Roger Access Control System

RCP Master 3 Time & Attendance system

Software version: 3.0

Document version: Rev. B

CE

CONTENTS

1. INTRODUCTION

1.1 Application and main features

RCP Master 3 is a Windows OS software dedicated to time and attendance analysis. User attendance is registered electronically on T&A terminal (e.g. PR602LCD-DT) by means of dedicated ID (card, tag, key, fob, PIN, etc.). Registered events are processed by the software to analyse employee's attendance and calculate the total timework including overtime, night shifts, delegations, holidays, etc. The software offers various reports for use by HR departments and management.

Main features:

- Direct operation with T&A terminals.
- Configuration and T&A events importing from RACS 4 system.
- Direct data collecting from RACS 5 system database.
- Work calendars defining for particular year. Calendars are used to determine expected time frames for employee attendance at work. Calendar can be assigned to an employee or employee group.
- Fixed or variable working time definition. Support for multishift working.
- Absence (holidays, departures) editing in the calendar of particular employee.
- Modification of employee calendar for the purpose of dynamic management of working diagram.
- Manual editing of events in the software.
- Operators with access to selected groups of employees.
- Flexible data importing from the previous version of the software.

1.2 Software and PC requirements

RCP Master 3 software can be installed and used in following operating systems:

- Windows Vista (x86 i x64) with Service Pack 2
- Windows 7 (x86 i x64)
- Windows 8 (x86 i x64)
- Windows 10

Following software packets are necessary for RCP Master 3 operation:

- MS .NET Framework 4.0 Extended
- MS Visual C++ 2010 Redistributable (x86 or x64)

Requirements for MS SQL database are defined by Microsoft company in the link below:
http://msdn.microsoft.com/en-us/library/ms143506%28v=sql.105%29.aspx

The selection of the optimal hardware and software configuration should be developed at the stage of pre-implementation analysis taking into account, for example: the size and number of supported databases, the number of supported users, the number of events, etc.

Database
Two types of databases can be used within RCP Master 3:

- MS SQL Server Compact file database
- MS SQL Server database, e.g. Express, Standard, Enterprise (2005 or newer)

The MS SQL Compact file database is generated locally by RCP Master 3 and it does not require installation or configuration of additional software.
The MS SQL Compact file database is designed for small systems supporting a maximum of 25 employees (maximum 12 thousand events per year). As recommended by Microsoft, the limit for a compact SQL Server database is 4 GB:
https://docs.microsoft.com/en-us/previous-versions/sql/compact/sql-server-2005-compact-edition/bb380177(v=sql.90)

In the case of a server database, it is necessary to download and install the SQL Server environment from Microsoft, then create the database in this environment using RCP Master 3. Both methods are described in Application notes available at www.roger.pl, respectively AN012 and AN017 .

SQL server versions
Different versions of Microsoft SQL Server have their own system requirements and limitations as to the supported operating systems. More information is available on Microsoft's website, for example: https://docs.microsoft.com/en-us/previous-versions/sql/?view=sql-server-2014
For optimally work of the RCP Master 3, the number of events in the database (MS SQL Express) should not exceed 2 million events.
If the database in which the events are stored exceeds 1 GB, we recommend switching to MS SQL Standard.

Hardware requirements for the workstation
The recommendations given below are indicative. Generally, the better the computer, the smoother the RCP Master 3 software works. PCs should be selected depending on the size of the system.

Recommended:
• RAM: 4 GB (8 GB for large systems *)
• CPU: Intel Core i5 or equivalent (Core i7 for large systems *)
• HDD: 500 MB for RCP Master 3 and up to 4 GB for MS SQL Compact database (if used), SSD disk recommended for MS SQL Compact database
• The minimum screen resolution of 1280x1024
* over 500 employees

1.3 Installation and first startup

Download RCP Master 3 installation package from http://www.roger.pl, unzip and start SETUP.EXE file. The software can operate with local Microsoft SQL Server Compact 4.0 database or centralized Microsoft SQL Server database. The database type is selected in CONNECTION CONFIGURATION window when database is created.

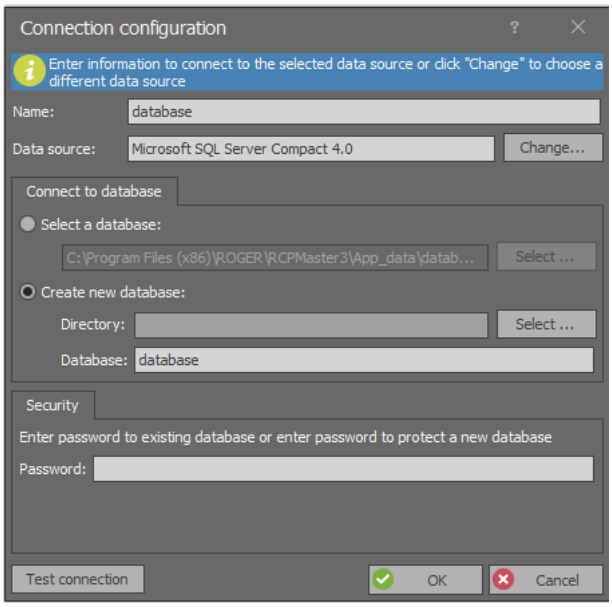


Figure 1. Configuration of local database connection.

- **Name**: Defines name of the database connection.
- **Data source**: Defines database type: Microsoft SQL Server Compact 4.0 or Microsoft SQL Server.
- **Select database**: Enables selection of existing database.
- **Create new database**: Enables creation of new database.
- **Password**: Defines password for optional database encryption.

- **Test connection**: Enables to verify connection to database.

When Microsoft SQL Server is selected as data source then following options are available:

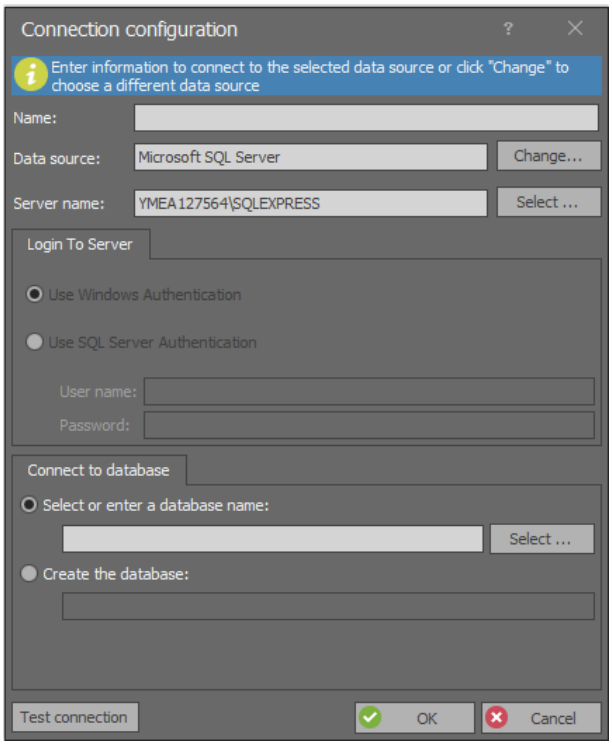


Figure 2. Configuration of centralized database connection.

- **Server name**: Defines name of database server.
- **Select**: When the button is pressed then the list of database servers in local area network is displayed for selection.
- **Use Windows Authentication**: When selected then Windows authentication is used for database authentication.
- **Use SQL Server Authentication**: When selected then SQL Server authentication is used for database authentication.
- **User name**: Defines login for SQL Server Authentication.
- **Password**: Defines password for SQL Server Authentication.

After installation and first startup, the software will display window for selection of work mode. The software can be operated in three different modes explained in the section 1.4.
The start page includes link to demo.sdf database with exemplary data. The password for ADMIN operator is empty (no password).

1.4 Work mode

RCP Master 3 can be operated in autonomic mode or cooperative mode. In autonomic mode the source of events are PR602LCD access controller which can be optionally connected with additional external readers (e.g. PRTxxLT). The configuration such T&A terminals in regard of their various parameters including T&A MODES is done directly on the level of RCP Master 3 software.
In cooperative mode the source of events is RACS 5 access control system (VISO software) or RACS 4 access control system (PR Master software).

1.4.1 Autonomic mode

In the first step of the configuration in autonomic mode it is necessary to define T&A terminal(s) by selection of ATTENDANCE TERMINALS icon in the top menu CONFIGURATION tab or in the navigation tree.
When ADD button is selected then following window is displayed:

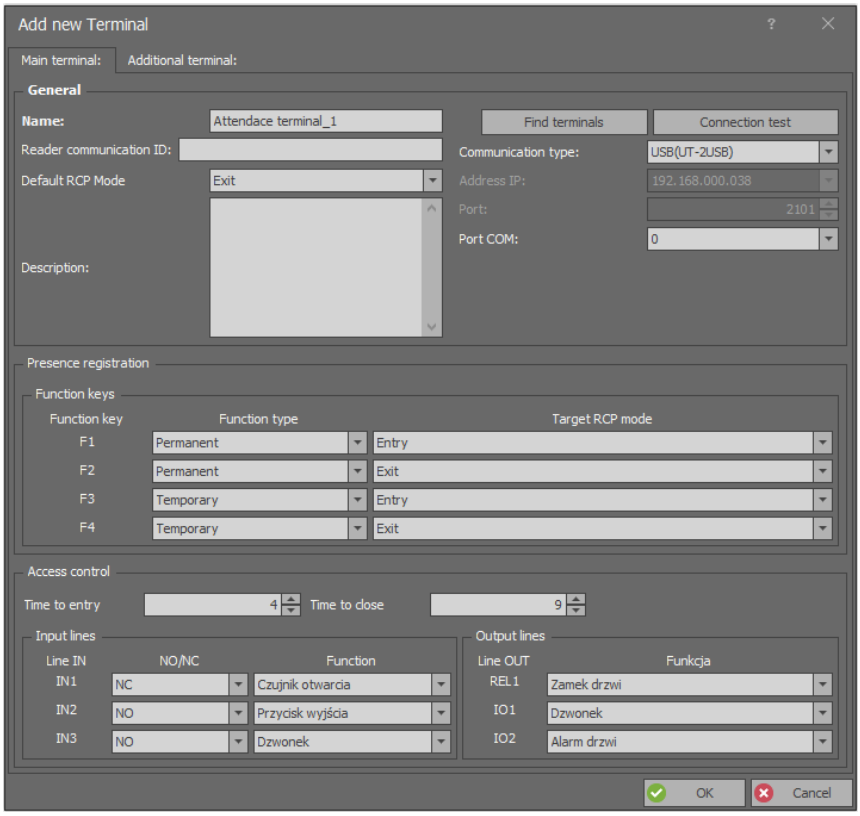


Figure 3. T&A terminal configuration

The configuration requires selection of Communications type. RCP Master 3 is communicating with terminals via UT-2USB or UT-4DR interface. In case of UT-2USB it is necessary to indicate COM serial port while in case of UT-4DR it is necessary to indicate its IP address and port (2101 by default).
Select Find terminals to detect main terminals via connected interface. When all main terminals are detected in particular communication channel then one of them can be selected. More main terminals can be added to the system in the same way by searching the communication channel or manual entering of address in Reader communication ID field.
If PRT reader is connected to PR602LCD device then Additional terminal checkbox must be selected in Additional terminal tab. Consequently such a pair of devices will be available for registering of default T&A mode.
Moreover, parameters related to attendance registration and access control are available.

Attendance registration options:
Default T&A Mode – parameter defines T&A MODE which will be applied at particular terminal by default. If main and additional terminals are used then it is convenient to assign ENTRY mode to one of them and EXIT mode to the other one.
Function keys – settings related to function keys on the keypad of main terminal (PR602LCD).
Function type – defines how the T&A MODE is changed with the function key. Following option are available:

- **Permanent** – when the key is pressed then target T&A MODE at the main terminal is applied indefinitely.
- **Temporary** – when the key is pressed then target T&A MODE is applied for 8 s. The main terminal returns to default T&A MODE when user identifies at the terminal or 8 s period elapses.

Access control options:
Time to Entry – parameter specifies the time for door lock release when access is granted for user after authorised card is used or exit button is pressed. Range: 1 – 6000 s.
Time to Close – parameter specifies time for door closing after access is granted . The option is effective only if door contact is connected to input of the terminal. Such input must be assigned with the DOOR CONTACT function. If TIME TO CLOSE elapses and door is still opened then DOOR ALARM is raised.

