Codeks TA Kit application

for Codeks TA Kit software
version 10.2110.0.15840 and newer

CodeksTAKit V10

Manual for the Codeks TA Kit applications

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1. Codeks Ta Kit

This document contains a detailed description of working with the **Codeks TA Kit** application, software for basic time & attendance registration, for small companies with up to 40 employees and a smaller number of time registration devices.

The **Codeks TA Kit** is a component of the time & attendance kits designed for smaller companies that want to establish a time registration system with as little cost as possible. The T&A kits contain all the necessary hardware and software equipment necessary to set up a simple time registration system.

The **Codeks TA Kit** software is designed so that the installation is as fast as possible and the use of the application is simple. The **Codeks TA Kit** is installed on the server, and administrators and users access the application through a web-browser in accordance with the client-server model.

With the *Codeks TA Kit* application, you can create simple work timetables, which are then used to register the employees' work hour at different locations. It allows users to view and edit their own work hours, and department managers to edit hours of all employees in selected departments.

The *Codeks TA Kit* can be easily upgraded to the **Codeks TA** software (also with an advanced database) that also enables access control in addition to time attendance registration.

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• It is not possible to upgrade individual expansion modules. All installed Jantar software is upgraded at the same time, including data exports.
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1.4. Contact Information

Jantar d.o.o. has more than 30 years of experience in the development and production of access control, time attendance and visitor control systems. What sets us apart from our competitors is that we develop and manufacture all of our software and most of our hardware ourselves. Our systems are installed and utilized at airports, office buildings, financial institutions, factories, shopping centers, hospitals, etc. Our products are present virtually anywhere our clients need basic or advanced access control and time and attendance systems.

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Web page: www.jantar.si

Support

For support contact our regional partner: https://jantar.si/en/contact/our-partners/

2. Description and Installation

The Codeks software family includes several main (core) applications, which can be extended with different Codeks additional applications and add-ons:

Codeks TA Kit	software for basic time & attendance registration, for companies with up to 40 employees, and a smaller number of time registration devices.
Codeks TA	software for advanced time & attendance registration and access control, for companies with up to 100 employees, and a larger number of time registration and access devices. (The documentation and instructions for use of the Codeks TA main application can be found in a separate document, available on our Codeks software download pages.)
Codeks TA Advanced	software for advanced time & attendance registration and access control with an advanced database, for companies with more than 50 employees, and an unlimited number of time registration and access devices. (The documentation and instructions for use of the Codeks TA Advanced main application can be found in a separate document, available on our Codeks software download pages.)
Codeks AC	software for advanced access control, for companies with up to 100 employees, and a larger number of access devices. (The documentation and instructions for use of the Codeks AC main application can be found in a separate document, available on our Codeks software download pages.)
Codeks AC Advanced	software for advanced access control with an advanced database, for companies with more than 100 employees, and an unlimited number of access devices. (The documentation and instructions for use of the Codeks AC Advanced main application can be found in a separate document, available on our Codeks software download pages.)

The Codeks software must be installed on a server capable of continuously running the Codeks service. All time & attendance devices connected to the server, send the server event information about users registering at different locations. The server, in turn, records these events in the database and executes calculations of the users' time and attendance.

CLIENTS   SERVER   DATABASE

COMMUNICATION LINES
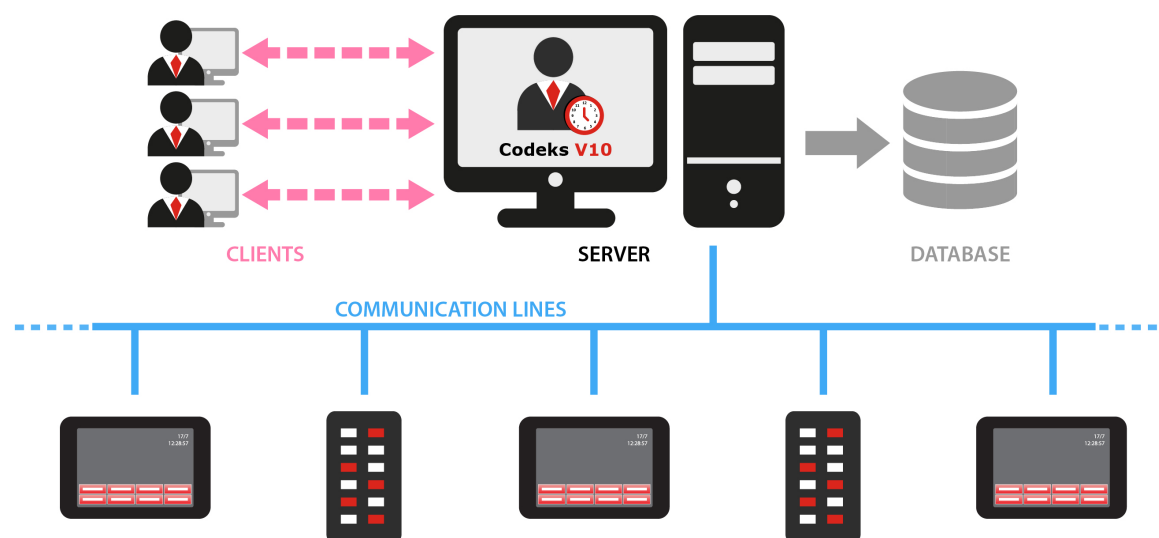
The work (interaction) with the Codeks server is modeled on the client-server model, which means that Codeks system administrators or company employees can access the Codeks application by login in with a web browser. Using a web browser, two types of logins are possible in the Codeks application:
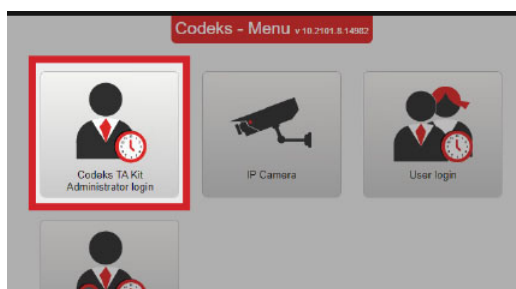
ADMINISTRATOR ACCESS - login for Codeks system administrators
Codeks administrators can configure, edit, do maintenance and make changes in the Codeks system.

> **NOTE**
> The following instruction manual is intended for Codeks administrators who log in to the Codeks application through the administrator login.
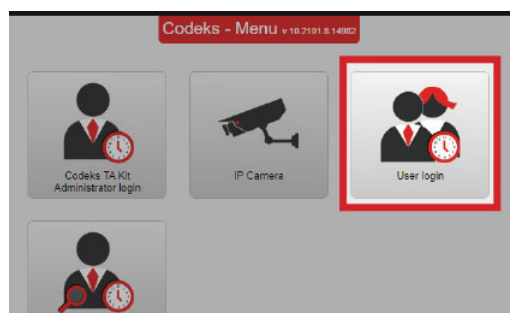
USER ACCESS - login for employees and heads of departments
User access enables employees and department heads to view or edit the data and recorded events in the Codeks system. Additionally, user access also enables users the use of Codeks add-ons and additional applications. (Instructions for users can be found in a separate document, available on our Codeks software download pages.)

The main (core) Codeks applications can be further extended with ADDITIONAL CODEKS APPLICATIONS AND ADD-ONS:

	Codeks TA Kit	Codeks TA	Codeks TA Advanced	Codeks AC	Codeks AC Advanced
TA Leave announces	❌	✅	✅	❌	❌
ePermits	❌	✅	✅	❌	❌
Presence monitor	✅	✅	✅	❌	❌
Layouts	❌	✅	✅	✅	✅
FrontDesk	❌	✅	✅	✅	✅
IP Camera	✅	✅	✅	✅	✅
Lunch	❌	❌	✅	❌	❌
Reservations	❌	✅	✅	✅	✅
Exports for payroll	❌	✅	✅	❌	❌
Shifts	❌	✅	✅	❌	❌
Screen keypad editor	❌	✅	✅	❌	❌
TA Weekly table view	❌	✅	✅	❌	❌
Parking	❌	✅	✅	✅	✅
Codeks Virtual Card	✅	✅	✅	✅	✅
Codeks Mobility *	✅	✅	✅	✅	✅

* The use of the Codeks Mobility mobile application is free, however, the use of some of the application features is dependant on the simultaneous possession of Codeks Virtual Card licenses and licences for other Codeks add-ons.

In the following chapters, you will find the minimum system requirements needed to set up the Codeks software system, as well as detailed instructions for the software installation.

2.1. Connecting Hardware

Usually, the Jantar team or partner will take care of the (physical) installation of the hardware devices, however, you are responsible for preparing the cable installation needed for the communication and power supply of the new devices. The preparation of the cable installation is simple, as you will only need to prepare:

- a standard UTP cable for communication between the Spider power supply and communication converter and the Regis controller,
- the connection to the power source (220V AC) and the local LAN network for the Spider device.

Examples of hardware installation:

T&A controller
Regis R-3-Kit   **Regis H-3-Kit**   **Regis T-3-Kit**

Power supply with communication converter
Spider W5-B

220VAC   **COMMUNICATION THROUGH THE LAN**

The server running the **Codeks TA-Kit** software

UTP cable   LAN

T&A controller
Regis R-1-Kit   **Regis H-3-Kit**   **Regis T-3-Kit**

Power supply with communication converter
Spider W5-B

220VAC   **COMMUNICATION THROUGH THE LAN**

UTP cable   LAN

T&A controller
Regis R-3-Kit   **Regis H-3-Kit**   **Regis T-3-Kit**

Power supply with communication converter
Spider W5-B

220VAC   **DIRECT COMMUNICATION THROUGH THE USB CABLE**

The server running the **Codeks TA-Kit** software

UTP cable   USB cable

T&A controller
Regis R-3-Kit   **Regis H-3-Kit**   **Regis T-3-Kit**

Power supply with communication converter
Spider W5-B

220VAC   **DIRECT COMMUNICATION THROUGH THE USB CABLE**

UTP cable   USB cable

T&A controller
Regis R-3-Kit   **Regis H-3-Kit**   **Regis T-3-Kit**

Power supply with communication converter
Spider W5-B

220VAC   **DIRECT COMMUNICATION THROUGH THE USB CABLE**

UTP cable   USB cable

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T&A controller
Regis R-3-Kit   **Regis H-3-Kit**   **Regis T-3-Kit**

Power supply with communication converter
Spider W5-B

COMMUNICATION THROUGH THE LAN

220VAC

UTP cable

LAN

The server running the **Codeks TA-Kit** software

T&A controller
Regis R-3-Kit   **Regis H-3-Kit**   **Regis T-3-Kit**

Power supply with communication converter
Spider W5-B

COMMUNICATION THROUGH THE LAN

220VAC

UTP cable

LAN

T&A controller
Regis R-3-Kit   **Regis H-3-Kit**   **Regis T-3-Kit**

Power supply with communication converter
Spider W5-B

COMMUNICATION THROUGH THE LAN

220VAC

UTP cable

LAN

NOTE FOR INSTALLATION
Connect the Regis to the Spider power supply as shown in the diagram with a standard UTP cable.
For distances greater than 25m, use one twisted pair of UTP cable for each pole (+ and -). The cable length between the power supply and the Regis should not exceed 50m.

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2.2. System Requirements

Before installing the Codeks TA Kit application make sure you meet these necessary system requirements:

- a server installed with the Windows 10 operating system or newer,
- available free USB ports or ethernet (LAN) ports for hardware connections,
- display resolution at least 1366 x 768 px (recommended resolution 1440 x 900 px),
- installed Microsoft .NET Framework 4.8,
- a minimum of 4 GB of RAM and dual-core processor,
- at least 50 GB of free space on the hard drive,
- PDF Reader software,
- internet access,
- Edge, Firefox or Chrome web browser updated to the latest official version,

  (We do not guarantee the proper functioning of the Codeks application if you are using a different browser or older browser versions.)

2.3. Installing Software

The Codeks software is available on our Codeks software download pages. **When purchasing or upgrading the Codeks software the link to the appropriate download page will be forwarded to you.**

> **NOTE**
> Before installing the downloaded Codeks software on your server:
> - Check the system requirements 19.
> - Make sure the **.NET Framework (at least) version 4.8** is already installed on your server, otherwise, install it on your server. (The Windows 8 operating system and newer already have the .NET Framework installed by default. Older versions of operating systems may require the framework to be installed manually.)
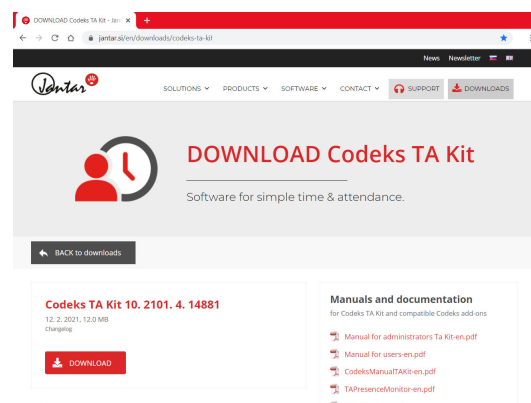
1. Click and run the downloaded Codeks installation file.

2. Select the language for the installation.

The selection of the installation language is important as it also determines which default settings and tools will be loaded during the Codeks software installation.
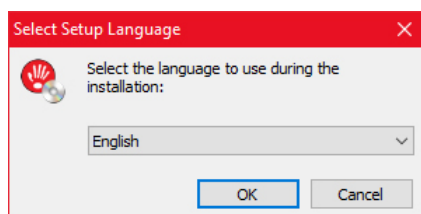
3. Read and accept the terms of the license agreement, then, click **Next** and follow the instructions of the installation process:
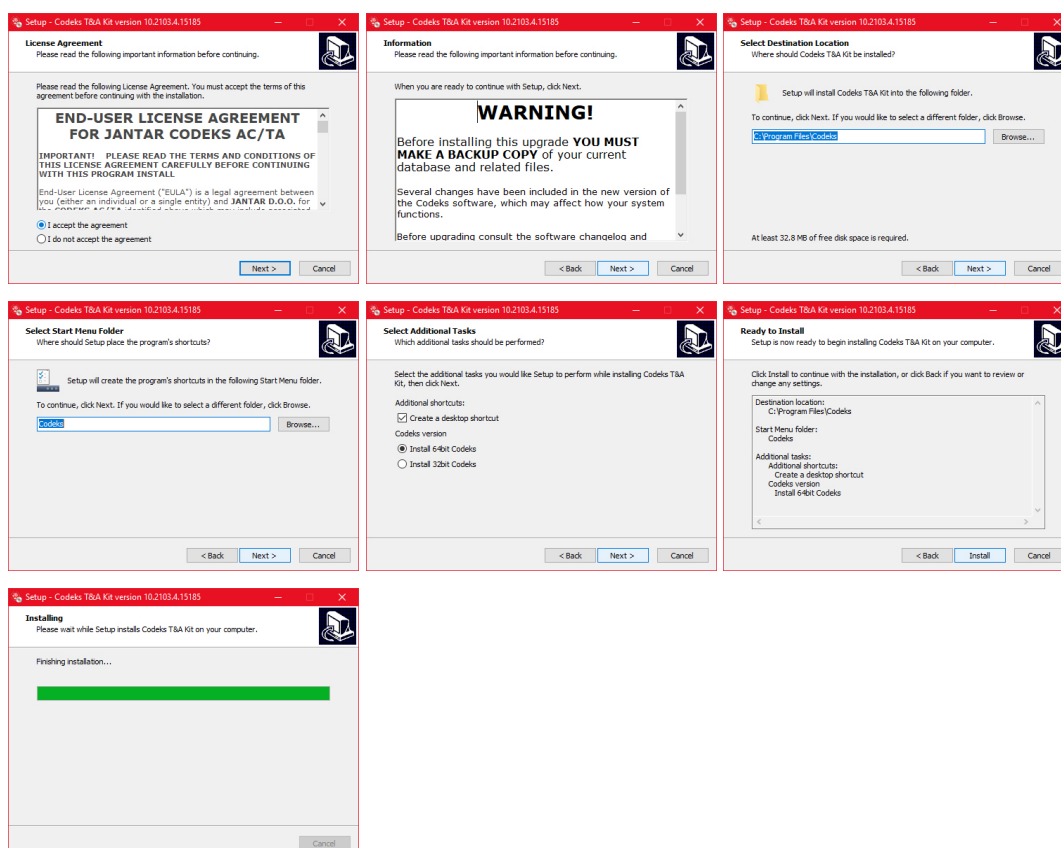
4. Next, the Codeks service will start for the first time and the system will require you to enter the Codeks software license code.

Enter the license code and then click *Save.*
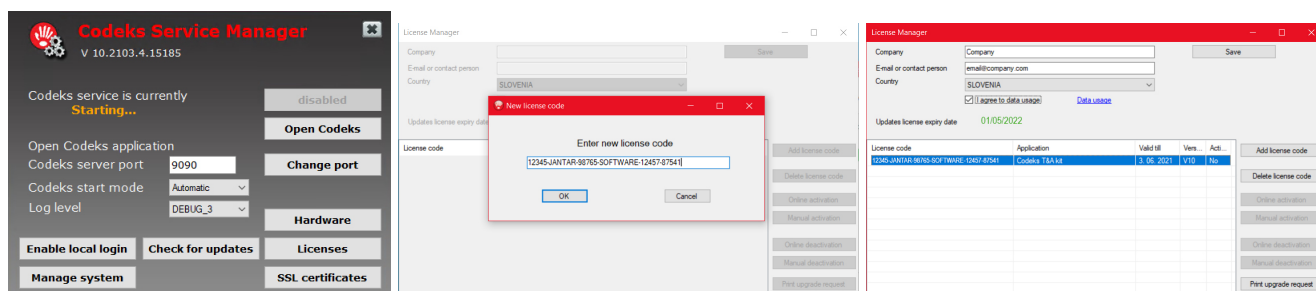
> **NOTE**
> You need to [activate] 23↵ your license code within 30 days otherwise Codeks TA Kit will stop to work until you activate it.

5. In the next step, the *Wizard for adding hardware* 30↵ will open. This wizard will help you connect the T&A registrator into your Codeks system.

> **NOTE**
> **To add the installed hardware to the Codeks system you will need data about the communication line (IP address, COM port etc.) and the data of the T&A registrators (the address of the controller), which you have assigned to the hardware during the (physical) installation.**

6. Follow the instructions within the wizard.

First, the wizard will automatically launch the search for communication lines leading to Jantar devices.

The wizard will display *a list of communication lines.* On the *List of communication lines* **find and select the communication line which leads to the Spider, power supply and communication converter.** Then click *Select.*
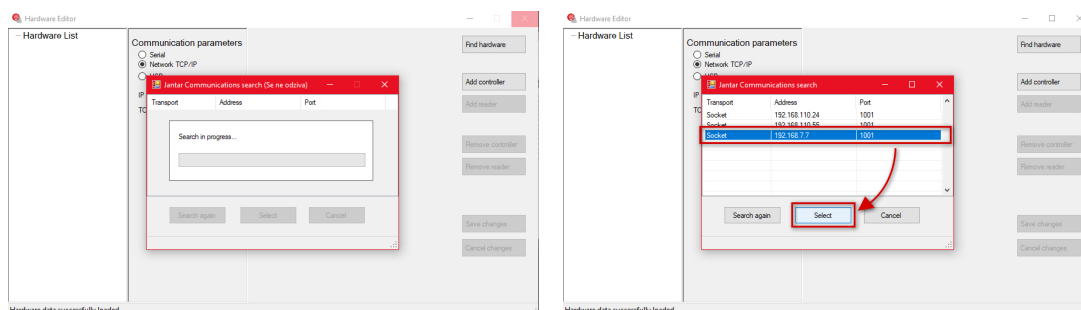
7. Next, the wizard will launch the search for all (T&A) controllers on the selected communication line.

When the wizard finds the controller on this communication line, a new window will open where you can enter the name of the passage (location) where the controller is installed.

Click **OK.**
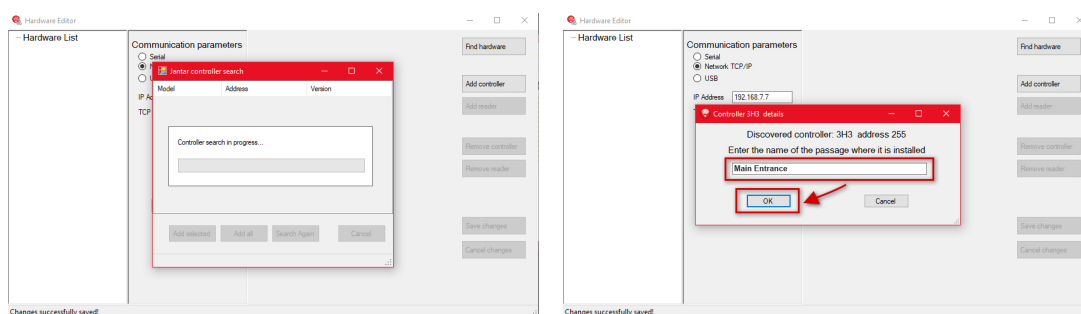
8. The new hardware will be added to the system and will also be displayed on the *List of hardware* on the left.
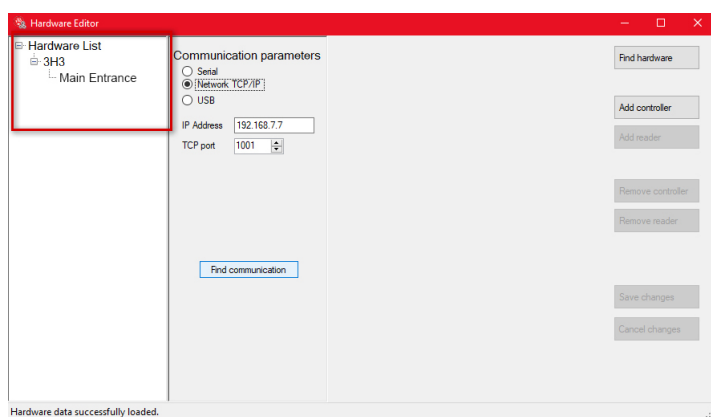
9. This will automatically conclude the process of adding hardware to your system.

10. You have successfully installed the Codeks software.
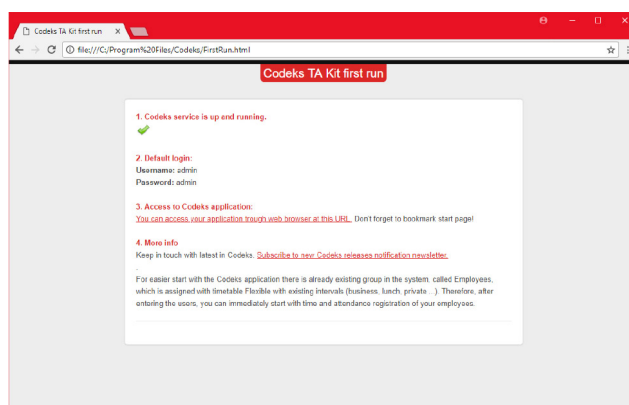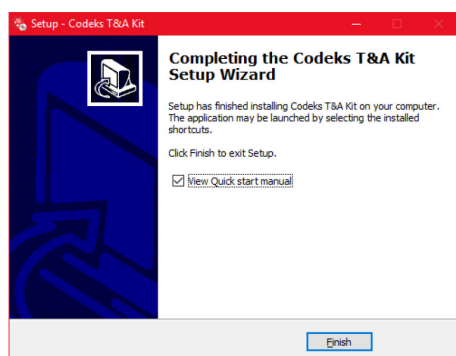
Finally, the installation process will display instructions for your first login to the Codeks application in your default web browser.

2.3.1. Activating License Code

The Codeks TA Kit software will not work without a valid license code, which must be added during the software installation. The license code must then also be **activated within 30 days from the installation date.** If you do not activate your license code within that time period, the application will stop working until you activate the license code.

You can activate the Codeks license codes using the *Codeks Service Manager* program. Open the Codeks Service Manager by clicking the **CodeksServiceManager.exe** file located on your desktop or in the folder *C:\Program Files\Codeks* (or *C:\Program Files (x86)\Codeks*).

Codeks Service Manager icon:

The following picture shows the **CodeksServiceManager.exe** file in the *C:\Program Files\Codeks* folder*:*

CodeksService.InstallState
CodeksService.pdb
CodeksServiceManager.exe
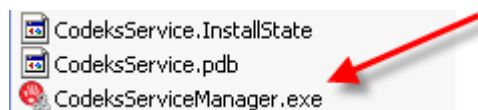
1. Before activating the a license code, **stop** the Codeks Service by clicking on the **Stop** button. Before continuing, make sure the status of the service is **Stopped**.
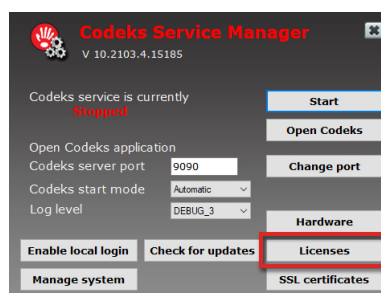
2. Then click the **Licenses** button.

3. Mark the license code you wish to activate and click the **Online activation** button. Repeat the process for each additional license code you wish to activate.

NOTE
If your Codeks server does not have an internet connection, the program will display an error.
In this case, you will have to activate the license code manually 24 using another device with internet access.
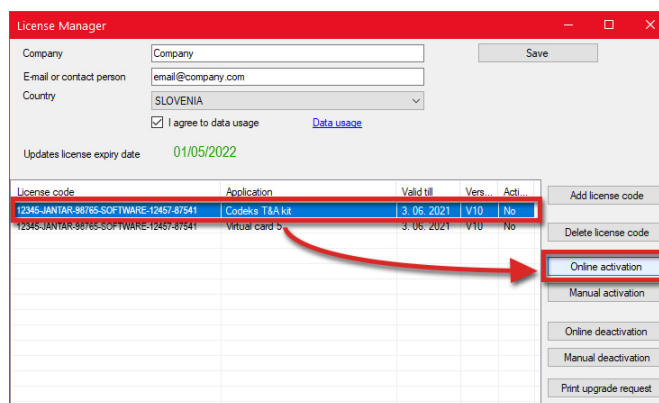
4. Finally, save the changes by clicking the **Save** button.
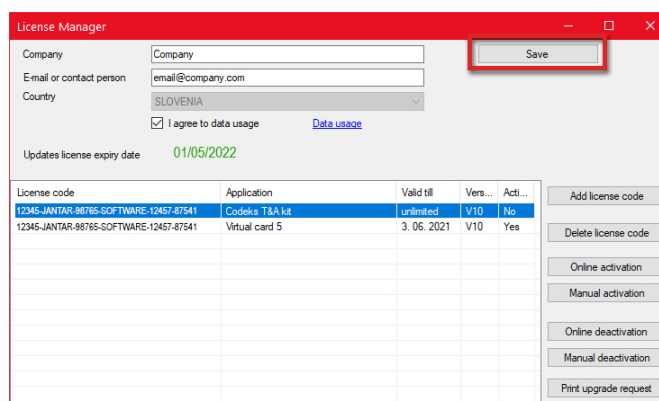
5. In the main window of the *Codeks Service Manager* program **restart** the Codeks Service by clicking the **Start** button.
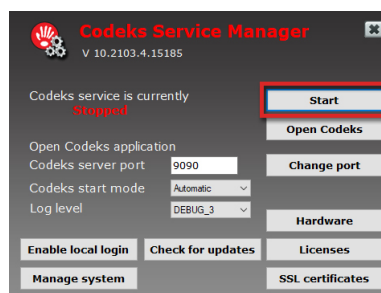
MANUAL LICENSE ACTIVATION

1. Select the license code you wish to activate and click on the *Manual activation* button.
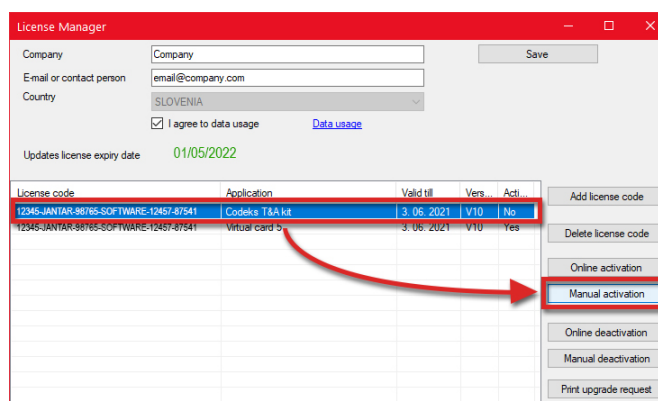
2. The *ManualActivationForm* window will open which contains a **Challenge code** for activating the selected license code.

IMPORTANT
Do not close this window until you enter the required *Codeks activation code*. If you close this window before entering the *Codeks activation code* you will have to repeat the manual activation process again, because a different *Challenge code* is generated every time you open the manual activation dialogue.
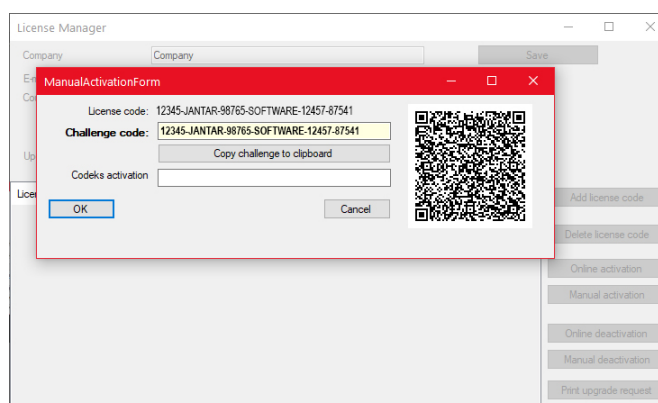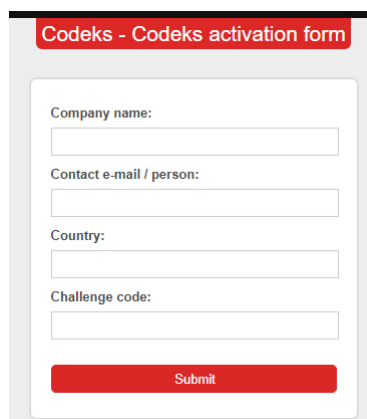
NOTE
If you scan the displayed OR code with your smartphone you will be **automatically redirected to the Codeks Activation Form webpage.** All the necessary information for generating the *Codeks Activation code* for the selected license code will already be entered in the form fields**. To continue just click Submit.**

3. Use your smartphone phone or any other device with internet access and go to **http://www.jantar.si/caf.html**. Here, fill in the *Codeks Activation Form* with the necessary company data and the generated *Challenge code*.

4. Then click **Submit.**

5. The form will then display the **Codeks Activation code** for activating the selected license code.

6. Enter the *Codeks activation code* into the ManualActivationForm and click **OK.**

7. If activation was successful the validity of the selected license will be changed to *unlimited*.

2.3.2. Deactivating License Code

If you wish to move the Codeks TA Kit application to another computer, you **first need to deactivate license code** on the computer where software is currently installed and **then reactivate it on the new computer**.

You can deactivate the Codeks license codes using the *Codeks Service Manager* program. Open the Codeks Service Manager by clicking the **CodeksServiceManager.exe** file located on your desktop or in the folder *C:\Program Files\Codeks* (or *C:\Program Files (x86)\Codeks*).

Codeks Service Manager icon:

The following picture shows the **CodeksServiceManager.exe** file in the *C:\Program Files\Codeks* folder:

1. Before deactivating a license code, **stop** the Codeks Service by clicking on the **Stop** button. Before continuing, make sure the status of the service is **Stopped**.

**2.** Then click the **Licenses** button.

3. Mark the license code you wish to deactivate and click the **Online deactivation** button.
Repeat the process for each additional license code you wish to deactivate.

> **NOTE**
> If your Codeks server does not have an internet connection, the program will display an error.
> In this case, you will have to <u>deactivate the license code manually</u> [27] using another device with internet access.

**4.** Finally, save the changes by clicking the **Save** button.

5. In the main window of the *Codeks Service Manager* program **restart** the Codeks Service by clicking the **Start** button.

MANUAL LICENSE DEACTIVATION

1. Select the license code you wish to deactivate and click on the *Manual deactivation* button.

2. The *ManualDeactivationForm* window will open which contains a **Challenge code** for deactivating the selected license code.

3. Use your smartphone phone or any other device with internet access and go to **http://www.jantar.si/caf.html**. Here, fill in the *Codeks Activation Form* with the necessary company data and the generated *Challenge code*.

4. Then click **Submit.**

5. When the license code is deactivated the form will display the following message:

6. The validity of the selected license will be changed to *expired*.

2.3.3. Using SSL certificates

The Codeks TA Kit software enables the use of **SSL certificates** 322 that are used to protect the transfer of data **between clients**, i.e. users who access the Codeks application through browsers on their computers, **and the Codeks software server**.

You can read more about this in chapter Encrypted data transfer 322 .

2.4. Setting Firewall

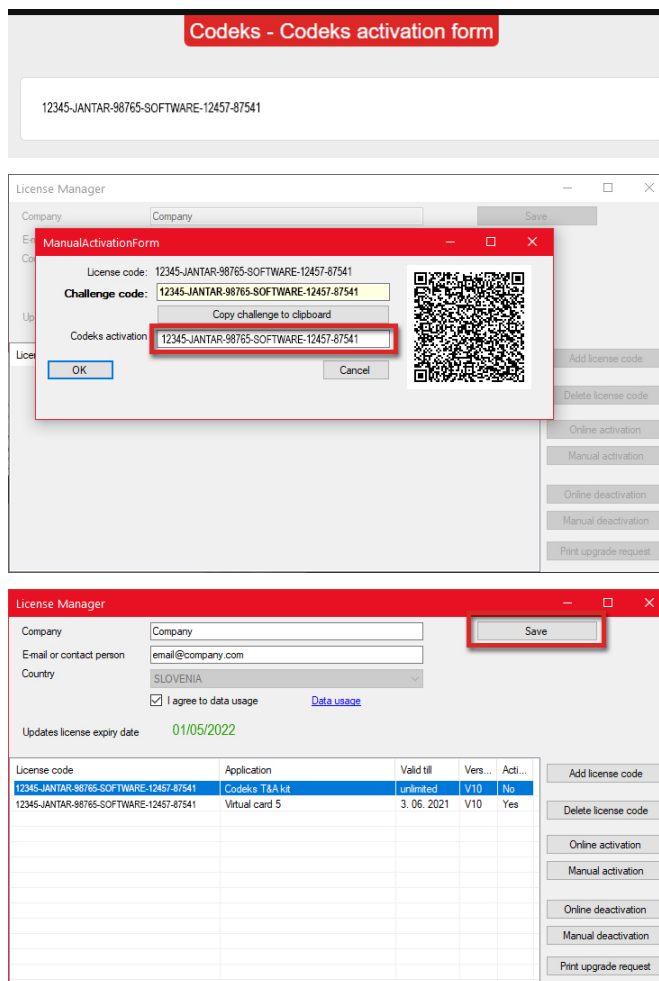Inadequate firewall settings can cause problems when searching for NET communication lines. It can also cause problems when accessing Codeks applications from other computers.

User must ensure the following:
- Allow receiving of the TCP connections from web clients. This is default on port 9090.
- Communication must be allowed on TCP port 100 for communication with Spiders (if you are using Spider NET).
- Communication must be allowed on TCP port 1001 for communication with controllers, which are directly on the network (1001 is the default value which can be changed in hardware settings).
- Set the Firewall so that service will be able to send and receive UDP packages on port 65535 (searching for communication lines).

2.5. Backup of Codeks' Data

Backing up is mandatory!

Backing up the database and other user files is the responsibility of the owner and administrator of the Codeks system! The Jantar company is in no way responsible for the loss of your data in any event!

Backing up your files protects them from permanent loss or irreversible alteration due to accidental deletion, virus or worm attacks as well as software or hardware failure. In the case of any of the mentioned scenarios, you can easily restore the original files, if you have their backup copies. A backup copy of the original files must be stored in a different location than the original. To track changes in your files, create multiple backup copies.

Making a backup copy

Making a backup copy of the Codeks program includes making a copy of your **database** as well as **some additional folders and files**.

1. Open the **Codeks Service Manager** program and **stop the Codeks service** by clicking the button **Stop.**

2. Make a backup copy of your database.
Locate the Codeks program folder (**C:\Program Files\Codeks**) on the server and **copy the folder named** *data*, which contains the SQLite database.

3. Then **copy all files with the .xml and .config extension** that are located in the Codeks program folder (C:\Program Files\Codeks).

4. Finally **copy the entire** *assets* **folder** located in the WebRoot folder (C:\Program Files\Codeks\WebRoot \assets). This folder contains:

- *EventPictures* folder - this folder contains all pictures taken by security cameras when using the **Codeks IP Camera** Add-on.
- *GeneratedExports* folder - this folder contains all created exports (e.g. Statistics Column Export).
- *GeneratedReports* folder - this folder contains all created reports (e.g. Statistics Report).
- *Statisticsicons* folder - this folder contains all the icons for statistics.
- *UserPictures* folder - this folder contains all the uploaded pictures of employees.

5. Save all copied folders and files in a secure location as they contain important and security sensitive data.

2.6. Codeks Service Manager Interface

The **Codeks Service Manager** is a graphical interface that is primarily designed to manage the Codeks service, but also contains other tools:
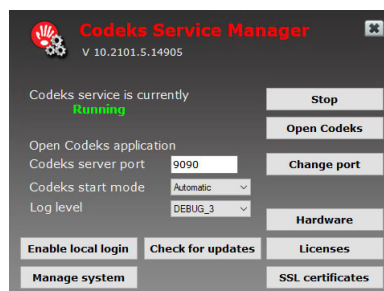
- setting for the TCP port through which users (clients) access the Codeks application;
Under the **Codeks server port** setting, you can change the TCP port number through which users within your local network access the Codeks application on your server. To change the TCP port, enter the new port number in the setting's field and click the **Change port** button (right).

- setting the Codeks startup mode;
The **Codeks start mode** setting determines how the Codeks service will launch; You can choose between *Automatic*, which launches Codeks when your computer is turned on, *Manual*, which lets you manually control the launch of Codeks, and *Disabled*, which completely disables the Codeks service.

- setting the level of detail being recorded into the software log file about the operation of your Codeks system;
The **Log level** setting defines how much information about the operation of the Codeks system will be recorded into the *Codeks.log* system file. (The file is located in the Codeks installation folder, e.g. ... \ Program Files \ Codeks \ Logs \ Codeks.log.)

- a link to the Wizard for adding hardware [21] **, with which you can connect new (additional) time registration devices to the Codeks system;**
Clicking the **Hardware** button will open a new window where you can find or manually add new communication lines, controllers and readers to your system.

- a tool for generating a time-limited access of a super administrator (1 hour);
Click the **Enable local login** button to create a super administrator's time-limited access (valid for 1 hour) to your Codeks application, which can only be used on the server where the Codeks software is installed. The local super administrator access is intended primarily for technical staff and the Jantar support service to help solve potential problems with the Codeks software.

- access to security-sensitive administrator functions that can have serious consequences for the operation of the Codeks software;
We recommend that you do not change the functions that are accessible by clicking the Manage system button yourself. The *Manage system* tools are primarily intended for the Jantar support service to help solve potential problems with the Codeks software.

- a link for the Codeks software updates [31]**;**
Clicking the **Check for updates** button will automatically run a check to see if an update is available for your software version. The updates available to you will be displayed in the table and ready for download and installation.

- a link to the Licenses [23] **editor for managing licenses for the main Codeks application and Codeks add-ons and additional applications;**
In the **Licenses** editor, you can add, delete, activate, and deactivate license codes for the basic Codeks application, Codeks software updates, and Codeks add-ons and additional applications.

- a link to the SSL certificates editor for managing the secure HTTPS connection [322]**;**
In the **SSL certificates** editor, you can import an SSL certificate into the Codeks software to enable secure HTTPS communication between the Codeks server and clients.

2.7. Software Update

NOTE
With the transition to the next generation of our software the Codeks V10, Jantar has also changed its licensing policy for software updates. By purchasing the Codeks V10 software or upgrading from the old Codeks V9 software to the new Codeks V10, each customer is also entitled to software updates for a period of one year from the date of the first activation of the software. After this period, you may purchase the rights to further updates or continue to use the Codeks software at the level of the last updated version to which you were entitled.

The date of eligibility for updates is displayed in the **Licenses** window of the *Codeks Service Manager:*
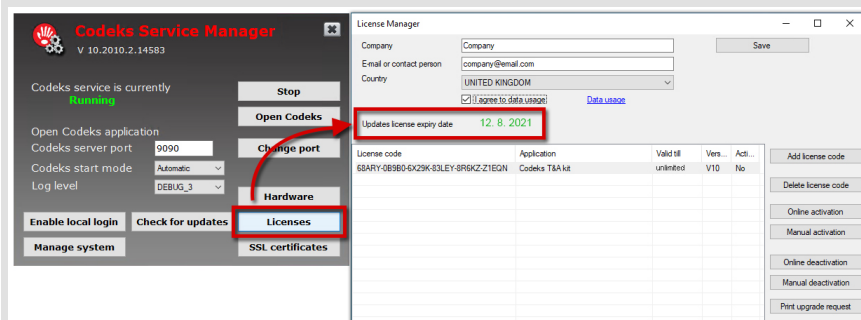
If you would like to purchase the option to update, you can contact us via the online form https://jantar.si/en/contact/.

You can update your Codeks software using the *Codeks Service Manager* program.

It is not necessary to uninstall the existing software from your computer. You can install the new Codeks version over an existing install.

WARNING
Before updating your existing software to the latest version make a backup copy 29 of your database and other files.

1. Start the *Codeks Service Manager* program.

2. Click the **Check for updates** button.
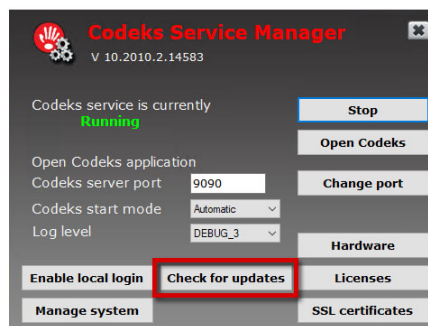
3. A list of new software versions, ready to be installed, will be displayed. If only one version is available, the program will automatically offer to launch the installation of the latest version.
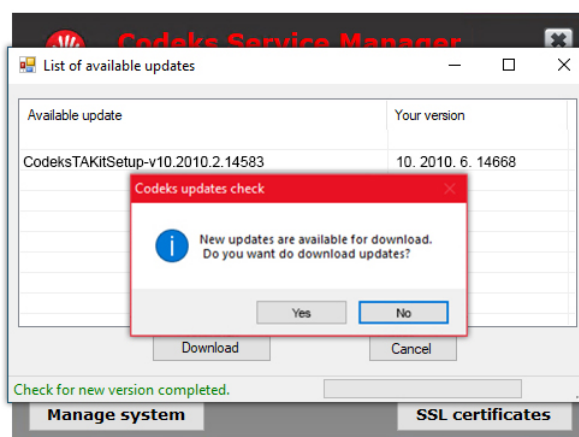
4. After launching the installation, follow the instructions for the software installation.

3. User interface

Administrators and users of the Codeks software can access and manage the *Codeks TA Kit* application **using a web browser of their choice** (Chrome, Firefox or Internet Explorer).

START MENU

Link to the start menu:
~IP address of your server~:9090
(e.g. localhost:9090, if you are logging to the application on the same computer (server) where the Codeks software is installed)
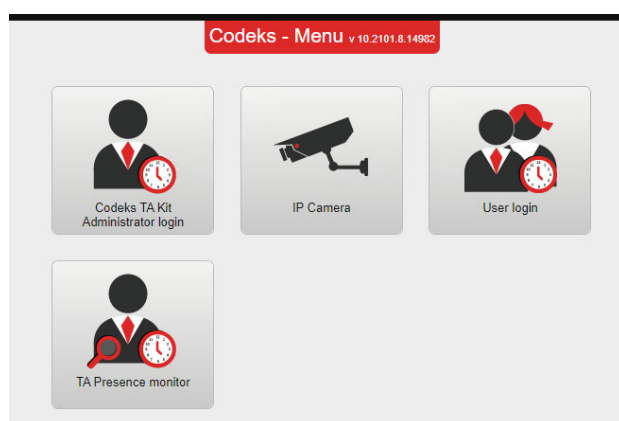
The Codeks application's start menu first displays **links to login forms for administrators and users**.

The start menu also contains **icons for the *Codeks TA Presence monitor* and *IP Camera*** if you are using these add-ons. The Codeks TA Kit can be easily upgraded to the *Codeks TA* software that enables access control in addition to time attendance registration and can also be expanded with *Codeks add-ons* and *additional applications*.

3.1. Login

ADMINISTRATOR ACCESS

Codeks administrators can log in to the Codeks TA Kit application with their username and password using a web browser.
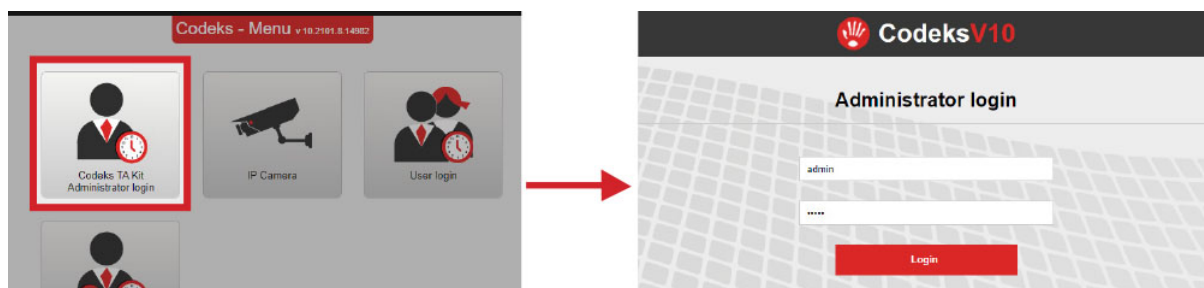
Link to the administrator login form:
~IP address of your server~:9090/ta/adminuserslogin.html

NOTE
The Codeks TA Kit application has only one system administrator. The default administrator username and password in the Codeks application is:
      Username: admin   Password: admin.
For security reasons, we recommend that you immediately change the default administrator login information. You can change the login username and password under the *Administrator settings* section in the *Program settings* tab of *Preferences*.

After a successful login, the ***Main menu*** 34 of the *Codeks TA Kit* will be displayed. In the *Main menu* you will find all the links to the individual editors.

USER ACCESS

In addition to administrators, **users, i.e. employees and heads of departments, can also login to the Codeks application**.

Users use their username and password to login to the Codeks application through the user login form.
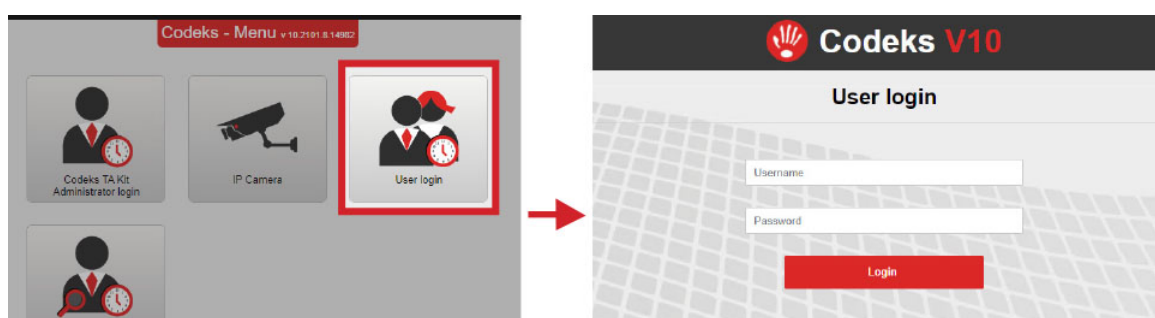
Link to the user login form:
~IP address of your server~:9090/addons/userslogin.html

Users will use user name and password which were assign to them, when they were added to the system (Users - Advanced Settings 41).

Instructions for users can be found in a separate document, available on our Codeks software download pages.

3.2. Main Menu

The upper toolbar of the **Main menu** contains the links to all individual editors that make up the *Codeks TA Kit* application.

The central part of the *Main menu* displays the **List of recent events** registered in the system.

The line at the bottom informs whether communication with controllers is established. The line will also display the status of the Sending tables process.

Users

The *Users* editor enables you to manage the users (employees) in your system.
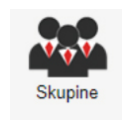
Groups

In the *Group* editor, you can manage groups through which employees are granted access and time attendance rights at different locations.
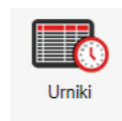
Timetables

In the *Timetables* editor, you can create and edit timetables which are used to define and limit the time when groups and users will be able to register their time attendance.

Time attendance

The *Time attendance* editor enables you to view and manage events with which employees record their work hours. Additionally, the editor also contains other tools and settings for managing the employees' time attendance, e.g. data exports suitable for import into payroll programs.
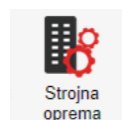
Hardware

In the *Hardware* editor, you can connect and manage all the devices for access control or time attendance in your Codeks systems, according to the needs of your company.
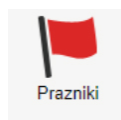
Holidays

In the Holidays editor, you can view all the defined holidays, which are work-free days and apply to all the users within the same Codeks system. Here you can also edit, add or delete defined holidays.
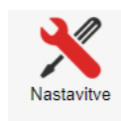
Settings

The *Settings* icon opens a new window, where you can set and edit settings that affect the entire Codeks system:
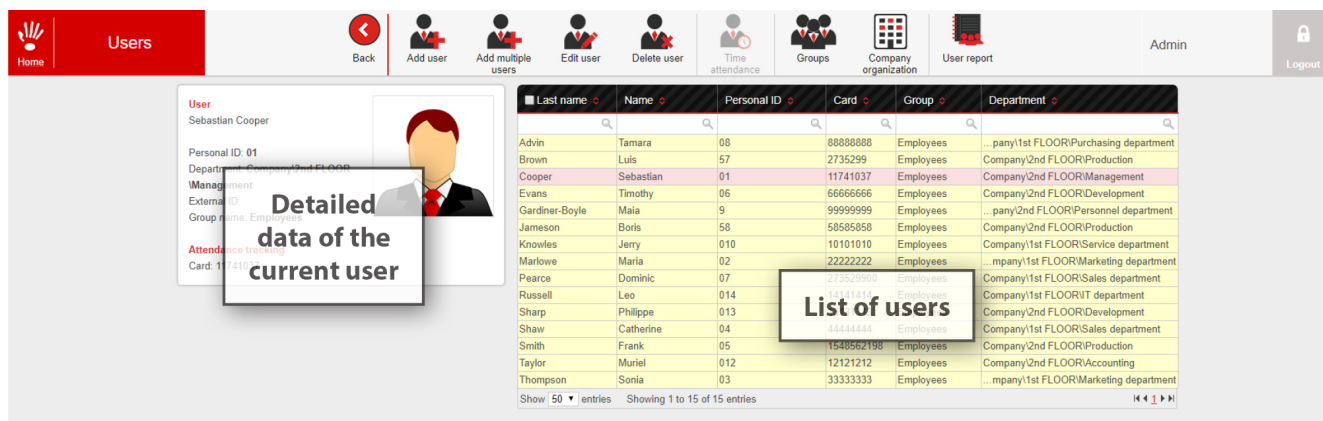
- **Program settings**
- **Time attendance**
- **TA screen**
- **Mail settings**
- **Export**

Send tables - NOTE!

The process of ***Sending tables*** is automated in the *Codeks Ta Kit* application and will be triggered every time the administrator returns to the *Main menu* page. The status of sending tables will be displayed in the *Communication status* line. During sending the database of the application is fully occupied, consequently, it is not possible to edit anything until sending is complete.

4. Users

The **Users** editor enables you to manage users as well as edit their data and settings. Here you can add new employees, edit the data of existing users and assign cards to the users.

NOTE

Any changes made to the users' settings in the *Users* editor may change the recording of work hours in the *Time and attendance*.

You can find more about revisions in chapter Revisions 64.

4.1. Adding a user

1. To add a new user, **click the *Add user* icon in the toolbar of the *Users* editor***.*
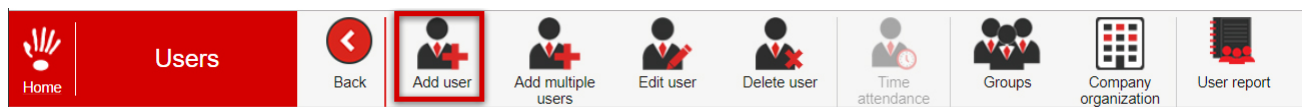
2. A new window will open, where you can enter the basic data about the user and also set any additional settings for the new user.

The individual setting are described in more detail in the following chapters.

3. When you are done editing click *Save.*

4. The new user will be added to the *List of users*.

NOTE
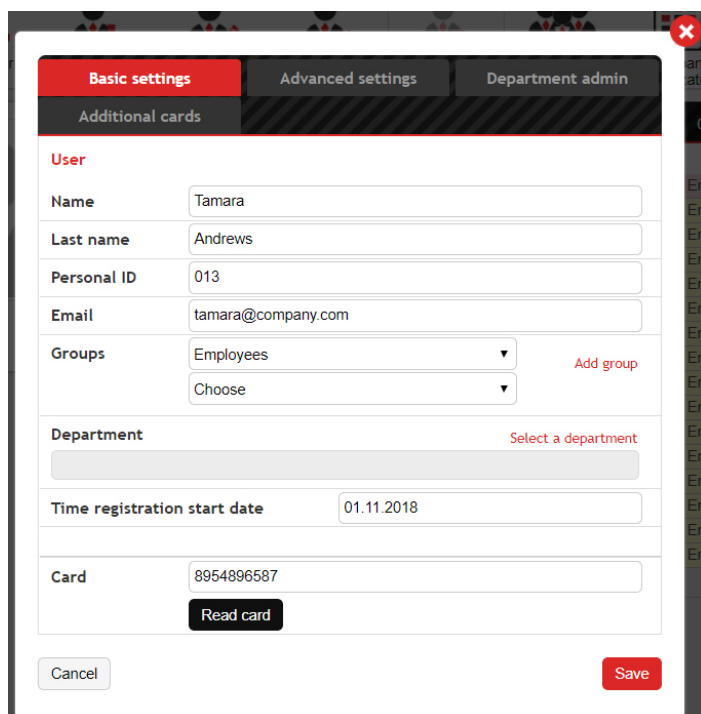
Editing the users' groups and other user data in the <u>Users</u> 36 editor also affects the recording of work hours!
Whenever assigning new groups, changing the assigned groups, or changing other user data (e.g., allocating new cards to the user) the system will issue a warning and offer you the option of creating a new revision so that you can save the current status for future reference.
We recommend extreme caution when editing currently valid revisions and revisions in the past!

4.1.1. Basic settings

In the **Basic settings** tab, you can enter the basic information about the user and set the basic settings for their time attendance registration.

1. To set basic settings for a user **in the Advanced settings tab enter the desired data in the appropriate fields**.

2. After you are done editing click **Save**.

3. Finally, **return to the Main menu to trigger the send tables process**.

Basic settings	Description
Username	The name of the employee (user).
Last name	The last name of the employee (user).
Personal ID	A custom assigned number which is usually used in reports and for payroll exports.
Email	The user's email address.
Groups	The list of groups the user is assigned to and through which the user is granted access rights.
	ATTENTION The order in which the groups are assigned to the user is important. The user rights assigned by a higher-ranking group will always override a lower-ranking group.
Department	The department (defined in the *Company organization* editor) the user is assigned to.
Time registration start date	The start date of recording the users time registration. All days prior to this date are disabled and cannot be edited in the *Time attendance* editor.
Card	The number of the (main) card the user will use to register his time attendance and access at different passages. You can read more about assigning cards to users in chapter Assigning a card to a user 39.

4.1.1.1. Assigning a card to a user

The cards (or other identification means for time attendance registration) assigned to users in the Codeks application have a unique number, that can be read by the reader of a controller. The identification card itself does not contain any data of the user it is assigned to. The number code read by the reader serves only as a reference to access data in a central database of the Codeks application, where all the users' data is stored. This means that even if a user's card is lost or stolen, the user's data cannot be accessed or abused.

If a user's card is lost or stolen you can simply assign the user a new one⎡40⎤, by entering a new number code. This action simultaneously disables the user's old card and assigns the user a new one.

> **NOTE**
>
> Users who are using the Codeks system, for time attendance registration, must always have a value (number code) entered in the Card field, even if they are using different identification means, e.g. fingerprints, identification tags or a PIN code.

The **Main card** is assigned to a user in the **Card** section of the *Basic settings* tab. The *Main card* holds the access rights the users are granted through the groups they are assigned to as well as any user access exceptions⎡85⎤.

In addition to the *Main card*, the users can also be assigned a number of ***Additional cards***⎡43⎤ which can hold the same or completely different access rights as the *Main card.*

1. Enter the number code of the card (or other identification means for time attendance registration) in the window for ***entering the user's data and other settings***. There are two different ways to enter the number code of a card:

- **manually enter the number code** printed on the card or other identification means,
- use a reader and the ***Read card***⎡40⎤ functionality.
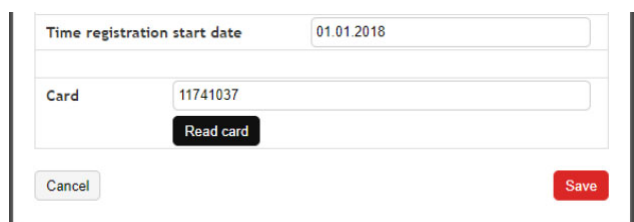
> **NOTE**
>
> **You CANNOT assign the same card to two different users.**
>
> If you want to assign a card, previously already used by a different user, to a new user, you must, first, assign a different card (number code) to the original user or erase him from the system.

2. After you are done editing click **Save.**

3. Finally, **return to the *Main menu* to trigger the send tables process.**

Time registration start date	01.01.2018
Card	11741037
	Read card
Cancel	Save
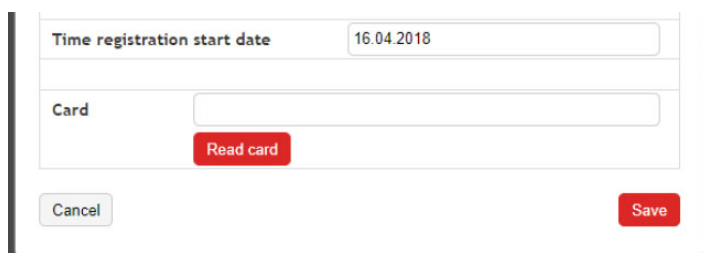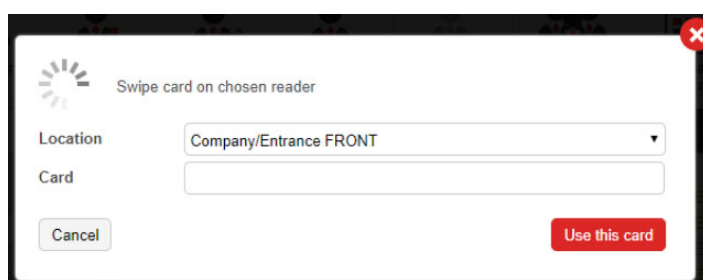
4.1.1.2. Read card

You can assign a card to a user by using the **Read card** functionality. This function enables you to assign the last read card on a selected reader to a user.
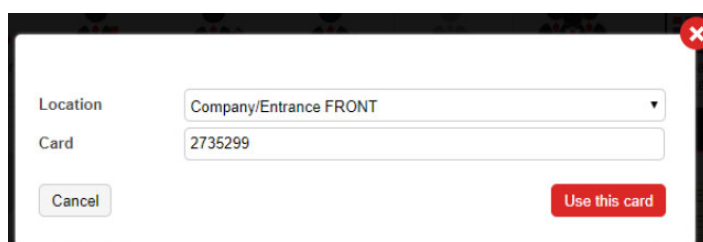
1. Click **Read card** in the window for entering the user's data and other settings.

Time registration start date	16.04.2018
Card	
	Read card
Cancel	Save
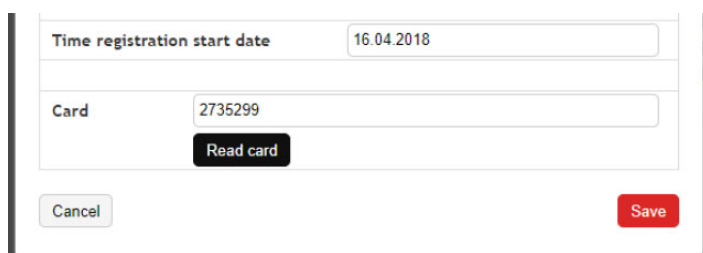
2. A new window for reading the card on a reader will appear.

First, **select the location of the reader**, where the card will be read.

Swipe card on chosen reader	
Location	Company/Entrance FRONT ▼
Card	
Cancel	Use this card

3. Position the pointer in the Card field and put the card on the reader.

When the reader successfully reads the card **a number code will appear in the lower field**.
Click **Use this card**.

Location	Company/Entrance FRONT ▼
Card	2735299
Cancel	Use this card

4. This will assign the last read card to the user.

To save the settings click **Save**.

Time registration start date	16.04.2018
Card	2735299
	Read card
Cancel	Save
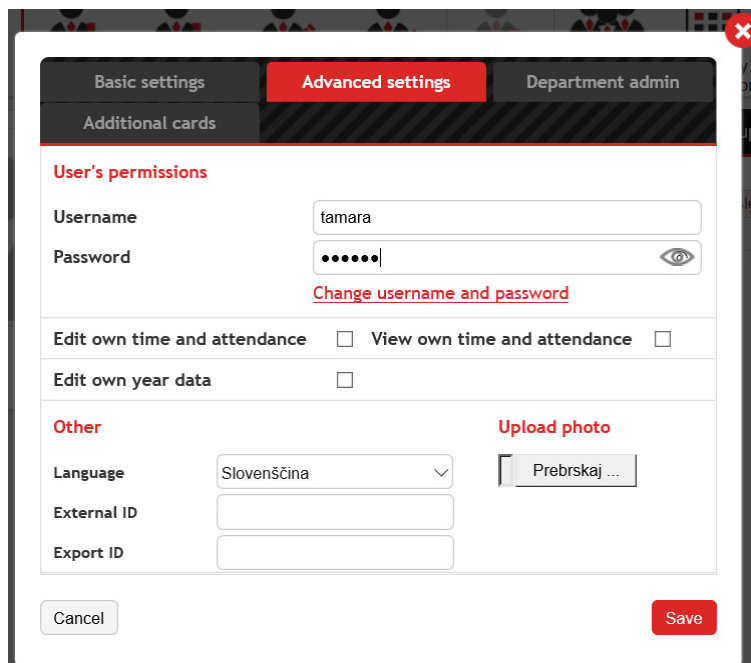
5. Finally, **return to the *Main menu* to trigger the send tables process.**

4.1.1.3. Lost or damaged cards

The process of changing the user's card is the same as

4.1.2. Advanced Settings

In the **Advanced settings** tab, you can enter additional data about the user as well as grant him user access for the Codeks application and advanced editing rights within the application.

1. To set advanced settings for a user **in the Advanced settings tab enter the desired data in the appropriate fields**

2. Click **Save** after you are done editing to save the changes.

3. Finally, **return to the *Main menu* to trigger the send tables process.**
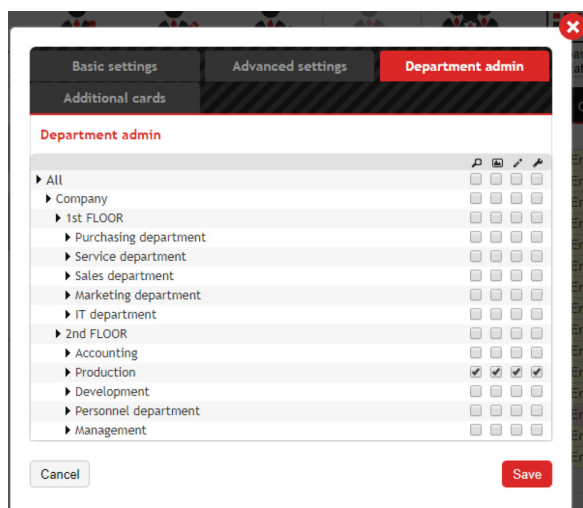
Settings	Description
Username	The username assigned to the employee which enables him to login into the Codeks application as a user.
Password	The user's password for the Codeks user login.
Edit own time and attendance	If this setting is enabled the user can edit his own time attendance data in the *Time attendance* editor.
View own time and attendance	If this setting is enabled the user can view his own time attendance data in the *Time attendance* editor.
Edit own year data	If this setting is enabled the user can edit his own year data in the *Time attendance* editor (read more in chapter Edit Year 127).
Language	Sets the language setting of the Codeks application for the user.
Picture	Upload interface for the user's photo (.jpg or .png format) that will be shown in the *Users* editor and the *Monitor* viewer when the user registers at controllers.
External ID	Optional setting that serves as additional identification data and is usually used when exporting data for third-party programs or applications.
Export ID	Optional setting that serves as additional identification data and is usually used when exporting data for third-party programs or applications.

4.1.3. Department Admin

In the **Department admin** tab, you can **assign the current user advanced rights to view and edit time registration data of other users**. These settings are used to *grant department managers the right to edit the time registration of their employees*.

1. You can assign different editing rights to the current user (department manager) and limit them according to a specific department.

To assign a right, add a checkmark in the appropriate box:

Settings	Description
🔍 **- View time and attendance**	The user can view the time registration data of other users in this department.
🖼 **- Edit statistics in time and attendance**	The user can edit the statistics in the time registration of other users in this department.
✏ **- Edit time and attendance**	The user can edit the time registration data of other users in this department.
🔧 **- Edit year data**	The user can edit the year data of other users in this department.

2. Save the settings by clicking the **Save** button.

3. Finally, **return to the *Main menu* to trigger the send tables process.**

4.1.4. Additional cards

In addition to the **Main card**, the users can also be assigned a number of **Additional cards** which can only hold the same rights as the *Main card.*

You can assign different media as an additional card to a user:

- an additional card (or RFID tag),

- * a virtual card which enables user to register their work hours through a web browser of mobile application (you must obtain the *Codeks Virtual Card* licence in order to use the virtual card functionality*).*

> **NOTE**
> **An additional card can only have the same rights as the user's main card.**

> **NOTE**
> Fingerprints **cannot** be added as additional cards.
> Finger prints are biometric data which is directly connected to the user and can only have the same access rights as the main card of the user.
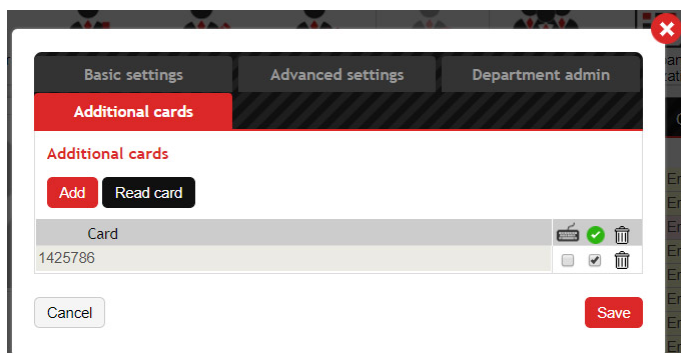
> **NOTE**
> Users who are using the Codeks system, for time attendance registration or access control, must always have a card entered in the Card field, even if they are using different identification means, e.g. identification tags or sticker, otherwise, errors in the time attendance can occur.

1. New means of identification can assign in several ways:
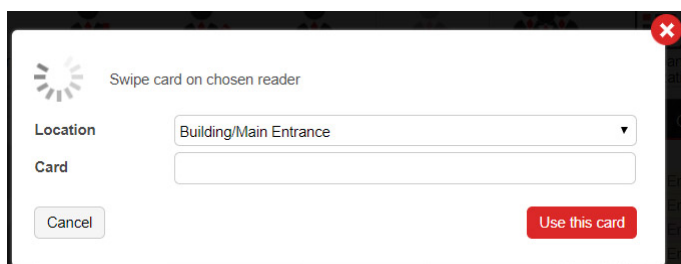
   a) To manually add a new user card or tag click **Add.**

A new row will be inserted into the table below. **Manually enter the number** printed on the identification means into the first field of the newly added row.

   b) Use the **Read card** functionality to automatically assign a new card or tag to a user.

You can read more about the *Read card* function in chapter

c) To add a virtual card click ***Select virtual card***.

You can read more about virtual cards in chapter <u>Virtual cards</u> 45 .
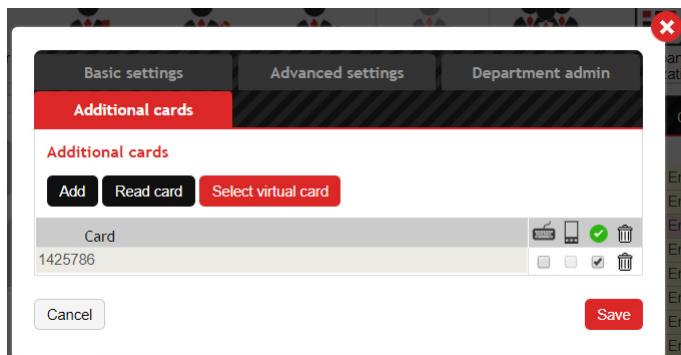
NOTE

To assign virtual cards to users, you need to purchase the *Codeks Virtual Card* license, which adds a specific number of virtual cards for employees to your Codeks system.

A new window will open. From the drop-down window select a number of a virtual card and click ***Use this card***.
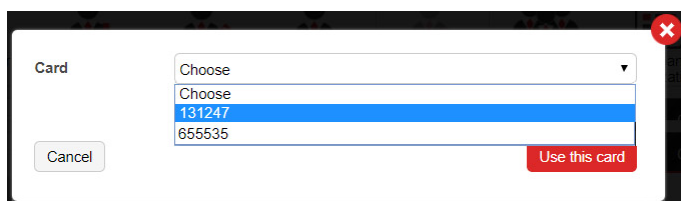
2. Click ***Save***.

3. Finally, **return to the *Main menu* to trigger the send tables process.**

NOTE

Editing the users' data in the <u>*Users*</u> 36 editor also affects the recording of work hours!
Whenever changing certain user data (e.g., allocating new cards to the user) the system will issue a warning and offer you the option of creating a new revision so that you can save the current status for future reference.
We recommend extreme caution when editing currently valid revisions and revisions in the past!

4.1.4.1. Virtual cards

The **Codeks Virtual card** is an electronic substitution for the classic (physical) contactless cards.

> **NOTE**
> **To assign virtual cards to users, you need to purchase the *Codeks Virtual Card* license, which adds a specific number of virtual cards for employees to your Codeks system.**
> You can add and activate the *Codeks Virtual Card license code* using the *Codeks Service Manager program.*
> A virtual card must be assigned to each user 43 by a Codeks system administrator in the *Users* editor.

> **NOTE**
> **All newer Codeks systems whose main Codeks license (Codeks TA Kit, Codeks TA or Codeks TA Advanced) was first activated AFTER October 1, 2021,WILL REQUIRE at least one Codeks Virtual Controller license to enable mobile T&A registration through the Codeks Mobility app.**
> **The Codeks Virtual Controller license enables mobile registration, additionally, it also enables the geographical restriction of the area around the point of the virtual controller, where employees are still allowed to register their working hours via mobile app.**
> **All older Codeks systems whose main Codeks license (Codeks TA Kit, Codeks TA or Codeks TA Advanced) was first activated BEFORE October 1, 2021, will NOT REQUIRE for the basic operation of mobile T&A registration. Owners of such systems will be able to purchase the additional Codeks Virtual Controller license if they wish to upgrade their system with the functionality of geographically restricting mobile registration. Older systems without a Codeks Virtual Controller license will continue to operate as before**.

> **NOTE**
> **The new functionality of the Codeks Virtual Controller license is only possible when using at least the version Codeks 10.2110.0.15840 of the main software or later.**
> You can also read more about the Codeks Virtual Controller in the separate instruction manual for the add-on (Codeks Virtual Controller EN Instructions for ADMINISTRATORS.pdf).

Users who are assigned a virtual (additional) card can **register their time and attendance through a web browser by using the simulated T&A controller in their user access menu** or **through the Codeks Mobility application for mobile devices.**
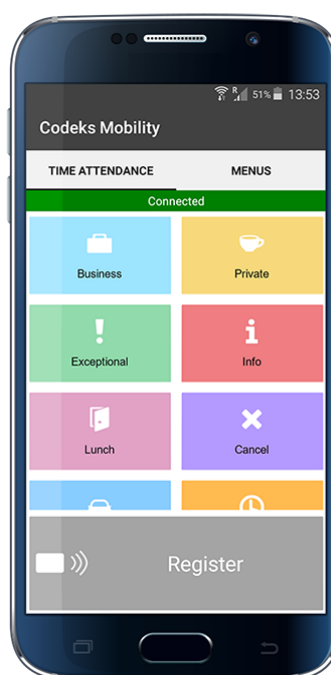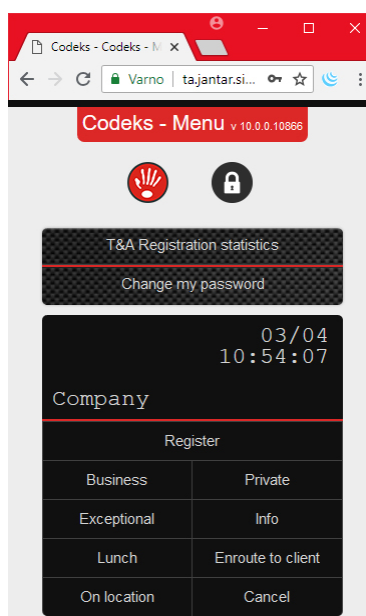
The use of the *Codeks Virtual Card* functionality is described in separate instructions for users (available on our download pages).

4.2. Adding multiple users

1. To add multiple users simultaneously, **click the *Add multiple users* icon in the toolbar of the *Users* editor.**
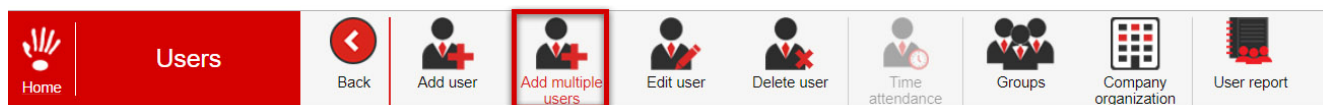
2. A new window will open where you can enter the number of users you wish to add. Click ***Use***.
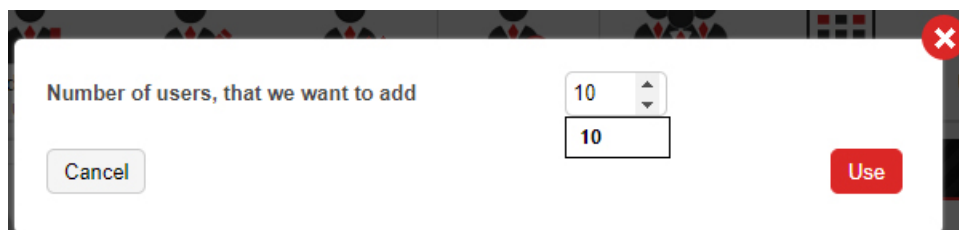
3. The defined number of (empty) users will then be added to the *List of users*.
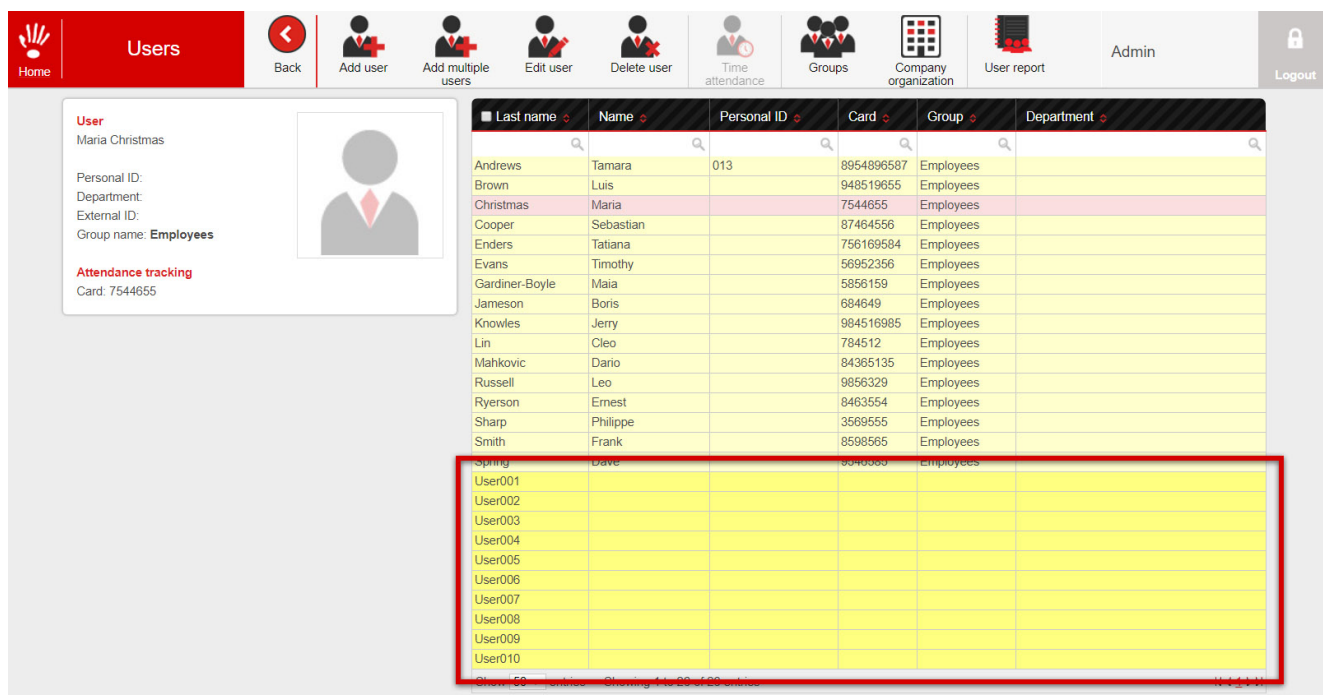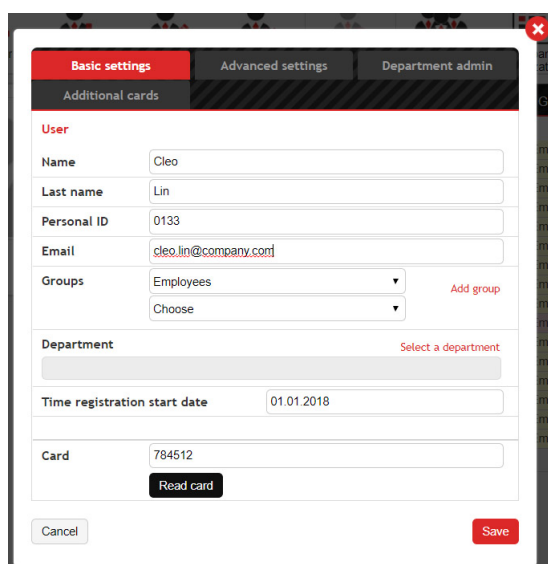
4.3. Edit User
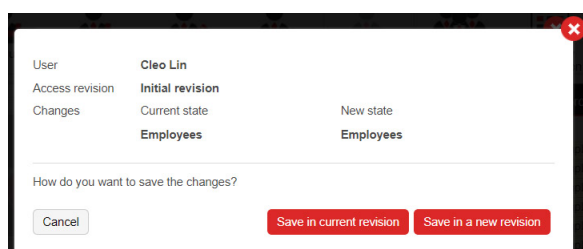
1. To edit a user, **double-click them** or **mark the user and then select the *Edit user* icon from the toolbar of the *Users* editor**.
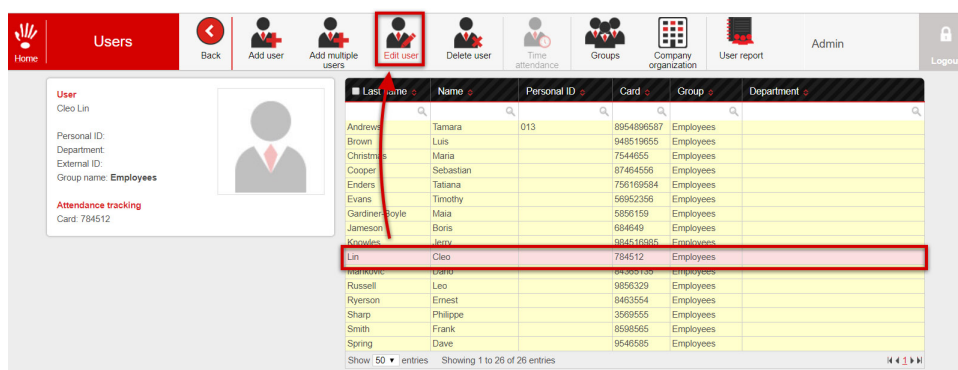
2. A new window will open, where you can edit the user's settings.

3. When you are done editing click *Save*.

The system will warn you that you may be affecting the user's revisions (rights history) with the newly entered changes. You will be offered to save the changes in the currently valid revision or a completely new revision.

NOTE
Any changes made to the users' settings in the *Users* editor may change the recording of work hours in the *Time and attendance*.
You can find more about revisions in chapter Revisions 64.

4.4. Delete User

> **NOTE**
>
> The **Delete user** function deletes a selected user form the Codeks application, so that the user is removed from all *Lists of users* and can no longer be edited.
>
> **The function does not delete a user from the Codeks database, and (by default) does not even anonymize the user's data or events in the database.**
>
> To completely and permanently delete a user from the database use the additional tool **Codeks Cleaner**. The instruction manual for Codeks Cleaner can be found on our Codeks software download pages.

1. To delete a user, **first mark the user on the *List of users***.

2. Then, select the *Delete user* icon in th toolbar of the *Users* editor.
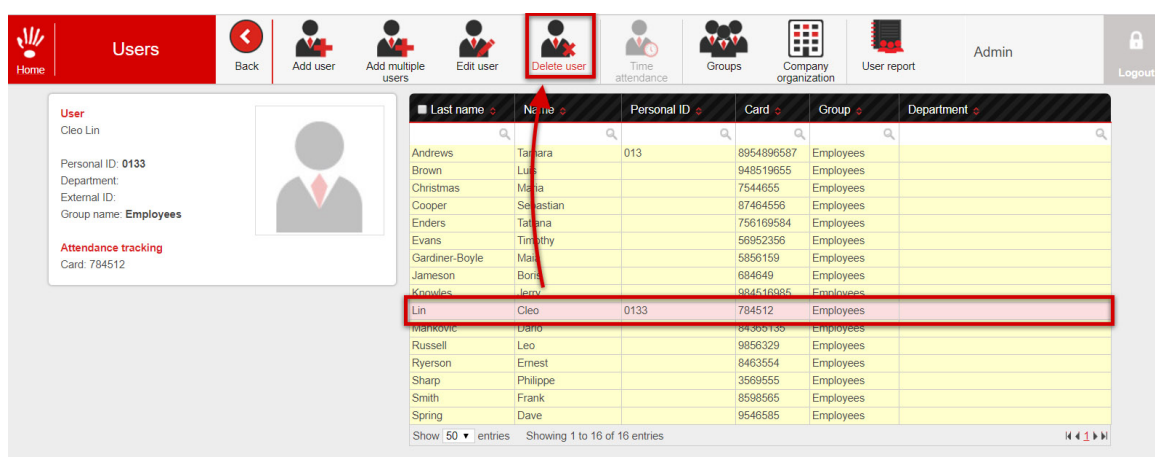
3. In the next step, the system will warn you that you are about to irreversibly delete a user from the Codeks application.

Additionally, you can enable the **Anonymize** option. The process of anonymization replaces all personal data with symbols, thus eliminating the possibility of connecting the remaining data to a particular person.

Click **Yes**.
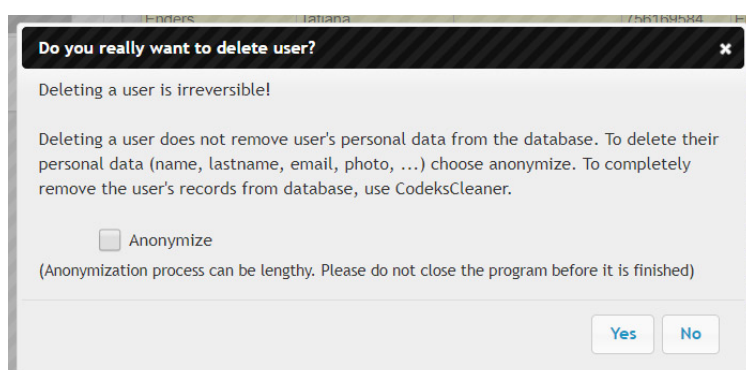
4. The user will be removed from all *Lists of users* in the Codeks application.

4.5. Actions for editing users

In the *Users* editor, you can access additional actions through the right-click menu on the *List of users*. These actions simplify the editing of certain users' settings and also enable editing of multiple users at the same time.

The individual actions are described in more detail in the following chapters.
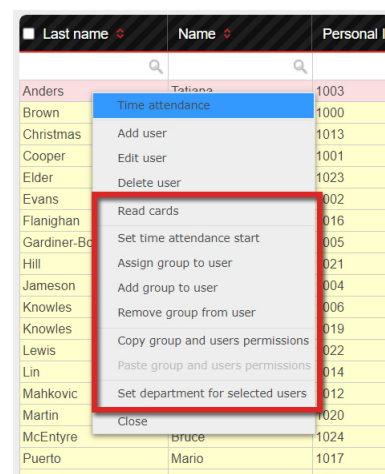
4.5.1. Read Cards for Multiple Users

The **Read cards** function, accessible through the right-click menu in the *Users* editor, enables you to semi-automatically assign cards to several users in a row.

> **ATTENTION!**
> **Only use the *Read cards* function for newly added users who have not yet used time attendance registration or been assign access rights through groups.**
> Assigning a card using the *Read cards* function will erase the groups assigned to the user.

**1. First, select the users to whom you want to assign cards by marking them on the *List of users* with the help of the *Shift* and *Ctrl* buttons*.*

The cards being read on the selected reader will only be assigned to the users marked on the *List of users*.
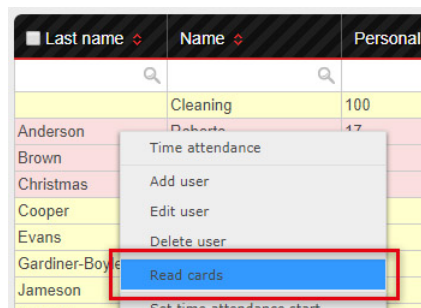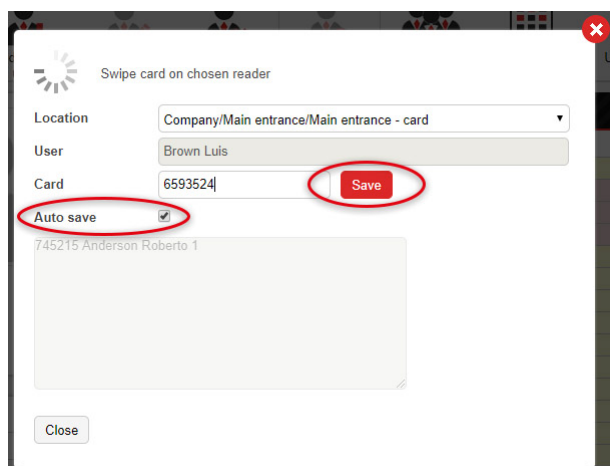
2. Select the **Read cards** function from the right-click menu. A new window will open.

3. In the new window, select the **Location** (reader) where you will be reading the cards.
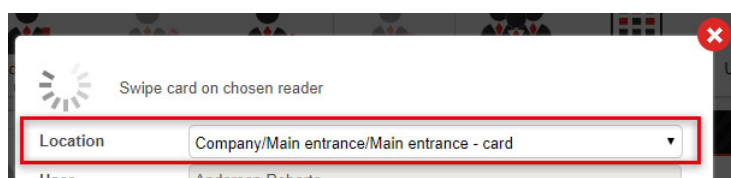
4. Then read the first card on the selected reader. The read card will be displayed in the window and will be ready to assign to the first selected user.

5. To assign the card to the user click **Save** or enable the **Auto save** option to automatically assign the read card to the user.

6. Continue with reading the cards until you assign a card to each selected user.

7. When you are done assigning cards to users close the pop-up window.

4.5.2. Set time attendance start
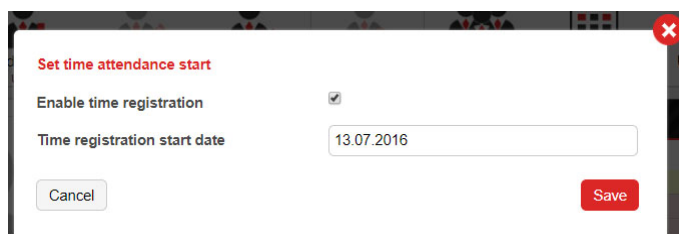
1. First, select the users to whom you wish to set the start date of the time registration by marking them on the *List of users* with the help of the *Shift* and *Ctrl* buttons.
Then select **Set time attendance start** from the right-click menu.

2. A new window will open where you must, first, enable time attendance registration for the users by adding a check mark to the **Enable time registration** setting.

Then also **set the *Time registration start date***.

3. Click **Save.**

4.5.3. Assign group to user

By using the **Assign group to user** function you can assign a group (or a list of groups) to all selected users. All groups assigned to the selected users will be removed and replaced by the newly set groups.

1. First, select the users to whom you wish to assign groups by marking them on the *List of users* with the help of the *Shift* and *Ctrl* buttons.

Then select the **Assign group to user** option from the right-click menu.
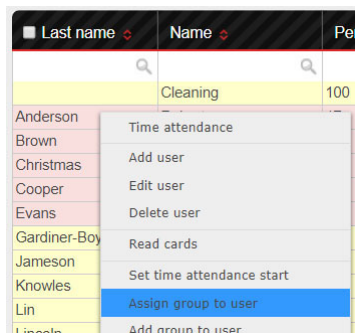
2. A new window will open where you can select a new group or list of groups that will be assigned to the selected users.
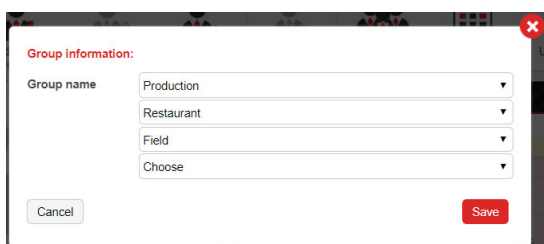
> **ATTENTION**
> The order in which the groups are assigned to the user is important. The user rights assigned by a higher-ranking group will always override a lower-ranking group.

3. Click **Save.** The system will inquire, whether you really wish to assign the set groups to the selected users.
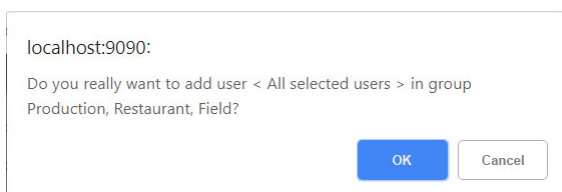
To confirm the action, click **OK.**

> **ATTENTION**
> **Changing the users' groups can affect the recording of their work hours in the *Time and attendance*.**
> Whenever assigning new groups or changing the assigned groups the system will issue a warning and offer you the option of creating a new revision so that you can save the current status for future reference.
>
>
>
> **We recommend extreme caution when editing currently valid revisions and revisions in the past!**
> You can read more about revisions in chapter Revisions 64 .

4.5.4. Add group to user

By using the ***Add group to user*** function you can add an additional group (or a list of groups) to all selected users. The newly added groups will be added to the end of the list of groups assigned to each user (the groups already assigned to users will not be removed).

1. First, select the users to whom you wish to add groups by marking them on the *List of users* with the help of the *Shift* and *Ctrl* buttons*.

Then select the ***Add group to user*** option from the right-click menu.
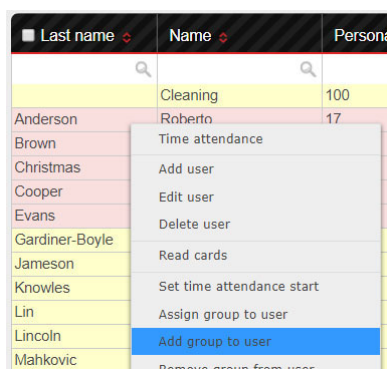
2. A new window will open where you can select a new group or list of groups that will be added to the selected users.

The new groups will be added to the end of the list of groups assigned to each user.
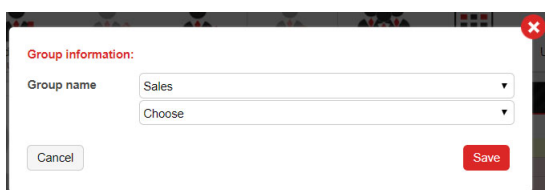
> **ATTENTION**
> The order in which the groups are assigned to the user is important. The user rights assigned by a higher-ranking group will always override a lower-ranking group.

3. Click ***Save.*** The system will inquire, whether you really wish to add the set groups to the selected users.
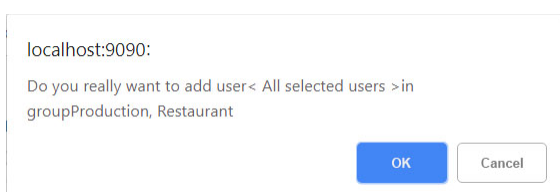
To confirm the action, click ***OK.***

> **ATTENTION**
> **Changing the users' groups can affect the recording of their work hours in the *Time and attendance*.**
> Whenever assigning new groups or changing the assigned groups the system will issue a warning and offer you the option of creating a new revision so that you can save the current status for future reference.
>
>
>
> **We recommend extreme caution when editing currently valid revisions and revisions in the past!**
> You can read more about revisions in chapter Revisions 64.

4.5.5. Remove group from user

By using the **Remove group from user** function you can remove a group (or a list of groups) from all selected users.

1. First, select the users whom you wish to remove groups by marking them on the *List of users* with the help of the *Shift* and *Ctrl* buttons.

Then select the **Remove group from user** option from the right-click menu.
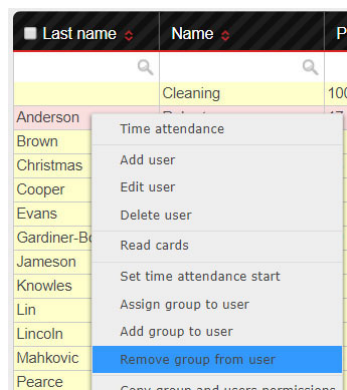
2. A new window will open where you can select a group or list of groups that will be removed from the selected users.

