2N® Lift8

Communicator for lifts

User Manual

The 2N TELEKOMUNIKACE a.s. is a Czech manufacturer and supplier of telecommunications equipment.

The product family developed by 2N TELEKOMUNIKACE a.s. includes GSM gateways, private branch exchanges (PBX), and door and lift communicators. 2N TELEKOMUNIKACE a.s. has been ranked among the Czech top companies for years and represented a symbol of stability and prosperity on the telecommunications market for almost two decades. At present, we export our products into over 120 countries worldwide and have exclusive distributors on all continents.

2N® is a registered trademark of 2N TELEKOMUNIKACE a.s. Any product and/or other names mentioned herein are registered trademarks and/or trademarks or brands protected by law.

2N TELEKOMUNIKACE a.s. administers the FAQ database to help you quickly find information and to answer your questions about 2N products and services. On www. faq.2n.cz you can find information regarding products adjustment and instructions for optimum use and procedures „What to do if…".

2N TELEKOMUNIKACE a.s. hereby declares that the 2N product complies with all basic requirements and other relevant provisions of the 1999/5/EC directive. For the full wording of the Declaration of Conformity see the CD-ROM (if enclosed) or our website at www.2n.cz.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The 2N TELEKOMUNIKACE a.s. is the holder of the ISO 9001:2009 certificate. All development, production and distribution processes of the company are managed by this standard and guarantee a high quality, technical level and professional aspect of all our products.

Content:

1. Product Introduction

In this section, we introduce the 2N$^®$ Lift8 product, outline its application options and highlight the advantages following from its use.

Here is what you can find in this section:

- 1.1 Product Description
- 1.2 Components and Associated Products
- 1.3 Changes
- 1.4 Terms and Symbols Used

1.1 Product Description

Basic Features

- Up to 8-lift connectivity
- Lift cabin, shaft and machine room voice audio units
- Optimum acoustic properties
- Rechargeable built-in backup battery
- Easy control and configuration – voice response system
- Check Call function
- Lift blocking during connection failure
- Internal communication – Triphony
- Telephone/PC-based configuration (via USB or Internet)
- USB interface
- User message recording option
- Local control centre (Intercom)
- Fireman function

Basic Description

2N® Lift8 (L8) is a communication system with a function similar to an intercom. The system voice audio units are linked to a common bus (pair of wires), connected to a splitter. The splitter is always connected to a central unit (CU), which controls the system operation and provides connection with the control centre. It is possible to connect up to 40 audio units to the bus. The CU contains an internal splitter.

Each splitter is uniquely identified: by lift number 1 to 8. The audio units are connected to the splitters and located on the shaft bottom, in the cabin interior, on the cabin roof and in the machine room. The machine room audio unit can be shared by multiple lifts.

The CU contains an easily replaceable backup battery pack (lead rechargeable battery). The CU is responsible for battery charging and status monitoring. It indicates the charging state, signal strength, telephone line state, bus state core state via five colour LEDs. It is also equipped with a USB interface for comfortable configuration, voice message recording and software upgrade.

The CU can be connected via: GSM, UMTS, PSTN or VoIP.

2N® Lift8 meets the TÜV and CE certifications .

System Diagram
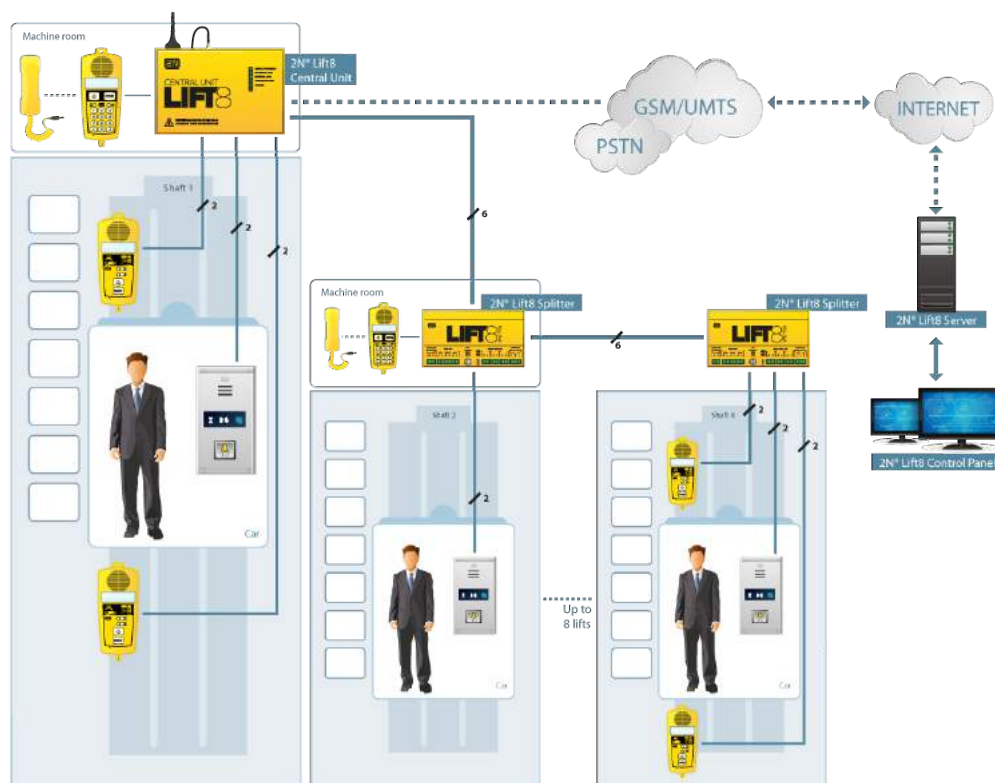
Example of 2N® Lift8 Central Unit, Splitter and Audio Unit Connection

Main bus
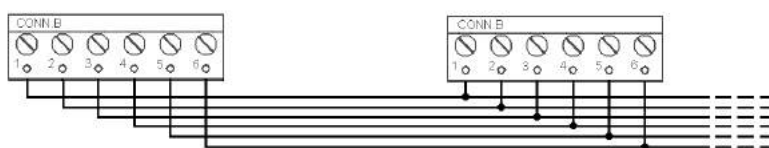
Audio unit bus
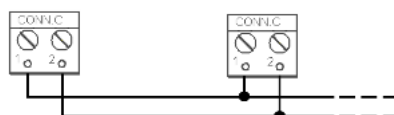
1.2 Components and Associated Products

2N ® Lift8 System Components

> ⚠️ **Notification**
>
> - The components of the **2N® Lift8** system cannot be used outside this system.
> - The audio units cannot be connected to a telephone line **without the CU** !
> - When shared by multiple shafts, the audio units cannot be connected without the **CU** and splitters.

918600 2N ® Lift8 Central Unit
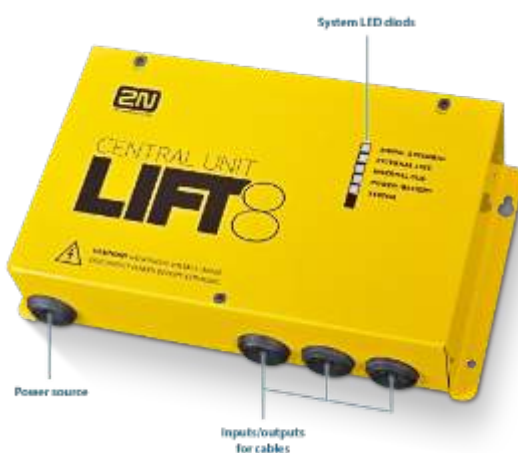
2N® Lift8 Central Unit

For connection of up to 8 lifts to a GSM/UMTS/PSTN line. Including a power EURO cable and rechargeable battery. USB interface for configuration.

918620E 2N ® Lift8 Splitter

2N® Lift8 Splitter

For **CU** – lift audio unit interconnection.

918610E 2N ® Lift8 Audio Unit – COP

(Normal version)

2N® Lift8 Audio Unit – COP

Audio unit electronics for lift cabin building in. Including speaker and microphone (HandsFree). Connection terminals for all prescribed elements and door opening signal input (optional).

918610EX 2N ® Lift8 Audio Unit – COP – Cable Version

Contains LED, microphone and speaker connected to cables.
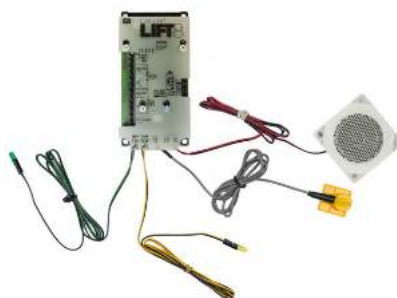
2N® Lift8 Audio Unit – COP – Cable Version

918611E 2N ® Lift8 Audio Unit – Machine Room/Control Centre

2N® Lift8 Audio Unit – Machine Room/Control Centre

Audio unit for the machine room/control centre. Contains receiver (optional) and keypad for easy control. Makes it possible to communicate with other system audio units and configure the CU without a PC. Equipped with an external siren connector. Can be shared by multiple lifts (shafts). Robust yellow cover.

918612E 2N ® Lift8 Audio Unit – Shaft

2N® Lift8 Audio Unit – Shaft

Audio unit for cabin roof and shaft or cabin bottom. Robust yellow cover. HandsFree mode, ALARM button and Triphony, LED indicators. Not intended for use in the cabin.

918613E 2N ® Lift8 Audio Unit – Compact

2N® Lift8 Audio Unit – Compact

Robust, heavy-duty design. Standard-sized ALARM button including signage for the blind and backlit pictograms (hardened glass). Easy cabin wall mounting. Easy 2-wire connection.

918615ZK 2N ® Lift8 Audio Unit – Fireman (1 button)

918615E 2N ® Lift8 Audio Unit – Fireman (knob + 1 push-to-talk button)

2N® Lift8 Audio Unit – Fireman

Used for fire fighting operations. Activates top priority calls.

918619E 2N ® Lift8 Audio Unit – Fireman DPS (knob + 1 push-to-talk button)

2N® Lift8 Audio Unit – Fireman DPS

Used by fire fighting operations. Activates top priority calls.

918617E 2N ® Audio Unit – Shaft Antivandal

2N® Lift8 Audio Unit – Shaft Antivandal

A robust, highly resistant audio unit designed for installation on lift cabin roofs and shaft bottoms, under cabin floors and/or any other places that require communication, e.g. for lift maintenance purposes. This unit is designed for outdoor applications too.

918621E 2N ® Lift8 I/O Module

2N® Lift8 I/O Module

Contains logical inputs and switch relays.

918622 2N ® Lift8 Camera Module

2N® Lift8 Camera Module

For camera connection (IP, RS232, RS485) to the lift cabin. Every cabin in each shaft can contain a camera module (up to 8 camera modules in 2N® Lift8).

918654E 2N ® Lift8 RS232 Module

2N® Lift8 RS232 Module

The RS232 module connects the 2N® Lift8 system with the lift control unit. The lift control unit transmits a command via RS232 to the Central Unit for processing and executing.

918650E 2N ® Lift8 GSM Module

2N® Lift8 GSM Module

For Central Unit connection via a mobile network. Optional data connection for remote system configuration.

918651E 2N ® Lift8 UMTS Module

2N® Lift8 UMTS Module

For Central Unit connection via a mobile network. Optional data connection for remote system configuration.

918652E 2N ® Lift8 PSTN Module

2N® Lift8 PSTN Module

For Central Unit connection via an analogue line.

918653E 2N ® Lift8 VoIP Module

2N® Lift8 VoIP Module

For Central Unit connection via a VoIP line.

Cooperating 2N ® Applications

918700E 2N ® Lift8 Service Tool
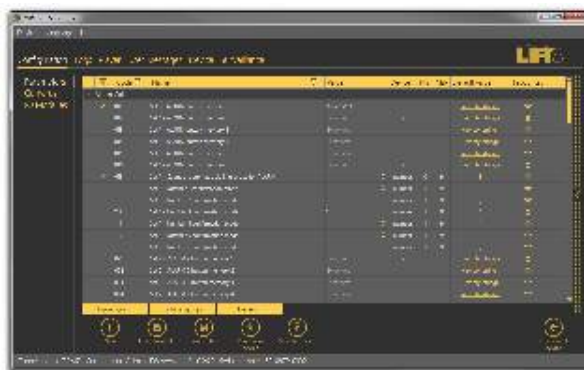
2N® Lift8 Service Tool

The **2N® Lift8 Service Tool** application is intended for remote supervision and configuration of the **2N® Lift8** communicators.

918700E 2N ® Lift8 Control Panel

2N® Lift8 Control Panel

The **2N® Lift8 Control Panel** application is intended for administration of users, lifts and authorisations.

918700E 2N ® Lift8 Communicator

2N® Lift8 Communicator

The **2N® Lift8 Communicator** application is intended for receiving alarm calls by the dispatcher.

918700E 2N ® Lift8 Server
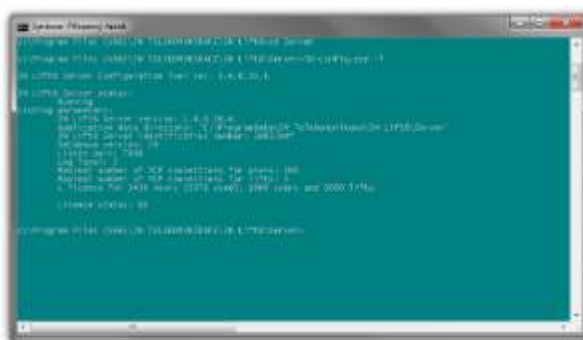
2N® Lift8 Server

The **2N® Lift8 Server** application processes check calls and mediates communication between the **CU**s and PC applications.

Associated 2N ® Products

918655E – 2N ® Lift8 External Pictograms Driver

2N® Lift8 External Pictograms Driver

Transforms the 2N® Lift8 cabin LED outputs into universal pilot lamps.

1.3 Changes

The table below sums up the User Manual upgrade changes made so far.

Manual version	Description of changes
1.0.0	Firmware 1.0.0 • Basic version
1.5.0	Firmware 1.5.0 • VoIP parameters added • Internal splitter four-lift configuration option (up to four cabin units can be connected to one internal splitter with lift 1–4 identification)
1.6.0	Firmware 1.6.0 • Fireman • I/O modules (inputs only) • Configurable rechargeable battery capacity • New alarm call protocols added (shaft/audio unit identification) • Dial-in option (for PSTN modules with non-standard tones) • CZ, EN, RU language support • Important warnings – Upgrade Server Database from ver. 1.5.x to ver. 1.6.x • Surveillance mode in the Control Panel • Improvements in applications
1.7.0	Firmware 1.7.0 • Camera module • New protocols: CPC Antenna/KONE 2N ext. and P100 2N ext. (shaft number and audio unit type identification) • DE language support • Auto-delete of archive records

Manual version	Description of changes
1.8.0	Firmware 1.8.0 • Modified Groups menu in the Control Panel • PT language support
1.9.0	Firmware 1.9.0 • RS232 module • SMS configuration • System completeness check
1.10.0	Firmware 1.10.0 • Audio test of audio units • Service Tool for Android • TLS/SRTP support • MJPG player in Service Tool • Audio unit – Shaft Antivandal • Camera module web interface
2.1.0	Firmware 2.1.0 • New processor type • Two-cabin lift extension (7 shaft/cabin audio unit location options) • Image downloading application (get-cam-image)
2.2.0	Firmware 2.2.0 • Event reporting • New actions and script commands • Monitoring of statistic data and a new character set on the server • New installers • In-band DMTF • Direct call (call to IP address)

Manual version	Description of changes
2.3.0	Firmware 2.3.0 • Server – receiving of operational calls • Operational calls (jammed button, audio test error, battery error) • Get-cam-image – image loading option outside an active call
2.3.1	Firmware 2.3.1 • Change of module mounting spacers • New events (service tool)
2.4.0	Firmware 2.4.0 • LAN module • Diagnostic package • Button 2 behaviour change • Current device state and device monitoring (ControlPanel) • Port forwarding (Service Tool)
2.5.0	Firmware 2.5.0 • CU restart via Service Tool • Current HW state monitoring (configure via the Service Tool or Control Panel – refer to Subs. 4.8 for details) • Audio unit audio test change • New parameter 029 (enable set 1 if set 2 is empty) • New parameter 987 (LED signalling according to EN81-28) • New parameter 810 (inter-checking call timeout) • New parameter 811 (manual checking call start) • New parameter 990 (allowed operational calls at events) • New parameter 963 (minimum button pressing time for forced/test alarm)

Manual version	Description of changes
2.6.0	Firmware 2.6.0 • New parameter 711 (Allowed 2G/3G bandwidths) • Change of parameter 983 range (1–100)

1.4 Terms and Symbols Used

Symbols Used

The following symbols and pictograms are used in the manual:

> ⊕ **Safety**
>
> - **Always abide** by this information to prevent persons from injury.

> ⊕ **Warning**
>
> - **Always abide** by this information to prevent damage to the device.

> ⚠ **Caution**
>
> - **Important information** for system functionality.

> ⊘ **Tip**
>
> - **Useful information** for quick and efficient functionality.

> ⓘ **Note**
>
> - Routines or advice for efficient use of the device.

2. Description and Installation

The section is divided according to system components into the following subsections:

- 2.1 PSTN/GSM/UMTS/VoIP Central Unit
- 2.2 Splitter
- 2.3 Audio Unit - COP
- 2.4 Audio Unit - Machine Room
- 2.5 Audio Unit - Shaft
- 2.6 Audio Unit - Compact
- 2.7 PSTN Module
- 2.8 GSM/UMTS Module
- 2.9 VoIP Module
- 2.10 Audio Unit – Fireman
    - 2.10.1 Fireman PCB
    - 2.10.2 Fireman
    - 2.10.3 Fireman - Mechanical Mounting
- 2.11 I/O Module
- 2.12 Camera Module
- 2.13 RS232 Module
- 2.14 Audio Unit - Shaft Antivandal
- 2.15 LAN Module
- 2.16 Voice Alarm Station

Each subsection includes:

- Description of Components
- Before You Start
- Fitting
- Electrical Wiring

2.1 PSTN/GSM/UMTS/VoIP Central Unit

Description
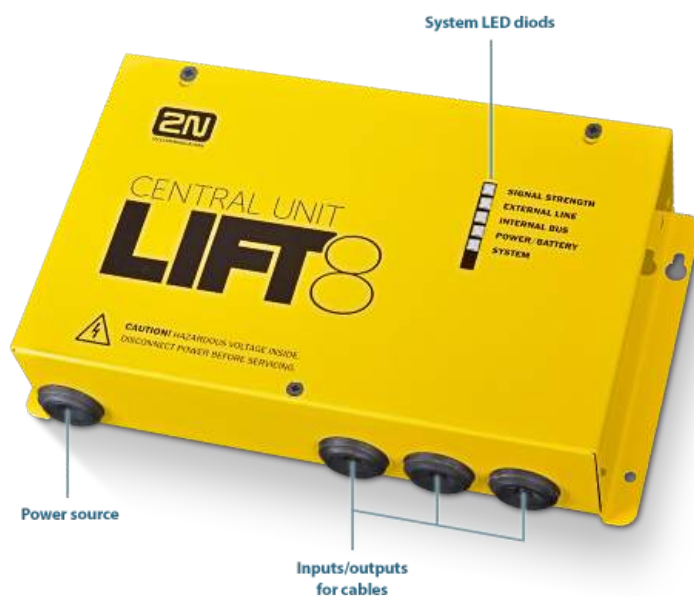
Central Unit

Signal strength

Green	Strong signal
Yellow	Medium signal
Red	Teak signal
Nothing is illuminated	In case of IP/PSTN

The signal can flicker between the individual bands (strong – medium, medium – weak)

External line

Green	The line is all right and ready
Green flashes	Call in progress
Yellow	The line is all right, but is registered in ROAMING
Yellow flashes (quickly)	Data transmission
Yellow flashes (long 3s)	SMS in process – sending/receiving
Yellow - green	Call and data at the same time (only GSM/UMTS version)
Red flashes (slowly)	SIM not inserted
Red flashes (quickly)	Incorrect PIN, last attempt
Red permanently illuminated	SIM inserted, but not registered Fault in PSTN VoIP not registered

Internal bus

Green	Bus all right and in standby
Green flashes (slowly)	Voice communication (Alarm or triphony)
Green flashes (quickly)	Downloading picture from camera module
Yellow flashes	Some announcers are undergoing upgrade process, some are ready for a call
Yellow-green flashes	Announcers are waiting for upgrade + call underway
Red	The current configuration does not correspond to the saved configuration
Red flashes	Sound check fail on audio units

Power/battery

Green	Power OK, the battery is charged
Green flashes	Battery charging
Yellow	Power failure, battery in operation
Yellow flashes	Less than one hour battery operation
Red	Battery not connected
Red flashes	Battery is defective - replace

System

Green	Core OK
Green flashes	System is launching (other LEDs start to
Yellow	Bootloader launching
Yellow flashes	Upgrade underway
Red	HW activation (immediately after switch Error in core (logs can be downloaded)
Red flashes	HW must go for servicing (it is not possi download the logs, and the bootloader h
Green/Red flashes	Checking call error, indalid configuration files missing

SIGNAL STRENGT

EXTERNAL LINE

INTERNAL BUS

POWER/BATTER

SYSTEM

Indication Elements
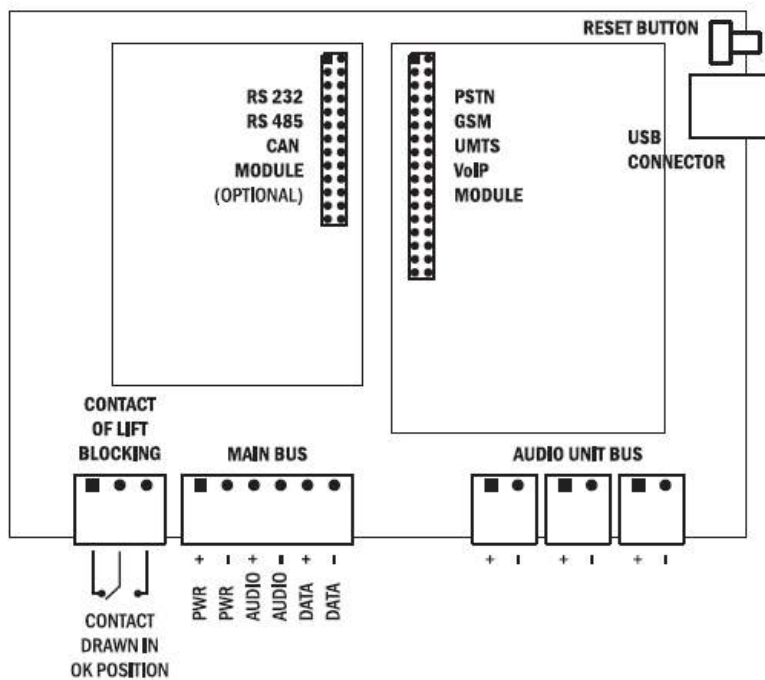
Central Unit Connectors

There are a USB connector and reset button to the right of the **CU** (see the figure below).
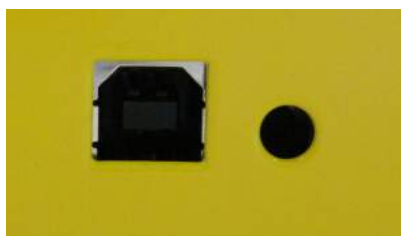
USB Connector and Reset Button

Reset Button Function

- **Reset equipment** – press the button quickly.

- **Restore factory values** – press and hold the button until all the LEDs turn red. Then release the button and wait until the SYSTEM LED flashes yellow. Now press the button quickly to delete all the user settings.

- **Zero backup rechargeable battery life counter** – press and hold the button until all the LEDs turn red. Then release the button and wait until the POWER /BATTERY LED flashes yellow. Now press the button quickly. Perform this function after replacing the backup rechargeable batteries with new ones only!

- **Check system completeness** – press and hold the button until all the LEDs turn red. Then release the button and wait until the INTERNAL BUS LED flashes yellow. Now press the button quickly to make the system supervise all the installed equipment (splitters, Audio Units etc.) for proper connection and function. Refer to S. 4.8.

- **Delete central unit software completely** – press and hold the button until all the LEDs turn red. Then release the button and wait until the SYSTEM LED flashes red. Now press the button quickly. CAUTION: after performing this function you can only restore the normal function of the device using a PC!

⚠ **Warning**

- After the CU SW is deleted, value 13 (equivalent to 13A h) is set in parameter **600 Capacity of accumulator** regardless of the type of batteries. Adjust this value manually according to the battery type to make the charging procedure correct.

USB Port Connection

Recommendation

- Do not keep your PC connected for a long time unless necessary to reduce the computer damage due voltage surge from the telephone line during storms, for example.

Before You Start

CU Installation Conditions

- The **Central Unit** (hereinafter referred to as **CU**) is not intended for outdoor use.
- Do not install the **CU** onto vibration-producing machines.
- Install the **CU** vertically to allow air flow for cooling purposes (never cover the **CU** with any cloth or install it in another closed box).
- You may install the **CU** into the lift switchboard unless the temperature exceeds the acceptable limit. Remember that a higher ambient temperature reduces the life of backup rechargeable batteries in the **CU**.
- It is recommended that the **CU** should be operated in the upright position with the cable openings at the bottom. Such mounting position ensures the lowest temperatures and thus the longest life of the rechargeable batteries. Horizontal mounting is also possible. The upright position with the cable openings at the top (upside down) is forbidden!
- After mounting the **CU** check that the equipment is firmly fixed in place and cannot come loose and drop down into the shaft.

Product Completeness Check

Check whether the product package is complete before installation:

- 1 central unit
- 1 main bus terminal
- 4 bus connection terminals
- 4 wall plugs
- 4 wall plug screws
- 8 cable ties
- 1 battery connecting cables
- 1 brief manual
- 1 warranty sheet
- drilling template

CU Mounting

It is recommended to install the **CU** in a room that is secured against unauthorised persons, such as the lift machine room, switching station etc. On an easily accessible place there is a risk of telephone line misuse or SIM card misappropriation.

The **CU** is mounted on a wall with the included wall plugs and screws.

CU Electrical Installation

Putting in Operation

1. Keep the **CU** disconnected from the mains.

2. Loosen the three screws on the upper cover of the **CU.**

3. Move the upper cover of the **CU** in such a way that you can remove it.

4. When removing the cover, proceed with caution, be careful about the earth wire connecting the cover with the **CU** bottom part. Do not disconnect the wire unless there is a reason to do so!

5. Using the slide-on terminals supplied with the device, connect the Audio Units, splitters (if there are 2 and more lift shafts) and other components of the system with the **CU.** Adhere to polarity!

6. Install a PSTN, GSM or UMTS module unless installed on the **CU**. Abide by the instructions given in the Instructions for Use of the given module (refer to Subs. 2.7 or 2.8).

7. Connect an analogue telephone line to the PSTN module if used (use a telephone connector or the terminal board on the module). Do not forget to connect an antenna to the GSM/UMTS module is used and insert a SIM card!

8. Take the rechargeable batteries out of the package and place them into the CU as instructed. Fix them into the holder and use an 8 mm spanner for tightening. Interconnect the batteries using the included cables but do not connect them to the CU yet.

9. Connect the **CU** power cable to a 230 V socket.

10. Interconnect the battery cables with the CU motherboard.

11. Replace the upper cover on the **CU** and tighten the cover fitting screws. Doing so make sure that the earthing wire is connected to the cover!

12. Press the Reset button to execute the **Zero backup rechargeable battery life counter** (refer to the Reset Button Function subsection).

13. Connect the **CU** to the mains supply.

> ⚠️ **Caution**
>
> - If you connect one lift shaft only, it is not necessary to connect the splitters. Use the splitters only if you want to connect 2 or more lift shafts.

> ⚠ **Warning**
>
> - WARNING! Live parts are exposed after the CU cover is removed!
> - Be very careful and do not touch dangerous live parts!
> - Never work with a switched-on CU with its protective cover off unless you are an authorised person duly trained according to Decree 50/1978 Coll.
> - **Never insert damaged batteries.** Do not insert the batteries in the CU that might show electric or mechanical damage.
>
> - **Never use 2N® Lift8 without its protective cover** to avoid electric accident, malfunction due to wrong interconnection and/or **2N® Lift8** electronics damage or destruction as a result of electric short-circuit or adverse environmental conditions. It is because **2N® Lift8** is not protected against dangerous touch and water – **IP00**.
>
> - Make sure before installation that the 2N® Lift8 board is not damaged!
>
> - **Do not connect a power supply other than the allowed one** to avoid electric accident or device damage.

Power Supply

- The **CU** is powered by 100–240 V mains power.

> ⚠ **Warning**
>
> - Never connect an AC source or unstabilised DC source to avoid **CU** damage.

Rechargeable Battery Connection and State Check

Procedure:

1. Keep the **CU** disconnected from the mains.

2. Loosen the three screws on the upper cover of the **CU**.

3. Move the upper cover of the **CU** in such a way that you can remove it.

4. Proceed with caution while removing the cover: be careful about the drain wire connecting the cover with the **CU** bottom part. Do not disconnect the wire unless there is a reason to do so!

5. Interconnect the rechargeable batteries, but do not connect them to the motherboard.

6. Plug in the **CU** supply cable into a 230 V socket.

7. Now interconnect the batteries with the motherboard using the FASTON cable (see the Fig. below). Maintain polarity.

8. Replace the upper cover on the **CU** and tighten the cover fitting screws. Doing so make sure that the earthing wire is connected to the cover!

After plugging the **CU** into the socket the LED (Power/battery) should start to flash (charging). The **CU** charges the rechargeable batteries until fully charged. After some time the flashing green LED (charging) should change to a permanently illuminated green LED (battery charged).

> ⓘ **Warning**
>
> - Adhere to the polarity of the rechargeable batteries! When the polarity of the batteries is reversed, there is a danger of fire or explosion or damage to the CU electronics.

Rechargeable Batteries

> ⚠ **Caution**
>
> - If backup rechargeable batteries are used for the 2N$^{®}$ Lift8 power supply, the required backup of up to 1 h is guaranteed only if up to 20 audio units are connected in the system.
> - The required 1h backup is not guaranteed if more than 20 audio units are installed.
> - Remember to replace the batteries every two years.

Splitter – CU Bus Connection
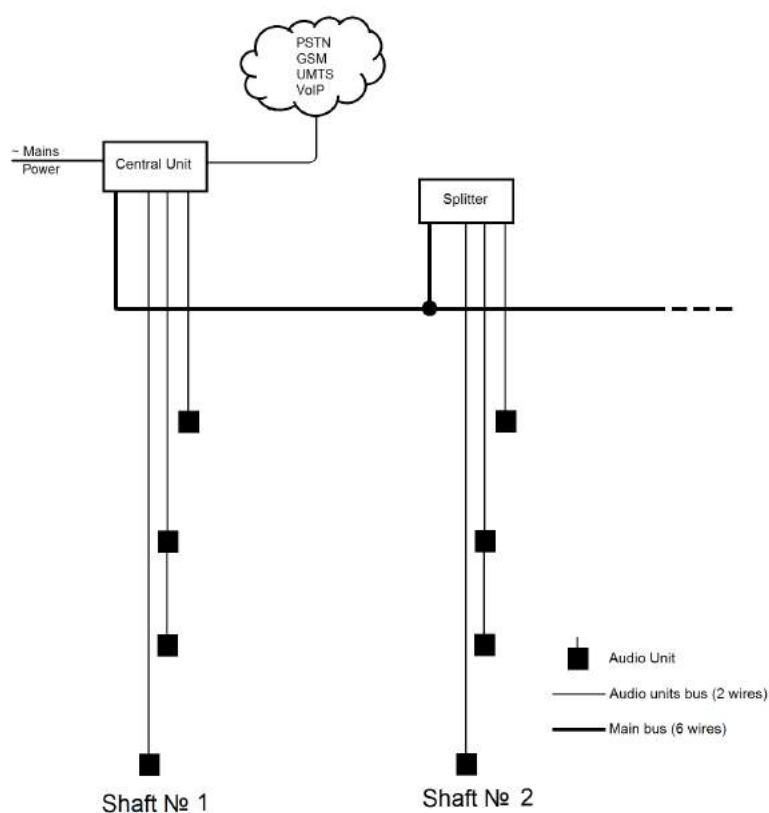
Interconnect the **CU** and splitter using a 6-wire main bus (power + - , audio + - , data + -). Mind the polarity.
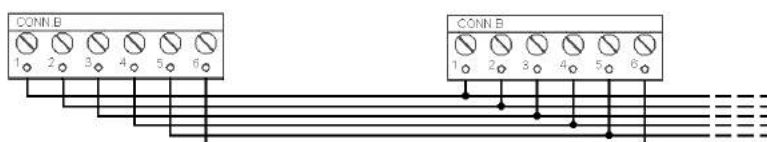
Main bus
1 ... Main bus power +
2 ... Main bus power -
3 ... Main bus audio +
4 ... Main bus audio -

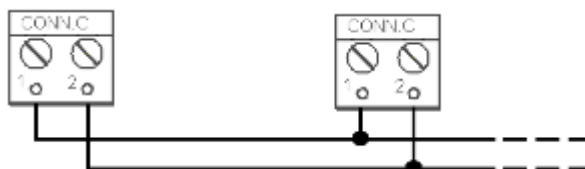| Main bus |
|---|
| 5 ... Main bus data + |
| 6 ... Main bus data - |

> ⚠️ **Caution**
>
> - 6-wire
>   - Use unshielded wires of the cross-section of 0.75 mm2.
>   - The maximum total cable length is 30 m with the cross-section of 0.75 mm2.
>   - For higher lengths, enlarge the supply pair cross-section: PWR (60 m – 1.5 mm2 , or 100 m – 2.5 mm2).

Audio Units – Splitter (CU) Bus Connection

(the **CU** is used if one lift shaft is connected)

Interconnect the Splitter (**CU**) and Audio Units using a two-wire bus. Mind the polarity.

Audio unit bus
1 ... Bus for Audio Units +
2 ... Bus for Audio Units -

> ⚠️ **Caution**
>
> - 2-wire
>   - Use unshielded wires of the cross-section of 0.75 mm2.
>   - The maximum total length per shaft is 600 m.
>   - With multi-strand cables, always use a pair of wires which match each other.
>   - With a tow cable, consider the cable length too.
>   - With special cables (to the cabin), use the neighbouring wires and make sure that the nearest surrounding wires do not radiate interference (power wire, video signal etc.).

> ✅ **Tip**
>
> - Do not lead the bus close to power cables, especially in long-distance sections.
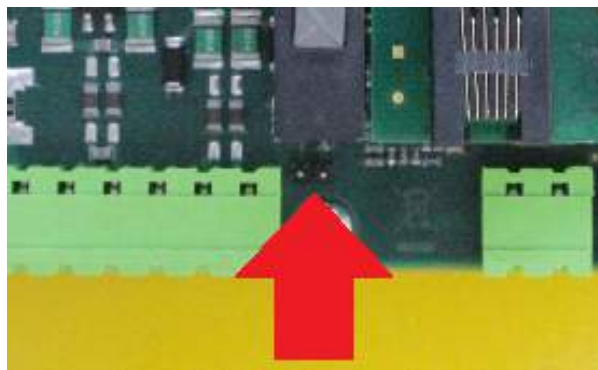> - Branch the bus to shorten the total length of sections.

> 🛑 **Safety**
>
> - The bus is electrically isolated from the telephone line circuits according to the EN60950 standard requirements and its low voltage cannot cause any electrical accident.
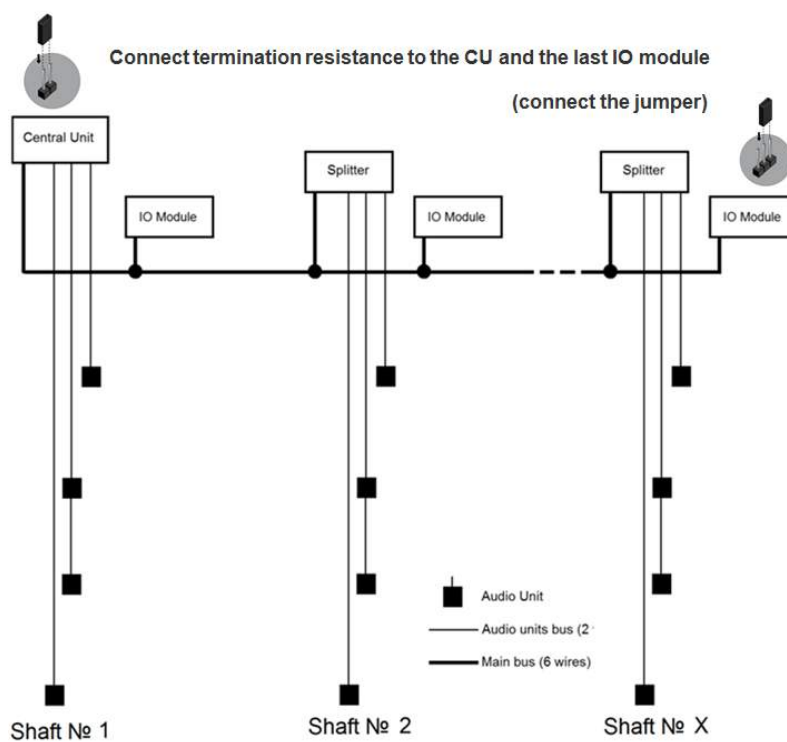
Termination Resistance

Connect the termination resistance connector to the first and last device connected to the bus: CU, splitter or I/O module.

> ⚠️ **Caution**
>
> - Find the 2-pin termination resistance connector between the main bus connector and audio unit connectors (see the figure below).
> - By default, the termination resistance is connected (jumper mounted).

Examples of Connection:

Connect termination resistance to the CU and the last IO module (connect the jumper)

Central Unit

Splitter

Splitter

IO Module

IO Module

IO Module

Audio Unit

Audio units bus (2

Main bus (6 wires)

Shaft № 1

Shaft № 2

Shaft № X

Connect termination resistance to the splitter and the last IO module

Central Unit

Splitter | IO Module

Splitter | IO Module

Splitter | IO Module

■ Audio Unit
Audio units bus (2
Main bus (6 wires)

Shaft № 1   Shaft № 2   Shaft № 3   Shaft № X

CU Connection to Telephone Network

You can connect the **CU** to any of the following telephone networks:

- PSTN
- PBX
- GSM
- UMTS
- VoIP

PSTN

2N$^®$ Lift8 works in a broad band regardless of polarity and line parameters (refer to Technical Parameters). Connect it using the enclosed cable with an RJ–12 terminal. It is the most reliable and simplest connection. The disadvantage is the operating cost (fixed fee).

> ⚠️ **Caution**
>
> - Only one **CU** may be connected to one telephone line and no other end telephone equipment may be connected to the line including a product through which the telephone line goes (so-called priority connection – electronic burglar alarm, e.g.).
> - No dual or party lines may be used.
> - No telephone "multiplugs" (adaptors), even the smart ones, may be used.
> - Never connect 2N$^®$ Lift8 to an ISDN line.

Telephone line requirements

- The line must not be a dual or party one.
- The telephone socket and its wiring are usually the network provider's property and may not be tampered with.

Other recommendations

- Notify the telephone network provider of your 2N$^®$ Lift8 installation and submit certification upon request.
- Your follow-up wiring must comply with the relevant safety regulations.
- You are recommended to secure your cabling against pirate connection (with a telephone lock, e.g.).

Connection via PBX (Private Branch Exchange)

- This is the least-cost solution where a PBX and an unused PBX line are available.

PBX line requirements

- The PBX to be used must work reliably even in the case of power outage. Large PBXs are mostly equipped with a back-up power supply, smaller PBXs usually use PSTN line redirection in the event of power failure. Consult the problem with the technician responsible for your PBX. An error during power outage may result in 2N$^®$ Lift8 calling an undesired station.

- Relevant call access rights have to be assigned to the PBX line to be used (use a standard telephone set to check whether the line can make outgoing calls to all the required numbers).

- While programming, enter the necessary PSTN code (typically a zero), or (preferably) make the PBX not require a prefix (so-called automatic connection to the provider's telephone line).

- To make the control room – lift calls, you have to know the extension number and how to get through to it (dial-in, DISA, operator).

- The control room – lift connection may not depend on the operator's presence; no call forwarding to a fax/answering machine in the night mode is allowed, etc.

Other recommendations

- Make an agreement with the PBX owner regarding operating costs (2N$^®$ Lift8 outgoing calls are billed at the owner's expense with the exception of free calls via "green lines").

> **⊘ Tip**
>
> - If there is permanent manning in your building (security staff, receptionist), train the personnel how to rescue people and program 2N$^®$ Lift8 to call this service.

GSM

This is used in particular where no PSTN line is available.

Recommendation

- In places with a poor signal quality find an appropriate place or use a special (directional) antenna.
- Protect the SIM card from theft.
- If a prepaid SIM card is used, make sure that the credit is monitored and topped up in time.

UMTS

This is used in particular where no PSTN line is available. If 2N$^®$ Lift8 is connected via UMTS, the system can be configured remotely using the 2N$^®$ Lift8 Service Tool application.

Recommendation

- In places with a poor signal quality find an appropriate place or use a special (directional) antenna.
- Protect the SIM card from theft.
- If a prepaid SIM card is used, make sure that the credit is monitored and topped up in time.

Operation without SIM card or PSTN line

- 2N$^®$ Lift8 can be used as an intercom without an inserted SIM card or connected PSTN line during the lift fitting time. In this case do not enable the lift blocking function until the telephone line is connected.

VoIP

VoIP is the cheapest solution where a reliable Internet connection is available.

VoIP

2.2 Splitter

Description

The splitter helps extend installations by interconnecting audio units in multiple lift shafts (audio units can be connected directly to the **CU** in one-shaft installations). It is connected with the **CU** via six wires (power, audio, data). Audio units are connected to the splitter using a two-wire bus. The splitter also contains a make/break contact for the lift blocking function. There can be up to 7 splitters (according to the count of lift shafts).

Each splitter must be configured for a different address (lift shaft number) for the system to work. The addresses are 2–8 (lift 2–8). Lift 1 is the **CU**.

The splitters are connected in series, i.e. one after another (never in parallel), to avoid system instability. The termination resistance (jumper) is mounted on the last splitter or IO module (furthest from the **CU**).
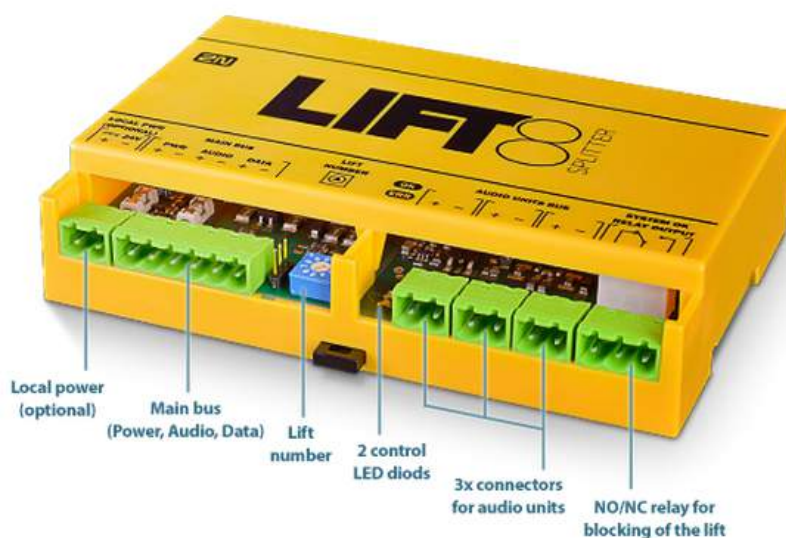
2N® Lift8 Splitter

> ⚠️ **Caution – upgrade**
>
> - Set the splitters to odd addresses (lift/shaft number) for 1.x.x to 2.x.x upgrade as even addresses cannot be upgraded. Example: First upgrade the odd address splitters. Then disconnect these spliters and change the even address splitters to odd ones. After upgrade, change the odd addresses back to even ones.
> - The upgrading process is indicated by green and red flashing LEDs (OK and ERR respectively).

> ⚠️ **Caution**
>
> - Local power supply is not supported yet.

Electrical Installation

Main Bus Connection

Remove the push-in terminal board from the main bus connector and connect six wires from the **CU** maintaining the polarity (power + -, audio + -, data + -). See the printed figure on the splitter cover.

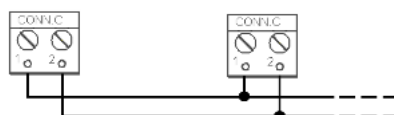| Main bus |
| --- |
| 1 … Main bus power + |
| 2 … Main bus power - |
| 3 … Main bus audio + |
| 4 … Main bus audio - |
| 5 … Main bus data + |
| 6 … Main bus data - |

⚠️ **Warning**

- Maintain the connection polarity to avoid a 2N® Lift8 error.

Bus Connection between Audio Units and Splitter

Interconnect the splitter and audio units using a two-wire bus maintaining polarity.

Audio unit bus
1 ... Bus for Audio Units +
2 ... Bus for Audio Units -

Address Configuration

Configure the splitter address for the given lift using a 10-position switch 0–9 (see the figure).

Configure lift 2–8 as 2–8 (set the switch to position 5 for lift 5, e.g.).

⚠️ **Warning**

- Do not configure the splitter address as 0, 1 and 9 or the system will report a fault
- Address 1 is used by the central unit

Audio Unit Connection

Connect up to 5 audio units to each splitter. As the splitter has only 3 audio unit terminals, connect 1–2 audio unit in parallel. Remove the slide-on terminals from the audio unit connectors and connect the twin-wire. Adhere to polarity to avoid the audio unit error. Refer to the schemes printed on the splitter and audio unit for connection polarity.

Requirements

- Connect up to 2 audio units to one terminal.
- With multi-strand cables, always use a pair of wires which match each other. In standard UTP cables the paired wires are twisted around each other.
- With special cables (to the cabin), use the neighbouring wires and make sure that the nearest surrounding wires do not radiate interference (power wire, video signal etc.).

Recommendation

- Do not run the bus near power wires, especially long sections.
- Branch the bus to shorten the total length of sections.

> ⊙ **Warning**
>
> - The bus is electrically isolated from the telephone line circuits according to the EN60950 standard requirements and its low voltage cannot cause any electrical accident.

Lift Blocking Function Connection

Lift blocking is enabled by the contact breaking (opening) when there is a telephone line (PSTN, GSM, UMTS, VoIP) fault or if the 2N® Lift8 rechargeable batteries are almost flat. Connect the contact to the relevant input of the control electronics of the lift/group of lifts. The control electronics must ensure that, after the contact opening, the lifts in operation go down to the nearest station and the doors open.

> ⚠ **Caution**
>
> - This function may be mandatory depending on the regulations applicable for the given country and time of installation.

Termination Resistance

> ⚠️ **Caution**
>
> - Find the 3-pin termination resistance connecting jumper between the main bus connector and lift number switch.
> - Connect the jumper to the first and last device (CU, splitter or I/O module) on the bus. Refer to the CU describing section for more details on termination resistance mounting.
> - By default, the termination resistance jumper is off.

Termination Resistance ON

Mounting Types

See below for the mounting types and necessary components. Install the device on sites not exposed to water leakage or condensation.
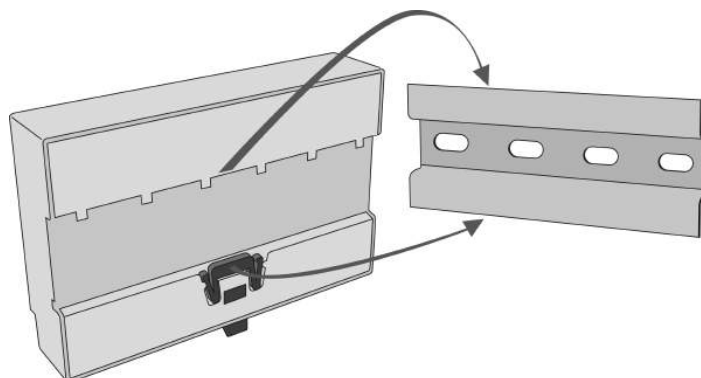
Wall Mounting

Use appropriate wall plugs and screws for mounting (not included in the delivery). Hang the device using the pre-drilled holes on the device bottom.
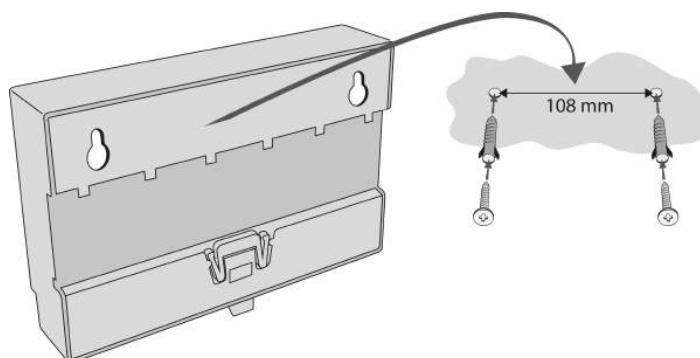
Wall Mounting

DIN Rail Mounting

Its possible to mount device on standard DIN rail TS 35. Min. rail length is 14 cm.

DIN Rail Mounting

> ⚠️ **Caution**
>
> - The warranty does not cover any defects or failures of the product arisen as a result of improper mounting in contradiction to these instructions.
>
> - A wrong mounting procedure may lead to damage to the electronics due to water infiltration. The splitter circuits are constantly under voltage and water leakage causes electrochemical reaction. No warranty can be claimed for products damaged in this manner!

2.3 Audio Unit - COP

Description

The user does not come into a direct contact with this product. The control and indication elements depend on the specific installation. The functions of the indication elements correspond to the applicable standards

Figure: Audio Unit – COP

⚠ **Caution - diodes**

Alarm call

- The yellow LED is illuminated to indicate the call setup progress (request received).
- The green LED is on to indicate call confirmation (connection confirmed).
- The yellow LED starts flashing when the call has been confirmed to indicate camera image downloading.

Upgrade

- The yellow and green LEDs are on (request received and connection confirmed) and the red LED is illuminated on the back side to indicate audio unit initialisation.
- The yellow and green LEDs flash to indicate audio unit upgrading. The red LED on the back side is permanently on.
- No LED is illuminated upon upgrade and the audio unit is ready for use.

Before You Start

Installation Conditions

- The panel has to be installation-ready, including speaker perforation.
- The panel has to be equipped with the following obligatory elements:
    - ALARM button;
    - illuminated pictogram "Request received";
    - illuminated pictogram "Connection made".
- The above mentioned elements have been located as required by the applicable regulations.
- There must be free space of at least 65 x 130 x 20 mm behind the panel.

Product Completeness Check

Check the product for completeness before installation.

The cabin audio unit package contains (assembled):

- 1 electronics board
- 4 terminals slid onto the board; see the photo
- 1 jumper slid onto the board; see the cover printing
- 1 mounting panel
- 1 speaker connected directly or by cable
- 1 microphone connected directly or by cable
- 1 cover with printing
- 5 tightening straps

Mounting

Electronics Mounting

This audio unit is intended for mounting behind the lift control panel. Typically, the panel is ready for installation as shown in the drawing below:
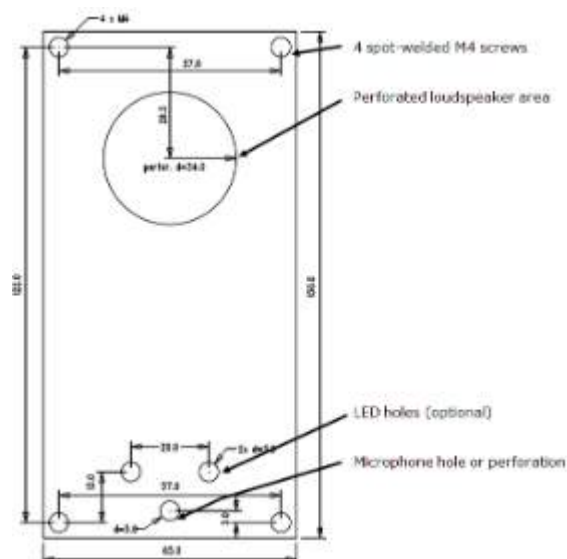
Figure: Mounting Hole Dimensions for Audio Unit – COP

To mount the audio unit, you need 4 electrically spot welded **M3** or **M4** screws, a sufficiently perforated speaker area and a microphone hole. In emergency, you can fix the audio unit on a perfectly degreased surface with a high-quality double-sided foam self-adhesive tape.

> ⚠ **Safety**
>
> - **Leave no gap** between the lift control panel and the audio unit surface to avoid acoustic speaker fault and acoustic speaker-microphone feedback.
> - **Do not use** this type of audio unit in a position other than mounted on a sufficiently large board. The acoustic properties of an uninstalled audio unit cannot be guaranteed.

Separate Microphone Mounting

If the microphone is supplied separately with a cable on a 25 x 25 mm large board with self-adhesive foil, just glue it directly behind any hole in the panel (one hole must have the minimum diameter of 5 mm, a group of smaller holes must have the same total area). Be sure to degrease and clean the surface carefully before!

Requirements

- **The minimum distance between the loudspeaker and microphone centres is 90 mm.** A lower distance may lead to acoustic feedback. A greater distance (within the available 1m cable) does not matter.

- The microphone must be stuck on so that it does not pick up (even in part!) the acoustic pressure from the space behind the control panel. Such sensing might result in acoustic feedback since the speaker strongly radiates sound into the cavity.

Separate Speaker Mounting

The speaker is equipped with a cable and can be separated from the electronics (simply pulled out) within the reach of the cables delivered (1m). This option is useful where there is not enough space for the whole electronic equipment. Fit the speaker according to the instructions below:

- While gluing the speaker choose such procedures or adhesives that prevent membrane damage by adhesives and volatile substances or heat.

- We recommend you to keep the speaker sealed to eliminate vibrations and provide electrical insulation.

Frequently Asked Questions about Speaker

- *Is it possible to use a common speaker for the communicator and floor announcer?*

No, it is not possible.

- *May I use a speaker of my own?*

Yes, but make sure that the impedance is 64 Ω. By doing this you assume responsibility for sufficient volume and frequency range.

- *May I place the speaker on the cabin ceiling?*

This placement is not recommended.

- *May I use a longer cable to the speaker?*

For the speaker yes, but we do not recommend it for the microphone.

Electrical Installation
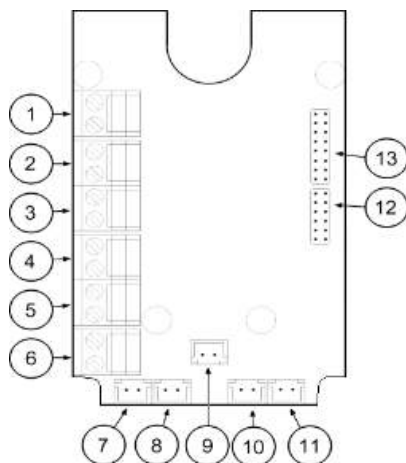
Description of Terminals, Connectors and Jumpers

Figure: Terminals, Connectors and Jumpers on Audio Unit – COP

Terminals		Connectors	
1	Audio unit bus	7	"Connection made" LED
2	ALARM, voltage activation	8	"Request received" LED
3	ALARM, contact activation	9	Microphone connector (optionally)
4	CANCEL, voltage activation	10	Induction loop connector
5	CANCEL, contact activation	11	Speaker connector
6	Alarm 2 (set 2)	13	Servicing connector
Configuration jumpers		Two LED signal lamps (other side)	
12	Audio unit position	1. (yellow)	Request received
12	ALARM and CANCEL negation	2. (green)	Connection confirmed

> ⓘ **Note**
>
> - If external LEDs are connected to connectors 7 and 8, LED indicators 1 and 2 will not be shining.

Audio Unit Location Configuration

The audio unit is configured as a cabin audio unit by default and so it is not necessary to change the configuration. To use the audio unit in a room other than the lift cabin, proceed as follows.

Procedure

1. Reconfigure the jumper on configuration jumper 12.

2. If there is poor access to the pins, you can remove the electronics cover. Slightly loosen the four screws and shift the cover downwards. Now you can remove the cover.

3. The first 4 pins help set the audio unit location (1 – cabin ceiling, 2 – cabin, default, 3 – under cabin, 4 – shaft bottom, 1+ 4 – cabin 2 roof, 2+ 4 – cabin 2, 3 + 4 under cabin 2). Use the jumpers for 1–4 settings. In cabin 2 setting, set one jumper to the shaft bottom position (4) and then select the position with the other jumper (1 – cabin 2 roof , 2 – cabin 2, 3 – under cabin 2).

4. Configure the required changes as printed on the electronics cover.

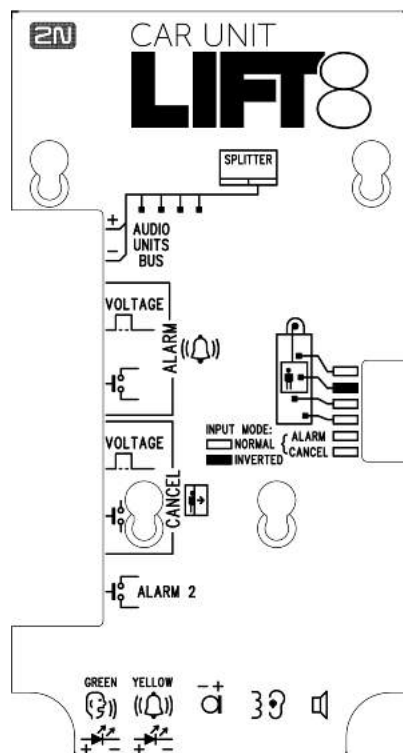5. If you have removed the cover, put it back in the original position and tighten the screw.

Figure: Address Configuration for Audio Unit – COP

> ⚠️ **Caution**
>
> - In versions 2.0.0 and higher, up to 7 audio unit positions can be configured for two-cabin lifts (1 – cabin roof, 2 – cabin = default, 3 – under cabin, 4 – shaft bottom, 5 – cabin 2 roof, 6 – cabin 2, 7 – under cabin 2).
> - Connect up to 6–7 audio units to one shaft including the Fireman audio unit and camera modules.

> ℹ️ **Note**
>
> - Make sure that no two audio units have an identical address to avoid system error.
> - The position-setting jumpers are employed exceptionally, e.g. where a certain audio unit type is used in a position other than normally intended.
> - To recover the initial address setting, follow the drawing on the cover.

Bus Connection

Pull the terminal out of connector 1 – Audio units bus, connect the bus audio units wires and replace the terminal to connector 1. Mind the polarity.

> ⊘ **Warning**
>
> - The audio unit is intended for 2N$^®$ Lift8 audio unit bus connection exclusively. Do not connect it to other wires to avoid its damage or destruction.
> - Maintain polarity while connecting the audio unit to avoid audio unit error.

> ⚠ **Caution**
>
> - The audio unit is powered via a 2-wire bus. Disconnection of these wires results in the audio unit switch-off.
> - Avoid the audio unit address duplicity.

ALARM Button Connection

Requirements

- The ALARM button design (colour, symbol, keypad surface, mechanical operation) and location have to meet the requirements of the particular installation.

Button control

Requirements

- The ALARM button has to be equipped with a make or break (NO/NC) contact that is not connected with any other circuit.
- None of the ALARM button terminals may be connected electrically with any other electrical circuit and no voltage source other than the NO/NC contact may be connected to them.
- If one of the ALARM contacts is connected to another circuit, an appropriate isolation strength according to the applicable standards has to be ensured between the contacts.

Procedure

1. Leave the ALARM terminal in the lower position (3).

2. If you use a make contact, leave the jumper as it is (5th pin on jumper 12) – ALARM without jumper fitted (factory setting).

3. If you use a break contact, fit the jumper (5th pin on jumper 12) – ALARM inverted – jumper fitted.

Voltage control

Requirements

- DC 12 to 48 V voltage
- The voltage signal must be active even during a power failure.

Procedure

1. Move the ALARM terminal two pins up into position (2).

2. For activation by voltage connection, leave the jumper as it is (5th pin on jumper 12) – ALARM without jumper fitted (factory setting).

3. For activation by voltage disconnection, fit the jumper (5th pin on jumper 12) – ALARM inverted – jumper fitted.

> ⓘ **Warning**
>
> - Ignoring the instructions above may lead to product damage.

> ⚠ **Caution button ALARM 2**
>
> - The ALARM 2 button has the N/O contact only.
> - Delayed call (914) and Minimum ALARM 1 pressing time (962) do not relate to the ALARM 2 button.
> - A short button press (100 ms) sets up a call to the other set of numbers (021–026). If the other set is empty, the call is set up to the first set of numbers (011–016).
> - A long button press (3,000 ms) cancels the rescue process if parameter 966 is set.

CANCEL Input Connection (Door Contact, Optional)

This input helps cancel a rescue request if the lift is fully functional. When the ALARM button is pressed, the system waits for a pre-programmed period of time, which is a little longer than the maximum lift running time. If the lift is functional, it arrives in the required station within this timeout and opens the door. In that case, the rescue request is cancelled. If the door does not open, the request is accepted.

Find out before installation whether the door opening signal is available in the lift cabin.

Requirements

- If the lift has a double door, the signal must be active only if both the door sets are open, i.e., if it is really possible to leave the cabin.
- The door position signal has to work even in the case of power outage.

Contact control

Requirements

- None of the contact outlets terminals may be connected electrically with any other electrical circuit and no voltage source other than the NO/NC contact may be connected to the CANCEL terminals.

Procedure

1. Leave the CANCEL terminal in the lower position (5).
2. f you use a make contact, leave the jumper as it is (6th pin on jumper 12) – CANCEL without jumper fitted (factory setting).
3. If you use a break contact, fit the jumper (6th pin on jumper 12) – CANCEL inverted – jumper fitted.

Voltage control

Requirements

- DC 12 to 48V voltage

Procedure

1. Move the CANCEL terminal two pins up into position (4).

2. For activation by voltage connection, leave the jumper as it is (6th pin on jumper 12) – CANCEL without jumper fitted (factory setting).

3. For activation by voltage disconnection, fit the jumper (6th pin on jumper 12) – CANCEL inverted – jumper fitted.

> ⊙ **Warning**
>
> - Ignoring the instructions above may lead to product damage.
> - The CANCEL function only works when the cabin audio unit is set to the cabin position (default).

> ⚠ **Caution**
>
> - Remember to program delayed calling to make the CANCEL connection work successfully.
> - Refer to the electronics cover for the ALARM and CANCEL configuration scheme.

LED Indicator Connection

The current LED technology makes it possible to achieve a relatively good light intensity with a small current. If the lift indicators are illuminated with a sufficiently efficient LED requiring a current of approx. 5 mA (with diode loss of about 2 V), no power supply is needed. See the figure below for the connection.
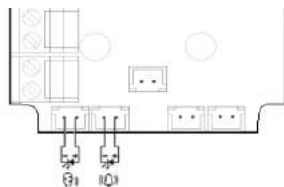
Figure: Alternative LED Connection for Audio Unit – COP

> ⓘ **Note**
>
> - The cables required for this configuration are not part of the standard delivery but are available upon agreement.
> - In this configuration, the auxiliary indicators on the PCB are not illuminated.

External Pictogram Driver

Description

The device transforms the 2N® Lift8 Car Unit LED outputs into a universal pilot lamp, whose outputs are capable of driving two lamps rated at the maximum of 36 Volts, 0.5 Amps. The outputs are galvanically isolated from the Car Unit. Since the lamp outputs are polarity independent, both AC and DC power supplies can be used for powering the lamps. To protect the Car Unit and Pictogram Driver against damage caused by shorts, **always use the included isolating tube when installing the device!**

Wiring diagram
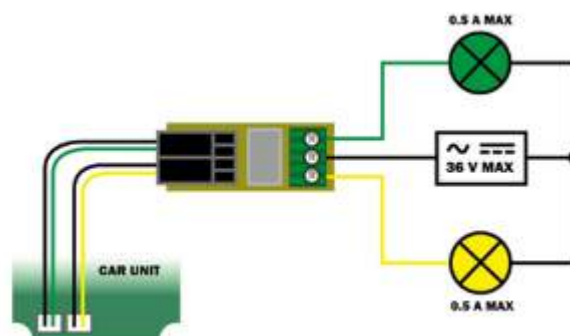
> ⚠️ **Caution**
>
> - External pictograms are connected to connectors 7 and 8 on the cabin audio unit.
> - The manufacturer, 2N TELEKOMUNIKACE a.s., hereby declares that the 2N$^®$ Lift8 External Pictogram Driver is in compliance with the essential requirements and other relevant provisions of the 1999/5/EC Directive. The Declaration of Conformity is attached to the basic module of 2N$^®$ Lift8 and also available at www.2n.cz.

Volume Configuration

Slightly loosen the four screws and shift the cover downwards. Now you can remove the cover. Use the trimmer located in the bottom part of the electronics to set the required volume level (see the figure below).

> ⚠️ **Caution**
>
> - Use the trimmer to set the best acoustic properties eliminating feedback.

Induction Loop Connection

The regulations that apply to communicator installations may require a mandatory loop for persons with defective hearing in the lift cabin. In that case, connect the loop to connector (10) with any polarity. The loop including a 1m long cable can be part of your delivery if agreed so.

Requirements

- The induction loop has to be placed behind a non-metal, non-magnetic cover in the control panel as the magnetic field of the induction loop cannot go through a metal control panel.
- The induction loop has to be labelled with an appropriate symbol (ear) placed according to the applicable standards.

Rescue Process

- The rescue (extrication) process is activated after the alarm call end.
- The yellow LED keeps shining on the audio unit.
- The service technician enters a valid password via the 2N® Lift8 voice menu to terminate the process.
- When the rescue password is entered via the voice menu, the yellow LED goes off on the audio unit and the 'Rescue process was terminated' is played.

> ⚠️ **Caution**
>
> - Access the voice menu (during an incoming call to L8 or from the machine room) to terminate the rescue process. Enter the administration menu (9) and press (2) to terminate the rescue process. Enter the shaft number (only if multiple audio units are involved in the rescue process) and enter the rescue terminating password.

> ⊗ **Warning**
>
> - Remember to set the rescue password (parameter 992) to activate the rescue function.
> - The rescue process can only be activated on a cabin audio unit configured as the cabin (default audio unit setting).

2.4 Audio Unit - Machine Room

Description

The machine room audio unit is intended for installation in the machine room or as an intercom solution located in the reception. It has some **distinctive** features compared with the other types:

- The audio unit is equipped with a keypad.
- The keypad helps you select various functions and **program the system.**
- You can connect a handset to the audio unit for better acoustic properties in noisy environments.
- You can connect an external siren to the audio unit for incoming call signalling.
- You can configure the machine room audio unit to be shared by multiple lifts.

> ⚠️ **Caution - upgrade**
>
> - The yellow, green and red LEDs are on (request received, connection confirmed and red LED under the glass) to indicate audio unit initialisation.
> - The yellow and green LEDs flash to indicate audio unit upgrading. The red LED is permanently on.
> - The ALARM pictogram (bell symbol) goes on upon upgrade and the audio unit is ready for use.

Operation

1. This type of audio unit is operated by qualified people (lift maintenance staff, e. g.).

2. Push the TRIPHONY button to activate voice communication with the other audio units of the same lift. Push and hold the button for over 2 seconds to activate communication with another lift (to display a voice menu and select the required lift number).

3. Push the ALARM button to call the control centre, for example. The audio unit calls the numbers configured in the ALARM memory – set 2 (021–026). The ALARM button illumination (not required by default) helps you find and activate the audio unit easily in the dark.