Input lines:
Line IN – input lines which are available on the level of main terminal (PR602LCD).
NO/NC – parameter specifies type of input. NO is normally opened (closed when triggered) while NC is normally closed (opened when triggered).
Function – specifies function assigned to the input. Following functions are available:

- **Door Contact Toggle** – as long as triggered then door opening is reported to main terminal. Input with the function is used for connection of door contact.
- **Exit button** – when triggered then door is opened for the time specified by the parameter Time to Entry. Input with the function is used for connection of exit button.
- **Door Bell** – when triggered then main terminal generates 4 s acoustic signal and output with the function Door Bell is triggered.
- **Set Locked Door Mode** – when triggered then door lock is blocked and access is denied.
- **Unlocked Door Mode Toggle –** as long as triggered then door lock is released and the door remains opened for everyone.
- **Set Normal Door Mode** – when triggered then door is in normal mode i.e. it can be opened only by user with proper proximity card or by means of exit button for the time specified by Time to Entry parameter.
- **Set Unlocked Door Mode** – when triggered then door lock is released and the door remains opened for everyone.

Output lines
Line OUT – output lines which are available on the level of main terminal (PR602LCD). REL1 is a relay while IO1 and IO2 are open collector transistor outputs.
Function – specifies function assigned to the output. Following functions are available:

- **Door Alarm** – triggered when Door Alarm is raised. Door Alarm is combined function consisting of such alarms as PREALARM, DOOR OPEN TOO LONG ALARM and DOOR FORCED ALARM. Each mentioned alarm is signalled by different modulation at the output. When more than one alarm is raised then the output is controlled by the alarm with higher priority.

Door Alarm			
Alarm	**Description**	**Priority**	**Modulation**
PREALARM	The alarm is raised in case of five consecutive attempts of identification at particular main terminal by unknown user within 5 minutes. The user, who is in the system but does not have access right at particular controller does not trigger PREALARM.	Low	Single pulse lasting 0,5 s repeated with 4 sec. period
DOOR OPEN TOO LONG ALARM	The alarm is raised if door is not closed after time specified by parameter Time to Close. It is necessary to install door contact and connect it to terminal in order to use that option.	Medium	Double pulses (each lasts 0,5 s) repeated with 4 s period
DOOR FORCED ALARM	The alarm is raised if terminal detects door opening when access is not granted. It is necessary to install door contact and connect it to terminal in order to use this alarm.	High	Single pulse lasting 2 s repeated with 4 s period

Table 1. Door Alarm component alarms

- **Access Granted** – triggered for the time specified by the parameter Time to Entry if the access is granted for authorized card or PIN. The output is not activated when exit button is used.
- **Door Status drzwi** – triggered as long as door is opened. It replicates input with the function Door Contact Toggle.
- **Access Denied** – triggered for 2 s every time the terminal denies access to a user.
- **Door Bell** – triggered for 5 s when input with the function Door Bell is triggered.
- **Normal Door Mode Status** – triggered as long as Normal Door Mode is activated at the terminal.
- **Unlocked Door Mode Status** – triggered as long as Unlocked Door Mode is activated at the terminal.

- **Door Chime** – triggered for 2 s when the terminal detects door opening. In order to use this output it is necessary to connect door contact to terminal input with the function Door contact. Access granting itself does not activate the output.
- **Read-in Door Lock** – triggered for time specified by the parameter Time to Entry when access is granted for user identified at main terminal (PR602LD). The output is dedicated to turnstiles, barriers, etc.
- **Read-out Door Lock** – triggered for time specified by the parameter Time to Entry when access is granted for user identified at additional terminal (PRT reader). The output is dedicated to turnstiles, barriers, etc.
- **Door Lock** – triggered for time specified by the parameter Time to Entry when access is granted for user identified at main or additional terminal. The function is by default assigned to REL 1 relay output to control door lock.

Employee enrollment

In autonomic work mode it is essential to assign Authentication Factors (cards or PINs) to Employees before the configuration is uploaded to T&A terminals. Employee is created by selection of EMPLOYEE icon in top menu CONFIGURATION tab and then ADD button. Cards and PINs are defined in Authentication Factor tab.

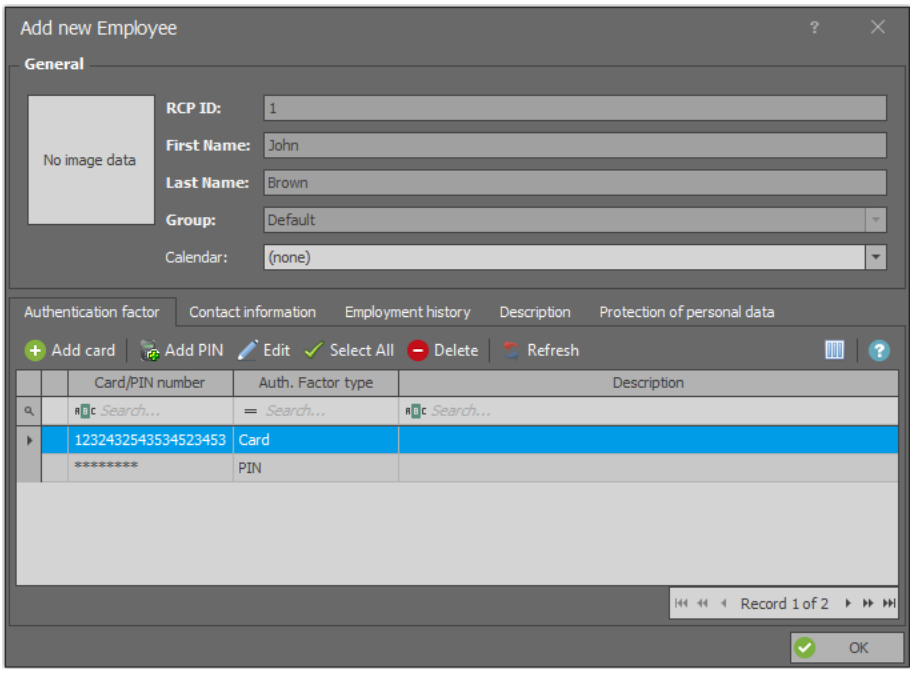


Figure 4. Factors defining

Select ADD CARD and in the opened window enter card number manually or select READ and then read your card at RUD-2 or RUD-3 USB reader to fill the number automatically.

Note: Employee can be assigned with up to 8 factors, each with the same access rights on all terminals.

Synchronisation

When all terminals are configured and users are enrolled with their Authentication Factors then it is necessary to upload the configuration to all devices by selection of SYNCHRONISE command in Attendance terminals window or right clicking Attendance terminals command in the navigation tree. The configuration of single terminals takes approximately 90 s.

Events reading

Events can be downloaded from terminals to database by selection of READ EVENTS command in Attendance terminals window or right clicking Attendance terminals command in the navigation tree.
The time for event reading depends on the number of registred events. It can last a few or dozen seconds and in case of many events even dozen minutes.

Event monitor
The Event monitor is available in the top menu, in the CONFIGURATION tab. The monitor presents events in real time when they are registered in the system.

Attendance monitor
The Attendance monitor is is available in the top menu, in the CONFIGURATION tab. The monitor presents employee statuses based on registered events in a maximal period of 24h. Events added by operator are included. The monitor recognizes three employee statuses: Present, Absent, On-Duty Exit.

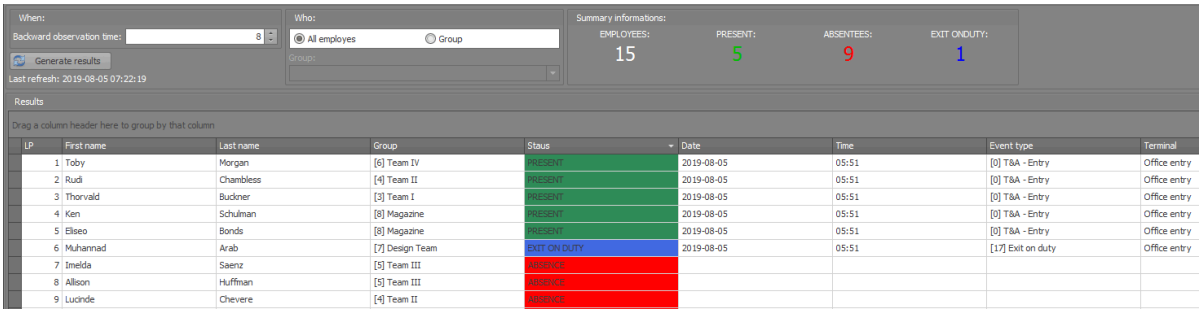


Figure 5. Attendance Monitor

1.4.2 Cooperative mode – RACS 5 (VISO)

In this mode, the source of events for RCP Master 3 is RACS 5 system which is managed by means of VISO software. In this mode EMPLOYEES, EMPLOYEES GROUPS, ATTENDANCE TERMINALS, T&A MODES and EVENTS are imported from RACS 5 database in real time. No data (except for EVENTS) can be edited in RCP Master 3 software.
In order to establish the connection it is necessary to indicate RACS 5 database during CONNECTION CONFIGURATION. The RACS 5 system database must be centralized type Microsoft SQL Server 2005 (or newer) database.

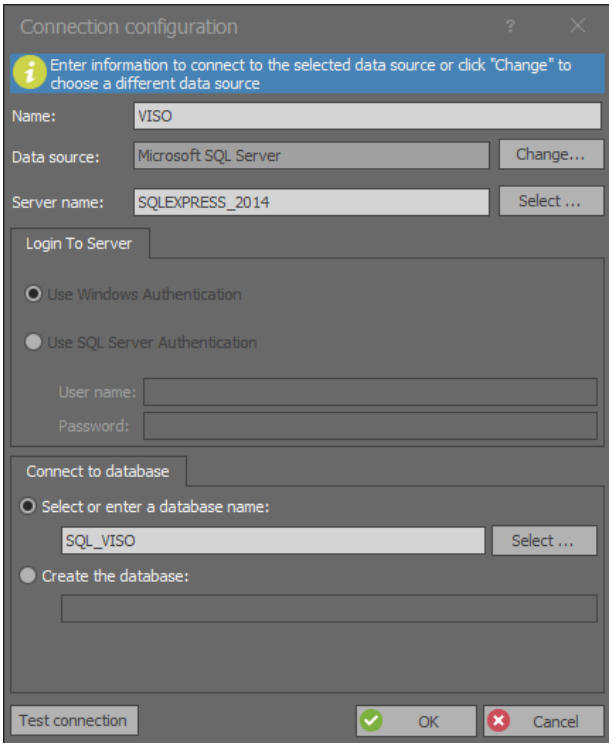


Figure 6. Connection with RACS 5 (VISO) database

1.4.3 Cooperative mode – RACS 4 (PR Master)

In this mode, the source of events for RCP Master 3 is RACS 4 system which is managed by means of PR Master software. Data and events are imported to RCP Master 3 via files exported from PR Master software:

- Configuration parameters: EMPLOYEE GROUPS, EMPLOYEES, TERMINALS and T&A MODES can be imported from CONFIG.XML file.
- Events registered in access control system can be imported from *.RCP file.

Events can be downloaded automatically if PR Master software is started in online monitoring mode. In such case PR Master collects events from devices and uploads them to the file in real time. The location of file is specified in PR Master software after selection of Tools command in top menu and then Options/T&A Reports.
Consequently it is necessary to specify path to the *.RCP file in RCP Master 3 software. Select CONFIGURATION tab in the top menu and then OPTIONS/AUTOMATIC IMPORT OF EVENTS. Events can be downloaded when RCP Master 3 is started. Additionally there can be downloaded in regular periods when RCP Master 3 is operated.

