AMR DEVICES &
SYSTEMS

HELM MobileMR

User Manual

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1 Overview

MobileMR is a mobile application for collecting data of energy consumption. Its main function is to provide a link between the billing system and meter consumption data. Data is acquired from measuring devices in the field, which measure various energy types such as electricity, gas, water and heat.

MobileMR is capable of collecting various types of information such as billing periods, events and load profiles.

MobileMR application uses various communication interfaces for automated data collection. Data can be entered manually using touchscreen, virtual keyboard or mechanical keyboard.

MobileMR is able to transfer collected data to a desktop computer located in the collection center. If the handheld terminal and a computer are both equipped with wireless communication (GPRS, Wi-Fi, Bluetooth), file transfer is done wirelessly, if not transfer is done via USB interface.

MobileMR application runs on all types of terminals with Microsoft Windows Mobile operating system.

1.1 Generating assignments

The billing system generates assignments and transfers them to the terminal using HELM MobileSync application. The basic functionality that the billing system should support:

- Manage meter data
- Manage customer data
- Create reading assignments
- Process collected data
- Transfer XML files to MobileMR

You can also use any other application that is capable, or that can be upgraded, so that it can generate XML assignments and also update its database upon receiving measurement data.

2 Installation

This section describes installation procedure of HELM MobileMR application on your terminal.

2.1 System requirements

MobileMR application runs on terminals with one of the following operating systems:

- Microsoft Windows Mobile 2003
- Microsoft Windows Mobile 2003 SE
- Microsoft Windows Mobile 5
- Microsoft Windows Mobile 6
- Microsoft Windows Mobile 6.1
- Microsoft Windows Mobile 6.5

For HELM MobileMR to work properly additional system components must be installed on terminal:

- Microsoft .NET Compact Framework 2.0
- Microsoft SQL Server Compact 3.5 Service Pack 2

2.2 Installation procedure

To install HELM MobileMR application on the terminal is necessary to do the following steps:

- Connect terminal on PC
- Open HELM MobileSync application on your desktop computer
- Browse for application CAB file.
- Start the installation process.
- Wait until installation process is complete.



See HELM MobileSync User Manual for additional information regarding installing CAB files.

3 Licensing

This section describes steps needed to complete licensing of HELM MobileMR application.

3.1 Licensing concept

After successful installation and before any use, the HELM MobileMR application must be licensed. For this purpose user has to send registration data to HELM d.o.o. license department, in return the user will obtain license key witch than has to be entered in the registration form.

3.2 Licensing procedure

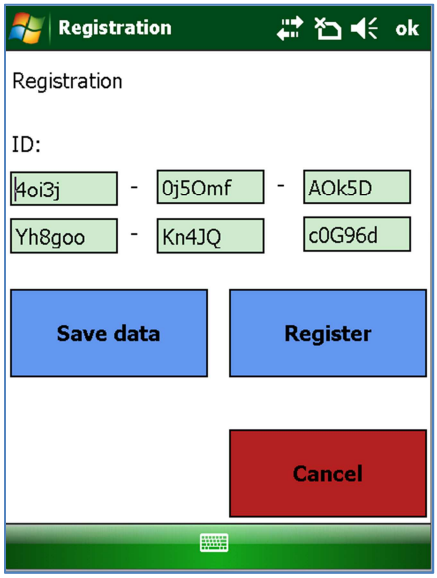
To license application is necessary to do the following steps:

1. Open application by clicking on the “HELM MobileMR” icon in Start->Programs menu.



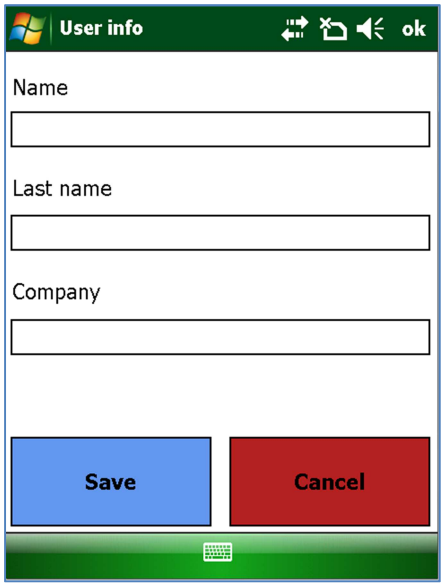
Picture 1. Programs menu

2. Click on “Save data” on registration form (picture 2).



Picture 2. Registration form

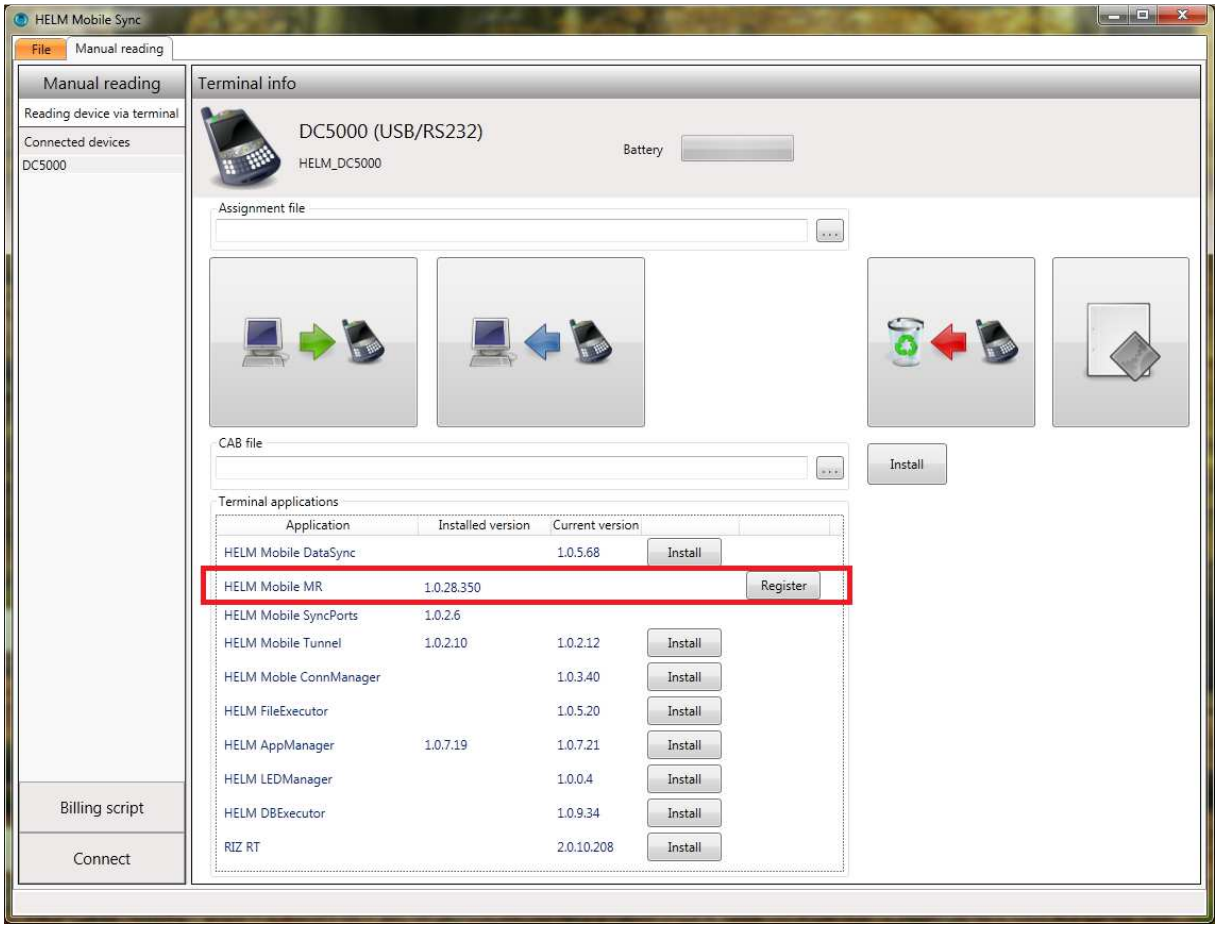
3. Fill the “User info” form with correct information and then click on the “Save” button.



Picture 3. User info form

4. Connect terminal on PC.
5. Open HELM MobileSync application on your desktop computer.
6. Select a name of terminal from list.