4. When you press the ALARM or TRIPHONY button, the function is called up immediately. Speak HandsFree or use a handset for better acoustic properties.

5. Press ⊠ for more than 2 s to display the voice menu.

> ⚠️ **Caution**
>
> - If no number is specified in the ALARM memory – set 2 (021–026), the audio unit dials the numbers defined in the ALARM memory – set 1 (011–016).
> - Push the ALARM button to call the control room or machine room audio unit configured as an intercom.
> - The ALARM and TRIPHONY buttons shine even at relax.

Before You Start

Requirements

- Connect a handset supplied by the manufacturer to the audio unit to avoid handset operation error.

Product Completeness Check

Check the product for completeness before installation.

- 1 audio unit
- 2 wall plugs
- 2 wall plug screws
- 7–8 jumpers for common machine room configuration

Mounting

The audio unit is typically mounted on a wall using the wall plugs and screws included in the delivery.

Electrical Installation

Description of Connectors

There are 3 connectors to the right under the cover:

- Bus connector
- External siren contact connector
- Earphone connector
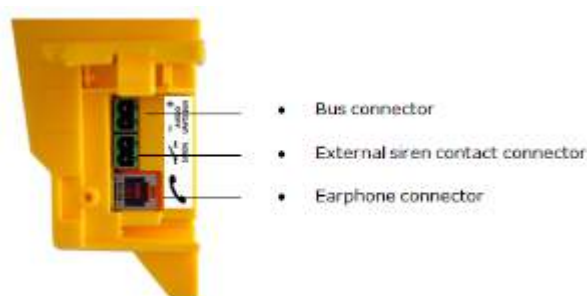
Figure: Machine Room Audio Unit Connectors

Address Configuration

There is a group of jumpers under the transparent front cover. Do not use any of them if the machine room is only intended for the given lift. The audio unit identifies itself as the machine room for the given lift.

If the machine room is to be shared by multiple lifts, configure the corresponding pins 1–8 for the lifts to share the machine room (numbered 1–8 from left to right 1–8).

> ⓘ **Note**
>
> - This audio unit is always configured as the machine room and cannot have a different location.

- Group of 8 jumpers for address configuration: If the machine room is shared by multiple lifts, use one audio unit and configure several addresses using the included jumpers. **The other audio unit types do not have this possibility!**

> ⓘ **Note**
>
> - Having set more addresses for the audio unit, press the TRIPHONY button to activate communication of the lift audio units with the lowest of the configured addresses.

> ⚠ **Caution**
>
> - Avoid the audio unit address duplicity.

Bus Connection

Loosen the screws to the right and open the connector cover. There is just one connector under the cover: a bus connector. Pull out the terminal from the connector, connect the wires and replace the terminal. Make sure that the polarity is maintained.

> ⓘ **Warning**
>
> - The audio unit is intended for 2N® Lift8 audio unit bus connection exclusively. Do not connect it to other wires to avoid its damage or destruction.
> - Maintain polarity while connecting the audio unit to avoid audio unit error.

> ⚠️ **Caution**
>
> - The audio unit is powered via a 2-wire bus. Disconnection of these wires results in the audio unit switch-off.

Handset Connection

Order an additional handset for your audio unit. The handset is delivered including a cable with telephone end pieces.

> ⚠️ **Caution**
>
> - If the handset is not connected, the audio unit works in the HandsFree mode.
> - A handset of a type other than that supplied by the manufacturer may not work.

Testing

Connect a handset and push and hold for over 2 s ⊛ to display the voice menu for the function test. If the handset does not work, the voice menu will be played from the audio unit speaker.

Volume Configuration

Open the protective door on the audio unit and adjust the volume using the trimmer.

> ⚠ **Caution**
>
> - Use the trimmer to set the best acoustic properties eliminating feedback.
> - Volume configuration only works in the HandsFree mode.

2.5 Audio Unit - Shaft

Description

This audio unit is designed for installation on the lift shaft bottom or lift cabin roof, or wherever it is necessary to communicate (during lift maintenance, e.g.). The audio unit is enclosed in a robust yellow cover. It is not intended for outdoor use but perfectly tolerates the conditions in lift shafts: is resistant against fall of small objects, dripping oil, etc. The ALARM button activates the control centre connection, the TRIPHONY bottom enables conference connection with the other audio units of one and the same lift. The audio unit contains a built-in microphone and a speaker. A handset can be connected for better acoustic properties. Thanks to its size and robustness, the audio unit has a very good, strong sound.

⚠️ **Caution – upgrade**

- The yellow, green and red LEDs are on (request received, connection confirmed and red LED under the glass) to indicate audio unit initialisation.
- The yellow and green LEDs flash to indicate audio unit upgrading. The red LED is permanently on.
- The ALARM pictogram (bell symbol) goes on upon upgrade and the audio unit is ready for use.

Operation

1. This type of audio unit is operated by qualified people (lift maintenance staff, e. g.).
2. Push the TRIPHONY button to activate voice communication with the other audio units of the same lift.
3. Push the ALARM button, for example, when someone falls down the shaft.
4. The audio unit calls the numbers configured in the ALARM memory – set 2 (021–026).
5. The ALARM button illumination (not required by default) helps you find and activate the audio unit easily in the dark.

> ⚠️ **Caution**
>
> - If no number is specified in the ALARM memory – set 2 (021–026), the audio unit dials the numbers defined in the ALARM memory – set 1 (011–016).
> - Push the ALARM button to call the control room or machine room audio unit configured as an intercom.
> - The ALARM and TRIPHONY buttons shine even at relax.

Before You Start

Product Completeness Check

Check the product for completeness before installation.

- 1 audio unit
- 2 wall plugs
- 2 wall plug screws

Requirements

- This type of audio unit has no specific requirements.

Mounting

The audio unit is typically mounted on a wall using the supplied wall plugs and screws. There is a drilling template in the product package.

> ⚠️ **Caution**
>
> - The audio unit is not intended for outdoor installations.

Electrical Installation

Connectors

The audio unit has one connector for bus connection. The second RJ-11 connector is used for handset connection. Both the connectors are under the side doors.
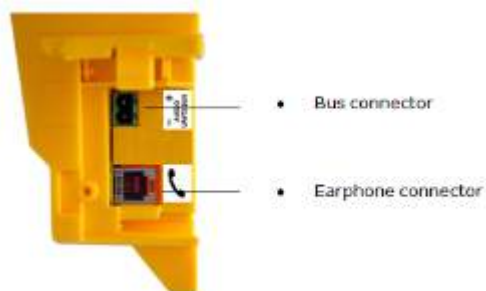
Audio Unit Location Configuration

Audio unit location means configuration of jumpers (see the cover print). You do not have to change the jumper configuration if you are installing the audio unit at the shaft bottom. Otherwise, proceed as follows:

Procedure

1. Loosen the screws on the jumper-protecting door and open the door.
2. Set the audio unit location. See the printed label under the door for one-cabin configuration. To set the cabin 2 audio unit, insert the jumper to the shaft bottom position (left jumper) and then select the audio unit position with the other jumper (cabin 2 roof, cabin 2, under cabin 2).
3. Close the door and tighten the screw.

> ⚠️ **Caution**
>
> - In versions 2.0.0 and higher, up to 7 audio unit positions can be configured for two-cabin lifts (1 – cabin roof, 2 – cabin = default, 3 – under cabin, 4 – shaft bottom, 5 – cabin 2 roof, 6 – cabin 2, 7 – under cabin 2).
> - Connect up to 6–7 audio units to one shaft including the Fireman audio unit and camera modules.
> - Avoid the audio unit address duplicity.
> - This audio unit **cannot** be configured as common for multiple lifts.

Bus Connection

Loosen the screws to the right and open the connector cover. There is just one connector under the cover: a bus connector. Pull out the terminal from the connector, connect the wires and replace the terminal. Make sure that the polarity is maintained.

> ⓘ **Warning**
>
> - The audio unit is intended for 2N$^{®}$ Lift8 audio unit bus connection exclusively. Do not connect it to other wires to avoid its damage or destruction.
> - Maintain polarity while connecting the audio unit to avoid audio unit error.

> ⚠️ **Caution**
>
> - The audio unit is powered via a 2-wire bus. Disconnection of these wires results in the audio unit switch-off.

Handset Connection

Use the handset supplied with the audio unit and the included cable with telephone terminals.

> ⚠️ **Caution**
>
> - If the handset is not connected, the audio unit works in the HandsFree mode.
> - A handset other than that supplied by the manufacturer may not work.

Volume Configuration

Open the protective door on the audio unit and adjust the volume using the trimmer.

> ⚠️ **Caution**
>
> - Use the trimmer to set the best acoustic properties eliminating feedback.
> - Volume configuration only works in the HandsFree mode.

2.6 Audio Unit - Compact

Description

Robust, heavy-duty design. Standard-sized ALARM button including signage for the blind and backlit pictograms (hardened glass). Designed for cabin wall mounting. No drilling is required as the device is to be wall-mounted.

loudspeaker

symbol window (access to a rotary switch and volume control)

symbol indication location of induction loop for people with defective hearing

pictogram „connection established " – green (lit even when active TRIPHONY)

pictogram „establishing connection" – yellow, „Image transmission" indication – yellow flashing

pictogram „audio unit bus" – lit red when error

ALARM button

window bezen hole

microphone hole

Figure: Description of Audio Unit – Cabin Compact

Operation

- Push the ALARM button to activate the audio unit. The 'Establishing connection' symbol goes on. The 'Connection established' symbol goes on when communication is set up.

Before You Start

Requirements

- Make sure that the lift wall is even.
- Make sure that the installation meets the standard requirements (ALARM button height and distance from the other lift buttons, e.g.).

Product Completeness Check

Check the product for completeness before installation.

- 1 Compact audio unit including: one long, 2 mm ballpoint hexagon key wrench4 M4×8 screws
    - symbol window
    - 3 terminals slid on the backside connector
- 4 M4 x 30 worm screws
- 4 M4 nuts
- 4 fan washers

Mounting

Just drill holes into the cabin wall as shown in the figure below (also see the 1:1 figure on the product box). The larger hole is intended for cabling. Round the hole edges to avoid cable damage!
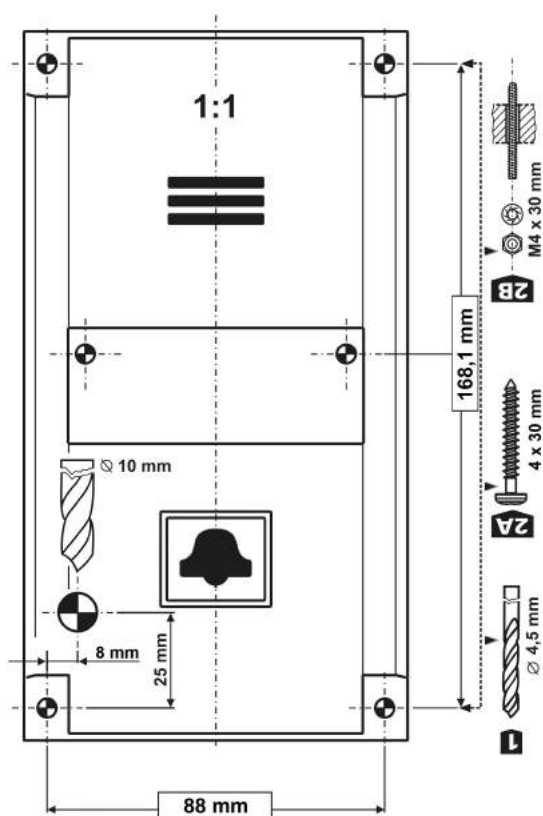
Figure: Mounting Hole Dimensions for Audio Unit – Cabin Compact

> ### ⓘ Note
>
> Two 2.5 mm holes in the symbol window are intended for installations without access to the back side of the installation panel. The 2.5 diameter is suitable for plywood wall mounting (chipboard, laminated plastic, etc.) with the screws included in the delivery. Drill M4-threaded holes for metal panel mounting from the front side.

Do not complete the mounting procedure until connecting the device electrically (see below).

Electrical Installation

> ### ⚠ Caution
>
> - Connect the wires before mounting the audio unit on the lift cabin wall. The connectors are separable – remove them, connect the wires, tighten the screws and replace the connectors.

Description of Terminals

Terminals		Description	
AUDIO UNIT BUS		Audio unit bus (2-wire) connection, polarity must be maintained.	
ALARM terminals	**Voltage** = voltage control (on/off)	6–24 V DC, any polarity *)	Alarm call activation
	Contact = contact control (on/off)	NO/NC contact *)	
CANCEL terminals	**Voltage** = voltage control (on/off)	6–24 V DC, any polarity **)	Alarm call deactivation by door opening
	Contact = contact control (on/off)	NO/NC contact **)	
ALARM 2 terminal	**Contact** = contact control (closing)	NO contact	Alarm call activation from Alarm set 2

*) By default, ALARM is activated by voltage connection or contact closing. Use a rotary switch to apply voltage disconnection and contact opening.

**) By default, ALARM is deactivated by voltage connection or contact closing. Use a rotary switch to apply voltage disconnection and contact opening.

⚠ **Caution button ALARM 2**

- The ALARM 2 button has the N/O contact only.
- Delayed call (914) and Minimum ALARM 1 pressing time (962) do not relate to the ALARM 2 button.
- A short button press (100 ms) sets up a call to the other set of numbers (021–026). If the other set is empty, the call is set up to the first set of numbers (011–016).
- A long button press (3,000 ms) cancels the rescue process if parameter 966 is set.

Bus Connection

Pull the **AUDIO UNIT BUS** connector out of the terminal board. Connect the audio unit bus (keep polarity as shown on the audio unit cover) and replace the connector.

⚠ **Warning**

- The audio unit is intended for 2N$^®$ Lift8 audio unit bus connection exclusively. Do not connect it to other wires to avoid its damage or destruction.

Connectors
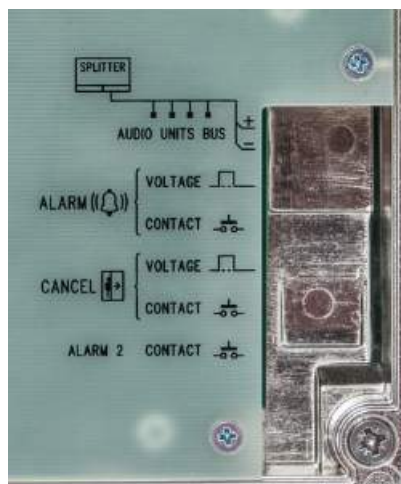
Figure: Connectors on Audio Unit – Cabin Compact (New Type)

> ⚠ **Safety**
>
> - Make sure that the minimum button isolation distance is 1.5 mm and breakdown voltage is 1,500 V. The button contacts may not be connected to any other circuits. If you cannot meet these conditions, use voltage control.
> - You can use the switch on the audio unit front side or closing/opening button connected to the ALARM CONTACT connector or both of them if necessary.

> ⓘ **Note**
>
> - The ALARM button on the cover keeps functional even if an external button is connected.

Rotary Switch

There is a glass-covered rotary switch on the audio unit front side. Use the switch to set ALARM/CANCEL (normal/inverted input) and audio unit type (cabin, cabin roof, cabin bottom, shaft bottom).
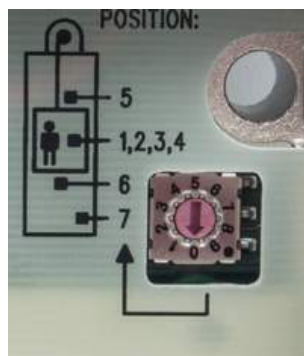
Procedure	Rotary switch position
1. Insert the hexagonal spanner (included) in the hole on the product bottom edge (window lock screw) and turn left (about 10 times) until you feel resistance.	Position 1 – ALARM normal, CANCEL normal, cabin
2. The window slides down by itself or with a slight aid, revealing its upper brim.	Position 2 – ALARM inverted, CANCEL normal, cabin
3. Tilt the window forward and remove it.	Position 3 – ALARM normal, CANCEL inverted, cabin
4. Set the required address.	Position 4 – ALARM inverted, CANCEL inverted, cabin
5. Replace the window.	Position 5 – cabin roof

| Procedure	Rotary switch position
6. Insert the hexagonal spanner (included) in the hole on the product bottom edge (window lock screw) and turn right (about 10 times) until the window slides under the panel edge. Tighten slightly.	Position 6 – cabin bottom
	Position 7 – shaft bottom
	Positions 8, 9, 0 / not used (red bus LED flashing)

ALARM and CANCEL Setting (Rotary Switch)

Contact closing/voltage connection control of ALARM and CANCEL

- Set the rotary switch (under the front glass) to position 1 to make ALARM /CANCEL be controlled by contact closing or voltage connection.

Contact opening/voltage disconnection control of ALARM, contact closing/voltage connection control of CANCEL

- Set the rotary switch (under the front glass) to position 2 to make ALARM be controlled by contact opening or voltage disconnection and CANCEL be controlled by contact closing or voltage connection.

Contact closing/voltage connection control of ALARM, contact opening/voltage disconnection control of CANCEL

- Set the rotary switch (under the front glass) to position 3 to make ALARM be controlled by contact closing or voltage connection and CANCEL be controlled by contact opening or voltage disconnection.

Contact opening/voltage disconnection control of ALARM and CANCEL

- Set the rotary switch (under the front glass) to position 4 to make ALARM and CANCEL be controlled by contact opening or voltage disconnection.

> ⚠ **Caution**
>
> - Use 6 to 24 V DC of any polarity. However, make sure that the power supply is backed up against power outage.
> - Combine the control with buttons if you need to activate ALARM and CANCEL from more sites.

CANCEL input connection (door contact, optional)

This input helps you cancel the rescue request if the lift is fully functional. Press ALARM to make the system wait for a defined period of time, which slightly longer than the maximum lift ride. If functional, the lift reaches the required station and opens the door within the timeout, thus cancelling the rescue request. If the lift door does not open, the rescue request is accepted. Make sure before installation that the door opening signal is available in the lift cabin.

Requirements

- If the lift is equipped with a double door, the signal must be active only if both the door parts are open and the people can leave the cabin safely.
- The door opening signal must be active even during power outage.

> ⓘ **Note**
>
> - Make sure that delayed calling is configured to make the CANCEL input connection effective.

Volume Setting

1. Insert the hexagon key wrench (included in the delivery) in the hole on the product bottom edge (window lock screw) and turn **left** (about 10 times) until you feel resistance.
2. The window slides down by itself or with a slight aid, revealing its upper brim.
3. Tilt the window forward and remove it.
4. Set the required volume level using a trimmer.
5. Replace the window.

6. Insert the hexagon key wrench (included) in the hole on the product bottom edge (window lock screw) and turn **right** (about 10 times) until the window slides under the panel edge. Tighten slightly.

⚠️ **Caution**

- Use the trimmer to set the best acoustic properties eliminating feedback.

Mounting Completion

Having connected the wires, you can complete the 2N® Lift8 wall mounting. If you can access the cabin wall from the outside, use the mounting type that prevents dismantling and unauthorised tampering from the cabin. Mounting procedure:

- Where access from the outside is possible, use the four pre-drilled M4 holes in the corners.
- Remove the corner covers fitted with four M4 screws from behind.
- Screw the 30 mm long M4 headless grub screws included in the audio unit package in place of the corner cover screws removed. Tighten the screws with an internal hexagon key wrench.
- Put the audio unit on the holes, apply the serrated lock washers from the outside and screw the M4 nuts (both included in the delivery).
- This type of mounting is suitable for lift cabin wall thickness of up to 20 mm.
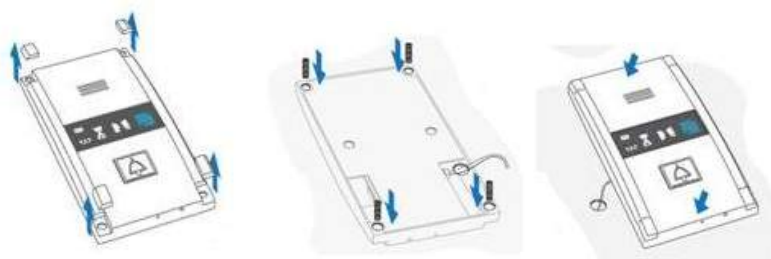
If you cannot access the cabin wall from the outside, use the screws under the pictogram glass:

- Insert the hex key wrench (included in the package) in the hole on the product bottom edge and turn it left (about 10 times) until it puts up resistance.

- The window slides down by itself or with little assistance, showing its upper brim.

- Tilt the window forwards and remove it.

- Now you have access to two holes in the window corners. Put 2N® Lift8 on the pre-drilled lift cabin wall holes and fit it with the included screws, which are suitable for plywood, chipboard, laminated plastic etc. walls. For other materials, use appropriate screws or M4 screws in the pre-drilled M4 threaded holes.

- Replace the window and insert the hex key wrench in the bottom edge hole turning it right about 10 times until the window slides under the panel edge. Tighten the window applying a moderate force.
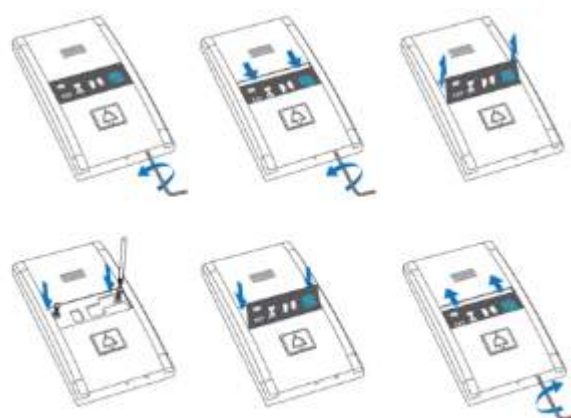
Connection of induction loop for hearing-impaired persons

The induction loop for people with impaired hearing is part of the Compact cabin audio unit. No more accessories are required for the given case.

2.7 PSTN Module

Description of Connection

The module should be part of the Central Unit (hereinafter referred to as **CU**). If the **CU** does not contain the PSTN module, proceed as follows:

1. Disconnect the **CU** from the mains supply.

2. Loosen the three screws on the **CU** upper cover.

3. Move the **CU** upper cover in such a way that you can remove it.

4. Proceed with caution while removing the cover: be careful about the drain wire connecting the cover with the CU bottom part. Do not disconnect the wire unless there is a reason to do so!

5. Disconnect the back-up rechargeable batteries if available using the battery – **CU** cable FASTON terminals.

6. Mount the module on the externally threaded spacers (2) and connect it to the motherboard connector (1).

7. Be careful while putting the module on the pins. Make sure that you have connected all the pins to the module connector.

8. If you have mounted the connector pins correctly, use 1 bolt spacer (3) and 2 threaded spacers (4) to fit the module. Use a 5mm hex socket wrench to fit the spacers.
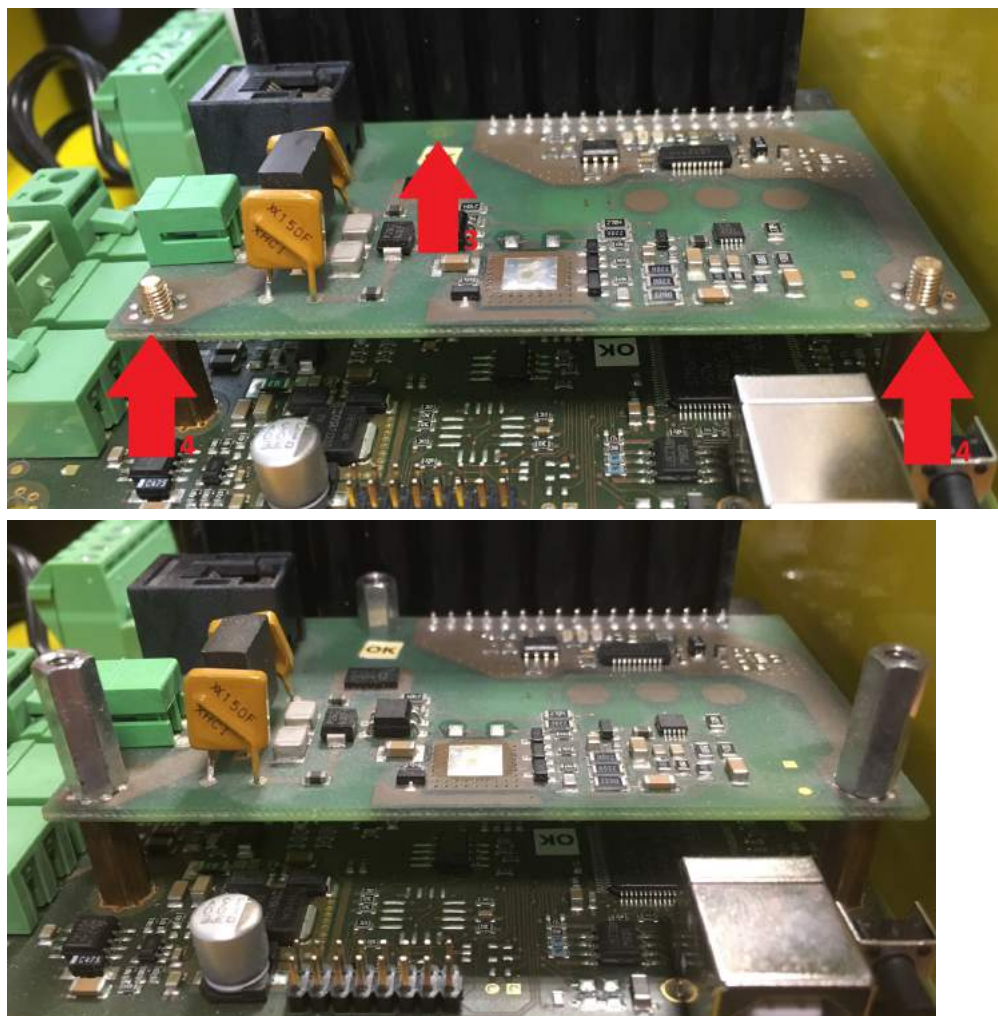
9. Now connect the PSTN line. There are 2 options:

   a. using an RJ 11 connector

   b. using a slide-on terminal board

10. Connect the rechargeable batteries and replace the **CU** cover. Tighten the 3 screws to fit the cover.

11. Connect the **CU** to the mains supply.

> ⚠ **Warning**
>
> - While mounting the module, make sure that all the pins are fitted correctly into the connector to avoid module damage.
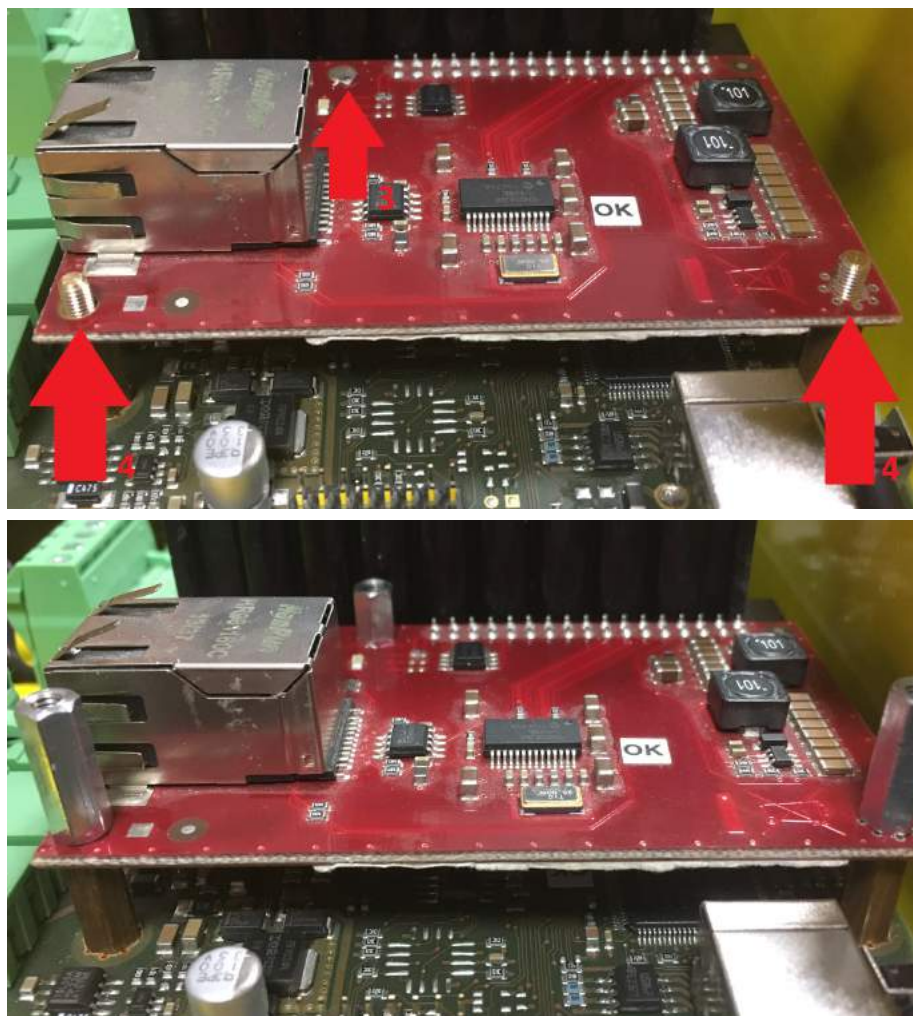
2.8 GSM/UMTS Module

Description of Connection

The module should be part of the Central Unit (hereinafter referred to as **CU**). If the **CU** does not contain the GSM/UMTS module, proceed as follows:

1. Disconnect the **CU** from the mains supply.

2. Loosen the three screws on the **CU** upper cover.

3. Move the **CU** upper cover in such a way that you can remove it.

4. Proceed with caution while removing the cover: be careful about the drain wire connecting the cover with the CU bottom part. Do not disconnect the wire unless there is a reason to do so!

5. Disconnect the back-up rechargeable batteries if available using the battery – **CU** connecting cable FASTON terminals.

6. Remove the sealing ring from the **CU** cover.
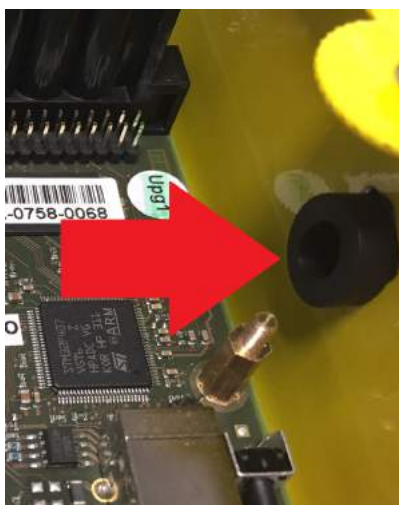
7. Be careful while mounting the module: push the antenna connector through the **CU** cover.

8. Mount the module onto the externally threaded spacers (2) and connect it to the motherboard connector (1).
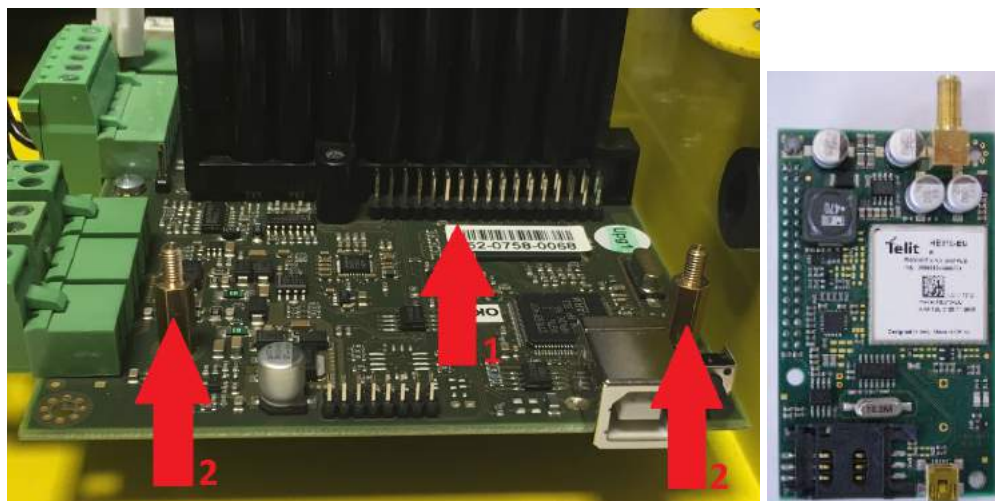
9. Be careful while putting the module on the pins. Make sure that you have connected all the pins to the module connector.

10. If you have mounted the connector pins correctly, use 1 bolt spacer (3) and 2 threaded spacers (4) to fit the module. Use a 5mm hex socket wrench to fit the spacers.
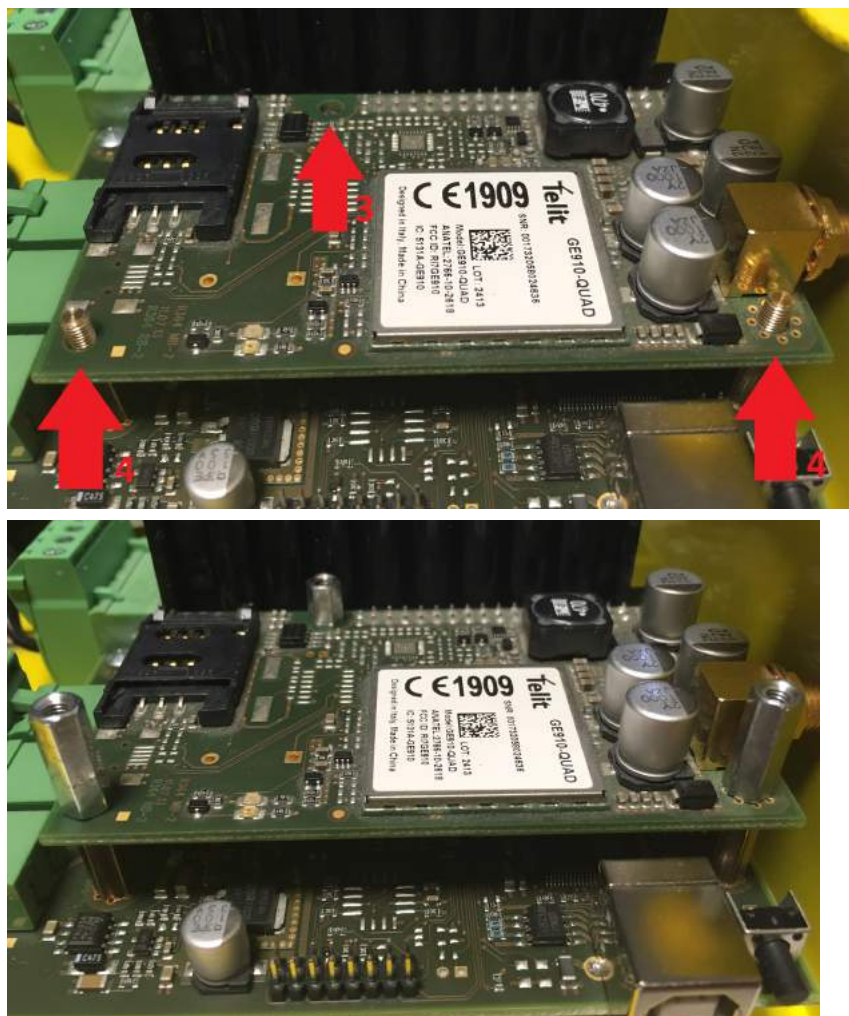
11. Now insert the SIM card and connect the antenna.

    a. Slide and release the SIM card holder (Fig. 1).

    b. Tilt out the SIM card holder (Fig. 2).

    c. Insert the SIM card (Fig. 3).

    d. Replace the SIM card holder and lock it into position (Fig. 4).
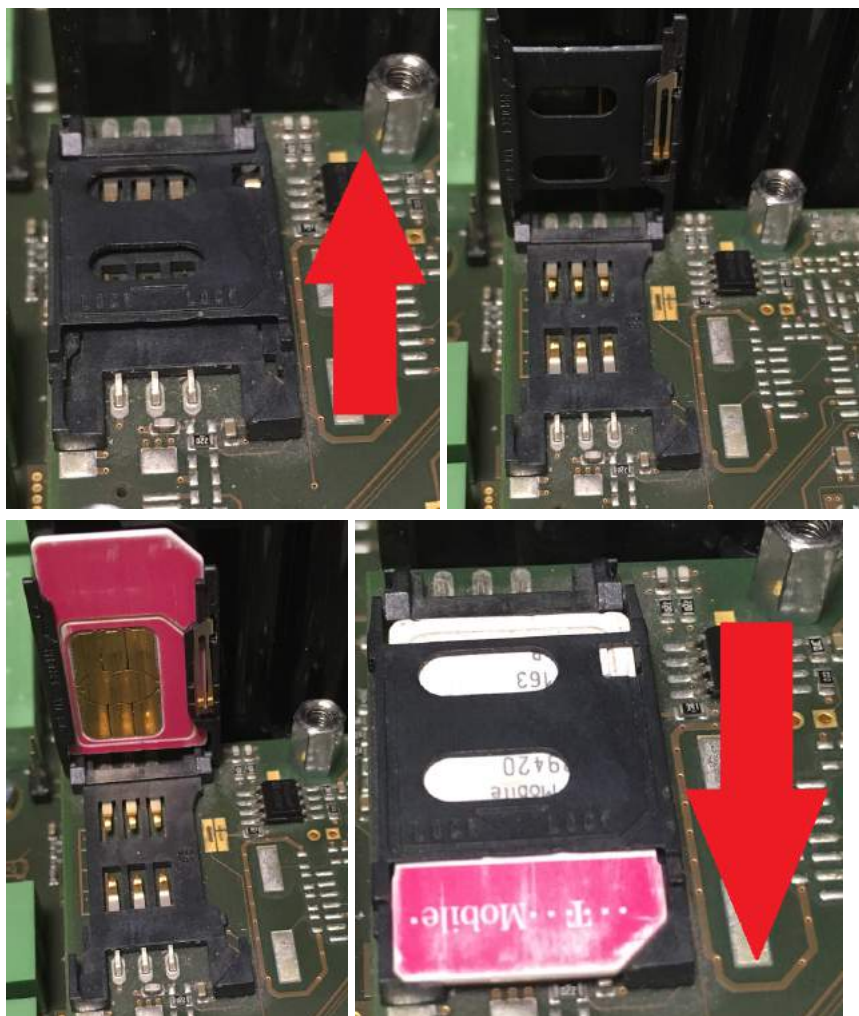
12. Connect the antenna.

13. Connect the rechargeable batteries. Reconnect the cover – **CU** bottom connecting drain wire if disconnected. Replace the cover and tighten the 3 screws.

14. Connect the **CU** to the mains supply.

> ⚠ **Warning**
>
> - While fitting the module, make sure that all the pins are fitted correctly into the connector to avoid module damage.

> ⚠️ **Caution**
>
> - In places with a poor signal quality find an appropriate place or use a special (directional) antenna.
> - Should you have DTMF transmission problems, set parameter 710 to 1 (for GSM modules only).

Signal Strength Levels

LED colour	red	red – yellow	yellow	yellow – green	green
Signal level	> -96 dBm	-96dBm <-> -90 dBm	-90dBm <-> -74 dBm	-74dBm <-> -69 dBm	< -69 dBm

> ⚠️ **Caution**
>
> - From version 2.6.0 it is possible to select the preferred network (2G / 3G) for the UMTS module using parameter 711.

2.9 VoIP Module

Description of Connection

The module should be part of the Central Unit (hereinafter referred to as **CU**). If the **CU** does not contain the VoIP module, proceed as follows:

1. Disconnect the **CU** from the mains supply.

2. Loosen the three screws on the **CU** upper cover.

3. Move the **CU** upper cover in such a way that you can remove it.

4. Proceed with caution while removing the cover: be careful about the drain wire connecting the cover with the CU bottom part. Do not disconnect the wire unless there is a reason to do so!

5. Disconnect the back-up rechargeable batteries if available using the battery – **CU** cable FASTON terminals.

6. Mount the module onto the externally threaded spacers (2) and connect it to the motherboard connector (1).

7. Be careful while putting the module on the pins. Make sure that you have connected all the pins to the module connector.

8. If you have mounted the connector pins correctly, use 1 bolt spacer (3) and 2 threaded spacers (4) to fit the module. Use a 5mm hex socket wrench to fit the spacers.

9. Now connect the VoIP line via the RJ-45 connector.

10. Connect the rechargeable batteries. Reconnect the cover – **CU** bottom connecting drain wire if disconnected. Replace the cover and tighten the 3 screws.

11. Connect the CU to the mains supply.

⚠ **Warning**

- While fitting the module, make sure that all the pins are fitted correctly into the connector to avoid module damage.

> ⚠️ **Caution**
>
> - The A-Law codec is only supported in 2N$^®$ Lift8.

2.10 Audio Unit – Fireman

The Fireman audio unit is available in two versions.

- 2.10.1 Fireman PCB
- 2.10.2 Fireman
- 2.10.3 Fireman - Mechanical Mounting

2.10.1 Fireman PCB

Description: 1-Button Version

The Fireman audio unit improves the fire fighting operations by setting up top priority calls between the Fireman audio unit and the cabin and machine room audio units in one and the same lift shaft. If any of the machine room audio units is configured as the control centre (intercom), you can join in the Fireman call.

Install the Fireman audio unit in a dedicated space that can be easily accessed by firemen.

The Fireman call has the highest priority, suspending all the other calls (refer to **Function Description**). It is connected with the cabin audio unit in one and the same shaft.

Press the button to set up the call. The call duration is infinite. Repress the button to stop the call.

The Fireman call setup is signalled by the Fireman audio unit LED (mounted on the PCB or carried externally from connector 8).

If the control-centre configured machine room audio unit is used, the Fireman call is signalled by a green LED flashing on the audio unit. Push ✱ (for longer than 2 s) on the audio unit keypad to join in the call. Push # (for longer than 2 s) on the audio unit keypad to leave the call without terminating it.

> ⚠️ **Caution**
>
> - The Fireman calls has the highest priority and suspends all the other calls except for the Fireman call set up in another shaft.
> - The Fireman call is set up by the cabin audio unit in one and the same shaft.
> - You can join in the Fireman call from a machine room audio unit configured as the intercom.
> - Button is not included.

Description: Knob+Button Version (Push-To-Talk)

The Fireman audio unit improves the fire fighting operations by setting up top priority calls between the Fireman audio unit and the cabin and machine room audio units in one and the same lift shaft. If any of the machine room audio units is configured as the control centre (intercom), you can join in the Fireman call.

Install the Fireman audio unit in a dedicated space that can be easily accessed by firemen.

The Fireman call has the highest priority, suspending all the other calls (refer to **Function Description**).

Press the detent button switch or turn the knob (0 > 1) to set up the Fireman call. The call duration is infinite. Repress the button or return the knob to stop the call. (The detent button switch or knob is connected to terminal 3).

The Fireman call setup is signalled by the Fireman audio unit LED (mounted on the electronics board or carried externally from connector 8). Push the button switch (Push to talk) to activate the audio unit microphone and speak to the other audio units (the LED starts flashing). While the button is pushed, no sound is transmitted from the other audio units. Release the button to allow the persons at the other audio units (cabin, machine room or machine room as intercom) to talk.

If the control-room (intercom) configured machine room audio unit is used, the Fireman call is signalled by a green LED flashing on the audio unit. Push ⊠ (for longer than 2s) on the audio unit keypad (green LED shining) to join in the call. Push # (for longer than 2 s) on the audio unit keypad (green LED flashing) to leave the call without terminating it.

> ⚠ **Caution**
>
> - The Fireman calls has the highest priority and suspends all the other calls except for the Fireman call set up in another shaft.
> - The Fireman call is set up to the cabin and machine audio units in one and the same shaft.
> - You can join in the Fireman call from a machine room audio unit configured as the intercom.
> - Button is not included.

Before You Start

Installation Conditions

- Make sure that the panel is ready for installation, check the speaker perforation area.
- Make sure that there is 65×130×20 mm of free space behind the panel.

Product Completeness Check

Please check the product package for completeness before starting installation.

- Cabin audio unit package contents:
    - 5 straps
    - 1 electronics board
    - 3 board-slid terminals, see the photo
    - 1 board-mounted jumper (defining the button version)
    - 1 mounting panel
    - 1 speaker (directly or cable connected)
    - 1 microphone (directly or cable connected)
    - 1 printed cover

Mounting

Electronic Installation

This audio unit is designed for mounting behind the lift control panel. Prepare the panel for installation as shown below:
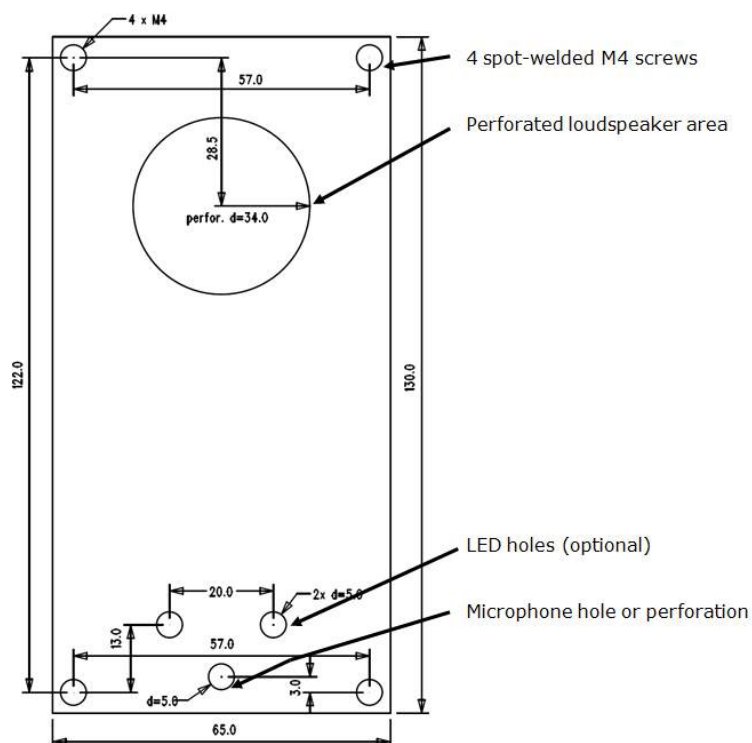
Figure: Cabin Audio Unit – Universal Mounting Hole Dimensions

To mount the unit, you need 4 electrically spot-welded (from the inner panel side) **M3** or **M4** screws, a sufficiently perforated speaker area and a microphone hole. If needed, a high-quality double-sided foam self-adhesive tape can be used for installation on a perfectly degreased surface.

> ⚠ **Warning**
>
> - **Leave no gap** between the lift control panel and the audio unit surface to avoid acoustic speaker fault and acoustic speaker-microphone feedback.
> - **Do not use this type of audio unit** otherwise than mounted on a sufficiently large board. The acoustic properties of an uninstalled audio unit cannot be guaranteed.

Separate Microphone Mounting

If the microphone is supplied separately on a 25 x 25 mm large board with self-adhesive foil and with a cable, you can mount it easily behind any hole in the panel (keep the minimum hole diameter of 5 mm or a group of smaller holes of the same total area). Just glue the microphone directly onto the required place from behind (be sure to degrease and clean the surface carefully before mounting!).

Requirements

- **The minimum distance between the speaker and microphone centres is 90 mm.** A lower distance may lead to acoustic feedback. A greater distance (within the available 1m cable) does not matter.
- Make sure that the glued-on microphone does not pick up (even partially!) the acoustic pressure from the space behind the panel. Such sensing might result in acoustic feedback since the speaker strongly radiates sound into the cavity

Separate Speaker Mounting

The speaker is equipped with a cable and can be separated from the electronics by simply being slid out within the reach of the cables delivered (1 m). This option is useful where there is not enough space for the whole electronic equipment. Fit the loudspeaker according to the instructions below:

- While gluing choose such procedures or adhesives that prevent membrane damage by adhesives and volatile substances, or heat.
- We recommend you to keep the speaker sealed to eliminate vibrations and ensure electric insulation.

Frequently Asked Questions Concerning Speaker

- *Can I use a speaker of my own?*

Yes, but keep the impedance of 64 Ω. Doing this, however, you assume responsibility for sufficient volume and frequency range.

- *Can I use a longer cable for the speaker?*

You can use a longer cable for the speaker, but not for the microphone.

Electric Installation

Description of Terminals, Connectors and Jumpers
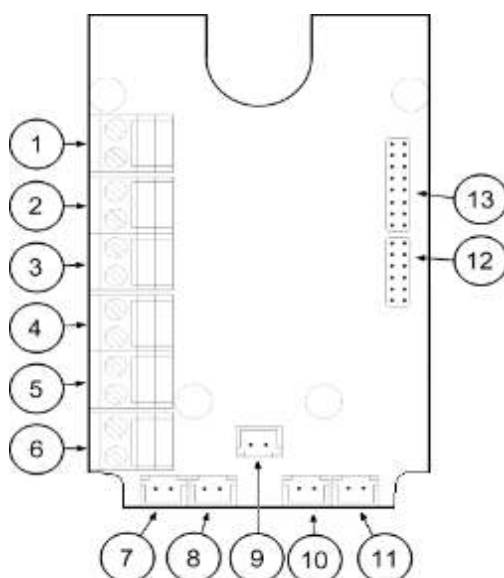
Figure: Terminals, Connectors and Jumpers on Cabin Audio Unit – Universal Board

Terminals		Connectors	
1	Audio unit bus	7	Unconnected
2	Unconnected	8	LED
3	Unconnected (1-button version) Fireman call activation – with detent (2-button version)	9	Microphone connector (optional)
4	Unconnected	10	Induction loop connector
5	Activation/Deactivation – without detent (1-button version) Push to talk – without detent (2-button version)	11	Speaker connector
6	Unconnected	13	Servicing connector
Configuration Jumpers		**Two LED Indicators (from the other side)**	
12	 The lower pin defines the button count • jumper connected – 1 button • jumper unconnected – 2 buttons	1. (yellow)	Shining – active Fireman call Flashing – Push to talk (for 2-button versions only)
		2. (green)	

> ⓘ **Note**
>
> • If an external LED is connected to connector 8, the LED 1 indicator will not be shining.

Bus Connection

Pull the terminal out of connector 1 – Audio units bus, connect the bus audio units wires and replace the terminal to connector 1. Mind the polarity.

> ⚠ **Warning**
>
> - The audio unit is intended for 2N® Lift8 audio unit bus connection exclusively. Do not connect it to other wires to avoid its damage or destruction.
> - Maintain polarity while connecting the audio unit to avoid audio unit error.

> ⚠ **Caution**
>
> - The audio unit is powered via a 2-wire bus. Disconnection of these wires results in the audio unit switch-off.
> - Proper polarity (+ -) is shown on the cover of audio unit.

Volume Setting

Loosen the four screws slightly and move the cover downwards. Remove the cover. Use the trimmer in the lower part of the electronics to adjust the volume (see the figure below).

> ⚠ **Caution**
>
> - Use the trimmer to set the best acoustic properties while eliminating feedback.

2.10.2 Fireman

Description: 1-Button Version

The Fireman audio unit improves the fire fighting operations by setting up top priority calls to the cabin audio unit in one and the same lift shaft. If any of the machine room audio units is configured as the control centre (intercom), you can join in the Fireman call.

Install the Fireman audio unit in a dedicated space that can be easily accessed by firemen.

The Fireman call has the highest priority, suspending all the other calls (refer to Function Description).

Press the button (without detent) to set up the call. The call duration is infinite. Repress the button to stop the call.

The Fireman call setup is signalled by the Fireman audio unit LED (blue LED shining around the button).

If the control-centre (intercom) configured machine room audio unit is used, the

Fireman call is signalled by a green LED flashing on the audio unit. Push ⊞ (for longer than 2 s) on the audio unit keypad (green LED shining) to join in the call. Push

⊞ (for longer than 2 s) on the audio unit keypad (green LED flashing) to leave the call without terminating it.

> ⚠️ **Caution**
>
> - The Fireman calls has the highest priority and suspends all the other calls except for the Fireman call set up in another shaft.
> - The Fireman call is set up by the cabin audio unit in one and the same shaft.
> - You can join in the Fireman call from a machine room audio unit configured as the intercom.

Description: Knob+Button (Push-To-Talk)

The Fireman audio unit improves the fire fighting operations by setting up top priority calls between the Fireman audio unit and the cabin and machine room audio units in one and the same lift shaft. If any of the machine room audio units is configured as the control centre (intercom), you can join in the Fireman call.

Install the Fireman audio unit in a dedicated space that can be easily accessed by firemen.

The Fireman call has the highest priority, suspending all the other calls (refer to Function Description).

Turn the knob (0 > 1) to activate the Fireman call. The call duration is infinite. Return the knob to stop the call.

The Fireman call setup is signalled by the Fireman audio unit LED (blue LED shining around the button). Push the button (Push to talk) to activate the audio unit microphone and speak to the other audio units (the blue LED around the button starts flashing). While the button is pushed, no sound is transmitted from the other audio units. Release the button to allow the persons at the other audio units (cabin, machine room or machine room as intercom) to talk.

If the control-room (intercom) configured machine room audio unit is used, the Fireman call is signalled by a green LED flashing on the audio unit. Push ⊠ (for longer than 2 s) on the audio unit keypad (green LED shining) to join in the call. Push ⊞ (for longer than 2 s) on the audio unit keypad (green LED flashing) to leave the call without terminating it.

> ⚠️ **Caution**
>
> - The Fireman calls has the highest priority and suspends all the other calls except for the Fireman call set up in another shaft.
> - The Fireman call is set up to the cabin and machine audio units in one and the same shaft.
> - You can join in the Fireman call from a machine room audio unit configured as the intercom.

Before You Start

Product Completeness Check

Please check the 2N® Lift8 Fireman package for completeness before starting installation:

- 1 2N® Lift8 Fireman

- 1 double Torx 10 / Torx 20

- Bushings (in package insert): 1x 2N® Lift8 Fireman short manual1 mounting template
    - 1x big two-hole sealed bushing with nut
    - 1x replaceable one-hole sealing for big bushing for thick cables
    - 1x big blind with nut
    - 1x small bushing with nut
    - 1x big bushing packing
    - 2x small bushing packings
- 4x (5 x 90) mm screws
- 4x "intelligent" (8 x 50) mm wall plugs

Electrical Installation

Use the Torx 20 spanner included in the delivery to loosen the 4 screws and remove the audio unit front cover. Find the board with electronics under the cover.

Description of Terminals, Connectors and Jumpers
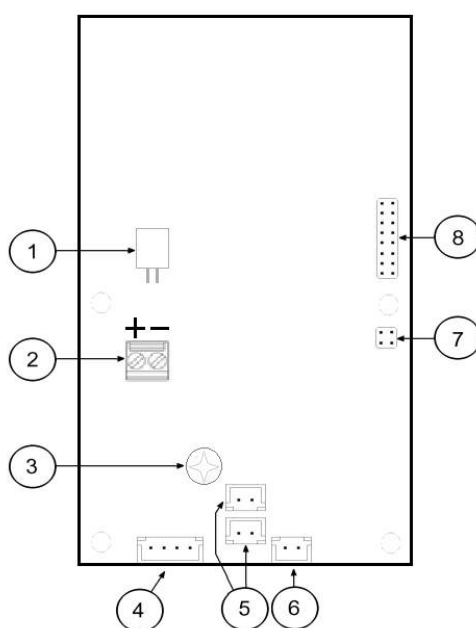
Terminals, Connectors and Jumpers on Fireman Audio Unit Board

Terminals and Connectors			
1	Speaker connector	5	2 microphone connectors
2	Audio unit bus	6	Detent button (knob) connector
3	Volume setting (trimmer)	7	Configuration jumper
4	Button connector (Push to talk)	8	Servicing connector

Bus Connection

Remove the audio unit cover and unplug terminal 2 (audio unit bus). Connect the bus and replace the terminal keeping polarity.

> ⊘ **Warning**
>
> - The audio unit is intended for 2N® Lift8 audio unit bus connection exclusively. Do not connect it to other wires to avoid its damage or destruction.
> - Keep polarity while connecting the audio unit to make the audio unit work properly.

> ⚠ **Caution**
>
> - The audio unit is powered via a 2-wire bus. Unplugging these wires results in the audio unit switch-off.

Volume Setting

Use the trimmer on the electronics board to adjust the volume (refer to the Description of Terminals, Connectors and Jumpers above).

> ⚠ **Caution**
>
> - Use the trimmer to set the best acoustic properties while eliminating feedback.

Mounting Completion

1. Having connected all the wires, check the bushings if employed for tightness.

2. Install the front panel carefully. Make sure that the wires inside the device are placed so that there is space for the front panel. Tighten the four screws again with the enclosed Torx 20 spanner, for example, to fit the panel into position on the metal chassis.

> ⚠ **Caution**
>
> - A wrong mounting procedure may deteriorate the Fireman's water resistance and damage the electronics due to water leakage.
>
> - 2N$^®$ Lift8 Fireman is assembled with stainless steel screws. Using different, lower-quality screws may lead to screw and surface corrosion!

2.10.3 Fireman - Mechanical Mounting

Mechanical Mounting – Mounting Types

See below for an overview of mounting types and list of necessary components.

Wall Mounting

- For concrete and steel structures, etc.

What you need for installation:

- 2N® Lift8 Fireman only (no need for covering frame)
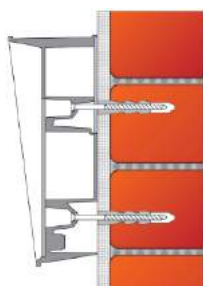
Flush Mounting – Classic Bricks

What you need for installation:

- Properly cut-out hole or, optionally, a flush mounting kit, Part No. **9151001**

- For 2N® Lift8 Fireman:
  - Covering frame: contact your distributor
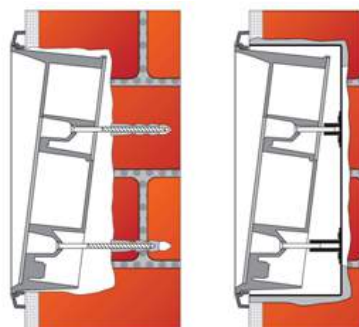
Flush Mounting – Thermally Insulated Wall

What you need for installation:

- Longer screws (depending on the thermal insulation thickness)

- For 2N$^®$ Lift8 Fireman:

  - Covering frame: contact your distributor

Flush Mounting – Hollow Bricks

What you need for installation:

- Flush mounting kit, Part No. **9151001**

- For 2N® Lift8 Fireman:

    - Covering frame: contact your distributor
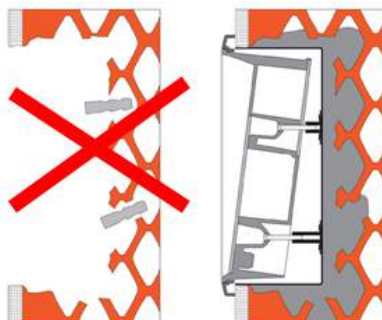
Flush Mounting – Plasterboard

What you need for installation:

- Flush mounting kit for plasterboard, Part No. **9151002**

- Pro 2N® Lift8 Fireman:

    - Covering frame: contact your distributor
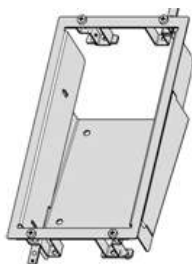
⚠ **Caution**

- The warranty does not cover any defects or failures of the product arisen as a result of improper mounting in contradiction to these instructions.

- A wrong mounting procedure may lead to damage to the electronics due to water infiltration. The circuits are constantly under voltage and water leakage causes electrochemical reaction. No warranty can be claimed for products damaged in this manner!

Common Mounting Principles

⊘ **Tip**

- Choose flush mounting where possible to make your product more elegant, vandal-resistant and safer.

- You can buy the flush mounting kit in advance and commission a specialised firm to install the device. Moreover, the flush mounting kit helps you level the audio unit properly (with a maximum vertical position deviation of 2°).

⚠ **Caution**

- Check the diameter of the plug holes. If the holes are too large, the plugs may come loose! Use a building glue for fixing if necessary.

- Check the depth of the plug holes! The plug length is 50 mm, the screw length is 90 mm.

- Do not use lower-quality plugs to avoid their pulling out of the wall!

- 2N$^®$ Lift8 Fireman is assembled with stainless steel screws. Using different, lower-quality screws may lead to screw and surface corrosion!

- Make sure that no impurities get into the device (especially on the sealing and microphone sound guides) after removing the front panel.

> ⓘ **Note**
>
> - The microphone sound guides are loose after the front panel is removed. This not a defect as the fitting screw only protects the guides against falling out during installation.

Wall Mounting

Wall (surface) mounting is used wherever flush mounting is not applicable – in concrete and steel structures, for example. The frame is not used.

> ⓘ **Warning**
>
> - Eliminate the risk of injury! Wall mounting is not suitable for narrow passages and places where people pay attention to something else. The manufacturer shall not be held liable for injuries caused by such negligence!

> ⚠ **Caution**
>
> - Wall mounting is a problem where the device may be damaged by vandals. In that case, use steel fitting elements instead of the plugs and screws included in the delivery.
> - Seal all unused bushing holes with packings to avoid water leakage (during wall washing, e.g.). Do not leave the holes open even for a short time (between mounting and wire connection, e.g.).

1. Choose the audio unit position according to the supply cables too. If the cables lead inside a structure or wall, use the holes on the audio unit bottom.

2. Drill plug holes of the depth of 70 mm (as shown in the figure below) into concrete and similar walls. Push or hammer the supplied plugs into the holes. If the plugs are too loose, use a mounting glue. Use fitting elements of your own for steel structures – metric screws and nuts, for example.

3. Remove the front panel from the audio unit.

4. Select the holes for the cables. Choose and mount the enclosed bushing depending on the count of cables: two-hole, one-hole or both types of bushings. Fill the other holes with the packing included.

5. Fit the audio unit to the wall or structure and lead in the cables leaving a small reserve inside. Insert the packings into the unused bushings and tighten the bushing nuts.

6. Do not complete the mounting procedure until you have connected the audio unit electrically – refer to Electric Installation . If the cables lead on the surface, use the bushings included in the delivery.
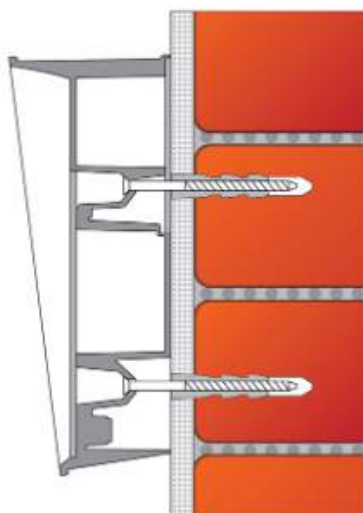

Flush Mounting – Classic Bricks

Follow the instructions for the flush mounting kit if used. Follow the instructions below if you do not use the flush mounting kit.

1. Drill a hole using the template included for all the necessary cables. Be careful while drilling as this type of mounting does not allow to balance rather great deviations later!

2. Unpack the frame, put the audio unit onto it and put this set on the hole to test whether the hole is deep enough and its uneven edge is completely covered by the frame.

3. Push or hammer the supplied plugs into the holes. If the plugs are too loose, use a mounting glue.

4. Remove the front panel from the audio unit.

5. Select the holes for the cables. Insert the packings in the other holes. Use the cable bushings or some sealing to avoid insect or water penetration. Mount a small bushing into the audio unit bottom hole too.

6. Put a frame on the audio unit.

7. Insert the audio unit in the hole and put the cables in at the same time. Leave a small cable reserve inside keeping the excessive cables under the audio unit bottom.

8. Insert the screw in the plugs in the holes on both the audio unit sides. Tighten all the screws carefully. Caution: the screw tightening sequence may affect the audio unit position.

9. Seal the frame against the wall if necessary with some silicon or other cement. Although unnecessary for the audio unit function, the sealing helps protect the wall against dampening due to water leakage.

10. Do not complete the mounting procedure until you have connected the audio unit electrically – refer to Electric Installation.
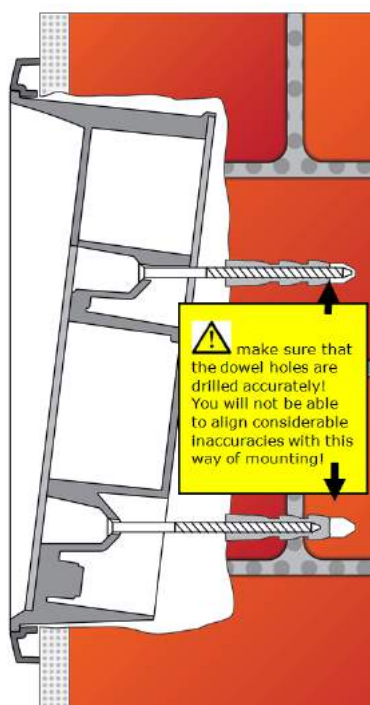
Flush Mounting – Thermally Insulated Wall

Cut out a hole in the insulation layer with the aid of the template (like with classic bricks).

> ⚠️ **Caution**
>
> - As the hole depth depends on the insulation layer thickness, you may need longer screws! If there are hollow bricks under the insulation layer, the screws must be long enough to fill in the whole plug (50 mm)! Otherwise, the plug will come loose.
> - Check the diameter of the plug holes. If the holes are too large, the plugs may come loose! Use a building glue for fixing if necessary.
> - Check the depth of the plug holes! The plug length is 50 mm, the screw length is 90 mm.

It is assumed that all the necessary cables lead to the predrilled hole. Now follow the instructions for classic brick mounting yet respect a lower strength of thermally insulated walls while tightening the screws.
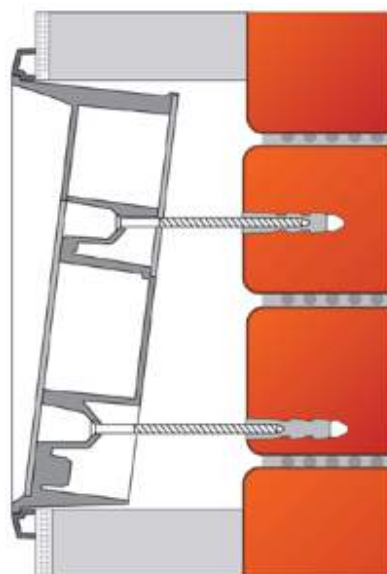
Flush Mounting – Hollow Bricks

It is practically impossible to fit plugs into hollow bricks because the inner brick walls are too thin for drilling. Therefore, use the flush mounting kit and follow the instructions included therein.
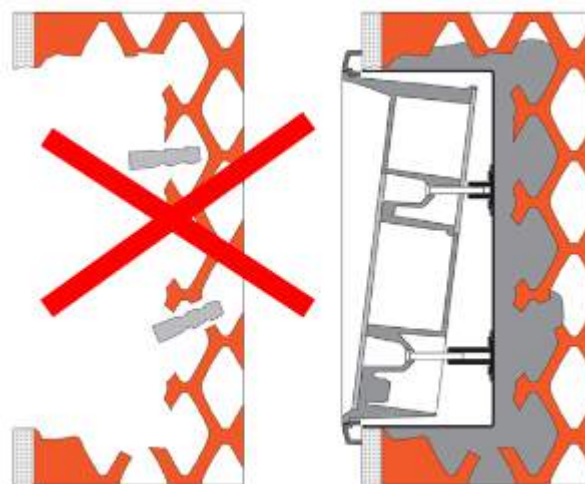
Flush Mounting – Plasterboard

Use the flush mounting kit for plasterboard walls and follow the instructions included therein.

2.11 I/O Module

Description

The purpose of the I/O Module is to interconnect the Central Unit (CU) with the lift signalling. It is designed for usage of binary inputs or switching of relay inputs. It is connected to the CU via 6 wires (power, audio, data). The inputs/outputs are connected to the I/O Module via 2-pin slide-on terminals.