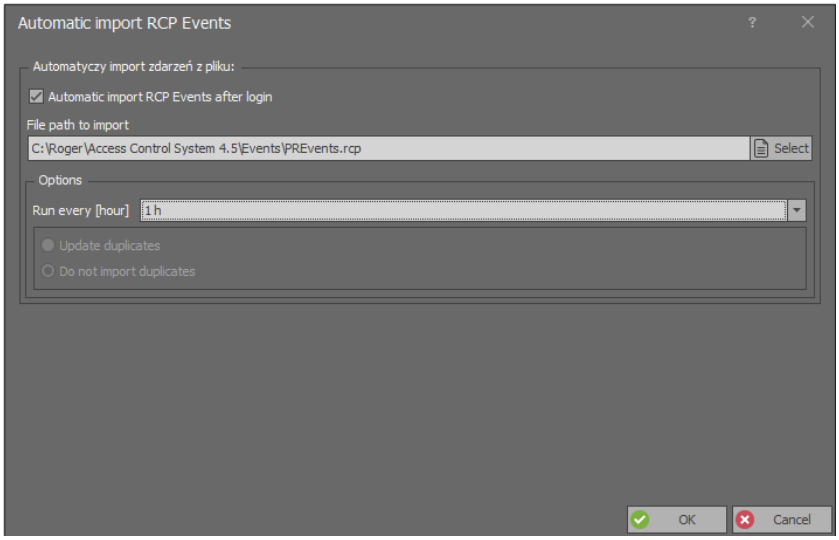


Figure 7. Automatic event downloading from PR Master

2. TERMS AND DEFINITIONS

T&A – Time and Attendance is a system for employee work registering and control.
T&A terminal – electronic device equipped with card reader and possibly keypad which is used to identify employee and to register events with T&A Modes.
Registration – also called **Logging** is employee action in RCP Master 3 system consisting in employee identification with authentication factor (card, PIN, etc.) at T&A terminal.
T&A event – electronic data which is recorded by T&A terminal during employee registration and uploaded to the software. For the purpose of RCP Master 3 software, T&A event should be attributed with T&A Mode.
Event log – chronological list of T&A events. The log can be presented collectively (all events) or selectively (events related to employee, group, T&A terminal). The main source for log are events registered at T&A terminal but it can also include events inserted manually by operator. The software does not allow to completly remove event from T&A terminal but only to remove if from T&A calculations.
T&A Mode – attribute of T&A event which defines the type of registration at T&A terminal. There are predefined T&A Modes such Entry, Exit, Exit on duty, Breakfast break, etc. and additionally T&A Modes can be defined by system operator.
Attendance type – definition of attendance period within working day. Every attendance type is started by event with specific T&A Mode. Examples of attendance types are: Work, Exit on duty, On-demand leave, etc.
Absence type – definition of employee daylong absence which depending on system configuration is included into work time or not.
Overtime type – predefined list of 5 overtime definitions. The software calculates overtime based on rules which are defined for calendar day types.
Calendar day type – definition of working day which specifies range of working hours, daily work time and additional elements such as late entries, work time rounding, overtime, etc. Each calendar day type defines also night working hours, obligatory breaks and time limts for selected attendance types. RCP Master 3 software enables flexible defining of working time by operator.
Calendar – yearlong pattern consisting of calendar day types and defining employee expected attendance in work. The calendar is compared with T&A events to calculate working time. Multiple calendard can be configured in RCP Master 3 software and then assigned to various employees. Calendard are configured separately for every calendar year.
Group – employee group which works according to the same calendar. Each group can include many employees. Group can be named and assigned with the same calendar.
T&A ID – identification number which is assigned to employee. The number must be unique as it is used to distinguish employees in the system. This rule must be followed even in case of dismissed employees. Therefore it is recommended to use unique citizen ID number or a number based on birth date and some other digits. T&A ID can contain digits and letters.
Operator – person who can use RCP Master 3 software. Operator must authenticate when software is started and based on assigned roles, the operator can access various parts of the software. The special operator is ADMIN who has all possible permissions. ADMIN operator is automatically created when the system is configured. By default ADMIN password is empty.

3. SOFTWARE FUNCTIONS

3.1. Configuration menu

Configuration menu commands are described in subsections below.

3.1.1 Groups

The window consists of two parts – the top one includes list of employee groups while the bottom one includes employees belonging to selected group.

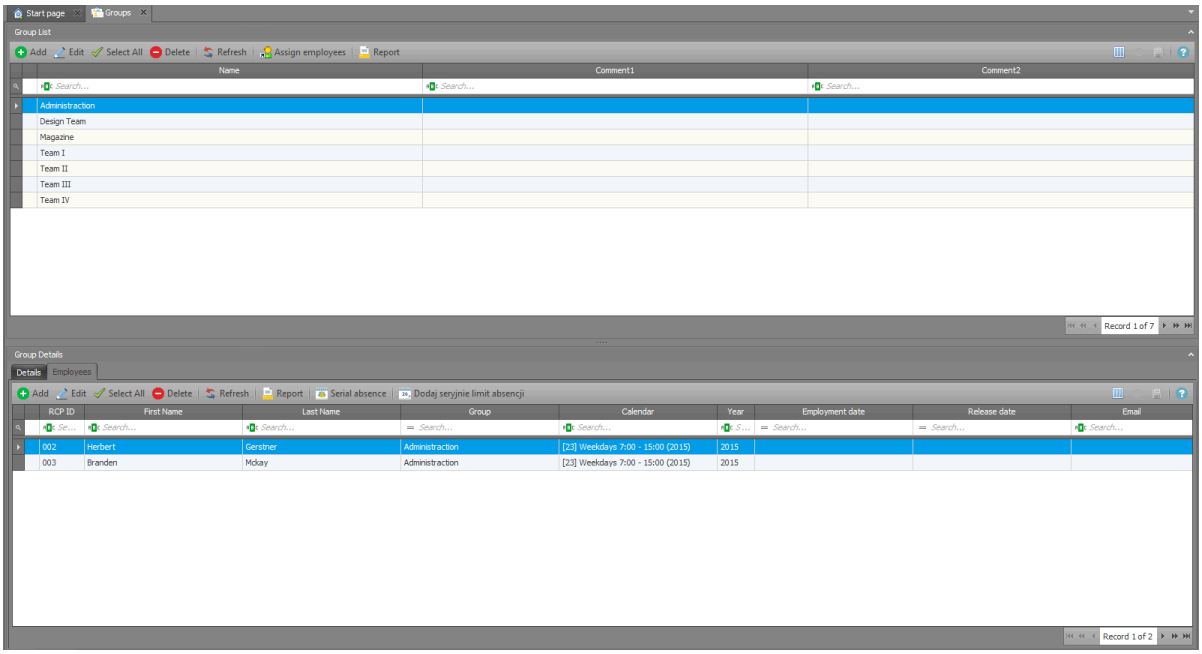


Figure 8. Groups window

Elements on the list can be added, edited and deleted. Additonally such commands as REFRESH, ASSIGN EMPLOYEES and REPORT are available.

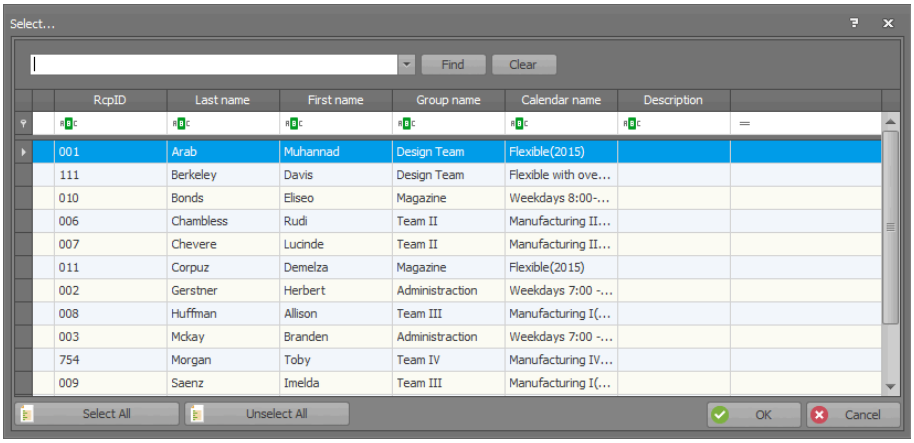


Figure 9. Assign employees window

3.1.2 Employees

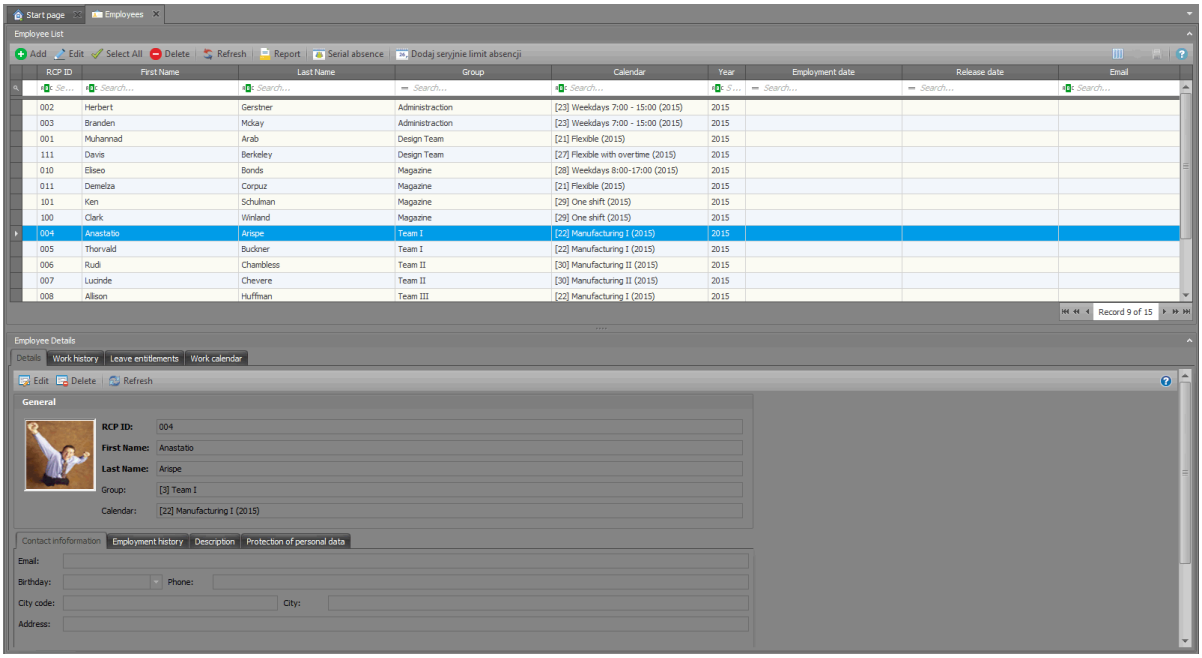


Figure 10. Employees window

In the bottom part of the screen, four tabs are available:

DETAILS

Following data can be accessed in DETAILS tab (fig. 10):

- **Photo** — employee photo (when photo is assigned to employee then it is downsized to limit database overload). Photo and other data are kept in currently edited data file.
- **T&A ID** — employee unique ID. In RCP Master 3 software, each employee is identified by this number and there can be employees with the same first and last names. When employee last name is changed, it does not affect the software as long as T&A ID remains unchanged.
- **First and Last name**
- **Group** — employee can be assigned to groups to facilitate assignment of calendars and reporting.
- **Calendar** — defines expected attendance of employee. Based on calendar and T&A Events the attendance is calculated and reported.
- **Contact information** — (optional) employee personal data
- **Employment history** — (optional) affects attendance calculations e.g. if report is generated for January and employee worked only two weeks then it is necessary to fill the last working date to prevent wrong reporting of two weeks absence.
- **Description** — additional information
- **Protection of personal data** – (optional) fields related to legal requirements for personal data protection of employee.

WORK HISTORY

The tab includes attendance calculations for employee in a configurable date range. The name of calendar and date range are displayed in the top. Date range can be limited to particular month of a year or it can be defined in details. When date range is defined then the software will calculate employee attendance respectively.

