USER MANUAL

for product

2N LIFT-Manager

For	Author
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In Prague, 2008-07-17.

Table of Contents

1. INTRODUCTION

The LIFT-Manager system is intended for remote monitoring, control and communication with LiftNet units. LiftNet unit is a hardware device – a lift (elevator) communicator. LIFT-Manager communicates with LiftNets through analogue telephone lines.

Part of the LIFT-Manager installation is Service Tool application which is aimed to manage configurations of available devices (LiftNet units).

1.1 Purpose of the Document

This document describes LIFT-Manager v2.0 from a user's point of view. It explains main functionality, which is provided via graphical user interface.

1.2 Intended Audience

This document is intended for all users of the LIFT-Manager application, and anyone who wishes to learn about it's basic functionality.

1.3 References

[1] 2N LIFT NET Manuál

1.4 Contacts

Technical support of 2N TELEKOMUNIKACE a.s., **www.2n.cz**.

1.5 Abbreviations and Symbols

CLI	caller line identification (typically phone number of the caller)
CC	control call
EC	emergency call
UC	unknown call
ERC	error call
MS	Microsoft company
OS	operating system (e.g. Microsoft Windows)
CSV	comma-separated values – simple file format which can be imported into main spreadsheet processor (ex. MS Excel)
DTMF	dual-tone multi-frequency
PBX	private branch exchange
PC	personal computer

1.6 Definitions

application	LIFT-Manager application
broken lift	lift which has either reported an error, or has not sent CC within last three days
clipboard	MS-Windows clipboard
station	PC which hosts LIFT-Manager application including accessories (modems, telephone)

1.7 List of Figures

1.8 List of Tables

2. APPLICATION OVERVIEW

LIFT-Manager is intended for use by companies (or individuals) who install or maintain lifts. It serves as remote monitor or communicator with LiftNet units.

2.1 Main functionality

- Receiving calls – the application can receive and process following types of calls:
  - Control call (CC) – regular call, which informs that the LiftNet unit is "alive“
  - Error call (EC) – reports error state of the LiftNet unit
  - Emergency call (EC) – emergency call (triggered by pressing corresponding LiftNet's button)
  - Unknown call (UC) – call from an unknown number (not present in application) or number that was not recognised
- View, delete and edit data – the application allows viewing and editing or the following items:
  - View, delete and edit LiftNets data
  - View, delete and edit Lift watchers data
  - View, delete and edit subjects data
  - View call history
- User filter management – The stored data (lifts, subjects, calls) can be filtered by user specified filters, that can be stored for later use.

  Data export – export displayed data either into a CSV file or onto clipboard.
- Day/Night mode – application may be run in two different modes – see chapter 5.6.
- Modem configuration – see chapter 4.4.3.

2.2 Application types

Application can be run in different modes. It depends on the number of cooperating applications, which share the same data.
Following situations can occur:

- One standalone application – application is configured as "server“ and manages it's own data (lifts, subjects, calls) in it's own data storage.
- Two or more applications share data – one of the applications is configured as "server“ and provides data to the remaining applications, which are configured as "client“. The data (lifts, subjects, calls) is then shared among all applications.

Note: When the "server“ application is not running all the "client“ type applications cannot run also because the database is inaccessible.

See chapter 4 for information about setting application type.

3. INSTALLATION

LIFT-Manager installation consists of following files:

- setup.exe
- lift-manager.msi

To start installation process run "setup.exe“ file.

Note: LIFT-Manager must be installed by user with Administration privileges.

Warning: Versions prior to version 2.1.5 must be uninstalled manually before installing version 2.1.5 (or newer).

The installer a shows license agreement and asks for a target directory. It then creates a desktop icon and two Start menu shortcuts: "LIFT-Manager", which launches the application itself and "Service tool" which starts service tool. New directory is created during the installation, where database file and log files are placed. The directory is called **LMData** and is located on a **C:** drive (full path is **C:\LMData**).

Warning: Remember which user has installed the application. Uninstalling (and upgrading to a new version) must be done by the same user that has installed it. Otherwise the uninstallation might not complete properly, and several problems may occur during next installation.

3.1 Uninstall

To uninstall the application go to "Control Panel" and then "Add or remove programs" and run the installer from the list of installed software. Log files and **C:\LMData** directory are not removed by the installer, and must be removed manually.

Warning: Uninstalling (and upgrading to a new version) must be done by the same user that has installed it. Otherwise the uninstallation might not complete properly, and several problems may occur during next installation.

Note: User configuration file is removed (deleted) during the uninstallation.

Note: Database isn't removed (deleted) during the uninstallation.

3.2 NoteApplication upgrade

To start application upgrade (installation of a new version) run "setup.exe" file. It is not necessary to remove the previous version. Database file from the previous version is preserved.

Warning: When upgrading from version prior to 2.1.5 uninstall the application manually before installing version 2.1.5 (or newer).

4. APPLICATION CONFIGURATION AND START

It is necessary to have modem installed before the application is started for the first time. To install the modem use the manufacturer's installation guide.

4.1 Station setup

In order for the application to work correctly it is necessary to connect the components (modems and telephone) properly and in appropriate order.
When the telephone line is managed by two (or more) modems (details in chapter 4.4.3), then modems are connected in series. The first modem (from the telephone line) provides CLI detection ("CLIP" modem) and the second one provides call handling ("Handling calls" modem). The telephone is connected in parallel with the second modem (the one that provides call handling).
When telephone line is managed by one modem only ("All in one" modem), it is connected in parallel with the modem.

Suggestion: It is recommended to mute the volume of the telephone. When the EC or UC call is received the application uses the PC speaker to ring. Reception of CC and ERC calls is done automatically (no ring sound from the speaker), so operator is not disturbed.

4.2 Database initialization

In order for the application to work properly, it is necessary to have a database filled with relevant data (list of registered lifts and its location and operator). Database is installed automatically during the installation process but contains no data. These can be entered using application, see chapter 5.2.

4.3 Application start

To start the application, either click the shortcut "LIFT Manager" on the computer's desktop, or go to Start menu (option Start -> Programs -> 2N -> LIFT Manager -> LIFT Manager).
To close the application click the option "Action -> Quit" in the main menu bar. Pressing the button or pressing Alt+F4 keys causes the application to hide in system tray area.

4.4 Application setup

Once the modem and application are successfully installed it is necessary to configure the application. The user is guided through the application setup by a wizard, which is started when the application is first launched.
The wizard consists of the following panels:

4.4.1 Choose the application type

On this panel the user may choose the type of application. These options are:

- Client,
- Server.

Choose the desired option, see chapter 2.2. The following panels may differ according to the selected option. It will be stated in such a case.

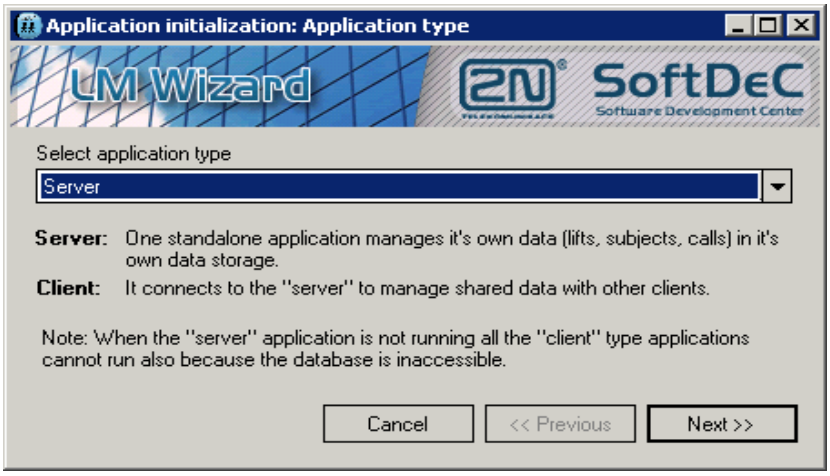

Figure 1: Application type setup

4.4.2 Database connection setup

This panel allows the user to setup database connection and depends on the application type.

Server

In the case of a "server“ type application it is necessary to enter the port number, where the server listens for the incoming connections from "client“ type applications. Enter a number ranging from 1024 to 65535.

Figure 2: Database connection setup - server

Client

In the case of a "client“ type application it is necessary to enter a server address and a server port. Enter the port number that has been chosen during the server configuration into the “Port” text-box. The "Host“ text-box must contain an address (or a computer name) of the server.

Figure 3: Database connection setup - client

4.4.3 Modem setup

Following two screens allow the user to configure the installed and active modems. It also allow the user to choose whether to require CLI for caller identification and consequence identification parameters.

To select the modem tick the check-box in the first column.

The second column defines the modem function – three possibilities exist:

- CLIP – modem is used to retrieve caller identification (it's phone number)

- Handling calls – modem which handles calls (pick-up, hang-up, etc.)
- All in one – modem is capable of both previous functions (handle calls and CLIP detection)

Caller identification using CLI must be supported either by the PBX, or by the telephone line provider. If CLI is not supported all incoming calls (CC, EC, ERC) will be handled as UC.

Warning: Not every modem supports all the functions (retrieve CLI and call processing). In such a case it is necessary to use two modems where each of them provides one of the functions. See Station setup section for more details.

The third column defines a group into which the modem is assigned. Modems assigned to the same group cooperate with each other (CLI, Handling calls) and are connected to the same telephone line. Such modems must have the same group number (ranging from 0 to 99).

Warning: It is necessary to have "complete modem" to be used by application. "Complete modem" means to select modem with function "All in one" (even if it supports "Call handling" only) or select two modems with particular functions.

Example: The Application should process incoming calls on two telephone lines. Three modems are available, but only the first one is capable of all functionality. The configuration will look as shown in figure 4.

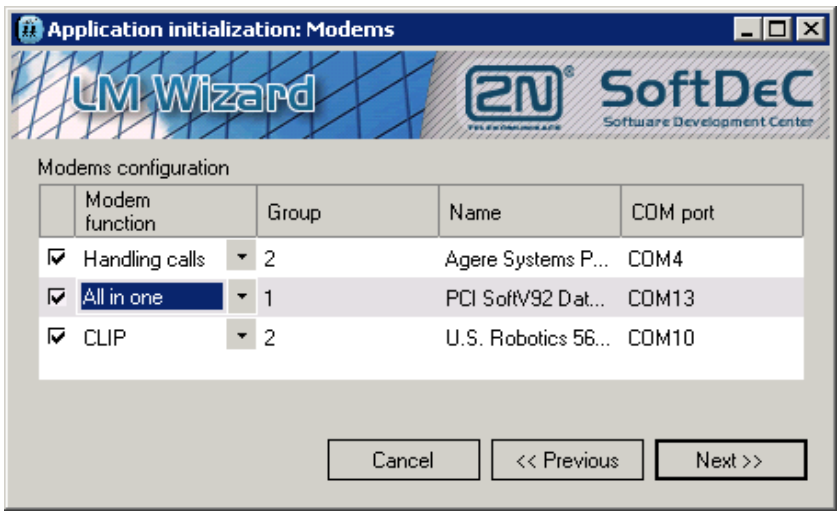

Figure 4: Modem setup

By clicking the Next button the user is asked to setup identification parameters (see figure 5):

- Require CLI for caller identification:
- No – "CLI" is not required to identify a caller – caller is identified according to DTMF message sent by "LiftNet" unit.
- Yes – requires "CLI" to identify caller.
- DTMF identification tiomeout: amount of time (in seconds) the DTMF identicication is required to be received; valid range 5-16 seconds
- DTMF identification retry count: number of attempts to receive DTMF identification; does not include the first attempt; valid range 0-5
- Send confirmation for unknown calls; this feature is to support communication with older Lift units:
    - No – when „Unknown call" is recognized confirming DTMF char „1" IS NOT send to possibly ask old Lift unit for identification

– Yes – when „Unknown call“ is recognized confirming DTMF char „1“ IS send to possibly ask old Lift unit for identification

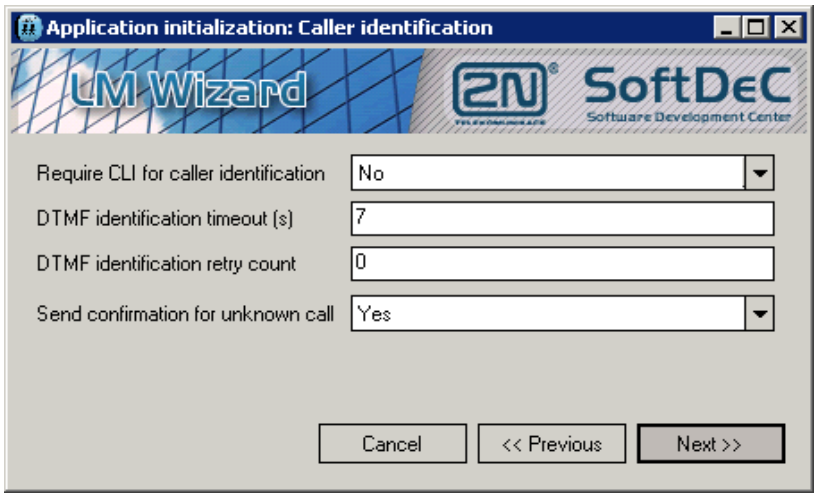

Figure 5: Modem setup part II

4.4.4 Automatic application start configuration

This panel asks the user, whether the application should start during OS startup. The following options are possible:

– Do not run after system start – application does not start during OS startup.
– Run after system start – application starts automatically during OS startup.