The I/O Module detects status changes on 4 galvanically isolated logical inputs, whose nominal voltage ranges between 12 and 24V AC/DC (refer to the table below for the minimum and maximum voltage values). The I/O Module also contains 4 output NO contacts equipped with bistable relays (refer to the table below for the maximum closing values). There may be up to 8 I/O Modules (depending on the count of lift shafts available).

Remember to set a different address (lift shaft number) for each I/O Module to make the system work properly. A collision of addresses is signalled by the ERR LED. Set the address manually using the rotary switch (position 1–8 according to lift shaft 1–8). Addresses 9 and 0 are not used. If you set one of them, the ERR LED will indicate an error.

The I/O Modules are connected serially (in line). Do not use parallel connection to avoid system instability. Connect the termination resistance connecting jumper to the last device (Splitter or I/O Module furthest from the CU). See the figures below for terminal layout details.
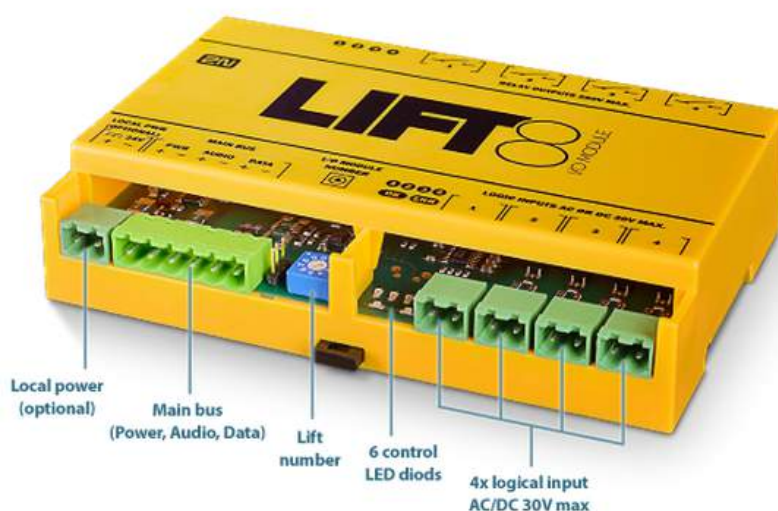
I/O Module – Lower Side
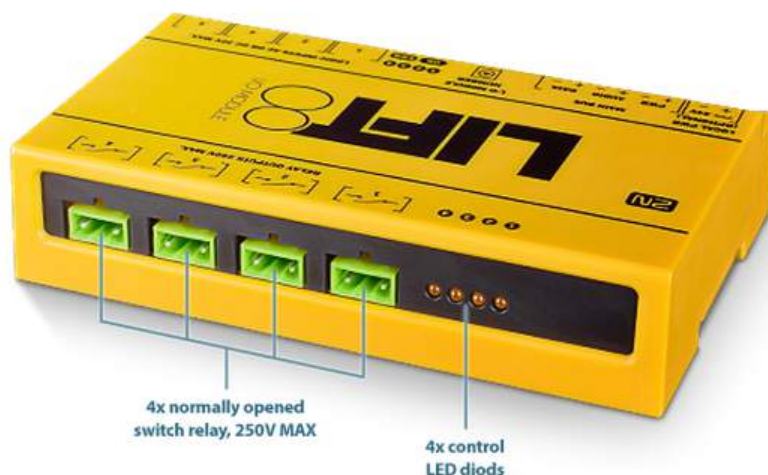
I/O Module – Upper Side

Electrical Installation

> ⚠️ **Caution**
>
> - Local power is not supported. Do not connect any local power supply.
> - The main bus power is sufficient for the I/O Module.

Main Bus Connection

Take the 6-pin main bus connector from the package and connect 6 wires from the CU maintaining polarity (power + -, audio + -, data + -) – see the I/O Module cover. Connect the devices serially (in line). Parallel connection is not allowed. Refer to the CU section for more details.
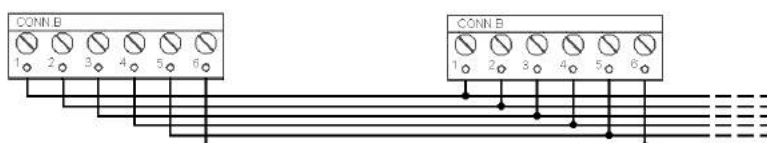
Main bus
1 ... Main bus power +
2 ... Main bus power -
3 ... Main bus audio +
4 ... Main bus audio -
5 ... Main bus data +
6 ... Main bus data -

> ⓘ **Warning**
>
> - Maintain the connection polarity to make the 2N® Lift8 system work correctly.

> ⓘ **Warning**
>
> - The bus is electrically isolated from the telephone line circuits according to the EN60950 requirements and its low voltage cannot cause any electrical accident.

Termination Resistance

> ⚠ **Caution**
>
> - Find the 3-pin termination resistance connecting jumper between the main bus connector and lift number switch.
> - Connect the jumper to the first and last device (CU, splitter or I/O module) on the bus. Refer to the CU section for more details.
> - By default, the termination resistance jumper is off.

Termination Resistance Off

Address Setting

Use a 10-pin rotary switch 0–9 (see the figure above) to set the I/O Module address for a lift. Set 1–8 like the shaft number for the splitter (set 5 for lift 5, e.g.).

> ⚠ **Warning**
>
> - Do not set address 0 and 9 to avoid system error.

LED Indicators

The I/O Module is equipped with ten LED indicators: two I/O Module status signalling LEDs, four input status signalling LEDs and four output status signalling LEDs. Refer to the table for details.

Name	Colour	Description
OK	Green	If everything is OK, the power supply and bus are connected, the I/O Module is communicating with the CU, the LED is flashing.
ERR	Red	If the red LED is on, the bus is not connected or there is an address collision with another I/O Module in the system.
Logic Input 1–4	Orange	This LED is on when the given input is active, i.e. nominal voltage for detection of logic 1 is detected on it.
Logic Output 1–4	Orange	This LED is on when the given input is active, i.e. the given relay is closed.

Logic Input Connection

Up to 4 galvanically isolated logic inputs can be connected to each I/O Module. The nominal voltage of these inputs is 12–24 V. The minimum detectable level is 8 V and the maximum level may not exceed 30 V. Otherwise, the I/O Module input circuits will get damaged. Transition to state 1 occurs with the logic signal rising edge and transition to state 0 with the falling edge. Every transition is detected and displayed in

the 2N® Service Tool application. At the same time, every status change is recorded in the system log for later use and the user is informed via a pop-up window. See the figure below for an example of input circuit connection.
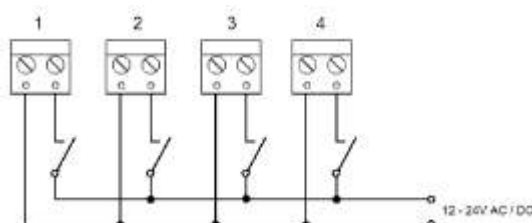
Example of Input Circuit Connection

Output Relay Connection

Every I/O Module is equipped with 4 bistable relays with the maximum load of 250 V / 5 A per contact. Never exceed this limit to avoid system damage. When the relay is closed, the respective LED signals this state. You can configure the relay function in

the 2N® Service Tool application.
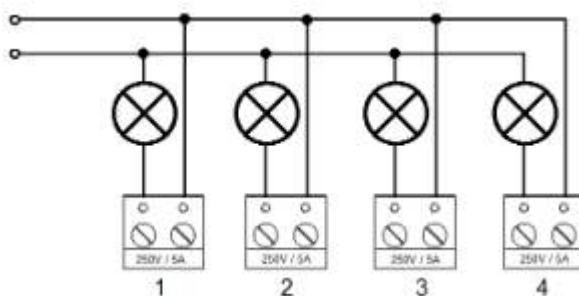
Example of Output Relay Connection

> ⚠️ **Warning**
>
> - Never exceed the voltage and current limits specified in the Technical Parameters for the load applied to the relay contacts to avoid system damage.

> ⚠️ **Warning**
>
> - Never connect any important structural devices such as brakes, door locks, security equipment, etc. to the relay outputs. **The I/O Module is not designed and must not be used for such installations.** Connect only the devices that will not be damaged by unexpected relay contact disconnection (CU remote upgrade, bus restart, etc.) such as unimportant signalling lamps, ventilators, shaft lights, etc.).
> - **The manufacturer shall not be held liable for damage incurred as a result of improper installations on the relay contact.**

Mounting Types

See below for the mounting types and necessary components. Install the device on sites not exposed to water leakage or condensation.

Wall Mounting

Use appropriate wall plugs and screws for mounting (not included in the delivery). Hang the device using the pre-drilled holes on the device bottom.

Wall Mounting

DIN Rail Mounting

Mount the device on a standard TS 35 DIN rail. The recommended DIN rail length is 14 cm.

DIN Rail Mounting

⚠ **Caution**

- The warranty does not cover any defects or failures of the product arisen as a result of improper mounting in contradiction to these instructions.

- A wrong mounting procedure may lead to damage to the electronics due to water infiltration. The splitter circuits are constantly under voltage and water leakage causes electrochemical reaction. No warranty can be claimed for products damaged in this manner!

2.12 Camera Module

Description

The camera module helps you connect a lift cabin camera of the IP, RS-232 and RS-485 type. The camera module can work with the Central Unit (CU), or autonomously. It contains a microSD card slot for recording images in variable intervals.
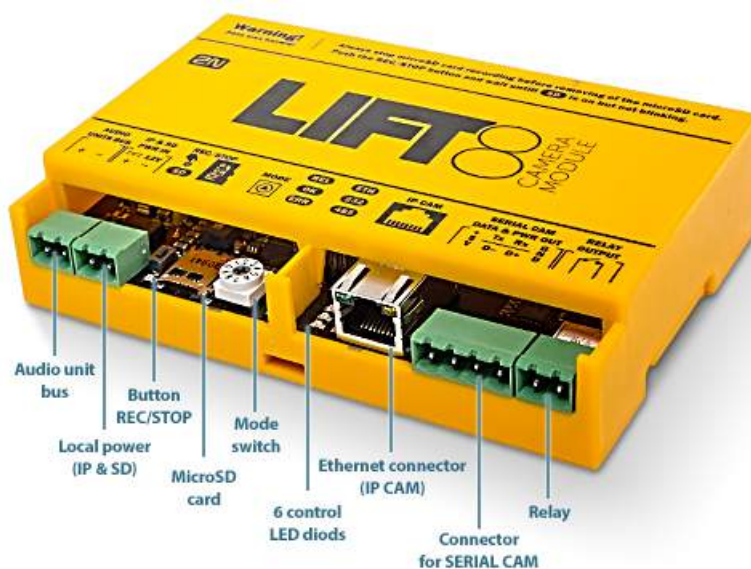
Connect the camera module to the CU or splitter via a 2-wire bus to support the 2N® Lift8 communication.

Connect a local power supply to record images on the microSD card.

> ⚠ **Caution - upgrade**
>
> - The red ERR LED is illuminated, the green OK LED flashes quickly and the yellow REL LED flashes slowly to indicate the upgrading process.

> ⚠️ **Caution**
>
> - Local power is supported.
> - Connect the local power supply if:
>   - an IP camera communicating with the CU is connected to the camera module;
>   - images are recorded on the microSD card in certain intervals;
>   - the camera module works autonomously without bus connection.

Electric Installation

Bus Connection

Connect the camera module via a 2-wire bus (audio unit bus) to the CU or splitter maintaining polarity.
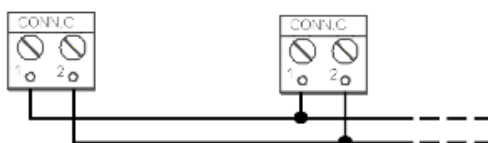
Audio unit bus
1... Audio unit bus +
2... Audio unit bus –

> ⊘ **Warning**
>
> - Maintain the connection polarity to make the 2N® Lift8 system work correctly.

> ⚠ **Safety**
>
> - The bus is electrically isolated from the telephone line circuits according to the EN60950 requirements and its low voltage cannot cause any electrical accident.

Mode Switch

Set the camera module connection mode with a 10-position switch 0–9:

0 – the camera module works within the 2N$^{®}$ Lift8 system (connected to the CU /splitter via a 2-wire bus);

1 – the camera module works autonomously (see below for details);

2–9 – no setting (the red ERR LED is flashing).

IP Camera Connection
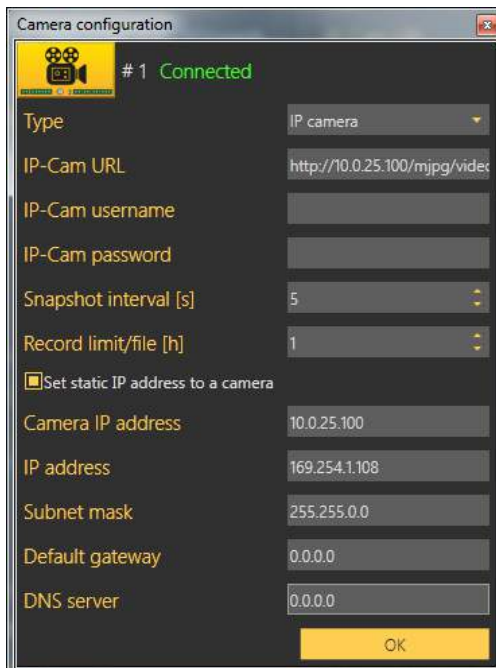
There are two IP camera connection options.

1. Connect the IP camera directly to the camera module.
2. Connect the camera module to the LAN if the IP camera is installed in the LAN.

If the camera module is connected to the Lift8 system, use the Service Tool for configuration (refer to Subs. 5.3 – Service Tool – Use for more details).

Refer to the Autonomous Camera Module Connection Subs. for more setting details.

Direct IP camera - camera module connection

IP camera LAN connection

Select Set static IP address to a camera to activate the DHCP server to assign the defined address to the camera. If the static IP address is already set for the IP camera, it is unnecessary to enable the server.

> ⚠️ **Caution**
>
> - To retrieve the IP address from the DHCP server, make sure that the Retrieve IP address from DHCP server option is enabled for the camera.
> - Switch on the local power supply.

RS-232/RS-485 Camera Connection

Set only the resolution, compression, snapshot interval and Record limit/file parameters for the RS232 and RS485 cameras.

Connect the camera to the SERIAL CAM connector using a push-on terminal board.

See the table below for connector details.

+5 V	TX/D	RX/D+	GND
+UCC	data transmitted	data received	signal ground

> ⚠️ **Caution**
>
> - The RS232 and RS485 cameras work without a local power supply too in the Lift8 system only if they have a low current consumption.
> - Saving files to an SD card does not work without a local power supply.

> ⊘ **Tip**
>
> - We recommend you to switch on a local power supply because cameras usually take more current in the night mode (for infrared illumination).

LED Indicators

The camera module is equipped with seven LED indicators; see the table below.

Name	Colour	Description
SD	Orange	The LED flashes to indicate recording. However, the camera type must flash at the same time (ETH, 232, 485). When the LED is on, you can slide the microSD card out by pressing the REC/STOP button.
REL	Orange	The LED is illuminated to indicate a closed relay.
OK	Green	The LED flashes (slowly) to indicate that the bus is connected and the camera module is communicating with the CU. The LED flashes (quickly) to indicate image download. The LED is illuminated permanently to indicate that the module is connected in the autonomous mode and is OK.
ERR	Red	The LED flashes to indicate an error in the camera module or Ethernet cable connection. The LED is illuminated to indicate address collision. Make sure that one camera module is only connected in the shaft.
ETH	Orange	The LED is on when the camera is connected and configured properly. The LED flashes to indicate active recording.
232	Orange	The LED is on when the camera is connected and configured properly. The LED flashes to indicate active recording.
485	Orange	The LED is on when the camera is connected and configured properly. The LED flashes to indicate active recording.

> ⚠ **Caution**
>
> - The OK LED is flashing and ERR LED is illuminated when the unit is being upgraded.

> ⚠ **Caution**
>
> - Use the **2N® Lift8 Service Tool** application to set the camera type and other parameters.

Camera Module Setting

Set the **2N® Lift8** camera module via the **2N® Lift8 Service Tool**. Refer to **5.3 Use** for details.

Autonomous Camera Module Connection

The camera module can be used autonomously without being connected to **2N® Lift8**. To make the module work autonomously, change the connection mode to autonomous (no **2N® Lift8** connection) using a rotary switch (switch to 1), connect a local power supply, insert a microSD card and make basic configuration.

There are two IP camera connection options.

1. Connect the IP camera directly with the camera module.
2. Connect the camera module to the LAN if the IP camera is installed in the LAN.

Refer to the camera.cfg, network.cfg, password.cfg a time.cfg files on the microSD card for basic settings. These files are created automatically when you insert a new microSD card. Modify the configuration file slightly with respect to the camera type used.

> ⚠️ **Caution**
>
> - You are recommended to format the microSD card before inserting it in the camera module (FAT32).
> - You are recommended to connect the camera module to a backup power supply to avoid recording errors at power outage. Connect the IP camera to the backup power supply too.

Camera Module Settings (network.cfg)

Parameter name	Default value	Note
IP address	10.0.0.254	Camera module IP address
Gateway	0.0.0.0	Gateway IP address
DNS	0.0.0.0	DNS server IP address
Netmask	255.0.0.0	Network mask
DHCP camera ip address	0.0.0.0	0.0.0.0 = disabled Ip address = DHCP server enabled on camera module. Used only if the IP camera is directly connected with the camera module.

> ⚠️ **Caution**
>
> - Set Camera IP address to enable the DHCP server and assign the selected address to the IP camera. Make sure that the Retrieve IP address from DHCP server option is enabled for the camera.
> - Refer to network.cfg for more setting details.
> - Having set the network parameters, you can open the Internet browser to go on configuring via the web interface (see the Web Interface below).

IP Camera Settings (camera.c fg)

Parameter name	Value range	Default value	Note
Camera type	1–3	3	1 = RS-232 2 = RS-485 3 = IP camera
Resolution	1–3	2	1 = 160 x 80 2 = 320 x 240 3 = 640 x 480
Compression ratio	10–100 %	60 %	Image compression
Camera URL IP		http://10.0.0.1/jpg/image.jpg	Each camera has a different URL.
Record interval	1–3600 s	5 s	Camera recording interval
Record rotate file interval [1h]	1–24h	1 h	MicroSD card file creation interval
Username		admin	IP camera access user name (login)
Password		2n	IP camera access password

> ⚠ **Caution - IP camera**
>
> - Set resolution and compression in your IP camera configuration.
> - Each IP camera has a different URL.

> ⚠️ **Caution**
>
> - Refer to camera.cfg for more setting details.

Date and Time Settings (time .cfg)

Parameter name	Default value	Note
Coordinated Universal Time	0	Set the time zone in which the camera module is located.
Date (dd:mm:yyyy)	01.01.1970	
Time (hh:mm:ss)	00:00:00	

> ⚠️ **Caution**
>
> - Refer to time.cfg for more setting details.

Password Setting (password.cfg)

Parameter name	Default value	Note
password	2n	The password set via password.cfg is encrypted when an SD card is inserted in the camera module.

> ⚠️ **Upozornění**
>
> - The user name is always **Admin** (not respecting the upper/lower case).

Standalone Camera Module Upgrade

Refer to 2N$^®$ Lift8 Camera Module at **www.2n.cz** for the latest firmware (ln_app_camera.bin). Download the file to a microSD root directory. When you insert the microSD card, the file (ln_app_camera.bin) will be loaded onto the dataflash (yellow LEDs flashing) and then the module will get restarted. Upon restart, the new FW will be loaded to the camera module. The ln_app_camera.bin file will be renamed to OFF_ln_app_camera.bin.

MicroSD Card

Insert the microSD card in the slot. If the card is loaded correctly and the camera module is configured properly, the orange **SD** LED will start flashing to indicate that images are recorded onto the microSD card in the selected intervals. Press REC/STOP to remove the microSD card and wait until the LED stops flashing.

> ⚠️ **Caution**
>
> - Support of microSD cards up to 32 GB.
> - Saving files to an SD card does not work without a local power supply.

Web Interface

Enter the camera module IP address into the Internet browser to display the camera module web menu in English.

There are 3 menus:

1. Configuration – set the same camera module (available in the autonomous mode only) parameters as in the SD card files (camera.cfg, network.cfg, password.cfg and time.cfg).
2. Video files – display the video files recorded.
3. Relay control – set the camera module relay control.
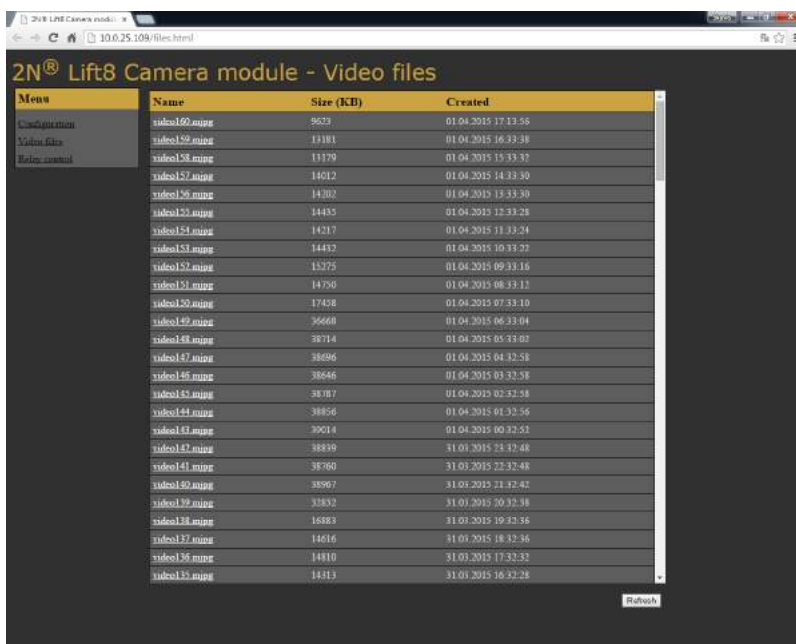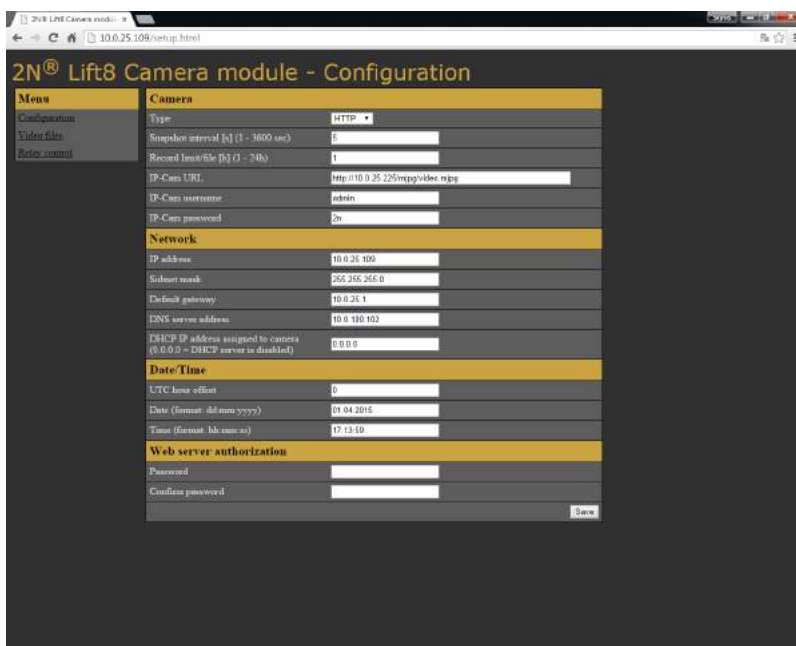
User name: Admin

Password: 2n

> **⚠ Caution**
>
> - You can only change the web access password via the web and password.cfg. The username is always the same (Admin, regardless of lower/upper case).
> - If the RS232 and RS485 cameras are connected, you cannot get connected to the camera module web interface.

> **⊘ Tip**
>
> - Download the recorded files in the Video files section. As the download rate is very slow, you are recommended to remove the SD card and load the files directly from the card to get the files more quickly.

Relay Control HTTP Commands

You can also use http commands to close/open the relay.

Function	HTTP command
Relay state	http://10.0.0.1/relay_get
Close relay	http://10.0.0.1/relay_set?value=1
Open relay	http://10.0.0.1/relay_set?value= 0

Mounting Types

See below for the mounting types and necessary components. Install the device on sites not exposed to water leakage or condensation.

Wall Mounting

Use appropriate wall plugs and screws for mounting (not included in the delivery). Hang the device using the pre-drilled holes on the device bottom.

Wall Mounting

DIN Rail Mounting

Mount the device on a standard TS 35 DIN rail. The recommended DIN rail length is 14 cm.

DIN Rail Mounting

> ⚠️ **Caution**
>
> - The warranty does not cover any defects or failures of the product arisen as a result of improper mounting in contradiction to these instructions.
>
> - A wrong mounting procedure may lead to damage to the electronics due to water infiltration. The Camera Module circuits are under constant voltage and water leakage causes electrochemical reaction. No warranty can be claimed for products damaged in this manner!

2.13 RS232 Module

Description

The RS232 module helps you receive AT commands from the lift Central Unit (CU).

Some AT commands are supported only. Use the 2N® Service Tool to set the transmission rate (115200 by default).

Before You Start

Product Completeness Check

Check whether the product package is complete before installation.

The RS232 module package contains:

- 1 electronics board (RS232 module)
- 2 long threaded spacers, 1 short screwed spacer
- 1 screw
- RS232 cable
- cable bushing

Description of Connection

1. Keep the **CU** disconnected from the mains.

2. Loosen the three screws on the upper cover of the **CU**.

3. Move the **CU** upper cover in such a way that you can remove it.

4. While removing the cover, proceed with caution - be careful about the earth wire connecting the cover with the **CU** bottom part. Do not disconnect the wire unless there is a reason to do so!

5. Disconnect the back-up rechargeable batteries if connected (using the FASTON cable end pieces connecting the rechargeable batteries with the motherboard).

6. Unscrew 2 screws (1) and replace them with 2 threaded spacers. Fit the screwed spacer (2) into the LED plastic cover (see Fig.).

> ⊘ **Tip**
>
> To make your spacer mounting easier, turn the screw until it stops and use a cross-point screwdriver to fit the spacer. Having tightened the spacer in the LED plastic cover, use flat-nose pliers to secure the spacer against spinning and remove the screw.

7. Now mount the RS232 module. Be careful while putting the module on the pins. Make sure that you have connected all the pins to the module connector.

8. Having fitted the pins into the connector correctly, you can fix the module using 3 screws (see Fig.).
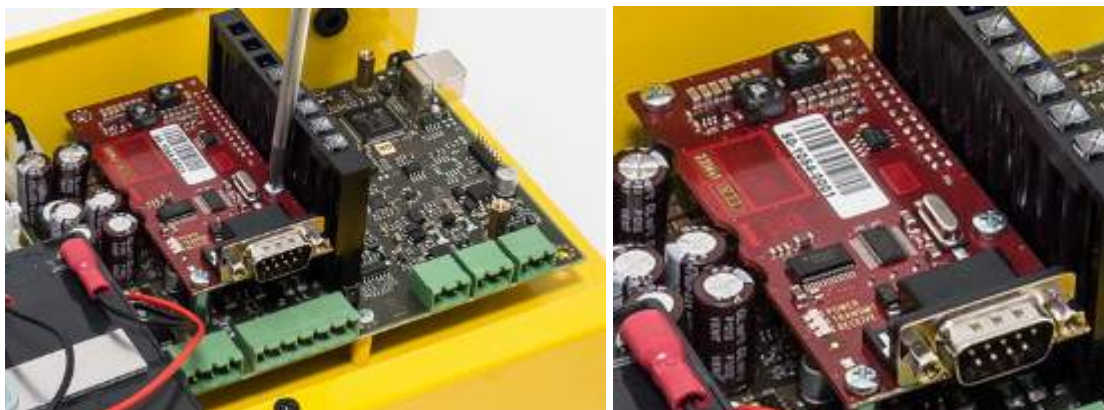
9. To mount the RS232 cable, remove the blank module on the CU bottom edge. Put a cable bushing on the RS232 cable and insert it in the empty space (the cable bushing is factory-cut in one point for easier handling).

10. Replace the rechargeable batteries and **CU** cover and tighten the 3 screws to fit the cover.

Supported AT Commands

AT Command	Example	AT Command Use	Note
AT+CMGS=	AT+CMGS="603123456", 145<CR>sms text<Ctrl+z> or without apostrophes AT+CMGS=603123456, 145<CR>sms text<Ctrl+z>	Send SMS	<CR> = Enter 145 – international number (including +) 129 – national number
AT+CMGF=	AT+CMGF=1	Select SMS mode	
ATE1	ATE1	Enable echo	Return edited characters to the terminal

AT Command	Example	AT Command Use	Note
ATE0	ATE0	Disable echo	
ATE	ATE	See ATE0	
AT	AT	Start command row	

See here for details on AT commands.

> ⚠️ **Caution**
>
> - Use a **CU** with the GSM/UMTS module for sending SMS.

Serial Port Configuration

You can only set the transmission rate of 9600–115200 bauds for the serial port.

The other parameters are preset:

Bits per word	8 bits
Parity	no parity
Stop bits	1 stop bit

2.14 Audio Unit - Shaft Antivandal

Description

Typically, this audio unit is installed on lift shaft bottoms, cabin floors and roofs and/or any other places that require communication, e.g. for lift maintenance purposes. The audio unit features an orange robust aluminium case and is thus highly resistant against small falling objects, dripping oil and other hardships that might occur in lift shafts. This unit is designed for outdoor applications too. Press the ALARM button to establish connection with the control centre. The audio unit is equipped with an integrated microphone and speaker and, thanks to its dimensions and strength, provides a good and strong sound.

⚠️ **Caution - diods**

Alarm call

- The button is blue-backlit to indicate alarm call setup.
- The button blue backlight flashes to indicate image download from a camera module.

Upgrade

- The audio unit is initialised first – the ALARM button is blue-backlit.
- The ALARM button blue backlight flashes to indicate an upgrading process.
- The audio unit stops shining after upgrade and is ready for use.

Operation Staff

1. This audio unit type is operated by well-trained persons (lift maintenance staff, e. g.).

2. Use the ALARM button whenever a person falls into the shaft, for example.

3. The audio unit dials the numbers stored in the ALARM button memory – set 2 (021–026).

> ⚠️ **Caution**
>
> - If set 2 (021/026) is not stored in the ALARM memory, the audio unit dials set 1 (011–016) stored in the ALARM memory.
> - Use the ALARM button to call the control centre or machine room audio unit configured as an intercom.
> - The ALARM button is not illuminated at relax.

Before You Start

Product Completeness Check

Check the product package for completeness before installation:

- 1 2N® Lift8 Shaft Antivandal
- 1 Torx 10 / Torx 20 double-ended spanner
- Bushings (extra package):
    - 1x big two-hole, sealed bushing with nut
    - 1x replaceable big one-hole bushing seal for thick cables
    - 1x big blank module with nut
    - 1x small bushing with nut
    - 1x big bushing packing
    - 2x small bushing packings
- 1x 2N® Lift8 Shaft Antivandal brief manual
- 1x mounting template
- 1x bus connector
- 4x screws (5 x 90 mm)
- 4x "intelligent" mounting wall plugs (8 x 50 mm)

The audio unit is typically mounted on a wall using the wall plugs and screws included in the delivery. Find the drilling template in an extra package.

> ⚠️ **Caution**
>
> - The audio unit is designed for outdoor applications too.
> - Refer to Subs. 2.10.3 (Fireman – Mechanical Mounting) for more mounting details.

Electric Installation

Unscrew the 4 screws using the Torx 20 spanner enclosed and remove the audio unit front cover to reveal the electronics board.

Desription of Terminals, Connectors and Jumpers
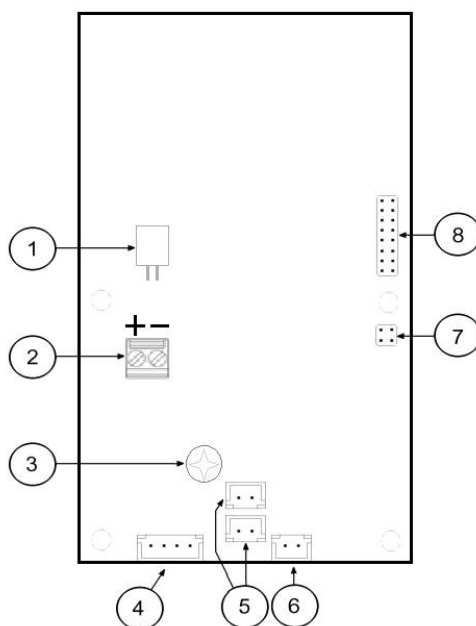
Audio Unit – Fireman Terminals, Connectors and Jumpers

Terminals and Connectors			
1	speaker connector	5	2 microphone connectors
2	audio unit bus	6	lockable button connector (knob)
3	volume control	7	configuration jumper
4	button connector (push to talk)	8	servicing connector

Audio Unit Location

The audio unit is designed for shaft bottom installations by default.

In other cases, follow the instructions below:

Procedure

1. Unscrew the 4 screws using the Torx 20 spanner enclosed and remove the audio unit front cover.
2. Set the audio unit location using the configuration jumper (7).

Jumper setting	Audio unit location
no jumper	shaft bottom
jumper up	over the cabin
jumper down	under the cabin

3. Replace the cover and tighten the 4 screws.

> ⚠️ **Caution**
>
> 1. Avoid duplicate audio unit settings.

Bus Connection

Remove the audio unit cover. Pull the bus through the bushing and put it on terminal 2 using the connector enclosed. Maintain polarity (see the Audio Unit – Fireman Terminals, Connectors and Jumpers figure above).

> ⓘ **Warning**
>
> 1. The audio unit is intended for 2N$^®$ Lift8 audio unit bus connection exclusively. Do not connect it to other wires to avoid its damage or destruction.
> 2. Maintain polarity while connecting the audio unit to avoid audio unit error.

> ⚠ **Caution**
>
> 1. The audio unit is powered via a 2-wire bus. Disconnection of these wires results in the audio unit switch-off.

Volume Control

Set the required volume using the trimmer (refer to the Description of Terminals, Connectors and Jumpers above) on the electronics board.

> ⚠ **Caution**
>
> 1. Use the trimmer to set the best acoustic properties eliminating feedback.

Mounting Completion

1. Having connected all the wires, check the bushings if used for proper tightening.

2. Replace the front cover carefully. Make sure that the wire arrangement inside the device provides enough space for front panel insertion. Tighten the 4 screws thoroughly to push the panel by 1 mm further to the metal chassis. Use the Torx 20 spanner for tightening, for example.

⚠ **Caution**

1. An improper mounting may result in the audio unit not being waterproof. Water leakage may damage the electronics.

2. 2N$^{®}$ Lift8 Shaft Antivandal is assembled with stainless steel screws. If you lose them, never use other screws to avoid corrosion and screw appearance deterioration!

2.15 LAN Module

Description

The main purpose of the LAN module is to connect the ETH supporting lift controller. Like the serial module, it can support the Internet connection via the Central Unit WAN interface. Here the VoIP or GSM/UMTS module can be mounted. In general, it is an interface providing connection to a network. Set the LAN module address as the default gateway on the devices connected. Then you can get connected to the Internet via the Central Unit. Set the LAN module parameters, such as IP address and subnet mask, using the Service Tool in the LAN Data module section (parameters 1500 and 1501). Port forwarding is closely associated with the Data module and ensures that communication directed to a certain WAN port is forwarded to the selected port and IP address in the LAN Data module network.

Before You Start

Product Completeness Check

Check whether the product package is complete before installation.

The LAN module package contains:

- • 1 electronics board (Ethernet level)
  - 2 long threaded spacers
  - 1 short screwed spacer
  - 1 screw

Description of Connection

1. Disconnect the CU from the mains supply.

2. Loosen the three screws on the upper cover of the **CU**.

3. Move the **CU** upper cover in such a way that you can remove it.

4. While removing the cover, proceed with caution - be careful about the earth wire connecting the cover with the **CU** bottom part. Do not disconnect the wire unless there is a reason to do so!

5. Disconnect the back-up rechargeable batteries if connected (using the FASTON cable end pieces connecting the rechargeable batteries with the motherboard).

6. Unscrew 2 screws (1) and replace them with 2 threaded spacers. Fit the screwed spacer (2) into the LED plastic cover (see Fig.).

> ⊘ **Tip**
>
> To make your spacer mounting easier, turn the screw until it stops and use a cross-point screwdriver to fit the spacer. Having tightened the spacer in the LED plastic cover, use flat-nose pliers to secure the spacer against spinning and remove the screw.

7. Now mount the Ethernet level. Be careful while putting the module on the pins. Make sure that you have connected all the pins to the module connector.

8. Having fitted the pins into the connector correctly, you can fix the module using 3 screws (see Fig.).

9. Now connect the Ethernet cable via RJ-45.

10. Replace the rechargeable batteries and **CU** cover and tighten the 3 screws to fit the cover.

11. Reconnect the **CU** to the mains supply.

2.16 Voice Alarm Station

Description

The **2N®** **Voice Alarm Station** extends the **2N®** **Lift8 Audio Unit – Cabin Universal** (**918610E**, **918610EX**) with an audio unit installed on the cabin roof and under the cabin. It is a "**audio panel switch**" that interconnects the cabin audio unit with one or two cabin units.

Operation

Use "Press to call" to activate the device and set up a call to the number set in **2N®** **Lift8** (Set 1 – ALARM button memory – 011 to 016 or Set 2 – ALARM button memory – 021 to 026). Refer to the Mounting subsection for details.

> ⚠️ **Caution**
>
> - The audio unit does not contain any call-setup indicating LED. The LED on the **2N®** **Lift8 Audio Unit – Cabin Universal** is illuminated to indicate call setup and confirmation.
> - It is necessary to wait for approx. 30 s for call setup from another audio unit. The switch remembers the last alarm-calling audio unit and when alarm is generated from another audio unit within 30 s, the call is set up from the audio unit that was the last to make the alarm call.

Mounting

Use the 4 screws to loosen and move downwards the cabin audio unit. Remove the cover, disconnect the speaker and (external) microphone.

Connect the cable connectors included in the delivery to the microphone and speaker connectors on the cabin audio unit (the microphone and speaker connectors have different sizes and cannot be interchanged due to the audio unit cover pictograms). Connect a 16-pin connector with 2 wires to the service connector (13) on the cabin audio unit (see the figure below).
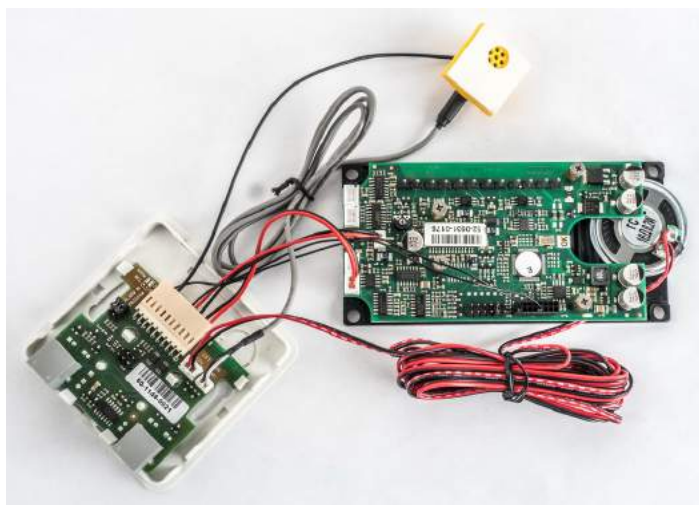
⚠ **Warning**

- Make sure that the 16-pin connection is correct to avoid product damage.

Replace the audio unit cover, move it upwards and tighten the 4 screws.

The last cable wire enclosed is intended for ALARM button connection. Connect it to button 1 (to call Set 1 – ALARM button memory – 011 to 016) or button 2 (to call Set 2 – ALARM button memory – 021 to 026). Connect the wire to the upper terminal (when viewing the audio unit) of the ALARM connector, or ALARM 2 for contact control.

⚠ **Warning**

- Do not connect the switch to voltage-controlled inputs to avoid damage.

Remove the cover from the switch. Interconnect the switch and the **2N**® **Lift8 Audio Unit – Cabin Universal** using the cable included in the delivery.

Connect the microphone and speaker from the **2N**® **Lift8 Audio Unit – Cabin Universal** in the switch. The speaker and microphone connectors are marked (SPK and MIC). Pull the cables through the holes.

> ⚠️ **Caution**
>
> - In the case of a cable version of **2N**® **Lift8**, an external microphone should be connected into the microphone input on the cable-switch. If you do not have a cable version, this input should be free.
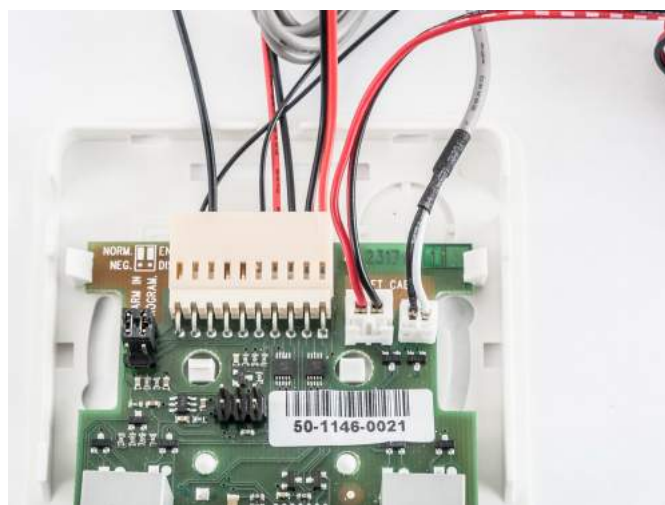
Break out cable holes in the switch upper cover. Then replace the cover. There are 2 RJ-12 connectors on the switch side for audio unit connection. Interconnect the audio unit and the switch using the cable supplied.

Proportions

Audio unit – Voice alarm station: 225 x 87 x 67 mm

Audio panel switch: 81 x 81 x 30 mm

3. System Configuration

The system is supplied pre-configured.

This section describes the **2N® Lift8** configuration. There are three ways how to program **2N® Lift8**.

- 3.1 Lift8 Programming
- 3.2 Table of Parameters
- 3.3 SMS Configuration

3.1 Lift8 Programming

The advantage of the 2N® Lift8 (hereinafter referred to as **L8**) system is that it is programmed via the **CU** where all the parameters are stored. Hence, you do not have to reconfigure anything to replace an Audio Unit and you can program just one **CU** in multiple lift systems, for example. The memory is independent of the **CU** power.

Before You Start

- Fill in all the values to be changed in the prepared form with a clear table of basic functions.
- If the **L8** is not brand new, make sure that you have the correct servicing password, and if you are not completely sure of your **L8** configuration, execute full initialisation (Warning: The servicing password is also initialised!).
- **L8** can be programmed in 3 ways: remotely via a telephone (telephone number), using the machine room Audio Unit and/or using the service tool program (connection via USB/IP address).
- Make sure that your telephone supports tone dialling (key phones may cause problems in some PBXs).

> ⚠️ **Caution**
>
> - Warning: The servicing password is also initialised!

Access to Programming Mode

You can enter the programming mode during an incoming call (calling the **L8** number) or using the machine room Audio Unit (press ✳ for over 2 seconds).

Use the voice menu (press 9 for administration and 1 for access to the programming).

Upon request, enter the servicing password as follows: **servicing password** ✳ (do not forget to put an asterisk after the password).

If the password is correct, **L8** announces: **"You have entered the programming menu, select a parameter"**.

The factory password is 12345 but you are recommended to enter a different password to protect your device against unauthorised persons.

> ### ⓘ Note
>
> - The factory password is 12345 but you are recommended to enter a different password to protect your device against unauthorised persons.
> - While entering the password, keep a limit of 60 seconds (or any other value configured in the range between 10 and 1000 seconds) for each character to avoid **L8** hang-up.

Programming Procedure

Having entered the programming mode, you can change any programmable value(s) in any order. Proceed as follows: enter the function number and then the value. Use an asterisk as a separator or Enter. In general, the function has the following format:

function number ✳ value ✳

The function number has three digits (see the table). After you enter the function number and an asterisk, **L8** reports the number or name, current value and potential range of the parameter to be programmed. After you enter the value and another asterisk, **L8** reports "New value stored", or "Invalid value, new value not stored" if the value is beyond the allowed range.

L8 reads out the parameter number and the newly configured value for checking purposes.

> ### ⚠ Warning
>
> - A drawback of some telephone sets is that, after you press a button, i.e. send a DTMF signal, they go "deaf" for a fraction of a second. In that case, you cannot hear the whole text and are recommended to use another telephone.

Programming Error

- If you make a mistake during entering (the function number or value) and have not entered an asterisk yet, you can cancel the whole number by pressing # and re-enter the number.
- If **L8** rejects the parameter number or value you have entered, go on programming but re-enter the function number even if only the value was wrong.
- If you have programmed and stored a value other than the required one, you can re-enter the value of course.

Programming End

- If you are calling **L8** via a telephone number, hang up to terminate programming.
- If you are programming via the machine room Audio Unit, press and hold over 2 s ⌗ to terminate programming and put the Audio Unit in the standby mode.
- If you only want to go one menu back, press ⌗ .

> ⊘ **Tip**
>
> - If you are not quite sure of how **L8** will behave after programming, save the filled-in form for later check.

Troubleshooting

L8 fails to respond correctly to DTMF commands, e.g. the programming mode cannot be entered.

Today, voice transmission is prevailingly digital, using variable compression algorithms. Therefore, the DTMF signal to be transmitted is often distorted. Moreover, it may, in some cases, be transmitted through the so-called command channel, whose delay may differ from that of the speech channel.

> ⚠ **Caution**
>
> - Experience shows that, especially recently, it is practically impossible to recover the DTMF signal in GSM networks!

In such cases, try some other equipment (a digital PBX, e.g.) or the machine room telephone set. If the machine room or PSTN programming attempts fail too, you have probably entered an invalid password.

Programming via Service Tool

Refer to the 2N® Service Tool section (Section 5) for details.

3.2 Table of Parameters

Table of Parameters

Par. No	Parameter name	Range of values	Default value	Note	Info
011	Set 1 – ALARM button memory 1	up to 30 digits: 0–9	empty	Entering characters ⊛ , # and 'p' for a 1-second pause while programming is possible via a PC (use the 2N® Service Tool).	
012	Set 1 – ALARM button memory 2	up to 30 digits: 0–9	empty		
013	Set 1 – ALARM button memory 3	up to 30 digits: 0–9	empty		
014	Set 1 – ALARM button memory 4	up to 30 digits: 0–9	empty		
015	Set 1 – ALARM button memory 5	up to 30 digits: 0–9	empty		
016	Set 1 – ALARM button memory 6	up to 30 digits: 0–9	empty		
017	Insert specific character in ALARM memory set 1	**Entering format:** X X 7 ⊛ X X XX ⊛ — Button number, 01; 1 = ⊛ 2 = # 3 = space; Button memory number, 1 – 6; Character position, 01 - 16. *Note: The digits behind this position are shifted automatically.*			

Par. No	Parameter name	Range of values	Default value	Note	Info
018	Set 1 – count of automatic dialling cycles for ALARM	0–9	3	If 0 is configured, only the first number in the memory is called regardless of the count of saved numbers.	
111–116	Set 1 – confirmation mode for number 1–6	1–9	1	1 = with confirmation DTMF (1), 2 = confirmation of picking up (supported only for GSM/UMTS /VoIP), 3 = CPC Antenna, 4= CPC KONE, 5 = P100, 6 = autodetection DTMF protocol (CPC Antenna /P100), 7 = CPC Antenna 2N Ext, 8 = CPC KONE 2N Ext, 9 = P100 2N Ext 2N Ext is a protocol that transmits the shaft number and audio unit position together with the ID (to be displayed in 2N® Lift8). If there is no guarantee of problem-free transfer of DTMF, do not set 6 for autodetection CPC Antenna/P100, but precisely specify the protocol to be used (3 or 5).	1.6.0 - Range change

Par. No	Parameter name	Range of values	Default value	Note	Info
021	Set 2 – ALARM button memory 1	up to 30 digits: 0-9		Entering characters ✱ , # and 'p' for a 1-second pause while programming is possible via a PC (use the 2N® Service Tool). If set 2 of the ALARM memories is completely empty, use set 1. If parameter 029 = 0, the call is not made.	
022	Set 2 – ALARM button memory 2	up to 30 digits: 0-9			
023	Set 2 – ALARM button memory 3	up to 30 digits: 0-9			
024	Set 2 – ALARM button memory 4	up to 30 digits: 0-9			
025	Set 2 – ALARM button memory 5	up to 30 digits: 0-9			
026	Set 2 – ALARM button memory 6	up to 30 digits: 0-9			
027	Insert specific character in ALARM memory set 2	Entering format: X X 7 ✱ X X XX ✱ Button number, 02 1 = ✱ 2 = # 3 = space Button memory number, 1 – 6 Character position, 01 - 16 Note: The digits behind this position are shifted automatically.			
028	Set 2 – count of automatic dialling cycles for ALARM	0-9	3	If 0 is configured, only the first number in the memory is called regardless of the count of saved numbers.	

Par. No	Parameter name	Range of values	Default value	Note	Info
029	Allow usage of alarm set 1 when set 2 is empty	0–1	1	The alarm set 2 is used when pressing the alarm button on non-car units. If the set 2 is empty and this parameter set to 0, the call request is ignored.	
121–126	Set 2 – confirmation mode for number 1–6	1–9	1	1 = with confirmation DTMF (1), 2 = confirmation of picking up (supported only for GSM/UMTS/VoIP), 3 = CPC Antenna, 4= CPC KONE, 5 = P100, 6 = autodetection DTMF protocol (CPC Antenna /P100), 7 = CPC Antenna 2N Ext, 8 = CPC KONE 2N Ext, 9 = P100 2N Ext 2N Ext is a protocol that transmits the shaft number and audio unit position together with the ID (to be displayed in 2N® Lift8). If there is no guarantee of problem-free transfer of DTMF, do not set 6 for autodetection CPC Antenna/P100, but precisely specify the protocol to be used (3 or 5).	

Par. No	Parameter name	Range of values	Default value	Note	Info
071	Checking call memory 1	up to 30 digits: 0–9	empty	Entering characters ⊞, ⌗ and 'p' for a 1-second pause while programming is possible via a PC (use the 2N® Service Tool). If the set of checking call memories is completely empty, use the set of ALARM memories. Caution: Be sure to set the checking call number to route the call to the 2N® Lift8 server. The call may not be confirmed properly if it falls to set 011-016.	
072	Checking call memory 2	up to 30 digits: 0–9	empty		
073	Checking call memory 3	up to 30 digits: 0–9	empty		
074	Checking call memory 4	up to 30 digits: 0–9	empty		
075	Checking call memory 5	up to 30 digits: 0–9	empty		
076	Checking call memory 6	up to 30 digits: 0–9	empty		
077	Insert a character in checking call memory	Entering format: X X 7 ⊞ X X XX ⊞ First two digits of parameter number, 08 1 = ⊞ 2 = ⌗ 3 = space Button memory number, 1 – 6 Character position, 01 - 16 Note: The digits behind this position are shifted automatically.			
078	Count of automatic dialling cycles for checking call	0–9	3		

Par. No	Parameter name	Range of values	Default value	Note	Info
				If 0 is configured, only the first number in the memory is called regardless of the count of saved numbers.	
171–176	Confirmation mode for checking call memory 1–6	1–6	1	1 = with confirmation DTMF (1), 2 = confirmation of picking up (supported only for GSM/UMTS /VoIP), 3 = CPC Antenna, 4= CPC KONE, 5 = P100, 6 = autodetection DTMF protocol (CPC Antenna /P100), If there is no guarantee of problem-free transfer of DTMF, do not set 6 for autodetection CPC Antenna/P100, but precisely specify the protocol to be used (3 or 5).	
081	Operational call memory 1	up to 30 digits: 0–9	empty	Entering characters ⊠ , ⊞ and 'p' for a 1-second pause while programming is possible via a PC (use the 2N® Service Tool). Caution: Be sure to set the checking call number to route the call to the 2N	
082	Operational call memory 2	up to 30 digits: 0–9	empty		
083	Operational call memory 3	up to 30 digits: 0–9	empty		
084	Operational call memory 4	up to 30 digits: 0–9	empty		

Par. No	Parameter name	Range of values	Default value	Note	Info
085	Operational call memory 5	up to 30 digits: 0–9	empty	® Lift8 server. The call may not be confirmed properly if it falls to set 011-016.	
086	Operational call memory 6	up to 30 digits: 0–9	empty		
087	Insert specific character in fault reporting memory	Entering format: X X 7 ⊠ X X XX ⊠ First two digits of parameter number, 08 1 = ⊠ 2 = # 3 = space Button memory number, 1 – 6 Character position, 01 - 16 Note: The digits behind this position are shifted automatically.			
088	Count of automatic dialling cycles for ERROR	0–9	3	If 0 is configured, only the first number in the memory is called regardless of the count of saved numbers.	
181–186	Confirmation mode for number 1–6	3–9	5	3 = CPC Antenna 4= CPC KONE 5 = P100 6 = autodetection DTMF protocol (CPC Antenna /P100) 7 = CPC Antenna 2N Ext, 8 = CPC KONE 2N Ext, 9 = P100 2N Ext 2N Ext is a protocol that transmits the shaft number and audio unit position together with the ID.	

Par. No	Parameter name	Range of values	Default value	Note	Info
				In version 2.4.0 and higher it is used for announcing new events (battery replaced, button repaired, audio repaired).	

Par. No	Parameter name	Range of values	Default value	Note	Info
501	Default output state of IO module 1	ABCD	empty	The value defines the state of the I/O modules after the system start: A= output 1 B= output 2 C= output 3 D= output 4 0= output off 1= output on Example: 1001= outputs 1 and 4 will be on after the system start. Set parameters 501–508 via the voice menu. Find these parameters in the Configuration / IO modules / Basic menu in the 2N® Service Tool.	From version 1.6.0
502	Default output state of IO module 2	ABCD	empty		
503	Default output state of IO module 3	ABCD	empty		
504	Default output state of IO module 4	ABCD	empty		
505	Default output state of IO module 5	ABCD	empty		
506	Default output state of IO module 6	ABCD	empty		
507	Default output state of IO module 7	ABCD	empty		
508	Default output state of IO module 8	ABCD	empty		

Par. No	Parameter name	Range of values	Default value	Note	Info
600	Battery capacity	1–740	13	In 100 mAh units (x*100 mAh "13=1.3 Ah, 740=74 Ah")	From version 1.6.0
700	SIM PIN	up to 16 digits: 0–9	0000		
710	DTMF transfer enhanced mode enabled	0–1	0	0 = disabled, 1 = enabled If there is a DTMF transfer problem in the GSM network, enable this parameter.	1.9.0 Default value change
711	Allowed bands	1–3	3	Preferred mobile network (only applies to UMTS module) • 1 - 2G • 2 - 3G • 3 - Auto	From version 2.6.0
800	Set time	hhmm		Read the current time setting and configure a new one if necessary. *	
801	Set date	RRMMDD		Read the current date setting and configure a new one if necessary. *	
810	Time until the next checking call is activated	hhhmmss		Voice menu reads the value in the format of hours, minutes and	From version 2.5.0

Par. No	Parameter name	Range of values	Default value	Note	Info
				seconds (hhhmmss). It indicates when will be the next checking call activated.	
811	Manual activation of checking call			Remember to press * for confirmation after entering the service.\n\nThe checking call is set up the moment programming is completed.	From version 2.5.0
890	Restart CU			Re-enter the valid servicing password. *	From version 2.0.0
898	Cancel working configuration			Cancel all the changes performed during this configuration call except for the date/time setting – confirm this by an asterisk. *	
899	Complete initialisation (including servicing password!)			Re-enter the valid servicing password to protect the system against unintentional deletion during incorrect function number entering. *\n\n(Parameters 1100–1110 are not deleted after complete initialization).	

Par. No	Parameter name	Range of values	Default value	Note	Info
901	Dial prefix	up to 30 digits: 0–9	empty	Dial-in is used for calling via the PSTN module. When a call is answered, the dial-in is sent and only then the dialling or constant tone is awaited. When the tone is detected, a number is dialled from a memory (common dial-in for all memories: 011–016, 021–026, 071–076, 081–086).	
902	Enable dial tone detection	0–1	1	0 = do not perform dial tone detection. A call is set up with any line tone. 1 = perform dial tone detection. No call is set up if the dial tone is not detected.	From version 1.9.0
909	Time for tone detection after hang-up	1000–9999 ms	5000 ms	2N® Lift8 waits for the constant or dialling tone. If none is detected, there is a fault on the line (PSTN only).	

Par. No	Parameter name	Range of values	Default value	Note	Info
911	Count of rings before incoming call pick-up	1–9	2	Define the moment of line pick-up during ringing (if there is an incoming call from PSTN).	
912	Max. call time	0–1000 s	120 s	The call can be extended by a call-extending command (DTMF 4). 0 = disabled (never-ending call).	
913	Login time limit	10–1000 s	60 s	Maximum period during which the control centre staff must answer the call and send confirmation, otherwise 2N® Lift8 hangs up and proceeds to dialling the next number. Counted from the end of dialling.	
914	Delayed call	0–1000 s	0 s	Used only with connected CANCEL input on the cabin audio unit.	
915	Max. TRIPHONY time	10–9999 s	7200 s	Maximum TRIPHONY period after which TRIPHONY is terminated automatically.	
917	Hang-up time between calls	500–9999 ms	5000 ms	For PSTN lines only.	

Par. No	Parameter name	Range of values	Default value	Note	Info
918	Max. telephone line test time	1–20 s	5 s	This applies to PSTN modules only. If the line is OK, the test is carried out every hour. Lift8 seizes the line and tries to detect the dialtone. If no dialtone is detected, the line test is carried out every two minutes (the line will pass into ERROR in 6 minutes and the lift will be blocked in another 5 minutes). If the dialtone is detected again, Lift8 will pass into the "Line OK" state.	
940	Min. dialtone period	200–2000 ms	400 ms	The tone must be longer than a half-period of the busy tone!	
942	Min. busy tone period	100–500 ms	200 ms	These parameters control the busy tone detection.	
944	Max. tone – gap difference	10–400 ms	50 ms		
945	Min. busy tone period count	2–50	4		1.6.0 Default value change
948	Min. ringback tone time	50–2000 ms	200 ms	The ringtone time is the length of the section just before the long gap.	

Par. No	Parameter name	Range of values	Default value	Note	Info
949	Min. long space time of ringback tone	100–5000 ms	2000 ms	The longest gap in the ringing period must be in an interval between parameters 949 and 950.	
950	Max. long space time of ringback tone	500–9999 ms	5500 ms	The longest gap in the ringing period must be in an interval between parameters 949 and 950.	
951	Min. ringing signal time	50–2000 ms	200 ms	Incoming call detection: The ringtone time is the sum of sections between which there is no long gap. The longest gap in the ringing period must be in the interval between parameters 952 and 953. CAUTION! Parameters 951–953 (default values) work for incoming ringing.	
952	Min. long space time of ringing signal	100–5000 ms	1000 ms		
953	Max. long space time of ringing signal	500–9999 ms	6000 ms		
961	Max. next digit pressing time	15–120 s	60 s	Counted from the transition to a new state (NOT after the end of announcement).	
962	Min. cabin ALARM button pressing time	10–9999 ms	3000 ms	A low value is recommended for comfortable product testing.	

Par. No	Parameter name	Range of values	Default value	Note	Info
963	Min. time of pressing button to trigger forced/test alarm	0–30 s	0 s	Minimum time in seconds the alarm button needs to be pressed to activate the forced/test alarm. This alarm bypass the cancel contact status. 0 = disabled	
965	Private mode	0–25	0	Private mode allows muting of the microphone on the car unit 2N® Lift8. Possible setting of this parameter when the rescue mode is used are: 0 = Two way audio enabled only when the rescue mode is active. 1 - 24 = Two way audio enabled when the rescue mode is active and during a time window after a successful alarm call. After this time, the microphone on the unit is muted. 25 = Two way audio enabled always.	

Par. No	Parameter name	Range of values	Default value	Note	Info
966	Rescue process	0–3	0	0 = Disabled 1 = End of the rescue process by Button 2 2 = End of the rescue process by rescue password 3 = End of the rescue process by Button 2 or by the rescue password	
969	ALARM button test	0–9999 s	0	0 = no test 1–9999 = closing time after which a button is considered jammed If a button is detected as jammed, any of the following events can be generated: IO module activation/deactivation, operational call setup, SMS sending (for GSM and UMTS only). Use the 2N$^®$ Service Tool Events menu for configuration. Refer to Subs. 5.3 for details.	
973	Language for numeric messages	0–1	1	0 = user recorded, 1 = voice menu language User-recorded digits are played only if values 11, 12 or 13 are set in parameters 975–979 or 971.	

Par. No	Parameter name	Range of values	Default value	Note	Info
974	Intercom identification number	up to 16 digits: 0–9	empty	Provide lift identification for foreigners, for example. If not filled in, the serial number is used.	

Par. No	Parameter name	Range of values	Default value	Note	Info
975	Local (cabin) message sequence (Alarm)	up to 10 announcements in sequence		Start announcements in more languages in a defined sequence, including the identification number, etc.	
976	Control centre (outgoing) message sequence (before confirmation by 1)	up to 10 announcements in sequence		Message list: 01 = User message 1 02 = User message 2 03 = User message 3 04 = User message 4 05 = User message 5 06 = User message 6 07 = User message 7 08 = User message 8 09 = User message 9 10 = User message 10	
977	Checking call message sequence	up to 10 announcements in sequence			
978	Call confirmation message sequence	up to 10 announcements in sequence		11 = Serial number 12 = Lift identification number (par. 974) 13 = Lift shaft number (1–8)	
979	Control centre (outgoing) message sequence by pressing 3 after call confirmation	up to 10 announcements in sequence		14 = Pause (2 s) 15 = Confirmation tone 🎵 **Cautions:** User messages **1** to **10** are recorded into the **CU** with the aid of the **2N**® **Service Tool**.	
971	Call end sequence	up to 10 announcements in sequence			

Par. No	Parameter name	Range of values	Default value	Note	Info
981	Checking call	0–6	0	0 = disabled 1 = enabled, the first call in 3 minutes and then as set in parameter 983 2 = enabled, the first call in 2 hours and then as set in parameter 983 3 = enabled, as set in parameter 983 4 = enabled, the call on the nearest day set in parameter 986 5 = enabled, the first call in 3 minutes and then as set in parameter 986 6 = enabled, the first call in 3 minutes and then according to server	1.8.0 Range change
982	Checking call interval	hhmmhhmm	00002359	Set announcements into lower traffic (lower tariff) time, generated at random in the time interval.	
983	Checking call period	1–100 days	3 days	0 = disabled (0 in parameter 981 has the same effect), the value is applied if parameter 981 is set to 1–6.	

Par. No	Parameter name	Range of values	Default value	Note	Info
986	Weekdays for checking call	MTWTFSS	0000000	Values for Mon, Tue, Wed, Thu, Fri, Sat, Sun: 0 = do not call 1 = call Example: 1000100 = the checking call will be made on Mondays and Fridays.	
987	LED signalling according to EN 81-28	0–1	1	Yellow LED permanently on during an Alarm Call Yellow and green LED flashing alternately after an unsuccessful checking call	From version 2.5.0
990	Enable notification operational calls	xxxxxxx	0000000	Mask settings the notification to trigger an operational call. Each character corresponds to a notification in the following order (0 = disable, 1 = enabled): Rescue end, Button stuck, Button unstuck, Audio error, Audio fixed, Replace battery, Battery replaced. Do not use in combination with notification scripts!	From version 2.5.0

Par. No	Parameter name	Range of values	Default value	Note	Info
991	Servicing password	up to 16 digits: 0–9	12345	Change the default servicing password for access to programming via the voice menu and for full initialisation.	
992	Rescue password	up to 16 digits: 0–9	empty	Set the rescue terminating password.	
993	Enable audio unit self-test	0–1	0	0 = disabled 1 = An audio test of selected audio units is carried out after a check call.	From version 1.10.0
994	Enable 4-lift version	0–1	0	0 = standard connection, 1 = connect up to 4 cabin Audio Units to the **CU** internal splitter as lifts 1–4 (refer to Subs. 4.5 for details).	
995	Enable outgoing machine room call	0–1	0	0 = disabled, 1 = enabled (if the parameter is enabled, the machine room Audio Unit can be used for outgoing public network calls).	

Par. No	Parameter name	Range of values	Default value	Note	Info
1001	Enable data	0–1	0	Permit the use of the GSM/UMTS module connection to the provider's data network. **	
1002	APN			Configure the mobile provider's access APN server. **	
1003	Login			Configure the username for authentication in the provider's APN server. **	
1004	Password			Configure the authorisation password in the provider's APN server. **	
1100	Enable DHCP client	0–1	1	The DHCP server assigns devices in particular the IP address , net mask , gateway and DNS server address via the DHCP. ** 0 = disabled 1 = enabled	
1101	IP Address			IP address defined for the Ethernet interface (VoIP module). **	
1102	Netmask			Set the subnet bit mask. **	

Par. No	Parameter name	Range of values	Default value	Note	Info
1103	Default gateway			Set the IP address of the router/PC via which communication outside the internal net is made. **	
1104	DNS server			Set the DNS server IP address. **	
1105	SIP registrar			Set the IP address for connection to the counterparty (PBX, operator). **	
1106	User	max. 64 characters		Set the user name for connection to the counterparty (PBX, operator). **	1.9.1 Chars count increased to 64
1107	Password	max. 32 characters		Set the password for connection to the counterparty (PBX, operator). **	
1108	Enable in-band DTMF detector	0–1	0	If you enable an in-band DTMF detector, all others DTMF detectors will be disabled.**	
1109	SIP server port	1–65535	5060	Set the PBX (operator) port via which the SIP Proxy communicates with the terminals connected. **	

Par. No	Parameter name	Range of values	Default value	Note	Info
1110	Registration expires	0–3600	0	0 = registration validity is not sent (is assigned by the opponent). **	
1111	Authentication name			Set the name used for authentication.	
1112	Display name			Set the name displayed on the peers device. Use #A to generate the calling unit address, #S to generate the calling unit shaft.	
1113	Domain			If the domain is not set, the registrar is used instead.	
1114	Outgoing proxy			Outgoing proxy address. The registrar address is used, if not set.	
1115	Outgoing proxy port	1-65535	5060	Outgoing proxy port. The registrar port is used, if the outgoing proxy is not set.	
1150	Time zone	-12–12	1	Set the time zone (UTC) in which 2N® Lift8 is installed. **	From version 1.7.2 1.8.0 Change value
1151	Synchronisation period	60–86400	3600		From version

Par. No	Parameter name	Range of values	Default value	Note	Info
				Define how often 2N® Lift8 shall synchronise with the SNTP server. **	1.7.2
1160	SNTP enabled	0–1	0	Enable SNTP synchronisation. ** 0 = disabled, 1 = enabled	From version 1.7.2
1161	Primary SNTP server address		212.51.144.44	**	From version 1.7.2
1162	Secondary SNTP server address		81.95.103.173	**	From version 1.7.2
1165	Communication speed	9600–115200	115200	Baud rate RS232 module. **	From version 1.8.0
1166	Controller Driver		AT SMS		
1220	Camera type	0–2	1	not implemented	
1221	Resolution	0–4	2	not implemented	
1222	Compression ratio	1–100	60	not implemented	
1230	Client enabled	0–1	0	Enable the data client (refer to 7.1 Control Panel for details). **	From version 1.6.0

Par. No	Parameter name	Range of values	Default value	Note	Info
					1.7.2 Range change
1231	Server address		empty	Set the 2N® Lift8 Server IP address. **	From version 1.6.0
1232	Server port	1–65535	7008	Specify the ports where the data client operates. **	From version 1.6.0
1234	Password		empty	The password must match the intercom password preset in the Control Panel. **	From version 1.6.0
1500	IP Adress	0.0.0.0 - 255.255.255.255	0.0.0.0	IP adress LAN module.	From version 2.4.0
1501	Subnet mask	0.0.0.0 - 255.255.255.255	0.0.0.0	Subnet mask LAN module.	From version 2.4.0

* This parameter can only be configured via the voice menu (incoming call to 2N® Lift8 or via the machine room audio unit).