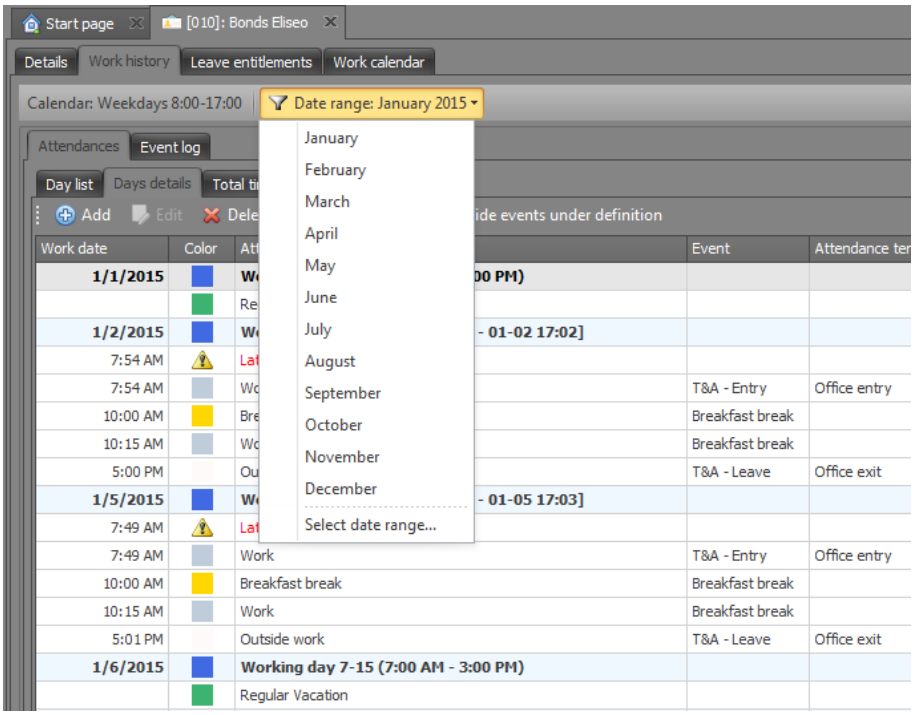


Figure 11. Date range selection

Work history includes Attendances (calculations) and Event log (employee related events) tabs. The employee attendance result can be displayed in following views:

Day list

The most general view of employee attendance including list of days, total time and calculated time. On the right a calendar is displayed including colours which correspond to Attendance types and Absence types. The summary of calculations is given in the bottom (calendar and calculated working hours, balance, late entries, early departures and information on night hours, overtime, holidays etc.)

Days details

This view includes information which is available in **Day list** view. Additionally each day is divided chronologically into attendance times based on assigned calendar and T&A events so it includes breaks, work time, overtime etc. Late entries, early departures and other discrepancies against the calendar are marked with yellow exclamation mark icon and they include comments. The same icon is used on calendar which is located on the right. When day is selected then the list is scrolled respectively.

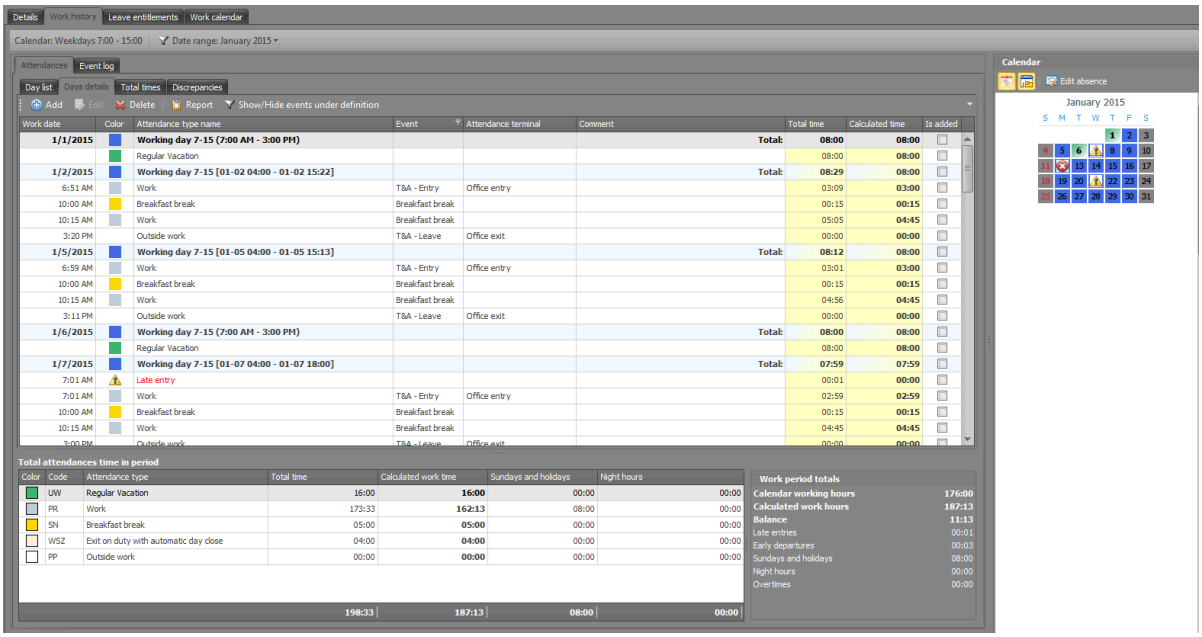


Figure 12. Days details view

Total times

This view includes information included in **Days details** view. Additionally each day includes total times for particular T&A Modes e.g. cigarette break, break, worktime, etc.

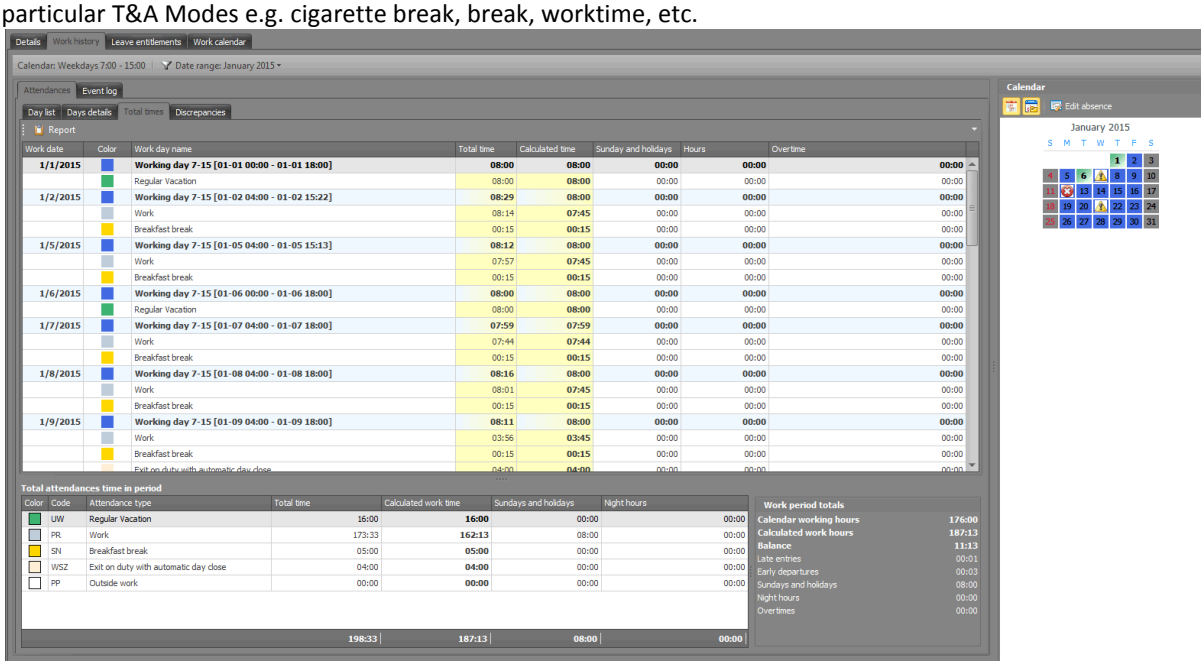


Figure 13. Total times view

Discrepancies

This view includes all discrepancies between actual user attendance and valid calendar (late entries, early departures, breaks). In the example below there are late entry on 7th November and early departure on 21st January.

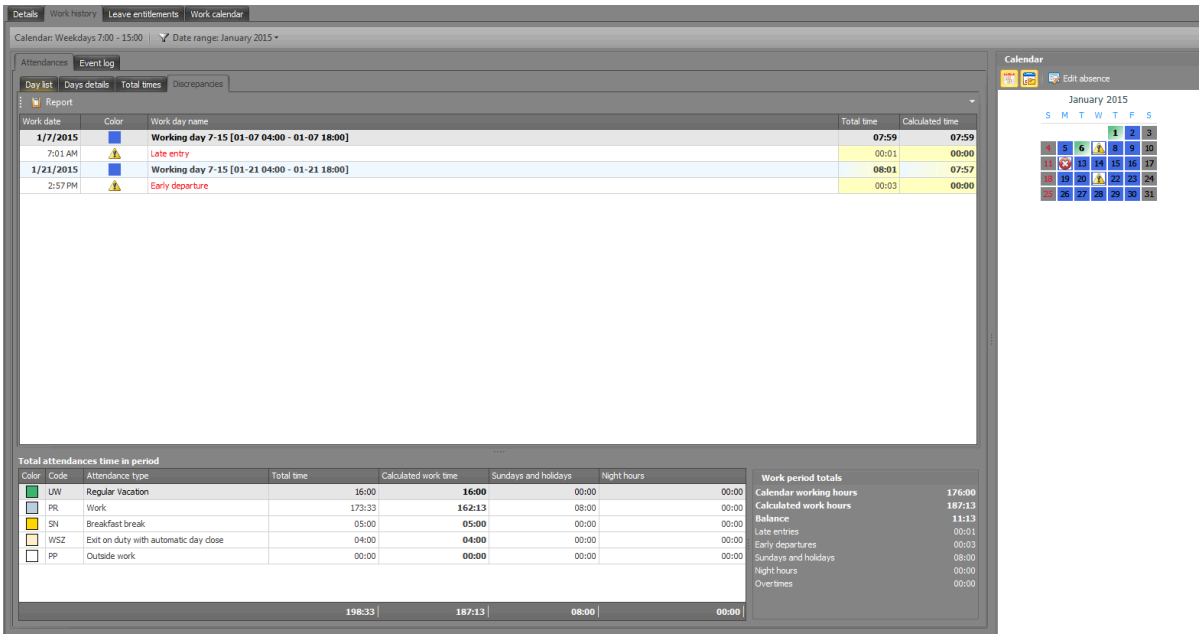


Figure 14. Discrepancies view

LEAVE ENTITLEMENTS

Usually employees are entitled to paid and unpaid leaves according to labour code. In **Leave entitlements** tab (fig. 15) it is possible to define number of days for paid and unpaid leaves (the list of such leaves is defined in ABSENCE TYPE menu). Additionally the number of used days and remaining days for each type of leave. The software enables serial defining of leaves for multiple employees at once. The option is available inthe top menu of EMPLOYEE LIST window.

It is necessary to define due Regular vacation and Vacation on request separately despite the fact that according to Polish labour code the Vacation on request is counted in Regular vacation limit. The column Left from previous specifies the number of Regular vacation days from previous year and it is automatically filled when calendar is assigned in current year. In case of Regular vacation and Vacation on request, the column Day count in year is completed automatically with the number of due days from previous year.

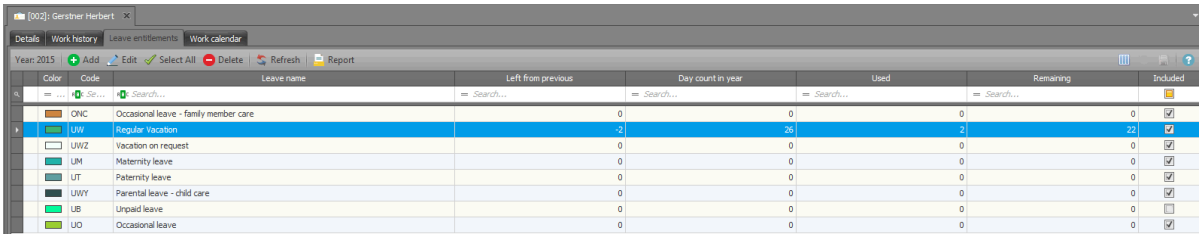


Figure 15. Leave entitlements tab

WORK CALENDAR

Calendar is a list of rules which are used to calculate employee attendance in the days of current year. Calendars can be assigned to employee groups and to individual employees (fig. 16). In case of unplanned situations e.g. employee exchange, work off, etc. it is possible to manually modify records in the work calendar.