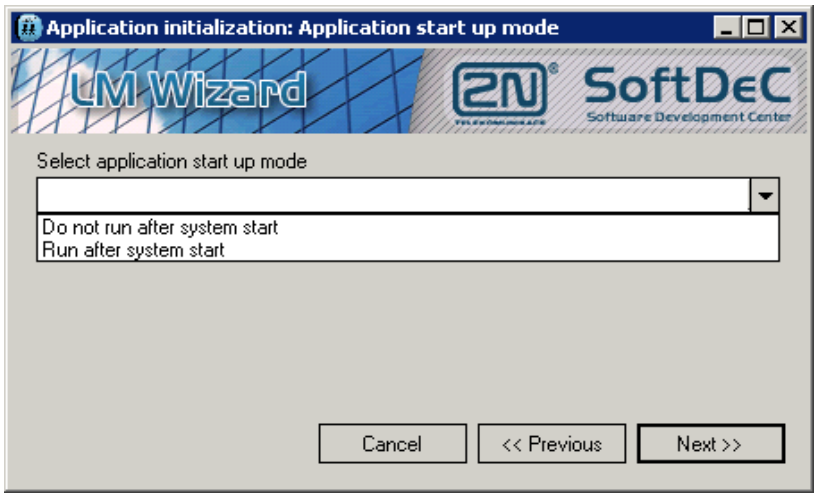

Figure 6: Automatic application start

4.5 Licensing

This chapter applies to server type application only.

To start application successfully it is necessary to have valid and activated primary license. When no valid or activated license exists in the application “Licensing wizard welcome screen” appears (see figure 7).

Figure 7: Licensing wizard welcome screen

Click next to proceed to the next screens.

In the next screen (figure 8) user is requested to insert a license; text-boxes are initially empty. Primary license has to be inserted as the first license. Primary license should be included in the installation bundle (NOT installation program).

To insert license click the "Load License" button, next select the particular file and click OK in the "Open" dialog. Next license is verified and if it is valid its data are displayed as shown in figure 8. If the license is invalid corresponding error message will be shown.

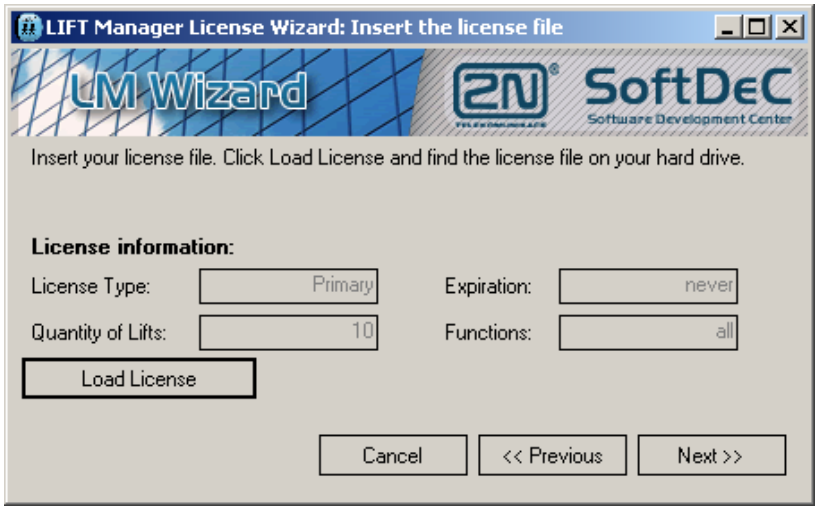

Figure 8: Insert license screen

Click next to navigate to "On-line activation" screen (figure 9) and click "Activate" button. If activation process is successful "The license has been activated" text will be displayed. In the following screen user may either insert other license or finish licensing wizard and start the application.

Figure 9: On-line activation screen

In the case the activation is not successful user may save unactivated license in the next screen (figure 10). Such a license should be sent to 2N technical support which activates it manually. In the following screen user may either insert other license or finish licensing wizard and quit the application.

Warning: Process of license activation joins the license and computer itself. Activated license can be used with particular computer only (computer where the activation was done).

Figure 10: Save license for manual activation screen

When the license is activated by 2N technical support it is sent back to the user. Start the license wizard then and insert activated license in the “Insert license file” screen (figure 8). License is checked and its data are displayed in text-boxes as shown in figure 8; “License type” text-box should contain “Activated” value. Next screen just informs the user that the application has been successfully activated (figure 11) and is ready to use.

Figure 11: Activated license successfully inserted

Note: If server type application has no valid license or license expires:

- it will become unreachable to all client application
- it will stop handle incoming calls
- it will show red text „Incoming calls disabled“ in the top left corner of the main window to inform the user

4.6 Login

When the configuration is complete a login form is shown (figure 12). This form is shown every time the application is started. The user has to choose a user name, or create a new user, to successfully log in.

Login form provides the following actions:

- Add a new user ("Add user...“)
- Login into the application as specified user (select a value from "User name“ combo-box and press "Select“)
- Quit the application ("Cancel“),
- “Connection setup...“ - shows database connection setup, see chapter 4.4.2.
- “License wizard ...” - opens license wizard (see chapter 4.5)

Figure 12: Application login form

Note: When the station a is configured as a "client" and the "server" application is not reachable, an error message is shown (figure 13). In this case, check that the "server is running, or click on "Connection setup..." to adjust the connection settings. See chapter 4.4.2 for details.

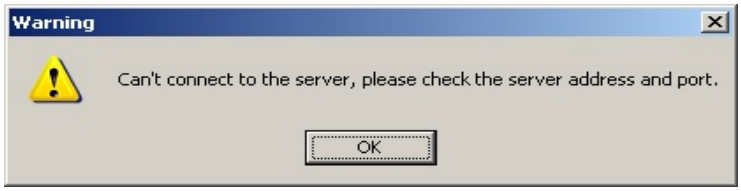

Figure 13: Warning "Server is unreachable"

5. GRAPHICAL USER INTERFACE

5.1 Main window

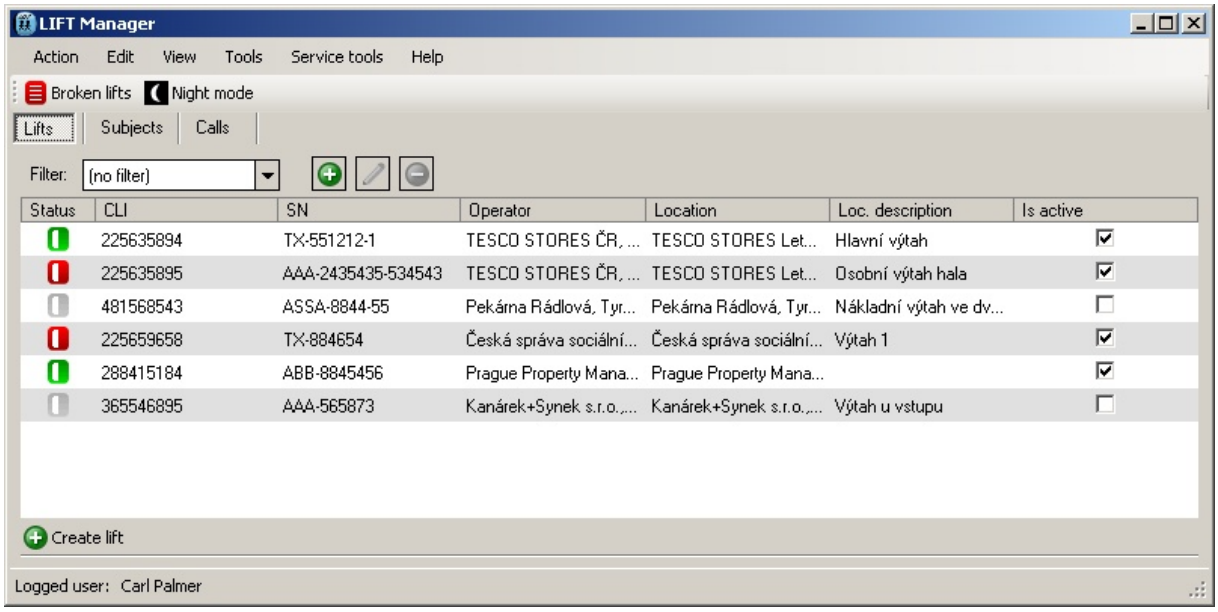

Figure 14: Main application window – list of lifts

The main window contains:

- Main menu bar
- Tool bar
- Tab-pages with list of lifts subjects and calls
- Status bar
- Icon in a system tray area

5.1.1 Main menu bar

Main menu bar contains the following options:

- Action
  - Night mode – sets the application mode to Night ( ) mode.
  - Quit – quits the application ( ).
- Edit
  - Copy all to clipboard – copies all data from the current tab-page (lifts, subjects, calls) into the clipboard ( ).
  - Copy selected to clipboard – copies selected data from the current tab-page (lifts, subjects, calls) into the clipboard ( ).
- View
  - Lifts – show tab-page with list of lifts ( ).
  - Subjects – show tab-page with list of subjects ( ).
  - Calls – show tab-page with list of calls ( ).
- Tools
  - Change user – change the currently logged user ( ).
  - Add user – creates new user ( ).
  - Export all to CSV – exports all data from the current tab-page (lifts, subjects, calls) into a CSV file ( ).
  - Export selected to CSV – saves selected data from current tab-page (lifts, subjects, calls) into CSV file ( ).
  - Options – shows the settings dialog.

- Service tools
  - Service tool – runs the "Service tool“ application ( ).
  - License wizard – opens the license wizard to add next licenses (see chapter 4.5).
- Help
  - About – shows a brief information about the application.

Note: To import exported CSV file into MS-Excel use the *Data / Import external data / Import data* option in MS-Excel menu bar; select *File types* "Text files (*. csv)"; find the file to import and choose the "Open". In the following dialog choose UTF-8 encoding in combobox *File type*.

Note: Version of Microsoft Excel 2003 or higher are supported.

5.1.2 Tool bar

The tool bar contains shortcuts to frequently used functions. Currently it contains buttons for showing broken lifts ( ) and for switching the application to night mode ( ).

5.1.3 Lifts tab-page

Shows the list of registered lifts. The "Filter“ combo-box is used to show lifts, which correspond with filter search criteria. The user can use predefined filters or define his own.

Following filters are defined by the application:

- (no filter) – displays all lifts.
- Broken lifts – displays broken lifts only.

Following information is shown for each lift:

- Status – This icons shows the lift state. The following states are possible:
  - (green) – The lift is working properly; CC has been received within last three days.
  - (red) –Th lift is not working properly; CC has not been received within last three days.
  - (light gray) – The lift is marked is inactive. The application does not monitor such lift.
- CLI – phone number from which the LiftNet unit calls
- SN – serial number of the lift
- Operator – subject who runs/owns the lift
- Location – location address
- Loc. Description – describes the location in more detail, for instance “main passenger lift“, etc.
- Is active – a yes/no value, which indicates whether the lift is monitored or not. (i.e. whether it should send CC)

List of lifts is shown in the figure 14.

5.1.4 Subjects tab-page

Shows the list of registered subjects. The "Filter“ combo-box is used to show only subjects that correspond to filter search criteria. The user can use his own or application defined filters.

