

ConSELPLUS Software Configuration – ConSEL Client.



System version: 7.x

Document version: 1.5

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Contents

1.	Introduction.....	6
2.	Software and hardware requirements.....	7
3.	System architecture.....	8
3.1.	Radio server module – server.....	8
3.2.	ConSEL PLUS Client – system client.....	8
4.	ConSEL Plus Client module – ConSEL PLUS system client.....	10
4.1.1.	Basic tabs.....	12
4.1.2.	Radio windows.....	13
4.1.3.	Other.....	13
5.	Application users.....	20
5.1.	Application users – creating user accounts.....	20
5.2.	Application users – granting feature permissions.....	21
5.3.	Cloning user account configurations.....	23
5.4.	Cloning of user account permissions / settings.....	24
6.	Objects.....	25
6.1.	Object editor.....	25
6.2.	Configuration of monitored GPS objects.....	25
6.3.	Creating GPS objects manually.....	25
6.4.	Creating GPS objects automatically.....	28
7.	Working screen.....	30
7.1.	Configuring a dedicated user working screen.....	30
8.	Administration – radio console configuration.....	35
8.1.	Module type – NAI IPSite.....	37
8.2.	Module type – NAI CP(M).....	38
8.3.	Module type – NAI SFR.....	39
8.4.	Module type - Capacity Max.....	41
9.	Radio panel.....	42
9.1.	Radio panel – Radio contacts area.....	43

9.1.1.	Creating radio contacts automatically	44
9.1.2.	Creating radio contacts manually.....	46
9.1.3.	Creating a contact list from a list of GPS objects	49
9.1.4.	Importing contact list from file.....	50
9.1.5.	Configuration of radio contact list start options	51
9.2.	Radio panel – radio area.....	54
9.2.1.	Voice calls.	55
9.2.1.1.	Voice calls to all (All Call).....	55
9.2.1.2.	Making a group voice call.....	56
9.2.1.3.	Making an individual voice call.....	57
9.2.2.	Additional push-to-talk (PTT) buttons.....	58
9.2.2.1.	Editing additional PTT buttons	60
9.2.2.2.	Importing/exporting additional PTT buttons	62
9.3.	Radio panel – call history area.	62
9.3.1.	Call history.....	62
9.3.2.	Dispatcher chat.....	63
9.4.	Radio panel module – additional features	64
9.4.1.	Text messaging (SMS).....	65
9.4.2.	Defining text messages.....	66
9.4.3.	Sending an audio call (ringing)	67
9.4.4.	Monitoring (listening) the radio's surroundings	67
9.4.5.	Checking contact presence in the radio system.....	68
9.4.6.	Remotely blocking/unblocking user radios.....	69
9.5	Radio Panel in Capacity Max	71
10.	Change log.....	73

1. Introduction.

ConSEL PLUS software is an advanced dispatcher system designed to integrate various communication systems used on a daily basis by the control room personnel managing, monitoring and supervising the company's activities and operations.

ConSEL PLUS software allows for development of dispatcher systems in companies with a small number of dispatcher positions and a relatively small number of users of radio communication systems, as well as very complex and extensive (also geographically) systems integrating the company's multiple information exchange systems. Such a system may include tens of dispatcher positions, and the number radio communication system users can exceed 1,000.

The system provides integration and access from a single computer device (operator console) to DMR radio communication systems connected to it and used in daily operations.

The system allows for voice communications, data transmission (including statuses), remote control of repeaters, recording of communications, direct communication between dispatchers (dispatcher chat), transfer of calls between different communication systems (cross patch).

The system also allows for real-time visualisation and presentation on digital maps (publicly available or developed by the user) of the users' current location together with various types of additional information (movement speed and direction, status of defined and monitored sensors).

The system also has a reporting module allowing the user to generate various types of reports from the data collected and stored in the system.

The extensive system of user authentication and the ability to specify in detail the permissions for each user makes it a secure system, and the actions performed by users are recorded and fully accountable.

The ConSEL Plus software is based on AMBE software codecs. The AMBE+2 voice coding Technology embodied in this product is protected by intellectual property rights including patent rights, copyrights and trade secrets of Digital Voice Systems, Inc. This voice coding Technology is licensed solely for use within this DMR Communications Equipment. The user of this Technology is explicitly prohibited from attempting to extract, remove, decompile, reverse engineer, or disassemble the Object Code, or in any other way convert the Object Code into a human-readable form. U.S. Patent Nos. #8,595,002, #8,359,197, #8,200,497, and #6,912,495 B2.

2. Software and hardware requirements.

ConSEL PLUS is a fully scalable solution that can be adapted to the user's requirements, capabilities and expectations.

ConSEL PLUS software modules can be installed and run on a single computer, or they can be installed and configured to run in a client-server configuration.

The choice of system installation and configuration depends on user requirements and the expected number and size of ICT systems to be integrated.

ConSEL PLUS is developed using best programming practices and we make every effort to ensure that it has the lowest possible use of system resources.

ConSEL PLUS software can be installed and run on computers running Windows operating systems (Windows 10, Windows 11) in 64-bit versions.

The database system for the ConSEL PLUS software is created and managed using a relational database management system.

A dispatcher system built on ConSEL PLUS in its basic version, for a small dispatching system (2-3 operator consoles, up to 15-20 users/monitored objects) can be run on a standard office computer with a Pentium i3 class processor, 4 GB RAM, 500 GB HDD, equipped with a sound card (in case of using voice).

For more complex systems (several integrated radio communication systems, several or more dispatch consoles; e.g.: more than 500 users), primarily due to the need to correctly estimate the amount of data to be processed and stored, it is advisable to consult the hardware requirements

3. System architecture.

A dispatcher system built with ConSEL PLUS software has a modular design, with the individual modules and features of the application activated according to the user's needs.

For the proper operation of the ConSEL PLUS dispatching system, 2 basic and closely cooperating modules are required:

- radio server module
- ConSEL PLUS Client module (system client/operator console)

Depending on the user's needs and requirements, the system can be expanded with additional features and tools:

- call recorder
- raster map calibration module
- WWW gateway
- repeater network monitoring module

3.1. Radio server module – server.

The **radio server module** is responsible for ensuring data exchange between the dispatcher system and the radio communication infrastructure. It is also used for the detailed global configuration of the system regarding its interaction with map systems, the database system and the configuration of common parameters for other system modules.

Note: The configuration of the radio server module is described in detail in the document: " ConSELPLUS Manual – Radio Server".

3.2. ConSEL PLUS Client – system client.

ConSEL PLUS Client – the system operator console is designed primarily for operation of the radio communication devices available in the dispatcher system and the presentation of the data collected in the system's databases in a graphic or tabular manner.

This module is also used to configure the detailed settings of the objects located and presented on the map, and to manage users and their permissions in the system.

ConSEL PLUS Client also provides access to other modules, e.g. the call recorder module or the repeater diagnostics module.

Note: The configuration of the ConSEL PLUS Client module is described in detail in this document.

4. ConSEL Plus Client module – ConSEL PLUS system client.

Open the application from the Start menu / ConSEL PLUS group or from the desktop shortcut.

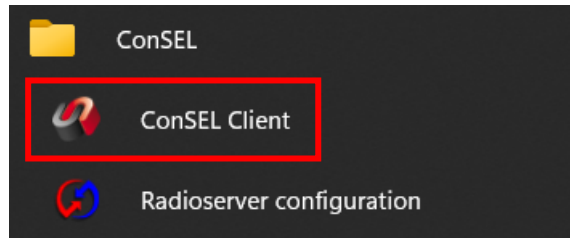


Fig 1 App icon

Enter your login and password to create a ConSEL administrator account, which you will later log in to



Fig 2 ConSEL PLUS login window

Note: Making of administrator account is forced when running ConSEL for the first time, administrator account is required for the program to function.

On start-up, the ConSEL PLUS system client application appears with a home screen, providing access to all key modules of the system.

The home screen navigation buttons allow for access to the Side Menu and return to the home screen after opening a tab or tabs.

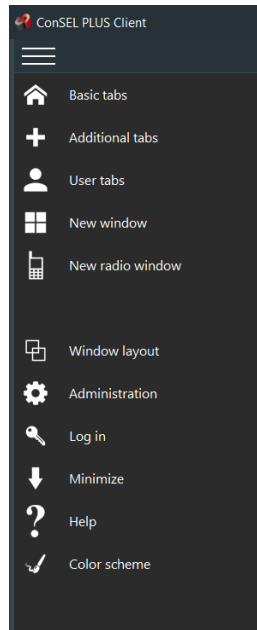


Fig 3 ConSEL PLUS menu

The home screen of the ConSEL PLUS Client module is divided into 3 areas of tiles acting as function buttons.

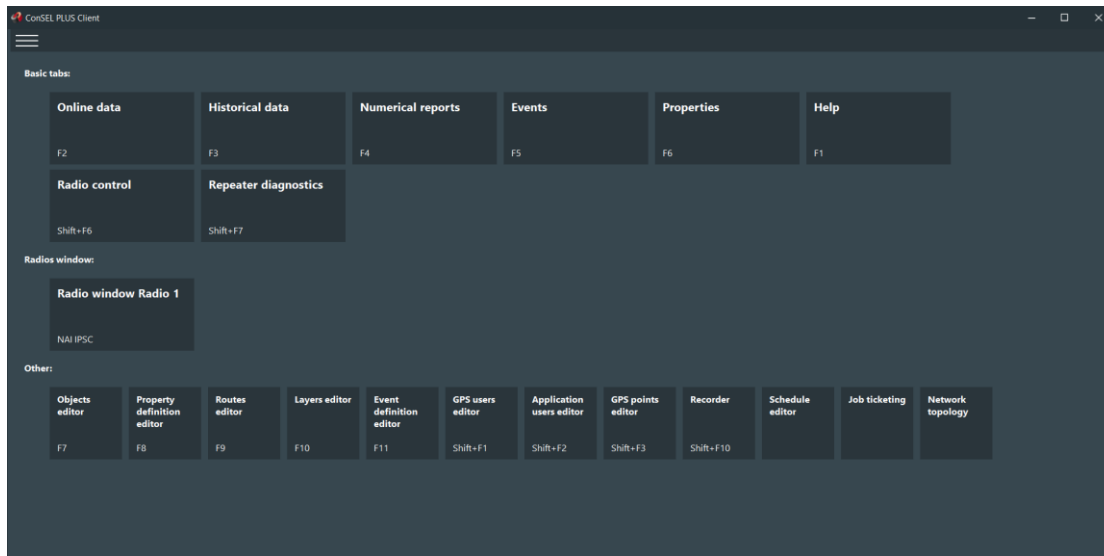


Fig 4 ConSEL PLUS tabs

Tabs (tiles)

4.1.1. Basic tabs.

A collection of function keys allowing for access to the most frequently used system modules opened in the form of successive tabs:

Current data.

Opens a tab containing a map module displaying the objects' location data and a tabular summary of the current information received from the monitored objects.

Archived data.

Opens a tab allowing for selection and filtering of archived data received from the monitored objects and a map module allowing the visualisation of their locations in the past.

Numerical reports.

Activates a tab allowing for generation of simple and complex tabular reports based on data from the monitored objects over a selected period of time and statistical reports related to the repeaters used.

Events

Activates a tab allowing for viewing current and historical events in the system and assigned to the monitored objects, e.g. powering on/off, exceeding a set speed, etc.

Properties

Activates the tab allowing you to view the configuration of monitored objects in tabular form.

Help

Opens the tab for accessing help files in pdf format.

Radio control

Activates the tab for operating the radio connected to the system and using it for communications in the radio network.

Repeater diagnostics

activates the tab for monitoring the operation of repeaters in the radio communication system. This feature needs to be activated on the radio server.

4.1.2. Radio windows

A set of user-defined buttons allowing for direct access to virtual radios operating in the defined radio system. The radio control panel opens as a new application window – radio console – which can be moved around the screen.

4.1.3. Other

A collection of buttons allowing for direct access to the windows used for detailed system configuration.

- **GPS object settings editor.**
Launches a tab to manually add, delete and configure objects monitored in the system, as well as modify the configuration of objects automatically added by ConSEL PLUS once they have been identified in the radio communication system.
- **Properties definition editor.**
activates a tab that allows you to define specific properties of the monitored objects.
- **Route editor**
launches a map tab that allows you to define the route along which the monitored objects can or should move. Routes can be created and defined manually by selecting specific points on the map or they can be loaded from the previous route history of the selected object.
- **Layer editor** –launches a map tab allowing for definition of the area in which monitored objects can or should move. Areas can be created and defined manually by selecting specific points on the map, or they can be loaded from the previous route history of the selected object.
- **Event definition editor** –launches a tab allowing for configuration and assignment of specific events to monitored objects, which will be indicated and recorded in the system in a specified manner. Events can include, for example, statuses sent from radios, activation

of emergency mode, entering or leaving an area or deviating from a preset and assigned route.

- **GPS user settings editor** –launches a tab allowing for configuration and assignment of specific data identifying users of location data.
- **Application user settings editor** –launches a tab to manually add, remove and configure system users. This tab allows for configuration of all system user permissions in terms of access to: application options, radio system, console and recorders, and location data of monitored objects.
- **GPS points editor** – launches a tab allowing for configuration and assignment of geographical points required in specific and dedicated versions of the application for a selected group of users.
- **Recorder** –launches a tab to access, filter and manage the saved call recordings made using the ConSEL PLUS client that have been recorded in the system.
- **Coverage map** –activates a tab for detailed map visualisation of radio call / connection parameters with received signal level indication. ***A diagnostic tool essential for the administrator of any radio communication system.***
- **Schedule editor** –launches a tab for creation and management of task schedules – required in specific and dedicated versions of the application for a selected group of users.
- **Task management** –launches a tab for creation of a log for tasks assigned to designated users – required in specific and dedicated versions of the application for a selected group of users.

Side menu

The side menu of the ConSEL PLUS system client mirrors the home screen of the application. It is available to the user at all times while working with the application (irrespective of the tab(s) that are running) and allows for quick and direct access to the tabs defined on the application's home screen.

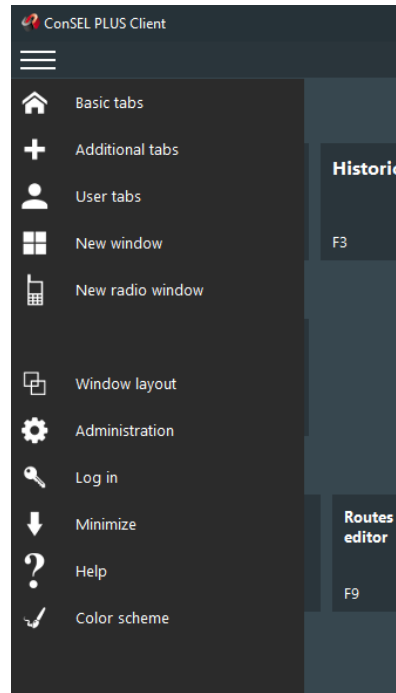


Fig 5 Side menu

Basic tabs menu – reflecting the **Basic tabs** items from the home screen

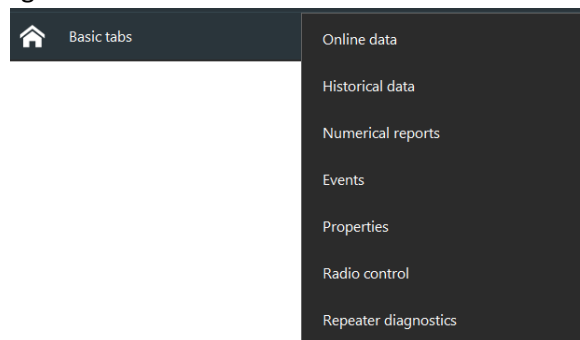


Fig 6 Basic tabs menu

Additional tabs menu – reflecting the **Other** items from the home screen

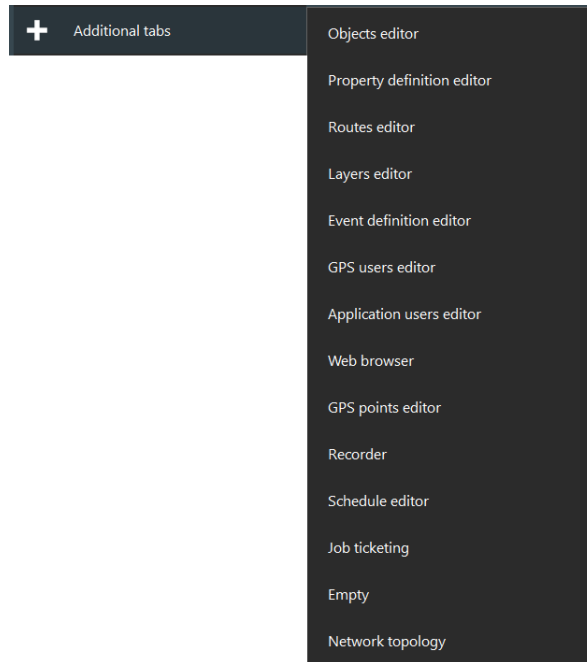


Fig 7 Additional tabs menu

User Bookmarks menu –displays an additional menu allowing for configuration of application screen appearance defined by a specific user.



Fig 8 User tabs menu

New window menu – opens an additional menu with direct access to the most frequently used system modules opened as a **new application window**. Using the windows opened in this way, it is possible to build and configure the user's screen by docking them at the desired location on the screen.

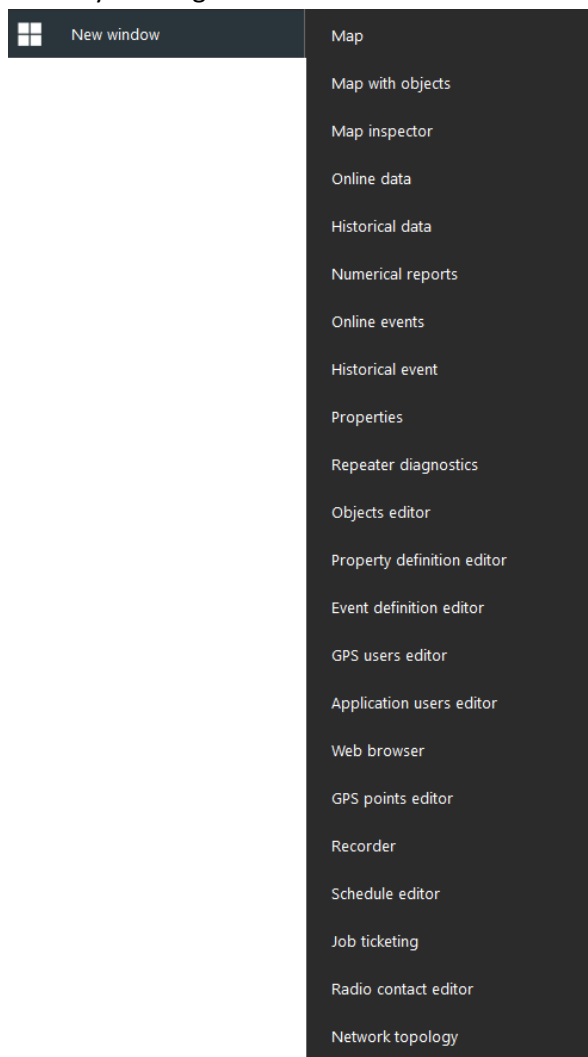


Fig 9 New window menu

New radio window menu – opens an additional menu allowing to open the **Radio Panel** to operate radios installed in the system, the **Messages to send** window allowing for text messaging radio system users, and the **Common panel control** window, which is designed to create buttons allowing to dynamically create groups of radio users or to group radio communication systems used in the application (interconnections at the console level), e.g. DMR standard radio communication system - TETRA radio communication system.