The selected groups will be removed from all the selected users (regardless of where on the users' list the groups are listed).
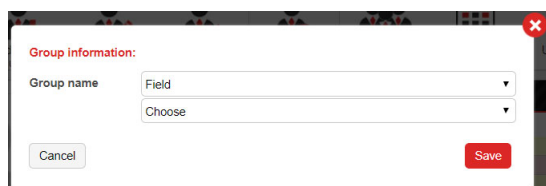
ATTENTION
The order in which the groups are assigned to the user is important. The user rights assigned by a higher-ranking group will always override a lower-ranking group.

3. Click **Save.** The system will inquire, whether you really wish to remove the set groups from the selected users.
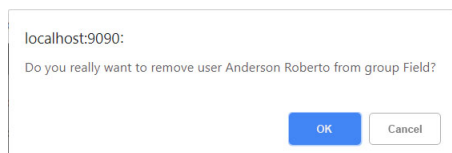
To confirm the action, click **OK.**

ATTENTION
Changing the users' groups can affect the recording of their work hours in the *Time and attendance*.
Whenever assigning new groups or changing the assigned groups the system will issue a warning and offer you the option of creating a new revision so that you can save the current status for future reference.
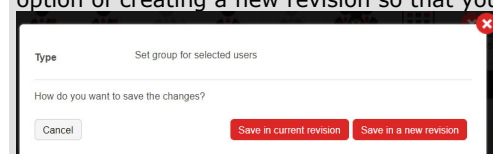
We recommend extreme caution when editing currently valid revisions and revisions in the past!
You can read more about revisions in chapter .

4.5.6. Copy and paste group and users permissions

By using the **Copy group and user permissions** and **Paste group and user permissions** functions you can assign the list of groups and user's permissions of a particular user to another user. remove a group (or a list of groups) from all selected users.
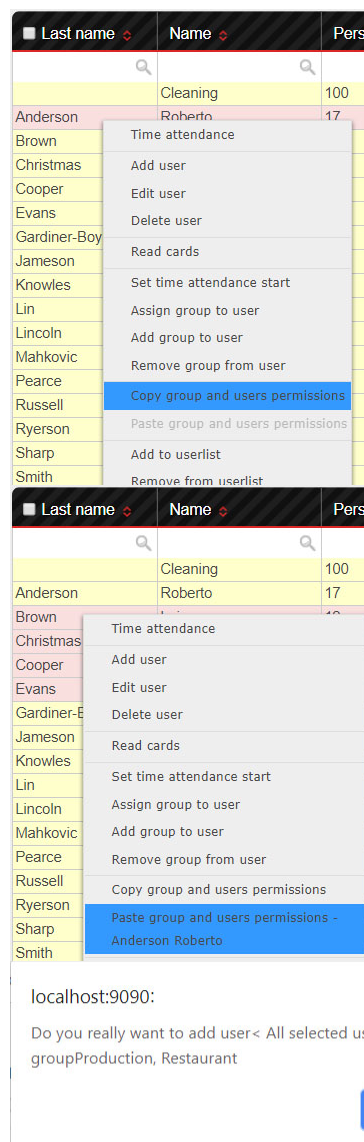
1. First, select the user whose groups and user's permissions you wish to copy on the *List of users.*
Then select the ***Copy group and users permissions*** option from the right-click menu.

2. Next, select the users whom you assign the copied groups and user's permissions on the *List of users* with the help of the *Shift* and *Ctrl* buttons*.*
Then select the ***Paste group and user permissions - [Name of the copied user]*** option from the right-click menu.

3. The system will inquire, whether you really wish to assign new groups to the selected users.
To confirm the action, click **OK.**

ATTENTION
Changing the users' groups can affect the recording of their work hours in the *Time and attendance*.
Whenever assigning new groups or changing the assigned groups the system will issue a warning and offer you the option of creating a new revision so that you can save the current status for future reference.
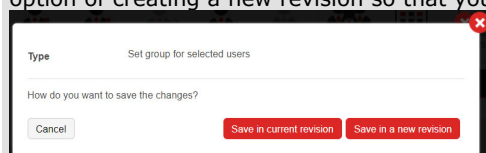
We recommend extreme caution when editing currently valid revisions and revisions in the past!
You can read more about revisions in chapter Revisions 64 .

4.5.7. Set department for selected users

By using the **Set department for selected users** function you can assign all selected users the same department.

1. First, select the users to whom you want to assign a department by marking them on the *List of users* with the help of the *Shift* and *Ctrl* buttons*.

The department will only be assigned to the users marked on the *List of users*.

2. Select the **Set department for selected users** function from the right-click menu. A new window will open.
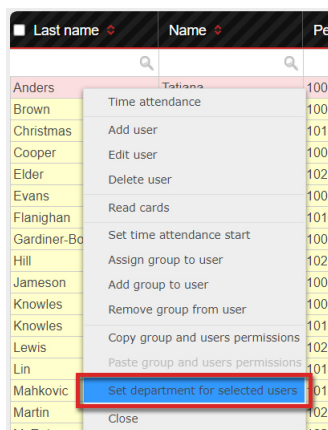
3. In the new window, select the **department** you wish to assign to the selected users.

4. To assign the department the users click **Save**.
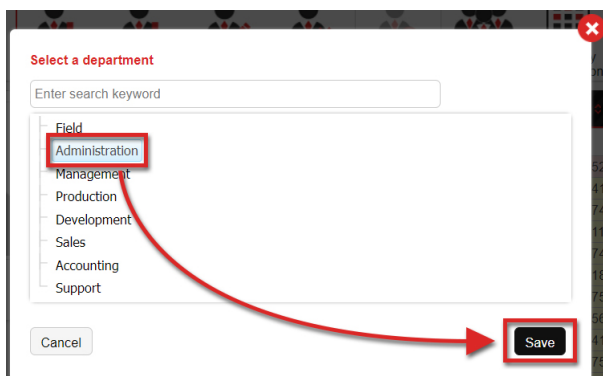
4.6. Company Organization

In the **Company organization** editor you can add and manage the company units (departments) and create a custom-tailored company hierarchy suited for your company. Managing the *Company organization* is described in details in chapter <u>Company organization</u> 57.

4.7. User Report

1. First, **mark the users you wish to make a report about from the *List of users***.

To select an individual user just click on him in the *List of users* on the left. To select multiple users hold down the SHIFT or CTRL key and click the desired users.

2. Then click on the *User report* icon. You can choose between displaying the **User report** and **Card issue.**
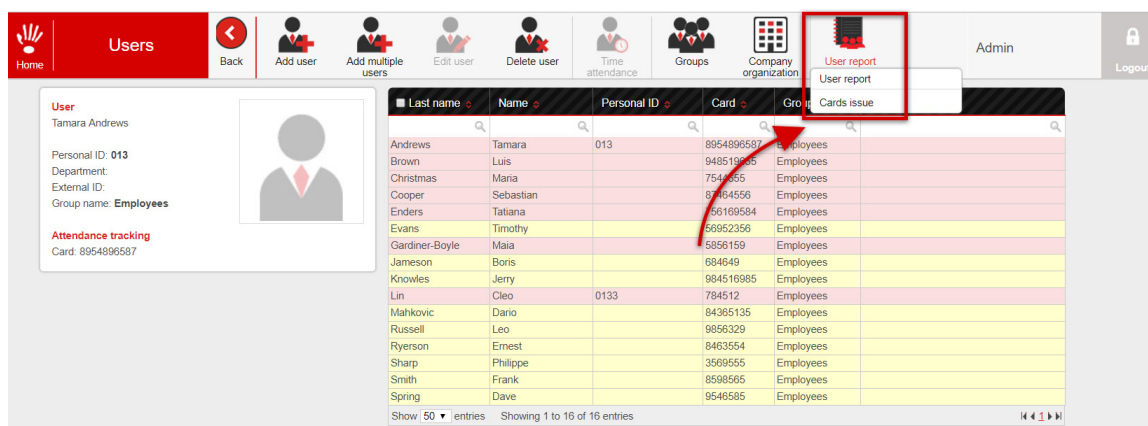
3. In the next step you can select the report format:
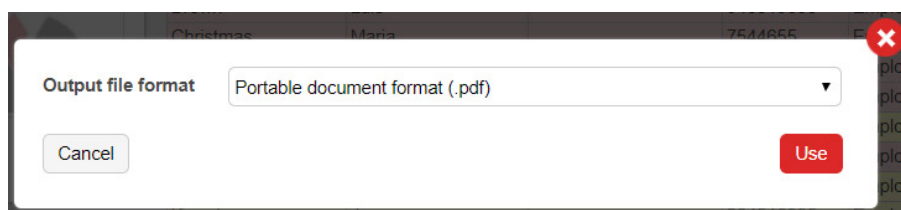
Portable document format (.pdf),
Excel Worksheet (.xls),
Excel Worksheet (.xlsx),
Open document spreadsheet (.ods),
Comma separated values (text document - .cvs)).

4. The selected report will contain:

- **User report** - Data for each selected user (groups, cards, department, etc.) and space for the users' signature.

- **Card issue** - Issued cards and the respective users they were issued to as well as space for the users' signature.

5. Company Organization

You can access the **Company organization** editor through the **Company organization** icon in the toolbar of the *Users* editor.
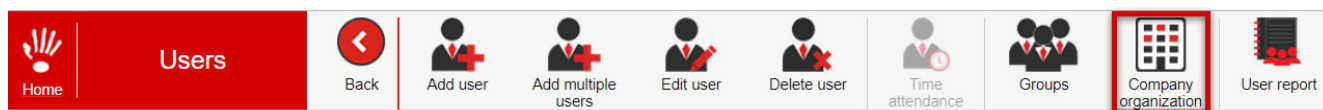
The company organization (structure) is defined **in the form of a tree-structure**, composed of different types of units:
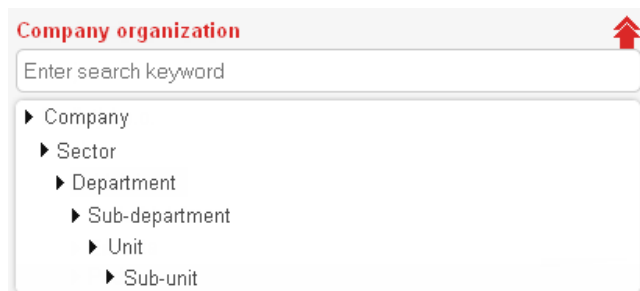
Company: you can add a sector, department, sub-department, unit or sub-unit to the company.

  Sector: you can add sector, department, sub-department, unit or sub-unit to the sector.

    Department: you can add department, sub-department, unit or sub-unit to the department.

      Sub department: you can add sub-department, unit or sub-unit to the sub department.

        Unit: you can add unit or sub-unit to the unit.

          Sub unit: you can add sub unit to the sub-unit.

You can add a new unit to the structure by clicking the **Add unit** icon in the toolbar or by selecting the desired type of unit from the right-click menu when clicking on the parent or previous unit.
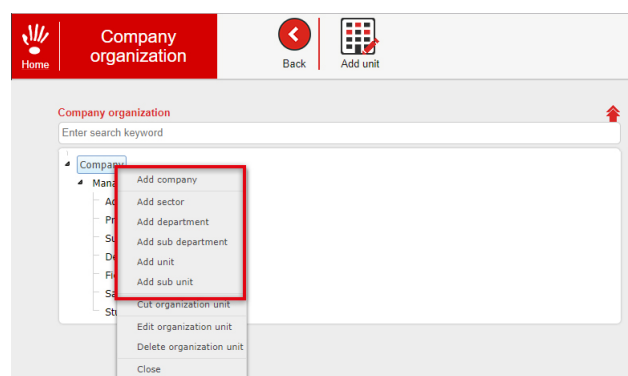
You can change the order of the organization units simply by dragging and dropping a selected unit to the desired position:
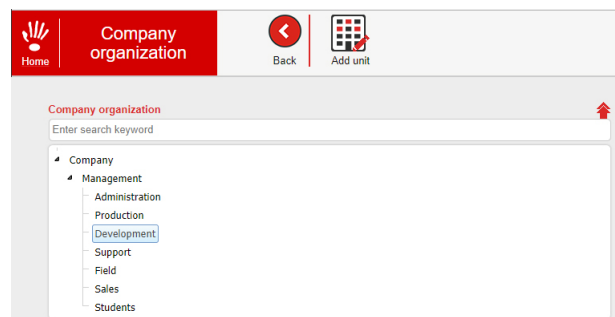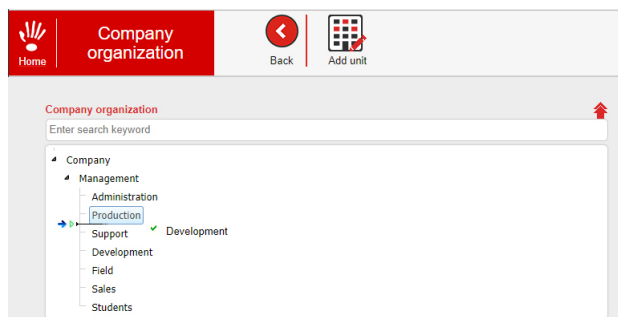
5.1. Add Organization Unit

1. To add a new unit to the company structure click the ***Add unit*** icon in the toolbar or select the desired type of unit from the right-click menu when clicking on the parent or previous unit.
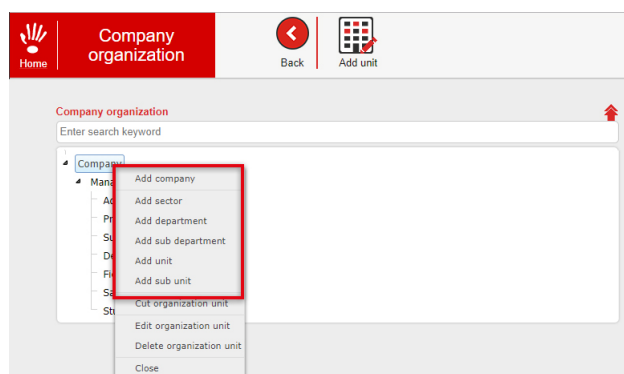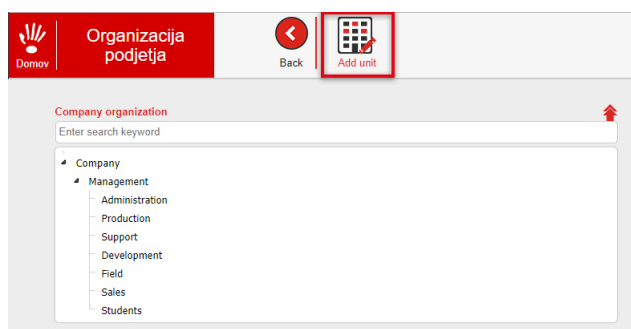
2. A new window will open where you can add a new organizational unit. You can also select the position of the new unit within the structure and set the settings of the unit.
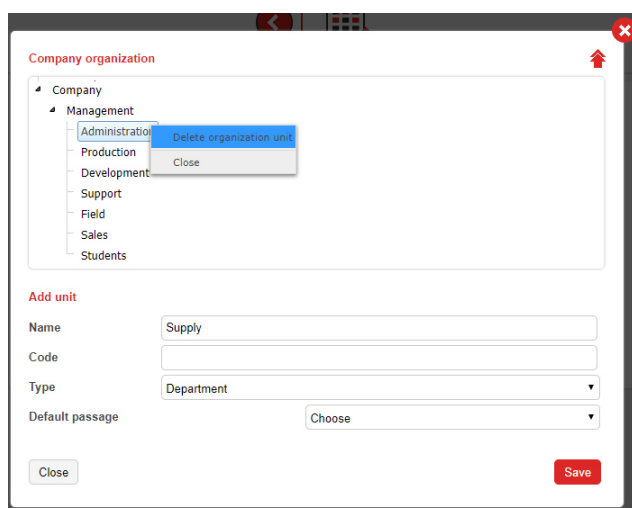
If you **right-click on an existing company unit** in the *add-unit* window, **you can also delete the selected unit from the structure of the company.**

IMPORTANT!
The deletion of a company unit may cause errors in the system if there are still some users assigned to the deleted company unit.

Settings	Description
Name	The name of the company unit which should be as short as possible yet sufficiently descriptive.
Code	The code of the company unit which is usually necessary for reports and exports to payroll programs.
Type	The unit type. You can choose between company, sector, department, sub department unit, sub unit.
Default passage	The unit's default passage for time attendance.

3. When you are done editing click ***Save***.

5.2. Edit Organization Unit

1. To edit an existing organizational unit **double-click the selected unit** or **right-click on the unit and select *Edit organization unit* from the menu**.
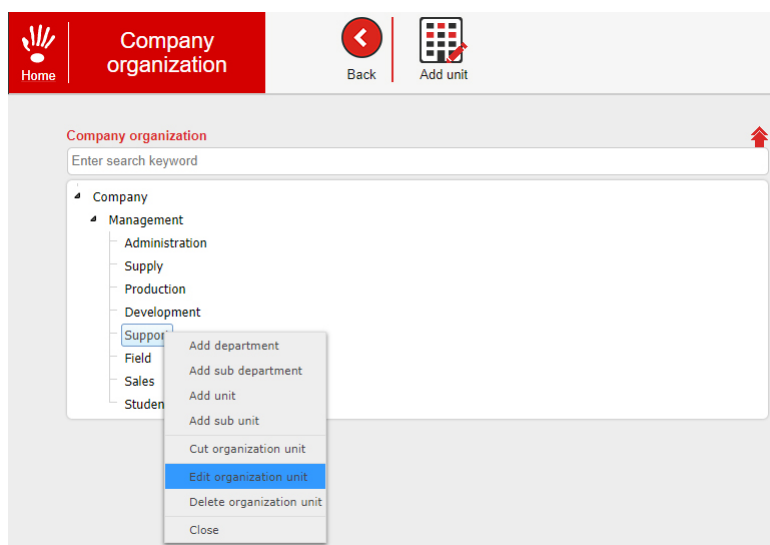
2. A new window will open where you can edit the settings of the organizational unit.
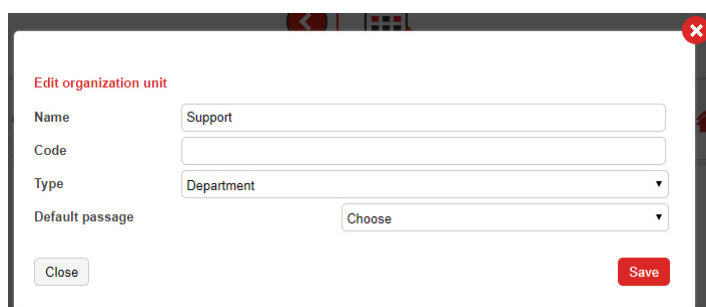
3. When you are done editing click ***Save***.

5.3. Delete Organization Unit

1. To delete an organizational unit, first, **select the unit you wish to delete**.

2. Then **right-click and select** *Delete organization unit* **from the menu.**
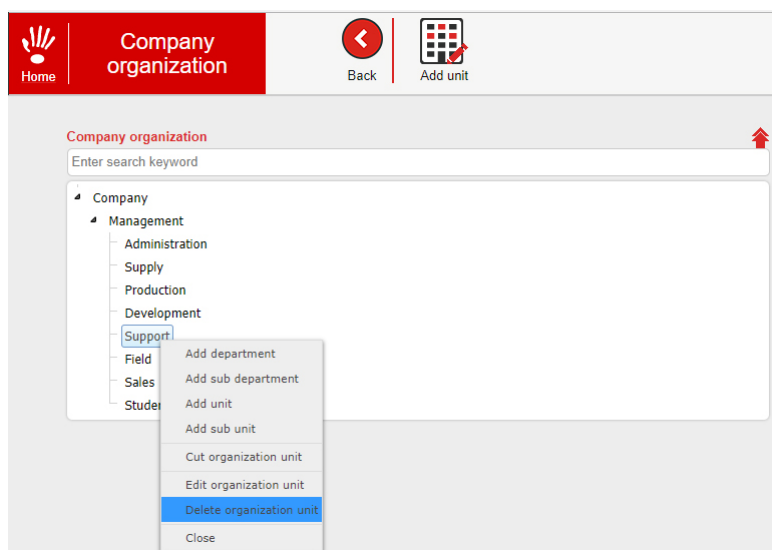
3. The system will inquire, whether you really wish to delete the selected unit.

To confirm the deletion, click **OK.**
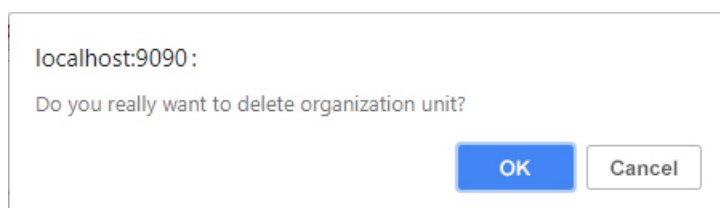
6. Groups

In the *Groups* editor, you can edit groups, assign users to different groups and edit the groups' T&A rights at specific passages.

You can assign users to different groups. The process of assigning users to groups is described in more detail in chapter Access 77.
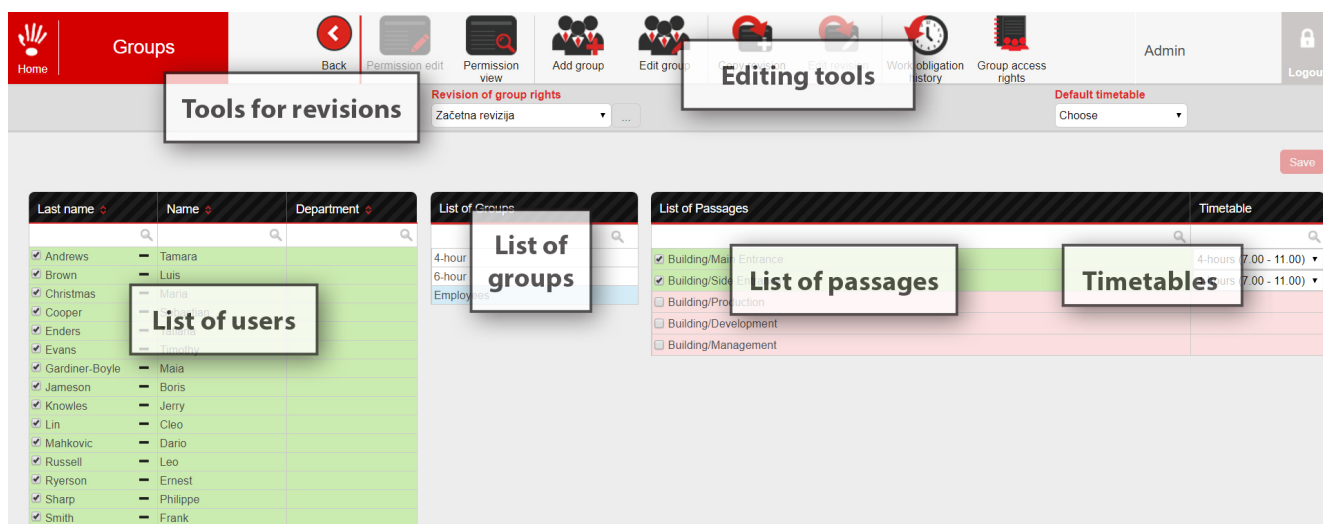
NOTE
Any changes made in the *Groups* editor may change the recording of work hours in the *Time and attendance*.
You can find more about revisions in chapter Revisions 64.

6.1. Add Group

1. First, click the *Permission edit* icon to enable editing in the *Groups* editor.
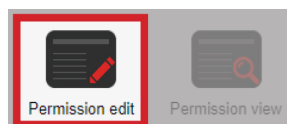
2. Then select the *Add group button*.
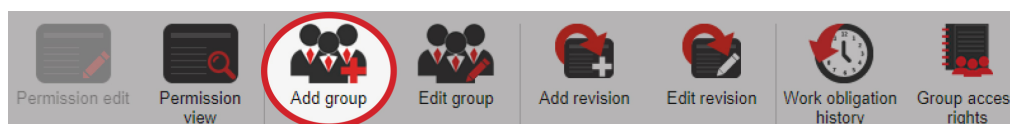
3. In the new pop-up window, *enter the name of the new group*.
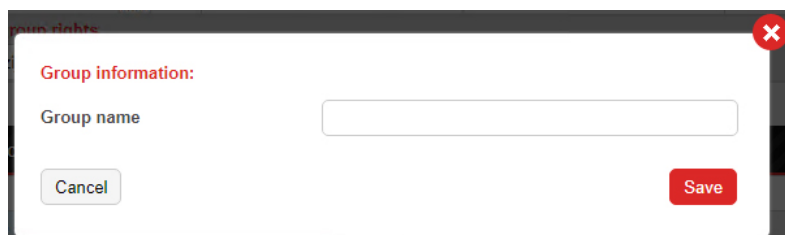
4. Click *Save*.

The new group will be displayed in the *List of groups*.

6.2. Edit Group

1. First, click the ***Permission edit*** icon to enable editing in the *Groups* editor.
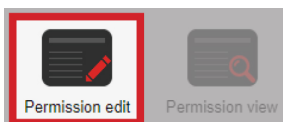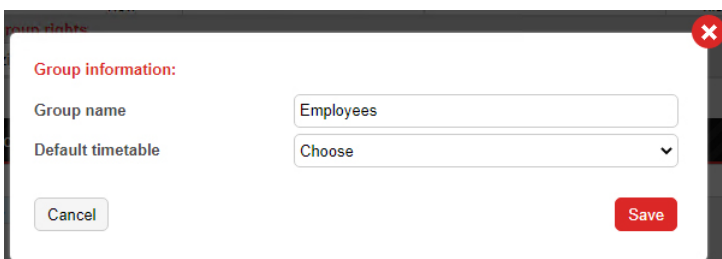
2. Then ***select the group you wish to edit*** and select the ***Edit group*** icon.
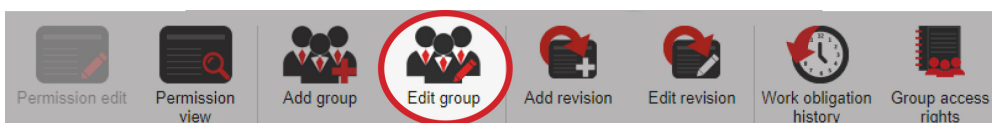
3. A pop-up window will appear where you can edit the name and default timetable of the group.

4. When you are done editing, click ***Save***.
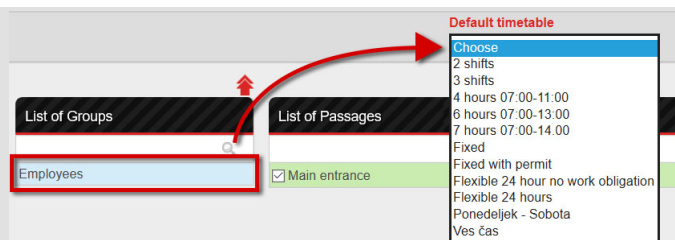
6.3. Delete Group

1. First, click the **Permission edit** icon to enable editing in the *Groups* editor.
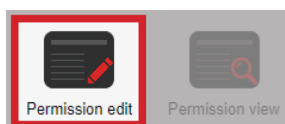
2. Then **select the group you wish to delete** and select **Delete group** from the right-click menu.
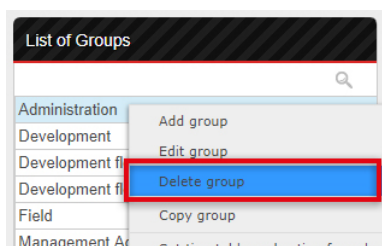
3. The system will warn you that you are about to delete a group.

To confirm the deletion click **OK**.
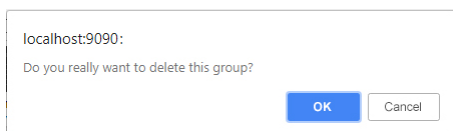
6.4. Group Access Rights

The **Group access rights** report will display the locations where the group's users have granted access rights as well as the timetable and action assigned at each location.

To generate the report click the **Group access rights** icon.
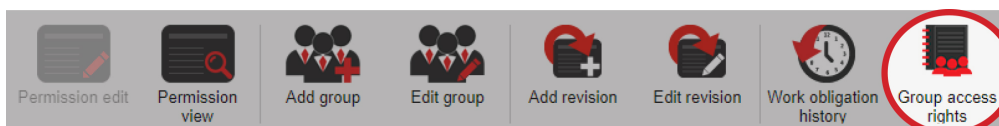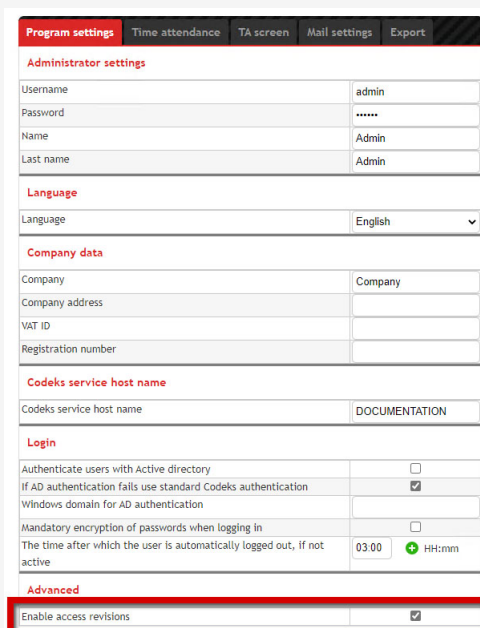
The generated report will display all rights of the groups which are in use on the current date.

7. Revisions

NOTE

By default *Revisions* are disabled in the Codeks software. To use revisions, first, enable the *Enable access revisions* setting in *Preferences* in the *Program settings* tab.

Revisions are snapshots of the status of time&attendance rights of either an individual user or group. These snapshots (revisions) together form the history of changes made to the rights of users or groups. Revisions enable you to save and manage the past records of users' or groups' rights, and also set changes to these rights that will be put into effect sometime in the future.

There are two types of revisions: ***user revisions*** and ***group revisions***. User revisions regulate and affect only the rights of a specific user, while group revisions simultaneously affect the rights of all users ("members") assigned to a particular group.

Changes that can be made using user or group revisions:

User revisions	Group revision
1 - Changing the user's "membership" in groups	**1 -** Changing the default timetable assigned to the group
2 - Setting access exceptions for a user at specific passages	**2 -** Changing the access rights at specific passages
3 - Setting the end of the user's time registration	
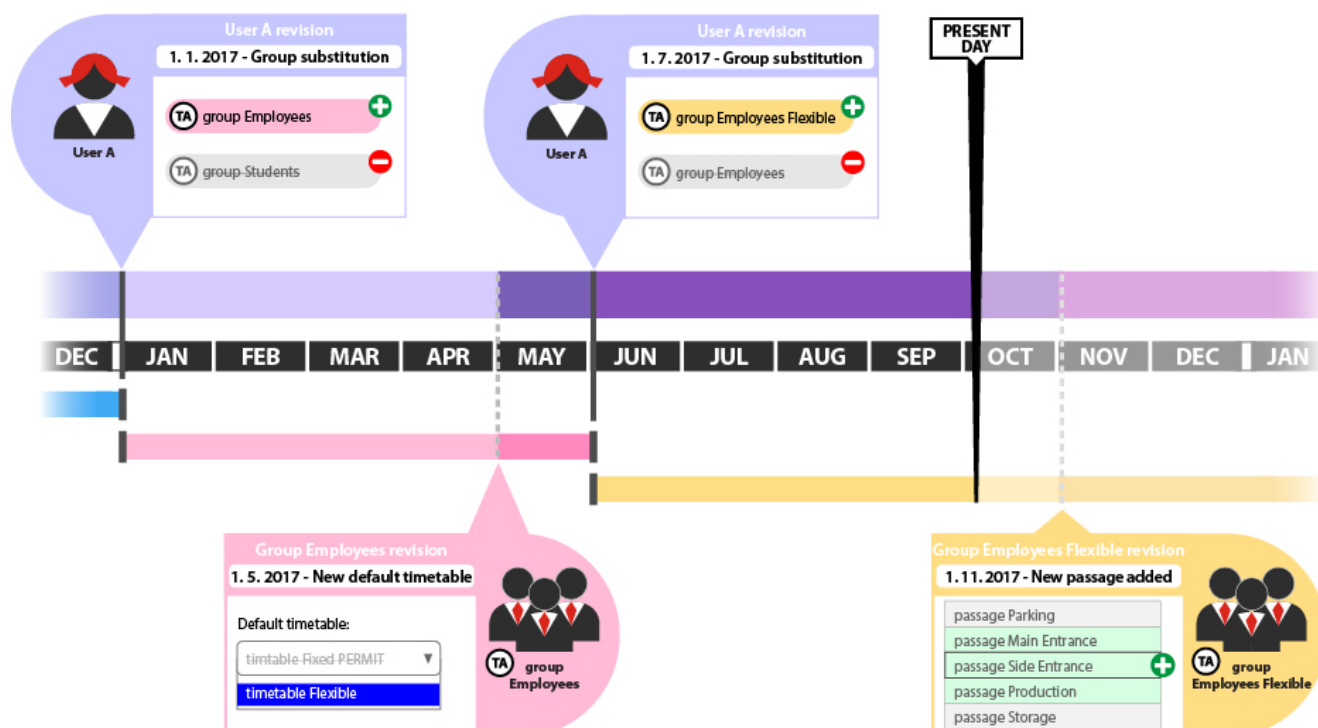
Graphic depicting **user revisions** and **group revisions**. The group revisions indirectly also affect the rights of the user.

DESCRIPTION OF THE REVISION GRAPHIC
The graphic above presents a section of a user's rights, **which are affected by both the user's own revisions and the revisions of various groups, which the user belongs to**:

- At the end of the previous year the user was a member of the *Students* group, however, at the beginning of the new year she was transferred to the *Employees* group.
- At the beginning of May, the default timetable of the T&A group *Employees*, used by members to register their time and attendance using mobile devices, was changed.
- In June the user was, again, transferred from the *Employees* T&A group to the *Employees Flexible* group.
- From November on all members of the *Employees Flexible* group will be also able to use the *Side Entrance* passage.

A user's rights on a specific day are therefore dependent on the current state of her "membership" in various groups and the state of the groups' rights on that same day.
In the example above, the user already has the right to register at certain passages at the beginning of October, because she became the member of the *Employees Flexible* in June. However, she will not be able to use the *Side Entrance* passage until November.

NOTE
Any changes made in the *Groups* editor may change the recording of work hours in the *Time and attendance*.
Whenever changing the rights of any revision (i.e. past, present or future revision) the system will issue a warning and offer you the option of creating a new revision so that you can save the current status for future reference.
We recommend extreme caution when editing currently valid revisions and revisions in the past!

NOTE
Editing the users' groups and other user data in the *Users* [36] editor also affects the recording of work hours!
Whenever assigning new groups, changing the assigned groups, or changing other user data (e.g., allocating new cards to the user) the system will issue a warning and offer you the option of creating a new revision so that you can save the current status for future reference.
We recommend extreme caution when editing currently valid revisions and revisions in the past!

7.1. Add revision

1. First, click the **Permission edit** icon to enable editing in the **Groups** editor.
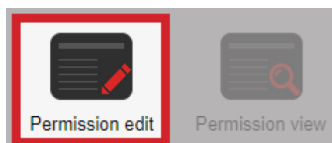
2. **Select (mark) the group or user** for whom you wish to create a new revision. The group or user will be colored *blue*.

3. Then select the **Add revision** option from the drop-down menu next to the *Revision of group rights* or *User rights revisions* field.
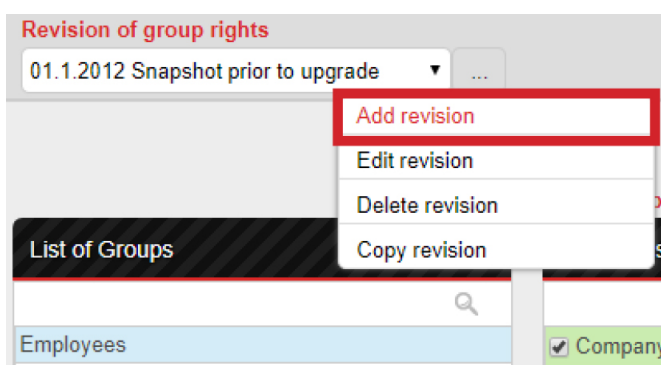
4. A new pop-up window will open where you can enter the **Start date of the revision** and **the revision name**.
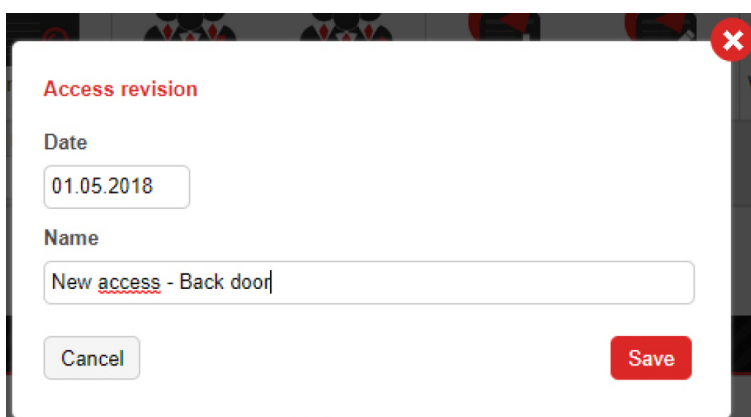
5. Click **Save**.

A new "empty" revision will be created which will not contain any rights at passages.

6. To add rights in the newly added revision start editing the displayed status in the *Groups* editor.

7. Finally, **return to the *Main menu* to trigger the send tables process.**

7.2. Edit revision

1. First, click the **Permission edit** icon to enable editing in the **Groups** editor.
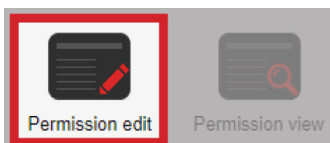
2. **Select (mark) the group or user** whose existing revision you wish to edit. The group or user will be colored *blue*.

3. From the drop-down menu of the appropriate field (*Revision of group rights* or *User rights revisions*) select the revision you wish to edit.
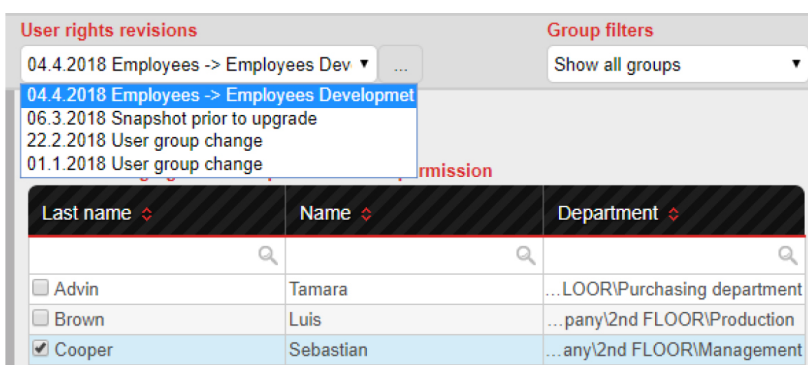
4. After a revision has been selected, the status of rights saved in the revision will be displayed in the *Groups* editor. To change the rights in the revision, start editing the displayed status.

After the first click, the system will inquire whether you wish to save the changes in the currently displayed revision or whether you wish to create a new revision.

To edit the currently selected revision click **Save in current revision** and continue editing.
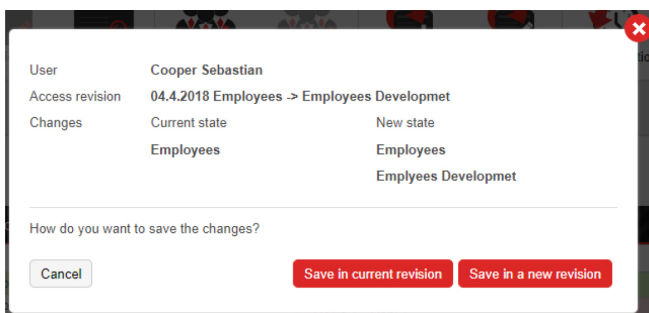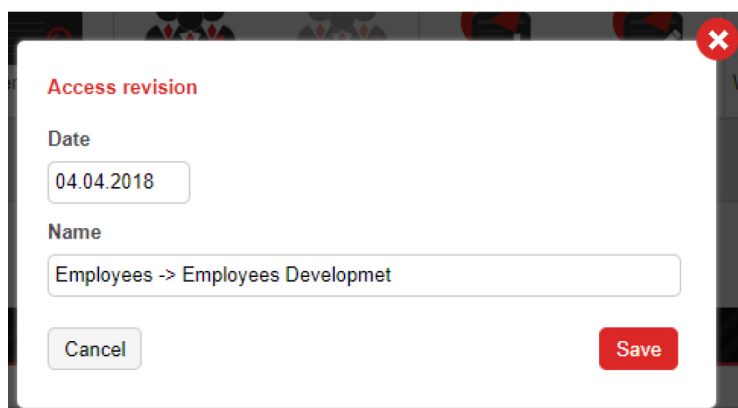
5. To edit the basic settings of the revision click the **Edit revision** icon from the toolbar or select the **Edit revision** option from the drop-down menu next to the *Revision of group rights* or *User rights revisions* field.
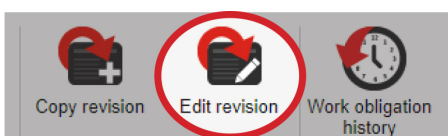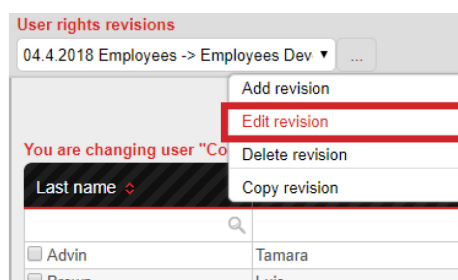
6. A new pop-up window will open where you can change the **Start date of the revision** and **the revision name**.

7. Click **Save**.

8. Finally, **return to the *Main menu* to trigger the send tables process.**

7.3. Delete revision

NOTE
Deleting a revision can change the recorded events of the time registration. We recommend extreme caution when deleting currently valid revisions and revisions in the past!

1. First, click the **Permission edit** icon to enable editing in the **Groups** editor.
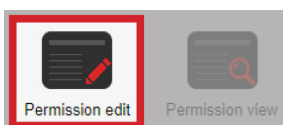
2. Select (mark) the group or user for whom you wish to delete a new revision. The group or user will be colored *blue.*

3. From the drop-down menu of the appropriate field (*Revision of group rights* or *User rights revisions*) select the revision you wish to delete.
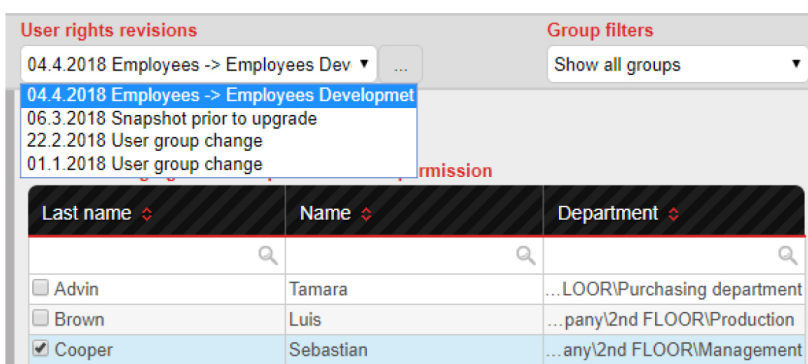
4. To delete the revision click the **Delete revision** option from the drop-down menu next to the *Revision of group rights* or *User rights revisions* field.
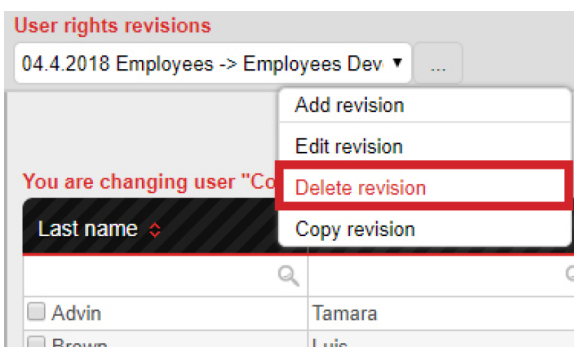
5. The system will warn you that you are about to delete a revision. To confirm the deletion click **OK**.
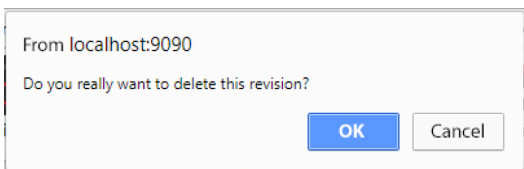
6. Finally, **return to the *Main menu* to trigger the send tables process.**

7.4. Copy revision

1. First, click the **Permission edit** icon to enable editing in the **Groups** editor.
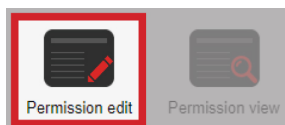
2. Select (mark) the group or user for whom you wish to create a copy of a revision. The group or user will be colored *blue*.

3. From the drop-down menu of the appropriate field (*Revision of group rights* or *User rights revisions*) **select the revision you wish to copy**.
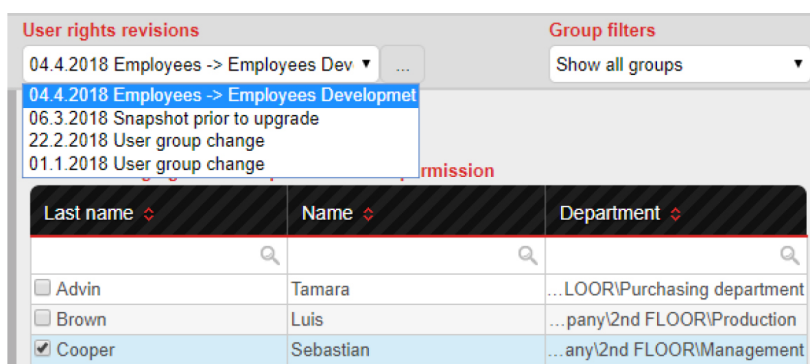
4. To copy the selected revision click the **Copy revision** icon from the toolbar or select the **Copy revision** option from the drop-down menu next to the *Revision of group rights* or *User rights revisions* field.
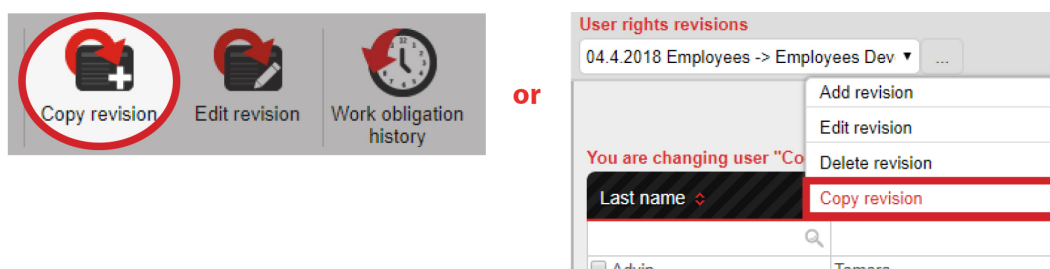
5. A new pop-up window will open where you can enter a new **Start date of the revision** and **the revision name**.
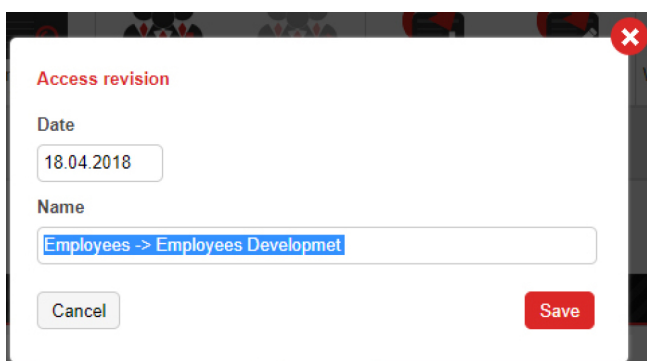
6. Click **Save**.

After copying, the *Groups* editor will display the status or rights in the newly copied revision which is the same as defined by the original revision. To change the rights in the newly copied revision, start editing the displayed status.

7. Finally, **return to the *Main menu* to trigger the send tables process.**

7.5. Examples of using revisions

7.5.1. Changing the user's work obligation from 8 hours to 4 hours

1. First, click the **Permission edit** icon to enable editing in the *Groups* editor.
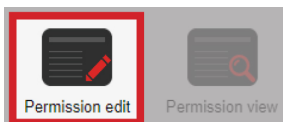
2. To change a user's work obligation from 8 hours to 4 hours, first, find and select the user on the *List of users*.

3. Click the **Copy revision** icon from the toolbar or select the **Copy revision** option from the drop-down menu next to the *User rights revisions* field.
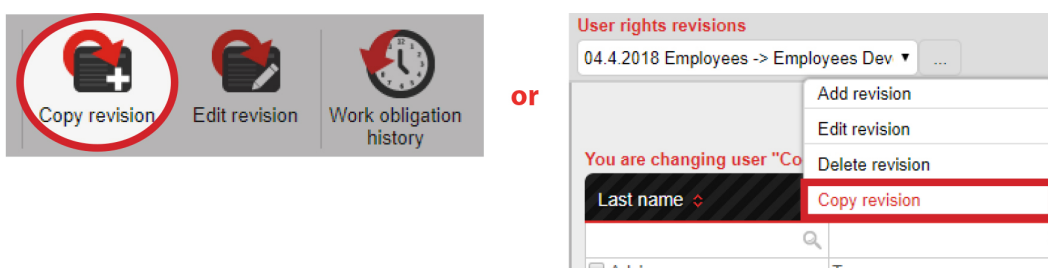
4. In the new pop-up window set a new **Start date of the revision**, which in cases such as this one is usually in the past, and **add the revision name**.
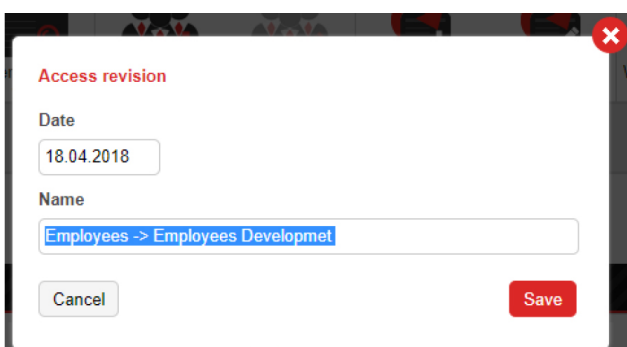
5. Click **Save**.
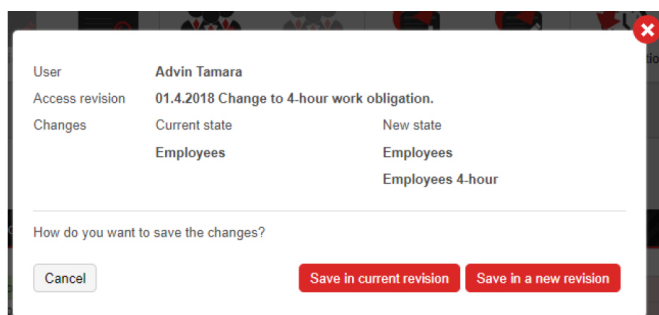
6. The *Groups* editor will display the status or rights in the newly copied revision which is the same as defined by the original revision.

At this stage you can start to edit the displayed rights of the user.

    a) First, assign the user to the T&A group with a 4-hour work obligation.
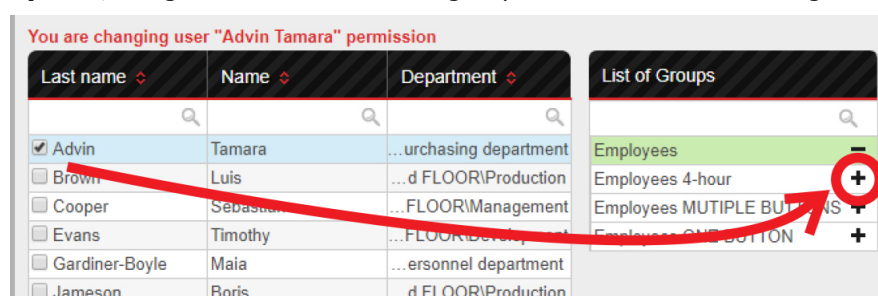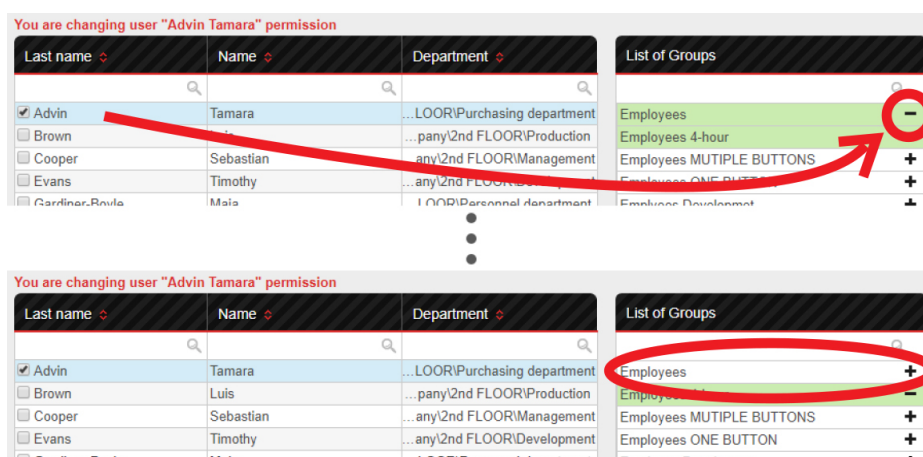
b) The system will inquire into which user revision you wish to save the entered changes.

Select **Save in current revision**.

c) Then, remove the user from the group with an 8-hour work obligation.

The edited rights will be saved to the newly created user revision.

7. In order for the newly assigned rights of the user to take effect in the *Time attendance*, you must also recalculate events for the appropriate period in the Time attendance editor:

    a) In the *Time attendance* editor, first, select the user on the *List of users.*

    b) Then right-click on it and select the **Recalculate period** function from the menu, which allows you to specify the recalculation period more precisely.

The users time and attendance events will be recalculated in regard to the new defined work obligation.

7.5.2. End of employment

1. First, click the **Permission edit** icon to enable editing in the *Groups* editor.
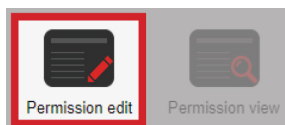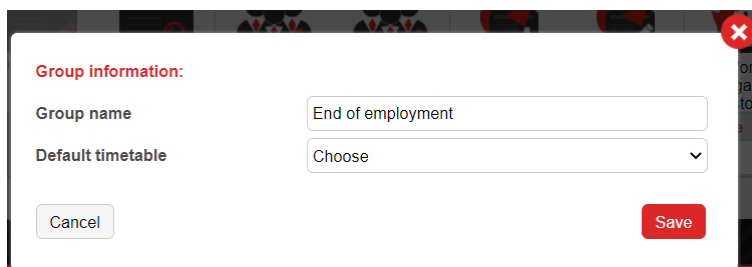
2. Next create a group for the end employment:

a) First, click on the **Add group** button in the *Groups editor* toolbar.
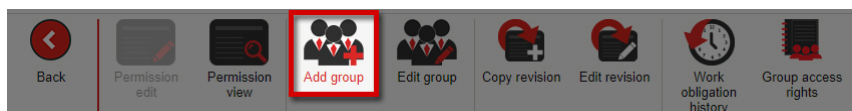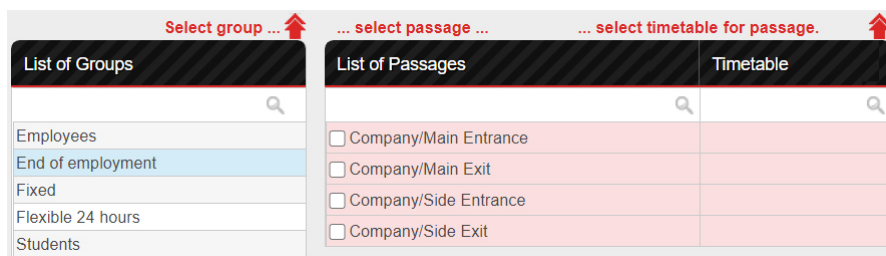
b) A pop-up window will open for adding a new group, where can you specify the group name, e.g. *End of employment*.

Click **Save**.

c) The new group will appear on the *List of all groups*.

To terminate the employment relationship, the group deprives the user of the work obligation, so do not add any access rights i.e. timetables at passages.
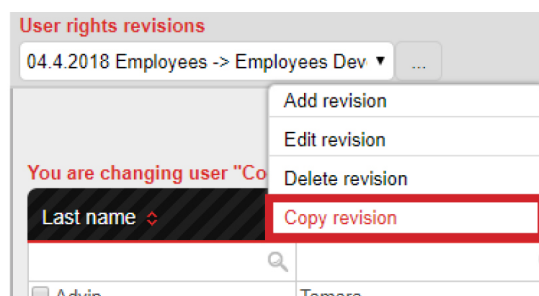
3. Then **find and select the user on the *List of users***.
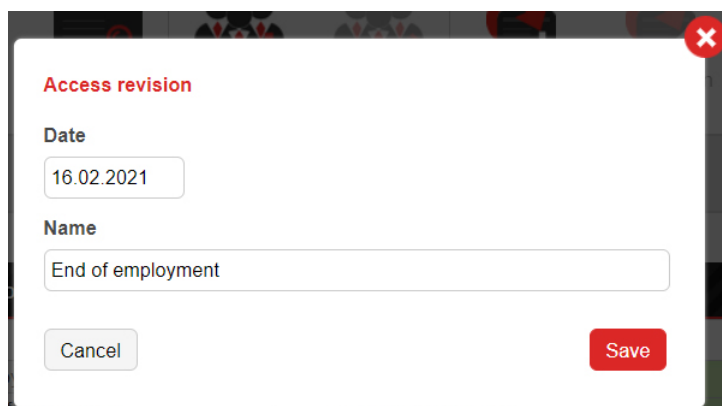
4. Click the **Copy revision** icon from the toolbar or select the **Copy revision** option from the drop-down menu next to the *User rights revisions* field.
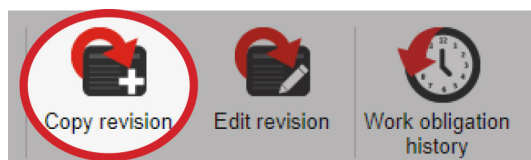
5. In the new pop-up window set a new **Start date of the revision** to the day after the termination of employment and **add the revision name**.
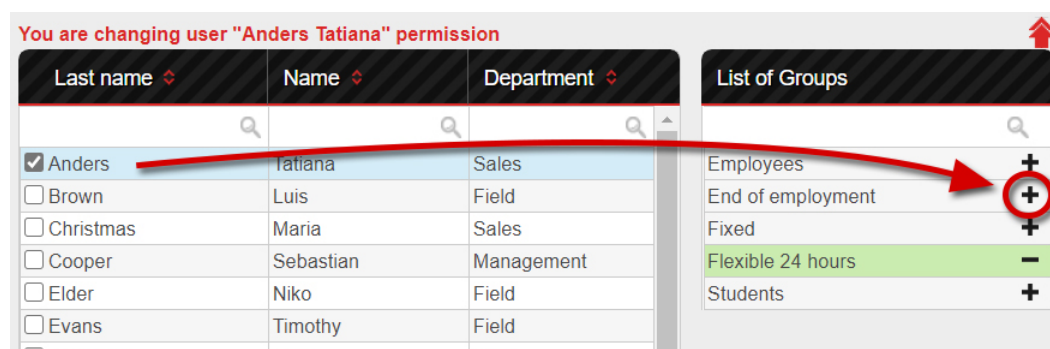
6. Click **Save.**

7. The *Groups* editor will display the status or rights in the newly copied revision which is the same as defined by the original revision.

At this stage you can start to edit the displayed rights of the user.

   a) First, assign the user to the time&attendance group with no specified work obligation (i.e., the newly added *End of employment* group).

   b) The system will inquire into which user revision you wish to save the entered changes.

   Select **Save in current revision**.

c) Then, remove the user from their former T&A group.

The edited rights will be saved to the newly created user revision.
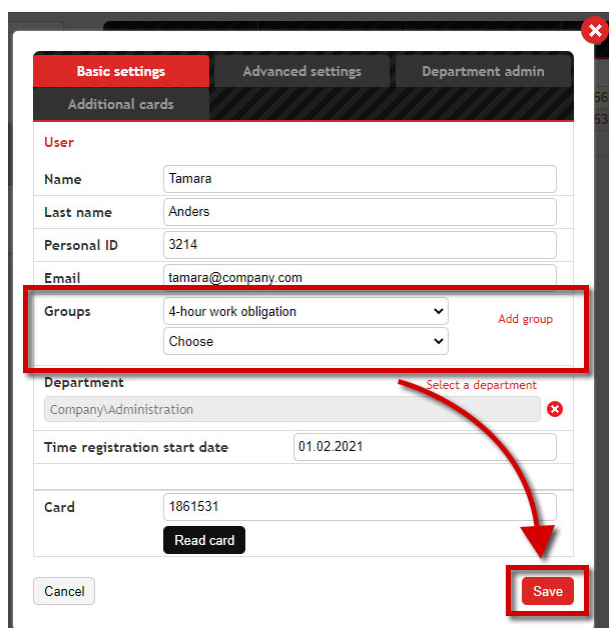
8. In order for the newly assigned rights of the user to take effect in the *Time attendance*, you must also recalculate events for the appropriate period in the Time attendance editor:

    a) In the *Time attendance* editor, first, select the user on the *List of users.*

    b) Then right-click on it and select the **Recalculate period** function from the menu (with the *Reset manual changes* option disabled), which allows you to specify the recalculation period more precisely.

The users time and attendance events will be recalculated in regard to the new defined work obligation.

7.5.3. Editing the user's groups in the Users editor
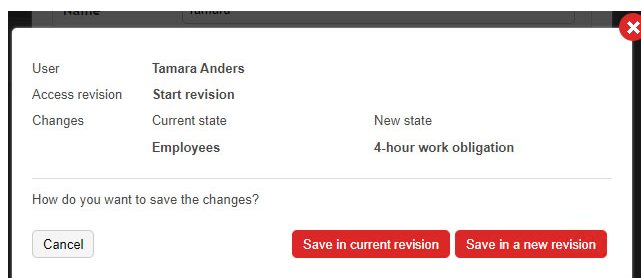
1. In the *User* Editor, first open the window for editing the user's settings.

2. Edit user's groups in a new window.
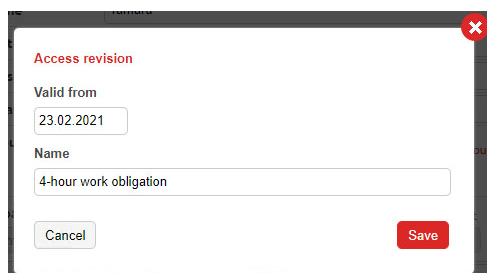
3. Click **Save**.

4. A new window will appear with which the system will issue a warning and offer you the option of creating a new revision so that you can save the current status for future reference.

*5. If you select **Save in a new revision**, a new window will appear in which you can set the start date and the name of the new revision.

8. Access

In the **Groups** editor, you can edit groups, assign users to different groups and edit the groups' rights at specific passages. ***In the Codeks application, users are (usually) granted time attendance or access rights at specific passages through the groups they are assigned to.***

It is also possible to assign time attendance rights directly to individual users, however, we recommend extreme caution when doing so. **Assigning user rights exceptions can quickly become unmanageable in larger systems**.
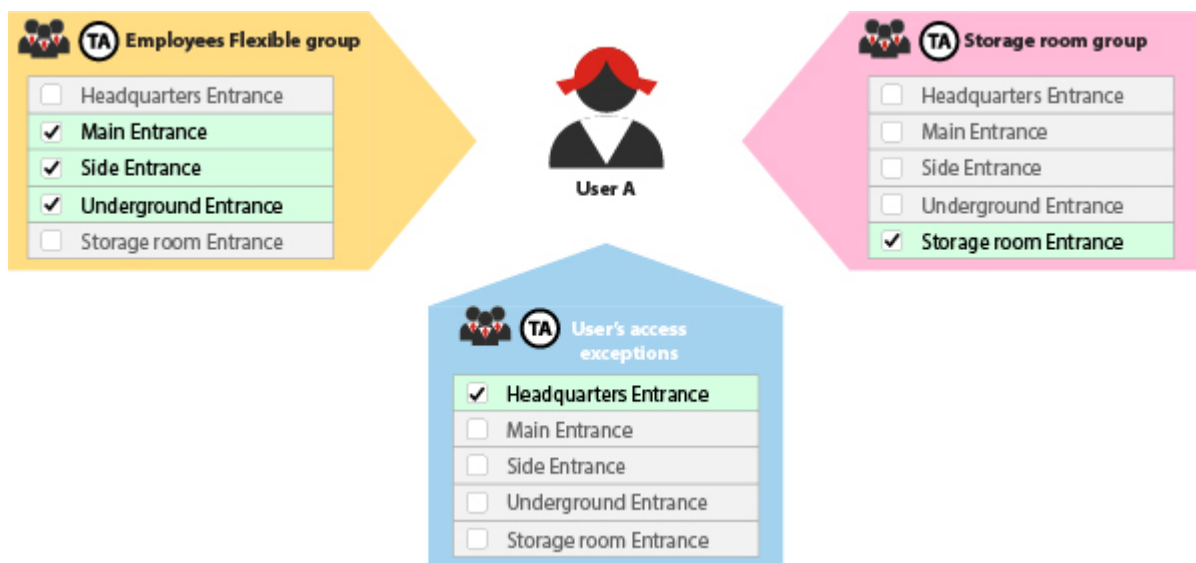
> **IMPORTANT!**
> **You can only assign access and time attendance right to passages** with a connected reader. Before assigning access, rights it is, therefore, necessary to properly <u>set the hardware</u> 24 .

> **NOTE**
> Any changes made in the *Groups* editor may change the recording of work hours in the *Time and attendance*.
> You can find more about revisions in chapter <u>Revisions</u> 64 .

After you finish editing the access rights, **you need to return to the Main menu to trigger the send tables process**. The *Codeks TA Kit* application will not work properly until you send the updated access and time attendance rights to the hardware in the system.
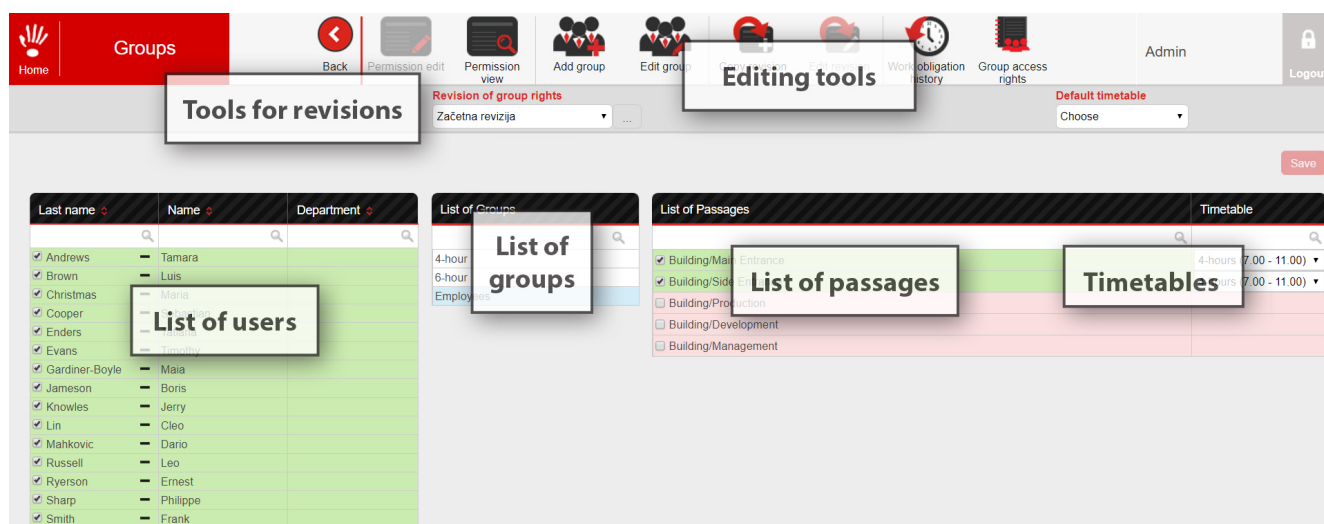
8.1. Group and User Access

In the Group Editor you can determine access rights at specific passages for groups or a single user. You can enable or disable access at a selected passage, set a timetable, and select an action to be executed. Note that locations 248 and hardware 241 must be set before you can assign access or time attendance rights to a group or user.

> **NOTE**
> Any changes made in the *Groups* editor may change the recording of work hours in the *Time and attendance*.
> You can find more about revisions in chapter Revisions 64.

When a single user from the **List of users** is selected, all the groups assigned to the user color *green* in the List of groups. The user access rights set by all the assigned groups are shown in the List of passages. Passages with enabled access are colored *green* and passages with disabled access are colored *red*.

It is also possible to **set access exceptions** for a user. Exceptions are access rights that are not defined by a group, instead they are set specifically for a selected user. Adding access exceptions to users is described in more detail in chapter Adding group and user access 82.

When a group from the **List of groups** is selected, all the users assigned to it will be colored *green* in the List of users. The users that belong to the selected group will color green.

> **IMPORTANT!** When enabling the *Permission edit*, pay attention to the **red text above the List of users**. This text informs you who's access rights you are currently editing.

You are changing group "Direktor AC"   OR   You are changing user "Benkovič Tilen"

The **List of passages** can display all the passages in your system. To enable a group to access a certain passage, enable the field next to the name of the passage. The enabled passages will color *green* and the drop downs for setting a timetable and actions will appear.

In the drop down menu of **Timetables** you can select the timetable that defines, when the selected group will be able to access a selected passage.

8.1.1. Assigning users to groups

In order for a user to be granted access or time attendance rights through groups, he must first be assigned (i.e. be a member) of the group.

ASSIGNING A USER TO A GROUP

1. First, click the **Permission edit** icon to enable editing in the *Groups* editor.
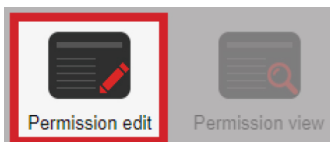
2. In the *List of groups* **select the group you wish to assign a user to**.
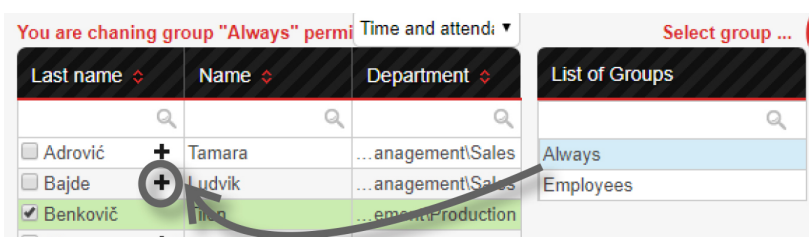
3. Then **click the plus (➕) icon next to the name of the user**.

4. The system will inform you that you are about to add a user to the selected group.

> If you have the revisions functionality enabled, the notification will inquire whether you wish to save the changes in the currently displayed revision or whether you wish to create a new revision. You can read more about revisions in chapter Revisions 64 .

The system will wait for your confirmation.

5. After confirming, the user will be assigned to the selected group and will be colored *green* in the *List of users*.
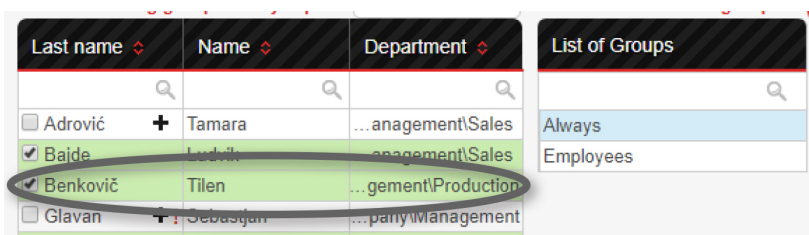
6. Finally, **return to the *Main menu* to trigger the send tables process**

ASSIGNING A GROUP TO A USER

1. First, click the ***Permission edit*** icon to enable editing in the *Groups* editor.
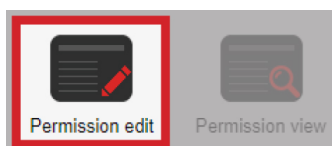
2. In the *List of users* **select the user to which you want to assign a new group**.

The groups, which are already assigned to the user, will be colored *green*.
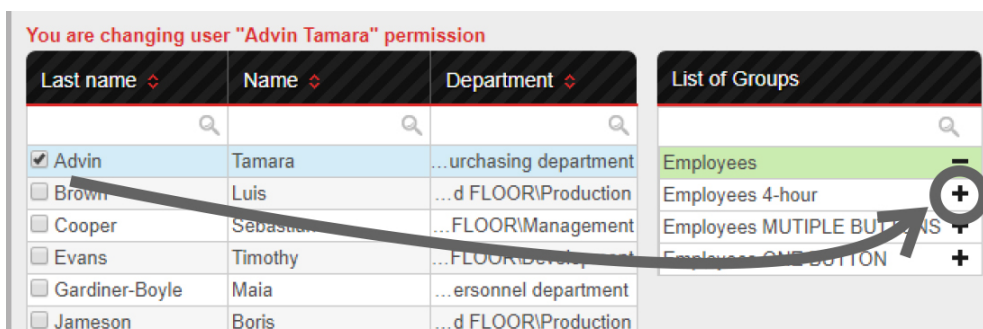
3. Then **click the plus (✚) icon next to the group you wish to assign to the user**.

4. The system will inform you that you are about to add a group to the selected user.

> If you have the revisions functionality enabled, the notification will inquire whether you wish to save the changes in the currently displayed revision or whether you wish to create a new revision. You can read more about revisions in chapter Revisions 64 .

The system will wait for your confirmation.

5. After confirming, the user will be assigned the newly selected group, which will be colored *green* in the *List of groups*.
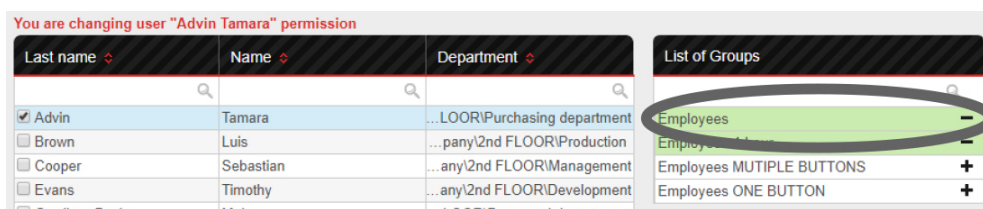
6. Finally, **return to the *Main menu* to trigger the send tables process**.

8.1.2. Adding Group Access

NOTE
Any changes made in the *Groups* editor may change the recording of work hours in the *Time and attendance*.
You can find more about revisions in chapter Revisions 64.

IMPORTANT! When enabling the *Permission edit*, pay attention to the **red text above the List of users**. This text informs you who's access rights are currently editing.

You are changing group "Direktor AC"   OR   You are changing user "Benkovič Tilen"

1. First, click the *Permission edit* icon to enable editing in the *Groups* editor.
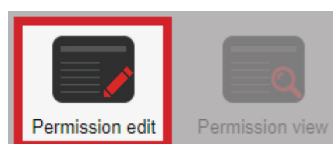
2. In the *List of groups* select the group you wish to assign an access right at a passage. The selected group will be colored *blue*.

3. To add an access right at a passage enable the checkmark next to the name of the passage in the *List of passages*.
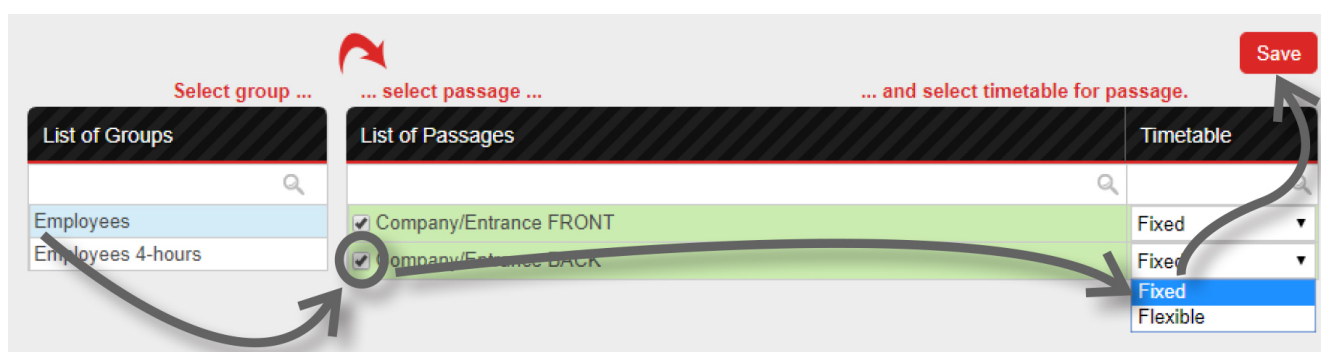
The passages, where the group's access rights are enabled, are colored green and passages, where the group's access rights are disabled, are colored red .

4. Set the *Timetable* that defines when the users will be able to pass through the passage.

5. When you are done editing, click *Save*.

6. Finally, **return to the *Main menu* to trigger the send tables process.**

8.1.3. Edit Group Access

NOTE
Any changes made in the *Groups* editor may change the recording of work hours in the *Time and attendance*.
You can find more about revisions in chapter Revisions 64.

IMPORTANT! When enabling the ***Permission edit***, pay attention to the **red text above the List of users**. This text informs you who's access rights you are currently editing.

You are changing group "Direktor AC"   OR   You are changing user "Benkovič Tilen"

1. First, click the ***Permission edit*** icon to enable editing in the *Groups* editor.
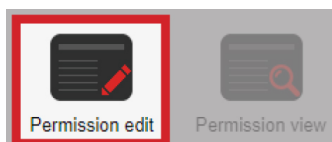
2. In the *List of groups* select the group to which you wish to change access rights at a passages. The selected group will be colored *blue*.

3. In the *List of passages* make the desired changes to the *timetable* and *action* settings of the selected passages.
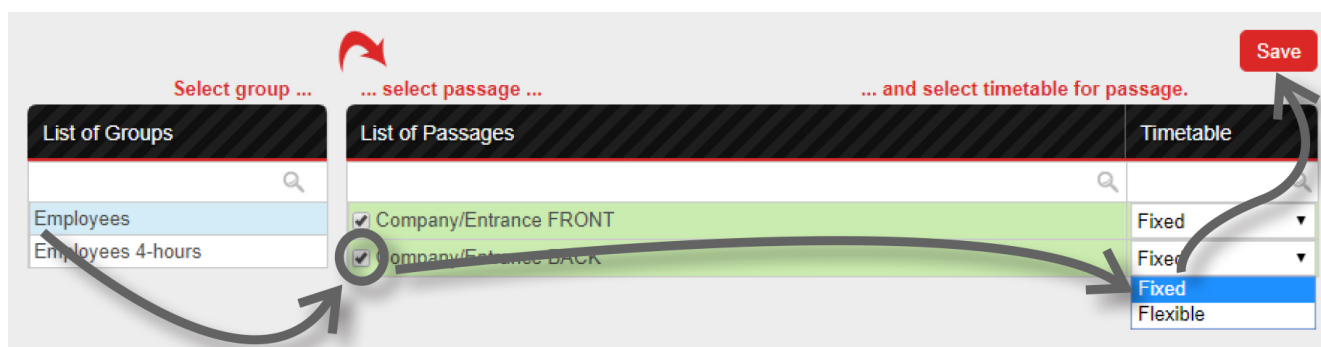
4. When you are done editing, click ***Save***.

5. Finally, **return to the *Main menu* to trigger the send tables process.**

8.1.4. Remove Group Access

NOTE
Any changes made in the *Groups* editor may change the recording of work hours in the *Time and attendance*.
You can find more about revisions in chapter Revisions 64.

IMPORTANT! When enabling the **Permission edit**, pay attention to the **red text above the List of users**. This text informs you who's access rights you are currently editing.

You are changing group "Direktor AC"   OR   You are changing user "Benkovič Tilen"

1. First, click the **Permission edit** icon to enable editing in the *Groups* editor.
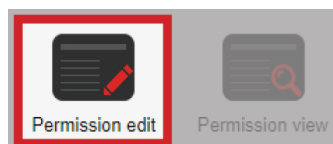
2. In the *List of groups* select the group to which you wish to remove an access right at a passage. The selected group will be colored *blue*.

3. To remove an access right at a passage remove the checkmark next to the name of the passage in the *List of passages*.
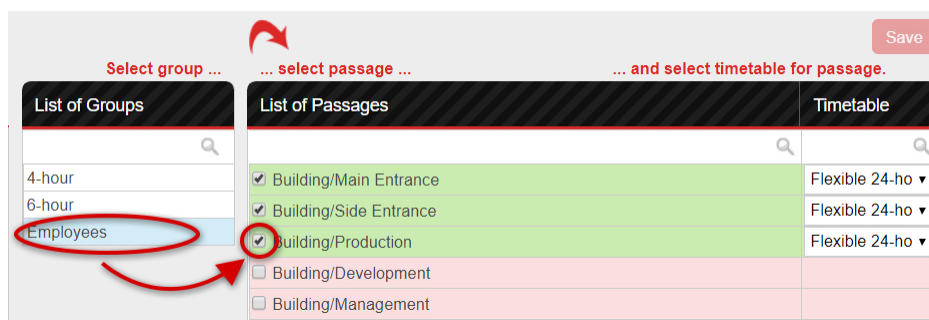
4. The passage will color *red*.

5. When you are done editing, click **Save**.

6. Finally, **return to the *Main menu* to trigger the send tables process.**

8.1.5. Adding access exceptions to users

NOTE
Any changes made in the *Groups* editor may change the recording of work hours in the *Time and attendance*.
You can find more about revisions in chapter Revisions 64 .

IMPORTANT! When enabling the *Permission edit*, pay attention to the **red text above the List of users**. This text informs you who's access rights you are currently editing.

You are changing group "Direktor AC"   OR   **You are changing user "Benkovič Tilen"**

We recommend extreme caution when assigning time attendance rights directly to individual users. **Assigning user rights exceptions can quickly become unmanageable in larger systems**.

1. First, click the **Permission edit** icon to enable editing in the *Groups* editor.
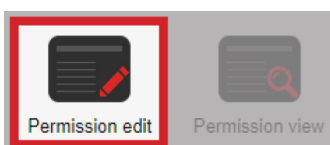
2. In the *List of users* **select the user whom you wish to assign a rights exception** at a specific passage. The selected user will be colored *blue*.

3. Then add or remove the user's access right at a passage by enabling or disabling the selected passage on the *List of passages*.
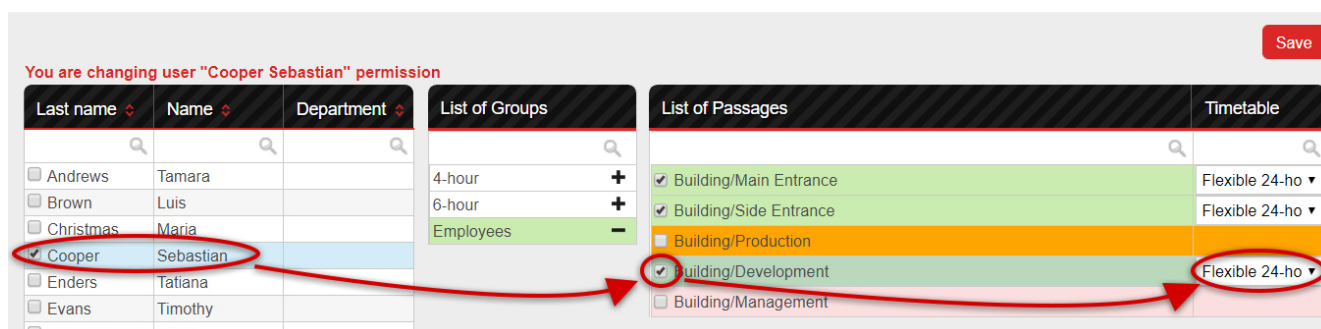
The passages, where the user's access rights are enabled by a rights exception, are colored dark green ▢ and passages, where the user's access rights are disabled by a rights exception, are colored orange ▢ .

4.* If you are assigning the user an additional access right you can also select the *timetable* and *action* that will be executed when users register at controllers.

5. When you are done editing, click **Save**.

6. Finally, **return to the *Main menu* to trigger the send tables process.**

8.1.6. Set Timetable for Selected Passages

It is possible to **set the same timetable to all passages where a group has granted access rights simultaneously with one function**.

> **NOTE**
> Any changes made in the *Groups* editor may change the recording of work hours in the *Time and attendance*.
> You can find more about revisions in chapter Revisions 64.

> **IMPORTANT!** When enabling the ***Permission edit***, pay attention to the **red text above the List of users**. This text informs you who's access rights you are currently editing.
> You are changing group "Direktor AC"   OR   You are changing user "Benkovič Tilen"

1. First, click the ***Permission edit*** icon to enable editing in the *Groups* editor.
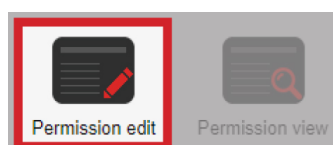
2. In the *List of groups* select the group to which you wish to set the same timetable at all enabled passages. The selected group will be colored *blue*.

3. From the right-click menu select the ***Set timetable for selected passages***.
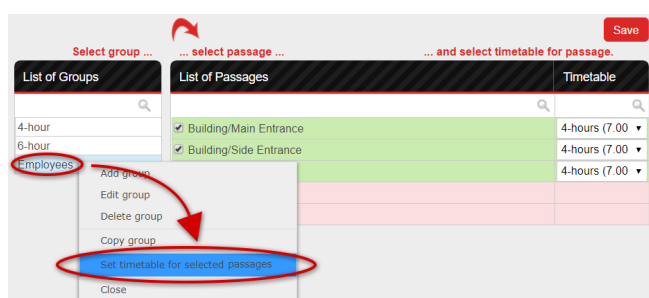
4. A new window will open where you can **set the timetable which will be assigned to all selected (checked) passages**.
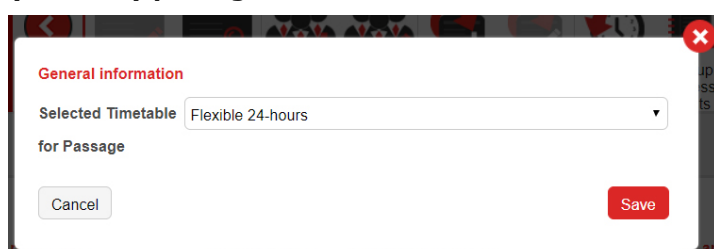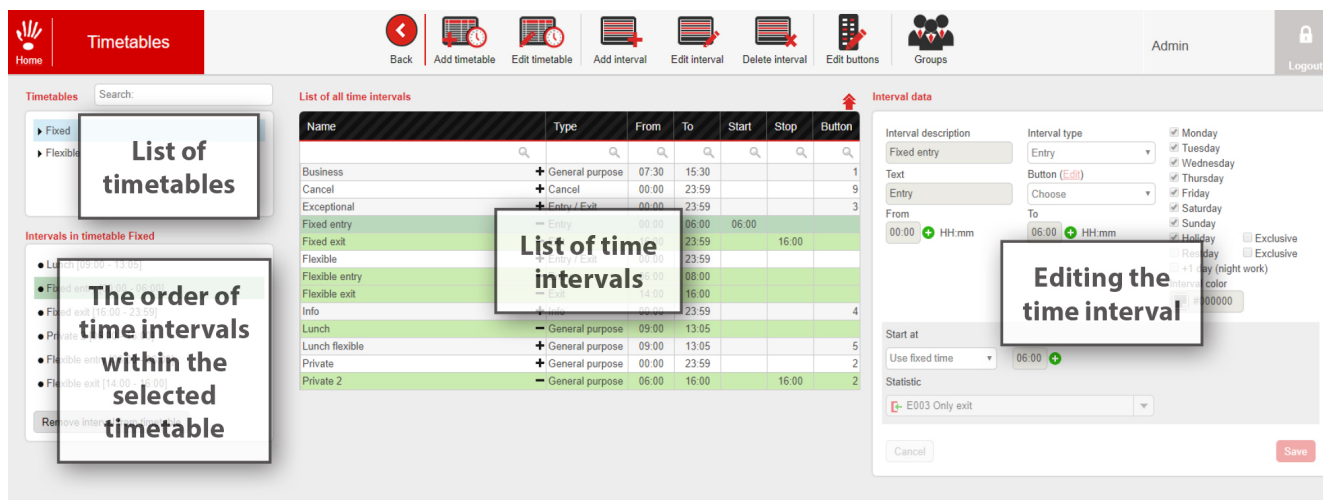
5. When you are done editing, click ***Save***.

6. Finally, **return to the *Main menu* to trigger the send tables process.**

9. Timetables

In the *Timetables* editor, you can view, create and edit timetables. Timetables in the Codeks application define when users can pass through specific passages and when they can access certain functionalities of controllers.

In addition to Groups, Timetables are a key feature in the Codeks system structure as they define the rights of users and groups as well as add functionality to controllers. **Timetables define the specific times**:

- of the users' work obligation (Codeks TA) and their daily work hours (Codeks TA),

- when users can use different time intervals during work hours (e.g. lunch, business exit, private exit, exit permits etc.) (Codeks TA),

- when certain statistics will be used and recorded (Codeks TA),

The structure of timetables

Every **timetable** contains one or more **time intervals**. The time intervals are defined completely separately and can be assigned to several timetables simultaneously. By selecting specific time intervals you can create completely customized timetables. Time intervals enable event registration every time a user registers at a controller. The Codeks system uses the data of registered events in order to calculate the users' work hours or enable access to passages.

> **ATTENTION!**
> The same time intervals can be simultaneously assigned to several timetables. By making changes to a selected time interval you are affecting all the timetables the time interval is assigned to.

Colors in Timetables Editor

Blue - indicates the selected timetable on the *List of timetables.*

Green - indicates the intervals assigned to the selected timetable in the *List of all time intervals*.

Dark green - indicates the currently selected interval in the *List of all time intervals* and the *List of intervals in selected timetable*.

Red - indicates the currently selected interval in the *List of all time intervals*, if that time interval is not assigned to the selected timetable.

Using timetables to define the users' time and attendance

Timetables enable you to set when he will be able to register his entry and exit at work, how and when he will be able to use his lunch break, take a private exit, go to a meeting at another location etc.

A user is usually assigned these rights through the rights of groups, of which he is a member. The group rights are defined in the Groups editor. Here you can set group rights for all the users assigned to a group by enabling access and setting a timetable for each specific passage. The following picture shows how a user is assigned access rights on specific passages by belonging to different groups.
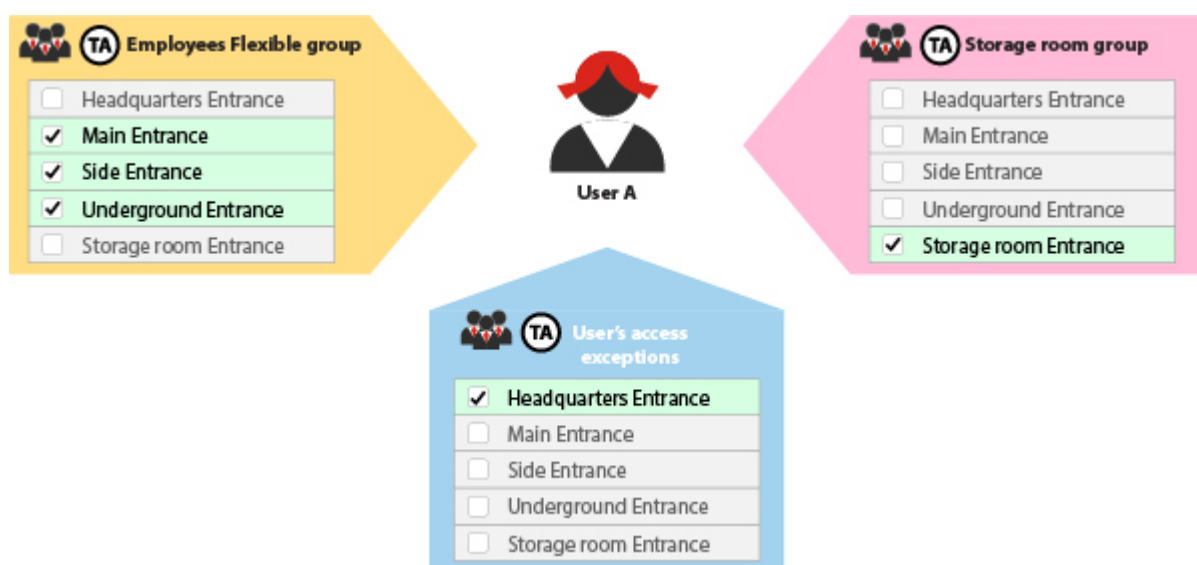
The process of defining group and user access rights by assigning different timetables to specific passages is described in chapter

9.1. Timetable overview

The List of all timetables can be found on the left side in the Timetables editor. The currently selected timetable is colored blue. The list of all time intervals assigned to the currently selected timetable is shown under the List of timetables.
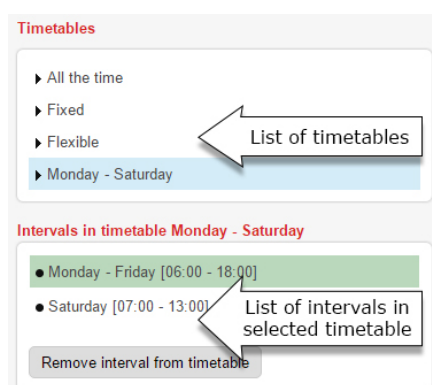
Timetables are essentially collections of time intervals. Time intervals define when users arrive at work, when they can take a lunch break, where and when they have access rights, etc. You can read more about different types of time intervals in chapter Add New Time Interval 94. All time intervals, shown in the middle section of the timetables editor, are defined completely independently and can be assigned to multiple timetables at the same time. Time intervals assigned to a selected timetable are colored green in the List of time intervals. The following picture shows the List of all time intervals.

List of all time intervals

Name	Type	From	To	Start	Stop	Button
All the time	+ Access	00:00	23:59			
Business	+ General purpose	07:30	15:30			1
Cancel	+ Cancel	00:00	23:59			9
Entry flexible	+ Entry	06:00	08:00			
Exeption	+ Entry / Exit	00:00	23:59			3
Exit flexible	+ Exit	14:00	16:00			
Fixed entry	+ Entry	00:00	06:00	06:00		
Fixed exit	+ Exit	16:00	23:59		16:00	
Flexible	+ Entry / Exit	00:00	23:59			
Info	+ Info	00:00	23:59			4
Lunch	+ General purpose	09:00	13:00			
Lunch flexible	+ General purpose	09:00	13:00			5
Monday - Friday	— Access	06:00	18:00			
Private	+ General purpose	00:00	23:59			2
Private 2	+ General purpose	06:00	16:00			2
Saturday	— Access	07:00	13:00			

Some sample default timetables are already provided with the Codeks installation. You can use or edit them to meet the specific needs of your system.