Following filter is defined by the application:

- (no filter) – displays all subjects

Following information is shown for each subject:

- Name – subject (company) name
- Street – street name
- Number – street number
- City – city of residence of the subject
- Region – region
- ZIP – ZIP/postal code
- Country – country of residence of the subject

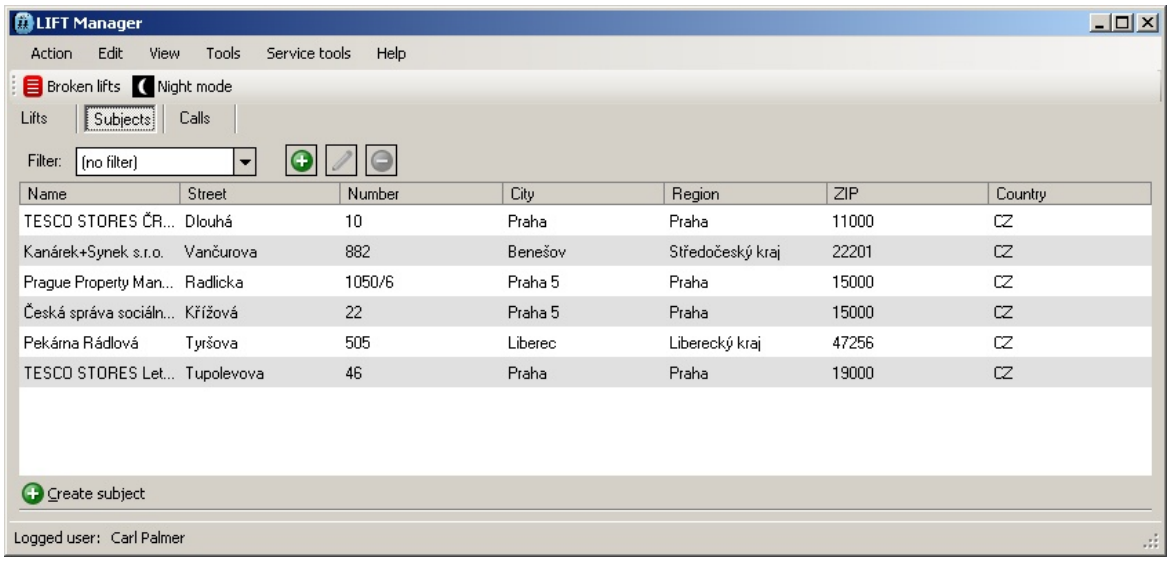

Figure 15: List of subjects

5.1.5 Calls tab-page

Shows the list of calls. The "Filter" combo-box is used to show only calls which correspond to filter search criteria. The user can use his own or application defined filters.

Following filter is defined by the application:

- (no filter) – displays all calls

Following information is shown for each call:

- Call type – contains one of the following values:
  - Unknown Call – light yellow background color
  - Emergency Call – light green background color
  - Control Call – light gray background color
  - Error Call – red background color
- Status – contains one of the following values:
  - new call
  - the call has already been seen by any user

  Note. To change call state from new call to seen call click the corresponding line.
  Note. New call is highlighted with a bold text style.
- CLI – phone number of the caller
- Start time – date and time when the call has started

- Duration – duration of the call
- Resolver – user who has processed the call
- Note – additional information about the call

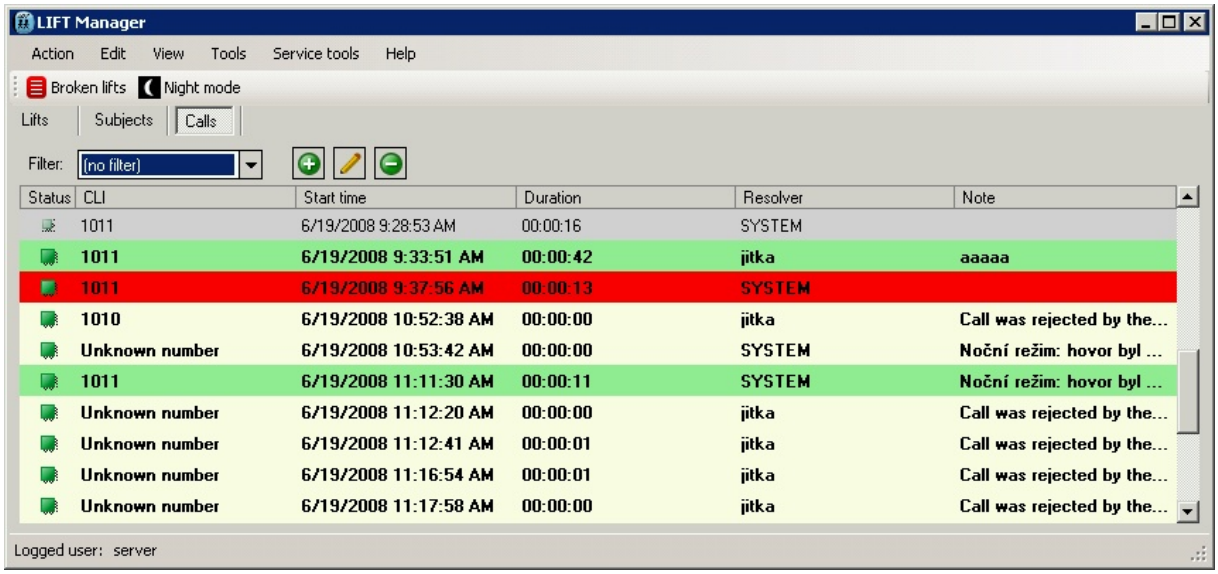

Figure 16: List of calls

5.1.6 Status bar

Status bar is located at the bottom of the main application window, and is used to show auxiliary or state information, such as currently logged user, etc.

Figure 17: Status bar

5.1.7 Application tray icon

In the case the button ( ), or Alt+F4 is pressed the application is hidden (but is still running) into system tray area where an icon ( ) appears.

The following options are available after right-clicking on the system tray icon:

- LIFT Manager ( ) - activates (shows) the LIFT-Manager application
- Service tool ( ) - runs the "Service tool“ application
- Quit ( ) - quits the application

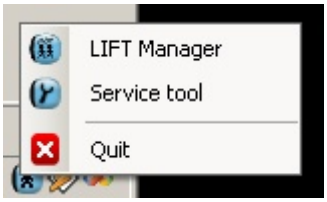

Figure 18: System tray options

5.2 Editing of registered data

Registered data (lifts, subjects) can be changed in an arbitrary way (add new, edit, delete) using application forms, that are accessible via "Create“ button, or context menu (right-click on a list).

5.2.1 Lifts editing

Lifts tab-page enables the user to edit any lift using following actions:

- Create lift ( ) - When this button under the list is pressed, a create new lift dialog is shown.
- Edit lift ( ) - When this option is chosen form the context menu, an edit lift dialog is shown.
- Delete lift ( ) - When the option is chosen from the context menu, the selected lift is deleted (including all its watchers)

The following information can be changed:

- CLI – phone number from which the LiftNet unit calls
- SN – serial number of the lift
- DTMF – tone dialing identification that is sent by the LiftNet unit
- Operator – subject that runs/owns the lift
- Location – location address
- Loc. Description – describes the location in more detail, for instance "main passenger lift“, etc.
- Is active – yes/no value that indicates whether the lift should send CC
- Watcher – list of watchers that are connected to the LiftNet unit, see chapter 5.2.2.

To save the data press the "Save“ button, to close the dialog without saving press the "Cancel“ button.

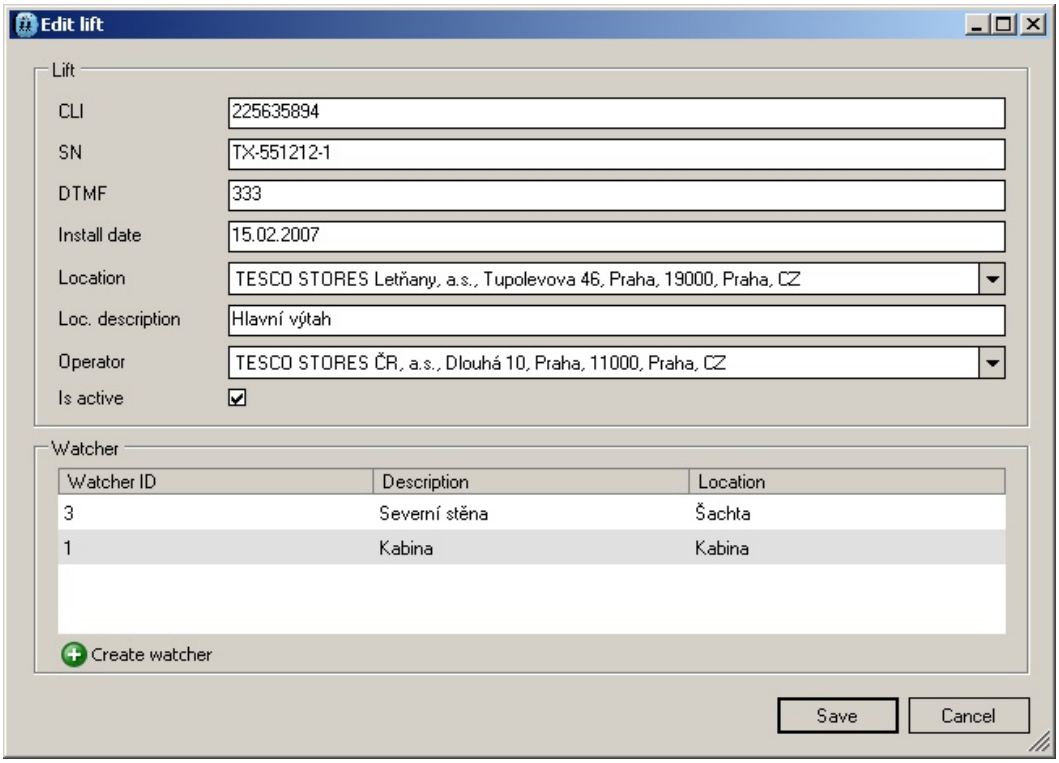

Figure 19: Editing a lift

5.2.2 Watchers editing

The Edit watcher window enables the user to edit any watcher assigned to the selected lift, using following actions:

- Create watcher ( ) - When this button under the list is pressed, a create new watcher dialog is shown.

- Edit watcher ( ) - When this option is chosen from the context menu, an edit watcher dialog is shown.
- Delete watcher ( ) - When this option is chosen from the context menu, the selected watcher is deleted.

The following information can be changed:

- Watcher ID – Watcher identification: depends on physical location and configuration of the watcher described in [1].
- Description – additional description (e.g. “cabin”, “machine hall” etc.).
- Location – additional location description.

To save the data press the "Save“ button, to close the dialog without saving press the "Cancel“ button.

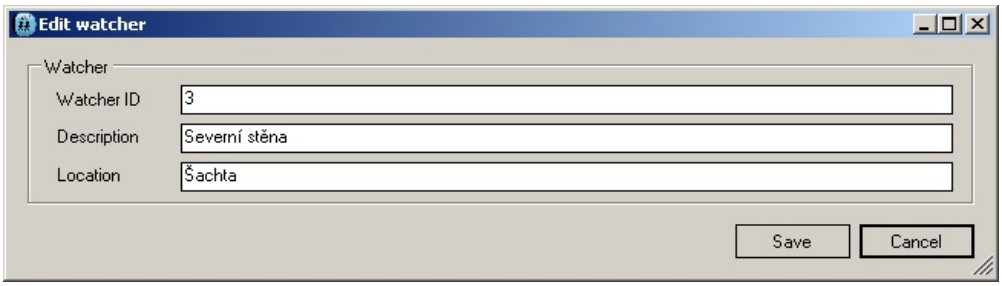

Figure 20: Watcher editing

5.2.3 Subjects editing

The subjects tab-page enables the user to edit any subject using following actions:

- Create subject ( ) - When the button under the list is pressed, a “Create new subject” dialog is shown.
- Edit subject ( ) - When this option is chosen form the context menu, an “Edit subject” dialog is shown.
- Delete subject ( ) - When this option is chosen form the context menu, the selected subject is deleted.

The following information can be changed:

- Name – name of the subject (company)
- Street – street name
- Number – street number
- City – city of residence of the subject
- Region – region
- ZIP – ZIP/postal code
- Country – country of residence of the subject

To save the data press the "Save“ button, to close the dialog without saving press the "Cancel“ button.

Note: Only one user is allowed to edit a subject at a time. Maximum time for editing is set to ten minutes. When the ten minutes limit elapses, it is not possible to save the subject. The only thing the user can do is to reopen the dialog - close it by pressing the "Cancel“ button and then open it again.

Note: It is not possible to delete a subject that is associated with any lift (i.e. there exits a lift, which contains the subject in it's "Location" or "Operator" field). It is only possible to delete the subject, after all it's associated lifts are deleted.

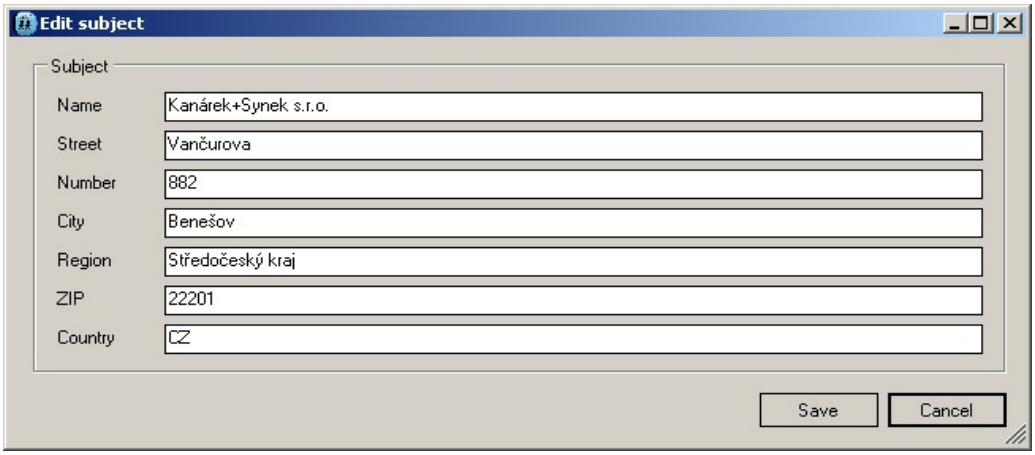

Figure 21: Subject editing

5.3 Filter editing

Users can define their own filters on all entities (lifts, subjects, calls).