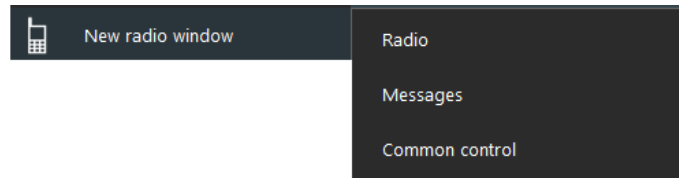


Fig 10 New radio window menu

Window Layout menu –saves the setting of bookmarks launched by the user and automatically configures these settings each time the user logs in to the application.

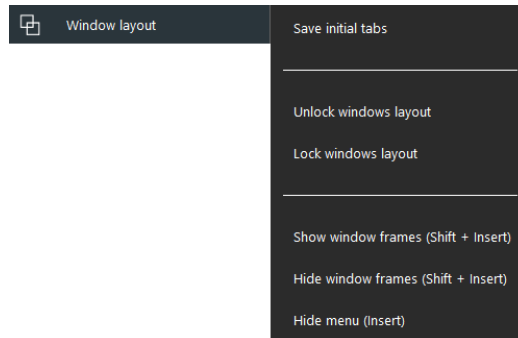


Fig 11 Window layout menu

Administration menu - opens an additional menu allowing access to general system configuration settings, event log and configuration of external devices - transmit button, various types of dedicated additional controllers.

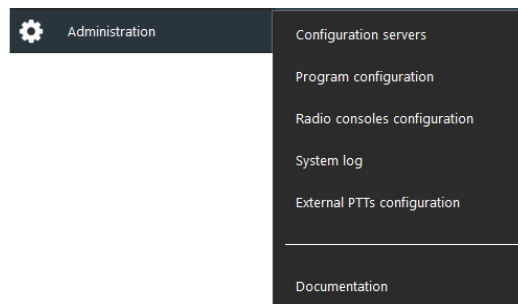


Fig 12 Administration menu

Log in again menu – an additional menu allowing to log in to the application with higher permissions, switch (log in) another user or change the current password of the user logged in.

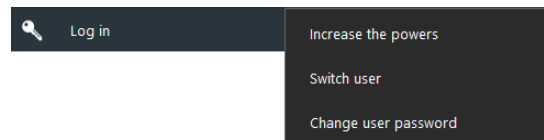


Fig 13 Log in menu

Minimise menu – hides the application window by minimising it to the Windows system taskbar (the operation does not interrupt the ConSEL PLUS application). The working window of the application can be restored by selecting the ConSEL PLUS Visualisation Module icon from the taskbar.

Help menu – opens a tab of the internal web browser and opens the page containing help for the programme.

Colours menu – opens an additional menu allowing the colours used by the application to be changed according to the user's preferences.

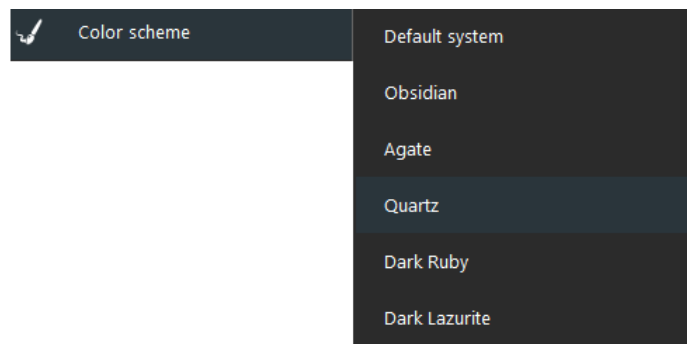


Fig 14 Color scheme menu

5. Application users

5.1. Application users – creating user accounts.

ConSEL PLUS allows for full configuration and comprehensive management of user permissions and accounts created in the application.

Depending on the radio communication system's configuration, size, structure and current needs of the organisation, and above all its data security policy, an individual account can be created **for each user or group of users**, fully accountable regarding the activities performed in the system.

Immediately after installation, on first start-up, the application runs in full administrative mode, i.e. it does not have any predefined user accounts or security passwords.

It is the system administrator's task to create a user account with full administrative rights; this should be done during system configuration.

To create a ConSEL PLUS administrator account on the start screen, from the **Other** button group, select the **Application User Settings Editor** button.

After opening the **Application User Settings** tab, select **Add New** and in the new window enter the name of the user who will be the system administrator.

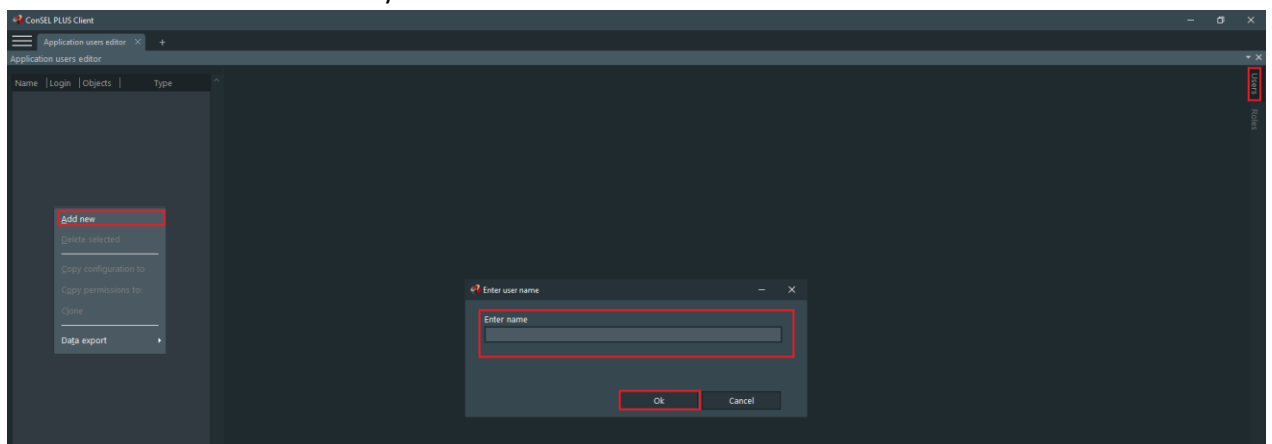
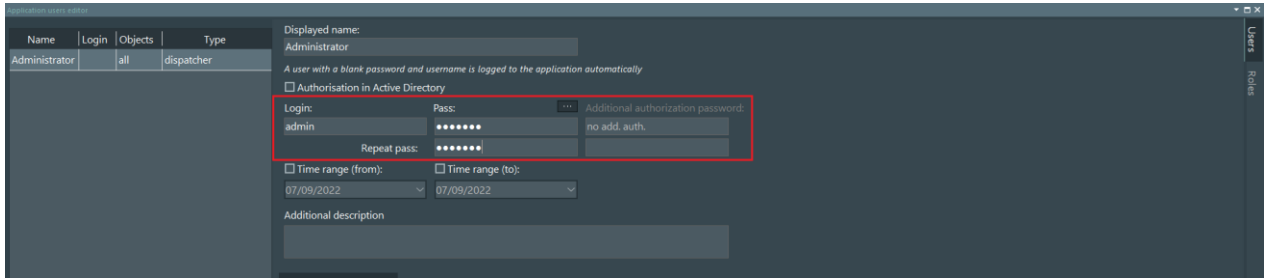


Fig 15 Application Users Editor tab

After confirming the entered data by clicking **OK**, a new user is created and access is enabled to the **Application User Editor** window for detailed configuration of their permissions.



Name	Login	Objects	Type
Administrator	admin	all	dispatcher

Displayed name: Administrator

A user with a blank password and username is logged to the application automatically

Authorisation in Active Directory

Login: admin Pass: ***** Additional authorization password: no add. auth.

Repeat pass: *****

Time range (from): 07/09/2022 Time range (to): 07/09/2022

Additional description

Fig 16 Adding login and password

Enter the login data to be used by the system administrator/users. The application has the ability to enforce password strength and validity requirements.

The password created for the system administrator should be complex and difficult to break.

5.2. Application users – granting feature permissions.

The system administrator should have full permissions to access all modules, features/functions and devices operating within the system, so it is possible to quickly grant all the permissions using the button.

Using the checkboxes in the "Permissions" section, configure the features available to the user in terms of applications, radio functions, defined GPS objects, radio consoles by checking or unchecking the respective box.

Once these are selected, save the changes by selecting the **Save Changes** button; the application will return to the **Application User Settings** start/home tab, where you can see the recently created user on the list. Selecting that user displays a detailed configuration window, which allows you to modify the configuration.

Using the checkboxes in the "Permissions" section, configure the features available to the user in terms of applications, radio functions, defined GPS objects and radio consoles by checking or unchecking the respective boxes.

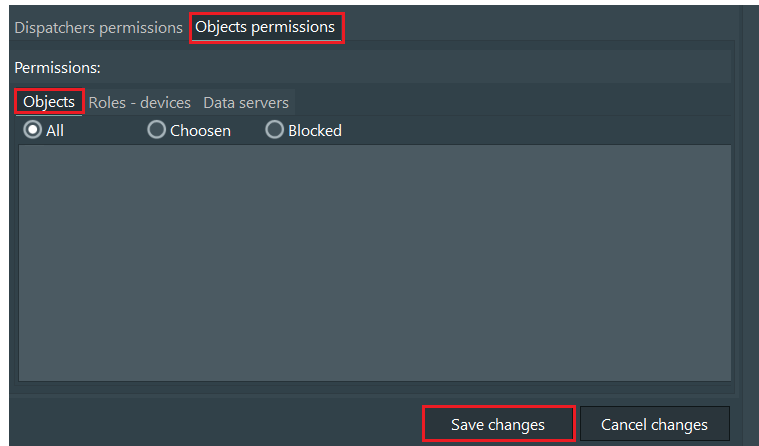


Fig 17 Objects permissions

Once these are selected, save the changes by selecting the **Save Changes** button; the application will return to the **Application User Settings** start/home tab, where you can see the recently created user on the list. Selecting that user displays a detailed configuration window, allowing you to modify the configuration.

Using the **Side menu/Login again/Switch user** you can logon in a new window using the login and password you have set up with the permissions you have defined.

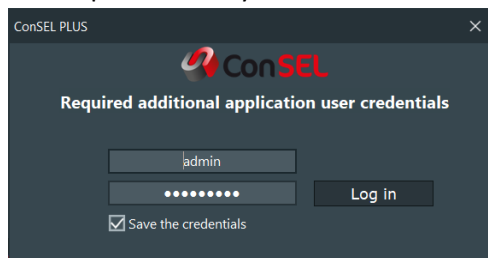


Fig 18 Login window

Depending on the permissions granted, an application window with active buttons will open after logging in.

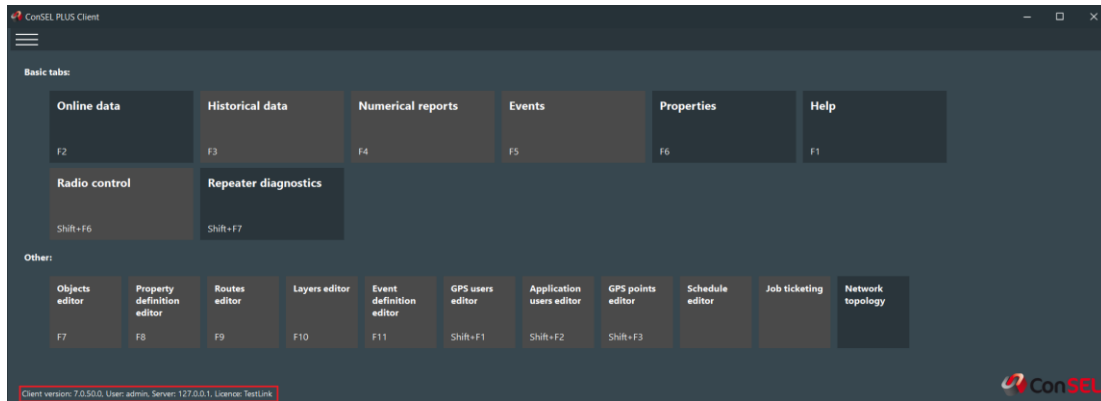


Fig 19 Main tabs depending on permissions

At the bottom of the home screen you will find information about the currently logged-in user, the software version of the client application, the radio address of the server and the licence held.

Subsequently, you can create further user accounts with the same or different system permissions.

5.3. Cloning user account configurations.

In complex systems where it is planned or necessary to use multiple individual accounts defined with identical permissions and functions, e.g. for control room personnel, it is possible to copy (clone) the permissions from a master / template account.

You can configure as required and save a "master" / template user account.

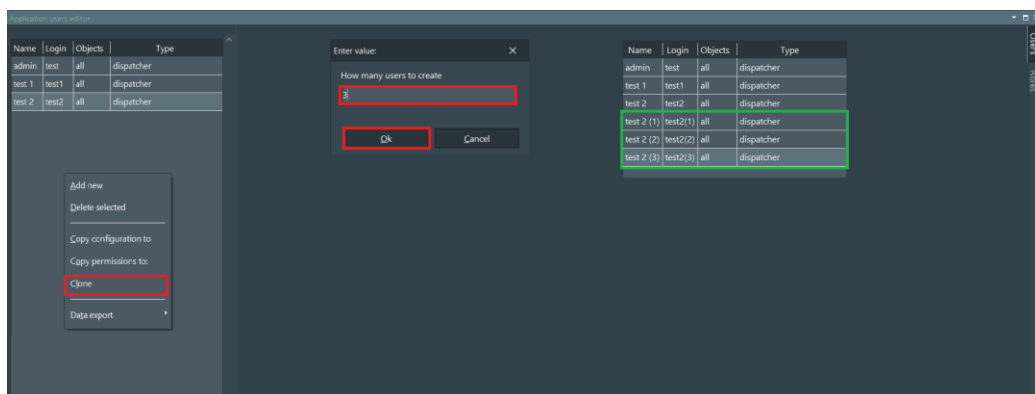


Fig 20 Cloning users accounts

Such a solution greatly simplifies system administration and also avoids possible confusion when manually configuring the permissions for each new user account.

The required number of new accounts must then be created in the system. After opening the **Application User Settings** tab, select **Add New** and enter the system user name in the new window.

After confirming the entered data with the **OK** button, a new user is created. Once the account has been created, you only need to complete the **Login** field, which must be unique in the system. Skip further configuration of the created account and use the **Add New** button to create more user accounts.

5.4. Cloning of user account permissions / settings.

Once the required number of user accounts has been created, select the "master" / "template" account, right-click and select the relevant option to copy settings or permissions to another account.

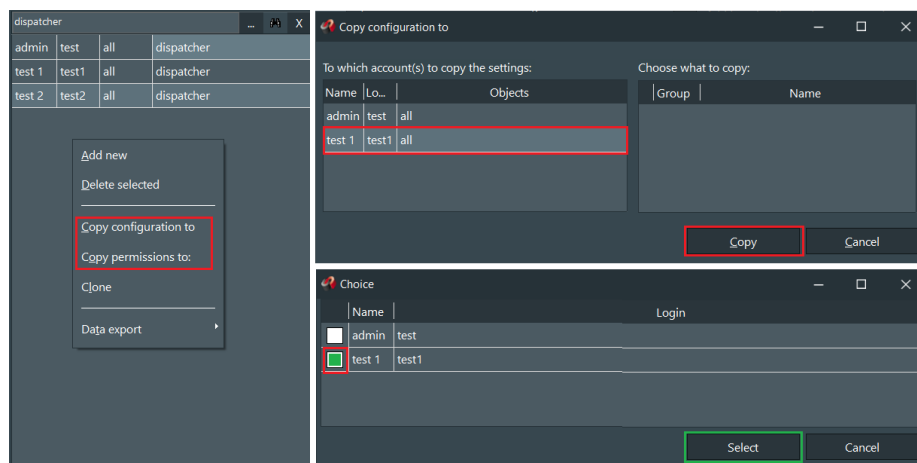


Fig 21 Cloning users permissions

After selecting **Copy settings** or **Copy permissions**, select the target accounts for the template configuration.

6. Objects.

6.1.Object editor

In the ConSEL PLUS software, physical devices are represented as objects and, depending on the selection of the object type, the software has an embedded communication protocol used for data transfer and method of connection to the communication server.

6.2.Configuration of monitored GPS objects.

ConSEL PLUS allows for monitoring of various types of objects, including: DMR radios, TETRA radios, portable locators and dedicated and specialised GPS-equipped controllers offered by Akxel Sp. z o.o.

The ConSEL PLUS system, as specialised dispatcher software, is mostly used in radio communication networks, which is why the primary objects monitored in the system are Motorola MotoTRBO radios.

Tracking of radios' locations in ConSEL PLUS requires the radio network administrator to prepare and configure the radios to send GPS location data!!!

ConSEL PLUS monitors and collects data on objects that are registered in the system, i.e. are added to the database of monitored objects.

Registration of objects in the system can be carried out manually or automatically based on ongoing analysis and monitoring of data transmitted over the radio network.

6.3.Creating GPS objects manually.

In order to manually add a GPS object to the ConSEL PLUS system, on application home screen, from the

Other group select the "**GPS object settings editor**" button.

A new tab "**Object Settings**" will open in the application.

On the right-hand side of the window, you can see the area [1] in which the GPS objects registered in the system will be displayed.

To add an object in the area [1], right-click and select "**Add new object**" in the context menu [2].