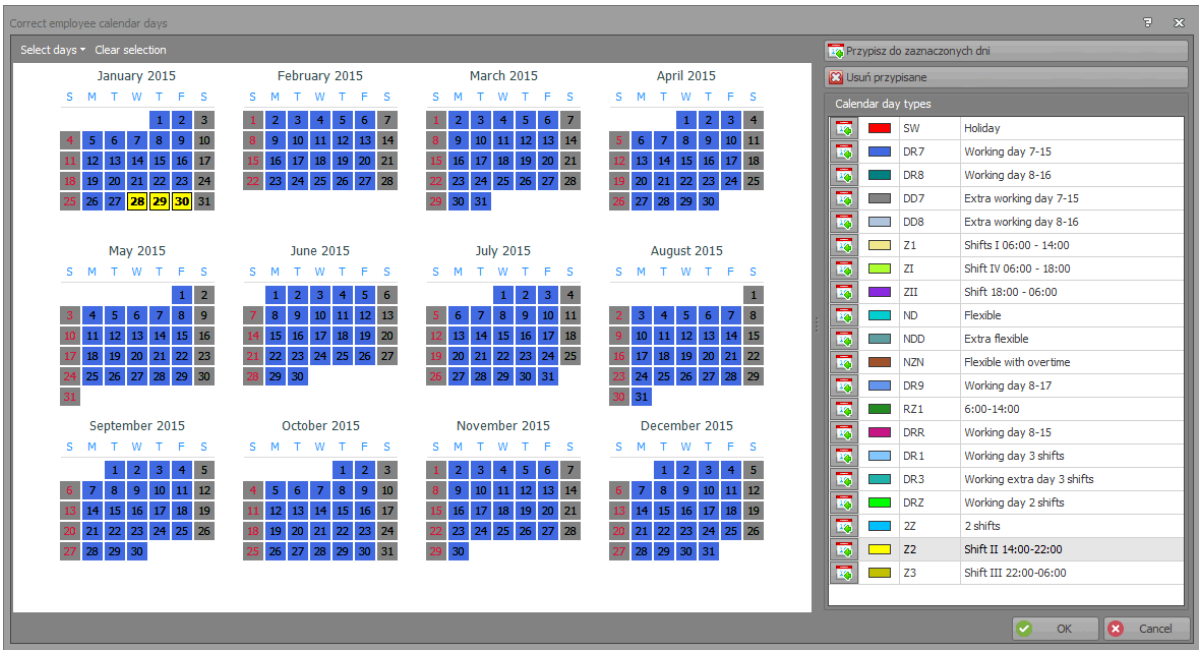


Figure 16. Employee calendar

In order to modify the calendar, select the buton CORRECT EMPLOYEE CALENDAR DAYS. Modified days are marked in colour (see 7-9th January). In order to display unmodified calendar, select one of VIEW icons. Modified calendar days replace original calendar days.
CORRECT EMPLOYEE CALENDAR DAYS command is also available from the level of WORK HISTORY tab when particular day is double clicked with left mouse button. Modified calendar days are marked with frame.

3.1.3 Attendance types

Attendance types are used to specify type of employee attendance in particular period. Attendance type concerns period during employee work day. Exemplary attendance types are: Work, Exit on duty, Breakfast break, etc. System operator can define own attendance types.
Details tab in attendance types window includes following data:

- **Code** — unique number of attendance type.
- **Name** — name of attendance type.
- **T&A Mode** — defines T&A Mode of event which starts attendance type (e.g. 'Entry' mode starts 'Work' attendance type, 'Exit on-duty' mode starts 'Exit on duty' attendance type, etc.
- **Color** — attendance type color used in calendar.
- **Include in working hours** — specifies if the attendance type is included in work time (e.g. Breakfast break is included in work time while Lunch break is not.
- **Break** — specifies if the attendance type is a break i.e. it is shown in the list of employee obligatory breaks.
- **Description** — field for additional information.

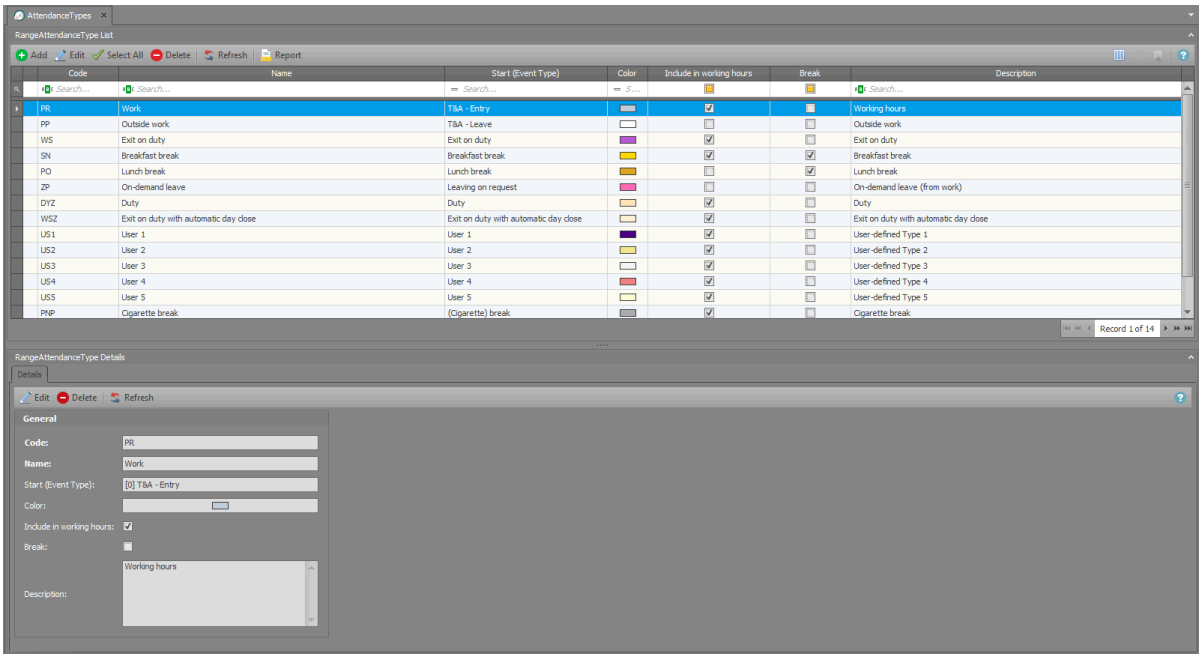


Figure 17. Attendance types window

3.1.4 Absence types

Absence types are used to specify type of employee absence in particular period. Absence type concerns the whole work day of employee. The parameter Include in working hours determines if the absence is counted as work time or not. Parameter Leave determines if the absence is displayed on the list of Leave entitlements.

An absence is assigned to employee in work history by means of **Edit absence** button. The RCP Master software enable serial editing of absences for multiple employees at once. This command is available in the top menu of EMPLOYEE LIST window.

3.1.5 Overtime types

Five predefined overtime types are included in the software. The overtime is calculated dynamically according to rules in CALENDAR DAY TYPES.

3.1.6 Calendar day types

Calendar day type specifies work template (schedule) in particular day e.g. work day from 8:00 am to 5:00 pm with unpaid lunck break from 12:00 pm to 1:00 pm. Calendar day types are used to configure calendars. Work calendar is defined by assignment of day types for all week days e.g. for all days from Monday to Friday there can be assigned Working day 8-16. More information on calendards is given in calendars section.

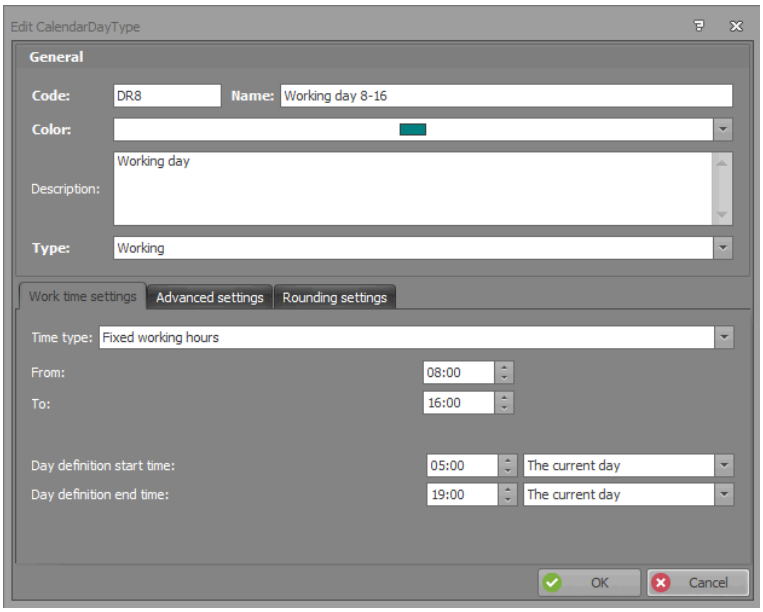


Figure 18. Calendar day types window

General settings for calendar day type include:

- **Code** – unique number of calendar day type.
- **Name** – name of calendar day type.
- **Color** – calendar day type color used in calendar.
- **Description** – field for additional information.
- **Type** – it can have following values: Working (obligatory attendance at work); Extra working (optional, not obligatory attendance at work); Holiday; Day off (not considered for attendance calculations).

Additionally, following tabs are available:
Work time settings – includes options related to work time calculations and reporting on discrepancies against calendar:

- **Time type** – following values are available: **Fixed working hours** (work in specified from – to hours); **Flexible working hours** (work in unspecified time frames with possible defining of daily hours limit); **Shifts** (defined by selection of the number of shifts and first shift start time; the maximal number of shifts is four).
- **Day definition start time** – specifies the earliest time for employee entry to work. If employee comes before this time then depending on selected option it will be treated as entry beyond calendar day type or it will be included in the previous day. This parameter is used to define when working day starts as it doesn't have to be at 12:00 am.
- **Day definition end time** – specifies the latest time for employee departure from work. If employee leaves after this time then depending on selected option it will treated as exit beyond calendar day type or it will be included in the next day. This parameter is used to define when working day ends as it doesn't have to be at 12:00 am.
- **The current day** – parameter of day definition which specifies that early entries and late departures should be included in the current day.
- **The previous day** – parameter of day definition which enables to include early entries to the previous day.
- **The next day** – parameter of day definition which enables to include late departures to the next day.

Advanced settings

- **Sunday and holiday begin time** – enables to define when holiday starts and ends e.g. from 6 am on Sunday to 6 am on Monday.
- **Include early entries for fixed working hours from** – enables to define from when early entries will be included in working time. The parameter concerns fixed working hours and the time cannot be later than **From** parameter.

- **Include late departures for fixed working hours after** – enables to define to when late departures will be included in working time. The parameter concerns fixed working hours and the time cannot be earlier than **To** parameter.
- **Mark as late entry for fixed working hours after** – enables to define time after which late entries will be registered.
- **Mark as early departure for fixed working hours before** – enables to define time after which early departures will be registered.
- **Night hours (range)** – specifies time range for night working hours. Night working hours can be disabled completly.
- **Type of overtime calculations** – specifies if overtime calculations are based on fixed hours or flexible hours. Overtimes are further configured in **Overtime** tab when calendar day type is created.

Rounding settings
Settings in this tab are used to define how to round time for start of work and end of work. In the example below counting starts every 30 min and allowed arrival/departure margin equals to 5 min. It means that if an employee comes to work before 8:05 am then it will be rounded to 8:00 am but if an employee comes to work between 8:06 and 8:35 am then it will be rounded to 8:30 am. Similarly if employee leaves before 3:55 pm then it will be rounded to 3:30 pm but if employee leaves from 3:56 pm to 4:25 pm then it will be rounded to 4:00 pm. Rounded entry and departure hours in employee work history are marked with tilde e.g. ~ 8:00.

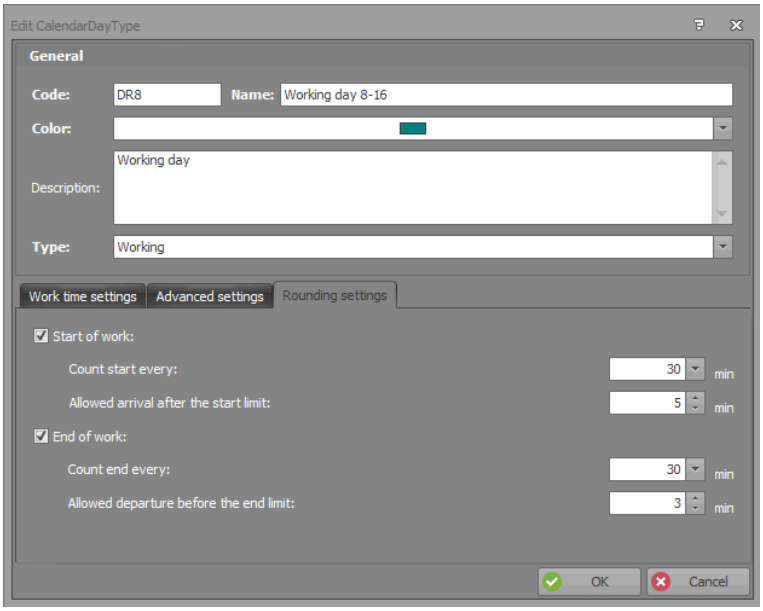


Figure 19. Rounding settings tab

Regulatory breaks
The tab enables definition of obligatory breaks e.g. breakfast break. Such breaks will be automatically included in working time in selected period.
If attendance type which is not included in working time is selected as regulatory break then such break time is substracted from daily hours limit.
NOTE! If T&A event (e.g. Exit) is registered during regulatory break then the software does not close the regulatory break.