** This parameter can only be configured via the 2N® Service Tool.

⚠ **Caution**

- Parameters 1003 and 1004 are used for username and password configuration for verification at the provider's. Most providers do not use any verification. If the your provider requires verification, it must give you the necessary access data.

Configuration by Computer

Install the 2N® Service Tool to configure 2N® Lift8 connected to a PC via the USB or via the Internet using the 2N® Lift8 IP address (UMTS version only). You can also upgrade the firmware.

Install and launch the 2N® Service Tool from the included CD for more details. Find the current 2N® Service Tool version at www.2n.cz/Lift8 .

How to Record Announcement

From PC

Apply the 2N® Service Tool to record user announcements and numerals to 2N® Lift8. Refer to Subs. 5.3, 2N® Service Tool – Use, for details.

3.3 SMS Configuration

This subsection describes how to configure 2N® Lift8 via the Short Message Service (
SMS). Short text messages can help you configure the Central Unit (CU) easily without
using a PC. See below for their use. You need to know the phone number of the SIM
card inserted in the 2N® Lift8 CU to use this function.

> ⊘ **Warning**
>
> - The SMS configuration function is supported only on condition that the
>   CU is equipped with a **GSM** (918650E 2N® Lift8 GSM Module) or **UMTS**
>   (918651E 2N® Lift8 UMTS Module) module.
>
> - This function is not available with the **PSTN** (918652E 2N® Lift8 PSTN
>   Module) or **VoIP** (918653E 2N® Lift8 VoIP Module) modules!

> ⚠ **Caution**
>
> - Every SMS must meet the conditions listed below to be sent to 2N® Lift8
>   successfully. If not, the SMS will be ignored, no changes will be made.

Function Description

You can configure 2N**®** **Lift8** with the aid of SMS messages. Send the SMS to the CU SIM card phone number. Make sure that the used parameters are correct to avoid SMS processing failure and an error reply.

> ⚠ **Warning**
>
> Make sure that every configuration SMS includes the correct parameters!
>
> - Device name: L8
> - Correct command format (CNF, RESET, etc.)
> - CU service password
> - Correct parameter format (see the command parameters)
> - Space separated parameters

> ⓘ **Note**
>
> Maximum length of command SMS
>
> - Modern GSM devices support long SMS, i.e. several normal SMS messages recognised as a single message. A common SMS may have up to 160 characters according to the GSM standard, which permits a total of 1120 bits, i.e. 140 bytes, per SMS. As 7-bit encoding is used by default, 20 characters are saved in every 140 bytes. Therefore, 160 characters are the maximum SMS text length. GSM 03.38 is used as the character set. If non-ASCII characters (chars with diacritics) are used, 16-bit UCS-2 encoding is applied and the SMS contains 70 characters only. Information on all fragments of long SMS are written in the UDH (User Data Header) and so the maximum fragment length is 153 characters with 7-bit encoding. On principle, long SMS may consist of up to 255 fragments, but mobile devices support 6–8 fragments in practice.
> - It implies from what is said above that the maximum message length is **918–1224** characters with 7-bit encoding depending on the device used. The UCS-2 calculation is analogous.

Basic Configuration with CNF Command

You can set all the 2N**®** **Lift8** CU parameters via configuration SMS messages, including those requiring a string (word, IP address, etc.). Every configuration SMS message must include the following parts: L8 header for unique identification of the **2N**

®Lift8 CU, a CNF command for identification of the function to be performed, i.e. configuration in this case, and a valid service password, which is 12345 by default. Now you can enter the CU setting data in the parameter=value format. The SMS syntax is as follows:

```
<header> <CNF> <service password> <par1>=<val1> <par2>=<val2>
```

A complete SMS can be as follows, for example:

```
L8 CNF 12345 011=734523352 941=99 012=602874321 914=105 111=5 112=1
```

If everything is OK, you will receive the following confirmation SMS:

```
L8 CNF OK
```

> ⊘ **Tip**
>
> - Commonly, the bus or GSM/UMTS module may get restarted during configuration. In this case, the configuration confirming message is not sent until re-login.

> ⚠ **Caution**
>
> - SMS-based configuration obeys the same rules and limitations as configuration via an application or a phone (maximum length, value range, two-digit limitation, etc.). If any of these rules is not met, 2N® Lift8 shall not set the parameters and shall send an error SMS specifying the wrong parameter.

Factory RESET

Use the DEF command to reset the CU factory values remotely. Once the command is received, the CU is factory reset immediately. The message syntax is as follows:

```
<header> <DEF> <service password>
```

A complete SMS can be as follows, for example:

```
L8 DEF 12345
```

If everything is OK, you will receive the following confirmation SMS:

```
L8 DEF OK
```

RESET Command

Use the RST command to restart the CU remotely. When the command is received, the CU is restarted immediately. A confirmation SMS is sent before the CU restarts. . The message syntax is as follows:

```
<header> <RST> <service password>
```

A complete SMS can be as follows, for example:

```
L8 RST 12345
```

If everything is OK, you will receive the following confirmation SMS:

```
L8 RST OK
```

Profile Changing Command

Profile configuration is customised in 2N® Lift8. Use the SET command to set a selected profile and send a confirmation SMS. The message syntax is as follows:

```
<header> <SET> <service password> <profil number>
```

A complete SMS can be as follows, for example:

```
L8 SET 12345 4
```

If everything is OK, you will receive the following confirmation SMS:

```
L8 SET OK
```

Error Replies

Should there be an error in the configuration SMS or command processing procedures, 2N® Lift8 transmits an error reply notifying that the command has not been executed!

2N® Lift8 sends error replies until all the configuration SMS parameters are correct and the command can be executed.

The following errors can be specified:

L8 ERR Unknown command – An unknown command has been entered. The CNF and RESET commands are only allowed.

L8 ERR Invalid Message – The received SMS has an invalid format. The L8 header is probably missing.

L8 ERR Invalid Syntax – There is a syntactic error in the SMS. Most probably, the password/command sequence is wrong or there is a redundant text at the end.

L8 ERR Invalid Password – The Service password is absent or invalid.

L8 ERR Invalid parameters – Some command parameters fail to match the CU parameters or the parameter value is beyond the allowed limits.

> ⓘ **Note**
>
> - The language localisation of the SMS reply is based on the voice menu recorded.
> - Cs and en texts are available at present. Slovak uses cs, the other languages use en.

4. Function and Use

In this section there is a description of the basic and expanded functions of the product.

Here is what you can find in this section:

- 4.1 User Instructions
- 4.2 Control Centre Instructions
- 4.3 Function Description (for Advanced Users)
- 4.4 Call Confirmation Types
- 4.5 Lift Blocking Function
- 4.6 Four-Lift Version
- 4.7 Intercom Function
- 4.8 System Completeness Check and Audio Unit Test
- 4.9 ALARM Button Test
- 4.10 Rescue Activation and End
- 4.11 Battery Replacement
- 4.12 CPC and P100

4.1 User Instructions

Cabin

The cabin audio unit is intended for an untrained user. Nevertheless, the instructions can be placed in the lift cabin, e.g., to help the people trapped in the lift communicate with the control centre.

Meaning of pictograms (icons)

- The yellow Wait icon is illuminated while connection with the control centre is being set up.
- The green icon lights up when connection has been set up and confirmed by the control centre.
- The green icon lights up whenever TRIPHONY is in progress.
- The blue icon does not shine, but marks the place where a signal is radiated during the call for people with defective hearing equipped with hearing aids.

Shaft, Cabin Roof

- Press the ALARM button to call the control centre using the ALARM 2 numbers (parameters 021–026). If the parameter is not filled in, it calls the ALARM numbers (parameters 011–016) like the cabin.
- Pressing the TRIPHONY button to call the other audio units in the same lift (shaft).
- Hold the TRIPHONY button (for approximately 2 s) to retrieve the voice menu to call the other shafts via TRIPHONY.
- Re-press the TRIPHONY button to terminate this connection.
- The ALARM button is illuminated in the standby mode.
- The ALARM button flashes when a calling is being set up.
- The TRIPHONY button is not illuminated in the standby mode.
- The TRIPHONY button flashes and the green LED indicator is illuminated if TRIPHONY is active between the lifts.
- The yellow LED indicator is illuminated if connection is being made with the control centre.
- The green LED indicator is illuminated if connection has been made and confirmed by the control centre.

Machine Room

Everything that refers to the shaft audio unit applies here too. Press ⊠ (for longer than 2 s) to display the **machine room voice menu**. You can use the HandsFree mode or connect a handset to achieve better acoustic properties.

Having entered the voice menu, you can select the following functions using the audio unit keypad.

Press 0 to dial the public telephone network
Enter lift number X to dial the lift
• Press 1 to dial the lift cabin
• Press 2 to dial the cabin roof
• Press 3 to dial the lift cabin bottom
• Press 4 to dial the shaft bottom
• Press 5 to dial the machine room
• Press 6 to dial the lift cabin 2
• Press 7 to dial the cabin 2 roof
• Press 8 to dial the lift cabin 2 bottom
• Press # to return to the main menu
Press 9 for administration
• Press 1 to enter the programming menu

- Press 2 to terminate the rescue process

- Press 3 for communicator info

- Press 4 for IO module administration

- Press # to return to the main menu

Press # t o end the call

> ⓘ **Note**
>
> - The **9** selection serves primarily for the **L8** configuration – refer to S. 3 – Configuration.

4.2 Control Centre Instructions

ALARM Call

1. Press the ALARM button on any audio unit to make 2N$^®$ Lift8 call the control centre (refer to Automatic Dialling for details).

2. A received call is either confirmed as configured (parameters 111–116 > Confirmation mode for memory 1–6 ALARM call – set 1). By default, confirmation of DTMF 1 is set in 2N$^®$ Lift8.

3. If the control centre is equipped with the 2N$^®$ Communicator application, you can configure automatic sending of DTMF 1 after call pick-up.

4. The call is time limited (press button 4 upon warning announcement "Caution, the call is ending" to extend the call).

5. You are recommended to end the by pressing 5 or #.

Control Room-to-Lift Calling

The control centre can also call back to the communicator. The **CU** automatically receives every incoming call, identifies itself and, via a voice menu (DISA), offers you another function to get through to the required audio unit. Incoming calls are time limited as outgoing calls and are processed in the same way (extension, termination).

Incoming Call Voice Menu

Welcome, this is a 2N® Lift 8 communicator
Press 0 to dial the last-calling audio unit
Enter lift number X to dial another audio unit
• Press 1 to dial the lift cabin
• Press 2 to dial the cabin roof
• Press 3 to dial the lift cabin bottom
• Press 4 to dial the shaft bottom
• Press 5 to dial the machine room
• Press 6 to dial the lift cabin 2
• Press 7 to dial the cabin 2 roof
• Press 8 to dial the lift cabin 2 bottom
• Press # to return to the main menu
Press 9 for administration
• Press 1 to enter the programming menu
• Press 2 to terminate the rescue process

• Press 3 for communicator info
• Press 4 for IO module administration
• Press # to return to the main menu
Press # to end the call

The menu above makes it possible to call the selected audio unit.

> ⚠️ **Caution**
>
> - Press # to go one level back in the voice menu.
> - You can also terminate a call using #, but only on the highest voice menu level: Press 0 for connection with the last-calling audio unit, Enter the lift number X for connection with another audio unit, Press 9 for administration, information or rescue process, and Press # to end the call.

> ⚠️ **Calling to lift which was the last to call Alarm**
>
> - Having entered the voice menu, press 0 to call the lift was the last to dial the Alarm function.
> - This function operates only if you are calling 2N® Lift8 via a PSTN, GSM, UMTS or VoIP network.

> ⓘ **Note**
>
> - The **9** selection serves primarily for 2N® Lift8 configuration – refer to S. 3 – Configuration.

Tone Dialling Control during Call – Long Command List

Where automatic dialling with confirmation is used, it is possible to use tone dialling for 2N® Lift8 control during the call according to the table below. For simplification, commands 1 to 5 are arranged in the sequence they are usually used in.

DTMF symbol	Description of function
1	Only where automatic dialling repetition is enabled (with confirmation DTMF 1). This symbol is used to **confirm** a successful call to 2N® Lift8. 2N® Lift8 mutes the played-back announcement and, optionally, sends the identification code (DTMF). The call goes on until the timeout end and any of the following commands may be used.
2	Announcement playing end.
3	Repeated voice module **playback** for one replaying of the announcement.
4	**Call extension.** The call is extended as defined in parameter 912 (120 seconds by default) upon this command. Can be used repeatedly.
5 or #	**Call termination** (does not work until the call is confirmed).

This table applies to the Automatic voice dialling with confirmation mode.

> ⚠ **Warning**
>
> - Rarely, 2N® Lift8 may not identify the above listed commands reliably during message playing or voice communication. This is due to the essential principle of the telephone line function where DTMF signalling is mixed with the call and thus may be masked by certain speech tones or noise. This, however, is not a defect of the product.

4.3 Function Description (for Advanced Users)

Purpose of Section

The purpose of this section is to help technicians solve problems if any. If the system fails to work properly and a well-trained technician, who monitors its operation step by step according to the description included herein, gets to a point where the description and reality are in contradiction, he or she describes the contradiction, thus facilitating troubleshooting. This procedure often reveals that the system works properly but the user had a different idea of how to use it.

Outgoing Call

The process starts whenever the ALARM button is pressed on any audio unit (in the lift cabin audio units, the CANCEL input may delay or block calling, refer to parameter 914). After the ALARM button is pressed, 2N$^®$ Lift8 establishes connection with the control office (refer to Automatic Dialling for details). 2N$^®$ Lift8 plays the following announcements ″Wait pleased, connection is being made″ to the person in the lift and ″Press 1 for confirmation″ to the control centre (if DTMF 1 confirmation is used). The received call has to be confirmed manually or automatically. The call is time-limited ("Caution, the call is ending", but can be extended.

Refer to the Control Centre Instructions subsection for details for DTMF control during the call.

> ⚠️ **Caution**
>
> - The ALARM buttons on the shaft and machine room audio units are always illuminated in the standby mode.

Outgoing Machine Room Calls

You can call any audio unit of the same 2N® Lift8 from the machine room (i.e. from the machine room audio unit, Part No. 918611E), activate functions and configure the 2N® Lift8 parameters. Press and hold for over 2 s ⊠ to activate the machine room voice menu. Press the TRIPHONY button to enter the machine room voice menu get through to the other audio units of the same lift and set up triphony with the other shafts.

Machine Room Voice Menu

Press 0 to dial the public telephone network
Press lift number X to dial the lift
• Press 1 to dial the lift cabin
• Press 2 to dial the cabin roof
• Press 3 to dial the lift cabin bottom
• Press 4 to dial the shaft bottom
• Press 5 to dial the machine room
• Press 6 to dial the lift cabin 2
• Press 7 to dial the cabin 2 roof
• Press 8 to dial the lift cabin 2 bottom
• Press # to return to the main menu

Press 9 for administration
• Press 1 to enter the programming menu
• Press 2 to terminate the rescue process
• Press 3 for communicator info
• Press 4 for IO module administration
Press # t o end the call

> ⚠ **Caution**
>
> - Press # to go one level back in the voice menu.
> - Press and hold # (for longer than 2 s) or move to the top menu and press # to quit the voice menu.

Triphony

Triphony provides interconnection of audio units within one shaft. Press the TRIPHONY button in the machine room to set up triphony with another shaft.

This mode features a different setting of the automatic HandsFree mode: the microphones of active audio units are less sensitive than those operating in the ALARM mode.

Triphony termination options

- re-pressing of the TRIPHONY button
- expiry of the time limit
- incoming call/ALARM – processed preferentially

Check Call

A check call is an automatically made outgoing call (typically every 3 days). The purpose is to check the correct function of the system. This call is usually processed automatically in the control centre.

A check call can be sent to the control centre via PSTN, GSM, UMTS or VoIP. Set the values in parameters 071–076 and 981 (refer to Subs. 3.2, Table of Parameters).

> ⚠ **Caution**
>
> - Make sure that parameter 974 is completed where the lift Id is evaluated in the checking call transmission (applies to CPC and P100).
> - If the set of checking **call** memories is completely empty, use the set of **ALARM** memories.

> ⓘ **Warning**
>
> - With CPC or P100, be sure the set the checking call number to route the call to the 2N$^{®}$ **Lift8 server**. The call may not be confirmed and evaluated properly if it falls to sets 011–016.

> ⚠ **Caution**
>
> - Use parameter 811 to manually start a checking call without affecting the current checking call timing.

Operational Call

An operational call is made automatically when an event is executed (stuck button, battery replacement, rescue end, audio error). Use the Service Tool Configuration – Events menu for configuration. Refer to Subs. 5.3 for details.

These calls can be set up via the CPC or P100 protocols only (OK confirmation can only be made via CPC 2N ext or P100 2N ext).

If the operational call number is not entered, the call is set up via memories 011–016.

⚠ **Warning**

- Be sure to set the checking call number to route the call to the 2N$^®$ **Lift8 server**. The call may not be confirmed and evaluated properly if it falls to sets 011-016.

✓ **Tip**

- For operational calls set the CPC Antenna 2N ext, CPC KONE 2N ext and P100 2N ext protocols, which allow the OK confirmations to be sent (batteries replaced, button repaired, audio repaired). You cannot set up these operational calls using protocols without 2N ext.

Incoming Call

The control centre can also call back to the communicator. The **CU** automatically receives every incoming call, identifies itself and, via a voice menu (DISA), offers you another function to get through to the required audio unit. Incoming calls are time limited as outgoing calls and are processed in the same way (extension, termination).

Press 0 in the voice menu for connection with the last-calling audio unit.

Incoming Call Voice Menu

Welcome, this is a 2N[®] Lift8 communicator

Press 0 to dial the last-calling audio unit

Enter the lift number X to dial another audio unit

- Press 1 to dial the lift cabin

- Press 2 to dial the cabin roof

- Press 3 to dial the lift cabin bottom

- Press 4 to dial the shaft bot tom

- Press 5 to dial the machine room

- Press 6 to dial the lift cabin 2

- Press 7 to dial the cabin 2 roof

- Press 8 to dial the lift cabin 2 bottom

- Press # to return to the main menu

Press 9 for administration

- Press 1 to enter the programming menu

- Press 2 to terminate the rescue process

• Press 3 for communicator info	
• Press # to return to the main menu	

Press # t o end the call

Call Sequencing

If another request arises during communication, the calls are ordered according to priorities: Fireman has the highest priority, followed by Alarm. These calls suspend any lower-priority call. Calls with identical priorities are queued and processed one after another. Having done that, 2N® Lift8 recovers the suspended activity if possible.

Ongoing: new event	Incoming call	Programming	Check call	ALARM	Triphony	Fireman
Incoming call	na	ns	na	na/ns	S	ns
Check call time	q	q	na	q	q	q
Entering voice menu from machine room audio unit	ns	ns	ns	ns	ns	ns*
TRIPHONY button press	ns	ns	ns	ns	ns	ns
ALARM button press	S	S	q	q	S	q
Fireman function	S	S	S	S	S	na

Explanations:

- na = not applicable
- ns = not served (ns* for machine room configured as the control centre: the Fireman call is entered whenever the phone is answered)
- q = put in queue
- S = suspends ongoing activity

Automatic Check Call Answering

A control centre with a PC workplace with the **2N ® Lift8 Server** receives calls automatically as configured. Configure the server using the **2N ® Lift8 Control Panel**.

> ⚠️ **Caution**
>
> - If the checking call number (071-076) is not set, the call is made to the numbers in memories 011-016. Therefore, we advise you to always set the checking call number. If the CPC or P100 protocols are used and the call is directed to **2N® Lift8 Communicator,** the call will not be evaluated correctly.
>
> - Operational calls can only be made via the CPC or P100 protocols. If memories 081-086 are empty, the call falls to the alarm numbers if the CPC or P100 confirmation mode is available. **2N® Lift8 Communicator** cannot evaluate such calls.

> ⓘ **Warning**
>
> - Once fallen to the alarm numbers, the call may be confirmed incorrectly and evaluated as error if the checking call number is not entered.
>
> - If the operational call number is not entered, the call to **2N® Lift8 Communicator** is evaluated as alarm. Therefore, set the right number to direct the call to the **2N® Lift8 server** for proper evaluation and display in the **2N® Lift8 Control Panel**.

Overview of Announcements

Announcement	Meaning
"Please wait for connection"	The announcement is played to the lift user when the call is being set up (before confirmation).

Announcement	Meaning
"This is an emergency call, to confirm connection press 1"	The announcement is played to the control centre before call confirmation.
"Connection confirmed"	The announcement is played after call confirmation.
"This is communicator with …."	The announcement is played only if the control centre presses DTMF 3 after call confirmation. The communicator sends information on its product number or Id if available (parameter 974).
"Attention, the call will end the soon, to extended the call press 4"	The announcement signals during an outgoing/incoming call that the maximum call duration shall expire in 10 seconds.
"End of call"	The announcement is sent before hang-up.
"This is a checking call, to confirm connection press 1"	The announcement is sent to the control centre only (if DTMF 1 confirmation is enabled).

Call End (Outgoing/Incoming)

A call is terminated (line hang-up occurs) if any of the following cases happens:

- The busy or continuous tone has been detected*) (call end on PBXs).
- The timeout for call confirmation expired (see parameter 913 setting).
- The configured maximum call time has been exceeded (parameter 912). 10 seconds before the expiry, 2N® Lift8 plays "Caution, the call is ending" for you to extend the call with ④ .
- The ⑤ or # symbol has been received.
- The time limit has expired during programming.
- A higher-priority call request has arrived.

4.4 Call Confirmation Types

The settings included in this subsection apply to alarm calls (sets 1, 2), check calls and trouble reports.

1. With DTMF Confirmation

Up to 6 telephone numbers plus the count of repetitions can be stored for control centre dialling. 2N® Lift8 then tries to call all the numbers stored. Tone dialling (DTMF) is the most reliable service for confirmation of successful calls. Having received a call manually, the control centre officer has to press the [1] button on its tone-dialling phone. If the called line is busy or unanswered within a timeout, or the call is not confirmed, 2N® Lift8 dials the next number in the sequence until it exhausts all the pre-set attempts. The procedure is the same for check calls or failure reports but a separate group of six numbers can be used.

Evaluation of Situations in Dialling with Confirmation

Situation	2N® Lift8 activity
No dialtone on the line (PSTN line only)	**L8** hangs up.
Busy tone after dialling end	**L8** hangs up and dials the next number.
Call or silence (after dialling end)	**L8** waits for the defined time (parameter 913).
Ringing tone	**L8** waits for the defined time (parameter 913).
Continuous tone (on PBX line, e.g.)	**L8** hangs up and dials the next number.
DTMF char [5] or [#]	**L8** hangs up immediately and dials the next number.

Situation	2N® Lift8 activity
DTMF char 1️⃣	**L8** confirms receipt ("Connection confirmed") and mutes the currently played announcement. The call goes on for the maximum call time as configured.
1️⃣ 2️⃣ 3️⃣ 4️⃣ 5️⃣	These digits are interpreted as control characters (refer to Subs. 4.2 , Tone Dialling Control during Call).

> ⓘ **Note**
>
> - The PSTN connection quality is not so high as to identify the above mentioned situations reliably in all cases. Moreover, excessive noise in the lift cabin may decelerate automatic dialling (due to inability to recognise the busy tone, e.g.). In general, DTMF is the most reliable type of signalling and so is used for confirmation. Thus, the connection is established (yet for a shorter time than usual) even in extreme cases, e. g. when 2N® Lift8 cannot identify the DTMF.

2. Automatic Redialling of Multiple Numbers without Confirmation (GSM/UMTS/VoIP Only)

This mode is useful where no trained personnel for automatic dialling with confirmation are available. The called party does not have to press any button. The two modes share a set of numbers and count of cycles, respond identically to the busy tone, etc.

The only difference is that the confirmation-less mode detects the ringing tone and recognises that the called party is off-hook (i.e. answers the call) when the ringing tone terminates before the timeout end.

The message speaker **cannot** be controlled using buttons 1️⃣ to 5️⃣ .

Evaluation of Situations in Voice Dialling without Confirmation

Situation	2N® Lift8 activity
Busy tone	**L8** hangs up in approx. 2 seconds and dials the next number.
Call /silence	**L8** waits for the defined time (answering timeout), then hangs-up and dials the next number.
Ringing tone	**L8** waits for the defined time (answering timeout), then hangs-up and dials the next number.

> ⚠ **Warning**
>
> - Make sure in this mode that no VoiceMail box, FAX or any other equipment are assigned to the numbers to be dialled that might answer the call before the pre-programmed timeout end and thus terminate automatic dialling.

3 and 4. CPC (Antenna and KONE)

Used wherever the counterparty is equipped with the required SW. When the line is answered, a DTMF string is sent and the lift is identified. The call is either switched to voice communication (alarm call) or confirmed automatically and terminated (check call), as the case may be.

5. P100

Used wherever the counterparty is equipped with the required SW. When the line is answered, a DTMF character is sent and the lift is identified. The call is either switched to voice communication (alarm call) or confirmed automatically and terminated (check call), as the case may be.

6. DTMF Protocol AutoDetection (CPC/P100)

Having received a DTMF string, the lift recognises the protocol used and responds accordingly.

> ⚠ **Warning**
>
> - 2N® Lift8 may have troubles detecting DTMF characters and recognising the protocol in places with a poor signal quality.
> - If such troubles occur, we recommend you to change the CPC Antenna /P100 (3/5) settings.

7, 8, 9. CPC (Anthenna a KONE), P100 2N ext

These protocols work as CPC in items 3 and 4 and P100 in item 5 above for emergency calls. The only difference is that the shaft number and audio unit type are transmitted too.

With 2N ext, error states OK can be transmitted too in operational calls (battery replaced, audio repaired, button repaired).

4.5 Lift Blocking Function

Blocking Procedure

The contact closes/opens whenever an alarm call cannot be set up. Connect the contact to the appropriate controller input of the lift/group of lifts. The control electronics shall ensure that, upon contact opening, the lifts that are in operation arrive in the nearest station and open the door.

Every **CU** and every splitter are equipped with the lift blocking contact. Refer to Subs. **2.1, PSTN/GSM/UMTS/VoIP** Central Unit – Lift Blocking Contact Connector.

The lift blocking function will be enabled if:

- no number is defined in the ALARM memory – the lift gets blocked immediately.
- a number to a non-existent machine room (intercom) is defined – the lift gets blocked in 2 minutes.
- a PSTN number is defined but no module is inserted – the lift gets blocked immediately.
- the external line (PSTN, VoIP) is not functional – the lift gets blocked in 5 minutes.
- the dialtone is not detected – the lift gets blocked in ca. 10 minutes (after the PSTN line test which does not detect the dialtone).
- no SIM (GSM/UMTS) is inserted – the lift gets blocked in 5 minutes.
- there is no signal (GSM/UMTS) – the lift gets blocked in 5 minutes (a very low signal does not cause blocking).
- the capacity of the device feeding battery so low that the internal buses (audio units) get disconnected – the lift gets blocked when the internal bus gets disconnected.
- 2N$^{®}$ **Lift8** is off – the lift gets blocked immediately.

> ⚠ **Caution**
>
> - The PSTN line test is carried out every hour. If an error is detected, the line test is repeated every 2 minutes until the line is evaluated OK again.
>
> - If parameter 902 is set to 0, the line test is not performed and the line is not blocked when the dial tone is not detected.

The lift blocking function will be disabled if:

- the line works for 1 minute at least (PSTN, VoIP).
- a power supply is connected to recharge the battery.

> ⚠ **Caution**
>
> - This function may be mandatory if the applicable regulations valid for the country and time of installation require so.

4.6 Four-Lift Version

4-Cabin Connection to Internal Splitter

Modify parameter 994 to allow up to 4 cabin audio units to be connected to the **CU** internal splitter as lifts 1–4. You can connect the machine room audio unit in this mode.

- Set parameter 994 to 1.
- Connect up to 4 cabin audio units.
- Set each cabin audio unit to a different type (cabin roof, cabin, cabin bottom, shaft bottom) using the adjustable pins (see the audio unit cover printing).
- Connect the machine room audio unit to the **CU** internal splitter if necessary.
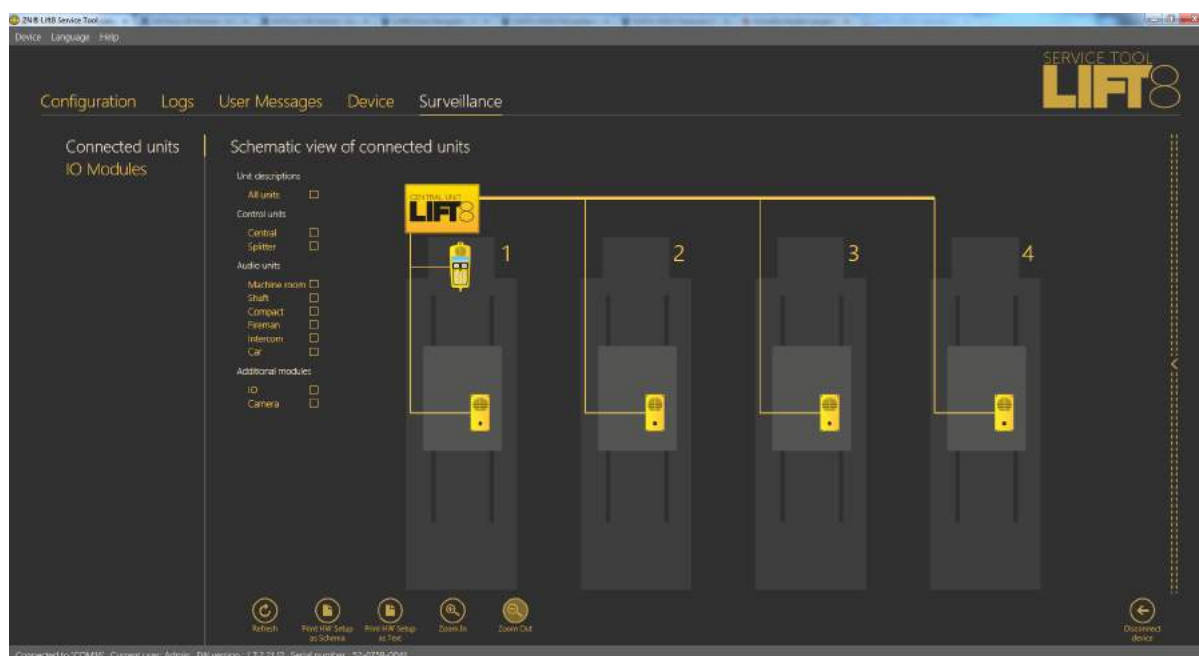
Display of 4-Cabin Connection in Service Tool

⚠ **Warning**

- Make sure that each audio unit is assigned a different type (cabin roof, cabin, cabin bottom, shaft bottom).

> **ⓘ Note**
>
> - You can use a shaft audio unit instead of the cabin one.
> - Set the jumpers as follows: 1. shaft – cabin roof, 2. shaft – cabin, 3. shaft – cabin bottom, 4. shaft – shaft bottom.

Normal 8-Lift Connection

If you set parameter 994 to 0, you can connect up to 8 lift shafts and up to 5 audio units to each shaft (machine room, cabin roof, cabin, cabin bottom, shaft bottom).

8-Lift Configuration

> **⚠ Caution**
>
> - Up to 7 audio units can be connected to one shaft in versions 2.0.0 and higher (two-cabin lifts).
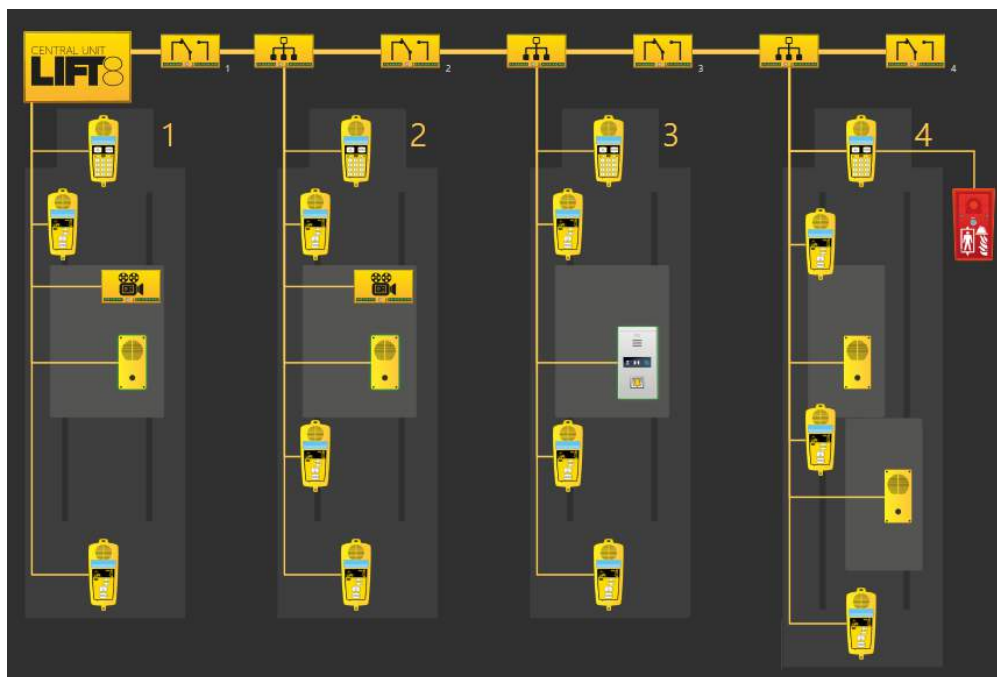
Two-Cabin Lift Connection

4.7 Intercom Function

ALARM – Intercom Calls

1. Press the ⌂ ALARM button on any audio unit (except for the machine room audio unit set as the control centre) to start the process. Upon the press, **2N®** **Lift8** calls the pre-set machine room – control centre audio unit.

2. Press ⌂ or ✳ (for longer than 2 s) to answer an incoming call.

3. When the call is answered by the operator, the **2N® Lift8** system announcement will be played.Then, voice connection with the calling audio unit is activated.

4. Press 1 on the machine room audio unit keypad to confirm the received call manually. If Confirmation by pick-up (011–016=2) is configured, it is unnecessary to confirm the call with DTMF1 (refer to **Tone Dialling Control during Call - Long Command List** for details).

5. The call is time-limited (by the "Caution, the call is ending" message), but can be prolonged using button 4.

6. Press ⌂ , 5 or # to terminate the call.

> ⚠ **Caution**
>
> - You cannot set up an alarm call to another control centre from the machine room audio unit that is configured as the control centre. The call is made to the audio unit that is the last to activate the alarm call. If no alarm call was activated on any audio unit, the machine room audio unit will not call any unit.
>
> - Press ⌂ on the control centre audio unit to set up a call to the audio unit that is the last to activate the ALARM function. Such a call is processed as TRIPHONY and can be terminated by pressing the TRIPHONY ☏☏☏ button on any of the two audio units or pressing and holding the # button for longer than 2 s on the machine audio unit.
>
> - If a call is set up to a non-existent machine room audio unit, the Alarm function will not be activated (valid for settings #9, #0). If more numbers than one are pre-programmed, the non-existent audio unit is skipped.

Number Setting for Machine Room – Control Centre Calls

Enter **#** before the shaft number to set the machine room number. For example, 011 – #8 means that a call to the machine room audio unit in the shaft of lift 8 is set in ALARM button memory 1.

Setting options:

1. Service Tool – enter # and the shaft number into parameters 011–016.

Code ▼	Name	▼	Value
Alarm call			
011	Set 1 - ALARM button memory 1		#8

2. Enter the programming mode via the voice menu (incoming call or machine room audio unit) and set the shaft number to the ALARM memory (011–016). Then choose parameter 017 (refer to the Table of Parameters) and add the required character (#) to one of the ALARM memories.

> ⚠ **Caution**
>
> - Configure the alarm-intercom connection for calls to the machine room audio unit of any shaft (1–8).
> - Identically, configure the machine room – control centre connection for ALARM set 2.
> - **Make sure that the control centre audio unit is of the machine room type.**
> - You can use confirmation mode 1 or 2 for calling to a machine room audio unit. With the other options (3–9), the call is processed as if 1 was selected.

> ⓘ **Note**
>
> - It is possible to combine calling to the machine room (control centre) audio unit with calling via the PSTN, GSM, UMTS and VoIP networks (depending on the module used).
> - To set up a check call to a machine room audio unit, you can set the number as described in the Alarm – Intercom subsection above.

4.8 System Completeness Check and Audio Unit Test

Function

The system only checks the cabin and Fireman audio units added during RESET configuration. Use the RESET button again to make the system monitor all the audio units added later to the system.

Such audio units are displayed in the Supervision - Added units menu in the **2N**®
Service Tool.

Display of Audio Units to Be Checked in **2N**® **Service Tool**.

- The connected cabin and Fireman audio units that are checked and OK are flashing green.
- Defective/missing audio units are flashing red (see the cabin in shaft 3).

If an audio unit is missing in the system, no check call is made and the INTERNAL BUS LED red light flashes.

> ⓘ **Note**
>
> - If no audio units, splitters, etc. are connected in the **2N**® **Lift8** system, the INTERNAL BUS LED red light is flashing even if no system completeness check is being performe d.

System Completeness Check Enable

Use the RESET button to set the function.

Press and hold the button until all the LEDs light up red. Release the button and wait until the INTERNAL BUS LED lights up yellow. Now push the button shortly to make the system check all the audio units (cabin, Fireman) for proper connection and function.

> ⓘ **Note**
>
> - You can set the audio units to be checked via the Service Tool or Control Panel in versions 2.5.0 and higher.

Audio Unit Audio Test

Use parameter 993 to enable the audio test for audio units. The selected audio units (cabin, Fireman) are tested after a check call . If all the audio units are OK, the next check call will be made. If an audio error is detected in one or more audio units, the next check call will not be made.

The INTERNAL BUS LED flashes red to indicate an audio test failure.

> ⚠ **Caution**
>
> - The audio unit audio test is active only if the system completeness check is enabled and checking calls are active.

> ⓘ **Note**
>
> - An audio test is considered unsuccessful if it fails three times.
> - The test is carried out three times in 1-hour intervals.
> - Repeated tests are only made for the audio units that failed the previous audio tests.
> - All the checked audio units are re-checked after a checking call.

Audio Error Event

In versions 2.3 and higher an event can inform of an unsuccessful audio test. Use the 2N® Service Tool Events menu for audio error configuration. When an audio test error is detected, any of the following events is executed.

The following options are available:

- IO module output activation
- IO module output deactivation
- Send SMS – set the phone number and text (for GSM/UMTS module only)
- Send system SMS – set the phone number (for GSM/UMTS module only)
- Operational call – this call is set up to the number defined in parameters 081–088 (Operational call) and uses CPC Antenna, CPC KONE or P100 for transmissions

> ⚠ **Caution**
>
> - The event is not executed until the audio test fails three times.
> - SMS can be sent only if the GSM/UMTS module is installed.

From version 2.4.0 up, an event can be executed if the audio test is OK. The events related to an audio error (IO module output activation/deactivation, send SMS or operational call) can be executed. Set the parameters via the Service Tool again (Configuration – Events – Stuck button).

Operational calls are possible with this event only if CPC Antenna/KONE and P100 2N Ext are set in parameters 181-186. Make sure that the settings match the Control Panel values. Be sure to set 2N Ext in the Control Panel for CPC Antenna 2N Ext. CPC KONE or P100 will do for the other protocols (CPC KONE 2N Ext, P100 2N Ext).

System Completeness Check Disable

Disconnect all the audio units (mainly cabin and Fireman) by disconnecting the main bus and audio unit bus on the CU. It takes CU some time (several tens of seconds) to find out that all the units have been disconnected. Therefore, use the 2N® Service Tool to check whether all the units have logged out. Then press and hold RESET until all the LEDs light up red. Release the button and wait until the INTERNAL BUS LED lights up yellow. Now push the button shortly to make the system check no audio units.

Parameter 990

In versions 2.5.0 and higher, you can set the operational call (audio error, audio repaired) via parameter 990. Refer to Subs. 3.2 (Table of Parameters) for details.

> ⚠️ **Caution**
>
> - If you set the operational call via parameter 990 and Events menu (script), the call will be set up twice.

4.9 ALARM Button Test

This function informs that the ALARM button got stuck in the lift cabin.

Set the timeout in seconds after which the button shall be considered jammed in parameter 969 (ALARM button test). Then, the event defined via the 2N® Service Tool Events menu (Jammed button) will be executed.

The following options are available:

- IO module output activation
- IO module output deactivation
- Send SMS – set the phone number and text (for GSM/UMTS module only)
- Send system SMS – set the phone number (for GSM/UMTS module only)
- Operational call – this call is set up to the number defined in parameters 081–088 (Operational call) and uses CPC Antenna, CPC KONE or P100 for transmissions

> ⚠ **Caution**
>
> - Multiple events can be set up (output activation + operational call, e.g.).
> - SMS can be sent only if the GSM/UMTS module is installed.
> - If you set the operational call option and CPC/P100 2N ext confirmation, the audio unit type (cabin 1 or 2) and shaft number is displayed for the stuck button (if the call is received via the 2N® Lift8 server).
> - Set the IO module activation/deactivation timeout to 1 s at least. If you set 0, the function will not work.

From version 2.4.0 up, an event can be executed if the button has been repaired. The events related to a stuck button (IO module output activation/deactivation, send SMS or operational call) can be executed. Set the parameters via the Service Tool again (Configuration – Events – Stuck button).

Operational calls are possible with this event only if CPC Antenna/KONE and P100 2N Ext are set in parameters 181–186. Make sure that the settings match the Control Panel values. Be sure to set 2N Ext in the Control Panel for CPC Antenna 2N Ext. CPC KONE or P100 will do for the other protocols (CPC KONE 2N Ext, P100 2N Ext).

> ⚠️ **Caution**
>
> - We recommend you to set a rather long interval in parameter 969 to avoid unintentional event generation.
> - R e c o m m e n d e d   v a l u e :   3 0 0   s .

Parameter 990

In versions 2.5.0 and higher, you can set the operational call (stuck button, button repaired) via parameter 990. Refer to Subs. 3.2 (Table of Parameters) for details.

> ⚠️ **Caution**
>
> - If you set the operational call via parameter 990 and Events menu (script), the call will be set up twice.

4.10 Rescue Activation and End

Rescue Process Activation

Set parameter 992 (Rescue password) to activate the rescue process. If an alarm call is set up, the yellow LED will keep shining on the audio unit after the call end to indicate an active rescue process.

Rescue Process End

There two ways how to end a rescue process.

- Call the CU (9 for administration – 2 for rescue end – select the shaft – enter the password).

- Set the IO module input (via 2N$^{®}$ Service Tool – IO modules – create the "rescue end" action and assign it to one of the IO modules).

When the rescue process has been ended, the active audio unit will report: "Rescue process ended".

Event after Rescue Process End

When the rescue process has been completed, any of the following events can be executed:

- IO module output activation
- IO module output deactivation
- Send SMS – set the phone number and text (for the GSM/UMTS module only)
- Send system SMS – set the phone number (for the GSM/UMTS module only)
- Operational call – this call is set up to the number defined in parameters 081–088 (Operational call) and uses CPC Antenna, CPC KONE or P100 for transmissions

Use the 2N$^{®}$ Service Tool Events menu (Rescue end) for configuration.

> ⚠️ **Caution**
>
> - Multiple events can be set up (output activation + operational call, e.g.).
> - SMS can be sent only if the GSM/UMTS module is installed.
> - If you set the operational call option and CPC/P100 2N ext confirmation, the audio unit type (cabin 1 or 2) and shaft number is displayed for the rescue process (if the call is received via the 2N$^{®}$ Lift8 server).

Parameter 990

In versions 2.5.0 and higher, you can set the operational call (rescue end) via parameter 990. Refer to Subs. 3.2 (Table of Parameters) for details.

> ⚠️ **Caution**
>
> - If you set the operational call via parameter 990 and Events menu (script), the call will be set up twice.

4.11 Battery Replacement

2N® Lift8 monitors the rechargeable battery state. If the battery capacity is low or the batteries are older than 2 years, the red Power/battery LED will start flashing on the CU.

An event can be executed to inform the user of the battery replacement need.

The following options are available:

- IO module output activation
- IO module output deactivation
- Send SMS – set the phone number and text (for the GSM/UMTS module only)
- Send system SMS – set the phone number (for the GSM/UMTS module only)
- Operational call – this call is set up to the number defined in parameters 081–088 (Operational call) and uses CPC Antenna, CPC KONE or P100 for transmissions

> ⚠ **Caution**
>
> - SMS can be sent only if the GSM/UMTS module is installed.

From version 2.4.0 up, the Battery replaced event can be executed. The events related to battery replacement (IO module output activation/deactivation, send SMS or operational call) can be executed. Set the parameters via the Service Tool again (Configuration – Events – Battery replaced).

Operational calls are possible with this event only if CPC Antenna/KONE and P100 2N Ext are set in parameters 181–186. Make sure that the settings match the Control Panel values. Be sure to set 2N Ext in the Control Panel for CPC Antenna 2N Ext. CPC KONE or P100 will do for the other protocols (CPC KONE 2N Ext, P100 2N Ext).

Parameter 990

In versions 2.5.0 and higher, you can set the operational call (replace battery, battery replaced) via parameter 990. Refer to Subs. 3.2 (Table of Parameters) for details.

> ⚠ **Caution**
>
> - If you set the operational call via parameter 990 and Events menu (script), the call will be set up twice.

4.12 CPC and P100

CPC

The are two CPC protocols: KONE and Antenna. These protocols can include 2N Ext, which completes the DATA (error) information with the shaft number and audio unit type.

The data message consists of:

Command – Call type – DATA – ID (974) – Axx (for 2N Ext only)

CPC KONE 2N Ext					
Call type	Command	Call type	Data	ID (974)	2N Ext
Alarm	04	10	0000000000000	parameter 974	Axx
Alarm 2	04	10	0000000000000	parameter 974	Axx
Checking call	04	21	0000000000000	parameter 974	
Rescue process ended	04	84	0000000000000	parameter 974	Ax
Button stuck	04	90	0000000000000	parameter 974	Axx
Button repaired	04	90	0000000000001	parameter 974	Axx
Replace battery	04	31	1510070000000	parameter 974	
Battery replaced	04	31	1510070000001	parameter 974	
Audio error	04	91	0000000000000	parameter 974	Axx
Audio repaired	04	91	0000000000001	parameter 974	Axx

Note Axx:

A – shaft and audio unit extension

Xx – shaft number

xX – audio unit type (0 – cabin, 1 – machine room, 2 – shaft, 3 – cabin roof, 4 – cabin bottom, 5 – cabin 2, 6 – cabin 2 roof, 7 – cabin 2 bottom, 8 – fireman)

> **ⓘ Example**
>
> This is only a part of the data message, excluding the beginning, checksum and end.
>
> - 04900000000000000187654321A50 – Button repaired, identification number (parameter 974) 87654321, shaft 5, cabin audio unit

> **⚠ Warning**
>
> - The Button repaired, Battery replaced and Audio repaired information is only transmitted via the 2N Ext protocol.
> - If the 2N Ext mode is not set, the operational call will not be established.

CPC Antenna 2N Ext					
Call type	Command	Call type	Data	ID (974)	2N Ext
Alarm	04	27	00000	parameter 974	Axx
Alarm 2	04	27	00000	parameter 974	Axx
Checking call	04	26	00000	parameter 974	
Rescue process ended	04	84	00000	parameter 974	Ax
Button stuck	04	90	00000	parameter 974	Axx
Button repaired	04	90	00001	parameter 974	Axx
Replace battery	04	17	00000	parameter 974	
Battery replaced	04	17	00001	parameter 974	
Audio error	04	91	00000	parameter 974	Axx
Audio repaired	04	91	00001	parameter 974	Axx

Note Axx:

A – shaft and audio unit extension

Xx – shaft number

x**X** – audio unit type (0 – cabin, 1 – machine room, 2 – shaft, 3 – cabin roof, 4 – cabin bottom, 5 – cabin 2, 6 – cabin 2 roof, 7 – cabin 2 bottom, 8 – fireman)

> ⓘ **Example**
>
> **This is only a part of the data message, excluding the beginning, checksum and end.**
>
> - 04910000087654321A45 – Audio error, identification number (parameter 974) 87654321, shaft 4, cabin 2 audio unit

> ⚠ **Caution**
>
> - The Button repaired, Battery replaced and Audio repaired information is only transmitted via the 2N Ext protocol.
> - If the 2N Ext mode is not set, the operational call will not be established.

P100

This protocol can also include 2N Ext, which completes the DATA (error) information with the shaft number and audio unit type.

The data message consists of:

Call type – ID (974) – DATA – Axx (for 2N Ext only)

P100				
Call type	Call type	ID (974)	DATA	2N Ext
Alarm	1	parameter 974		Axx
Alarm 2	1	parameter 974		Axx
Checking call	3	parameter 974		
Rescue process ended	2	parameter 974	500	Ax

P100				
Button stuck	2	parameter 974	800	Axx
Button repaired	2	parameter 974	801	Axx
Replace battery	2	parameter 974	100	
Battery replaced	2	parameter 974	101	
Audio error	2	parameter 974	200	Axx
Audio repaired	2	parameter 974	201	Axx

Note Axx:

A – shaft and audio unit extension

Xx – shaft number

x**X** – audio unit type (0 – cabin, 1 – machine room, 2 – shaft, 3 – cabin roof, 4 – cabin bottom, 5 – cabin 2, 6 – cabin 2 roof, 7 – cabin 2 bottom, 8 – fireman)

> ⓘ **Example**
>
> This is only a part of the data message, excluding the beginning, checksum and end.
>
> - 2876543215OOA3 – Rescue process ended, identification number (parameter 974) 87654321, shaft 3

> ⚠️ **Caution**
>
> - The Button repaired, Battery replaced and Audio repaired information is only transmitted via the 2N Ext protocol.
> - If the 2N Ext mode is not set, the operational call will not be established.

5. Service Tool

Here is what you can find in this section:

- 5.1 Installation and Login
- 5.2 Introduction to Application
- 5.3 Use

Refer to the 2N® Lift8 product pages at **www.2n.cz**, download section, for the latest FW version.

5.1 Installation and Login

After the installation is launched, the installation program will scan your PC for another **2N® Lift8 Service Tool** version and ask you to uninstall the currently available version if identical with the new one. Use the system control panel Add or Remove programs to uninstall the existing product version for reinstallation or reconfiguration. If the versions are not identical, the original version will be uninstalled and a new application version will be installed. Then you will also be asked whether the configuration files should be removed and the whole application with a new, empty database should be installed.

Now the **2N® Lift8 Service Tool Setup Wizard** has been launched. Follow the wizard instructions. Then select the installation location for the **2N® Lift8 Service Tool**. C:\Program Files (x86)\2N TELEKOMUNIKACE\2N Lift8\ is used by default. Now the application will ask you to enable transmission of system data and software use surveys to help the 2N TELEKOMUNIKACE a.s. company improve the software quality, availability and performance. No confidential data shall be sent. You can participate in this effort voluntarily and cancel sending statistic data any time. Confirm or decline this cooperation and click Next to continue.

Now the wizard is ready to install the **2N® Lift8 Service Tool**. Confirm user account administration notification to the Windows system if necessary. Another Start item and the application shortcut icon will be added automatically. Once installed, the application will start automatically.

Alternatively, use the command line for installation: select the installer file and define the manner and location parameters. See below for command explanation.

Command	Description
/VERYSILENT	Installation runs on the background, no installer is open to the user.
/DIR="C:\..."	Set the installation location.
/NO-DRIVER=1	No driver is installed for 2N® Lift8.
/LOG=file_name.txt	Create an installation course log to be displayed in the installer directory.

```
C:\Windows\system32\cmd.exe

C:\2n\2.3.0.28.7\lift8\PC_apps\ServiceTool>"2N Lift8 ServiceTool Setup.exe" /VERYSILENT /

C:\2n\2.3.0.28.7\lift8\PC_apps\ServiceTool>
```

Application Installation Command

> ⚠ **Caution**
>
> - Make sure that the command line is started by admin. If it is started by a user, the editor authenticating window will pop up.

> ⊘ **Warning**
>
> - There is an installer change in version 2.2.0. The installer is unable to remove the original application versions (up to 2.1.x) correctly and an installation error may occur. To avoid this, remove the original applications manually if you use versions lower than 2.2.0.
> - Use the Start/Control panels/Programs/Uninstall program Windows menu to remove the application (this path applies to Windows 7 but can probably be used for other systems too). Select the application to be removed and click the right button to uninstall the program from your PC. Finally, you will be asked whether you really want to delete the existing configuration files. If you click NO, your configuration will be preserved.

> ⓘ **Note**
>
> - The 2N® Lift8 Service Tool installation requires **500 MB** of free disk space at least.

Now the 2N® **Lift8 Service Tool** is ready for use. Click the shortcut item on the desktop (see the figure below) or select the Start item to start the application.

2N® **Lift8** Service Tool Icon

After the application launch, the splashscreen gets displayed to inform you of the application manufacturer and current version. After the launch, you will be in the basic screen and Configuration / Parameters menu. Here an offline table of parameters can be prepared for you to export the data or view the diagnostic packages. Click Connect device to connect the **CU** in the Connect to device menu. Select the login mode: TCP or USB. TCP is selected by default. If you choose the Advanced settings, the list of all available connections to the **2N® Lift8 Central Unit** will be displayed to the left in a clearly arranged tree structure. If you have installed the application for the first time, the default connection will be created automatically. This connection cannot be removed. Click New server and New group to create a tree structure of your own. The settings are saved by a successful **CU** connection. Select a connection and click Delete selected to remove a connection. Be sure to complete the connection parameters correctly to make the **CU** connection successful. Enter the connection name and the **2N® Lift8 Central Unit** or **2N® Lift8 Server** IP address in the public network. Use the DNS terms if available. Fill in the **CU** listening port (7007) or the **Server** port (7008). Ask your network administrator for the proper setting. Now enter your **CU** or **Server** Username and Password; see the figure below for an example. Select the connection from the **CU** list and press Connect or double click the selected **CU** with the left mouse button. The application will log you in to the **2N® Lift8 Central Unit**. Take analogous steps to connect to the **2N® Lift8 Server**. However, you cannot use double click in this case. Just select a connection and click Connect to server.

Application Window

Once connected to the Server, you can log in and go to the list of **2N**® **Lift8 Central**

Units connected to the Server. The **2N**® **Lift8 Central Unit** list as configured on the given Server will be displayed including the following activity symbols: the red chain under the lift signals the **Disconnected** state between the Server and the Central Unit. The blue chain under the lift signals **Connection established** between the Server and the Central Unit and indicates that it is possible to get connected to the Central Unit. The green chain under the lift signals **File transmission** between the Server and the Central Unit. Click the Connect button or double click the selected unit to get connected to the CU.

List of Central Units Connected to Server

If you use a USB cable for **CU** connection, select the USB connection type. The screen will change and the login name and password will only be visible. Enter the correct values. Refer to the text below for the default values. Now connect the **CU** and click

Connect. The **2N**® **Lift8 Service Tool** automatically finds the connected **CU** on the PC and starts downloading parameters and logs. Having completing the download, the **2N**

® **Lift8 Service Tool** is ready for work.

> ⚠ **Warning**
>
> - Make sure that the USB port driver for the **2N**® **Lift8 Central Unit** has been installed properly on the PC to avoid identification and login failures.
> - If a problem with non-compatible version of .NET occurs during installation, you should download the new .NETFX4.0 version from **www. 2n.cz** . You can use this link from the online manual.
> - Minimum operating system requirements: **Windows Vista**, **7**, **8**.

> **⊘ Tip**
>
> - Some **Windows Vista** versions may have problems while detecting a connected device. If a system message keeps announcing you that the device has not been recognised and driver installation has failed, follow the instructions below to solve the situation manually:
>
> 1. Open the device manager and find the undetected hardware (marked with a yellow triangle).
>
> 2. Display a menu for this device with the right mouse click and select Update driver.
>
> 3. Click the option to find the driver in the PC.
>
> 4. Click the option to select a driver from a list and select a $2N^{®}Lift8$ model instead of Complex USB device. Now the driver starts working and, whenever you connect the Central Unit to the same PC USB port, the device will be detected correctly.
>
>   a. If there is no $2N^{®}$ Lift8 selection, go one step back.
>
>   b. Here enter the path to the driver file on the local disk and get the driver installed.
>
>   c. The typical path is C:\Program Files (x86)\2N ... \ServiceTool\inf

ⓘ **Note**

- Recommended hardware requirements

OS	Microsoft Windows 10, Microsoft Windows 8 / 8.1 CZ, Microsoft Windows 7 SP1 CZ, Microsoft Windows Vista SP2 CZ
CPU	Equivalent Intel Quad Core i7 3.4 GHz
RAM	8 GB
HDD	500 GB
LAN	100 Mbps Ethernet (**LAN**)
Other	• **Dedicated Sound card** (User sound record) • Dedicated Graphics card

⚠ **Caution**

- Default values for **CU** connection:
- **TCP**
    - Password: **2n**
    - Port: **7007**
- **USB**
    - Password: **2n**

5.2 Introduction to Application

In this subsection, we will show you the application menu layout and basic controls. The application is divided into three menu levels. The first screen upon start includes Configuration / Parameter/ Basic (see the figure below), which displays all of the three menu levels. The horizontal Main menu (Configuration and Logs) helps you select whether to configure the 2N® Lift8 system or supervise the history of logged events. The vertical menus (Parameters, Cameras, IO Modules) help you select the area to be administered. The third menu level, if meaningful, gets displayed horizontally in the right-hand upper corner and includes a list of parameter setting forms.
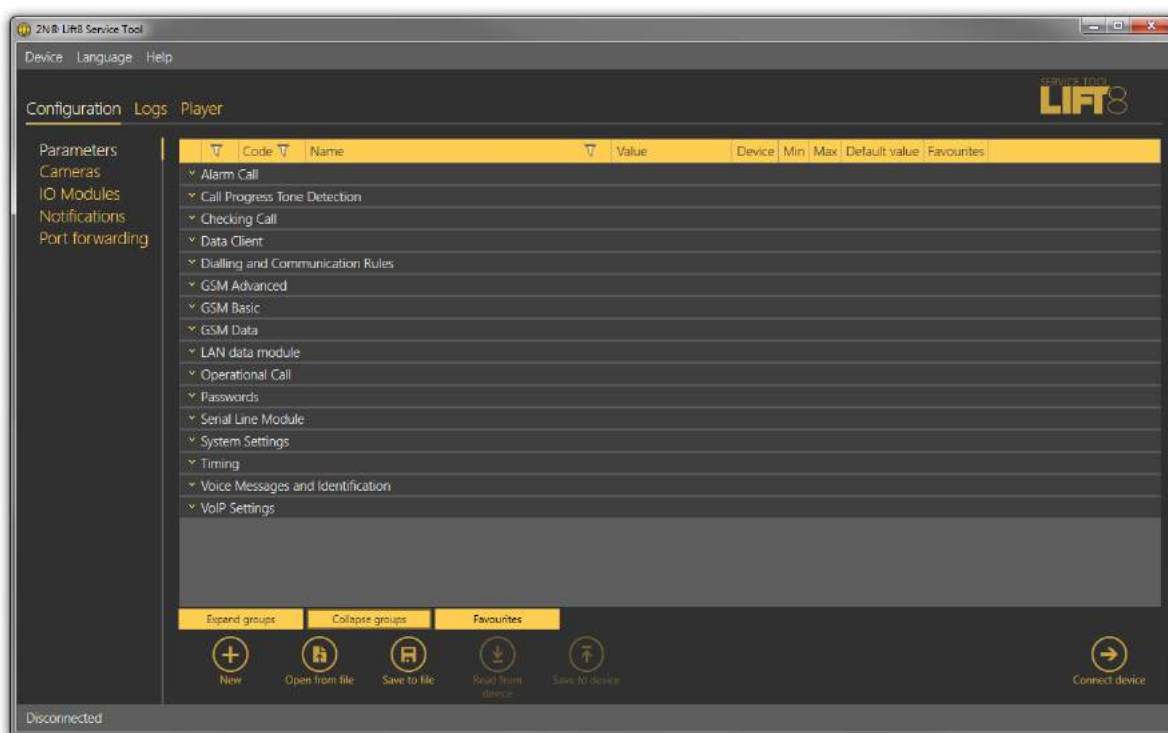
2N® Lift8 Service Tool Window

The application main menu consists of three pop-up menus. The Device menu helps you disconnect from/connect to the CU and quit the program. The Setting submenu includes a Statistics window: confirm the request to enable transmission of your system data and software use surveys to help the 2N TELEKOMUNIKACE a.s. company improve the software quality, availability and performance within the applicable law. You can participate in this cooperation voluntarily and cancel your prior approval any time. The Diagnostic package submenu helps you download a package including information relevant for troubleshooting: device state, bus

operations and control centre communication. Log in to the CU to get access to this package. Change the language mutation in the Language menu: CZ and EN are available for the time being. Click on Help to find a link to the latest manual and information on the application manufacturer. You will always be warned before logging out or quitting the application in order not to lose unsaved data.

You will be warned against data loss before loading a new configuration and overwriting the current set of parameters. Confirm your intention to avoid unintentional loss of unsaved parameters.

> ⓘ **Note**
>
> - The language change will not be executed until the application restart.

The Status line displays connection information. From the left: 'Connected to' includes the name of the server to which you are currently connected, 'COM port' specifies your PC COM port if you use a USB cable for connection, 'Current user' displays the currently logged in user, 'FW version' specifies the current CU FW version and 'Serial number' gives the CU serial number.

Upon login to the CU, the **Real-time device state** keeps displayed to the right in the whole application. Hide and redisplay the window any time with the arrow in its left upper corner (see below). The information is grouped logically: **Link properties** defines the Link state (idle or calling) and Link type (PSTN, GSM or IP communication level in the CU), **GSM network** provides information on the GSM / UMTS network to which the SIM card is logged in such as Signal strength in the form of a clear scale and numerical value in dBm, Operator (Provider) name and IP address assigned by the provider's APN server to the SIM card if UMTS / GSM data transmission is allowed and configured. If data flow is disallowed, incorrectly configured or not supported by the SIM, the address will be 0.0.0.0.
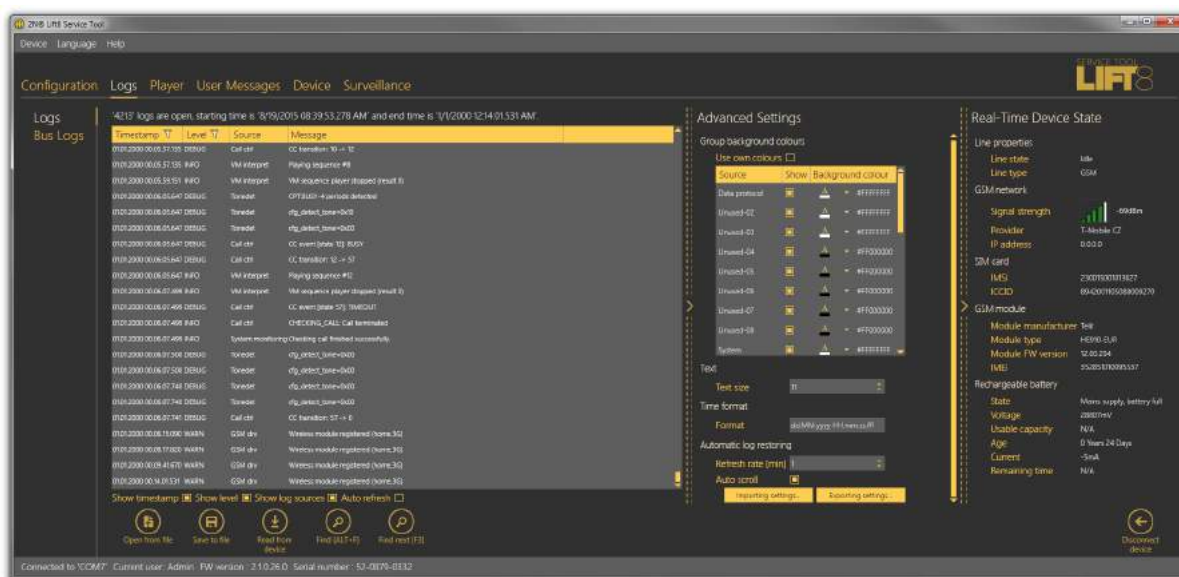
Maximum Application Display with Real-Time Device State

The SIM card section specifies the SIM card state and IMSI and ICCID identifiers. The GSM Module section displays the GSM/UMTS module information: Module manufacturer, Module type, Module FW version and IMEI. **Battery** is devoted to the rechargeable batteries. State simply describes the current state of the batteries: "Mains power, no battery" means that the CU is supplied from the mains, for example. Voltage measures and displays the current battery voltage value in mV. If the value is very low (hundreds of mV), the batteries are disconnected. Usable capacity specifies the battery charging percentage. Age defines the maximum battery life and the age counter has to be reset whenever new batteries are inserted. When the battery life is exhausted, the CU reports an error and the batteries have to be changed. This helps you find out how long your batteries have been used in the device. Current measures the current flow through the batteries: either the charging current when the batteries are being charged or discharging current when the CU is disconnected from the mains and fed from the batteries.

If your CU is equipped with a VoIP module, the Real-time device state section displays the relevant parameters; see the figure below. The section informs you of the line state and type, IP module parameters, IP address or address obtained from the DHC server, network mask, default gateway and DNS server. Finally, like with the GSM / UMTS module, you can see the current battery and charger states. If you use a PSTN module, the line state and battery charging state will only be displayed.

Real-Time Device State for VoIP Module

> ⚠️ **Caution**
>
> - The Real-time device state only displays the Link properties and Battery. The other parts are displayed automatically depending on the HW connected.

The lower part of the application includes the Logout button (to the right) and other important controls, which may be different in different menus. The table below describes all the buttons available in the application.

Basic Controls

⊕ New	**New** helps you create a new table of parameters. The existing table will be replaced after a warning.
📖 Open from a file	**Open from file** helps you read the table of parameters from a disk file.
💾 Save to a file	**Save to file** helps you save the current table of parameters into a disk file.