9.2. Before adding a new timetable

Timetables in Codeks define when users and groups have access rights at specific passages, set the users' work obligation and enable the daily event registration. Additionally, they set and control the button functionalities of the controllers.

Timetables are one of the key elements in Codeks and require careful planning before generating.

We recommend thorough and careful consideration as to how users will be coming and going, when they will be allowed to enter the company and how they will be allowed to move within the company.

When planning timetables it is important to consider **any official company policy** (e.g. each company defines when the employees must be present at their workplace and how their work hours are recorded), **any internal unofficial agreements** (e.g. employees can take a cigarette break during work hours, but must clock the time as a cigarette break) and **different levels of access rights** (e.g. the management has the right to access the company premises at any time of the day, while other users may have time limited access rights). It is also important to **consider how the system will react in extraordinary circumstances** (e.g. how an employee's emergency entry will be clocked).

TIMETABLE PLANNING

Time and attendance timetables are used to define and record the users' work hours. Additionally, they are also used to define the access rights of users and add functionality to the buttons of controllers.

1. Before planning the timetable, **install the necessary hardware**, set the **locations**, define your **company's organization structure** and connect your **controllers to the appropriate passages** (using the Hardware editor).

2. Next, determine what the typical work day of a user should look like. The exact sequence of events in the day is defined with different types of time intervals.
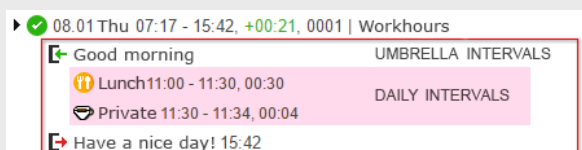
> **THE STRUCTURE OF THE DAY**
>
>
>
> In the Codeks application, each work day consists of **umbrella time intervals**, which begin with the user's arrival at work (an **Entry** event) and end with the user's departure from work (an **Exit** event). All Entry and Entry events are displayed in the *List of events* in the Time attendance editor.
>
> Within the **umbrella time intervals**, during the user's work hours, any number of **daily time intervals** (e.g. a lunch break, a private exit, a business meeting) can be added.
>
> A new event in the day is registered every time a user registers at a controller for time attendance. The type of event registered is dependent on the defined time intervals that are assigned to the user's time and attendance timetable (i.e. the activated **daily time intervals - General purpose** type intervals).

First, define the umbrella intervals of a typical work day.

Determine when users will be **arriving at work** and how the start of their work hours will be recorded.

The interval types Entry [100] and Entry / Exit [105] are used to define the intervals needed to cover the time period of the users' arrival at work. The settings of the intervals offer different ways of starting the recording of work hours.

FIXED AND FLEXIBLE

The terms fixed and flexible are used to describe how time intervals are set to record the start or end of their duration:

- If an interval has a **fixed** way of recording work hours, this means that a fixed pre-defined time will be recorded and used for calculations, instead of the actual time a user registered at a controller.

  Example:
  A Fixed entry interval is defined, that records any entry events registered before 6 a.m. In this case, the term "fixed" applies to how the start of the user's work hours is recorded. Regardless of the actual time of event registration, the start of the Entry interval is always set to 6:00, in the event that the user registers his arrival before 6 a.m.
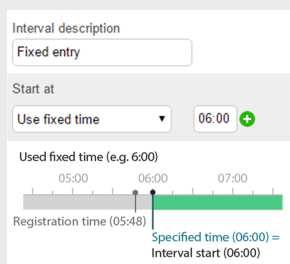
- If an interval has a **fixed** way of recording work hours, this means that the actual time of event registration will be used when a user registers an event at a controller during the interval duration.

  Example:
  An Entry flexible interval is defined, that records any entry events registered between 6 and 8 a.m. The term "flexible" describes how the start of the user's work hours will be recorded. The when a user registers an entry event between 6 and 8 a.m. the actual time of the event registration will be recorded as the start of the interval.
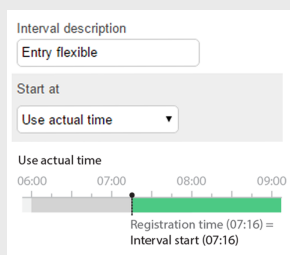
Companies often use a combination of intervals with a fixed and flexible way to start recording work hours.

Example:
All users in a company must be present at their workplace at 8 o'clock in the morning.
The start of their work day is defined by two intervals:
- **fixed, if the users arrive at work before 6:00 in the morning** (If a user arrives at work before 6:00, his work hours start to record at 6:00, regardless of when exactly the user recorded his Entry event.),
- **flexible, if the users arrive at work between 6:00 and 8:00 in the morning** (If the user arrives at work between 6:00 and 8:00, his work hours start to record from the actual time of his Entry event registration at the controller.).

Similarly, determine when the users will be able to **depart from work** and how the end of their work hours will be recorded. The interval types <u>Exit</u> [102] and <u>Entry / Exit</u> [105] are used to define the intervals needed to cover the time period of the users' departure from work. The settings of the intervals offer different ways of ending the recording of work hours.

3. After defining the umbrella events of the day, you can plan the **daily time intervals** that a user will be able to use within the umbrella intervals on a typical work day.

   Examples of daily time intervals are lunch breaks, business or private exits, cigarette breaks, etc. The interval type <u>General purpose</u> [96] is used to define the daily time intervals. The settings of the intervals offer advanced options for recording the duration and number of repeats.

INTERVAL HIERARCHY

When planning and using time interval also **keep in mind the intervals' hierarchical order in the selected timetable**. The current hierarchical order of the intervals can be seen in the *Intervals in timetable* window on the left side of the Timetables editor.

Intervals in timetable Fixed timetable

- Business [07:30 - 15:30]
- Info [00:00 - 23:59]
- Cancel [00:00 - 00:00]
- No office hours [00:00 - 23:59]
- Lunch 1 [10:00 - 14:00]
- Entry fixed [00:00 - 06:00]
- Exit fixed [16:00 - 23:59]
- Private 2 [06:00 - 16:00]
- Entry flexible [06:00 - 08:00]
- Exit flexible [14:00 - 16:00]

Remove interval from timetable
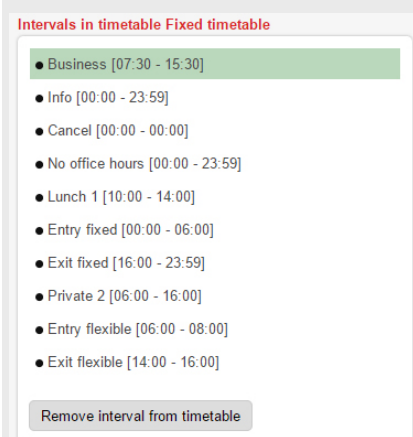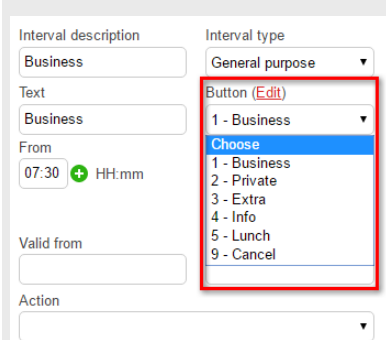
Time intervals assigned to a timetable determine how a specific registered event at a controller will be recorded in the time attendance. When a user registers at a controller the system looks for the highest ranking time interval that is valid at that time of day. If more than one time intervals are valid at a specific time of day the system will record events according to the highest ranking one (e.g. for the timetable presented in the picture above, the system would record an event registered at 10:30 according to the *Business* interval before the *No office hours* interval).

The interval hierarchy does not apply to time intervals with assigned buttons. To activate an interval with an assigned button a user must select the appropriate button before registering at the controller.

4. Lastly, define the buttons needed in order for users to access the functionalities of the defined daily time intervals during their work hours. Users usually access the functionality of the general purpose interval using the buttons of the controllers.

EDITING AND USE OF CONTROLLER BUTTONS

Interval types General purpose 96 Info 109 ,and Cancel 110 enable a controller button to be assigned to them in order to access the intervals functionality on the controller.

Interval description	Interval type
Business	General purpose ▼
Text	Button (Edit)
Business	1 - Business ▼
From	**Choose**
07:30 ⊕ HH:mm	1 - Business
	2 - Private
	3 - Extra
Valid from	4 - Info
	5 - Lunch
	9 - Cancel
Action	

Read more about settings and the use of buttons for event registration in chapter Edit Buttons.

Use of buttons at the controller:
1. When users want to activate the functionality of a certain interval, they first select and press the appropriate button on the controller.
2. After selecting the button, they register at the controller and the system starts the time count of the selected interval. In the event of selecting intervals Info or Cancel, the system displays the user's information or cancels the last registered event, respectively.
3. To end the selected interval the users just register at the controller again.
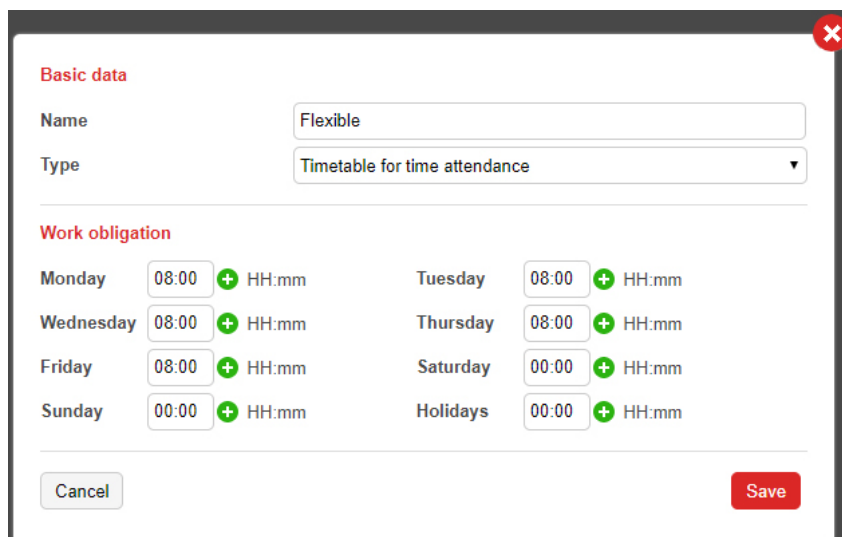
9.3. Add Timetable

1. To add a new timetable select the **Add timetable** icon in the Timetables editor.
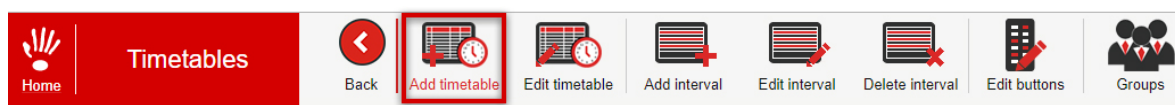
2. A new window will open, where you can enter the name of your new timetable.

It is advised that a suitably descriptive and distinguishing name be assigned to the new timetable.

Settings	Description
Name	The name of the timetable
Type	The Codeks TA Kit application uses the *Timetable for time attendance* type of timetables.
Work obligation	Sets the number of work hours the user is expected to be present at the workplace. Codeks enables different work obligations to be set for different days of the week. The set work obligation hours are repeated periodically each week.

In the lower part of the pop-up window, you can also set the work obligation which will be assigned to all users who will use this timetable.

3. Save the newly added timetable by clicking the **Save** button. The new timetable will be added to the *List of timetables*.

In the next step <u>add existing time intervals</u> [112] to the selected timetable or <u>create new intervals</u> [94].

9.3.1. Add New Time Interval

1. To add a new interval, click the **Add interval** icon in the upper menu of the *Timetables* editor.

This will enable the interval editor window on the right side of the editor.
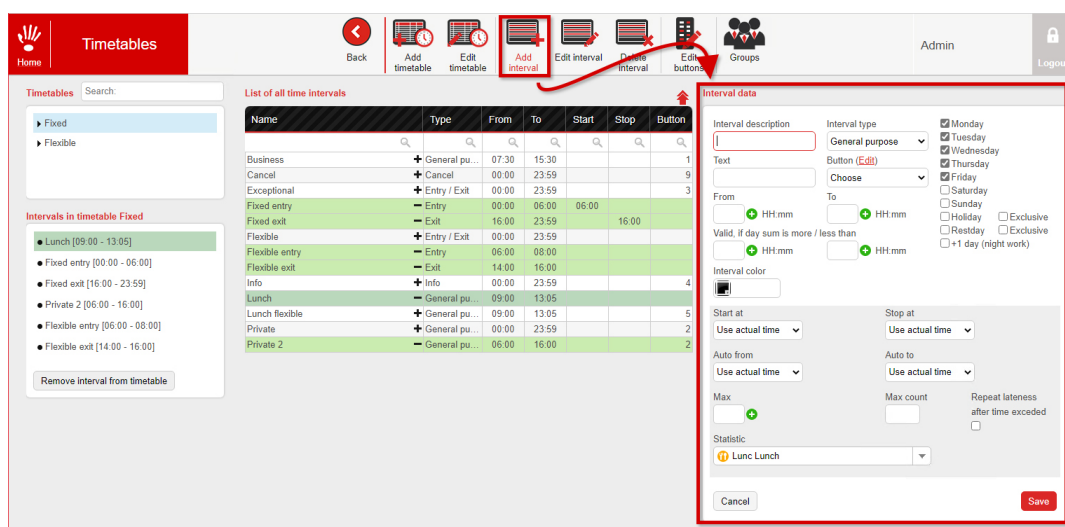
2. Enter the required data for the time interval.

3. Save the entered data by clicking the **Save** button.

The newly added time interval will be added to the *List of all intervals*. The interval is not yet assigned to any timetable.

4. To add a time interval to a selected timetable, first, mark the timetable you wish to assign the time interval to. The selected timetable will color *blue*.

5. Then locate the interval in the *List of all intervals* and click on the **+** (plus) icon next to the interval name. When the time interval is successfully added to the timetable it will color *green*.
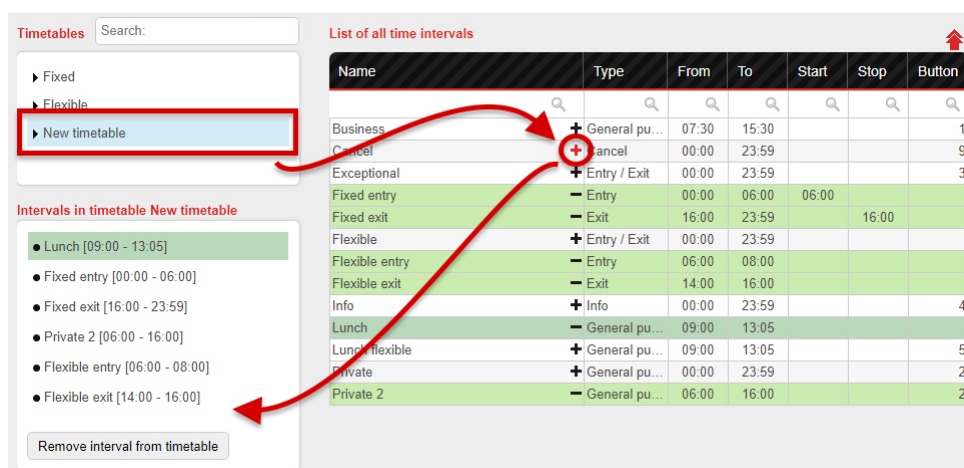
ATTENTION!
The same time intervals can be simultaneously assigned to several timetables. By making changes to a selected time interval you are affecting all the timetables the time interval is assigned to.

Interval types

Several types of time intervals are available, which differ depending on the purpose of use:

Types of interval	Description
General purpose 96	General purpose intervals enable the change of the statistic being recorded and are usually used to record daily intervals within work hours, such as lunch brakes, private or business exits, etc. Users often access the functionality of general purpose intervals using the buttons of the controllers. Read more about settings and the use of buttons for event registration in chapter Edit Buttons 116.
Entry 100	The Entry interval type is used to record daily entry events, which mark the beginning of all umbrella intervals, which in turn contain all daily intervals.
Exit 102	The Exit interval type is used to record daily exit events, which mark the endings of all umbrella intervals. By registering an exit event the recording of user's work hours is stopped.
Entry/Exit 105	The Entry/Exit interval type is used to record entry events, which are the start of all umbrella intervals, as well as exit events, which are the end of all umbrella intervals. This type of interval is usually used when a user has a flexibly defined timetable, with multiple entries and exits per day. The user can freely come and go during the duration of the interval.
Info 109	The Info interval enables the use of the additional functionality of displaying a user's information on the controller (the presence status, the saldo for period and their available leave days status). The functionality of the Info interval can be accessed through a specific button, which the user presses before registering, on the controller. Read more about settings and the use of buttons in chapter Edit Buttons 116.
Cancel 116	The Cancel interval enables the last, incorrect registered event on the controller to be canceled (e.g. pressing the button *Business* instead of *Private)*. The functionality of the Cancel interval is time limited and can only be used up to 30 s after registering the incorrect event. Read more about settings and the use of buttons in chapter Edit Buttons 116.
Access 94	The Access interval enables a user access to specific passages during the duration of the interval (defined by settings From and To).

The intervals' settings are dependent on the selected interval type. The general settings, available for all types of time intervals, are described in the table below and all additional settings, dependent on interval type, are described in the following chapters.
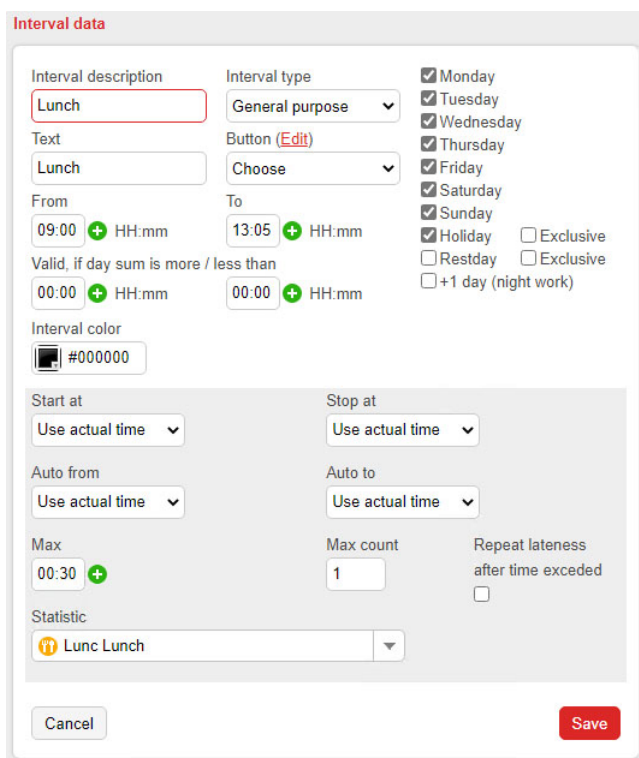
General settings for the Codeks TA time intervals

Settings	Description
Interval description	The name of the interval. The name should be suitably descriptive to enable easier recognition in the list of intervals.
Interval type	Interval type selection. The additional settings displayed are dependent on the selected interval type.
Text	The text that will be displayed on the controller when a user registers.
From	The start of the interval duration.
To	The end of the interval duration. The end time must always be greater than the interval start time.
Days of the week	Sets the day of the week, to which this interval will apply. The settings **Holiday** and **Restday** enable setting intervals for special days. The additional setting **Exclusive** can be used to set intervals for combination days, for example, an interval is only valid for weekdays that are at the same time also a holiday. The **+1 day (night work)** setting defines how the work hours after midnight in the night shift will be recorded. By default, this setting is not enabled. If the setting is not enabled the work hours after midnight will be recorded in the new day, regardless of the exact time the worker clocked his arrival at work (Entry). If the setting is enabled the work hours after midnight will be recorded in the previous day if the worker has clocked his arrival at work (Entry) on this day.
Interval color	Sets the color the interval will be displayed with when printing the timetable.

9.3.1.1. General purpose
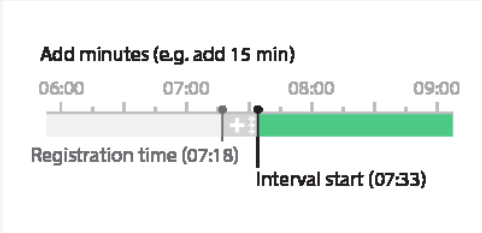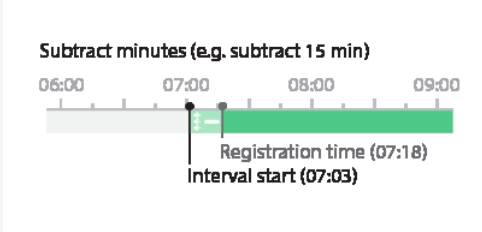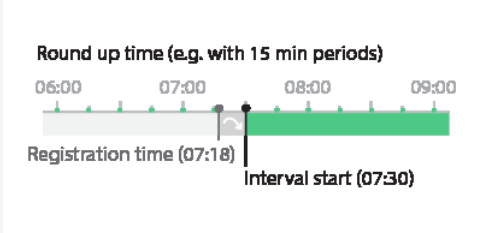
General purpose intervals are usually used to define daily intervals, which are recorded within the umbrella interval during work hours. Examples of this kind of intervals are lunch breaks, business and private exits, etc.
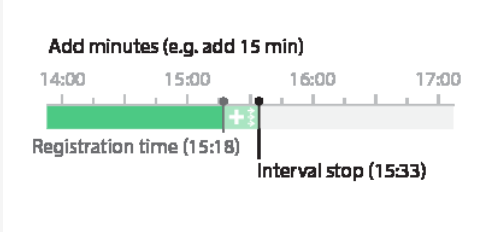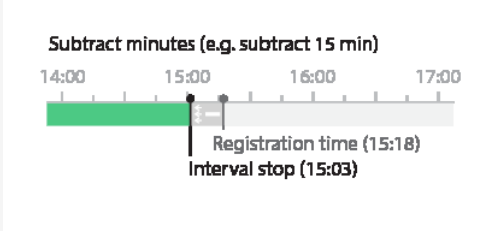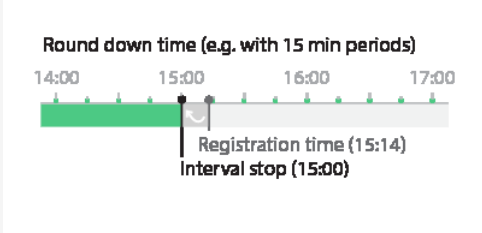
General purpose intervals enable the change of the statistic being recorded. Users often access the functionality of general purpose intervals using the buttons of the controllers. Read more about settings and the use of buttons for event registration in chapter Edit Buttons 116.

General settings for the time intervals are described in table *General settings for the Codeks TA time intervals* 95. The following table contains all setting specific to General purpose intervals.

Settings	Description	
Button	A button can be assigned to interval types which enable adding a new functionality to controllers. A user accesses the functionality of the interval by selecting the appropriate button before registering at the controller. Read more about settings and the use of buttons for event registration in chapter Edit Buttons 116.	
Valid, if day sum is more / less than	This setting enables you to set the minimum sum of work hours that must be reached and/or the maximum sum of work hours that must not be exceeded in order to trigger this interval's function.	
Start at	Sets the start time of an interval.	
	VALUES:	
	Use actual time	The start of the interval is the time of the user's actual registration at a controller.
	Use fixed time	The start of the interval is set to a defined fixed time. The fixed time is entered in the additional field next to the setting's window (e.g. fixed time at 8:00 in the morning -> 08:00).

Settings	Description
	Add minutes — The start of the interval is set to the time of the user's registration with an added number of additional minutes. The number of minutes that is added to the registration time is entered in the additional field next to the setting's window (e.g. add 15 minutes -> 00:15).

Add minutes (e.g. add 15 min)

06:00   07:00   08:00   09:00

Registration time (07:18)

Interval start (07:33)

| | **Subtract minutes** — The start of the interval is set to the time of the user's registration minus a defined number of minutes. The number of minutes that is subtracted from the registration time is entered in the additional field next to the setting's window (e.g. subtract 15 minutes -> 00:15). |

Subtract minutes (e.g. subtract 15 min)

06:00   07:00   08:00   09:00

Registration time (07:18)

Interval start (07:03)

| | **Round up time** — The start of the interval is rounded up to the next set time period. The defined time period is entered in the additional field next to the setting's window (e.g. round up with 15 minute time periods -> 00:15). |

Round up time (e.g. with 15 min periods)

06:00   07:00   08:00   09:00

Registration time (07:18)

Interval start (07:30)

| | **Round down time** — The start of the interval is rounded down to the next set time period. The defined time period is entered in the additional field next to the setting's window (e.g. round down with 15 minute time periods -> 00:15) |

Round down time (e.g. with 15 min periods)

06:00   07:00   08:00   09:00

Registration time (07:14)

Interval start (07:00)

Stop at	Sets the end time of an interval.
	VALUES:
	Use actual time — The end of the interval (stop) is the time of the user's actual registration at a controller.
	Use fixed time — The end of the interval (stop) is set to a defined fixed time. The fixed time is entered in the additional field next to the setting's window (e.g. fixed time at 16:00 in the afternoon -> 16:00).
	Example: Lunch The interval Lunch is defined from 13:00 to 14:00, with the Stop at setting set to Use fixed time at 14:00. A user can take his lunch break anytime from 13:00 to 14:00, but when he returns the system will automatically mark his time of return at 14:00, regardless of his actual time of return.

Settings	Description
	Add minutes The end of the interval is set to the time of the user's registration with an added number of additional minutes. The number of minutes that is added to the registration time is entered in the additional field next to the setting's window (e.g. add 15 minutes -> 00:15).
	Subtract minutes The end of the interval is set to the time of the user's registration minus a defined number of minutes. The number of minutes that is subtracted from the registration time is entered in the additional field next to the setting's window (e.g. subtract 15 minutes -> 00:15).
	Round up time The end of the interval is rounded up to the next set time period. The defined time period is entered in the additional field next to the setting's window (e.g. round up with 15 minute time periods -> 00:15).
	Round down time The end of the interval is rounded down to the next set time period. The defined time period is entered in the additional field next to the setting's window (e.g. round down with 15 minute time periods -> 00:15)
Auto from	The setting enables automatic recording of the interval start based on the value of the setting. **Example 1: Business interval** A user frequently has early morning meetings with clients, which prevent him from clocking in his arrival at work in time for the Entry interval to start recording his work hours. Instead, he can achieve this by using a specially created Business interval which is defined from 8:00 to 16:00 and has the *Auto from* setting is set to *Use fixed time* at 8:00. The user selects the appropriate button to activate the Business interval functionality before he registers at the controller. The Business interval enables the entry time of the user to be set at 8:00 simultaneously with recording the Business interval from 8:00 till the time of the users actual arrival. VALUES:
	Use actual time The start of the interval is the time of the user's actual registration at a controller.

Settings	Description	
	Use fixed time	The start of the interval is set to a defined fixed time. The fixed time is entered in the additional field next to the setting's window (e.g. fixed time at 8:00 in the morning -> 08:00).
Auto to	The setting enables automatic recording of the interval ending (stop) based on the value of the setting.	
	VALUES:	
	Use actual time	The end of the interval (stop) is the time of the user's actual registration at a controller.
	Use fixed time	The end of the interval (stop) is set to a defined fixed time. The fixed time is entered in the additional field next to the setting's window (e.g. fixed time at 16:00 in the afternoon -> 16:00).
		Example 1: Business interval The *Business* interval is defined from 8:00 to 16:00 and the *Auto to* setting is set to *Use fixed time* at 16:00. A user uses the functionality of the *Business interval* exit at 10:00 and does not return for the day. The system will automatically record the *Business* daily interval from 10:00 to 16:00 and set an exit event for the day at 16:00.
Max	Sets the maximum duration of an interval. Enter the maximum allowed duration of the interval in the additional field.	
	ADDITIONAL SETTINGS:	
	Max count	The setting sets the maximum number of daily repetitions of a specific interval.
	Repeat lateness after time exceeded	The setting enables the user's tardiness (excess of the maximum interval duration) to be summed up together for all interval repetitions. (If the setting is not enabled, the user will not be able to use a certain daily interval again, if he has already exceeded the maximum interval duration time. If the setting is enabled the user will be able to use all interval repetitions, even if he has already exceeded the maximum interval duration time. The user's tardiness (excess time) is recorded to the Late statistic (default setting) or any other interval set by the *Count interval excess into* setting.)
Statistic	This setting sets which statistic the interval's duration and repetition will be recorded into. The default set statistics are: - *Holiday* for holidays, - *Weekend* for weekends, - *Not present* for work days (when work obligation is >0). **Example**: The Exit interval is defined from 17:00 to 22:00 and set to record the Business trip statistic. If the user registers an exit event during the duration of this interval his work day is concluded using the Business trip statistic. **WARNING!** If the statistic setting of an Exit interval is set to *Interval does not count for any statistic*, the default daily statistic will be used to record the work hours. **WARNING!** If the default daily statistic is Not present and an Entry event has been registered for the day, the *Worktime* statistic will be used at the end of the day. **WARNING!** If the default daily statistic has the Overwrite setting enabled (Settings -> Statistics 219 editor), the newly selected statistic in the interval settings will overwrite it. If the default daily statistic does not have the Overwrite setting enabled, the newly selected statistic will not be able to overwrite it.	

The use of the functionality of General purpose intervals:

1. A user can initialize the functionality of a general purpose interval (e.g. a lunch break) when registering at a controller. The user must press the appropriate button (e.g. labeled Lunch) to activate the functionality of the selected general purpose interval before he registers at the controller.

2. After pressing the button the user proceeds with registering at the controller.

3. The controller will display a message that signals the start of the selected general purpose interval (e.g. Lunch start).

4. The activated general purpose interval will be concluded the next time the user registers at a controller.

Read more about settings and the use of buttons for event registration in chapter Edit Buttons 116.

9.3.1.2. Entry

The Entry interval type is used to record daily entry events, which mark the beginning of all umbrella intervals. The daily umbrella intervals always start with an Entry event and end with an Exit event. Umbrella intervals contain all registered daily intervals, such as lunch brakes or business and private exits.

Interval data

Interval description: Fixed entry
Interval type: Entry
☑ Monday
☑ Tuesday
☑ Wednesday
☑ Thursday
☑ Friday
☑ Saturday
☑ Sunday
☑ Holiday   ☐ Exclusive
☐ Restday   ☐ Exclusive
☐ +1 day (night work)

Text: Entry
Button (Edit): Choose

From: 00:00 ⊕ HH:mm
To: 06:00 ⊕ HH:mm

Interval color: #000000

Start at: Use fixed time   06:00 ⊕

Statistic: E001 Only entry

Cancel   Save

General settings for the time intervals are described in table *General settings for the Codeks TA time intervals* 95 . The following table contains all setting specific to Entry type time intervals.

Settings	Description	
Button	A button can be assigned to interval types which enable adding a new functionality to controllers. A user accesses the functionality of the interval by selecting the appropriate button before registering at the controller. Read more about settings and the use of buttons for event registration in chapter Edit Buttons 116 .	
Start at	Sets the start time of an interval.	
	VALUES:	
	Use actual time	The start of the interval is the time of the user's actual registration at a controller.
	Use fixed time	The start of the interval is set to a defined fixed time. The fixed time is entered in the additional field next to the setting's window (e.g. fixed time at 8:00 in the morning -> 08:00).
	Add minutes	The start of the interval is set to the time of the user's registration with an added number of additional minutes. The number of minutes that is added to the registration time is entered in the additional field next to the setting's window (e.g. add 15 minutes -> 00:15).
		Add minutes (e.g. add 15 min) 06:00 07:00 08:00 09:00 Registration time (07:18) Interval start (07:33)

Settings	Description
	Subtract minutes — The start of the interval is set to the time of the user's registration minus a defined number of minutes. The number of minutes that is subtracted from the registration time is entered in the additional field next to the setting's window (e.g. subtract 15 minutes -> 00:15).

Subtract minutes (e.g. subtract 15 min)

06:00   07:00   08:00   09:00

Registration time (07:18)
Interval start (07:03)

Settings	Description
	Round up time — The start of the interval is rounded up to the next set time period. The defined time period is entered in the additional field next to the setting's window (e.g. round up with 15 minute time periods -> 00:15).

Round up time (e.g. with 15 min periods)

06:00   07:00   08:00   09:00

Registration time (07:18)
Interval start (07:30)

Settings	Description
	Round down time — The start of the interval is rounded down to the next set time period. The defined time period is entered in the additional field next to the setting's window (e.g. round down with 15 minute time periods -> 00:15)

Round down time (e.g. with 15 min periods)

06:00   07:00   08:00   09:00

Registration time (07:14)
Interval start (07:00)

Settings	Description
Statistic	This setting sets which statistic the interval's duration and repetition will be recorded into. The default set statistics are: - *Holiday* for holidays, - *Weekend* for weekends, - *Not present* for work days (when work obligation is >0). **Example**: The Exit interval is defined from 17:00 to 22:00 and set to record the Business trip statistic. If the user registers an exit event during the duration of this interval his work day is concluded using the Business trip statistic. **WARNING!** If the statistic setting of an Exit interval is set to *Interval does not count for any statistic*, the default daily statistic will be used to record the work hours. **WARNING!** If the default daily statistic is Not present and an Entry event has been registered for the day, the *Worktime* statistic will be used at the end of the day. **WARNING!** If the default daily statistic has the Overwrite setting enabled (Settings -> Statistics 219 editor), the newly selected statistic in the interval settings will overwrite it. If the default daily statistic does not have the Overwrite setting enabled, the newly selected statistic will not be able to overwrite it.

9.3.1.3. Exit

The Exit interval type is used to record daily exit events, which mark the endings of all umbrella intervals. The daily umbrella intervals always start with an entry event and end with an exit event. Umbrella intervals contain all registered daily intervals, such as lunch brakes or business and private exits.

General settings for the time intervals are described in table *General settings for the Codeks TA time intervals* 95 . The following table contains all setting specific to Exit type time intervals.
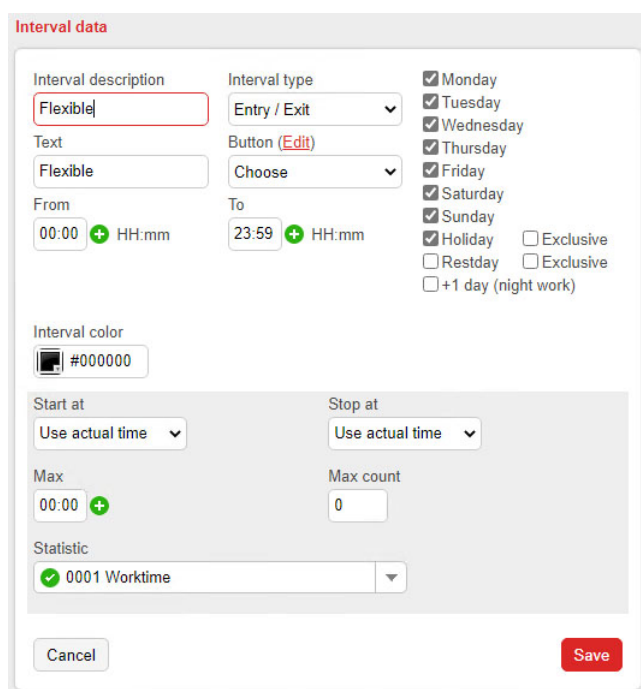
Settings	Description	
Button	A button can be assigned to interval types which enable adding a new functionality to controllers. A user accesses the functionality of the interval by selecting the appropriate button before registering at the controller. Read more about settings and the use of buttons for event registration in chapter Edit Buttons 116 .	
Stop at	Sets the end time of an interval.	
	VALUES:	
	Use actual time	The end of the interval (stop) is the time of the user's actual registration at a controller.
	Use fixed time	The end of the interval (stop) is set to a defined fixed time. The fixed time is entered in the additional field next to the setting's window (e.g. fixed time at 16:00 in the afternoon -> 16:00).
		Example: Lunch The interval Lunch is defined from 13:00 to 14:00, with the Stop at setting set to Use fixed time at 14:00. A user can take his lunch break anytime from 13:00 to 14:00, but when he returns the system will automatically mark his time of return at 14:00, regardless of his actual time of return.

Settings	Description
	Add minutes — The end of the interval is set to the time of the user's registration with an added number of additional minutes. The number of minutes that is added to the registration time is entered in the additional field next to the setting's window (e.g. add 15 minutes -> 00:15). Add minutes (e.g. add 15 min) 14:00 15:00 16:00 17:00 Registration time (15:18) Interval stop (15:33)
	Subtract minutes — The end of the interval is set to the time of the user's registration minus a defined number of minutes. The number of minutes that is subtracted from the registration time is entered in the additional field next to the setting's window (e.g. subtract 15 minutes -> 00:15). Subtract minutes (e.g. subtract 15 min) 14:00 15:00 16:00 17:00 Registration time (15:18) Interval stop (15:03)
	Round up time — The end of the interval is rounded up to the next set time period. The defined time period is entered in the additional field next to the setting's window (e.g. round up with 15 minute time periods -> 00:15). Round up time (e.g. with 15 min periods) 14:00 15:00 16:00 17:00 Registration time (15:18) Interval stop (15:30)
	Round down time — The end of the interval is rounded down to the next set time period. The defined time period is entered in the additional field next to the setting's window (e.g. round down with 15 minute time periods -> 00:15) Round down time (e.g. with 15 min periods) 14:00 15:00 16:00 17:00 Registration time (15:14) Interval stop (15:00)
Max	Sets the maximum duration of an interval. ADDITIONAL SETTINGS: **Max count** — The setting sets the maximum number of daily repetitions of a specific interval.

Settings	Description	
	Repeat lateness	The setting enables the user's tardiness (excess of the maximum interval duration) to be summed up together for all interval repetitions. (If the setting is not enabled, the user will not be able to use a certain daily interval again, if he has already exceeded the maximum interval duration time. If the setting is enabled the user will be able to use all interval repetitions, even if he has already exceeded the maximum interval duration time. The user's tardiness (excess time) is recorded to the Late statistic (default setting) or any other interval set by the *Count interval excess into* setting.)
Statistic	This setting sets which statistic the interval's duration and repetition will be recorded into. The default set statistics are: - *Holiday* for holidays, - *Weekend* for weekends, - *Not present* for work days (when work obligation is >0). **Example**: The Exit interval is defined from 17:00 to 22:00 and set to record the Business trip statistic. If the user registers an exit event during the duration of this interval his work day is concluded using the Business trip statistic. **WARNING!** If the statistic setting of an Exit interval is set to *Interval does not count for any statistic*, the default daily statistic will be used to record the work hours. **WARNING!** If the default daily statistic is Not present and an Entry event has been registered for the day, the *Worktime* statistic will be used at the end of the day. **WARNING!** If the default daily statistic has the Overwrite setting enabled (Settings -> Statistics 219 editor), the newly selected statistic in the interval settings will overwrite it. If the default daily statistic does not have the Overwrite setting enabled, the newly selected statistic will not be able to overwrite it.	

9.3.1.4. Entry / Exit
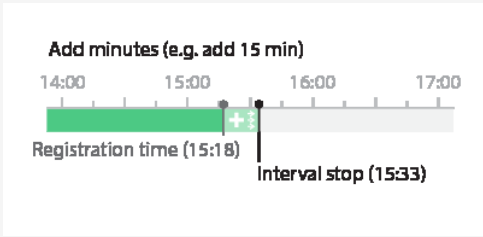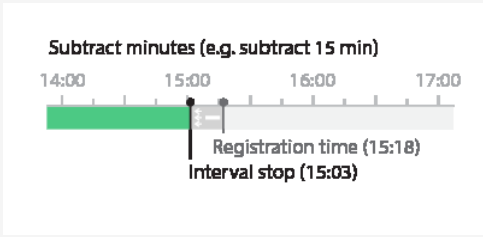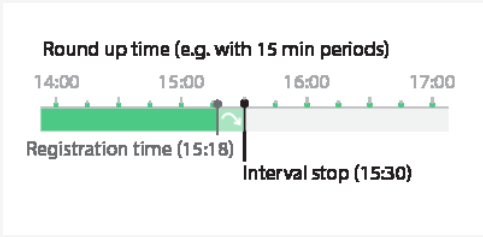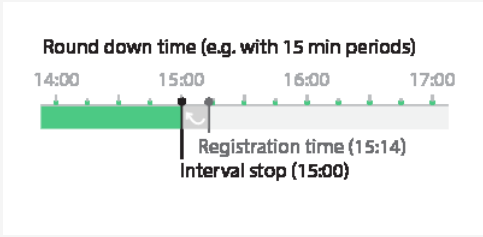
The Entry/Exit interval type is used to record entry events, which are the start of all umbrella intervals, as well as exit events, which are the end of all umbrella intervals. The Entry/Exit interval is usually used to record the start and end of a user's work hours, when that user has a flexibly defined timetable, with multiple entries and exits per day. The daily umbrella intervals always start with an entry event and end with an exit event. Umbrella intervals contain all registered daily intervals, such as lunch brakes or business and private exits.

General settings for the time intervals are described in table *General settings for the Codeks TA time intervals* 95. The following table contains all setting specific to Entry/Exit type intervals.

Settings	Description
Button	A button can be assigned to interval types which enable adding a new functionality to controllers. A user accesses the functionality of the interval by selecting the appropriate button before registering at the controller. Read more about settings and the use of buttons for event registration in chapter Edit Buttons 116.
Start at	Sets the start time of an interval.
	VALUES:
	Use actual time The start of the interval is the time of the user's actual registration at a controller.
	Use fixed time The start of the interval is set to a defined fixed time. The fixed time is entered in the additional field next to the setting's window (e.g. fixed time at 8:00 in the morning -> 08:00).

Settings	Description
	Add minutes — The start of the interval is set to the time of the user's registration with an added number of additional minutes. The number of minutes that is added to the registration time is entered in the additional field next to the setting's window (e.g. add 15 minutes -> 00:15).
	Subtract minutes — The start of the interval is set to the time of the user's registration minus a defined number of minutes. The number of minutes that is subtracted from the registration time is entered in the additional field next to the setting's window (e.g. subtract 15 minutes -> 00:15).
	Round up time — The start of the interval is rounded up to the next set time period. The defined time period is entered in the additional field next to the setting's window (e.g. round up with 15 minute time periods -> 00:15).
	Round down time — The start of the interval is rounded down to the next set time period. The defined time period is entered in the additional field next to the setting's window (e.g. round down with 15 minute time periods -> 00:15)
Stop at	Sets the end time of an interval.
	VALUES:
	Use actual time — The end of the interval (stop) is the time of the user's actual registration at a controller.
	Use fixed time — The end of the interval (stop) is set to a defined fixed time. The fixed time is entered in the additional field next to the setting's window (e.g. fixed time at 16:00 in the afternoon -> 16:00).
	Example: Lunch The interval Lunch is defined from 13:00 to 14:00, with the Stop at setting set to Use fixed time at 14:00. A user can take his lunch break anytime from 13:00 to 14:00, but when he returns the system will automatically mark his time of return at 14:00, regardless of his actual time of return.

Settings	Description	
	Add minutes	The end of the interval is set to the time of the user's registration with an added number of additional minutes. The number of minutes that is added to the registration time is entered in the additional field next to the setting's window (e.g. add 15 minutes -> 00:15).
		Add minutes (e.g. add 15 min)
		14:00 15:00 16:00 17:00
		Registration time (15:18)
		Interval stop (15:33)
	Subtract minutes	The end of the interval is set to the time of the user's registration minus a defined number of minutes. The number of minutes that is subtracted from the registration time is entered in the additional field next to the setting's window (e.g. subtract 15 minutes -> 00:15).
		Subtract minutes (e.g. subtract 15 min)
		14:00 15:00 16:00 17:00
		Registration time (15:18)
		Interval stop (15:03)
	Round up time	The end of the interval is rounded up to the next set time period. The defined time period is entered in the additional field next to the setting's window (e.g. round up with 15 minute time periods -> 00:15).
		Round up time (e.g. with 15 min periods)
		14:00 15:00 16:00 17:00
		Registration time (15:18)
		Interval stop (15:30)
	Round down time	The end of the interval is rounded down to the next set time period. The defined time period is entered in the additional field next to the setting's window (e.g. round down with 15 minute time periods -> 00:15)
		Round down time (e.g. with 15 min periods)
		14:00 15:00 16:00 17:00
		Registration time (15:14)
		Interval stop (15:00)
Max	Sets the maximum duration of an interval.	
	ADDITIONAL SETTINGS:	
	Max count	The setting sets the maximum number of daily repetitions of a specific interval.

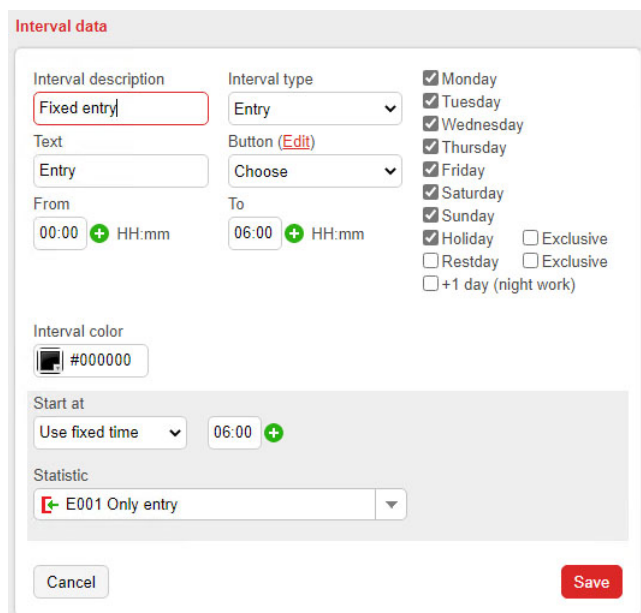| Settings	Description	
	Repeat lateness	The setting enables the user's tardiness (excess of the maximum interval duration) to be summed up together for all interval repetitions. (If the setting is not enabled, the user will not be able to use a certain daily interval again, if he has already exceeded the maximum interval duration time. If the setting is enabled the user will be able to use all interval repetitions, even if he has already exceeded the maximum interval duration time. The user's tardiness (excess time) is recorded to the Late statistic (default setting) or any other interval set by the *Count interval excess into* setting.)
Statistic	This setting sets which statistic the interval's duration and repetition will be recorded into. The default set statistics are: - *Holiday* for holidays, - *Weekend* for weekends, - *Not present* for work days (when work obligation is >0). **Example**: The Exit interval is defined from 17:00 to 22:00 and set to record the Business trip statistic. If the user registers an exit event during the duration of this interval his work day is concluded using the Business trip statistic. **WARNING!** If the statistic setting of an Exit interval is set to *Interval does not count for any statistic*, the default daily statistic will be used to record the work hours. **WARNING!** If the default daily statistic is Not present and an Entry event has been registered for the day, the *Worktime* statistic will be used at the end of the day. **WARNING!** If the default daily statistic has the Overwrite setting enabled (Settings -> Statistics 219 editor), the newly selected statistic in the interval settings will overwrite it. If the default daily statistic does not have the Overwrite setting enabled, the newly selected statistic will not be able to overwrite it.	

9.3.1.5. Info

The Info type interval is used to enable the additional functionality of displaying the user's data (presence, saldo and available leave days) on the controller.

General settings for the time intervals are described in table *General settings for the Codeks TA time intervals* 95 . The following table contains all setting specific to Info type time intervals.

Settings	Description
Button	A button can be assigned to interval types which enable adding a new functionality to controllers. A user accesses the functionality of the interval by selecting the appropriate button before registering at the controller. Read more about settings and the use of buttons for event registration in chapter Edit Buttons 116 .
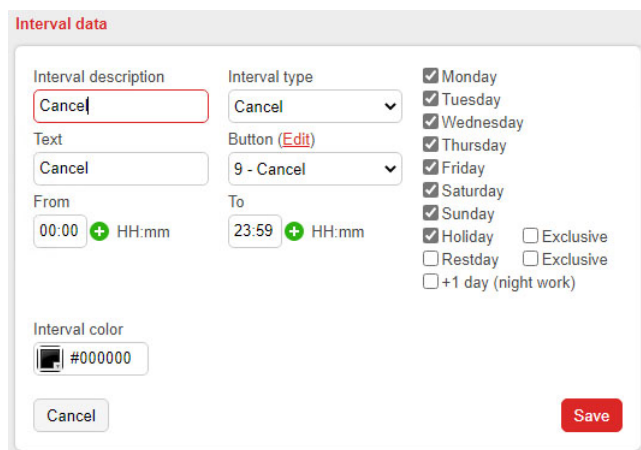
Use of Info functionality:

1. To display the user's information on the controller a user must first select the appropriate Info button.

2. After selecting the Info button, the user proceeds by registering at the controller.

3. The controller will display the user's presence status, saldo and his currently available leave days.

Read more about settings and the use of buttons for event registration in chapter Edit Buttons 116 .

9.3.1.6. Cancel

The Cancel interval enables the additional functionality of canceling the last registered event on the controller. The functionality of the Cancel interval is used, when a user registers an incorrect event at the controller, e.g. the user selected the Business instead of the Private button.

General settings for the time intervals are described in table *General settings for the Codeks TA time intervals* 95 . The following table contains all setting specific to Cancel type time intervals.
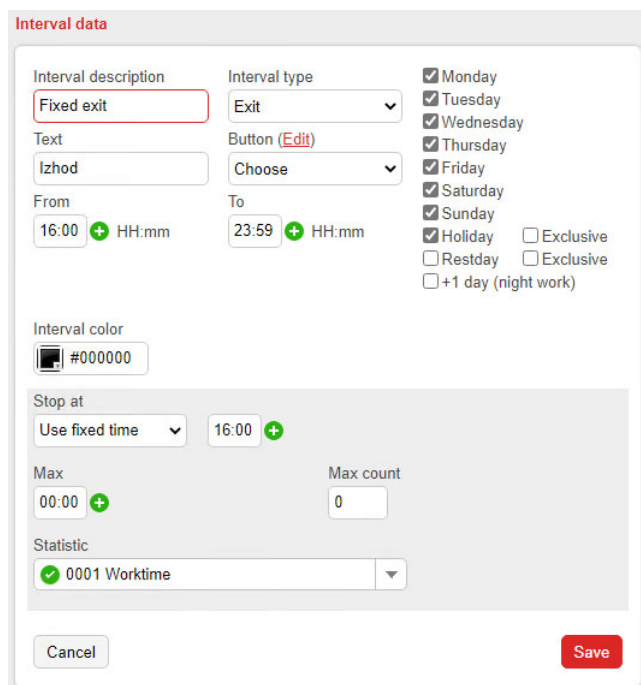
Settings	Description
Button	A button can be assigned to interval types which enable adding a new functionality to controllers. A user accesses the functionality of the interval by selecting the appropriate button before registering at the controller. Read more about settings and the use of buttons for event registration in chapter Edit Buttons 116 .

Use of Cancel functionality on the controller:

> **ATTENTION!**
> **A user can only use the Cancel functionality on the controller within 30 seconds of the incorrectly registered event.** After the 30 seconds have expired the incorrectly registered event can no longer be canceled using the controller and must instead be manually corrected in the Time attendance editor.

1. To cancel an incorrectly registered event on the controller a user must first select the appropriate Cancel button, assigned to the Cancel interval.

2. After selecting the Cancel button, the user proceeds by registering at the controller.

3. The controller will display a message that the last event was successfully canceled.

Read more about settings and the use of buttons for event registration in chapter Edit Buttons 116 .

9.3.1.7. Access

The Access interval enables a user access to specific passages during the duration of the interval (defined by settings From and To).

The settings for access intervals are:

Settings	Description
Interval description	The name of the interval. The name should be suitably descriptive to enable easier recognition in the list of intervals.
Text	The text that will be displayed on the controller when a user uses a controller.
From	The start of the interval duration.
To	The end of the interval duration. The end time must always be greater than the interval start time.
Days of the week	Sets the day of the week, to which this interval will apply. The settings **Holiday** and **Restday** enable setting intervals for special days. The additional setting **Exclusive** can be used to set intervals for combination days, for example, an interval is only valid for weekdays that are at the same time also a holiday. The **+1 day (night work)** setting defines how the work hours after midnight in the night shift will be recorded. By default, this setting is not enabled. If the setting is not enabled the work hours after midnight will be recorded in the new day, regardless of the exact time the worker clocked his arrival at work (Entry). If the setting is enabled the work hours after midnight will be recorded in the previous day if the worker has clocked his arrival at work (Entry) on this day.
Interval color	Sets the color the interval will be displayed with when printing the timetable.

9.3.2. Add Existing Time Interval

On the list of timetables select the timetable and click the *plus* icon (✚) next to the time interval you wish to add to this timetable. Time interval will immediately appear on the List of intervals in the selected timetable.
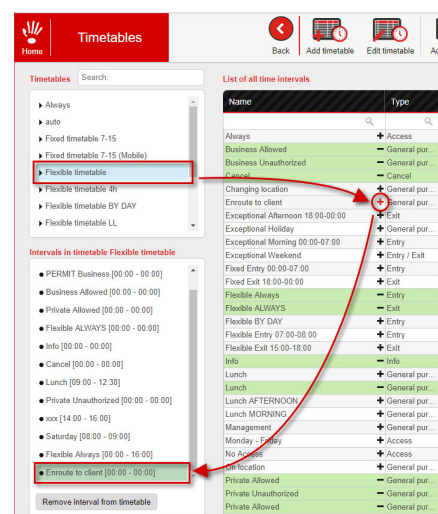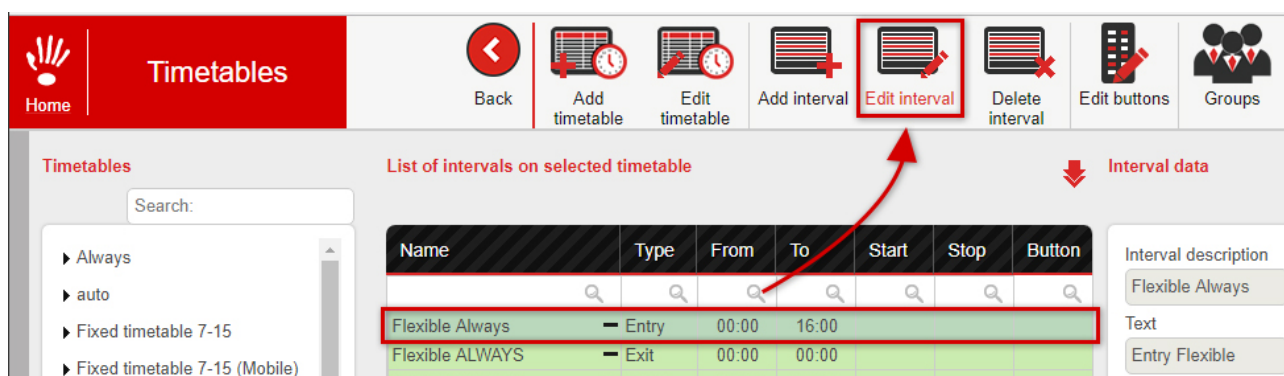
You can also add time interval to the timetable with right-click on time interval. First select the timetable, then right-click on the time interval you wish to add to the selected timetable and select option *Add interval to timetable.* Time interval will immediately appear on the List of intervals in the selected timetable. This option is shown in the picture on the next page.
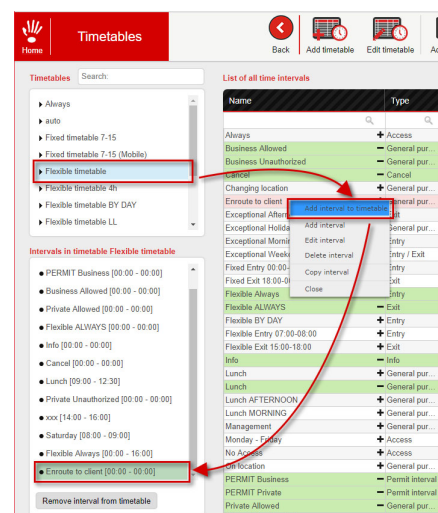
9.3.3. Edit Time Interval
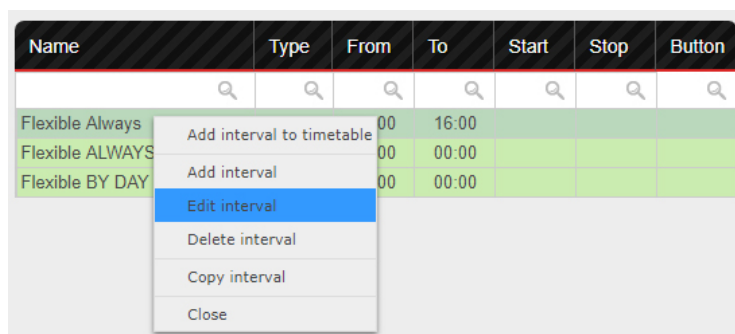
If you want to edit time intervals, first select the time interval in the *List of all time intervals* table and click *Edit interval* icon in the upper menu.

On the right side of the editor the *Interval data* window will enable. In this window you can edit interval's data. Window is the same as for adding new intervals 94 . Change the data in accordance with need and save changes with the click on the *Save* button.

Window for editing interval data will also enable by double-clicking on a certain time interval or you can right-click on the time interval and select *Edit interval* option on the menu.

ATTENTION!
The same time intervals can be simultaneously assigned to several timetables. By making changes to a selected time interval you are affecting all the timetables the time interval is assigned to.

9.3.4. Remove Time Interval from Timetable

If you wish to remove a certain interval form the timetable, select the interval in the *Intervals in timetable* list and click *Remove interval from timetable* button, located at the bottom of the list. Interval will be removed from the timetable, but it will still be visible in the *All time intervals* list and can be used with other timetables. You can also remove interval from the timetable by selecting the *Remove interval from timetable* option in the right-click menu or clicking on the minus (━) icon next to the interval's name in the *List of all time intervals*.

9.3.5. Delete Time Interval

If you want to delete time intervals, first select the time interval in the *List of all time intervals* table and click *Delete interval* icon in the upper menu. New window pops up in which you need to confirm deletion of the interval. If the time interval was assigned to one or more timetables, the application will inform you with a warning.
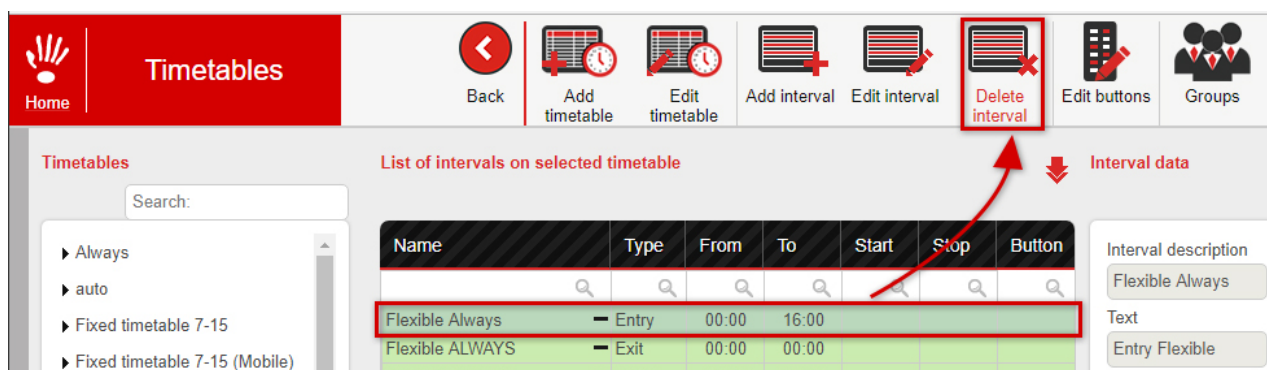
You can also right-click on the interval and select *Delete interval* option on the menu. Interval will be permanently deleted from the *List of all time intervals* table and you will not be able to use it anymore.
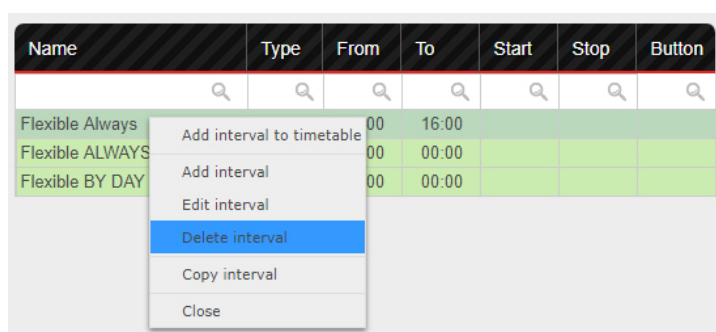
9.3.6. Copy Time Interval

A new interval can be added to the system by copying an existing one. To copy an existing interval, right-click on the interval and select *Copy interval* option on the menu. You can change the interval's data by editing[113] the interval.
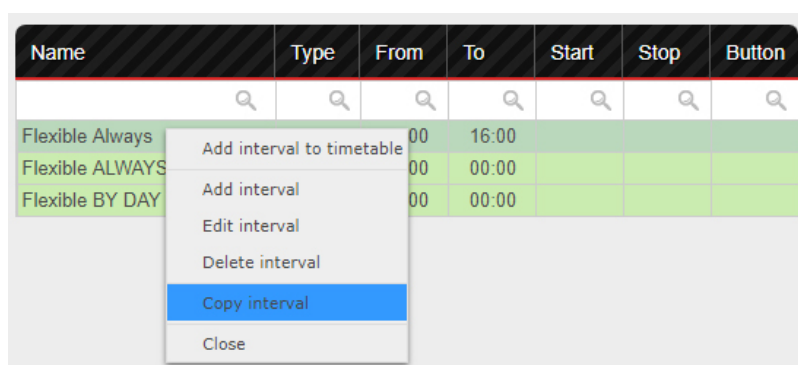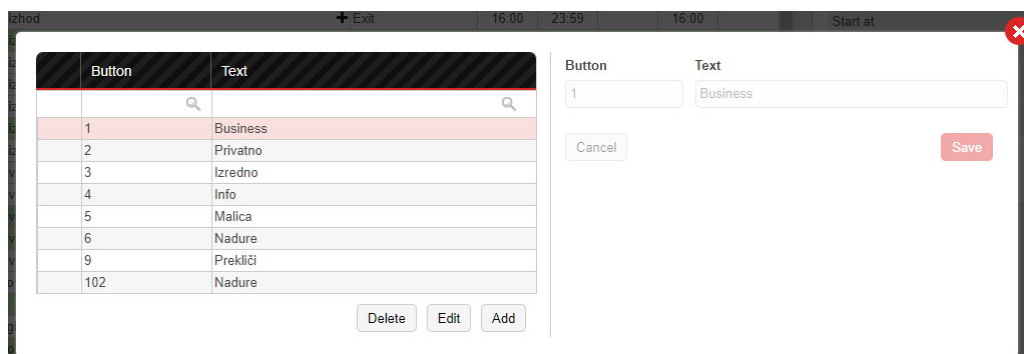
9.3.7. Edit Buttons

With buttons you can determine the number that the user must press before registering on the controller in a certain interval. If you want to edit buttons select *Edit buttons* icon on the menu.
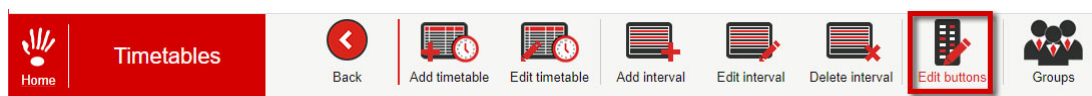
With buttons *Add*, *Edit* and *Delete* you can work with existing and new added buttons. Buttons which are used at a certain interval cannot be deleted.

9.4. Intervals in Timetable

Intervals in a certain timetable determine times of arrivals to work, time for lunch, business hours ... Intervals can be moved up and down the list.

To move interval up or down the list, right-click on the interval and select wanted action on the menu.
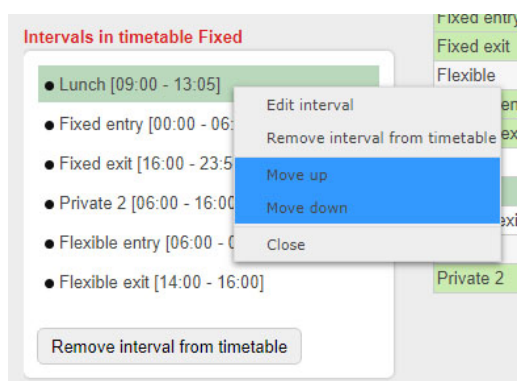
You can also use drag&drop to move intervals. Select the interval, drag it up or down the list and drop it into desired place. Yellow line marks the place of the drop.
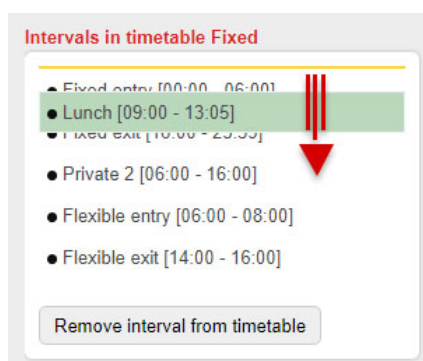
9.5. Edit Timetable

On the list of timetables select the timetable you wish to edit. Click the *Edit timetable* icon in the upper menu, edit timetable's name and save the changes. You can also edit the timetable with double click on it or through the menu which appears with the right-click on the timetable.
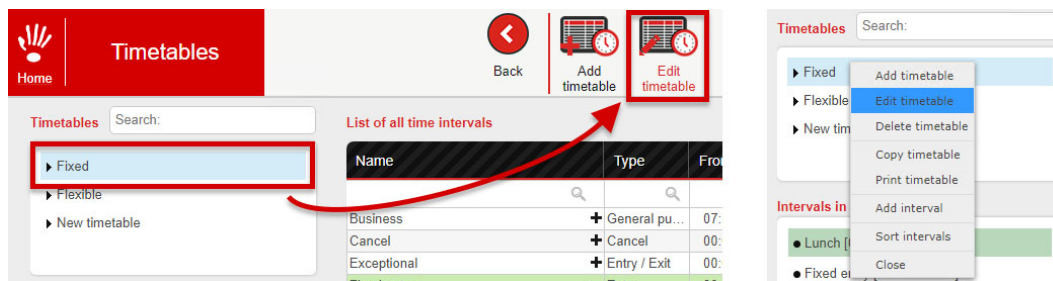
9.6. Delete Timetable

You can delete timetable in Timetables Editor. Right-click on the timetable you wish to delete and select *Delete timetable* option on the menu.
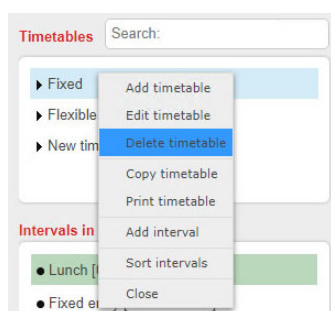
9.7. Copy Timetable

A new timetable can be added to the system by copying an existing one. To copy an existing timetable, right-click on the timetable and select *Copy timetable* option on the menu. You can change the timetable's data by <u>editing</u> [118] the timetable and add or remove intervals in the timetable.
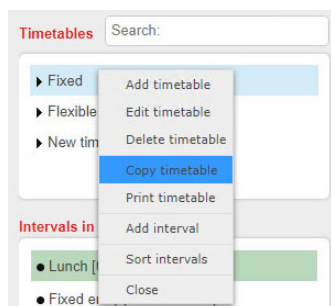
9.8. Print Timetable

In the Timetables Editor right-click on the timetable you wish to print and select *Print timetable* option.
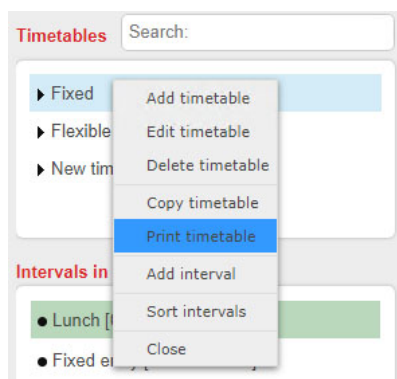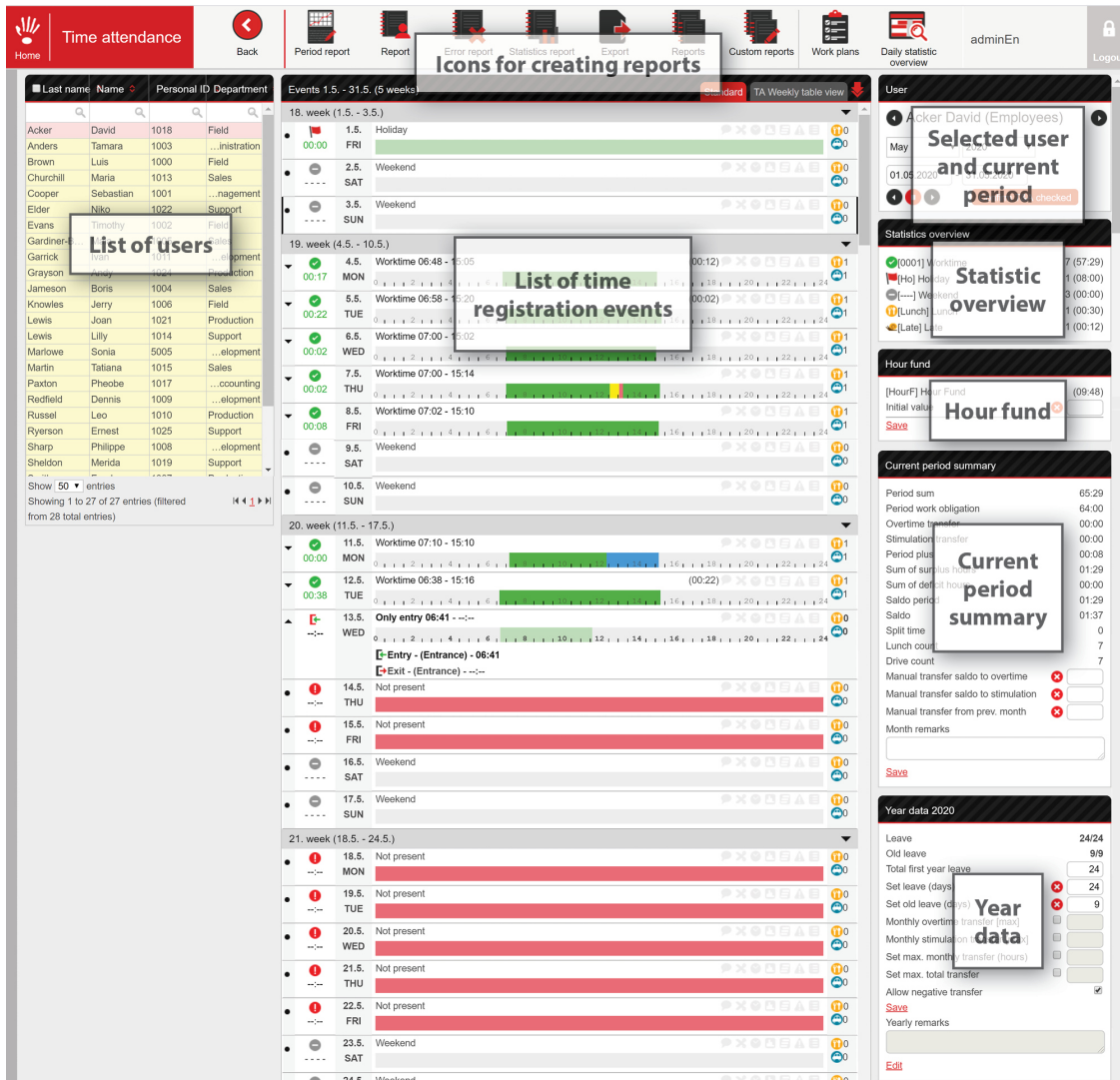
This sends a request for PDF document with timetable's data to the server. In a few seconds the browser offers you to save or print PDF report. You can open document immediately or you can save it for further use.

Picture below shows the appearance of printout.

10. Time Attendance

In the **Time attendance** editor, you can view and edit the employees' time registration as well as set additional settings which affect the recording of their work hours.

List of users	The list contains all users who clock their time registration. By right-clicking on a selected user or multiple selected users you can perform different functions or recalculations.
Icons for creating reports	By clicking different report icons you can create reports for all currently selected users in the list of users.
List of time registration events	The main part of the screen displays the daily time registration events of the selected user. The timeline and the icons indicating manual corrections enable quick overview and easy search for errors and anomalies in the time registration.
Selected user and current period	Displays the currently selected user and enables navigation between periods.
Statistic overview	Overview of all statistics and their values in the current period.
Hour fund	Display of the value of the hour fund and the possibility of setting the initial value of the hour fund for the selected user. The section is shown only when using the hour fund 234 functionality. You can read more about managing the hour fund in the *Time Registration* editor in chapter section Hour funds 155.
Current period summary	Saldo and hour transfer summary for the selected user in the current period.
Year data	Yearly data and settings for the time registration of the selected user.

10.1. Selecting the user and period for display
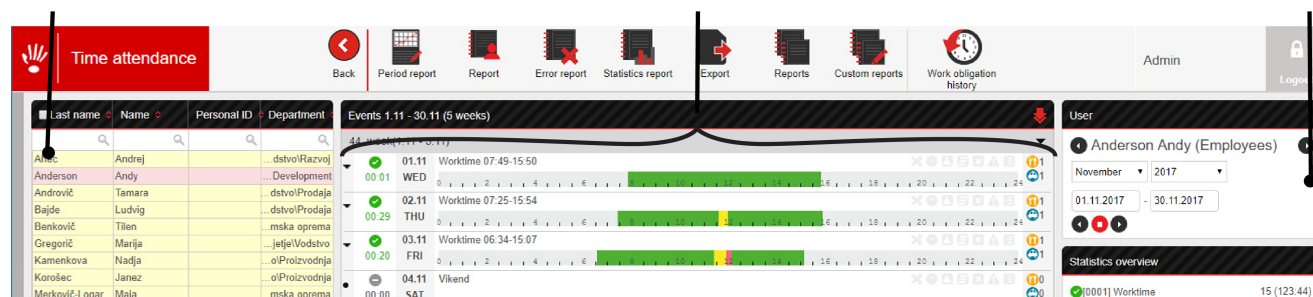
In the *Time attendance* editor you can **view and edit the time registration data of each individual user (employee).**

In the *Selected user and current period section*, **the time registration groups which define and affect the selected user's time registration are displayed next to the name of the user**.

The *List of time registration events*, in the center of the editor, displays the payroll period, which by default is set to be from the first to the last day of the month. This default period presents the basis for calculating the work obligation, the number of clocked-in hours, overtime hours, number of lunches and the transport costs.

Here, you can also **set a custom period** to be displayed in the *List of time registration events*.

Select the user to be viewed from the *List of users*.

10.2. Events Review

In the central part of the *Time attendance* editor, you will find the *List of time registration events* displayed by days.

By default, the daily displays are collapsed and thus only display the timeline (the graphic representation of the daily intervals) and the very basic information about the day.
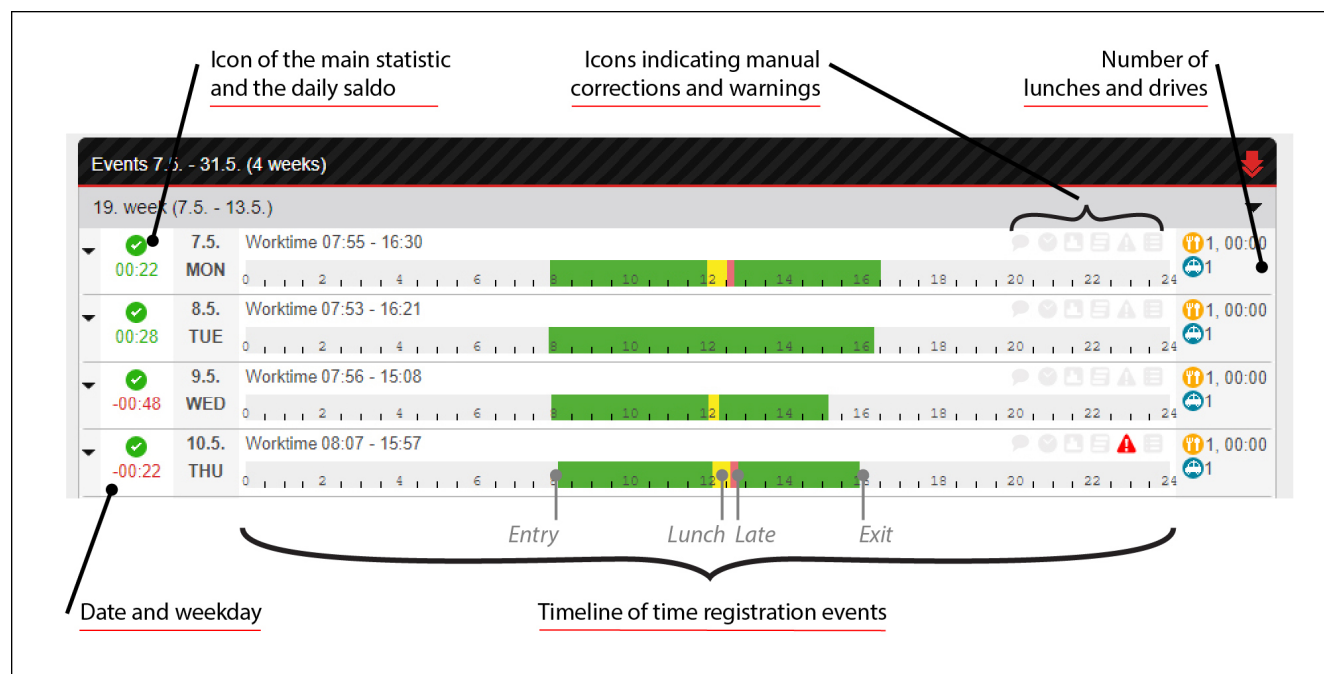
By clicking the arrow on the left side of the daily display you can expand the day and display the details of the registered intervals.
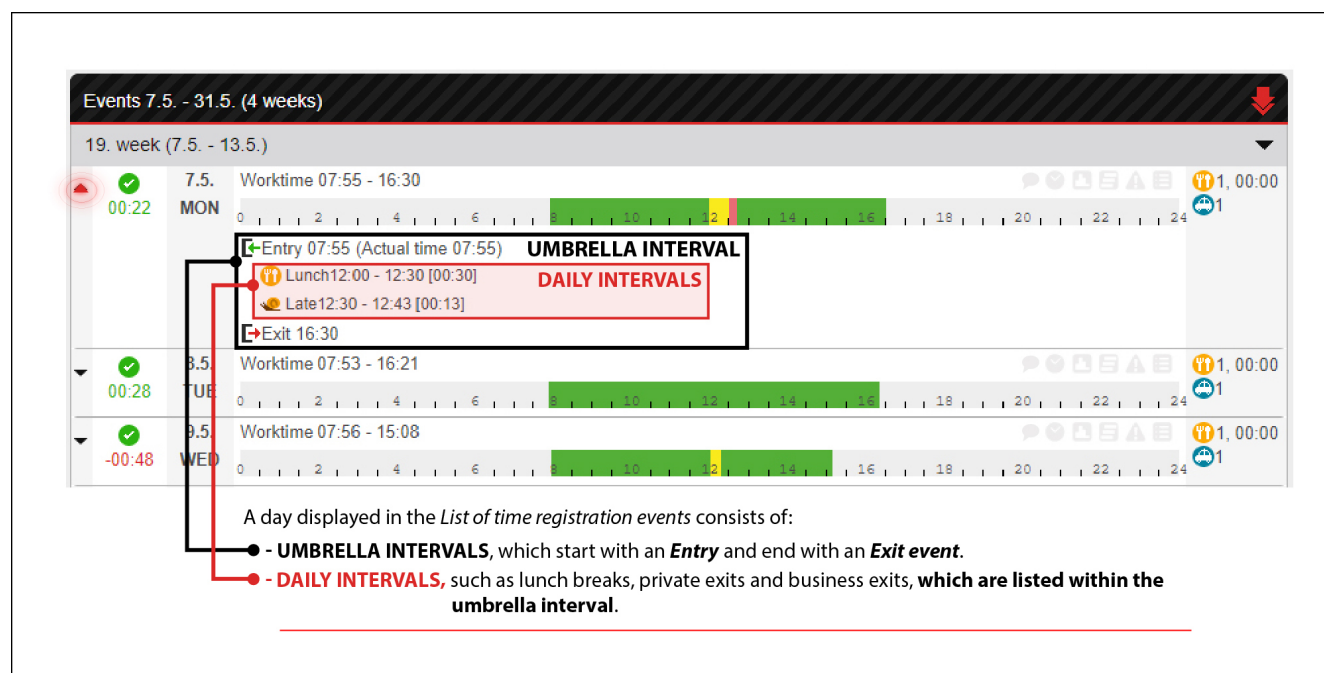
A new event is recorded every time a user registers at *a time attendance controller*. The type of event that will be registered depends on the *Timetable* for time attendance which is assigned to the employee (read more in chapter).

In the upper right corner of the daily display, you will find **correction icons**, which indicate that different manual corrections were made to the daily entry, and **warning icons**, which display warnings about errors in the time registration:

	Note	The icon will be colored red if a note was added for the selected day. By clicking on the icon you can open a pop-up window where a user, head of department or an administrator can write a note for the selected day.
	Entry/exit time correction	The icon will be colored red if corrections were made to the *Entry* or *Exit* time (the start and end of the daily umbrella interval).
	Statistic correction	The icon will be colored red if a statistic in the day was corrected or added.
	Interval correction	The icon will be colored red if an interval in the day was corrected.
	Registration error	The icon will be colored red if an error was registered in the day.
	Show events	The icon will be colored red if some of the registered events, which are used to calculate the intervals of the user's time attendance, were marked to be ignored. By clicking on the icon you can open a window which will display all the registered time attendance events in the selected day.

The editing of daily events in the *Time attendance* editor is described in more detail in the following chapters (chapter).

Examples of daily display:

- **Regular workday** - the display of a typical workday
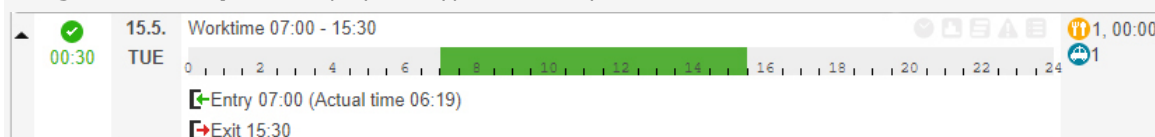
- **Leave** - the display of a leave day
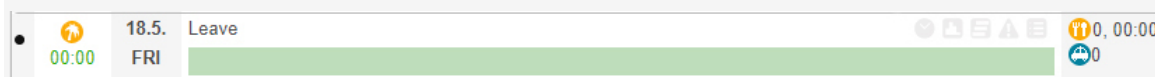
- **Additional statistic (Sickness 4 hours)** - Display of a day, when a user worked for four hours, then became ill, and was subsequently given an additional 4 hours of a sick leave statistic (*Sickness 4 hours*) to fully cover his daily work obligation
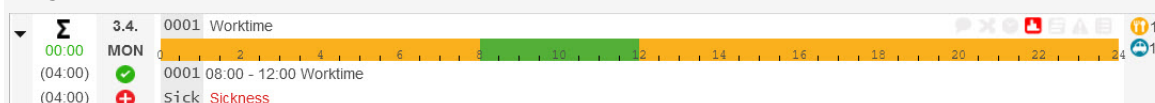
- **Multiple entry-exits per day** - display of a typical workday of a user with a flexible timetable

Examples of daily display:

- **Night work** - display of night-shift work on the timeline
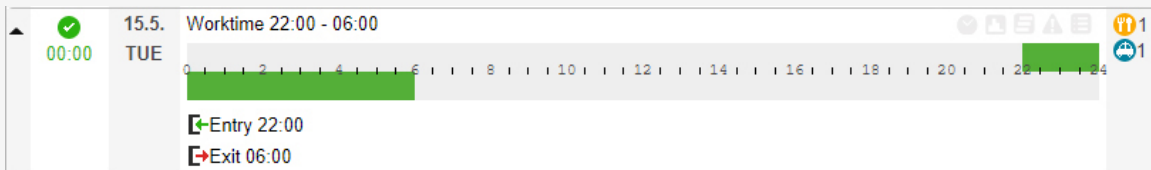
- **Note** - display of adding a note for the selected day
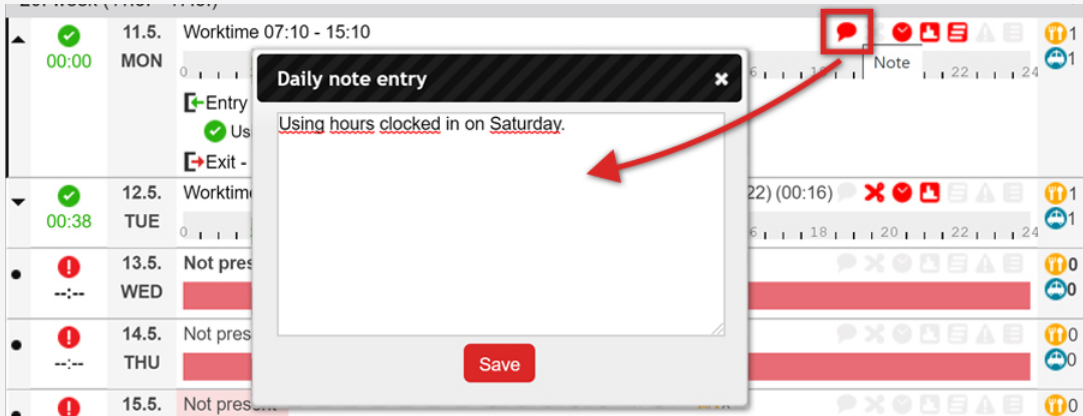
10.3. Current period summary

When displaying a payroll period (by default defined from the first to the last day of the month) in the *Time attendance* editor the **Current period summary** section will display different sums and hour transfers for the currently selected user.

In the **Current period summary** section you can view and edit:

Field	Description
Period sum	The total number of hours recorded in the current period, i.e. work hours as well as absence hours.
Period work obligation	The number of hours the employee is obligated to clock in the current period.
Work obligation for selected period	The number of hours the employee is obligated to work up to the end of the period displayed in the *Time attendance* editor.
Overtime transfer	The number of hours, clocked during the current period, which will be recorded as overtime hours. (The value is dependent on the *Manual transfer saldo to overtime* and *Monthly overtime transfer [max]* settings.)
Stimulation transfer	The number of hours, clocked during the current period, which will be recorded as hours for stimulation. (The value is dependent on the *Manual transfer saldo to stimulation* and *Monthly stimulation transfer [max]* settings.)
Period plus	The number of saldo hours transfered from the previous period. (The value is dependent on the *Manual transfer from prev. month*, *Set max. monthly transfer (hours)* and *Set max. total transfer* settings.)
Sum of surplus hours	The total value of all excess hours in the period.
Sum of deficit hours	Total value of all hourly deficits in the period.
Saldo period	The (positive or negative) difference between the work obligation and clocked work hours for the current period.
Saldo	The total value of saldo including the values of the *Saldo period* and *Period plus*.
Split time	Number of days when more than one entry and exit was registered.
Lunch count	The number of (paid) lunches that the user is entitled to in the current period.
Drive count	The number of (paid) drives that the user is entitled to in the current period.

Field	Description
Manual transfer Saldo to overtime	The number of hours (from the value of saldo) that will be manually transferred to overtime in the current period. Enter the number of hours you wish to transfer and click *Save*. The value of saldo will be reduced by the transferred number of hours and the transferred hours will be displayed in the *Overtime transfer* field.
Manual transfer Saldo to stimulation	The number of hours (from the value of saldo) that will be manually transferred to stimulation in the current period. Enter the number of hours you wish to transfer and click *Save*. The value of saldo will be reduced by the transferred number of hours and the transferred hours will be displayed in the *Stimulation transfer* field.
Manual transfer from previous period	The number of saldo hours that will be manually transferred from the previous period. The transferred value will be displayed in the *Period plus* field.
Month remarks	Here you can add a comment to the time registration (optional).

1. To edit the *Manual transfers* **enter the desired values into the appropriate field** in the *Current period summary* section.

2. After editing, you must always click the ***Save*** button to save the changes.

3. You can **cancel** the manually entered values by **clicking the red x-mark** or by **disabling the checkbox** next to the appropriate field.

10.4. Edit Year

In the *Year data* section, you can define and edit the annual data and settings for each user, e.g. the number of days of annual leave and automatic transfer of a number of saldo hours to overtime.

> **ATTENTION!**
> Changing or canceling the Year data in the current month affects the calculation of work hours in the following as well as in the previous months. Please consult your system administrator before changing or canceling any existing year data.

Year data	Description
Leave	Displays how many days of leave the user still has available from his total yearly number of leave days.
Old leave	Displays how many days of old leave the user still has available from his total yearly number of old leave days.
Total first year leave	Enter the total number of leave days assigned to a user in his first year of employment in your company (also enter the total number of leave days for all uses in the first year of using the Codeks application).
Set leave (days)	Enter the number of leave days the user still has available at the start of registration. **NOTE** For a new employee in your company, enter the number of available leave days in his first year of employment in your company. **NOTE** When entering the leave data for employees in the first year of using the Codeks application, enter the number of still available leave days for each employee. Enter the total number of leave days for each employee in the Set leave (days) filed.
Set old leave (days)	Enter the number of still available old leave days for the first year of using the Codeks application. **NOTE** At the start of a new year, the number of available leave days will be automatically converted to available old leave days.
Monthly overtime transfer [max]	Enter the maximum number of overtime hours that can be transferred to the next month for a user.
Monthly stimulation transfer [max]	Enter the maximum number of stimulation hours that can be transferred to the next month for a user.

Year data	Description
Set max. monthly transfer (hours)	Enter the maximum number of saldo hours that can be automatically transferred from the current to the next month for a user.
Set max. total transfer	Enter the maximum number of saldo hours that can be automatically transferred from all previous months to the next month.
Allow negative transfer	Enable this field if you would like to enable the transfer of negative saldo hours into the next months.
Allow old leave use after validity expires	If this setting is enabled, the user will be able to use their old leave days even after their validity has expired (i.e., in the second half of the year).
Yearly remarks	In this window, you can write a yearly remark for a specific user.

1. To edit the *Year data* **enter the desired values into the appropriate field**.

2. After editing, you must always click the ***Save*** button to save the changes.

3. You can **cancel** the manually entered values **by clicking the red x-mark** or by **disabling the checkbox** next to the appropriate field.

10.5. Edit Day

You can edit the day or individual daily intervals in the *Time attendance* editor by either double-clicking on the day or a selected daily interval, or by using the right-click menu.
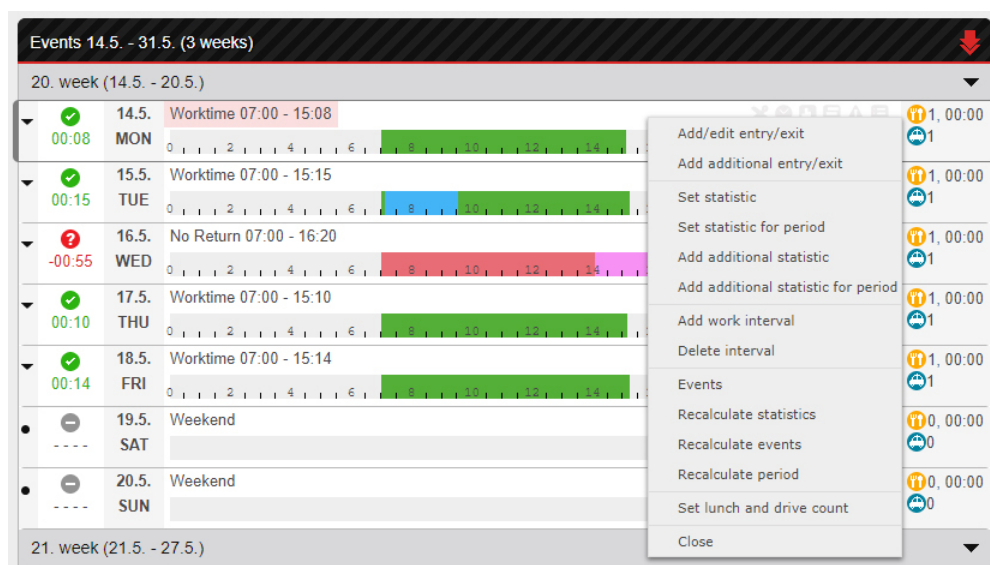
Through the right-click menu you can access the following tools and functions:

Day editing	Description
Add/edit entry/exit	Enables adding and editing of the entry and exit times as well as editing the daily statistic.
Add additional entry/exit	Enables adding an additional entry and exit as well as editing of the secondary daily statistic.
Set statistic	Set statistic for a selected day or interval.
Statistic for period	Set a statistic for an extended time period.
Add additional statistic	Adding an additional statistic to a selected day.
Add additional statistic for period	Adding an additional statistic to a selected period.
Add work interval	Adding a new daily interval to a day or an umbrella interval. You can only select an existing *General purpose* 96 type interval.
Delete interval	Delete existing umbrella or daily intervals.
Delete entry Delete exit	Delete entry or exit events. The function is especially useful when an unknown time registration error has occurred. The entry or exit time can be left undefined.
Events	Display of actual events, registered on the controller, which are used to calculate the intervals of the user's time attendance.
Recalculate statistics	This function enables the recalculation of daily statistics (as well as the daily saldo) and does <u>not</u> delete the manual changes made to the selected time period. Use this function when: adding a new statistic or editing an existing one (in the *Statistics* editor), adding new time intervals or changing the work obligation of the used timetable (in the *Timetables* editor), changing the group and user rights (in the *Groups* editor), etc.
Recalculate events	This function recalculates the intervals in the *Time attendance* editor based on the actual registered events. This process deletes (undoes) all the manual changes made to the day.
Recalculate period	This function enables the recalculation of multiple (consecutive) days for a selected user: • If the **Reset manual changes** setting is enabled, this function recalculates the intervals based on the actual registered events and deletes the all manual changes. • If the **Reset manual changes** setting is <u>not</u> enabled, this setting will recalculate the daily statistics, daily saldo and daily intervals, without deleting manual changes.
Set lunch and drive count	This function enables you to set the lunch and drive count manually.

10.5.1. Add/Edit Entry/Exit

If a user has forgotten to register at the controller or if he has registered incorrectly, you can manually edit his day, by setting his entry and exit time.

1. Right-click on the selected day to display the edit menu and select ***Add/edit entry/exit***.
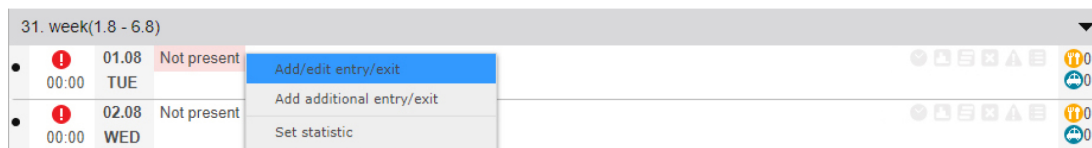
2. In the new pop-up window select *the name of the event*, *the passage*, and *statistic for the day*, then ***set the entry and exit time***.