To work with filters use the component that is placed above the list of lifts, subjects or calls; see figure 22.

The following options are available:

- Select a filter (Broken lifts) - Use this combo-box to select any filter from the list – after the filter is selected only data filtered by the chosen filter are displayed.
- Create a new filter ( ) - Opens the dialog to create the filter
- Edit ( ) - Opens an "Edit filter" dialog with allows the user to edit data of the selected filter.
- Delete filter ( ) - Deletes the selected filter.

Figure 22: Filters

Note: It is impossible to edit or delete the predefined filters.

5.3.1 Filter features

The "Edit filter" dialog provides the filter options:

- Select columns to be shown in the list – only columns that are chosen by ticking the check-box (☑) next to the column name will be displayed.
- Define search criteria; Enter only the exact values, which you wish to be filtered out (e.g. entering 225435894 into CLI will show only lifts with caller id 225435894).

Note: When the condition for the column is left empty, the data will not be filtered by this column.

Note: When the "yes/no" (☑) type field disabled (☑), it will be not used to filter the data.

Note: When the "select" type field is empty it will not be used to filter the data. The empty value can be entered by pressing "Delete" button when the field is focused.

5.3.2 Lifts filter editing

Using the “Edit filter” dialog for lifts, the user can define his own filters on lifts.

The Following fields can be included into search criteria:

- CLI – phone number from which the LiftNet unit calls
- SN – serial number of the lift
- Operator name – operator name
- Operator city – city of residence of the operator
- Location name – name of the location where the list is located
- Loc. Description – describes the location in more detail
- Is active – yes/no value which indicates whether the lift should send CC

Example: Picture 24 defines filter named "Active lifts Prague“ which shows all lifts that are located in Prague.

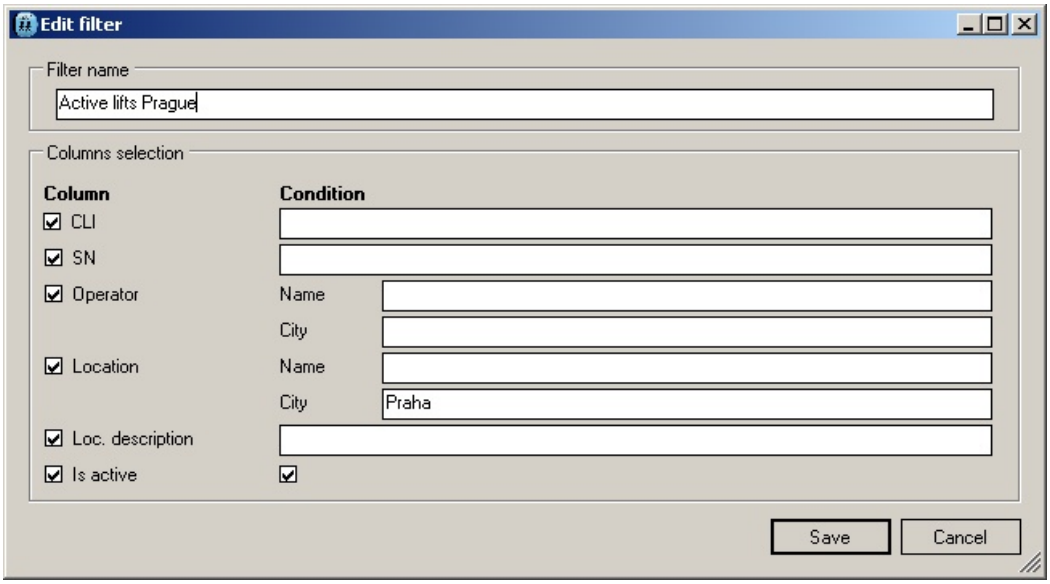

Figure 23: Lift filter editing dialog

5.3.3 Subjects filter editing

Using the Subjects editing dialog the user can define his own filters on subjects.

Following fields can be included into search criteria:

- Name – name of subject
- Street – street name
- Number – street number
- City – city of residence of the subject
- Region – region
- ZIP – ZIP/postal code
- Country – country of residence of the subject

Example: Picture 24 defines filter named "Prague 5“ which shows all subjects that resides in Prague 5.

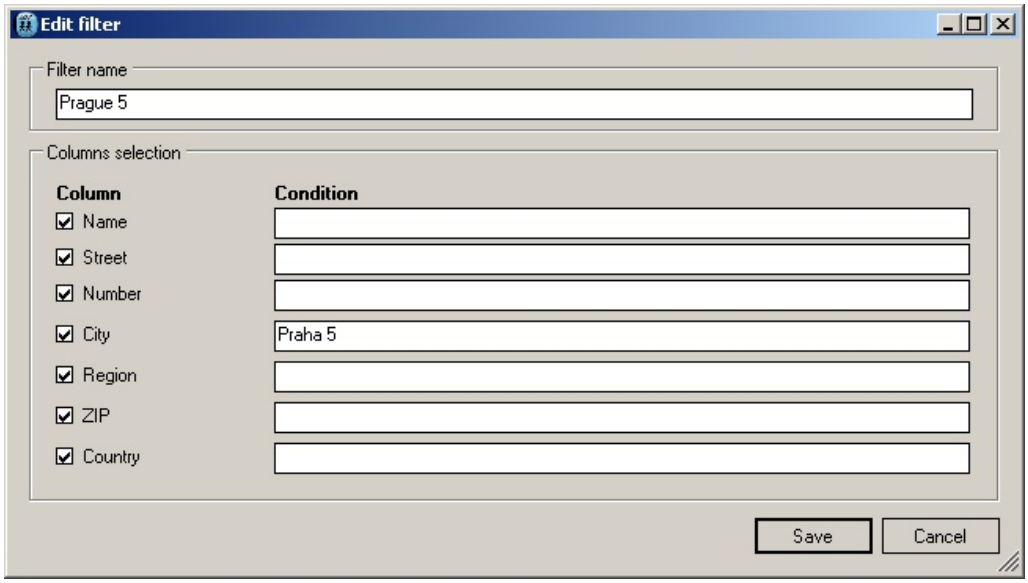

Figure 24: Subject filter editing dialog

5.3.4 Calls filter editing

Using the "Edit filter" dialog for calls the user can define his own filters on calls.

The Following fields can be included into search criteria:

- Call type – defines call type (CC, ERC, EC, UC)
- Status – status of the call (new call, seen call)
- CLI – phone number of the caller
- Start time from, Start time to – call start time range
- Resolver – user who handled the call
- Note – additional information about the call

Note: Call start time range must be defined – both "From" and "To" fields must be filled in.

Example: Picture 25 defines filter named "June emergency calls" which shows only emergency calls that started during June 2008.

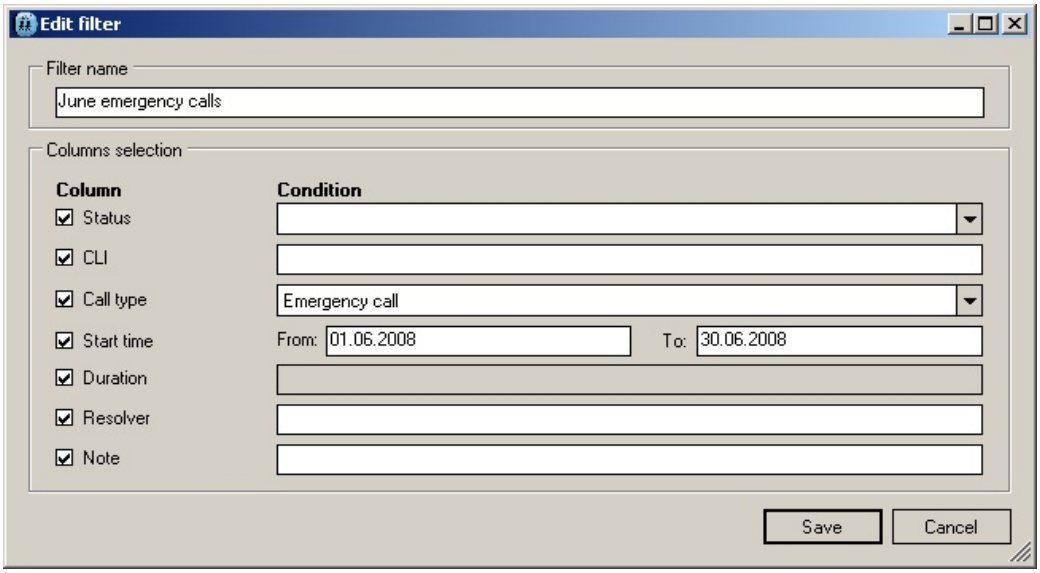

Figure 25: Call filter editing dialog

5.4 Application settings

To open the application settings dialog (figure 26) choose “Tools/Options“ from the main menu bar. This dialog allows the user to change the same settings as during the initialization process (during the first application start – see chapter 4.4) except language and date and time format settings.

5.4.1 Language

This option allows the change of language graphical user interface – one possibility exists:

- English

5.4.2 Date and time format

This option allows to select a date and time format – two possibilities exist:

- MM/dd/yyyy hh:mm AM/PM
- dd.MM.yyyy HH:mm

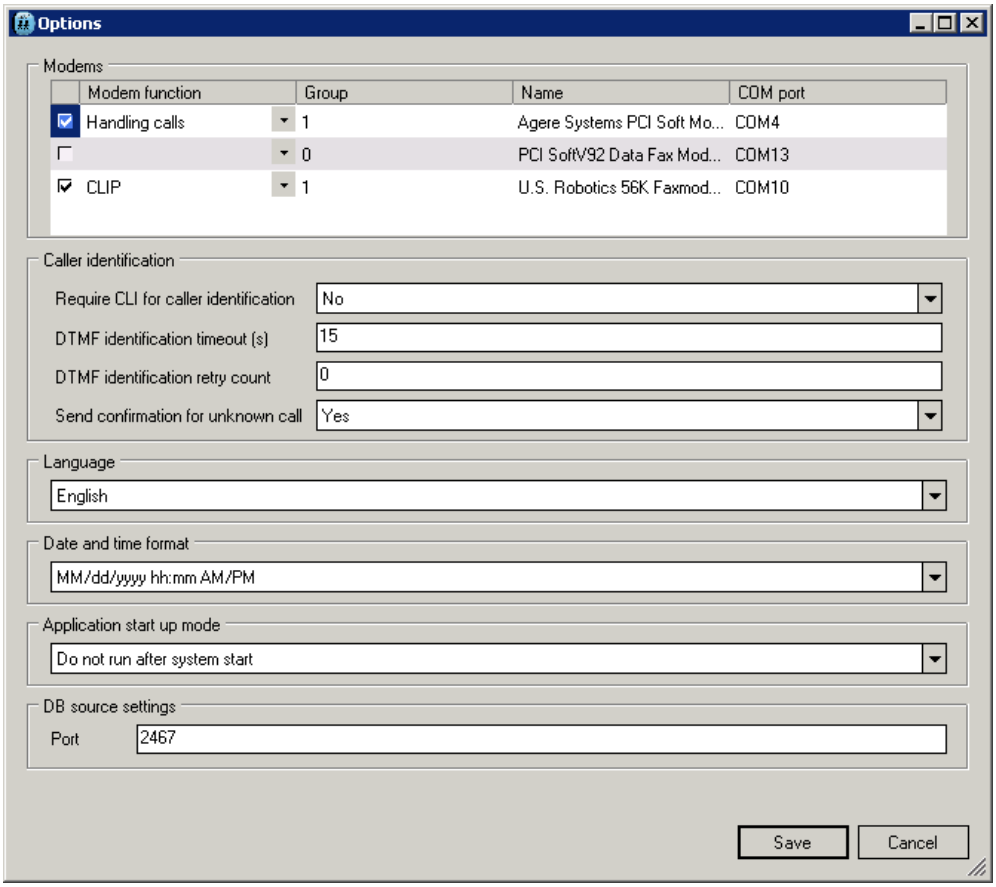

Figure 26: Application settings

5.5 Accepting calls

The calls can be classified in two ways, according to the direction (incoming/outgoing), as emergency, error and unknown. The application supports incoming calls only.

5.5.1 Emergency call

An emergency call from the LiftNet unit is indicated by an “Emergency call” dialog (figure 27), and by playing an alarm sound.