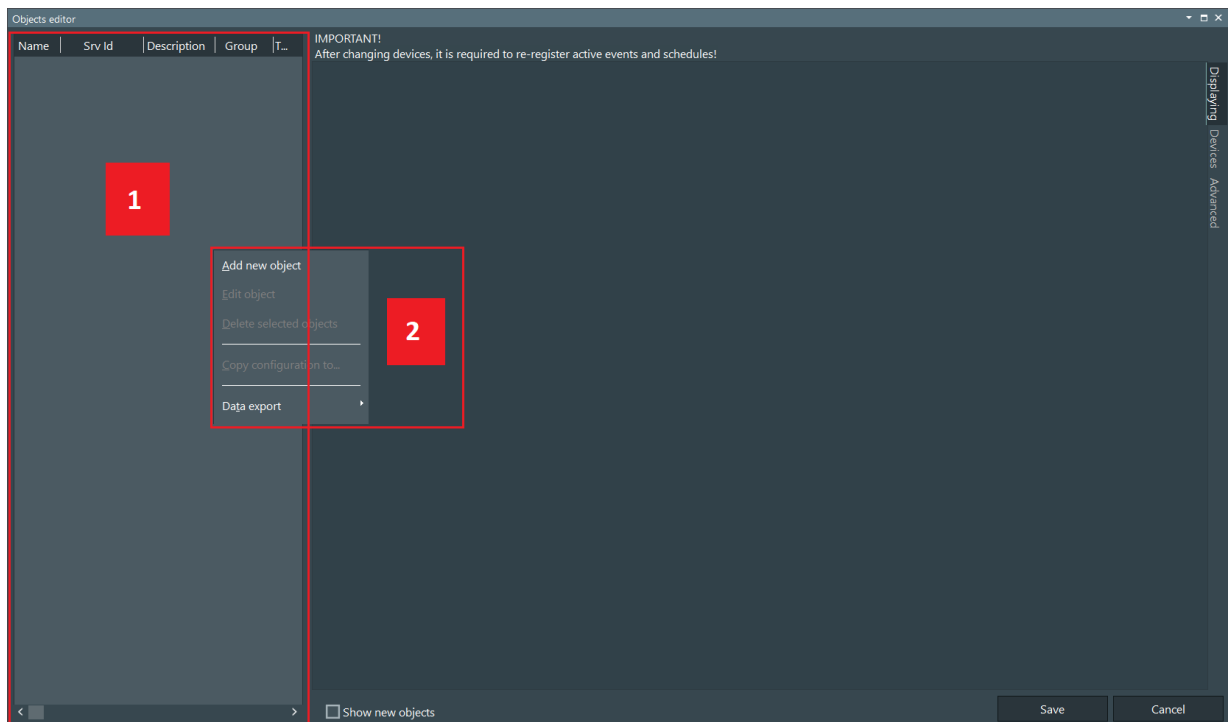


Fig 22 Adding object window

In the "Edit Object" window, enter the necessary data:

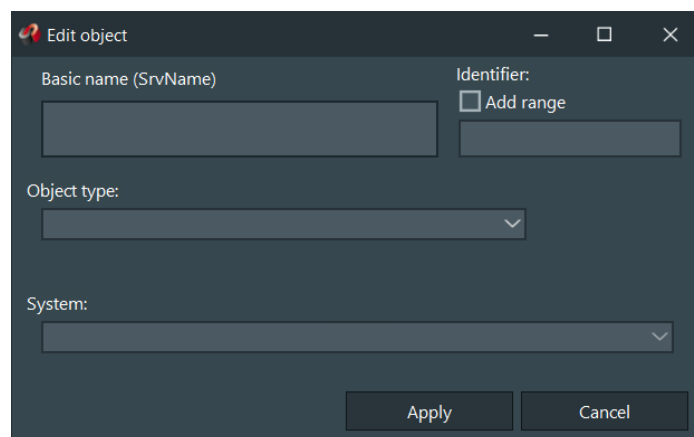


Fig 23 Object edit window

Basic name (SrvName) – object name assigned the system administrator to ensure its identification by the console user

Identifier – the unique designation of the object in the radio communication system. For radios, it should match the radio ID assigned when preparing the radio for operation in the radio system.

Object type – select a predefined GPS object type from the drop-down list.

System – this parameter is used for complex radio communication systems; select the system in which the device will be used the drop-down list of available systems.

Save the data you have entered by clicking **Confirm**.

After refreshing the data, the added GPS object appears in area [1] and, after selecting it, you can access its further detailed configuration.

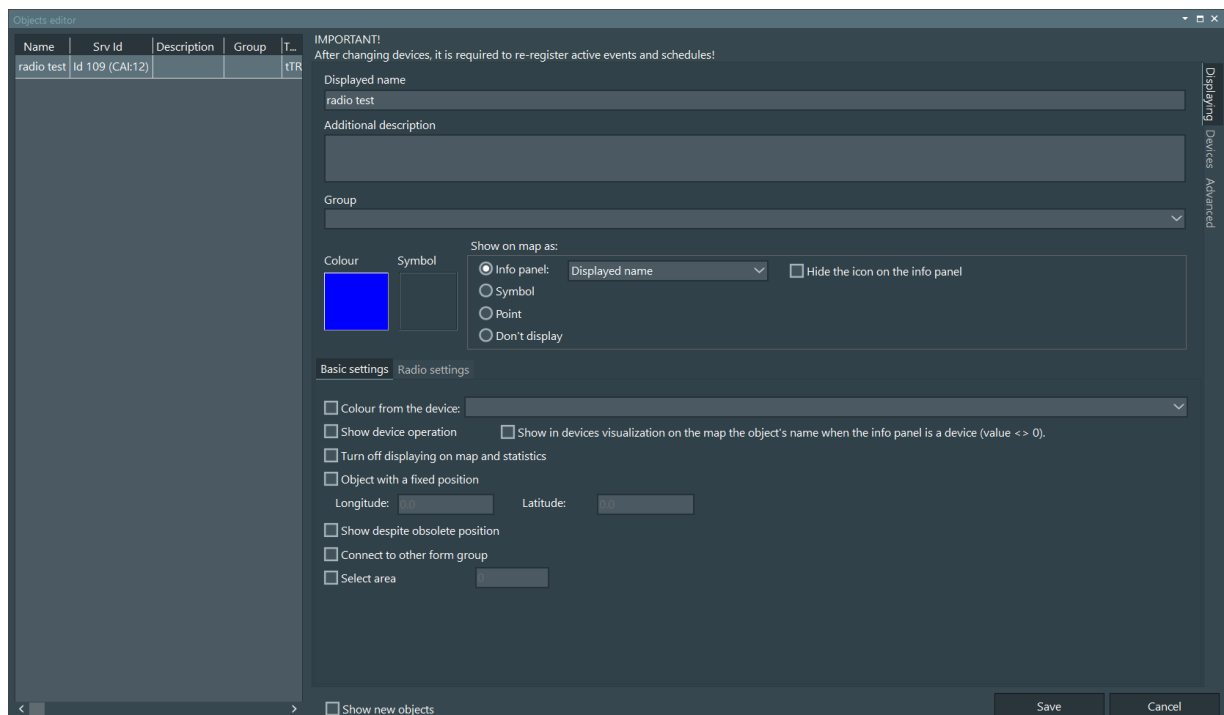


Fig 24 Object editor window

The ConSEL PLUS application allows for full configuration of the graphic appearance of monitored objects. Depending on the user's needs and preferences, each monitored object or group of monitored objects can be assigned a colour to be displayed on the digital map, as well as the way it is displayed: label, symbol, point.

It is also possible to define and assign any user-defined graphic object designation for each object. Graphic objects in *.png, *.jpg or *.bmp formats can be imported into ConSEL PLUS.

6.4. Creating GPS objects automatically.

Automatic registration of objects in the system is carried out on the basis of data coming directly from the radio communication system operating with the ConSEL PLUS application using the radio console previously launched in the system.

Note:

This functionality is useful for the radio communication system administrator. It significantly increases the security of the system and automatically and continuously reports radios (including unauthorized radios) joining the radio system!!!

This function is active when the "Current data" tab is running, i.e. in the map view.

If information about a radio that has not previously been manually registered in ConSEL PLUS is identified among the data transmitted in the radio network, the application informs the user about the new object that has been identified in the radio network by displaying a dialog box.

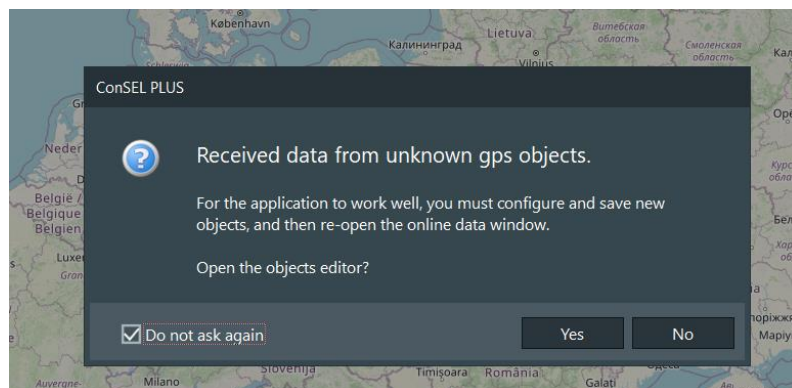


Fig 25 Receiving data from objects window

Clicking **YES** will add objects to the database and open the window for editing GPS object parameters, clicking **NO** will ignore the data received by the system.

GPS objects that have been automatically added to the database **are highlighted in blue in the list**, and selecting an object allows for its further detailed configuration.

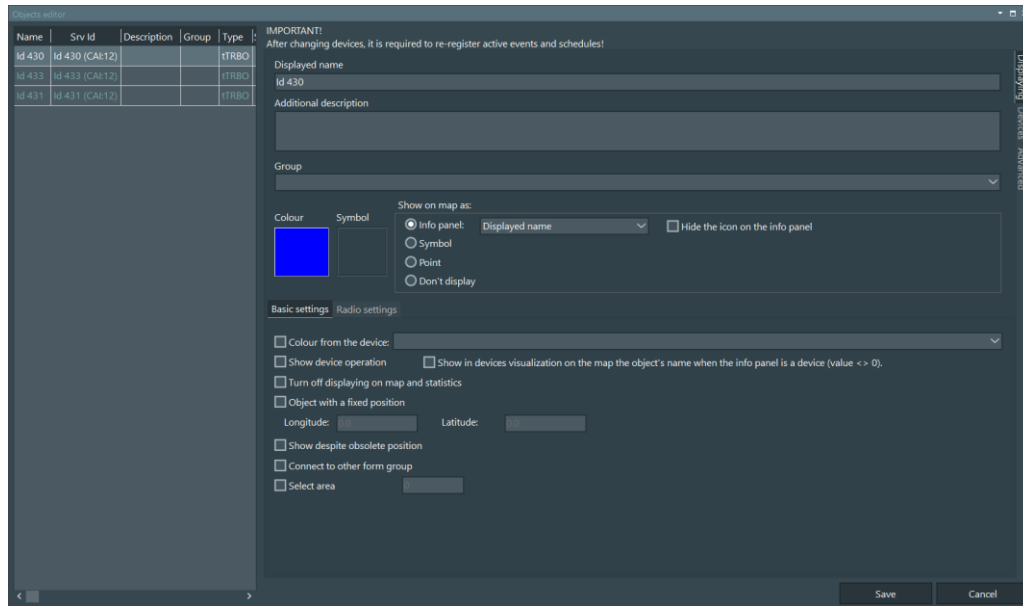


Fig 26 Adding unknown objects

After making the required changes to the configuration of the GPS objects, confirm them by clicking **Save** and close the window. The changes will be applied when the "Current data" tab with the digital map is reopened.

7. Working screen.

7.1. Configuring a dedicated user working screen.

ConSEL PLUS allows for full configuration and customisation of the layout to suit the user's needs and expectations. In many situations, the application user does not need access to all windows and modules of the application, and such access is not even advisable, e.g. due to security of the data stored in the system.

The ConSEL PLUS application allows a working screen to be designed for a specific user or group of users, displaying only the data from the modules to which they should have access.

The user's working screen can be created from all the functional windows of the application, however, it is most often created based on the windows of the **Radio Panel** module or several radio panels supporting the radio networks used and the **Current data** module, containing current data on the location of monitored objects.

The user work screen is created as a secondary/additional tab in the ConSEL PLUS application.

To create a user work screen, select **Side menu\Additional tabs\Empty**.

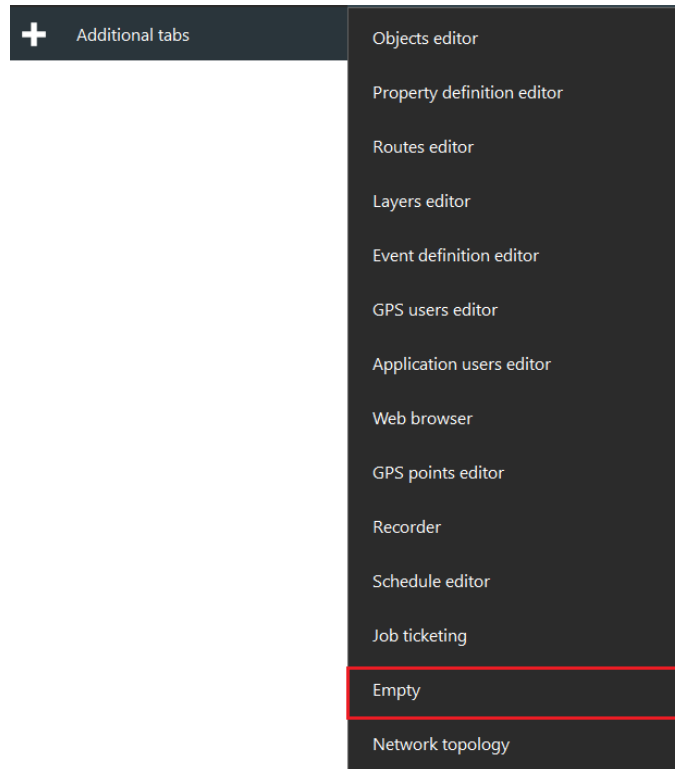


Fig 27 Additional tabs menu

A new tab window named **User** will open.

Use: **Side menu\New window** and **Side menu\New radio window** to select the windows of the application modules and radios required on the screen.

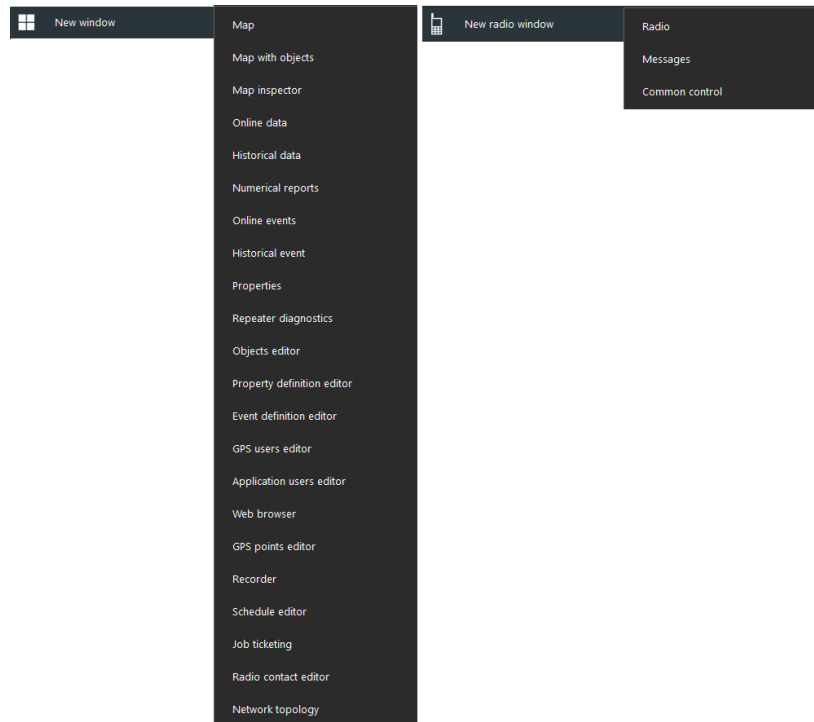


Fig 28 New windows and New radio window menu

When you point and move the selected window, docking handles will be activated to help position the windows on the screen.

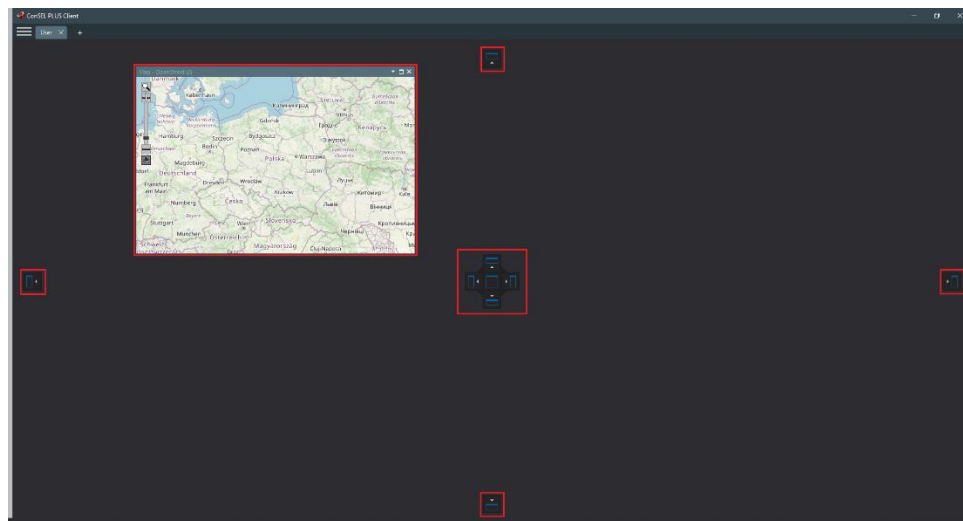


Fig 29 Docking system

Once the windows are in place, it is possible to resize them and adapt them to the user's preferences and expectations.

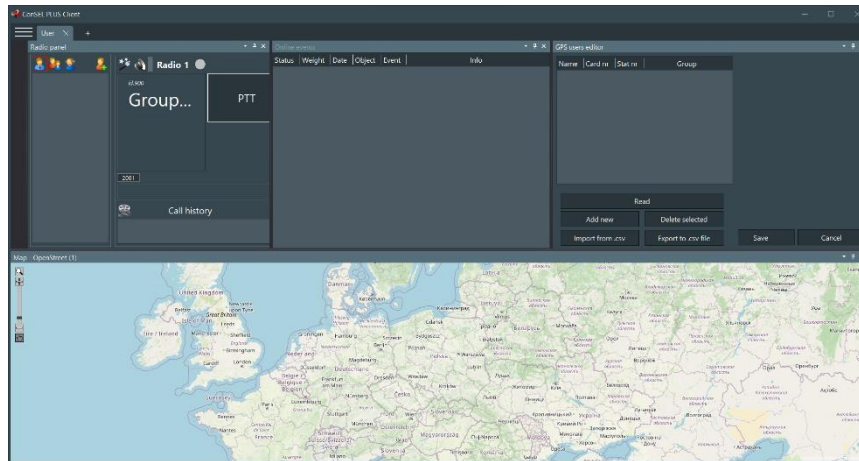


Fig 30 Already configured window appearance

Using the commands available in the menu, the appearance of the radio window can be freely configured to suit the user's preferences. Once the configuration is complete, save your changes by selecting **Side menu\User tabs\Save tab**.