Connect device	**Connect device** switches the user into the 'Connect to device' menu.
New group	**New group** helps you create a new **CU** connection group in the Connect to device screen.
New server	**New server** helps you create a new **CU** connection in the Connect to device screen.
Delete selected	**Delete selected** deletes the currently selected objects from the list in the Connect to device screen.
Back	**Back** is only available in the Connect to device menu and helps you return to the Configuration / Parameters menu if you do not want to get connected to any **CU**.
Connect	**Connect** logs in the user to the configured **CU**.
Connect to Server	**Connect to server** connects the user to 2N® Lift8 Server and displays the list of set and active **Central Units** to be connected to. Connect is always used for **CU** connection.
Connect to another Lift	**Connect to another lift** disconnects the user from the current intercom and displays the list of connected 2N® Lift8 Server devices.

Disconnect server	**Disconnect server** disconnects the user from the server and displays the Connect to device screen.
Disconnect device	**Disconnect device** logs out the currently logged-in user from the **CU**.
Find (ALT+F)	**Find** helps you activate log searching. The Find window is displayed for you to set a string (word) to be found.
Find next (F3)	**Find next** helps you find another occurrence of the set string (word).
Read from device	**Read from device** downloads the current settings and logs from the **CU**.
Save to device	**Save to device** helps you save new parameters into the **CU** memory.
Get new image	**Get new image** helps you download a preview from the camera connected to the selected camera module.
Rotation to left	**Rotation to left** turns the image left by 90°.

Rotation to right	**Rotation to right** turns the image right by 90°.
Add action	**Add action** adds a new IO module action.
Delete action	**Delete action** deletes the selected action.
Verify	Click **Verify** to verify the validity of the LUA script for IO module control before loading to the **CU**.
Save script	Click **Save script** to save the current script into a file for backup and later use if necessary.
Load script	Click **Load script** to load a script from the backup file and delete the original script.
Open directory	Click **Open directory** to load video files from a disk/SD card.

New set	**New set** helps you create a new set of user voice messages.
From device	**From device** helps you download user messages from the **CU**.
To device	**To device** helps you upload new user messages into the **CU** memory.
Load from directory	**Load from directory** helps you load the list of user messages from a directory to a disk.
Save to directory	**Save to directory** saves the list of user messages into a selected folder onto a disk.
Print HW Setup as Schema	**Print HW setup – diagram** helps you print out the current 2N® Lift8 HW settings as an image.
Print HW Setup as Text	**Print HW setup – text** helps you print out the current 2N® Lift8 HW settings as a text.
Upgrade	**Upgrade** starts FW uploading to the **CU**.

Refresh	**Refresh** updates the list of connected communicators and the **CU** bus.
Zoom In	**Zoom in** helps you get a close-up view of the diagram displayed.
Zoom Out	**Zoom out** helps you see more of the diagram displayed at a reduced size.
Delete all in device	**Delete all in device** erases all user-recorded messages from a set. After all the parameters are saved, the messages will be deleted from the CU too.
Open from file and save to device	**Open from file and save to device** opens a file viewer for you to select the licence file for your **CU**. This file will be downloaded to the **CU** upon confirmation.
Start watching connected units	**Start watching connected units** activates the function like the Reset button on the CU. It makes the system check the audio units (cabin, fireman only) for proper connection and function. Refer to Subs. 4.8 for details.
End watching units	**End watching units** deactivates the unit watching function.

5.3 Use

Upon the application launch, you get to the Configuration main menu and then the Parameters – Basic menu, where you can find almost all the 2N® Lift8 Central Unit settings. You are in the offline configuration, which you can modify, save into a file and prepare for download into the CU any time later. The offline mode helps you view the CU settings, logs. You have access to the Configuration and Logs menus. The other menus are meaningful only if the CU is connected. The meaning and description of the parameters and controls are the same as in the online mode (i.e. with the CU connected); see below for details. Follow the CU login instructions in Subs. 5.1. Now let us explain what the menus are used for.

Configuration

Parameters

Having logged in to the CU as described in the preceding subsection, you get into the main configuration menu. The Parameters – Basic menu includes the table of all the 2N® Lift8 parameters including their codes. Refer to Subs. 3.2. for the list of parameters and their meanings. All the parameters are arranged in associated groups for convenience. Moreover, each table row is equipped with a hint, which describes the parameter purpose and setting options. The table includes the following items: Code corresponds to the parameter number in the CU voice menu, Name displays the parameter name, Value shows the currently set parameter value and Unit specifies the parameter unit (if no unit is specified in this column, the value is just a number). Maximum and Minimum define the permitted range of the values to be set. Default value displays the factory value of the parameter (which also appears after the factory reset). Click this value to add it to the value column.
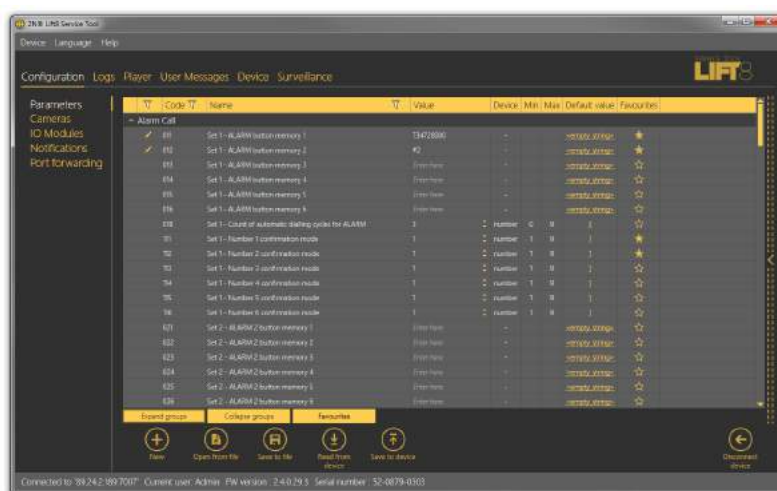
Parameters – Basic Menu

The menu also includes the Expand groups/Collapse group buttons for you to expand
the sections and display all the required parameters quickly. Click the Favorites next
to the Collapse group button to display your favourite items in the table. Click on the
empty star symbol behind a parameter in the Favorites column to select a new
favourite item. Similarly, c lick on a filled-in star symbol to unselect a favourite item.
Use the Expand groups/Collapse groups buttons also for displaying your favourite
items and filtering. A yellow-to-orange colour change of the Favorites button means
that the favourite items are only active. Push Open from file to read the back-up data.
The Read from device button helps you read the current set of parameters from the
CU. Having completed the settings, click Save to device to save the changes into the
CU memory. Filtration is a convenient searching tool. Set the filter for each column
separately and combine the filters to find the required data as quickly as possible.
Click the funnel symbol in the selected column to activate the filter. Activation is
indicated by a colour change of the funnel symbol; see the figure below.

Left – Inactive Filter, Right – Active Filter

Each column with the funnel symbol includes filter settings; see the figure below. The
Contains function finds the searched string in all the column items and returns all the
occurrences. Enter a text into the string field and click Filter to activate the filter and
find all the searched items in the column. Use another filter to make your search more

precise and efficient. Having completed filtering, click Delete filter in the used columns to delete all the active filters. If you did not delete the setting, the filtration settings would keep active even upon the **CU** logout and you would obtain filtration results instead of complete information in your next search.

> ⊘ **Tip**
>
> - You can also delete the active filters using a context menu displayed by clicking the right mouse button anywhere in the table or pressing the **Alt+R** hot key.

Filtration Setting Result

The pencil symbol is displayed whenever a default parameter is changed to highlight the parameters that have been changed in the configuration.

> ⊘ **Tip**
>
> - Each table row is equipped with a hint including parameter description for convenience.

Cameras

Switch to the **Cameras** menu to configure the camera modules. There are 8 frames in the window, one for each camera module on the given address. Each frame includes a camera module icon, which symbolises the module state, plus the module number and state description. A grey icon and greyish 'Not connected' description indicate an unconnected camera module. A yellow-highlighted icon plus a green 'Connected' text indicate that the camera module is connected to the CU and the camera is online. See the figure below.

Cameras Menu

The two buttons in the right-hand upper corner of the frame are active when the camera module is online. The pencil icon (Edit) is active even if the camera module is disconnected. Use Edit to switch to the camera module configuration menu. The camera icon helps you get the current image from the camera. Click camera editing to open a new window - Camera configuration. The window can be different for different cameras as those parameters are only displayed that are valid for the given camera type. For example: with an IP camera the image web link is specified instead of image parameters. Make sure that the resolution and compression parameters are set in the camera before connecting the camera to the camera module. Now let us describe all the parameters to be configured. Type selects one of the three available camera types: IP camera, RS 232 and RS 485. None is selected by default. Having selected the camera type, you can define the other parameters: Resolution, which defines the image size to be sent by the camera: 640 x 480, 320 x 240 and 160 x 80, Compression (only for RS232), which defines how to compress an image from the original bitmap to the .JPEG format, and IP camera URL, which defines the image path to be entered into the browser. IP-Cam username is IP camera access user name (login). IP-Cam password is IP camera access password. The DHCP server in the camera module ensures that the connected camera should always get the same address (10.0.0.1). Add the image address in the device as shown in the figure below. Enter a value in seconds in the Snapshot interval to define the image loading interval in case the camera saves its images on a memory card. Define the maximum size of the .mjpg file in hours in the Record limit/file parameter for memory card saving. The IP camera configuration section also includes DHCP settings and camera module IP configuration. Refer to Subs. 2.12. for more setting and function details.
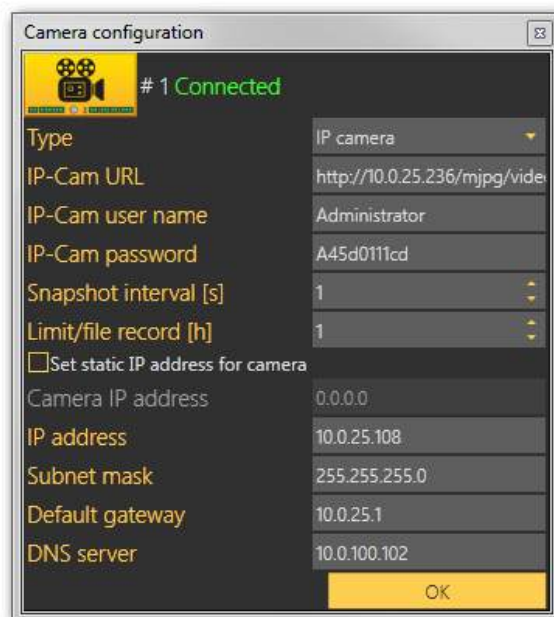
IP Camera Configuration
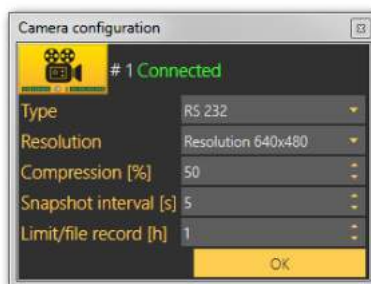
RS232 Camera Configuration

Press OK to confirm the settings and add the values to the table. Click Save to device to store the data in the memory and use it in the CU.

> ⚠ **Caution**
>
> - Caution! Whenever you click Save to device, the whole configuration table will be overwritten. Make sure that you have loaded the valid parameters to avoid data loss.

Click the Camera button to open a camera preview. Three controls are available in this window. Click Get new image to start loading an image from the camera module. Image loading via a 2-wire bus is a rather time-consuming process depending on the image size: transmission of a serial camera image of the resolution of 640 x 480 and with the minimum compression takes a few tens of seconds. The other two buttons help turn the image left or right to optimise the view if the camera scans under the angle of 90°, for example. Close the window to quit the preview.

Camera Window

IO Modules - Basic

Open the **IO Modules** menu to configure the IO modules. There are 8 frames in the window, one for each IO module on the given address. Each frame includes an IO module icon, which symbolises the module state, plus the module number and state description. A grey icon and greyish 'Not connected' description indicate an unconnected IO module. A yellow-highlighted icon plus a green 'Connected' text indicate that the IO module is connected to the CU and the camera is online. See the figure below.

IO Modules – Basic Menu

The pencil icon (Edit) in the right-hand upper corner of the frame is active even if the camera module is disconnected. Click Edit to open a new window – IO module configuration. Like in the overview, the IO module state is displayed in the upper part of the window. The IO module input states are displayed below the IO module state.

Name is the first parameter in the window. Select a brief name for the input sensor characterising its type and location: Smoke sensor on shaft ceiling, for example. Activation mode is a negation of the input circuit: if you set 1, the input is active if logic 1 is set on it, and if you set 0, the input is active at logic 0. Activation /Deactivation colour defines the colour of an active/inactive input to be displayed next to the input in the **Surveillance** menu. Activation action specifies the action to be executed whenever the input becomes active and Deactivation action defines the action after the input passes into the inactive state. See the **Action** menu below for how to set the actions. Set the outputs similarly: enter the function name (Ventilator 4, e.g.), set the output relay negation in the Activation mode and specify the output colours for the Surveillance menu.
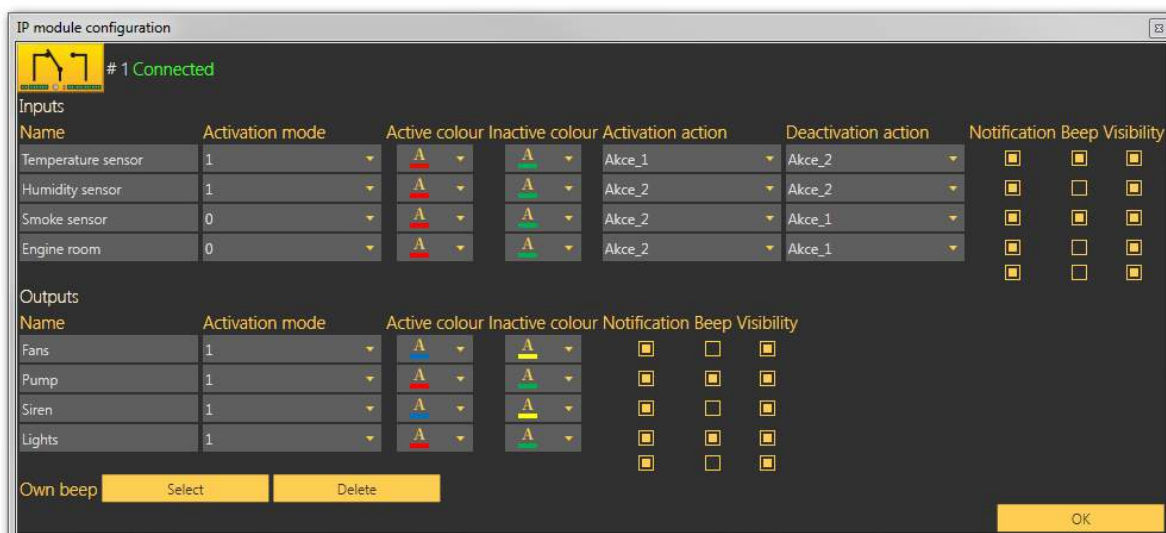
IO Module Configuration Window

Select/unselect the checkboxes to the right to enable/disable display of relevant information. Select Display inputs to display information on all the IO module inputs. Check off Display outputs to display the outputs. Select Notification to enable/disable the notification pop-up window. Tick Beep to enable sending of the dialtone to your system output (speakers/headset) whenever a new notification message arrives. Find Custom beep in the left-hand bottom corner. Click Select to select an audio file from your disk to be played as notification, or press Remove to remove the user file and start using the default sound again.

IO Modules - Actions

The **Actions** menu helps you set the actions/commands to be executed. These actions are initiated by changes on the IO module inputs and set as shown above. Click Add action to create a new action. In the settings to the right rename the new action, specify a list of tasks (Behaviour) to be performed: Activation, Deactivation, Send SMS and Rescue end. Activation activates the relay contacts. Select more parameters in the extended settings to the right: module number on which the relay state change occurs, output number including description for better orientation and task duration. Deactivation deactivates the relay and is configured similarly. The only difference is Send SMS, where you enter a phone number and SMS text of the maximum length of 160 or 70 characters depending on the encoding type. Use GSM 03.38 or UCS 2 for diacritics and non-standard character sets. One SMS is sent at a time. Long, multipart

SMS are not supported. Rescue end helps you select the shaft(s) for which the rescue mode shall be terminated. With this option you terminate the rescue mode in all the selected shafts. Click Load configuration to save the actions to the device on the Basic tab.

> ⊘ **Tip**
>
> - If you keep the default value 0 in the Duration parameter, the relay will keep closed/open during the input activation time.
> - Example: if input 1 keeps 10 s at logic 1, the associated relay 1 will keep closed for 10 s too.
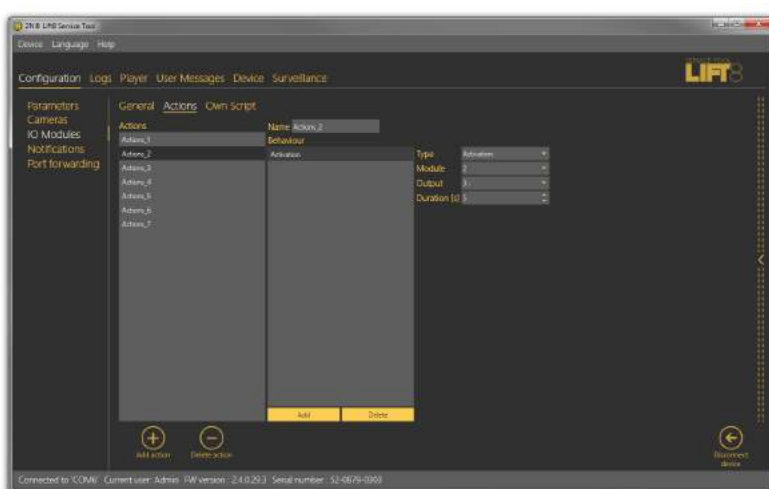
IO Modules - Actions Menu

IO Modules – Own Script

The **Own Script** menu enables advanced users to edit scripts with own installation logic instead of using graphical action settings. This solution is useful for installations where identical parameters are defined and can be simply copied to multiple central units. The LUA open-source programming language is used for the script. Refer to www.lua.org for more details.
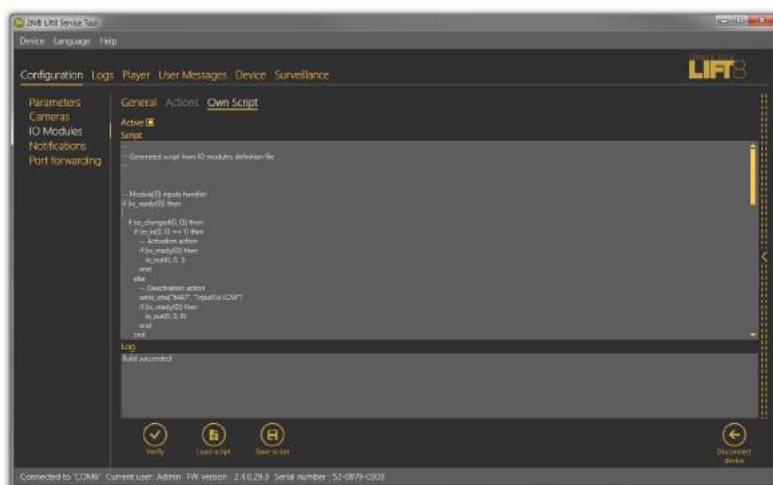
IO Modules – Own Script Menu

To edit a script of your own, first select the Active checkbox to disable the current graphical parameters and enable your own script settings. Programming should be made by a duly trained person. Refer to **faq.2n.cz** for examples. Having completed editing, click Verify to check the code entered. Click Save script to save the properly verified code onto your PC disk. Click Load script to load a file from the disk and add it to the script editing field. Click Load configuration on the Basic tab to save the completed script to the device. The functions below are available.

Functions	Description	Parameters
io_out(m,a,s)	Set module output state	m=module_pos a=output_addr s=output_state
io_in(m,i)	Get module input state	m=module_pos i=input_addr return input state
io_changed(m, i)	Checking module input was changed	m=module_pos i=input_addr return true if input changed
io_ready(m)	Checking module is ready	m=module_pos
send_sms(p,s)	Send SMS	p=phone_num s=sms text
rescue_end (<shaft_list>)	Rescue mode end	shaft_list=shaft numbers separated with a comma The rescue mode is terminated in the shafts where no alarm call is active.
io_out_get(m, a)	Output value	m=module_pos a=output_addr

Events

The Events menu helps you configure how the CU shall behave when an event is detected. The events are mostly pre-defined system events and you just choose the type of response to them . Four events are defined at present.

- Replace battery – the event is activated automatically when the set battery life expires or the battery capacity is too low. Refer to Subs. 4.11 for more details.
- Button stuck – use parameter 969 (ALARM button test) for configuration. Refer to Subs. 4.9 for more details.
- Rescue end – the event is executed when the rescue process has been completed. Refer to Subs. 4.10 for more details.
- Audio error – the event is activated when the audio test fails for three times. Refer to Subs. 4.8 for more details.
- Battery replaced – OK state to Battery replace.
- Button repaired – OK state to Button stuck.
- Audio repaired – OK state to Audio error.
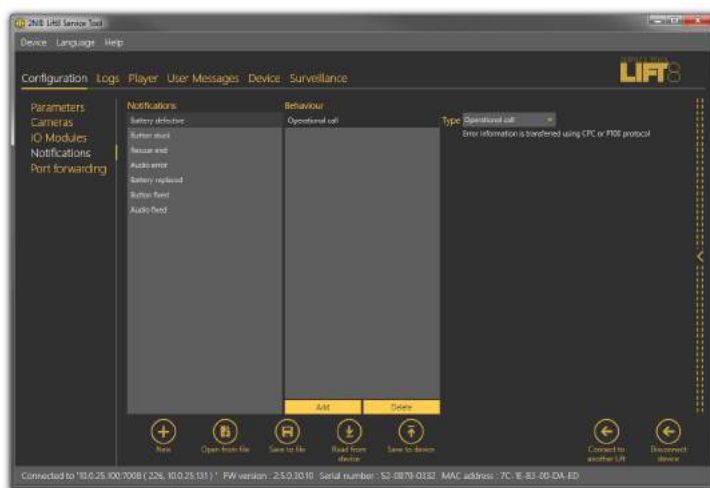
Events Menu

When an event is detected, you can specify a list of tasks to be performed: Activation, Deactivation, Send SMS, Send system SMS and Error call. **Activation** activates the relay contacts. Select more parameters in the extended settings to the right: module number on which the relay state change occurs, output number including description for better orientation and task duration. **Deactivation** deactivates the relay and is configured similarly. The only difference is **Send SMS**, where you enter a phone number and SMS text of the maximum length of 160 or 70 characters depending on the encoding type. Use GSM 03.38 or UCS 2 for diacritics and non-standard character sets. One SMS is sent at a time. Long, multipart SMS are not supported. **Send system SMS** means that the message text is pre-defined in the system and the only parameter to be completed is the phone number. If you select **Error call**, the CU shall make a call to the number defined in the error call set: parameters 081–086. The error information is then transmitted via CPC or P100. Click Save to device to save the actions into the device.

⚠️ **Caution**

- You can send SMS only if your CU is equipped with a GSM or UMTS module.
- Make sure that communication via CPC or P100 is set correctly in parameters 181 - 186 to make successful error calls.

Port Forwarding

Port forwarding helps you get connected to devices located in the LAN. It is because such devices are hidden behind the WAN IP address to the public internet users. This service can only be used via a VoIP or UMTS/GSM module as the PSTN module does not support this type of data transmission. The user gets connected to the external WAN address and a defined port and then is automatically forwarded to the LAN IP address behind the LAN module or another port as defined by the user.
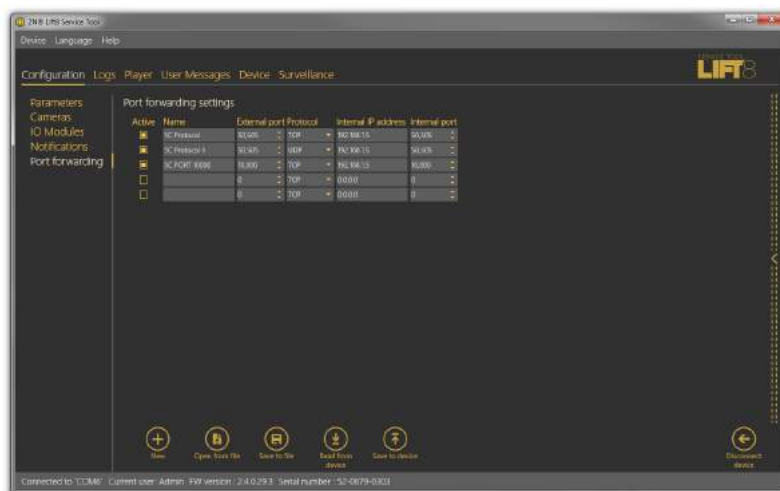
Port Forwarding Menu

You can define up to five ports to be forwarded to selected IP addresses. Specify the following parameters: select Active and then define Name, External port, Protocol (TCP/UDP), Internal address (depending on the LAN module range) and Internal port (LAN port to which communication is to be forwarded).

⚠ **Caution**

- Port forwarding is only available if a **VoIP**, **UMTS** or **GSM** module is mounted in the **WAN** interface!

- **Make sure that a LAN module is mounted to make this service work!**

- Never forward Lift8 system ports used for communication, namely:

    - **7007** – Service Tool communication port

    - **7008** – Lift8 Server default communication port. To change this port, refer to parameter 1232.

    - **5060** – SIP PROXY default communication port. To change this port, refer to parameter 1109.

Logs

The **Logs** section helps you view the diagnostic reports included in the log files. No logs are displayed upon the application launch. Download the current logs from a file or the **CU** upon login.

Logs – Basic

The **Logs – Basic** menu includes a table with necessary data. Use the checkboxes below the table to select the table columns. Select the parameters to display the required information: display/hide the timestamp, log level and log group. Click Auto refresh to enable automatic screen update in selected time intervals. Press Read from device to read the current logs from the **CU** connected. The following items are displayed in the table: Timestamp, which defines the date/time in which the event was captured, and Level and Source, which define the log type and source respectively. Message includes the information itself. The State parameter above the table specifies how many logs (rows) have been read and the log start/end time.
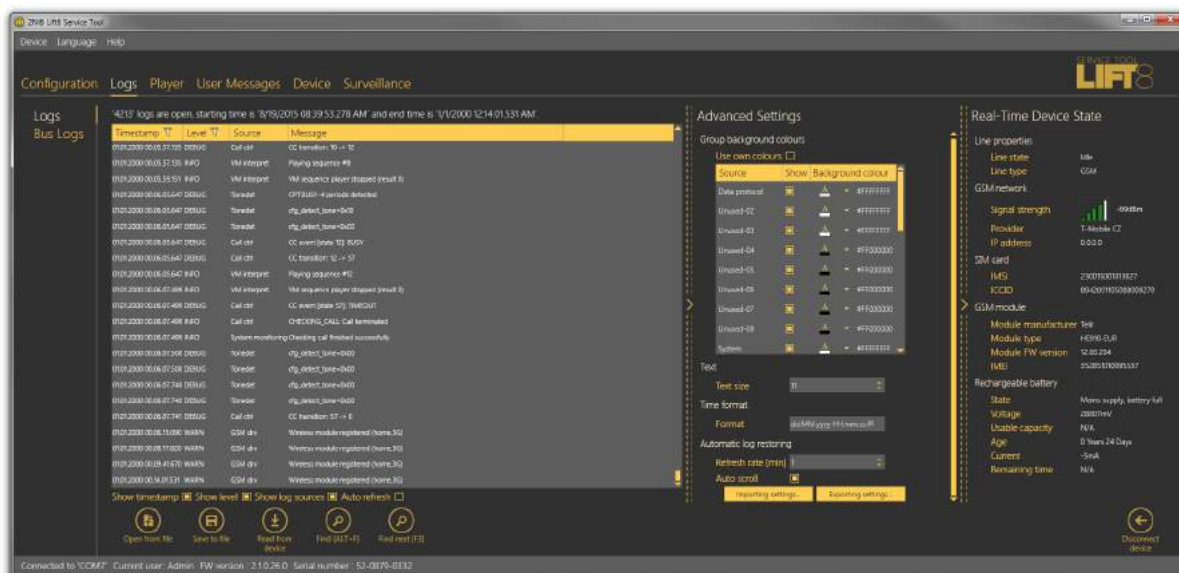
Logs Menu

Save the captured log for later analysis in the left-hand bottom part. Click Find to find a message in the log. Enter the string to be searched in the dialogue window. Click Filter to find the first occurrence and Find next to find the next occurrence. Use Advanced settings to enable/disable message types and assign colours for easier log displaying and other advanced options. See below for details.

> **✓ Tip**
>
> - The logs should only be analysed by duly trained persons or your Technical Support department.

Logs – Advanced Settings

Logs – Advanced settings is displayed to the right in a hideable form. The **Group background colours** table helps you set specific background colours for the selected messages. Select the **Use specific colours** checkbox to activate the user background colour settings for the log groups located below. The change will occur immediately after check-off. **Text** helps you modify the text size. Moreover, you can configure the **Time format**: either use the system date/time format or define a format of your own (dd.MM.yyyy **HH.mm**.ss.fff). Not all values have to be completed, you can also arrange them as you wish respecting the general Custom Date and Time Format Strings rules (see **here** for details, e.g.). **Auto refresh logs** is the last option. Set the Refresh rate in minutes a tick off Autoscroll to display the latest log row all the time.
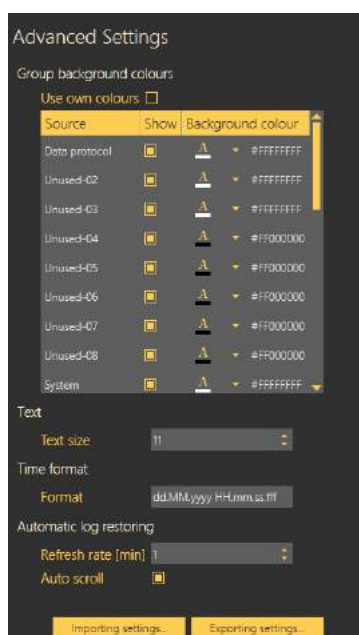
Advanced Settings Menu

Save configuration and Upload configuration help you save and load your advanced settings respectively onto your PC disk for later use.

Bus Logs

This menu has been introduced specifically for monitoring all communication along the bus between the bus-connected devices and the Central Unit. Each row symbolises one device connected. The table columns specify the device, bus, address (for later search in the Logs menu) and communication parameters.
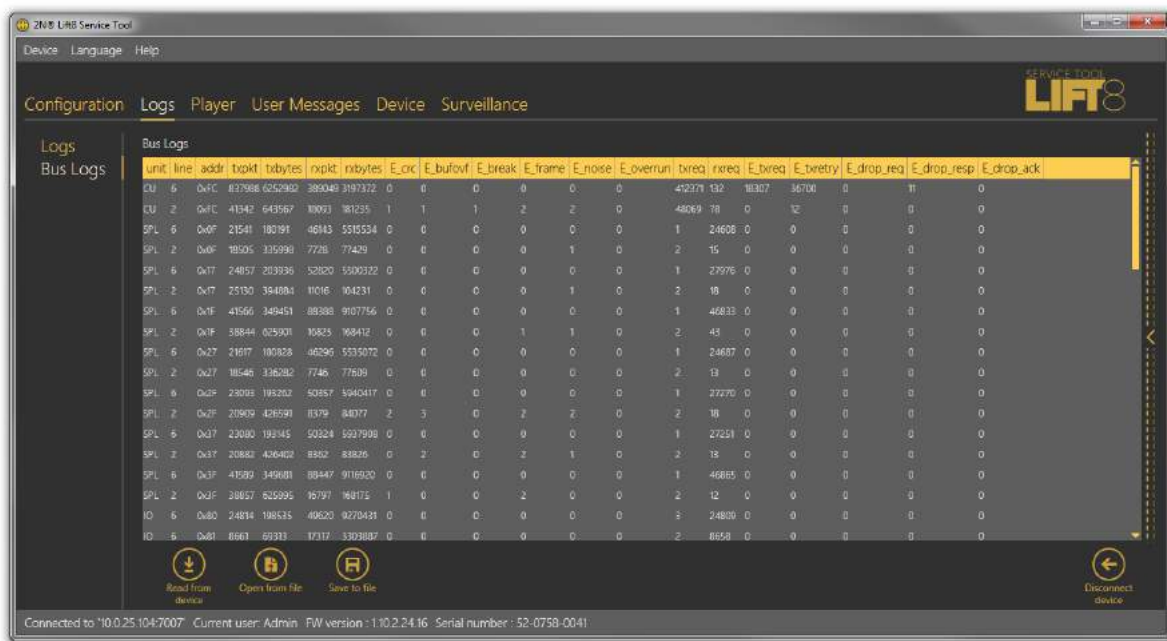
Bus Logs

Click Save to a file to save a log for later use. Click Open from a file to open the statistical data offline. See the table below for the columns.

unit	Unit name (CU = Central Unit, AU = audio unit, SPL = splitter, CAM = camera module, IO = I/O module)
line	Line type (6 = 6-wire, 2 = 2-wire)
addr	Unit address
txpkt	Count of packets sent
txbytes	Count of bytes sent
rxpkt	Count of packets received

rxbytes	Count of bytes received
E_crc	Count of CRC errors
E_bufovf	Count of UART errors – buffer overflow
E_break	Count of UART errors – incorrectly received break
E_frame	Count of UART errors – incorrectly received frame
E_noise	Count of UART errors – incorrectly received bit
E_overrun	Count of UART errors – received byte overwritten with a new value
txreq	Count of requests sent
rxreq	Count of requests received
E_txreq	Count of incorrectly sent requests
E_txretry	Count of incorrectly received requests
E_drop_req	Count of discarded requests (duplicate requests)
E_drop_resp	Count of discarded replies (duplicate replies)
E_drop_ack	Count of discarded reply confirmations (duplicate confirmations)

Player

The **Player** menu helps save records of the cameras connected to the 2N$^{®}$ Lift8 camera modules onto SD cards inserted in the camera modules. You have three options how to play a video record. The simplest is to remove the SD card from the camera module respecting the SD card connection/disconnection rules described in Subs. 2.12., connect the SD card to your PC and copy the data to a local disk directory.

Player Menu

Having loaded the files onto your PC disk, click Open directory. Find the proper file directory in the list and select Open to load the video files from the directory into the file list including the file name, size and record date and time. To play a video, select the file in the file list to activate the player to the right. A standard set of video controls is available here. Use the scroll bar or set the playing rate to view the video more quickly (1 to 10 times). Find the count of images in the file and the currently displayed picture in the menu.

> ⚠️ **Caution**
>
> - The player only supports .mjpg files recorded by a camera module. No other formats can be played.

User Messages

User Messages helps you replace the default system announcements with user messages. Load these messages from a file or, in the correct format, via the 2N® Lift8 Service Tool. Use the microphone connected to your PC to record the messages.

Messages

The Messages menu includes a list of user message, which can be replaced with own records. Having entered the menu, you will find no item. Choose one of the following three methods how to fill in the menu: click New set to display an empty list and fill in your own messages, press From device to download the current set of messages used in the CU, or push Load from directory to load a message set saved on your PC. Select the folder with the message set and confirm your selection to load the selected set into the application.
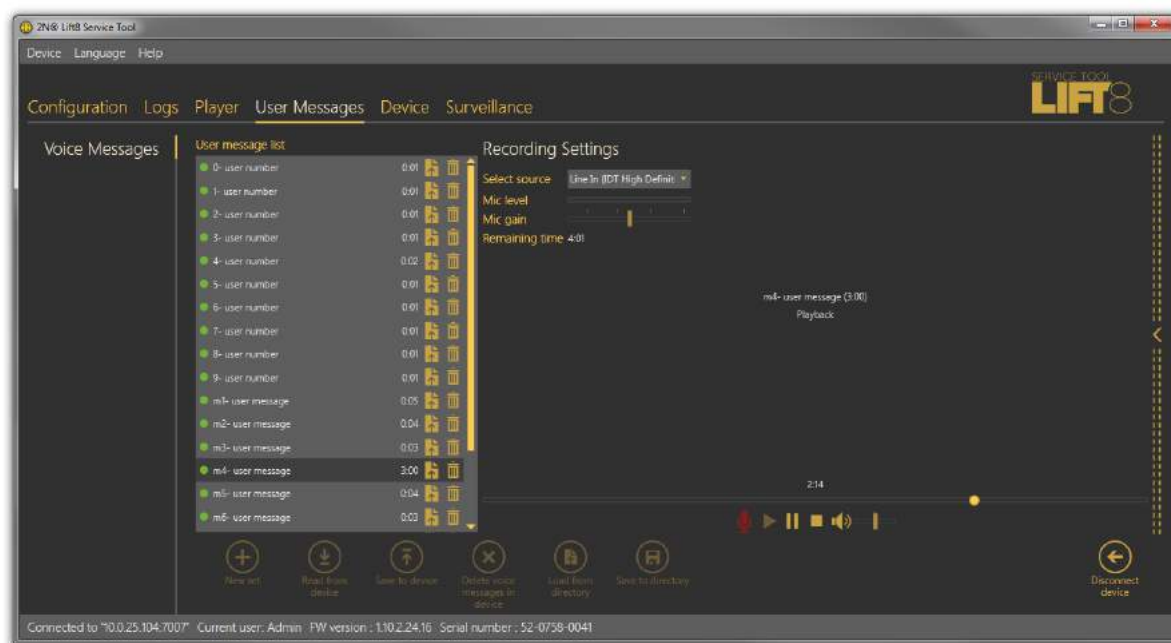
User Messages – Messages Menu

The message list includes the message duration and two action buttons: Import message from file and Delete. If a message is not recorded, its total time is 0:00. The total time is displayed for each message recorded. Click on the import button to open a file viewer on the disk to replace the selected message with a new, properly formatted one. If you just select a message, a message player will become accessible to the right for you to play the message. Standard player functions are available too. Press Play to play the message. To record new messages, select the input source. When the microphone icon shines red, start recording a new message, thus deleting the old one.

> **ⓘ Note**
>
> - The correct format for a message to be added is .WAV. No other files can be recorded.
> - A message cannot be recorded until the input device is selected in the recording settings.

The menu is faded during message recording. The player displays the name, total time and current state of the selected message, thus signalling active recording, playing or recording stop. Click the 'Stop" icon to stop recording, Click 'Play' to check the recorded or imported messages. If the message volume level is too low, adjust the input device volume. If the volume is still very low, try to record the message using another device. Having completed message editing, click To device to load the message set into the CU connected. Click Save to directory to save the current set onto your PC disk. Select a message and click the Trash icon to delete the message.

> **⚠ Caution**
>
> - The output volume value in the application does not affect the master volume of the record to be saved into the CU. Thus, if the recorded volume is too low, record the message once again and louder.

> **✓ Tip**
>
> - Use high-quality microphones and properly noise-insulated rooms with good acoustic properties for recording to avoid noise and interference in your records.

Recording Settings

Find the **Recording settings** to the left. Select one of the available input devices in Select source: integrated or external microphone or line input. Mic level defines the microphone input drive level. Mic gain defines the input gain. The total memory capacity for all the messages to be saved into the **CU** is 8 minutes. The time left for message editing is displayed in the Time left parameter.

> **ⓘ Note**
>
> - If the microphone input is overdriven during recording, turn down the mic input gain. If the record is too silent, turn up the mic input.
> - In case the application gain setting is not sufficient, use the system controllers or an external amplifier.
> - When the maximum message time (8 minutes) is exhausted, no more messages can be added. Thus, optimise the message time to record all of your messages.

Device

The **Device** menu provides information on the **2N$^®$ Lift8 Central Unit** connected: basic parameters and text/graphic diagram of available Audio Units and splitters. In addition, you can upgrade the **CU** here too.

Info

The **Info** menu provides basic information on the state of the device connected: **CU** FW version, serial number, voice menu language and time. The Time in device parameter displays the current time read from the **CU**. This parameter is not read online and has to be updated using the Read from device parameter. Set time in device helps you record a time setting of your own. Click on the calendar to set the date/time in hours manually. This value can be overwritten and different time can be set for a different time zone. Click Confirm to confirm the new setting. Click Save current time from PC to device to synchronise the **CU** time with your PC time value and load the new setting into the **CU** automatically.
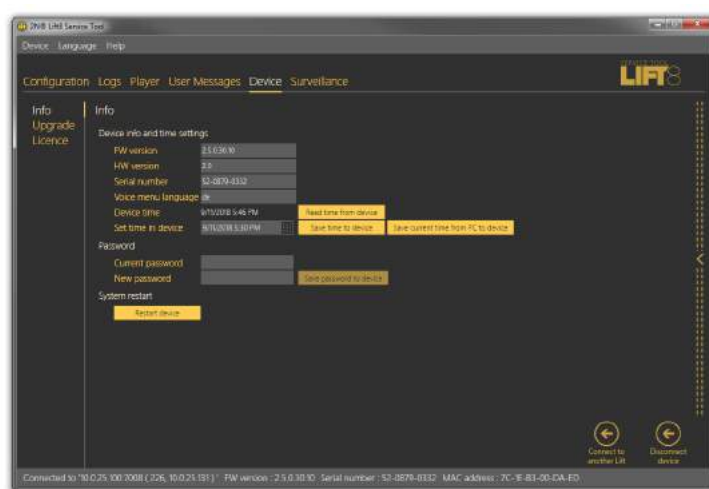
Devices – Information Menu

The Password section helps you change the administrator password for the **CU** connected. Enter the existing password into the Current password and the new password into the New password. Click Save password to device to confirm and save the new setting. Or, click the button to restart the device if necessary and log out automatically.

> ⓘ **Note**
>
> - Remember to change the password in the 2N® **Lift8 Service Tool** configuration too for future connections.

Upgrade

The **Upgrade** menu helps you upgrade the **CU** firmware via two menus: List of applicable parameters and List of applicable voice menus. Click on the appropriate name to select the FW version and voice menu type to be loaded to the **CU**. Having selected the items, click Upgrade to make the **2N**®️ **Lift8 Service Tool** load the new FW and voice menu into the **CU**. The menu provides a list of upgrade licences.

> ⚠️ **Caution**
>
> - Having upgraded the FW you will be notified of the **CU** restart. After confirmation, the restart will be made and the application will be disconnected. Reconnection will not be possible until the system upgrades the Audio Units and restarts. This process may take a few minutes in extensive systems.
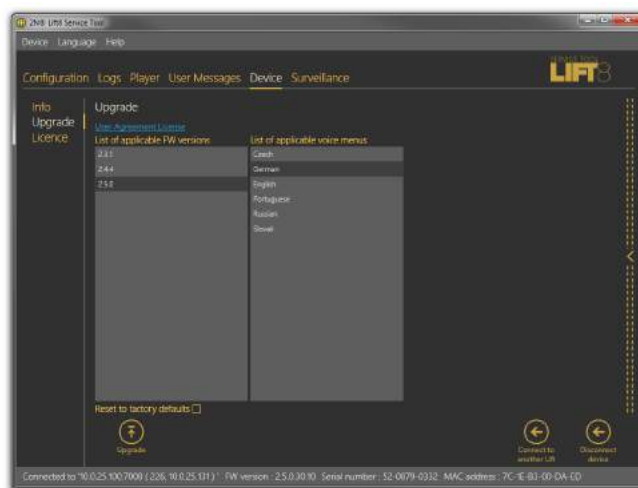
Menu Device / Upgrade

Select Reset to factory defaults to delete all user edited changes and restart the audio unit with the factory default values. Select this option and click Upgrade to reset factory default values upon upgrade. This action will only be performed together with new FW, Bootloader or Voice menu loading. To reset the default values only, use the Configuration menu.

> ⚠ **Caution**
>
> - If you select **Reset to factory defaults**, parameters 1100 ~ 1110 (VOIP settings) will not be deleted for security reasons.

Licences

The **Licences** menu is used for adding licence files. The licences to be added to the **CU** are only applicable in the UMTS/GSM module versions. The licence enables/disables the network (provider) to which the device shall log in. Enter the IMSI code into the licence: particularly the MCC and MNC to define the country and provider permitted for the **CU**. Enter a greater portion of the IMSI code to specify the SIM cards to be used in one network. You can add up to 10 IMSI codes to the licence. Contact your **2N®**

Lift8 supplier or the manufacturer's Technical Support department (**sales@2n.cz**) for the licence file.

Having acquired the licence file, click Open from file and Load to device to open a file browser with the licence location and click Confirm. The program will notify you of the licence change and necessary device restart. Confirm your selection. Re-log in and check the licence. The Allowed IMSI item will display the IMSI codes permitted by the new licence.

> ⚠ **Caution**
>
> - Any attempt to load licences for another serial number into the **CU** will be rejected.
> - If you fail to log in to a GSM/UMTS network, it is possible that the licence permits a different IMSI range, which does not match the currently inserted SIM card. This state is indicated as follows: the GSM/UMTS module has a sufficiently strong signal, but the EXT. line LED is shining red. Insert the correct SIM card or change the licence file.
> - The licence features only apply to the **CU**s equipped with a GSM/UMTS module.
> - There is no limitation as to the other PSTN/VoIP communication interfaces even if the licence is added to the **CU**.
> - If your **CU** does not include any licence file, its function is not limited and the inserted SIM card can log in to the provider's network, yet with some limitations (roaming, e.g.).

Surveillance

Connected Units

The **Connected units** menu provides a graphic diagram of all the units connected to **2N**

® **Lift8.** The following controls are available: Refresh to update the display, Press HW setting (diagram/text) to print out the diagram/text of all the Audio Units and splitters connected to the given CU. The diagram displays the units like in the application and the text provides the same information as the diagram in the XML format. Click these buttons to export the diagram/text to the printer. Zoom in and Zoom out help you get a closer (more detailed) and more distant view (whole structure) of the diagram/text respectively. The unit watching buttons help you enable /disable the function. The system behaves like with the Reset button. All the units to be watched are green-highlighted and an error is detected and displayed if there is a loss of connection; see the figure below.
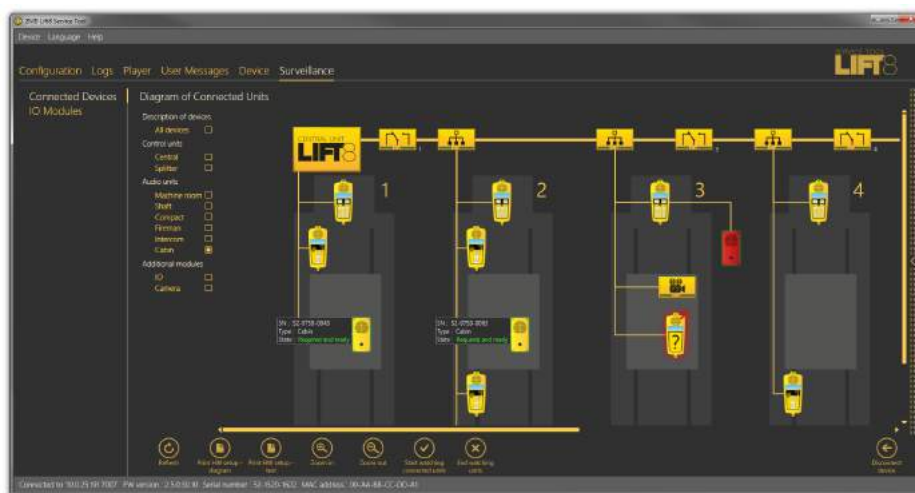
Surveillance Menu

Diagram of Connected Units

The diagram displays graphically all the devices connected to the selected **CU**: buses, shafts and Audio Units. Tick off the checkboxes in the Unit description to display details on the audio units and select the audio unit type as shown in the figure below. The brief description to the left of the audio unit includes the Audio Unit serial number, type and current state.

If you use the system completeness check, the audio units to be monitored (cabin, Fireman) are marked either green or red. Green means that the audio unit works properly. Red means that the audio unit is in the error state, fails to communicate or is

disconnected. Get the audio unit repaired as soon as possible to make your system complete. Or, remove the audio unit from checking in the system completeness check configuration; refer to Subs. 2.1.

IO Modules

IO Modules Menu

The **IO Modules** menu helps you monitor the states of the IO modules connected. The **IO modules** section displays all the modules connected to the bus. Each module is identified with a number, which corresponds to its HW address set on the DPS. Furthermore, states of all the inputs and outputs are included. The inputs and outputs are set to 0 by default upon the system startup. Logic 0 is on the input and the relay is open. Use the settings in the Configuration / IO Modules menu to change the relay position upon startup. A change of the input signal level or setting the relay into the open state will change the signal from 0 to 1 and the user will be notified of the change by a LED colour change and text notification, which provides information on the module, input and signal value that initiated the event. This notification is displayed in a special pop-up window, which is not closed automatically but closing has to be confirmed with a cross. In this way, the user is always duly informed and cannot miss any input change. Disable notification in the Setting / Configuration menu. You can also choose a module to be listed. If you do not enable module displaying in the Configuration menu, the module will not be visible here.
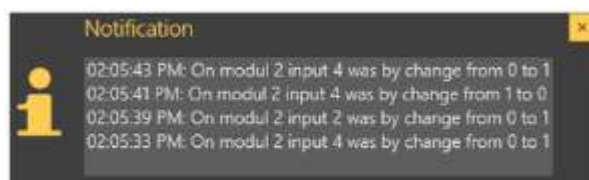
Notification Pop-Up Window

Each IO module is identified with a number and an overview of inputs and outputs. Use the Configuration / IO Modules menu to add a brief description to an input /output. You can also select the active/inactive input/output state colour in the same menu to simplify the visual state identification. The logic state of the given object (input/output) is signalled with digits 0/1 in a colour ring.

6. Lift8 Server

Here is what you can find in this section:

- 6.1 Installation and Licensing
- 6.2 Use

Refer to the 2N $^®$ Lift8 product pages at **www.2n.cz**, download section, for the latest FW version.

6.1 Installation and Licensing

The **2N® Lift8 Server** is an application necessary for a correct operation of the **2N®**

Lift8 Central Unit, **2N® Lift8 Control Panel** and **2N® Lift8 Communicator.** Its purpose is

to mediate communication between these devices and user interfaces.

> ⚠️ **Caution**
>
> - Be sure to install the **2N® Lift8 Server** on a PC with Internet connection
>   or in a LAN which includes a SIP Proxy to make check and alarm calls
>   properly. While configuring the system, you can select the RTP ports to
>   be redirected to your LAN via NAT.

> ⊘ **Warning**
>
> - CHANGE OF CHARACTER SET
>
> - If you use the **2N® Lift8 Server,** it is necessary to upgrade the database
>   before passing to version 2.2.0 and higher. It is because the character
>   sets have changed in the server and characters with diacritics would be
>   imported incorrectly without upgrade. Upgrade is performed
>   automatically during installation: the installer evaluates the database
>   state and upgrades it if necessary.
>
> - Remember that it would be impossible to import earlier databases
>   correctly unless upgraded during installation. Their character sets would
>   not match the server sets and diacritic characters would be corrupted
>   without upgrade.
>
> - Be sure to remove an earlier server version from the system before
>   installing the new version 2.2.0 to avoid server installation errors. It is
>   because version 2.2.0 is equipped with improved installers that are able
>   to perform database upgrade in a more efficient way.
>
> - Use the Start/Control panels/Programs/Uninstall program Windows
>   menu to remove the application (this path applies to Windows 7 but can
>   probably be used for other systems too). Select the application to be
>   removed and click the right button to uninstall the program from your
>   PC. Finally, you will be asked whether you really want to delete the
>   existing configuration files. If you click NO, your configuration will be
>   preserved.
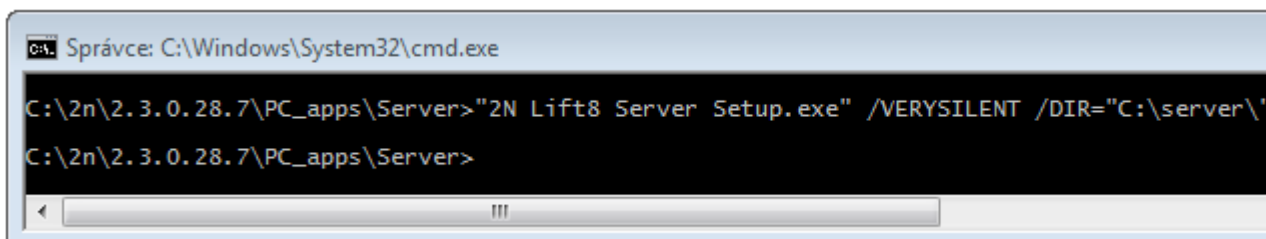
Installation

After the application is launched, the installation program will scan your PC for another 2N® Lift8 Server version and ask you whether or not to uninstall the currently available version if any. If you deny, the installation wizard will be terminated. If you agree, the original version will be uninstalled. Then you will be asked whether the configuration files should be removed too. If you select no, the existing configuration will be retained and the application will only be updated. Now the 2N® Lift8 Server Setup Wizard has been launched. Follow the wizard instructions. Select the 2N® Lift8 Server installation location: **C:\Program Files (x86)\2N TELEKOMUNIKACE\2N Lift8\Server** is used by default.

The default port for communication with other applications is 7008 and can be changed if necessary. Make sure that the port is accessible from the LAN (see the Note above) and correctly set in all the applications. Now the wizard is ready to install your 2N® Lift8 Server. It displays an overview of the settings. Check them carefully as you will not be able to modify them after installation unless you re-install the application! If you detect an error, press Back to return to the error window. If all the parameters are OK, click Install to install the 2N® Lift8 Server. The 2N® Lift8 Server service will be launched automatically after installation. If, for any reason, the automatic launch failed, start the service manually. Now your 2N® Lift8 Server is ready for use.

Command	Description
/VERYSILENT	Installation runs on the background, no installer is available to the user.
/DIR="C:\..."	Set the installation location.
/LOG=file_name.txt	Create an installation course log (to be displayed in the installer directory).

> ⚠️ **Caution**
>
> - Make sure that the command line is run by the administrator. If run by a user, the issuer authentication window pops up.
> - If an earlier server version is installed, the uninstallation window pops up even if the installation is VERYSILENT.

> ⓘ **Note**
>
> - The **2N® Lift8 Server** installation requires **250 MB** of free disk space at least.
> - Further **2N® Lift8 Server** setting modifications can be done via the **2N® Lift8 Control Panel**.

ⓘ **Note**

- Recommended hardware requirements

OS	Microsoft Windows 10, Microsoft Windows 8 / 8.1 CZ, Microsoft Windows 7 SP1 CZ, Microsoft Windows Vista SP2 CZ, Microsoft Windows Server 2012 (R2) Standard, Microsoft Windows Server 2008 R2 SP1 Standard, Microsoft Windows Server 2016 Standard Evaluation
CPU	Equivalent Intel Quad Core i7 3,4 GHz
RAM	16 GB
HDD	500 GB
LAN	Gigabit Ethernet (**GLAN**)
Other	• **Dedicated Sound card** (Very important!) • Dedicated Graphics card

⚠ **Warning**

- If a problem with non-compatible version of .NET occurs during installation, you should download new version of .NETFX4.0 from www. 2n.cz . From online manual you can use this link .

- Minimum operating system requirements: **Windows Vista**, **Windows 7**, **Windows 8**

Licensing

All the 2N® Lift8 Server functions are subject to licence. Upon your first PC installation of the application, you will get a trial licence for 800-hour operation and 50-user and 50-lift (CU) connection.

> ⚠️ **Caution**
>
> - Every 2N® Lift8 Server restart increments the hour counter by 1.

The 2N® Lift8 Licence Tool is installed together with the server. Having launched the application, you can see the installed server version, ID and status and other server service data as well as the currently installed licence and the count of exhausted licence hours. See the figure below.
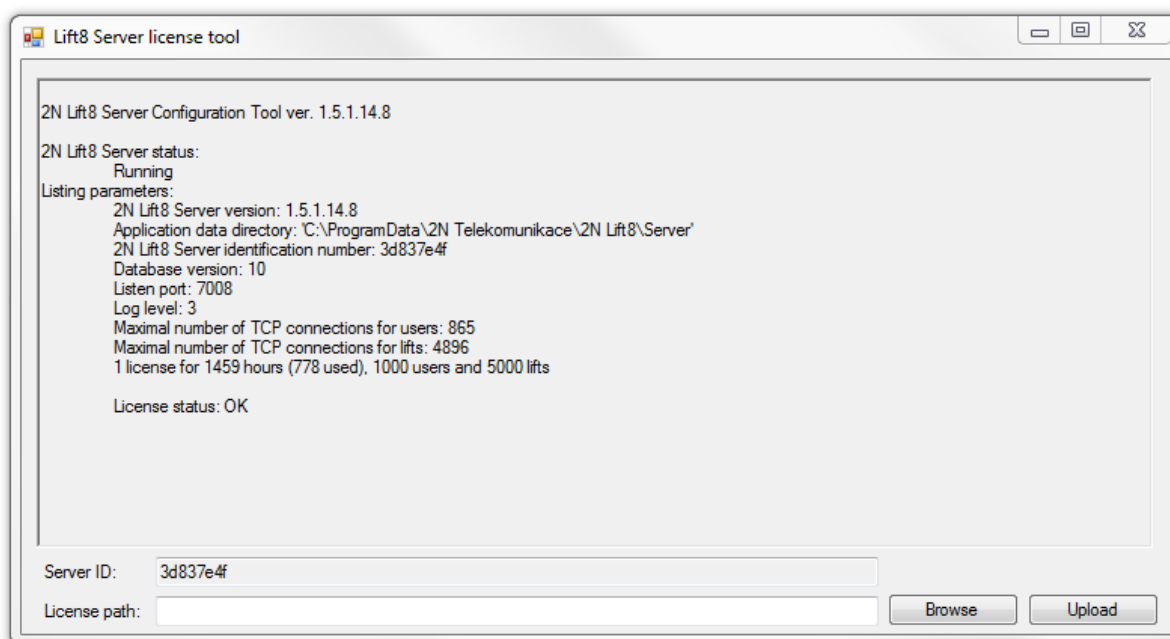
2N® Lift8 Licence Tool

A unique server ID is generated during installation and displayed in the Server ID parameter. The identifier is selected upon launch and you just copy it to use it. Send this code together with your licence requirements to sales@2n.cz to get an extended licence.

Having received the licence file, start the 2N® Lift8 Licence Tool and enter the path to this file into the Licence path parameter. Click Upload to add the licence to the server directory and restart the server to update the licence data. The licence status will change into OK. The last row, Listing parameters, will display such licensed server parameters as the count of users or terminals. Now set the licensed values for use via the MaxLifts and MaxUsers parameters in the l8-config program. Refer to the next subsection for details.

> ⚠ **Caution**
>
> - Set the MaxLifts and MaxUser TCP connections manually to make a licence with a higher count of these connection work properly.

> ⊘ **Warning**
>
> - Make sure while using the application that the server ID has not changed. This identifier is also generated from the MAC address of the primary network car d. If you install or launch the VPN software or the primary network card changes, the server ID will change. As a result, the existing licence will become invalid and you will not be able to log in to the server!

6.2 Use

The **2N® Lift8 Server** application updates a lift database where all the lift check and alarm calls are recorded. The database also includes a list of authorised users, which, depending on their user roles, can connect to the server, change configuration settings and/or process incoming alarm calls via the **2N® Lift8 Control Panel** and **2N® Lift8 Communicator**.

The **2N® Lift8 Server** integrates a SIP station which can be assigned up to 8 independent accounts and process up to 32 parallel calls. A proprietary protocol communicating on TCP/UDP port 7008 is used for the server – application communication. Port 7008 is set by default during installation and can be changed.

The **2N® Lift8 Server** also includes a storage manager, which helps you map a storage of any size for building plans and firmware for central unit upgrades. The application also keeps a database of and evaluates check calls. The lift that fails to meet the set limits will be marked in the database. Refer to Section 7, **2N® Lift8 Control Panel**, for setting details.

> ⚠ **Caution**
>
> - **Important!** A default user with administrator login is created during the **2N® Lift8 Server** installation to get connected to the server and configure the other users. The default user uses the following login data:
> - Name: Admin
> - Password: 2n

> ⚠ **Caution**
>
> - The default listening port of the server is **7008**.

The terminal application l8-config.exe is used for server administration and launched in the command row that controls the **2N® Lift8 Server**. Use this program to set all the server parameters, stop/start the server and export/import the server database.
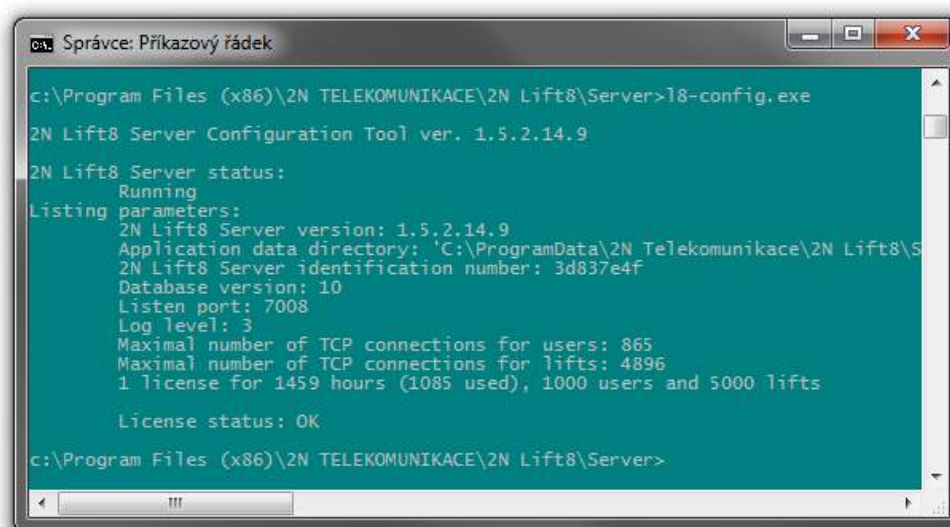
> ⚠️ **Caution**
>
> - Database export/import can only be executed securely using this program.
> - Copying of database files 'config.db' between the servers is not recommended as data may get lost during this operation.

> ⊘ **Tip**
>
> - The application is launched in the command row. The common path to the program in all WINDOWS XP, Vista and 7 versions is as follows:
> - **c:\Program Files\2N TELEKOMUNIKACE\2N Lift8\Server\l8-config.exe**

If l8-config.exe is launched without any parameter, the program will write out all available information on the server as follows:

l8-config.exe

Database Export/Import

You can export the database under normal operational conditions. When the program is launched, a copy of the current database is made for the exporting purpose to avoid database overwriting and modifications during export. Start the l8-config program with the –cExportDatabase parameter with the following command to execute export:

```
C:\Program Files\2N TELEKOMUNIKACE\2N Lift8\Server\l8-config.exe -
cExportDatabase
```

The program creates a new file, db-20120221095921-export.xml, for example. The number in the filename specifies the current export date and time in the YYYYMMDDhhmmss format.

Being saved into a user data folder, the database may be different in different systems.

> ⓘ **Note**
>
> - Typical location for WINDOWS XP: **C:\Documents and Settings\All Users\Application data\2NTELEKOMUNIKACE\2N Lift8\Server\db-20120221095921-export.xml**.
>
> - Typical location for WINDOWS Vista and 7: **C:\ProgramData\ 2NTELEKOMUNIKACE\ 2N Lift8\Server\db-20130221095921-export.xml**.

Database import may only be executed when the server is stopped. If the server is running, the program identifies any importing attempt as an error. Enter the following command to stop the server:

```
C:\Program Files\2N   TELEKOMUNIKACE\ 2N Lift8\Server\l8-config.exe -
cStopServer
```

Then enter the –cImportDatabase parameter and the file path to import the database:

```
C:\Program Files\2N TELEKOMUNIKACE\ 2N Lift8\Server\l8-config.exe -
cImportDatabase "C:\ProgramData\2N TELEKOMUNIKACE\ 2N Lift8\Server\db-
20130221095921-export.xml"
```

Now all the database tables start being exported sequentially. Every successful table import is confirmed.

> ⚠️ **Caution**
>
> - The path to the exported database file must always be given in inverted commas. If no path is found, the current database will be deleted and replaced with a new, empty one.

> ⓘ **Note**
>
> - If the database includes a high number of users and terminals, the table import will take a few minutes.

Restart the server after every successful database import using the following command:

```
C:\Program Files\2N  TELEKOMUNIKACE\ 2N Lift8\Server\l8-config.exe -
cStartServer
```

Setting Options

The l8-config program provides numerous server settings; see the long list below.

> ✓ **Tip**
>
> - The parameters are set as program parameters: program name<space>program parameter.

General Commands

```
-l
```

- writes out all the parameters.

```
--help or -h
```

- displays Help.

```
--version or -V
```

- writes out the program version.

```
-d <data directory>
```

- sets the server data directory.

Parameter Get Commands

```
-gListenPort
```

- writes out the server listening port.

```
-gLicensesNumber
```

- gets the number of installed licences

```
-gProductStatisticsEnable
```

- displays the server statistics sending option: 1 = enabled, 0 = disabled.

Parameter Set Commands

```
-sListenPort <listen_port>
```

- sets the server listening port.

```
-sProductStatisticsEnable
```

- sets the server statistics sending: 1 = enabled, 0 = disabled.

```
-sLogLevel <log_level>
```

- sets the server logging level (1–5).

```
-sMaxUser <max_user_tcp_conn>
```

- sets the maximum count of users to be connected to the server at the same time. The maximum count is based on the licence.

```
-sMaxLift <max_lift_tcp_conn>
```

- sets the maximum count of lifts to be connected to the server at the same time. The maximum count is based on the licence.

```
-sResetAdmin
```

- resets the Admin password to default '2n'.

Server Commands

```
-cStartServer
```

- starts the l8 server.

```
-cStopServer
```

- stops the l8 server.

```
-cRestartServer
```

- restarts the l8 server.

```
-cExportDatabase
```

- exports the database to an XML file.

```
-cImportDatabase <XML_file>
```

- imports the database from an XML file. Make sure that the server has been stopped to avoid operation failure.

7. Control Panel

2N® Lift8 Control Panel is an application is used for easy intercom administration and, thanks to the administrator approach, user and user group administration. Users can be assigned access rights to new intercom settings and administration. The application displays the check and alarm call databases and helps you set the SIP lines to process the intercom check calls and create storages for building plans and central unit firmware.

Here is what you can find in this section:

- 7.1 Installation and Login
- 7.2 Introduction to Application
- 7.3 Use

Refer to the 2N® Lift8 product pages at www.2n.cz, download section, for the latest FW version.

7.1 Installation and Login

After the application is launched, the installation program will scan your PC for another **2N**® **Lift8 Control Panel** version and ask you to uninstall the currently available version if identical with the new one. Use the system Control Panel Add or Remove programs to uninstall the existing product version for reinstallation or reconfiguration. If the versions are not identical, the original version will be uninstalled and a new application version will be installed. Then you will also be asked whether the configuration files should be removed or the whole application with a new, empty database should be installed.

Now the **2N**® **Lift8 Control Panel Setup Wizard** has been launched. Follow the wizard instructions. Then select the installation location for the **2N**® **Lift8 Control Panel**. **C: \Program Files (x86)\2N TELEKOMUNIKACE\2N Lift8** is used by default. Now the application will ask you to enable transmission of system data and software use surveys to help the 2N TELEKOMUNIKACE a.s. company improve the software quality, availability and performance. No confidential data shall be sent. You can participate in this effort voluntarily and cancel sending statistic data any time. Confirm or decline this cooperation and click Next to continue.

Select whether the application should be installed for the currently logged-in user or all the PC users. The wizard is ready to install the **2N**® **Lift8 Control Panel**. Confirm user account administration notification to the Windows system if necessary. Another Start item and the application shortcut icon will be added automatically. Once installed, the application will start automatically.

Alternatively, use the command line for installation: select the installer file and define the manner and location parameters. See below for command explanation.