7. Press the “Register” button for MobileMR application.



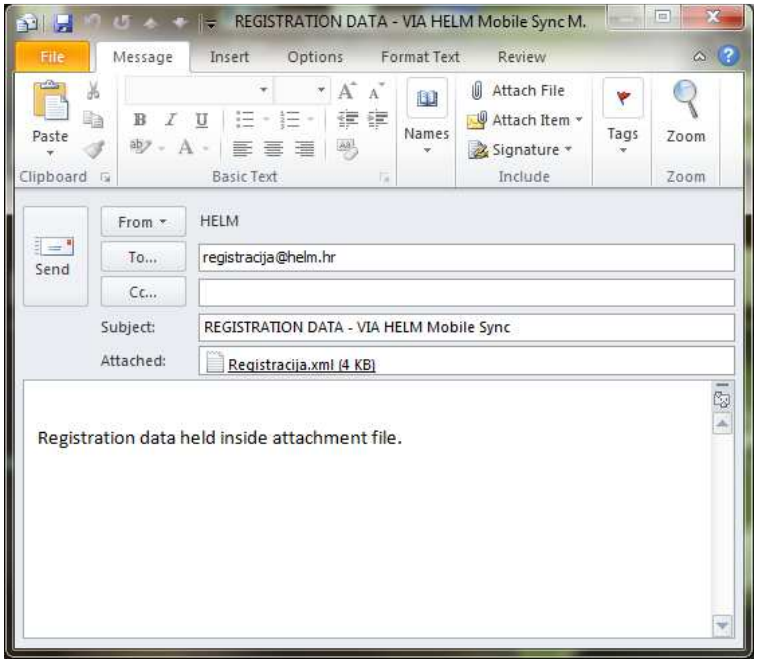
Picture 4. HELM MobileSync application

8. Press the “Collect registration data end send e-mail” button on the registration form.



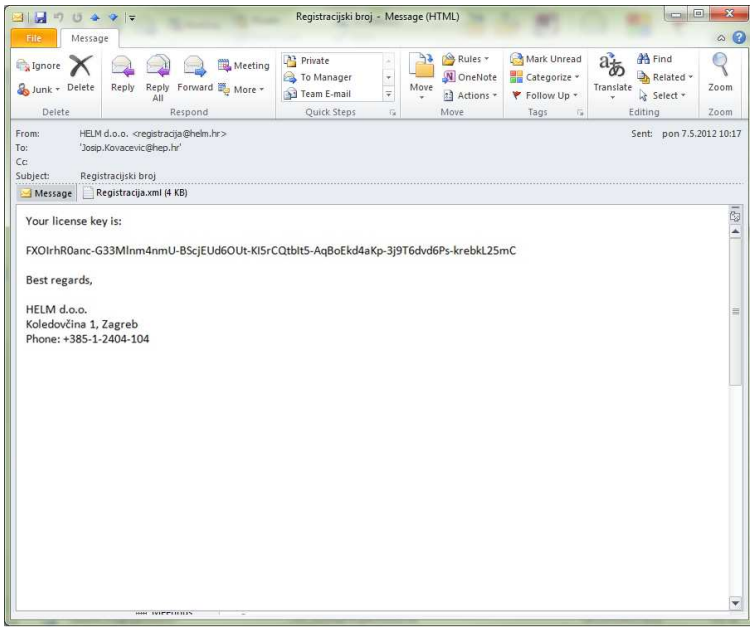
Picture 5. Registration form in HELM MobileSync

9. Your default e-mail client will pop up with license required e-mail ready to be sent. By sending license request e-mail you have successfully completed the first step of obtaining your license key



Picture 6. License request e-mail

10. After few minutes you will receive an e-mail with your license key.

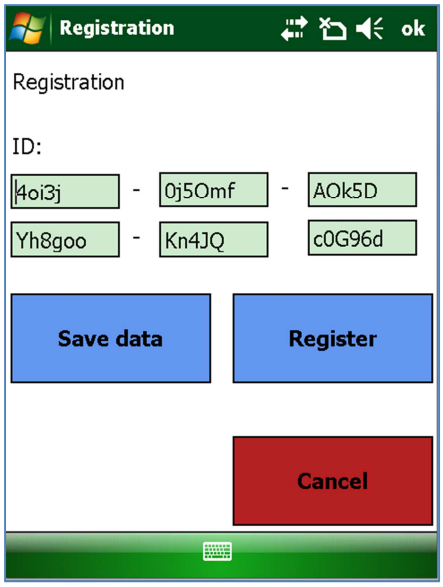


Picture 7. Example of an e-mail with license key

11. Save attached file (Registracija.xml) from received email to the desktop file system.
12. Press the “Register” button on the registration form (Picture 5) and browse for received XML file.

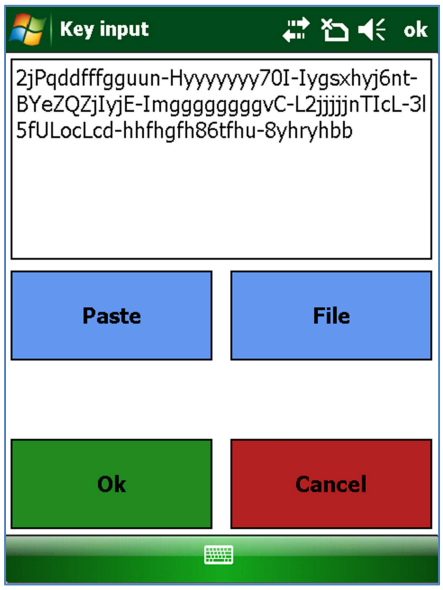
The terminal must be connected to your computer.

13. Click on the “Register” button on the registration form (picture 8).



Picture 8. Registration form

14. Click on the “File” button on the “Key input” form to read the license key into a form.



Picture 9. Key input form

15. Click on “OK” to complete licensing procedure

The main menu (picture 11) of the application is displayed if the registration process is completed successfully. Otherwise first screen (picture 2) of the registration process is displayed.

4 Use of MobileMR application

This section describes the use of MobileMR application.

4.1 Starting application

To open application click on “HELM MobileMR” icon in Start->Programs menu.



Picture 10. Programs menu

4.2 Main menu

Main menu of MobileMR application is shown on picture 11.



Picture 11. Main menu

Functions of the main menu are listed in the table below.

Button	Description
Reading	Loading XML file into application.
Save	Save collected data into XML file.
Search	Search data.
Statistics	Statistics of data collection.
Terminal	Terminal information.
Settings	Application settings.
Exit	Exit.

Table 1. Main functions

4.3 Settings

Click on the “Settings” button to enter into settings menu. Settings menu of MobileMR application is shown on picture 12.

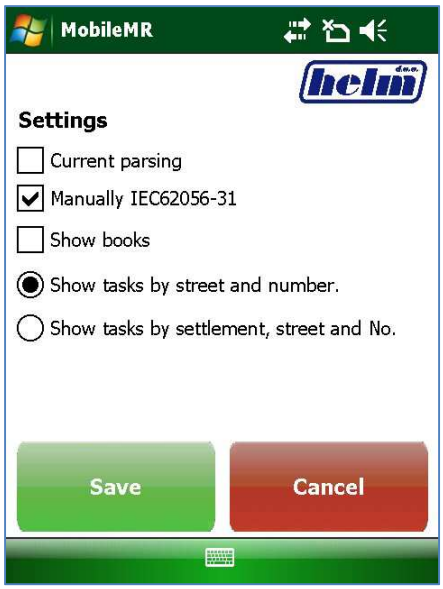


Picture 12. Settings

By pressing on the “About” button you will get screen with application information and contact information.