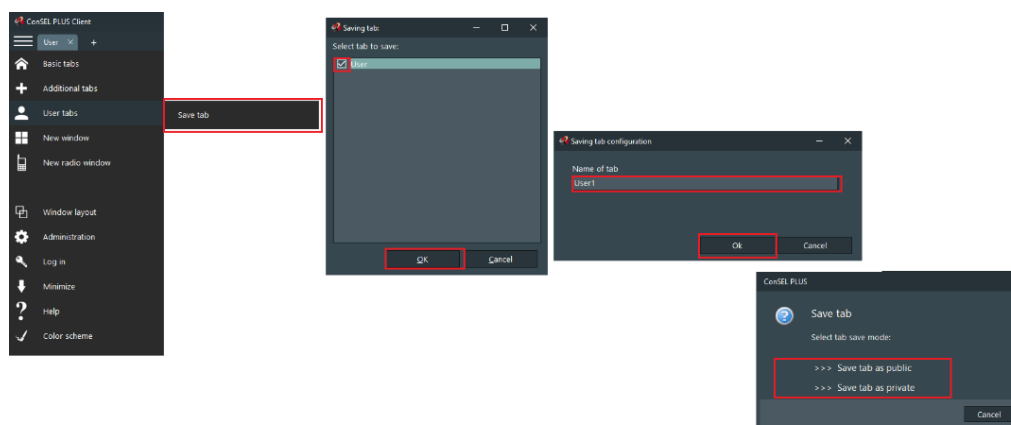


Fig 31 Saving existing tab arrangement

In the dialog boxes, specify the name of the tab you have created and whether you want it to be a public tab – available to all users – or a private tab – available only to a specific user. Once the configured bookmark has been saved, the user work screen created will be available directly when the ConSEL PLUS application is launched on the home screen.

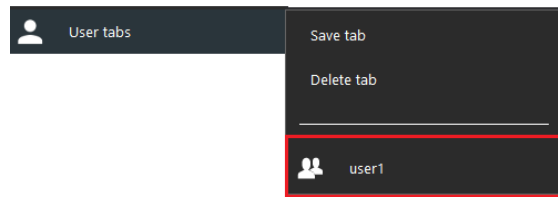


Fig 32 Choosing saved tab

Pointing to and pressing the tile with the name of the bookmark created, e.g. User 1, will launch the application window ready to work according to the configuration you have made.



Fig 33 Appearance of saved user tabs

You can permanently save a bookmark you have created as your start bookmark by selecting **Side menu\Window layout\Save home tabs**.

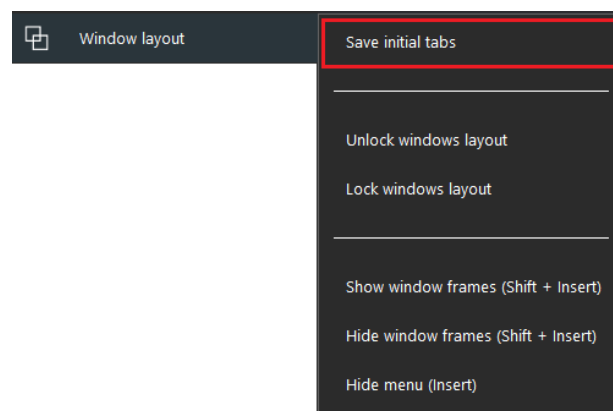


Fig 34 Saving initial tabs

After restarting the application and logging in as the user for whom the tab was created, the application will start with the saved window layout.

8. Administration – radio console configuration.

Depending on the chosen installation method of the ConSEL PLUS software, selected radio modules were activated in the radio server.

In order for them to be used to work in the radio communication system and to carry out communications, it is necessary to link them to the system client.

To do this, in the ConSEL PLUS system client, select **Side Menu\Administration\Radio console configuration**,

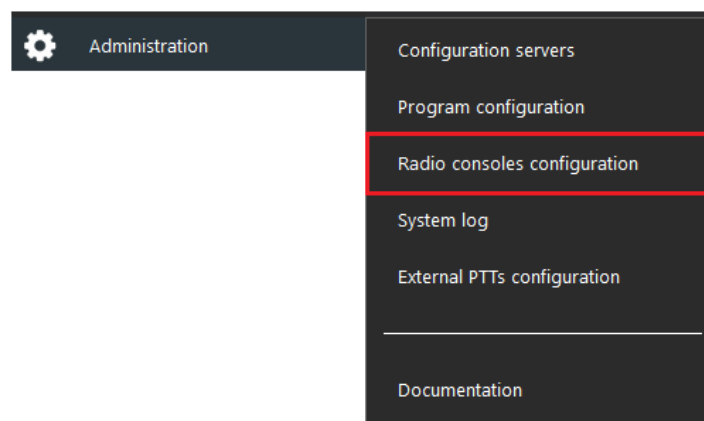


Fig 35 Radio consoles configuration menu

and then set the required parameters in the new **Radio server module configuration** window.

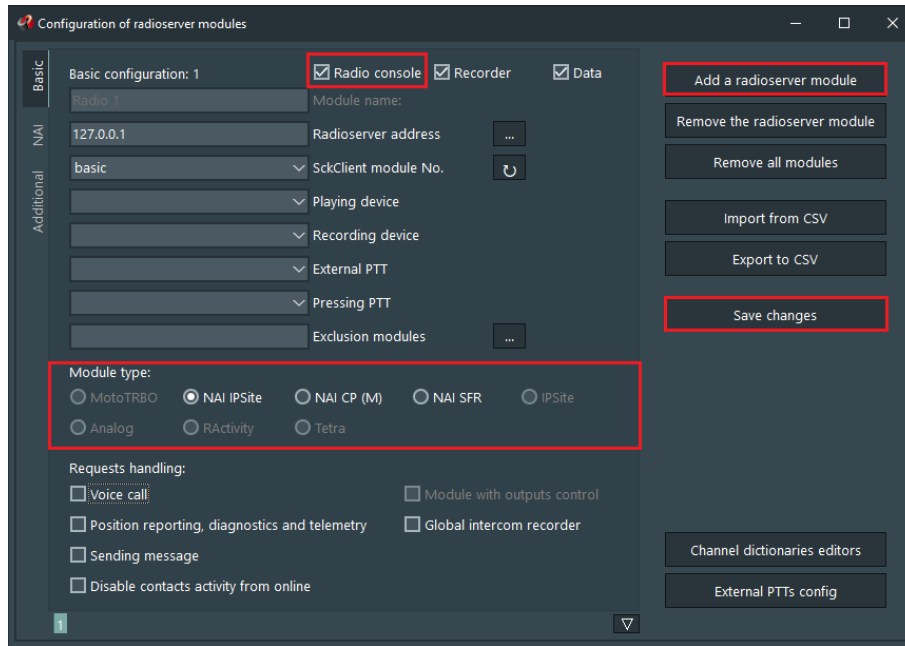


Fig 36 Basic consoles configuration window

Basic configuration – selection of supported functions:

- **Console** – the radio will be visible on the client's home screen in the **Radio windows** area.
- **Recorder** – voice communications made using the radio will be recorded in the system recorder.
- **Data** – the radio will support data transmission in the radio communication system.

Radio server address – network address of the computer on which the radio server is running; for the installation of the radio server and the client on the same computer it is the local address 127.0.0.1

SckClient module number – from the list of radio modules running on the radio server, select the module that supports the radio network to be configured; the basic radio server module is selected by default.

Playback device – from the list of devices available in the system, select the device which will play back the voice communications on the console.

Recording device – from the list of devices available in the system, select the device to act as a microphone.

Module type – select the relevant module type depending on the configuration of the module type in the radio server and the configuration of the supported radio network.

Request handling – select the functions that will be handled by the ConSEL PLUS system.

Once the required data has been entered, accept it by clicking **Save changes**.

8.1. Module type – NAI IPSite.

Support for Motorola Solution's IP Site Connect solution using NAI protocols.

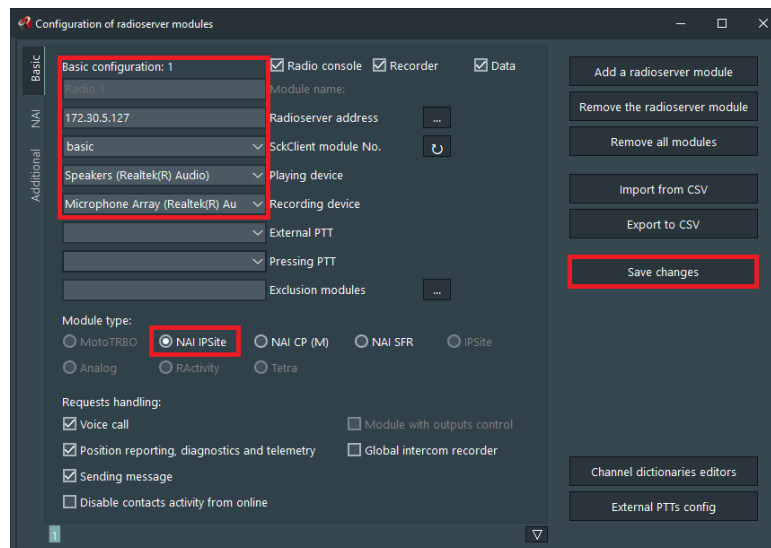


Fig 37 IP Site Connect basic configuration

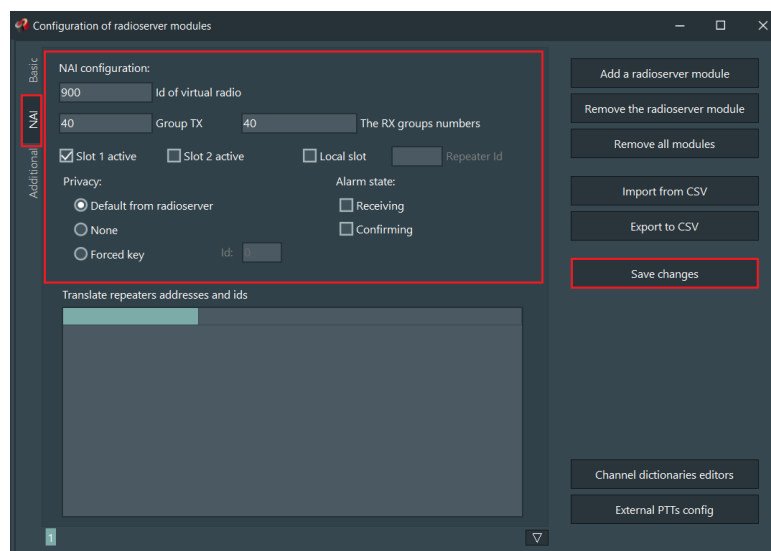


Fig 38 IP Site Connect NAI configuration

For the virtual radio created in the NAI tabs, you need to enter:
 ID of virtual base radio
 Default receive and transmit talkgroups
 Slot used by the virtual base radio.

8.2.Module type - NAI CP(M).

Support for Motorola Solution's Capacity Plus Single Site and Capacity Plus Multi-Site solutions using NAI protocols.

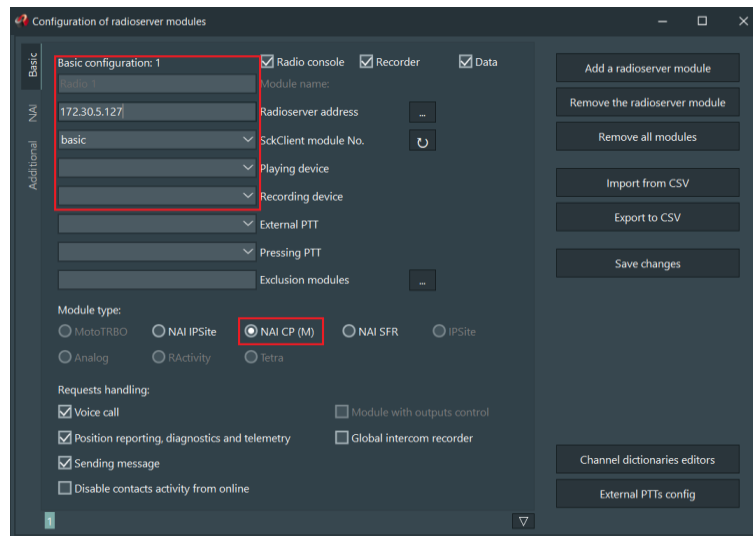


Fig 39 CP(M) basic configuration

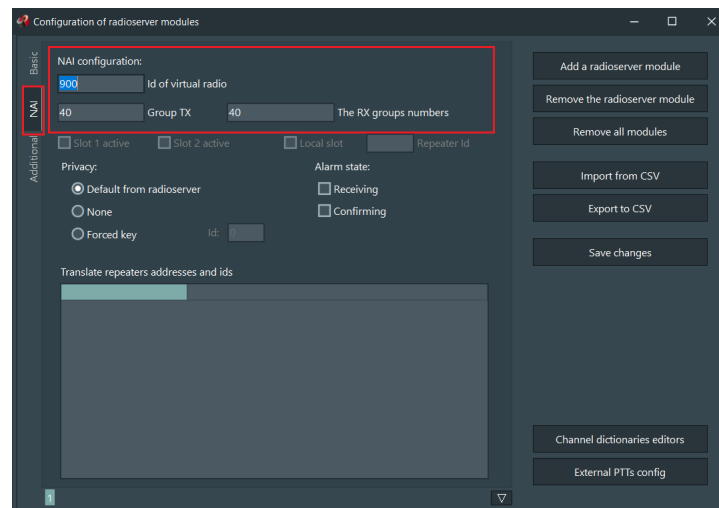


Fig 40 CP(M) NAI configuration

For the virtual radio created in the NAI tabs, you need to enter:
 ID of virtual base radio
 Default receive and transmit talkgroups

8.3.Module type – NAI SFR.

Support for Motorola Solution's Extended Range Direct Mode solution using NAI protocols.

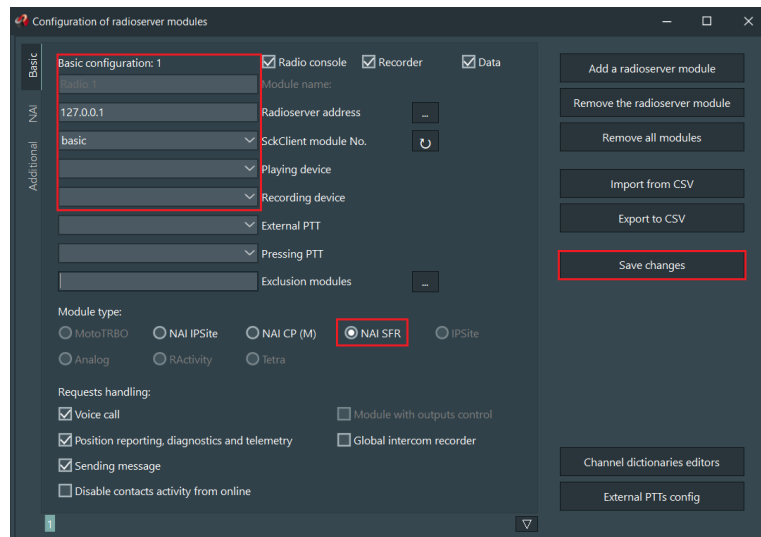


Fig 41 SFR basic configuration

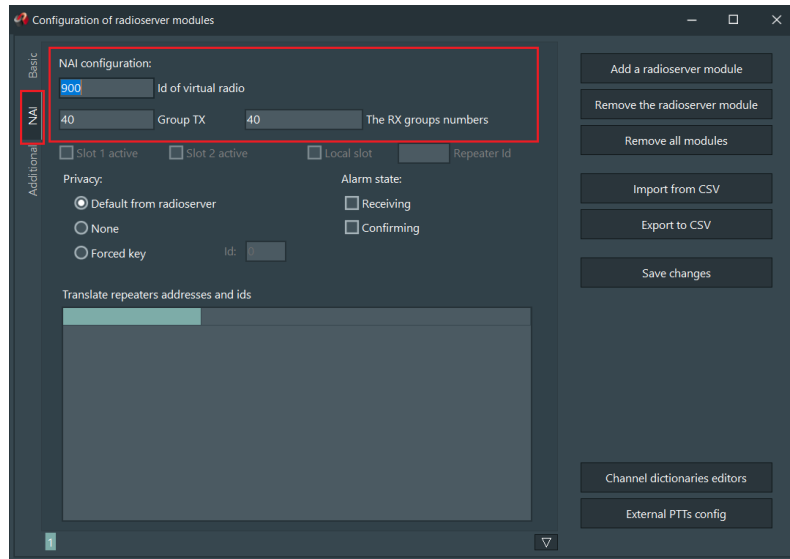


Fig 42 SFR NAI configuration

For the virtual radio created in the NAI tabs, you need to enter:

ID of virtual base radio

Default receive and transmit talkgroups

8.4. Module type - Capacity Max

Support for Capacity Max solution.