The Following information is shown:

- CLI – phone number of the calling LiftNet unit

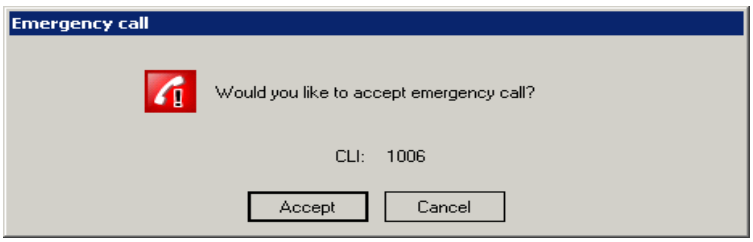

Figure 27: Incoming emergency call

The user must follow these steps to process the call:

- Accept/reject of emergency call:
  - Accept/pick-up the call by pressing the "Accept" button
  - Reject/hang-up the call by pressing the "Cancel" button – The call is rejected and call processing is completed
- Pick-up telephone receiver:
  - pick up the call – communicate with the person in the lift
  - hang-up the telephone receiver
- Write additional notes about the call into the dialog provided and press "Save" button - see figure 28.
- Emergency call processing is completed.

The following information is shown about the caller:

- CLI – phone number of the calling LiftNet unit
- SN – serial number
- Watcher – description about the watcher where the call originates, ie. "Lift cabin", etc.
- Operator – operator/owner of the lift
- Location – location address
- Lift Number – number of given lift the call initiated

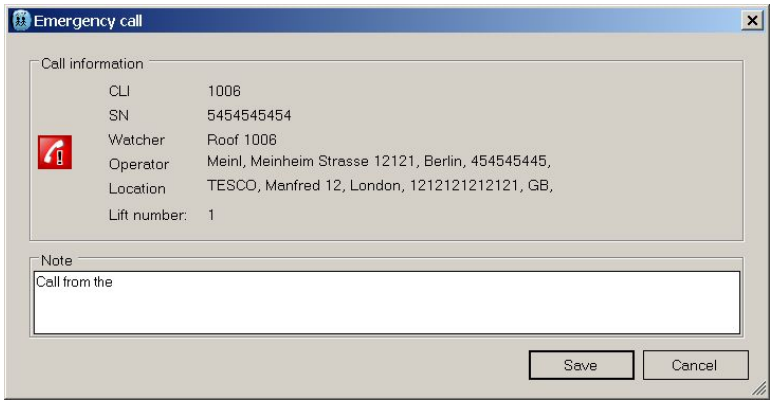

Figure 28: Append note to emergency call

5.5.2 Control call

A control call is processed automatically by the application. A control call that has been processed is shown in the call list on Calls tab-page.

5.5.3 Error call

An error call is processed automatically by the application. An error call that has been processed is shown in the call list on Calls tab-page.

5.5.4 Unknown call

An unknown call is indicated by an “Unknown call” dialog (figure 29) and by playing an alarm sound.

The call is analyzed as unknown in one of the following cases:

- "CLI“ was not recognized
- "CLI“ is not among the set of registered CLIs – no lift exists with such a CLI

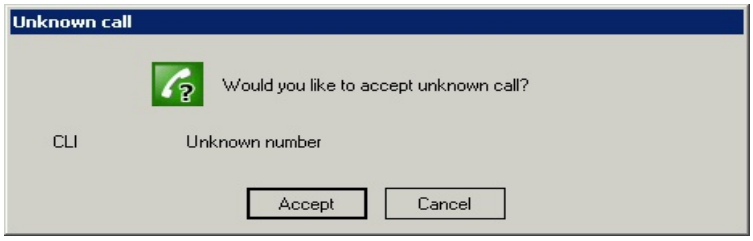

Figure 29: Incoming unknown call

The user must follow these steps to process the call:

- Accept/reject the unknown call:
  - Accept/pick-up the call by pressing the “Accept“ button
  - Reject/hang-up the call by pressing the “Cancel“ button – The call is rejected and call processing is completed
- Pick-up telephone receiver:
  - When communicating with the LiftNet unit press button “1“ on the telephone keyboard to confirm the call.
  - pick-up the call – communicate with the person who is calling
  - hang-up the telephone receiver
- Write additional notes about the call into the dialog provided and press "Save“ button - see figure 30.
- Unknown call processing is completed.

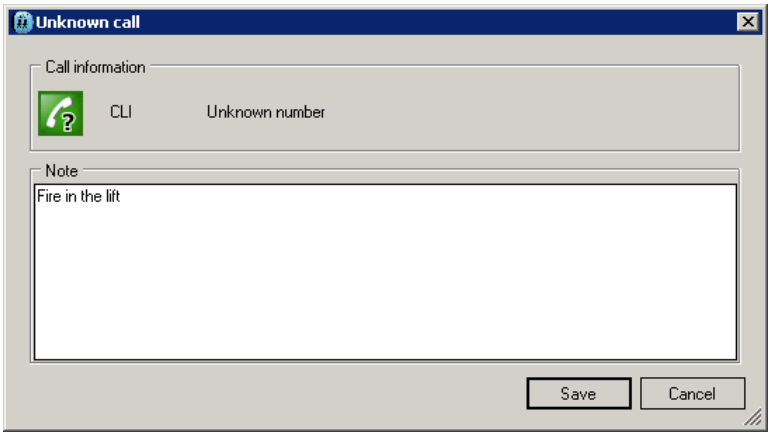

Figure 30: Append note to unknown call

Note: When „Send confirmation for unknown calls“ is set to „Yes“ (see chapter 4.4.3) and user accepts the call, the call may change its type to Control, Error or Emergency.according received

DTMF identification string. For Control and Error calls appropriate note in shown in the Status bar. For Emergency calls corresponding dialog is shown to handle the call (see figure 28).

5.6 Day/night mode

When the application is started it is automatically set to Day mode – in this mode the application handles all types of calls.

When the mode is changed to Night mode ("Action/Night mode" in main menu bar or "Night mode" in tool bar) then all functions are disabled, and "Night mode" (figure 31) is shown in the main window. During the Night mode the application handles control and error calls only. Emergency and unknown calls are automatically rejected.

To go back from Night mode do Day mode, press either the button "Day mode" in tool bar, or the button "Go to day mode after pressing...", which is placed at the bottom of the main window.

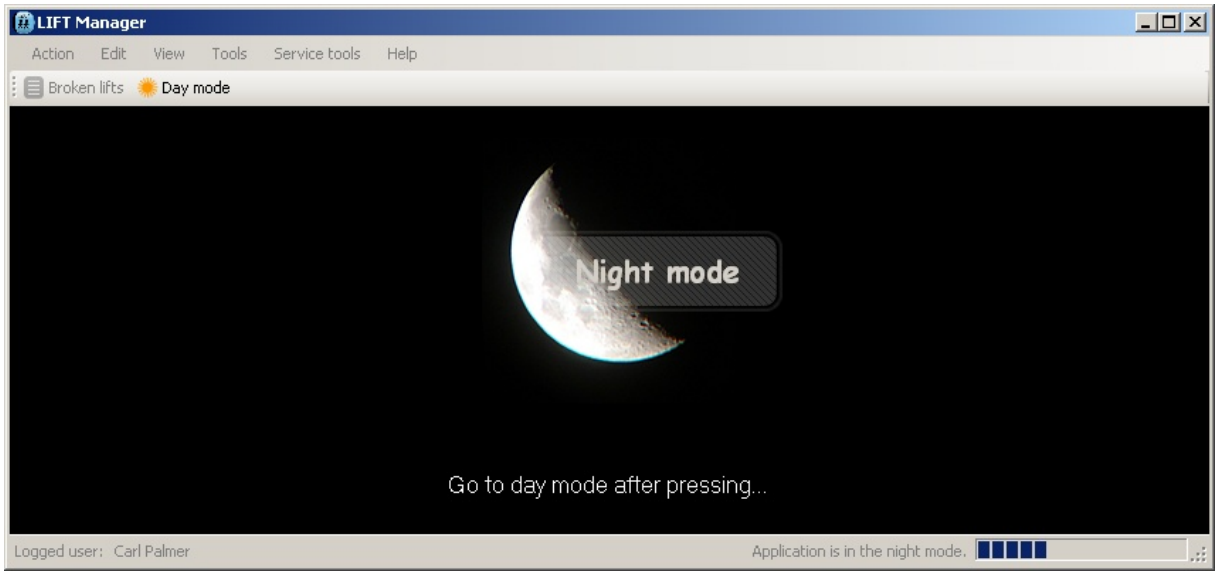

Figure 31: Night mode

6. SERVICE TOOL

6.1 Getting started

6.1.1 Service Tool application environment

For correct operation of the service tool it is necessary to have a correctly created directory structure, see below.

./Program Files	Default installation directory
/Lift Manager/	Lift Manager directory
Service Tool Executable	Service Tool executable file (*.exe)
/ServiceTool/	Service Tool directory (contains all data necessary for application run)
/CSV/	Service Tool database directory
/AU/	Audio units configuration.
/PAR/	Default firmware's configurations.
/FW/	Firmwares description.
/LNG/	Language localizations.
Devices.csv	Table of all known devices.
Parameters.csv	Table of all device's functional parameters.
Screens[COUNTRY].csv	Tables for parameters grouping. Tables are three, for each below mentioned languages [CS – Czech, EN – English and DE - Germany].
/DATA/	
/AU/	Firmwares for Audio Units (*.baf).
/FW/	Firmwares (*.hex or *.txt).
/SW/	State machine files (*.baf).
/VM/	Voice menu files (*.baf).
/Patch/	
Patch.txt	File contents BSL patch data.

Table 1: Service Tool - Directory structure

6.1.2 Starting the Service Tool application

To start the Service Tool go to Start menu (option Start -> Programs -> 2N -> LIFT Manager -> Service Tool).

First a connected device must be selected, see figure 32. When there are no devices available, connect a device and press "Refresh List", or close the service tool by pressing Cancel button.

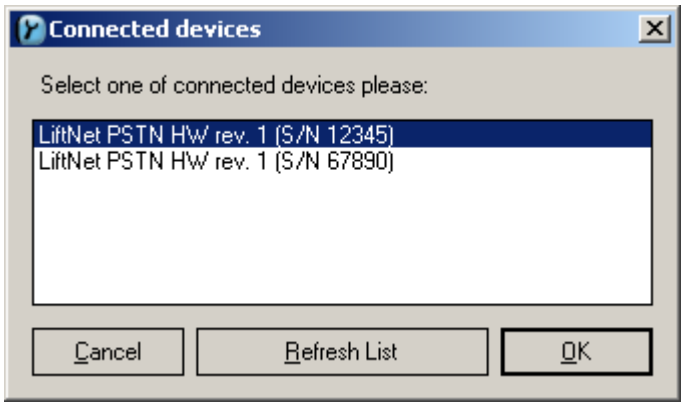

Figure 32: Connected devices dialog

After a connected device has been selected a service tool main window will appear, see figure 26.

Next the device firmware must be selected. It can be done either manually, using Firmware combo-box, or automatically, using the "Detect Firmware" button. The controls for firmware selection can be found at the top of the main window.

When both device and firmware is selected, the Service Tool is prepared for configuration management.

The user can manage arbitrary number of unlocked parameters, by selecting a parameter group (list on the left side) first and then by selecting the desired parameter.

To edit a parameter value, select a row in the parameters table and type alphanumeric characters or allowed symbols.. If a new parameter value is admissible, the change will be accepted. If an escape key is pressed in editing mode, the change will be discarded immediately. For detailed information about parameters managing see Service Tool – Managing parameters paragraph.