4.3.1 General Settings

By pressing on the “General” button you will get screen with general settings (picture 13).



Picture 13. General settings

On that screen you can edit the following settings:

- **Current parsing**
  - Parsing data immediately after reading data from the meter
- **Manually IEC62056-31**
  - Ask for manual input for IEC62056-31 electronic meters
- **Show books**
  - Grouping measurement places by books

If you don't check „Show books“, measurement places will be grouped by streets or settlements. In that case you can choose:

- **Show tasks by street and number**
- **Show tasks by settlement, street and number**.

To save settings click on the „Save” button, otherwise click on „Cancel“.

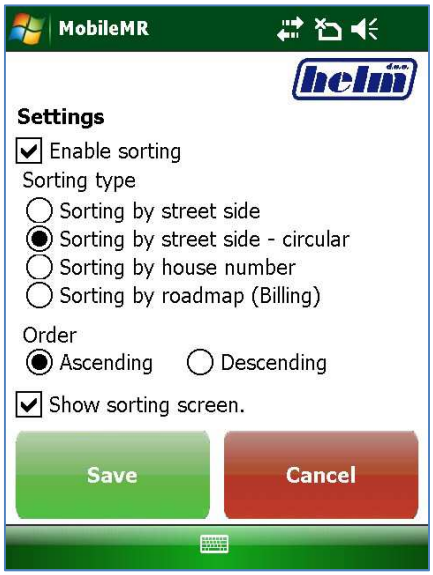
4.3.2 Set paths

By pressing on the “Path” button you will get screen with path settings. On that screen you can edit the following settings:

- **Assignment path**
  - Set folder path to assignment files by typing in text box.
- **Results path**
  - Set folder path where to write collecting results by typing in the text box

4.3.3 Roadmap settings

By pressing on the “Roadmap” button you will get screen with roadmap settings (picture 14).



Picture 14. Roadmap settings

On that screen you can edit the following settings:

- **Enable sorting**
  - Enable or disable sorting measurement places
- **Sorting type**
  - If you enable sorting you can change sorting type
- **Order**

  - If you enable sorting you can change sorting order to ascending or descending
- **Show sorting screen**
  - Check this setting if you want to sort each list of measurement places.

If you enable sorting you can change sorting type to:

- **Sorting by street side**
  - Sorting measurement places by street side using the street number
  - Example: 1,3,5,7,9,2,4,6,8,10
- **Sorting by street side - circular**.
  - Sorting measurement places by the circular side of the street using the street number
  - Example: 1,3,5,7,9,10,8,6,4,2
- **Sorting by house number**
  - Sorting measurement places by the street number
  - Example: 1,2,3,4,5,6,7,8,9,10
- **Sorting by roadmap (billing)**
  - Sorting measurement places by roadmap received from the billing system

To save settings click on the “Save” button, otherwise click on „Cancel“.

4.3.4 GPS Information

By pressing on the “GPS” button (picture 12) you will get screen with GPS information (picture 15).



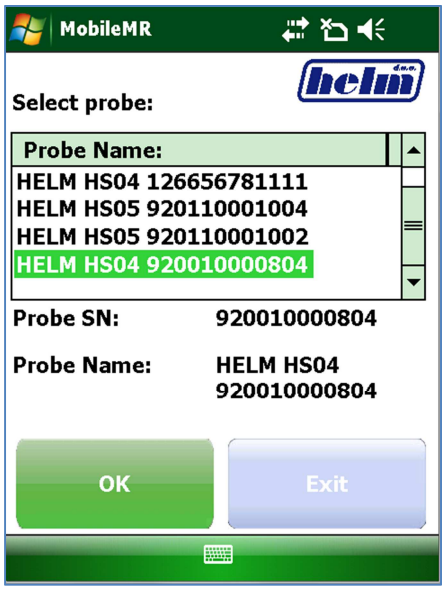
Picture 15. GPS information

On that screen you can view following information:

- **Latitude**
  - Geographic latitude
- **Longitude**
  - Geographic longitude
- **Altitude**
  - Geographical altitude
- **Satellites**
  - Number of visible GPS Satellites

4.3.5 Probes

By pressing on the “Probes” button (picture 12) you will get a screen where is the list of available probes (picture 16).



Picture 16. Probes

Opening screen may take a few moments.

To establish connection between the terminal and probe user must select probe from the list. After selecting probe press on the “OK” button to connect with probe, otherwise select “Exit”.

Probe types that can be connected with the device:

- HELM HS04
- HELM HS05
- RIZ KF3



Before establishing a connection with HS04/05 probe user must press the button on the probe and wait for the LED lamps turn off.