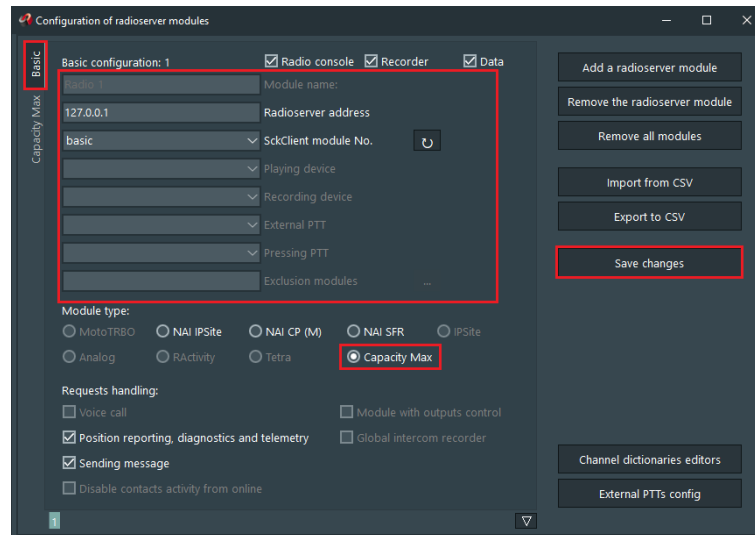


Fig 43 Capacity Max basic configuration

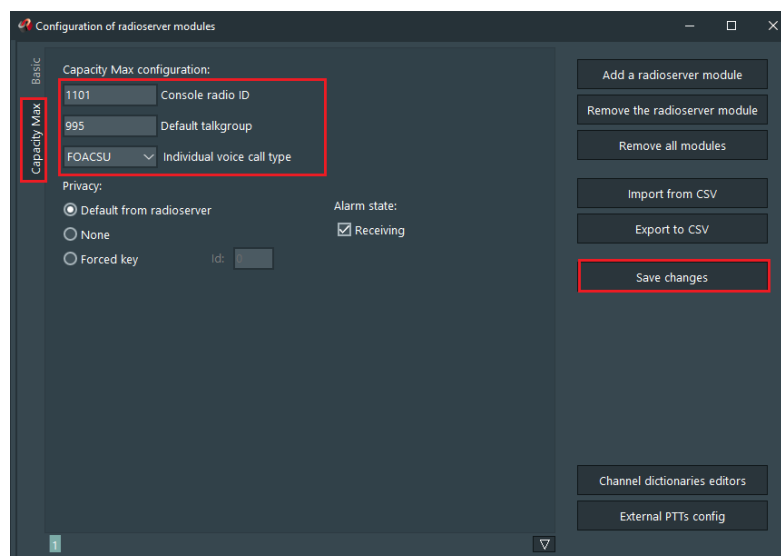


Fig 44 Capacity Max configuration

To create a virtual radio using Capacity Max, first you need to enter the radioserver address, and check the “Capacity Max” checkbox.

Next step is the configuration of Capacity Max in Capacity Max tab.

Enter:

The console radio ID

Default talkgroup

Individual voice call (OACSU, FOACSU)

After all, click on **Save Changes**.

9. Radio panel.

The radio panel is a module of the ConSEL PLUS application allowing for communication and exchange of correspondence with users of radios working in the radio communication system.

Immediately after installation and launch of the application, there are 3 main areas in the standard Radio Panel module:

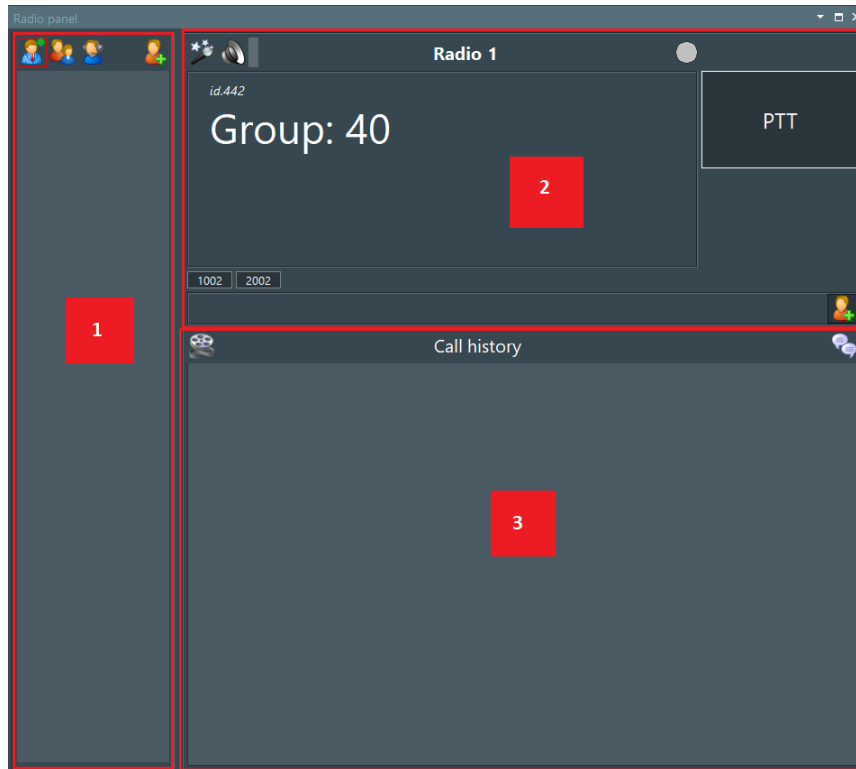


Fig 45 Radio panel

[1] – radio contacts area – a list of active or saved (permanently defined) radio users (individual and group) and dispatchers available in the Intercom system in the supported radio communication system, together with information on their current status, i.e. whether they are logged in to the radio communication system.

[2] – radio area – a graphical representation of the radio's display, push-to-talk (PTT) button and the function buttons of the connected radio or repeater.

[3] – call history area – a preview of the history of calls made in the radio communication system and a dispatcher chat window providing the possibility for direct exchange of information between dispatchers.

9.1. Radio panel – Radio contacts area.

The Radio Contacts area of the Radio Panel contains information about the radios and devices available on the radio communication system supported by the ConSEL PLUS application.

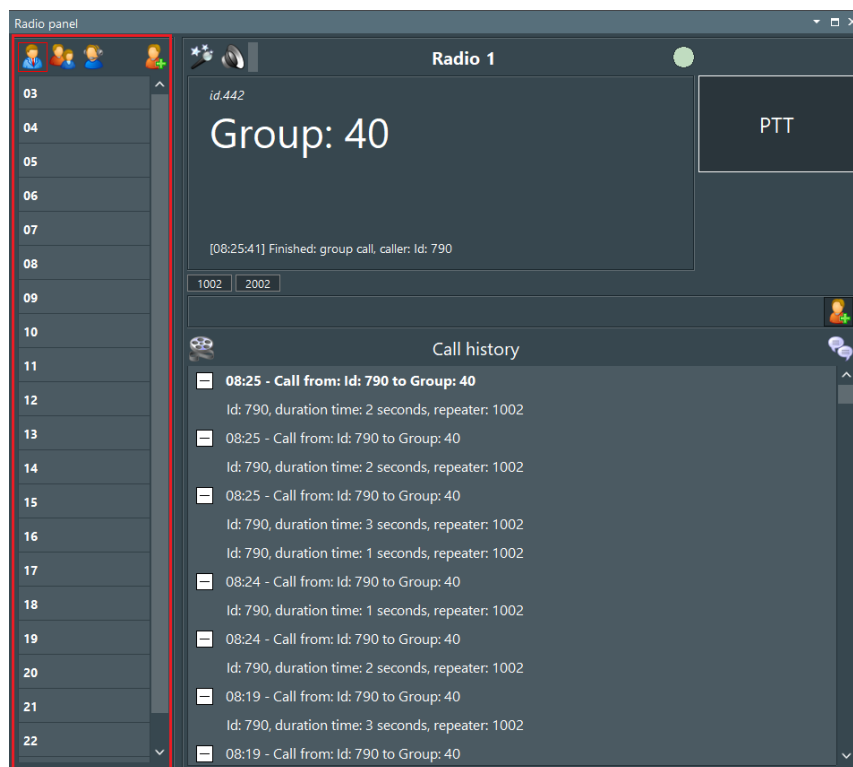


Fig 46 Radio panel - contacts area

The ConSEL PLUS application uses individual and group contacts, which correspond to the types of calls possible in the radio communication system.

Contact lists available in the radio communication system supported by the ConSEL PLUS application can be created automatically or manually.

9.1.1. Creating radio contacts automatically

The ConSEL PLUS application creates radio contacts automatically based on continuous monitoring of the data transmitted via the system's radio network. When a message is received from a radio or monitored device, it is automatically given an active device status in the ConSEL PLUS system.

Data monitoring in the radio network is carried out continuously, so the contact list created in this way contains current information about active and cooperating devices.

The automatically created contact list is available by clicking and selecting **Active** in the menu that appears.

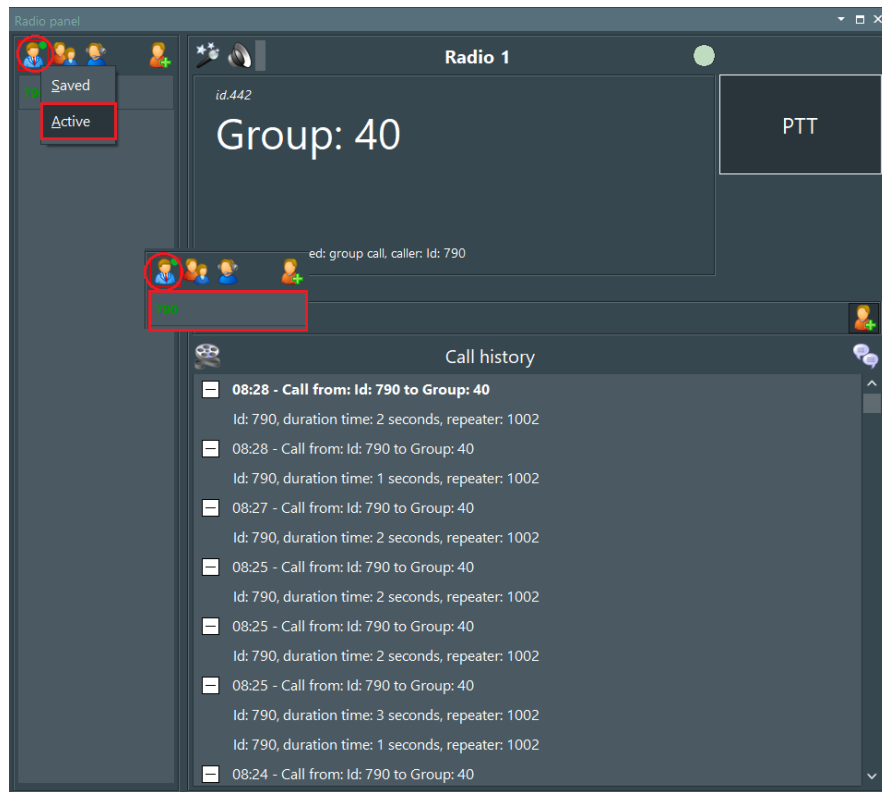


Fig 47 Showing active contacts

The use of the list of active radio contacts is indicated by the addition of a green dot next to the individual contact button.

9.1.2. Creating radio contacts manually

To manually create a contact, in the contacts area, click the button , and then select **Contact editor**.

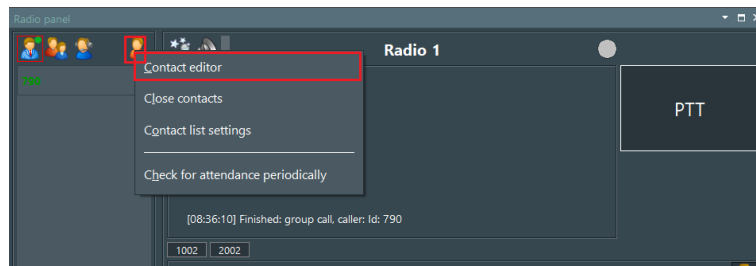


Fig 48 Creating contacts

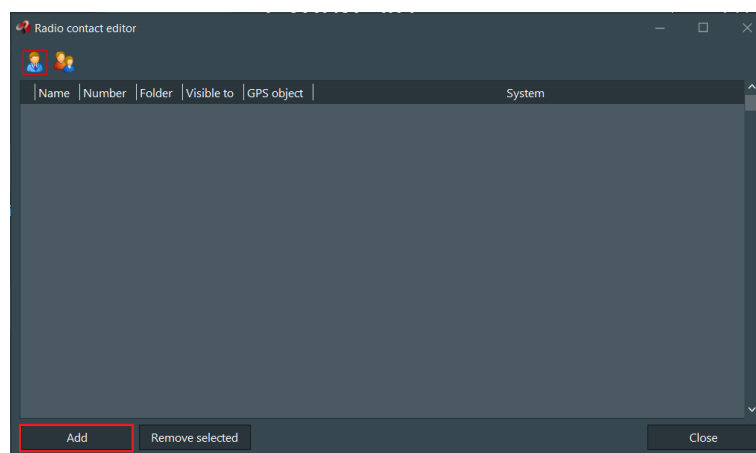


Fig 49 Adding contact window

In the new **Radio Contact Editor** window select the type of new contact: individual or group, and then click **Add**.

In the new window, enter the necessary data in the **Basic** tab: radio ID number in the radio system, contact name, and add a custom graphic icon if necessary.

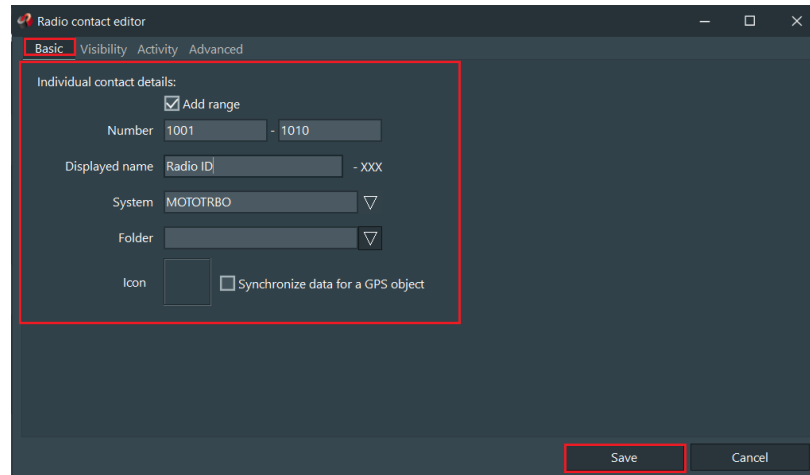
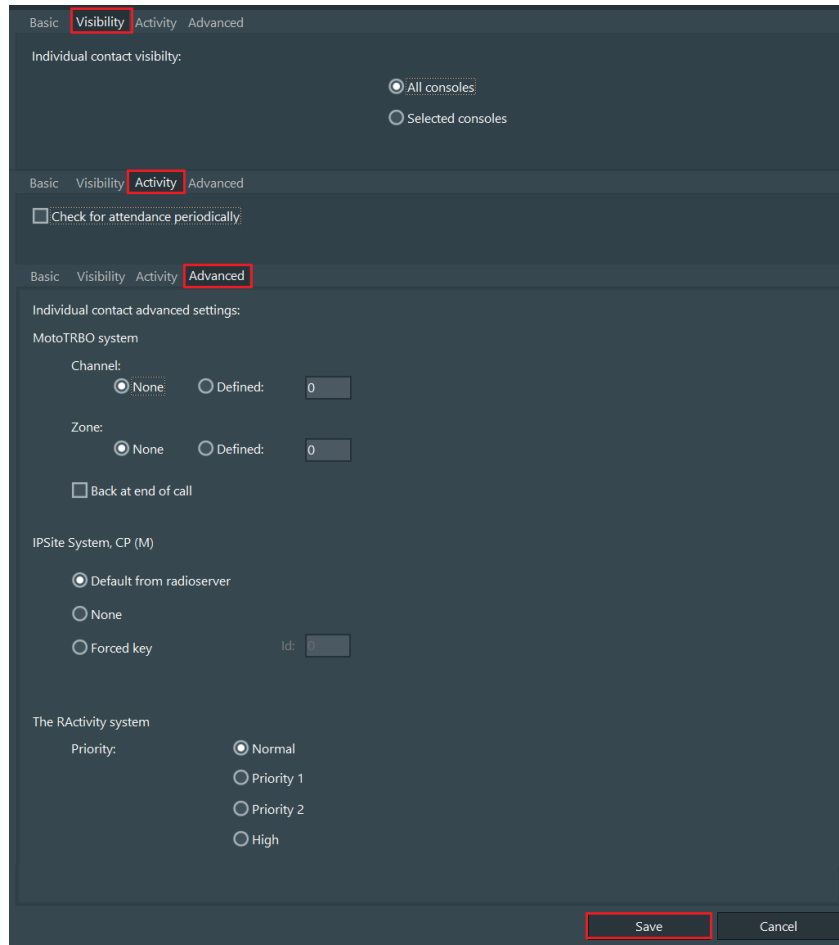


Fig 50 Definig contact

Using the **Folder** field you can create a structure of contacts in a configuration similar to directories on a computer drive. You can assign contacts to each folder (directory). The use of this option depends on the size of the system and the user's needs and preferences.

In the following **Visibility** and **Advanced** tabs, configure the contact's accessibility to other Radio Panels and dispatchers, as well as specific settings for the radio side of the created contact.



Basic **Visibility** Activity Advanced

Individual contact visibility:

All consoles
 Selected consoles

Basic Visibility **Activity** Advanced

Check for attendance periodically

Basic Visibility Activity **Advanced**

Individual contact advanced settings:

MotoTRBO system

Channel:
 None Defined:

Zone:
 None Defined:

Back at end of call

IP Site System, CP (M)

Default from radioserver
 None
 Forced key

The RActivity system

Priority:
 Normal
 Priority 1
 Priority 2
 High

Fig 51 Contact parameters overview

Once the required data has been entered, accept it by clicking **Save**.

9.1.3. Creating a contact list from a list of GPS objects

The ConSEL PLUS application allows the creation of a radio contact list based on the information entered at an earlier stage of software configuration stored in a database containing information about monitored GPS objects.

To import collected GPS objects data, in the Contacts area, click the button, and then select **Contact editor**.

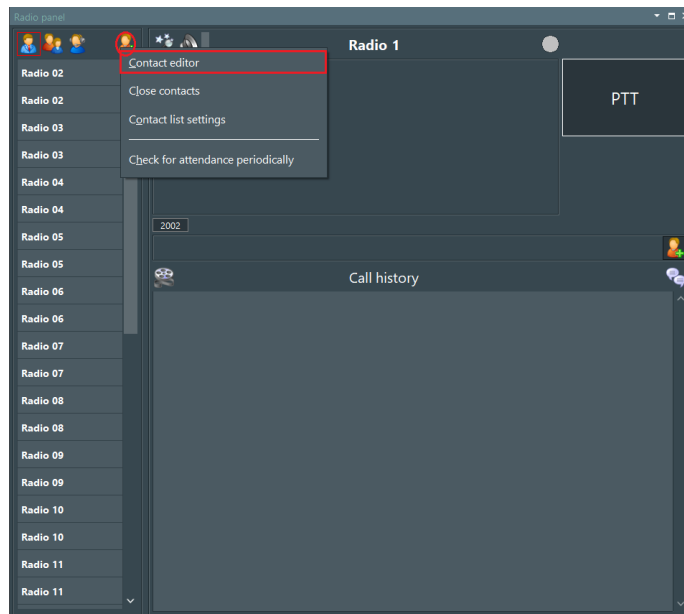


Fig 52 Adding contacts from GPS objects

In the new **Radio Contacts Editor** window, right-click anywhere and select **Add from GPS objects** from the context menu.