Overtime
The tab enables definition of overtime periods. In the first step **Type of overtime calculations** must be defined within properties of calendar day type in **Advanced settings** tab. The software will automatically calculate overtime based on defined rules. There are two methods for overtime calculations:

FIXED HOURS: specified by selection of From-To periods. The column Attendance type specifies the type of overtime in selected period (e.g. Overtime 50%, Overtime 100%, etc.)

FLEXIBLE HOURS: calculated dynamically (when certain number of working hours elapses). Defined by specifying the number of working hours after which overtime starts and by specyfing the minimal working hours which will trigger overtime.

Example:
In the first row below it is defined that after 8 hours of work, overtime will be applied e.g. if employee worked from 7:00 am to 4:00 pm then Overtime 50% would be started at 3:00 pm.
According to second row, when employee worked for 10 hours then Overtime 100% is started after 8 hours i.e. at 3:00 pm and 2 hours of Overtime 50% are replaced.

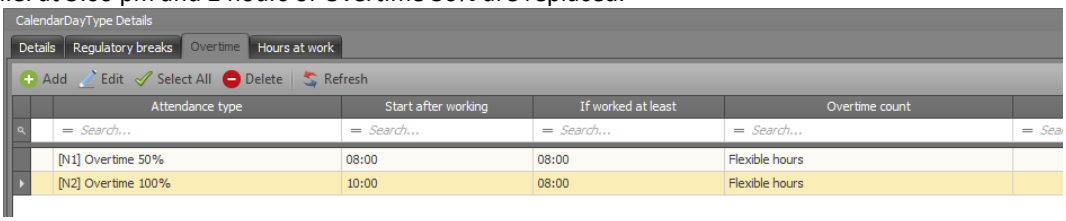


Figure 20. Flexible hours overtime.

In the window below the report for exemplary overtime flexible hours is presented.

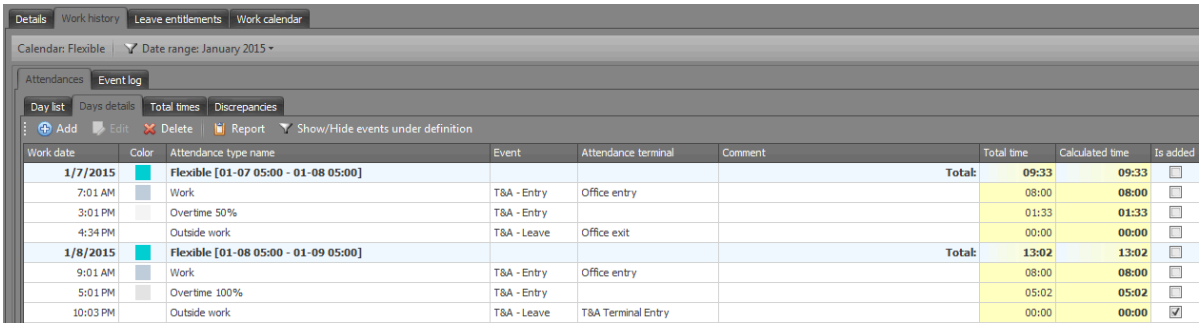


Figure 21. Work history for flexible hours overtime

NOTE! If only one row with flexible hours overtime is defined where required minimal hours parameter is greater than time required for overtime applying then work time calculation is extended by the difference between these two values.

Hours at works
The tab enables definition of limits for selected attendance types e.g. it is possible to define maximal total time for cigarette breaks, lunch breaks, etc.
Additionally when the option **Not count when above max** is enabled then the limit is imposed on particular attendance type. In such case when the time for this attendance type is greater than maximal value then it is subtracted from working time.

Example:
If the **Max** time for breakfast break attendance equals to 10 min and the option **Not count when above max** is enabled and employee spends 30 min on breakfast break then the software will deduct 20 min from working time i.e. employee who was 8 h in work will have 7 h 40 min working time reported.
If employee leaves multiple times for breakfast break then the limit resulting from the option **Not count when above max** is applied to the sum of breakfast breaks.
The **Min** parameter is used to alert when employee did not spend enough time at particular attendace type but it does not affect employee working time.

NOTE! If the option **Not count when above max** is enabled for working type attendance type then it affects only this type of attendance. If there are breaks which are included in working time (e.g. exit on-duty, breakfast break)) then they are not included in attendance time.

3.1.7 Calendars

When calendar (figure 22) is selected then in **Date list** tab there is presented legend explaining all colors used in calendar.

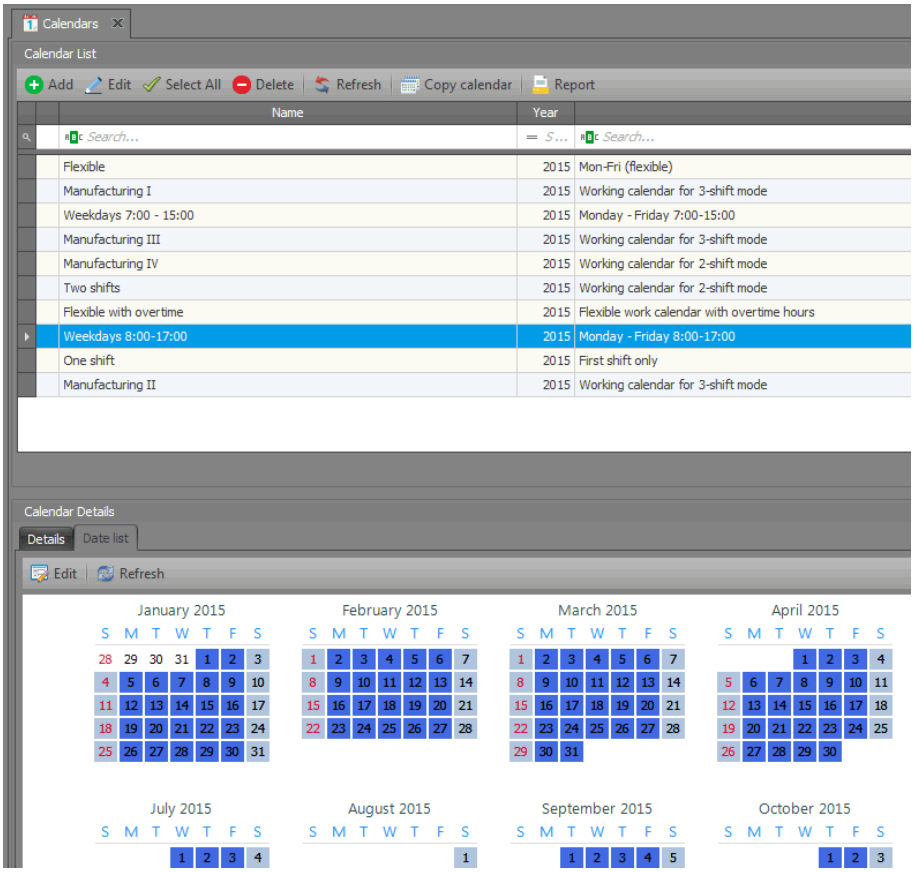


Figure 22. Calendars window

The calendar can be modified by selection of EDIT button. On the right there is legend with calendar day types that can be applied. Assignment can be done by selection of particular day(s) with left mouse click and then right mouse clicking and selection of particular calendar day type from the list. In order to remove the assignment select the command UNASSIGN SELECTED DAYS from the list. In the top menu there is INSERT HOLIDAYS command. When expanded then predefined national holidays can be selected and assigned to the calendar.

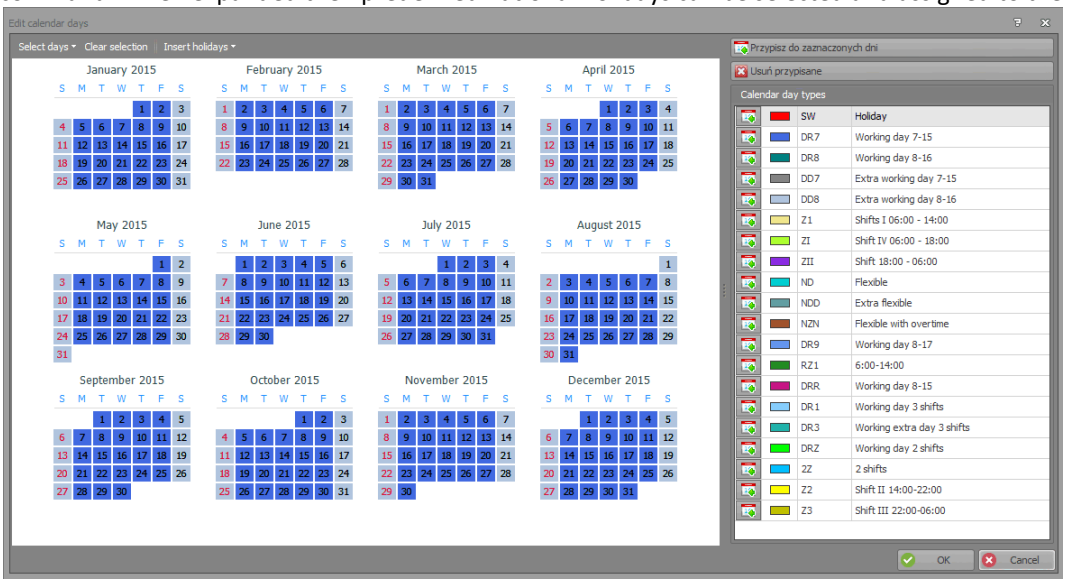


Figure 23. Edit calendar days window

In order to facilitate selection of days in calendar according to certain rule (e.g. all Mondays in August) the command SELECT DAYS in top menu can be used (figure 24).

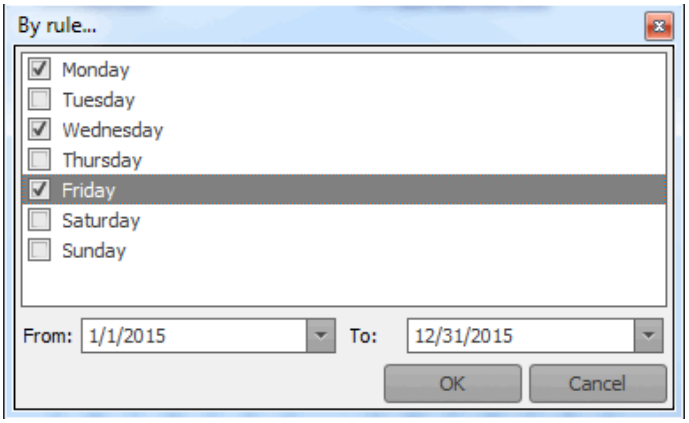


Figure 24. Selection of days in calendar

3.1.8 T&A Modes

RCP Master 3 software is using events with T&A Modes (e.g. Entry, Exit, Exit on-duty) to determine attendance types of employees when they identify at T&A terminals.
In case of autonomic mode, T&A Modes are configured on the level of terminals by means of RCP Master 3 software. In cooperative mode, T&A Modes are configured on the level of terminal by means of VISO (RACS 5) or PR Master (RACS 4) software.
Some T&A Modes offer unique features which affect the software:

- **[0] Entry** – this mode by default starts employee working day.
- **[16] Exit** – this mode by default ends employee working day.
- **[25] Release of employee** - this mode by default ends employee working day.
- **[150] Business exit with automatic closing** – this mode be default ends employee working day and additionally in case of fixed hours it includes time between actual exit and expected exit while in case of flexible hours it completes daily hour limit.

Own T&A Modes can be configured in RCP Master 3 software. When **Entry type** or **Exit type** option is selected then the mode respectively starts or ends working day.