Command	Description
/VERYSILENT	Installation runs on the background, no installer is open to the user.
/DIR="C:\..."	Set the installation location.
/LOG=file_name.txt	Create an installation course log to be displayed in the installer directory.

```
C:\Windows\system32\cmd.exe

C:\2n\2.3.0.28.7\PC_apps\ControlPanel>"2N Lift8 ControlPanel Setup.exe" /VERYSILENT /DIR=
C:\2n\2.3.0.28.7\PC_apps\ControlPanel>
```

Application Installation Command

> ⚠️ **Caution**
>
> - Make sure that the command line is started by admin. If it is started by a user, the editor authenticating window will pop up.

> 🚫 **Warning**
>
> - There is an installer change in version 2.2.0. The installer is unable to remove the original application versions (up to 2.1.x) correctly and an installation error may occur. To avoid this, remove the original applications manually if you use versions lower than 2.2.0.
>
> - Use the Start/Control panels/Programs/Uninstall program Windows menu to remove the application (this path applies to Windows 7 but can probably be used for other systems too). Select the application to be removed and click the right button to uninstall the program from your PC. Finally, you will be asked whether you really want to delete the existing configuration files. If you click NO, your configuration will be preserved.

> ⓘ **Note**
>
> - The **2N® Lift8 Control Panel** installation requires **650 MB** of free disk space at least.

Now the **2N® Lift8 Control Panel** is ready for use. Click on the shortcut item on the desktop (see the figure below) or select the Start item to start the application.

2N® Lift8 Control Panel Icon

After the application is launched, a splashscreen gets displayed informing you of the application manufacturer and current version. Start it to display the basic login screen and Log in to server menu. The last used connection is displayed for quick access. Select the Show advanced settings checkbox to display the list of all available connections to the **2N® Lift8 Servers** in a clear tree structure to the left. If you have installed the application for the first time, the default connection will be created automatically. This connection cannot be removed. If you use one and the same PC for your **2N® Lift8 Control Panel** and server, you can make use of these pre-settings and click the Connect icon. The **2N® Lift8 Control Panel** will log in to the local server. You need not use the pre-set values but can create a connection of your own using the New server and New group buttons. Create a tree structure of your own and save the settings by login to the server. Select a connection and push Delete selected to remove a connection. It is easy to set the connection: all you have to do is enter the connection name and insert the local loop address 127.0.0.1 or the localhost text (only if the server is running locally) in the server address. Enter the IP address of the LAN or public network server to get connected to another server. Use the DNS server if available. Enter the listening port selected during the **2N® Lift8 Server** installation into the Port parameter. The default port value is 7008. Contact your LAN administrator to verify the settings. Refer to the figure below for possible settings.
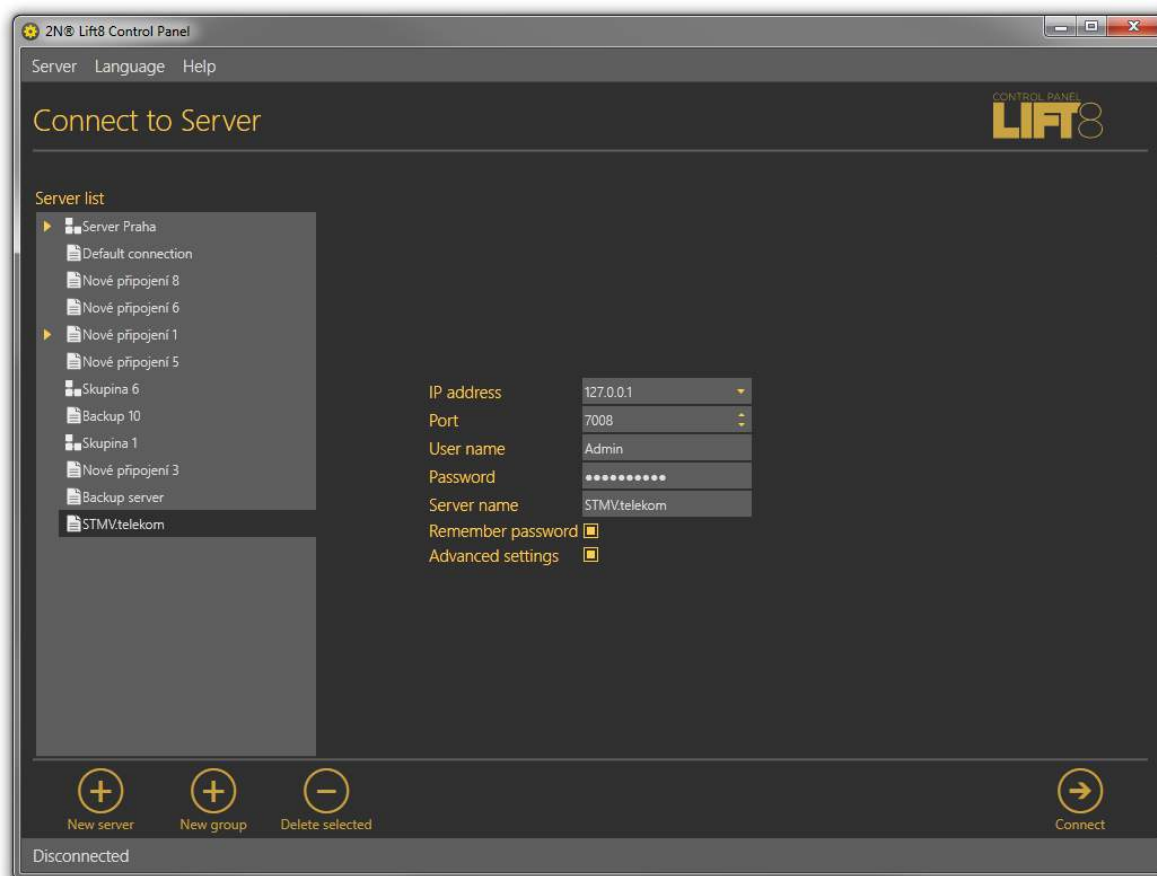
Server Connection Screen

Now select the server connection and press Connect or double-click the selected server with the left button. The application will execute login to the 2N® Lift8 Server.

> ⊘ **Tip**
>
> - Server login may take some time if you have an extensive database as the application has to download all the current tables. Be patient please and wait for completion.

> ⓘ **Note**
>
> - Recommended hardware requirements
>
> | | |
> |---|---|
> | OS | Microsoft Windows 10,
Microsoft Windows 8 / 8.1 CZ, Microsoft Windows 7 SP1 CZ, Microsoft Windows Vista SP2 CZ |
> | CPU | Equivalent Intel Quad Core i7 3.4 GHz |
> | RAM | 16 GB |
> | HDD | 500 GB |
> | LAN | Gigabit Ethernet (**GLAN**) |
> | Other | **Dedicated Sound card** (Very important!) Dedicated Graphics card |

> ⚠ **Caution**
>
> - **Important!** A default user with administrator login is created during the 2N® Lift8 Server installation to get connected to the server and configure the other users. The default user uses the following login data:
> - Name: Admin
> - Password: 2n
> - Port: 7008

> ⚠ **Warning**
>
> - If a problem with non-compatible version of .NET occurs during installation, you should download new version of .NETFX4.0 from **www. 2n.cz** . You can use this link from the online manual.
>
> - Minimum operating system requirements: **Windows Vista**, **Windows 7**, **Windows 8**

7.2 Introduction to Application

In this subsection, we will show you the application menu layout and basic controls. The application is divided into three menu levels. The first screen upon start includes Configuration / Intercoms; see the figure below, which displays the first menu levels.

The horizontal Main menu helps you select whether to configure the 2N® Lift8 system or supervise the history of check and alarm calls. The vertical menus help you select the area to be administered. The third menu level, if meaningful, gets displayed horizontally behind the intercom/user list in the right-hand upper corner and includes a list of user/intercom card forms that have to be completed or display a list of calls for the given intercom.
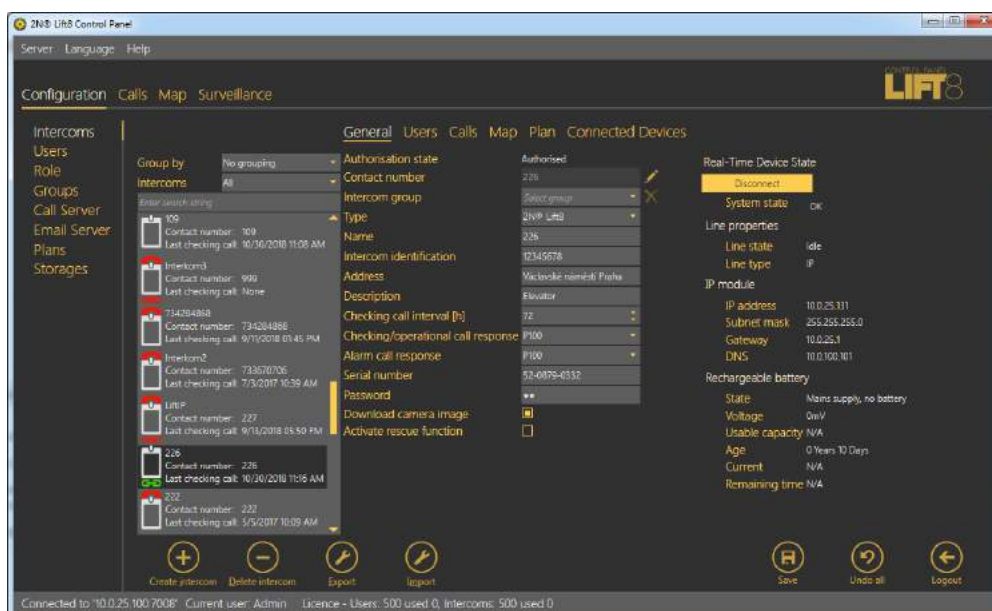
2N® Lift8 Control Panel Window

The main menu contains three pop-up menus. The **Server** menu helps you disconnect from the server or terminate the application. You will always be warned before logout or termination against data loss. The Setting submenu includes a Statistics window: confirm the request to enable transmission of your system data and software use surveys to help the 2N TELEKOMUNIKACE a.s. company improve the software quality, availability and performance within the applicable law. You can participate in this cooperation voluntarily and cancel your prior approval any time. Select the language mutation in the **Language** menu: CZ and EN are available so far. The **Help** menu provides information on the product manufacturer and version.

> ⓘ **Note**
>
> - The language change will not be executed until the application restart.

The Status line displays connection information. From the left: 'Connected to' includes the name of the server to which you are currently connected, 'IP' specifies the IP address of the server to which you are currently connected and the server listening port, and 'Current user' displays the currently logged in user. In case you are logged in as Administrator, licence information is also displayed on users and intercoms: the maximum count of server-licensed objects and their current use. See the figure above. Find the Logout button in the right-hand bottom corner and various important control buttons in the lower part of the application. The table below describes all the buttons available in the application.

Basic Controls

(+) New server	**New server** helps you create a new connection in the login screen.
(+) New group	**New group** helps you create a new server connection group in the login screen.
(−) Delete selected	**Delete selected** deletes the currently selected objects from the list in the login screen.
(→) Connect	**Connect** is used for user login to the selected server.
(←) Logout	**Logout** is used for user logout.
(💾) Save	**Save** is a common button for saving new objects into the database. The button has three states: inactive – all changes are saved, flashing – changes have been made in the database and should be saved, and red – changes cannot be saved as the validator disapproved some of the parameters (marked with a distinct red frame).
(↺) Undo all	**Undo** helps undo all changes made since the last saving.

Create Intercom	**Create Intercom** helps you add an intercom card to the database by adding a central unit.
Delete	**Remove** helps you remove objects from configuration.
Create Role	**Create role** adds a user role to the server configuration.
Create User	**Create user card** adds a user in the Configuration/Users menu.
Create group	**Create group** helps you create a new group of users/intercoms depending on which menu view is currently switched on.
Add plan	**Add plan** helps you add a building plan to the selected storage.
Remove plan	**Remove plan** helps you remove the selected plan.
Change plan	**Change plan** updates the plan stored by storing a new map under the same name.

Download plan	**Download plan** helps you save the selected plan to a local disk.
Export	**Export** helps you export the table in the currently displayed menu.
Import	**Import** helps you import the intercom or user table.
Pin view	**Pin view** is accessible in the Calls menu only and helps you 'tear' a screen away from the application and display it on another monitor, for example.
Load calls from archive	**Load calls from archive** helps you display all the server database calls. Both the current records and records moved to the archive are displayed.
Refresh intercoms	**Refresh intercoms** is available in the Map menu. Use this button to refresh the list of intercoms and their states.
Filter reset	**Filter reset** is available in the Map menu. Use the button to reset the filters to the default values.
Start surveillance	**Start surveillance** is used for switching on/activation and online status reading of data tunnels to the intercoms.

|	
End surveillance	**End surveillance** is used for deactivation and ending of status reading of data tunnels to the intercoms.
Zoom in	**Zoom in** helps you magnify the scheme to be displayed.
Zoom out	**Zoom out** helps you shrink the scheme to be displayed.

7.3 Use

Configuration

Upon login, you get to the **Configuration** main menu where you can find almost all the

2N$^®$ Lift8 settings. The user may access the menus allowed by its role. The Administrator can administer the whole system without limitations: divide users into groups, assign the user roles, assign the users intercoms to be configured and monitored, set the Call server for intercom check calls and configure the storages for buildings plans. The **Surveillance** menu provides a view of all the configured lifts on the world map including their current states. Now let us explain what the menus are used for.

Intercoms

The **Intercoms** menu includes a database of the intercoms defined on the server. The intercom list to the left includes all the available intercoms. Click Group by to arrange the intercoms according to the contact number, database ID or type of authorisation (Authorised, Unauthorised and Unknown). Or, you can arrange the intercoms according to their functions. Click Intercoms to display either all the intercoms or just functional/non-functional intercoms. You can use the search function to find the required intercom: enter the intercom name (or a sequence of characters) into the search row. The function requires no confirmation and starts searching the database the moment you enter the first character. Add more characters to refine the filter until you find the required intercom.
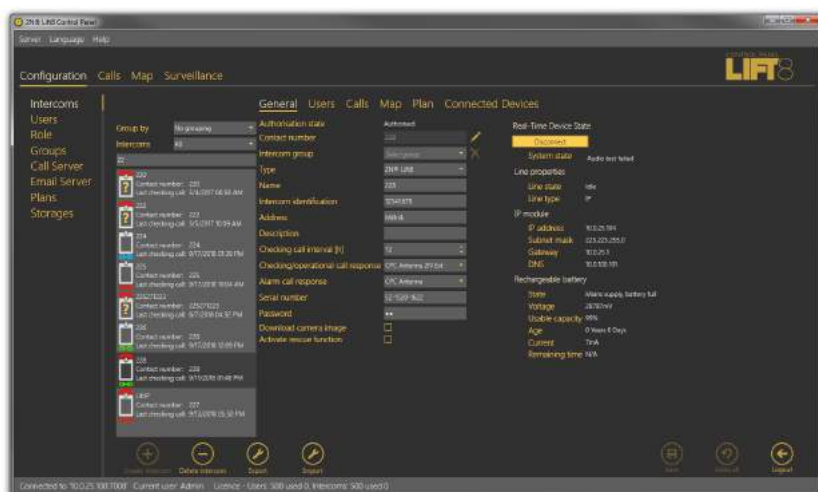
Intercoms Menu

The list in the figure above includes some information on the intercom. The icon at each intercom indicates the lift cabin and can have several functions and meanings, which can be combined (see the table below).

|	
	A red handset above the icon indicates that the intercom failed to make a check call within the timeout and is thus marked as non-functional. When the intercom makes a correct check call, this state will disappear.
	A yellow handset above the icon signals that the intercom made a check call within the timeout but the first call was not accepted OK. This happens when the first call was terminated for some reason, but the following calls were OK. When the intercom makes correct check calls within the check call timeout, this state will disappear.
	A yellow question mark signals an intercom that was created by a check call but has not been confirmed by Administrator yet as a real intercom. Refer to the Intercom Creation subsection below for details.
	This symbols a functional intercom: 2N® SingleTalk, 2N® LiftNet, 2N® Helios or **Unknown**, probably supplied by another manufacturer and able to communicate with the 2N® **Lift8 Server** via CPC / P100.
	A functional 2N® Lift8 intercom. The red chain below the icon indicates the **Disconnected** state between the 2N® **Server** and the Central Unit.
	A functional 2N® Lift8 intercom. The blue chain below the icon indicates the **Connection established** state between the 2N® **Server** and the Central Unit.
	A functional 2N® Lift8 intercom. The green chain below the icon indicates the **File transmission** state between the 2N® **Server** and the Central Unit.

> **⊘ Tip**
>
> - The **2N® Lift8 Server** is able to work with the third party equipment via the standard communication protocols (CPC and P100) instead of proprietary protocols. Set the type to Unknown to communicate with such equipment.

Intercom Creation

Add an intercom to the database as follows:

The first way is to install a **CU** and configure it to call the number that the server uses for check calls. When the **CU** makes the first check call to the server, a new intercom card is created and basic information on the intercom is included: the telephone number used for the check call is filled in as the Name. The so-created intercom is marked as unauthorised to eliminate unintentional calls (telemarketing, e.g.). To authorise this intercom, use the Basic tab for this intercom in the **2N® Control Panel**, which informs you that a new record has been created by a call from number x and asks you whether you want to keep it in the database or delete it. Press Preserve to add the intercom to the database or Remove to delete the intercom from the database if unintentional (telemarketing, error).
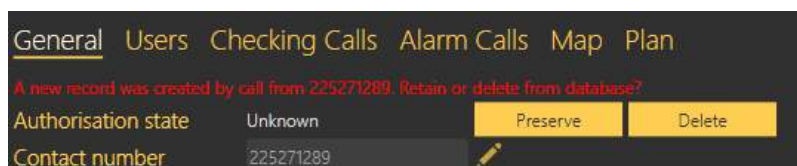
Authorisation of Intercom Created by Check Call

Complete more intercom card parameters for authorisation. See below for details (Intercoms).

> **ⓘ Note**
>
> - If the device that is making the check call for the first time supports the CPC or P100 protocol, you have to set this parameter manually. Calls from a number that is not included in the database are always served by the server by sending DTMF 5 and hang-up. If you want to use the above-mentioned protocols for check and alarm calls, set them manually.

The other intercom adding method is to create an intercom card in the database. Click on Create intercom card to open a window in which you can set the contact number for intercoms with one and the same phone number. Click on the combo box to add another intercom to a contact number included in the database.

> **ⓘ Note**
>
> - Multiple intercom functionality under one contact number is important where intercoms are connected to a gateway or PBX which identifies itself as a single external number.
> - If you assign multiple intercoms to one number, the evaluation logic will change depending on the check call response type:
>   - With confirmation 1 and 5, Receive and send 5 – the incoming check calls are counted. The system waits until the preset count of intercoms have called and then designates the whole set of intercoms under the given number as functional. If, however, one of the intercoms fails to call within the timeout, all the intercoms will be regarded as non-functional.
>   - CPC, P100 – identification must be set for each intercom under the given number. Each call is evaluated separately. If the number and Id match, the intercom is marked as functional.

> **⚠ Caution**
>
> - If the CPC or P100 protocol is set to multiple intercoms with one and the same number, complete the correct identification for each intercom. If the Id is wrong, the system will not evaluate the check calls correctly.

Confirm the number dialling to get into the General menu. Complete and save all necessary data as described in the Intercoms subsection below. As this intercom has not made a check call yet, it will be considered non-functional. Install it and make the first check call to make the intercom ready for use.

> ⚠ **Caution**
>
> - The intercom that fails to make a check call within the timeout will be marked as non-functional and remain so until the next correct check call. A non-functional intercom is visible to the technician for check.

> ⊘ **Tip**
>
> - **Name** and **Telephone number** are mandatory parameters for a new intercom. Complete these values to validate and save the intercom card. No more parameters are necessary for the function. **However, you are strongly advised to complete the whole intercom card correctly** to facilitate intercom search and dispatchers' and rescuers' work.

Each created intercom is added to the end of the table. Select an intercom for editing and configuration. You can use multiselect to change (delete, export) parameters for a higher number of intercoms: either hold Ctrl to select the objects or hold Shift to select the first and last objects thus selecting all the objects between them. All the changes or exports made over the selected intercoms will apply to all of them.
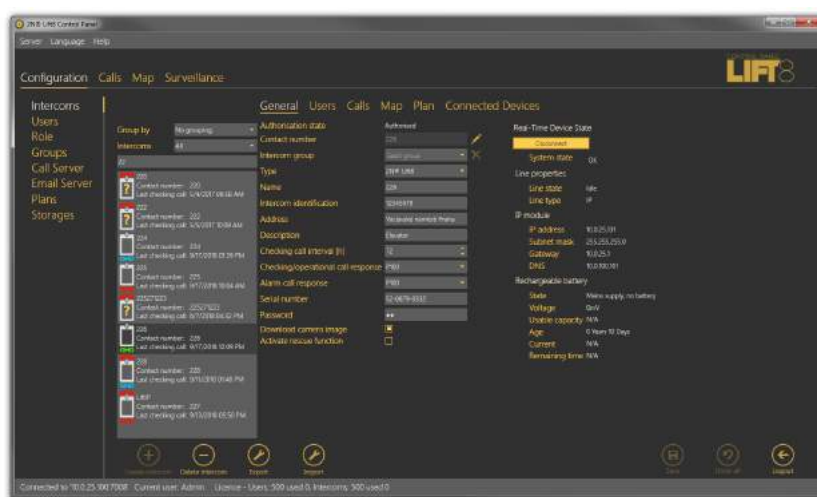
Intercoms

Select an intercom to open an extensive menu level with intercom identification forms, check call evaluations, maps and local plans of the building where the intercom is installed. Let us describe each of the forms.

General

The **General** form helps you configure general parameters for an intercom. The first row defines the Authorisation state of the selected intercom. All the intercoms added manually to the database or created automatically and confirmed as real intercoms are authorised. Contact number provides the **CU** identification. 2N® Lift8 makes check calls from this number and 2N® **Lift8 Server** makes active check calls to this number: enter either a SIM card in the **CU**, number of the PSTN line to the intercom or number of the PBX/gateway behind which the intercom is located. Intercom group specifies the group to which the intercom is assigned. Select an item from the list to change the group. Press the cross symbol to remove an intercom from all the groups.

Type defines the type of device: **2N**® **LiftNet**, **2N**® **SingleTalk**, **2N**® **Lift8** , **2N**® **Lift1**, **2N**®
LiftIP o r **Unknown**. Refer to the Intercom Creation subsection above for details. Name
defines the intercom name. Set a name equal to the contact number for an
automatically created intercom. Intercom identification is primarily used by the CPC a
P100 protocols for counterparty authorisation. As identification is not set
automatically during creation, complete the value to make the two protocols work
properly. In the case of check call rejection/confirmation with a DTMF character, this
parameter is not checked off. Enter the address of the building in which the intercom
is located into the Address field to display this information on the map used by
Technician for repairs or Dispatcher for rescue team navigation. Fill in brief
information on the intercom to be installed in the Description item: location, purpose,
specific settings and so on.

Intercoms – General Menu

The Checking call period specifies the timeout within which the intercom must call the
2N® **Lift8 Server** or after which **2N**® **Lift8 Server** makes active check calls. The
intercom can call the **2N**® **Lift8 Server** any time within this timeout, but having
exceeded this value, it will be marked as defective. The non-functional status will be
removed when another check or alarm call arrives in the server from this intercom.
The default value of this parameter is 72 hours. The Alarm call response specifies the
type of alarm call processing: **Normal call**, **Confirm with 1**, **CPC Antenna**, **CPC KONE**
and **P100.** Similarly, the Check call response specifies the type of check call
processing: **Reject**, **Accept and send 5**, **Confirm with 1 and 5**, **CPC Antenna**, **CPC**
Antenna 2N Ext , **CPC KONE** and **P100**. Complete the serial number of your intercom
in the Serial number field. Together with Password, this parameter is relevant for a
correct function of the data tunnel. The default password is 2n. Click Save to confirm
the setting. If you select the **2N**® **Helios** type, set the outgoing check call parameters

too: select Active check calls to enable active check calls for the selected intercom, complete First run to define the first check call and Next run to define the next check call to the intercom. Complete the Unsuccessful call repeat count to specify how many check call attempts are to be made before the system detects an error and executes the action set in the Call server. If the lift is equipped with a camera, enable loading images from the camera using a checkbox. This will be applied to incoming calls in the 2N® Lift8 Communicator.
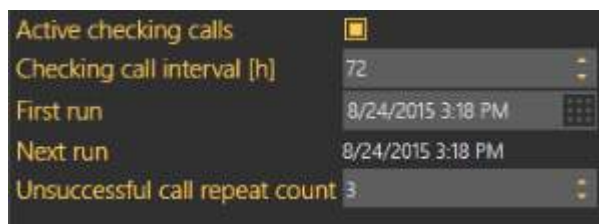
Extended Active Checking Call Settings

Where the lift is equipped with a camera, tick off the Download camera image option. This becomes active in the incoming call in the 2N® Lift8 Communicator. Enable the rescue mode monitoring with the Activate rescue function checkbox. In case an alarm call is received from the intercom, the error message announcing that the rescue action is in progress will be displayed and transferred into the 2N® Lift8 Communicator. You can terminate this caution manually or by pressing the End rescue process button, or the rescue process will be terminated automatically after the incoming operational call has been evaluated.

> (i) **Note**
>
> There are two types of checking calls in **2N Helios**.
>
> - **Standard check call**, which waits until the intercom calls and then evaluates the call interval.
> - **Active check call**, in which the server itself dials the intercom as scheduled and evaluates the intercom response (pick-up/reject/no answer). For this purpose, the first Call server line is always used as it is assigned extended error call notification settings.
>
> The active and standard check calls can work on a single server and the use of one type does not exclude the use of the other in any way.

The list of intercom error states is displayed below the parameter list whenever a failure occurs. These states are only displayed for the intercoms that support sending of these states. Information is transmitted to the server via operational calls and CPC and P100 protocols. Like the rescue mode, these states can be ended using the application button or automatically by an operational call.
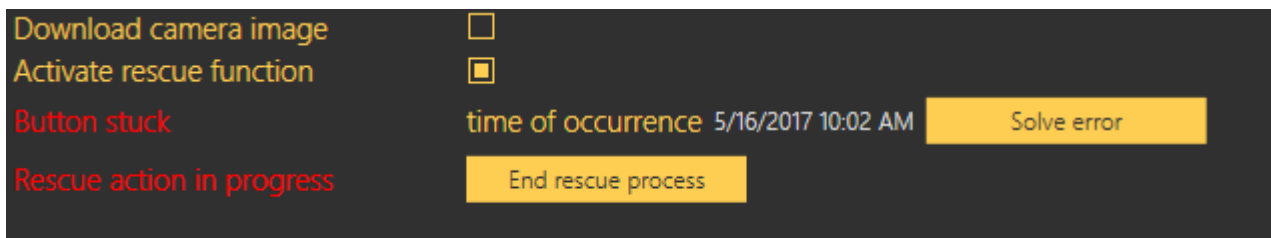
Error State Display

The following device states are monitored with the aid of operational calls.

| State	Error
Battery failure	Sent if the battery capacity falls below a defined limit or the batteries are older than 2 years.
Stuck button	Sent whenever the Alarm button gets jammed due to a mechanical defect or sabotage.
Audio error	Sent whenever the audio unit audio test fails.
Rescue end	Enabled automatically whenever an alarm call comes in.

If the server data tunnel is supported, you can download the current device state from the server. Once the tunnel connection has been established, click Connect to set up an active connection via the tunnel and view the current device state like in the 2N® Lift8 ServiceTool. Click Disconnect to quit the device state monitoring mode.

> ⚠ **Caution**
>
> - Data is transmitted between the intercom and server continuously while the connection is active. If the device is located in a limited traffic network (mobile data, e.g.), data transmission fees can be charged.

Users

The **Users** menu provides a list of all users with the right to view/administer the selected intercom. Administrator may administer all the system intercoms, users and roles regardless of group assignment. The list of Assigned users displays all the users authorised for the selected intercom. To add a user, select the user in the Not assigned users and move it to the Assigned users with the arrow. To delete a user, select the user in the Assigned users and move it to the Not assigned users with the arrow key. To search a user, enter the string to be searched into the field above the list and see the filtration result in the associated list immediately. Click Save to save the new settings.
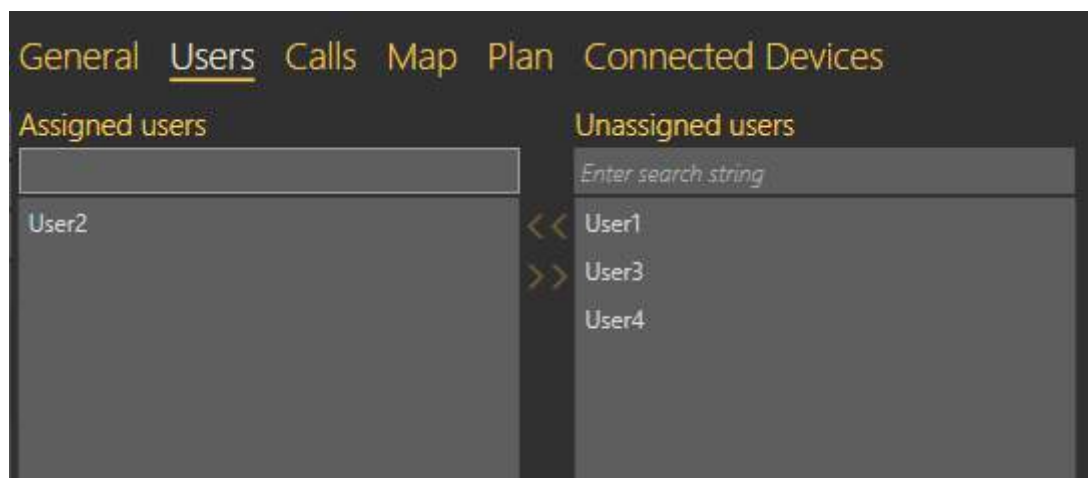
Intercoms – Users Menu

Calls

Find the list of active calls related to the given intercom in the Calls menu. There are three pop-up menus for checking, alarm and operational calls respectively. See below for details.

Checking Calls

The Checking Calls table includes a list of all checking calls that have been received by

the 2N$^{®}$ Lift8 Server since the intercom addition. Click the filter button at each column

to use filtration for call history search. Refer to the Calls subsection for details. The table provides the following information: check call Timestamp, **CU** Contact number, Intercom identification if CPC/P100 was successfully used and check call Result string. See the figure below.
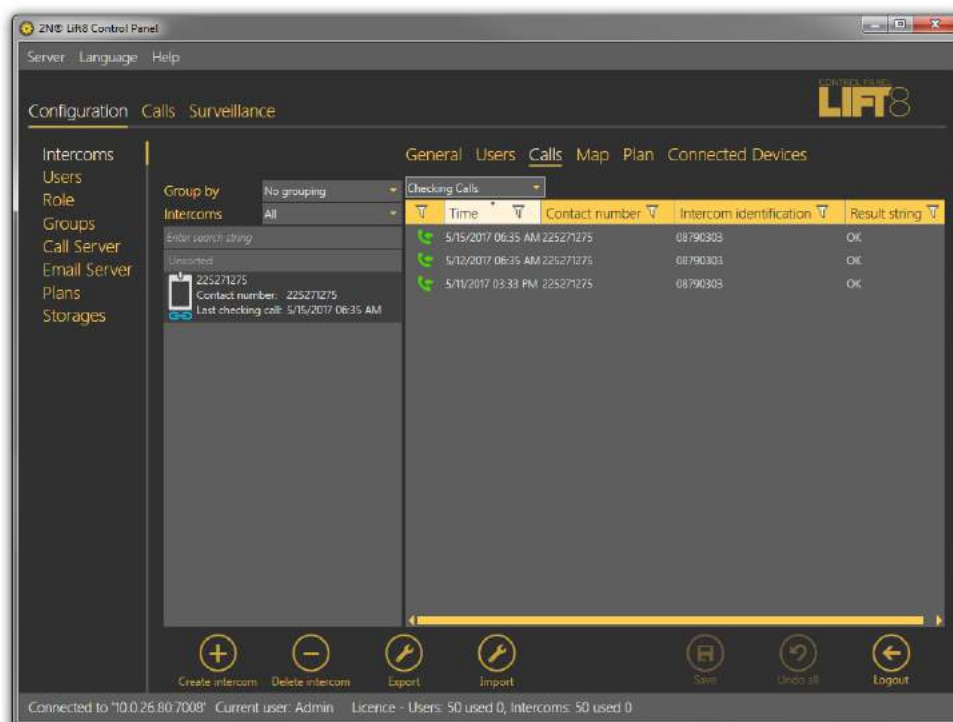
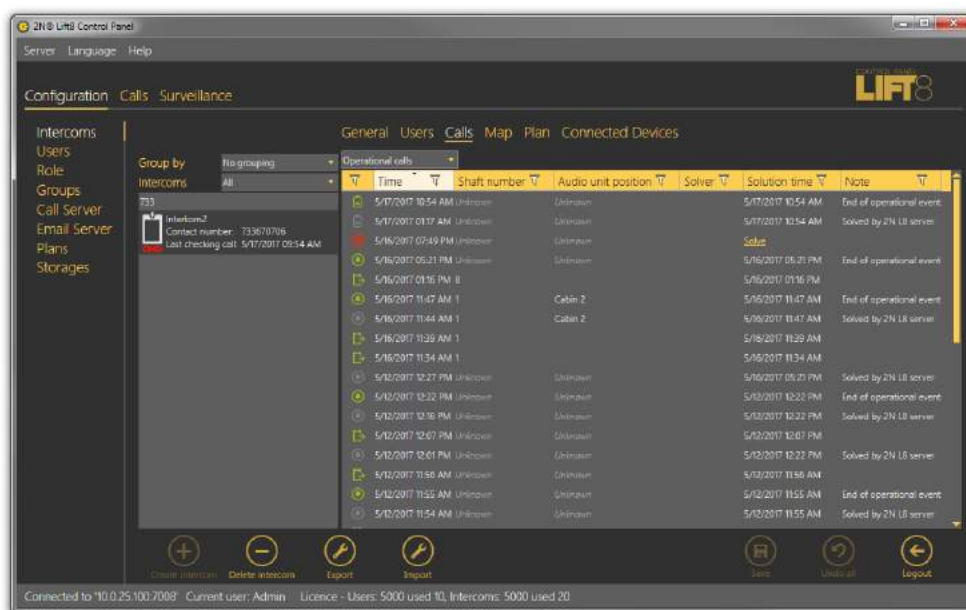Intercoms – Calls – Checking Calls Menu

Alarm Calls

The Alarm Calls table includes a list of all alarm calls that have been received by the **2N**

® Lift8 Server since the intercom addition. Click the filter button at each column to use filtration for call history search. Refer to the Calls subsection for details. The table provides the following information: alarm call Timestamp, **CU** Contact number, Shaft number, Audio unit position, Intercom identification if CPC/P100 was successfully used and call-processing Agent name. The last column Note shows the note entered by the dispatcher during the alarm call.
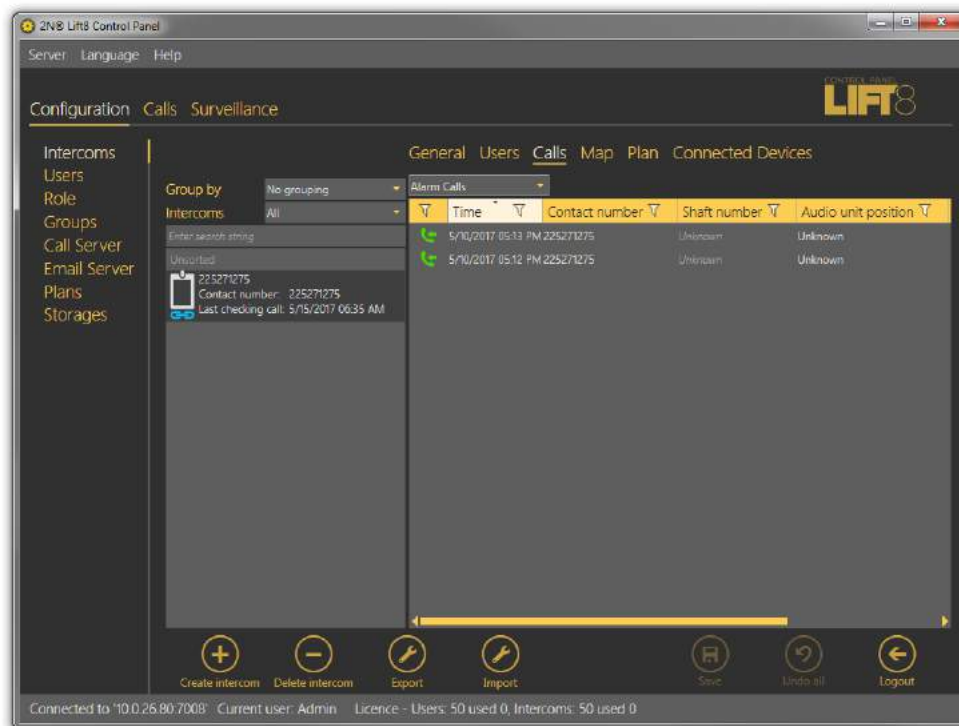
Intercoms –Calls – Alarm Calls Menu

Operational Calls

The Operational Calls table includes a list of all operational calls. The operational call is initiated by an action in the Central Unit, which calls the server and transfers the device state information via the CPC/P100 protocol. As a rule, the action transits into an error state and then, if everything is OK, to the OK state. The most recent actions are marked green or red in the table. It is because error messages (stuck button, e.g.) are marked red until the OK state message is received. Once received, the OK state remains green and the other states turn grey to indicate that the error situation has been solved successfully.

Intercoms – Calls – Operational Calls Menu

Map

If you filled in the intercom address in the General menu, the **Map** menu will display the intercom map position. Use the slider in the left-hand upper corner to zoom in and out. The intercom address is also displayed below the map. If the address is incorrect, change it here. The change will appear in the General menu too. Click Check address to set a new address and press Save to add the address to the database.
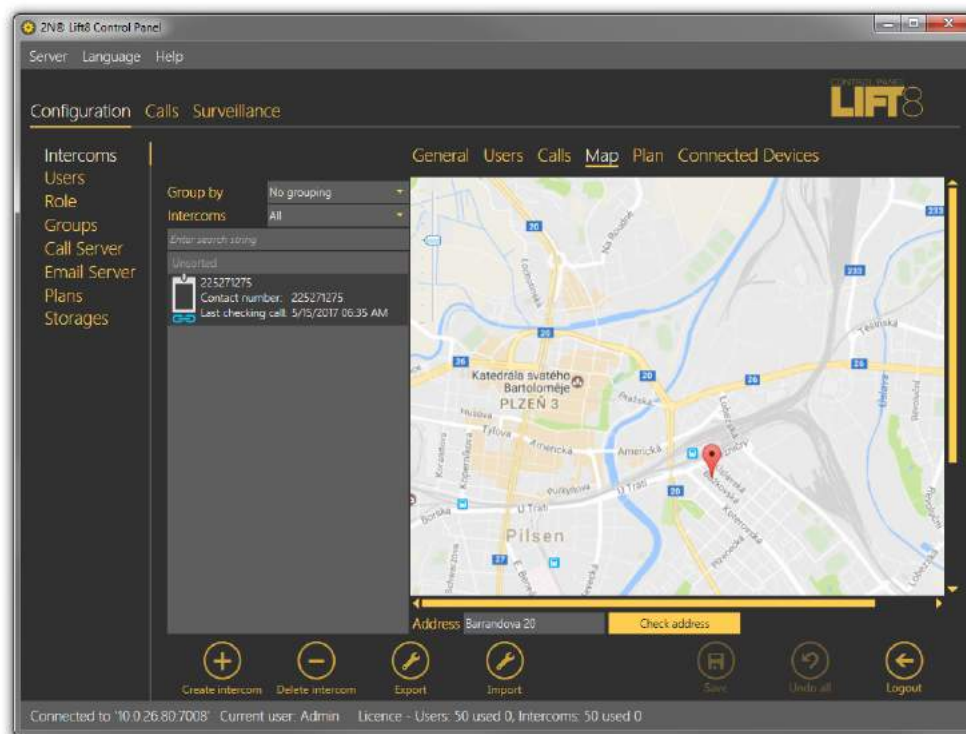
Intercoms – Map Menu

Plan

If you have set a storage, added a plan and set the plan in the General menu, the plan will appear in the **Local Plan** menu. Use the sliders to find the intercom location and move the intercom onto the map with the left button. See the intercom default position in the new plan in the left-hand upper corner. The plan also displays other intercoms in the building including colour states: orange indicates the intercom that is being configured, green means another functional intercom and red denotes a defective intercom that failed to make a check call within the timeout. A phone number is displayed for each intercom too. Select an option in the Available plans to change the intercom plan. Click Save to confirm the settings.
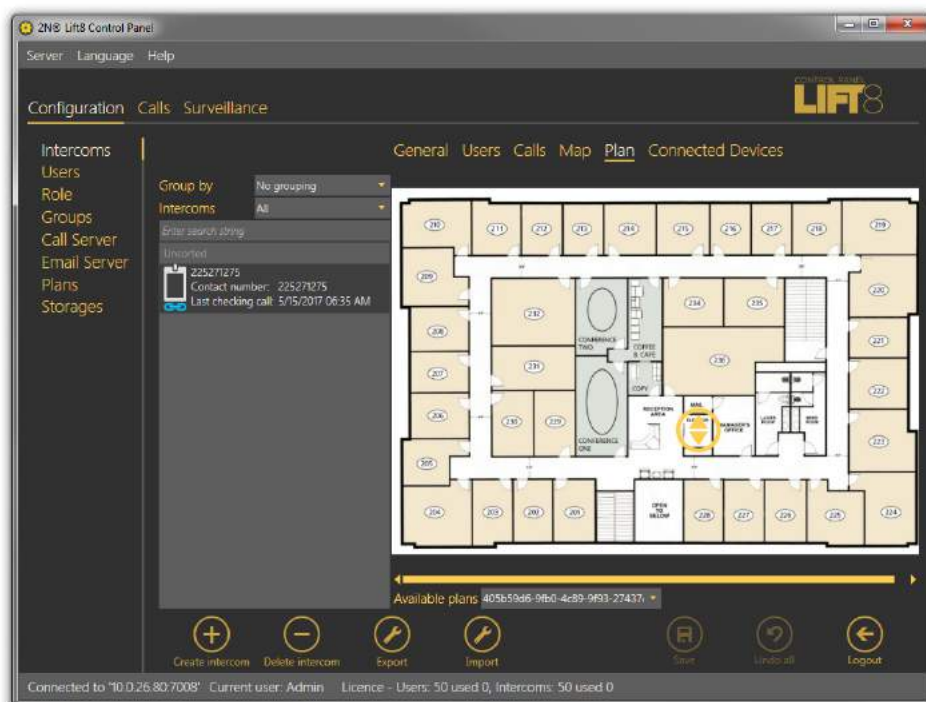
Intercoms – Local Plan Menu

Connected Devices

The Connected Devices menu is another part of the intercom monitoring service. The menu is displayed only if the intercom type is set to 2N® Lift8. The other types do not support device monitoring. If the Central Unit - server connection is active, press Get a scheme of connected devices to create a tunnel for the ControlPanel application to download the diagram of the devices currently connected to the CU and save it onto the PC disk. The connection remains active and the device diagram can be updated any time. At the same time, the current device state is activated on the General tab. Click Log out to close the tunnel connection. The last-downloaded diagram is then saved and displayed any time later in the application. The diagram of connected devices is similar to that in the ServiceTool application. Press the respective buttons in the lower part to print out the diagram as a text or image, or zoom in/out the view. Use the checkboxes to display extended information on the devices connected.
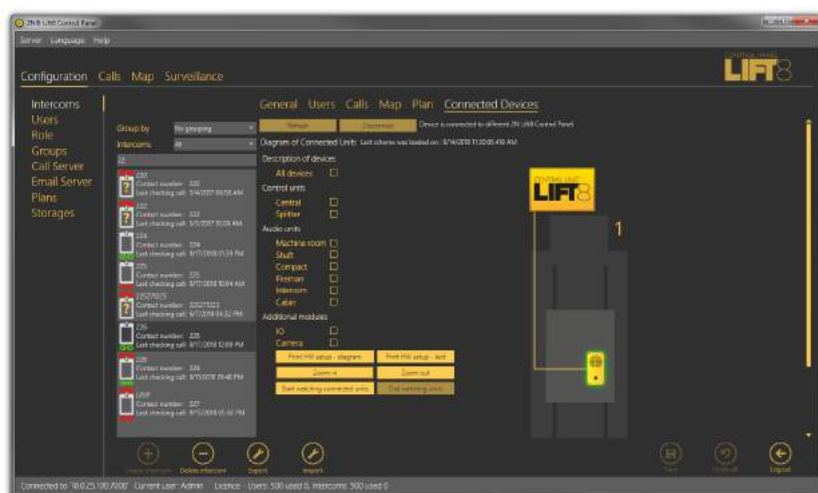
Intercoms – Connected Devices Menu

The unit watching buttons help you enable/disable the function. The system behaves like with the Reset button. All the units to be watched are green-highlighted and an error is detected and displayed if there is a loss of connection.

> ⚠ **Caution**
>
> - Data is transmitted between the intercom and server continuously while the connection is active. If the device is located in a limited traffic network (mobile data, e.g.), data transmission fees can be charged.
> - The diagram downloads are saved on a working station with the ControlPanel application running instead of the server. Having logged in from another PC, you cannot see the diagram and have to download a diagram of your own.

Export

The table export function is available in the Intercoms – Users – Calls menu. To enable the function, click Export or use the context menu displayed with the right mouse button above the selected object or objects if multiselect is used in the Intercoms – Users menu. In the Calls menu, the export function is only available in the context menu and always exports the whole table for which export was activated. In the Intercoms – Users menu, you can only export selected objects via the context menu and if you want to export all the objects, click Export. Having pressed this button, you have additional checkbox options: select the items to be exported and click Export in the form to confirm your selection. If you choose export of assigned users, a list of the

users assigned to the selected object will be added to each table row. The same applies to the assigned intercoms. Now choose a location on your disc and click Save to save the exported data. See the figure below for the exporting forms from the two menus.
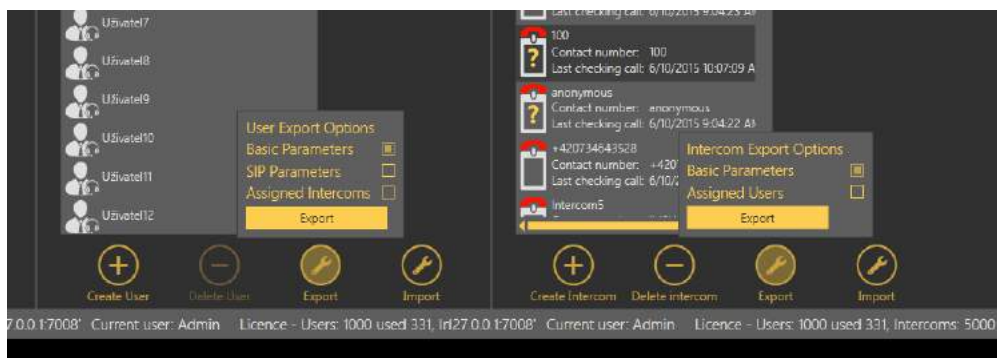
Intercom Table Export – Right, User Table Export – Left

Import

The table import function is available in the Intercoms – Users menu. Click Import to open an import window and select a disk location. Select the file to be imported and confirm your selection to import the file and display the lists of imported objects.

Users

The **Users** menu displays the whole user database defined on the server. The main common part of the menu provides the database searching function: enter the user name (or a sequence of characters) into the search row. The function requires no confirmation and starts searching the database the moment you enter the first character. Add more characters to refine the filter until you find the required user. Click Create user card to add a user to the end of the table. Each user has an icon that identifies its role (function).

	Administrator	Administrator is authorised to make all settings.
	Superuser	Superuser is only authorised to manage the intercoms and users in its group.
	Dispatcher	Dispatcher processes the assigned intercom alarm calls via the 2N® Lift8 Communicator application.
	Technician	Technician is entitled to view the assigned lift settings.
	User defined	User defined role.

Click Delete to remove a user. You can use multiselect to delete or select a higher number of users: either hold Ctrl to select the objects or hold Shift to select the first and last objects thus selecting all the objects between them. All the changes made over the selected objects will apply to all of them. Select a user to open an extensive (third) menu level with up to three forms. Let us describe each of the forms.

General

The Users – General menu helps you set personal information on the user: login username and password for the 2N® Lift8 applications.

> ⓘ **Note**
>
> - Login Name and Password are the only mandatory parameters of this menu. **However, you are strongly advised to complete the whole user card correctly!**

The other parameters include Firstname and Surname, user function/job Description, Contact number for Technicians or user defined roles without access to the Communicator, Email, Company and Role. New users are created as Dispatchers by default. The following options are available: Administrator, Technician, Dispatcher or User defined role (refer to the Roles and Rights below). Click Save to add the parameters to the database.

Users – General Menu

Intercoms

The **Intercoms** menu provides a list of intercoms that can be administered and monitored by the user. You can view the check call results and set some of the intercom parameters depending on your role. Administrator may administer all the system intercoms, users and roles regardless of group assignment. The list of Assigned intercoms displays all the intercoms authorised for the selected user. To add an intercom, select the intercom in the Not assigned intercoms and move it to the Assigned intercoms with the arrow. To delete an intercom, select the intercom in the Assigned intercoms and move it to the Not assigned intercoms with the arrow key. To search an intercom, enter the text or number to be searched into the field above the list and see the filtration result in the associated list immediately. Click Save to save the new settings.
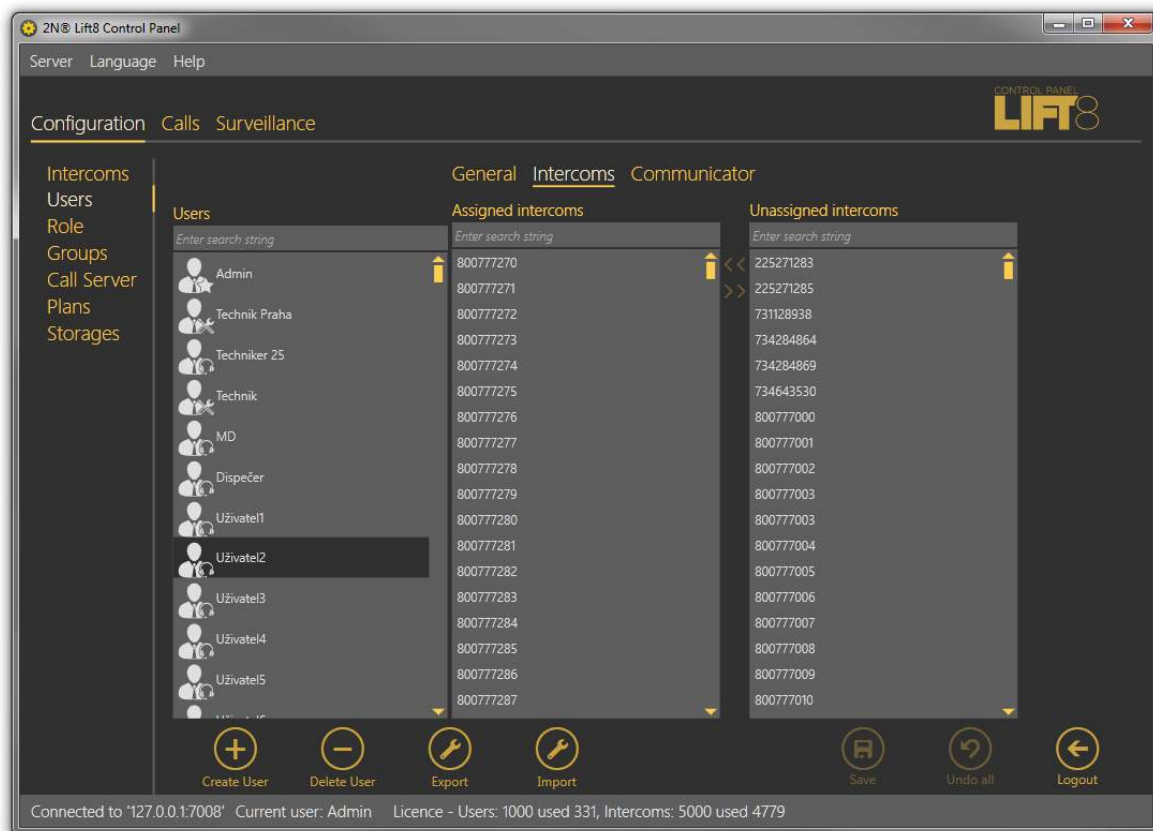
Users – Intercoms Menu

Communicator

Every user authorised to use the 2N® Lift8 Communicator must be assigned a SIP line, i.e. an account registered with a SIP provider or the PBX used for login via the 2N® Lift8 Communicator. When you log in to the application, your line will get registered and you can process the calls coming to your line depending on the 2N® Lift8 configuration. An incoming alarm call will probably dial Dispatcher account number.

Dispatcher can then contact Technician if necessary. Refer to S.8, 2N® Lift8 Communicator, for details on these functions. Set the following SIP line parameters in the **Communicator** menu: SIP server and Registrar server, i.e. the server via which the SIP client will register and calls will be made. Enter the IP address/domain of the SIP Proxy server: port 5060 is used by default. If your provider uses a different port, add this port to the Domain parameter behind a colon as shown in the figure below. Set the Domain to differentiate Proxies within a PBX, Username and provide/PBX SIP account Password. Define how often the account shall register with the SIP Proxy in

the Registration expires parameter. Find the Local SIP port in the extended Stack settings, which is generated automatically by default but can be changed easily. Specify the protocol type to be used for packet transmission in the SIP transport: UDP, TCP or TLS. Select the RTP secure mode: Disabled means that the RTP stream will never be encrypted and SIP communication will only be secured. If you choose Optional, the RTP stream will be encrypted only if the opponent, i.e. the SIP Proxy server, requires so. Select Mandatory to make RTP transmissions secure every time. Click Save to confirm the settings.
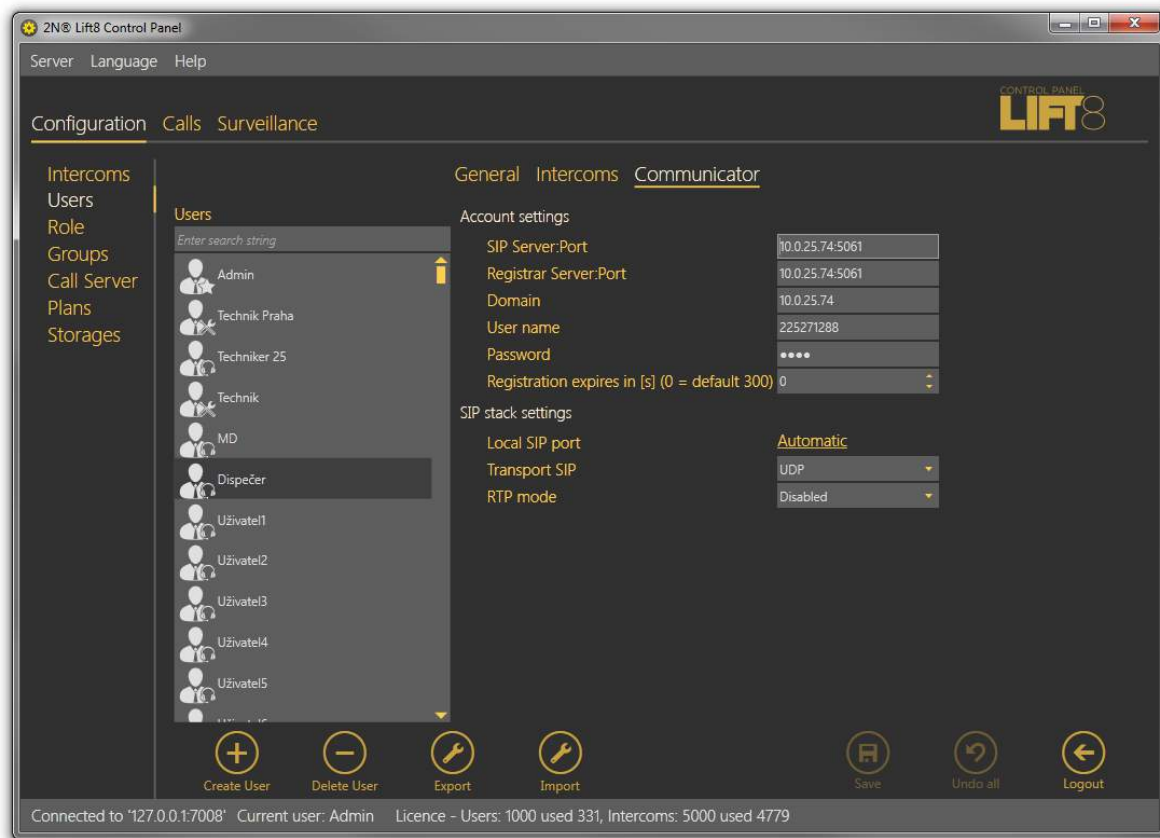
Users – Communicator Menu

> ⚠ **Caution**
>
> - Make sure that the SIP line is configured correctly to register your SIP line and log in to the 2N® Lift8 Communicator application.
>
> - Contact your network administrator for the SIP line settings.

2N

> **⊘ Important warning - Upgrade System from ver. 1.5.x to ver. 1.6.x**
>
> If you have upgraded an existing database instead of installing a new version, the line settings will not work after upgrade! It is because essential function and configuration changes have been made since the last version and the database could not be transferred completely due to some differences. Thus, modify the configuration as follows to make the system work:
>
> - Keep the Username and Password as they can be transferred correctly.
> - Copy the Domain value from version 1.5 into two new parameters: SIP Server and Registrar server.
> - Modify the Domain parameter making sure that it does not include : a port and includes just address or domain name.
> - Set the Registration expiry and Time limit parameters as necessary.
> - Activate the line you have just configured.
> - Save the new settings.
>
> After such modification, you will be able to log in via the 2N$^®$ Lift8 Communicator and process calls in a standard manner.

Roles

The **Roles** menu specifies the user login types. The roles define the user rights in the **2N**$^®$ **Lift8** system. Three roles are available by default: Administrator, Technician and Dispatcher. These roles cannot be removed or edited. Click Create role to create a new role and assign access to the functions. See the table below for function details. Click Delete to remove a role. If a role disables a user to view or configure a menu, the menu will not be displayed to the user.
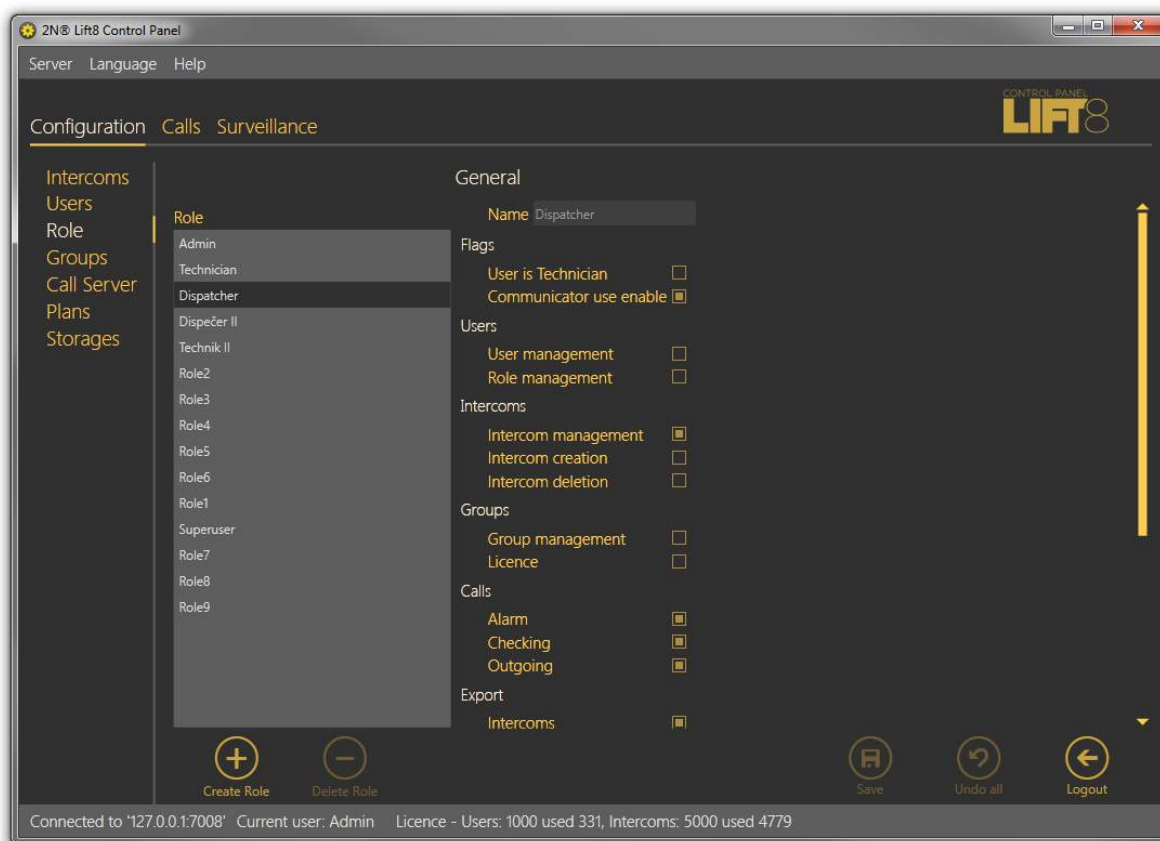
Roles Menu

> ⚠️ **Caution**
>
> - If you are editing (updating) rights for an existing role, the user concerned will be logged out when the new parameters have been saved. You will be informed of this by a dialogue window with confirmation.

Parameter name	Meaning
Authorisation	
User is Technician	The user is included as Technician in the database and its assignment to the intercom in the 2N® Lift8 Communicator is displayed.

Parameter name	Meaning
Allowed to use Communicator	The user has access to the SIP line settings and may join the 2N® **Lift8 Communicator** application.
Users	
User administration	Helps create, delete and edit all users.
Role administration	Helps create, delete and administer user roles.
Intercoms	
Intercom administration	Helps administer intercom databases.
Intercom creation	Helps create a new intercom.
Intercom function display	Activates functional/non-functional intercom display.
Groups	
Group administration	Helps create, delete and edit user and intercom groups.
License	Allows assigning licenses to groups.
Calls	
Alarm	Displays the intercom alarm call database.
Check	Displays the intercom check call database.
Outgoing	Displays the dispatcher outgoing call database.
Export	
Intercom export	Helps export the intercom table.
User export	Helps export the user table.
Call export	Helps export the call table.

| Parameter name	Meaning
Import	
Intercom import	Helps import the intercom table.
User import	Helps import the user table.
Surveillance	
Global map	Displays the Surveillance menu.
Others	
Call Server	Makes Call Server settings accessible to the user.
Plans	Makes plan list and settings accessible to the user.
Storages	Makes server storage creation accessible to the user.
Email server	Makes Email server settings and management accessible to the user.

Groups

The **Groups** menu helps you define intercom groups for easier configuration of multiple objects and separation of lift administering firms. The first option helps you configure all intercoms assigned to one group (in one building, e.g.) at one time. The other option helps you manage multiple companies on one server as separate groups. Administrator assigns intercoms and users to each group to be administered by the appropriate group Superusers.

> ⊘ **Tip**
>
>   - You can combine the two options to a certain extent. However, remember that the main structure users cannot see the group users and that there are some security risks due to extended user rights.
>
>   - If you define groups with own Administrator - Superuser rights, we recommend that the Administrators - Superusers themselves configure the users to be administered to eliminate potential problems in the future.