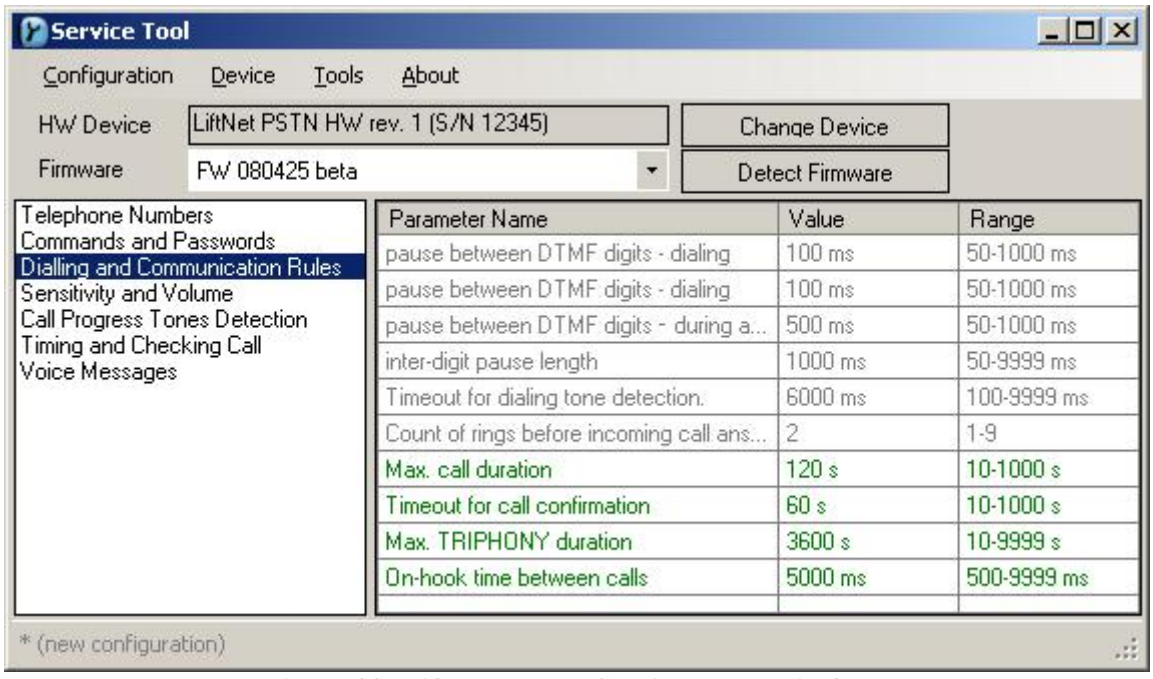

Figure 33: Lift Manager - Service Tool main form

6.2 Managing parameters

6.2.1 Parameter data types and allowed values

Service tool is closely related to LiftNet devices and their firmware, thus five data types are provided for each value:

- phone number: can contain characters from set {[0..9]; hash mark; star; comma}, maximum length is 16 characters,
- password: can contain characters from set {[0..9]; hash mark; star}, maximum length is 16 characters,
- number: can contain 16 bit unsigned integer (i.e. number in range $0..2^{16}-1$),
- second: can contain 16 bit unsigned integer,
- millisecond: can contains 16 bit unsigned integer.

6.2.2 Inserting a new value

The user can edit any parameter value, except locked parameters, which are displayed in gray.

If the user inserts an invalid value (see valid data chapter 6.2.1), a value input dialog will be shown, see figure 34. The user has to insert a new value, and confirm it by pressing OK, or press Cancel to return to the previous value.

When a new value is inserted, the parameter will change state color. The meaning of each color is discussed in Table 2.

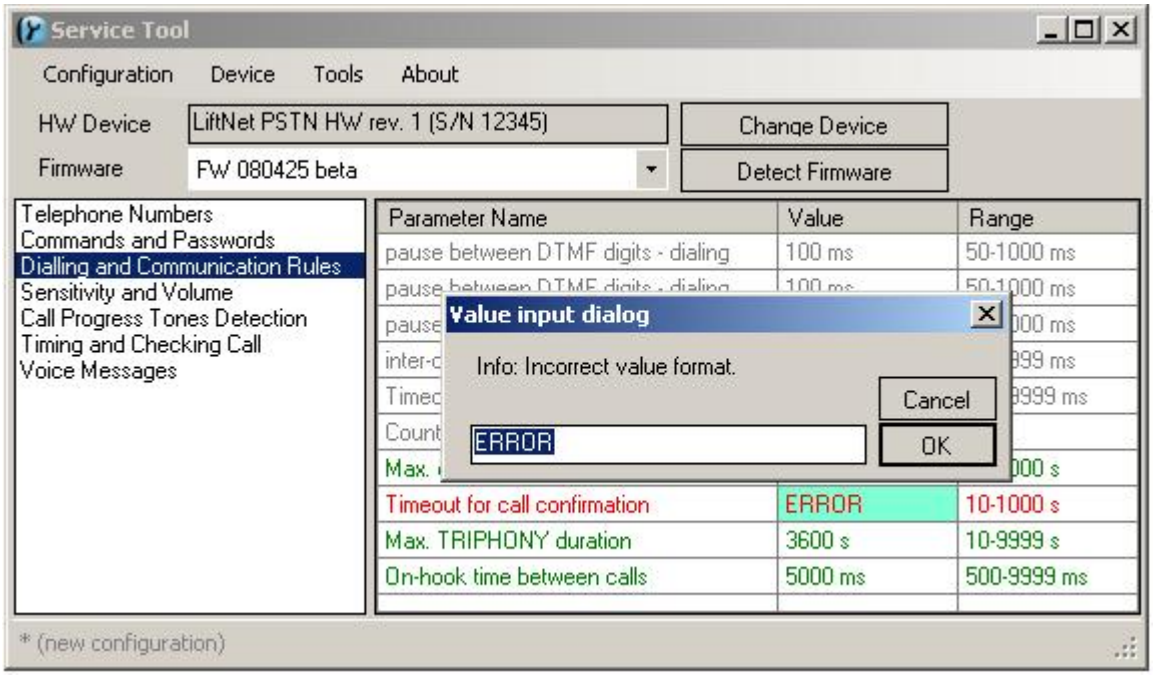

Figure 34: Value input form

Value state color	Value state semantic
Gray value	Locked (read only) parameter
Green value	Parameter with default value
Blue value	Modified parameter (correct value)
Red value	Modified parameter (incorrect – out of range value)

Table 2: Parameters colors and its semantics

6.3 Service Tool – Command menu description

This section gives overview of available options in main menu bar.

Note: Execution of any command marked by * character may cause loss of all previously created changes. In this case, the user is informed, with the possibility to cancel the command operation.

6.3.1 Configuration menu

The Configuration menu provides user interface for creating, opening, saving and printing parameter configuration, see bellow.

New Configuration *

The New configuration command loads a new (default) configuration from specific file according to selected device and firmware; the parameters group and table are filled by obtained values.

Open Configuration from File *

This command loads a configuration from a selected configuration file (any previously modified and saved configuration). The user is notified, if any read parameters are missing or redundant for the default device and firmware. The information dialog is shown in figure 37.

Save Configuration

This command saves a configuration to a specified file. If the configuration was already saved, the new changes are automatically overwritten, otherwise configuration file name and location must be specified by the user. A filename consisting of serial number and hardware ID of the selected device is constructed automatically. If the extension ".csv" is not specified it is appended automatically.

Save Configuration As

This command saves the configuration to a specified file. The user is always asked for a configuration file name and location. The filename is also constructed automatically. The .csv extension is automatically appended to the filename only when there is a CSV file type selected at the bottom of the Save dialog. The Save dialog is shown in the figure 35.

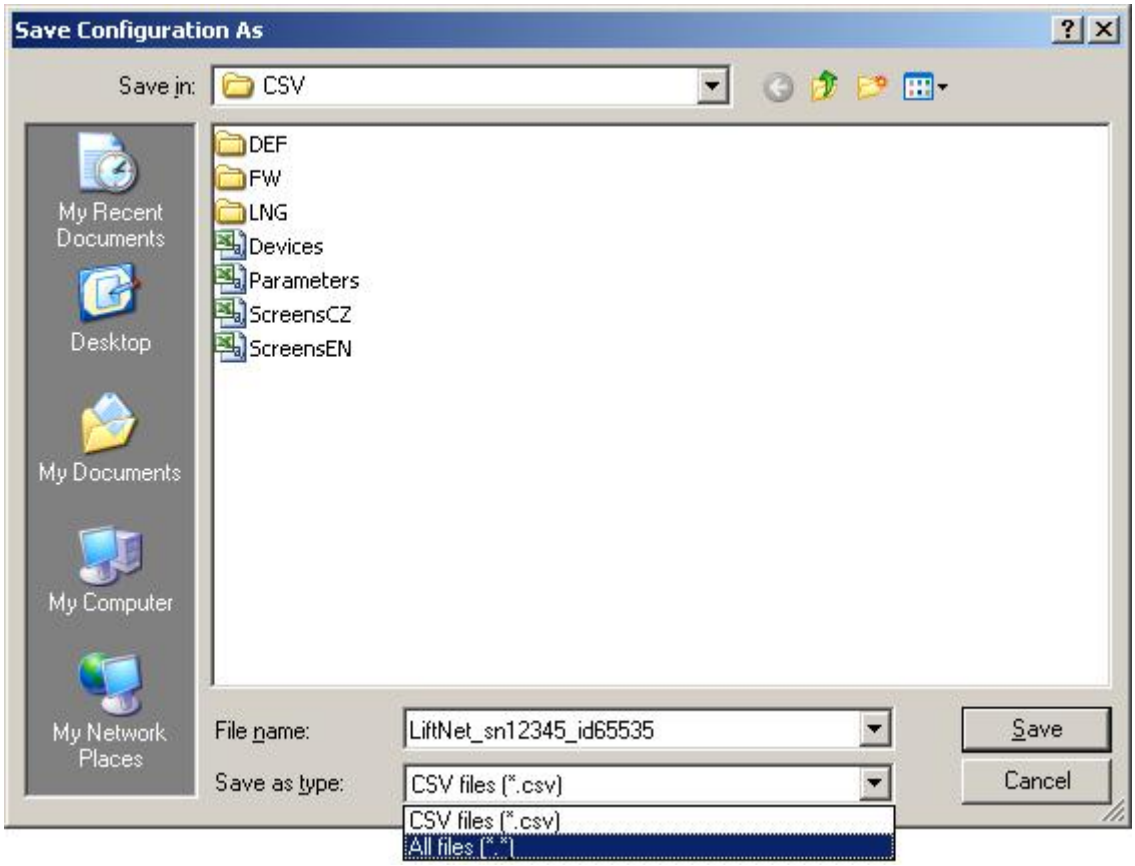

Figure 35: Save configuration as dialog

Print Configuration

This command exports the selected parameter group as a HTML page, which is shown in default web browser. The web browser print dialog is shown automatically when page is loaded. See figure 36 for illustration.

Device: LiftNet PSTN HW rev. 1 (S/N 12345)
Firmware: FW 080425 beta
Parameters: Dialling and Communication Rules

Parameter	Value	Range
pause between DTMF digits - dialing	100 ms	50-1000 ms
pause between DTMF digits - dialing	100 ms	50-1000 ms
pause between DTMF digits – during a call	500 ms	50-1000 ms
inter-digit pause length	1000 ms	50-9999 ms
Timeout for dialing tone detection.	6000 ms	100-9999 ms
Count of rings before incoming call answering	2	1-9
Max. call duration	120 s	10-1000 s
Timeout for call confirmation	60 s	10-1000 s
Max. TRIPHONY duration	3600 s	10-9999 s
On-hook time between calls	5000 ms	500-9999 ms

Figure 36: Configuration parameter's group as HTML page cut

Close Service Tool *

This command closes the Lift Manager - Service Tool application.

6.3.2 Device menu

The Device menu provides a user interface for reading, writing and updating of the device parameter configuration, or detecting firmware.

Detect Firmware *

The Detect Firmware command tries to get the firmware name from a connected device. The name of the device firmware is obtained from `Devices.csv` file according to the connected device firmware ID. If no firmware is detected or firmware id was not found, an error message with problem description is shown.

Read Configuration From Device *

This command reads the configuration (all parameters) from the connected device. If the read parameters are missing or redundant according to default device and firmware configuration file, the user is informed about this. Parameters readout information dialog is shown in figure 37.

Note: If no device is connected this command will be disabled.

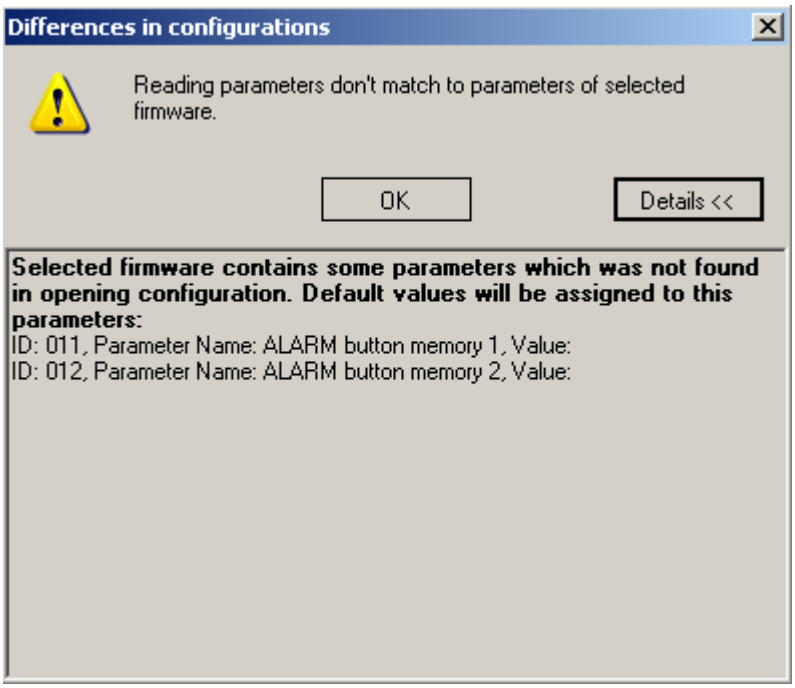

Figure 37: Parameter readout differences information dialog example

Write Configuration Into Device

This command writes the current configuration into the selected device. If any of parameters in configuration has an invalid value (red color), an error message is shown and writing process is canceled, i.e. no parameter is written.