Click ***Save***.

Entry	The text that will be displayed next to the entry event in the *List of time registration events* in the *Time attendance* editor.	Exit	The text that will be displayed next to the exit event in the *List of time registration events* in the *Time attendance* editor.
Passage	The location where the entry (start of the umbrella interval) should be registered.	**Passage**	The location where the exit (end of the umbrella interval) should be registered.
Statistic	The main statistic, which will be set for the day.	**Add automatic intervals**	If this setting is enabled all *Automatic insert* intervals the user's timetable may contain will also be added to the day.
From	The date and the exact time of the start of the umbrella interval.	**To**	The date and the exact time of the end of the umbrella interval.
Entry error	You can manually mark an error at the start of the interval.	**Exit error**	You can manually mark an error at the end of the interval.
Events	This link shows all the events the user has registered on different controllers in a selected day.		

3. The edited daily events will be colored red.

Additionally, the correction of time icon (🔴) and the correction of statistic icon (🔴) will also color red, marking that the day had been manually edited.

You can access the edit day pop-up window at any time by double-clicking the selected day.
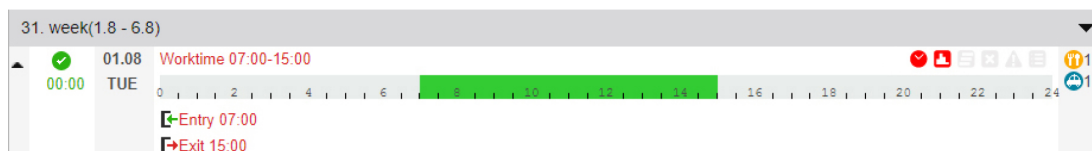
NOTE
Entry/Exit can also be set for **multiple users simultaneously**. Select multiple users on the *List of users* by holding down SHIFT or CTRL key on the keyboard, then right-click and select *Add/edit entry/exit for period* from the menu. In the new pop-up window, enter the necessary data and click *Save*. Before saving the application will warn you that you are about to add a new interval to multiple users.

10.5.2. Add additional entry/exit

You can also manually set additional entries and exits to users, for example, if a user returned to work in the afternoon but was unable to register his hours.

1. *Right-click on the selected day* to display the edit menu and select ***Add additional entry/exit***.
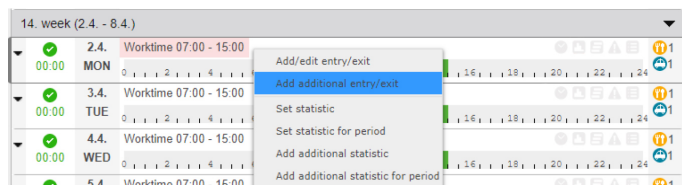
2. In the new pop-up window *select the name of the event*, *the passage*, and *statistic*, then **set the entry and exit time**. Click **Save**.

Entry	The text that will be displayed next to the entry event in the *List of time registration events* in the *Time attendance* editor.	Exit	The text that will be displayed next to the exit event in the *List of time registration events* in the *Time attendance* editor.
Passage	The location where the entry (start of the umbrella interval) should be registered.	Passage	The location where the exit (end of the umbrella interval) should be registered.
Statistic	The main statistic, which will be set for the day.	Add automatic intervals	If this setting is enabled all *Automatic insert* intervals the user's timetable may contain will also be added to the day.
From	The date and the exact time of the start of the umbrella interval.	To	The date and the exact time of the end of the umbrella interval.
Entry error	You can manually mark an error at the start of the interval.	Exit error	You can manually mark an error at the end of the interval.
Events	This link shows all the events the user has registered on different controllers in a selected day.		

3. The added daily events will be colored red.

Additionally, the correction of time icon (⬤) and the correction of statistic icon (🔻) will also color red, marking that the day had been manually edited.

You can access the edit day pop-up window at any time by double-clicking the selected day.
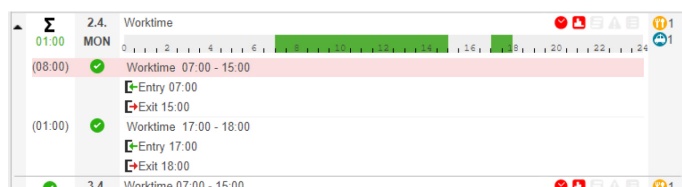
NOTE
An Additional entry/exit can also be set for **multiple users simultaneously**. Select multiple users on the *List of users* by holding down SHIFT or CTRL key on the keyboard, then right-click and select *Add additional entry/exit for period* from the menu. In the new pop-up window, enter the necessary data and click *Save*. Before saving the application will warn you that you are about to add a new interval to multiple users.

10.5.3. Set Statistic

Use this function when you want to set a daily statistic for a single day (e.g. holiday leave or sick leave).

EXAMPLE 1 - Setting statistic LEAVE for a single day

1. Right-click on the selected day to display the edit menu and select *Set statistic*.
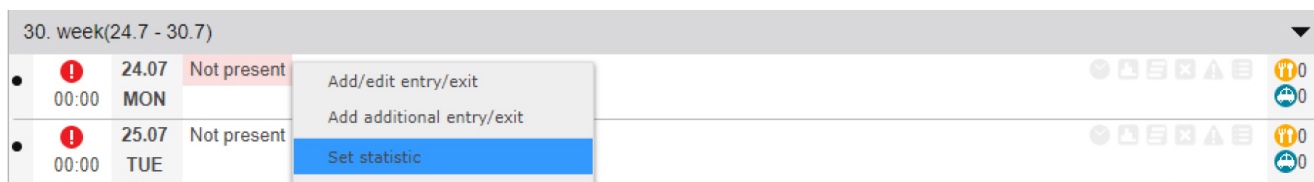
2. In the new pop-up window *select the statistic* you wish to set and click *Save*.

3. The selected statistic will be set for the day and will be colored red. Additionally, the correction of statistic icon (⬛) will also color red, marking that the statistic had been manually added.

EXAMPLE 2 - Setting statistic SICK for a single day

1. Right-click on the selected day to display the edit menu and select *Set statistic*.
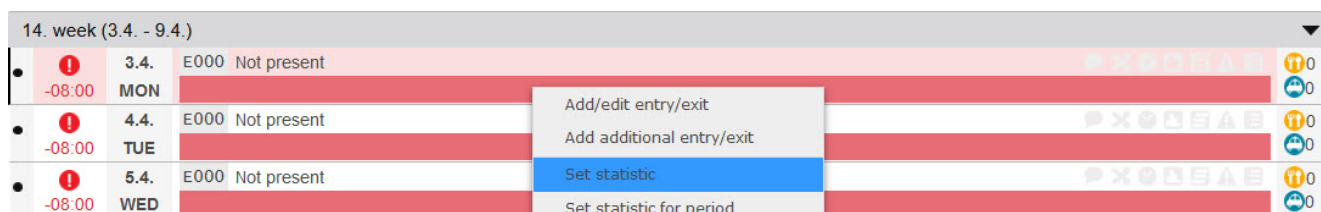
2. In the new pop-up window *select the statistic which indicates sick leave.* The *Cover work obligation* setting should be enabled. This will fully cover daily work obligation of the employee. After making the appropriate entry, click *Save*.
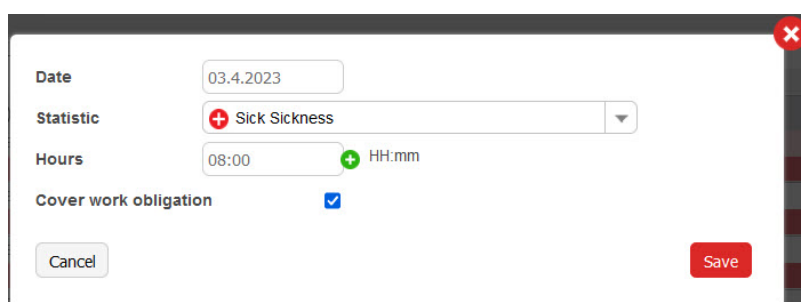
3. The selected statistic will be set for the day and will be colored red. Additionally, the correction of statistic icon (🔴) will also color red, marking that the statistic had been manually added.

NOTE
You can also set a statistic for **multiple users simultaneously**. Select multiple users on the *List of users* by holding down SHIFT or CTRL key on the keyboard, then right-click and select *Set statistic for period* from the menu. In the new pop-up window, enter the necessary data and click *Save*. Before saving the application will warn you that you are about to add a new statistic to multiple users.

10.5.4. Set Statistic for Period
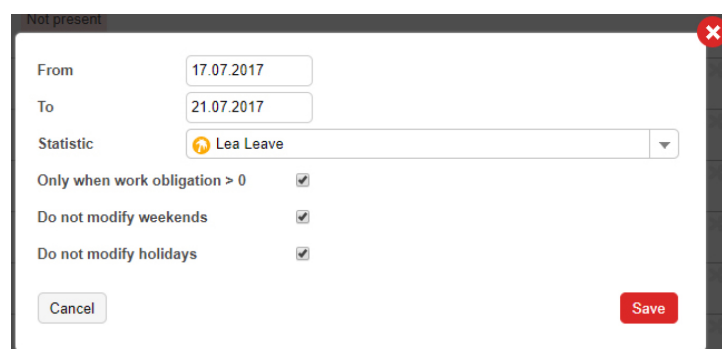
Use this function when you want to set a daily statistic (e.g. holiday leave or sick leave) for multiple consecutive days.

EXAMPLE 1 - Setting statistic LEAVE for multiple consecutive days

1. Right-click on the selected day to display the edit menu and select *Set statistic for period*.
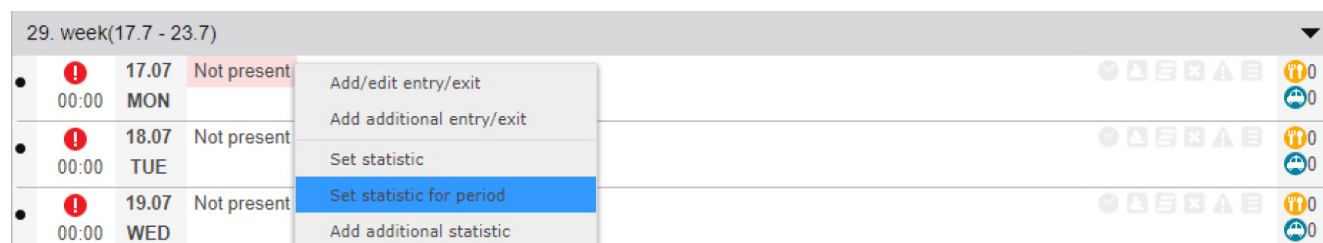
2. In the new pop-up window select the start and end date, then also *select the statistic* you wish to set. Click *Save*.

Only when work obligation > 0
If this setting is enabled, the statistic will only be set for days when the user's work obligation is greater than 0, i.e. all free days (e.g. weekends and holidays) will remain unchanged.
Do not modify weekends
If this statistic is enabled, the system will keep the originally set statistic for weekends and will not substitute it for the new one.
Do not modify holidays
If this statistic is enabled, the system will keep the originally set statistic for holidays and will not substitute it for the new one.

3. The selected statistic will be set for the days and will be colored red. Additionally, the correction of statistic icon ( ) will also color red, marking that the statistic had been manually added.

EXAMPLE 2 - Setting statistic SICK for multiple consecutive days

1. Right-click on the selected day to display the edit menu and select *Set statistic for period*.

2. In the new pop-up window select the start and end date, then also ***select the statistic*** you wish to set. Click ***Save***.

Cover work obligation
The *Cover work obligation* setting should be enabled. This will fully cover daily work obligation of the employee.
Only when work obligation > 0
If this setting is enabled, the statistic will only be set for days when the user's work obligation is greater than 0, i.e. all free days (e.g. weekends and holidays) will remain unchanged.
Do not modify weekends
If this statistic is enabled, the system will keep the originally set statistic for weekends and will not substitute it for the new one.
Do not modify holidays
If this statistic is enabled, the system will keep the originally set statistic for holidays and will not substitute it for the new one.

3. The selected statistic will be set for the days and will be colored red. Additionally, the correction of statistic icon ( ) will also color red, marking that the statistic had been manually added.

NOTE
You can also set a statistic for **multiple users simultaneously**. Select multiple users on the *List of users* by holding down SHIFT or CTRL key on the keyboard, then right-click and select *Set statistic for period* from the menu. In the new pop-up window, enter the necessary data and click *Save*. Before saving the application will warn you that you are about to add a new statistic to multiple users.

10.5.5. Add Additional Statistic

Use the **Add additional statistic** when setting partial work-from-home or part-time sick leave.

1. Right-click on the selected day to display the edit menu and select **Add additional statistic**.
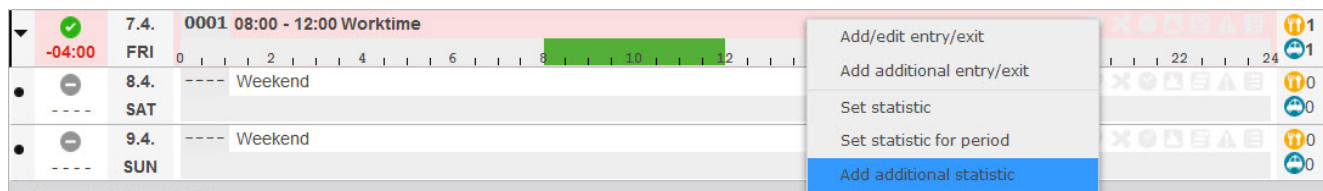
2. In the new pop-up window **select the statistic** you wish to set. The *Cover work obligation* setting must NOT be enabled for you to be able to enter hours of additional work performed or part-time sick leave in the *Hours* field.

Click **Save**.
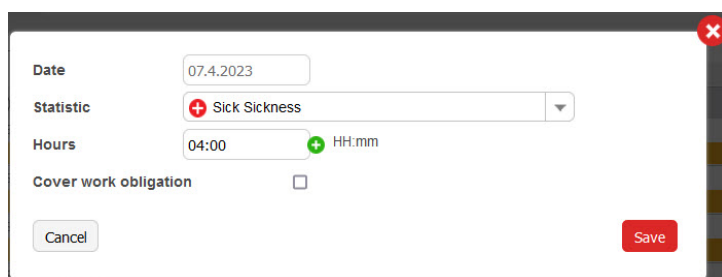
3. The selected statistic will be set for the day and will be colored red. Additionally, the correction of statistic icon (⬛) will also color red, marking that the statistic had been manually added.
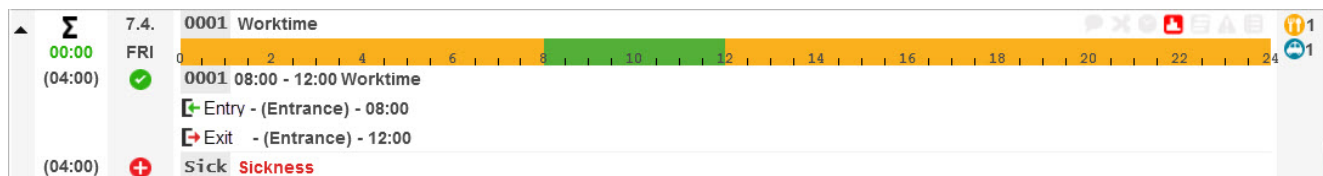
10.5.6. Add Additional Statistic for Period
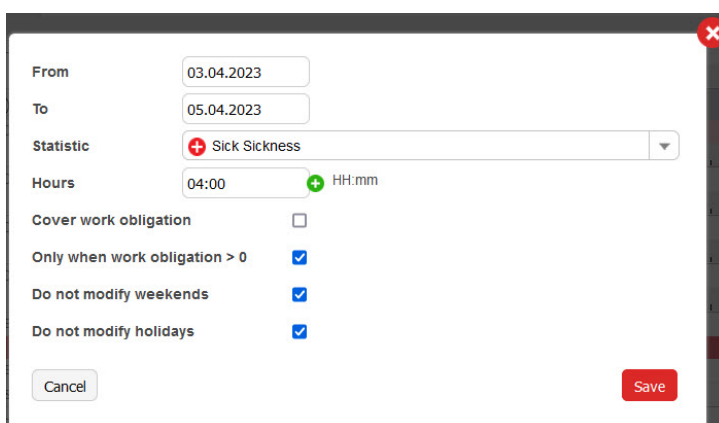
If you want to set an additional statistic for a number of consecutive days (e.g. set a 4-hour sick leave statistic for a period), use the **Add additional statistic for period** function.

1. Right-click on the selected day to display the edit menu and select **Add additional statistic for period**.
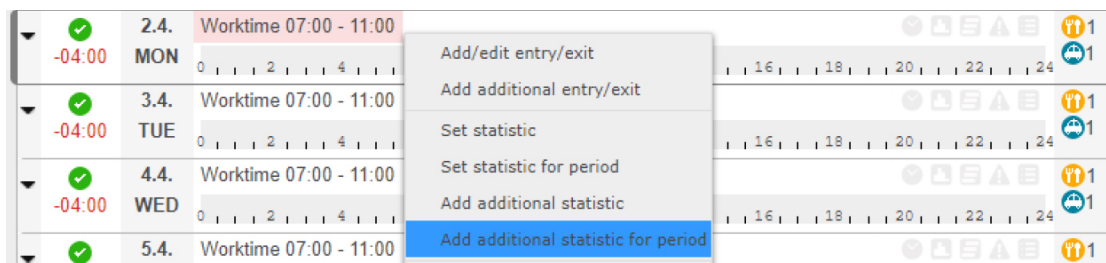
2. In the new pop-up window s**elect the start and end date** and **select the statistic** you wish to set. Click **Save**.

Cover work obligation
If this setting is enabled, the employee's daily work obligation will be fully covered. If the employee has already worked a certain number of hours, then the *Cover work obligation* setting must NOT be enabled and the hours of part-time sick leave must be entered manually in the Hours field.

Only when work obligation > 0
If this setting is enabled, the statistic will only be set for days when the user's work obligation is greater than 0, i.e. all free days (e.g. weekends and holidays) will remain unchanged.

Do not modify weekends
If this statistic is enabled, the system will keep the originally set statistic for weekends and will not substitute it for the new one.

Do not modify holidays
If this statistic is enabled, the system will keep the originally set statistic for holidays and will not substitute it for the new one.

3. The selected additional statistic will be set for the day and will be colored red. Additionally, the correction of statistic icon (🔴) will also color red, marking that the statistic had been manually added.
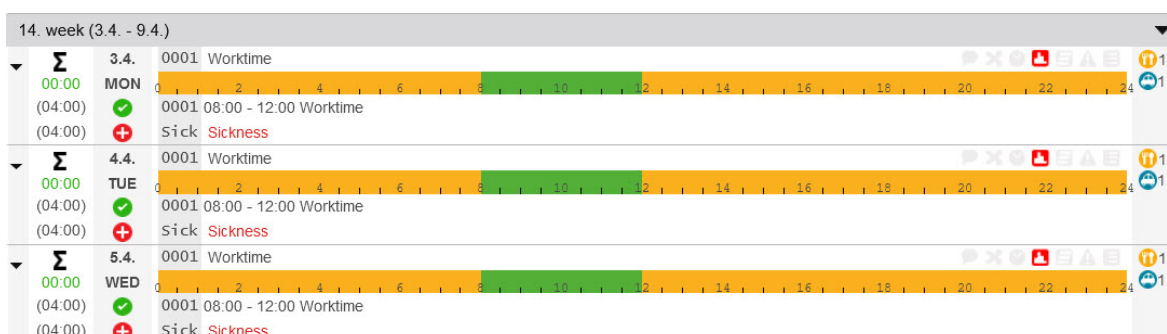
10.5.7. Add Work Interval

Use the **Add interval** function to set a daily interval (e.g. a lunch break).

1. Right-click on the selected day to display the edit menu, select **Add interval** and select the interval you wish to add.

You can only select an existing *General purpose* type interval.
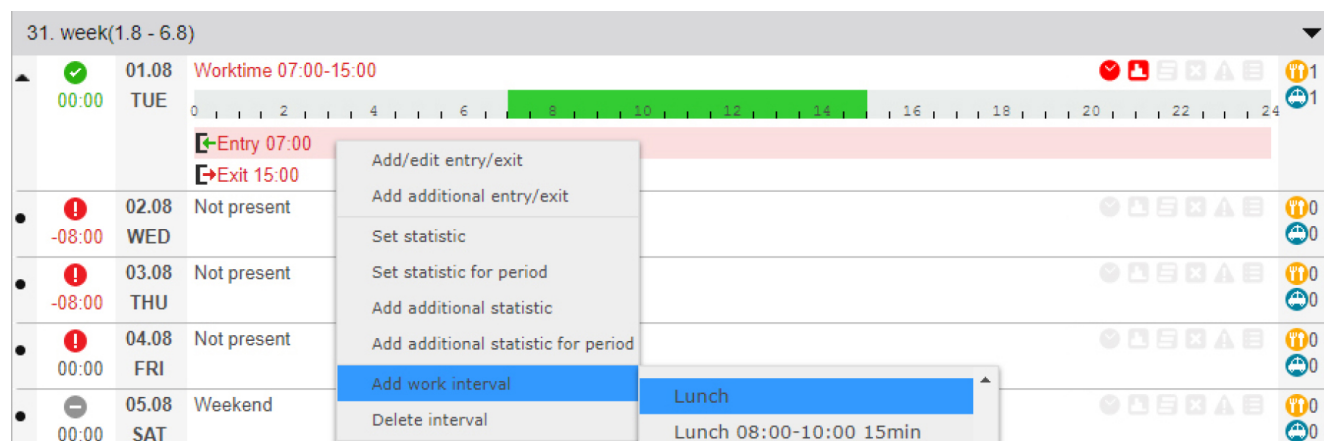
2. A new pop-up window will appear where you can **set the start and end time of the selected interval**. Click **Save**.

Interval	The selected interval is displayed in this field. You can change the interval to be added by selecting a different one from the drop-down menu.	**Add lateness**	If this setting is enabled, a *Late* interval will be added automatically if the total duration of the newly added interval exceeds the allowed duration of the interval.
Entry	The text that will be displayed at the start of the interval in the *List of time registration events* in the *Time attendance* editor.	**Exit**	The text that will be displayed at the end of the interval in the *List of time registration events* in the *Time attendance* editor.
Passage	The location where the start of the interval should be registered.	**Passage**	The location where the end of the interval should be registered.
From	The date and the exact time of the start of the interval.	**To**	The date and the exact time of the end of the interval.
Entry error	You can manually mark an error at the start of the interval.	**Exit error**	You can manually mark an error at the end of the interval.
Events	This link shows all the events the user has registered on different controllers in a selected day.		

3. The newly added interval will be colored red. Additionally, the correction of interval icon (⊟) will also color red, marking that the day had been manually edited.
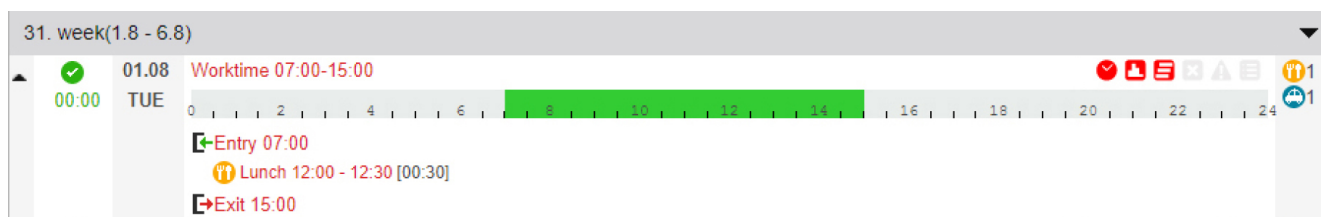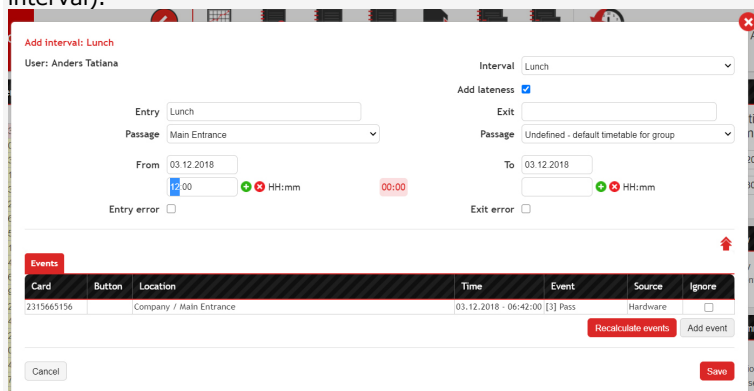
NOTE
You can also set the same interval for **multiple users simultaneously**. Select multiple users on the *List of users* by holding down SHIFT or CTRL key on the keyboard, then right-click and select *Add interval for period* from the menu. In the new pop-up window, enter the necessary data and click *Save*. Before saving the application will warn you that you are about to add a new interval to multiple users.
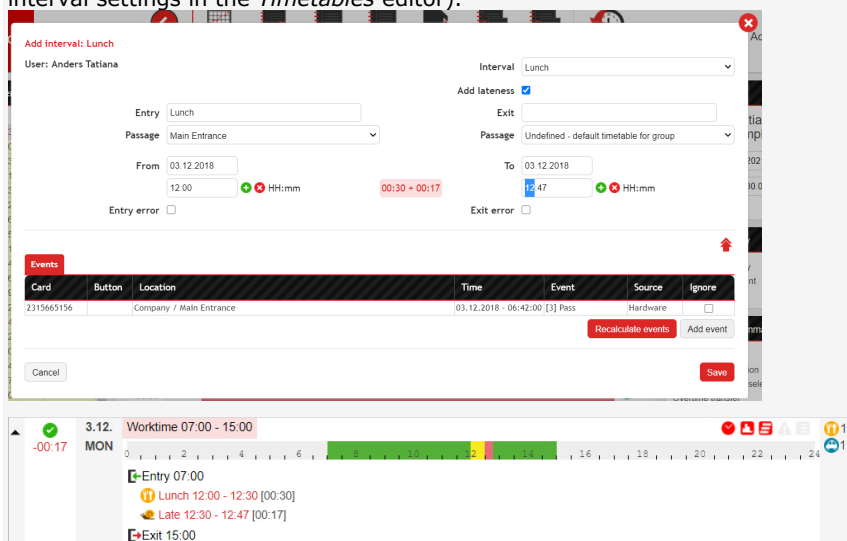
Examples:

- **Record of interval entry time** - If you only want to set entry time, enter the time in the **From** field and **leave the end time To undefined**. The newly added interval will end when the user registers on the controller (e.g. you can set the start time of the *Lunch* interval, and when the user comes back, he will register on the controller and end the *Lunch* interval).

- **Add lateness** - If you enable the ***Add lateness*** checkbox when adding a new interval, a *Late* interval will be added automatically if the total duration of the newly added interval exceeds the allowed duration of the interval (set by the interval settings in the *Timetables* editor).
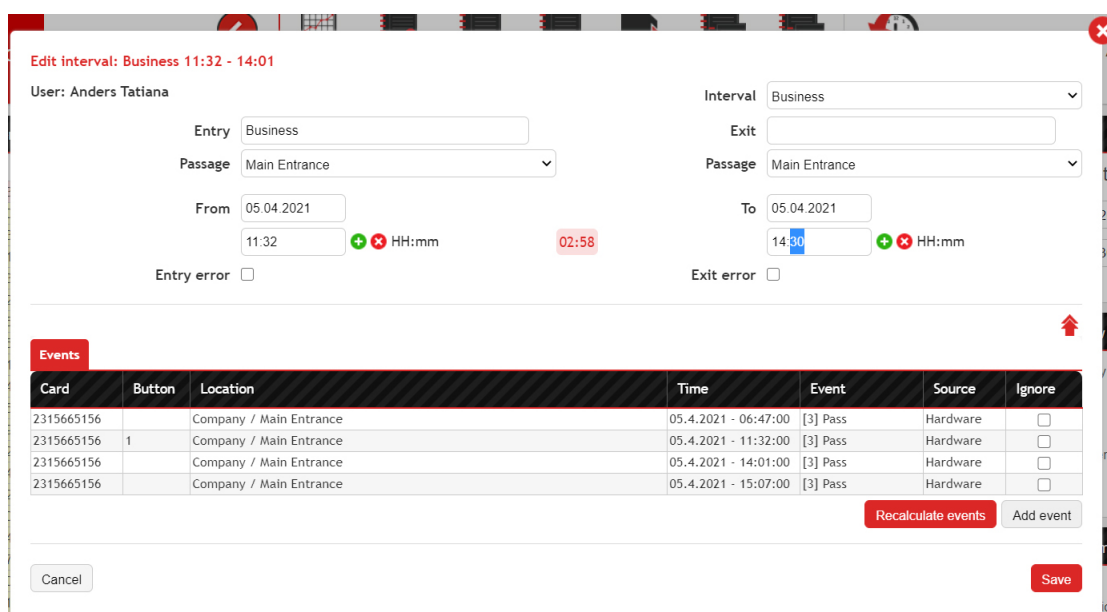
10.5.8. Edit Interval

You can edit an existing interval in the day by double-clicking on it or selecting *Edit interval* from the right-click menu.
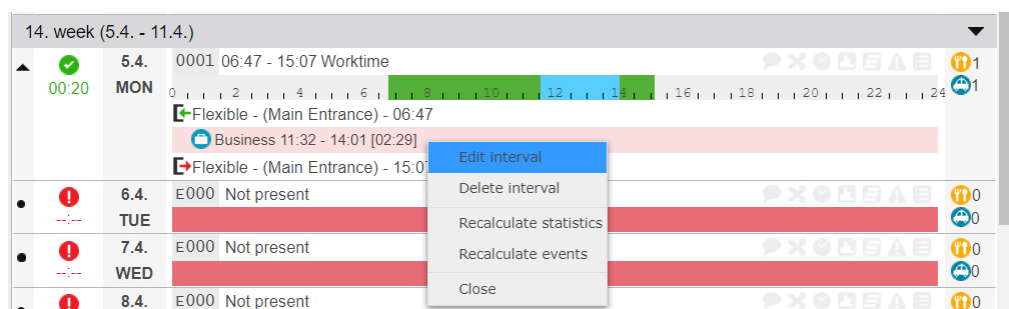
The edit interval pop-up window will appear, where you can make the desired changes to the interval.

The changed data, as well as the related correction icon in the upper right part of the daily display, will be colored red.
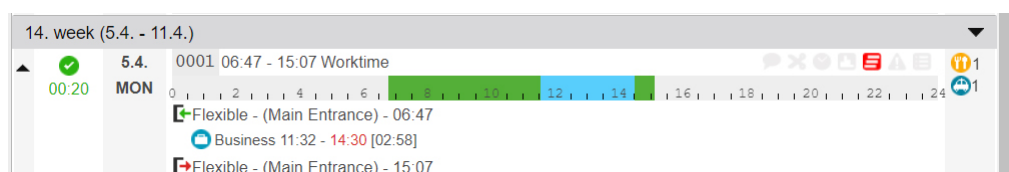
10.5.9. Delete Interval

You can delete individual intervals and statistics entries on a day by selecting **Delete interval** from the right-click menu.
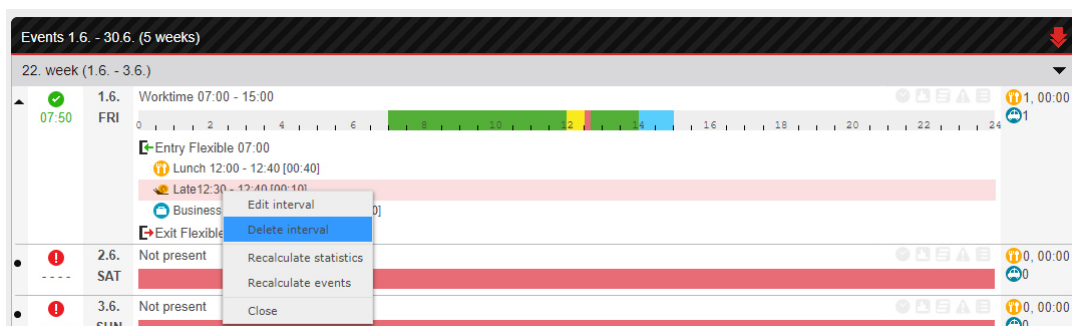
10.5.10. Delete entry or exit

In the right-click menu, you can also find the option to delete the input or output.

These two options allow you to delete the user input or. leave the output and time of the event undefined. This feature is especially useful when you need to edit the user's time registration with an error in event registration, but you have not yet clarified all the circumstances and determined the correct way to correct the registration.

1. To delete an entry or exit event, first, right-click on the selected event.

2. Then select the **Delete entry** or **Delete exit** option from the right-click menu.
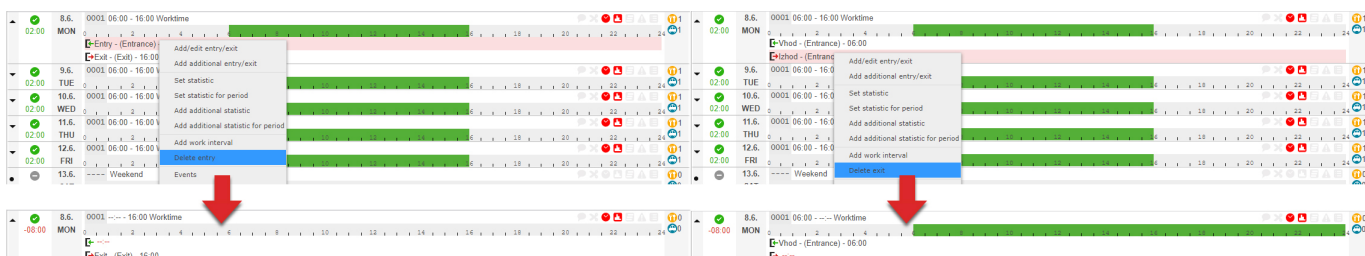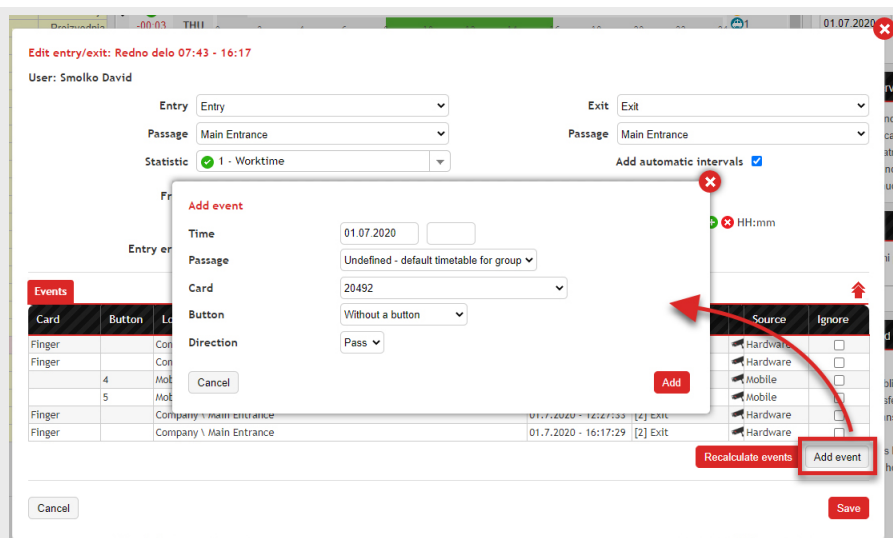
3. The event will be deleted from the time registration and the daily saldo will be recalculated according to the deletion of the selected event.

10.5.11. Actual Events and Recalculate Events

The intervals listed on the *List of time registration events* (and displayed on the timeline) are calculated based on the events the user registers on controllers on a specific day.

Whenever a user registers on a time registration controller, a new event is recorded in the day. A list of events that a user has registered on a single day is accessible through the *Events* option in the right-click menu or through the *Show events* icon (▤), and can also be viewed at the bottom of the interval editing window.

Right-click on the day

Editing intervals

NOTE

From the Codeks 10.2007.0.14283 software version (issued July 7, 2020) on the events on which it calculates the registration time employees can be created manually in the *Time attendance* editor via an administrator access or the user access of a head of department.

You can read more about this functionality in chapter Manually adding events 144.

Recalculations in the *Time attendance*

The recalculations accessible through the right-click menu, give different results:

Day editing	Description
Recalculate statistics	This function enables the recalculation of daily statistics (as well as the daily saldo) and does <u>not</u> delete the manual changes made to the selected time period. Use this function when: adding a new statistic or editing an existing one (in the *Statistics* editor), adding new time intervals or changing the work obligation of the used timetable (in the *Timetables* editor), changing the group and user rights (in the *Groups* editor), etc.
Recalculate events	This function recalculates the intervals in the *Time attendance* editor based on the actual registered events. This process deletes (undoes) all the manual changes made to the day.
Recalculate period	This function enables the recalculation of multiple (consecutive) days for a selected user: • If the **Reset manual changes** setting is enabled, this function recalculates the intervals based on the actual registered events and deletes the all manual changes. • If the **Reset manual changes** setting is <u>not</u> enabled, this setting will recalculate the daily statistics, daily saldo and daily intervals, without deleting manual changes.

NOTE

You can also perform statistic, recalculations for **multiple users simultaneously**. Select multiple users on the *List of users* by holding down SHIFT or CTRL key on the keyboard, then right-click and select the appropriate recalculation option from the menu.
The recalculations you are performing for multiple users **will recalculate the entire month**, not just a specific day.
Before saving the application will warn you that you are about to perform a recalculation for all selected users for the entire month.

10.5.11.1. Manually adding events

In the *Time attendance* editor, **administrators or heads of departments can also manually create a (missing) time registration event** that is required to correctly recalculate users' working hours.

The event is recorded in the list of events in the same way as other time attendance registration events registered by users via T&A registrators, the T&A registrator simulator in a browser or via the Codeks Mobility mobile application, with the difference that the tag ***Manual*** is written next to it which means that the event was created manually.
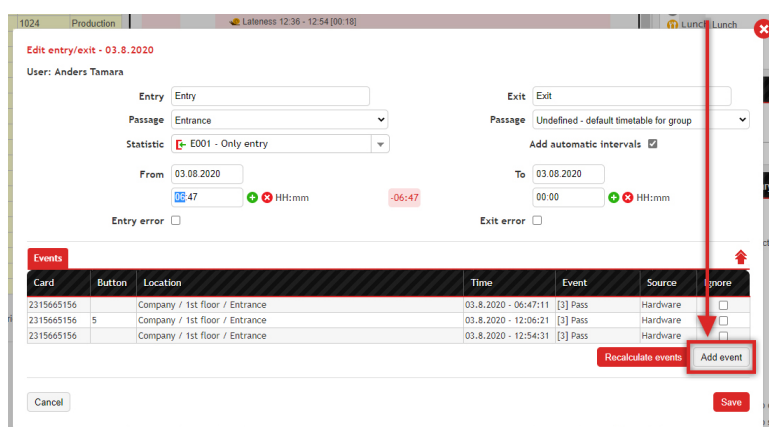
1. To manually add time attendance events, first open the interval editing window on the selected day. **You can open the window by double-clicking on the day, or select *Add/edit entry/exit* from the right-click menu on the day.**
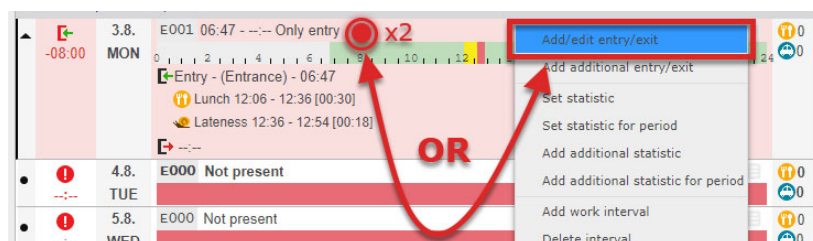
2. In the new window, expand the list of events, and then click the ***Add event*** button.
A new window will open.
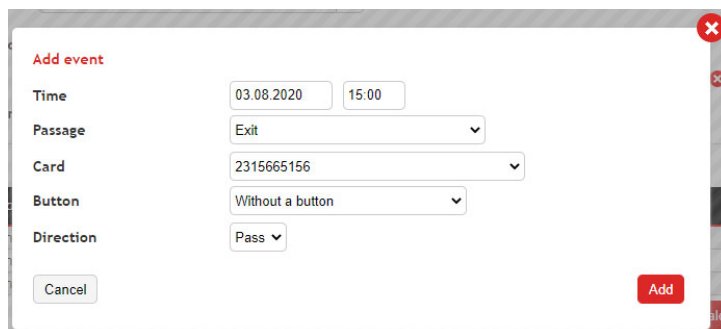
3. In the new pop-up window, set the appropriate event parameters:
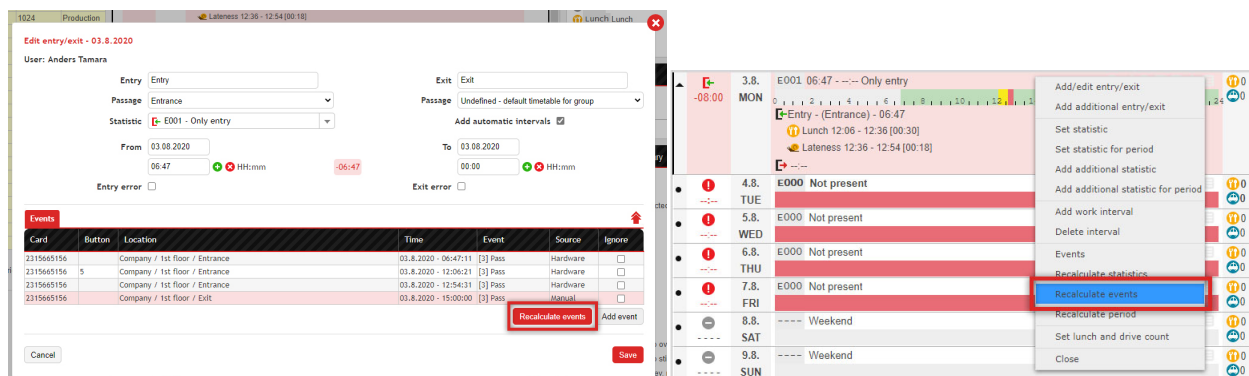
Setting	Description
Time	Set the date and time of the event.
Passage	Set the passage at which the event would be registered. (Selecting the appropriate passage is important because, depending on the selected passage, the corresponding *Timetable for time attendance* will be activated according to which the events of the day will be recalculated.)
Card	Select one of the user's cards (i.e. means of identification) with which the user would register.
Button	Specify a button only if the user would also use a specific button to register the event (e. g. registering *Lunch* or a *Private exit*).
Direction	Select the direction of the passage. (This event parameters is especially important when using the anti pass-back or global anti pass-back function.)

4. Then click **Add**.

5. A new manual event will be added to the list of time registration events.

To apply the added event in the user's time registration, you must recalculate the events of the day.

You can do this by clicking the **Recalculate events** button in the interval edit window or by selecting **Recalculate events** from the right-click menu when clicking on the day.

6. The time registration events will now be recalculated and there will be no more errors in the user's time attendance registration.
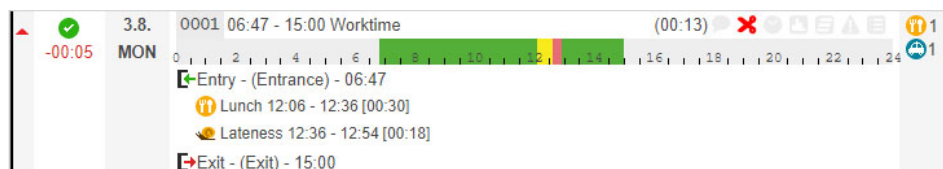
10.5.12. Set Lunch and Drive Count

By using the **Set lunch and drive count** you can change the automatically assigned number of drives and lunches

Set the **automatic lunch and drive count** with the **_Timetable settings_** 93 .

1. Right-click on the selected day to display the edit menu and select **Set lunch and drive count**.
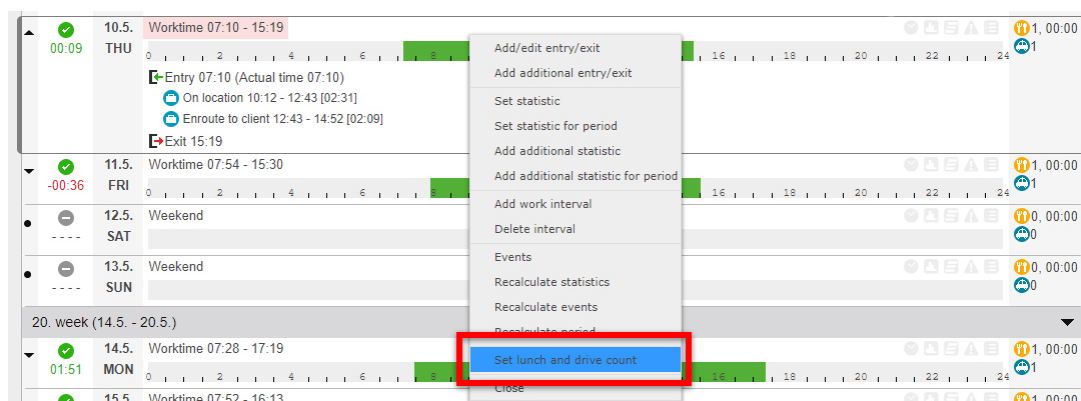
2. In the new pop-up window select the start and end date and **add a check mark next to the setting you wish to change.**

Then **enter the desired value (count) of lunches or drives.**

Click **Save.**
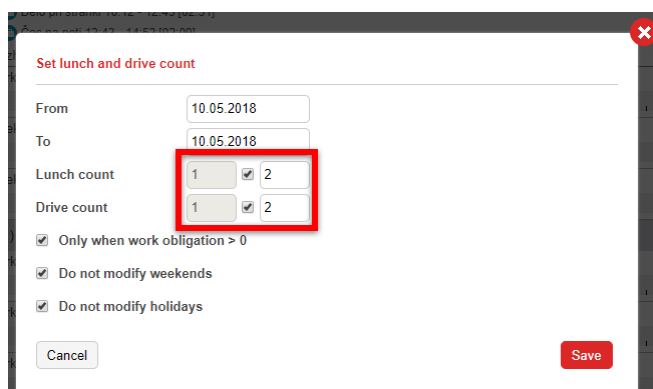
Only when work obligation > 0

If this setting is enabled, the value will only be set for days when the user's work obligation is greater than 0, i.e. all free days (e.g. weekends and holidays) will remain unchanged.

Do not modify weekends

If this setting is enabled, the system will keep the originally set value for weekends and will not substitute it for the new one.

Do not modify holidays

If this setting is enabled, the system will keep the originally set value for holidays and will not substitute it for the new one.

3. The lunch or drive count for the day will now be changed.
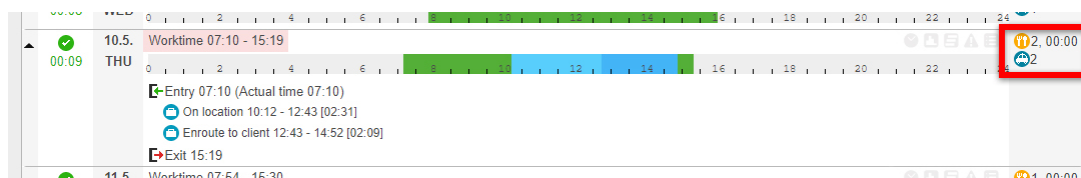
10.6. The right-click menu on the List of users

Right-clicking on the list of users in the *Time attendance* editor opens a menu with various actions that you can perform for **one or more users**. **You can easily select multiple users by holding down the *Ctrl* or *Shift* buttons.**
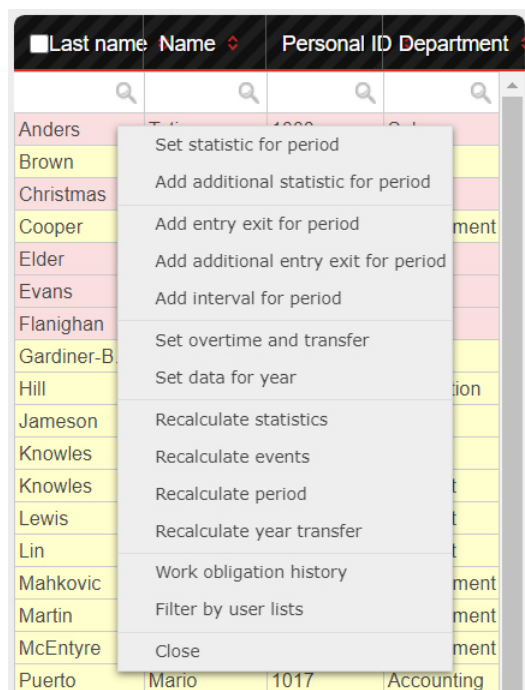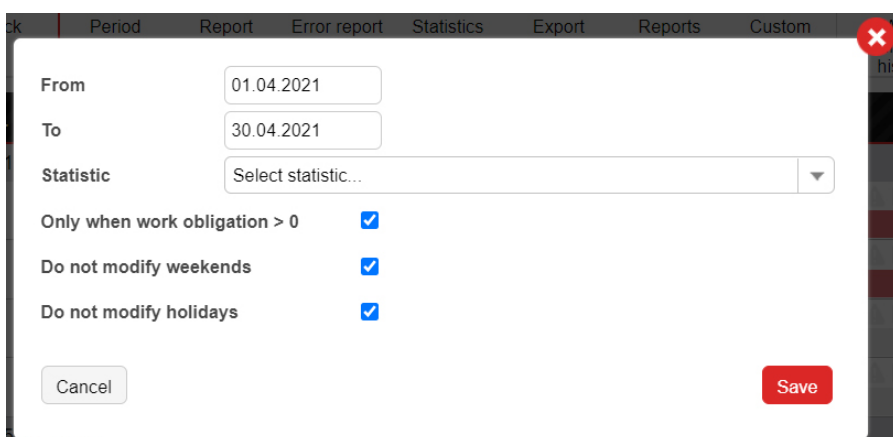
10.6.1. Set statistic for period and Add additional statistic for period

By clicking the *Set statistic for period* you can set a specific statistic to selected days for all the marked users.
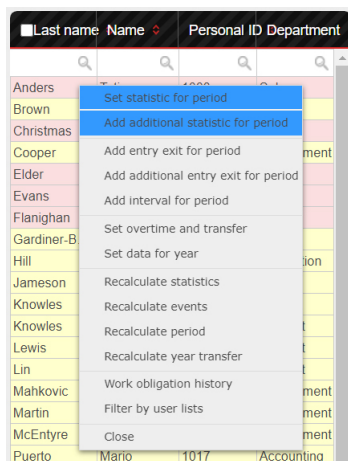
A new pop-up window will open, where you can set the duration and select a statistic.
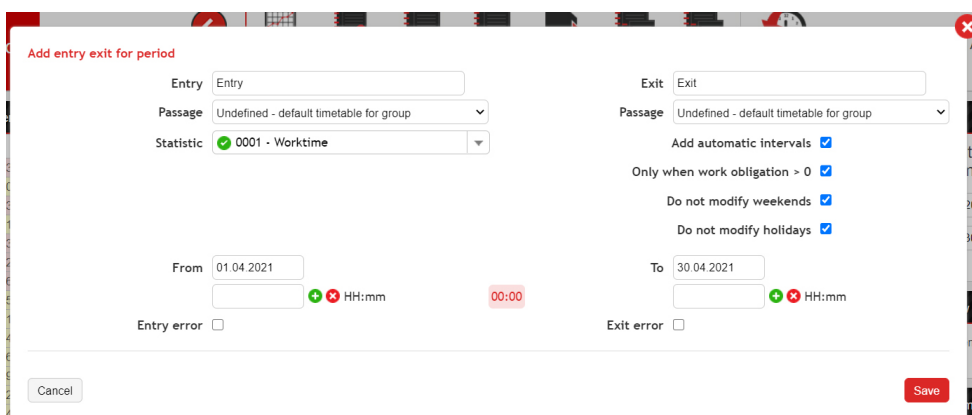
From	The start date of the statistic.
To	The end date of the statistic.
Statistic	The main statistic, which will be set for the day.
Only when work obligation > 0	If this setting is enabled, the statistic will only be set for days when the user's work obligation is greater than 0, i.e. all free days (e.g. weekends and holidays) will remain unchanged.
Do not modify weekends	If this setting is enabled, the system will keep the originally set statistic for weekends and will not substitute it for the new one.
Do not modify holidays	If this setting is enabled, the system will keep the originally set statistic for holidays and will not substitute it for the new one.

10.6.2. Add entry exit for period and Add additional entry exit for period

You can add an entry and exit or use the second option to add an additional entry and exit for all marked users.
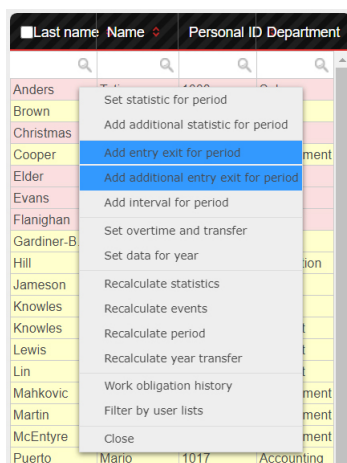
In the pop-up window you can edit the setting of the newly added entry and exit as well as set the time period.
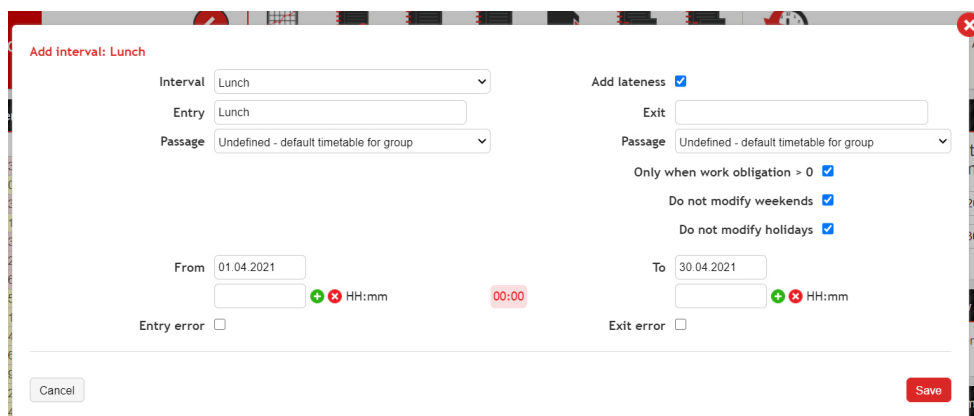
Entry	The text that will be displayed next to the entry event in the *List of time registration events* in the *Time attendance* editor.	Exit	The text that will be displayed next to the exit event in the *List of time registration events* in the *Time attendance* editor.
Passage	The location where the entry (start of the umbrella interval) should be registered.	**Passage**	The location where the exit (end of the umbrella interval) should be registered.
Statistic	The main statistic, which will be set for the day.	**Add automatic intervals**	If this setting is enabled all *Automatic insert* intervals the user's timetable may contain will also be added to the day.
		Only when work obligation > 0	If this setting is enabled, the statistic will only be set for days when the user's work obligation is greater than 0, i.e. all free days (e.g. weekends and holidays) will remain unchanged.
		Do not modify weekends	If this statistic is enabled, the system will keep the originally set statistic for weekends and will not substitute it for the new one.
		Do not modify holidays	If this statistic is enabled, the system will keep the originally set statistic for holidays and will not substitute it for the new one.
From	The date and the exact time of the start of the umbrella interval.	**To**	The date and the exact time of the end of the umbrella interval.
Entry error	You can manually mark an error at the start of the interval.	**Exit error**	You can manually mark an error at the end of the interval.

10.6.3. Add interval for period

To add an interval for a selected time period to the marked users, select the *Add interval for period* option.

The displayed list contains intervals set with the interval type General purpose (set in Timetables).
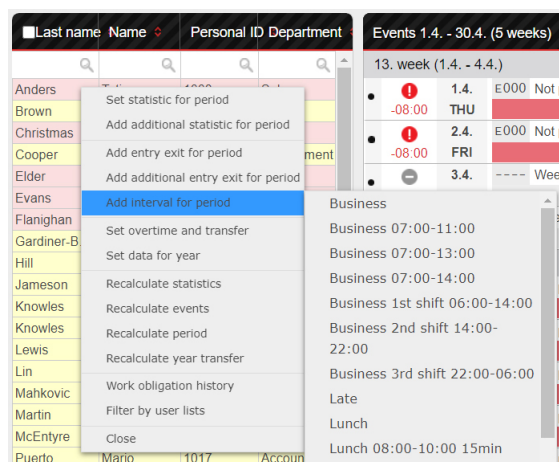
In the pop-up window edit the interval settings and set the time period.

Interval	The selected interval is displayed in this field. You can change the interval to be added by selecting a different one from the drop-down menu.	**Add lateness**	If this setting is enabled, a *Late* interval will be added automatically if the total duration of the newly added interval exceeds the allowed duration of the interval.
Entry	The text that will be displayed at the start of the interval in the *List of time registration events* in the *Time attendance* editor.	**Exit**	The text that will be displayed at the end of the interval in the *List of time registration events* in the *Time attendance* editor.
Passage	The location where the start of the interval should be registered.	**Passage**	The location where the end of the interval should be registered.
		Only when work obligation > 0	If this setting is enabled, the interval will only be set for days when the user's work obligation is greater than 0, i.e. all free days (e.g. weekends and holidays) will remain unchanged.
		Do not modify weekends	If this setting is enabled, the system will keep the original state of the weekends and will not modify them.
		Do not modify holidays	If this setting is enabled, the system will keep the original state of the holidays and will not modify them.
From	The date and the exact time of the start of the interval.	**To**	The date and the exact time of the end of the interval.
Entry error	You can manually mark an error at the start of the interval.	**Exit error**	You can manually mark an error at the end of the interval.

10.6.4. Set overtime and transfer

To edit the overtime and hour transfer settings select the *Set overtime and transfer* option.
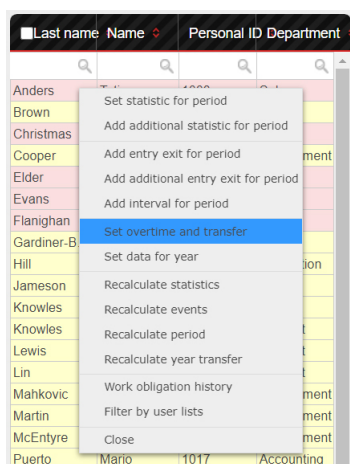
In the pop-up window you can edit the Saldo and monthly hour transfer settings.

Manual transfer Saldo to overtime	The number of hours (from the value of saldo) that will be manually transferred to overtime in the current period. Enter the number of hours you wish to transfer and click *Save*. The value of saldo will be reduced by the transferred number of hours and the transferred hours will be displayed in the *Overtime transfer* field.
Manual transfer Saldo to stimulation	The number of hours (from the value of saldo) that will be manually transferred to stimulation in the current period. Enter the number of hours you wish to transfer and click *Save*. The value of saldo will be reduced by the transferred number of hours and the transferred hours will be displayed in the *Stimulation transfer* field.
Manual transfer from previous period	The number of saldo hours that will be manually transferred from the previous period. The transferred value will be displayed in the *Period plus* field.

10.6.5. Set data for year

To set the yearly data for all marked users select the *Set data for year* option.
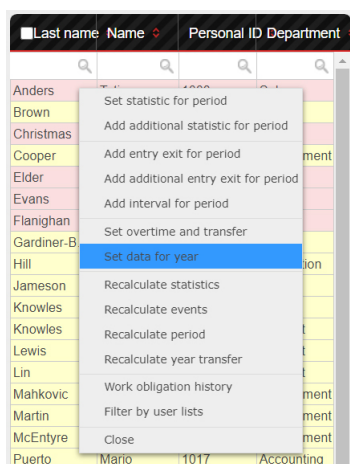
In the pop-up window you can edit the settings of the *Year data section*.
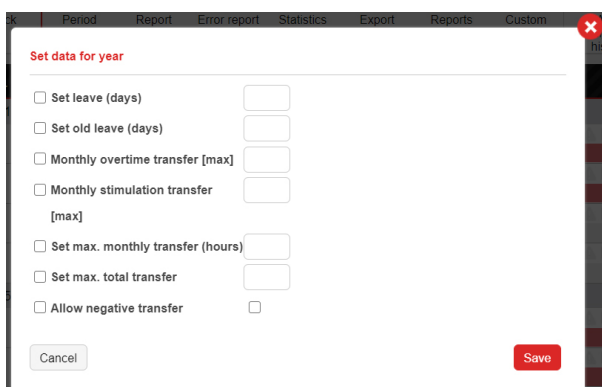
10.6.6. Recalculate statistics, events, period, and year transfer

You can also select different options for editing data in the *Event editor*.

Recalculate statistics	This function enables the recalculation of daily statistics (as well as the daily saldo) and does <u>not</u> delete the manual changes made to the selected time period. Use this function when: adding a new statistic or editing an existing one (in the *Statistics* editor), adding new time intervals or changing the work obligation of the used timetable (in the *Timetables* editor), changing the group and user rights (in the *Groups* editor), etc.
Recalculate events	This function recalculates the intervals in the *Time attendance* editor based on the actual registered events. This process deletes (undoes) all the manual changes made to the day.
Recalculate period	This function enables the recalculation of multiple (consecutive) days for a selected user: • If the **Reset manual changes** setting is enabled, this function recalculates the intervals based on the actual registered events and deletes the all manual changes. • If the **Reset manual changes** setting is <u>not</u> enabled, this setting will recalculate the daily statistics, daily saldo and daily intervals, without deleting manual changes.
Recalculate year transfer	The function recalculates the yearly transfer of leave days and Saldo for all the marked users.

10.6.7. Filter by userlists

Filters the List of users display by userlists.

10.7. section Hour funds

Hour funds are special statistics for recording overtime hours, which users can later use for leave days or early departure from work.

Resetting the initial value of the hour fund

1. To reset the initial value of the hour fund, enter the desired value in the *Initial value* field, and click *Save*.

2. The entered value will be added to the value of the hour fund.

Example:

In the example shown below, the user has filled his hour fund by working on a weekend. He then used a few hours the following week for an early departure from work.
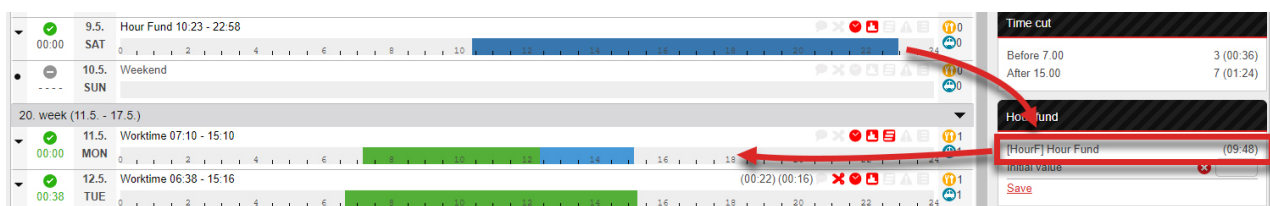
You can read more about hour funds in chapter Statistics [219], and you can view an example of the use of the hour funds in chapter Examples of using statistics [234].

10.8. Time attendance Reports

In the upper toolbar of the *Time attendance* editor, you will find several icons for creating different reports and data exports.
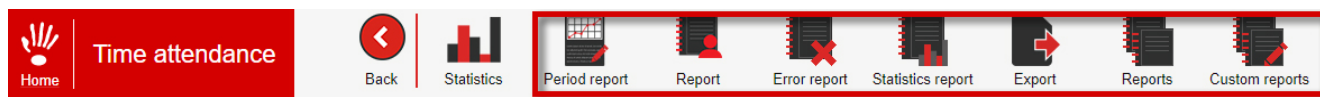
1. First, select the users you wish to make a report about from the *List of users*. To select an individual user just click on him in the *List of users* on the left. To select multiple users hold down the SHIFT or CTRL key and click the desired users.

2. Click on the icon of the desired report and set the additional settings.
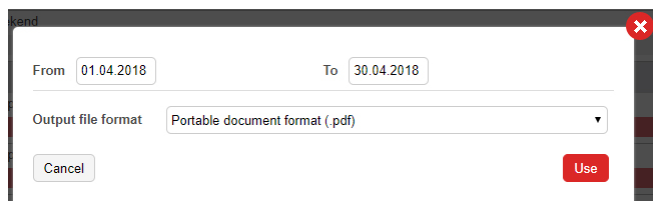
3. You can save the newly generated report or view it with a suitable program.

The individual types of reports are described in more detail in the following chapters.

10.8.1. Period Report
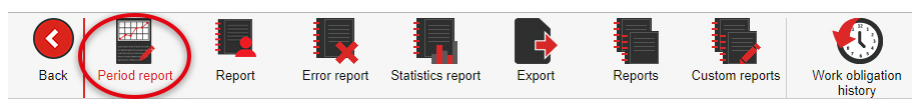
The **Period report** displays the recorded hours and the number of iterations of statistics for all users you have selected in the *list of users* .

Before generating the report you can specify the exact period for display and select the output file format (Portable document format (.pdf), Excel Worksheet (.xls), Excel Worksheet (.xlsx), Open document spreadsheet (.ods), Comma separated values (text document - .cvs)).

Period report
Period: 1. 04. 2018 - 30. 04. 2018

Personal ID	User	----	Hd	001	0003	OLea	Hou	Luni	PrivUn	Priv	OLoc	Enr
17	Anderson Roberto Development	00:00 9	16:00 2	157:55 19								
	Sum 173:55	Balance 13:55	Saldo period 05:55			Leave 21/21		Work obligation 168:00		Lunch count 19		
	Days 19	Transfer 08:00	Overtime 00:00		Stimulation 00:00	Old leave 2/9		Split time 0		Drive count 19	Second lunch in hours	00:00
12	Brown Luis Field	00:00 9	16:00 2	118:39 14	07:15 1	32:00 4	08:00 1	00:00 1	01:17 1	01:22 1	31:41 20	54:08 40
	Sum 166:39	Balance 06:39	Saldo period -01:21			Leave 28/28		Work obligation 168:00		Lunch count 14		
	Days 19	Transfer 08:00	Overtime 00:00		Stimulation 00:00	Old leave 4/9		Split time 0		Drive count 14	Second lunch in hours	00:00
	Sum :		00:00 18	32:00 4	276:34 33	07:15 1	32:00 4	08:00 1	00:00 1	01:17 1	01:22 1	31:41 20	54:08 40
	Sum 340:34	Balance 20:34	Saldo period 04:34			Leave 49/49		Work obligation 336:00		Lunch count 33		
	Days 38	Transfer 16:00	Overtime 00:00		Stimulation 00:00	Old leave 6/18		Split time 0		Drive count 33	Second lunch in hours	00:00

Legend

[----] Weekend	[Hd] Holiday	[001] Worktime	[0003] No Return
[OLea] Old Leave	[Hou] Using Hours	[Luni] Lunch	[PrivUn] Private Unauthorized
[Priv] Private	[OLoc] On location	[Enr] Enroute to client	

The **Period report** shows the duration and number of repetitions of statistics recorded in the selected period for all the users you selected in the *list of users*.

Next, several values from the Current period summary section are displayed: Total number of hours worked, Number of workdays, Saldo, Saldo for the period, Transfer of overtime hours, the value of overtime and stimulation, number of remaining days of annual and old leave days compared to the allocated values at the beginning of the year, Work obligation, number of repetitions of split working time, the Number of lunches and drives to which each user is entitled.
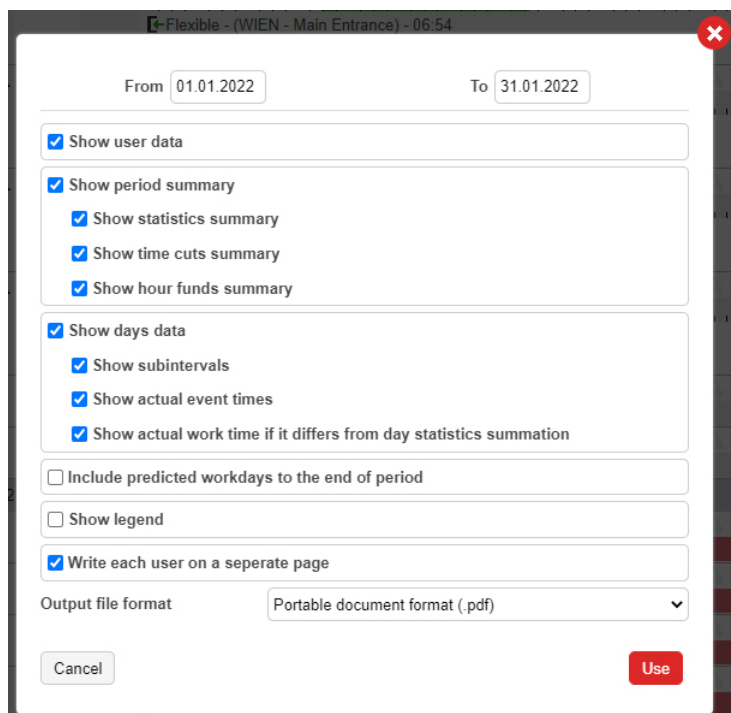
Following the displays for each user, a summary line is displayed with the sums of the listed values for all the users combined.

Finally, a legend of the all the statistics that appear in the report is displayed at the end of the report.

10.8.2. Report
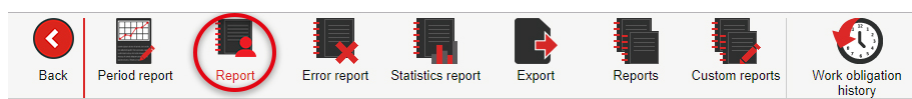
Use **Report** when you want to display a detailed list of entries and exits for selected users of the period currently displayed in the *Time attendance* editor.

Before generating the report you can specify the exact period for display and select the output file format (Portable document format (.pdf), Excel Worksheet (.xls), Excel Worksheet (.xlsx), Open document spreadsheet (.ods), Comma separated values (text document - .cvs)).

You can also set these additional settings:

Settings	Description
Show user data	If this setting is enabled the users' data will be written on the report.
Show period summary	If this setting is enabled the period summary data (the statistic, time cuts, and/or hour funds summaries) will be displayed on the report.
Show statistics summary	If this setting is enabled the report for each user will also contain the sums of all the statistics registered in the displayed period.
Show time cuts summary	If this setting is enabled the report for each user will also contain the sums of all time cuts registered in the displayed period.
Show hour funds summary	If this setting is enabled the report for each user will also contain the sums of hour funds registered in the displayed period.
Show days data	If this setting is enabled detailed daily data will be displayed on the report (the subintervals, actual events, and/or the actual work time).
Show subintervals	If this setting is enabled the report will also contain the recorded daily intervals within the umbrella intervals.
Show actual events	If this setting is enabled the actual times (as well as the recorded rounded-up times) of the time attendance events will be displayed on the report (the actual events will be marked with an asterisk *).

Settings	Description
Show actual work time if it differs from day statistics summation	If this setting is enabled, the *Total* column of the report will display all the user's recorded hours, and next to these values the hours which actually count for working hours will be displayed in parentheses. (This setting is used in cases where the user also records working hours, which are not counted in (obligatory) working hours, but in different statistics (or fund).)
Include predicted workdays to the end of period	If this setting is enabled the report for each user will also contain all future days up to the end of the displayed (payroll) period.
Show legend	If this setting is enabled the report will also contain the legend of the displayed statistics.
Write each user on a separate page	If this setting is enabled every user will be displayed on a separate page in the report.

User	**Anderson Roberto**		Supervisor	
Period	**1. 04. 2018 - 30. 04. 2018**		User	
Department	**Company\Management\Development**		Administrator	
Registrska tablica				
Timetable	**Fixed timetable 7-15**			
Personal ID	**17**			
User card	**2685402**			

USER DATA

Sum	**173:55**		**Statistic**	001	----	Hd
Overtime	**00:00**		**Time**	157:55	00:00	16:00
Stimulation	**00:00**		**Count**	19	9	2
Balance	**13:55**					
Saldo period	**05:55**					
Transfer	**08:00**					
Work obligation	**168:00**					
Leave	**21/21**					
Old leave	**2/9**					
Split time	**0**					
Lunch count	**19**					
Second lunch in hours	**00:00**					
Drive count	**19**					

PERIOD SUMMARY

Day Date	Start	End	Total	Statistic
Sun 1. 04. 2018	--:--	--:--	--:--	Weekend
Mon 2. 04. 2018	--:--	--:--	--:--	Holiday
Tue 3. 04. 2018	**07:48** Entry	**16:00** Exit	**08:12**	Worktime
Wed 4. 04. 2018	**07:46** Entry	**16:11** Exit	**08:25**	Worktime
Thu 5. 04. 2018	**07:47** Entry	**15:56** Exit	**08:09**	Worktime
Fri 6. 04. 2018	**07:50** Entry	**16:22** Exit	**08:32**	Worktime
Sat 7. 04. 2018	--:--	--:--	--:--	Weekend
Sun 8. 04. 2018	--:--	--:--	--:--	Weekend
Mon 9. 04. 2018	**07:57** Entry	**15:26** Exit	**07:29**	Worktime
Tue 10. 04. 2018	**07:50** Entry	**16:21** Exit	**08:31**	Worktime
Wed 11. 04. 2018	**07:57** Entry	**15:25** Exit	**07:28**	Worktime
Thu 12. 04. 2018	**07:47** Entry	**16:05** Exit	**08:18**	Worktime
Fri 13. 04. 2018	**07:40** Entry	**16:05** Exit	**08:25**	Worktime
Sat 14. 04. 2018	--:--	--:--	--:--	Weekend

DAYS DATA
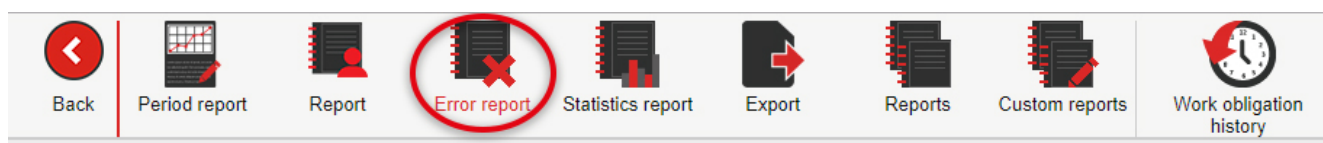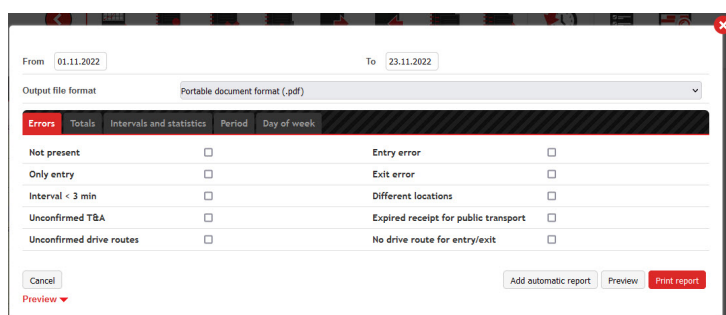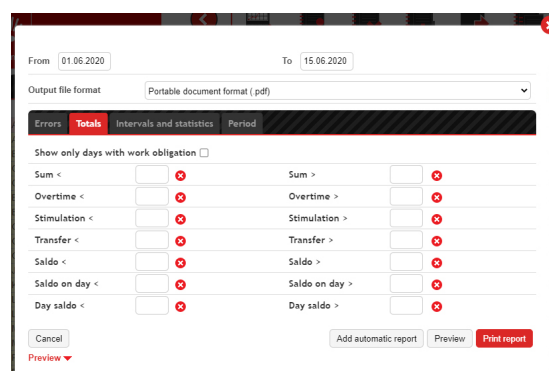
10.8.3. Error Report

The **Error report** offers different filtering options that enable you to display customized reports of various exceptions and deviations in the time attendance registration. **Pay close attention to which settings you have set in each tab because the settings in ALL tabs are taken into account when printing the report!**
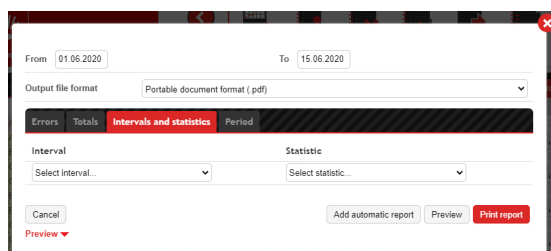
The **Error report** also allows you to ***preview the errors*** [162] found according to the set parameters. **Errors shown in the preview are hyperlinks, and clicking on them opens a new tab, with the *Time attendance* editor, with the marked user and the day on which the error was found.** This enables faster search and correction of errors in the employees' time registration.

Before generating the report you can specify the exact period for display and select the output file format (Portable document format (.pdf), Excel Worksheet (.xls), Excel Worksheet (.xlsx), Open document spreadsheet (.ods), Comma separated values (text document - .cvs))
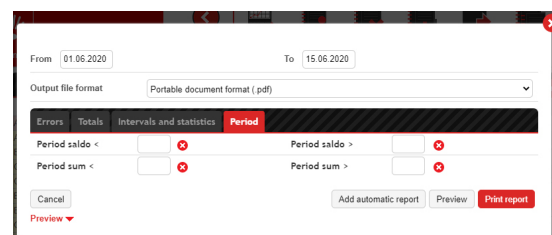
Errors	Description
Not present	Displays the days when the user did not register his work (was not present at work).
Only entry	Displays the days when the user did not register an Exit (e.g. they forgot to register going home from work).
Interval < 3 min	Displays intervals which lasted less than 3 minutes.
Unconfirmed T&A	Displays all the payroll periods which have not yet been confirmed by heads of departments. (You can read more about *Worktime approval* settings in chapter Preferences - Time attendance [306].)
Entry error	Displays the days when an error was recorded when the user registered an Entry event.
Exit error	Displays the days when an error was recorded when the user registered an Exit event.
Different locations	Displays the days when the user registered time attendance events at different locations.
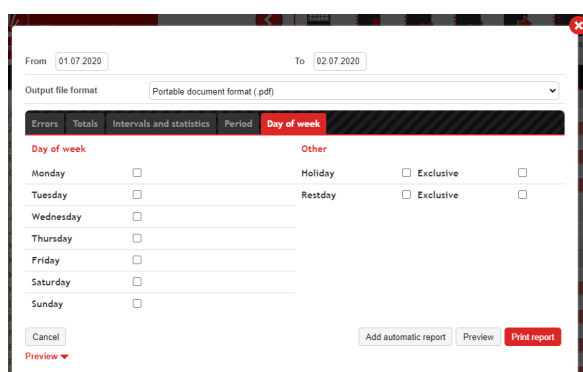
| Totals	Description
Show only days with work obligation	If this setting is enabled, the report will only be set for days when the user's work obligation is greater than 0 (e.g. weekends and holidays will remain unchanged).
Sum	This setting limits the report display according to the total number of recorded work hours in the day.
Overtime	This setting limits the report display according to the number of overtime hours.
Stimulation	This setting limits the report display according to the number of stimulation hours.
Transfer	This setting limits the report display according to the number of transfer hours.
Saldo	This setting limits the report display according to the value of *Saldo*.
Saldo on day	This setting limits the report display according to the value of *Saldo on day* (the value of the user's total saldo on a particular day).
Day saldo	This setting limits the report display according to the value of *Day saldo* (the number of hours the user has added to his total saldo on a particular day).

Intervals and statistics	Description
Interval	Displays the days when a user registered a specific interval (or several intervals).
Statistics	Displays the days when a user registered a specific statistic (or several statistics).

Period	Description
Period saldo	This setting limits the report display according to the value of *Period saldo*.
Period sum	This setting limits the report display according to the value of *Period sum*.

Day of week	Description
Monday Tuesday Wednesday Thursday Friday Saturday Sunday	You can limit the error search to specific day of the week.
Holiday Restday	You can limit the error search to only include holidays or restdays. The additional option **Exlusive** enables you to search for special combinations of days when a specific day of the week was also a holiday or restday.

Clicking the **Print report** button will generate a report in the selected file format. Example of a PDF report:

10.8.3.1. The display and use of the Error overview

1. First, in the list of users, mark all the users you want to scan with an error report and then click the **Error report** icon.
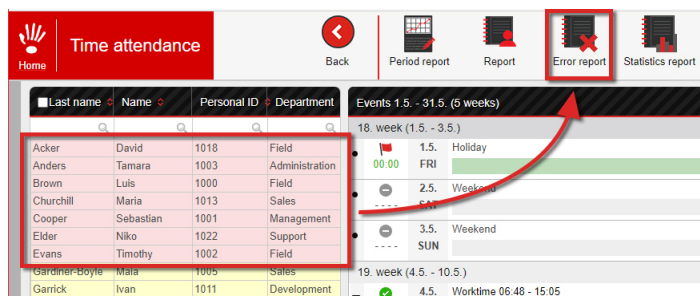
2. In the new pop-up window, first, select the period for display.

3. Then select the desired parameters depending on the registration errors you want to find. Then click the **Preview** button instead of the *Print report* button.

4. In the lower part of the pop-up window, a preview of all errors found according to the selected parameters, in the period currently displayed in the *Time attendance* editor, will be displayed.
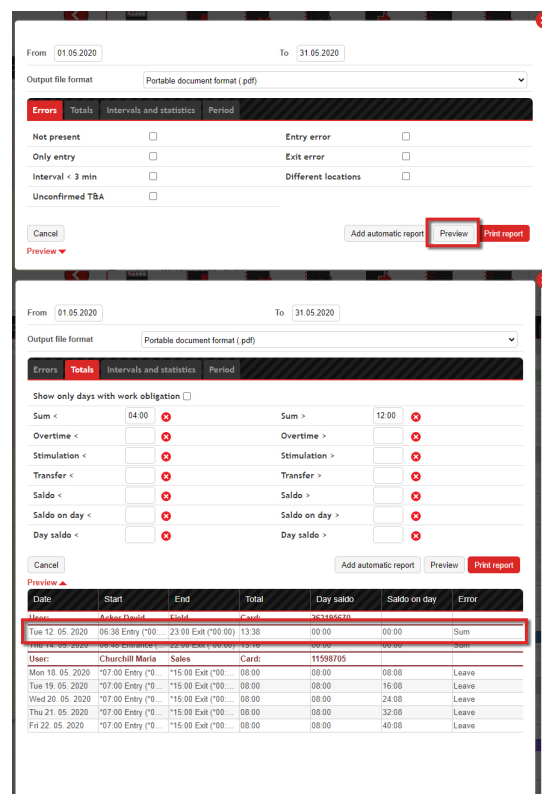
5. Double-clicking on an individual record will open a new tab displaying the location of the registration error found. Here you can then easily correct the error.
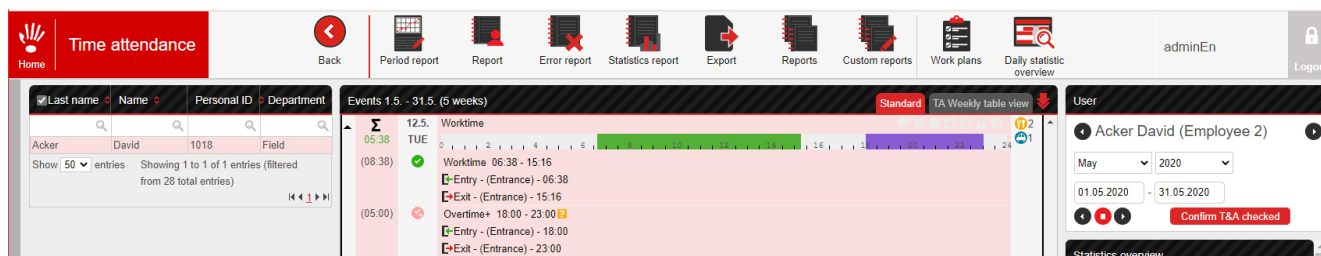
10.8.4. Statistic Report
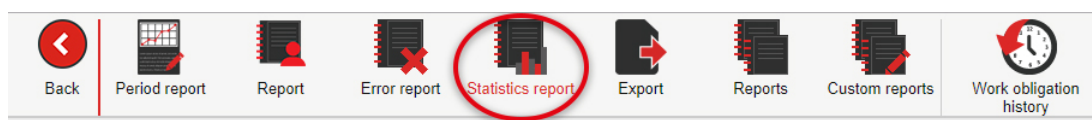
The **Statistics report** graphically displays the recorded daily statistics for the selected period. The report contains a practical graphic visualization of the users' time registration, with which you can easily check, for example, if several users have leave on the same date.

Before generating the report you can specify the exact period for display and select the output file format (Portable document format (.pdf), Excel Worksheet (.xls), Excel Worksheet (.xlsx), Open document spreadsheet (.ods), Comma separated values (text document - .cvs)).

You can also set these additional settings:

Settings	Description
Show statistics summary	If this setting is enabled the report for each user will also contain the sums of all the statistics registered in the displayed period.
Show day statistic sum	If you enable the setting, the report will show the sum of work hours the user has clocked. The sum contains the values of all daily statistics that count work hours 224.
Write each user on a separate page	If you enable this setting, each user will be written on a separate page in the report.
Show only selected statistics	This setting enables you to only include the selected statistics in the *statistic report*, that you have selected in the additional fields below which have been displayed when you enabled this setting.
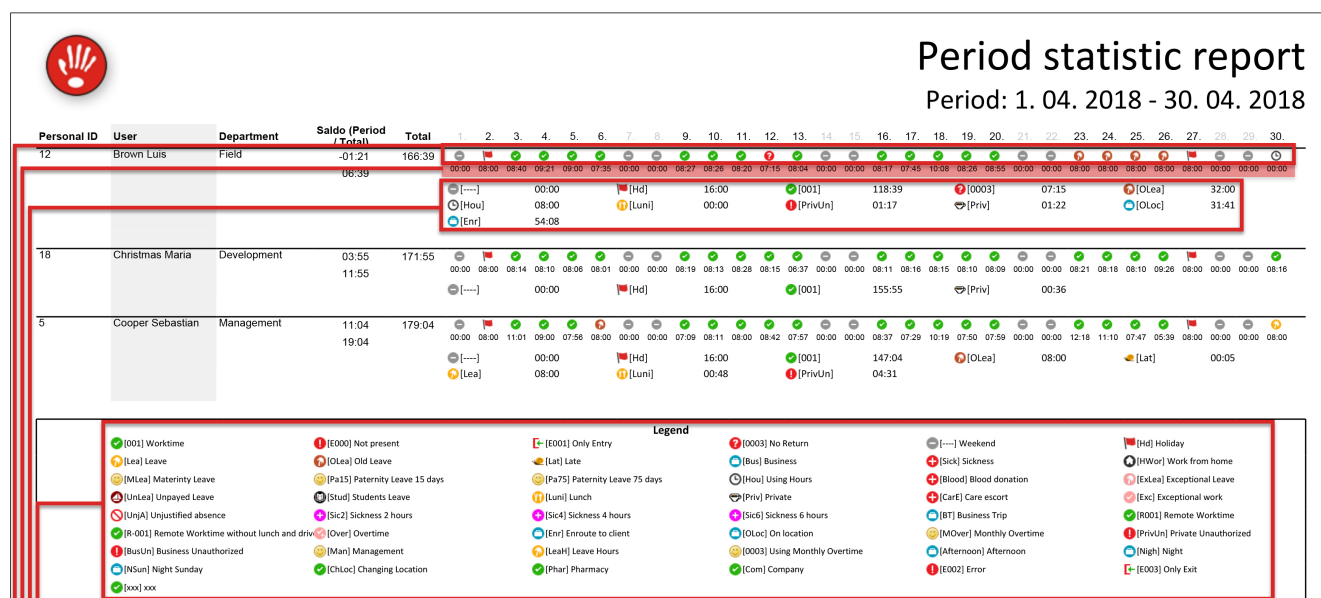
The **Period Statistics Report** displays daily statistics (i.e., icons of daily statistics) for each day in the selected period.

Optionally, it is also possible to print the sum of hours recorded under daily statistics.

Additionally, you can also display the totals of statistics recorded by the user in the selected period. It is possible to print all statistics that are marked to be exported in the *Statistic* editor, or you can manually specify which statistics should be exported on the report (e.g. if you only want to export leave and sick leave absences).

A legend of the statistics exported in this report is added at the end of the report.

10.8.5. Export
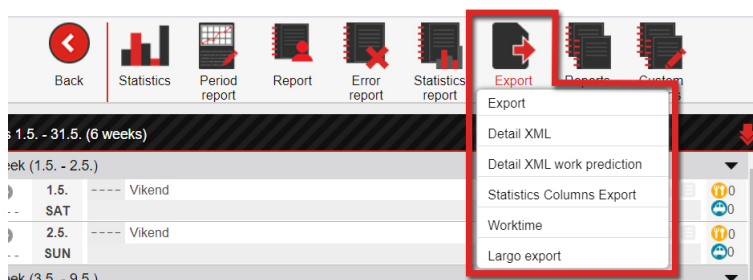
Export enables you to export the users' data into different types of reports that can also be imported and processed by a third-party program or application (for example, a payroll program).

The following chapters describe the individual types of exports in more detail.

10.8.5.1. Export

The **Export** exports the same data as the *Period report* 157 in .csv format.
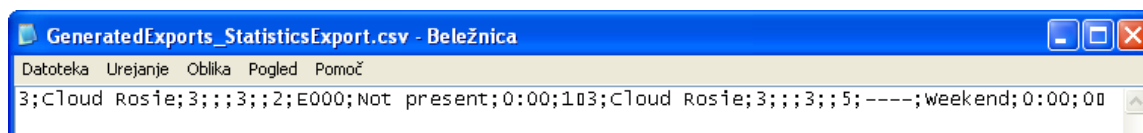
10.8.5.2. Detail XML and Detail XML work prediction

The **Detail XML** creates an XML report of the current status of presence (the number of hours) for selected users, and the **Detail XML work prediction** creates an XML report of predicted presence (number of hours) for selected users. The *work prediction* is based on the user's work obligation. In the xml badge <HOURS>, the presence of the employee is predicted according to his work obligation. This prediction applies to the coming days of the current month. At the end of the month, it is necessary to check the data and adjust them in case of discrepancies.

The difference between the **Detail XML** (first image below) and **Detail XML work prediction** (second image below) **in the same month, for the same user**:
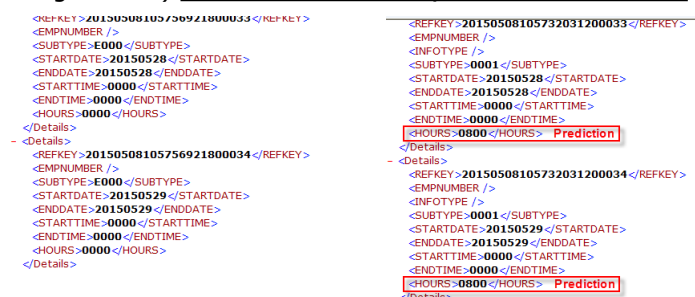
10.8.5.3. Statistics Columns Export

The **Statistics Columns Export** offers several different forms of displaying statistics by columns in .csv text file format:
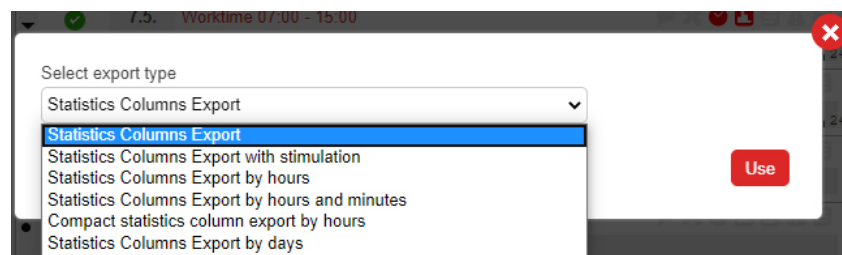
The **Statistics Columns Export** displays the values of statistics by columns in hours and days. The export is created for those statistics that have the **Export** setting enabled in the *Statistics* editor.	
The **Statistics Columns Export with stimulation** displays the values of statistics by columns in hours and days, and also displays the value of stimulation. The export is created for those statistics that have the **Export** setting enabled in the *Statistics* editor.	
The **Statistics Columns Export by hours** displays the values of statistics by columns in hours. The export is created for those statistics that have the **Export** setting enabled in the *Statistics* editor.	
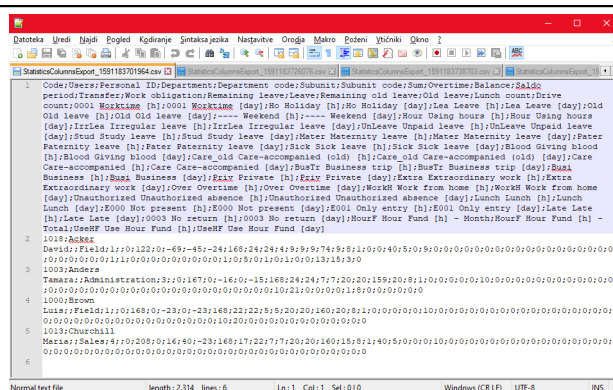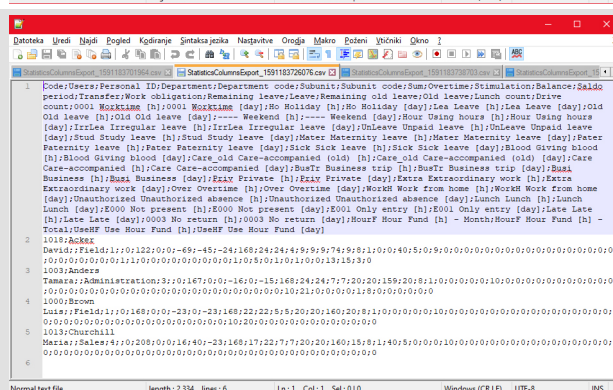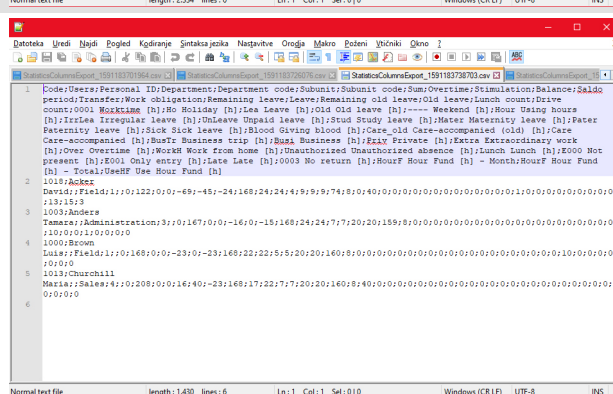
The **Statistics Columns Export by hours and minutes** displays the values of statistics by columns in hours and minutes. The export is created for those statistics that have the *Export* setting enabled in the *Statistics* editor.