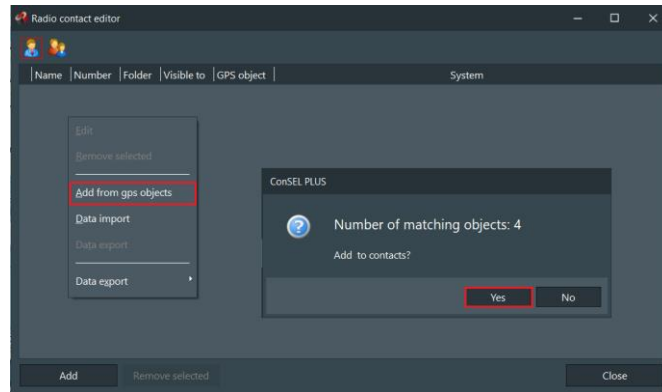


Fig 53 Adding contacts from GPS objects

The ConSEL PLUS application will analyse the data collected in the GPS object database and suggest adding matching objects to the radio contact list.

Confirming the operation with the **Yes** button will add them to the contact list.

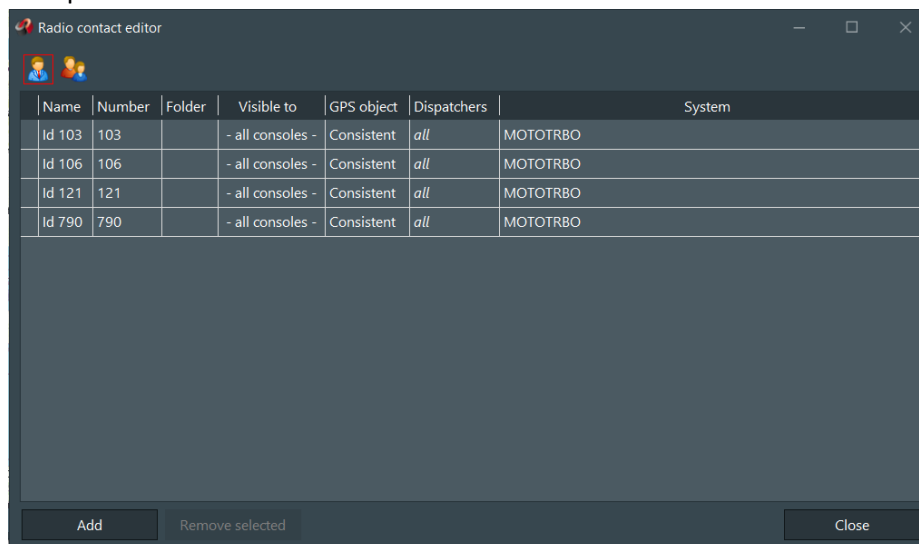


Fig 54 Radio contacts editor

Once a specific contact has been indicated and its details selected for **Edit**, in the following **Visibility** and **Advanced** tabs configure the contact's accessibility to other Radio Panels and dispatchers, as well as specific settings for the radio side of the created contact.

Once the required data has been entered, confirm by clicking **Save**.

9.1.4. Importing contact list from file.

The ConSEL PLUS application allows you to import a created list of radio contacts from a file in *.csv (comma separated) or Excel (2010) format.

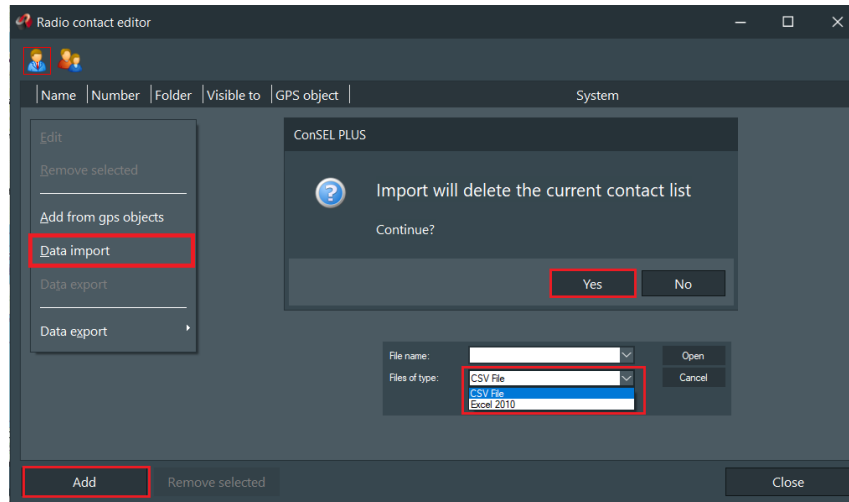


Fig 55 Importing contacts from file

9.1.5. Configuration of radio contact list start options

Depending on the user's preferences and needs, the ConSEL PLUS application allows for any configuration of the radio contact list display.

The user can select the list of contacts displayed when the radio console is launched, resize the list and specify the duration of contacts' visibility depending on their activity in the system.

In the contacts area, click the button, and then select **Contact list settings**.

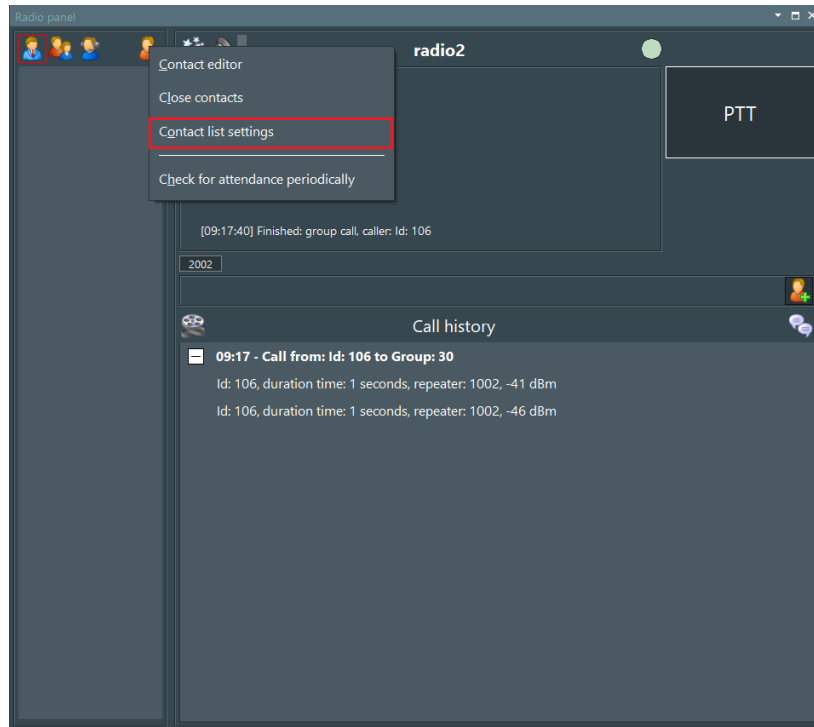


Fig 56 Contact list settings

In the new **Contact List Preferences** window, use the **Size, Display, Activity** tabs to modify the settings.

In the **Size** tab, you can select:

- the size of displayed contacts on the console
- the way contacts are displayed on the console

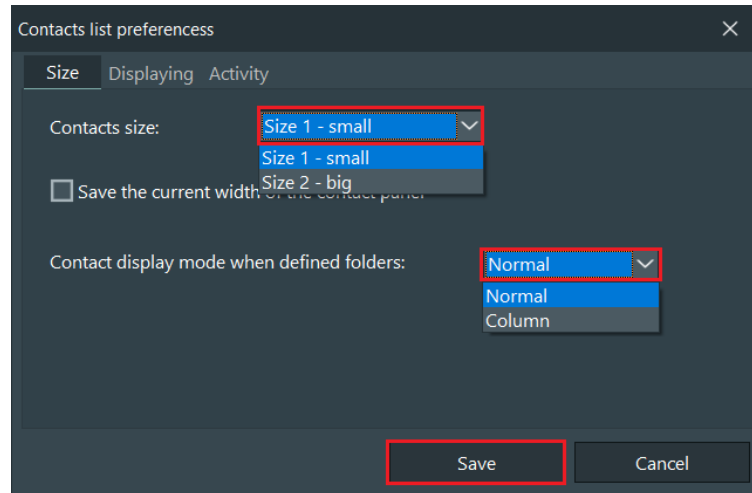


Fig 57 Contact size change

In the **Display** tab, you can define which contacts are to be displayed when the radio console is started.

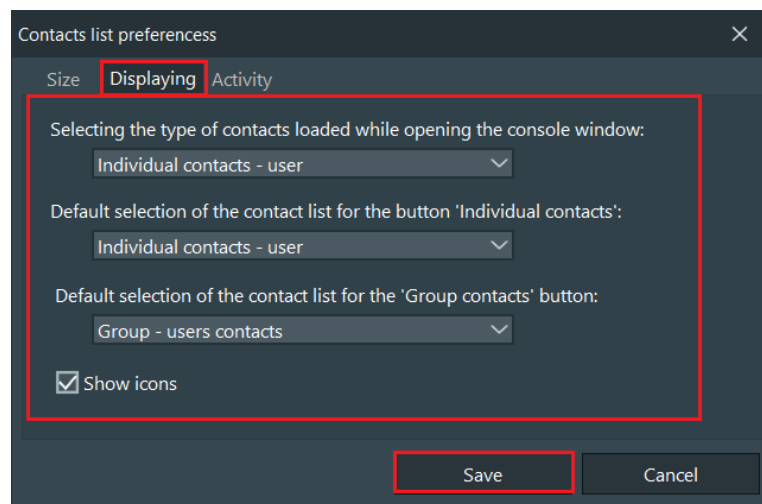


Fig 58 Contacts display editor

In the **Activity** tab, you can change the colour of the contact list highlighting depending on the activity in the radio system.

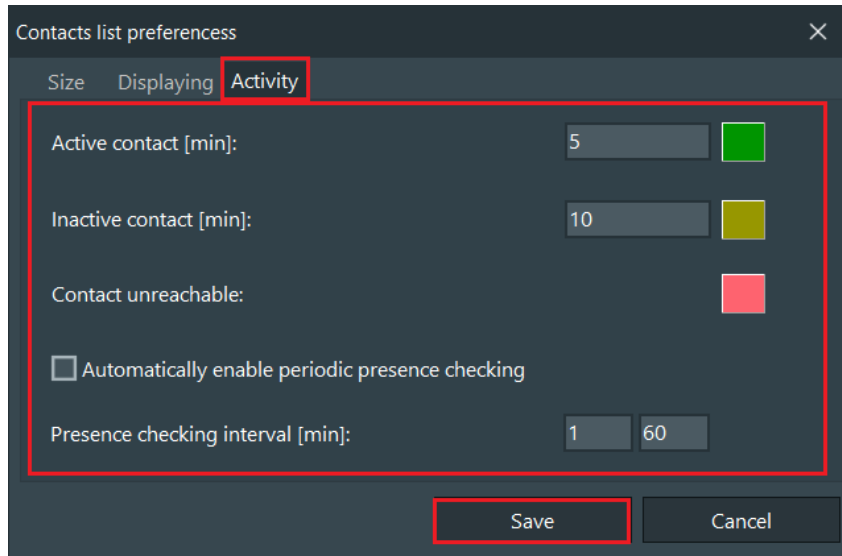


Fig 59 Activity colours time of visibility change

After making changes to the configuration, confirm them by clicking **Save**.

9.2. Radio panel – radio area

The radio area of the Radio Panel module should be regarded as a virtual radio providing the possibility of communicating in the radio system cooperating with the ConSEL PLUS application.

The graphical representation of the radio includes the basic elements of the actual radio's control panel, i.e.: display **[1]**, push-to-talk (PTT) button **[2]**, LED indicators **[3]**.

An additional solution, not found in real radios, is a field that allows the creation of additional virtual and fully configurable push-to-talk (PTT) buttons to facilitate and improve the work of the dispatcher **[4]**.

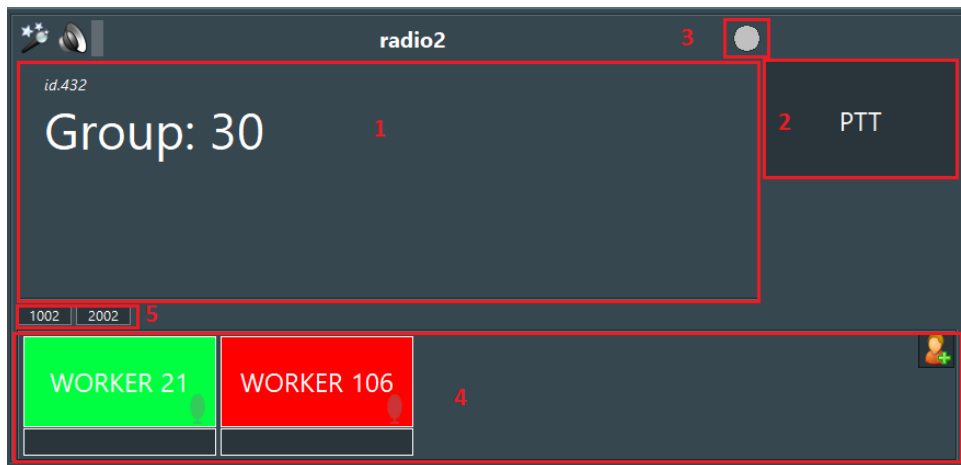


Fig 60 Radio panel - radio area

The dispatcher has information about the connection status [5] of physical radio devices in the system.

Radio operation and communication using the ConSEL PLUS application is not fundamentally different from operation using actual, physical radios.

As with a radio, the push-to-talk (PTT) button must be used to initiate a call, and the type of call set up depends on the configuration of the radio communication system, the organisation of the communication network and, above all, the needs and preferences of the users.

In most radio networks, the most commonly used voice calls are all calls (to all users), individual calls (to a specific user), and group calls (to a specific group of users).

9.2.1. Voice calls.

9.2.1.1. Voice calls to all (All Call).

In order to establish a voice call to all users (all call) from the ConSEL PLUS application, select All Call in the Contact area of the Radio Panel and in the Radio Panel area of the virtual radio, left-click **the PTT button** and hold the mouse button for the duration of the call.

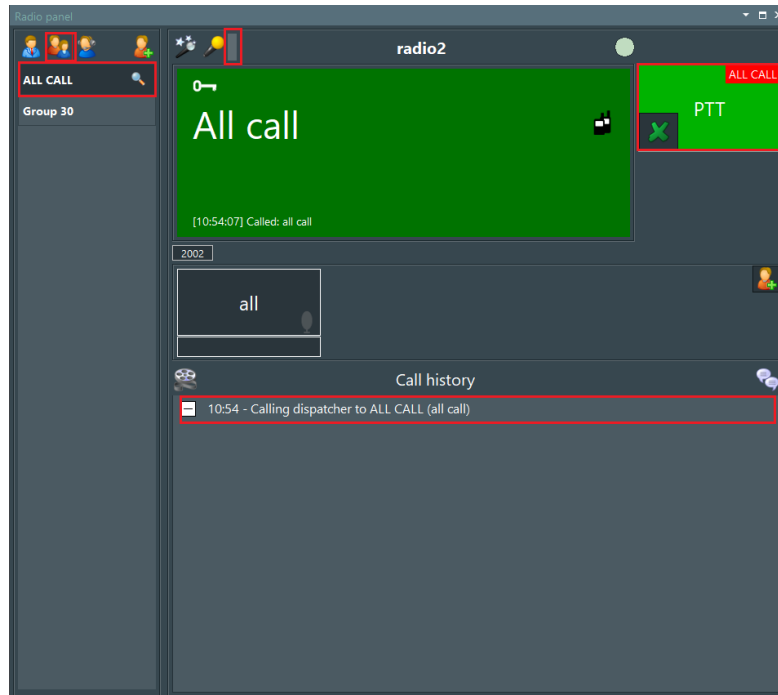


Fig 61 All Call

Following these steps will initiate the radio transmission. The start of transmission is indicated by the change in colour of the **PTT button** and **the radio's display**. To end the transmission, release the mouse button.

9.2.1.2. Making a group voice call

In order to make a voice call from the ConSEL PLUS application, select and highlight a talkgroup from the list of group contacts in the contact area of the Radio Panel. Selecting and highlighting a contact will change the appearance of the PTT button.

In order to establish a voice call, left-click **the PTT button** in the radio area of the Radio Panel of the virtual radio and hold the mouse button for the duration of the call.

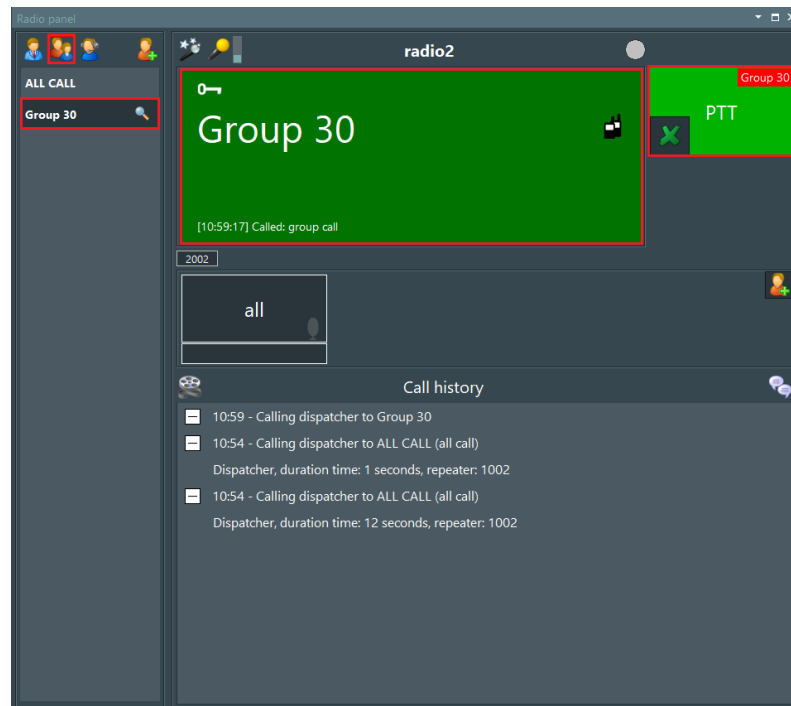


Fig 62 Group call

Following these steps will initiate the radio transmission. The start of transmission is indicated by the change in colour of the **PTT button** and **the radio's display**. To end the transmission, release the mouse button.