3.1.9 Event log

Events in the log are displayed chronologically. The list can be filtered and sorted by left and right clicking of column headers. In the bottom, details are displayed including employee T&A ID, first name, last name, photo (if assigned), group, logging time, terminal and T&A Mode. Additionally there are two flags to inform if the event was added or deleted by operator. When previously imported event is deleted in RCP Master 3 then the event is not removed completly but it is crossed and grey. Such event can be undeleted by means of button UNDELETE. Event which was added in RCP Master 3 can be deleted completly. Operator added events can be edited.

3.2. Reports menu

The main purpose of the software is to generate reports on employees attendance based on registered events with T&A Modes. Correct calculations require T&A data to be complete i.e. entry-exit pairs of events must be included. The software can detect missing events (TOOLS/T&A DATA VERIFICATION button) and highlight missing data in each report (red exclamation mark and comment). In such case the operator must enter missing elements – e.g. add absence or add T&A event in employee WORK HISTORY.

3.2.1 Report generators group

Various reports for employee work history are presented below. The software enables report generating for all kinds of data including report on leaves entitlement within a year (i.e. actual status of holiday takings). Reports can be generated in each window by selecting REPORT command (e.g. in Employees window) and by means of Report generator if more complex reporting is required. The generator can be used for group

reports (all employees, selected employee groups) and individual reports (selected employees). Reports can be automatically send in PDF format to email addresses specified in employee properties. Email server can be configured by selection of OPTION icon in the top menu CONFIGURATION tab. The example of report generator use is given below. The generator is available after selection of REPORT GENERATOR icon in the top menu REPORTS tab.

Step 1. Selection of report types.
Step 2. Selection of time range.
Step 3. Selection of employee groups.
Step 4. Selection of report options: group report or individual report.
Step 5. Selection of destination path and file format.
Step 6. Report saving to file.
Step 7. Report displaying.

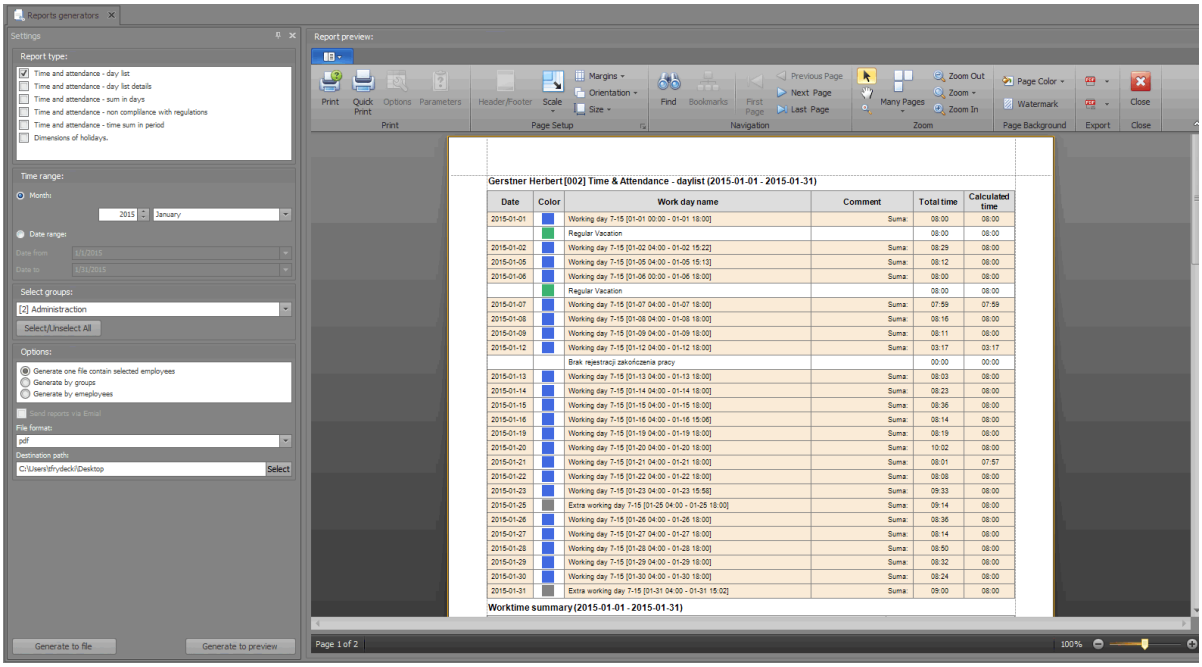


Figure 25. Report generator

The software enables data export to third party systems such as: RESET2 - R2płatnik, COMARCH - OPTIMA, Sage - Symfonia and Soneta - Enova. The process includes following steps after selection of DATA EXPORT GENERATOR icon in the top menu REPORTS tab.

Step 1. Selection of time range for reports.
Step 2. Selection of employee groups.
Step 3. Selection of report types.
Step 4. Selection of destination path and file format.
Step 5. Report saving to file.
Step 6. Report displaying.

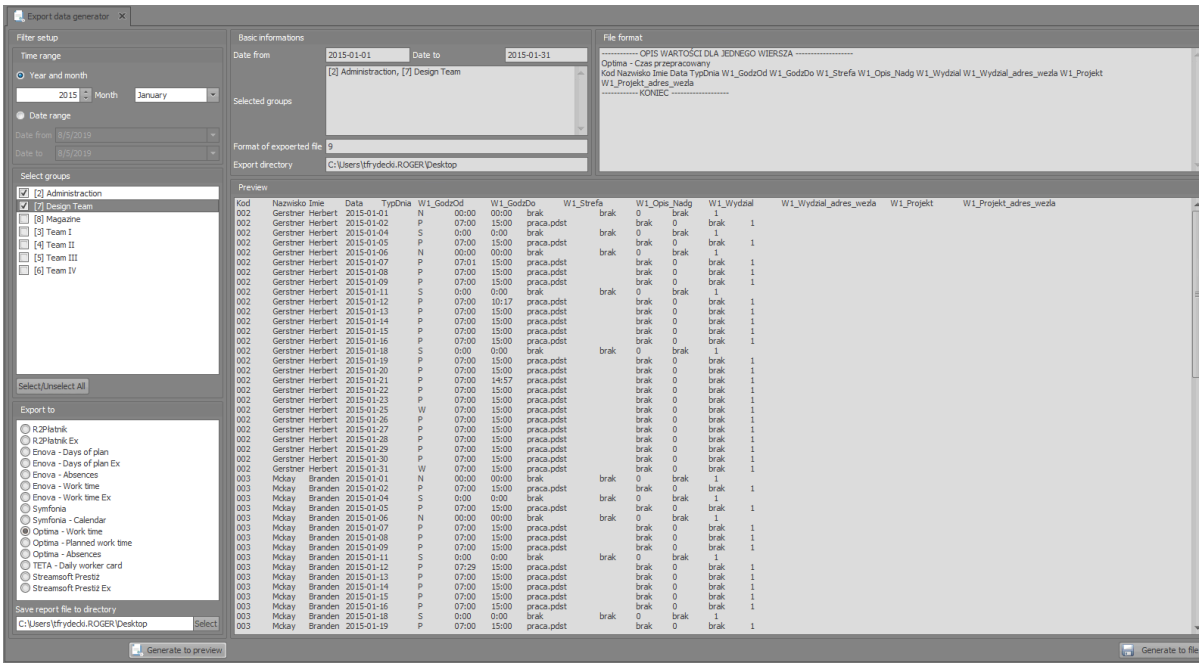


Figure 26. Data export generator

3.2.2 Reports centre group

The software enables to generate not only predefined reports by means of REPORT GENERATORS but also customized reports by means of REPORTS CENTRE group after selection of REPORTS tab in the top menu. REPORTS CENTRE enables to generate reports based on operator definition in specific time range – e.g. when particular month is accounted. Therefore reports from REPORT CENTRE when generated for particular definition are independent from further modification of calendars, options, etc. because when generated for the first time the data source scheme is created. Typical procedure in the REPORT CENTRE is as follows:

Step 1. Select REPORT DEFINITIONS in REPORT CENTRE and then Add to create the definition.
Step 2. Select Calculate to create data source.
Step 3. Select GROUP REPORTS or INDIVIDUAL REPORT in the top menu.
Step 4. Select previously created Report definition.
Step 5. Select columns which will be used in the report or use one of predefined templates.
Step 6. Print to view and save the report.

More detailed information on the procedere is given below:

Report definition

When REPORT DEFINITIONS window is opened then select Add to create the definition including its name, time range and headers. The name should be descriptive so the source of data would be clearly recognizable.

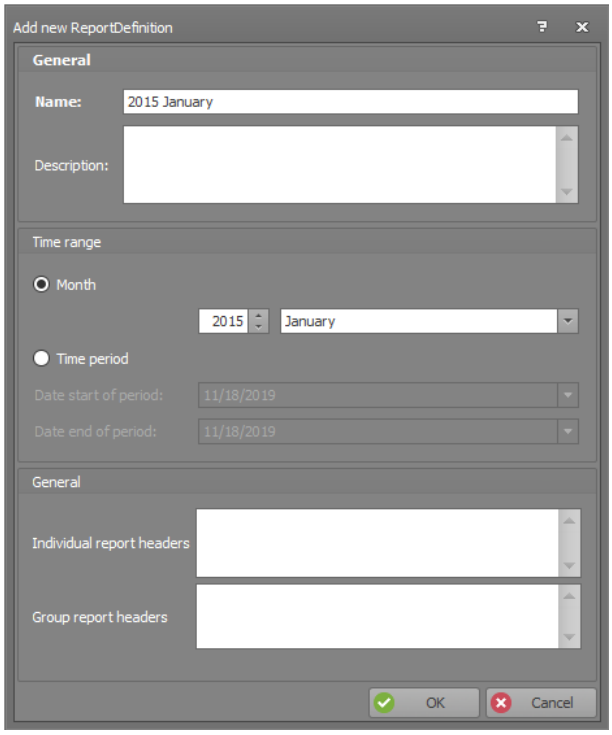


Figure 27. Report definition

Then in REPORT DEFINITION DETAILS (in the bottom) select GROUPS tab and then Assign button to select Employee groups for the definition.

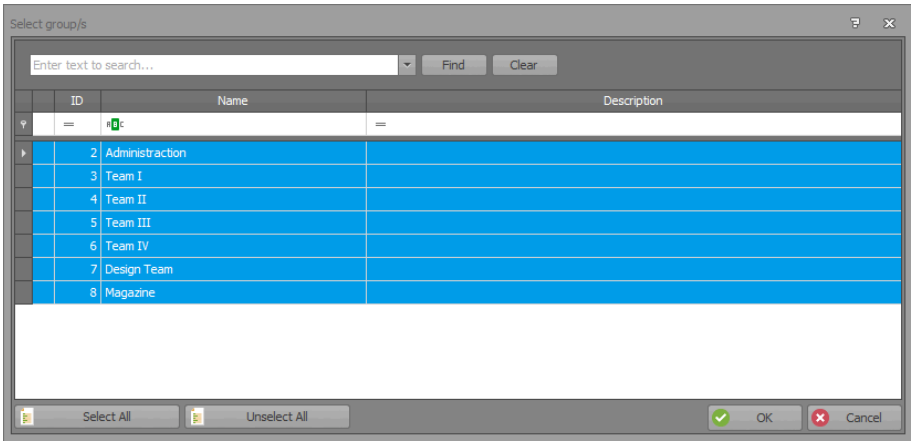


Figure 28. Selection of Groups for Report definition

When Calculate button is selected for Report definition then data source for reports in REPORT CENTRE is created and progress is shown.