The **Compact statistics columns export by hours** displays the values of statistics by columns in hours. The export is created for those statistics that have the *Export* setting enabled in the *Statistics* editor. The compact export of statistics by hours does not export all the user data (code, personal number, department, etc.), but only the user's name and statistics values in hours.
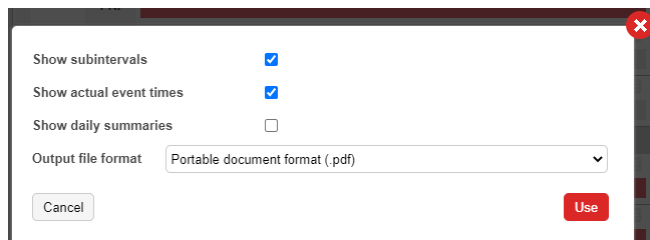
The **Statistics Columns Export by days** displays the values of statistics by columns in days.The export is created for those statistics that have the *Export* setting enabled in the *Statistics* editor.

10.8.5.4. Worktime

The ***Worktime*** export displays data on registered intervals for each individual user in the selected period, and can be printed in any format.

You can also enable some additional settings when exporting:

Settings	Description
Show subintervals	If this setting is enabled the report will also contain the recorded daily intervals within the umbrella intervals.
Show actual event times	If this setting is enabled the actual times (as well as the recorded rounded-up times) of the time attendance events will be displayed on the report (the actual events will be marked with an asterisk *).
Show daily summaries	If this setting is enabled, the report for each user will also include the totals of all statistics that they registered in the slected period.
Output file format	Before generating the report you can specify the exact period for display and select the output file format (Portable document format (.pdf), Excel Worksheet (.xls), Excel Worksheet (.xlsx), Open document spreadsheet (.ods), Comma separated values (text document - .cvs)).

An example of the report in PDF format:

10.8.5.5. Largo export

The **Largo export** is especially adapted for further import and processing in the ***Perftech.Largo*** system.

You can adjust the values of the displayed statistics using the formulas in the ***Largo Export*** section of the *Time Registration*[306] tab in the *Preferences* menu.

10.8.6. Reports
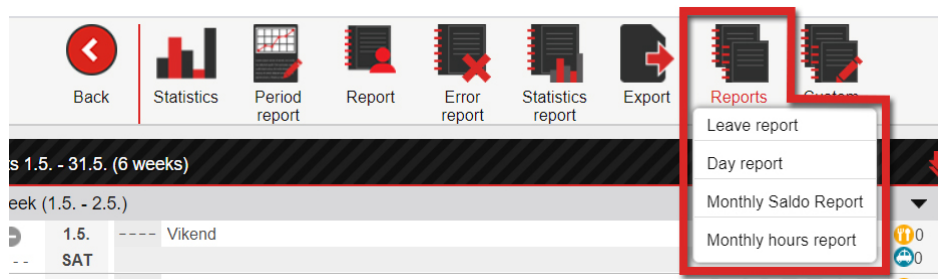
Through the **Reports** icon you can access special reports:

- Leave report,
- Day report,
- Monthly Saldo Report,
- Monthly hour report.
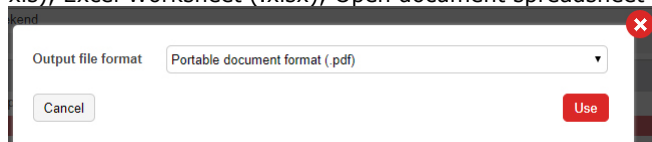
10.8.6.1. Leave report

The **Leave report** displays the current state of used and available leave and old leave days for all selected users.

If you are printing the *Leave report* **for the current month, the report will display the status of leave days on the current day**.

If you are printing the *Leave report* **for any month in the past, the status of leave days on the last day of the month will be displayed**. It is not possible to create a report showing the status of holidays on a particular day in the past for any month in the past.

Before generating the report you can select the output file format (Portable document format (.pdf), Excel Worksheet (.xls), Excel Worksheet (.xlsx), Open document spreadsheet (.ods), Comma separated values (text document - .cvs)).
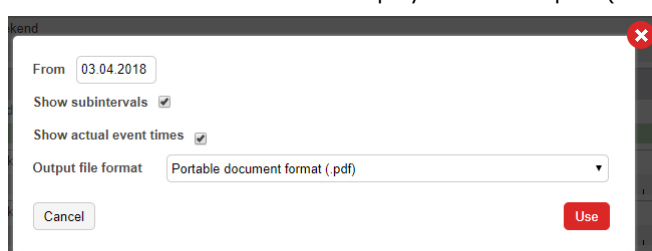
Leave report
30. 04. 2021

User	Department	Saldo	Sum	Leave	Old leave
Anders Tatiana	Administration	2:55	112:55	24/24	6/24
Jameson Boris	Field	1:20	111:20	22/22	0/0
Brown Luis	Field	0:01	110:01	22/22	7/22
Spring Dave	Field	5:23	115:23	15/24	0/23
Smith Frank	Production	2:12	112:12	25/25	3/24
				108/117	16/93

10.8.6.2. Day report

The **Day report** will display all Entry and Exit events as well as the daily statistics on a particular day for all selected users. To generate a *Day report*, first, **set the date to be displayed (From).**

If the **Show subintervals** setting is enabled the report will also contain the recorded daily intervals within the umbrella intervals.
If the **show actual event times** setting is enabled the actual times (as well as the recorded rounded-up times) of the time attendance events will be displayed on the report (the actual events will be marked with an asterisk *).

Before generating the report you can select the output file format (Portable document format (.pdf), Excel Worksheet (.xls), Excel Worksheet (.xlsx), Open document spreadsheet (.ods), Comma separated values (text document - .cvs)).

Day report
3. 04. 2018

User	Department	Start	Stop	Total	Statistic
Brown Luis	Field	07:29 Vhod	16:09 Izhod	08:40	Worktime
Brown Luis	Field	10:33 Čas na poti	11:50	01:17	Enroute to client
Brown Luis	Field	15:13 Čas na poti	15:56	00:43	Enroute to client
Christmas Maria	Development	07:00 Vhod (*06:36)	15:14 Izhod	08:14	Worktime
Cooper Sebastian	Management	*08:00 Gibljivo vhod (*19:01)	*19:01 Gibljivo Izhod	11:01	Worktime

10.8.6.3. Monthly Saldo Report

The **Monthly Saldo Report** will display the value of *Saldo* for each month as well as the total (sum) value of the period saldo for the selected period.

Before generating the report you can specify the exact period for display and select the output file format (Portable document format (.pdf), Excel Worksheet (.xls), Excel Worksheet (.xlsx), Open document spreadsheet (.ods), Comma separated values (text document - .cvs)).

Monthly Saldo Report
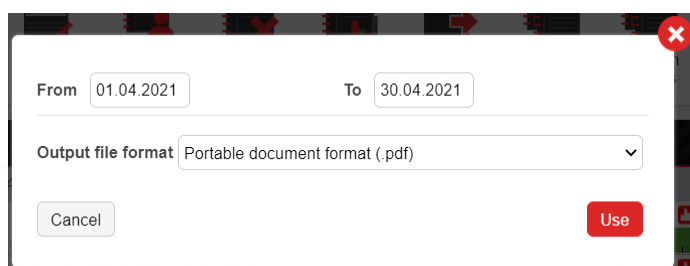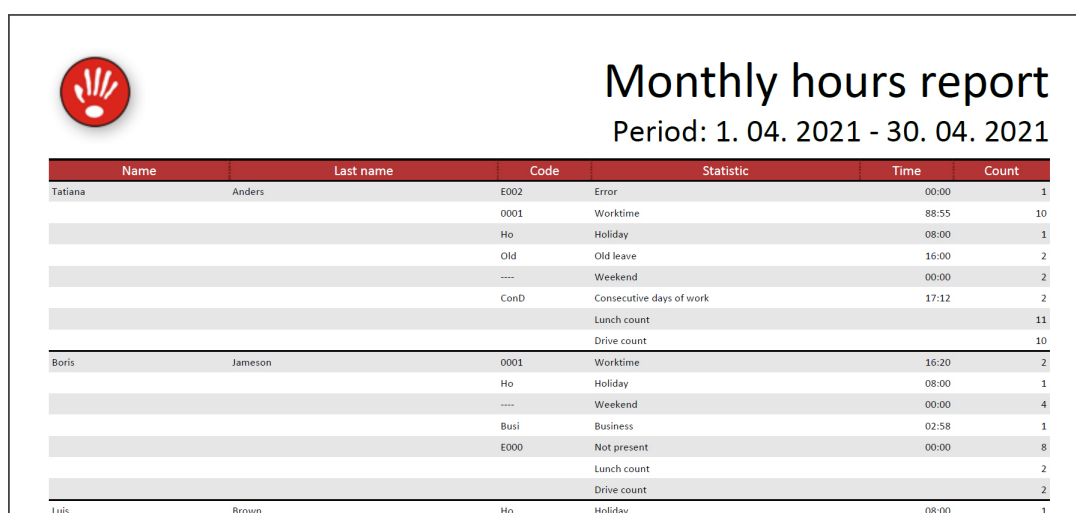
Work obligation and real hours
Employee: Brown Luis
Department: Field

Month	Work obligation	Period sum	Saldo period
01.2018	184:00	186:59	02:59
02.2018	160:00	157:31	-02:29
03.2018	176:00	179:49	03:49
04.2018	168:00	166:39	-01:21
Sum	688:00	690:58	02:58

10.8.6.4. Monthly hours report

For each selected user displays, the report **Monthly hours report** displays **all the statistics recorded in a given period**, including their duration and number of repetitions, additionally it also displays the number of lunches and drives in the given period.

When generating the report, you must first specify the date, then you can also select the output file format (Portable document format (.pdf), Excel Worksheet (.xls), Excel Worksheet (.xlsx), Open document spreadsheet (.ods), Comma separated values (text document .cvs)).

Monthly hours report
Period: 1. 04. 2021 - 30. 04. 2021

Name	Last name	Code	Statistic	Time	Count
Tatiana	Anders	E002	Error	00:00	1
		0001	Worktime	88:55	10
		Ho	Holiday	08:00	1
		Old	Old leave	16:00	2
		----	Weekend	00:00	2
		ConD	Consecutive days of work	17:12	2
			Lunch count		11
			Drive count		10
Boris	Jameson	0001	Worktime	16:20	2
		Ho	Holiday	08:00	1
		----	Weekend	00:00	4
		Busi	Business	02:58	1
		E000	Not present	00:00	8
			Lunch count		2
			Drive count		2
Luis	Brown	Ho	Holiday	08:00	1

10.8.7. Custom report

Custom reports enable you to create a completely customized output report or export data, that can be used for further data processing in third-party programs and applications.

> **ATTENTION!**
>
> **Defining a new custom report is a very complex process that demands a detailed knowledge of the data structure within the Codeks database. In addition, you must also understand the process of report generating and the elements used in the custom report definition.**

1. In the *Time attendance* editor **select all the users you want to include in the report**. Set the period to be used in the report in the *User* section on the right side of the editor.

2. To use a custom report, select the **Custom Report** icon in the menu of the *Time attendance* editor.

A list of all the saved custom reports will be displayed, as well as the **link Edit custom reports** that leads to the *Custom reports* editor.
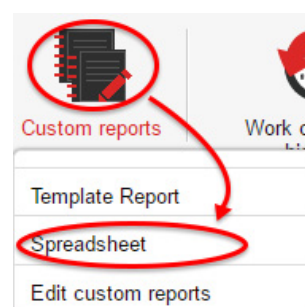
3. Select the **desired custom report** from the drop-down menu. A new window will appear, where you can limit the report to a specific company department by selecting the appropriate department code.
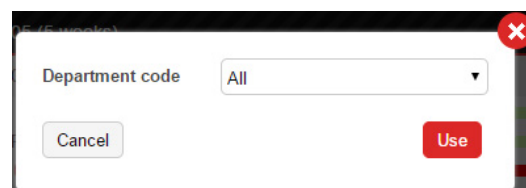
4. The system will display the custom report.

Custom reports enable you to create a completely customized output report, that can be used for further data processing. Custom reports can be used to prepare:

- data used in payroll programs,
- customized reports for calculating bonuses and incentives for employees,
- customized reports of leave absences and sick leave,
- spreadsheet reports suitable for use in other reports, etc.

Custom reports are created in the *Custom reports* editor.

10.8.7.1. Add Custom Report

The ***Custom reports editor*** can be accessed through the ***Edit custom reports*** link of the **Custom reports** icon in the Time attendance editor. You can use the editor to add and edit custom reports.

All added custom reports will later be displayed and accessible in the drop-down menu of the Custom reports icon.

1. To add a new custom report select the ***Edit custom reports*** link from the drop-down list of the **Custom reports** icon.
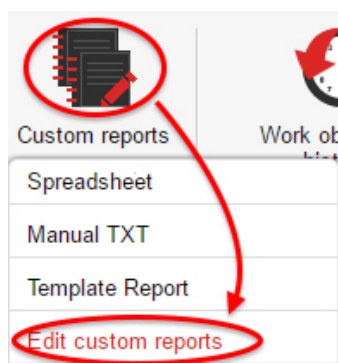
The *Custom reports* editor will open. Here you can add, edit and erase custom reports.
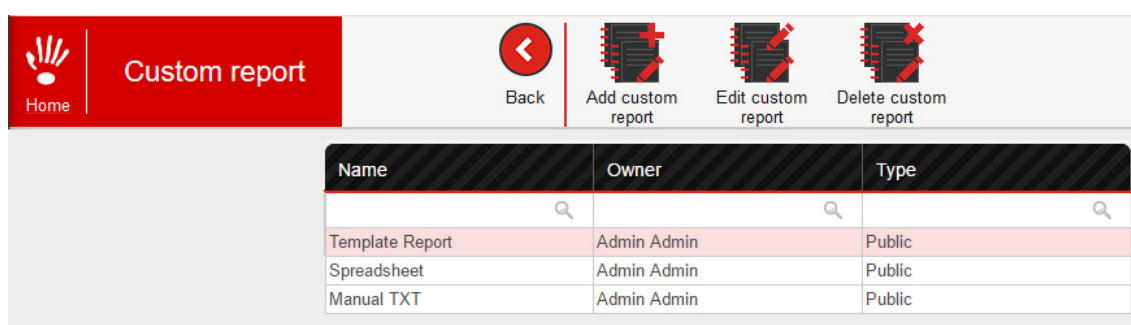
2. Click the **Add custom report** icon to add a new custom report.
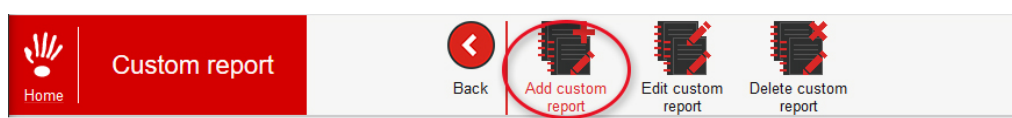
3. A pop-up window will appear where you can create a new custom report. In the Report definition [176] field, you can determine which data will be included in the report and how this data will be displayed. The process of writing a custom report definition is described in the following chapters.

Click **Save** when you are done with writing your report definition.

Add custom report	Description
Name	The name of the report will be displayed in the drop-down list of the Custom reports icon in the Time attendance editor.
Report definition	The code of the report definition, written in the .ini file syntax. The following chapters describe how to create a custom report definition.
Owner	Select a user that will be the owner of the report. The report's owner has unlimited preview and editing rights for the report.
Type	Set the report to be **public** or **private**. Public reports can be accessed and used by all Codeks administrators. Private reports are only available to the report.
Report template	The attached spreadsheet report template for the current report will be displayed in the field.
Upload	Enables you to upload a spreadsheet report template.

4. All newly added custom reports will be displayed in the drop-down list of the Custom reports icon in the *Time attendance* editor.

10.8.7.2. Report Definition

The structure of the **report definition** is primarily determined by the **.ini file syntax rules**. Specially defined elements, in the .ini file syntax (INI file), are used to determine which data will be displayed in the custom report and also what form they will be displayed in.

This file format was chosen in order to enable easier import of reports, that were created in the Jantar V7 program, to Codeks. This means that the content of the Codeks custom reports is usually compatible with the Jantar V7 program, although in some cases differences could not be avoided.

> **ATTENTION!**
>
> Defining a new custom report definition is a very complex process that demands a detailed knowledge of the data structure within the Codeks database. In addition, you must also understand the process of report generating and the elements used in the custom report definition.
>
> This process should only be done by the system administrator or another equally professionally qualified person. You can also contact the **Jantar support** [13] for help with defining a custom report.

10.8.7.2.1 Before writing the report definition

Before writing the report definition you have to determine **the report output file format** and **the type of data required in the output**.

Two different data sources can be used when generating a report:

- **Day events data**, which are displayed in the **List of events** of the Time attendance editor. With this Mode setting, it is possible to display all recorded intervals in a selected time period, without any cumulative statistic sums.
- **Statistic sums**, which are displayed in section **Statistics overview** and **Current period summary** of the Time attendance editor. This mode enables the display of cumulative statistic sums.

The system differentiates between the two data sources and will display different data in the rows or columns of a report depending on the selected source. The **data source** is defined by the **Mode** element in the report definition. Read more about the Mode element and its use in the following chapters and the <u>Table of elements</u> [200].

The selected data can be exported into different **file formats**:

- **text files**,

  with the .txt and .csv file extensions. The data for all selected users is displayed in separate rows (lines) in a text file report. Read more about text format reports in chapter <u>Text files</u> [185].

- **spreadsheets**,

  with the .xls, .xlsx and .ods file extensions. The data for all selected users is displayed in the columns of the spreadsheet report. Read more about spreadsheet reports in chapter <u>Spreadsheets</u> [187].

- *** spreadsheet with row display**,

  is a special report in the form of a spreadsheet (with the .xls, .xlsx and .ods file extensions), which is generated based on the logic of text files. The data for all selected users is displayed in separate rows, and the individual values in the rows are each separated into individual cells within the spreadsheet. Read more about spreadsheet reports with row display in chapter <u>Spreadsheets with row display</u> [190].

- **structured XML files**,

  that display the desired user data in an XML structure. The data for all selected users is displayed in the desired hierarchy using the XML structure. Read more about structured XML files in chapter Structured XML files⎡193⎤.

The structure of the report definition depends on the selected file format. The **export file format** is defined by the **ExportFormat** element in the report definition. Read more about the ExportFormat element and its use in the following chapters and the Table of elements⎡200⎤.

10.8.7.2.2 Definition structure

The first element in every report definition is the **[Report]** section.

In .ini files, the elements written in square brackets **[ ]** are called *sections*. The use of sections is not required in .ini files, as they do not determine any actions, but are only used to logically group together the content in a .ini file. In Codeks report definitions, however, the section **[Report] is mandatory**, because it marks the starting point of the custom report definition.

The section [Report] is then followed by different types of **elements**:

REQUIRED GENERAL ELEMENTS	are elements that must be used in all types of report definitions, regardless of the selected data source or export file format.
OPTIONAL GENERAL ELEMENTS	are elements that affect the display of data in the report and can be used in all types of report definitions, regardless of the selected data source or export file format.
REQUIRED ELEMENTS FOR TEXT FILES	are elements that must be used in report definitions for text file reports.
OPTIONAL ELEMENTS FOR TEXT FILES	are elements that can be used in report definitions for text file reports.
REQUIRED ELEMENTS FOR SPREADSHEETS	are elements that must be used in report definitions for spreadsheet reports.
OPTIONAL ELEMENTS FOR SPREADSHEETS	are elements that can be used in report definitions for spreadsheet reports.
REQUIRED ELEMENTS FOR SPREADSHEETS WITH TEMPLATES	are elements that must be used in report definitions for spreadsheet reports that use a spreadsheet template.
OPTIONAL ELEMENTS FOR SPREADSHEETS WITH TEMPLATES	are elements that can be used in report definitions for spreadsheet reports that use a spreadsheet template.
REQUIRED ELEMENTS FOR XML FILES	are elements that must be used in report definitions for structured XML file reports.
OPTIONAL ELEMENTS FOR XML FILES	are elements that can be used in report definitions for structured XML file reports.
REQUIRED ELEMENTS FOR SPREADSHEETS WITH ROW DISPLAY	are elements that must be used in report definitions for spreadsheet reports with row display.
OPTIONAL ELEMENTS FOR SPREADSHEETS WITH ROW DISPLAY	are elements that can be used in report definitions for spreadsheet reports with row display.

The use of specific elements is dependent on the selected data source and export file format. You can read more about elements in the following chapters and the .

Elements consist of the **element name** and **element value**, which are separated by an equals sign "=".

Element

Element name   Element value

ExportFomat = Spreadsheet
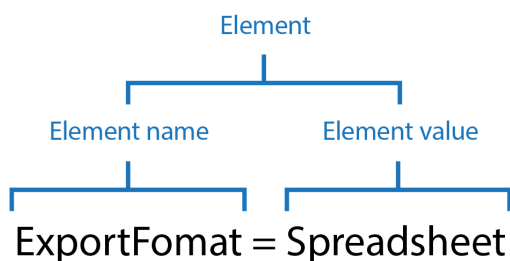
An **element** can contain values that affect how the data will be displayed or it can also contain data selectors which enable selected data to be retrieved from the database.

Element

Element name   Element value

Line = { DATE () yyyyMM } ; { USER_CODE () 10 } ; { STAT () } ; { DAYS () 5.2 } ; { HOURS () };

Data selector name   Data display parameter

Data selector
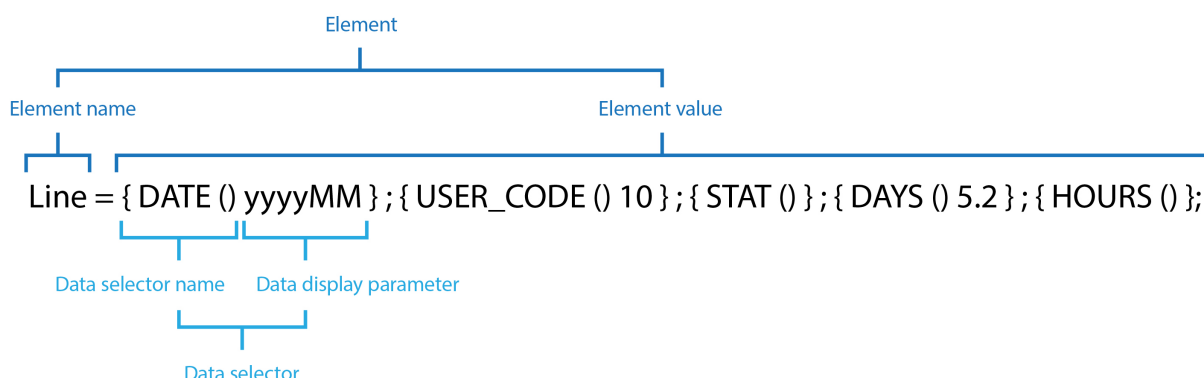
Example 1: DecimalSeparator =,

The element DecimalSeparator defines which punctuation mark will be used as the decimal separator. In this example, the defined decimal mark is a comma (,). This is an example of an element that contains a value that affects the display of data.

Example 2: Line = {USER_ID() 10};{STAT() 5};{HOURS() 4}

The element Line defines which user data will be retrieved from the database and will be displayed in each line of the report. In this example the element defines that first the user's ID number should be displayed, followed by the code of the statistic and finally the duration of the statistic in hours. This is an example, of an element that contains data selectors which enable selected data to be retrieved from the database.

Data selectors consist of the **data selector name** and **data display parameters**, which are used to set how the data will be displayed in the output file. The data names coincide with the naming of certain information within the Codeks database, which enables the information to be retrieved and displayed in the final output file. The data selectors available for use in Codeks custom reports are listed in the Table of data 206 .

Data display parameters are used to set how a specific piece of information will be displayed in the output file. Parameters differ depending on the data type (text, time, counter and date). You can read more about data display parameters in chapter Data display parameters 209 .

ATTENTION!
When writing the names of data or data display parameters pay attention to the letter case. Codeks can differentiate between lowercase and uppercase letters, and consequently, the use of the correct letter case use is essential.

Comments can also be added to the report definition. To mark a row of text as a comment put a semicolon (;) or a number sign (#) at the beginning.

Example:

; This is a comment.

This is also a comment.

USING ELEMENTS TO RETRIEVE DIFFERENT TYPES OF DATA

The use of some elements, which enable the retrieval, formatting, and recalculation of data from the database, is dependent on the type of data. It is important to know the difference between certain types of data in order to use the elements correctly:

- **general information** - referring to individual information such as the user name, the date, user ID number, etc.

  General information can be retrieved by using the **Line** and **LineForCalculatedValues** elements and can be formatted with the **Formula_XXXX** and **Line_XXXX** elements. Read more about the use of the **Line**, **LineForCalculatedValues**, **Formula_XXXX** and **Line_XXXX** elements in the following chapters (writing definitions for different file formats).

- **statistics** - are the statistic data sums defined in the Codeks application and are displayed in the *Statistics overview* section of the *Time attendance* editor. They contain two types of content: the time duration of a specific statistic and the repetition counter.

  Statistics can be retrieved by using the **Line** element and can be formatted with the **Line_XXXX** **element, where XXXX is the code of the statistic.** Read more about the use of the **Line** and **Line_XXXX** elements in the following chapters (writing definitions for different file formats).

  The default statistics set automatically when installing Codeks are:

Code	Statistic Name
0001	Worktime
E000	Not present
E001	Only entry
0003	No return
----	Weekend
PR	Holiday
Dop	Leave
Lan	Old leave
Zam	Late

  You can check all the defined statistics in your system in the *Statistic* editor (Main menu -> Settings -> Statistics).

- **additional values** - are additional data sums, that are not defined as statistics, and are displayed in the *Current period summary* and the *Year data* sections of the *Time attendance* editor. They contain only one type of content.

  Additional values can be retrieved by using the **LineForCalculatedValues** element and can be formatted with the **Line_XXXX element, where XXXX is the name of the additional value**. Read more about the use of the **LineForCalculatedValues** and **Line_XXXX** elements in the following chapters (writing definitions for different file formats).

10.8.7.2.2.1 Table of additional values

Name of additional value	Description	Content type
MustWork	Work obligation expressed in hours and in days. (depending on the selected Mode setting it will display: month - monthly work obligation, day - daily work obligation)	Time and counter
SplitTime	The number of days, when split working hours were registered (more than one entry/exit was registered).	Counter

Name of additional value	Description	Content type
Lunch	The number of lunches * when the Two Types lunch option is enabled, it counts the first lunch type.	Counter
Lunch2	The number of lunches * when the Two Types lunch option is enabled, it counts the second lunch type.	Counter
Lunch2Minutes	The time duration of lunches in minutes	Time
Drive	The number of commutes to work.	Counter
HourSum	Hourly sum of completed work hours (includes the sum of all statistics)	Time
DaySum	Hourly sum of completed work hours (includes the sum of all statistics)	Time
Saldo	Saldo of user's hours for the selected time period	Time
SaldoTotal	Total saldo of user's hours	Time
Overtime	Overtime in hours	Time
PeriodPlus	The number of hours transferred from the previous period (month)	Time
Stimulation	The number of hours that are used as the basis for calculating incentives and stimulation	Time
DayNumber	Returns the number of the day in the month (e.g. if the date is July 13th, 2014, the displayed output will be »13«)	Date
EntryTime	Returns the recorded time of an entry * when more than one entry a day has been recorded, it displays all individual entry times	Time
ExitTime	Returns the recorded time of an exit * when more than one entry/exit a day has been recorded, it displays all individual exit times	Time
Leave	Returns the total amount of leave days that a user is entitled to in the current year (in minutes or in days).	Time
OldLeave	Returns the total amount of old leave days that a user is entitled to in the current year (in minutes or in days).	Time
UsedLeave	Returns the number of leave days the user has already used (in minutes or in days).	Time
UsedOldLeave	Returns the number of old leave days the user has already used (in minutes or in days).	Time
RemainingLeave	Returns the number of leave days the user still has available (in minutes or in days).	Time
RemainingOldLeave	Returns the number of old leave days the user still has available (in minutes or in days).	Time
LunchAppOrdered *	Returns the number of ordered lunches for a user in the selected time period. * Only when using the *Codeks Lunch* additional application.	Counter
LunchAppServed *	Returns the number of served lunches for a user in the selected time period. * Only when using the *Codeks Lunch* additional application.	Counter
LunchAppNotEaten *	Returns the number of lunches that were ordered but not eaten (claimed) for a user in the selected time period. * Only when using the *Codeks Lunch* additional application.	Counter
LunchAppCanceled *	Returns the number of lunches that were canceled for a user in the selected time period. * Only when using the *Codeks Lunch* additional application.	Counter
LunchAppNotOrdered *	Returns the number of lunches that were server but were not ordered beforehand for a user in the selected time period. * Only when using the *Codeks Lunch* additional application.	Counter
LunchAppChanged *	Returns the number of lunches that were served, but were changed at the serving site (change of menu) for a user in the selected time period. * Only when using the *Codeks Lunch* additional application.	Counter
ComparativeMustWork	Returns the work obligation according to the comparative time attendance timetable. This data is used primarily for comparison with the actually clocked work hours and for custom recalculations.	Time and counter
DriveRoute_XXXX	Returns the recorded mileage and the counter of repetitions to a specific workplace (location), with XXXX being the location code 250 assigned to the selected location in the *Hardware* editor.	Time and counter

- **subsequent recalculations** - are additional calculations that can be executed prior to generating the desired report. **The element is used to calculate a value you wish to display in the report, and that is not yet calculated or written within the database.**

  Subsequent recalculations can be performed by using the **FORMULA_XXXX** element. All available mathematical operations are listed in the following <u>Table of formulas</u> 178. Read more about the use of the **Formula_XXXX** element in the following chapters (writing definitions for different file formats).

10.8.7.2.2.2 Table of formulas

Formula name	Description	Use	Example
SUM	This formula is used when recalculating a statistic from other statistic values and constants. Supported mathematical operations: • addition (+), • subtraction (-), • multiplication (*). The formula will be calculated following the written order of operations, it will not follow the mathematical order of operations. When using the SUM formula both content types the statistic contains are recalculated.	FORMULA_XXXX = {SUM()~VALUES~} • XXXX is the code of the statistic, which we wish to recalculate. • The ~VALUES~ contains the mathematical expression. The mathematical expression contains listed statistic codes and constants. Each code or constant is preceded by a mathematical operator and the individual statistic codes or values are separated by a semicolon **;** .	Formula_0001={SUM() +0001;+0003;-PR} The value of the 0003 statistic will be added to 0001, and then the PR statistic value will be subtracted.
FLOOR_TO_HOURS	This formula rounds the time duration component of a statistic to whole hours but leaves the counter component unchanged. The formula is similar in function to the HOURS_FLOOR, but it can also be used as an integrated formula.	FORMULA_XXXX = {FLOOR_TO_HOURS() XXXX} • XXXX is the code of the statistic, which's time duration content will be rounded to whole hours.	Formula_0001={SUM() +{FLOOR_TO_HOURS() 0001};+0003;-PR} The formula sets a new value to the 0001 statistic. First the embedded formula FLOOR_TO_HOURS rounds the time duration content of 0001 to whole hours and then the value of 0003 is added and the value of PR subtracted.
CONST	This formula sets a constant value to the to a specific statistic. A constant can be set: a) only for the time duration content of the statistic, b) for both the time duration and repetition counter contents of the statistic. The constant value for time duration is specified in minutes and the constant for the repetition counter is specified in the number of repetitions.	a) FORMULA_XXXX = {CONST[A]}, • XXXX is the code of the statistic, which's time duration content will be reset, • A is the new constant value for the time duration content, defined in minutes b) FORMULA_XXXX = {LIMIT[A,B]}, • XXXX is the code of the statistic, which's content will be reset, • A is the new constant value for the time duration content, defined in minutes • B is the new constant value for the repetition counter, defined by number of repetitions A maximum of two constant values can be set, written after the CONST formula name in square brackets [ ] and separated by a comma **,** .	Formula_310={CONST [480,1]} The values are set to 480 minutes and one repetition. Formula_0001={SUM() +0001;+0003;+CONST [480,1]} 480 minutes and one repetition is added to the sum of statistics 0001 and 0003.

Formula name	Description	Use	Example
NOT0CONST	This formula sets a constant value to the to a specific statistic, but only if the original value of the statistic is not 0. A constant can be set: a) only for the time duration content of the statistic, b) for both the time duration and repetition counter contents of the statistic. The constant value for time duration is specified in minutes and the constant for the repetition counter is specified in the number of repetitions.	a) FORMULA_XXXX = {NOT0CONST [A]}, • XXXX is the code of the statistic, which's time duration content will be reset, • A is the new constant value for the time duration content, defined in minutes b) FORMULA_XXXX = {NOT0CONST[A, B]}, • XXXX is the code of the statistic, which's content will be reset, • A is the new constant value for the time duration content, defined in minutes • B is the new constant value for the repetition counter, defined by number of repetitions A maximum of two constant values can be set, written after the NOT0CONST formula name in square brackets [ ] and separated by a comma **,** .	Formula_310={NOT0CONST [480,1]} The values are set to 480 minutes and one repetition, but only if the original value of the statistic's time duration content is grater than 0.
LIMIT	The LIMIT formula is used when setting a limit for the highest value of a statistic The value can be set to: • a numeric value, expressed in minutes and repetitions; • the value of the work obligation, by using the additional value »MustWork«. A limit can be set: a) only for the time duration value of the statistic, b) for both the time duration and repetition counter values of the statistic. The limit value for time duration is specified in minutes and the constant for the repetition counter is specified with the number of repetitions.	a) FORMULA_XXXX = {LIMIT[A]}, • XXXX is the code of the statistic, which's content will be limited, • A is the new limit value for the time duration content, defined in minutes b) FORMULA_XXXX = {LIMIT[A,B]}, • XXXX is the code of the statistic, which's content will be limited, • A is the new limit value for the time duration content, defined in minutes, • B is the new limit value for the repetition counter, defined by number of repetitions, A maximum of two limits can be set, written after the LIMIT formula name in square brackets [ ] and separated by a comma **,** .	Formula_0001={LIMIT[480]} The highest value for time duration of the statistic 0001 is limited to 480 minutes. The counter value remains unchanged. Formula_0001={LIMIT [480,1]} The highest value for time duration of the statistic 0001 is limited to 480 minutes and the counter value is limited to one repetition. Formula_0001={LIMIT [MustWork]} The highest value for the time duration value of the 0001 statistic is limited to the value of work obligation (MustWork).
MINLIMIT	The MINLIMIT formula is used when setting a limit for the lowest value of a statistic The value can be set to: • a numeric value, expressed in minutes and repetitions; • the value of the work obligation, by using the additional value »MustWork«. A limit can be set: a) only for the time duration value of the statistic, b) for both the time duration and repetition counter values of the statistic. The limit value for time duration is specified in minutes and the constant for the repetition counter is specified with the number of repetitions.	a) FORMULA_XXXX = {MINLIMIT[A]}, • XXXX is the code of the statistic, which's content will be limited, • A is the new limit value for the time duration content, defined in minutes b) FORMULA_XXXX = {MINLIMIT[A, B]}, • XXXX is the code of the statistic, which's content will be limited, • A is the new limit value for the time duration content, defined in minutes, • B is the new limit value for the repetition counter, defined by number of repetitions, A maximum of two limits can be set, written after the MINLIMIT formula name in square brackets [ ] and separated by a comma **,** .	Formula_Efek={MINLIMIT[0] {SUM()+HourSum;-CONST [30]}} In the example above, the SUM value of the formula is calculated first. Then the value is checked and if it is less than or equal to zero, it is set to zero.
COUNTOF	The formula COUNTOF substitutes the time duration content of a statistic with the repetition counter content of the same statistic. **ATTENTION! The formula COUNTOF is usually used when preparing the content of a certain statistic for further calculations.**	FORMULA_XXXX = {COUNTOF[XXXX]} • XXXX is the code of the statistic, which's time duration content will be substituted with the repetition counter content.	Formula_0001={SUM() +COUNTOF[0001];*CONST [480]} The time duration content of the 0001 statistic will be substituted by its repetition counter value. This step is taken so that in the next step the value can be multiplied by a constant.

10.8.7.2.3 Writing the report definition

The process of writing the report definition primarily differs depending on the desired export file format. Further, the use of certain elements differs depending on the selected data source (Mode element).

The following chapters describe how to write report definitions for text file reports, spreadsheet reports, and structured XML file reports. The required and optional elements for each report type are listed and the process the system uses to generate a report, depending on the selected data source, is described. Finally, examples of reports are provided for each report type.

10.8.7.2.3.1 Text files

Text file reports have a .txt or .csv file extension. They are usually used to prepare user data in a form suitable for import into a third-party program or application (e.g. importing data into a payroll program). The user information is displayed in separate rows in a text report file. The report definition for a text report defines which user data will be displayed in each row of the final report.

Every report definition must start with the **[Report]** section.

REQUIRED GENERAL ELEMENTS

The [Report] section is followed by the required general elements that must be used in every report definition:

Mode=month/day	Defines the data source to be used in the report. The *month* value displays the statistical sums for the defined period and the *day* value displays the desired data for each day.
	When generating the report the system first determines the selected data source. Then the system displays the user data defined by the **Line element**. The displayed data in each line differs depending on the selected data source: • **if Mode=day is selected,** the system will check the daily time attendance events for each user and will display each day (and each recorded statistic in a day) in a separate row. • **if Mode=month is selected,** the system will check the monthly statistic sums and display each sum in a separate line.
ExportFormat=TXT or **ExportFormat=CSV**	defines the file format of the report to be a text file.
File	sets the suggested name of the generated report.

OPTIONAL GENERAL ELEMENTS

DecimalSeparator, ExportEncoding, ExportTimeCuts, ExportStatsIntervals, ExportZeroDays, ExportZeroAny, ExportStatsIntervalsIgnoreWeekendHoliday *
* Read more about specific elements and data selectors in the Table of elements 200 .

REQUIRED ELEMENTS FOR TEXT FILES

Line	The **Line** element is the main required element for a text file report, that defines how user data will be displayed in each row. The Line element defines the display, order, and formatting of general information and statistics.
	Example: The Line command is set to Line={USER_NAME()-20};{USER_ID()6};{DATE()dd.MM.yyyy};{STAT()4};{HOURS() 6.2};{TIME() } . For the user Franci Mlakar we wish to display all recorded statistics in the time period from the 1st to the 7th February 2014. The output of the user information is displayed like this:
	Mlakar Franci ; 23;01.02.2014;----; 0;00:00 Mlakar Franci ; 23;03.02.2014;0001; 25,45;25:27
	Several rows will be displayed for each user because the selected data source ate the daily recorded events. A separate row will be displayed for each day of the month (for each user). If a user has two or more recorded statistics in the same day, each statistic in the day will be displayed in a separate row.

OPTIONAL ELEMENTS FOR TEXT FILES

LineForCalculatedValues	The **LineForCalculatedValues** is not required for a text file report, however, it is necessary to include it, if you want to display additional values, which can not be displayed using the **Line** element.
	ATTENTION! **The LineForCalculatedValues will display all additional values with their default values. If you explicitly do not want an additional value to be displayed in the output you must define the value as empty.** Example: MustWork= Lunch= Using these setting the additional values MustWork and Lunch will not be displayed in the output file.
Line_XXXX	The element **Line_XXXX, where XXXX is the code of the statistic or the name of the additional value,** can assign a new name or define the formatting of a specific statistic or additional value.
	ATTENTION! **The names of regular statistics and additional values must not be the same.** Make sure that any manually set names (for example set by Line_XXXX command) do not coincide with existing names of statistics and additional values. The name repetition will subsequently cause the repetition of information in the output file.
Formula_XXXX	The **Formula_XXXX element, where XXXX is the code of the statistic or the name of the additional value,** can be used to include a subsequent recalculation of selected user data into the generated report.

StatInfotypeLine_XXXX, StatInfotypeSickLine_XXXX,StatGroupLine_XXXX, UserHeaderLine_X and **Line_DriveRoute_XXXX, Line_DriveRouteCount_XXXX, Formula_DriveRouteCount_XXXX**

* Read more about specific elements and data selectors in the Table of elements 200 and Table of data selectors 206 .

EXAMPLE OF .CSV AND .TXT DEFINITION AND OUTPUT REPORT

The CSV or TXT values for the ExportFormat command are used to generate a plain text report. In the report example shown below, monthly statistic sums have been displayed for several users. Each statistic for a selected user is displayed in a separate row. The user's name, user's ID number, the code of the statistic and the statistic's value are separated by a semicolon ; .

1	Ahec Jani ;578 ; RD1;00000000000;
2	Ahec Jani ;578 ;----;00000000000;
3	Ahec Jani ;578 ;050D;00000000800;
4	Ahec Jani ; 578;Delo;00000001600;
5	Bajde Ludvig ;975 ; RD1;00000000000;
6	Bajde Ludvig ;975 ;E000;00000000000;
7	Bajde Ludvig ;975 ;----;00000000000;
8	Bajde Ludvig ;975 ;050D;00000000000;
9	Bajde Ludvig ; 975;Delo;00000001600;
10	Benkovič Tilen ;127 ; RD1;00000000000;
11	Benkovič Tilen ;127 ;E000;00000000000;
12	Benkovič Tilen ;127 ;----;00000000000;
13	Benkovič Tilen ; 127;Delo;00000001600;
14	Gregorič Marija ;688 ; RD1;00000000000;
15	Gregorič Marija ;688 ;----;00000000000;
16	Gregorič Marija ;688 ;050D;00000000800;
17	Gregorič Marija ; 688;Delo;00000001600;

[Report] section marks the beginning of the report definition.	`[Report]`
The set source of information are the total sums of statistics.	`Mode=month`
The suggested filename placeholder text in the browser.	`File=mesecne_ure_{DATE()yyyyMM}.txt`
The ExportFormat command is not specified, so the default value is used that creates a plain text file (.csv or .txt).	
The set character encoding standard.	`ExportEncoding=Unicode`
The set decimal mark is a comma.	`DecimalSeparator=,`
The main command used in plain text files to set the display of each row. This command defines the display of regular statistics.	`Line={USER_NAME()-20};{USER_ID()-5};{STAT()4.4};{HOURS()$!9.2};`
The command for the display of additional values.	`LineForCalculatedValues={USER_NAME()-20};{USER_ID()5};{STAT()4.4};{ABS_DAYS()$!9.2};`
The command for the display of the statistic named Delovna obveznost.	`Line_Delovna obveznost={USER_NAME()-20};{USER_ID()5};{STAT()4.4};{HOURS()$!9.2};`
Do not display a null value (statistics which have not been recorded in the selected time period).	`ExportZeroDays=0`
An additional calculation for the statistic 0001 (work obligation).	`Formula_0001={SUM()+MustWork}`

Additional values that are defined as empty, will not be displayed in the output file.	`HourSum=`
	`Saldo=`
	`DaySum=`
	`RemainingLeave=`
	`RemainingOldLeave=`
	`Leave=`
	`OldLeave=`
	`UsedLeave=`
	`UsedOldLeave=`

Only the additional values Lunch, Drive, and MustWork, which have been assigned a value will be displayed.	`Lunch=306`
	`Drive=309`
	`MustWork=Delovna obveznost`

10.8.7.2.3.2 Spreadsheets

Spreadsheet reports can have a .xls, .xlsx or .ods file extension. Spreadsheet reports are usually used to easily display assorted user data, that can be used in different reports, exported in PDF form and even used for further data processing. User data is, by default, displayed in separate columns in spreadsheet reports.

Every report definition must start with the **[Report]** section.

REQUIRED GENERAL ELEMENTS

The [Report] section is followed by the required general elements that must be used in every report definition:

Mode=month/day Defines the data source to be used in the report. The *month* value displays the statistical sums for the defined period and the *day* value displays the desired data for each day.

When generating the report the system first determines the selected data source. Then the system displays the user data defined by the **XMLColumnOrder element in the columns of the spreadsheet** for each selected user. The displayed data in the columns differs depending on the selected data source:
- **if Mode=day is selected,** the system will check the daily time attendance events for each user. The individual days will be listed in rows, and the events and data for each day will be displayed in the correct column of the row.
- **if Mode=month is selected,** the system will check the monthly statistic sums and display each data in a separate column.

ExportFormat=Spreadsheet defines the file format of the report to be a spreadsheet.

File sets the suggested name of the generated report.

OPTIONAL GENERAL ELEMENTS

DecimalSeparator, ExportEncoding, ExportTimeCuts, ExportStatsIntervals, ExportZeroDays, ExportZeroAny, ExportStatsIntervalsIgnoreWeekendHoliday *
* Read more about specific elements and data selectors in the Table of elements 200 .

REQUIRED ELEMENTS FOR SPREADSHEETS

XMLColumnsOrder The **XMLColumnsOrder** element is the main and required element, that defines which data will be displayed in the spreadsheet report and what order it will be in. The value of the element consists of listed codes of statistics and names of additional values, separated by semicolon marks (;). **Only statistics and additional values listed in this element will be displayed in the spreadsheet report.**

Example: The XMLColumnsOrder element is:
XMLColumnsOrder = DayNumber;CustomColumn1;EntryTime;ExitTime;DaySum;0001;----;Lea .
All recorded statistics in May 2015 should be displayed for the selected user Franci Makar.
The data source are the daily time attendance events (Mode=day), thus 31 rows (one for each day) will be displayed in the spreadsheet for the selected user. The statistics and additional values defined by the XMLColumnsOrder element will be displayed in the columns of the spreadsheet.

OPTIONAL ELEMENTS FOR SPREADSHEETS

The **Line**, **LineForCalculatedValues**, **Line_XXXX** and **Formula_XXXX** elements in the spreadsheet report definitions are only used to format the display of user data. The **XMLColumnsOrder** element defines which user data will be displayed in the report and what order it will be in.

LineForCalculatedValues The **LineForCalculatedValues** element defines the formatting of additional values.

Line_XXXX The element **Line_XXXX, where XXXX is the code of the statistic or the name of the additional value,** can assign a new name or define the formatting of a specific statistic or additional value.

> **ATTENTION!**
> **The names of regular statistics and additional values must not be the same.**
> Make sure that any manually set names (for example set by Line_XXXX command) do not coincide with existing names of statistics and additional values. The name repetition will subsequently cause the repetition of information in the output file.

Formula_XXXX The **Formula_XXXX element, where XXXX is the code of the statistic or the name of the additional value,** can be used to include a subsequent recalculation of selected user data into the generated report.

PageOrientation, XMLFontSize, ColumnWidth, XMLReportTitle, ExportMonthSums (the use of this element is only sensible when the selected data source are the daily time attendance events - Mode=day)**, XMLMaxUsersPerPage** (the use of this element is only sensible when the selected data source are the monthly statistic sums - Mode=month)**, ExportColumnHeaders, HeaderStyle, Header_XXXX, ExportLegend, Legend_XXXX, PrintGridlines, ExportUserHeaders** (the use of this element is only sensible when the selected data source are the daily time attendance events - Mode=day)**, CompanyName, CompanyAddress, CompanyIDNumber, ExportPageHeaders, CsvValueSeparator** (*EXCEPTION - (the use of this element is only sensible when generating a *Spreadsheet* report with the .csv file extension in the name)**, CsvAlwaysQuoteValues** (*EXCEPTION - (the use of this element is only sensible when generating a *Spreadsheet* report with the .csv file extension in the name)**, PrintMarginLeft**, **PrintMarginRight**, **PrintMarginTop**, **PrintMarginBottom, PrintAdditionalEntryExits** and **Line_DriveRoute_XXXX, Line_DriveRouteCount_XXXX, Formula_DriveRouteCount_XXXX**

* Read more about specific elements and data selectors in the Table of elements 200 and Table of data selectors 206 .

EXAMPLE OF SPREADSHEET DEFINITION AND OUTPUT REPORT

The Spreadsheet value of the ExportFormat command is used to generate a spreadsheet report suitable for all newer spreadsheet editing programs. The example report that is shown below consist of:
- the report header, where company information and the export time period are displayed,
- the core of the report, where the users' daily information is displayed in separate columns,
- the bottom of the spreadsheet, where the monthly statistic sums are displayed.

	A	B	C	D	E	F	G	H
1	Podjetje							
2	Ulična cesta 2000					Obdobje 1. 01. 2016 - 31. 01. 2016		
3	12345678							
4				Dnevni izpis				
5	Dan	Vhod	Izhod	Seštevek ur v dnevu	0001	To	Lea	
6	01	00:00	00:00	8	0	0	0	
7	02	00:00	00:00	0	0	1	0	
8	03	00:00	00:00	0	0	1	0	
9	04	07:14	15:35	8,35	0	0	0	
10	05	07:00	15:58	8,97	0	0	0	
11	06	07:01	15:50	8,82	0	0	0	
12	07	07:00	15:09	8,15	0	0	0	
13	08	07:00	15:02	8,03	0	0	0	
14	09	00:00	00:00	0	0	1	0	
15	10	00:00	00:00	0	0	1	0	
16	11	07:48	16:00	8	0	0	0	
17	12	07:00	15:01	7,92	0	0	0	
18	13	07:00	17:06	9,33	0	0	0	
19	14	07:00	15:05	8,08	0	0	0	
20	15	07:00	15:08	8,13	0	0	0	
21	16	00:00	00:00	0	0	1	0	
22	17	00:00	00:00	0	0	1	0	
23	18	07:40	16:07	8,45	0	0	0	
24	19	07:02	15:14	8,18	0	0	0	
25	20	07:00	15:15	8,25	0	0	0	
26	21	07:00	18:00	11	0	0	0	
27	22	07:00	15:15	8,25	0	0	0	
28	23	00:00	00:00	0	0	1	0	
29	24	00:00	00:00	0	0	1	0	
30	25	07:00	16:10	9,17	0	0	0	
31	26	07:00	16:26	9,43	0	0	0	
32	27	07:00	15:09	7,95	0	0	0	
33	28	07:00	15:19	4,45	0	0	0	
34	29	00:00	00:00	0	0	0	0	
35	30	00:00	00:00	0	0	1	0	
36	31	00:00	00:00	0	0	1	0	
37	Skupaj			166,92				
38	Delo po urniku			158:55				
39	To			10				
40	Praznik			08:00				
41	Poslovno			06:36				
42	Malica			07:08				
43	Privatno			05:09				
44								
45								

[Report] section marks the beginning of the report definition.	`[Report]`
The set source of information are the recorded day events.	`Mode=day`
The suggested filename placeholder text in the browser.	**`File=Place{DATE()yyyyMM}.xls`**
The set decimal mark is a comma.	`DecimalSeparator=,`
All statistics will be displayed, including statistics with a null value (statistics which have not been recorded in the selected time period).	`ExportZeroDays=1`
The set character encoding standard.	`ExportEncoding=windows-1250`
The output file format is Spreadsheet.	**`ExportFormat=Spreadsheet`**
Monthly sums of recorded statistics will be displayed in the lower part of the spreadsheet for each user individually.	`ExportMonthSums=1`
Column width in millimeters.	`XMLColumnWidth=20`
Font size.	`XMLFontSize=6`
Page orientation is set to landscape.	`PageOrientation=Landscape`
The report title that will be displayed in the spreadsheet.	`XMLReportTitle=Dnevni izpis`
The order in which the columns will be displayed in the output file (the main command for spreadsheet-type output file formats).	**`XMLColumnsOrder = DayNumber;EntryTime;ExitTime;DaySum;0001;----;Lea`**
Horizontal alignment of the spreadsheet header.	`HeaderStyle=Horizontal`
The legend will not be displayed.	`ExportLegend=0`

| Company information. | ```
CopmanyName=Podjetje d.o.o.
CompanyAddress=Ulična cesta 2000
CompanyIDNumber=12345678
``` |
| The Line command determines how the regular statistics will be displayed. | ```
Line={TIME() }
``` |
| The LineForCalculatedValues command determines how the additional values will be displayed. | ```
LineForCalculatedValues={TIME() }
``` |
| List of commands that set the display of each statistic or additional value individually. | ```
Line_DayNumber={DATE()dd}
Line_EntryTime={DATE()HH:mm}
Line_ExitTime={TIME()}
Line_DaySum={HOURS()6.2}
Line_0001={HOURS()6.2}
Line_----={DAYS()6.2}
Line_Lea={HOURS()6.2}
``` |
| An additional calculation for the statistic 0001 (set to 480 minutes and one repetition). | ```
Formula_0001={LIMIT[480,1]}
``` |
| The column names as they will be displayed in the head row of the spreadsheet. | ```
Header_DayNumber=Dan
Header_EntryTime=Ulaz
Header_ExitTime=Izlaz
Header_DaySum=Dnevna suma
Header_0001=0001
Header_----=To
Header_Lea=Lea
``` |
| Descriptions of used codes and names displayed in the legend. | ```
Legend_DayNumber=Dan v mesecu
Legend_EntryTime=Čas vhoda
Legend_ExitTime=Čas izhoda
Legend_DaySum=Skupen dnevni delovni čas
Legend_0001=Delovni čas
Legend_----=Vikendi
Legend_Lea=Letni dopust
``` |
| Additional values that are defined as empty, will not be displayed in the output file. | ```
Lunch=
Drive=
MustWork=
HourSum=
Saldo=
DaySum=
PeriodPlus=
Overtime=
SplitTime=
RemainingLeave=
RemainingOldLeave=
Leave=
OldLeave=
UsedLeave=
UsedOldLeave=
``` |

ATTENTION!
When writing a report definition for the Spreadsheet file format it is necessary to set a value for the **File** command or at least determine the file extension. If the file name or file extension is not set, the web browser will report an error and will be unable to save the generated report.

10.8.7.2.3.3 Spreadsheets with row display

Spreadsheet reports with row display can have a .xls, .xlsx or .ods file extension. Spreadsheet reports are usually used to easily display assorted user data, that can be used in different reports, exported in PDF form and even used for further data processing. In spreadsheet reports with row display the user data is, similarly to text file reports, displayed in rows and the individual vales are additionally separated into individual cells of the spreadsheet.

Every report definition must start with the **[Report]** section.	
REQUIRED GENERAL ELEMENTS	
The [Report] section is followed by the required general elements that must be used in every report definition:	
Mode=month/day	Defines the data source to be used in the report. The *month* value displays the statistical sums for the defined period and the *day* value displays the desired data for each day.
	When generating the report the system first determines the selected data source. Then it starts to generate the user data defined by the **Line element in the rows of the spreadsheet** for each selected user. **The individual data values, defined to be displayed within each row by the *Line* element and separated by the set separator, will be divided into separate cells.** The displayed data in the rows of the spreadsheet differs depending on the selected data source:
	• **if Mode=day is selected,** the system will check the daily time attendance events for each user and will display each day (and each recorded statistic in a day) in a separate row.
	• **if Mode=month is selected,** the system will check the monthly statistic sums and display each sum in a separate line.
ExportFormat= Spreadsheet	defines the file format of the report to be a spreadsheet.
File,	sets the suggested name of the generated report.
OPTIONAL GENERAL ELEMENTS	
DecimalSeparator, ExportEncoding, ExportTimeCuts, ExportStatsIntervals, ExportZeroDays, ExportZeroAny, ExportStatsIntervalsIgnoreWeekendHoliday * * Read more about specific elements and data selectors in the <u>Table of elements</u> 200.	
REQUIRED ELEMENTS FOR SPREADSHEETS WITH ROW DISPLAY	
SplitLineToCells	This element activates the function of displaying the output data in individual cells of the spreadsheet and **is one of the required elements when generating a spreadsheet report with row display.**
Line	The **Line** element is the main required element for a spreadsheet report with row display, that defines how user data will be displayed in each row of the spreadsheet. The Line element defines the display, order, and formatting of general information and statistics.
OPTIONAL ELEMENTS FOR SPREADSHEETS / OPTIONAL ELEMENTS FOR SPREADSHEETS WITH ROW DISPLAY	
LineForCalculatedValues	The **LineForCalculatedValues** is not required for a spreadsheet report with row display, however, it is necessary to include it, if you want to display additional values, which can not be displayed using the **Line** element.
	ATTENTION! **The LineForCalculatedValues will display all additional values with their default values. If you explicitly do not want an additional value to be displayed in the output you must define the value as empty.** Example: MustWork= Lunch= Using these setting the additional values MustWork and Lunch will not be displayed in the output file.
Line_XXXX	The element **Line_XXXX, where XXXX is the code of the statistic or the name of the additional value,** can assign a new name or define the formatting of a specific statistic or additional value.
	ATTENTION! **The names of regular statistics and additional values must not be the same.** Make sure that any manually set names (for example set by Line_XXXX command) do not coincide with existing names of statistics and additional values. The name repetition will subsequently cause the repetition of information in the output file.
Formula_XXXX	The **Formula_XXXX element, where XXXX is the code of the statistic or the name of the additional value,** can be used to include a subsequent recalculation of selected user data into the generated report.
SplitLineColSeparator	Defines separator (typographic character) which will be used to separate data to individual cells of the spreadsheet.
PageOrientation, XMLFontSize, ColumnWidth, XMLReportTitle, ExportMonthSums (the use of this element is only sensible when the selected data source are the daily time attendance events - Mode=day)**, XMLMaxUsersPerPage** (the use of this element is only sensible when the selected data source are the monthly statistic sums - Mode=month), **ExportColumnHeaders, HeaderStyle, Header_XXXX, ExportLegend, Legend_XXXX, PrintGridlines, ExportUserHeaders** (the use of this element is only sensible when the selected data source are the daily time attendance events - Mode=day)**, CompanyName, CompanyAddress, CompanyIDNumber, ExportPageHeaders, CsvValueSeparator** (*EXCEPTION - (the use of this element is only sensible when generating a *Spreadsheet* report with the .csv file extension in the name), **CsvAlwaysQuoteValues** (*EXCEPTION - (the use of this element is only sensible when generating a *Spreadsheet* report with the .csv file extension in the name), **PrintMarginLeft**, **PrintMarginRight**, **PrintMarginTop**, **PrintMarginBottom,** **PrintAdditionalEntryExits** and **Line_DriveRoute_XXXX,** **Line_DriveRouteCount_XXXX, Formula_DriveRouteCount_XXXX**	
* Read more about specific elements and data selectors in the <u>Table of elements</u> 200 and <u>Table of data selectors</u> 206.	

EXAMPLE OF SPREADSHEET REPORT WITH ROW DISPLAY DEFINITION AND OUTPUT REPORT

To generate a spreadsheet report with row display use the Spreadsheet value for the ExportFormat element. The report below displays the daily hour sums for each user. Each daily statistic is displayed in a separate row and the individual data values (the date, time of entry and exit, the day total, etc.) are distributed into separate cells.

	A	B	C	D	E	F	G	P	Q	R	S
1	Company										
2							Period 1. 04. 2018 - 30. 04. 2018				
3											
4		Name and lastname				Roberto Anderson	Personal ID				17
5		Department				Development					
6											
7											
8											
9	02.04	00:00	00:00	Hd	02.04.2018						
10	03.04	07:48	16:00	001	03.04.2018						
11	04.04	07:46	16:11	001	04.04.2018						
12	05.04	07:47	15:56	001	05.04.2018						
13	06.04	07:50	16:22	001	06.04.2018						
14											
15											
16	09.04	07:57	15:26	001	09.04.2018						
17	10.04	07:50	16:21	001	10.04.2018						
18	11.04	07:57	15:25	001	11.04.2018						
19	12.04	07:47	16:05	001	12.04.2018						
20	13.04	07:40	16:05	001	13.04.2018						
21											
22											
23	16.04	07:52	16:22	001	16.04.2018						
24	17.04	07:52	16:29	001	17.04.2018						
25	18.04	07:52	15:07	001	18.04.2018						
26	19.04	07:41	15:16	001	19.04.2018						
27	20.04	07:51	16:34	001	20.04.2018						
28											
29											
30	23.04	07:37	16:56	001	23.04.2018						
31	24.04	07:57	15:25	001	24.04.2018						
32	25.04	07:32	16:44	001	25.04.2018						
33	26.04	07:45	17:44	001	26.04.2018						
34	27.04	00:00	00:00	Hd	27.04.2018						
35											
36											
37	30.04	07:48	15:36	001	30.04.2018						

[Report] section marks the beginning of the report definition.	`[Report]`
The set source of information are the recorded day events.	`Mode=day`
The suggested filename placeholder text in the browser.	`File=Statistics{DATE()yyyyMM}.ods`
The set decimal mark is a comma.	`DecimalSeparator=,`
Statistics with a null value (statistics which have not been recorded in the selected time period) will not be displayed.	`ExportZeroDays=0`
The output file format is Spreadsheet.	`ExportFormat=Spreadsheet`
Statistics that are repeated several days in a row will not be grouped.	`ExportStatsIntervals=0`
Displays the header cells in the upper part of the spreadsheet for each user.	`ExportUsersHeaders=1`
This element activates the function of displaying the output data in individual cells of the spreadsheet.	`SplitLineToCells=1`
The separator (typographic character) to be used for separating values which must be displayed in individual cells of the spreadsheet.	`SplitLinecolSeparator=;`
This element defines which user data will be displayed in each row of the spreadsheet, how it will be formatted and in what order it will be displayed. (It is one of the required elements for spreadsheets with row display.)	`Line={DATE()dd.MM};{DATE()HH:mm};{DATETO()HH:mm};{STAT()4};{DATE()dd.MM.yyyy`

Additional values that are defined as empty, will not be displayed in the output file.	HourSum= Saldo= DaySum= PeriodPlus= Overtime= SplitTime= Lunch= Drive= MustWork=

ATTENTION!
When writing a report definition for the Spreadsheet file format it is necessary to set a value for the **File** command or at least determine the file extension. If the file name or file extension is not set, the web browser will report an error and will be unable to save the generated report.

10.8.7.2.3.4 Structured XML files

Structured XML report files are generated with an .xml file extension. Reports structured using XML tags are usually used to import user data into another program or application and can be easily read by third-party software. The XML reports contain data from the Codeks database hierarchically structured within specially defined XML tags.

Every report definition must start with the **[Report]** section.	
REQUIRED GENERAL ELEMENTS	
The [Report] section is followed by the required general elements that must be used in every report definition:	
Mode=month/day	Defines the data source to be used in the report. The *month* value displays the statistical sums for the defined period and the *day* value displays the desired data for each day.
	When generating the report the system first determines the selected data source. Then the system displays the defined user data for each selected user according to the XML structure defined in the [XSLT] section of the report definition.
ExportFormat=XML	defines the file format of the report to be a structured XML file.
File	sets the suggested name of the generated report.
OPTIONAL GENERAL ELEMENTS	
DecimalSeparator, ExportEncoding, ExportTimeCuts, ExportStatsIntervals, ExportZeroDays, ExportZeroAny, ExportStatsIntervalsIgnoreWeekendHoliday * * Read more about specific elements and data selectors in the Table of elements 200 .	
REQUIRED ELEMENTS FOR XML FILES	
ATTENTION! **Defining a structured XML file demands a detailed knowledge of the data structure within the Codeks database as well as the syntax needed to design the custom XML data structure.** Read more about XML at http://www.w3schools.com/xsl/default.asp.	
XMLRootElementName	defines the name of the hierarchically highest root XML element used in the output file.
[XSLT]	The instructions for the data structure within the report are written in the **[XSLT]** section.
~ Other elements ~	are not used for structured XML files. The formatting of the data display is instead done by the code written within the **[XSLT]** section.
* Read more about specific elements and data selectors in the Table of elements 200 and Table of data selectors 206 .	

EXAMPLE OF XML DEFINITION AND OUTPUT REPORT

The XML value of the ExportFormat command generates a structured XML output file. In the report example shown below, the user's information and monthly statistic sums are displayed in the form of a tree structure. The exact form of the tree structure is set by the XML code in the [XSLT] section of the report definition.

```xml
1    <?xml version="1.0" encoding="utf-8"?>
2    <PayrollData>
3      <USERDATA Name="Ahec Jani" PersonalId="578">
4        <statisticsum>
5          <StatId>1</StatId>
6          <StatName>RD1</StatName>
7          <StatDescription>Delo po urniku</StatDescription>
8          <StatSum>9535</StatSum>
9          <StatCount>20</StatCount>
10       </statisticsum>
11       <statisticsum>
12         <StatId>5</StatId>
13         <StatName>----</StatName>
14         <StatDescription>Vikend</StatDescription>
15         <StatSum>0</StatSum>
16         <StatCount>10</StatCount>
17       </statisticsum>
18       <statisticsum>
19         <StatId>6</StatId>
20         <StatName>PR</StatName>
21         <StatDescription>Praznik</StatDescription>
22         <StatSum>480</StatSum>
23         <StatCount>1</StatCount>
24       </statisticsum>
25       <statisticsum>
26         <StatId>10</StatId>
27         <StatName>Posl</StatName>
28         <StatDescription>Poslovno</StatDescription>
29         <StatSum>396</StatSum>
30         <StatCount>3</StatCount>
31       </statisticsum>
32       <statisticsum>
33         <StatId>21</StatId>
34         <StatName>Mali</StatName>
35         <StatDescription>Malica</StatDescription>
36         <StatSum>428</StatSum>
37         <StatCount>16</StatCount>
38       </statisticsum>
39       <statisticsum>
40         <StatId>22</StatId>
41         <StatName>Priv</StatName>
42         <StatDescription>Privatno</StatDescription>
43         <StatSum>309</StatSum>
44         <StatCount>6</StatCount>
45       </statisticsum>
46     </USERDATA>
47   </PayrollData>
```

[Report] section marks the beginning of the report definition.	`[Report]`
The set source of information are the total sums of statistics.	`Mode=month`
The suggested filename placeholder text in the browser.	`File=ure_{DATE()yyyyMM}.xml`
The output file format is XML.	**`ExportFormat=XML`**
The set character encoding standard.	`ExportEncoding=Unicode`
The name of the root XML element used in the output file.	**`XMLRootElementName=PayrollData`**
An additional calculation for the statistic 0001 (work obligation).	`Formula_0001={LIMIT[MustWork]}`
The section [XSLT] marks the beginning of the XSLT code. Read mora about xml at http://www.w3schools.com/xsl/default.asp	`[XSLT]`

```xml
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform" version="1.0">
  <xsl:template match="userattendancedata">
    <USERDATA>
      <xsl:attribute name="Name">
      <xsl:value-of select="user/LastAndFirstName"/>
      </xsl:attribute>
      <xsl:attribute name="PersonalId">
      <xsl:value-of select="user/@personalid"/>
      </xsl:attribute>
      <xsl:apply-templates select="statisticsums"/>
    </USERDATA>
  </xsl:template>
  <xsl:template match="statisticsums">
    <statisticsum>
      <StatId><xsl:value-of select="@statisticid"/></StatId>
      <StatName><xsl:value-of select="@name"/></StatName>
              <StatDescription><xsl:value-of  select="@description"/></StatDescription>
      <StatSum><xsl:value-of select="@statsum"/></StatSum>
      <StatCount><xsl:value-of select="@statcount"/></StatCount>
    </statisticsum>
  </xsl:template>
</xsl:stylesheet>
```

ATTENTION!
When writing an XML report definition the use of the **[Report]** and **[XSLT]** sections as well as the **ExportFormat=XML** and **XMLRootElement=~any name** commands is absolutely necessary.

10.8.7.2.4 Reports with a spreadsheet template

Spreadsheet templates make it possible to customize the design of the spreadsheet report in advance using a spreadsheet generating program, such as Microsoft Excel. With such a template you can define exactly which user data will be displayed and how it should be formatted in the spreadsheet. All spreadsheets with the file extensions .xls, .xlsx and .ods can be used as report templates.

1. To define a new custom report with a spreadsheet template click the *Add custom report* icon.
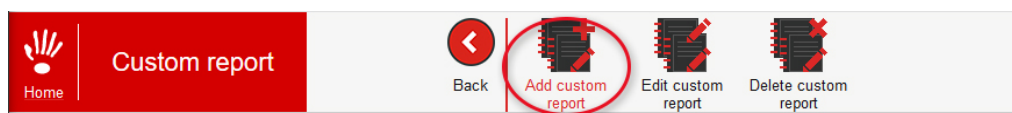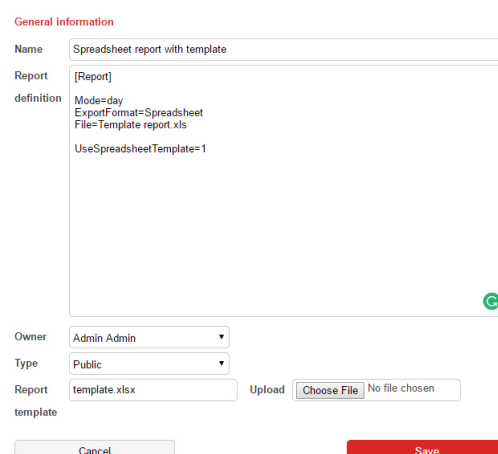
2. A new window will open. Here, enter the necessary information to define a new custom report.

3. Fill out the *Name, Owner* and *Type* fields.

4. You <u>must</u> enter the following in the *Report definition* field:

- the section **[Report]**,
- the selected data source using the **Mode** element,
- the **ExportFormat** element set to *Spreadsheet*,
- the name of the file with the appropriate file extension using the **File** element and
- the **UseSpreadsheetTemplate** element with the set value of **1**, which enables the use of the attached template.

You can also use any other element to display or format data in the *Report definition*. **However, keep in mind that elements written in the *Report definition* can, by default, overwrite the elements written in the report template.** Also, the use of some elements may be pointless in combination with the selected data source.

5. Click the **Choose File** button next to the *Upload* field and find the prepared spreadsheet report template.

The process of preparing spreadsheet report templates with various spreadsheet generating software is described in chapter <u>Designing the spreadsheet template</u> ¹⁹⁶.

6. Finally, click the **Save** button.

10.8.7.2.4.1 Designing the spreadsheet template

To successfully use the report template function you must correctly form the *Report definition* and the spreadsheet report template. The template can be prepared in any software capable of generating spreadsheets with file extensions .xls, .xlsx or .ods.

Writing the *Report definition*:

Every report definition must start with the **[Report]** section.

REQUIRED GENERAL ELEMENTS

The [Report] section is followed by the required general elements that must be used in every report definition:

Mode=month/day	Defines the data source to be used in the report. The *month* value displays the statistical sums for the defined period and the *day* value displays the desired data for each day.
	When generating the report the system first determines the selected data source. Then the system displays the user data defined by the **XMLColumnOrder element in the columns of the spreadsheet** for each selected user. The displayed data in the columns differs depending on the selected data source: • **if Mode=day is selected,** the system will check the daily time attendance events for each user. The individual days will be listed in rows, and the events and data for each day will be displayed in the correct column of the row. • **if Mode=month is selected,** the system will check the monthly statistic sums and display each data in a separate column.
ExportFormat=Spreadsheet	defines the file format of the report to be a spreadsheet.
File	sets the suggested name of the generated report.
*DayStatPerLine	It is necessary to use this element (with its value set to 1) when generating a report with a spreadsheet template displaying the value of the main statistic per day (only when using the *Mode=day*).

OPTIONAL GENERAL ELEMENTS

DecimalSeparator, ExportEncoding, ExportTimeCuts, ExportStatsIntervals, ExportZeroDays, ExportZeroAny, ExportStatsIntervalsIgnoreWeekendHoliday *
* Read more about specific elements and data selectors in the <u>Table of elements</u> 200.

REQUIRED ELEMENTS FOR SPREADSHEETS WITH TEMPLATES

UseSpreadsheetTemplate=1	**ATTENTION!** **The *Report definition* for a report with a spreadsheet template must contain the UseSpreadsheetTemplate element, set to value 1.** If the *Report definition* does not contain this element, the report template will not be used when generating the report, even though it is attached in the custom report form.

OPTIONAL ELEMENTS FOR SPREADSHEETS WITH TEMPLATES

ATTENTION!
Any element used to display or format data, that can be used in a spreadsheet report definition, can also be used in definitions of reports with a spreadsheet template. However, keep in mind that elements written in the Report definition, by default, overwrite the elements written in the report template.

XMLColumnsOrder	The **XMLColumnsOrder** element is the main and required element, that defines which data will be displayed in the spreadsheet report and what order it will be in. The value of the element consists of listed codes of statistics and names of additional values, separated by semicolon marks (;).

The **Line**, **LineForCalculatedValues**, **Line_XXXX** and **Formula_XXXX** elements in the spreadsheet report definitions are only used to format the display of user data. The **XMLColumnsOrder** element defines which user data will be displayed in the report and in what order.

LineForCalculatedValues	The **LineForCalculatedValues** element defines the formatting of additional values.
Line_XXXX	The element **Line_XXXX, where XXXX is the code of the statistic or the name of the additional value,** can assign a new name or define the formatting of a specific statistic or additional value.
	ATTENTION! **The names of regular statistics and additional values must not be the same.** Make sure that any manually set names (for example set by Line_XXXX command) do not coincide with existing names of statistics and additional values. The name repetition will subsequently cause the repetition of information in the output file.
Formula_XXXX	The **Formula_XXXX element, where XXXX is the code of the statistic or the name of the additional value,** can be used to include a subsequent recalculation of selected user data into the generated report.

PageOrientation, XMLFontSize, ColumnWidth, XMLReportTitle, ExportMonthSums (the use of this element is only sensible when the selected data source are the daily time attendance events - Mode=day)**, XMLMaxUsersPerPage** (the use of this element is only sensible when the selected data source are the monthly statistic sums - Mode=month)**, ExportColumnHeaders, HeaderStyle, Header_XXXX, ExportLegend, Legend_XXXX, PrintGridlines, ExportUserHeaders** (the use of this element is only sensible when the selected data source are the daily time attendance events - Mode=day)**, CompanyName, CompanyAddress, CompanyIDNumber, ExportPageHeaders, CsvValueSeparator** (*EXCEPTION - (the use of this element is only sensible when generating a *Spreadsheet* report with the .csv file extension in the name), **CsvAlwaysQuoteValues** (*EXCEPTION - (the use of this element is only sensible when generating a *Spreadsheet* report with the .csv file extension in the name), **PrintMarginLeft, PrintMarginRight, PrintMarginTop, PrintMarginBottom, PrintAdditionalEntryExits** and **Line_DriveRoute_XXXX, Line_DriveRouteCount_XXXX, Formula_DriveRouteCount_XXXX**

Designing the spreadsheet template:

When designing the spreadsheet template, always keep in mind, which data source you will be displaying:

- **When displaying data from daily events (Mode=day)**, the user data for each day will be displayed in a separate row, which means that a number of rows will be needed to display the desired data for a single user.
- **When displaying data from monthly statistic sums and additional values (Mode=month),** the display of user data for a single user will require less space/rows.

You can set completely custom cell borders and fills for the cells in the spreadsheet template. The text that will not vary and will be constant (e.g. the spreadsheet header) can be simply entered and styled in the desired cells.

The variable parts of the spreadsheet template, that contain the elements used to retrieve the desired data from the database, are marked by a specific symbol combination. Each variable part must begin with a double percent sign (**%%**).

When generating the spreadsheet report with a report template, the Codeks system scans the report template searching for parts beginning with the %% sign. The template can contain several types of elements starting with the %% sign:

- **elements that display general information**
  an element with the form **%%{~NAME OF DATA SELECTOR~()~DATA DISPLAY PARAMETERS~}**, enables the display and formatting of specific general information.

    Example: The element **%%{PERIOD_START()MM}** written in the spreadsheet template will display the start month of the period to be displayed, and the **%%{USER_NAME()20}** element will display the name of the user.

- **the element that defines the row to be repeated depending on the selected data source**
  (Mode=day - the row is repeated for each day, Mode=month - the row is repeated for each user)
  the element **%%DATAROW** marks the beginning of the row to be repeated in the spreadsheet for each day or each user.

- **elements that display a specific statistic or additional value**
  an element with the form **%%STATDATA(~CODE OF STATISTICS / NAME OF ADDITIONAL VALUE~){~NAME OF DATA SELECTOR~()~DATA DISPLAY PARAMETERS~}** enables the display and data formatting of a selected statistic.

    Example: The element **%%STATDATA(0001){TIME()}** written in the spreadsheet template will display the duration of the statistic with the code 0001.

- **the element to display (statistic) sums**
  the **%%SUMDATA(DaySum){TIME()}** element will display:
  - the sum of each column, if it is used at the end of a row containing the %%DATAROW element,
  - the monthly sum, if it is used in the report header or separately elsewhere in the spreadsheet.

- **the element to display the drive and lunch count**
  the elements **%%STATDATA(Drive){~NAME OF DATA SELECTOR~()~DATA DISPLAY PARAMETERS~}** and **%%STATDATA(Lunch){~NAME OF DATA SELECTOR~()~DATA DISPLAY PARAMETERS~}** will display the number of drives and lunches, respectively.

From Codex version 10.2112.0.15840, it is possible to **specify the format of the data to be displayed in individual table cells in the spreadsheet template in the spreadsheet formatting program** (e.g., Microsoft Excel, LibreOffice Calc, OpenOffice Calc), and to calculate new values from values printed in the same spreadsheet line with basic Excel formulas (addition, subtraction, multiplication, and division).
You can read more about setting the data format in chapter Data format specified by Excel data format [212].
You can read more about the use of Excel formulas to calculate new values in the same row in chapter Example of a report with a template with Excel formulas [199].

10.8.7.2.4.2 Example of a spreadsheet report with a spreadsheet template

To generate a spreadsheet report using a report template you must correctly form the *Report definition* and the spreadsheet report template. The example report shown below displays the presence report for a selected user in a selected month. The used *Report definition* and spreadsheet report template are also shown below.

	A	B	C	D
1				
2	**User presence report**			
3				
4	Month:	01	Year:	2017
5				
6	Name and last name	Glavan Sebastjan		
7				
8	Date	Start	End	Sum
9				
10	01	00:00	00:00	
11	02	00:00	00:00	
12	03	07:00	15:00	08:00
13	04	07:00	15:00	08:00
14	05	07:00	15:00	08:00
15	06	07:00	15:00	08:00
16	07	00:00	00:00	
17	08	00:00	00:00	
18	09	07:00	15:00	08:00
19	10	07:00	15:00	08:00
20	11	07:00	15:00	08:00
21	12	07:00	15:00	08:00
22	13	07:00	15:00	08:00
23	14	00:00	00:00	
24	15	00:00	00:00	
25	16	07:00	15:00	08:00
26	17	07:00	15:00	08:00
27	18	07:00	15:00	08:00
28	19	07:00	15:00	08:00
29	20	07:00	15:00	08:00
30	21	00:00	00:00	
31	22	00:00	00:00	
32	23	07:00	15:00	08:00
33	24	07:00	15:00	08:00
34	25	07:00	15:00	08:00
35	26	07:00	15:00	08:00
36	27	07:00	15:00	08:00
37	28	00:00	00:00	
38	29	00:00	00:00	
39	30	07:00	15:00	08:00
40	31	07:00	15:00	08:00
41				

– the report definition with the attached spreadsheet report template

General information

Name: Spreadsheet report with template

Report definition:
```
[Report]
Mode=day
ExportFormat=Spreadsheet
File=Template report.xls

UseSpreadsheetTemplate=1
```

Owner: Admin Admin

Type: Public

Report template: template.xlsx   Upload: Choose File No file chosen

Cancel   Save

– spreadsheet template

	A	B	C	D
1				
2	**User presence report**			
3				
4	Month: {PERIOD_START()dd}		Year: {PERIOD_START()yyyy}	
5				
6	Name and lastname: %%{USER_NAME()20}			
7				
8	Date	Start	End	Sum
9				
10	%%DATAROW()%%STATDATA (DayNumber){DATE()dd}	%%STATDATA{EntryTime}{TIME()}	%%STATDATA{ExitTime}{TIME()}	%%STATDATA(0001){TIME()}
11				

10.8.7.2.4.3 Example of a report with a template with Excel formulas

The following is an example of a report with a spreadsheet template that contains cells in which data is written in the format specified by Excel (or another spreadsheet editing program) and a basic (Excel) formulas for calculating new values from printed values in the same row.

- the report definition with the attached spreadsheet report template

The report definition does not contain specific settings, as all detailed instructions for data printing are given in the table template.

- report template

Excel functions
In the report template, **the line with %% DARTAROW can also contain Excel formulas.**
Where you want the data from the current row to be used to calculate the new value according to the Excel formula, **use the form X999999, where X is the letter of the column, necessarily followed by 6 nines. 6 nines tell the program that it must take the values from the defined column in the current row to calculate**.
You can use basic Excel formulas: addition, subtraction, multiplication and division.

Examples:

The written function =SUM(C999999*D999999) will be changed to =SUM(A1*B1) for the first line, =SUM(A2*B2) for the second line and so on for the others.

The written function =SUM(E999999 + H999999 + K999999 + M999999 + P999999) will be changed to =SUM(E1 + H1 + K1 + M1 + P1) for the first line, =SUM(E2 + H2 + K2 + M2 + P2) for the second line and so on for the rest.

10.8.7.2.5 Table of elements

Element name	Description	Mode	Format	Default value	Allowed values
REQUIRED GENERAL ELEMENTS					
[Report]	The [Report] section marks the beginning of the report and must necessarily be the first element in each report definition. Only comments can be inserted before the [Report section].				
Mode	Defines the data source to be used in the report. More about Mode settings in chapter _Before writing the report definition_ 176.		CSV or TXT Spreadsheet XML	Mode = month	month day
ExportFormat	Sets the output format of the report file. More about setting the export format in chapter _Before writing the report definition_ 176.	month day	\	ExportFormat = TXT	CSV or TXT ExcelXML Spreadsheet XML
File	This element defines the name of the report file that is suggested to the user when saving the report in a web browser. The user has the option of using the offered file name or entering a different name. The file name can also be defined to generate the export date by using dynamic functions.	month day	CSV or TXT Spreadsheet XML	File = CustomReport_{DATE()yyyy-MM-dd}.txt	_~ custom text and dynamic function for generating the export date_
OPTIONAL GENERAL ELEMENTS					
DecimalSeparator	Defines the decimal mark used with decimal values.	month day	CSV or TXT Spreadsheet XML	DecimalSeparator = , (comma)	_~ custom mark (e.g. , . ; : etc.)_
ExportEncoding	Sets the character encoding standard	month day	CSV or TXT Spreadsheet XML	ExportEncoding = Unicode	Unicode windows-1250 windows-1251 windows-1252 windows-1257
ExportTimeCuts	Enables the display of Time cuts in the output file.	month day	CSV or TXT Spreadsheet XML	ExportTimeCuts = 0 (disabled)	0 (disabled) 1 (enabled)
ExportStatsIntervals	Groups the display of intervals, that are repeated several days in a row. Example: Instead of displaying E000;02.11.2016 : 02.11.2016 E000;03.11.2016 : 03.11.2016 E000;04.11.2016 : 04.11.2016 the display is E000;02.11.2016 : 04.11.2016	day	CSV or TXT Spreadsheet XML	ExportStatsIntervals = 0 (disabled)	0 (disabled) 1 (enabled)
ExportStatsIntervalsIgnoreWeekendHoliday	Groups the display of intervals or statistics, that are repeated several days in a row without weekends and holidays.	day	CSV or TXT Spreadsheet XML	ExportStatsIntervalsIgnoreWeekendHoliday = 0 (disabled)	0 (disabled) 1 (enabled)
ExportZeroDays	When enabled, it also displays statistics, which's either content is equal to 0.	month day	CSV or TXT Spreadsheet XML	ExportZeroDays = 0 (disabled display)	0 (disabled display) 1 (enabled display)
ExportZeroAny	When enabled, it does not display statistics, which's either content is equal to 0.	month day	CSV or TXT Spreadsheet XML	ExportZeroAny = 0 (enabled display)	0 (enabled display) 1 ((disabled display)
PredictWorktime	It also enables the display of days in the future up to the end of the (billing) period.	month day	CSV or TXT Spreadsheet XML	PredictWorktime = 0 (disabled display)	0 (disabled display) 1 (enabled display)
REQUIRED ELEMENTS FOR TEXT FILES					
Line	The Line element determines how the regular statistics will be displayed. You can read more about the Line element in chapter _Definition structure_ 178. **ATTENTION! It is obligatory to use this element, when defining a plain text report. If the Line element is not explicitly defined, the output file will only display the values set in the default value for this element.**	month day	CSV or TXT Spreadsheet XML	Line = {DATE()yyyyMM}; {USER_ID()10};{USER_NAME()10};{STAT()};{DAYS()5.2}; {HOURS()5.2};	_~ a description of the Line element can be found in chapter Definition structure_ 178 _~ Table of data_ 206

Element name	Description	Mode	Format	Default value	Allowed values
*UserPrefixLine	This element defines the basic data of each user that will be displayed before displaying the actual T&A data, defined by the Line element, in the report which conforms to the RILPRE6 specification (in Italy). ***ATTENTION! It is obligatory to use this element in combination with *Line=RILPRE6*, when defining a plain text report that conforms to the RILPRE6 specification. If this combination of elements is not thus defined, the output file will not display the values as desired.**	day	CSV or TXT	UserPrefixLine = (empty value – if the value is not set, it will not be displayed)	*~ the element can contain the same kind of content as the Line element*
OPTIONAL ELEMENT FOR TEXT FILES					
LineForCalculated Values	This element defines how the additional values will be displayed. You can read more about the LineForCalculatedValues element in chapter *Definition structure* 178.	month day	CSV or TXT Spreadsheet XML	*~ the same display as in the Line element.*	*~ a description of the LineForCalculated Values element can be found in chapter Definition structure 178* *~ Table of data 206* *~ Table of additional values 180*
Line_XXXX	Sets the display of a specific statistic or user information defined in the Line element.	month day	CSV or TXT Spreadsheet XML	*~ the same display as in the Line element.*	*~ a description of the Line_XXXX element can be found in chapter Definition structure 178* *~ Table of data 206*
Formula_XXXX	Adds an additional calculation for a specific statistic or additional value.	month day	CSV or TXT Spreadsheet XML	Formula_XXXX = (empty value - if the element is not set, no additional calculations are performed)	*~ a description of the Formula element can be found in chapter Definition structure 178* *~ Table of formulas 182*
StatInfotypeLine _XXXX	This element specifies how statistics with the same infotype will be displayed, with XXXX being replaced by the corresponding statistics infotype.	month day	CSV or TXT	StatInfortypeLine_XXXX = (empty value – if the value is not set, it will not be displayed)	*~ the element can contain the same kind of content as the Line element*
StatInfotypeSick Line_XXXX	This element specifies how statistics with the same infotype that mark sick leave will be displayed, with XXXX being replaced by the corresponding statistics infotype.	month day	CSV or TXT	StatInfortypeSickLine_XXXX = (empty value – if the value is not set, it will not be displayed)	*~ the element can contain the same kind of content as the Line element*
StatGroupLine_X XXX	This element specifies how statistics in the same statistic group will be displayed, with XXXX being replaced by the corresponding code of the statistics group.	month day	CSV or TXT	StatGroupLine_XXXX = (empty value – if the value is not set, it will not be displayed)	*~ the element can contain the same kind of content as the Line element*
UserHeaderLine_ 1 UserHeaderLine_ 2 UserHeaderLine_ 3 UserHeaderLine_ 4 itd.	The element specifies how rows of user data, which will be listed before the user's registration data, will be displayed. The element UserHeaderLine_1 determines the display of data for one (the first) line of the user's data display, the element UserHeaderLine_2 determines the display of data for the next (the second) line of the user's data, and so on.	month day	CSV or TXT	UserHeaderLine_X = (where X is the sequential number in which the user's data will be printed; empty value – if the value is not set, it will not be displayed)	*~ the element can contain the same kind of content as the Line element*
ExportColumnHe aders	Displays the column headers.	month day	Spreadsheet	ExportColumnHeaders = 0 (disabled display)	0 (disabled display) 1 (enabled display)

Element name	Description	Mode	Format	Default value	Allowed values
Line_DriveRoute_XXXX	The element specifies the display of the line with the data on the mileage of the route traveled to a specific workplace. In the element, XXXX is replaced with the corresponding Location Code |250⟩ assigned to the location in the *Hardware* editor. The item is relevant and can only be used when using the Codeks Distance Table add-on. Example of use: Line_DriveRoute_xyz={DISTANCE()8.3	month day	CSV ali TXT Spreadsheet	*~ the same display as in the Line element.*	*~ a description of the Line_XXXX element can be found in chapter Definition structure |178⟩* *~ Table of data |206⟩*
Line_DriveRouteCount_XXXX	The element specifies the display of he line with information on the number of repetitions of transports to a specific workplace. In the element, XXXX is replaced with the corresponding Location Code |250⟩ assigned to the location in the *Hardware* editor. The element is relevant and can only be used when using the Codeks Distance Table add-on. Example of use: Line_DriveRouteCount_xyz={DAYS()3.0	month day	CSV ali TXT Spreadsheet	*~ the same display as in the Line element.*	*~ a description of the Line_XXXX element can be found in chapter Definition structure |178⟩* *~ Table of data |206⟩*
Formula_DriveRouteCount_XXXX	The element allows you to add an additional recalculation for the counter of the number of drives made to a specific workplace, where XXXX is substituted by the appropriate Location Code of the workplace. Example of use: Formula_DriveRouteCount_xyz={SUM()+DriveRoute_xyz;}	month day	CSV ali TXT Spreadsheet	Formula_DriveRouteCount_XXXX = (empty value - if the element is not set, no additional calculations are performed)	*~ a description of the Formula element can be found in chapter Definition structure |178⟩* *~ Table of formulas |182⟩*
REQUIRED ELEMENTS FOR SPREADSHEETS					
XMLColumnsOrder	Lists all the statistics and additional values, which will be displayed in the columns of the spreadsheet. It also sets the order in which they will be displayed in the output file. **ATTENTION! It is obligatory to use this element when defining a spreadsheet-type report. If the XMLColumnsOrder element is not defined, no data will be displayed in the output file. Each individual statistic or value separated by a semicolon ; , will be displayed in a separate column.**	month day	Spreadsheet	XMLColumnsOrder = (empty value – if the value is not set, it will not be displayed)	*~ the element value consists of listed codes of statistics and additional values, separated by a semicolon ;* **All** (displays all statistics and time cuts) **Statistics** (displays all statistics) **ExportableStatistics** (displays all statistics marked for export) **TimeCuts** (displays all time cuts) **ExportableStatisticsAndTimeCuts** (displays all statistics marked for export and all time cuts) **DriveRouteData** (displays counters and distances for all drive routes specified in user settings; available only when using the Codeks Distance Table add-on)
OPTIONAL ELEMENTS FOR SPREADSHEETS					
XMLFontSize	Sets the font size.	month day	Spreadsheet	XMLFontSize = 6	*~ number value*
ColumnWidth	Column width	month day	Spreadsheet	XMLColumnWidth = Autofit	*~ number value in millimeters*
XMLReportTitle	Sets the title of the report, which is displayed in the header of the spreadsheet.	month day	Spreadsheet	XMLReportTitle = (empty value - if the title is not specifically defined, it is not displayed)	*~ custom title*

Element name	Description	Mode	Format	Default value	Allowed values
XMLMaxUsersPerPage	Enables the display of multiple users per page.	month day	Spreadsheet	XMLMaxUsersPerPage = 1	~ *number value*
PageOrientation	Sets the page orientation of the output report.	month day	Spreadsheet	PageOrientation = Portrait	Portrait Landscape
ExportMonthSums	Displays the monthly sums of statistics in the lower part of the spreadsheet for each user.	day	Spreadsheet	ExportMonthSums = 0 (disabled)	0 (disabled) 1 (enabled)
HeaderStyle	Sets the text orientation of the spreadsheet header.	month day	Spreadsheet	HeaderStyle = Horizontal	Horizontal Vertical
Header_XXXX	Changes and defines the display of the column name. XXXX represents the code of a specific statistic. The element is used similarly to the Line_XXXX element.	month day	Spreadsheet	Header_XXXX = ~ the name of a statistic of additional value	~ *custom column name*
ExportLegend	Displays the legend of all used codes and names, at the bottom of the spreadsheet report. It is used in combination with the Legend_XXXX element.	day	Spreadsheet	ExportLegend = 0 (disabled)	0 (disabled) 1 (enabled)
Legend_XXXX	Sets the description of the codes and names, displayed in the legend. To enable the display of the legend the ExportLegend element must be enabled.	day	Spreadsheet	Legend_XXXX = (empty value – if the value is not set, it will not be displayed)	~ *custom description of the value*
PrintGridlines	Enables the cell borders to be printed when generating a PDF or Excel spreadsheet report.	month day	Spreadsheet	PrintGridlines = 0 (disabled)	0 (disabled) 1 (enabled)
[Custom column]	A custom column can be added to the column display in spreadsheet type output files. First, add the new custom column to the column order, in the XMLColumnsOrder element. Next, using the Line_XXXX element, define what kind of information will be displayed in the custom column. Example: XMLColumnsOrder=DayNumber; NameLastname;DaySum Line_NameLastname={USER_NAME ()} In the example shown a column containing the user's name and last name has been added to the spreadsheet, using the custom column functionality.	month day	Spreadsheet	\	~ *custom content, similar to Line element value*
ExportUserHeaders	Displays the header cells of the spreadsheet, which contain the company name, address and VAT number, the name, ID number and department of the user, the report title and the export period. **ATTENTION! Do not use ExportUserHeaders and ExportPageHeaders simultaneously. The elements display similar information and would consequently cause repeated display of the same information when exporting to PDF or printing.**	day	Spreadsheet	ExportUsersHeaders = 1 (enabled)	0 (disabled) 1 (enabled)
CompanyName	Sets the company name that will be displayed in the header of the spreadsheet.	month day	Spreadsheet	CompanyName = ~ the company name saved in the Codeks' settings	~ *company name*
CompanyAddress	Sets the company address that will be displayed in the header of the spreadsheet.	month day	Spreadsheet	CompanyAddress = ~ the company address saved in the Codeks' settings	~ *company address*
CompanyIDNumber	Sets the VAT identification number of the company that will be displayed in the header of the spreadsheet.	month day	Spreadsheet	CompanyIDNumber = ~ the VAT number of the company saved in the Codeks' settings	~ *the VAT (Value Added Tax) identification number of the company*

Element name	Description	Mode	Format	Default value	Allowed values
ExportPageHeaders	Writes the Company name and address, the report title and the time period to the document header. **ATTENTION! The information will not be displayed in the spreadsheet, but only in the document header. The headers will only be displayed when exporting the spreadsheet to PDF or when printing the spreadsheet.** **ATTENTION! Do not use ExportUserHeaders and ExportPageHeaders simultaneously. The elements display similar information and would consequently cause repeated display of the same information when exporting to PDF or printing**	day	Spreadsheet	ExportPageHeaders = 0 (disabled)	0 (disabled) 1 (enabled)
CsvValueSeparator	**ATTENTION! The use of this element is only sensible when generating a Spreadsheet report with the .csv file extension in the name.** Puts a custom separator mark between the displayed values in the report. Example: CsvValueSeparator=; Display: Janez Novak;08:00;123,45;03:00	month day	Spreadsheet **! file extension: . csv**	CsvValueSeparator= ; (semicolon)	*~ custom mark (e.g. , . ; : etc.)*
CsvAlwaysQuoteValues	**ATTENTION! The use of this element is only sensible when generating a Spreadsheet report with the .csv file extension in the name.** Puts quotation marks around each displayed value in the report. Example: CsvAlwaysQuoteValues=1 Display: "Janez Novak"; "08:00"; "123,45"; "03:00"	month day	Spreadsheet **! file extension: . csv**	CsvAlwaysQuoteValuess = 0 (disabled)	0 (disabled) 1 (enabled)
PrintMarginLeft PrintMarginRight PrintMarginTop PrintMarginBottom	Defines the borders of the page, when the report will be printed.	month day	Spreadsheet	PrintMarginLeft = 0.7 PrintMarginRight = 0.7 PrintMarginTop = 0.7 PrintMarginBottom = 0.7	*~ number value in inches* ** the default decimal separator depends on the localization settings of the system where the Codeks software is running.*
PrintAdditionalEntryExits	Turns on the display of additional entries and exits on the same day. If the setting is enabled, any additional entries and exits will also be displayed in the spreadsheet. The time of the second entry or exit of the day will be recorded in the same table cell as the first entry or exit of the day, only in the second line below the first record. Any potential additional entries and exits will also be listed lower in the same cell.	day	Spreadsheet	PrintAdditionalEntryExits = 1 (by default the display of additional entries or exits is enabled)	0 (disabled) 1 (enabled)
REQUIRED ELEMENT FOR SPREADSHEETS WITH TEMPLATES					
UseSpreadsheetTemplate	Enables the use of the spreadsheet report template that is added to the report's definition. The element must always be included in the report definition if you want to generate a spreadsheet report using a spreadsheet report template.	month day	Spreadsheet	UseSpreadsheetTemplate = 0 (disabled)	0 (disabled) 1 (enabled)

Element name	Description	Mode	Format	Default value	Allowed values
DayStatPerLine	**ATTENTION!** The use of this element is only sensible when generating **a report with a spreadsheet template** and the setting **Mode** set to **day.** This element displays the value of the main statistic in a separate row for each day when the user's assigned work obligation is not 0. (In order for the element to display the values correctly, the brackets of the %%STATDATA element in the spreadsheet template must be left empty - e.g. %%STATDATA().)	day	Spreadsheet	DayStatPerLine = 0 (disabled)	0 (disabled) 1 (enabled)
REQUIRED ELEMENTS FOR XML FILES					
XMLRootElement Name	The name of the hierarchically highest root XML element used in the output file. This element includes all other elements that contain user information of the selected users. **ATTENTION! It is obligatory to use this element when defining a structured XML output file.**	month day	XML	XMLRootElementName = (empty value – if the value is not set, it will not be displayed)	~ *the name of the root XML element in the output file*
[XSLT]	The [XSLT] section marks the beginning of the XSLT code written in the XSLT 1.0 syntax. You can read more about XML at http://www.w3schools.com/xsl/default.asp. **ATTENTION! It is obligatory to use this element when defining a structured XML output file.**	month day	XML	\	\
REQUIRED ELEMENTS FOR SPREADSHEETS WITH ROW DISPLAY					
SplitLineToCells	This element activates the function of displaying the output data in individual cells of the spreadsheet. ***ATTENTION! It is obligatory to use this element when defining a spreadsheet report with row display. It must be used in combination with the *Line*, *LineForCalculatedValues* or *Line_XXXX* elements that define which data and in what form it will be displayed in the spreadsheet report with row display.**	month day	Spreadsheet	SplitLineToCells = 0 (disabled)	0 (disabled) 1 (enabled)
OPTIONAL ELEMENTS FOR SPREADSHEETS WITH ROW DISPLAY					
SplitLineColSeparator	Defines separator (typographic character) which will be used to separate data to individual cells of the spreadsheet.	month day	Spreadsheet	SplitLineColSeparator = ; (semicolon)	~ *custom mark (e.g. , . ; : etc.)*

Other form elements

% - When the % sign is used in combination with a statistic name, a list of all intervals that contain that statistic will be displayed, instead of the content value of the statistic.