Note: If no device is connected, this command will be disabled.

Perform Device Upgrade *

When this command is executed, the "Perform Device Upgrade" dialog is shown, see figure 38. This dialog can be closed by Cancel button.

After performing the device upgrade the selected firmware and localization, including the state machine and voice menu, is written into the connected device. With selected firmware for Central Unit are also written firmwares for Audio Units.

If the "Preserve device configuration" option is selected, the configuration from the connected device will stay in the upgraded device. The configuration readout is shown in the parameters table.

If "Reset device configuration option" is selected, the default configuration will be written into the upgraded device.

Note: If any error occurs, an error message will be shown and the process of upgrading will be terminated. The user should perform the upgrade again.

Note: The upgrade process can take a few minutes, since the data may be large (especially voice menus).

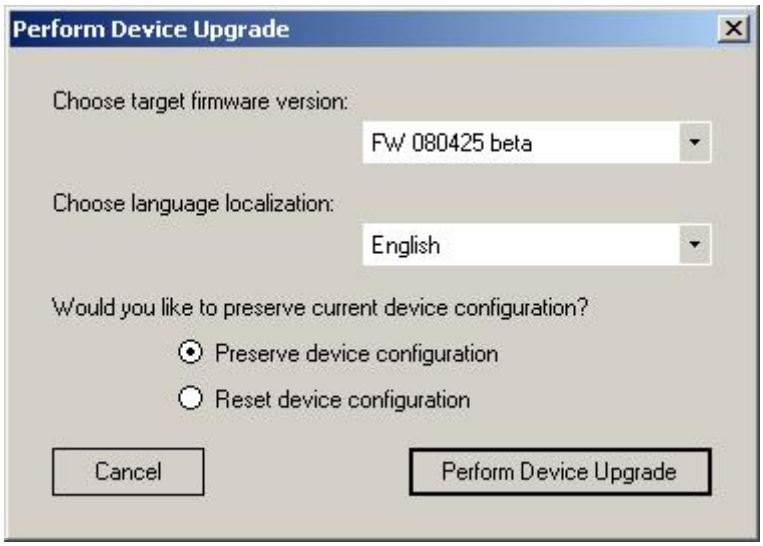

Figure 38: Perform Device Upgrade dialog

Set Date and Time

This command show form with date and time read from device. User can modify values and write new values to the device. Button Use Topical Date and Time set Date and Time fields to the current time on computer. When is command perform by pressing button Write Into Device, Date and Time fields are written to the connected device.

Note: Format of displayed Date and Time can user change in Application settings, see 5.4.2.

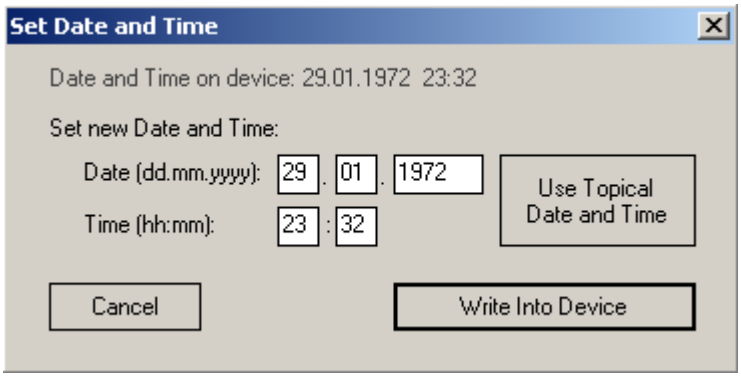

Figure 39: Set Date and Time dialog

Audio Units Check

This command try to find all connected Audio Units and show information about them in form. In figure are available these columns:

- Address – identification number of Audio Units
- Unit type – Audio Unit type
- HW – version of hardware used in Audio Units
- FW – version of firmware in Audio Units
- Boot FW – version of boot firmware in Audio Units
- Serial Number – Serial Number of Audio units

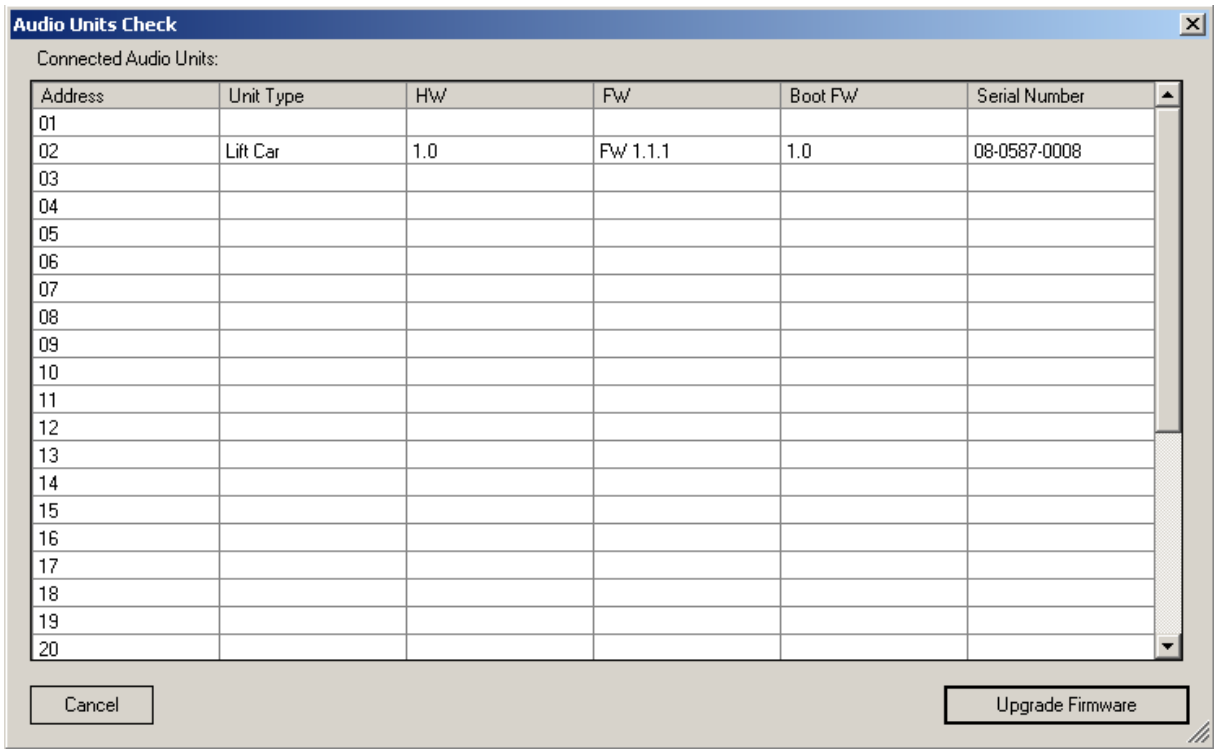

Figure 40: Audio Units information dialog

Note: If upgrade of Audio Units is not needed, cell with name of firmware (column FW) has white color (see Figure 40). If upgrade is needed, cell with firmware's name has red value (see Figure 41) and user is ask if he want upgrade immediately (if user choose No, he can perform upgrade Audio Units later by pressing Upgrade Firmware button). After confirm upgrade, successfully upgraded Audio Units are colour to green.

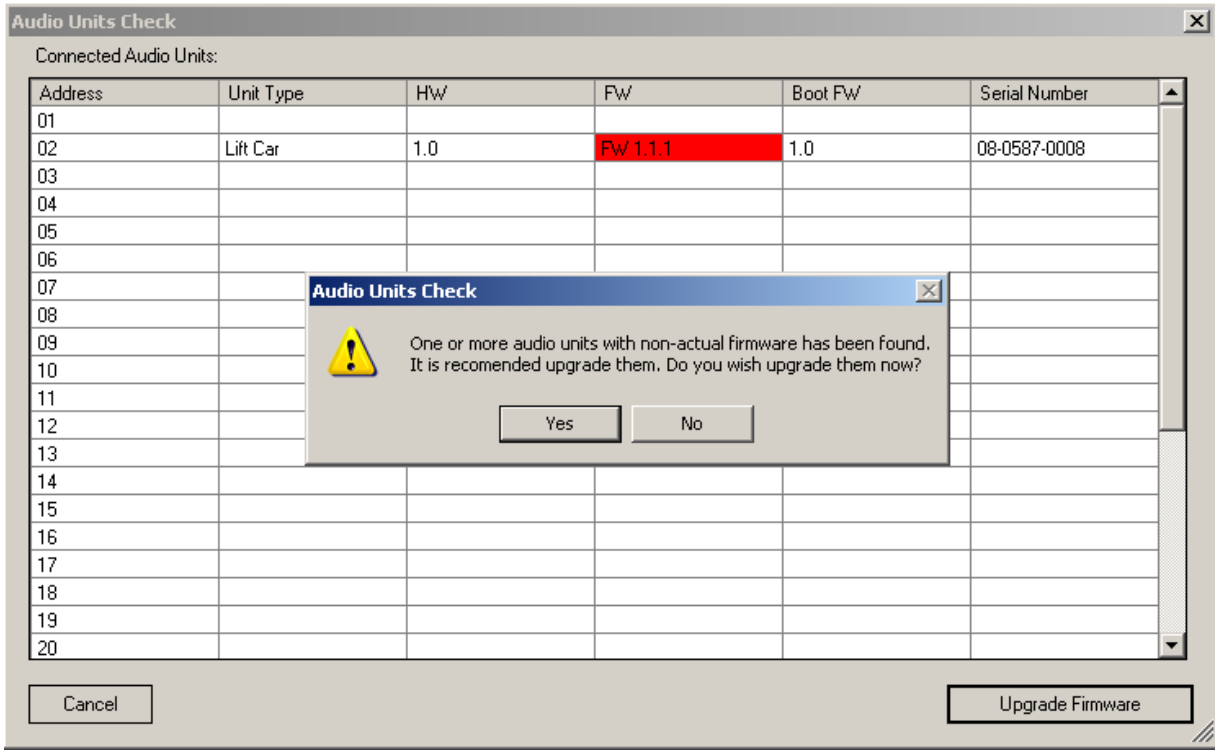

Figure 41: Audio Units Check result with old firmware version dialog

Note: Actually upgrading Audio units row is colour to light grey and progress is shown as green bar replacing red cell color (see Figure 42).

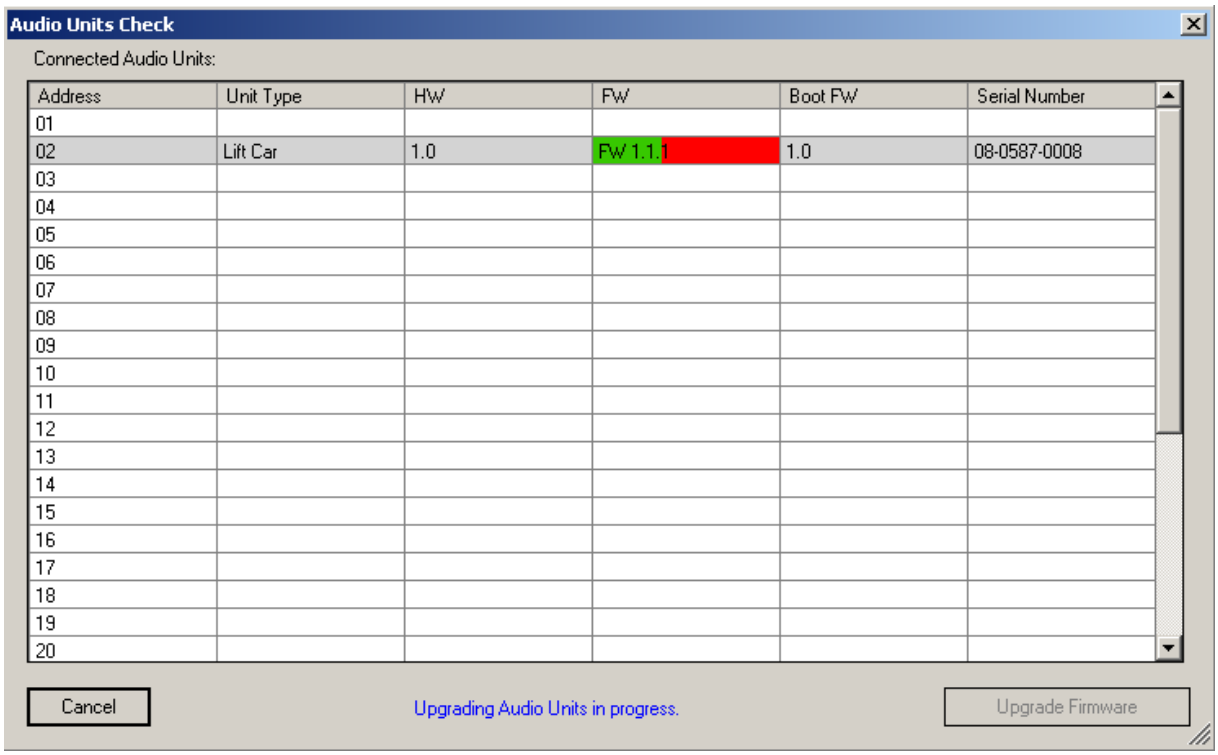

Figure 42: Audio Units Upgrading progress dialog

User Messages Upload

This command allows user to write to the device his own messages. Input form allows user enter up to 10 messages. After perform uploading by pressing Upload into Device button are input messages upload into the device.