9.2.1.3. Making an individual voice call

To make an individual voice call from the ConSEL PLUS application, select the recipient in the Radio Panel's contact area in the radio contact list by clicking the mouse button. Selecting a contact will change the appearance of the PTT button.

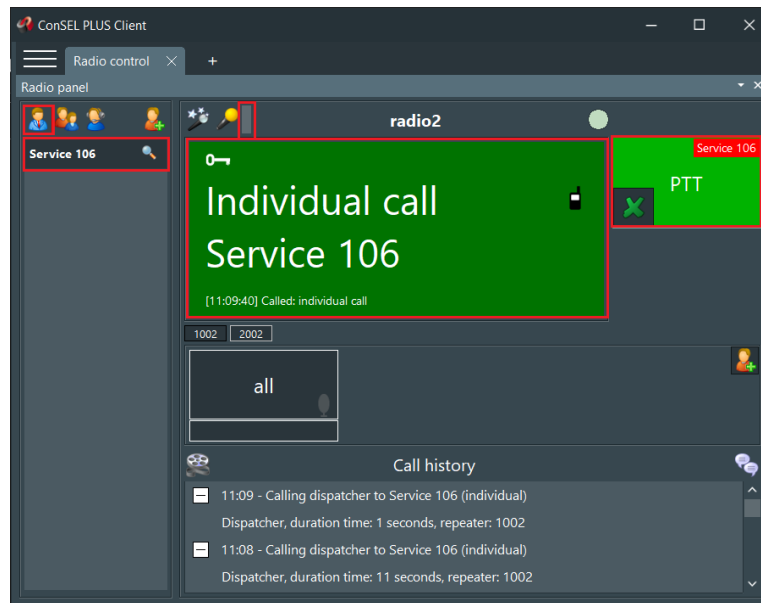


Fig 63 Individual call

To establish a voice call left-click **the PTT button** in the radio area of the Radio Panel of the virtual radio and hold the mouse button for the duration of the call. Following these steps will initiate the radio transmission. The start of transmission is indicated by the change in colour of the **PTT button** and **the radio's display**. To end the transmission, release the mouse button.

9.2.2. Additional push-to-talk (PTT) buttons

Up to 16 additional transmit (PTT) buttons can be created in the ConSEL PLUS application. These buttons simplify the work of the dispatcher by reducing the time required to prepare the necessary call in the standard way using the existing radio contact list. Each of the created push-to-talk buttons is fully customisable and can be assigned to handle a specific call: individual, group or all call.

Establishing a call assigned to an additional PTT button only requires pressing it.

To configure additional PTT buttons, click in the radio area of the Radio Panel and select **Add PTT Contact** from the pop-up menu.

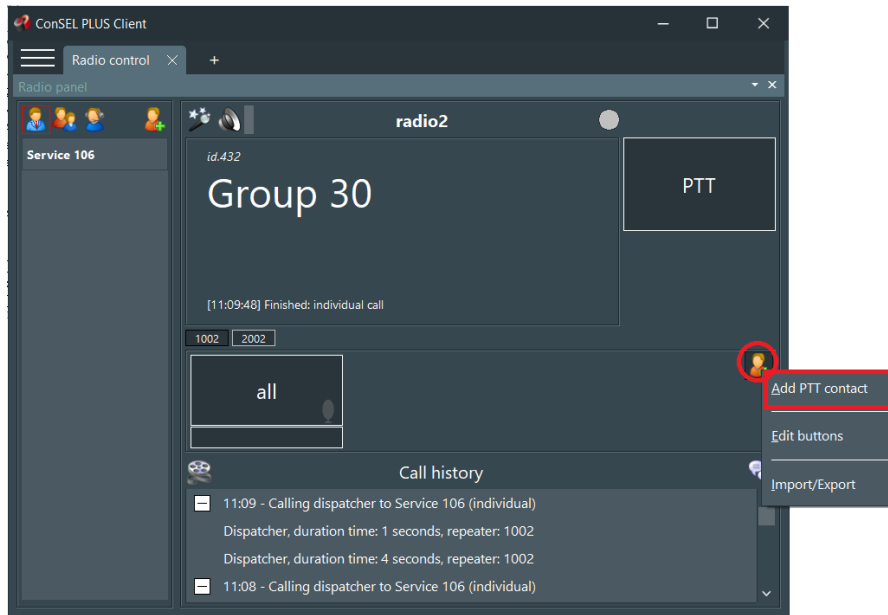


Fig 64 Adding PTT contact

In the new **Enter button data** window, configure the button by specifying its name, colour, keyboard shortcut, type of button, type of call and configuration data related to the radio network.

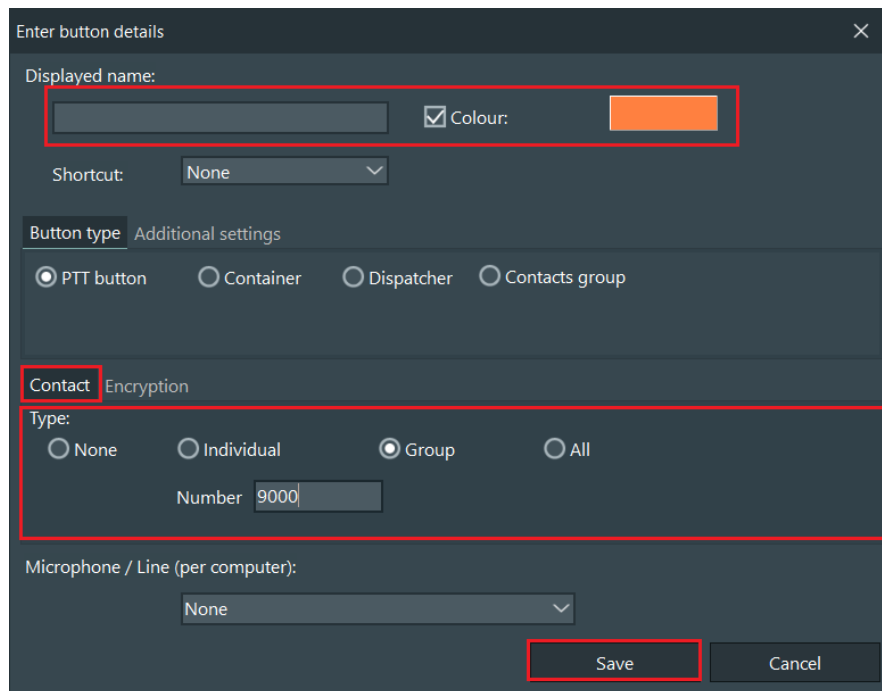


Fig 65 Editing parameters for new contact

Once the required data has been entered, confirm by clicking **Save**.

To establish a voice call, left-click the desired **PTT button**, and hold it for the duration of the information transfer.

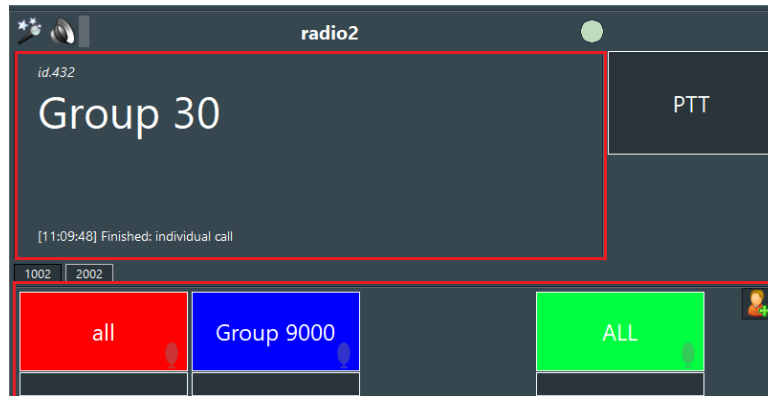


Fig 66 Radio window with added PTT contact

Following these steps will initiate the radio transmission.

The start of transmission is indicated by the change in colour of the **PTT button** and **the radio's display**. To end the transmission, release the mouse button.

9.2.2.1. Editing additional PTT buttons

Additional PTT buttons can be arranged within the radio console by selecting **Edit buttons**.

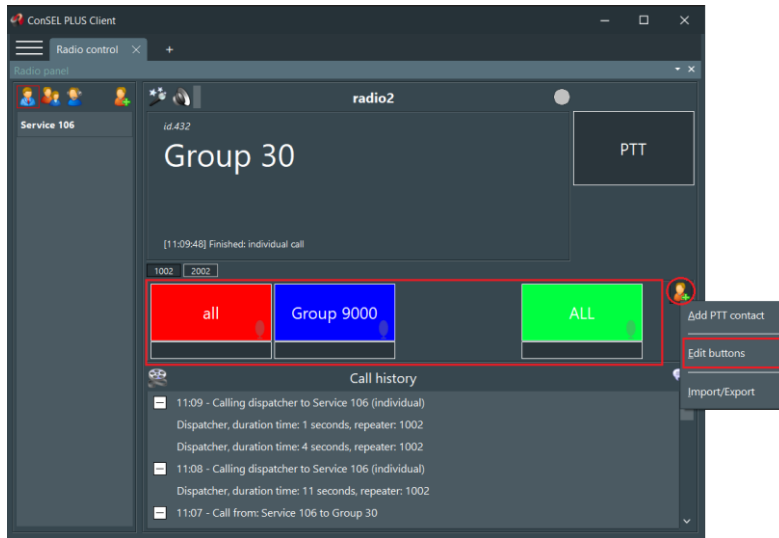


Fig 67 Editing PTT buttons

A window opens with an editor for additional PTT buttons.



Fig 68 PTT editing window

The Button Position Editor allows you to:

- change the location on the console– 1
- hide the button– 2
- delete the button– 3
- configure the button – 4

9.2.2.2. Importing/exporting additional PTT buttons

If you want to transfer the created contact template to other radio consoles, you can use the option for Import/Export of additional PTT buttons; the created configuration can then be read/written from/to a file in *.txt format.

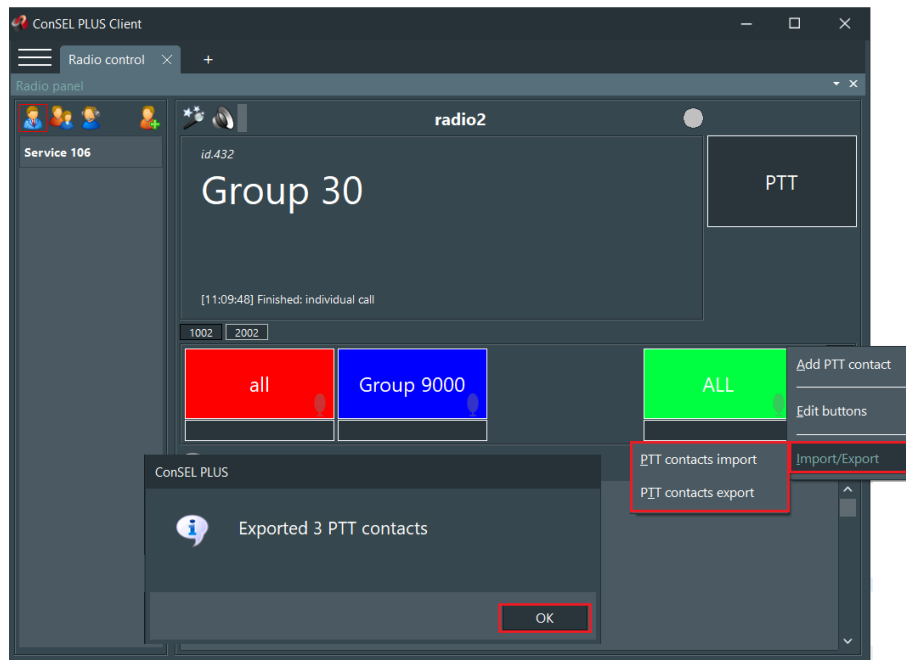


Fig 69 Import / export of PTT contacts

9.3. Radio panel – call history area.

The call history area of the Radio Panel contains two functionalities that significantly improve the dispatcher's work:

- Call history – a mini-recorder of voice calls from the moment the radio console was activated
- Dispatcher chat – for direct and quick exchange of information between dispatchers

9.3.1. Call history.

Call history is a mini-recorder of voice calls available to the dispatcher directly from the Radio Panel. It contains information about calls and conversations that have taken place on the radio network supported by the ConSEL PLUS application and allows the dispatcher to listen to their content directly from the Radio Panel.

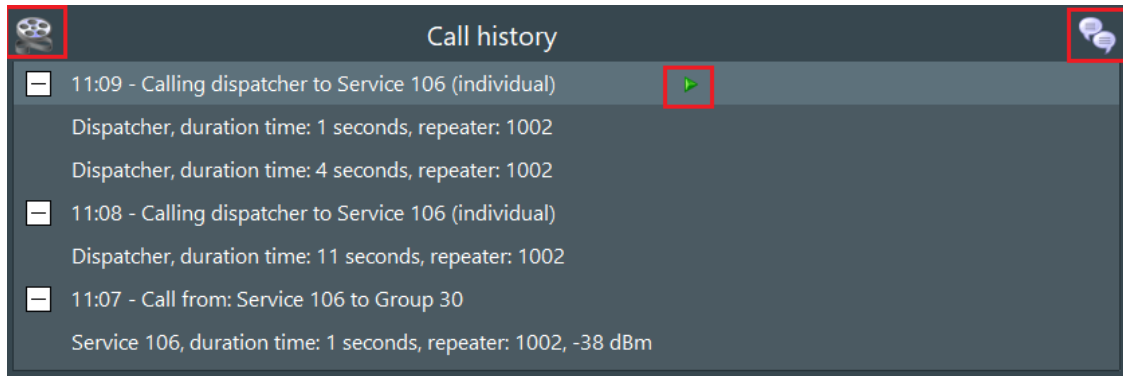


Fig 70 Call history

Note: From the Call History it is not possible to export recordings to audio files!

Conversations in the Call History window are presented in the form of a tree sorted by the time they were conducted. They contain information about the participants in the radio call, who initiated it and to whom it was directed.

Expanding the tree of the selected conversation (the button) presents details of the conversation: who was transmitting, for how long, which repeaters were used.

To play back the content of a call, point to and press the button visible after selecting the call in the Call History window.

From the Call History window, it is also possible to directly access the full **Correspondence Recorder** module (if the user has such privileges) by pointing to and pressing the button.

9.3.2. Dispatcher chat

Dispatcher chat in the Radio Panel is available by clicking the button in the Call History area, which toggles the window between Call history and Dispatcher chat.

Dispatcher chat allows information to be exchanged between users (dispatchers) in real time directly from the ConSEL PLUS application.

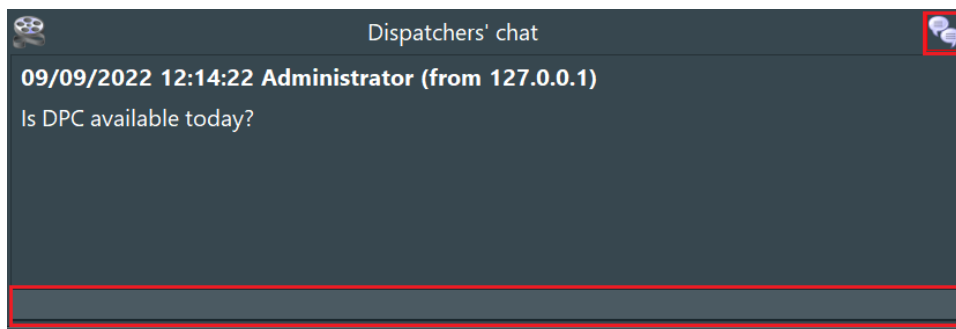


Fig 71 Dispatcher's chat

Sending a message to other dispatchers involves typing the text of the message into the text box at the bottom of the window and sending by pressing ENTER.

9.4. Radio panel module – additional features

The Radio Panel module also provides access to additional functions closely related to the type of radio communication system working with the ConSEL PLUS application and its configuration and designation.

Additional features are available as standard on MotoTRBO and TETRA digital radio systems.

Additional features can be accessed from the radio contact list.

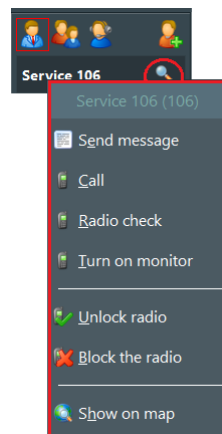


Fig 72 Contact options

To access additional features, select a contact in the contact list and then click the button, which will display an additional menu.

9.4.1. Text messaging (SMS)

Text messages can be sent to individual and group recipients.

To send a text message in ConSEL PLUS, select the message recipient from the list of individual or group contacts, highlight the recipient, then click the button and select **Send Message** in the secondary menu (option not available in **Capacity Max** radio panel. In order to open message windows, go to Menu -> New Radio Window -> Messages)

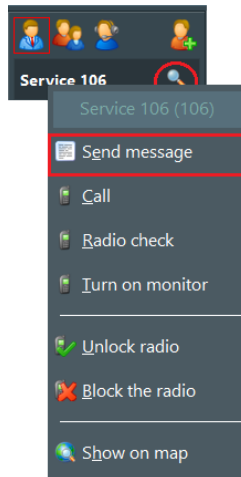


Fig 73 Send message option

In the new **Edit Message to Send** window, enter the title of the message and its content.

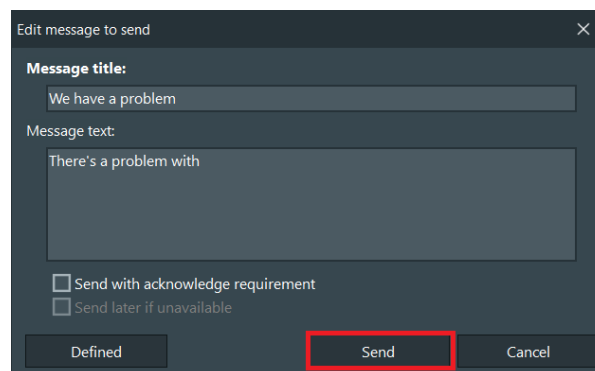


Fig 74 Sending message

In addition, it is possible to select the option for receipt acknowledgement or, if they are currently outside the radio network, the option for the message to be delivered after logging back into the radio network.

To send the message, click the **Send** button.