Use:
- It can only be used along with the following settings: *Mode = day,* and *ExportFormat = ExcelXML* or *Spreadsheet*
- It is written in front of the statistic code (%XXXX, where XXXX stands for the code of the statistic).

Example:
XMLColumsOrder = Break;%Break
The first column will display the daily sum of the Break statistic and the second column will display a list of all recorded intervals containing this statistic.

! - When the ! mark is used in combination with the code of a statistic or additional value, the value will only be displayed for the first user in a row.

Use:
- It can only be used along with the following settings:
    Mode = day
    ExportFormat = ExcelXML or Spreadsheet
    XMLMaxUsersPerPage is greater than 1 (this means that more than one user per page/row is displayed).
- The exclamation mark ! is written in front of the statistic code (!XXXX, where XXXX stands for the code of the statistic).
Example: XMLColumnsOrder=!DayNumber;0001;DaySum
The value of DayNumber will only be displayed for the first user. It is unnecessary to repeat it for other users on the same page.

10.8.7.2.6 Table of data selectors

Data selector name	Description	Content type
USER DATA SELECTORS		
USER_CODE	Displays the user code. * This data is only used when exporting user data originally created in the Jantar V7 program.	Text
USER_CARD	Displays the user's card number.	Text
USER_ID	Displays the user's personal identification number.	Text
USER_EXTERNAL_ID	Displays the user's external identification number.	Text
USER_EXPORT_ID	Displays the user's export identification number.	Text
USER_NAME	Displays the user's name and last name.	Text
USER_FIRSTNAME	Displays the only the user's name.	Text
USER_LASTNAME	Displays the only the user's last name.	Text
USER_DEPARTMENT	Displays the code of the organization unit.	Text
USER_DEPARTMENT_NAME	Displays the name of the organization unit.	Text
USER_GROUP_ID	Displays the internal number of the user's main group.	Text
USER_GROUP_NAME	Displays the name of the user's main group.	Text
USER_EMAIL	Displays the user's email address (that is entered in the Codeks application).	Text
USER_CUST_FIELD1	Displays the user's information entered in the first additional custom field. * The information must be entered subsequently for each separate user. The fields can be accessed when adding or editing a user on the Additional fields tab.	Text
USER_CUST_FIELD2	Displays the user's information entered in the second additional custom field. * The information must be entered subsequently for each separate user. The fields can be accessed when adding or editing a user in the Additional fields tab.	Text
USER_CUST_FIELD3	Displays the user's information entered in the third additional custom field. * The information must be entered subsequently for each separate user. The fields can be accessed when adding or editing a user in the Additional fields tab.	Text
*RILPRE6	Displays the user's information for the whole month according to the RILPRE6 specification.	*~ predefined user data according to the RILPRE6 specification ~*
INTERVAL DATA SELECTORS		
DATE	month: Displays the period start date. day: Displays the interval start date.	Date

Data selector name	Description	Content type
DATETO	month: Displays the period end date. day: Displays the interval end date (important when displaying night shifts).	Date
PERIOD_START()	Displays the start date of the report period.	Date
PERIOD_END()	Displays the end date of the report period.	Date
PERIOD_WO	Displays the work obligation period within the same row as another statistic value. (Example: Line{USER_NAME()};{USER_ID()};{STAT()4};{HOURS()6};{PERIOD_WO() 6.2})	Time
	INTERVAL STATISTIC DATA SELECTORS	
STAT	The data displays the statistic code (set in the statistic settings) when using the Line_XXXX command, or the name of the additional value, when using the LineForCalculatedValues command.	Text
HOURS	The data displays the statistic time duration in hours. Minutes are converted to decimal values.	Time
HOURS_FLOOR	The data displays the statistic time duration in hours, rounded to the lower whole-hour limit. This data can also work with negative values.	Time
ABS_HOURS_FLOOR	The data displays the statistic absolute time duration in hours, rounded to the lower whole hour limit. This data always displays only positive values.	Time
HOURS_ROUND(15)	The data rounds the time duration content of a statistic to half hours, using 15-minute increments. If the time value is from 0 to including 15 minutes past the last whole hour, the data will round the time value down to the last whole hour value. If the time value is from 16 to including 45 minutes past, the value will be rounded to half past (half hour mark). If the time value is from 46 to including 59 minutes past, the value will be rounded up to the next whole hour. Examples: The value of a statistic is 7 hours and 15 minutes. Using the HOURS_ROUND data the value will be rounded down to 7 hours. The value of a statistic is 7 hours and 37 minutes. Using the HOURS_ROUND data the value will be rounded to 7 hours and 30 minutes (7,5 hours). The value of a statistic is 7 hours and 46 minutes. Using the HOURS_ROUND data the value will be rounded to 8 hours.	Time
HOURS_ROUND(30)	The data rounds the time duration content of a statistic to half hours, using a 30-minute increment. If the time value is from 0 to including 30 minutes past the last whole hour, the data will round the time value down to the last whole hour value. If the time value is from 31 to including 59 minutes past, the value will be rounded to half past (half hour mark). Examples: The value of a statistic is 7 hours and 30 minutes. Using the HOURS_ROUND data the value will be rounded to 7 hours. The value of a statistic is 7 hours and 31 minutes. Using the HOURS_ROUND data the value will be rounded to 7 hours and 30 minutes (7,5 hours).	Time
DAYS	Displays the repetition counter content of the statistic.	Time
ABS_DAYS	The data displays the absolute value of the number of days.	Time
MINUTES	The data displays the time duration of a statistic in minutes.	Time
HOUR_MINUTES	The data displays the remainder of minutes, after rounding the time duration content of a statistic to whole hours. Example: The time value of a statistic is 8 hours and 5 min, that is 485 minutes. In this case, the data would return the value of 5.	Time
TIME	The data displays the time duration of a statistic in hours and minutes (hh:mm), unlike the HOURS data, which converts the minutes into decimal values. The data does not support any additional data display parameters.	Time
SIGN	The data displays if the value of the statistic is positive + or negative - . In some cases. the output file must contain the absolute value of the statistic and the mathematical sign associated with it is written in a different column. Any sign can be set to display if a value is positive or negative. The data can contain up to two signs: the first sign displays that the value is positive and the second that it is negative. Example 1: {SIGN()+-} Example 2: {SIGN()PN}	Mathematical operator
MINUTES2DAYS	The data displays the quotient between the recorded work hours and the work obligation. If the user worked exactly the same length of time as set by his work obligation, then the data will display the value 1.	Number
INTERVALFIRSTDAY	The data displays the start date of the statistic for period. By default, the *INTERVALFIRSTDAY()* will display the start date of the statistic for period but within the set period for display. If the *INTERVALFIRSTDAY(#)* is used the absolute start date of the statistic for period will be displayed, but only if the date is not contained within the set period to be displayed. Example: If you are creating a report of statistics for period in April for a user who already started his sick leave in March: Primer: • to display the absolute start date of the statistic for period use *INTERVALFIRSTDAY(#)*. • To display the start date of the statistic for period within the set period to be displayed use *INTERVALFIRSTDAY()*	Date

Data selector name	Description	Content type
STAT_DESCRIPTION	The data displays the description of the statistic, which is specified in the statistics settings.	Text
[1] DAY_STAT	The data displays the code of the main daily statistic, which is specified in the statistics settings.	Text
[1] DAY_STAT_DESCRIPTION	The data displays the description of the main daily statistic, which is specified in the statistics settings.	Text
[1] DAY_STAT_INFOTYPE	The data displays the infotype of the main daily statistic, which is specified in the statistics settings.	Text
EVENTIN_EVENTID EVENTOUT_EVENTID	The data displays the entry event type id if EVENTIN_EVENTID is used, and the exit event type id if EVENTOUT_EVENTID is used.	Number
EVENTIN_EVENTID_NAME EVENTOUT_EVENTID_NAME	The data displays the entry event type name if EVENTIN_EVENTID_NAME is used, and the exit event type name if EVENTOUT_EVENTID_NAME is used.	Text
DISTANCE	The data displays the recorded distance in kilometers for commuting to different workplaces.	Number
	ADDITIONAL DATA SELECTORS	
SKIP	Skips a selected statistic. When you want to exclude a certain statistic from the current report, you can use the data SKIP. Line_XXXX = {SKIP()} The statistic XXXX can keep the option "statistic for export" in the statistic settings enabled, because the SKIP data excludes its export only in the current report.	
EMPTY	Inserts the desired number of blank rows. Line = … {EMPTY()A}… , where A is the number of blank rows.	Blank row
SPACE	Inserts the desired number of single spaces. Line = … {SPACE()A}… , where A is the number of spaces.	Single space
\t (Tab)	Inserts a tab space.	Tab space

[1] these selectors only work with the mode=day.

10.8.7.2.7 Data display parameters

Data display parameters are used to determine the form, in which the data will be displayed in the output file. The use of parameters differs depending on the content type (text, time, counter and date) contained by the data. For more about content types see the Table of data selectors [206].

Keep in mind that Codeks distinguishes between uppercase and lowercase letters. When using the display parameters the parameter hierarchy and order must be followed. In the following examples, the **main parameters** for each data type are colored **dark blue** and the **secondary parameters** are colored **light blue**.

WARNING!

The use of display selectors is always required when displaying numeric data and it is also highly recommended when displaying text and other types of data.

WARNING!

The order of the data display parameters is important. The order and hierarchy of the parameters must be followed in order to accurately form a data display.

Text:

Line_XXXX = {DATA_NAME() **$** - **X** **.Y**}

X   X = minimum length. If the data consists of fewer characters, single spaces are added.

.Y   Y = maximum length. If the data consists of more characters the surplus characters are not displayed.

$ The leading zeros are displayed.

-   The text is left-aligned. By default the text is right-aligned.

    Examples:

    Line = {USER_CARD()10}   The display parameter is "10".

    If the number of the user's card is 5678, the Line will display:

        5678.

    6 single spaces followed by the card number.

    Line = {USER_NAME()-10.20}   The display parameter is "-10.20".

    If the user's name and last name are shorter than 10 characters, spaces will be added at the end, but if they are longer, the last letters will be cut off. The name "Rok Semič" will be displayed with an addition of 11 single spaces and the name "Ferdinand Semprimožnik" will be shortened to "Ferdinand Semprimožn".

Time and counters:

Line_XXXX = {DATA_NAME() **$ - ! X .Y**}

X   X = the total number of characters used to display the data (including decimal numbers). If the data consists of fewer characters, single spaces are added.

.Y   Y = the number of decimal spaces. If this value is not set, whole numbers are displayed or the values are rounded to whole numbers.

> **ATTENTION!**
>
> When displaying time, the values are converted to decimal format. This means that the minutes are displayed as decimal values.

$ The leading zeros are displayed.

-   The text is left-aligned. By default the text is right-aligned.

!   The exclamation mark ! subtracts the decimal mark from the display.

Examples:

Line = {HOURS()5}   In this case, the display parameter "5". It represents the total length of the display. If a statistic had a time duration content of 12 hours and 20 minutes, the data would display the value "   12", the number 12 preceded by three single spaces. No decimal values would be displayed.

Line = {HOURS()5.2}   In this case the display parameter is "5.2". The total length of the display is set to 5 characters, two characters are used for decimal values and one for the decimal mark. If a statistic contained the value 12 hours and 20 minutes, the display would be 12,33.
If the statistic contained the value 6 hours in 15 minutes, the display would be 06,25.
A problem would arise if the statistic had more than 99 whole hours. The display would be incorrect in this case.

Line = {HOURS()-7.2}   In this case the total length of the display is "7", of which two characters are used to display decimal values and one character is used to display the decimal mark. If the statistic consisted of 12 hours and 20 minutes, the display would be 12,33   . The display would be left-aligned and two single spaces would be added at the end.

Line = {DAYS()3}   In this case the display parameter is "3" and it represents the full length of the repetition counter. If the statistic contained the value 22, the display would be   22. The number 22 preceded by a single space.

Date:

Example: Line_XXXX = {DATE()dd }

The date consists of individual elements, which enable a completely custom date display. The parameters used to form a date are listed in the table below. The date display is also dependant on the regional setting of the server and user account, where Codeks service in running.

Table for date formatting

Parameter	Description
d	Day of the month, without the leading zero. 1 - 31
dd	Day of the month, with the leading zero. 01 - 31
ddd	Abbreviated weekday name. Mon, Tue ...
dddd	Full weekday name. Monday, Tuesday ...
M	Month, without the leading zero. 1 - 12
MM	Month, with the leading zero. 01 - 12
MMM	Abbreviated name of the month. Jan, Feb ...
MMMM	Full name of the month. January, February ...
y	Year, written with two characters and without the leading zero. 0 - 99
yy	Year, written with two characters and the leading zero. 00 - 99
yyy	Year, written with three characters and leading zeros. 001 - 999
yyyy	Year, written with four characters and leading zeros. 0001 - 1999
m	Minutes, without the leading zero. 0 - 59
mm	Minutes, with the leading zero. 00 - 59
h	Hours, written in a twelve-hour format and without the leading zero. 0 - 12
hh	Hours, written in a twelve-hour format and with the leading zero. 00 - 12
H	Hours, written in a twenty-four-hour format and without the leading zero. 0 - 24
HH	Hours, written in a twenty-four-hour format and with the leading zero. 00 - 24

* Data format specified by Excel data format [for <u>reports with a spreadsheet template</u>[195]]:

For spreadsheet template reports, **the format of the data that will be displayed in individual cells of the spreadsheet can be specified in the spreadsheet formatting program** (e.g., Microsoft Excel, LibreOffice Calc, OpenOffice Calc).

By default, all data is written to the reports as **plain text** (i.e., *General* in Excel).

In the selected program for spreadsheets, specify the format in which you want the data to appear in the report. You can **choose between data types: Time (day time), Date and Number.**
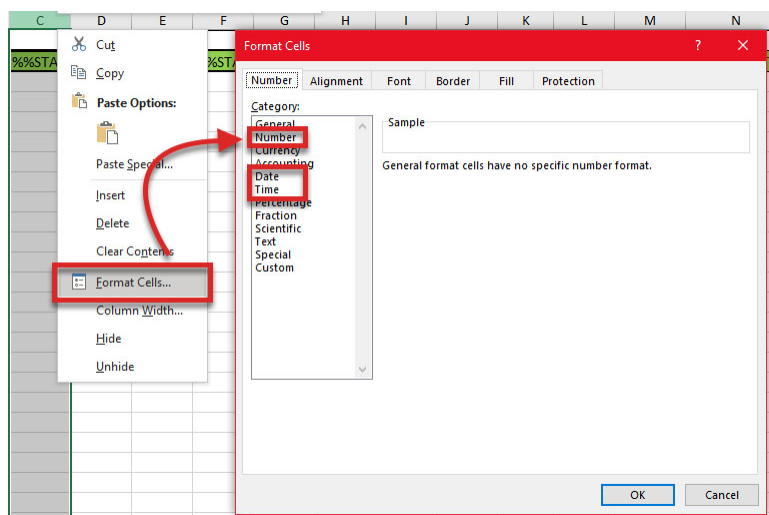
Then you need to set the data type in the element for the display of this data in the spreadsheet template. To specify the data type write one of these data display parameters in the element:
- EXCEL_TIME for data type **Time (day time),**
- EXCEL_DATE for data type **Date,**
- EXCEL_NUM for data type **Number.**
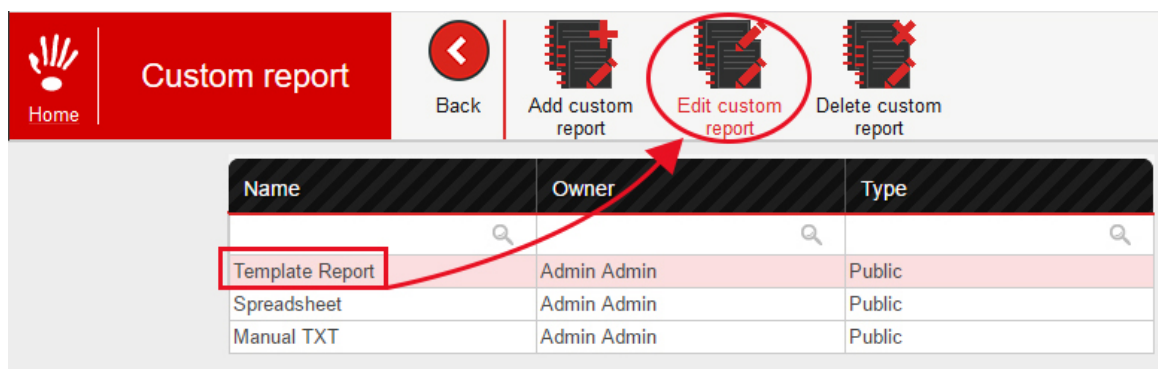
Example of an element with an Excel time format:
%%STATDATA(Saldo){HOURS()EXCEL_TIME}

You can view an example of this kind of report in chapter <u>Example of a report with a template with Excel formulas</u>[199].

10.8.7.3. Edit Custom Report

You can change existing report's settings in the Custom report editor. Select the report you wish to edit from the List of reports. Click the *Edit custom report* icon, edit report's data and save the changes. You can also edit the report with double click on it or through the menu which appears with the right-click on the report.
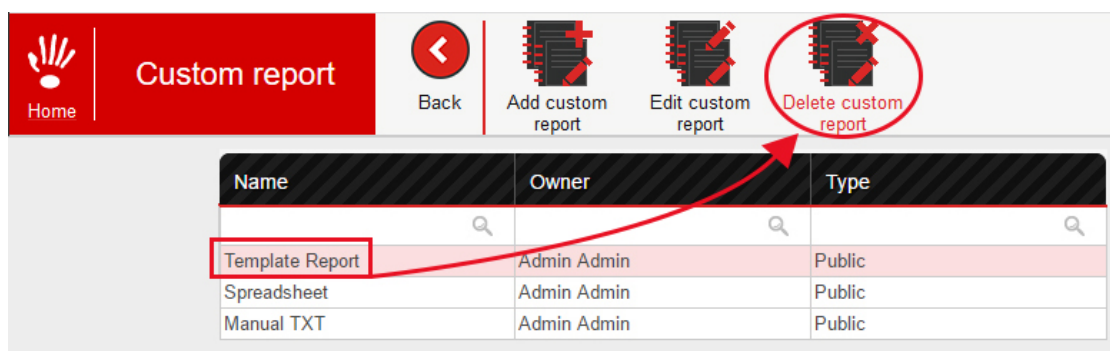
10.8.7.4. Delete Custom Report

On the list of reports select the report you wish to delete and click the *Delete custom report* icon. New window pops up in which you need to confirm deletion of the report. This will delete the report from the list of reports.

10.9. Work Obligation History

Changes in the work obligation of an individual user (e.g. reduced work obligation, maternity leave, end of employment, etc.) are recorded in the *Work obligation history*.

1. To display the user's work obligation history, first, select the desired user on the *List of users*.

Then **right-click to open the menu and select *Work obligation history* or click the *Work obligation history* icon in the toolbar of the editor**.
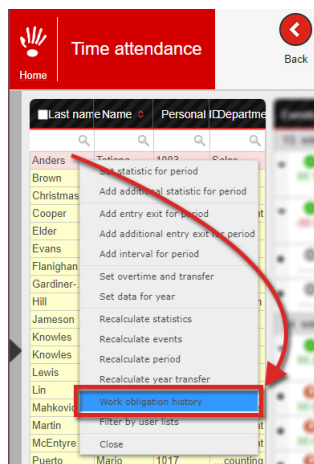
2. The user's work obligation changes will be displayed in a new pop-up window.

Date	Type	Name	Notes	
	User	Anders Tatiana	Initial revision	Edit
01.3.2020	Group	Flexible 24 hours	SPRING work	Edit
01.6.2020	Group	Flexible 24 hours	SUMMER work	Edit
05.11.2020	Group	Flexible 24 hours	AUTUMN work	Edit
16.2.2021	User	Anders Tatiana	Maternity leave	Edit

3. The *Edit* link displayed next to each entry will open the user or group revision in the *Groups* editor with which the change to the users work obligation was made. **You can read more about revisions in chapter** **Revisions** .

# 10.10. Confirming statistics

When using the *confirming statistics* function, some statistics recorded by users in the time registration are not automatically accepted, but must first be confirmed by the relevant head of department before they are taken into account in the recalculation of hours or for the salary payment. This feature is typically used to validate extraordinary work, such as overtime hours.
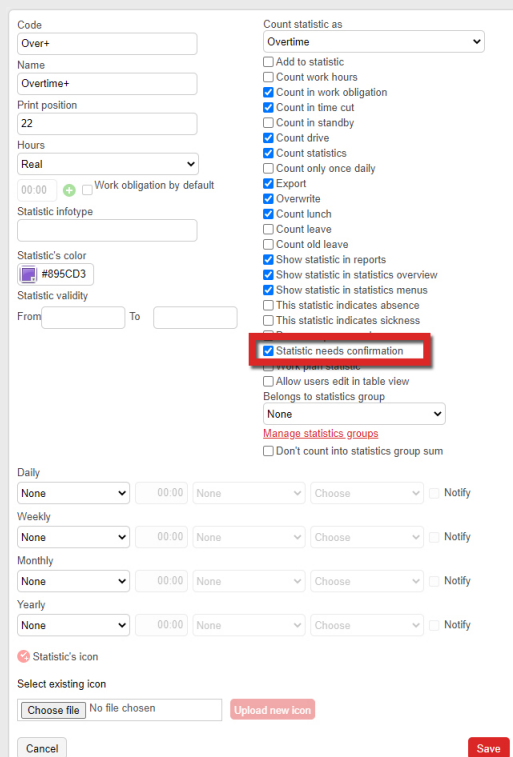
NOTE
To create statistics that need the confirmation of a head of department, you will have to create new statistics in the *Statistics* editor, that have the ***Statistic needs confirmation*** [225] setting enabled.

This type of statistics will be displayed with an icon next to them in the *Time attendance* editor, which indicates that the statistics require confirmation. The statistics will be taken into account when recalculating the time attendance data only after they have been confirmed by the head of the department.
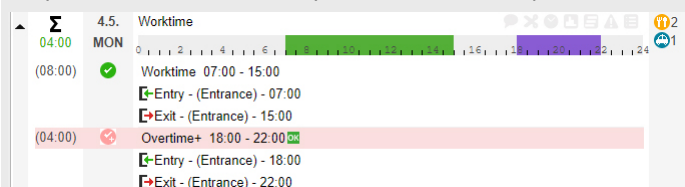
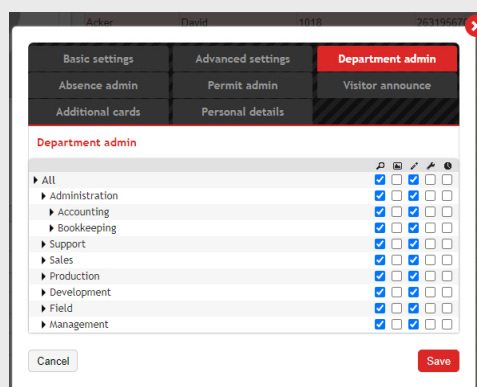You can read more about statistics in chapter ***Statistics*** [219].

NOTE

Statistics that need confirmation can only be confirmed by:
- **super administrators** and
- **heads of departments**, who have the rights to edit the users' time attendance.

Settings for the head of department
To create a head of department, who can edit the time attendance of users, you have to set the following settings in the *Users* editor:

- in the user's settings in the **Department admin** tab, enable the **View time attendance** and **Edit time attendance** settings for each user designated to be a head of department.

You can read more about managing the users' rights to edit time attendance in chapter ***Department Admin*** [42].
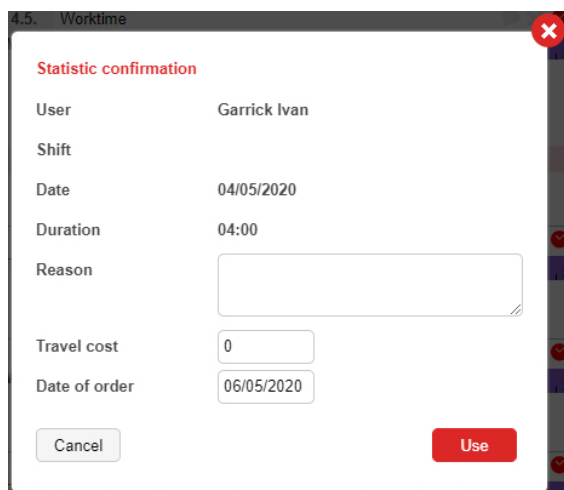
Confirm statistic

1. In the *Time attendance* editor, first, select the user who has recorded a statistic that needs confirmation. Next to the statistic that needs the confirmation of a head of department, an orange question mark icon (❓) will be displayed.

2. Then, right-click on the question mark icon. A drop-down menu will open in which you can find and click the ***Confirm statistic*** option.
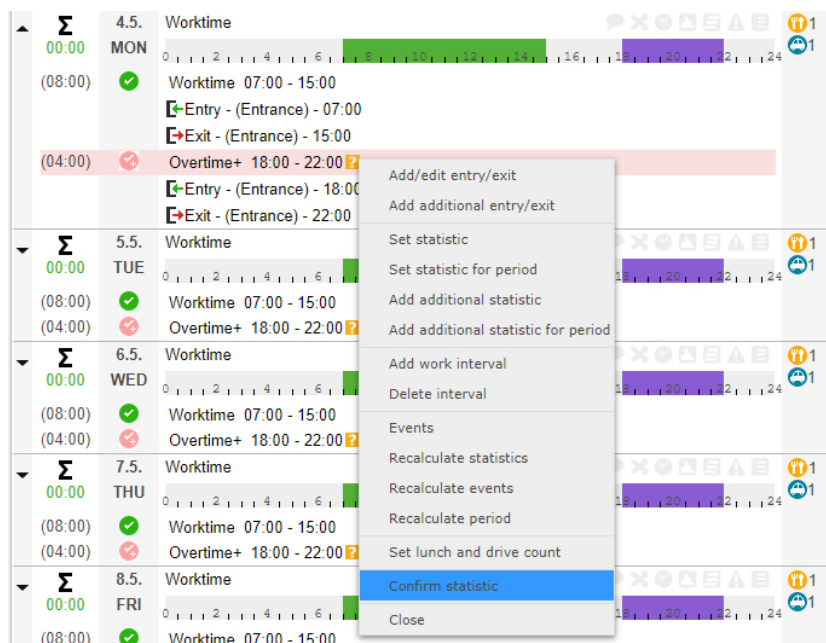
3. A new window will open, where you can edit the data related to the statistic.
For the final confirmation of the statistic, click *Use*.

| Settings	Description
User	The name of the user.
Shift	The shift in which the user is assigned. If the user is not assigned to any shift, the field is empty. * Users can only be assigned to shifts using the Codeks add-on ***Codeks Shifts***.
Date	The date the statistic that requires confirmation was recorded.
Duration	The recorded duration of the statistic, that requires confirmation.
Reason	In this field, you can enter any comment about the confirmed statistic (e.g. the reason for the overtime).
Travel cost	In this field, you can the travel cost that may have occurred as a result of the recorded statistics.
Date of order	The date when the head of department confirmed the statistic (e.g. the date when the order for overtime hours was confirmed).

4. In the daily display, a green OK icon (🆗) will be displayed next to the statistic.
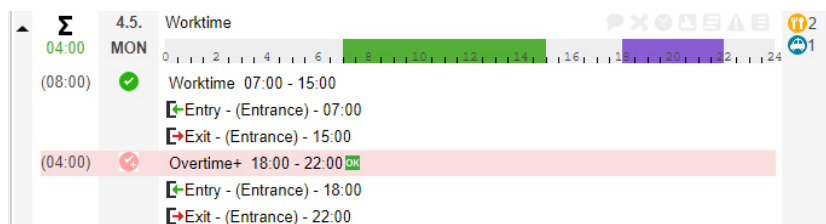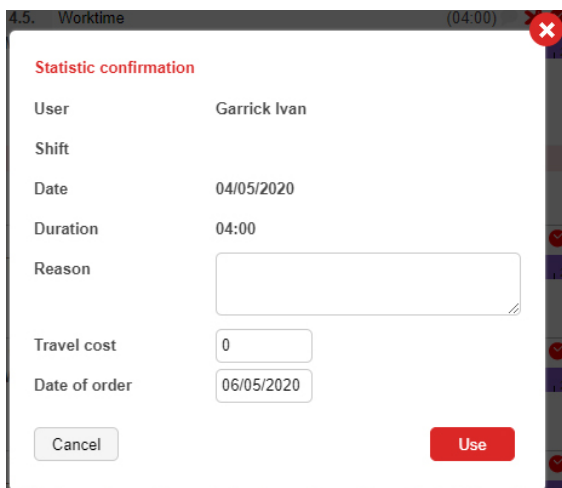
Edit confirmation data

1. To subsequently edit the confirmation data, first, right-click the green OK icon (OK).

A new window will open in which you can find and click the **_Edit confirmation data_** option.
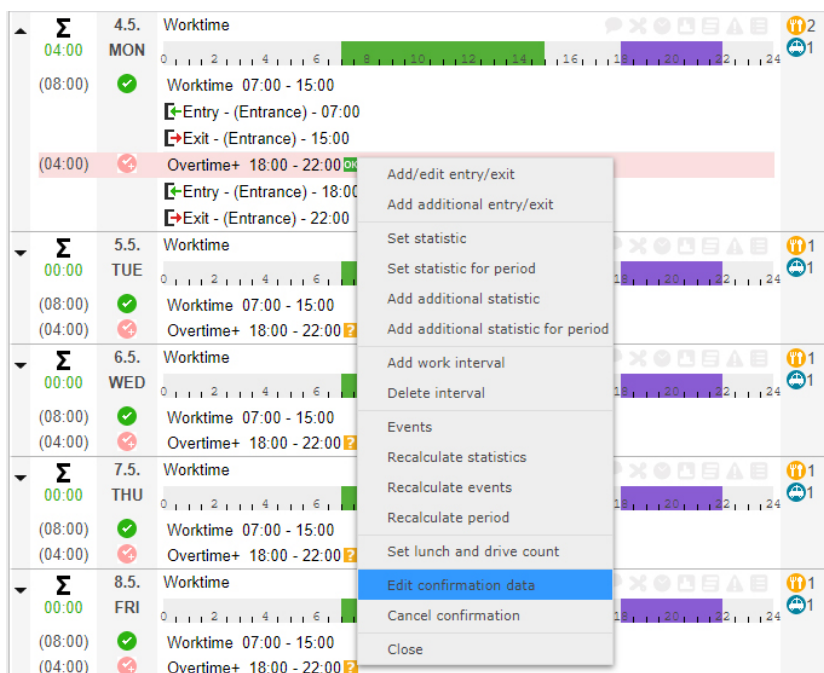
2. In the new pop-up window, you can edit the statistic's data.
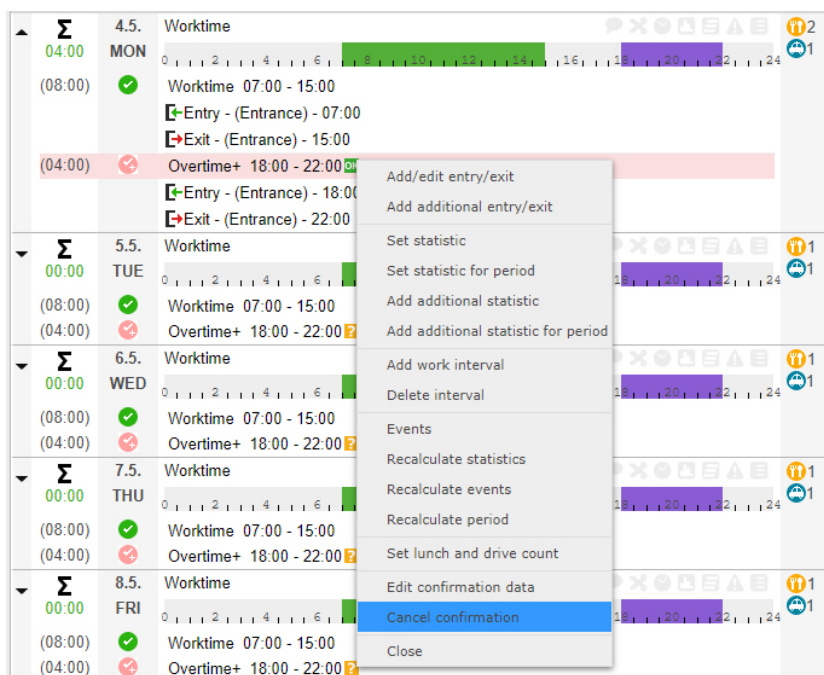
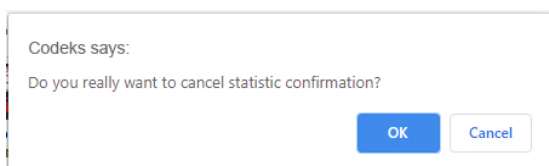**3.** When you have finished editing, click **_Use_**.

Cancel confirmation

1. To cancel the statistic confirmation, first, right-click the green OK icon ().

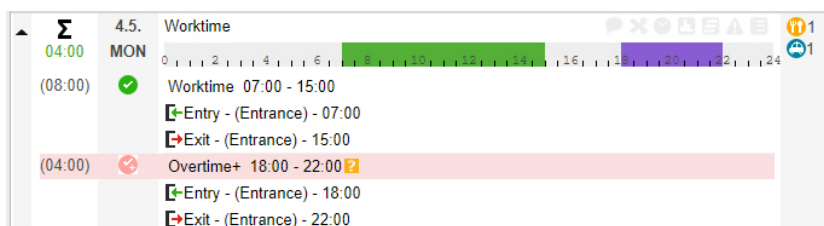A new window will open in which you can find and click the *Cancel confirmation* option.

2. A notification will appear asking you to confirm the statistic cancellation.

Click *OK* to un-confirm the statistic.

3. In the daily display, an orange question mark icon () will again appear next to the statistic.

11. Statistics

Statistics are used to describe the type of work hours the employees of the company are clocking in, as well as the different types of employee absences from work. Statistics are used to categorize the clocked employee work hours in order to prepare them for further data processing in different payroll programs.

You can access the **Statistics** editor through the **Statistics** icon in the toolbar of the *Time attendance* editor.
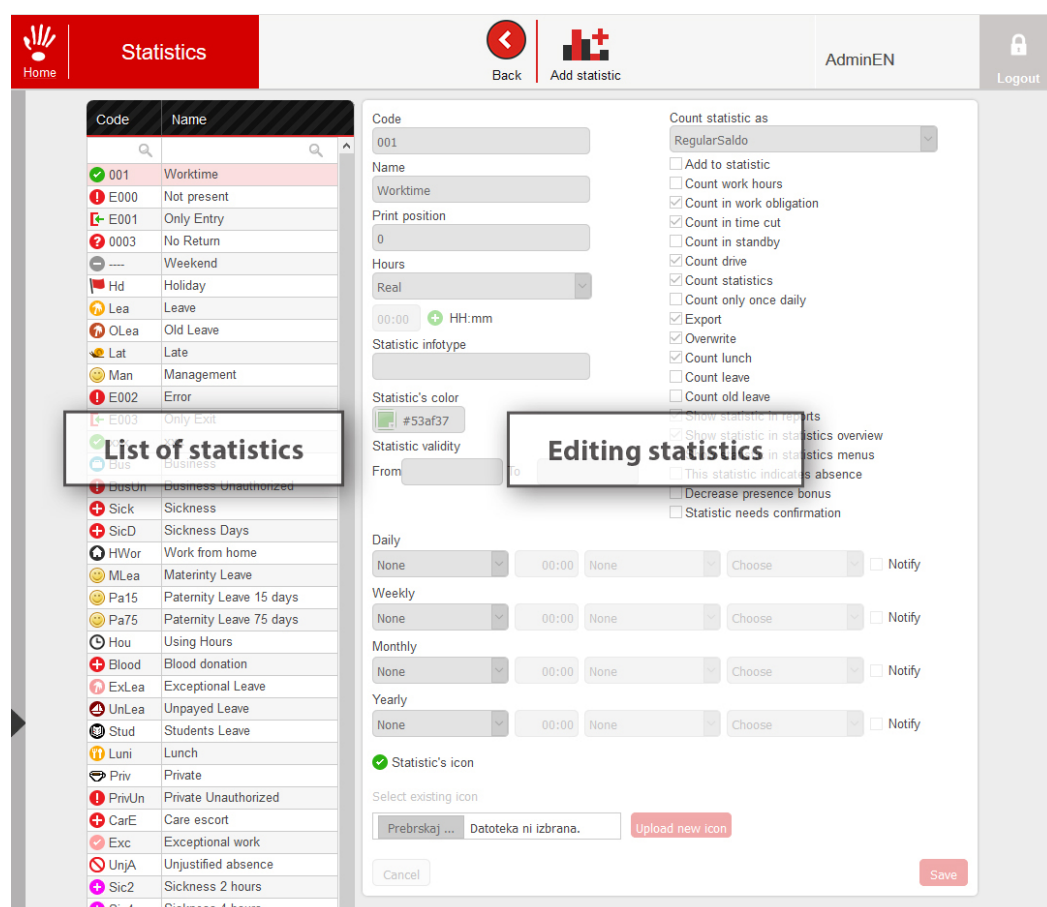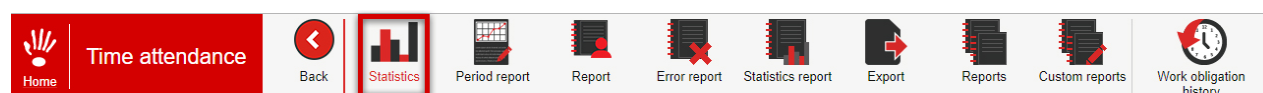
In the *Statistic* editor you can view and edit statistics.

ATTENTION!
You MUST NOT DELETE any system statistics (!) or statistics that were used to record time attendance at any time in the past. This could cause errors or inconsistencies when recalculating past events or displaying data in the Time attendance editor.
Remove the statistics that are no longer suitable for use by disabling the **Show statistic in statistics menus** (more in chapter Statistics settings 222). This will remove the statistics from all menu lists for settings statistics. The statistic will remain archived in the database, enabling any event recalculation to be performed correctly, but users will no longer be able to use it for future time registration.

11.1. Statistics review

Statistics in the Codeks application are used to record the duration of different types of work hours and different types of absences.

Depending on their use, statistics can be categorized into several groups: **Statistics for daily intervals** are used in the time attendance to record daily events within the umbrella intervals (more in chapter <u>The structure of the day</u> ⌐90⌐) and usually only last a few hours. **Statistics for period** are used to categorize the type of day and are usually set for the entire day.

1. **STATISTICS FOR DAILY INTERVALS** are statistics that are added to the List of daily events in the Time attendance editor, when users register different events (activate different <u>daily intervals</u> ⌐90⌐ during the day).
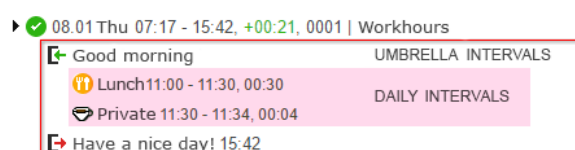
   Statistics for daily intervals are used to record the duration and repetition of intervals such as a Lunch break or Business exit. The statistic starts recording when a user activates the appropriate daily interval by registering at a controller for time attendance (more in chapters <u>Interval hierarchy</u> ⌐92⌐ and <u>Editing and use of controller buttons</u> ⌐92⌐).

2. **STATISTICS FOR PERIOD** are statistics that are used to categorize the type of day, e.g. the statistic Holiday used for holidays, the statistic Worktime used to record work hours on regular work days, and the statistic Leave used for recording the employees' leave days. The statistics for period are further categorized into **System statistics**, which are necessary to ensure that the Codeks time attendance works correctly, and additional **Users' statistics** that are not necessarily used in employee time registration and which you can edit completely arbitrary.

   A. **SYSTEM STATISTICS** are the statistics that are necessary in order for the Codeks time attendance system to work correctly. These statistics are already added during the installation of the Codeks software and are used as default statistics for period to categorize the type of days in the time attendance system. They are marked with a red exclamation mark (**!**) on the list of all statistics and can not be deleted.

      - The Codeks application originally differentiates between three types of days in the year:
        - *holidays*, by default categorized with the system statistic **Holidays**,
        - *weekends*, by default categorized with the system statistic **Weekend**, and
        - *work days* (when the work obligation is >0), by default categorized with the system statistic **Not present**. A user overwrites the *Not present* statistic when he registers his arrival at work (Entry event).
      - When a user registers his departure form work (an Exit event), he concludes the recording of his work hours and stores the value into the system statistic **Worktime**. The system statistic Worktime records the hours used to cover the user's defined daily work obligation. The recording of the hours that cover the user's work obligation is successfully concluded when the user registers his departure from work (an Exit event).

- The system statistics *Leave* and *Old leave* are used for days when the user is using his yearly leave days or old leave days. The statistics enable the system to correctly reduce the number of available leave and old leave days that the user has left.
- The system statistic *No return* is used to describe the state, when a user has left his work place using the functionality of a daily interval (e.g. Business exit) but has not registered an exit event to conclude his work day, and the system has automatically concluded the users day.
- The system statistic *Only entry* is used to record the state when the user has registered his entry event but has not yet registered an exit event as his workday is still in progress.
- By default users' tardiness is recorded in the system statistic **Late.**

B. **USERS' STATISTICS** are additional statistics that are not necessarily used in employee time registration and which you can edit completely arbitrary. You can read more about adding and editing statistics in the following chapters.

3. **STATISTICS FOR HOUR FUNDS** are used to record work hours into special separate hour funds. Users can later use the accumulated hours for personal days or early departure from work. Statistics for hours funds are always used in pairs, where the first statistic records hours into a special hours fund and the second statistic enables the accumulated hours in the fund to be used (Example of the use of hour funds).

ATTENTION!

You MUST NOT DELETE any system statistics (!) or statistics that were used to record time attendance at any time in the past. This could cause errors or inconsistencies when recalculating past events or displaying data in the Time attendance editor.

Remove the statistics that are no longer suitable for use by disabling the ***Show statistic in statistics menus*** (more in chapter Statistics settings [222]). This will remove the statistics from all menu lists for setting statistics. The statistic will remain archived in the database, enabling any event recalculation to be performed correctly, but users will no longer be able to use it for future time registration.

11.2. Statistic settings

This chapter describes all the settings for statistics. The examples of practical use of these settings are shown in the following chapters.

Code	A custom set, unique code for each statistic. The statistic's code is used to display the recorded data in exports and reports.
Name	The full name of the statistic used to describe the statistic in more detail.
Print position	The order in which the statistics will be displayed in the exports and reports.
Hours	The setting defines how the work hours will be recorded. Read more about this setting in the Hours [223] table. The additional field is used to set the fixed number of hours when using the values FixedHours and FixedAndRealHours.
Statistic infotype	The setting enables you to set an additional code (or infotype). This setting is not necessary and is only used when an additional code is needed in reports to identify each statistic.
Statistic's color	The color of the statistic that will be used to color the status bar of the day in the *Time attendance editor*.
Statistic validity	This setting limits the validity of the statistic according to the set day and month, however, it does not take into account the year. This means that a statistic is recurringly valid for a specific period each year.

~ *additional settings for hour count* ~	you can find a detailed description of the additional settings in chapter <u>Additional settings for hour count</u> 224 .
Statistic limits	The settings enable a limit to be set to a statistic. You can find a detailed description of the settings in chapter <u>Statistic limits</u> 226 .
Statistic's icon	The icon of the statistic that will be displayed in the Time attendance editor and in certain reports.
Select existing icon	Enables you to chose one of the pre-installed statistic icons.
Upload new icon	Enables you to chose and upload a new statistic icon from your computer.

The Hours setting defines how the statistic will record the work hours (e.g. it sets whether the statistic will record only the actually registered work hours or if it will record a fixed number of hours. The following table contains the descriptions of the different values of the setting. You can see examples of practical use of these settings in the following chapters.

Hours	Description
None	The statistic does not record anything (does not record the duration nor repetitions). This setting is used when you wish to mark the time of a certain statistic during the work hours but you do not want to record or store the duration. The setting is used e.g. for the Private exit statistic when you want to mark the user's exit as private time, but do not need to record exactly how long the private exit lasted.
Real	The statistic will only record the actual registered amount of work hours (the amount of clocked in work hours according to the registered time attendance events).
WorkObligation	The statistic will always record a number of hours equal to the set work obligation.
LeaveDayHours	This setting is only used for special cases of recording leave days when the users have varying amounts of work obligation hours depending on the day of the week. Using this setting you can set a fixed number of leave hours to be recorded for each leave day.
RealPlusWorkObligation	This statistic setting is only used for holidays. The statistic will record the number of hours equal to the set daily work obligation plus the actual amount of clocked in work hours.
FixedHours	The statistic will always record the fixed number of hours, set in the additional field next to the setting. `00:00` ⊕ HH:mm
AskHours	If this setting is enabled the system will always ask you to enter the desired number of hours whenever setting this statistic.
RealAtMostWorkObligation	The statistic will record the actual registered amount of work hours, but it will only record up to the maximum value equal to the daily work obligation.
FixedAndRealHours	The statistic will always record the fixed number of work hours set in the additional filed next to the setting. If a user exceeds the entered fixed number of work hours the statistic will also record any excess work hours that have been actually registered.
WorkObligationPlusSaldo	This setting is used for recording work hours of regular work days. The statistic will always record the number of hours equal to the set daily work obligation and also record any additional hours that have been actually registered (overtime hours).
WorkObligationOrReal	If the user has not registered his arrival at work (Entry event) the statistic will record the number of hours equal to the set daily work obligation. If the user has registered his arrival at work (Entry event) the system will only record the actual registered amount of work hours.
WorkObligationMinusReal	This statistic setting is only used for holidays. The statistic will record the actual registered amount of work hours, and, in the event the user has not yet fulfilled his work obligation, add the *Holiday* statistic up to the full value of the user's daily work obligation.

ADDITIONAL SETTINGS FOR HOUR COUNT

Setting	Description
Count statistic as	This setting defines what the clocked hours of the current statistic will be recorded as. It is possible to set the hours to be recorded in the value of the saldo (default), directly as overtime or in a special hours fund, which the users can later use as private hours.
	VALUES:
	Regular Saldo — The clocked hours are recorded in the value of the saldo (as by default).
	Overtime — The clocked hours are recorded (directly) as overtime.
	HoursFund — The clocked hours are recorded in a separate hours fund.
	NOTE Statistics set with this setting, which record hours into a special hours fund, can only be used in combination with statistics, which enable the accumulated hours in the fund to be used.
	Additionally, you can set how many months the hours will be stored in the fund and how long they will be available to be used. After this period the recorded hours will be removed from the fund and erased.
	Count statistic as [HoursFund ▼] ☑ Limit fund hours transfer Validity of fund hours (months) [1]
	UseHoursFund — The recorded hours in a separate hours fund will be used. Select the hours fund to be used by this statistic in the field underneath this setting.
	Count statistic as [UseHoursFund ▼] Use fund [Fond ▼] **Fond**
	NOTE Statistics set with this setting, which enable the accumulated hours in the fund to be used, can only be used in combination with statistics, which record hours into the same hours fund.
Add to statistic	The work hours in this statistic will also be recorded to another statistic, defined in the additional field next to this setting.
Count work hours	The work hours recorded by this statistic are taken into account when assigning lunches and drives. Usually, employees must register their arrival at work and clock a certain number of work hours, to be assigned a lunch or drive to work. However, this setting, in combination with settings *Count drive* and *Count lunch*, enables a drive or lunch to be assigned only based on a sufficient number of work hours, without the users having to register their arrival at work. This setting is used mostly for special cases and exceptions, e.g. for statistic *Working from home*, which is usually manually added to a day at some later date.
Count in work obligation	The work hours recorded by this statistic are used to cover the defined work obligation.
Count in main day statistic	The work hours recorded by this statistic will also be recorded in the statistic of the main daily interval (e.g. in the *Worktime* statistic).

Setting	Description
Count in time cut	This setting can only be used in the full Codeks TA software, in the Codeks TA Kit it has no effect on recording statistics. The work hours recorded by this statistic are taken into account when using time cuts.
Count in standby	This setting can only be used in the full Codeks TA software, in the Codeks TA Kit it has no effect on recording statistics. The work hours recorded in this statistic are counted as standby hours.
Count drive	The work hours recorded by this statistic are taken into account when assigning drives.
Count statistics	The setting enables the repetitions of the statistic to be counted (in addition to the duration of the statistic, as additional data within the statistic). If the setting is disabled the statistic repetition is not recorded.
Count only once daily	The setting enables only one repetition of the statistic to be recorded per day, regardless of the actual number of repetitions. This setting must be used in combination with the *Count statistic* setting.
Export	The setting enables the statistic to be displayed in the statistic exports in the Time attendance editor.
Overwrite	The setting enables the statistic to be overwritten by another statistic.)this setting is usually used for leave day statistics, where the Leave statistic can be overwritten if the user comes to work during his vacation).
Count lunch	The work hours recorded by this statistic are taken into account when assigning lunches.
Count leave	The work hours recorded in this statistic are counted as used leave days.
Count old leave	The work hours recorded in this statistic are counted as used old leave days.
Show statistic in reports	This setting enables the statistic to be displayed in reports in the Time attendance editor.
Show statistic in statistic overview	This setting enables the statistic to be displayed in the Statistic overview section in the Time attendance editor.
Show statistic in statistics menus	This setting enables the statistic to be displayed and selected in the menu lists for setting statistics.
[1] This statistic indicates absence	This setting can only be used in the full Codeks TA software, in the Codeks TA Kit it has no effect on recording statistics. This setting enables the statistic to be selected when announcing absences. [1] The setting can only be set when using the Codeks Leave Announces Add-on.
This statistic indicates sickness	The work hours recorded in this statistic are counted as sick leave.
Decrease presence bonus	This setting can only be used in the full Codeks TA software, in the Codeks TA Kit it has no effect on recording statistics. This setting enables the recording of hours which decrease the value of the employees' presence bonus (a salary bonus). This setting is usually enabled for recording absences such as leave or sick.
Statistic needs confirmation	The statistic must be confirmed [215] by an administrator or a department manager. Unconfirmed statistics are not recorded anywhere.

STATISTIC LIMITS

You can set a limit to the hour cont of each statistic. The set limits can be daily, weekly, monthly or yearly.

Daily
| None ▾ | 00:00 | None ▾ | Choose ▾ | ☐ Notify |

Weekly
| None ▾ | 00:00 | None ▾ | Choose ▾ | ☐ Notify |

Monthly
| None ▾ | 00:00 | None ▾ | Choose ▾ | ☐ Notify |

Yearly
| None ▾ | 00:00 | None ▾ | Choose ▾ | ☐ Notify |

To set a desired limit, first, select how the work hours will be recorded:

| None ▾ | 00 |

None
WorkObligation
WorkObligationPlusFixedHours
FixedHours

Hours	Description
None	The statistic limit is not set.
WorkObligation	The maximum amount of hours the statistic can record is equal to the set work obligation for the selected time period.
WorkObligationPlusFixedHours	The maximum amount of hours the statistic can record is equal to the set work obligation for the selected time period plus a fixed number of hours. The additional fixed number of hours is entered in the field next to the setting.
FixedHours	The maximum amount of hours the statistic can record is equal to the fixed number of hours entered in the field next to the setting.

By choosing one of the options for recording work hours, the next drop-down list is activated. Here you can specify how the system will record any excess of hours. You can choose one of four options: **None, Discard, AddToStat** or **AddToOvertime**.

Action	Description
None	Nothing is done with the excess hours.
Discard	The excess hours are erased.
AddToStat	The excess hours are added to the statistic selected in the third column.
AddToOvertime	The excess hours are recorded as overtime hours.

The third drop-down list is only activated when the **AddToStat** option is selected. The last column enables you to set the statistic that will record the excess of hours.

Daily
| WorkObligation ▾ | 00:01 | AddToStat ▾ | Ovtm - Overtime ▾ | ☑ Notify |

Weekly

Choose
0001 - Wroktime

The **Notify** option enables e-mail notifications to be sent when a set statistic limit is exceeded.

Example: Exceeding the maximum overtime hours
The department manager wants to be notified every time a worker exceeds the maximum number of daily overtime hours.
The daily limit for the statistic is set to WorkObligationPlusFixedHours and the value in the additional field is set to 2. This means workers can clock up to 2 overtime hours each day. The excess hours are discarded (the second column is set to Discard). Finally, the Notify option is checked to enable e-mail notification to be sent to the department manager.
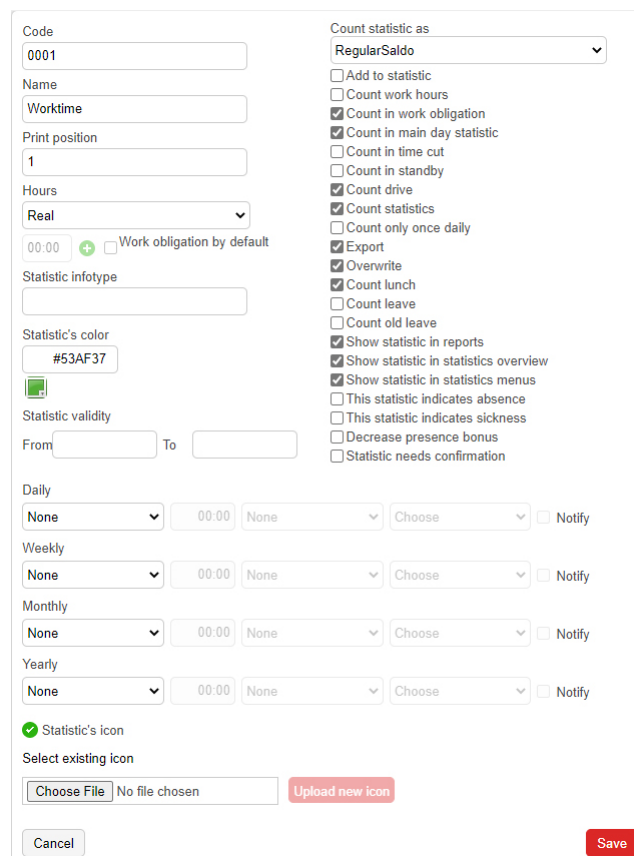
Daily
| WorkObligationPlusF ▾ | 02:00 | Discard ▾ | Choose ▾ | ☑ Notify |

11.3. Examples of using statistics

This chapter contains descriptions of some typical statistics used by most companies. Each statistic setting is explained in detail, and the use of the statistic in the *Timetables* and *Time attendance* editor is shown.

11.3.1. Worktime statistic

The **Worktime** statistic is a system statistic which records how many work hours users have clocked in each day.

This statistic has the *Hours* setting set to **Real** which means that it will only record the actual registered work hours - from the time the employee registered his arrival at work (Entry) at a controller up to his departure (Exit).

The statistic also has the following additional settings enabled:

- **Count in work obligation** defines that the work hours recorded by this statistic are used to cover the user's defined daily work obligation.
- **Count in main day statistic** defines that the work hours recorded by this statistic will also be recorded in the statistic of the main daily interval.
- **Count drive** defines that the work hours recorded by this statistic are taken into account when assigning drives.
- **Count statistics** enables the repetitions of the statistics to be counted.
- **Export** enables the statistic to be displayed in the statistic exports in the *Time attendance* editor.
- **Overwrite** enables this statistic to be overwritten by another statistic.
- **Count lunch** defines that the work hours recorded by this statistic are taken into account when assigning lunches.

- **Show statistic in reports** enables the statistic to be displayed in reports in the Time attendance editor.
- **Show statistic in statistic overview** enables the statistic to be displayed in the Statistic overview section in the Time attendance editor.
- **Show statistic in statistics menus** enables the statistic to be displayed and selected in the menu lists for setting statistics.

The use of the statistic in the Timetables editor:

The **Worktime** statistic is usually assigned to an Exit interval when defining timetables. This means the statistic is added in the time attendance only after the user registers his departure (Exit) from work.

The statistic is assigned to exit intervals in order to enable the system to mark any potential time attendance errors. If a user, for example, only registers an arrival (Entry) and forgets to register his departure (Exit) the system will mark the day in with the *Only entry* statistic. The employee's work hours will still be recorded, the system will only mark the employee's error when exiting from work. The *Entry only* statistic is overwritten by the *Worktime* statistic only when the employee correctly registers his departure (Exit) at a controller. The recording of the employee's work hours is then concluded and the value is stored in the *Worktime* statistic.

The use of the statistic in the Time attendance editor:
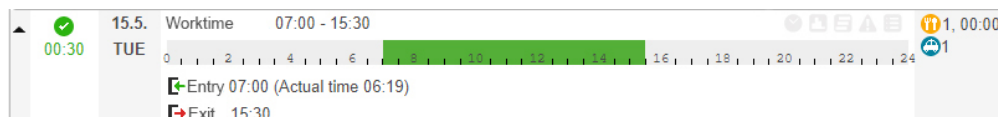
The *Worktime* statistic is marked with a green icon in the Time attendance editor. It is displayed in the day when the user registers his departure from work - Exit.

11.3.2. Sick Leave statistic

Code
Sick

Name
Sick leave

Print position
11

Hours
AskHours

00:00 ☑ Work obligation by default

Statistic infotype

Statistic's color
#F9B01D

Statistic validity
From   To

Daily
None   00:00   None   Choose   ☐ Notify

Weekly
None   00:00   None   Choose   ☐ Notify

Monthly
None   00:00   None   Choose   ☐ Notify

Yearly
None   00:00   None   Choose   ☐ Notify

Statistic's icon

Select existing icon
Choose File No file chosen   Upload new icon

Cancel   Save

Count statistic as
RegularSaldo

☐ Add to statistic
☐ Count work hours
☑ Count in work obligation
☑ Count in main day statistic
☐ Count in time cut
☐ Count in standby
☐ Count drive
☑ Count statistics
☑ Count only once daily
☑ Export
☑ Overwrite
☐ Count lunch
☐ Count leave
☐ Count old leave
☑ Show statistic in reports
☑ Show statistic in statistics overview
☑ Show statistic in statistics menus
☐ This statistic indicates absence
☑ This statistic indicates sickness
☐ Decrease presence bonus
☐ Statistic needs confirmation

The *Sick leave* statistic is used to record days when users are absent from work because of sickness or injury.

Statistics has the *Hours* setting set to **Ask Hours**, which means the system always asks how many hours of statistics you want to set when you add statistics to the employees' time registration.

The statistic also has the following additional settings enabled:

- **Count in work obligation** defines that the work hours recorded by this statistic are used to cover the user's defined daily work obligation.
- **Count in main day statistic** defines that the work hours recorded by this statistic will also be recorded in the statistic of the main daily interval.
- **Count statistics** enables the repetitions of the statistics to be counted.
- **Count only once daily** enables only one repetition of the statistic to be recorded per day, regardless of the actual number of repetitions. This setting must be used in combination with the *Count statistic setting*.
- **Export** enables the statistic to be displayed in the statistic exports in the *Time attendance* editor.
- **Overwrite** enables this statistic to be overwritten by another statistic.
- **Show statistic in reports** enables the statistic to be displayed in reports in the Time attendance editor.
- **Show statistic in statistic overview** enables the statistic to be displayed in the Statistic overview section in the Time attendance editor.
- **Show statistic in statistics menus** enables the statistic to be displayed and selected in the menu lists for setting statistics.
- **This statistic indicates sickness** defines that the work hours recorded by this statistic are counted as sick leave.

The use of the statistic in the Time attendance editor:

This statistic is usually manually added in the Time attendance editor using the *Set statistic* or *Set statistic for period* functions. It is marked with a red icon and records a number of hours equal to the defined daily work obligation.

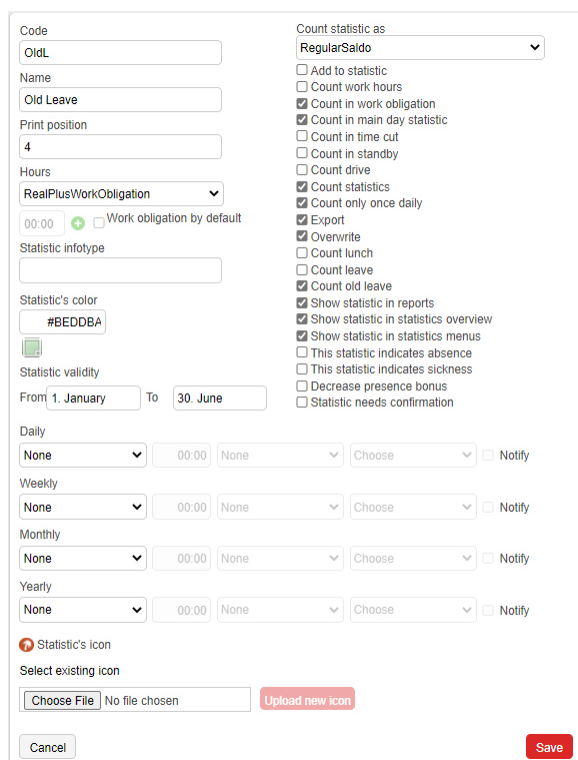| ● | ➕ | 2.3. | Sick leave | ⊘ 🅰 🗐 ⚠ 🗐 | 🕐0, 00:00 |
| | 00:00 | FRI | | | ⊕0 |

11.3.3. Leave days statistic

The *Leave days* statistic is used to record days when users are on vacation.

This statistic has the *Hours* setting set to **RealPlusWorkObligation** which means that it will record the number of hours equal to the set daily work obligation but any actual clocked in work hours will also be added to the day (e.g. if the user came to work during his vacation).

The statistic also has the following additional settings enabled:
- **Count in work obligation** defines that the work hours recorded by this statistic are used to cover the user's defined daily work obligation.
- **Count in main day statistic** defines that the work hours recorded by this statistic will also be recorded in the statistic of the main daily interval.
- **Count statistics** enables the repetitions of the statistics to be counted.
- **Count only once daily** enables only one repetition of the statistic to be recorded per day, regardless of the actual number of repetitions. This setting must be used in combination with the *Count statistic setting*.
- **Export** enables the statistic to be displayed in the statistic exports in the *Time attendance* editor.
- **Overwrite** enables this statistic to be overwritten by another statistic.
- **Count leave** defines that the work hours recorded by this statistic are counted as used leave days.
- **Show statistic in reports** enables the statistic to be displayed in reports in the Time attendance editor.
- **Show statistic in statistic overview** enables the statistic to be displayed in the Statistic overview section in the Time attendance editor.
- **Show statistic in statistics menus** enables the statistic to be displayed and selected in the menu lists for setting statistics.

The use of the statistic in the Time attendance editor:

This statistic is usually manually added in the Time attendance editor using the *Set statistic* or *Set statistic for period* functions. It is marked with a yellow icon and records a number of hours equal to the defined daily work obligation.

11.3.4. Old leave days statistic

The **Old leave days** statistic is used to record days when users are using their old leave days.

This statistic has the *Hours* setting set to **RealPlusWorkObligation** which means that it will record the number of hours equal to the set daily work obligation but any actual clocked in work hours will also be added to the day (e.g. if the user came to work during their vacation).

The statistic also has the following additional settings enabled:
- **Count in work obligation** defines that the work hours recorded by this statistic are used to cover the user's defined daily work obligation.
- **Count in main day statistic** defines that the work hours recorded by this statistic will also be recorded in the statistic of the main daily interval.
- **Count statistics** enables the repetitions of the statistics to be counted.
- **Count only once daily** enables only one repetition of the statistic to be recorded per day, regardless of the actual number of repetitions. This setting must be used in combination with the *Count statistic setting*.
- **Export** enables the statistic to be displayed in the statistic exports in the *Time attendance* editor.
- **Overwrite** enables this statistic to be overwritten by another statistic.
- **Count old leave** defines that the work hours recorded by this statistic are counted as used old leave days.
- **Show statistic in reports** enables the statistic to be displayed in reports in the Time attendance editor.
- **Show statistic in statistic overview** enables the statistic to be displayed in the Statistic overview section in the Time attendance editor.
- **Show statistic in statistics menus** enables the statistic to be displayed and selected in the menu lists for setting statistics.
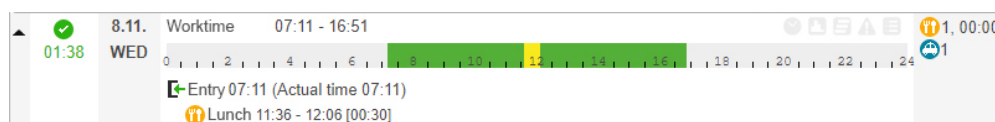
The use of the statistic in the Time attendance editor:

This statistic is usually manually added in the *Time attendance* editor using the *Set statistic* or *Set statistic for period* functions. It is marked with a brown icon and records a number of hours equal to the defined daily work obligation.

11.3.5. Lunch statistic

The *Lunch* statistic is used to record the time users spend on their lunch breaks during the work day.
This statistic has the *Hours* setting set to **Real** which means that it will only record the actual time spent on the lunch break, from the time the user registers his departure to the time he returns back to the workplace.

The statistic also has the following additional settings enabled:
- **Count in work obligation** defines that the work hours recorded by this statistic are used to cover the user's defined daily work obligation.
- **Count in main day statistic** defines that the work hours recorded by this statistic will also be recorded in the statistic of the main daily interval.
- **Count drive** defines that the work hours recorded by this statistic are taken into account when assigning drives.
- **Count statistics** enables the repetitions of the statistics to be counted.
- **Export** enables the statistic to be displayed in the statistic exports in the *Time attendance* editor.
- **Overwrite** enables this statistic to be overwritten by another statistic.
- **Count lunch** defines the work hours recorded by this statistic are taken into account when assigning lunches.
- **Show statistic in reports** enables the statistic to be displayed in reports in the Time attendance editor.
- **Show statistic in statistic overview** enables the statistic to be displayed in the Statistic overview section in the Time attendance editor.
- **Show statistic in statistics menus** enables the statistic to be displayed and selected in the menu lists for setting statistics.

The use of the statistic in the Timetables editor:

The **Lunch** statistic is used to record the time the users spend on their lunch breaks.

The use of the statistic in the Time attendance editor:

The daily interval with the *Lunch* statistic is added within the umbrella interval in the Time attendance editor and is marked with an orange icon. The interval is added to the day when the user registers at the controller.

11.3.6. Statistics for hour funds

Statistics for hours funds are always used in pairs, where the first statistic records hours into a special hours fund and the second statistic enables the accumulated hours in the fund to be used.

The statistics have the *Hours* setting set to **Real** which means that they will only record the actual recorded time.

The **Fund** statistic has the *Count statistic as* setting set to **HoursFund**, which means that it will store the recorded hours in a special hours fund.

The **Use fund** statistic has the *Count statistic as* setting set to **UseHoursFund**, which means that it will use the hours accumulated in the hours fund by the **Fund** statistic.

The statistics also have the following additional settings enabled:

- **Count work hours** defines that the work hours recorded by this statistic are taken into account when assigning lunches and drives.
- **Count drive** defines that the work hours recorded by this statistic are taken into account when assigning drives.
- **Count statistics** enables the repetitions of the statistics to be counted.
- **Count only once daily** limits the count of this statistic to once daily.
- **Export** enables the statistic to be displayed in the statistic exports in the *Time attendance* editor.
- **Overwrite** enables this statistic to be overwritten by another statistic.
- **Count lunch** defines the work hours recorded by this statistic are taken into account when assigning lunches.
- **Show statistic in reports** enables the statistic to be displayed in reports in the Time attendance editor.
- **Show statistic in statistic overview** enables the statistic to be displayed in the Statistic overview section in the Time attendance editor.
- **Show statistic in statistics menus** enables the statistic to be displayed and selected in the menu lists for setting statistics.

The use of the statistics in the Timetables editor:

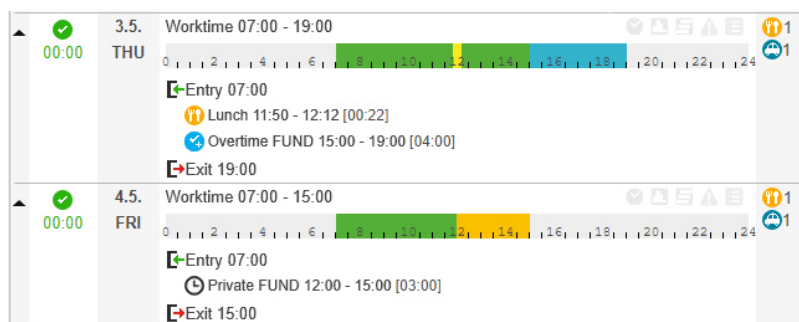In timetables the statistics are used for two time intervals: the first interval enables work hours to be recorded in an hours fund and the second one enables the hours to be used.

The use of the statistic in the Time attendance editor:

11.3.7. Statistic that requires confirmation

Code
Busi+

Name
Business requires confirmation

Print position
57

Hours
Real

00:00 ⊕ ☐ Work obligation by default

Statistic infotype

Statistic's color
#58CEFC

Statistic validity
From ___ To ___

Daily
None | 00:00 | None | Choose | ☐ Notify

Weekly
None | 00:00 | None | Choose | ☐ Notify

Monthly
None | 00:00 | None | Choose | ☐ Notify

Yearly
None | 00:00 | None | Choose | ☐ Notify

⊙ Statistic's icon

Select existing icon
Choose File | No file chosen | Upload new icon

Cancel | Save

Count statistic as
RegularSaldo

- ☐ Add to statistic
- ☐ Count work hours
- ☑ Count in work obligation
- ☑ Count in main day statistic
- ☐ Count in time cut
- ☐ Count in standby
- ☑ Count drive
- ☑ Count statistics
- ☐ Count only once daily
- ☑ Export
- ☑ Overwrite
- ☑ Count lunch
- ☐ Count leave
- ☐ Count old leave
- ☑ Show statistic in reports
- ☑ Show statistic in statistics overview
- ☑ Show statistic in statistics menus
- ☐ This statistic indicates absence
- ☐ This statistic indicates sickness
- ☐ Decrease presence bonus
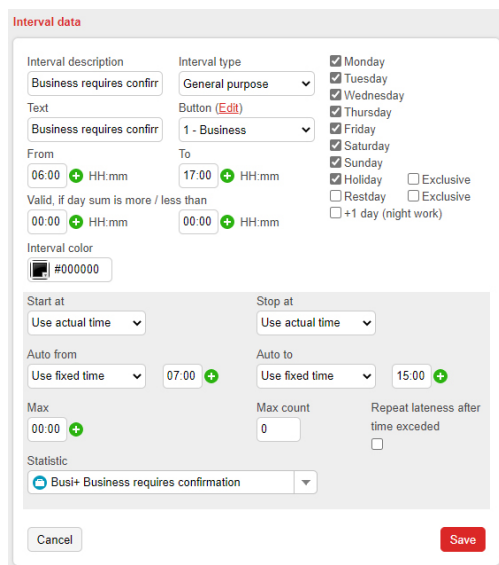- ☑ Statistic needs confirmation

The ***Business requires confirmation (Busi+)*** statistic is used to record business exits during the working hours that require the approval of a head of department).
This statistic has the *Hours* setting set to **Real** which means that it will only record the actual time spent on the business exit, from the time the user registers his departure to the time he returns back to the workplace.

The statistic also has the following additional settings enabled:
- **Count in work obligation** defines that the work hours recorded by this statistic are used to cover the user's defined daily work obligation.
- **Count in main day statistic** defines that the work hours recorded by this statistic will also be recorded in the statistic of the main daily interval.
- **Count drive** defines that the work hours recorded by this statistic are taken into account when assigning drives.
- **Count statistics** enables the repetitions of the statistics to be counted.
- **Export** enables this statistic to be printed in time attendance exports.
- **Overwrite** enables this statistic to be overwritten by another statistic.
- **Count lunch** defines the work hours recorded by this statistic are taken into account when assigning lunches.
- **Show statistic in reports** enables the statistic to be displayed in reports in the Time attendance editor.
- **Show statistic in statistic overview** enables the statistic to be displayed in the Statistic overview section in the Time attendance editor.
- **Show statistic in statistics menus** enables the statistic to be displayed and selected in the menu lists for setting statistics.
- **Statistic needs confirmation** defines that the statistics must be confirmed by a head of department before they are aknowledeged recognized by the user and taken into account in the time registration.

The use of the statistic in the Timetables editor:

In the timetables, the **Business requires confirmation** statistic is used to record a business exit.

The use of the statistic in the Time attendance editor:
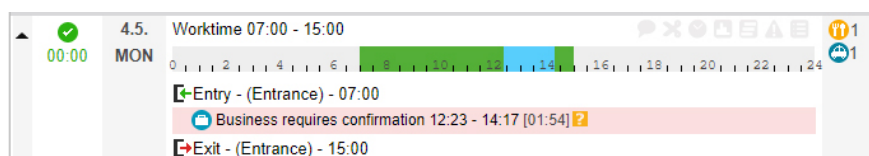
The **Business requires confirmation** statistic is recorded within the daily umbrella interval in the *Time attendance* editor. An an orange icon with a question-mark is displayed next to the interval, which indicates that the statistic needs to be confirmed. You can read more about statistics that require confirmation of a head of department in chapter Confirming statistics 215.

11.3.8. Statistic that records overtime directly

Code
OverD

Name
Overtime Direct

Print position
60

Hours
Real

00:00 ⊕ ☐ Work obligation by default

Statistic infotype

Statistic's color
#895CD3

Statistic validity
From ____ To ____

Count statistic as
Overtime

☐ Add to statistic
☑ Count work hours
☐ Count in work obligation
☐ Count in main day statistic
☐ Count in time cut
☐ Count in standby
☑ Count drive
☑ Count statistics
☐ Count only once daily
☑ Export
☑ Overwrite
☑ Count lunch
☐ Count leave
☐ Count old leave
☑ Show statistic in reports
☑ Show statistic in statistics overview
☑ Show statistic in statistics menus
☐ This statistic indicates absence
☐ This statistic indicates sickness
☐ Decrease presence bonus
☐ Statistic needs confirmation

Daily
None   00:00   None   Choose   ☐ Notify

Weekly
None   00:00   None   Choose   ☐ Notify

Monthly
None   00:00   None   Choose   ☐ Notify

Yearly
None   00:00   None   Choose   ☐ Notify

Statistic's icon
Select existing icon
Choose File   No file chosen   Upload new icon

Cancel   Save

The statistic **Overtime Direct (OverD)** is used to record overtime hours directly. (Usually, employees record overtime when they work more than their work obligation per day. Using this **Overtime Direct** statistic, however, overtime can be recorded directly, regardless of the number of the user's recorded working hours in the current day.)

This statistic has the *Hours* setting set to **Real** which means that it will only record the actual time spent, from the time the user registers his arrival to the time they register their departure from the workplace.

The statistic has the **Count statistic as** set to the **Overtime** value, which means that all working hours recorded under this statistic are counted directly in overtime.

The statistic also has the following additional settings enabled:
- **Count work hours** defines that the work hours recorded by this statistic are taken into account when assigning lunches and drives.
- **Count drive** defines that the work hours recorded by this statistic are taken into account when assigning drives.
- **Count statistics** enables the repetitions of the statistics to be counted.
- **Export** enables this statistic to be printed in time attendance exports.
- **Overwrite** enables this statistic to be overwritten by another statistic.
- **Count lunch** defines the work hours recorded by this statistic are taken into account when assigning lunches.
- **Show statistic in reports** enables the statistic to be displayed in reports in the Time attendance editor.
- **Show statistic in statistic overview** enables the statistic to be displayed in the Statistic overview section in the Time attendance editor.
- **Show statistic in statistics menus** enables the statistic to be displayed and selected in the menu lists for setting statistics.

The use of the statistic in the Timetables editor:

In the timetables, the **Overtime Direct** statistic is used to record work hours in an overtime interval.

The use of the statistic in the Time attendance editor:
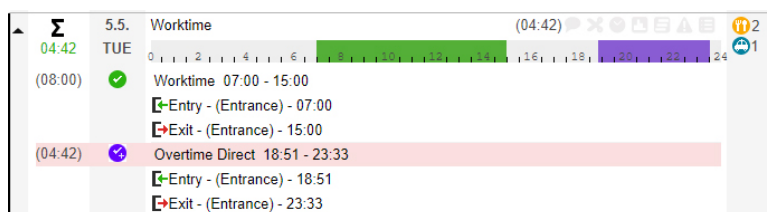
The *Overtime Direct* statistic is recorded in the *Time attendance* editor as a new daily umbrella interval, as the user returned to work after having already completed working hours on that day.

11.4. Edit Statistic

You can edit an existing statistic in the Statistic editor.

1. Select the statistic you wish to edit from the *List of statistics* and click the **Edit statistic** icon or double click the selected statistic.
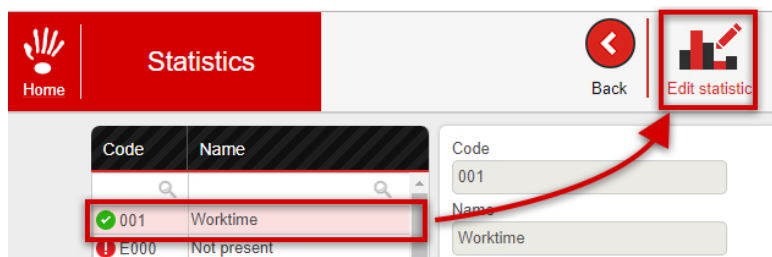
2. The edit statistic window will be enabled and you will be able to make changes to the selected statistic.

3. Click **Save** when you are done editing.

12. Hardware

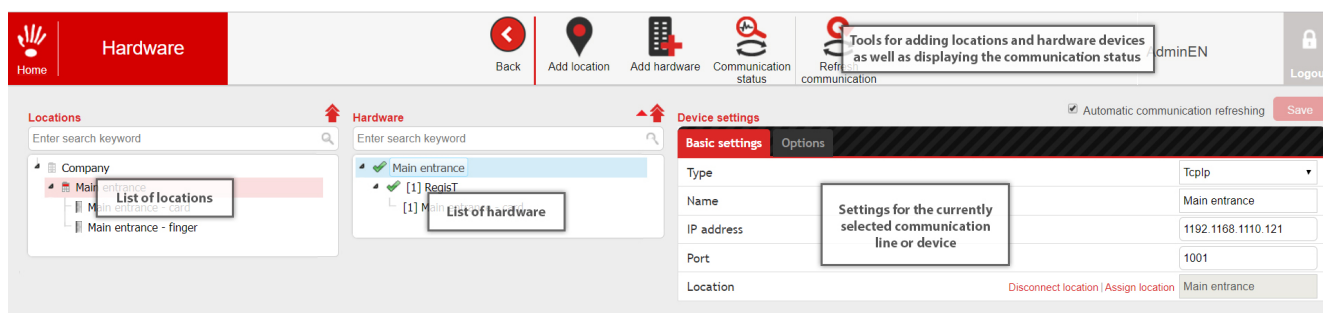The *Hardware* **editor contains tools for connecting devices** for access control and time attendance **with the Codeks software** as well as tools for defining their settings.

You can also **recreate the physical layout of the company premises (buildings, floors, etc.)** in the *Hardware* editor and **define the entry points - passages, which are used to assign access rights to groups and users** 78.
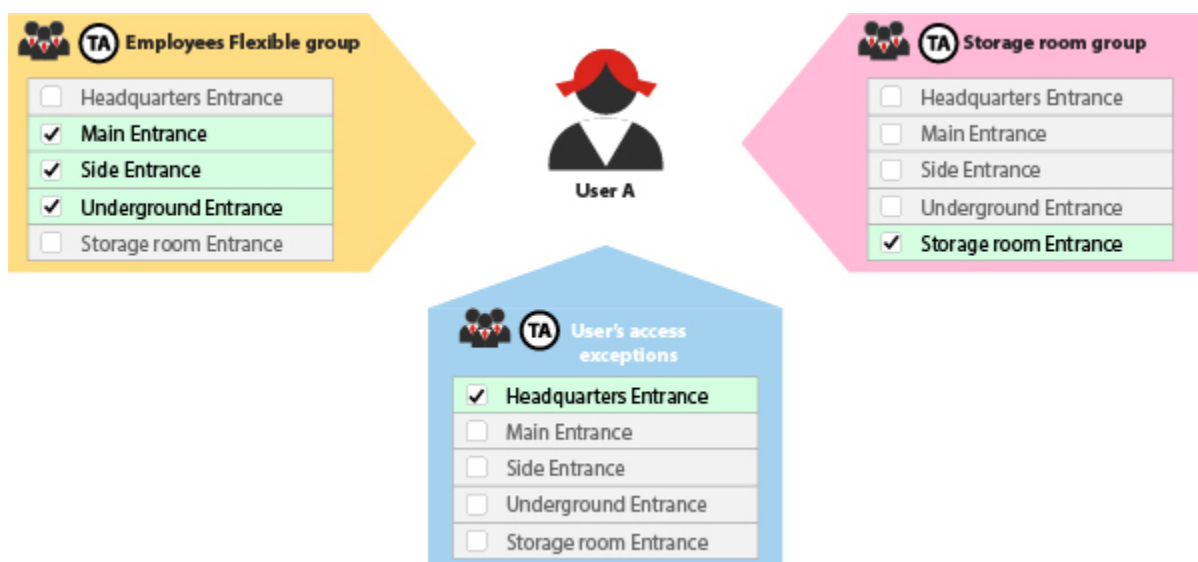
All user and group access rights can only be defined for passages.

The added devices can be connected to specific location types:

- **controllers** [27] and **communication lines** [257] can be connected with *organization*, *building*, *floor*, and *room* location types*, however, connecting *controllers* and *communication lines* to locations is not necessary.
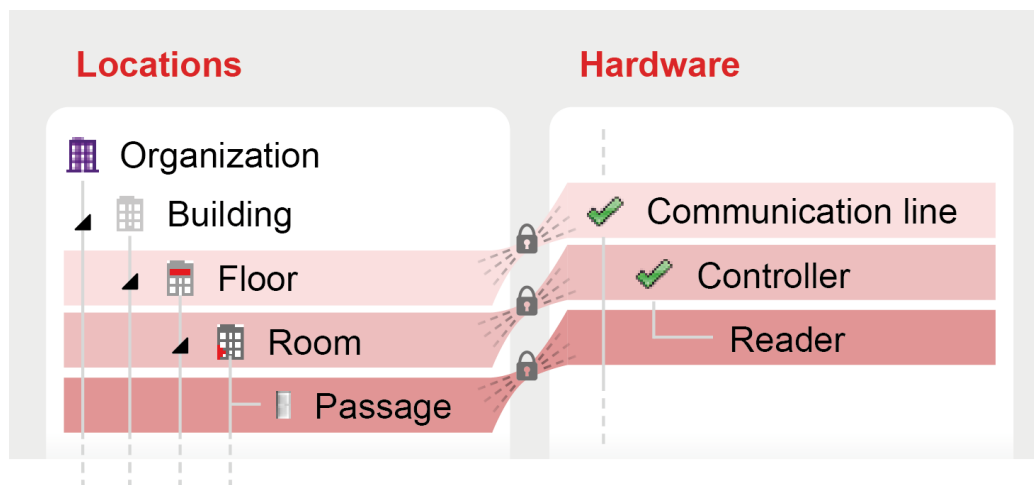- **readers** [29], on the other hand, must always be connected to *passage** location types to enable the correct operation of access control or time attendance registration at the company entry points.

* (read more in chapter *Locations* [248])

<div style="background:#e6e6e6">

NOTE:

We recommend that you connect al the installed devices with the Codeks system via the *Add hardware wizard*, which you can access by clicking the *Add hardware* icon.
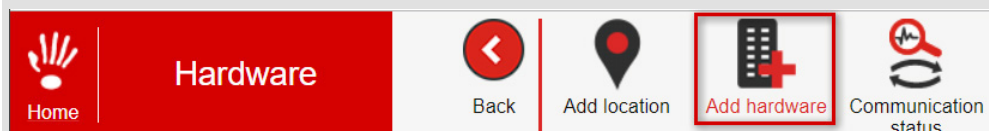
The wizard will help you to add new devices in the correct structure (communication line > controller > reader) and also at the same time create (only) the necessary locations.

The *Add hardware wizard* also ensures that the added devices will have an active and functioning communication, as it can only find those devices with which it can communicate.

</div>

<div style="background:#e6e6e6">

ATTENTION!

When you are finished with editing the hardware and locations you must return to the *Main menu* to trigger the send tables process. Otherwise, the hardware will not work correctly in combination with the Codeks application.

</div>

12.1. Adding new hardware

1. To add a new device with the *Add hardware wizard*, first, select the **Add hardware** icon in the toolbar of the *Hardware* editor.
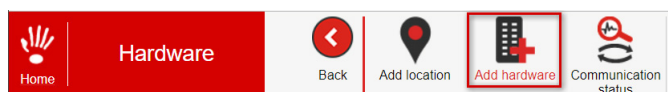
2. A new window will open where you will, **first**, **add a new communication line** 257 **which will lead to the new device (or devices).**

3. To automatically find all available communication lines click *Discover all communication lines*.

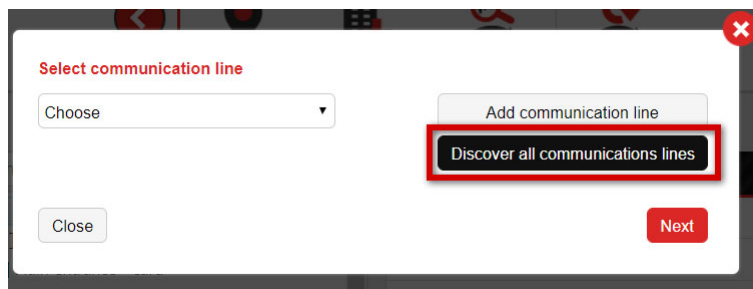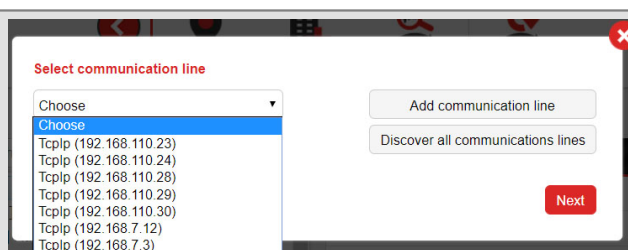|	
If you want to add a device to **an existing communication line** select the desired communication line from the **Select communication line** drop-down. Then click **Next** and continue with adding the controller device.	
If you want to **manually add a new communication line for a new device** (e.g. if the connection is weak or slow) click the **Add communication line** 258 button.	
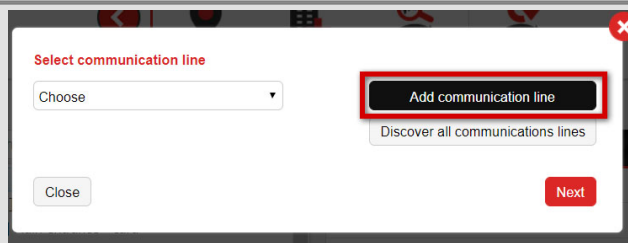
4. The automatic search can take a few moments.

5. Next, the **table containing all communication lines**, which connect the access control or time attendance devices (Jantar devices) will be displayed.

> **NOTE**
> **When installing the devices you must note the type (TCP/IP, Serial or USB) and specification number (IP address, COM port, etc.) of the communication line connecting the devices.**

6. Find and click the desired communication line.
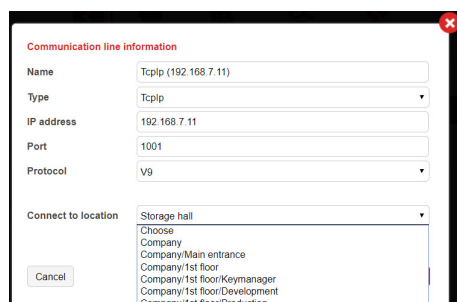
A new window will open, where the details of the communication line will be displayed and where you can edit some of the basic settings of the communication line.
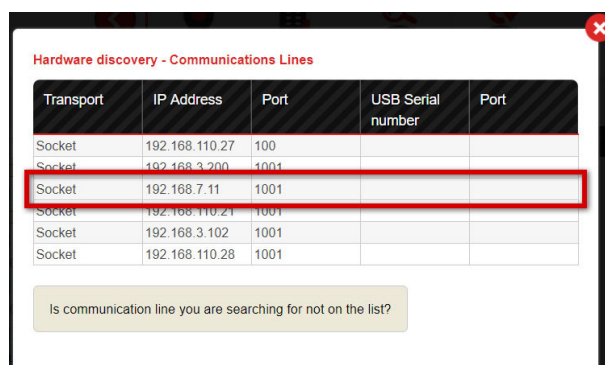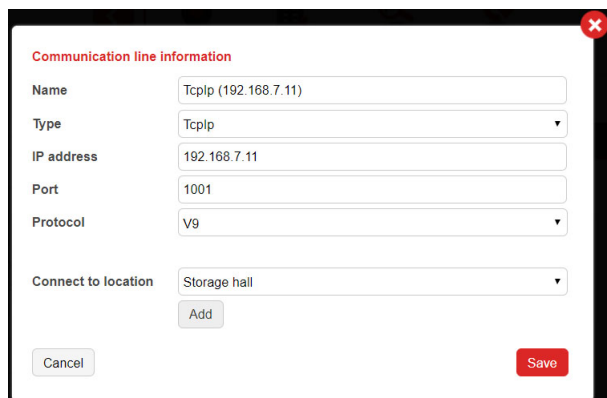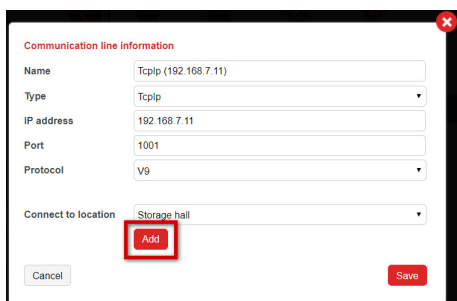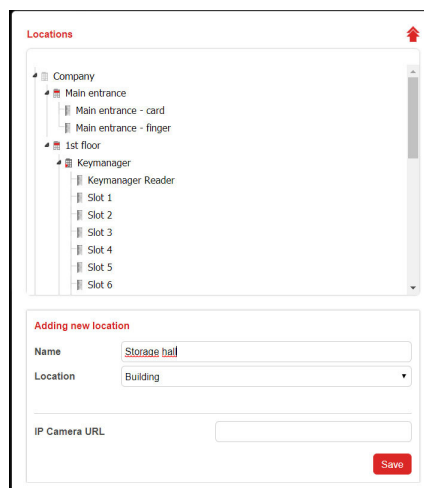
You can read more on communication line settings in chapter Communication lines 257 .

7.* At this point you can also **connect the communication line to a specific location**, if you want. However, it is not necessary to connect a communication line to any location (only readers must necessarily be connected to *passage* type locations). You can connect the communication line to:
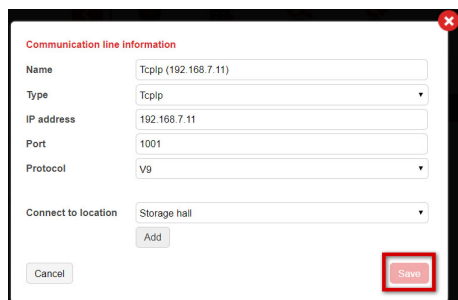
 - an existing location, which you can select from the drop-down menu.

- a new location which you can create and add by clicking the ***Add*** button*.