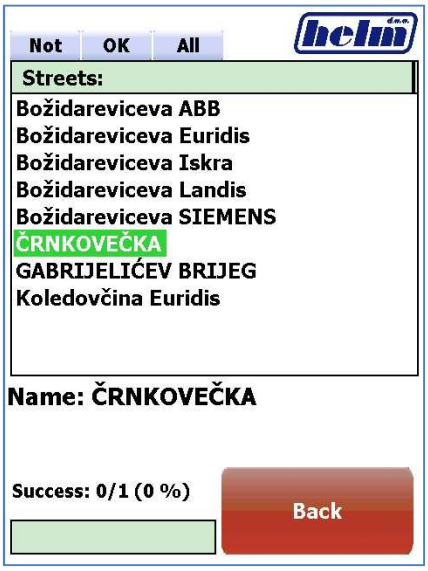


Before establishing a connection with KF3 probe user must physically connect probe to terminal.

Establishing a connection must be performed just once. The application will use a selected probe in any future communication.

4.4 Readings meters

By pressing on the “Reading” button (picture 12) you will get a screen that shows the list of grouped measurement places (picture 17).



Picture 17. Streets

Measurement places can be grouped by:

- Streets
- Settlements
- Books

Displayed list can be filtered using a buttons in the upper left corner. Buttons are:

- **Not**
  - Show elements that are not successfully read
- **OK**
  - Show elements that are successfully read
- **All**
  - Show all elements

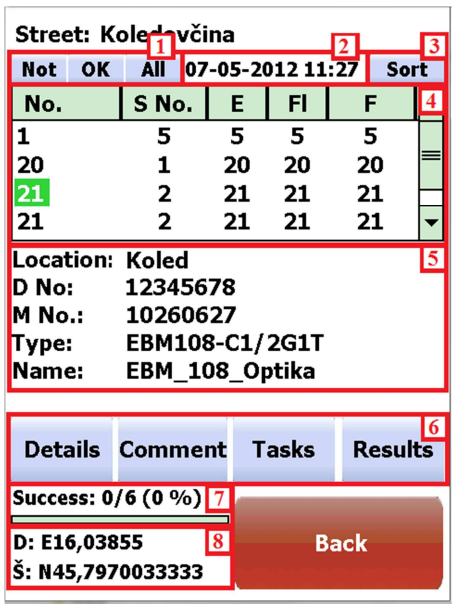
In the bottom left corner is shown reading progress of selected element.

To choice group of measurement places you must do one of following actions:

- Double-click on selected element
- Select element from the list and then press “enter” on the terminal’s keyboard.

4.4.1 List of measurement places

By choosing the desired group of measurement places you will get a screen that shows the list of measurement places (picture 18).



Picture 18. Measurement places

Displayed list (Picture 18, label 4) can be filtered using a buttons in the upper left corner (picture 18, label 1). Buttons are:

- **Not**
  - Show measurement places that are not successfully read
- **OK**
  - Show measurement places that are successfully read
- **All**
  - Show all measurement places

You can sort displayed list by clicking on the “Sort” button (picture 18, label 3). Pressing on button “Sort” you will get a screen with sorting options. That screen is described in detail in chapter 4.4.3.

In section below list is shown general details of the selected measurement place (picture 18, label 5). Shown details are:

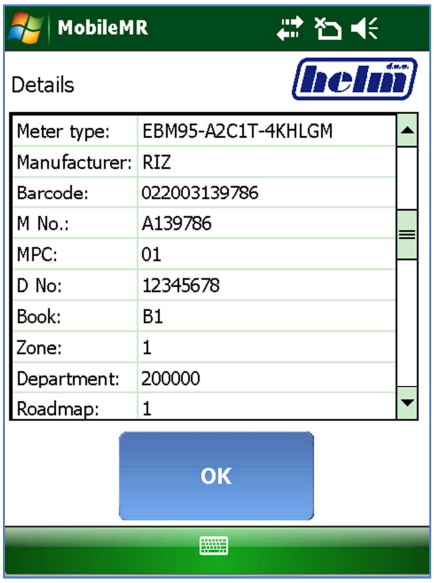
- **Location**
  - Location of measurement place
- **D. No.**
  - Distribution number
- **M. No**
  - Serial number of meter
- **Type**
  - Type of device
- **Name**
  - Name of measurement place

Readings percentage of selected measuring places is shown in the field below basic details (picture 18, label 7). On screen is also shown:

- **Current date and time**
  - The field labeled with a 2 in Figure 18.
- **GPS Coordinates**
  - The field labeled with an 8 in Figure 18.

4.4.2 Informations of measurement place

By pressing on the “Details” button (picture 18, label 6) you will get a screen that shows detail informations of measurement place (picture 19).