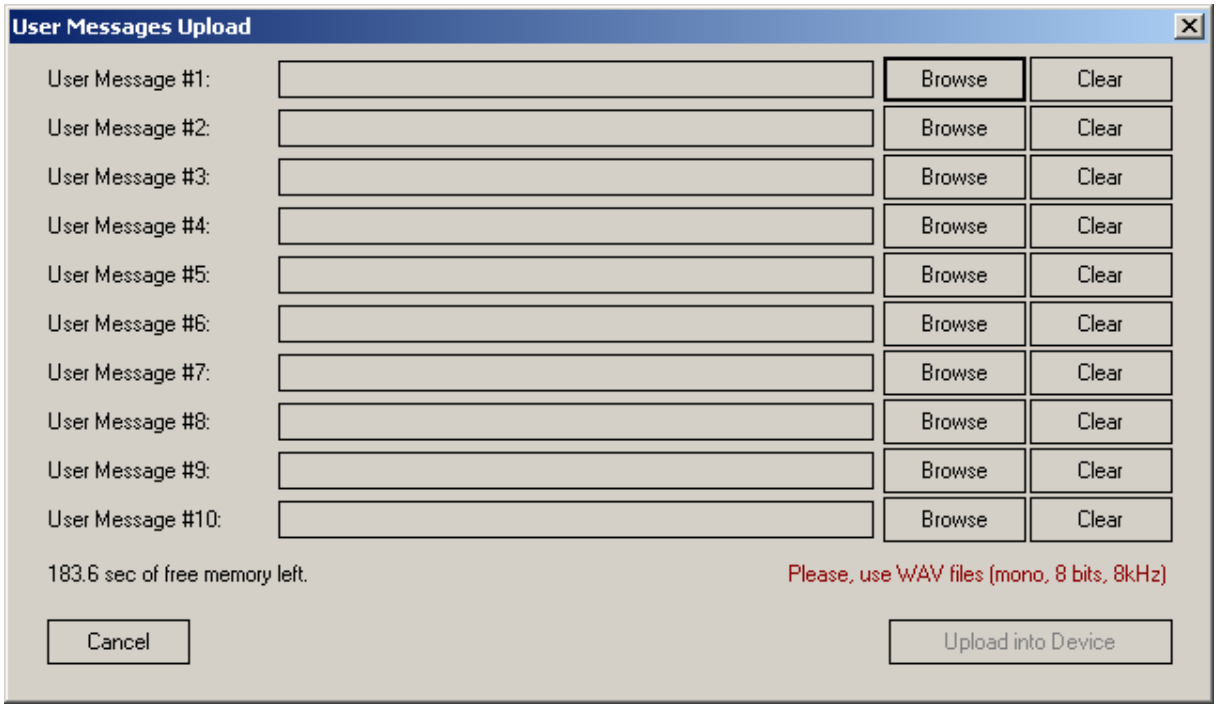

Figure 43: User Messages Upload dialog

Note: Free memory left is computed from free Dataflash memory. User need not enter all ten messages. Messages have to be wav, mono, 8 bits a 8 kHz format.

Note: User Messages Upload dialog support Drag&Drop. User can simply dragging file with his message in to a desired Message slot (e.g. User Message #1).

User Numbers Upload

This command allows user to write his own numbers to the device. To the input form user have to enter exactly all 10 numbers. After perform uploading by pressing Upload into Device button are numbers upload into the device.

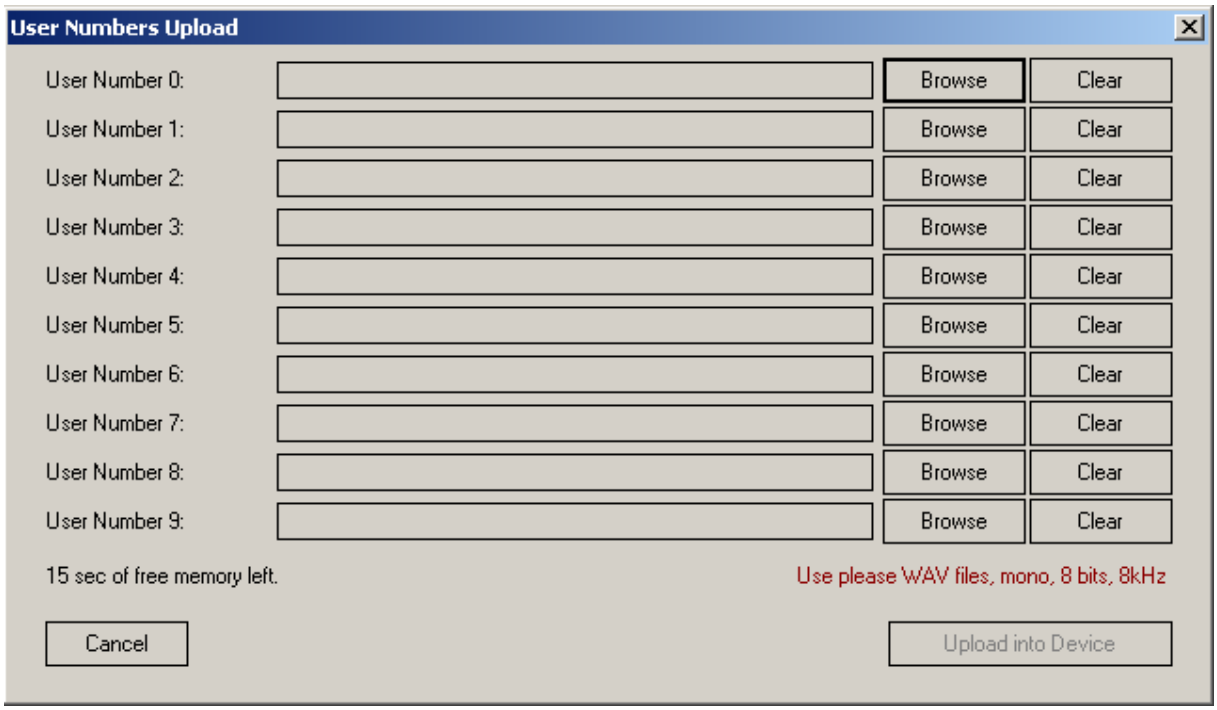

Figure 44: User Number Upload dialog

Note: Free memory left is exactly 15 second for all user numbers together. User have to enter all ten numbers. Numbers have to be wav, mono, 8 bits a 8 kHz format.

Note: User Numbers Upload dialog support Drag&Drop. User can simply dragging file with his number in to a desired Number slot (e.g. User Number 0).

6.3.3 Tools menu

The Tools menu provides an user interface for reading and writing data into Dataflash and for writing device firmware into the processor memory, see below.

Read Data From DataFlash

When this command is executed, the "Read Data From Dataflash" dialog is displayed, see figure 45. This dialog can be closed by Cancel button. After pressing "Load Data" the desired number of pages, starting with the selected page (zero based indexing), will be read from the Dataflash. After all pages are read the user can save data as binary (`*.bin` or `*.baf`) file.

Note: If no device has been connected this command will be disabled.

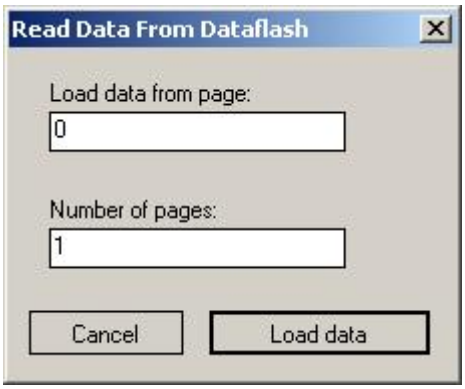

Figure 45: Read data from DataFlash dialog

Write Data Into DataFlash

When this command is executed, then "Write Data Into DataFlash" dialog is displayed, see figure 46. This dialog can be closed by Cancel button. By pressing the Browse button, the user can select either binary (`*.bin` or `*.baf`) file or a file with any extension (`*.*`).

When a concrete file (except `*.baf` file) is selected, the user must specify the initial page to write the data to. The count of necessary pages is computed automatically from the size of the binary data. If (`*.baf`) file is selected, then both edit boxes are filled automatically.

This dialog provides "Verify written data" option (check-box in left bottom). When this options is selected (i.e. check-box is checked), the written data will be read again and compared with the binary data from the input file.

Note: If no device is connected this command will be disabled.

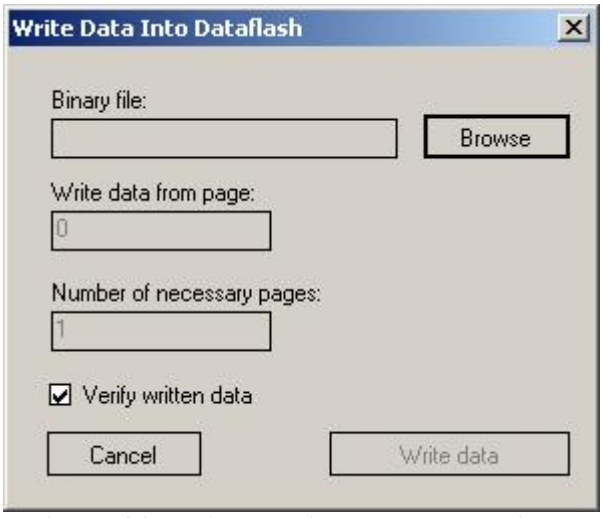

Figure 46: Write data into DataFlash dialog

Write Firmware Into Processor

When this command is executed, the "Write Firmware Into Processor" dialog is displayed, see figure 47. This dialog can be closed by Cancel button.

A new firmware file (`*.txt` or `*.hex`) or arbitrary file (`*.*`) for the connected device can be selected by the Browse button. The Firmware can then be written into the device processor.

Note: If no device is connected this command will be disabled.

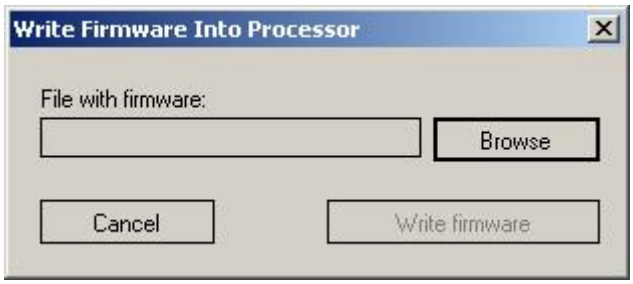

Figure 47: Write firmware into processor dialog

7. TROUBLESHOOTING

7.1 LIFT-Manager troubleshooting

Application errors (cannot connect to the server, unreachable database, etc.) are written into application log-file, which is located in "**C:\LMData\lm.txt**" file.

Errors that can be solved by changing the application configuration are written into log-file as well as presented to the user by an error dialog with resolution suggestion.

Remaining errors (cannot find database file, file is corrupted, etc.), which cannot be solved by the application are stored into the log-file only.

The most common errors and resolution suggestions are shown below.

Error		**App type**	**Cause**	**Solution**
1	no user is available in the combo-box at login screen although at least one was created before	S	unreachable database, unauthorized access to database file	- check the database file which is located in "**C:\LMData\lm.mdb**" - if the file does not exist, copy the file from the back-up (if any exists) and set access rights (Read/Write permissions for all LIFT-Manager users) - if the back-up does not exist reinstall the application – database file will be created - if the database file exists check the access rights on the file (both Read/Write permissions are required) - check log-file – search for "FATAL" or "ERROR" messages
2	error message "Can't connect to the server, please check the server address and port." is shown	C	"server" type application is unreachable	- check if the "server" type application is running - check the port numbers- it must have same value both in server and client ("Tools/Options" in main menu or "Connection setup..." on login screen) - check the server/host name ("Tools/Options" in main menu or "Connection setup..." on login screen) - check the firewall settings on both server and client side. The communication port must be allowed. - check the licenses is server type application - check log-file – search for "FATAL" or "ERROR" messages
3	cannot view, edit or delete data	S	unreachable database	see error 1
4	cannot view, edit or delete data	C	unreachable database	see error 2

Legend:

- S … "server" type application
- C … "client" type application

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