I ntercoms and users can only be added to a group by Administrator or Superuser. Now let us describe what you can configure in the Groups menu. There is a list of all objects called Intercom groups to the left. To find a group, enter the user name (or a sequence of characters) into the search row. The function requires no confirmation and starts searching the database the moment you enter the first character. Add more characters to refine the filter until you find the required group. Click Create group to create a new group and add it to the end of the list. Click Delete to remove a selected group. Click Save to confirm the settings.
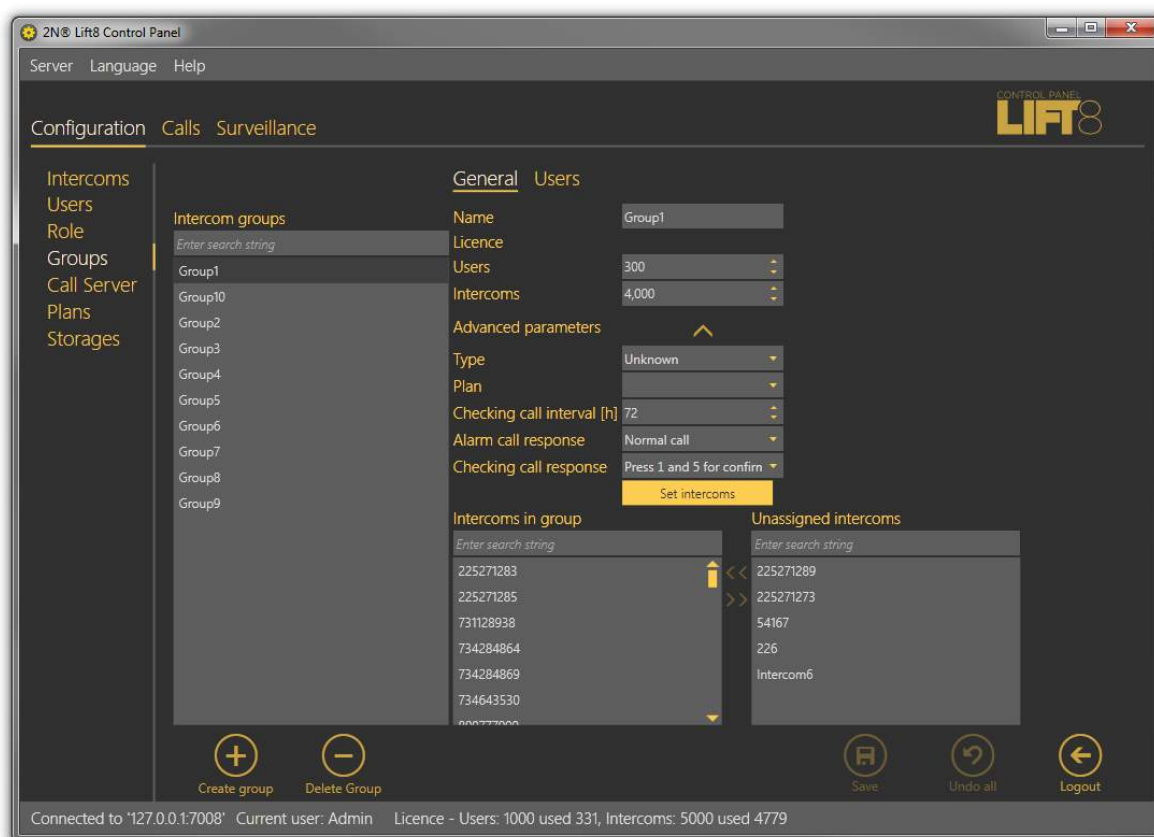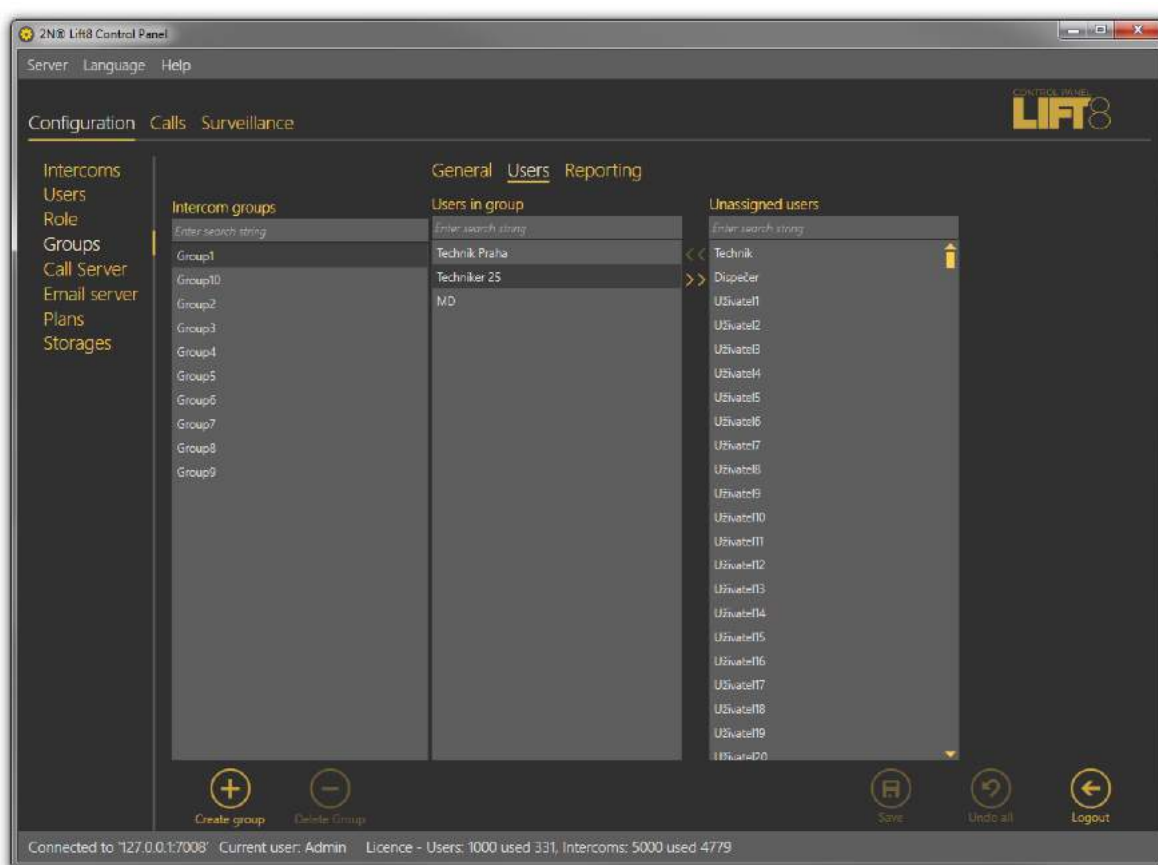
Groups Menu – General

General – Administrator

Rename a group in the Name parameter in the **Groups – General** menu. Specify the maximum count of licensed objects (intercoms and users) in the Licence parameter to be assigned to a group. Administrator finds the current use of licensed objects in the application status row. The other users cannot view this setting. Furthermore, you can assign intercoms to a group. You can see a list of all created intercoms not assigned to the currently displayed group to the right and a list of all intercoms assigned to the group to the left. You can use the searching function like in the group list. Select an intercom and click the appropriate arrow to move the intercom to/from a group. You can use multiselect for selection. Furthermore, the menu provides an extended setting, which helps you assign all the parameters at once to the given intercom group. Define the Type of device: 2N$^{®}$ **LiftNet**, 2N$^{®}$ **SingleTalk**, 2N$^{®}$ **Lift8** or **Unknown**; refer to the Intercom Creation subsection above for details. Plan is the next parameter: enter the Address of the building where the intercom group is installed and intercom positions on the plan. This information will then be displayed on the map for Technicians or Dispatchers to repair the device or navigate the rescue team respectively. The Check call period defines the timeout for the intercom to check-call the 2N$^{®}$ **Lift8 Server**. The intercom can call the 2N$^{®}$ **Lift8 Server** any time within this timeout, but having exceeded this value, it will be marked as defective. The non-functional status will be removed when another check or alarm call arrives in the server from this intercom. The default value of this parameter is 72 hours. The Alarm call response specifies the type of alarm call processing: **Normal call**, **CPC Antenna**, **CPC KONE** and **P100.** Similarly, the Check call response specifies the type of check call processing: **Reject**, **Accept and send 5**, **Confirm with 1 a 5**, **CPC Antenna**, **CPC KONE** and **P100.** Click Set intercoms to confirm the settings and execute changes in all the intercoms assigned to the selected group.

⊘ **Tip**

- Administrator is the only user authorised to set the licence parameters!
- Advanced settings are not required. You can configure all or no parameters at your discretion.
- The advanced parameter list is empty by default. If a parameter is identically set for all the intercoms, the parameter value will be displayed. If not, the field will remain empty.


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Users – Administrator

The **Users** menu provides a list of users that are authorised to administer and monitor the intercoms in a group. Administrator may administer all the system intercoms, users and roles regardless of group assignment. All the users authorised for the selected group are displayed in the list of Assigned users and next to the intercoms. To add a user, select the user in the Not assigned users and move it to the Assigned users with the arrow. To delete a user, select the user in the Assigned users and move it to the Not assigned users with the arrow key. To search a user, enter the string to be searched into the field above the list and see the filtration result in the associated list immediately. Click Save to save the new settings.

Groups – Users Menu

Reports – Administrator

The menu enables report sending. Selected users can send messages above the framework of general statistics sent by the Email server. The reports always refer to the group to which they are assigned and are only sent to the recipients included in the list. Make sure that a correct email is defined for every user on the list in the Users - Basic menu to allow for proper report sending.
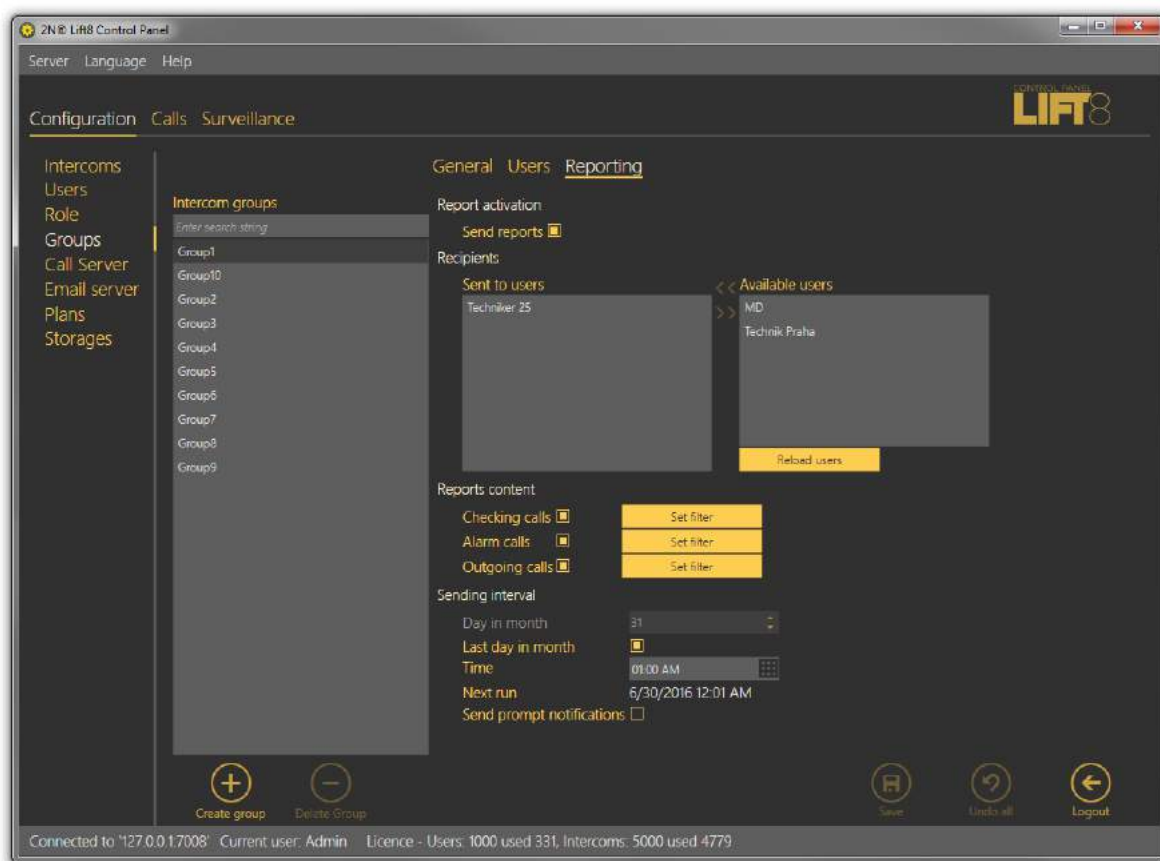
Groups - Reports Menu

Let us describe the menu controls now. Select Send reports in the Report activation section to enable report sending for the given group. Make sure that the outgoing server is configured in the Email server menu to make the function work properly. Otherwise, the reports will be set but not sent automatically. When reporting is enabled, the appropriate settings will be activated. Select a recipient from the list of Available users in the Recipients section and use the arrow to move it to the Send to users list. Remove the user analogously. The Available users only display the users that are assigned to the given group and whose email addresses are completed. Specify the reports to be sent in the Reports content section using the checkbox. Define the content of the email to be sent in the Email server – Report settings menu. Define the Sending interval for the reports: Next run will generate the time of your next report sending. Enable prompt notifications using the last checkbox to send information on a new situation immediately.

Superuser

Superuser is a system user that is assigned some Administrator rights. Superuser is assigned to a group, obeys the group setting rules and applies its rights only within the group assigned to it, thus substituting the Administrator function for the given group. Superuser is not allowed to create or delete a group, but may rename a group and add users and intercoms. Superuser never gets an intercom to a higher level without group assignment. This may be done by Administrator only. Moreover, Superuser is not allowed to set licences, but may monitor licences and ask Administrator for increasing licensed objects if necessary. Superuser can also add and edit plans in the group(s) assigned to it by Administrator.

> ⚠️ **Caution**
>
> - Remember that Superuser assigned to no group has similar rights as Administrator in the whole database upon login. Therefore, be very careful while assigning groups to avoid security risk or data loss.

> ⊘ **Tip**
>
> - Adding a user or an intercom, Superuser is always asked about its group assignment. If Superuser is assigned to one group, the new object will be added to this group automatically. If Superuser is assigned more groups than one, a list of assigned groups will be displayed. Superuser sets the object name and selects a group for the object.
> - Group users may only view the objects (users, intercoms, plans) as specified by their rights.
> - Superuser cannot view the Local plans added by Admin. It can only view the plans assigned to its group added either by Superuser or any other user in the given group. Superuser cannot set and/or change any plan that is not assigned to the group. If, however, Administrator adds a plan, any user can display the plan in the intercom menu.
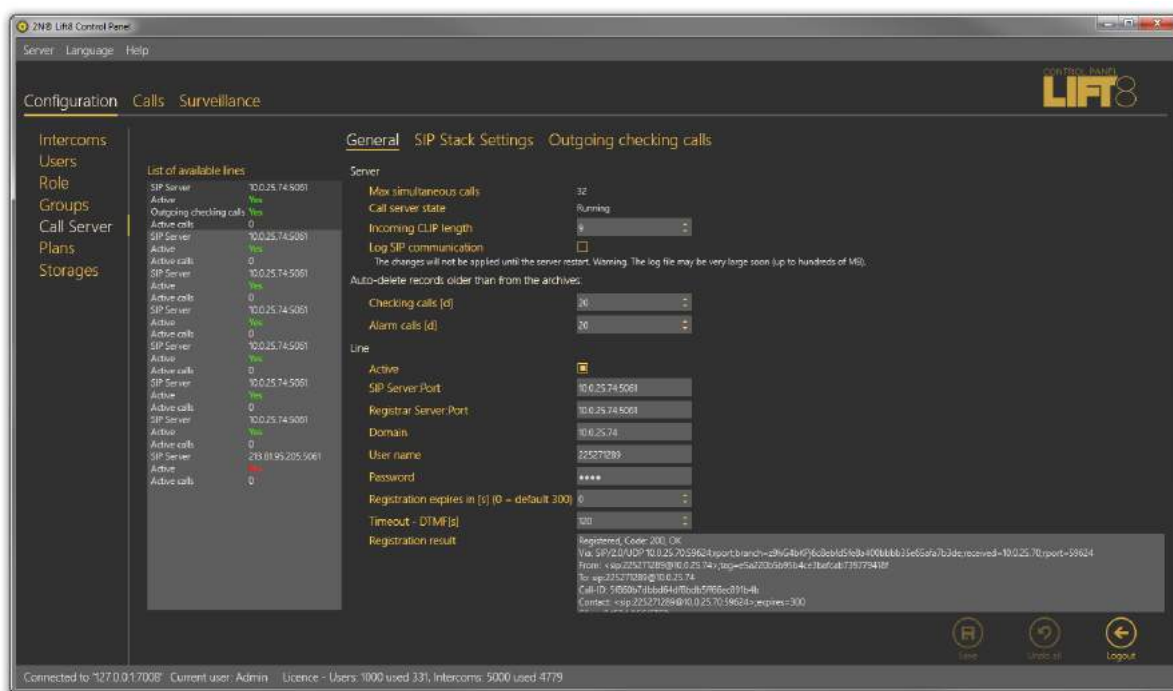
Call Server

The **Call server** helps you configure the SIP lines for the **CU** check calls. Configure up to 8 independent telephone lines. The first line is also intended for active check calls and can be configured via extended settings. Enter the SIP line parameters correctly

for a successful SIP Proxy server registration. Make sure that the lines and servers are configured correctly to make the Call server work properly. If you use VoIP, obtain the SIP line settings from your VoIP provider. If you have a SIP Proxy server of your own, contact your network administrator for correct settings.

> ⚠ **Caution**
>
> - Set the SIP lines in the 2N® **Lift8 Server!** Use the settings of the PC on which the server is installed instead of your PC settings. Your PC settings will be applied only if the server runs locally.

The List of available lines displays all of the 8 lines to be configured. Each line includes identification and state parameters: Domain specifies the domain with which the line is registered, Active shows whether the line is currently on/off and Active calls counts the current calls via the line. If Active calls is zero, there is no active incoming /outgoing call on the line. The Active check call function is enabled for the first line.

Call Server Menu

General

The **General** menu consists of two parts: **Server** for all the lines and **Line**. Server provides the current SIP server state information: Maximum simultaneous calls displays the maximum count of check calls to be processed by the server at the same

time. If more calls than as defined in the parameter arrives in the server at one moment, all the excess calls will be rejected. Call server state signals the current state of the server: Starting, Running, Waiting for reconfiguration and Error.

> ⚠️ **Caution**
>
> - If in a state other than **Running**, the Call Server rejects all calls coming to it, i.e. does not receive or process any check calls.

The Incoming clip length defines the typical length of incoming caller numbers. A longer number will be cut off to the set value before being saved into the database. Select Enable SIP communication logging to enable the trace which captures all server SIP communication and helps diagnose connection troubles. The parameter enable creates a pjsip.log file in the log directory for the logs captured. Enable the parameter to restart the server.

> ⚠️ **Caution**
>
> - Caution! Do not keep SIP communication logging enabled for too long to avoid extreme log file sizes (up to hundreds of MB) due to high frequency of incoming calls. Use this function for error diagnostics only.

Auto-Delete of Records from Archive Older Than

These two parameters monitor the age of the check and alarm call database records and delete the oldest ones to avoid an extreme growth of the database and rapid slowdown of the application and server operation. Set the parameters in days. The parameters work as follows.

An incoming check/alarm call is added to the primary call database, where the last three calls from each intercom are always stored. When another (fourth) call comes in, the oldest call will be moved automatically to the secondary call database for a user-defined period of time. When the user-defined interval elapses, the call will be deleted from the secondary database and stored nowhere on the server. This happens when the intercom works normally, the above-mentioned call is followed by another check call and the old record need not be stored any longer. If, however, no more calls come from the intercom, the last call will not be deleted, but stored as evidence of the last check call attempt. In practice, the database always stores three calls at least from each intercom phone number if accomplished. If the intercom never called more than once, there will be just one call in the database.

> **⊘ Tip**
>
> - Click Load calls from archive in the Calls menu to load the secondary call database.

> **⚠ Warning**
>
> - If you set the parameters to the minimum value (3 days), all calls will be deleted irretrievably after being moved to the secondary database.

Line

Complete the line parameters, select Active and save the new settings to activate a new SIP line. This activates the Registration result and sends the registration packet. The registration result is then displayed and the identification in the list changes from No to Yes. See below for details.

> **ⓘ Note**
>
> - Enter **SIP Server, Registrar server** and **Username** at least to configure a valid SIP line.

Select/unselect Active to activate/deactivate the selected line. Enter the SIP Proxy address into the SIP Server:Port field. The port is optional. If you set just the Proxy address, the default port 5060 is used. If you choose another port, add this port behind a colon. Enter the SIP Proxy address for login into the Registrar server parameter. The port is optional. If you set just the Proxy address, the default port 5060 is used. If you choose another port, add this port behind a colon. Domain specifies Proxies within one SIP server. Unless specified otherwise by your provider, the domain will be SIP or Registrar server, yet without a port. See the figure above. Complete the Username for your SIP Proxy server authentication and Password if the Proxy requires so. Registration expires after is an optional parameter. The default value is 300 s, but some servers may require a different value, which will not be changed. Set the Timeout – DTMF in seconds: 120 s is the default value. If no DTMF arrives within this timeout after answer, the call will be terminated. Registration result displays the SIP Proxy registration result. If unsuccessful. the registration packet will be resent. This parameter is updated automatically. When you click Save for

confirmation, the registration packet will be sent to the server immediately. If everything is OK, the following message header will be displayed in the Registration result: "Registered, Code: 200, OK". To deactivate an active line, select the line and unselect the Active checkbox. Click Save to confirm the setting.

> ⊘ **Tip**
>
>   - Contact your network administrator or VoIP provider for correct SIP line settings.
>   - If registration fails, you will find the error code (SIP error message) in the Registration result. If your registration data are correct, contact your network administrator.

> ⊘ **Important warning - Upgrade System from ver. 1.5.x to ver. 1.6.x**
>
> If you have upgraded an existing database instead of installing a new version, the call server will not work after upgrade! It is because essential function and configuration changes have been made since the last version and the database could not be transferred completely due to some differences. Thus, modify the configuration as follows to make the system work:
>
>   - Keep the Username and Password as they can be transferred correctly.
>   - Copy the Domain value from version 1.5 into two new parameters: SIP Server and Registrar server.
>   - Modify the Domain parameter making sure that it does not include : a port and includes just address or domain name.
>   - Set the Registration expiry and Time limit parameters as necessary.
>   - Activate the line you have just configured.
>   - Save the new settings.
>
> Go on like this with all the other lines. After such modification, the call server will start processing calls in a standard manner.

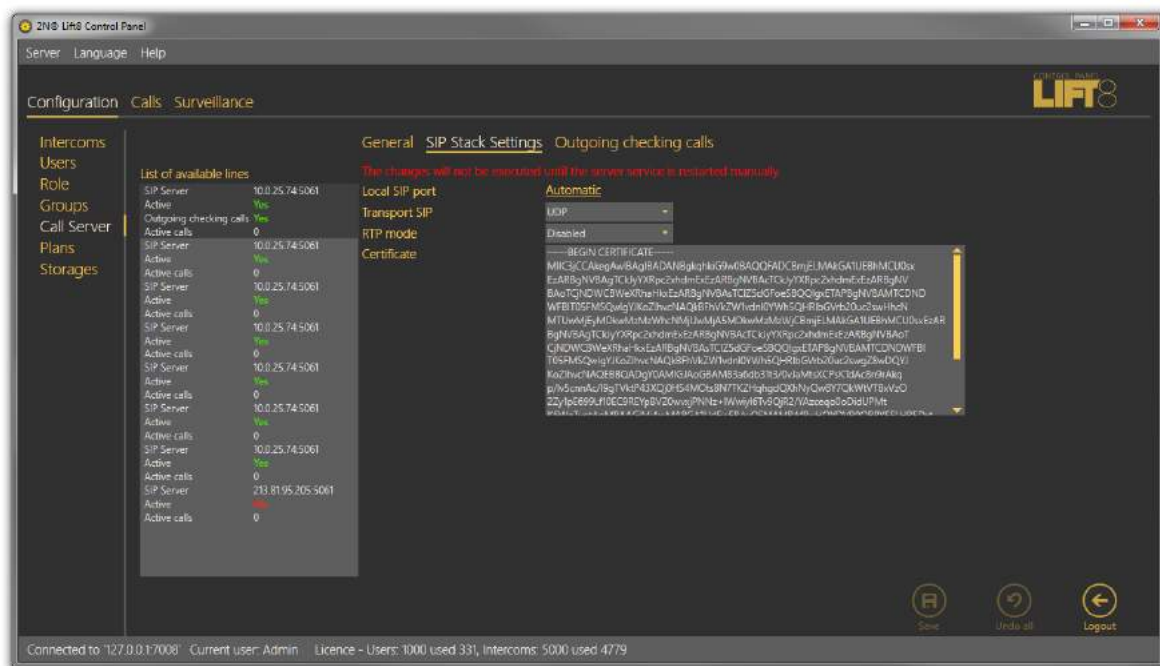# SIP Stack Settings

> ⚠️ **Caution**
>
> - The SIP stack settings are common for all the server lines and all the 2N®
>   **Lift8 Communicator** users. If TLS is enabled for dispatcher lines too, the application downloads the current security certificate from the server.
> - Remember that the lines that do not support TLS communication cannot get registered after TLS is enabled!

Set the SSL/TLS SIP communication and SRTP voice transmission parameters in this menu. These cryptographic protocols provide secure Internet communication and require a server-generated certificate to be used by clients for data verifications and subsequent encryption. Set the Local SIP port, which is generated automatically by default but can be changed easily. Specify the protocol type to be used for packet transmission in the SIP transport: UDP, TCP or TLS. Select the RTP secure mode: Disabled means that the RTP stream will never be encrypted and SIP communication will only be secured. If you choose Optional, the RTP stream will be encrypted only if the opponent, i.e. the SIP Proxy server, requires so. Select Mandatory to make RTP transmissions secure every time.

> ⓘ **Note**
>
> - Caution! If your SIP Proxy does not support the secured RTP transmission, no connection can be established in the Mandatory mode. Contact your provider or network administrator for configuration details.

Enter the security certificate obtained from your VoIP provider into the Certificate field. It is a certificate of the server, i.er. the device on which the SIP Proxy server is running. If you do not have a security certificate, ask your VoIP provider or LAN administrator for one.

Call Server / SIP Stack Settings Menu

> ⚠ **Warning**
>
> - All changes made in this menu will not be applied until the server is restarted manually! It is necessary to read the SSL libraries, which are not needed in common operations.
>
> - Restart the server in the Services system menu or via the 2N® Lift8 l8-config.exe application. Refer to Subs. 6.2. for function details.

Outgoing Checking Calls

This menu is devoted to outgoing check calls and their settings. The following parameters are defined here: Unsuccessful call repeat count defines the count of calls to the intercom before an error is detected. Repeat call defines the interval between the attempts. Call duration sets the maximum call timeout after which the Call server hangs up automatically. You can define an Unsuccessful call message to be sent in case the intercom is inaccessible and marked as defective. You can insert the string % TEL_NUM in the message to provide the inaccessible intercom contact number.

Complete the Message recipient number including the correct dial-in if necessary. Maximum count of simultaneous outgoing calls specifies the count of calls to be processed by the server at the same time. Respect the capacity of your outgoing gateway while completing this parameter.
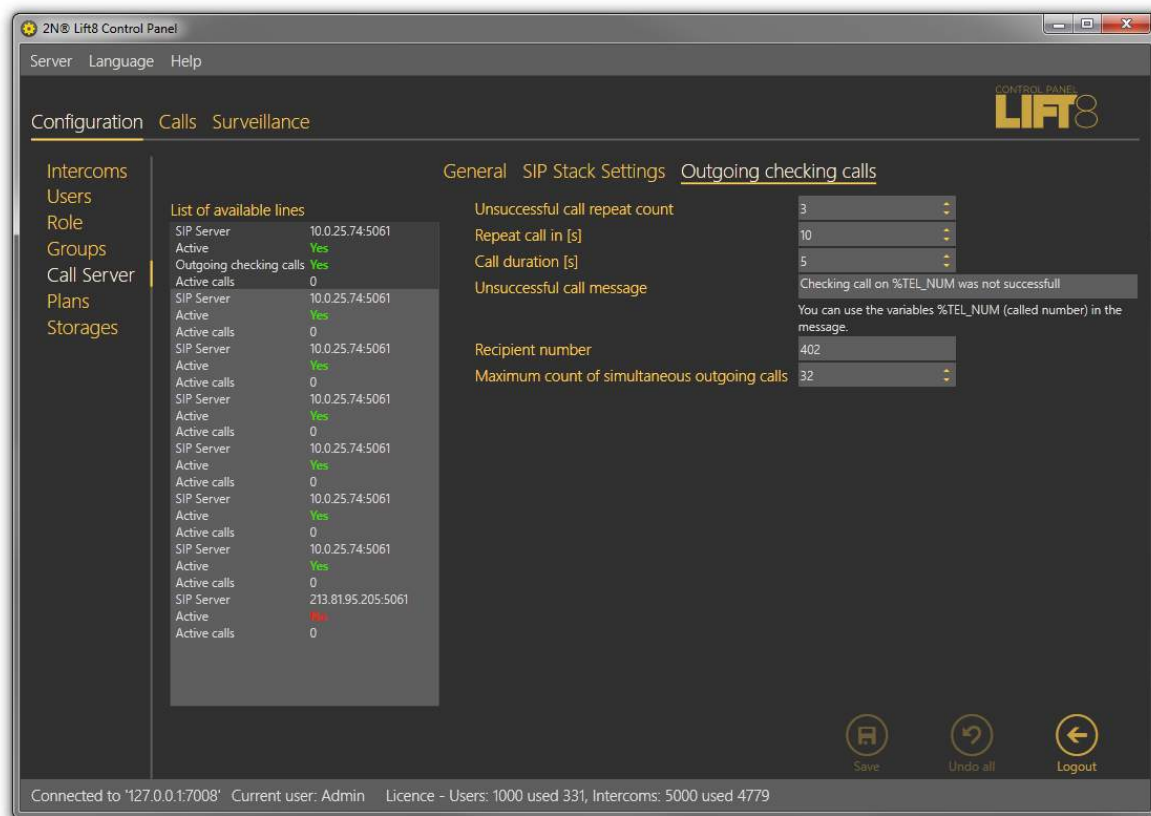
Outgoing Checking Calls Menu

> ⊘ **Tip**
>
> - If your outgoing gateway has 4 channels, make sure that the Maximum amount of simultaneous outgoing calls does not exceed 4. Otherwise, the server would try to make more calls than the gateway is able to process and the excess calls would be rejected. The server would thus be marked as non-functional after several rejections.

Email Server

2N® Lift8 Server is equipped with an email client that provides connection to the SMTP server and helps send reports on intercom states. The menu has two parts: SMTP Server Settings, which helps you set the report sending account, and Report Settings for detailed report settings.

SMTP Server Settings

Address and Port are the first parameters of the menu. Set any SMTP server that supports insecure connection on port 25 as the Email server is not intended for encrypted SSL communication. Then complete the Security items – User name and Password for authentication – as communicated to you by your network administrator. Select the required functions in the Report activation section. Enable periodic reports to make the server generate and send a report automatically at a defined time on a selected day. Enable sending of prompt notifications to watch all the intercoms and send error state information immediately regardless of the periodic report interval. Email sending diagnostics helps you define a text and test email recipient of your own to test the correct client setting for SMTP email sending.
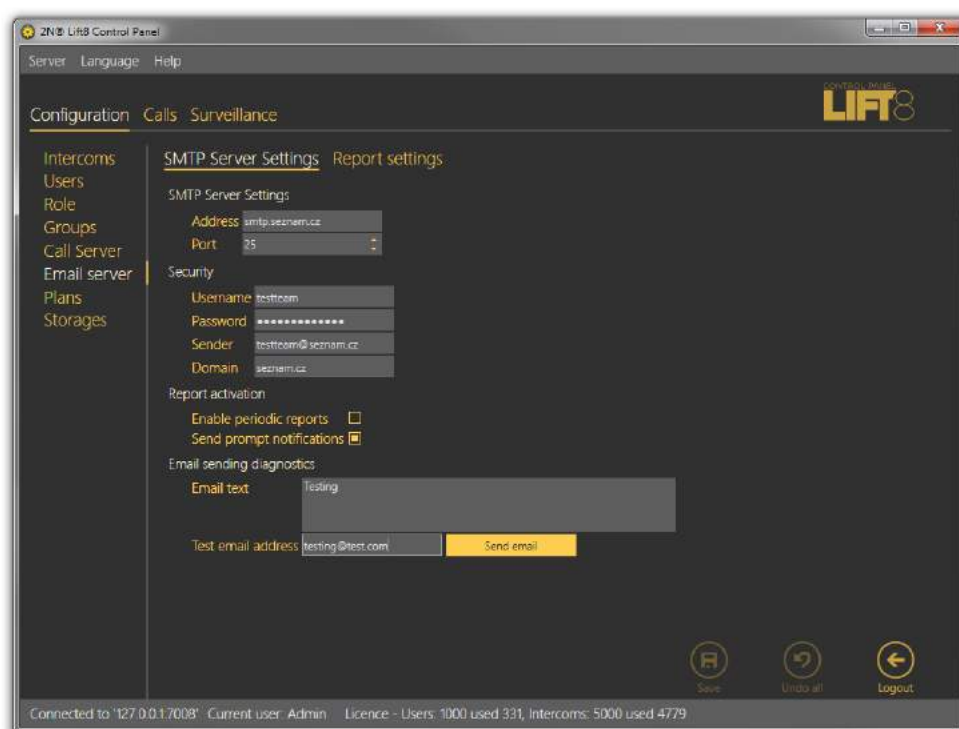
Email Server – SMTP Server Settings Menu

Report Settings

Define the content of the email reports to be sent. Four types of notifications are pre-defined here: checking, alarm and outgoing calls and prompt notifications. Set the contents of the three report types as follows: Select the report recipient email address or set groups on the provider's SMTP server for group/bulk sending. Then define the email subject and text (body). You can use a string to be replaced with the current intercom count or date. Refer to the list of supported strings below the report body. At present, the following strings are supported:

%DATE	Date and time
%INTERCOMS	Intercom count
%CHECKINGCALLS	Checking call count
%ALARMCALLS	Alarm call count
%OUTGCALLS	Outgoing call count

Set a filter for each report type: select the calls you are interested in (error or missed calls, for example). The filters are the same as in the Calls menu. If no filter is set, all calls are displayed. Enable prompt notifications and set the text of the report to be sent to distinguish prompt notifications from periodic reports. Prompt notifications are automatically sent to the email address completed for the given situation whenever a change occurs.
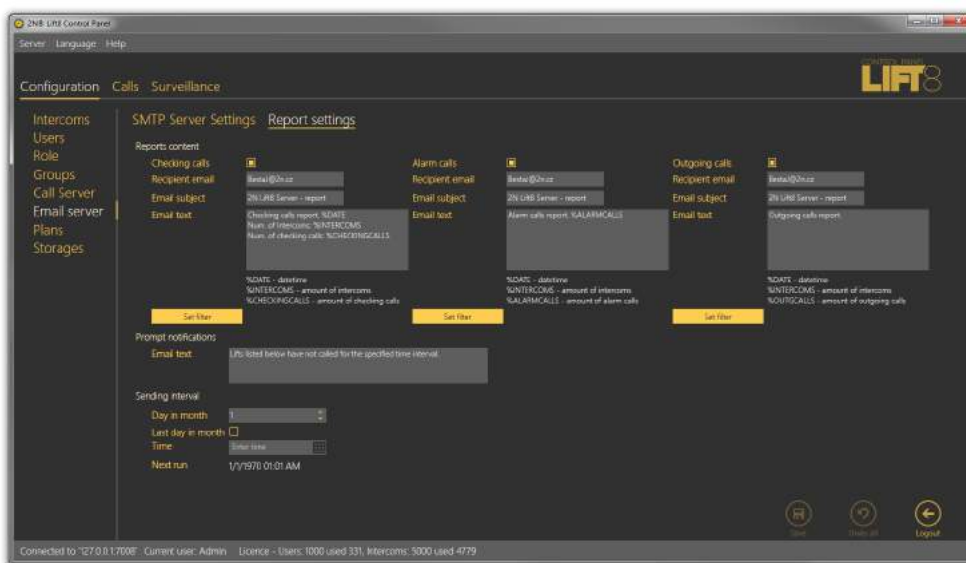
Email Server – Report Settings Menu

> ### ⓘ Note
>
> - Select Enable periodic reports and Send prompt notifications in the SMTP Server settings to enable sending of periodic reports and prompt notifications.

Define the Sending interval for periodic reports. Set a day in the month and time for the report to be generated and sent. Select the Last day in month to generate a report on the last day of the month regardless of the count of month days and define the hour.

Plans

The **Plans** menu helps you manage plans of the buildings in which the intercoms are installed. Assign the plans to the selected intercom and mark the intercom position in the Intercoms menu. This information will then be displayed to the 2N$^®$ **Lift8 Communicator** operators.
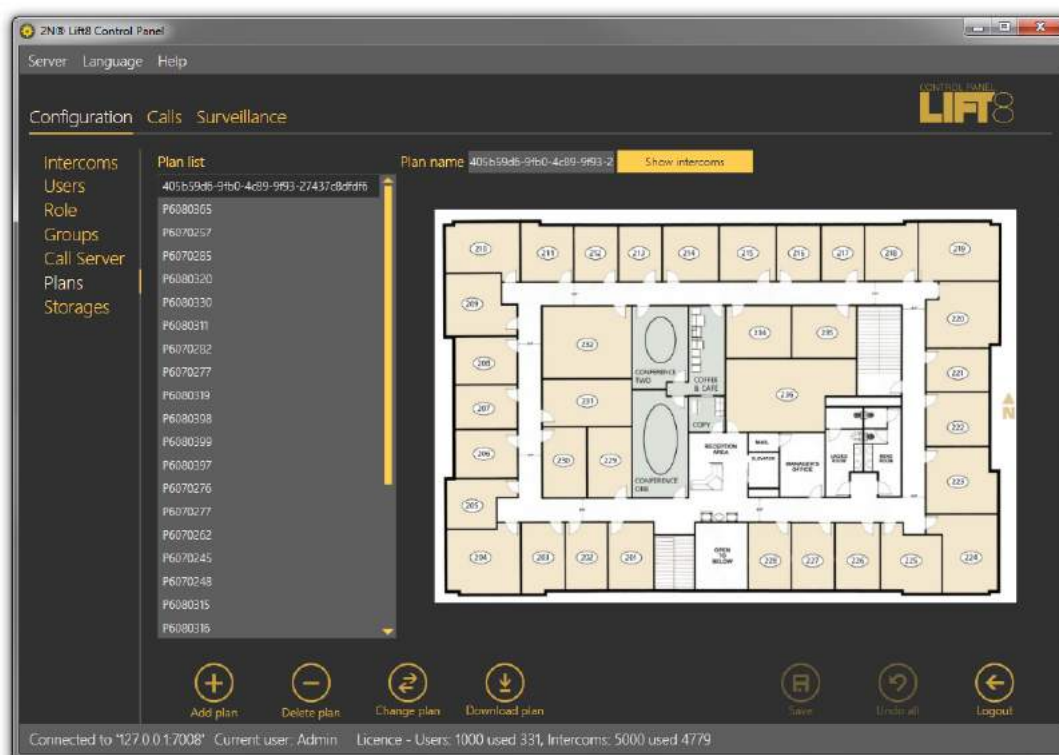
Plans Menu

Click Add plan to open a file browser and select the file to be added. Refer to the right part of the screen for the figure to be imported. Click Save to confirm the new plan.

> ✓ **Tip**
>
> - All the saved plans are stored in the 2N® **Lift8 Server** and accessible to all the logged-in users.

> ⚠ **Caution**
>
> - If, contrary to the figure, information is displayed instead of the plan list, check the plan storage on the server. If the storage is not configured, set its parameters in the Storage menu.
> - If the Storage menu is unavailable, enhance the user rights.

> ⓘ **Note**
>
> - Insert figures in the PNG, JPG or BMP format.
> - The file browser is configured for PNG by default. If you cannot see the figures in the folder, change the file format (typically, in the right-hand upper corner next to the file name).

Click on the plan to display the preview. Click Show intercoms next to the Plan name to view all the configured intercoms as an intercom symbol plus the phone number; see the figure above. Click Remove plan to delete a plan. Click Change plan to update a plan while keeping the plan name and the current intercom structure. Select Download plan to save the plan without the intercom positions onto a local disk.

> ✓ **Tip**
>
> - Plan changing is useful when you need to update a plan after reconstruction and interior changes while keeping the existing intercom structure in the building.

> ⚠ **Caution – exceeded maximum storage size**
>
> - Plans are saved sequentially. The error displayed always relates to the currently saved error-state plan, The other plans are queued for saving.
> - When the error is solved (by deleting of the 'defective' plan, e.g.), saving can go on as the Save button keeps active.

Storage

The **Storage** menu helps you configure all the storages necessary for the operation of the 2N® Lift8 system services. You can map the storage folders on a local disc, network discs and such additional memories as USB discs and memory cards.
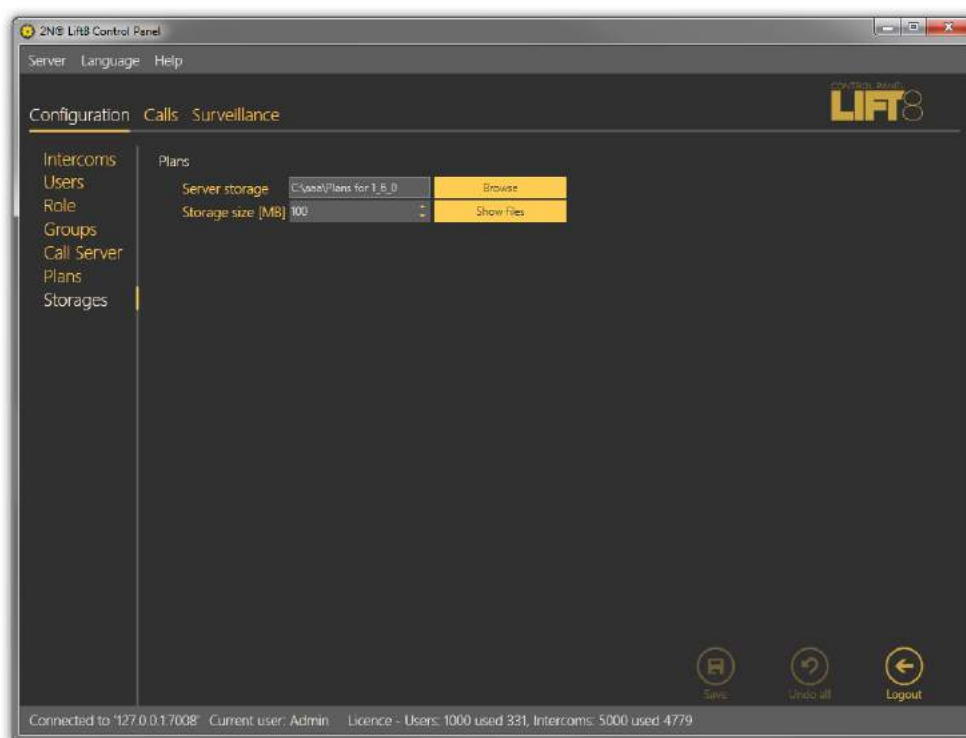
Storage Menu

You can map the path for plans: click Browse at the given storage to select the path to the folder to be used for storage. You can also create a new folder in the path selecting window. Now set the maximum Storage size (data space) within the whole logic storage (disc C, e.g.). Click Save for confirmation. From now on the storage will be active and used for data storing. Click Show files to view the files and plans stored on the disc. Their names correspond with the server database key. You can also see the file size and delete any file in this window.

> ✅ **Tip**
>
> - The file name is encoded to eliminate building identification for security reasons.
> - Press F2 to rename a new folder.

> ⚠️ **Caution**
>
> - When the storage is full, no new plans can be added. Delete the old plans or set a higher storage capacity.

Calls

Calls is the other part of the main menu. This menu contains tables with check and alarm calls of all the intercoms and dispatcher and technician outgoing calls. The call history starts with the first server installation and the whole call database is always read, which facilitates call search. You can also use filtration to find the required call. Set a filter for each column and combine the filters to find the required data as soon as possible. Click the funnel symbol in the selected column to activate the filter. Activation is indicated by a colour change of the funnel symbol; see the figure below.


Left – Inactive Filter, Right – Active Filter

Each column with the funnel symbol includes specific filter settings; see the figure below. The Contains function finds the searched string in all the column items and returns all the occurrences. Enter a text into the string field and click Filter to activate the filter and find all the searched items in the column. Use another filter to make your search more precise and efficient. Having completed filtering, click Delete filter in the used columns to delete all the active filters.

> ✅ **Tip**
>
> - You can also delete the filters via the contact menu displayed by clicking the right mouse button anywhere in the table or using Alt + r .
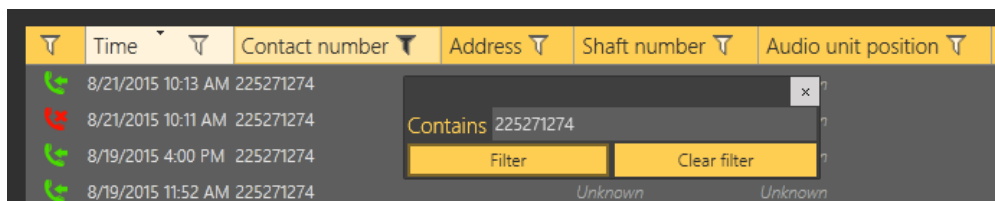
Filtration Setting Result

The first column of icons defines the call states. Column filtration can be used for explanation: choose which call state to filter. This information is available in all the three menus yet with different, specific meanings.
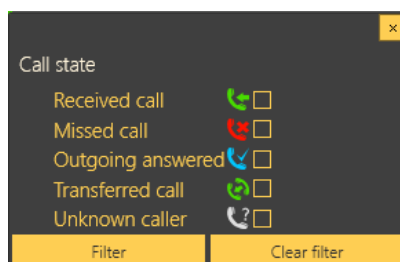

Alarm Call States

The states are described successively. Received call is the first state, which indicates a correctly processed incoming alarm call. The second icon, Missed call, means that the dispatcher failed to answer the call in time for any reason and ringing has been terminated. The Outgoing answered icon means that the dispatcher failed to answer the call in time for any reason and ringing has been terminated. The dispatcher is notified of this fact, calls the lift and gets connected to the alarm-initiating audio unit. This call is then evaluated as a correctly processed alarm call. Transferred call means that the dispatcher transfers a confirmed alarm call to another dispatcher or technician. The last state, Unknown caller, gets displayed whenever a completely unknown number is calling the server, i.e. the number is not included in the server configuration or is CLIR.
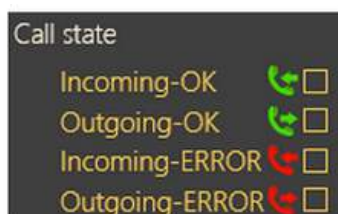

Checking Call States

The first state (top icon) is Incoming – OK, which signals a correctly processed incoming checking call and typically appears for rejected checking calls and checking calls with confirmation or via CPC and P100 whenever the communication is OK and the call is terminated correctly. Outgoing – OK appears for correctly made outgoing checking calls to the intercoms configured. Incoming – ERROR and Outgoing – ERROR mean that an error occurred during the call course and evaluation (CPC/P100 failure, e. g.).
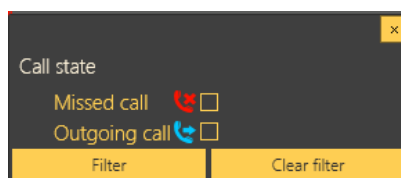

Outgoing Call States

The states are described successively. Missed call means that the dispatcher failed to answer the call in time for any reason and ringing has been terminated. The Outgoing answered icon means that the called person failed to answer the call in time for any reason and ringing has been terminated. The called party then calls the dispatcher itself and the call is evaluated as correctly processed.
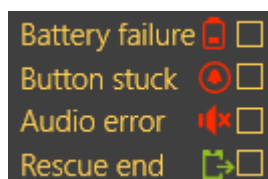
Operational Call States

The states are described successively. The first icon indicates a battery failure and is sent whenever the battery capacity is too low or the batteries are older than 2 years and need periodic replacement. Button stuck means that the Alarm button is jammed due to a mechanical defect or sabotage. Audio error means that the automatic audio unit audio test has failed due to a technical defect or sabotage (vandal damage to the microphone or speaker, e.g.), which disables proper communication with the control room. Rescue end signals that the cause of alarm has been repaired on site and the lift is fully functional again. In that case, the CU ends the rescue mode and calls the server to end the rescue mode too automatically.

The Calls menu is the only menu to include the Pin view button. Push the button to open the call history table in a new window. This allows you to view the call list on one monitor and configure other intercom and user parameters on the other; see the figure below.
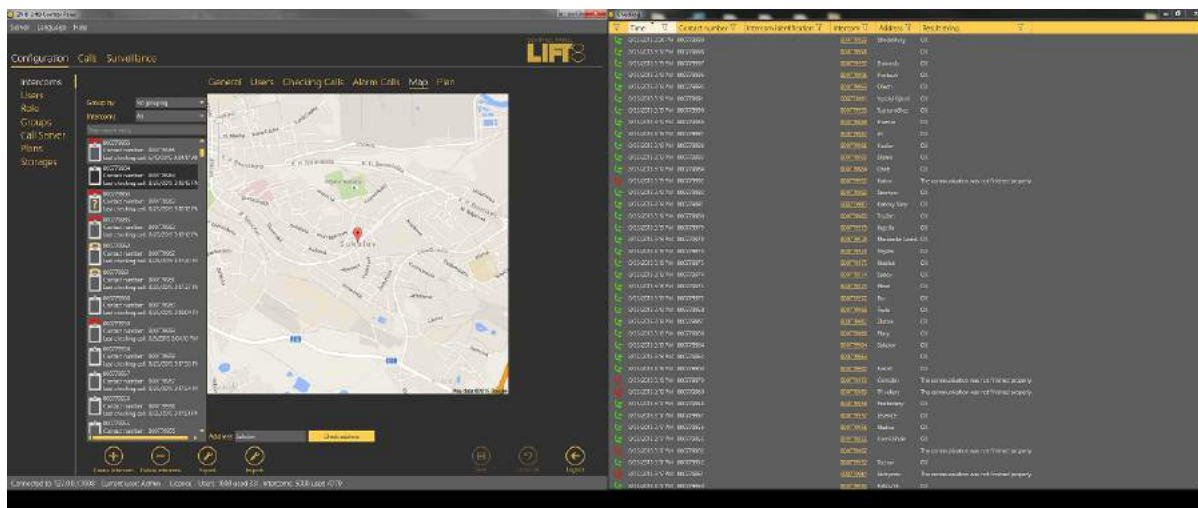
Pin View

Alarm Calls

The **Alarm** calls menu provides a table of all the alarm calls from all configured intercoms received by the **2N® Lift8 Server** from intercom addition until now. Click the filter button at each column to use filtration for call history search. See above for details. The table provides the following information: call state, Timestamp, Contact number, Address, Shaft number, Audio unit position, Intercom identification if CPC /P100 was successfully used, Opponent name and call-processing Agent/Dispatcher name. The last table column Note shows the note entered by the dispatcher during the alarm call. Click Load calls from archive to load the secondary call database as described in the Calls Server subsection above.
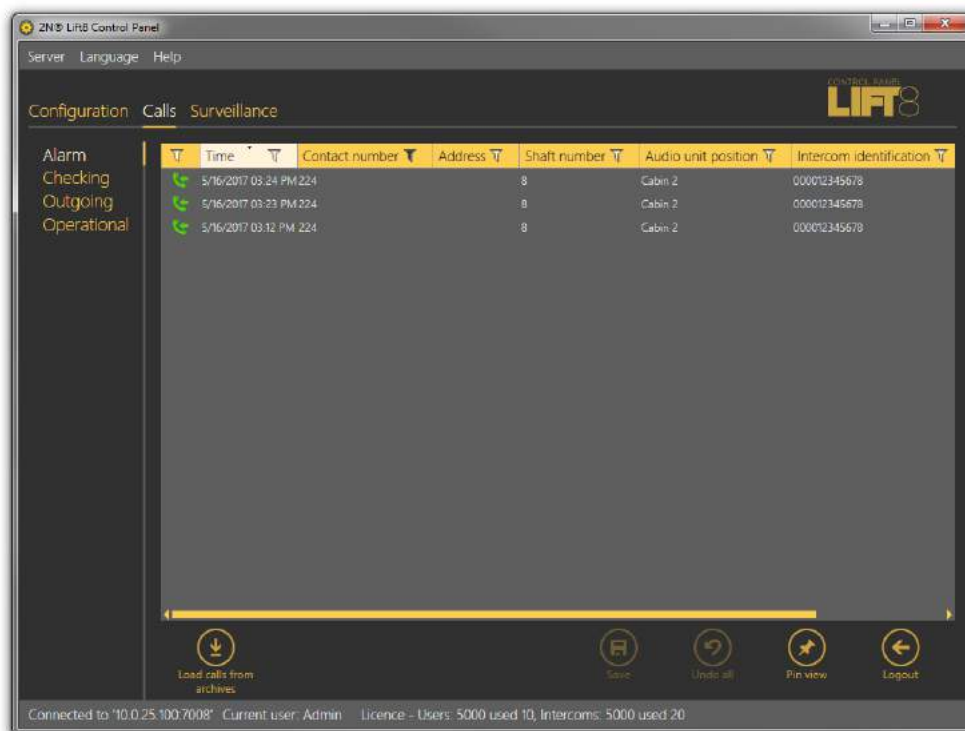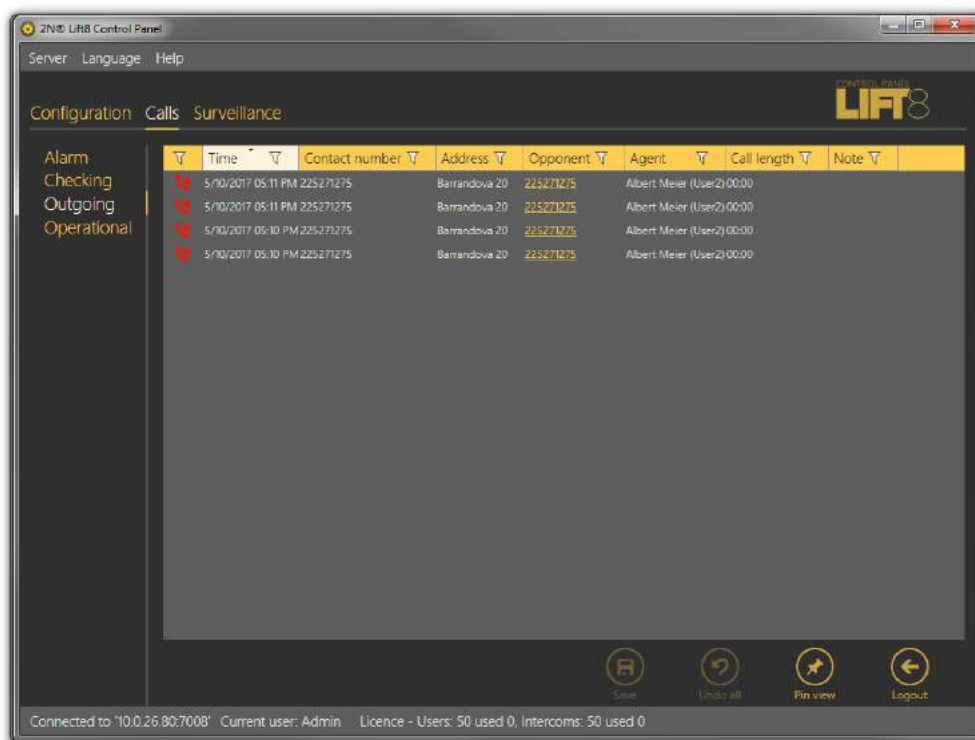
Calls – Alarm Menu

Checking Calls

The **Checking** calls menu provides a table of all the checking calls from all configured intercoms received by the **2N**® **Lift8 Server** from intercom addition until now. Click the filter button at each column to use filtration for call history search. See above for details. The table provides the following information: call state, Timestamp, Contact number of the calling **CU**, Intercom identification if CPC/P100 was successfully used, Intercom name, Address and Result string. See the figure below. Click Load calls from archive to load the secondary call database as described in the Calls Server subsection above.
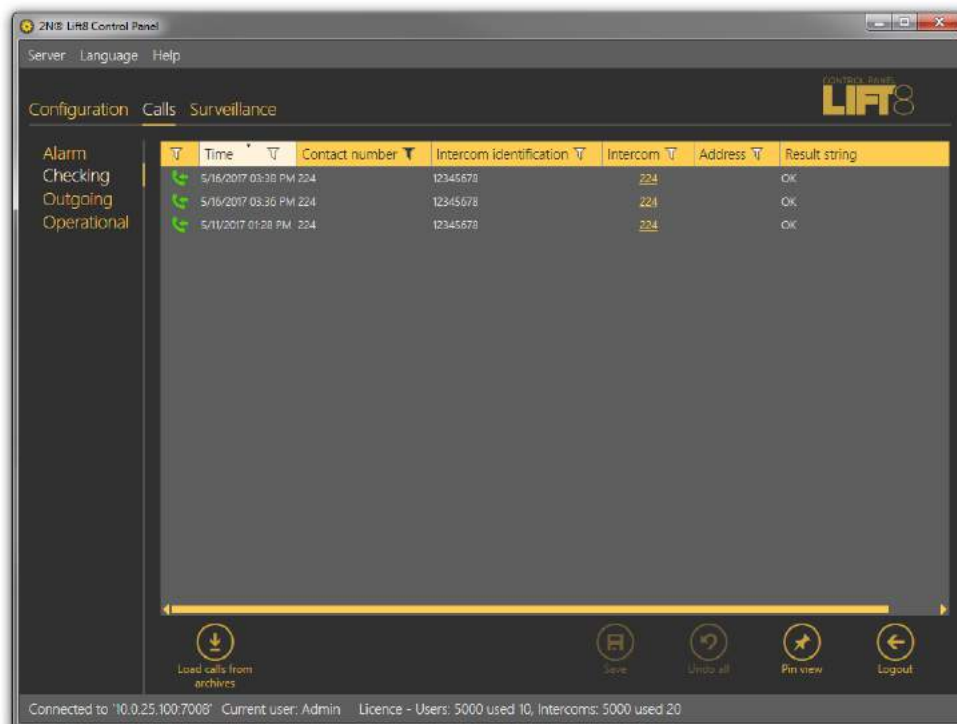
Calls – Checking Menu

Outgoing Calls

The **Outgoing** calls menu provides a table of all the outgoing calls from all users (Technicians and Dispatchers) received by the **2N® Lift8 Server** if made via the **2N® Lift8 Communicator**. Click the filter button at each column to use filtration for call history search. See above for details. The table provides the following information: call state, Timestamp, Contact number, intercom Address, Opponent number and call-processing Agent name. The last table column Note shows the note entered by Agent during the alarm call. Click Load calls from archive to load the secondary call database as described in the Calls Server subsection above.

Calls – Outgoing Menu

Operational Calls

The Operational Calls table includes all operational calls from all the intercoms recorded by the 2N® Lift8 Server. The condition is that the calls are made via a 2N® Lift device that supports this type of calls. Press the filter in the respective column to search the call history. See above for details. The table provides the following information: call state, call date and time, called number, intercom address and Id, intercom contact number and, if necessary, a note specifying the operational event ending type (automatically, by server). Thus, press the button to solve the error event in the Intercoms - General menu. Press Load calls from archive to load calls from the secondary database described in the Call Server subsection.
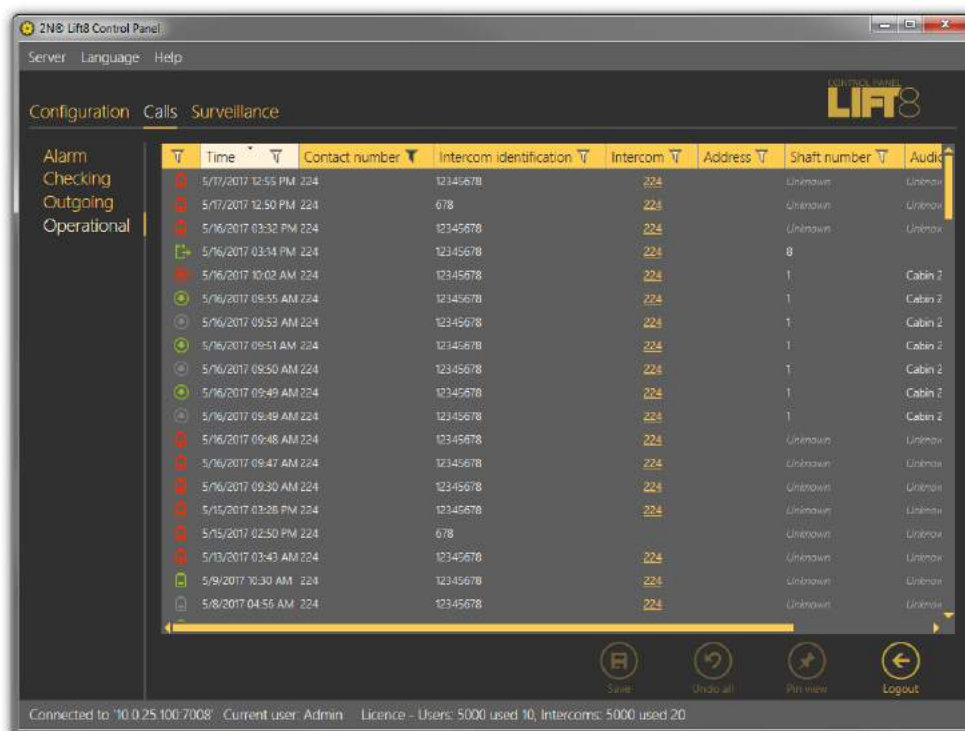
Calls – Operational Menu

Map

The **Map** menu helps you monitor the states of all intercoms configured in the system. It displays a list of all the intercoms that are assigned address, which is important for the world map location. A live map with groups of intercoms is displayed next to the list. Colours indicate the intercom state: green means that the intercom is functional, red signals a defective intercom due to a check call error, orange indicates that an intercom is OK now as the last check call was correct but the last but one check call was wrong and green reappears when a non-functional intercom makes a correct check call.
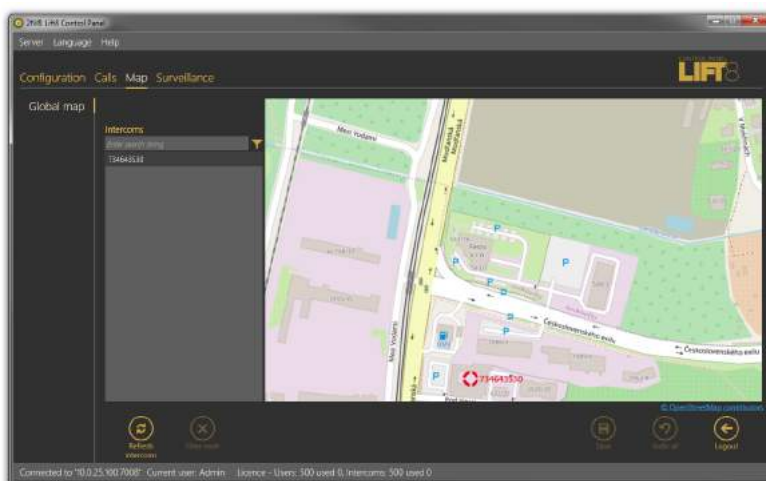
Map – Global Map Menu

Click on an intercom to focus on the currently selected intercom. Click on another intercom to centre this object. You can move and zoom in/out the map arbitrarily. You can use the search function to find the required intercom: enter the intercom name (or a sequence of characters) into the search row. The database search starts the moment you enter the first character. Add more characters to refine the filter until you find the required intercom. Click the Refresh intercoms button in the left-hand bottom corner to refresh all the intercoms on the map .
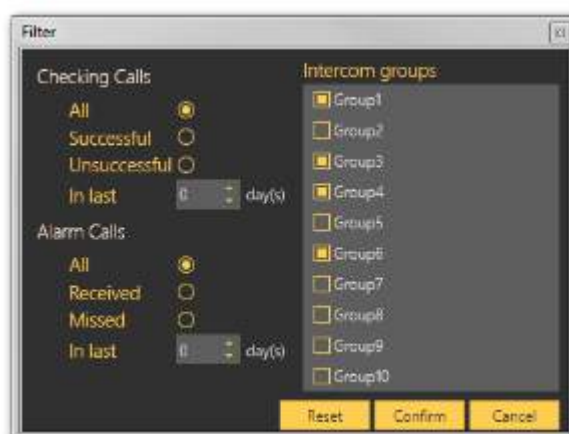
Map – Filtration Menu

Click the funnel symbol to display the intercom filtration window. Select a group of intercoms and click Confirm to display the intercom group to be searched. Use more filtering criteria to optimise your search: successful check or alarm calls or error check calls in the last x days (see above). All calls are displayed by default. The search result is shown in the Map menu – Global Map figure above.

Surveillance

The Surveillance menu displays and helps you monitor all of the configured 2N$^®$ Lift8

or 2N$^®$ LiftIP intercoms providing data tunnel communication. There are three possible intercom states: red indicates that the intercom is not connected to the Server or shows a problem, which is described in the hint under the cursor, blue means that the unit is server connection ready and green signals OK. Click the intercom field to move to the Basic/Intercom detail tab in the Intercoms menu.
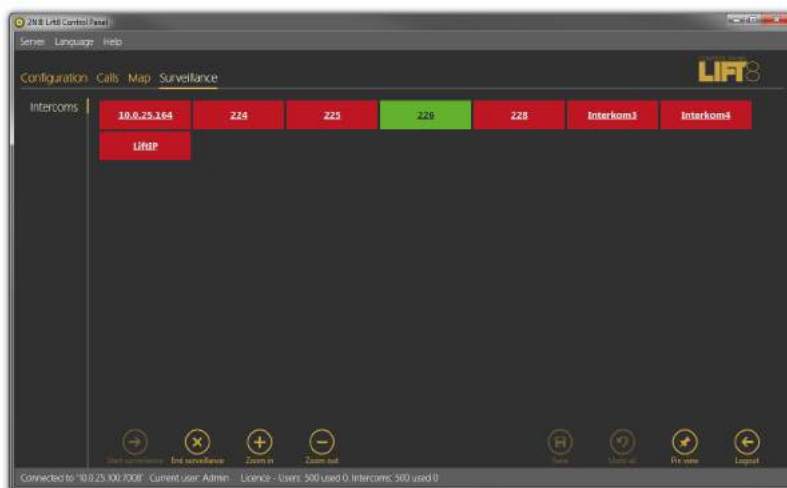
Surveillance Menu

Enter the menu to start watching the available intercoms. Click the Start / End watching buttons in the left bottom corner opf the screen to connect new intercoms or quit surveillance .

8. Communicator

2N® Lift8 Communicator is a user alarm call management application. When an alarm call comes in, all data on the lift are displayed including a map with the lift location, cabin camera monitoring and note recording option. It is a VoIP client. Make sure that

the 2N® Lift8 Server is installed on a PC and connected to one and the same network

with the 2N® Lift8 Communicator to make the device work properly.

Here is what you can find in this section:

- 8.1 Installation and Login
- 8.2 Introduction to Application
- 8.3 Use

Refer to the 2N ® Lift8 product pages at www.2n.cz, download section, for the latest FW version.

8.1 Installation and Login

After the application is launched, the installation program will scan your PC for another **2N® Lift8 Communicator** version and ask you to uninstall the currently available version if identical with the new one. Use the system control panel Add or Remove programs to uninstall the existing product version for reinstallation or reconfiguration. If the versions are not identical, the original version will be uninstalled and a new application version will be installed. Then you will also be asked whether the configuration files should be removed or the whole application with a new, empty database should be installed.

Now the **2N® Lift8 Communicator Setup Wizard** has been launched. Follow the wizard instructions. Then select the installation location for the **2N® Lift8 Communicator** . C:\Program Files (x86)\2N TELEKOMUNIKACE\2N Lift8\ is used by default. Now the application will ask you to enable transmission of system data and software use surveys to help the 2N TELEKOMUNIKACE a.s. company improve the software quality, availability and performance. No confidential data shall be sent. You can participate in this effort voluntarily and cancel sending statistic data any time. Confirm or decline this cooperation and click Next to continue.

Select whether the application should be installed for the currently logged-in user or all the PC users. The wizard is ready to install the **2N® Lift8 Communicator**. Confirm user account administration notification to the Windows system if necessary. Another Start item and the application shortcut icon will be added automatically. Once installed, the application will start automatically.

Alternatively, use the command line for installation: select the installer file and define the manner and location parameters. See below for command explanation.

Command	Description
/VERYSILENT	Installation runs on the background, no installer.
/DIR="C:\..."	Set the installation location.
/LOG=file_name.txt	Create an installation course log to be displayed in the installer.

C:\Windows\system32\cmd.exe

C:\2n\2.3.0.28.7\PC_apps\Communicator>"2N Lift8 Communicator Setup.exe" /VERYSILENT /DIR=

C:\2n\2.3.0.28.7\PC_apps\Communicator>

Application Installation Command

> ⚠️ **Caution**
>
> - Make sure that the command line is started by admin. If it is started by a user, the editor authenticating window will pop up.

> 🚫 **Warning**
>
> - There is an installer change in version 2.2.0. The installer is unable to remove the original application versions (up to 2.1.x) correctly and an installation error may occur. To avoid this, remove the original applications manually if you use versions lower than 2.2.0.
>
> - Use the Start/Control panels/Programs/Uninstall program Windows menu to remove the application (this path applies to Windows 7 but can probably be used for other systems too). Select the application to be removed and click the right button to uninstall the program from your PC. Finally, you will be asked whether you really want to delete the existing configuration files. If you click NO, your configuration will be preserved.

> ⓘ **Note**
>
> - The **2N® Lift8 Communicator** installation requires **150 MB** of free disk space at least.

Now the **2N® Lift8 Communicator** is ready for use. Click on the shortcut item on the desktop (see the figure below) or select the Start item to start the application.