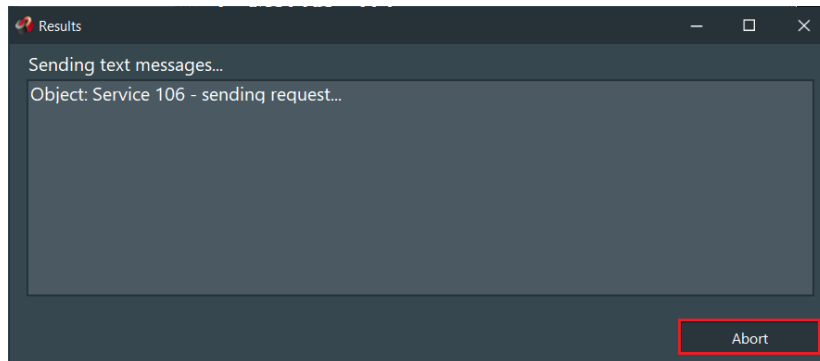


Fig 75 Sending message window

The ConSEL PLUS app also allows you to create your own text message list and define the most frequently used text messages to send without manually typing them in each time.

9.4.2. Defining text messages

To create a list of defined text messages, select the **Defined** button and then the **Manage** option from the menu.

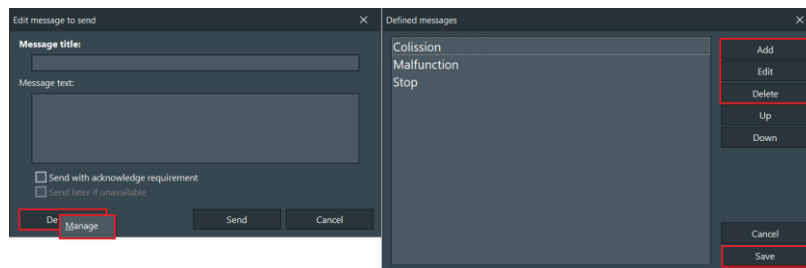


Fig 76 Sending defined messages

In the new window, use the **Add** button to create text messages. Confirm the entered text with the **Save** button.

To send a predefined text message in ConSEL PLUS, select the message recipient from the list of individual or group contacts, then select the button and click **Send Message** in the pop-up menu.

In the new **Edit Message to Send** window, select **Defined** and then choose the desired message from the predefined messages list; it will be automatically entered into the required fields: message title/body.

To send the message, click the **Send** button.

9.4.3. Sending an audio call (ringing)

The audio call (ringing) feature allows you to send an individual call request to a selected contact. If the radio network is configured appropriately, the user's radio will audibly or visually indicate that the ConSEL PLUS dispatcher wants to talk.

To send an audio call, select a contact from the list of individual contacts, select the button and choose **Call** in the pop-up menu.

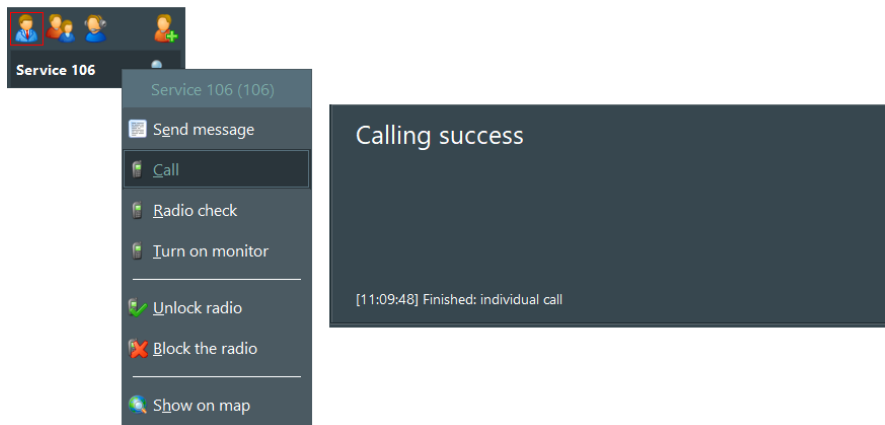


Fig 77 Calling from contact's option

Immediately after pressing the **Call** button, the system will send the corresponding command to the radio.

The operation of the function will be indicated in the display area of the Radio Panel by the "Ringing..." message.

When the radio user answers and accepts the call, an individual call is set up.

If the call is unsuccessful (user does not agree to the call, radio is out of range of the radio network), the ConSEL PLUS application will generate a failure tone and the message "Call unsuccessful" will appear on the display.

9.4.4. Monitoring (listening) the radio's surroundings

The monitoring (listening) function of the radio's surroundings, available in the ConSEL PLUS application, allows for the user's (contact's) radio to be remotely activated for transmitting, so you can remotely listen to the radio's immediate surroundings using its microphone without the user knowing or having to react in any way.

The remote monitoring (listening) function of the radio's surroundings, complemented by other radio functions (Lone Worker, Man Down), allows for a significant increase in the safety of radio users, especially those working alone or in hazardous environments.

In order to monitor (listen to) the surroundings of the radio (contact), select the contact from the list of individual contacts, and then select the button and select the option **Enable monitor** in the pop-up menu.

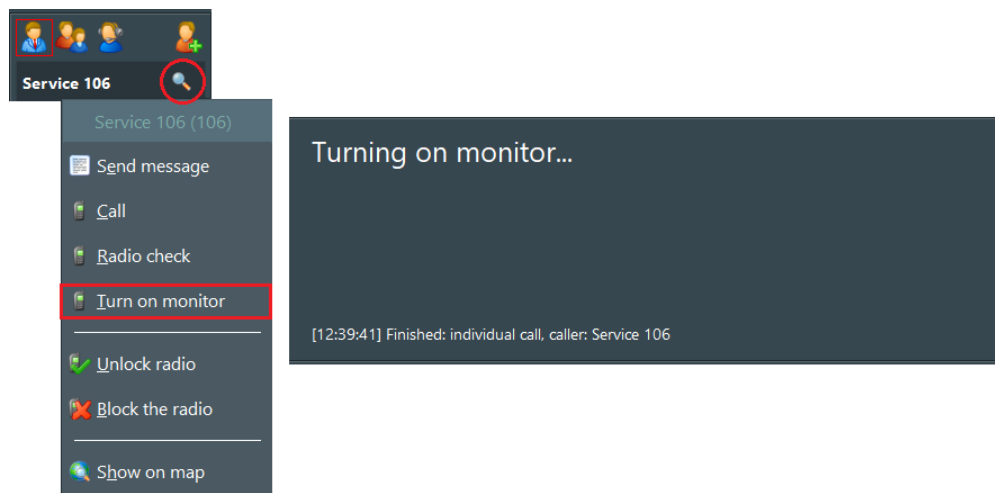


Fig 78 Turning on monitoring mode

Immediately after pressing the **Enable Monitor** button, the system will send the corresponding system command to the radio.

Operation of the feature will be indicated in the radio display area of the Radio Panel with the message "Switching on monitor...".

When a call is established, the sounds from the radio's surroundings will be heard in the speakers.

The monitoring (listening) function of the radio's surroundings will use an individual call set up exclusively between the ConSEL PLUS application user who has activated the monitoring function and the radio contact selected by the user.

9.4.5. Checking contact presence in the radio system

The presence check feature for a contact in the radio system allows an individual system query to be sent to the selected contact. If the radio is switched on and logged in to the radio system, it will automatically respond by confirming its presence.

The presence check feature is useful when there is no response to voice calls directed to a radio contact, to establish the initial reason for the call not being answered.

To check the presence of a contact in the radio system, select the contact from the list of individual contacts, select the button and select **Check presence** in the pop-up menu.

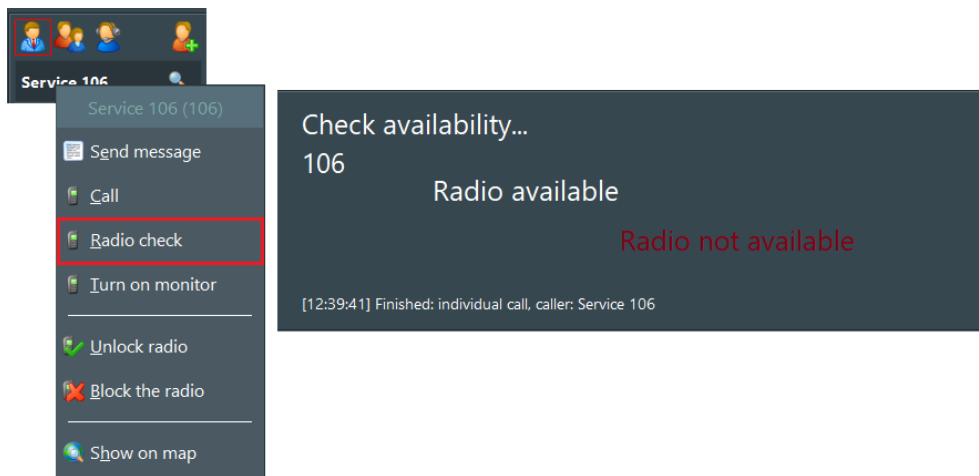


Fig 79 Availability checking

Immediately after pressing the **Check Presence** button, the system will send the corresponding system command to the radio.

Operation of the feature will be indicated in the radio display area of the Radio Panel with the message "Checking availability...".

When the ConSEL PLUS application receives a response from the user's radio, the display will show "Radio available".

If there is no response from the user's radio, the display will show 'Radio not available', indicating that it is switched off or out of range of the radio system.

9.4.6. Remotely blocking/unblocking user radios

The remote block/unblock feature allows for the user radio to be enabled or disabled over the air. A radio blocked using this feature will be visible in the ConSEL PLUS application and logged in to the radio system, but its radio operation will be disabled.

Depending on the radio's configuration, this feature can disable the screen, the ability to receive and transmit calls, as well as access to the menu. A locked radio becomes useless, which is very important if it is lost or stolen.

The function of remotely blocking/unblocking a user's radio can also be used when renting radios for a strictly defined period of time.

To remotely block/unblock a user's (contact's) radio in the system, select the contact from the list of individual contacts, select the button and click **Block Radio** or **Unblock Radio** in the pop-up menu.

Selecting the **Block Radio** option, which block radio communications and lock the user's radio, requires additional approval by the ConSEL PLUS application user.

The command to lock the radio will only be sent to the radio network after additional approval of the use of the feature by pressing **Yes**.

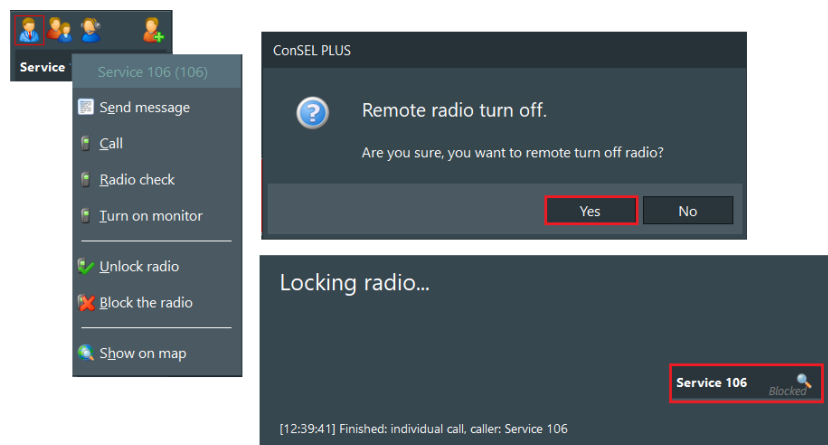


Fig 80 Locking / unlocking radio

Operation of the radio block feature will be indicated in the display area of the Radio Panel with the message "Locking the radio...".

A blocked radio will be indicated with a text message in the radio contact list directly next to the blocked radio contact.

Unlocking the user's radio is carried out in a similar way when the **Unblock Radio** option is selected.

Operation of the radio unblock feature will be indicated in the display area of the Radio Panel with the message "Unlocking the radio...".

Once the user's radio is unblocked, the **Blocked** message will not be visible and the radio will be ready to be used again on the radio network.

Show On Map feature

The Show on Map function allows the location of the user's radio (contact) to be visualised on a digital map displayed in a new window directly from the Radio Panel.

In order to display the location of the selected contact, it is not necessary to first launch the **Current Data** module in ConSEL PLUS, which is dedicated to the full handling of information related to object location and GPS location data.

In order to display the location of the user's (contact's) radio on the digital map, select the contact from the list of individual contacts, select the button and select **Show on map** in the pop-up menu.

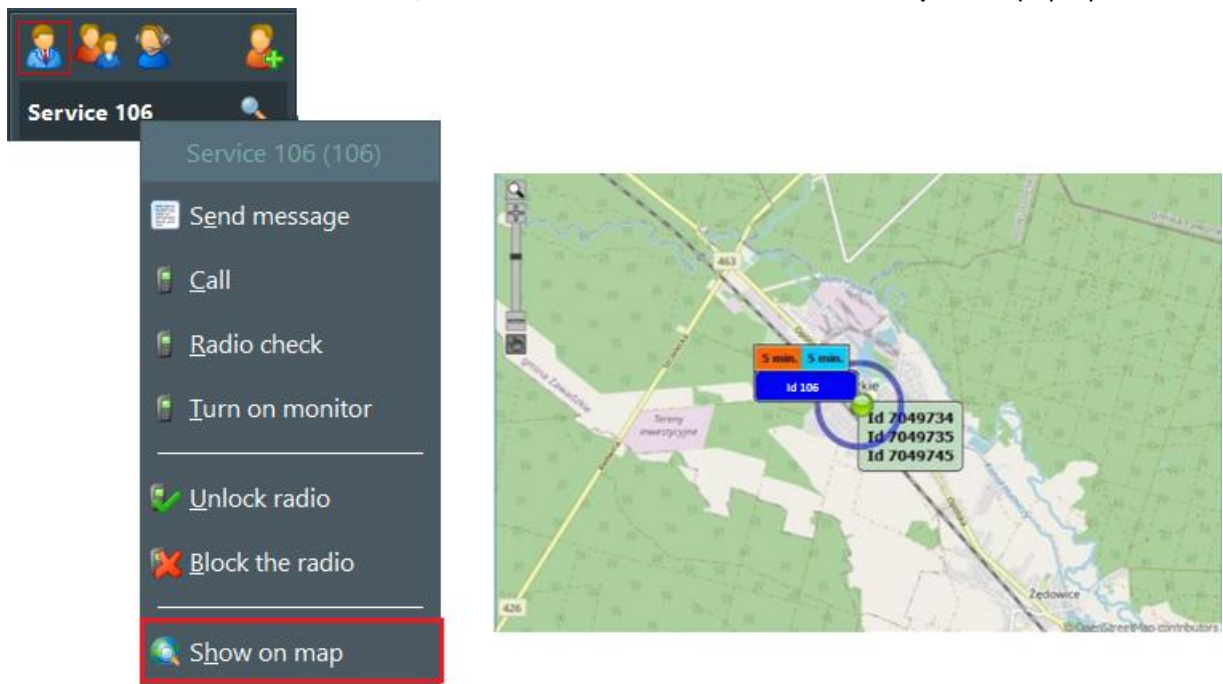


Fig 81 Showing object on map

A new window will open with the digital map used in the ConSEL PLUS application, displaying the location (geographical position) of the contact.

9.5 Radio Panel in Capacity Max

The Radio Panel for the Capacity Max system is different from the radio panels in other systems. Additional features and differences will be described below:

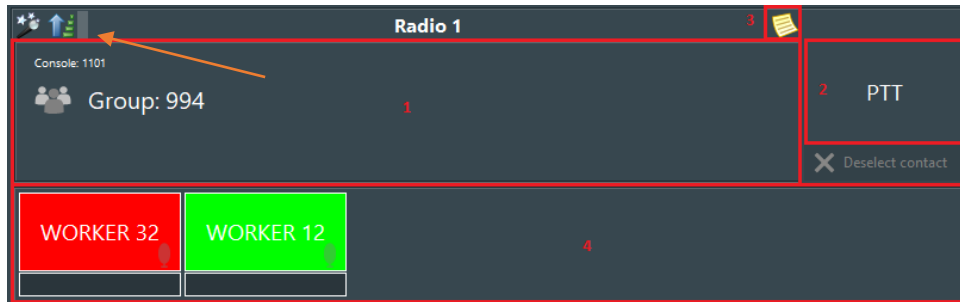


Fig 82 Capacity Max Radio Panel

On the Capacity Max radio panel, the volume change icon is different from other radio panels.

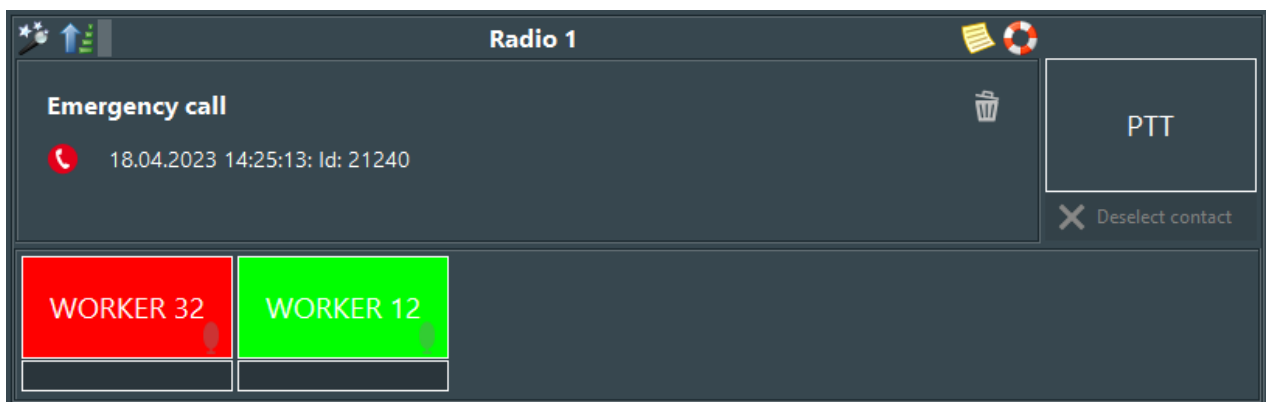


Fig 83 Emergency call display

Emergency state appears and puts in a pile of other similar events. In addition, the trash can icon is used to clean emergency states that have accumulated.

In this state, there is also a lifebuoy icon above the display, which can be used to switch between the emergency state and the display of current events.

The same way works the call alarm, which icon is a note (next to lifebuoy on fig 83)

10. Change log

Date	Version	Changes	Author
20.12.2022	1.5	ConSEL Plus Client module – ConSEL PLUS system client – create required a ConSEL administrator account	Adam Strugała
20.12.2022	1.5	Addition of Change log Unification of Headings used	Wiktor Śmieja
11.04.2023	1.6	Added Module type - Capacity Max, Added Radio Panel Capacity Max, Added description of graphics	Jacek Holona