Picture 19. Information

Information displayed on this screen is:

- **Name**
  - Name of measurement place
- **Street**
  - Street where is measurement place
- **Street No.**
  - Street number
- **Subnumber**
- **Entrance**
- **Floor**
- **Flat**
  - Flat number
- **ZIP Code.**
- **Settlement**
  - Settlement of measurement place
- **Location**
  - Location of measurement place
- **Telephone**
  - Customer telephone number

- **Assessments**
  - Number of assessment
- **Meter type**
- **Manufacturer**
  - Meter manufacturer
- **Barcode**
  - Barcode on measurement place
- **M No.**
  - Serial number of meter
- **MPC**
  - Code of measurement place
- **D No.**
  - Distribution number
- **Book**
- **Zone**
  - Reading zone
- **Department**
- **Roadmap**
- **Comm type**
  - Communication type
- **CN**
  - Communication number
- **Main line No.**
  - Main line number
- **Phases**
  - Number of phases
- **EES Power**
- **Energy**
  - Constant of energy
- **Power**
  - Constant of power
- **Latitude**

    - Latitude of measurement place
- **Longitude**
    - Longitude of measurement place
- **MP setting**
    - Seating of measurement place
- **MP type**
    - Type of measurement place
- **Connection**
- **Replacement**
    - Date of replacement
- **Energy Date**
    - Date of last reading of energy
- **Power Date**
    - Date of last reading power
- **On**
    - Power on
- **L1**
    - Limitation 1
- **L2**
    - Limitation 2
- **L3**
    - Limitation 2
- **Station code**
    - Substation code
- **Station name**
    - Substation name
- **Station circuit**
    - Name of the circuit

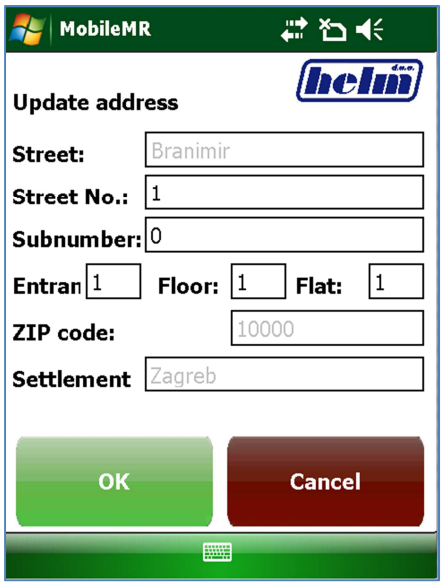
4.4.3 Update address

Press function key on terminal keyboard for update address.

Function keys are different on different types of terminals.

- **Motorola MC75** – key F8
- **HELM RT818** – key F3

By pressing function key you will get a screen that shows form for update address (picture 20).



Picture 20. Update address

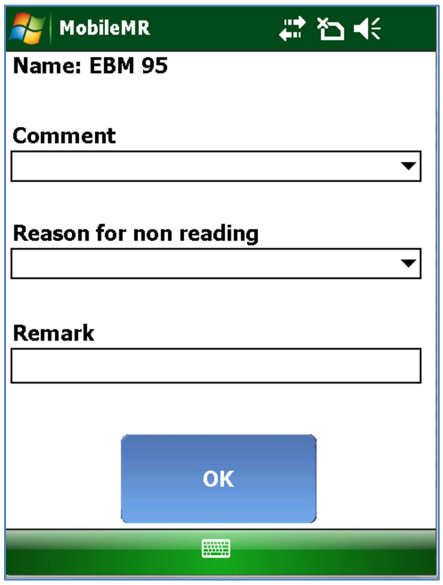
To save changes click on the “Save” button, otherwise click on „Cancel“.

4.4.4 Comments and remarks

By pressing on the “Comment” button (picture 18, label 6) you will get a screen that shows form for inserting (picture 21):

- **Comment**
  - Select comment from the provided list

- **Reason for non reading**
  - Select reason from the provided list
- **Remark**
  - Insert remark by typing in the text box



Picture 21. Form for comments

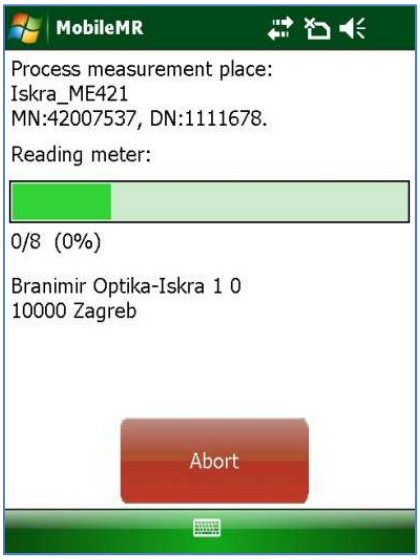
To save changes click on the “OK” button.

4.4.5 Read meters

To start read meter you must do one of following actions:

- Double-click on selected measurement place (Picture 18, label 4)
- Select measurement place from the list (Picture 18, label 4) and then press “enter” on the terminal’s keyboard

If you have selected measurement place with digital meter, reading process will start automatically. On the screen will display the progress of reading (picture 22).

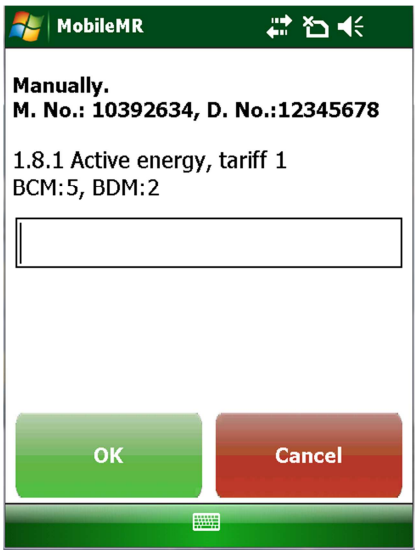


Picture 22. Reading progress

In the case that is in settings selected „Manually IEC62056-31“, the application will offer user to manually enter the readings.