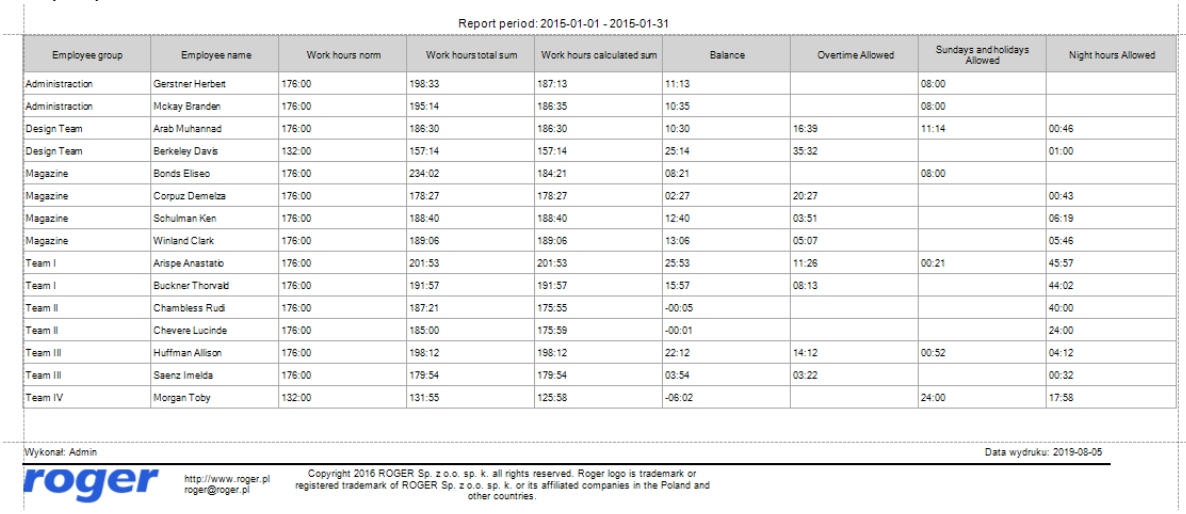
Note: The time required to calculate data source of the definition depends on the number of employees and time range. In order to shorten the calculation time there can be specified separate definitions for each Employee group.

Report types

REPORT CENTRE enables creating of customized Group reports and Individual Reports according to operator requirements. The software operator can select columns for report, apply one of predefined templates or create own template.

Two types of reports are available in the current version of REPORT CENTRE.

Group report



Report period: 2015-01-01 - 2015-01-31

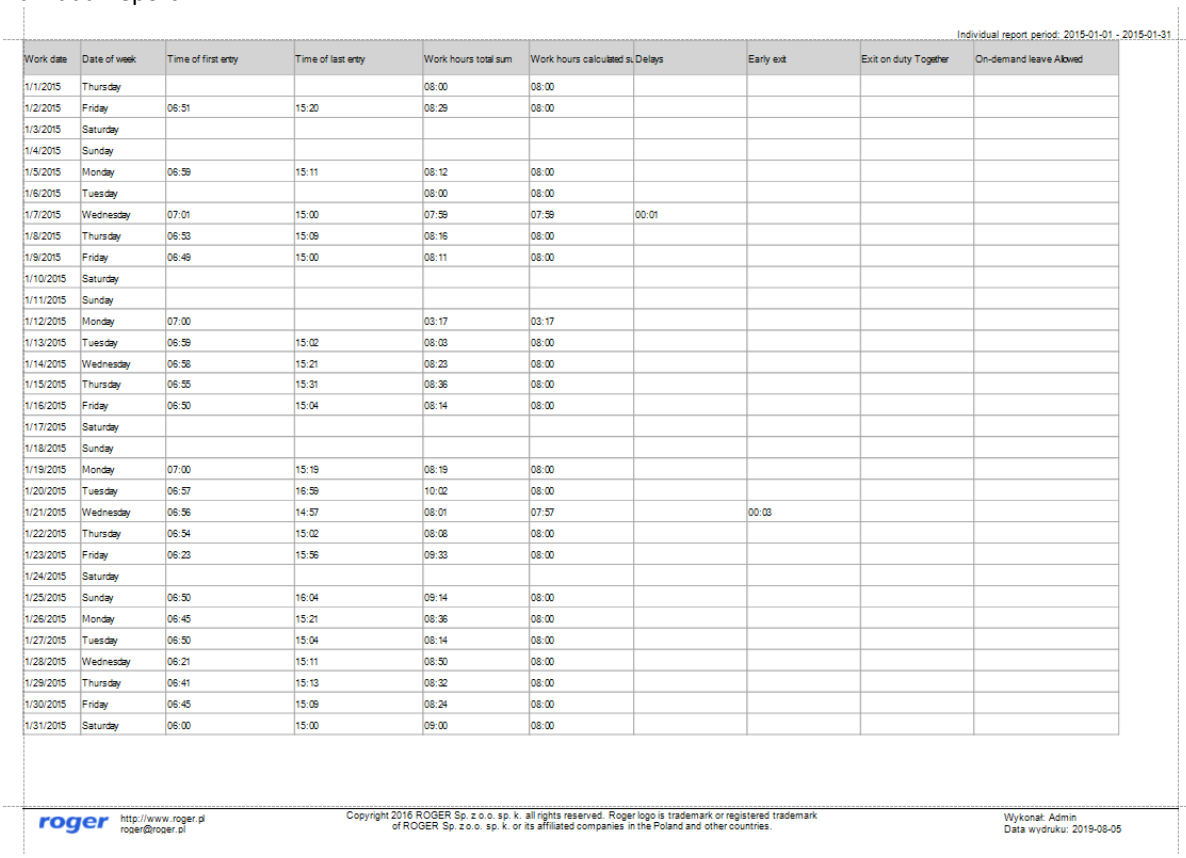
Employee group	Employee name	Work hours norm	Work hours total sum	Work hours calculated sum	Balance	Overtime Allowed	Sundays and holidays Allowed	Night hours Allowed
Administraction	Gerstner Herbert	176:00	198:33	187:13	11:13		08:00	
Administraction	Mckay Branden	176:00	195:14	186:35	10:35		08:00	
Design Team	Arab Muhannad	176:00	186:30	186:30	10:30	16:39	11:14	00:46
Design Team	Berkeley Davis	132:00	157:14	157:14	25:14	35:32		01:00
Magazine	Bonds Eliseo	176:00	234:02	184:21	08:21		08:00	
Magazine	Corpuz Demelza	176:00	178:27	178:27	02:27	20:27		00:43
Magazine	Schulman Ken	176:00	188:40	188:40	12:40	03:51		06:19
Magazine	Winland Clark	176:00	189:06	189:06	13:06	05:07		05:46
Team I	Arispe Anastatio	176:00	201:53	201:53	25:53	11:26	00:21	45:57
Team I	Buckner Thorvald	176:00	191:57	191:57	15:57	08:13		44:02
Team II	Chambless Rudi	176:00	187:21	175:55	-00:05			40:00
Team II	Chevere Lucinde	176:00	185:00	175:59	-00:01			24:00
Team III	Huffman Allison	176:00	198:12	198:12	22:12	14:12	00:52	04:12
Team III	Saenz Imelda	176:00	179:54	179:54	03:54	03:22		00:32
Team IV	Morgan Toby	132:00	131:55	125:58	-06:02		24:00	17:58

Wykonał: Admin Data wydruku: 2019-08-05

Figure 29. Example of Group report

Operator can select columns from the range of defined attendance types, absence types and overtime types. Columns can be added to the report by dragging it to the main window. In the bottom line of report the operator name and report date are included.

Individual report



Individual report period: 2015-01-01 - 2015-01-31

Work date	Date of week	Time of first entry	Time of last entry	Work hours total sum	Work hours calculated s	Delays	Early exit	Exit on duty Together	On-demand leave Allowed
1/1/2015	Thursday			08:00	08:00				
1/2/2015	Friday	06:51	15:20	08:29	08:00				
1/3/2015	Saturday								
1/4/2015	Sunday								
1/5/2015	Monday	06:59	15:11	08:12	08:00				
1/6/2015	Tuesday			08:00	08:00				
1/7/2015	Wednesday	07:01	15:00	07:59	07:59	00:01			
1/8/2015	Thursday	06:53	15:09	08:16	08:00				
1/9/2015	Friday	06:49	15:00	08:11	08:00				
1/10/2015	Saturday								
1/11/2015	Sunday								
1/12/2015	Monday	07:00		03:17	03:17				
1/13/2015	Tuesday	06:59	15:02	08:03	08:00				
1/14/2015	Wednesday	06:58	15:21	08:23	08:00				
1/15/2015	Thursday	06:55	15:31	08:36	08:00				
1/16/2015	Friday	06:50	15:04	08:14	08:00				
1/17/2015	Saturday								
1/18/2015	Sunday								
1/19/2015	Monday	07:00	15:19	08:19	08:00				
1/20/2015	Tuesday	06:57	16:59	10:02	08:00				
1/21/2015	Wednesday	06:56	14:57	08:01	07:57		00:03		
1/22/2015	Thursday	06:54	15:02	08:08	08:00				
1/23/2015	Friday	06:23	15:56	09:33	08:00				
1/24/2015	Saturday								
1/25/2015	Sunday	06:50	16:04	09:14	08:00				
1/26/2015	Monday	06:45	15:21	08:36	08:00				
1/27/2015	Tuesday	06:50	15:04	08:14	08:00				
1/28/2015	Wednesday	06:21	15:11	08:50	08:00				
1/29/2015	Thursday	06:41	15:13	08:32	08:00				
1/30/2015	Friday	06:45	15:09	08:24	08:00				
1/31/2015	Saturday	06:00	15:00	09:00	08:00				

Wykonał: Admin
Data wydruku: 2019-08-05

Figure 30. Example of individual report

Operator can select columns from the range of defined attendance types, absence types and overtime types. Columns can be added to the report by dragging it to the main window. In the bottom line of report the operator name and report date are included.

3.3 Administration menu

In this menu new operators of RCP Master 3 software can be configured and existing ones can be modified. Operators can be assigned with multiple Roles and Employee groups. Role defines what elements of the software are available to the operator with the role.

3.4 Tools menu

In this menu the command **T&A data verification** is located. The command can be used to verify if entry-exit pairs are complete. The messages as in figure 31 can be edited in order to correct T&A data.

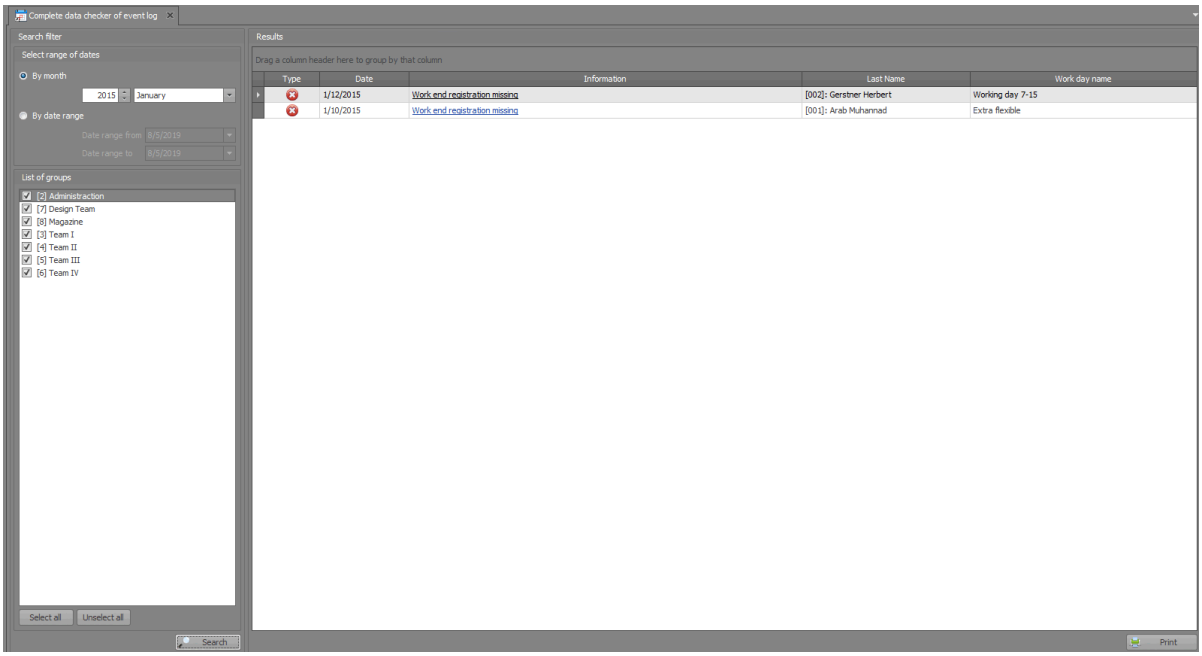


Figure 31. T&A data verification

Contact:
Roger sp. z o.o. sp. k.
82-400 Sztum
Gościszewo 59
Tel.: +48 55 272 0132
Faks: +48 55 272 0133
Pomoc tech.: +48 55 267 0126
Pomoc tech. (GSM): +48 664 294 087
E-mail: biuro@roger.pl
Web: www.roger.pl