2N® Lift8 Communicator Icon

After the application is launched, a splashscreen gets displayed informing you of the application manufacturer and current version. Start it to display the basic login screen and Log in to server menu. There is a **2N® Lift8 Server** login form in the centre of the application, which remembers the last logged-in user. If you are the first user of the application, enter your login data as communicated to you by your **2N® Lift8** administrator. It is easy to set the connection: enter the server IP address if you establish connection to a LAN or public network server. Use the DNS server if available. Enter the listening port selected during the **2N® Lift8 Server** installation into the Port parameter. The default port value is 7008. Ensure that the data via this port pass the firewall and NAT in your LAN. SIP Port defines the port from which RTP packets (audio) are sent to the PBX. Use the default automatic port setting unless expressly necessary to use another port because of the firewall or network settings, for example. Contact your LAN administrator to verify the settings. Select Remember password to save the currently saved password for next launch. Refer to the figure below for possible settings.
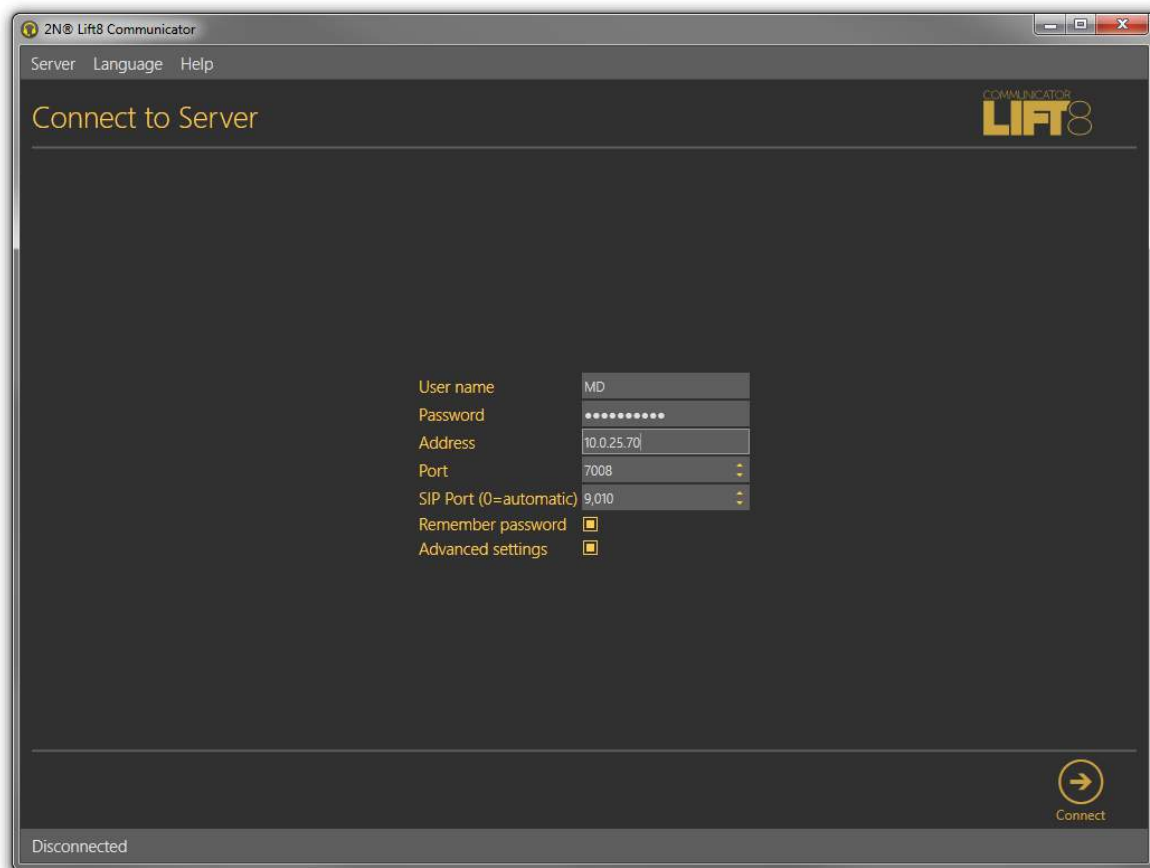
Login Screen

Now click Connect to selected server to log in to the 2N® Lift8 Server.

> ⊘ **Tip**
>
> - Server login may take some time if you have an extensive database as the application has to download all the current tables. Be patient please and wait for completion.

> ⓘ **Note**
>
> - Recommended hardware requirements
>
> | OS | Microsoft Windows 10, Microsoft Windows 8 / 8.1 CZ, Microsoft Windows 7 SP1 CZ, Microsoft Windows Vista SP2 CZ |
> | --- | --- |
> | CPU | Equivalent Intel Quad Core i7 3.4 GHz |
> | RAM | 16 GB |
> | HDD | 500 GB |
> | LAN | Gigabit Ethernet (**GLAN**) |
> | Other | **Dedicated Sound card** (Very important!) Dedicated Graphics card |

> ⚠ **Caution**
>
> - The **2N**® **Lift8 Communicator** provides different access rights to information and menus to users with different roles. It means that a dispatcher may access different information than a technician, for example.
> - The default port settings after server installation is as follows:
>   - Port: 7008

> ⓘ **Warning**
>
> - If a problem with non-compatible version of .NET occurs during installation, you should download new version of .NETFX4.0 from www. 2n.cz . You can use this link from the online manual.
> - Minimum operating system requirements: **Windows Vista**, **Windows 7**, **Windows 8**

8.2 Introduction to Application

In this subsection, we will show you the application menu layout and basic controls.

Unlike the **2N® Lift8 Service Tool** and **2N® Lift8 Control Panel**, the application has just one menu level. The first screen upon start includes the Intercoms menu, which provides an overview of all the intercoms assigned to the logged-in user. The horizontal Main menu helps you choose whether to view assigned intercoms or supervise the alarm call history. You can also display the database of the **2N® Lift8** users including their phone numbers.
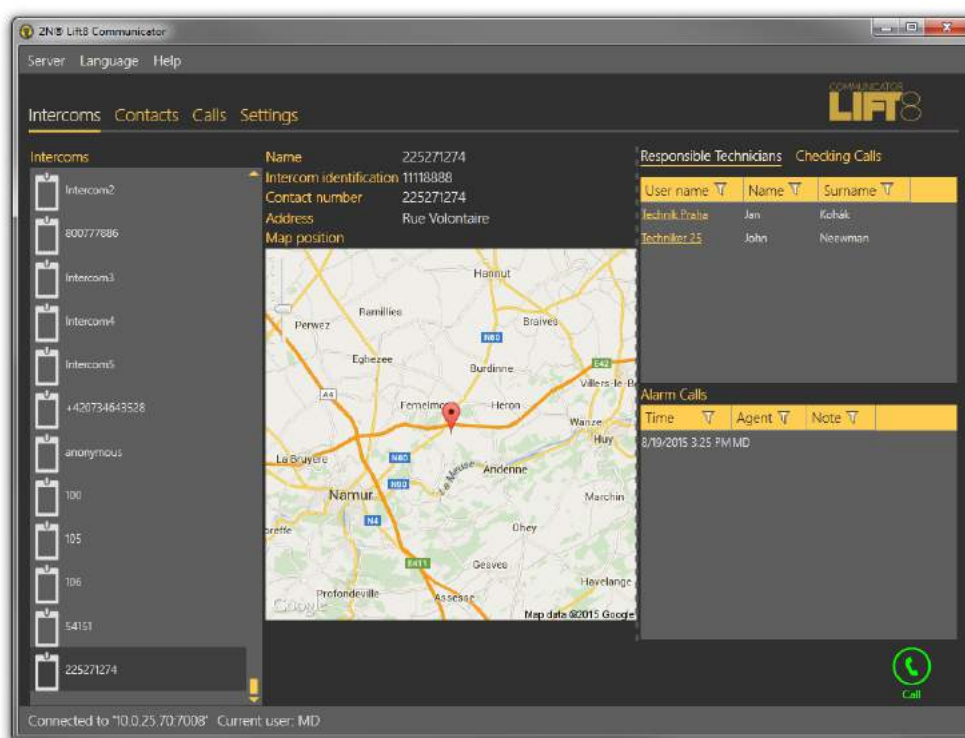
2N® Lift8 Communicator Window

The main menu contains three pop-up menus. The **Server** menu helps you disconnect from the server or terminate the application. You will always be warned before logout or termination against data loss. The Setting submenu includes a Statistics window: confirm the request to enable transmission of your system data and software use surveys to help the 2N TELEKOMUNIKACE a.s. company improve the software quality, availability and performance within the applicable law. You can participate in this cooperation voluntarily and cancel your prior approval any time. Select the language mutation in the **Language** menu: CZ and EN are available so far. The **Help** menu provides information on the product manufacturer and version.

> ⓘ **Note**
>
> - The language change will not be executed until the application restart.

The Status line displays connection information. From the left: 'Connected to' includes the name of the server to which you are currently connected and the server listening port behind a colon. 'Current user' displays the currently logged-in user.

Find the calling control buttons in the right-hand bottom corner, which may be different in different menus. The table below describes all the buttons available in the application.

Basic Controls

→ Connect	**Connect** is used for user login to the selected server.
📞 Call	**Call** is used for calling the currently selected intercom or user.
→ Transfer	**Transfer** helps transfer a confirmed call to another system user, responsible technician, for example.
☎ Hang up	**Hang up** helps you terminate an active call or reject an incoming call during ringing.
💾 Save	**Save** helps you return from the Incoming/Outgoing call window after call hangup and termination and save modified notes.
📞 Pick up	**Pick up** helps you answer an incoming call.

Cancel	**Cancel** helps terminate data transmission via the P100 and CPC protocols before call connection.
Keypad 1 2 3 4 5 6 7 8 9 * 0 #	**Keypad** is used for call control via DTMF. When pressed, each button sends the assigned DTMF character into the call. This function helps you confirm calls or program the CU.
Get new image	**Get new image** helps you download a preview from the camera connected to the selected camera module in the lift cabin.
Rotation to left	**Rotation to left** turns the image left by 90°.
Rotation to right	**Rotation to right** turns the image right by 90°.

8.3 Use

The **2N® Lift8 Communicator** application is used by dispatchers and technicians for intercom and **CU** communication. Every user with a login and SIP line created in the **2N® Lift8 Control Panel** may log in to the application. If the user SIP line is not registered, the user will not be able to log in.

> ⚠ **Caution**
>
> - Telephoning is the main function of the application. If the user SIP line cannot be registered, the user will not be able to log in. In that case, ask your system administrator to check the SIP line settings in the **2N® Lift8 Control Panel** or **SIP Proxy,** your LAN settings and your PC firewall if necessary.

> ⓘ **Note**
>
> - Every user may process any incoming call to its line but make outgoing calls only to the intercom/technician numbers included in the database.

Application at Relax

When the user logs in the application is at relax and in the case of an incoming /outgoing call it gets into one of the other two states. You return to this window whenever you terminate the call with the Save button.

Intercoms

The left section of the **Intercoms** menu provides a list of all the intercoms that are assigned for administration to the currently logged-in Dispatcher or Technician by the Administrator. Click on the intercom name to display more information: Name, Intercom identification, Contact number and Address if available. If the address is completed, the intercom Location on map is displayed too. Use the slider in the left-hand upper corner of the map to zoom in/out. Click Call to call any intercom on the list. You will be forwarded to the Outgoing call window.
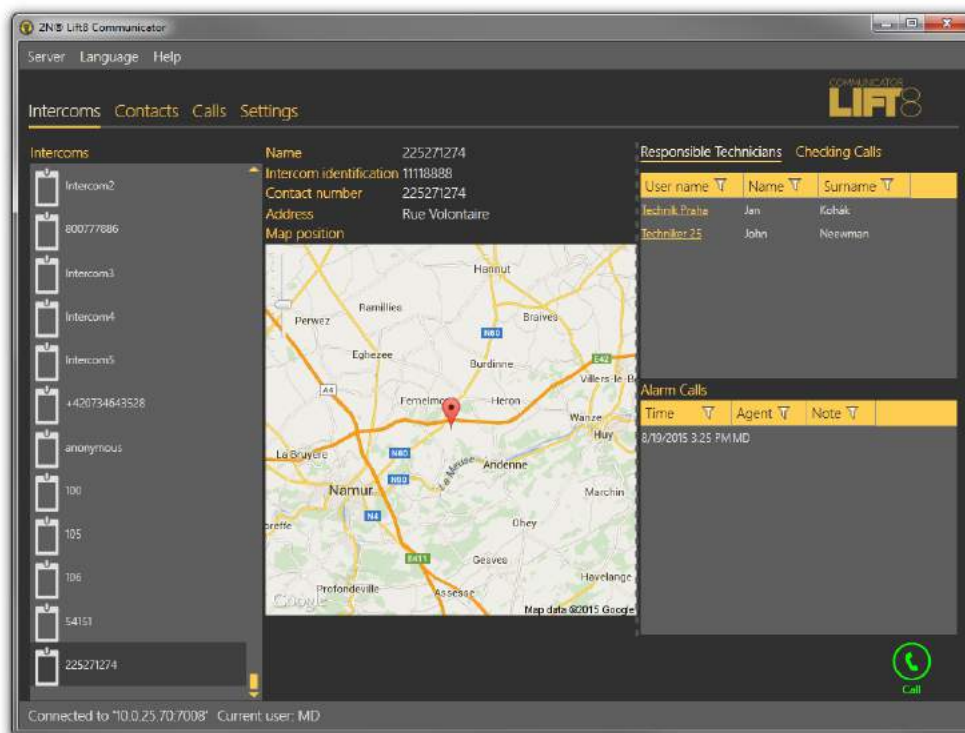
Intercoms Menu

There are three tables to the right. Two of them are directly visible, the third has to be switched on by clicking the Checking call heading. Filtration in columns works in all of the tables; refer to the Calls below. The Responsible technicians table displays the technicians responsible for the intercom administration and helps quickly select and send the appropriate technician.

> ⊘ **Tip**
>
> - Each technician is displayed as a link for simplification. Click on the link to get to the Contacts menu and call the technician immediately.

> ⚠ **Caution**
>
> - For the purpose hereof, Technician means the 2N® Lift8 user that is assigned the Technician user role. The other users (Admin, Operator or Own role) are not displayed in this table.

The Alarm calls table displays a list of alarm calls from the given intercom including the call date/time (Timestamp), call-processing Agent and Note added during the alarm call. The Checking call table shows all check calls from the given intercom since intercom addition to the database according to the server archives deletion setting. Each record includes its date/time and result.

Error states detected by the server can be displayed in the middle section depending on the intercom configuration: rescue modes, battery error states, jammed button or audio test failures. If so, the intercom display will be as follows.
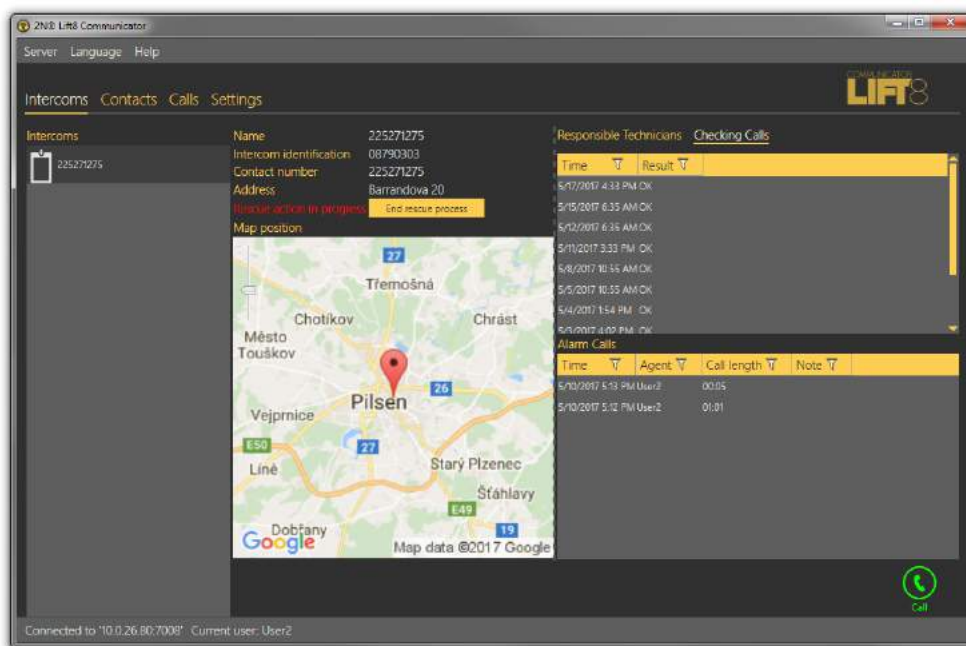
Intercoms Menu – Intercom Error State

Contacts

The left section of the **Contacts** menu displays a list of all users configured in the 2N® Lift8 system. Click a user to open its card. The following information is displayed in the middle of the window: Username, Firstname, Surname, Contact number and Role, which helps you identify the contact: Dispatcher or Technician. If the user is assigned a contact number, just click Call to set up a call to this user. This opens the Outgoing call window and the call will be made. See below for details on outgoing calls. If the call cannot be set up, you will get a voice message.
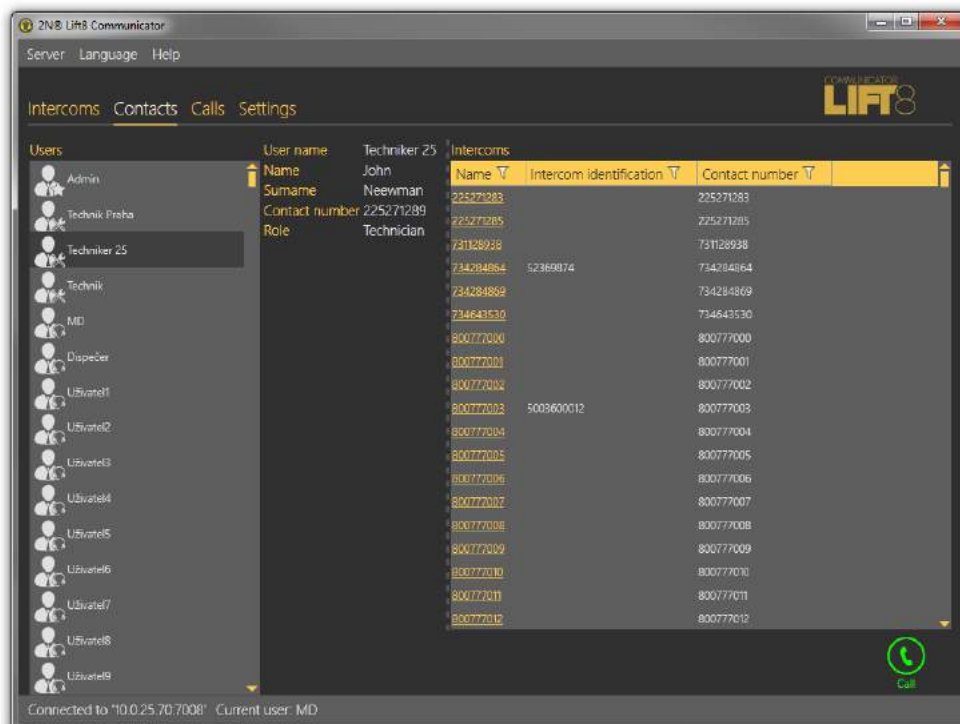
Contacts Menu

There is an Intercoms table to the right. The table displays a list of all intercoms assigned to the given user (Dispatcher/Technician/Admin/Own) and includes Name, Intercom identification and Contact number for each intercom assigned. Use filtration for convenient searching; see below.

> ⊘ **Tip**
>
> - Each intercom is displayed as a link for simplification. Click on the link to get to the Intercoms menu and call the intercom immediately, view the check and alarm call history and locate the intercom if necessary.

Calls

The **Calls** menu provides a table of all alarm, incoming, missed and outgoing calls from all the intercoms and users configured in the 2N$^®$ Lift8 system received by the 2N$^®$ Lift8 Server from intercom addition until now according to the server archives deletion setting. Click the filter button at each column to use filtration for call history search. See below for details. The first column or icon defines the call state. Let us explain this function using the filtration settings where you can choose the call state to be displayed.
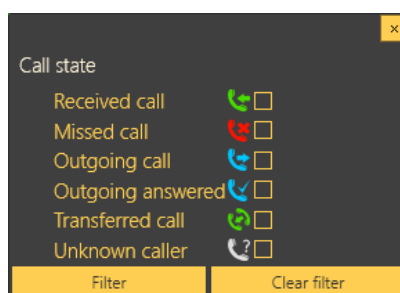
Call State Filtration

From left to right: The first icon symbols a processed incoming alarm call. The second icon indicates a missed call, which occurs whenever the dispatcher fails, for any reasons, to answer an incoming call in time and ringing was terminated. The third icon signals an outgoing call to another dispatcher, technician or intercom from which, however, the last missed call did not come. The fourth icon symbols an outgoing call to upon a missed call, which occurs whenever the dispatcher fails, for any reason, to answer an incoming call in time and ringing is terminated. The dispatcher is notified and calls the intercom (Audio Unit) that initiated the alarm call. Such a call is then considered a correctly processed alarm call. The next icon, Transferred call, is

recorded whenever the dispatcher transfers a confirmed alarm call to another dispatcher or technician. The last icon, Unknown caller, gets displayed whenever the dispatcher is called from a number that is not included in the 2N® Lift8 system: unknown call, telemarketing, automatic call, error call, etc.

Furthermore, the table includes the Timestamp, Contact number, intercom Address, Shaft number, Audio unit position, call-processing Agent/Dispatcher and Note added during the call.
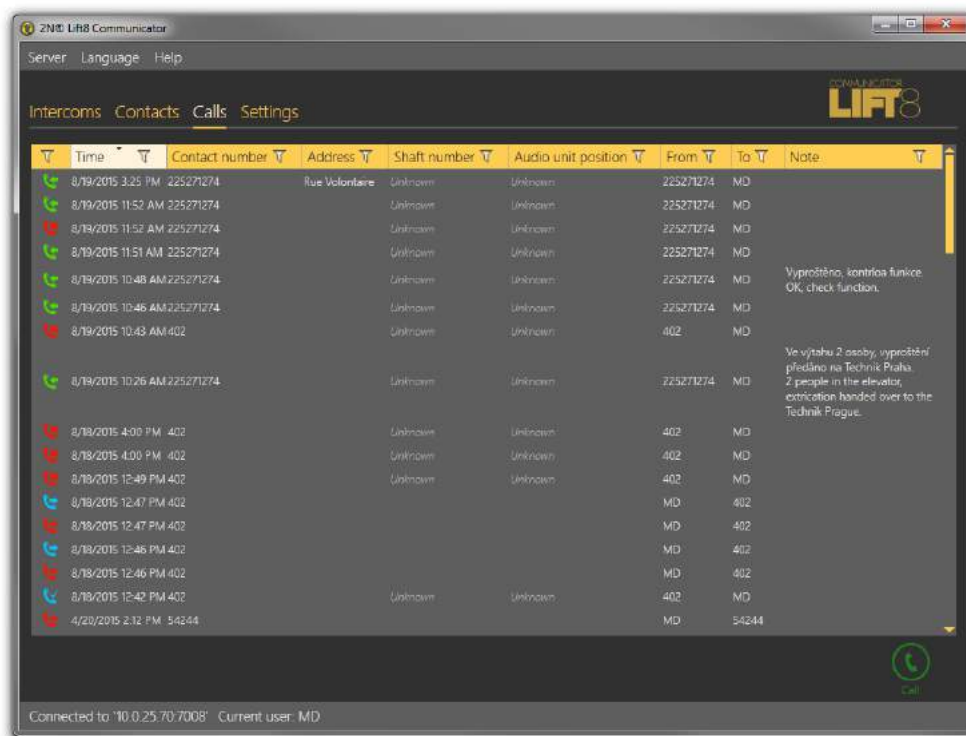
Calls Menu

Click the filter button at each column to use filtration for call search and combine the filters to find the required data quickly. Click the funnel symbol in the selected column to activate the filter. Activation is indicated by a colour change of the funnel symbol; see the figure below.

Left – Inactive Filter, Right – Active Filter

Each column with the funnel symbol includes filter settings; see the figure below. The Contains function finds the searched string in all the column items and returns all the occurrences. Enter a text into the string field and click Filter to activate the filter and find all the searched items in the column. Use another filter to make your search more precise and efficient. Having completed filtering, click Delete filter in the used columns to delete all the active filters. If you did not delete the setting, the filtration settings would keep active even upon the CU logout and you would obtain filtration results instead of complete information in your next search.

> ⊘ **Tip**
>
> - You can also delete the configured filters via the context menu under the right mouse button or by clicking "Alt + r".
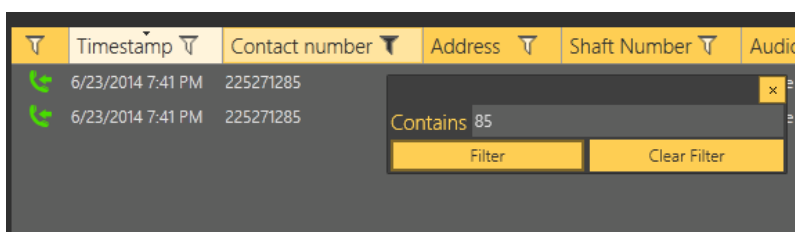
Filtration Setting Result

If the Dispatcher fails to answer or process an incoming call in time, the queued call is terminated but will not get lost. The user is notified as follows: the call is logged as a missed call and the Calls menu changes into Alarm calls in the main menu and the count of missed (non-processed) calls is included in the brackets. See the figure below,
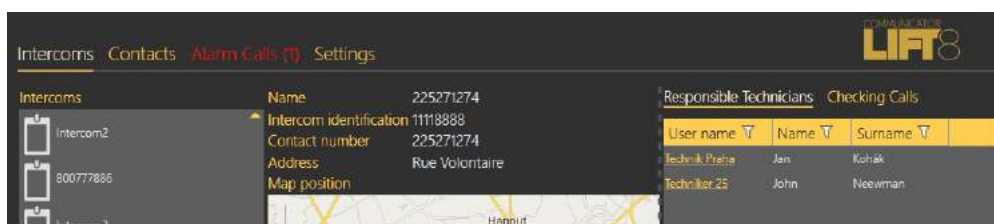
Display of Missed Alarm Calls

Settings

The **Settings** menu helps optimise the intensity of the received/transmitted audio signal. Although your operating system settings should be sufficient for a smooth function of the application, you can make additional microphone and speaker settings here if necessary. Select an input or output device in your PC in a pop-up menu and set the required volume using a slider.
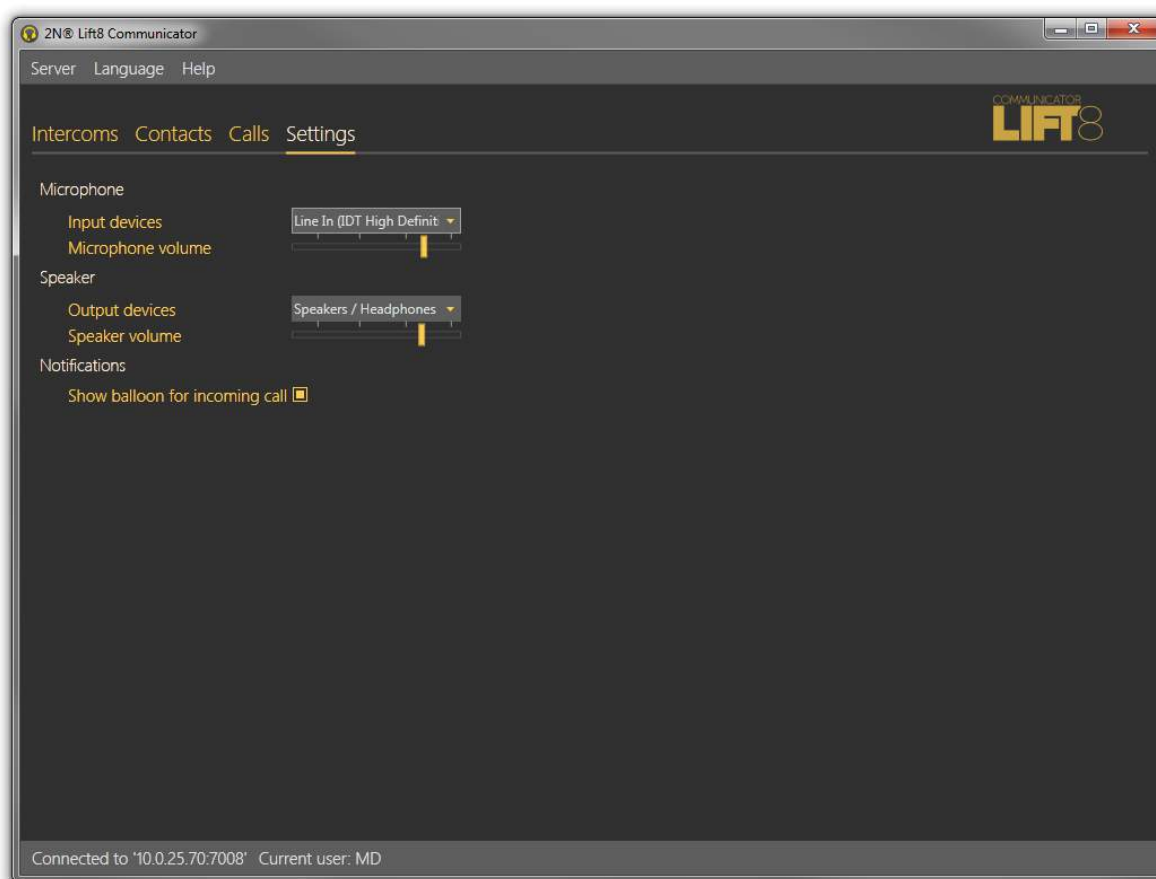
Settings Menu

The checkbox in the Notifications section enables/disables the display of automatic information balloon notifying an incoming call. If you do not want to use the information balloon, disable it here or using a checkbox in the balloon.

Incoming/Outgoing Calls

Every incoming call to a dispatcher/technician number is signalled with an automatic switch to the Incoming calls window and pop-up of an Incoming call window in the left-hand bottom corner of the screen. This is useful when the 2N® Lift8 Communicator display is hidden under another application as the Incoming call window is always on

the top. An incoming call from an intercom is also signalled acoustically by a ringing tone in the speakers/headsets. Press Pick up to answer the call or Hang up to reject the call. Use the checkbox to disable the information balloon function.
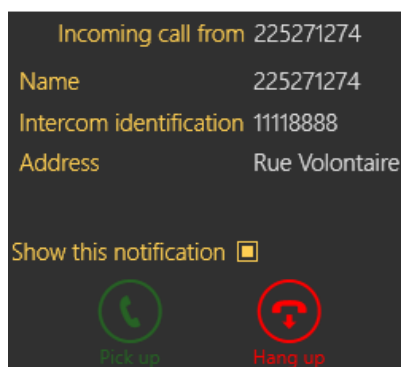
Incoming Call Pop-Up Window

> ⊘ **Tip**
>
> - No matter where you pick up the call (whether in the application or the pop-up window), the system always behaves identically.

The Incoming call window opens (see below) whenever a call is received. If Automatic confirmation is enabled, the respective DTMF character will be sent. If CPC/P100 confirmation is selected, an appropriate communication will take place before the call. Its state and progress will be signalled with a progress bar. When the communication is terminated, the call will be confirmed automatically and the Incoming call window will get displayed. Click Cancel to skip this step. If there is an active camera in the lift and loading images from the camera is enabled for this **CU**, the camera image will be transmitted before the Incoming call windows opens. This step is signalled with a progress bar again. Click Cancel to skip this step.

See the figure below for the Incoming call window. The upper part displays the currently speaking intercom name and phone number and one of the following Application states to the right:

- **Ringing**... – the selected outgoing/incoming call is just ringing.
- **Speaking**... – the call was answered by both the subscribers and is in progress.
- **Call terminated** – the call was terminated correctly.
- **Call rejected** – the outgoing call was rejected by the counterparty.
- **Missed call** – the incoming call was not served. Ringing stopped before the dispatcher answered the call.

The left-hand part of the screen provides information on the given intercom: Name, Intercom identification, Contact number and Address. Use the keypad below these items to control the Speaking call: confirm the call with DTMF or dial the required shaft number. A calling technician can use the keypad for the **CU** voice menu control. Press a button to send the particular DTMF character into the call. If the intercom address is completed, the intercom location is displayed on the map below the keypad. Use the slider in the left-hand upper corner to zoom in/out. If the lift cabin is equipped with a camera, you can view the cabin image displayed below the map. Click on this miniature to display the Camera window to view more image details and evaluate the cabin situation more precisely. Click the Get new image button to load a new, more recent image. A progress bar signals transmission and the image will get displayed if transmitted successfully. Click the cross to quit the Camera window.

⊘ **Tip**

- If the Camera window or image transmission is active, the call will not be terminated automatically as the Duration parameter is ignored. It is because high-resolution image transmissions take a rather long time and the time limit might be too low in this case.
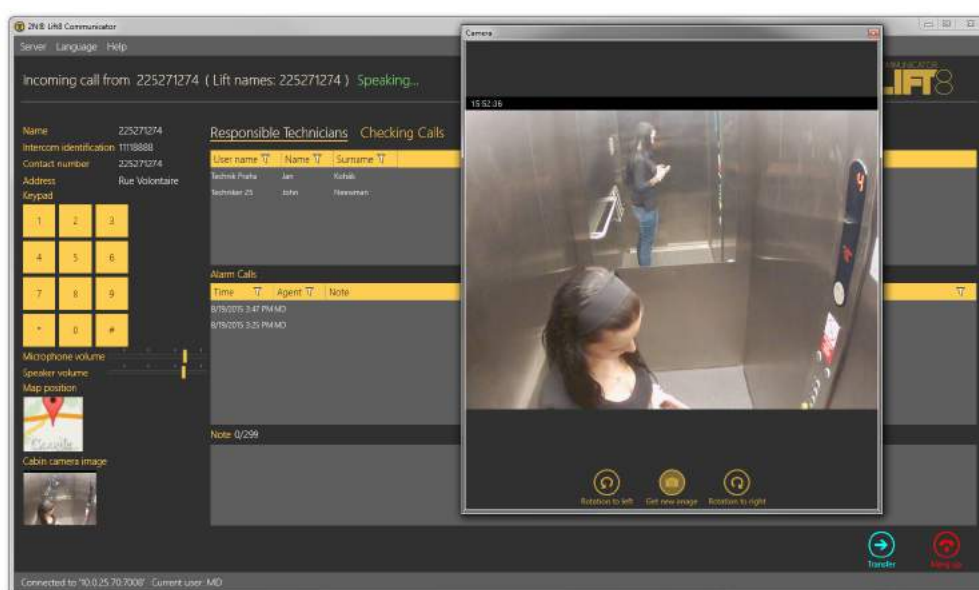
Incoming Calls

There are three tables to the right like in the Intercoms menu. Use the column filters for search; refer to the call describing subsections. The Responsible technicians table displays the technicians responsible for the intercom administration and helps quickly select and send the appropriate technician. The Alarm calls table displays a list of alarm calls from the given intercom including the call date/time (Timestamp), call-

processing Agent and Note added during the alarm call. The Checking calls table shows all check calls from the given intercom since intercom addition to the database according to the server archives deletion setting. Each record includes its date/time and result.

The last item of the screen is Note where a note can be added anytime while the intercom card is displayed in this window, i.e. after ringing, during the call and after the call end. If you press Save, you will lose the editing option and return to the application relax state and the note will be added to the Alarm calls table. The maximum note length is 300 characters. Find the count of used/total characters per note next to the Note heading.

> ⓘ **Note**
>
> - The Outgoing call window provides identical formats and functions as the Incoming call window.

Click Transfer to transfer an active call to one of the Available dispatchers/technicians, i.e. those who are online logged in to the 2N® Lift8 system; see the figure below.
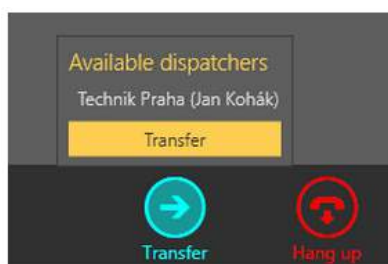
Available Dispatchers

Click on the dispatcher's name to select the dispatcher. Then push the yellow Transfer button to terminate your call and forward it to the selected destination. This type of transfer is called call transfer with hang-up, i.e. your call is terminated, the caller gets the ringing tone again and this call will alert the dispatcher's line selected by you.

9. Service Tool pro Android

Here is what you can find in this section:

- **9.1 Installation and Connection**
- **9.2 Use**

Refer to the Lift8 Download section at the 2N TELEKOMUNIKACE official web sites for the latest application versions. Use the following link or Google Play mobile application to view the online manual.

9.1 Installation and Connection

The application is available at **Google Play** or 2N TELEKOMUNIKACE web sites, Download of Lift8 products. Use the following **link** to view the online manual.

> ⊘ **Tip**
>
> - The application can be used for connection of Central Units with FW versions 1.10.0 and higher.

> ⚠ **Caution**
>
> - The application can only work on a device that supports the USB Host as it uses USB for CU communication! Otherwise, the CU cannot be connected.

> ⓘ **Note**
>
> - The application language is based on the local Android configuration. A language change in the system results in a language change in the application.

Google Play Installation

Use Google Play to install the package. If you do not have your Google Play account, simply create a new one. Now select Google Play in the application list, confirm the licence terms and conditions and get access to hundreds of thousands of applications. Google Play provides both free applications as well as paid applications that require a payment card assigned to the Google account. Now a standard procedurecan start.

Search and select the application and click Install. A list will get displayed with authorised accesses that the application requires (USB control and SD card writing, see the figure). Confirm the authorisations to make the application get installed. Confirmation will be displayed after a successful installation and you can start the new application. The application will be displayed in the menu and can be used.
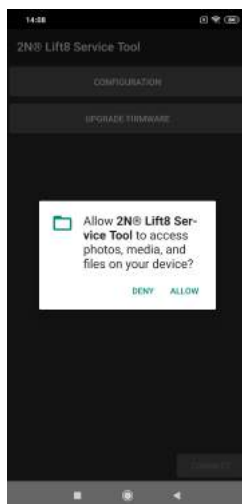
Service Tool Access Requirements

If you have a Google account connected with your phone or tablet, you can install the application via the web interface. All you have to do is log in to Google and select Play in the upper toolbar. Or, enter **market.android.com** or **play.google.com/apps** into your browser to display your application installations or updates. The web interface allows you to view applications more comfortably. If you like any of the applications, proceed like with a phone: click Install, confirm authorisation, let the application get installed and start using it.

Application Installation Confirmation

.APK Package Installation

You can also download an installation package and install the application manually. APK is an application ending for Android like EXE for Windows. Enable installations from Unknown sources to make this option work: MENU/SETTING/SECURITY /UNKNOWN SOURCES. Select the package in the loaded files or application location and open it using the package installation tool.
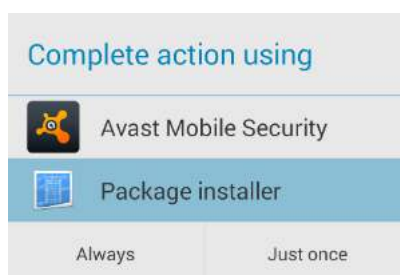
Package Installation Tool

Now the installation proceeds like with Google Play. After installation, the Service Tool icon will be added to the menu. Click on the icon to open the application and display the login screen.
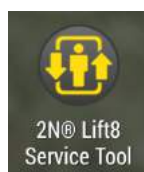
Application Icon in Menu

Central Unit Connection

The USB port driver is installed together with the application. Connect the Central Unit before login using a USB cable (USB A USB B) or a proper gender changer corresponding to your device USB port (MicroUSB A USB B). After starting the service tool and connecting, the message "Do you want to open the 2N$^{®}$ Lift8 Service Tool when connecting this USB device?"

> ⚠️ **Caution**
>
> - Make sure that your device supports the USB Host standard to avoid CU connection error!
> - Make sure that your mobile device (SmartPhone/Tablet) supports this function. Refer to the technical parameters or manufacturer's advise for information.

2N® Lift8 Service Tool

Allow the app 2N® Lift8 Service Tool to access the USB device?

☐ Use by default for this USB device

CANCEL   OK

USB Connection Setting

9.2 Use

Central Unit Login

Having launched the application, press Login (right-hand bottom corner) to display the password entering menu. Enter the CU password, which has up to 15 characters.

> ⓘ **Note**
>
> - The CU default password is **2n** unless specified otherwise by the customer. Refer to the CU package for the correct password.
> - A window pops up for you to get access to the USB device upon every login.

Login Screen

Enter the correct password and click Log in to log in to the Central Unit connected. The application warns you of any typing error and allows you to re-enter the password. Upon login, you get into the Main menu and its submenus. The Configuration and upgrade menu is only available at present. Other menus known from the 2N® Lift8 Service Tool PC application will be available in the future.
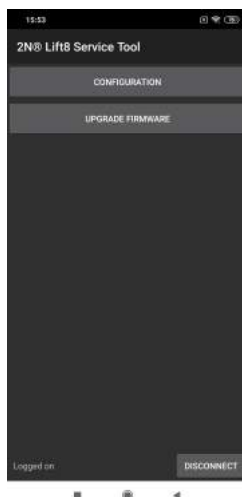
Configuration Menu

Configuration

Click on the menu name, i.e. Configuration, to open the menu. No data are available yet. The informative message **Start by selecting menu is only displayed. Click the pop-down menu in the right-hand upper corner to display five options:** New, Open from file, Save to file, Read from device and Save to device.

> ⊘ **Tip**
>
> - The control design may be different in different Android versions. Yet, the location and operation of the system control elements are almost the same.
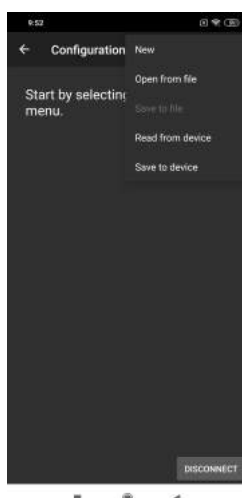
Read Configuration **New** – create a new configuration file.

Open from file – upload configuration from a file (saved on a phone or Google disk).

Save to file – save configuration (read from a phone or Google disk).

Read from device – read configuration from the connected Central Unit. The "Upload has started" message is displayed. When the parameter table has been uploaded, a dialog window is displayed to inform you that the configuration has been read successfully.

Save to device – save configuration to the Central Unit. The "Saving has started" message is displayed. When the parameter table has been uploaded, a dialog window is displayed to inform you that the configuration has been saved successfully.

When the parameter table is loaded, a dialogue window gets displayed confirming that the configuration has been read successfully and that you can view and edit the data. The loading time depends on your hardware power output. In general, loading takes a few seconds. If it takes more, press the Back button and repeat the operation.
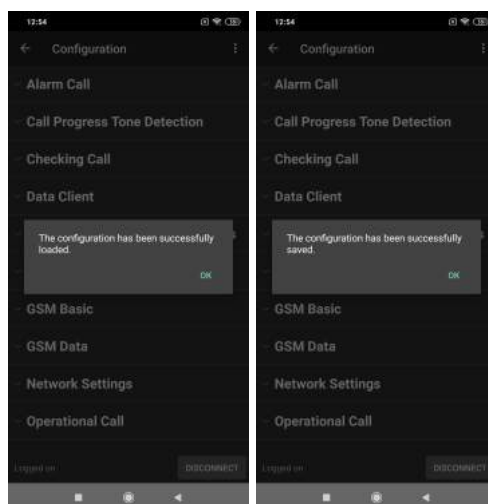
Configuration Download Confirmation

Parameter Editing

When the configuration has been read, parameter blocks are displayed in the alphabetical order like in the PC application. Click on the selected block to open the list of related parameters. Every parameter includes a numeric code, name and current value.
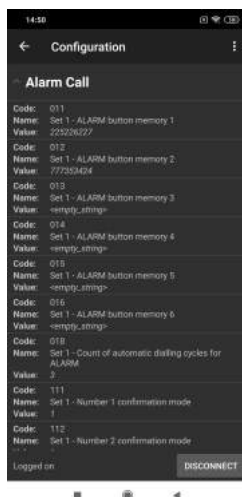
List of Parameters

Click on the parameter to be modified. The dialogue window includes the Numeric code, Name and Unit of the parameter. Click the question mark to know the parameter function. The Value parameter defines the range of values, which can be modified. If you use numeric or hourly values, you can use the system scroll bar to set the required value. With wide-range values, however, we recommend you to click the value and enter the new value via a keypad. The same applies to string (password) entering. Or, you can use a combobox to modify parameters with pre-defined values.

Parameter Setting

There are three controls in the lower part of the dialogue window. Click Cancel to quit editing and save the original setting. Click Default to set the default value and OK to confirm the new setting. If you make a typing mistake (set a value beyond the limits or exceed the character limit), you will be warned by the validator.
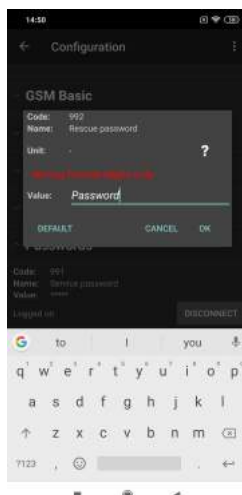
Value Validator Function

Having set all the parameters correctly, select the Save configuration option in the right-hand upper corner of the menu to save the settings into the CU database. Click Back to return to the preceding menu. If you click Back in the Main menu, you will log out. Click the system Home button to quit the application and press Last used programs to terminate the application.

Upgrade firmware

Click Upgrade firmware to display a menu to select the required firmware and voice menu. While upgrading, you can reset the Central Unit to the factory values using a checkbox. Having pressed Upgrade, wait for the firmware and voice menu to be upgraded. Then a message pops up and the applications disconnects. You cannot reconnect to the CU until the upgrade process has been completed.
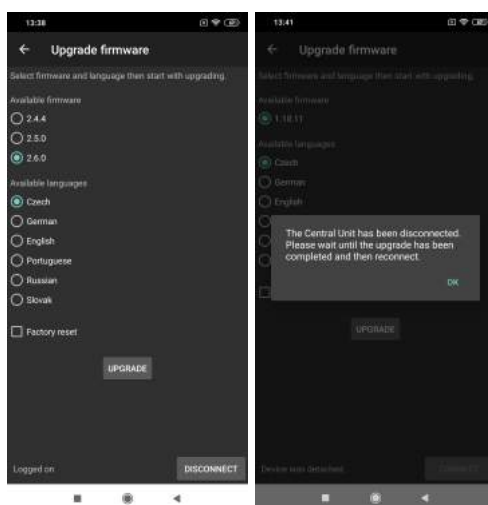
> ⓘ **Note**
>
> - Upon connection, the application recognizes the hardware and offers compatible firmware.

10. Get-cam-image

2N® Lift8 get-cam-image is used for remote image downloads from camera modules during a call where the 2N® Lift8 Communicator software is not installed.

You can download images in version 2.3 and higher. Remember to enter the number of the shaft where the required camera module is installed.

Installation
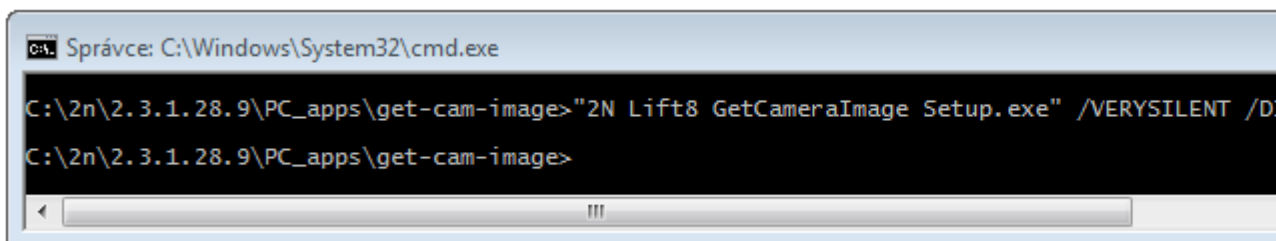
When the installation is started, the installation program will scan your PC. If it finds another 2N® Lift8 get-cam-image installation, it will ask you whether to uninstall the existing version. If you do not want to uninstall, the installer will be terminated. If you answer yes, the original version will be removed and replaced with the current version.

Now the 2N® Lift8 get-cam-image Setup Wizard is launched. Follow the wizard instructions. Select the location for your 2N® Lift8 get-cam-image installation. By default, C:\Program Files (x86)\2N TELEKOMUNIKACE\2N Lift8\get-cam-image is used. Click Next to make the wizard install 2N® Lift8 get-cam-image.

Once installed, the application is ready for use.

Alternatively, use the command line for installation: select the installer file and define the manner and location parameters. See below for command explanation.

Command	Description
/VERYSILENT	Installation runs on the background, no installer is open to the user.
/DIR="C:\..."	Set the installation location.
/LOG=file_name.txt	Create an installation course log to be displayed in the installer directory.

Application Installation Command

> ⚠️ **Caution**
>
> - Make sure that the command line is started by admin. If it is started by a user, the editor authenticating window will pop up.

> ⓘ **Note**
>
> - 2N® **Lift8 get-cam-image** requires **250 MB** of free disk space at least for installation.

> **ⓘ Note**
>
> - **Recommended software requirements**
>
> | OS | Microsoft Windows 8 / 8.1 CZ, Microsoft Windows 7 SP1 CZ, Microsoft Windows Vista SP2 CZ, Microsoft Windows Server 2012 (R2) Standard, Microsoft Windows Server 2008 R2 SP1 Standard |
> |---|---|
> | LAN /WAN | 2N® Lift8 Server connection |

> **⚠ Warning**
>
> - If you see 'incompatible version .NET' upon the wizard launch, download the current redistribution .NETFX4.0 from the 2N TELEKOMUNIKACE web sites or click **here** .
> - The minimum OS requirements are **Windows Vista**, **Windows 7**, **Windows 8**.

Use

If you do not use the **2N® Lift8 Communicator**, you can download an image from a camera module during a call via the command line (**cmd**).

Start the command line in the directory where **2N® Lift8 get-cam-image** is installed. Enter get-cam-image.exe to display the Help.

```
Správce: C:\Windows\system32\cmd.exe

C:\Program Files (x86)\2N TELEKOMUNIKACE\2N Lift8\GetCameraImage>get-cam-image.exe
2N Lift8 2.3.1.28.9
Copyright 2N TELEKOMUNIKACE 2015

ERROR(S):
  -s/--Server required option is missing.
  -u/--Username required option is missing.
  -w/--Password required option is missing.

Usage: get-cam-image [Options] intercom_contact_number |
intercom_contact_number:identification

  -o, --Output-file                   File name of the output file.

  -n 1 - 8, --Camera-module-number=1 - 8    Image will be downloaded from the
                                      module specified by this option.

  -s Address, --Server=Address        Required. Server hostname.

  -p 1 - 65535, --Port=1 - 65535      Server TCP port.

  -u UserName, --Username=UserName    Required. User-name

  -w Password, --Password=Password    Required. Password

  -v, --Verbose                       Turns on user-level information
                                      about what each operation is doing.

  -d, --Debug                         Turns on developer-level
                                      information about what is happening.

  --help                              Display this help screen.

C:\Program Files (x86)\2N TELEKOMUNIKACE\2N Lift8\GetCameraImage>
```

⚠️ **Caution**

- To download an image successfully, configure the selected intercom in the **2N® Lift8 Control Panel** application. Make sure that the data tunnel is enabled (refer to Subs. 7.3 for details).

- Also make sure that a user is created in the **2N® Lift8 Control Panel**.

To download an image, enter the following into the command line:

Get-cam-image.exe [Options] intercom contact number

Options

```
-o
```

- Output file name (test.jpg, e.g.)

```
-n
```

- - Number of the shaft where the camera module is installed (1–8)

```
-s
```

- **2N® Lift8 Server** IP address

```
-p
```

- **2N® Lift8 Server** port

```
-u
```

- User (must be created via the **2N® Lift8 Control Panel**)

```
-w
```

- User password

```
-v
```

- User listing (optional)

```
-d
```

- Developer listing (optional)

```
Example: Get-cam-image.exe -o test.jpg -s 89.24.1.180 -p 7008 -u novak -
w 1234 603123456
```

The application downloads the image from the intercom camera in shaft 3 whose contact number is 603123456 and gets connected to the server on the address 89.24.1.180 and port 7008 using user novak and password 1234 for login. The image is saved into the default directory under the name of test.jpg.

> ⚠️ **Caution**
>
> Complete all of the following information to download an image successfully:
>
> - Output file (image) name – save the name into the directory where GetCameraImage is installed. If no name is completed, the default name (camera-image.jpg) will be used.
> - Options (server IP address, user, user password)
> - Intercom contact number
> - If you fail to define the shaft number -n (1–8), you can only download an image during an active call with the shaft.

Should there be a problem during downloading, the user obtains the error number and description.

Error number	Description
1	Server version not found
2	Incompatible server version
3	Authentication error
4	Incompatible protocol version
5	Server connection failed
6	Connection terminated by server
11	Loading file on disk failed
12	No intercom selected
13	Selected intercom is not in database
14	Connection with intercom failed (tunnel)
15	Timeout expired
16	Intercom is busy

Error number	Description
17	Camera module not found
18	Camera error
19	Image cannot be downloaded now (rescue function enabled yet inactive)

11. Maintenance

This section describes the product maintenance and FW upgrade.

- 11.1 Operation Interruption and Battery Replacement
- 11.2 Firmware Upgrade

11.1 Operation Interruption and Battery Replacement

Operation Interruption and Battery Replacement

Disconnection and replacement of rechargeable batteries:

1. Disconnect the **CU** from the mains power. Remove the upper cover (see the preceding subsection – **CU** Electrical Installation, Operational Start).

2. Disconnect the battery interconnecting cable (see the figure) to disconnect the backup rechargeable batteries.

3. Disconnect the FASTON terminals of the motherboard - battery connecting cable too to replace the rechargeable batteries.

4. Remove the rechargeable battery holder using a No. 8 spanner.

5. Replace the rechargeable batteries and fix the holder again using a No. 8 spanner.

6. Interconnect the rechargeable batteries, but do not connect them to the motherboard.

7. Plug in the CU supply cable into a 230V socket.

8. Put the upper cover back on the **CU** and tighten the cover-fitting screws. Make sure that the earthing wire is connected with the cover before replacing the cover!

9. By reset button proceed the **Zero backup rechargeable battery life counter** (see chapter: 2.1)

> ⊙ **Warning**
>
> - Always disconnect the mains power before you start installing, maintaining or checking the **CU**.
> - Always use the rechargeable batteries supplied or approved by the manufacturer for replacement! If an correct type of rechargeable batteries is used, there is a danger of fire or explosion or damage to the **CU** electronics.
> - Adhere to the polarity of the rechargeable batteries! When their polarity is reversed, there is a danger of fire or explosion or damage to the **CU** electronics.
> - Replace both the rechargeable batteries in the equipment at the same time, never mix old and new rechargeable batteries! Make sure that the rechargeable batteries in the device are of the same type and age!
> - **Retired rechargeable batteries contain dangerous chemicals and so must be disposed of ecologically in compliance with the applicable regulations!**

> ⊙ **Warning**
>
> - WARNING! Live parts are exposed after the CU cover is removed!
> - Be very careful and do not touch dangerous live parts!
> - Never work with a switched-on CU with its protective cover off unless you are an authorised person duly trained according to Decree 50 / 1978 Coll.
> - **Never insert damaged batteries.** Do not insert the batteries in the CU that might show electric or mechanical damage.
>
> - **Never use 2N$^®$ Lift8 without its protective cover** to avoid electric accident, malfunction due to wrong interconnection and/or **2N$^®$ Lift8** electronics damage or destruction as a result of electric short-circuit or adverse environmental conditions. It is because **2N$^®$ Lift8** is not protected against dangerous touch and water – **IP00**.
>
> - Make sure before installation that the 2N$^®$ Lift8 board is not damaged!
>
> - **Do not connect a power supply other than the allowed one** to avoid electric accident or device damage.

> ⚠️ **Caution**
>
> - Remember to put the product in operation in time after **disconnecting the battery interconnecting cable**.
> - The product can be stored for a maximum **of 1 week without recharging and for 1 month after full charging**.
> - **Never** leave the rechargeable batteries flat longer than needed.
> - If the battery is completely flat, **recharge it as soon as possible**.
> - Remember to replace the rechargeable batteries every 2 years to provide backup in the case of power outage.

Always remember that the state of the batteries is essential for the system operation.

11.2 Firmware Upgrade

Use the **2N® Service Tool** to upgrade **2N® Lift8** including the **CU** and audio units connected.

Procedure

1. Start the **2N® Service Tool** and connect the **CU** (USB, TCP).

2. Select the Device – Upgrade menu.

3. Select the required firmware version.

4. Select the voice menu language version.

5. Choose whether to keep the configuration or reset the parameters to the factory values (via the checkbox).

6. Launch upgrade.

7. First the new FW is loaded to the **CU** (the Service Tool will log out from the **CU** upon the load). Then the upgrading process starts: first the **CU** (the yellow SYSTEM LED is flashing, the audio units are disconnected) and then the audio units (first the red, yellow and green LEDs are shining – the audio unit is waiting for upgrade, then the yellow and green LEDs are flashing – the audio unit is being upgraded).

8. Set date and time (Device > Date/Time setting).

> ⚠ **Caution**
>
> - You are recommended to factory reset the parameters to set new ranges and default values in the new FW version.

> ⊘ **Tip**
>
> - Back up your configuration, execute upgrade and factory default reset and upload the configuration into the device (new ranges and default values will be used in the new FW version).
> - Check the device time after upgrade.

Splitter Upgrade from 1.x.x to 2.x.x

Set the splitters to odd addresses (lift/shaft number) for 1.x.x to 2.x.x upgrade as even addresses cannot be upgraded.

Example: First upgrade the odd address splitters. Then disconnect these spliters and change the even address splitters to odd ones. After upgrade, change the odd addresses back to even ones.

12. Technical Parameters

Central unit

- **Power supply:** 100–240 V; 50/60 Hz; 0.75 A; up to 60 W
- **Backup power supply :** 1.3 Ah / 3 Ah Internal Lead Acid Battery
- **Maximum distance between CU and last splitter:** 30 m with the cross-section of 0.75 mm2 (60 m – 1.5 mm2 , or 100 m – 2.5 mm2)
- **Interface for connection with lift service centre:** PSTN / GSM / UMTS / VoIP
- **Configuration and monitoring:** voice menu / USB / remote
- **Indicators:** 5 LEDs, three-colour
- **Dimensions and weight:** 300 x 170 x 72 mm, 2.7 kg

Splitter

- **Power supply:** 24 V from central unit or local
- **Capacity:** 5 audio units + camera module
- **Maximum overall length of cable in shaft:** 600 m
- **Lift block pulse:** relay, both NO and NC contacts
- **Dimensions:** 142 x 98 x 34mm

IO module

- **Power supply :** 24 V from central unit or local
- **Capacity:** 4 inputs + 4 outputs
- **Inputs:** galvanic isolation, 12–24 V AC or DC
- **Outputs:** relay, NO contacts, u7p to 250 V, 5 A
- **Dimensions:** 142 x 98 x 34 mm

Fireman

- **Cover:** robust aluminium cast product
- **Working temperature:** -25 °C to +55 °C
- **Working relative humidity:** 10–95 % (non-condensing)
- **Storing temperature:** -40 °C to 70 °C
- **Dimensions:** (217 x 109 x 83) mm, (242 x 136 x 83) mm incl. frame
- **Weight:** netto max 2 kg, brutto max 2,5 kg
- **Covering level:** IP65

Audio unit – Shaft Antivandal

- **Cover:** robust aluminium cast product
- **Working temperature:** -25 °C to +55 °C
- **Working relative humidity:** 10–95 % (non-condensing)
- **Storing temperature:** -40 °C to 70 °C
- **Dimensions:** (217 x 109 x 83) mm, (242 x 136 x 83) mm incl. frame
- **Weight:** netto max. 2 kg, brutto max. 2,5 kg
- **Covering level:** IP65

Telephone Parameters (PSTN)

Parameter	Value	Conditions
Minimum line current	15 mA	off-hook
Minimum line voltage	22 V	on-hook
Off-hook DC voltage drop	< 8 V < 16 V	I = 25 mA I = 50 mA
Off-hook resistance	>1MΩ	U = 25..100 V
Off-hook impedance	220 Ω + 820 Ω paral. 115 nF	20 to 60 mA
Return loss	> 14 dB	20 to 60 mA
Bandwidth	300 to 3500 Hz	20 to 60 mA
Ringing impedance	> 2 kΩC = 1 μF	25 to 50 Hz
Ringing detector sensitivity	10 to 20 V	25 to 50 Hz
Pulse dialling	40 / 60 ms	
DTMF dialling level	6 a 8 dB ± 2 dB	20 to 60 mA
Dial-tone detector sensitivity	approx. 43 dB	
Overvoltage protection – between A, B	1000 V	8 / 20 μs

> ⓘ **Notes**
>
> - All the product parameters comply with TBR-21 on condition that the product is to be operated as a single line terminal, i.e. no parallel connection with any other equipment is allowed.
> - Line interference and noise picked up by the **L8** microphone are relevant factors.

Telephone Parameters (GSM/UMTS)

Telit HE-910, GE-910

- Bandwidth:
    - GSM 850/900/1800/1900 MHz
    - UMTS 800/850/900 MHz/2100 MHz
- **GSM:** Telit GE-910(EU,QUAD)
- **UMST:** Telit HE-910EUR
- **USIM/SIM card:** Small plug-in 3 V
- **Antenna:** One external antenna SMA FEMALE connector
- **Size:** 28.2 x 28.2 x 2.2 mm
- **Working temperature range**: -40 °C to +85 °C

Other Parameters

Unit type

- **918600, Central unit:** 300 x 170 x 72 mm
- **918601, Central unit Maxi:** 353 x 200 x 80 mm
- **918610E(XE), Audio unit – lift cabin, universal:** 65 x 130 x 22 mm
- **918611E, Audio unit – machine room:** 225 x 87 x 67 mm
- **918612E, Audio unit – shaft:** 225 x 87 x 67 mm
- **918613E, Audio unit – compact:** 185 x 100 x 22 mm
- **918620E, Splitter:** 142 x 98 x 34 mm
- **918620E, IO module:** 142 x 98 x 34 mm
- **918620E, Camera module:** 142 x 98 x 34 mm

- **Working temperature range:** 0–40 °C
- **Power supply:** 100–240 V; 50/60 Hz; 0.75 A; up to 60 W
- **Accumulator battery:** two 12 V, 1.3 Ah or 3 Ah lead-acid batteries
- **Weight:** 2.7 kg

The manufacturer reserves the right to modify the product in order to improve its qualities.

The product contains no environmentally harmful components. When the product's service life is exhausted, dispose of it in accordance with the applicable legal regulations.

13. Supplementary Information

This section provides supplementary information on the 2N® Lift8 product.

Here is what you can find in this section:

- 13.1 Troubleshooting
- 13.2 List of Abbreviations
- 13.3 Regulations
- 13.4 General Instructions and Cautions

13.1 Troubleshooting

For the most frequently asked questions refer to **faq.2n.cz**.

13.2 List of Abbreviations

L8	2N® Lift8
CU	System central unit, typically shared by multiple lifts in one building.
Splitter	Interconnects audio units and the CU. Each lift shaft has a splitter of its own.
Audio unit	Audio unit used for voice communication with the control centre or another system unit.
System	CU connected with a splitter and group of audio unit.
Main bus	6 wires (power, audio, data) connecting the CU with splitters.
Bus	Double wire connecting the splitter with lift audio unit.
Incoming call	Call from the control centre to the CU.
Outgoing call	Call from the CU to the control centre.
Check call	Call from the CU to the check call line registered in 2N® Server or another number defined.
Triphony	Inter-audio unit communication, typically between all audio units of one lift, during repairs or rescue operations, for example.
Control centre	Workplace receiving alarm calls. There can also be separate workplaces for various call types or just the staff mobile telephones.
DISA	Automatic voice menu for incoming call routing to the required audio unit or function activation, remote programming, e.g.
PBX	Private branch exchange (equipped with PSTN connection and analogue local lines).

L8	2N® Lift8
PSTN	Public telephone network. For simplicity, it is assumed that the CU is connected to the PSTN but works identically on the PBX line too.
GSM	Global System for Mobile Communications
UMTS	Universal Mobile Telecommunications System
TCP	Transmission Control Protocol is one of the **set of Internet protoco**ls.
ST	The **2N® Service Tool** application is intended for remote supervision and configuration of **2N® Lift8** communicators.
CP	The **2N® Control Panel** application is intended for the administration of users, lifts and authorisations.
CM (Comm)	The **2N® Communicator** application is intended for receiving alarm calls by the dispatcher.
SRV	The **2N® Server** application processes check calls and mediates communication between the **CU**s and PC applications.
Validator	This code monitors the values entered in the applications, and in the event of an error such as excessive length, forbidden character, incorrect format etc., warns the user.

13.3 Regulations

2N® Lift8 conforms to the following directives and regulations:

2014/35/EU on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits

2014/30/EU on the harmonisation of the laws of the Member States relating to electromagnetic compatibility

2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment

2012/19/EU on waste electrical and electronic equipment

Directive 2014/33/EU of the European Parliament and Council Directive of 26 February 2014 on the harmonisation of the laws of the Member States relating to lifts and safety components for lifts

European Parliament and Council Directive 95/16/EC of 29 June 1995 on the approximation of the laws of the Member States relating to lifts

ČSN EN 81-28

ČSN EN 81-72

13.4 General Instructions and Cautions

Please read this User Manual carefully before using the product. Follow all instructions and recommendations included herein.

Any use of the product that is in contradiction with the instructions provided herein may result in malfunction, damage or destruction of the product.

The manufacturer shall not be liable and responsible for any damage incurred as a result of a use of the product other than that included herein, namely undue application and disobedience of the recommendations and warnings in contradiction herewith.

Any use or connection of the product other than those included herein shall be considered undue and the manufacturer shall not be liable for any consequences arisen as a result of such misconduct.

Moreover, the manufacturer shall not be liable for any damage or destruction of the product incurred as a result of misplacement, incompetent installation and/or undue operation and use of the product in contradiction herewith.

The manufacturer assumes no responsibility for any malfunction, damage or destruction of the product caused by incompetent replacement of parts or due to the use of reproduction parts or components.

The manufacturer shall not be liable and responsible for any loss or damage incurred as a result of a natural disaster or any other unfavourable natural condition.

The manufacturer shall not be held liable for any damage of the product arising during the shipping thereof.

The manufacturer shall not make any warrant with regard to data loss or damage.

The manufacturer shall not be liable and responsible for any direct or indirect damage incurred as a result of a use of the product in contradiction herewith or a failure of the product due to a use in contradiction herewith.

All applicable legal regulations concerning the product installation and use as well as provisions of technical standards on electric installations have to be obeyed. The manufacturer shall not be liable and responsible for damage or destruction of the product or damage incurred by the consumer in case the product is used and handled contrary to the said regulations and provisions.

The consumer shall, at its own expense, obtain software protection of the product. The manufacturer shall not be held liable and responsible for any damage incurred as a result of the use of deficient or substandard security software.

The consumer shall, without delay, change the access password for the product after installation. The manufacturer shall not be held liable or responsible for any damage incurred by the consumer in connection with the use of the original password.

The manufacturer also assumes no responsibility for additional costs incurred by the consumer as a result of making calls using a line with an increased tariff.

Electric Waste and Used Battery Pack Handling

Do not place used electric devices and battery packs into municipal waste containers. An undue disposal thereof might impair the environment!

Deliver your expired electric appliances and battery packs removed from them to dedicated dumpsites or containers or give them back to the dealer or manufacturer for environmental-friendly disposal. The dealer or manufacturer shall take the product back free of charge and without requiring another purchase. Make sure that the devices to be disposed of are complete.

Do not throw battery packs into fire. Battery packs may not be taken into parts or short-circuited either.

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