During reading an electric meter probe shall be connected to the terminal and the meter. The application responds with an error if the probe is not connected to terminal.

If you have selected measurement place with mechanical meter, application will display the input form (picture 23).

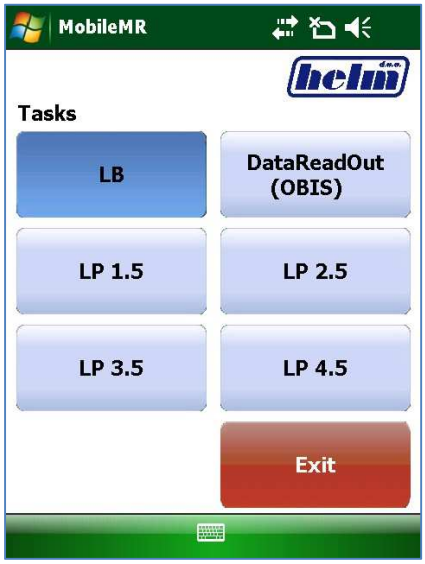


Picture 23. Input form

Insert value in the text box using terminal keyboard or windows virtual keyboard. If inserted value is incorrect application will display warning.

4.4.6 Additional tasks

By pressing on the “Tasks” button (picture 18, label 6) you will get a screen that shows additional tasks (picture 24).



Picture 24. Additional tasks

Additional tasks that can be executed are:

- **LB**
  - Reading log book
- **DataReadOut (OBIS)**
  - Reading registers
- **LP 1.5**
  - Reading load profile 1.5
- **LP 2.5**
  - Reading load profile 2.5
- **LP 3.5**
  - Reading load profile 3.5
- **LP 4.5**
  - Reading load profile 4.5

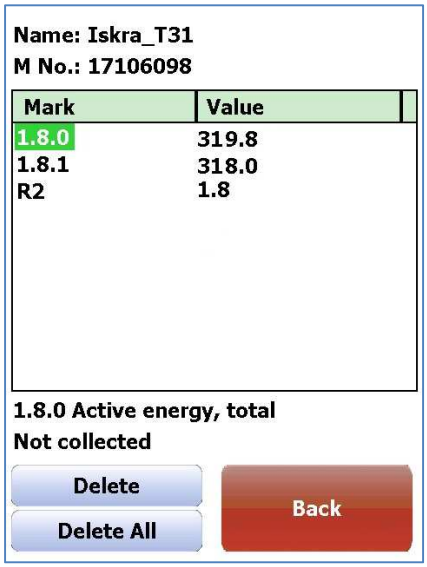
Reading process starts by pressing one of the buttons and on the screen will be displayed the progress of reading.



Additional tasks can be executed only on electronic meters.

4.4.7 Results

By pressing on the “Results” button (picture 18, label 6) you will get a screen that shows all results of reading process (picture 25).

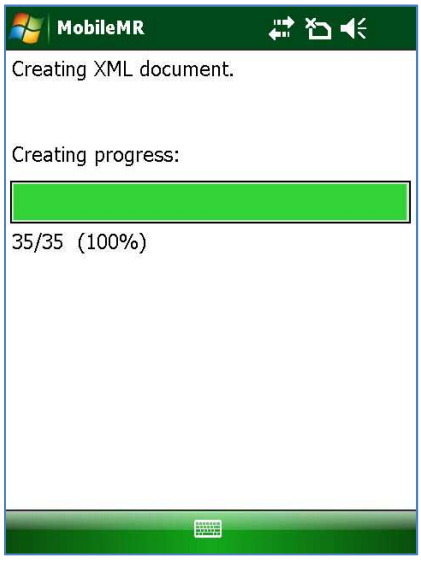


Picture 25. Results

On this screen you can delete results by pressing on the “Delete” button. If you want to delete all results press on the “Delete All” button.

4.5 Saving data

Click on the “Save” button (picture 11.) to save all collected data into output XML document. On the screen will be displayed the progress of saving data and creating XML document (picture 26).



Picture 26. Saving data

During saving process application will create an output XML document with collected results.

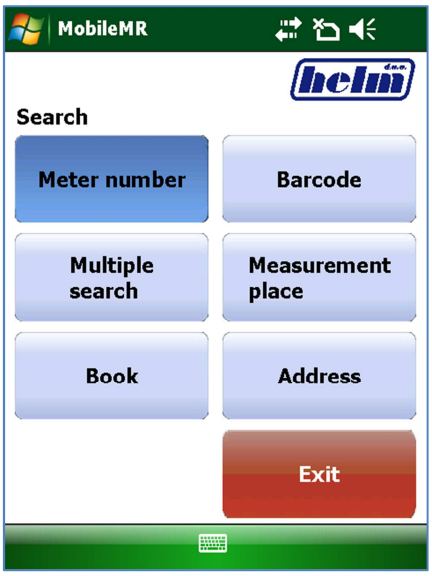
You can also use function key on terminal keyboard for save data.

Function keys are different on different types of terminals.

- **Motorola MC75** – key F4
- **HELM RT818** – key F2

4.6 Search

By pressing on the “Search” button on the screen will be shown the search menu (picture 27).