8. After checking and setting all the desired settings for the communication line, click ***Save***.

<table>
<tr><td>

ATTENTION!
The process of adding and saving the new communication line may take some time – meanwhile, DO NOT close any pop-up windows or the browser window!
</td></tr>
</table>

9. When the process of adding a new communication line is finished the wizard will return to the previous pop-up window.

The newly added connection line will now be displayed in the *Select communication line* field. Click **Next** to proceed with adding controllers to the new communication line.
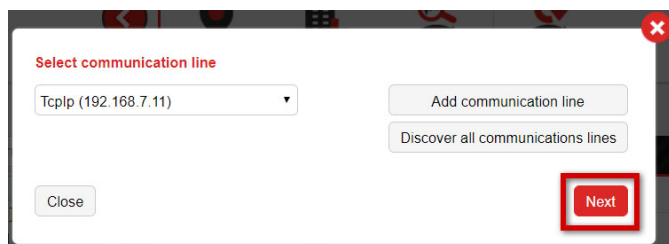
10. A new window will open for adding controllers 27⃝ **to the newly added communication line.**

11. To automatically find all controllers on a selected communication line, click available communication lines click ***Discover controllers***.

The process of discovering controllers can take a few moments.
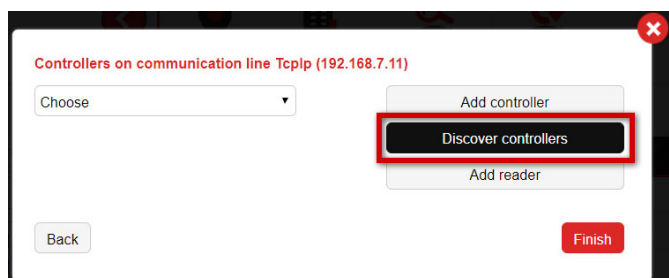
If you want to **manually add a new controller to the communication line click the Add communication line** 258⃝ **button.** Read more about adding controllers in chapter Controller 27⃝.	
At this point you can also **add readers to a selected controller by clicking the *Add reader* button.** You can read more about adding readers to controllers in chapter *Controller* 27⃝ or read about the reader's settings in chapter *Reader* 29⃝.	
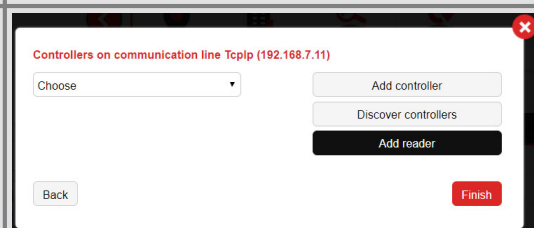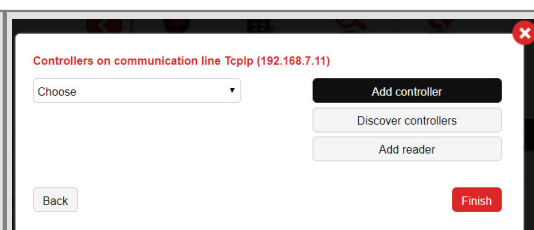
12. A new pop-up window will open where all controllers on the selected communication line will be displayed.

13. Next, **double-click each controller to connect it to the Codeks system and define the specific settings.** A new window will open where you can edit the basic settings for the selected controller.
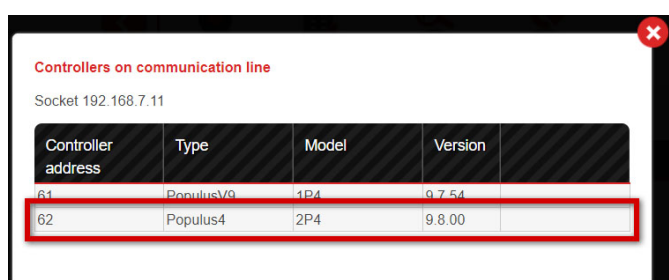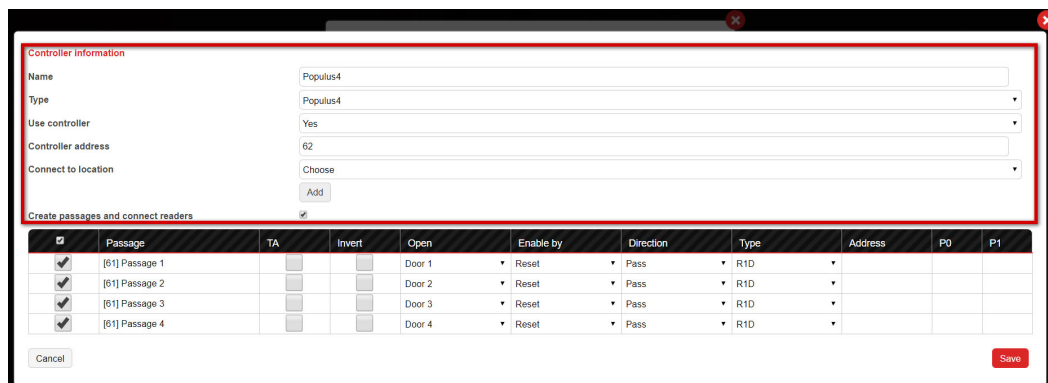
14. The upper part of the pop-up window for editing the (selected) controller contains basic settings for the controller.

> **NOTE**
> **The controller's settings vary depending on the type of controller and the number of readers connected to it.**
> **You can read more about controllers and readers in chapters _Controller_ 27↑ and _Reader_ 29↑.**
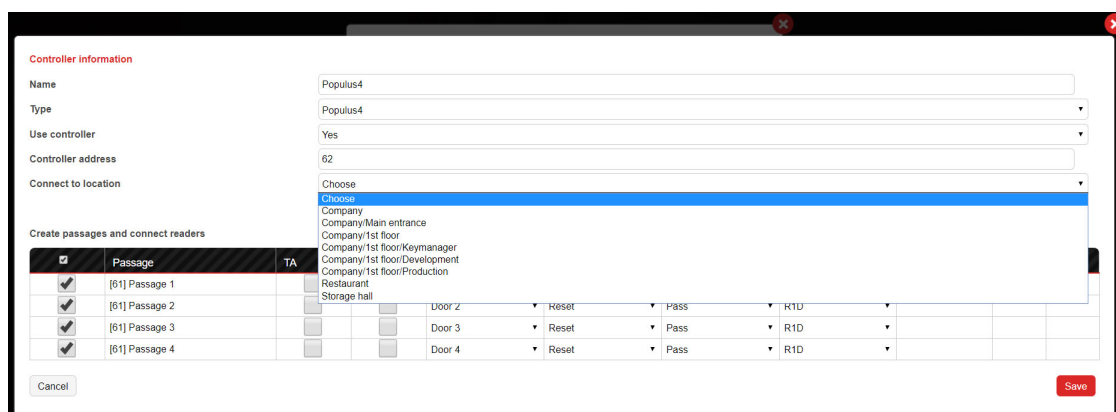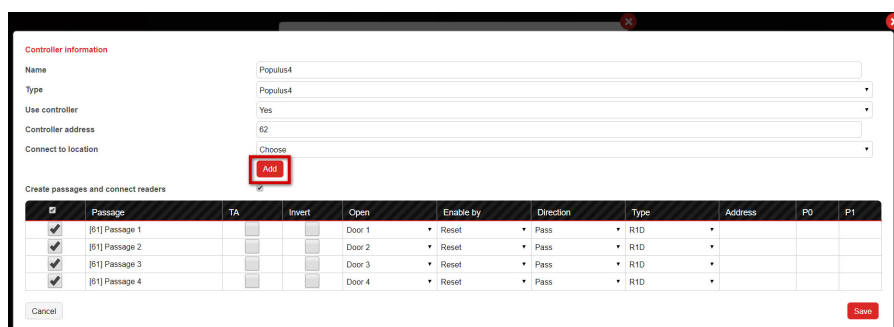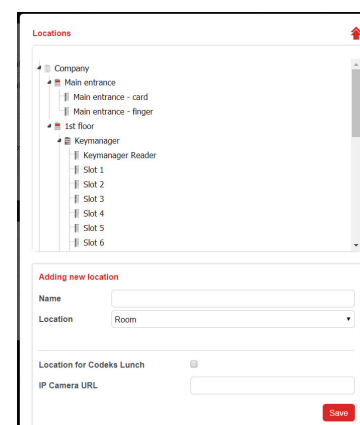
15.* At this point you can also **connect the controllers to specific locations**, if you want. However, it is not necessary to connect a controller to any location (only readers must necessarily be connected to _passage_ type locations).

You can connect the controller to:

- an existing location, which you can select from the drop-down menu.

- a new location which you can create and add by clicking the **_Add_** button**.**
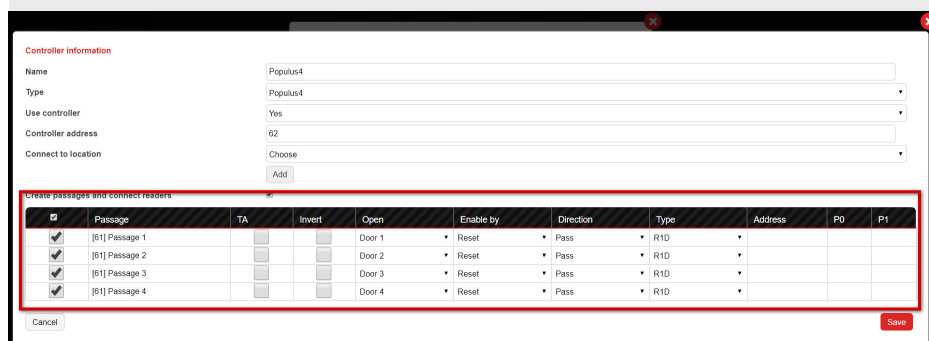
16. In the lower part of the pop-up window for editing the (selected) controller all he readers connected to the controller are displayed.
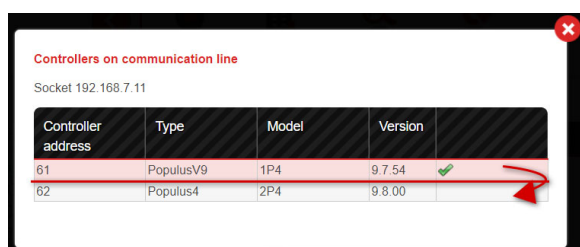
> **NOTE**
>
> **The pop-up window will display the maximum number of readers which can be connected to a specific type of controller**, even if, in reality, only some of the readers are connected (e.g. the Populus 4 access controller has the potential to connect to up to 4 readers, but in reality it may only have 2 readers actually connected). It is, therefore, essential to note the following during the device installation itself:
> - the number of readers connected to each controller,
> - the door number of each reader connected to a specific controller, and
> - the address number of each reader.

17. Click **Save** when you are done editing the controller settings. The wizard will then take you to the previous window where all the controllers on the selected communication line are displayed. Here you can:
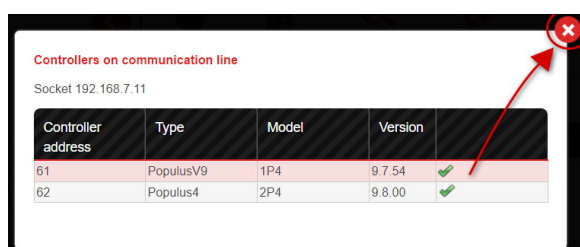
- continue and connect other controllers found on the same communication line (all controllers which have already been connected are marked with a green check-mark ✔)
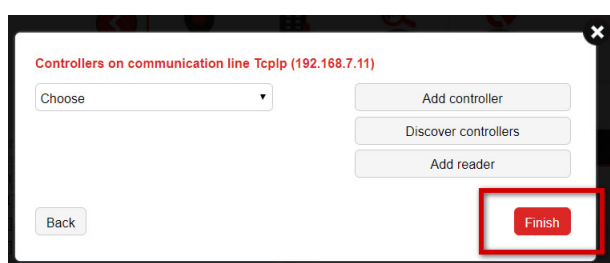
or

- stop adding controllers and click the ❌ icon to close the current dialog box.

18. The *Add hardware wizard* will take you back to the previous pop-up window. **To conclude the process of adding a new hardware device click *Finish*.**

12.2. Locations

The locations used in the Codeks application illustrate the physical structure of your company's facilities and are mainly necessary to define **passages** - *the entry points to the company* - which are used to define the user and group access rights.

Depending on the specific structure of your company's premises, then you create a tree structure of Locations with the help of different types of locations that hierarchically follow: *organization*, *building*, *floor*, *room,* and *passage*.

You can connect the company locations to the devices:
- **controllers** [27] and **communication lines** [257] can be connected with *organization*, *building*, *floor*, and *room* location types*, however, connecting *controllers* and *communication lines* to locations is not necessary.
- **readers** [29], on the other hand, must always be connected to *passage** location types to enable the correct operation of access control or time attendance registration at the company entry points, as all user and group rights are assigned to passage type locations.
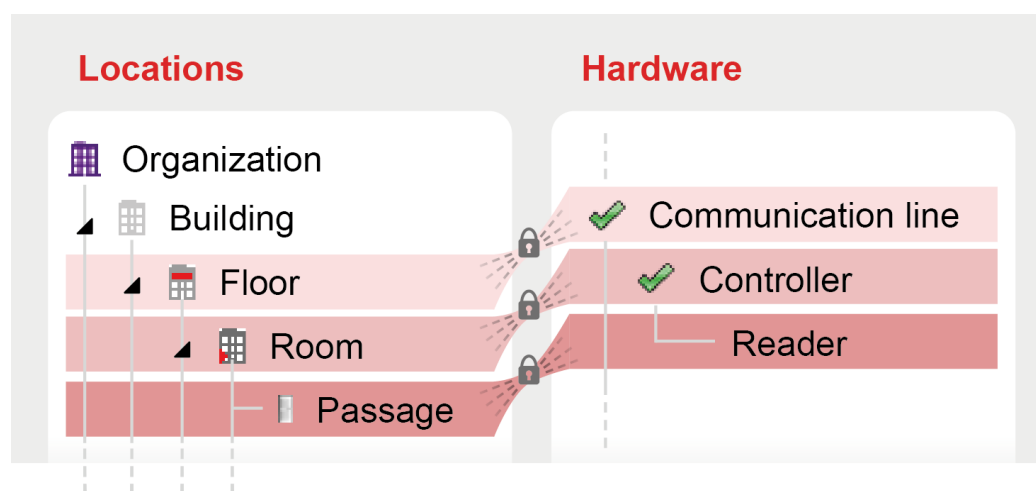
> **NOTE**
> **We recommend that you create any new locations when adding new hardware to the Codeks system using the *Add hardware wizard.* This way you will avoid creating unnecessary locations as well as connect the proper locations with devices at the same time.**

In the *Hardware* editor you can add, edit and delete locations as well as set the necessary settings for some of the Codeks add-ons and additional applications.

12.2.1. Add Location

1. To add a new location you can click the **Add location** icon n the toolbar of the *Hardware* editor
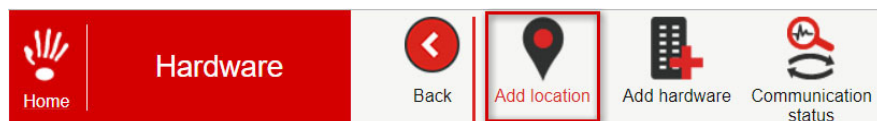
or select the appropriate *type of location* from the right-click menu on the "parent" location.
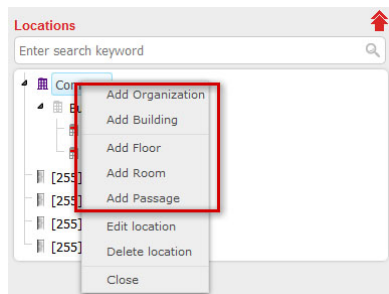
Types of locations and sub-locations:

🏢 - Organization: you can add a *building*, *floor*, *room* or *passage* to an organization.

🏢 - Building: you can add a *floor*, *room* or *passage* to a building.

🏢 - Floor: you can add a *room* or *passage* to a floor.

🏢 - Room: you can add a *passage* to a room.

▌ - Passage: you cannot add any sub-locations to a passage.

2. A new window will open where you can add a new location and set the additional settings for the location.

Read more about the additional settings for different Codeks add-ons and applications at locations in the following chapters and separate Codeks add-on user manuals.
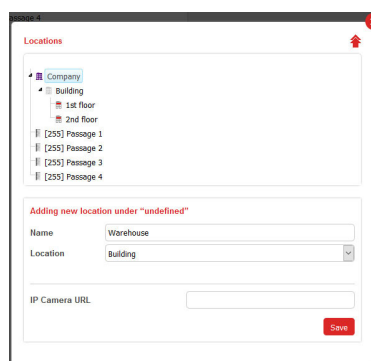
3. When you are done with editing, click **Save**.
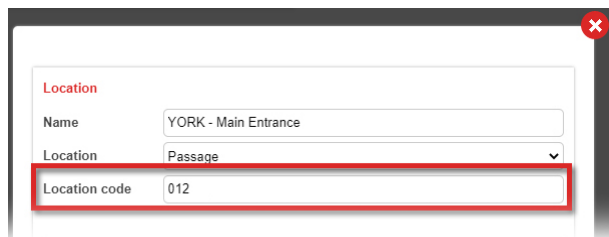
4. The new location will be displayed in the tree structure of the *List of locations*.
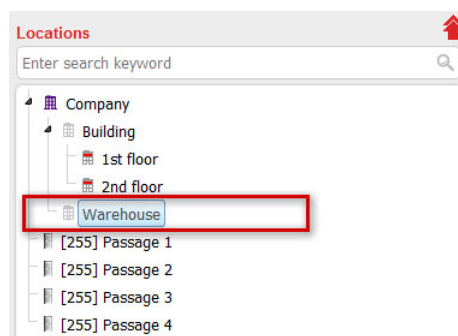
12.2.1.1. Location code

The *Location code* is an additional data or identifier of the location and is used primarily for exporting data to reports and exports to payroll programs.

You can enter any number or letter code that will identify the location in the *Location Code* field. Different locations may have the same location code.
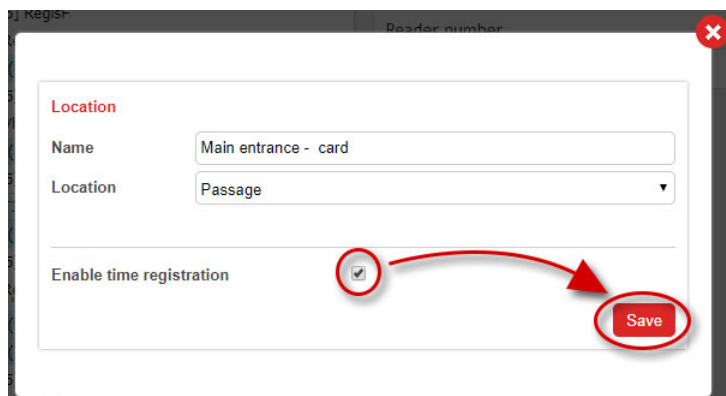
Example:

For example, the *Location Code* is used in *Largo Export* [168], to export data by individual locations (different workplaces). Different locations may have the same *Location Code*, for example, if the same branch has two entrances where employees can register, and data from these locations will be displayed summed up under the same output column in *Largo Export*.

12.2.1.2. Enable Time Registration

The **_Enable time registration_** setting must be enabled on all locations where the users will register their work hours. (If this setting is not enabled the users' work hours will not be registered even if they are assigned the correct timetable on the location.)
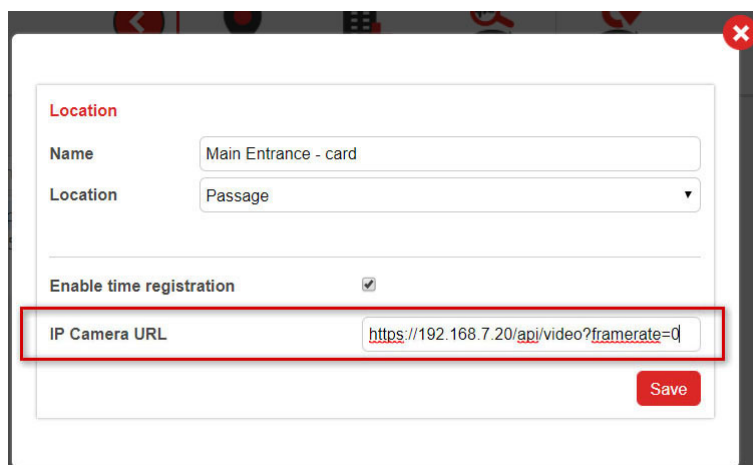
12.2.1.3. IP Camera settings

The **_Codeks IP Camera_** add-on enables static photos to be taken at the precise moment when a user registers at a location.

To add a security camera to the Codeks system using the _Codeks IP Camera_ add-on, you must **enter the IP address of the camera to the location** where the camera is installed.

Read more about setting up the _Codeks IP Camera_ add-on in a separate user manual.

12.2.1.4. * Geolocation

* When using the *Codeks Virtual Controller* add-on, additional settings are available for *Passage* type locations with which you can determine the geographic coordinates of a virtual controller and the area of maximum distance from the point of the virtual controller.

> **NOTE**
> **All newer Codeks systems whose main Codeks license (Codeks TA Kit, Codeks TA or Codeks TA Advanced) was first activated AFTER October 1, 2021,WILL REQUIRE at least one Codeks Virtual Controller license to enable mobile T&A registration through the Codeks Mobility app.**
> **The Codeks Virtual Controller license enables mobile registration, additionally, it also enables the geographical restriction of the area around the point of the virtual controller, where employees are still allowed to register their working hours via mobile app.**
> **All older Codeks systems whose main Codeks license (Codeks TA Kit, Codeks TA or Codeks TA Advanced) was first activated BEFORE October 1, 2021, will NOT REQUIRE for the basic operation of mobile T&A registration. Owners of such systems will be able to purchase the additional Codeks Virtual Controller license if they wish to upgrade their system with the functionality of geographically restricting mobile registration. Older systems without a Codeks Virtual Controller license will continue to operate as before**.

> **NOTE**
> **The new functionality of the Codeks Virtual Controller license is only possible when using at least the version Codeks 10.2110.0.15840 of the main software or later.**
> You can also read more about the Codeks Virtual Controller in the separate instruction manual for the add-on (Codeks Virtual Controller EN Instructions for ADMINISTRATORS.pdf).

To activate the functionality of the virtual controller, **it is necessary to assign a Codeks Virtual Controller license to the selected location** in the *Hardware editor* and **adjust the location settings accordingly**.

1. In the *Hardware* editor, **create a new Passage location for the virtual controller, or use an existing location** (to which no device has yet been assigned) and **open the window to edit the location settings**.

2. Enable the *Geolocation* setting. New location settings will open.

3. First, select the *Codeks Virtual Controller* license for this location from the **License** settings drop-down list.

4. * If you enable the Unlimited setting, the virtual controller will not have specific geographical coordinates and the area where employees are allowed to register mobile will not be restricted - employees will be able to register mobile anywhere.
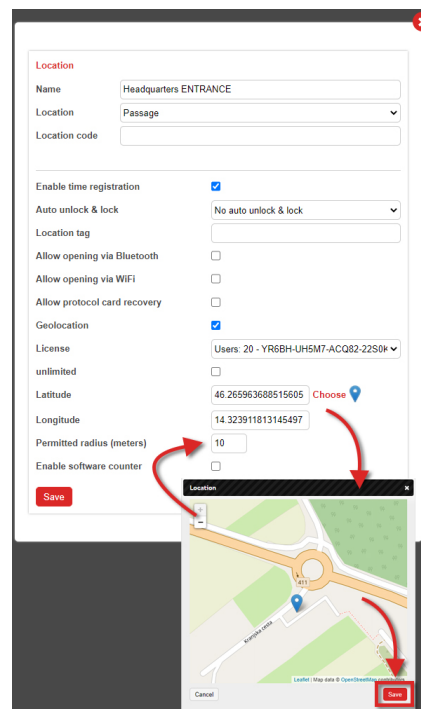
5. To limit the virtual controller area enter the geographical coordinates to which you want to bind the controller in the *Latitude* and *Longitude* settings fields. You can also set the coordinates with the graphic selector by clicking the ***Choose*** button Choose 📍.

6. Then set the ***Permitted radius (meters)*** from the selected geographical coordinates, where users will still be allowed to register their T&A. The minimum possible distance is 10 m.

7. Finally, click ***Save***.

8. A new virtual controller with a virtual reader already connected to the newly added location will appear in the hardware list.

Additionally you can read chapter <u>Virtual cards</u> 45 for more information on mobile registration.

12.2.2. Edit Location

1. To edit a location **double-click the desired location** or select the *Edit location* option from the right-click menu.
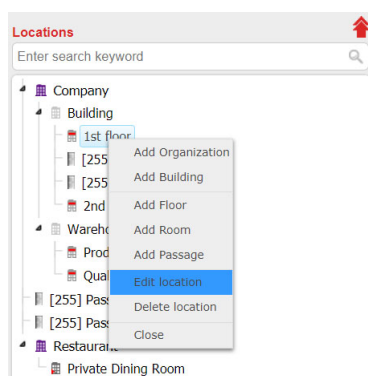
2. A window, similar to the add location window, will open where you can edit the basic information and additional setting for the location.
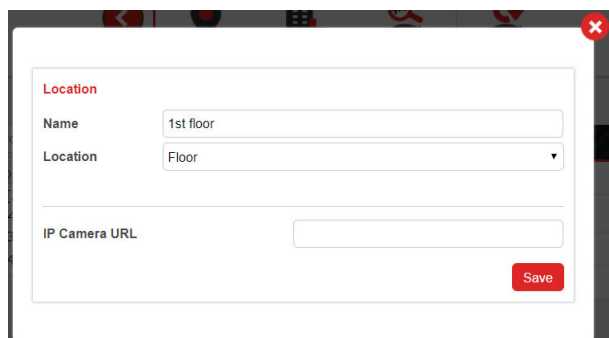
When you are done editing click *Save*.

3. To edit the position of the location within the tree structure use the "drag-and-drop" technic - just click the desired location and drag it to the proper position in the *List of locations.*
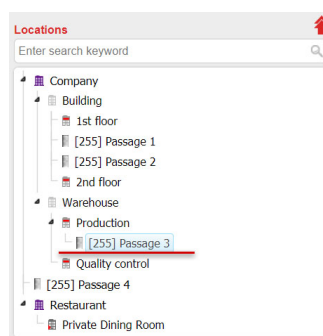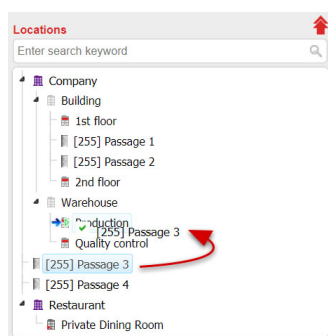
12.2.3. Delete Location

ATTENTION

You MUST NOT delete a location which has assigned user and group rights to it.

ATTENTION

You CANNOT delete locations which have sub-locations without first deleting all the sub-locations.

1. To delete a location select the *Delete location* option from the right-click menu.
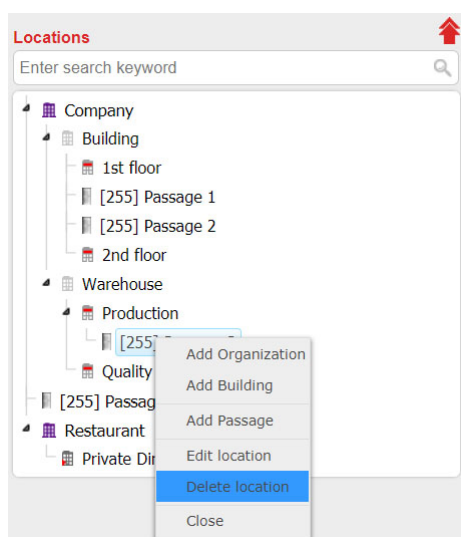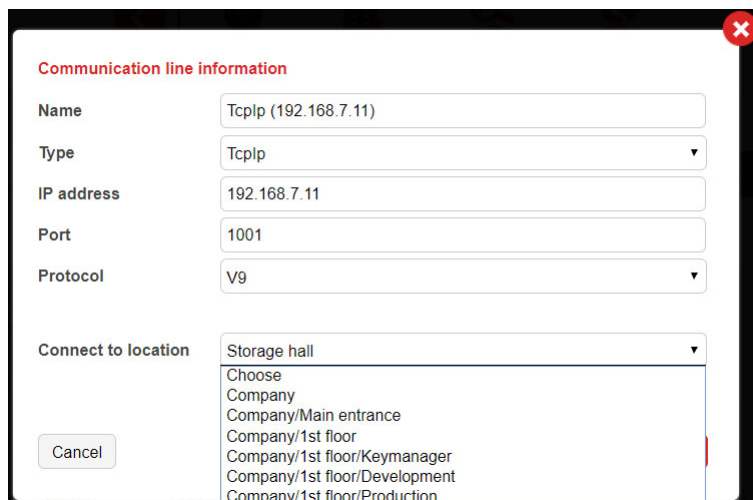
2. The system will warn you, that you are about to delete a location.

To confirm the deletion click *OK.*
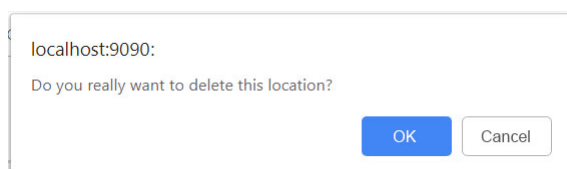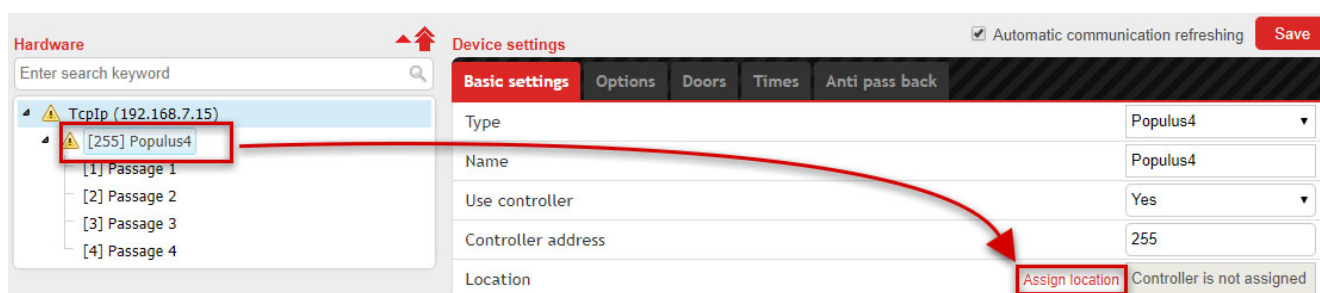
12.2.4. Assigning locations to devices and communication lines

Assign the corresponding location to the devices or communication lines when adding devices through the **Add hardware wizard**.
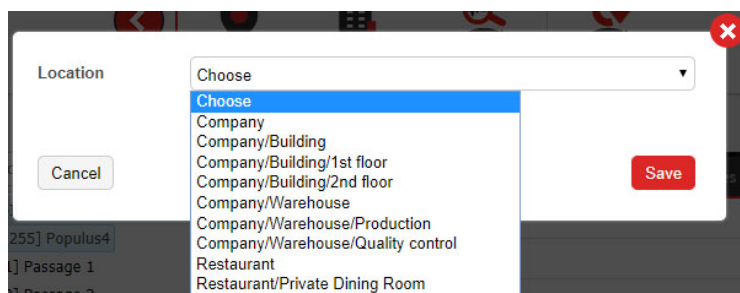
Subsequently, you can also add a location to a piece of hardware through the settings tabs on the right side of the editor:
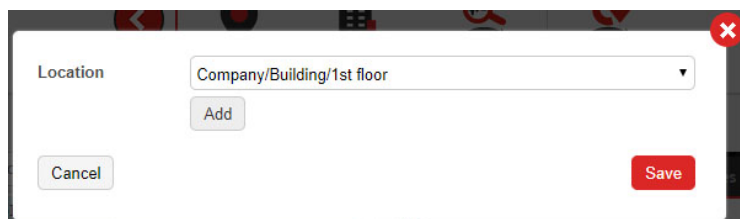
1. In the *Basic settings* tab, click the **Assign location** link.

2. A new window will open where you can chose the appropriate location from the drop down menu.

3. When you are done editing, click **Save**.

12.3. Communication Line

The **Communication line** (leading to controllers) is the first necessary component of a hardware (device) entry in the Codeks software.
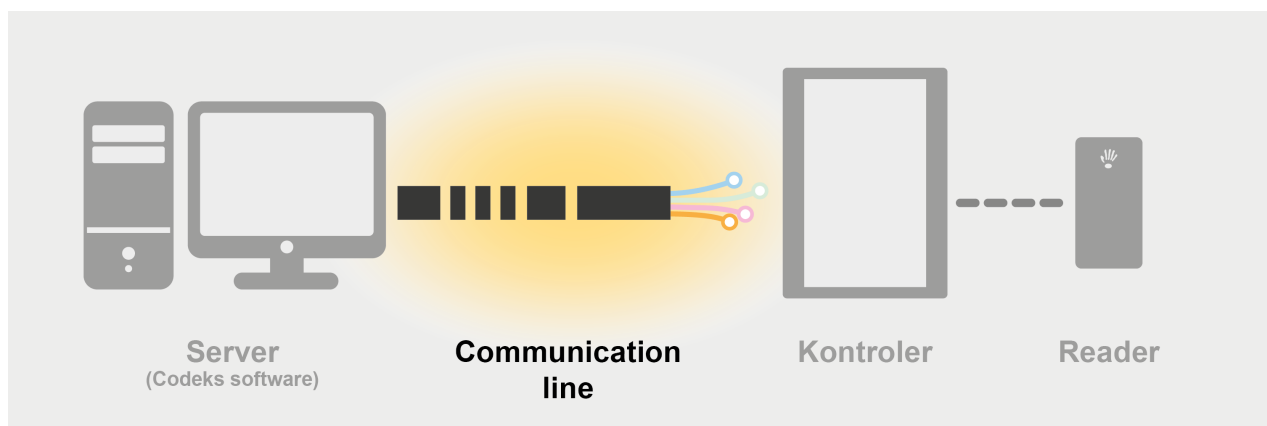
The Codeks software communicates with different hardware devices through communication lines.

The (physically) installed hardware devices can be connected with the Codeks software through one of three types of communication lines:

 - **TcpIP -** an IP communication line, using the TCP communication protocol.

 - **Serial** - a serial communication line connects the hardware devices with the server by using a COM Port connection. This type of communication line is used also to connect devices via USB connector to the server.

 - **USB** - a communication line that connects devices to the server using a USB interface is only designed to connect older Jantar devices (which still use the FTDI chip)

By right-clicking on the *communication line* you can access the action menu for communication lines.
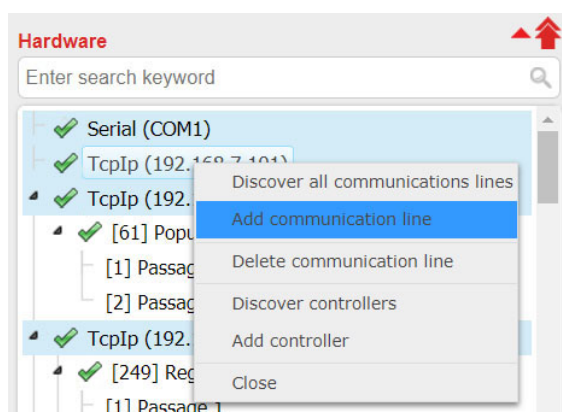
Individual actions are described in the following chapters.

12.3.1. Add Communication Line
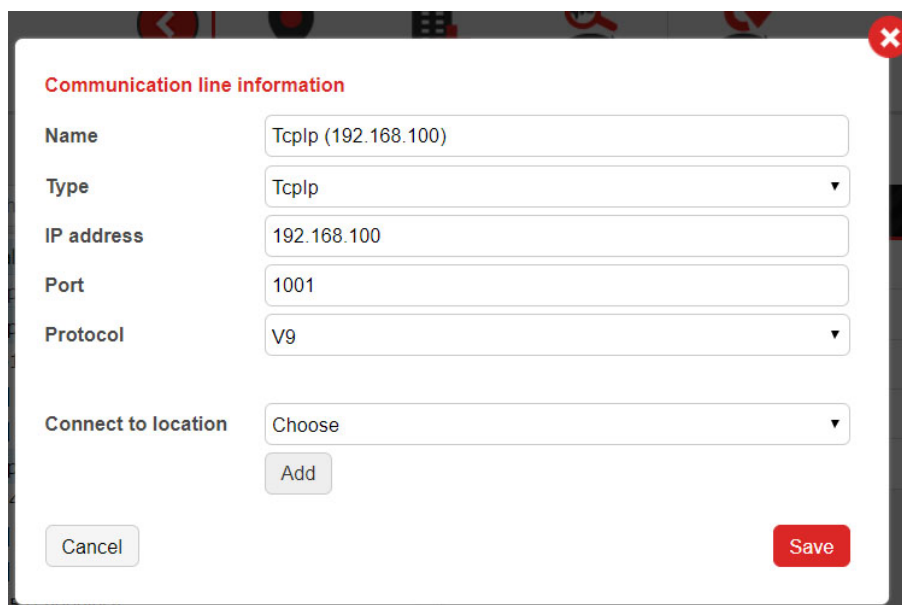
1. To manually add a new communication line select the *Add communication line* from the right-click menu.
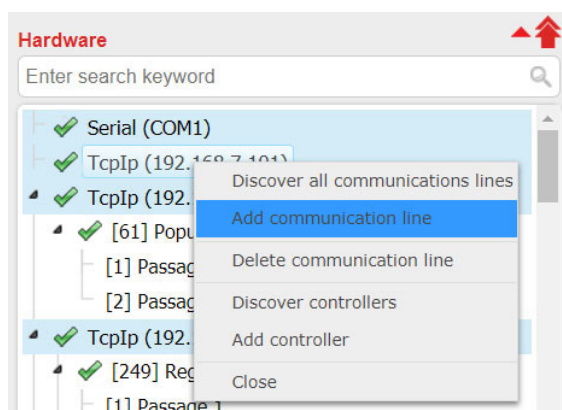
2. A new window will open for adding a new communication line.
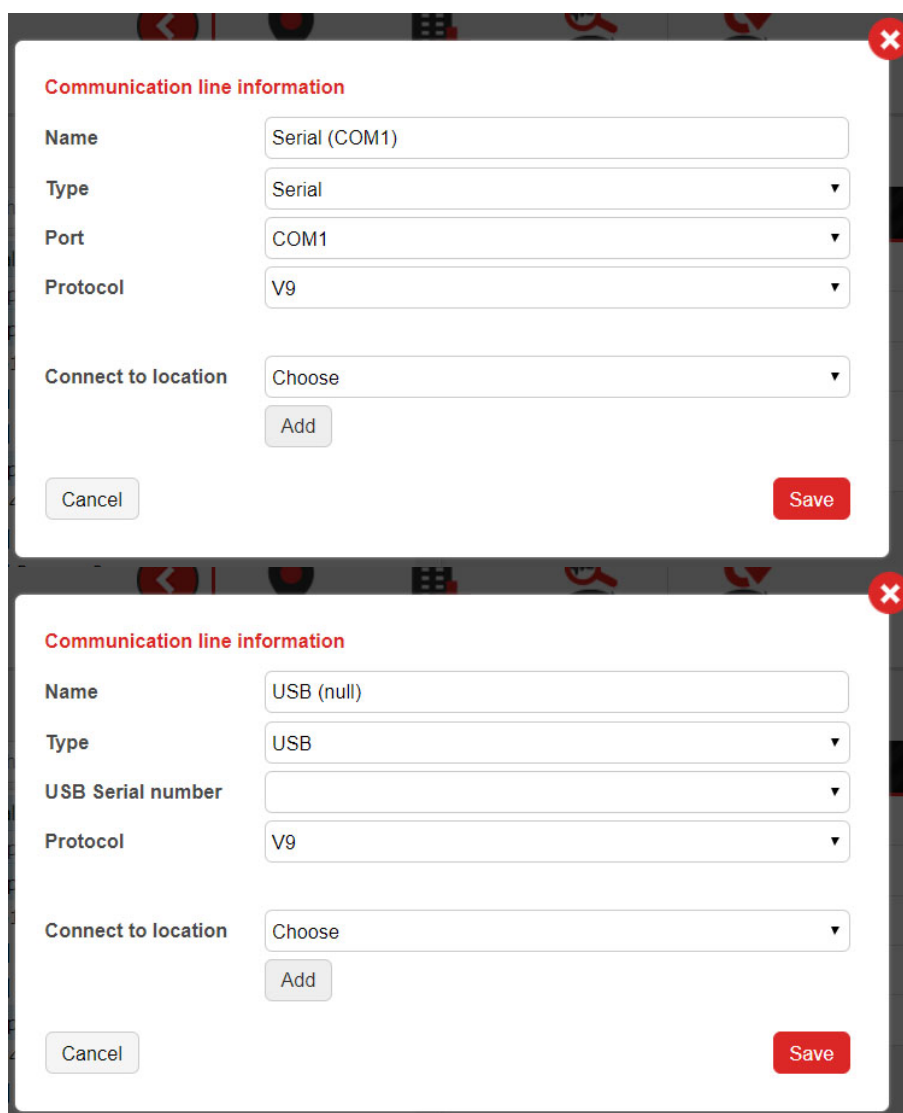
In the new window define the **name, communication protocol** and **type of communication line.**

Depending on the selected type of communication line you will require different information to add the communication line to the system:

TcpIp:

- *IP address*
- *Port* - the port, which will be used to communicate with the connected devices (the default value is 1001).

Serial:
- *Port* - the COM port number, which will be used by the communication line.

USB:
- *USB Serial number* - The serial USB number of the connected device (only for older Jantar hardware devices).

3.* You can also **connect the communication line to a specific location** if you like. However, it is not necessary to connect a communication line to any location (only readers must necessarily be connected to *passage* type locations.
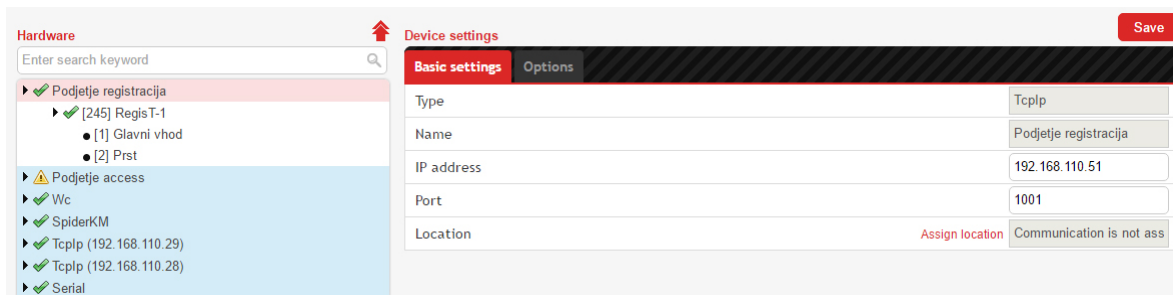
4. When you are done with adding the new communication line, click *Save*.

The new communication line will now be displayed in the *List of hardware devices.*
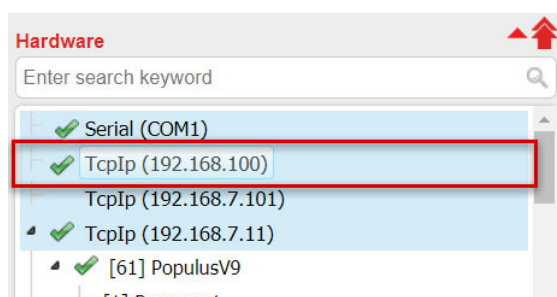
12.3.1.1. Basic Settings for communication lines
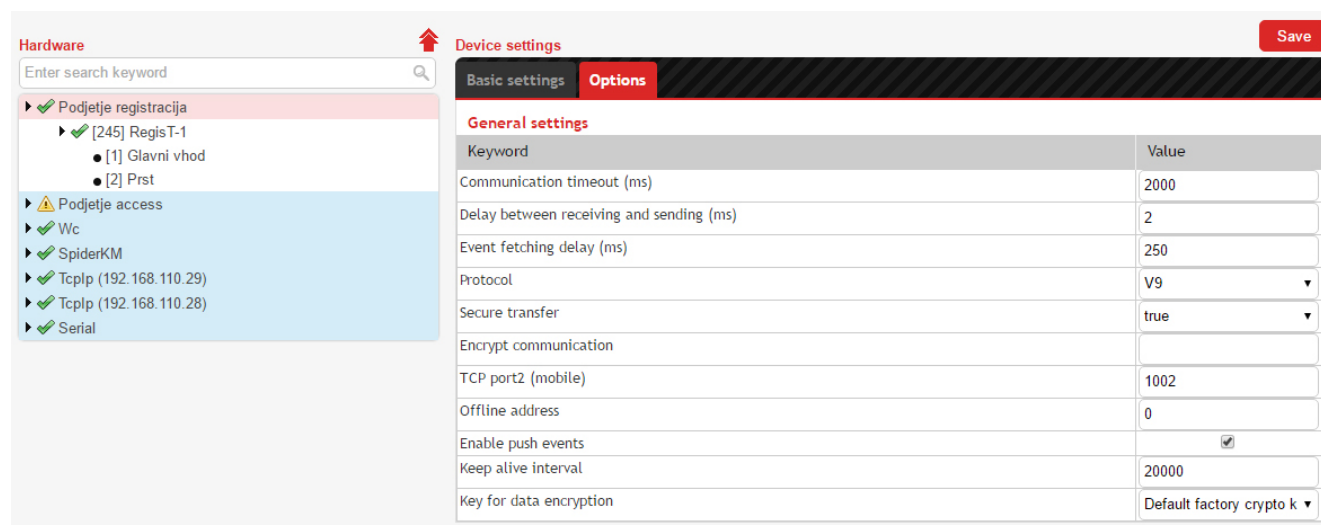
In the **Basic settings** tab, you can edit the basic settings, necessary to establish an active communication connection with devices, which are connected to the server through the selected communication line.

Some settings are dependant on the selected *Type* of communication line.

Type	The communication line type, according to the technology used (**TcpIp, Serial** or **USB**).
Name	The (custom) name of the communication line.
* IP address (* only for ***TcpIp*** type communication lines)	The IP address of the communication line.
* Port (* only for ***TcpIp*** type communication lines)	The number of the primary port, through which the communication line will connect with the Codeks software.
* USB Serial number (* only for ***USB*** type communication lines)	The identification number of the USB connection (**USB** type lines only).
* COM port (* only for ***Serial*** type communication lines)	The COM port number (**Serial** type lines only).
Location (optional)	The selected location, from the *Locations* three view, to which the communication line is connected.

12.3.1.2. Communication Line Options

In the **Options** tab, you can edit advanced settings for communication lines. Some settings are dependant on the selected *Type* of communication line.

Communication timeout (ms)	The amount of time set in milliseconds the system will wait before reporting a no connection status if a controller does not respond.
Delay between receiving and sending (ms)	The elapsed time period between two sent messages, set in milliseconds.
Event fetching delay (ms)	Sets the periodic time sequence when Codeks sends an event query to the controllers, in milliseconds.
Protocol	The Set communication protocol between the device and Codeks (V7 or V9). The setting is dependant on what kind of communication protocol the controllers in the system support. (Older controllers only support the V7 communication protocol. Newer controllers with firmware version 9.2 or higher can also support V9 communication).
Secure protocol	{obsolete}
Encrypt communication	{obsolete}
TCP vrata2 (mobile)	The number of the secondary port, through which the communication line (device) will connect with the Codeks software.
Offline address	{obsolete}
Enable push events	Enables Push communication [263] between controllers and Codeks.
Keep alive interval	The elapsed time period after which Codeks refreshes the connection with a controller.
Key for data encryption	**This functionality does not work in the Codeks TA Kit software, you need the full Codeks TA or Codeks AC software to use this feature.** Enabling the use of custom encryption keys for the encryption of communication between controllers and Codeks. This setting must be enabled to use a custom generated, V9 encryption key.

* the table above displays setting found in the *Options* tab for communication line types TcpIp and USB.

The device type *Serial* also has the following additional settings in the Options tab: **Baud rate, Parity** and **Stop bits**.

12.3.1.2.1 Push communication

By default Codeks communicates with all the active controllers in the network by sending regular periodic event queries. The controllers always send an answering message about the event status back to Codeks, even if no new events were registered since the last event query. This kind of communication, also known as **pull communication**, creates a lot of traffic on the communication lines, especially in systems with a large number of controllers.
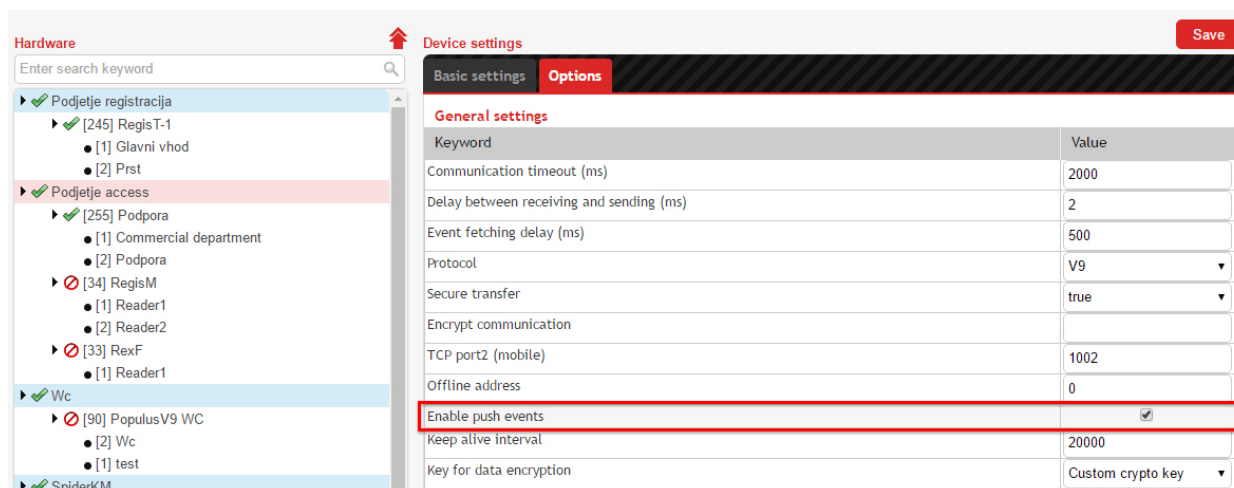
The traffic on the communication lines can be considerably reduced by enabling the **push communication** option within Codeks. When push communication is enabled, Codeks no longer sends regular event queries to active controllers. Instead, the active controllers send a message to the server, only when they register an event. Thus the communication lines are considerably less occupied, as data transfer only runs when an actual event occurs.

To enable push communication you need a **Codeks software package, version 9.0.1.58 or higher** and **controllers that have their own inbuilt network interface** and **firmware version 9.7.8 or higher**.

12.3.1.2.1.1 Enabling push communication

Push communication can be enabled for every communication line individually.

1. To set push communication to a specific communication line, mark the **selected communication line** in the *List of hardware.*

2. In the Device settings section select the *Options* tab.
   Find *Enable push communication* in the list below and **check it**.

3. The last step is to set the setting *Keep alive interval* setting.

It is essential, that the connection between Codeks and the controllers is kept active, in order to ensure successful communication. Codeks keeps the connection to a selected controller alive by periodically sending "keepalive" packets to it. The recurring time period for sending the "keepalive" packets is defined by the *Keep alive interval* setting.

Keep in mind that the value of the *Keep alive interval* setting must be lower than the value of the *Timeout* setting. *Timeout* is a setting defined for each controller individually (for Jantar controllers the default setting is usually 1 min). If the controller does not exchange any messages with Codeks, before the time period set by *Timeout* has passed, it ends the connection.

WARNING!

The value of the *Keep alive interval* setting must not exceed the value of the *Timeout* setting, set for the controller (see the Codeks Device Manager documentation to learn how to set the *Timeout* setting). If the *Keep alive interval* value exceeds *Timeout*, the controller will end the connection. The broken connection will first have to be reestablished, before any further messages between the controller and Codeks can be exchanged. This cycle is repeated every time the *Timeout* time period is exceeded, which interrupts communication and is very time consuming.

WARNING!

With push communication enabled, data transfer between the controllers and Codeks is less frequent. Consequentially, a broken connection with a controller is only registered when the next "keepalive" packet is send to the controller (i.e. after the *Keep alive interval* time period has passed).

This time delay can be problematic in instances when real-time warnings of broken connections are important (e.g. break-in attempts).

12.3.2. Edit Communication Line

1. To edit an existing communication line, first, click the line you wish to edit on the *List of hardware.*
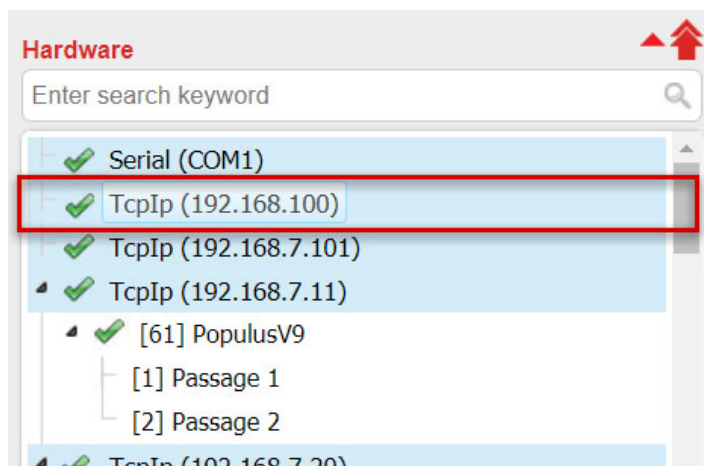
2. On the right side of the *Hardware* editor, the windows for editing the <u>Basic</u>[260] and <u>Advanced settings</u>[261] of the communication line will be enabled.

Enter the desired changes.
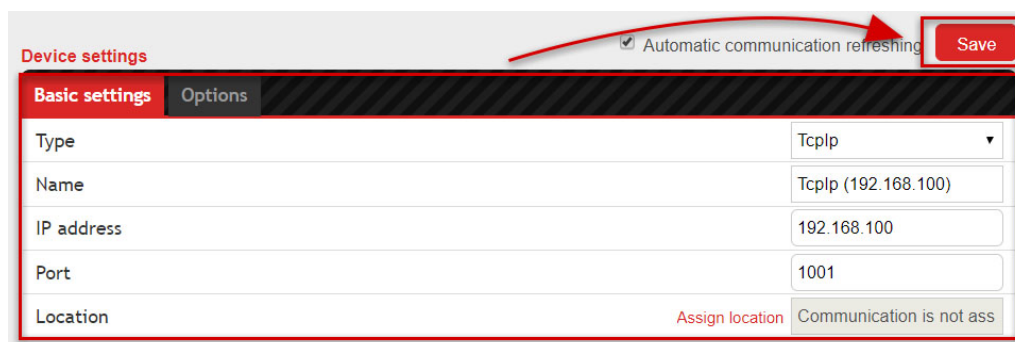
3. When you are done editing the communication line, click **Save**.

12.3.3. Discover All Communication Lines

1. If you want to solely **add a communication line** (which leads to a Jantar device) and then later on manually add the controllers and readers, select the ***Discover all communication lines*** option from the right-click menu on a random communication line.
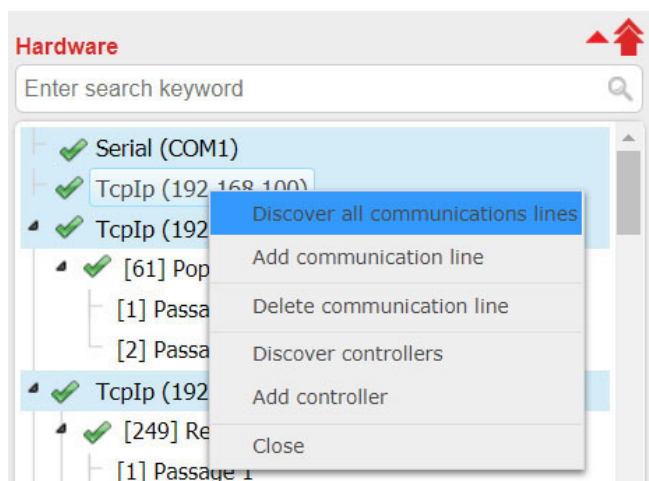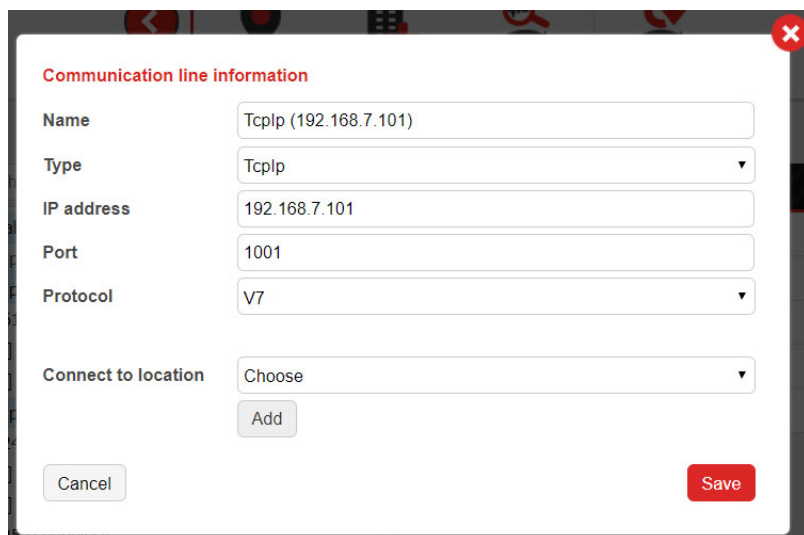
2. A new window will open displaying the **table containing all communication lines**, which connect the access control or time attendance devices (Jantar devices).

Find the desired communication line on the list and click it.
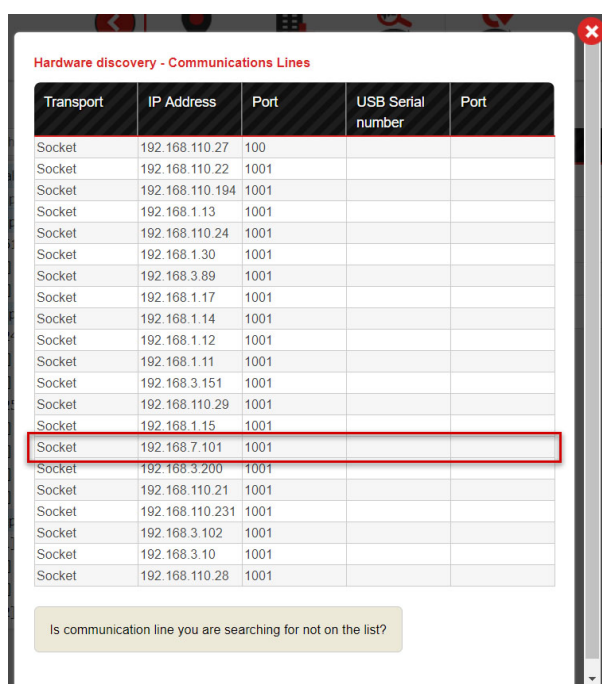
3. A new window will open, displaying the communication line's data. Here, you can also change some basic settings of the communication line and connect the line to a location.

You can read more about the individual settings for communication lines in chapters Basic settings for communication lines 260 and Communication line options 261

4. When you are done editing the communication line, click **Save**.

The new communication line will be displayed on the *List of hardware*.
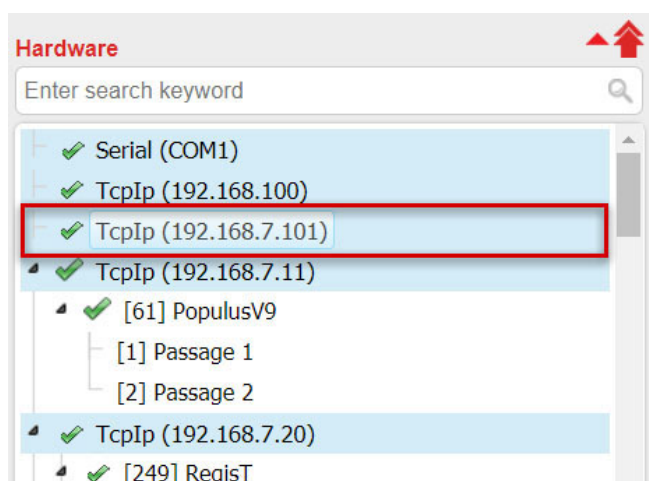
12.3.4. Delete Communication Line

> **NOTE**
>
> When deleting a communication line, all controllers and readers connected to the communication line will also be deleted.

1. To delete an existing communication line, first, select the communication line on the *List of hardware*.

2. Then, **right-click on it and select *Delete communication line* from the menu.**
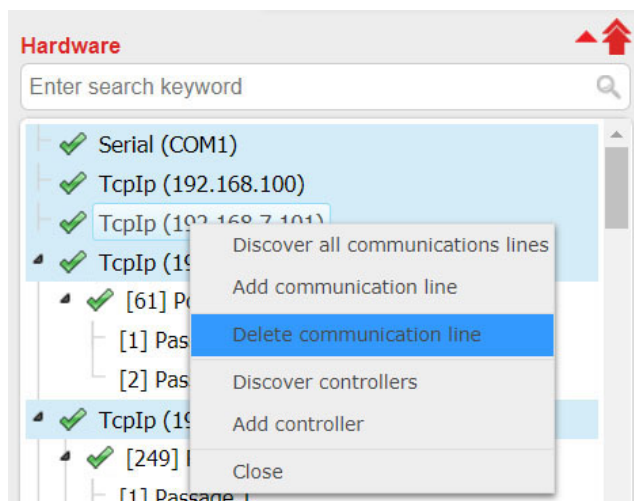
3. The system will warn you that you are about to delete the communication line.

To confirm the deletion click *OK*.
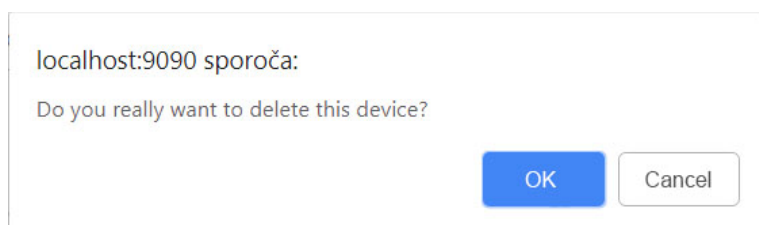
12.3.5. Discover Controllers

The **Discover controllers** function initiates an automatic search for all controllers connected to the selected communication line. Use this function, when you wish to add a new controller to an existing communication line within the Codeks system, e.g. as the continuation of the **Add communication line** or **Discover communication lines** functions.

1. To add a (new) controller to an existing communication line, click the **Discover controllers** option in the right-click menu.
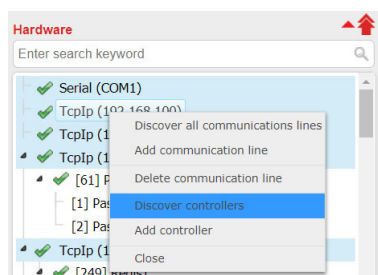
2. A new window will open displaying all the controllers connected to the selected communication line.
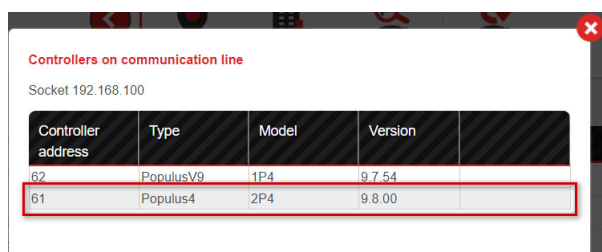
3. To **connect the controllers** (on this line) to the system, **double-click each entry**.

A new window will open, where you can edit the basic settings of the controller.
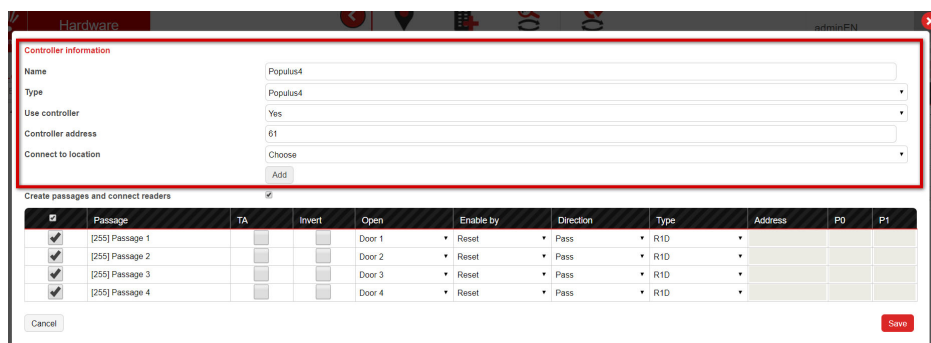
4. When you are done editing the controller, click **Save** and **close the previous pop-up window.**
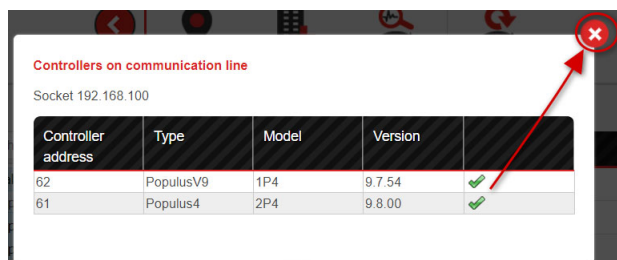
12.3.6. Add Controller

The **Add controller** function enables you to manually add a controller to a selected communication line. Use this function, when you wish to add a new controller to an existing communication line within the Codeks system, e.g. as the continuation of the **Add communication line** or **Discover communication lines** functions.

1. To manually add a (new) controller to an existing communication line, select the **Add controller** option from the right-click menu.
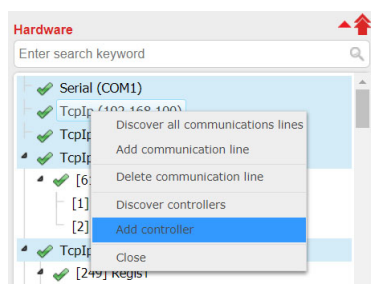
2. A new window will open where you can edit the basic settings for the controller.

NOTE
To be able to manually add a new controller, you will require the following information, which you must note during the (physical) installation process:
 - **the type of controller**
(you can choose between: Focus, Focus7, Focus_Kit, KeyManager, KeyManagerV9, KayMangerV9PLC, Lockart, Populus1, Populus2, Populus4, PopulusA, PopulusF, PopulusH, PopulusK, PopulusO, PopulusX, PopulusNec, PopulusV9, PopulusV9Relay, PopulusV9Slimline, Regis, RegisF, RegisH, ReisM, RegisR, RegisT, RegisS, RegisZ, Regis_NT, Rex, RexF, RexV9, Trigger, StandaloneReader, ZK_TF1700_BW, ThirdPartyVirtual, etc.)

 - the data of the **communication line** which leads to the controller (IP address, COM port or USB serial number),
 - **the location**, where the controller is installed,
 - **the address of the controller** (you can use the following values: from 1 to 249 and 255)
 - * **the layout of the controller - vertical (portrait) or horizontal (landscape)** - only when using the Regis H, Regis M or Regis T T&A controllers.

3. When you are done editing the controller, click **Save.**

The new controller will be displayed under the selected communication line on the *List of hardware*.
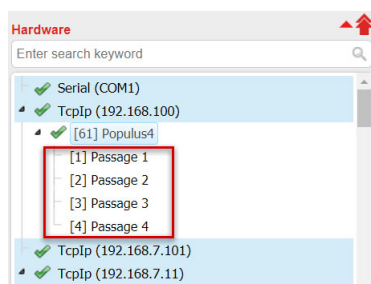
12.4. Controller

The **Controller** is the second component of a hardware (device) entry in the Codeks software.
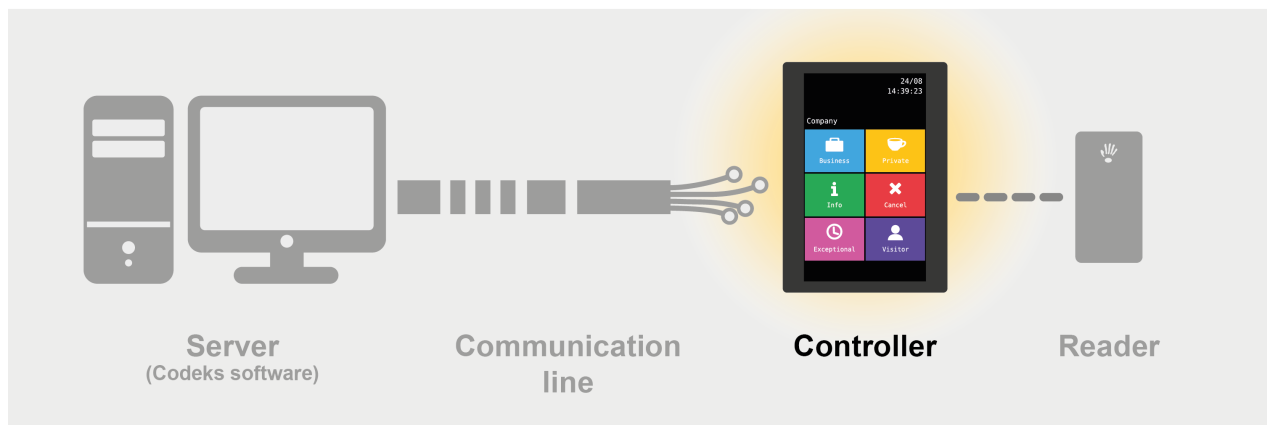
Controllers are connected to the server, where the Codeks software is installed, through a communication line. Controllers, in turn, serve ass the connection points for readers.

By right-clicking on the *controller* you can access the action menu for controllers.
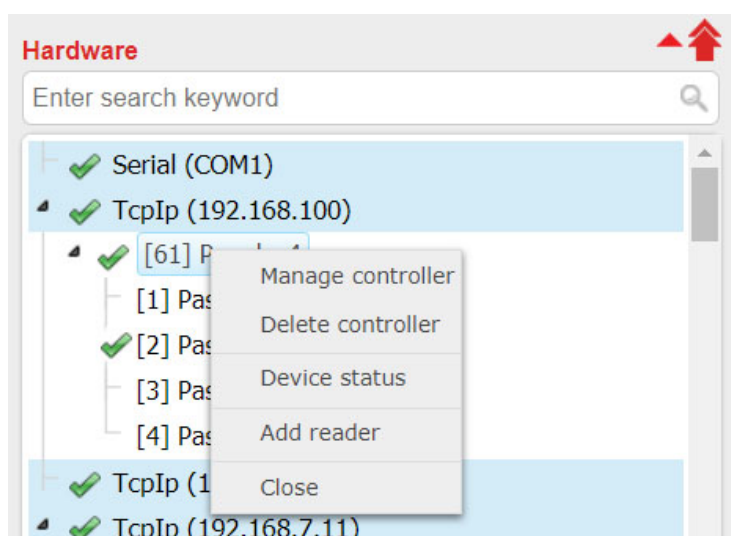
Individual actions are described in the following chapters.

12.4.1. Settings for controllers

12.4.1.1. Controller Basic Settings

The first tab, **Basic settings**, contains the basic settings for controllers.

Device settings

Basic settings	Options	Doors	Times	Anti pass back	Advanced

Type	RegisF ▼
Name	RegisF
Use controller	Yes ▼
Controller address	22
Keypad model	Numeric ▼
Device Type	Online controller ▼
Controller submode	Normal ▼
Location	Assign location Controller is not assigned

Type	The type of controller. Some controller settings are dependant on the defined type of controller.
Name	The name of the controllers, to be displayed in the *List of hardware*.
Use controller	This setting determines whether this controller will be actively connected with the Codeks application, or not: - if it is set to **Yes**, the controller will send and receive data as usual, - if it is set to **No**, the controller will **not** send or receive data.
Controller address	The controller's address is one of the key settings of controllers, as it defines the address through which the controller communicates with the Codeks software. **NOTE** **All controllers which are connected through the same communication line must be assigned unique addresses (on the communication line).** This is because the Codeks software cannot communicate with controllers using the same address on the same communication line. **NOTE** The address of the controller (i.e. the numerical value between 1 and 249 or 255) must already be **assigned to the controllers during the installation process itself**. If you choose to manually add the controller to the Codeks application, you must **carefully record this device information**. If you add the controller using the *Add hardware wizard*, the wizard will automatically find and insert the correct controller address.
* Keypad model (* only for touchscreen controllers)	This setting defines which keypad will be sent to a controller with a touchscreen. You can choose between keypads already integrated into the software and *custom keypads*. (Custom keypads can only be created with the *Codeks Screen Keypad editor* add-on.)

* Device type (* only for Populus F, Populus H, Populus K, Populus O, Populus X, Populus V9, Populus V9 Relay, Populus V9 Slimline, Regis F, Regis H, Regis M, Regis R, Regis T, Regis S, Regis Z, Rex F, Rex V9, Trigger)	Only change this setting if you want to change the controller's ***Operation mode***, otherwise, leave the default value of this setting *Online controller.* *You can choose between the following values:* ***Wiegand – single key -*** this setting changer the operation of the controller to that of a reader. (When a user registers at this controller, it only registers the card number and forwards the information. If a user enters a PIN on this controller each individual number is immediately forwarded.) ***Wiegand – key code after enter -*** this setting changer the operation of the controller to that of a reader. (When a user registers at this controller, it only registers the card number and forwards the information. If a user enters a PIN on this controller, the number is only forwarded when the *Enter* key is pressed.) ***Online controller -*** normal/default ***Electronic purse -*** the function of this setting is yet to be defined (TBD) ***Electronic purse set value -*** the function of this setting is yet to be defined (TBD)
* Controller submode (* only for Populus X)	This setting defines whether this controller will operate as a **regular card reader (*Normal*)** or as a **card holder (*Card holder*).**
Location	The location, to which the controller is connected. It is, however, not necessary to connect a controller to any location (only readers must necessarily be connected to passage type locations).

NOTE

To be able to manually add a new controller, you will require the following information, which you must note during the (physical) installation process:

 - **the type of controller**
(you can choose between: Focus, Focus7, Focus_Kit, KeyManager, KeyManagerV9, KayMangerV9PLC, Lockart, Populus1, Populus2, Populus4, PopulusA, PopulusF, PopulusH, PopulusK, PopulusO, PopulusX, PopulusNec, PopulusV9, PopulusV9Relay, PopulusV9Slimline, Regis, RegisF, RegisH, ReisM, RegisR, RegisT, RegisS, RegisZ, Regis_NT, Rex, RexF, RexV9, Trigger, StandaloneReader, ZK_TF1700_BW, ThirdPartyVirtual, etc.)

 - the data of the **communication line** which leads to the controller (IP address, COM port or USB serial number),

 - **the location**, where the controller is installed,

 - **the address of the controller** (you can use the following values: from 1 to 249 and 255)

 - * **the layout of the controller - vertical (portrait) or horizontal (landscape)** - only when using the Regis H, Regis M or Regis T T&A controllers.

12.4.1.2. Controller Options

The **Options** tab, contains some advanced controller settings. The exact number of settings may differ according to the *type* of controller.

BASIC SETTINGS (OPTIONS tab)

|	
Silent pre break	If this setting is enabled, the pre-break-in alarm will be silent.
Silent break	If this setting is enabled, the break-in alarm will be silent.
Sensor event	If this setting is enabled, an event will be recorded each time the status of the sensor (door switch) changes.
Tamper switch	If this setting is enabled, the controller's tamper switch will be turned on. This means that an alarm will be triggered if the device is physically moved or tampered with (vandalized).
Door switch event (only for KeyManagerV9, KeyManagerV9PLC, PopulusA, PopulusF, PopulusH, PopulusK, PopulusO, PopulusX, PopulusV9, PopulusV9Relay, PopulusV9SlimLine, RegisF, RegisH, RegisM, RegisR, RegisT, RegisS, RegisZ, RexF, RexV9, Trigger)	If this setting is enabled, an event will be recorded each time the status of the door switch (push button) changes.
Roll code check	If this setting is enabled the *roll-code* (shifting bytes) option for communication will be turned on. This feature prevents intrusions into the system by eavesdropping to the communication between devices (i.e., sniffing).
Link cards	**This functionality does not work in the Codeks TA Kit software, you need the full Codeks TA or Codeks AC software to use this feature.** If this setting is enabled, two users (who have linked cards through the **Link code** users' setting) must register at the controller, one after the other, within a defined time frame, in order to enable access through the passage.
Disable overload protection	If this setting is enabled, the controller's protection against overload is turned off.

Controller buzzer	If this setting is enabled, the controllers buzzer (sound) will be turned off and the controller will operate without any sound indicators.
Card record length (only for V7 communication)	This settings defines the amount of data used to save a simgle user card on the controller (only meant for older Jantar controllers using the V7 communication). You can chose between the following settings: - 4 (only the card number and time restrictions), - 11 (the card number, time restrictions, anti pass-back, link code settings, etc.) and - 24 (all functions).
Start Macro	**This functionality does not work in the Codeks TA Kit software, you need the full Codeks TA or Codeks AC software to use this feature.** The macro, which will be executed whenever a controller reset occurs (e.g. when the controller unexpectedly loses power).
* IO reset macro (* only for KeyManagerV9, KeyManagerV9PLC, PopulusA, PopulusF, PopulusH, PopulusK, PopulusO, PopulusX, PopulusV9, PopulusV9Relay, PopulusV9SlimLine, RegisF, RegisH, RegisM, RegisR, RegisT, RegisS, RegisZ, RexF, RexV9, Trigger)	**This functionality does not work in the Codeks TA Kit software, you need the full Codeks TA or Codeks AC software to use this feature.** The macro, which will be executed whenever a controller IO reset is triggered. (An IO reset is purposely triggered through the Codeks application, e.g. when sending tables, and resets the controllers default values yet does not erase the controller's memory or settings.)
Counter margin value	**This functionality does not work in the Codeks TA Kit software, you need the full Codeks TA or Codeks AC software to use this feature.** If the controller is set to record the number of entries an exits (counter), you can set the margin value here, which will determine the execution of either the ***People count less or equal Macro*** or ***People count greater Macro***. Before you can set a custom macro, you must however, create an appropriate macro in the *Macro* editor.
Counter value reset time	**This functionality does not work in the Codeks TA Kit software, you need the full Codeks TA or Codeks AC software to use this feature.** If the controller is set to record the number of entries an exits, you can set the time of day when the counter value will be reset to 0.
* People count value (* only Rex)	**This functionality does not work in the Codeks TA Kit software, you need the full Codeks TA or Codeks AC software to use this feature.** [the same as *Counter margin value*] If the controller is set to record the number of entries an exits (counter), you can set the margin value here, which will determine the execution of either the ***People count less or equal Macro*** or ***People count greater Macro***. Before you can set a custom macro, you must however, create an appropriate macro in the *Macro* editor.
People count less or equal Macro	**This functionality does not work in the Codeks TA Kit software, you need the full Codeks TA or Codeks AC software to use this feature.** The macro which will be executed if the counter value is less or equal to the ***Counter margin value.*** Before you can set a custom macro, you must however, create an appropriate macro in the *Macro* editor.
People count greater Macro	**This functionality does not work in the Codeks TA Kit software, you need the full Codeks TA or Codeks AC software to use this feature.** The macro which will be executed when the value of the counter exceeds the ***Counter margin value.*** Before you can set a custom macro, you must however, create an appropriate macro in the *Macro* editor.
Interval of time adjustment in seconds	This setting defines after how many seconds the server sends data about the exact (system) time to the controller.

BLOCKING (OPTIONS tab)

NC External 1	If this setting is enabled, the reader on the first input will be blocked.
NC External 2	If this setting is enabled, the reader on the second input will be blocked.

BUTTON (OPTIONS tab)

| Button 1
.
.
.
Button 15 | **This functionality does not work in the Codeks TA Kit software, you need the full Codeks TA or Codeks AC software to use this feature.**
In the **Button** section, you can set a custom macro to be executed when one of the (first 15) buttons is pressed. Alternatively, you can also block a button by selecting the *disable* button. Before you can set a custom macro, you must however, create an appropriate macro in the *Macro* editor. |

12.4.1.3. Controller Doors

In the **Doors** tab you can manage the inputs and outputs of the controller. The number of doors depends on the *Type* of controller.

INPUTS ENABLED (DOORS tab)

| Input 0 enabled | If this settings are enabled then the controller's inputs are active and can be used. By default all inputs are enabled. |
| **Input 0 enabled** **Input 1 enabled** etc. | If this settings are enabled then the controller's inputs are active and can be used. By default all inputs are enabled. |

SENSOR AND SWITCH POLARITY (DOORS tab)

| **NC Sensor Door 1** **NC Sensor Door 2** etc. | Enable these settings if you are using a door sensor which has a closed contact when in idle mode (when the doors are closed). |
| **NC Push button 1** **NC Push button 2** etc. | Enable these settings if you are using a push button sensor which has a closed contact when in idle mode. |

DOUBLE DOOR DIRECTION (WITH ENTRY AND EXIT READER/BUTTON) (DOORS tab)

Device settings

Basic settings	Options	Doors	Times	Anti pass back	Advanced	

Double door direction (with entry and exit reader/button)

Keyword	Value
Negate output Door 1	☐
Double Door 1	☐
Negate output Door 2	☐
Double Door 2	☐

Negate output Door 1 **Negate output Door 2** etc.	Enable these settings, if you are using such a device (e.g. a magnet or door strike) on a particular controller output that needs energy (a pulse) in the closed (locked) state, and requires the energy to be cut to open the door.
Double Door 1 **Double Door 2** etc.	[*This setting is only applicable when using older Jantar devices with V7 communication*] If these settings are enabled, the double door control is turned on, which first checks the door status of another reader, before the selected doors can be allowed to open. (***Example:*** **Trap door** The entrance to a high-security room is protected by a double door. A user can enter this room by first, registering on the reader for the first door, and then, closing the first door before he can register at the reader for the second door and open the second door. The second reader must receive a signal that the first doors are closed before ti will allow the user access through the second doors.)

12.4.1.4. Controller Times

In the **Times** tab, you can set different time definitions which affect the operation of the controller. Some time setting are dependant on the *Type of controller.*

Device settings

| Basic settings | Options | Doors | Times | Anti pass back | Advanced |

Durations, delays...

Keyword	Value
Energy for (sec)	3
Open in (sec)	3
Open for (sec)	3
Alarm in (sec)	3
Unblock for (sec)	3
Alarm delay line (sec)	3
LCD Time (sec)	3
Last card time (sec)	3
Alarm pulse (sec)	3
Input delay (sec)	3

Exit time

Keyword	Value
Enable Exit time	☐
Exit time (min)	1
Eco mode in (min)	1

DURATION, DELAYS ... (TIMES tab)

Energy for (sec)	The time duration (in seconds) of the energy pulse when the door lock is unlocked.
Open in (sec)	*[This setting is only applicable for older Jantar systems for key management]* The time duration (in seconds) when the user can remove a key (from the keymanager). Also, the time duration (in seconds) of the energy pulse, which can be longer than the *Energy for (sec)* setting, when using an impulse lock.
Open for (sec)	The time period (in seconds) when the doors are allowed to b open, before the pre-alarm or alarm is triggered. Also, the timeout the controller waits for the registration of the second user when the **Link cards** function is enabled. (When using the *Link cards* function two users must register at the controller one after the other within a limited time period in order to enable access at the passage.)
Alarm in (sec)	The time period (in seconds) after which the alarm is triggered if the doors are still open.
Pre alarm for (sec)	The time duration (in seconds) of the short pre-alarm sounds. The pre-alarm is triggered after the **Open for (sec)** time transpires.
Input delay (sec)	The timeout (in seconds) after the last controller input status change when the controller checks the input status again.
Unblock for (sec)	*[This setting is only applicable for older Jantar devices with V7 communication]* If the controller is blocked and an *Unblock* command is purposely triggered, this setting defines the time duration (in seconds) when the reader is unblocked).
Alarm delay line (sec)	*[This setting is only applicable for older Jantar devices with V7 communication]* The time period (in seconds) after which the alarm is triggered.
LCD Time (sec)	The time duration (in seconds) when the users data is displayed on controllers with screens, before the display returns to its original (standby) status. Also the time a user has to enter the PIN number after registering with a card at the controller (when using the *Card + PIN* function).
Reader unblock time (sec)	If the controller is blocked and an *Unblock* command is purposely triggered, this setting defines the time duration (in seconds) when the reader is unblocked).
Last card time (sec)	The timeout (in seconds) after which a controller allows the same user card to be read in the same reader again.
Alarm pulse (sec)	*[This setting is only applicable for older Jantar devices with V7 communication]* The time duration (in seconds) of the alarm.

Key manager open in (sec)	*[This setting is only applicable for older Jantar systems for key management - KeyManager V9PLC]* The time duration (in seconds) when the user can remove a key (from the keymanager). Also, the time duration (in seconds) of the energy pulse, which can be longer than the *Energy for (sec)* setting, when using an impulse lock.
Key manager open for (sec)	*[This setting is only applicable for older Jantar systems for key management - KeyManager V9PLC]* The time duration (in seconds) when the doors of the controller are allowed to be open before the pre-alarm is triggered.
Magnet holding time (sec)	The time (in seconds) when the magnet holding the key (in a key manager) is disabled and the user can remove the key.
Keyboard level returning time (sec)	The time period (in seconds) after which the display of touchscreen (Regis) controllers returns to the primary level (by default the primary level is level 1).

EXIT TIME (TIMES tab)

Enable Exit time	If this setting in enabled, the *Exit time* function is turned on.
Exit time (min)	**This functionality does not work in the Codeks TA Kit software, you need the full Codeks TA or Codeks AC software to use this feature.** The period of time (in minutes) the user is allowed to stay in the room. The user must vacate the room before the time transpires, otherwise, the controller will not allow him to exit.
Eco mode in (min)	The time, after which the controller switches to idle (Eco) mode and reduces the screen brightness to save energy.

12.4.1.5. Controller Anti pass-back

> **ATTENTION!**
> **The Anti pass-back functionality does not work in the Codeks TA Kit software, you need the full Codeks TA or Codeks AC software to use this feature.**

In the ***Anti pass-back*** tab, you can edit the settings for preventing unauthorized passage through certain passages within the system.

The *Anti pass-back* function records the status of the users (employees) as to whether they are located inside or outside a certain room. This function then prevents an employee from entering a room twice if he has not yet registered an exit from the room.

Device settings

Basic settings	Options	Doors	Times	**Anti pass back**	Advanced

Settings for antipass back

Keyword	Value
After reader	☐
After door switch	☐
Reset clears	☐
Clear at 00:00	☐
Global antipass back	☐

After reader	The users status is changed every time a user registers at a reader (set accordingly as an entry or exit).
After door switch	The users status is changed when a change of the door switch sensor is detected, after the user has already registered at the controller. The appropriate hardware to detect the door switch status is required in order for the anti pass-back function to work correctly using this setting.
Reset clears	If this setting is enabled, all users' statuses will be changed to undefined (i.e. not defined if they are in or out of a room) when a reset of the controller will be (purposely) triggered, e.g. when sending tables.
Clear at 00:00	If this setting is enabled, all users' statuses will be set to undefined every day at midnight.
Global anti pass-back	If this setting is enabled, the anti pass-back feature among several controllers will be turned on. All readers on all controllers included in the global anti pass-back must have a defined direction (entry or exit). Each time a user registers on a controller's reader, his status on the controller changes, and at the same time his status is transmitted to the Codeks server, which ensures that the change of the user's status is transferred to other controllers included in the global anti pass-back.

> **ATTENTION!**
> In order for the global anti pass-back function to work properly, the Codeks service must be running, otherwise, the controllers are unable to get the correct status of the users, thus, all users will be able to freely pass through al passages.

12.4.1.6. Controller Advanced

The **_Advanced_** tab, contains some advanced controller settings. The exact number of settings may differ according to the *type* of controller.

CLOCK CALIBRATION (ADVANCED tab)

Clock accuracy	This setting defines whether the local clock of the controller is accurate or if it lags or overtakes. (Empirical test data is needed to determine whether a controller's internal clock is accurate or not.)
The time difference in 24h (seconds)	The number of seconds a day on average the controller's clock lags or overtakes with regard to the server clock (according to the empirically gathered data).

CONTROLLER LANGUAGE (ADVANCED tab)

Controller language	This setting defines the default language which will be used to display messages on controllers with screens.

DISPLAY (ADVANCED tab)

Brightness	This setting defines the screen brightness when the controller is activated (i.e. a user registers on it). You can choose values between 1 (the least bright) and 9 (the brightest).
Eco mode brightness	This setting defines the screen brightness when the controller is inactive (i.e. in standby mode). You can choose values between 1 (the least bright) and 9 (the brightest).
Border on button	If this setting is enabled, all keypad buttons will have a gray outline.
Font thickness for keypad text box	This setting defines the font thickness (in pixels) for the text box of the keypad. You can choose values between 0 and 20.
Font thickness for keypad buttons	This setting defines the font thickness (in pixels) for the buttons of the keypad. You can choose values between 0 and 20.
Minimum time to register touch button (ms)	This setting determines the minimum amount of time (in milliseconds) the user has to hold a finger on the screen button so that the controller detects the action as a button selection. The recommended value is 50 milliseconds.
Transparent display	This setting enables a special effect of a transparent keyboard. If this setting is enabled the background of the keypad may be seen through the keypad.

PROTOCOL CARDS (ADVANCED tab)

Value for subtraction	**This functionality does not work in the Codeks TA Kit software, you need the full Codeks TA or Codeks AC software to use this feature.** [this setting is applicable only when using the Codeks *Electronic purse* add-on] This setting defines, how many units of credit will be subtracted from the users' card every time they register at this controller.
Address where data is recorded	**This functionality does not work in the Codeks TA Kit software, you need the full Codeks TA or Codeks AC software to use this feature.** [this setting is applicable only when using the Codeks *Electronic purse* add-on] This setting defines the location in the memory of the user's card, where the information about the user's credit is stored. Please, do not alter this setting and leave the default value of 512.

OPERATION MODE (ADVANCED tab)

Device settings

| Basic settings | Options | Doors | Times | Anti pass back | **Advanced** |

Operation mode

Keyword	Value
Offline master mode	☐
Spider mode	☐
Read card number from card memory	☐
Use card serial number if 3PRO not present	☐
Require TA key before card is read	☐
Write event when auto function is executed	☑
Controller submode	Normal ▼

Offline mode	**This functionality does not work in the Codeks TA Kit software, you need the full Codeks TA or Codeks AC software to use this feature.** If this setting is enabled, this controller will be set as the master controller of the offline system of smart wireless door handles and locks (Lockart). By registering at this controller users will gain and update their access rights for the offline system on their user cards.
Spider mode	**This functionality does not work in the Codeks TA Kit software, you need the full Codeks TA or Codeks AC software to use this feature.** If this setting is enabled, the selected controller will operate similarly to the (Spider) communication converter, enabling other controllers to be connected through it to the same communication line.
Read card number from card memory (3PRO)	**This functionality does not work in the Codeks TA Kit software, you need the full Codeks TA or Codeks AC software to use this feature.** If this setting is enabled, the controller will not read the card's default serial number, but will instead search for an encrypted card number located within the cards internal memory. **If this 3PRO setting is enabled on a controller, you must also enable it on all the readers connected to this controller.**
Use card serial number if 3PRO not present	**This functionality does not work in the Codeks TA Kit software, you need the full Codeks TA or Codeks AC software to use this feature.** This setting can only be used if the previous setting **Read card number from card memory (3PRO)** is also enabled. If this setting is enabled, the controller will first attempt to read the encrypted 3PRO card number (which is stored in a specific location within the card's internal memory), and if this fails, it will use the default serial number of the card.
Require TA key before card is read	If this setting is enabled, users **must** first press a button (on the controller's keypad) before they can register their work hours.
Write event when auto function is executed	**This functionality does not work in the Codeks TA Kit software, you need the full Codeks TA or Codeks AC software to use this feature.** If this setting is enabled, the controller will send an event to the (Codeks) server every time an automatic function (for door opening or locking) is executed. (This functionality is dependant on the use of the **Auto unlock & lock** function at a specific *passage* type location.)
Controller submode	This setting defines how the controller will respond to receiving an input from a user: - **Normal** - when a user registers the controller either beeps or not, depending on the controller's default operation mode and the buzzer settings, - **Beep on enter** - the controller will beep every time a button is pressed on its keypad (this setting is applicable mostly when the controller setting **Device type** in set to **Wiegand - single key** or **Wiegand - key code after enter.**

12.4.1.7. Macros on event

> **ATTENTION!**
> **The Macro functionality does not work in the Codeks TA Kit software, you need the full Codeks TA or Codeks AC software to use this feature.**

In the **Macro on event** tab, you can set a macro for each event (defined in the *Events* editor) that is triggered when the event is registered on the selected controller. You can prepare macros in the *Macro editor*.

12.4.2. Edit Controller

1. To edit an existing controller, first, select the controller you wish to edit on the *List of hardware.*
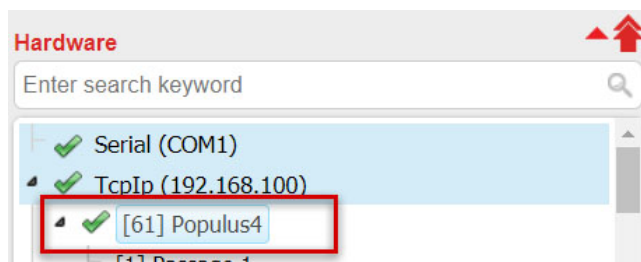
2. In the right part of the *Hardware* editor, the window for editing the selected controller's settings will be enabled.

Enter the desired changes.
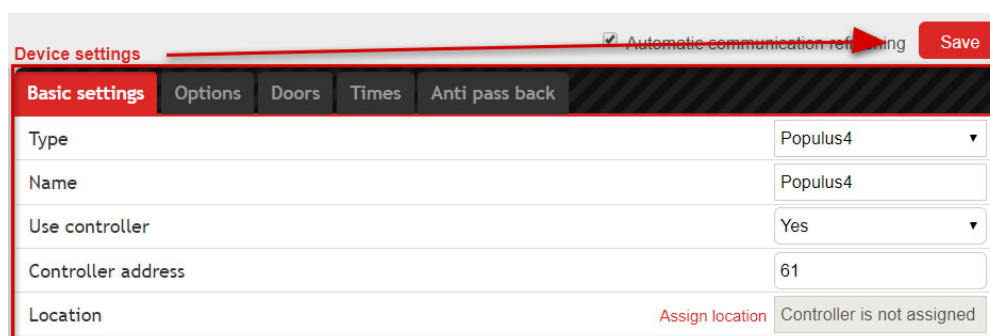
3. When you are done editing, click **Save**.

12.4.3. Manage Controller

You can also access some configuration settings for controllers from the right-click menu.

1. First, select the controller you wish to re-configure on the *List of hardware* and select **Manage controller** from the right-click menu.
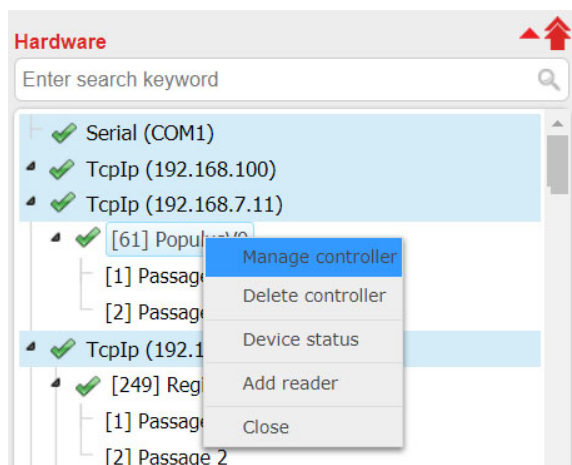
2. A new window will open where you can manage and reset certain controller settings:

Set controller address	This function enables you to change the controller's address. (This functionality is especially useful when you must subsequently change the controller's address because you are adding a new controller on the same communication line.) The **Current address** field displays the address that is currently assigned to the controller. Enter the new value for the controller address in the **New address** field and click **set controller address**.
Set time	By clicking **Set time** you can send the accurate server time to the selected controller.
Reset controller	By clicking **Reset controller** you will reset the controller's inputs and outputs to their default values.
Factory defaults	By clicking **Factory defaults** you will erase the controller's entire memory (readers, users, etc.). Also, the controller's address will be set to 255.

3. When you are done, click **Close**.

12.4.4. Delete Controller

NOTE

When deleting a controller, all readers connected to it will also be deleted.

1. To delete an existing controller, first, select the controller you wish to delete on the *List of hardware.*

2. Then, **select *Delete controller* from the right-click menu.**
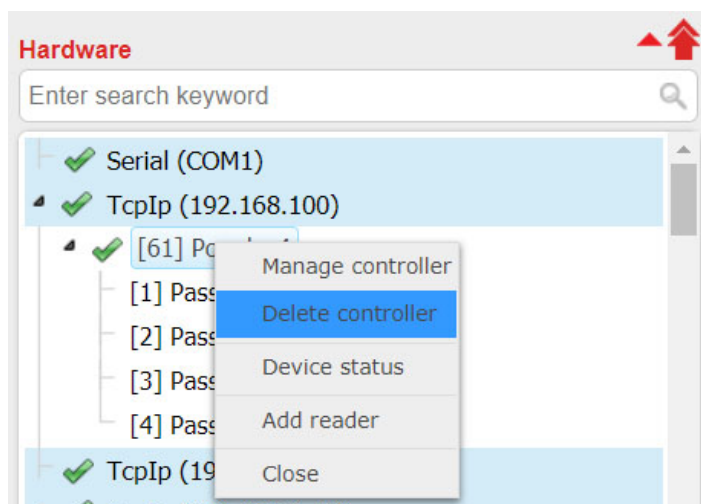
3. The system will warn you that you are about to delete the controller.

To confirm the deletion click *OK.*
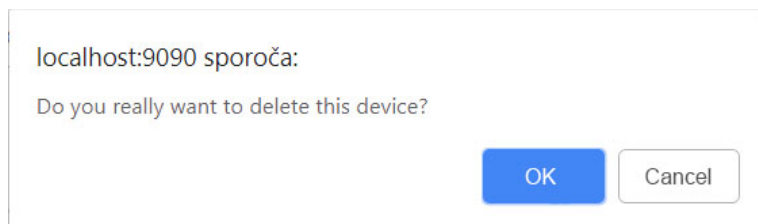
12.4.5. Device Status

The **Device status** *open a new window under the Device settings* section.

1. To display the **Device status** window for the desired controller, first, select the controller form on the *List of hardware* and click **Device status** from the right-click menu.
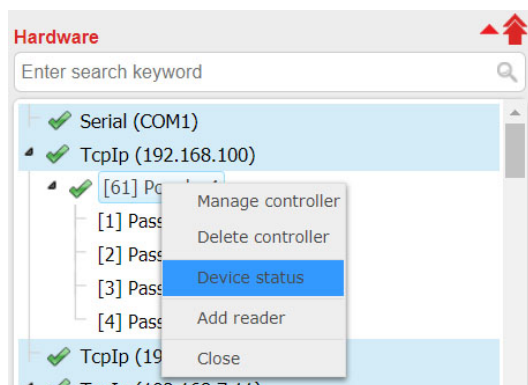
2. A new window will open under the *Device settings* section, displaying the status of the selected controller.
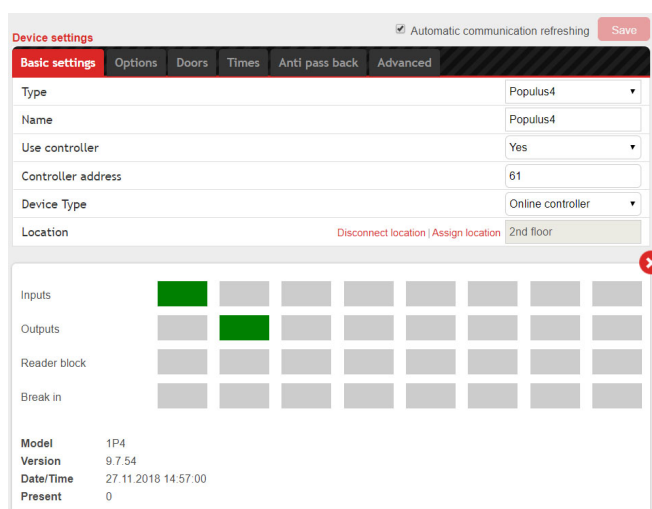
Inputs	All currently active inputs will be colored green.
Output	All currently active outputs will be colored green.
Reader block	All currently blocked readers will be colored green.
Break in	All door sensors where a break in has been presently detected will be colored green.
Model	Machine name of the controller
Version	The version of the controllers firmware
Date/Time	Displays the current date and time of the controller (the controller's Real-Time Clock)
Present	The number of people currently present at the controller's location (this will only be accurate if entry and exit readers are correctly set for all passages to this location).
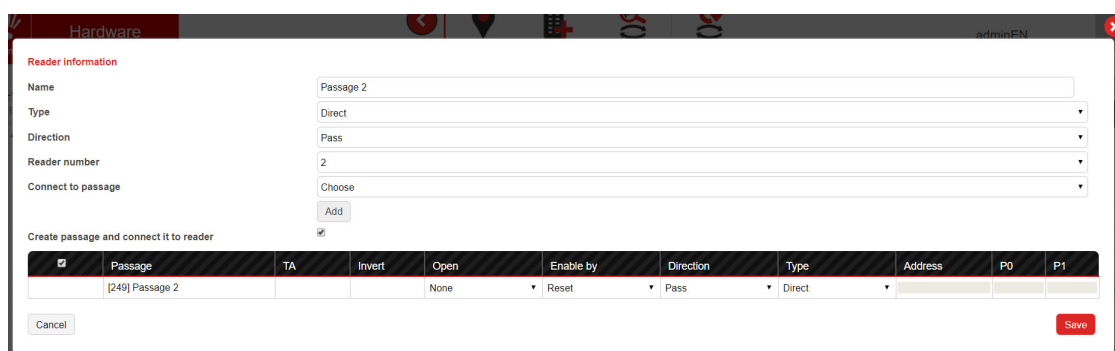
12.4.6. Add Reader

The **Add reader** function enables you to manually add a reader to a selected controller. Use this function, when you wish to add a new reader to an existing controller within the Codeks system, e.g. as the continuation of the **Add controller** function.

1. To manually add a (new) reader to an existing controller, select the **Add reader** option from the right-click menu.
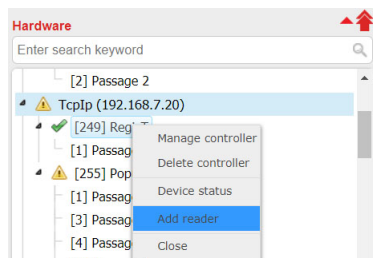
2. A new window will open where you can set the basic setting of the reader.

> **NOTE**
> To be able to manually add a new reader, you will require the following information, which you must note during the (physical) installation process:
> - the **type of reader**
> (you can choose between: Direct, Direct_C4, Finger, Hid,Hid_4B, Lockart, Protocol, R1D, R1W, R1W_K, R4W, R4W_26bit, RAD, Relay, Wiegand, Wiegand_custom, Wiegand_26bit, Finger_Zk, PopulusF_reader, RexF_reader, RegisF_reader, ANPR)
> - **the information about the controller to which the reader is connected to,**
> - **the reader number** (the sequential number of the reader of this controller),
> - **the location**, where the reader is (physically) installed, as well as the **direction** (entry, exit, pass).

3. When you are done editing the reader's information, click **Save**.

In the *List of hardware,* a new reader will be added to the selected controller.
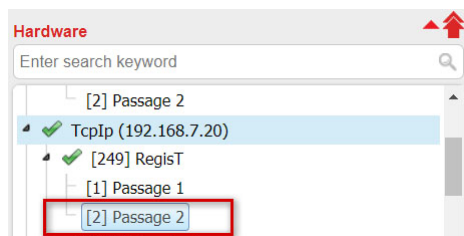
12.5. Reader

The **Reader** is the third component of a hardware (device) entry in the Codeks software.

| Server | Communication | Controller | Reader |
| (Codeks software) | line | | |
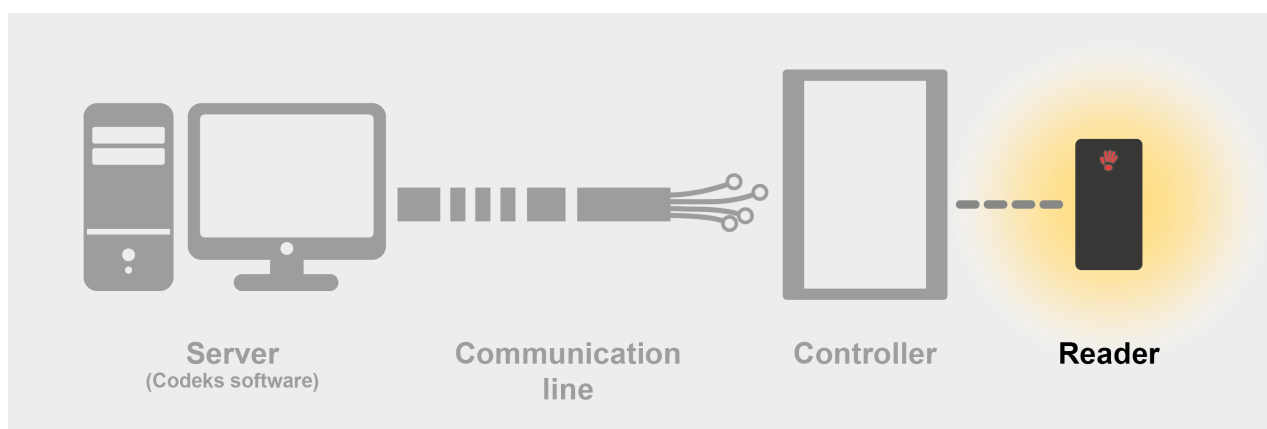
Readers are always connected to controllers and all controllers are connected to the server, where the Codeks software is installed, through communication lines.

Through the right-click menu you can access the *Delete reader* action.
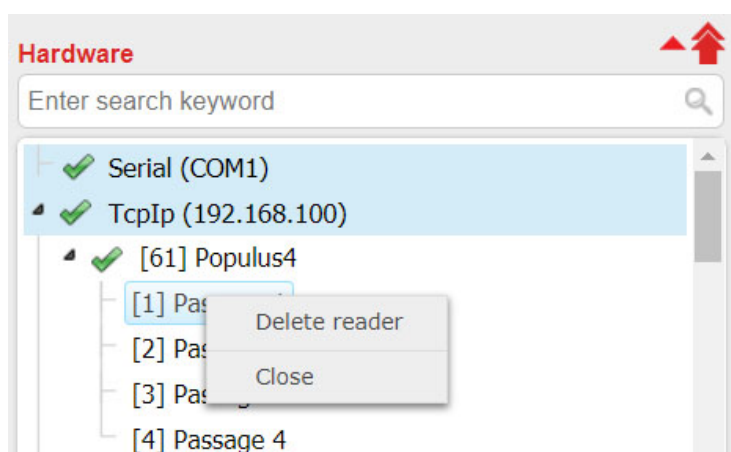
The process of deleting a reader is described in chapter Delete Reader 298.

12.5.1. Settings for readers

12.5.1.1. Reader Basic Settings

The first tab *Basic settings* contains the basic settings for readers.

Device settings

☑ Automatic communication refreshing | Save

| Basic settings | Options |

Type	Protocol ▾
Name	Passage 1
Direction	Pass ▾
Reader address	255
Reader number	1 ▾
Location	Disconnect location | Assign location [255] Passage 1

Type	The type of reader. Some reader settings are dependant on the defined *type of reader*.
Name	The name of the reader, to be displayed in the *List of hardware*.
* Direction (* only for Direct, Direct_C4, Finger, Hid, Protocol, R1D, RexF_reader, Wiegan, Wiegand_custom, PopulusF_Reader)	This setting defines the direction of the reader at the passage. You can choose between the following values: - ***Passage*** - the users can freely move through the passage, regardless of the direction. - ***Entry*** - by registering at the reader the users record that they are entering the room (i.e. they register an *Entry* event). - ***Exit*** - by registering at the reader the users record that they are leaving the room (i.e. they register an *Exit* event).
* Communication line (* only for RexF_reader and PopulusF_Reader)	The communication line (IP address) for sending user's fingerprint templates to fingerprint controllers that are set to operate as readers in the system.
* Reader address (* only for Protocol)	The address of a protocol reader is one of the key settings for the communication between a protocol reader and the controller to which it is connected. In the setting's field insert a number between 1 and 255. **NOTE** **Protocol readers connected to the same controller must be assigned unique reader addresses.** The controller is not able to communicate with readers assigned with the same address. **NOTE** The protocol reader address (i.e. the numerical value between 1 and 255) are already **assigned to the readers during the installation process itself**. Therefore, you must **carefully record this device information**.
* Device address (* only for RexF_reader and PopulusF_Reader)	The controller address of the controllers which operates as a reader within the system (i.e. has been subsequently set to operate as a reader).
* Parameter 0 (number of bits) (* only for Wiegand_custom)	[this setting is meant to define how third-party wiegand readers will read user cards] The information about how many bits are used for the user card within the reader response (string).
* Parameter 1 (shift to right) (* only for Wiegand_custom)	[this setting is meant to define how third-party wiegand readers will read user cards] The number of bits to shift in the reader response (string) to locate the place where the user card number begins.

Reader number	The sequential number of the reader of the controller. The number of readers that can be connected to a controller differs depending on the *type of controller*. All readers connected to the same controller must have a different reader number assigned.
Location	The location, to which the reader is connected. Readers can only be connected to *passage* type locations. *Passages* must be connected to readers to enable the correct operation of access control or time attendance registration at the company entry points.

NOTE
To be able to manually add a new reader, you will require the following information, which you must note during the (physical) installation process:
 - the **type of reader**
(you can choose between: Direct, Direct_C4, Finger, Hid,Hid_4B, Lockart, Protocol, R1D, R1W, R1W_K, R4W, R4W_26bit, RAD, Relay, Wiegand, Wiegand_custom, Wiegand_26bit, Finger_Zk, PopulusF_reader, RexF_reader, RegisF_reader, ANPR)
 - **the information about the controller to which the reader is connected to,**
 - **the reader number** (the sequential number of the reader of this controller),
 - **the location**, where the reader is (physically) installed, as well as the **direction** (entry, exit, pass).

12.5.1.2. Reader Options

GENERAL SETTINGS

Last card for controller	After reading a specific card, the reader is set to wait a certain amount of time (timeout) before it can read the same user card again. If this setting is enabled, the same time (timeout) is copied to all the readers connected to the same controller. This means that a user cannot register at any of the readers on the same controller until the timeout has transpired.
User + PIN	If this setting is enabled the *User + PIN* function will be turned on for this reader. When using the *User + PIN* function users must first register at the reader with their card and then also type in a PIN code on the readers keypad.
Don't end pulse on output (sensor switch off)	By default the energy pulse to open the door terminates as soon as the user physically opens the door. If this setting is enabled, the doors stay open (the pulse persists) for the entire time set by the *Energy for (sec)* setting regardless of the door status sensor.
Don't report unknown card events	If this setting is enabled, the controller will not report unknown card events from this reader to the server.
Enable key functions (Enable actions on buttons)	If this setting is enabled, users can trigger basic actions at passages (basic actions: Open, Lock, Unlock, Toggle, Enable, Disable, Unblock, Disable PIN and Enable PIN) by pressing a button on the controller.
Invert card number	If this setting is enabled, the reader will invert the reading of the card number (reverse the order of bytes).
Enable reader sound	If this setting is enabled, the controller's buzzer (sound) will be turned on.
3PRO mode	**This functionality does not work in the Codeks TA Kit software, you need the full Codeks TA or Codeks AC software to use this feature.** If this setting is enabled, the reader will read the encrypted 3PRO card number located within the cards internal memory. **This setting must be enabled for all readers connected to a controller using the 3PRO functionality.**
Use serial mode if 3PRO mode fails	**This functionality does not work in the Codeks TA Kit software, you need the full Codeks TA or Codeks AC software to use this feature.** This setting can only be used if the previous setting *3PRO mode* is also enabled. If this setting is enabled, the reader will first attempt to read the encrypted 3PRO card number (which is stored in a specific location within the card's internal memory), and if this fails, it will use the default serial number of the card.
* Energy for (sec) (* only for Protocol)	The time duration of the energy pulse (in seconds) when the door lock is unlocked.
* Controller submode (* only for Protocol)	This setting defines if a reader will be used as a **regular card reader (*Normal*)** or as a **cardholder (Card holder)** or if it will **forward the change of status to a specified output (*LED output*).**

BLOCKING AND ENABLING

Blocked	If this setting is enabled the reader will be blocked and it will not read cards.
	(A reader in this condition can be unblocked in various ways: *(1)* by clicking the *Unblock* button (in the *Monitor* or *Layouts* viewer) for the a time period set by the *Unblock for (sec)* setting in the Controller Times 279; *(2)* by clicking the *Enable* button (in the *Monitor* or *Layouts* viewer); *(3)* with a specially created *Macro*; *(4)* condition the action of unblocking with a signal that has to be sent from one of the inputs (set below - input 1 to input 7), **etc.**)
Also block keypad when reader is blocked	If this setting is enabled, and the reader has a keypad (for manually entering a PIN), the readers keypad will also be blocked.
Do not release blocking status at IO reset	If this setting is enabled the reader will not be unblocked even if an IO reset is triggered.
Enabled by input 0 . . . **Enabled by input 7**	If this reader is blocked, it can be unblocked if a signal is detected at a specific input. To enable this kind of operation, enable (add a checkmark to) the appropriate (controller) input, which will unblock the reader.

DOOR CONTROL

Device settings	
Basic settings **Options**	
Door control	
Keyword	**Value**
Door 1	☑
Door 2	☐
Door 3	☐
Door 4	☐
Door 5	☐
Door 6	☐
Door 7	☐
Door 8	☐
Door 9	☐
Door 10	☐
Door 11	☐
Door 12	☐
Door 13	☐
Door 14	☐
Door 15	☐
Door 16	☐

Options 1 **.** **.** **.** **Options 16**	This settings define which outputs will be activated when users register at this reader. (e. g. Door 1 is marked as O0 on the controller's circuit board.)

12.5.2. Edit Reader

1. To edit an existing reader, first, select the reader you wish to edit on the *List of hardware.*
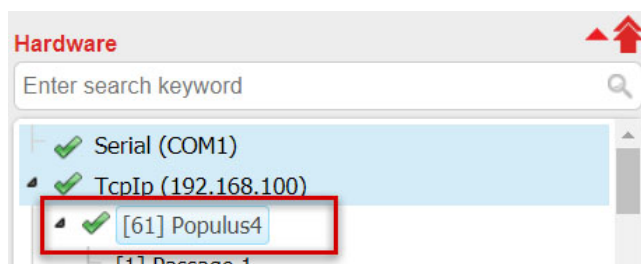
2. In the right part of the *Hardware* editor, the window for editing the selected reader's settings will be enabled.

Enter the desired changes.
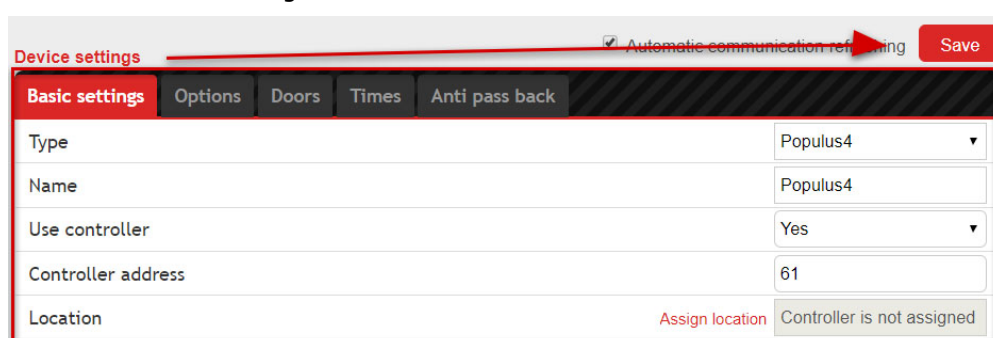
3. When you are done editing the reader, click **Save**.

12.5.3. Delete Reader

1. To delete an existing reader, first, select the reader on the *List of hardware*.

2. Then **right-click on it and select the *Delete reader* from the menu.**
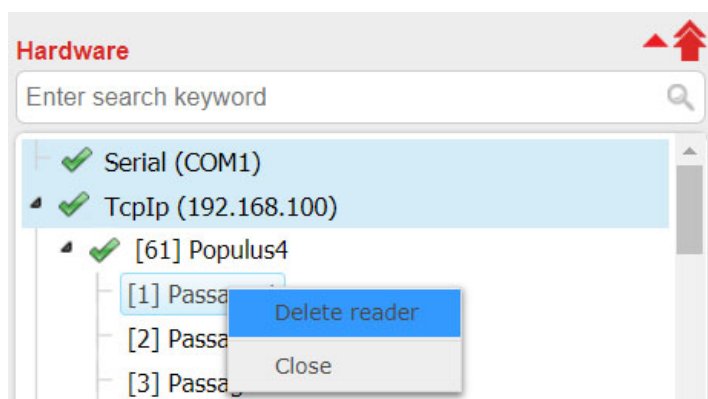
3. The system will warn you that you are about to delete the reader.

To confirm the deletion, click **OK.**
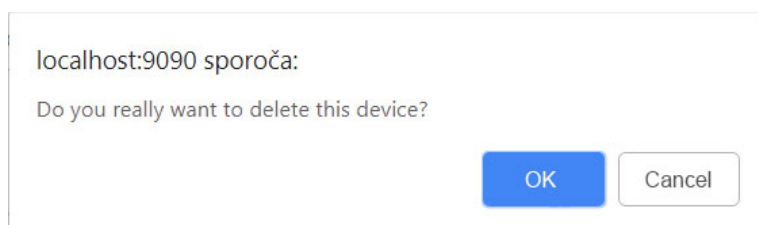
12.6. Communication status

The *List of hardware* itself already offers a quick preview the **Communication status.** The symbols next to each communication line and controller mark whether the communication is active or perhaps broken.
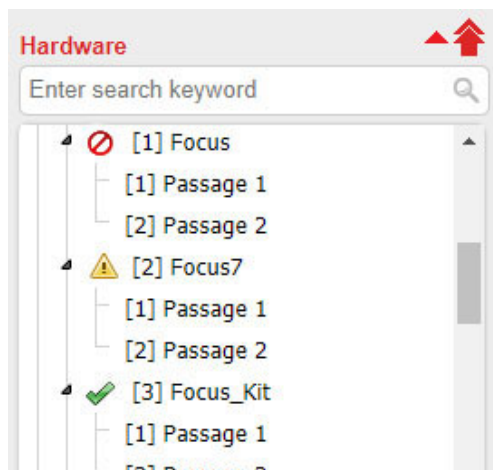
The communication through the communication line or with the controller is active and works properly.

There is no communication through the communication line or with the controller, or the communication is not working properly.

The controller **is not** in use (The controller setting *Use controller* is set to *No*.)

However, you can access a more detailed **communication status** overview by clicking the **Communication status** icon in the toolbar of the *Hardware* editor.
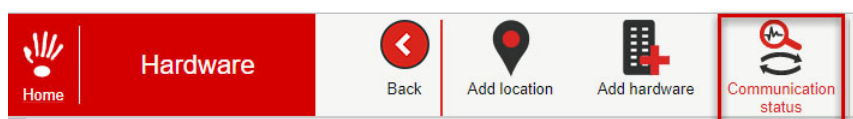
A new window will open, where the status of communication for each device will be displayed in more detail.
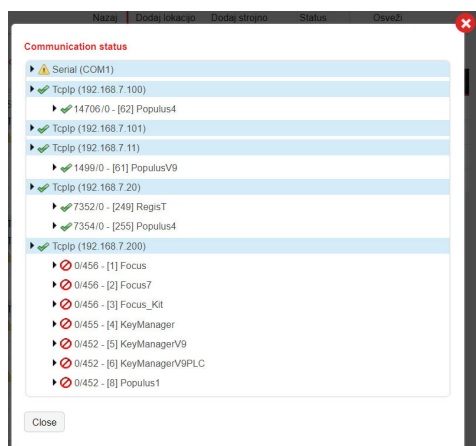
The numbered value displayed next to each device (controller) shows the number of successfully sent data packets per device compared to unsuccessfully sent packets. If the communication is working properly, then the number of successfully sent packets is constantly increasing, and the number of unsuccessfully sent packets is very low. If the number of unsuccessfully sent data packets is very high, this indicates that there is a problem with the communication between the server and the device.
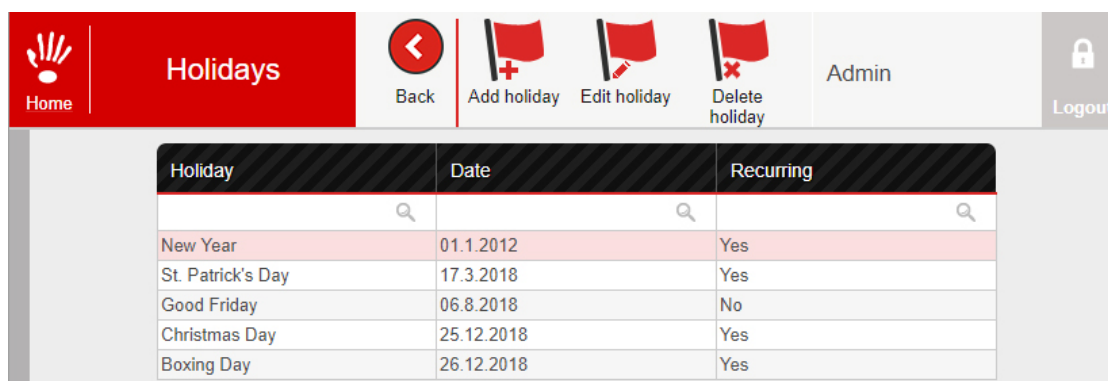
ATTENTION!

When you are finished with editing the hardware and locations you must return to the *Main menu* to trigger the send tables process. Otherwise, the hardware will not work correctly in combination with the Codeks application.

13. Holidays

In the **Holidays** editor, you can view all the defined holidays, which are work-free days and apply to all the users within the same Codeks system.
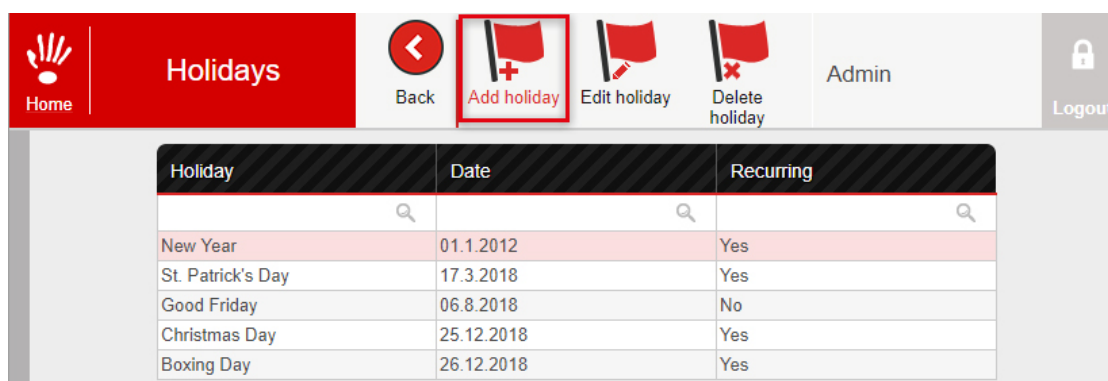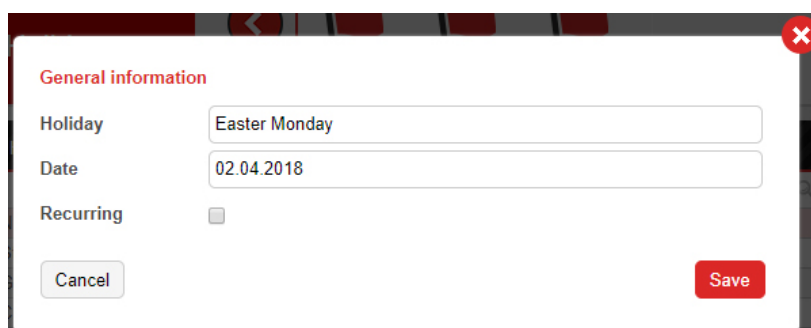
Here you can also edit, add or delete defined holidays.

13.1. Add Holiday

1. To add a new holiday click the **Add holiday** icon in the toolbar.

2. A new pop-up window will open where you can **specify the name and date of the holiday** (in the current year)**.** If the holiday takes place on the same date each year, also enable the **Recurring** setting. (Holidays which take place on a different date each year e.g. Easter Monday, must be defined separately for each year.)
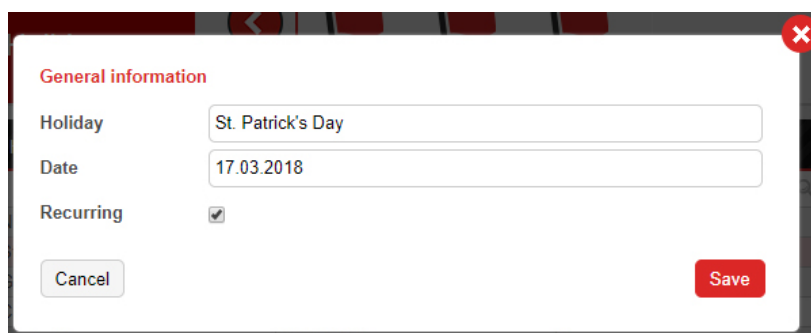
3. Finally, save the entry by clicking **Save.**

13.2. Edit Holiday

1. To edit an existing holiday, first, select the desired holiday on the list of all defined holidays.

2. Next, click the *Edit holiday* icon or **double-click the selected holiday.**
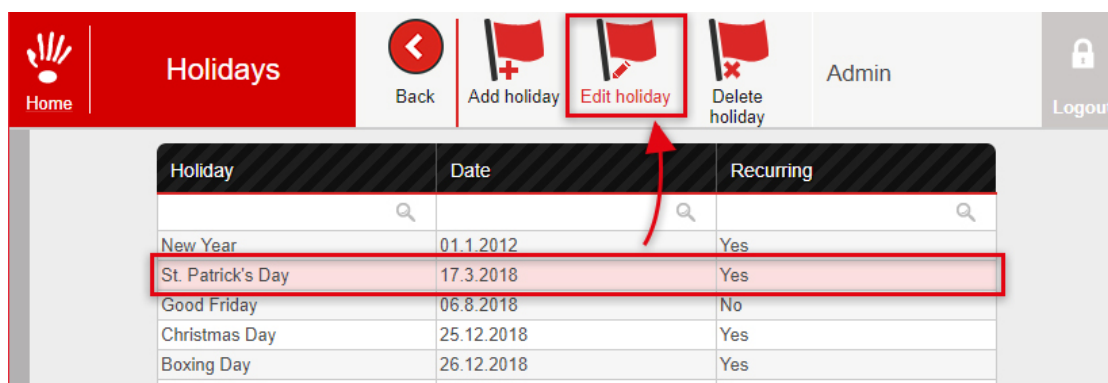
3. A pop-up window will appear where you can **change the holiday information and its settings.**

4. Finally, save the entry by clicking *Save*.

13.3. Delete Holiday

1. To edit an existing holiday, first, select the desired holiday on the list of all defined holidays.

2. Next, click the *Edit holiday* icon or **double-click the selected holiday.**
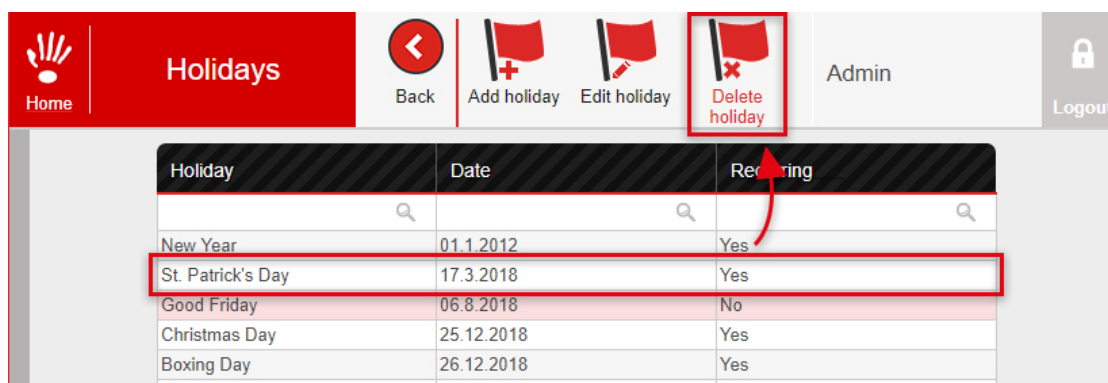
3. A pop-up window will appear where you can **change the holiday information and its settings.**
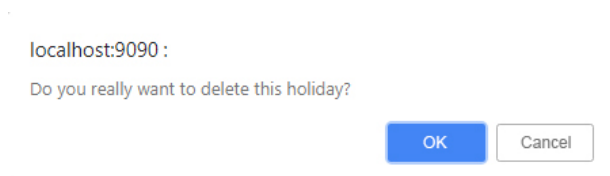
14. Preferences

The Preferences editor enables you to define and edit general settings affecting the entire Codeks system. The preference settings are distributed to different tabs depending on the functionality they regulate. The total number of preference tabs depends on the number of added Codeks Add-ons and additional applications:

- the **Program settings** tab contains general settings, which affect the entire Codeks system,
- the **Time attendance** tab contains settings that regulate the recording of work hours and other user data in the time attendance,
- the *TA screen* tab contains tools for adjusting the display of data on controllers with a touchscreen display when users register different types of events on them,
- the **Mail settings** tab contains settings for sending e-mail notifications,
- the **Export** tab enables the export of the defined statistics and timetables in the Codeks application.

14.1. Program Settings

In the *Program settings* tab you can set the general application settings:

- The **Admin settings** section contains the login data (username and password) for the Codeks TA Kit administrator.
- The **Language** settings define which language will be used to display all text in the Codeks application. This setting will be enabled at the next login.
- The **Company data** section contains the general company information that is also displayed in reports and exports.
- In the **Codeks service host name** section enter the name of the computer where the Codeks service is running. Additionally, you can also set the authentication settings for Active Directory.
- The **Login** section contains additional and advanced settings for the user and administrator login to the Codeks application.
- The **Advanced** section contains some advanced settings that are used primarily to enable compatibility.

Administrator settings	
Username	The username of the administrator of the Codeks TA Kit application.
Password	The password for the administrator of the Codeks TA Kit application.
Name	The administrator's name.
Last name	The administrator's last name.
Language	
Language	The language in which the application will display texts in the user interface of the Codeks application.
Company data	
Company	The name of the company.
Company address	The company address.

VAT ID	The company VAT ID number.
Registration number	The company registration number.
Codeks service host name	
Codeks service host name	The name of the computer where the Codeks software is installed (i.e. where the Codeks service is currently running).
Login	
Authenticate users with Active directory	If the setting is enabled the Active Directory will be used to authenticate users.
If AD authentication fails use standard Codeks authentication	If the setting is enabled the Codeks system will use the Codeks user login information (entered in the advanced settings 41 tab)for user authentication, in the event that the Active Directory is not available (e.g. because there is currently no connection).
Windows domain for AD authentication	The name of the server or computer where the Active Directory is running. This setting must be set if you want to use Active Directory for user authentication.
Mandatory encryption of passwords when logging in	If this setting is enabled the users' and administrators' passwords will be additionally encrypted.
The time after which the user is automatically logged out, if not active	The setting determines the time after which the user will be logged out of the Codeks application if they are not active during this time.
Advanced	
Enable access revisions	If this setting is enabled the functionality of *user revisions and group revisions* 64 will be turned on.

14.2. Time Attendance

In the *Time attendance* tab you can set the general and default setting to be used for recording and display of the time attendance.

Night shift	
Night work start	Start time of night work.
Night work end	End time of night work. The night work settings affect how and when the day will be concluded for employees working in the night shift. Unlike other workers, whose day is concluded and calculated every day at midnight, the night shift workers' day is concluded and calculated at the end of the night shift usually sometime in the morning on the following day.
Time attendance	
Lock editing of TA data to including month (YYYY-MM)	The time attendance data will be locked up to and including the entered month. Editing the time attendance data before this date is no longer possible.
Automatically lock editing of previous month	If the setting is enabled the editing of the previous month is automatically locked on the 15th of the new month.
Day of month to automatically lock editing	The day in the new month when the editing of the previous month is automatically locked. This setting can only take effect if the *Automatically lock editing of previous month* setting is enabled.
Count second lunch	If this setting is enabled the application will assign users an additional lunch after the number of work hours set by the *Minimum time to count second lunch* setting.
Codepage for exported files	This setting sets the coding table to be used for encoding font characters. The setting is used when exporting the names of users or company organization units.
Required percent of presence for time cut is calculated from work obligation	If the setting is enabled the required percent of presence set on specific *Time cut intervals* is calculated depending on full value of the defined daily work obligation.
Use strict mode for entries and exits	If this setting is enabled the *strict mode* function is turned on, which means that the users must first press an appropriate button before registering at controllers to specify the exact type of registered event.

Show presence counter on terminal	If this setting is enabled, the number of users currently present at work will be displayed on the time registration controllers with a screen.
Largo Export	
Statistic formula 1 Statistic formula 2 Statistic formula 3 Statistic formula 4 Statistic formula 5	In this section, you can customize the printout of the values that appear in the *Largo Export* 168 report. In each of the lines you can enter a formula 182 with which you can adjust the calculation and the resulting value for a particular statistic or additional value. You can use any of the *Formulas* used in *Custom reports* to adjust the value. **Example:** Adjust the value of the statistic with the statistic code 1234, by entering ***Formula_1234={MINLIMIT[0,0]{SUM()+COUNTOF[VP];*CONST[480];}}*** in the first line of this section (under *Statistic formula 1*). You can read more about creating formulas for adjusting the values of statistics and additional values in the chapter Table of formulas 182.

14.3. TA screen

In the *TA screen* tab, you can customize the display of data on controllers with a screen when users register different types of events on them. The data display settings for controllers with screens you set here will apply by default to all controllers in your system.

Program settings	Time attendance	**TA screen**	Mail settings	Export

Displayed data on entry registration

Line 1	User
Line 2	Interval text
Line 3	Saldo
Line 4	Empty
Line 5	Empty

Displayed data on exit registration

Line 1	User
Line 2	Interval text
Line 3	Saldo
Line 4	Sum
Line 5	Empty

Displayed data on start of general interval registration

Line 1	User
Line 2	Interval text
Line 3	Saldo
Line 4	Empty
Line 5	Empty

Displayed data on end of general interval registration

Line 1	User
Line 2	Interval text
Line 3	Saldo
Line 4	Sum
Line 5	Empty

Displayed data on registration info when user is present

Line 1	User
Line 2	User presence
Line 3	Saldo
Line 4	Leave
Line 5	Empty

Displayed data on registration info when user is not present

Line 1	User
Line 2	User presence
Line 3	Saldo
Line 4	Sum
Line 5	Empty

The controller response depends on the type of event the user registers on the controller. This allows you to customize the data view for the following event types:

Displayed data on entry registration	The display on the screen when a user registers an *Entry* event.
Displayed data on exit registration	The display on the screen when a user registers an *Exit* event.
Displayed data on start of general interval registration	The display on the screen when the user registers the start of a general interval, such as *Lunch*, *Private Exit*, or *Business trip*.
Displayed data on end of general interval registration	The display on the screen when the user registers the end of a general interval, such as *Lunch*, *Private Exit*, or *Business trip*.
Displayed data on registration info when user is present	The display on the screen when a user checks their registration data by registering an *Info* event and is present at work.
Displayed data on registration info when user is not present	The display on the screen when a user checks their registration data by registering an *Info* event and is not present at work.

It is possible to customize the display of up to 5 lines, but the display of five lines of text is only supported by some of the newer Jantar controllers with a screen. Older controllers can only display 4 rows, this means that the last (fifth) row will not be displayed on these controllers.

You can choose to display the following values for each data line:

Empty	A blank row will be displayed.
User	The user's name and last name will be displayed.
User presence	Displays whether the user is currently present or absent from work.
Interval text	Displays the text of the interval which was activated by registration (e.g., Entrance, Lunch, etc.).
Sum	If the user registers an *Entry* or *Exit*, this value displays the sum of the working hours of the current day up until the moment of registration.
	If the user registers the end of the general purpose interval, this value displays the duration of the interval or the delay time if the user has exceeded the maximum allowed duration of the interval.
	In cases where the user registers the start of the general purpose interval, this value does not make sense, as it will only display a zero time value.
Saldo	Displays the value of the saldo for the current period (month).
Balance + overtime + stimulation	Displays the sum of the saldo for the current period (month), overtime and stimulation values.
Leave	Displays the remainder of leave and old leave days the user still has available.

14.4. Mail Settings

In the *Mail Settings* tab you can set the connection between Codeks and your e-mail provider as well as set the general setting for sending e-mail notifications within the Codeks system:
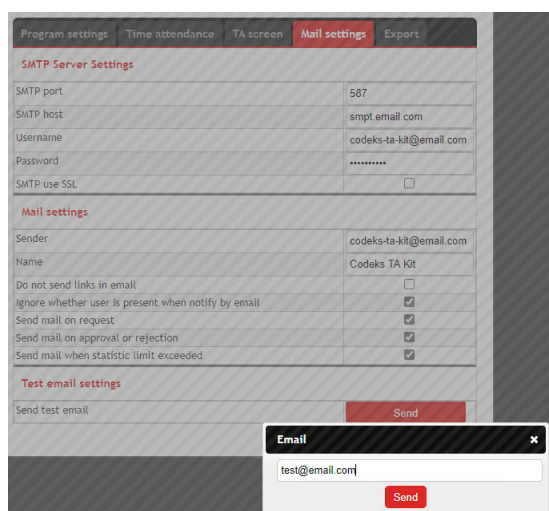
- **SMTP server Settings** enable you to set the connection with your e-mail service provider. You will get the necessary connection information from your e-mail provider (or internet provider).
- **Mail settings** enable you to set the general settings for sending e-mail notifications.

SMTP Server Settings	
SMTP port	SMTP port
SMTP host	SMTP host
Username	Username
Password	Password
SMTP use SSL	SMTP uses SSL
Mail settings	
Sender	The e-mail address all emails will be sent from. The e-mail address must really exist and must be prepared for use.
Name	The name of the sender.
Do not send links in email	If the setting is enabled, the sent e-mails will not contain any hyperlinks (e.g. link to editing leave announces). If the setting is not enabled, the e-mails will contain hyperlinks. **USE:** *Exceeding statistic limits*
Ignore whether user is present when notify by email	If the setting is enabled, the application will not take into account the presence of the department managers when sending e-mail notifications. The e-mail notification will be sent to all e-mail recipients. If the setting is not enabled, the application will take the absence of department managers into account when sending e-mail notifications. If the department manager is not present the system looks for the next deputy in command following the organization hierarchy. If none of the department managers and deputies are present, the system sends e-mail notifications to all the e-mail recipients. **USE:** *Exceeding statistic limits*

Send mail on request (* only for the Codeks TA program)	* If the setting is enabled an e-mail notification will be sent to the department manager when a user sends a request for leave. If the setting is not enabled, no e-mail notification shall be sent. **USE:** *ePermits, LeaveAnnounces*
Send mail on approval or rejection (* only for the Codeks TA program)	* If the setting is enabled the user, who announced a leave request, will be sent an e-mail notification about the confirmation or rejection of this request. If the setting is not enabled, no e-mail notification shall be sent. **USE:** *ePermits, LeaveAnnounces*
Send mail when statistic limit exceeded	If the setting is enabled the department manager will be sent an e-mail notification when a user exceeds a set statistic limit. If the setting is not enabled the department manager will not be sent an e-mail notification, when a user exceeds a set statistic limit. **USE:** *Exceeding statistic limits*
Test email settings	
Send test email	By clicking on the **Send** button, you will send a test message to an arbitrary e-mail address, which serves to verify the correctness of the entered settings for the e-mail and the SMTP server.

Testing email settings

1. To test the entered email settings, click the **Send** button next to the *Send test email* setting.

2. A new window will open where you can enter an arbitrary email address where you want to receive the test message.

Click **Send**.

3. At the end the system will inform you if the sending was successful or not.

14.5. Export

In the *Export* tab, you can export certain defined data and structures in the Codeks system. They are exported into a structured XML file, suitable to be imported into another program or application.

Program settings	Time attendance	Mail settings	
Export			

Export	
Export statistics	Export
Export timetables, intervals and statistics	Export

Export	
Export statistics	The setting enables the export of all entered statistics in the Codeks system into a structured XML file that can be imported into another program or application.
Export timetables, intervals and statistics	The setting enables the export of all entered timetables, intervals, and statistics in the Codeks system into a structured XML file that can be imported into another program or application.

15. Additional tools and functions

15.1. Jantar Import GUI

The Jantar Import GUI additional program enables you to import data directly into the Codeks database.
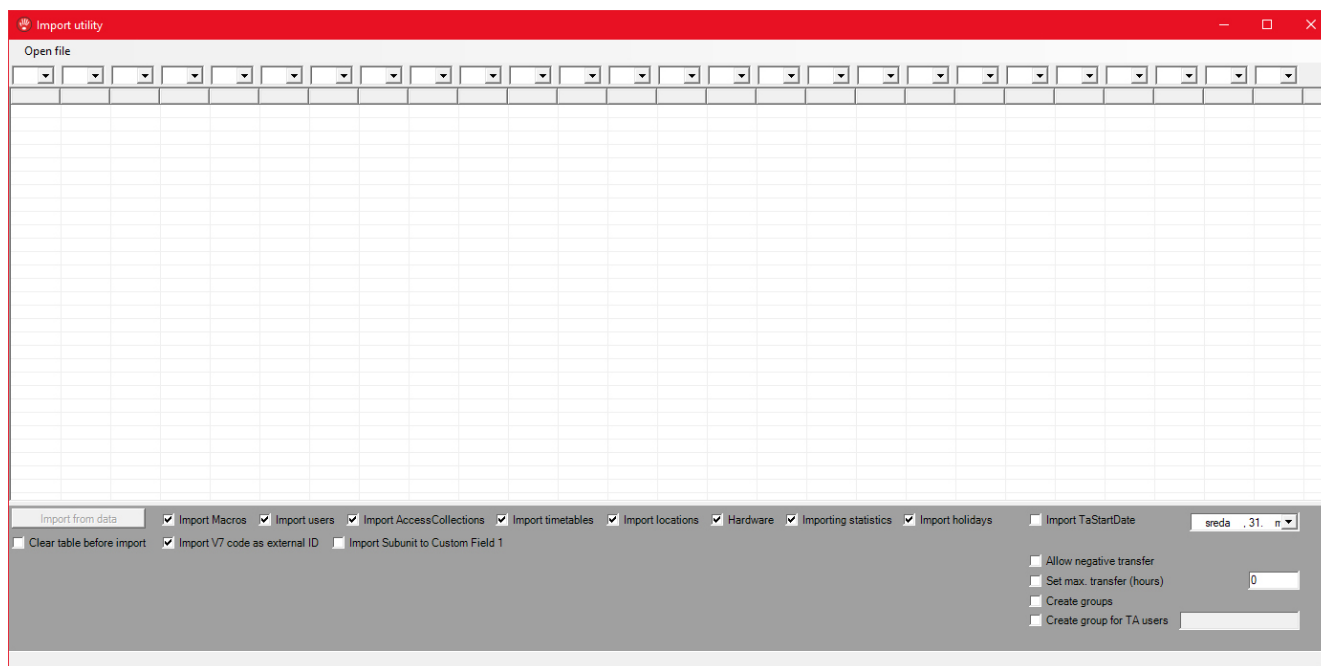
It was designed to import data from our older Jantar V7 program into the Codeks software. **It is mainly used when installing the Codeks system to import various data from existing (V7) systems or to import users and their data into new Codeks systems.**

The Jantar Import GUI program **is installed on your server simultaneously with the Codeks software**. You can run the program only on the server (computer) where your Codeks software is installed, **so you need (direct or indirect) access to the Codeks server to use the program**.

Via the *Jantar Import GUI* program you can therefore import:

- **full system exports from the Jantar V7 program in .xml file format** [314]. The export of the Jantar V7 system includes users and their data, statistics, timetables and time intervals, hardware and locations, access rights of groups and users at locations, holidays, etc. Therefore, the import of such data is usually made only when the customer switches from using the Jantar V7 program to the newer Codeks software. Read more about exporting from Jantar V7 in the chapter .
- **users and their data in a spreadsheet in .csv, .xls, and .xlsx formats** [316]. You must, however, manually create the spreadsheet for import using a spreadsheet editing program of your choice (e.g. Excel, LibreOffice Calc, OpenOffice Calc, Google Spreadsheets, etc.). This kind of import is appropriate when establishing a completely new Codeks system.

15.1.1. Import data in XML form from Jantar V7

With the Jantar Import GUI, you can import the **entire system export from the Jantar V7 program in .xml file format**. The export of the Jantar V7 system includes users and their data, statistics, timetables and time intervals, hardware and locations, access rights of groups and users at locations, holidays, etc. This kind of import is usually made only when the customer switches from using the Jantar V7 program to the newer Codeks software.

The process of exporting data from Jantar V7 software is described in chapter <u>* Export data from Jantar V7</u> 321.

1. Before starting the import process make sure the Codeks Service is stopped!

2. You can find the **Jantar Import GUI** program either in the Codeks folder on your server (*.../Codeks/JantarImportGUI.exe*) or through the search in the Start menu.
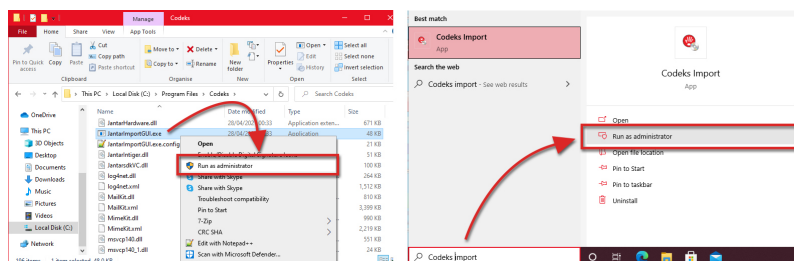
3. The main window of the program will open.

4. Click the **Open file** button to upload the **text document** you created when exporting data from the Jantar V7 program (e.g. *Text_document.xml*). Then select **Open**.

5. The data from the file will be loaded in the table in the upper part of the window.

Check and, if necessary, set the data type for EACH column by selecting the appropriate data type from the drop-down list above each column.

6. Then also check and adjust the **additional import settings** accordingly.

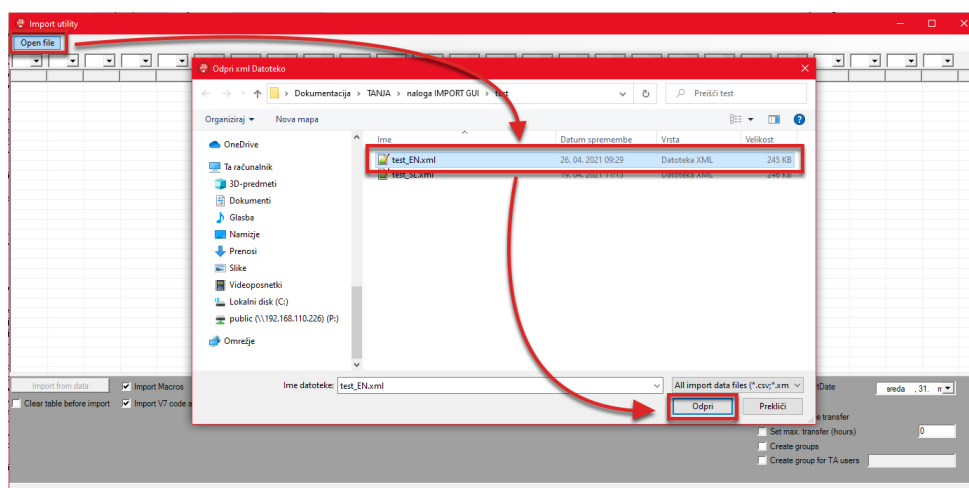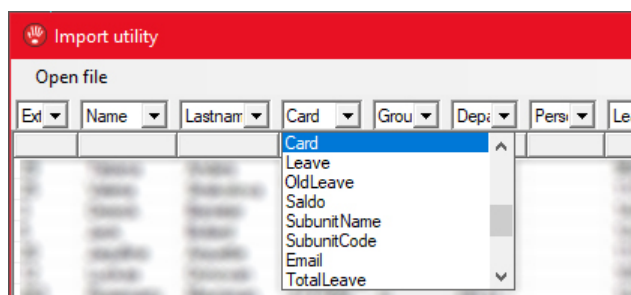| Additional setting	Description
Import Macros	If you enable this option, exported macros from Jantar V7 will be imported.
Import Users	If you enable this option, exported users from the Jantar V7 program will be imported.
Import AccessCollections	If you enable this option, the exported access rights of groups and users from the Jantar V7 program will be imported.
Import timetables	If you enable this option, the exported timetables and time intervals from the Jantar V7 program will be imported.
Import locations	If you enable this option, exported locations from the Jantar V7 program will be imported.
Hardware	If you enable this option, exported devices (hardware) from the Jantar V7 program will be imported.
Importing statistics	If you enable this option, exported statistics from the Jantar V7 program will be imported.
Import holidays	If you enable this option, exported holidays from the Jantar V7 program will be imported.
ImportTaStartDate	If you enable this option, the start date of the time and attendance will be set for all imported users into the Codes system. Set the date you want to assign to users in the additional field of this setting.
Clear table before import	If you enable this option, the program will delete all existing data in those database tables where you are about to import new data before importing data.
Import V7 code as external ID	If you enable this option the user's *ID code* from the Jantar V7 program will be imported as the user's *External code* into the Codeks system.
Import Subunit to Custom Field 1	If you enable this option the *Subunit* data from the Jantar V7 program will be entered in the *first additional custom field* * in the user's settings. * Available only in the full software versions Codeks TA or Codeks TA Advanced.
Allow negative transfer	Enabling this option will allow the transfer of a negative saldo value (i.e. shortage of hours) from month to month for all imported users.
Set max. transfer (hours)	If you enable this option, a monthly limit on the transfer of hours (ie, excess hours) from month to month will be set for all imported users. Set the maximum number of transfer hours in the additional field of this setting.
Create groups	If you enable this option, the system will create all the access groups that users have defined in the import file and add them to the appropriate users.
[1] Create group for TA users	[2] This option is only used when importing .xml exports from the Jantar V7 program into the Codeks system. If you enable this option, the system will create new time attendance groups, that are defined by the user data, for all users marked as time attendance users (TA users) in the export file and assign these groups to users.
[2] Leave in minutes	[3] This option only appears if the values of leave and old leave are defined in minutes (this is how the values in the Jantar V7 program were sometimes recorded). If you enable this option, your leave values will be imported in minutes, not days.

7. Finally, click the ***Import from data*** button. The Jantar Import GUI program will import the prepared data.
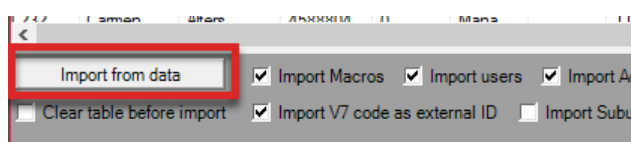
15.1.2. Import user data into a new Codeks system

With the Jantar Import GUI, you can **import users when installing a new Codeks system**, but you must first **manually create the spreadsheet of users and their data** (in **.csv, .xsl,** or **.xlsx** format). You can read more about creating a file for importing users in chapter <u>Preparing the user data spreadsheet for import</u> 320.

1. Before starting the import process make sure the Codeks Service is stopped!
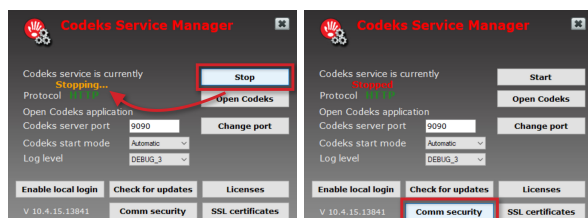
2. You can find the **Jantar Import GUI** program either in the Codeks folder on your server (*.../Codeks/JantarImportGUI.exe*) or through the search in the Start menu.

> **NOTE**
> **You must run the Jantar Import GUI program as administrator.** To launch the program as administrator right-click on the file and select **Run as administrator** or select the **Run as administrator** option on the right side of the Start menu.
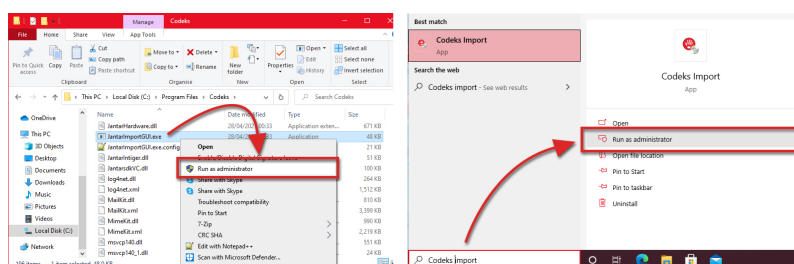
3. The main window of the program will open.

4. Click the **Open file** button to upload the ready-to-import file. A new window will open where you can find the file. Then select **Open**.
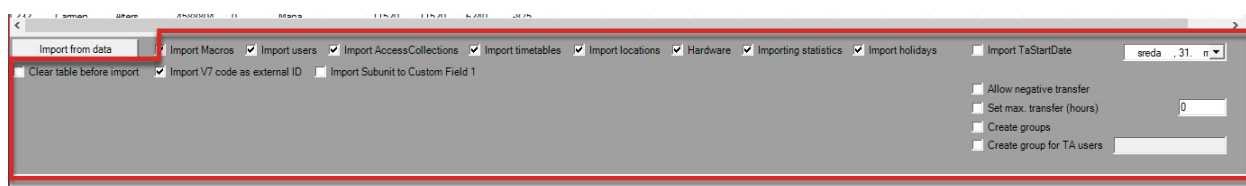
5. The data from the file will be loaded in the table in the upper part of the window.

Check and, if necessary, set the data type for EACH column by selecting the appropriate data type from the drop-down list above each column.


6. Then also check and adjust the **additional import settings** accordingly.

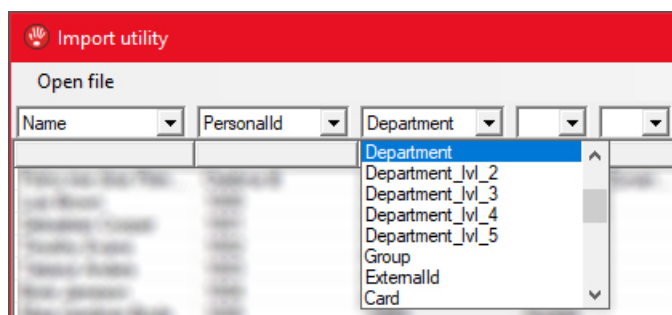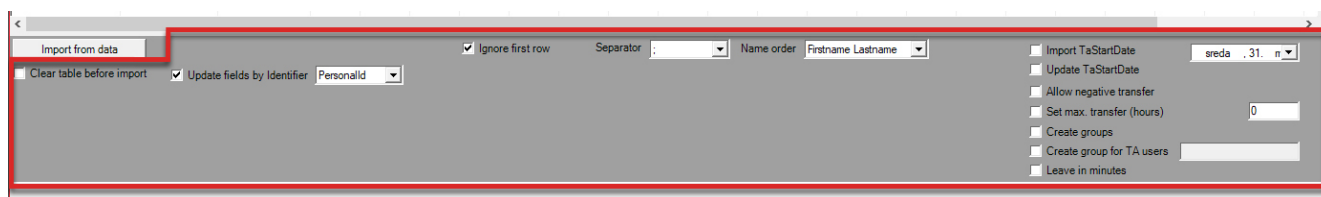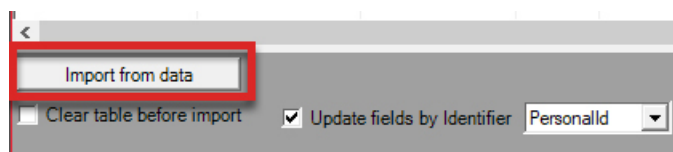| Additional setting	Description
Ignore first row	If you enable this option the program will ignore the first row of the import file and will not import it. This setting is usually used when the file includes the table header row.
Separator	You can select the separator character that separates the different data columns in the file.
Name order	In this field, you can select the format of the name and surname. The names and surnames of the users can be written in separate columns in the import file or they can be written together in the same column. For proper data import, it is, therefore, necessary to define the specified name format.
Import TaStartDate	If you enable this option, the start date of the time and attendance will be set for all imported users into the Codes system. Set the date you want to assign to users in the additional field of this setting.
[1] Update TaStartDate	[1] This option is only displayed if the *Update fields by identifier* option, which allows you to update the data of already imported users, and the *Import TAStartDate* option, which allows users to register the time and set the T&A registration start date, are enabled at the same time. This option allows you to set or reset the T&A registration date. The setting only works when you are updating the data of existing users. The setting uses the date defined in the additional field of the *Import TaStartDate* setting.
Clear table before import	If you enable this option, the program will delete all existing data in those database tables where you are about to import new data before importing data.
Update fields by identifier	Use this option when you want to update the user data that you have previously imported into the Codeks database (for example, assign users a current saldo value or leave days). When you enable this option, a new window will appear next to the setting, where you can select which user information the system should use to identify users so that it can add relevant additional information to them. You can identify users by *Personal ID*, *Card number*, or *External ID*.
Allow negative transfer	Enabling this option will allow the transfer of a negative saldo value (i.e. shortage of hours) from month to month for all imported users.
Set max. transfer (hours)	If you enable this option, a monthly limit on the transfer of hours (ie, excess hours) from month to month will be set for all imported users. Set the maximum number of transfer hours in the additional field of this setting.
Create groups	If you enable this option, the system will create all the access groups that users have defined in the import file and add them to the appropriate users.
[2] Create group for TA users	[2] This option is only used when importing .xml exports from the Jantar V7 program into the Codeks system. If you enable this option, the system will create new time attendance groups, that are defined by the user data, for all users marked as time attendance users (TA users) in the export file and assign these groups to users.
[3] Leave in minutes	[3] This option only appears if the values of leave and old leave are defined in minutes (this is how the values in the Jantar V7 program were sometimes recorded). If you enable this option, your leave values will be imported in minutes, not days.

7. Finally, click the **Import from data** button. The Jantar Import GUI program will import the prepared data.

Examples of use:

- the name and last name written in the same column

When preparing a user import file, you can write the first and last names together in the same column. In this case, you must set the value *Name* for the joint name and last name column in the table in the upper part of the program window and set the appropriate value for the *Name order* additional setting below (i.e. specify which data is written first - first or last name).
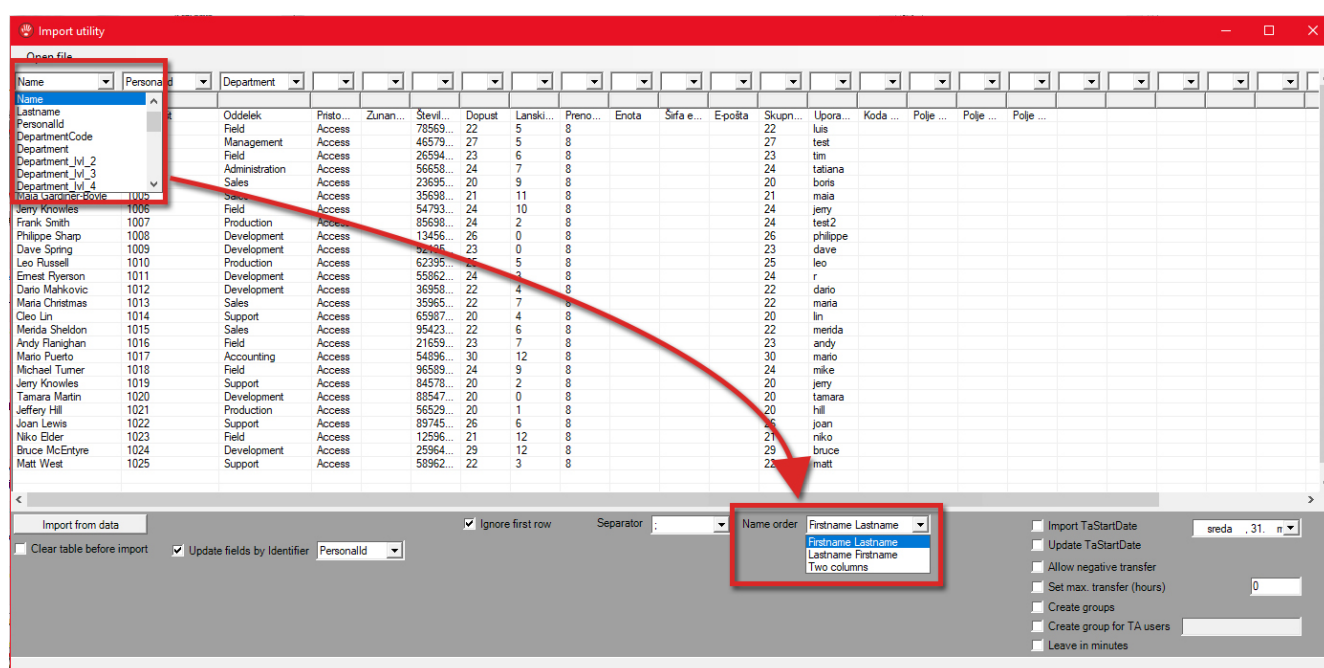
- empty columns or columns you do not want to import

In case you have columns in the import file that are empty or which you simply do not want to import into the Codeks system, set the *Ignore column* value for this column.
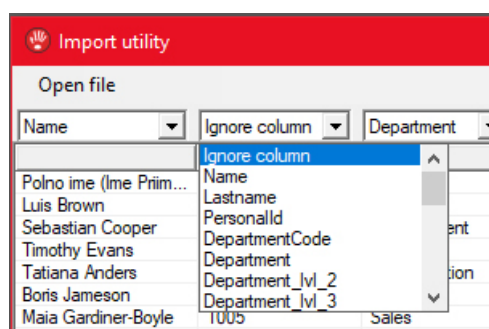
- department structure and department codes

Use the terms *DepartmentCode, Department, Department_lvl_2, Department_lvl_3, Department_lvl_4,* and *Department_lvl_5* to define the structure of departments ([company organization](#) 57) and at the same time assign the user to the appropriate department. This way you can create a company structure with up to 5 levels of departments. When assigning a department to a user, all higher levels of departments must also always be entered, not just the last one. The term *DepartmentCode* always specifies the code for the last-level department (e.g. if the user is assigned to the Accounting department which is under the parent Administration department in the Jantar company (i.e. Jantar -> Administration -> Accounting), the code for the Accounting department will be entered). Upon import, the system continuously checks whether a department with such a description already exists, otherwise, it creates a new one.

Example of an import spreadsheet:

Name	Lastname	Card	DepartmentCode	Department	Department_lvl_2	Department_lvl_3	Department_lvl_4
Tatiana	Anders	1234567	2000	Company	Management		
Sebastian	Cooper	7895462	2000	Company	Management		
Frank	Smith	1564885	2101	Company	Production	Installation	
Luis	Brown	1685415	2102	Company	Production	Warehouse	

This kind of department structure would result from the example import spreadsheet:

```
Company
  |
  --- Management
  |
  --- Production
      |
      --- Installation
      |
      --- Warehouse
```

15.1.2.1. Preparing the user data spreadsheet for import

To prepare a user import file, just arrange different user data in columns.

For each user you can import their name and last name, personal ID, code and name of the department, group, external code, card number, leave, total (first year) leave, old leave, current saldo, e-mail address, username, export code, the value of the first custom field, VATnumber, EMŠO number, and social security number.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
1	Name	Lastname	PersonalId	Group	ExternalId	Card	DepartmentCode	Department	Department_M_2	Department_M_3	Department_M_4	Department_M_5	Leave	OldLeave	TotalLeave	Saldo	Email	Username	ExportId	CustomField1	VATNumber	EMSONumber	SocialSecurityNumber	UserReferenceId
2	Luis	Brown	1003	Access		2315665156		Field					22	5	22	8		luis						
3	Sebastian	Cooper	7001	Access		2319291396		Management					27	5	27	8		test						
4	Timothy	Evans	1000	Access		2458599940		Field					23	6	23	8		tim						
5	Tatiana	Anders	1002	Access		2317758724		Administration					24	7	24	8		tatiana						
6	Boris	Jameson	1001	Access		2319088388		Sales					20	9	20	8		boris						
7	Maia	Gardner-Bo	7002	Access		2319145220		Sales					21	11	21	8		maia						
8	Jerry	Knowles	7014	Access		2318548228		Field					24	10	24	8		jerry						
9	Frank	Smith	7021	Access		1383036676		Production					24	2	24	8		test2						
10	Philippe	Sharp	7015	Access		2318685444		Development					26	0	26	8		philippe						
11	Dave	Spring	7020	Access		2318560004		Development					23	0	23	8		dave						

You can prepare the file in any spreadsheet program (e.g. Excel, LibreOffice Calc, OpenOffice Calc, Google Spreadsheets, etc.). Then export the prepared file to **.csv, .xls or .xlsx file format**.

You can leave a table header in the file, as you can easily turn off the import of the first line of the file in the *Jantar Import GUI* by enabling the optional *Ignore first row* setting.

NOTE
When preparing a file for import, you can also use keywords in the table header, which the program itself recognizes as a specific type of data.

These defined keywords are:

Keywords	Description
Name	The employee's first name. You can also enter both the user's first and last name in the column under this value. In such cases, you must then set the additional Name order [318] setting accordingly.
Lastname	The employee's last name.
PersonalId	The employee's personal ID.
DepartmentCode	Specifies the code for the last-level department (e.g. if the user is assigned to the Accounting department which is under the parent Administration department in the Jantar company (i.e. Jantar -> Administration -> Accounting), the code for the Accounting department will be entered).
Department	The name of a 1st level department.
Department_lvl_2	The name of a 2nd level department. It must always be preceded by the name of its parent department in the *Department* field.
Department_lvl_3	The name of a 3rd level department. It must always be preceded by the name of its parent departments in the *Department,* and *Department_lvl_2* fields.
Department_lvl_4	The name of a 4th level department. It must always be preceded by the name of its parent departments in the *Department*, *Department_lvl_2*, and *Department_lvl_3* fields.
Department_lvl_5	The name of a 5th level department. It must always be preceded by the name of its parent departments in the *Department*, *Department_lvl_3*, and *Department_lvl_4* fields.
Group	The name of the group to which the user is assigned. The system only creates new groups with this name in the Codex database if the additional *Create groups* setting is enabled at import.
ExternalId	The user's external ID.
Card	The user's card number.
Leave	The number of (annual) leave days that the user still has available. (You can also enter the data in minutes, but you must enable the additional setting *Leave in minutes* when importing.)
OldLeave	The number of old leave days (i.e. last year's leave) that the user still has available. (You can also enter the data in minutes, but you must enable the additional setting *Leave in minutes* when importing.)
Saldo	The current value of the user's saldo.
Email	The users e-mail address.
TotalLeave	The total number leave days granted to the user for the current year. (You can also enter the data in minutes, but you must enable the optional Leave in minutes setting when importing.)
Username	The username of the employee to use to log in to the Codeks.
ExportId	The Export ID allocated to the user.
CustomField1	The value that is entered in the *first additional custom field* * in the user's settings. * Available only in the full software versions Codeks TA or Codeks TA Advanced.
VATNumber	The user's VAT number (or tax number).
EMSONumber	The user's *Registration number* (sl. *Enotna matična številka občana* (EMŠO)).
SocialSecurityNumber	The user's social security number.
UserReferenceId	This function has yet to be defined (TBD).

15.1.3. * Export data from Jantar V7

To export data from the Jantar V7 program, you will need the **IzvozV7.exe** (dated 23 August 2016).

1. Start by creating a new text document with an **.xml** extension (e.g. *Text_document.xml*).

2. Run the **IzvozV7.exe** file *as administrator*.

> **NOTE**
> **You must run the *IzvozV7.exe* file as administrator.** To launch the program as administrator right-click on the file and select ***Run as administrator*** or select the ***Run as administrator*** option on the right side of the Start menu.
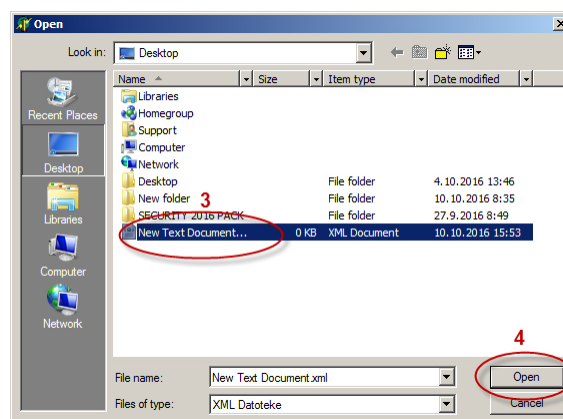
3. In the new window select the *same order of the name and last name* as they are used in Jantar V7 from the drop-down menu.
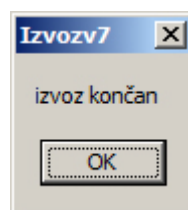Click **Izvozi** (Export).
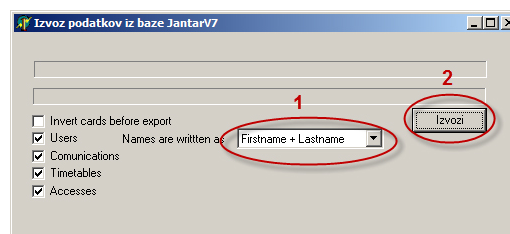
4. In the new window select **the text document you created in step 1** (e.g. *Text_document.xml*).
5. Click **Open**.

6. When the export is finished the "**izvoz končan**" ("export finished") window will appear.

7. All of the exported data is now written **in the new text document** (e.g. *Text.document.xml*).

> **The differences between the old and new controllers in reading and inverting the card number:**
> New V9 controllers with R1D reader will read the card number inversely compared to the old controllers.
> **Example:**
>
> | | Old controller | New V9 controller |
> |---|---|---|
> | Not inverted | 3560267 | 7129810 |
> | Inverted | 7129810 | 3560267 |

New V9 controllers with wiegand reader take into account "Inverted" setting, while the old controllers don't.

In Jantar V7 application, for invert reading of the wiegand reader it's "Parameter 0" had to be set to "99".

Codeks has two wiegand readers: wiegand_custom and wiegand.

- With "**wiegand_custom**" reader the user can set "Parameters 0 and 1" on his own.
- With "**wiegand**" reader the Codeks will set "Parameter 0" to "26" and "Parameter 1" to "0".
- * If "wiegand" reader is **connected to the old controller** (which does not take into account *Inverted* setting for wiegand), then "Parameter 0" is set to "99" to ease the user's work.

15.2. Encrypted data transfer

The main advantage of using the *HTTPS (HyperText Transfer Protocol Secure)* communication is the encryption of data transferred between the client and server. The use of *SSL (Secure Sockets Layer)* certificates guarantees that the user is **truly communicating with your server** and that all the **data sent is protected** against unauthorized viewing.

When establishing HTTPS communication, the data exchange between your server and the user's (client's) computer is encrypted with an encryption key stored in an SSL certificate. Such encrypted data is unreadable without the decryption key, which only the server knows.

Codeks software also allows HTTPS communication using SSL certificates. To use an SSL certificate in Codex software, you must:

> **1. Obtain a domain name for Codeks software on your server;**
>
> You need to obtain a domain for your Codeks server, which will later be used to issue an SSL certificate for your Codeks server (we suggest you use a subdomain of your website). Obtain a domain for your Codeks server from your domain registrar (often also your web host provider), and then edit the DNS server settings so that the selected domain points to the entry point of your local network (router) where the Codeks software.
>
> **2. Obtain_an_SSL_certificate_for_the_domain_on_the_server_where_the_Codeks_software_is running;** 323
>
> Codeks software allows you to use any paid SSL certificate, as well as free SSL certificates created with Let's Encrypt (https://letsencrypt.org/).
>
> **3. Import the certificate to the Codeks software server;** 324
>
> The obtained SSL certificate must be imported (installed) on the Codeks server.
>
> **4. Configure the firewall settings at the entry point of your local network accordingly (router);** 325
>
> You must allow access through the firewall of the entry point (router) of your local system, which allows external queries to access the server where the Codeks software is running within the local network.
>
> **5. Configure the firewall settings on the Codeks software server accordingly;** 326
>
> You must allow access through the server's firewall, where the Codeks software is running, which allows external queries to access the Codeks application on the server.
>
> **6. Turn_on_HTTPS_communication_and_edit_HTTPS_communication_settings_in_the_Codeks software;** 327
>
> You need to enable the use of the installed SSL certificate in the Codeks software and edit some additional settings in order for the Codeks software to work properly.

15.2.1. Obtaining the certificate

Obtaining a commercial SSL certificate

Commercial SSL certificates are issued by a world-known and accredited Certificate Authority institution, and can be purchased from a SSL certificate vendor of your choice. The selected vendor will guide you through the process of obtaining your certificate, and, at the end of the process, issue you an *SSL certificate* created for installation on your server. By using a SSL certificate when communicating with a client, your server presents itself as safe and guarantees that all the data transferred by the client is encrypted. The most important advantage of commercial SSL certificates is the longer validity of the certificate, as commercial certificates are usually issued for at least one year, and the validity of an individual free Let's *Encrypt certificate* is limited to 90 days.

Obtaining a Let's encrypt SSL certificate

SSL certificates obtained through the online service *Let's Encrypt* are free and accredited by *Let's Encrypt*, which is a free, automated, and open digital certificate authority (*Certificate Authority*). You will have to conduct the process of issuing the certificate yourself by using the tools provided by *Let's Encrypt*, also, you will have to make sure that you regularly replace your SSL certificate (each *Let's Encrypt* certificate is valid for 90 days, then a new SSL certificate must be created). More about Let's Encrypt certificates and instructions for using them can be found on the official website https://letsencrypt.org/.

After obtaining the SSL certificate for your Codeks domain, you need to add the SSL certificate to the Codeks server 324, edit the firewall settings of the entry point of your local network and the Codeks software server 325, and edit the HTTPS communication settings in Codeks 327.

15.2.2. Adding the certificate to the server

1. To add the SSL certificate to you Codeks server write **mmc** into the *Start menu search box.*

Start the **mmc** program (**Microsoft Management Console**).

2. In the *console window* chose **File -> Add/Remove snapp-in ...**

3. In the new window chose **Certificates** and click **Add >.**

4. In the new window chose **Computer account** and click **Next.**

5. Chose **Local computer** and click **Finish**.

Click **OK** to close the window.

6. In the *console window* double-click **Certificates (Local Computer)**.

Double-click **Personal**.

7. Click **More actions -> All actions -> Import ...**

8. In the *Certificate Import Wizard* click **Next**.

9. Select **Browse ...** and navigate to your SSL certificate (***.pfx**).

Above the Open and Cancel buttons select the **Personal information exchange (*pfx)** file type.

Select your certificate and click **Open**. Click **Next.**

Now **enter the certificate password** and click **Next**.

10. Select the option **Place all certificates in the following store** and in the **Certificate store** field

select **Personal**.

Click **Next** and then **Finish**. At the end the system informs you that the import was successful.

Close the console window.

Thus you have successfully added the SSL certificate to your server. Next you still have to edit the firewall settings of your network entry point and the Codeks server 325 as well as enable HTTPS communication protocol using the program Codeks Service Manager 327.

15.2.3. Firewall settings of your network entry point and the Codeks server

Setting the firewall of your local network entry point (router)

You must allow access through the firewall of your local system's entry point (router), which will allow external queries to access the server where the Codeks software is running within your local network.

You must, first, enable access of external queries to the router via TCP port 443, and then also, provide a redirect to the appropriate channel and enable access to the Codeks server via the TCP port designated for access to the Codeks application within your local network.
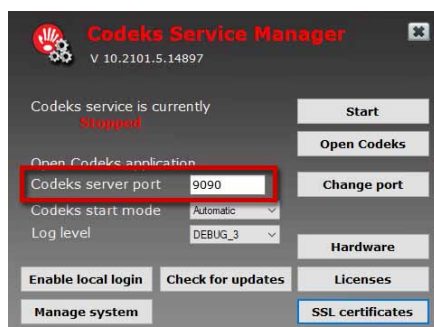

The TCP port through which you access the Coderks server within your local network can be viewed in the *Codeks Service Manager*.

Example 1: Standard configuration
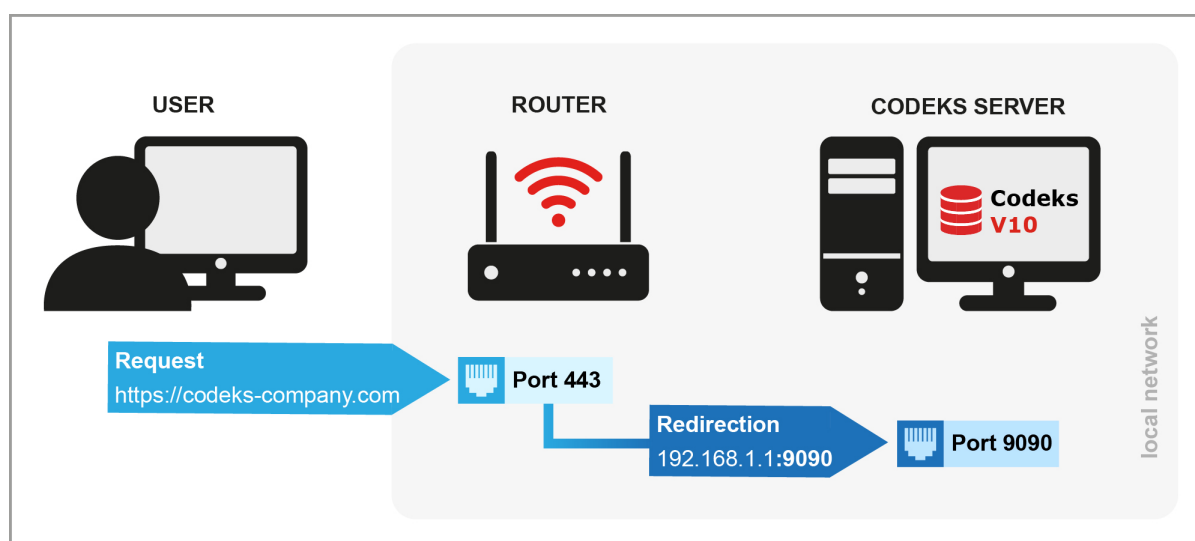
With the standard system configuration, external HTTPS requests to access the Codeks application (e.g. **https://codeks-company.com**) come to the router (router) of your local network **via the TCP port 443**, which is designated by standard for the secure encrypted SSL communication. When the router receives an external request to connect to the Codeks application on port 443, it forwards it on the local internal network to the appropriate server where the Codeks software is installed, **on to its TCP port 9090**, which is the default port for accessing the Codeks application.

Example 2: Custom configuration
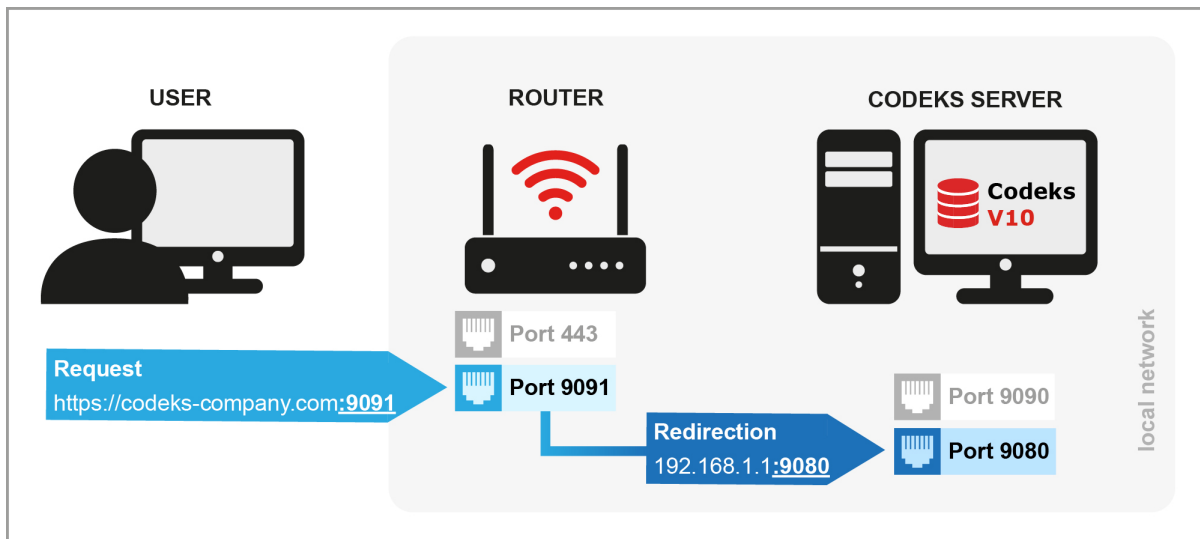
If external HTTPS requests for the same domain, that is also specified to access the Codeks application, already access another application via the standard TCP port 433 (e.g. a web page), you must **specify another TCP port on the router to access the Codeks application** (e.g. 9091). In such cases, users who want to access the Codeks application **will have to add the appropriate TCP port to their request** in addition to the domain address (e.g. **https://codeks-company.com:9091**). Only then will the router redirect the request to the correct server where the Codeks software is installed. The router redirects the query to the TCP port of the Codeks server, which you specify in the *Codeks Service Manager* program.

Setting the firewall of your Codeks software firewall

On the server where the Codeks software is running, you must allow access through the server's firewall which will allow external queries to access the Codeks application on the server.
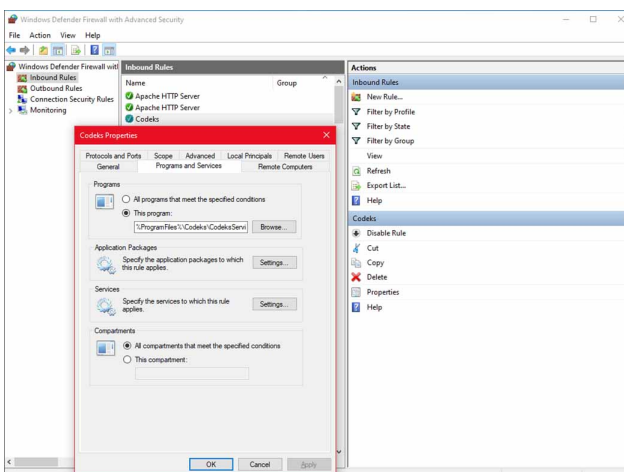

Next, you also need to <u>set the HTTPS communication settings in the Codeks software</u> 327.

15.2.4. Enabling safe communication using Codeks Service Manager and additional settings

Enabling safe HTTPS communication

To **enable communication encryption between the server and the user**, the **SSL certificate must be imported into Codeks** and **HTTPS must be set as the communication protocol**.

1. Launch the *Codeks Service Manger* program and **stop the Codeks service by clicking the *Stop* button***.*

2. Then click the *SSL Certificates* button.
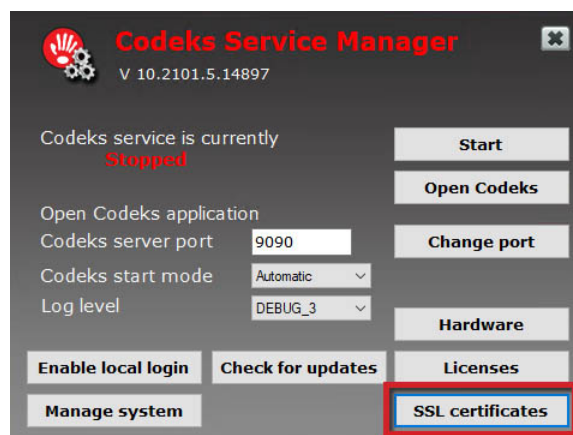
3. In the new pop-up window **select your SSL certificate from the list.**

4. Then select **HTTPS** from the drop-down below and click *Save.s*
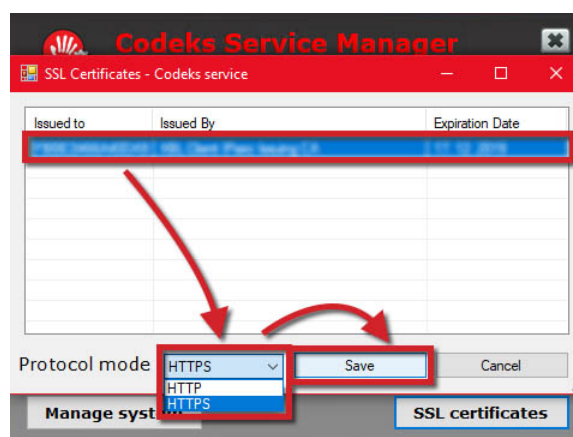
5. Two notifications will inform you of a successful certificate installation:

„SSL certificate successfully deleted." in **„SSL certificate successfully added."**
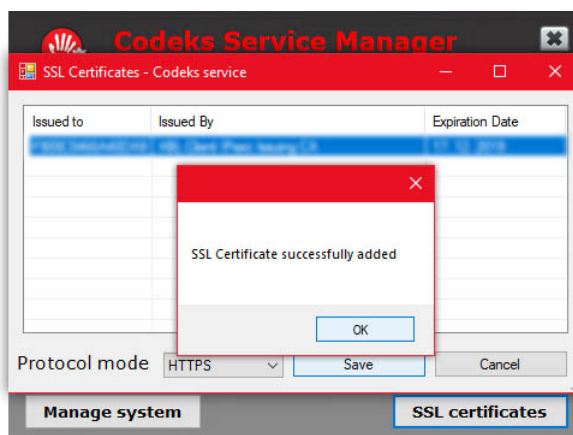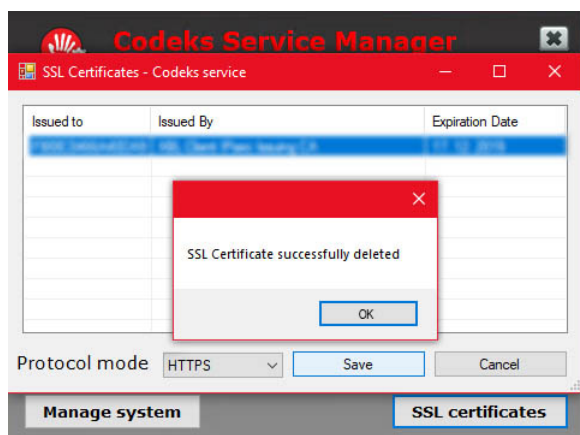
6. With this, you have successfully enabled safe communication between the client and server.

The change in the used communication protocol can be seen in the browser address bar:

🔒 https://

From now on **https://** (instead of http://) will always be displayed in the address bar when using the Codeks client application.
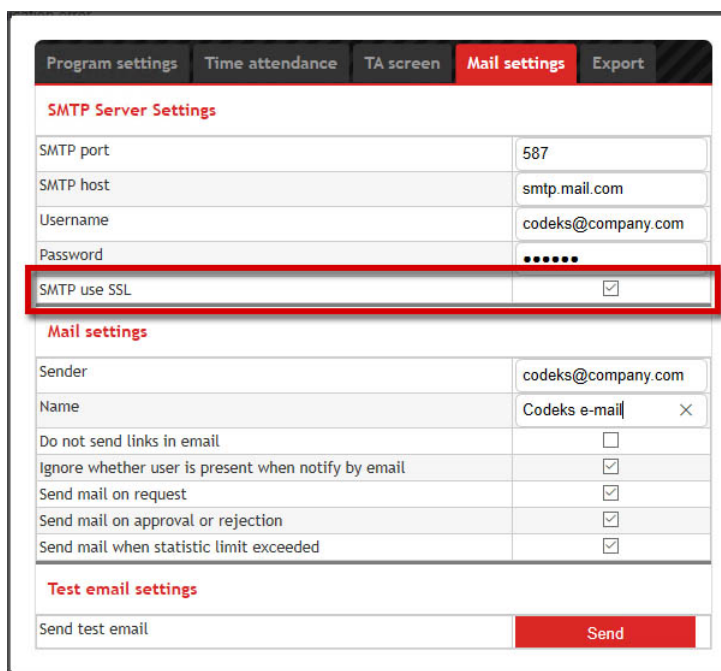
> **ATTENTION!**
> If you have enabled safe HTTPS communication sometime after installing the Codeks software, **inform your users** of the Codeks application URL change. The previous URL address, with *http://*, will no longer display the Codeks client application as it must be replaced with the new URL starting with **https://**.

> **ATTENTION!**
> If you are unable to establish safe (HTTPS) communication with your server using a mobile device, change the communication port setting in the *Codeks Mobility* mobile app on your mobile device. Enter the port 443 to communicate with your server as this port is regarded as the default communication port, for safe (https://) communication according to the HTTPS protocol standard.

Additional setting for HTTPS communication in Codeks

After enabling safe HTTPS communication in the *Codeks Service Manager* program, enable the **SMTP use SSL** setting in the **Settings -> Preferences** menu under the **Mail settings** tab.

Program settings	Time attendance	TA screen	**Mail settings**	Export

SMTP Server Settings

SMTP port	587
SMTP host	smtp.mail.com
Username	codeks@company.com
Password	••••••
SMTP use SSL	☑

Mail settings

Sender	codeks@company.com
Name	Codeks e-mail ✕
Do not send links in email	☐
Ignore whether user is present when notify by email	☑
Send mail on request	☑
Send mail on approval or rejection	☑
Send mail when statistic limit exceeded	☑

Test email settings

Send test email	Send