Picture 27. Search menu

Using the menu you can search for:

- **Meter number**
  - **Full** – insert serial number of meter
  - **Partially** – insert part of number

- **Last digits** – insert last digits of number

- **Barcode**
  - Insert barcode of measurement place
- **Multiple search**
  - **Multiple search** – insert distribution number, serial number, code of measurement place or barcode
  - **Last digits** – insert last digits of distribution number, serial number or barcode
- **Measurement place**
  - **MP code** – insert code of measurement place
  - **MP name** – insert name of measurement place
  - **Distribution number** – insert distribution number
  - **Last digits** – insert last digits of distribution number
- **Book**
  - **Book code** –Enter the code book
  - **Book name** – Enter the book name
- **Address**
  - By pressing on the “Address” button on the screen will show the address search menu (picture 28).



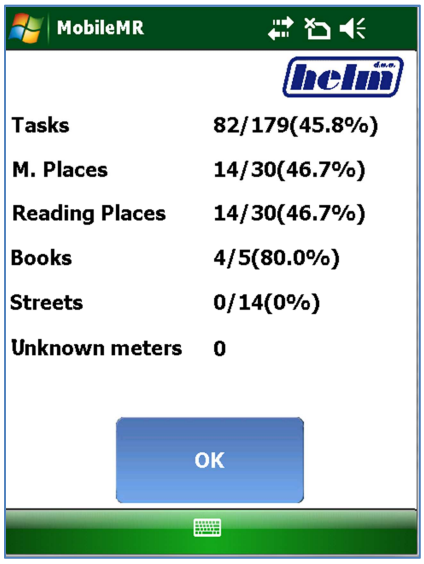
Picture 28. Search by address

Searching by address is possible by entering one or all of the requested information. Requested informations are:

- **Street**
  - Street where is the measurement place
- **Street number**
- **Subnumber**
- **Entrance, Floor and flat**
- **ZIP code**
- **Settlement**
  - Settlement where is the measurement place

4.7 Statistics

By pressing on the “Statistics” button (picture 11) you will get a screen that shows statistics of collecting process (picture 29).



Picture 29. Statistics

Information displayed on the screen:

- **Tasks**
  - Percentage of successfully completed tasks.
- **M. Places**

  - Percentage of successful readings of measurement places.
- **Reading Places**
  - Percentage of successfully processed reading places.
- **Books**
  - Percentage of successfully read books.
- **Streets**
  - Percentage of successfully processed streets.
- **Unknown meters**
  - Number of unknown meters.

You can also use function key on terminal keyboard for view statistics.



Function keys are different on different types of terminals.

- **Motorola MC75** – key F5

4.8 Terminal information

By pressing on the “Terminal” button (picture 11) you will get a screen that shows basic information of terminal (picture 30).



Picture 30. Terminal info

Information displayed on the screen:

- **Terminal**
  - Terminal type.
- **SN**
  - Serial number of terminal.
- **Battery status**
  - Percentage of low battery.
- **OS**
  - Version of operating system.
- **Probe SN**
  - Serial number of connected probe.

You can also use function key on terminal keyboard for view terminal informations.

Function keys are different on different types of terminals.

- **Motorola MC75** – key F6

4.9 Functions keys

Each terminal has few keys for executing some special functions. By using these keys user can quickly execute some function. Function keys are different on different types of terminals.

4.9.1 Unknown meter call

User can press key to read meter that don't exists in input XML file. If you press this function key, application will read this meter and save results of reading in terminal memory. Reading process will start automatically after pressing key and on the screen will display the progress of reading. When the process is finished, the application will inform user about reading results.



Function keys are different on different types of terminals.

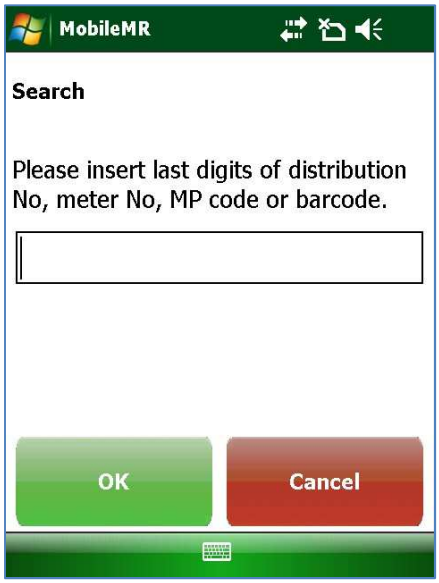
- **Motorola MC75** – key F1
- **HELM RT818** – key „Phone"

4.9.2 Fast search

Function key for fast search enables fast search for following information:

- Serial number of meter
- Distribution number
- Code of measurement place
- Name of measurement place
- Barcode

After pressing this key application will display the input form for fast search (picture 31).



Picture 31. Multiple search

Insert value in the text box using terminal keyboard or windows virtual keyboard.

Function keys are different on different types of terminals.

- **Motorola MC75** – key F2
- **HELM RT818** – key „Contacts“

4.9.3 Insert new mechanical meter

User can press key to insert new mechanical meter that don’t exists in input XML file. If you press this function key application will display the input form. In that form user must insert:

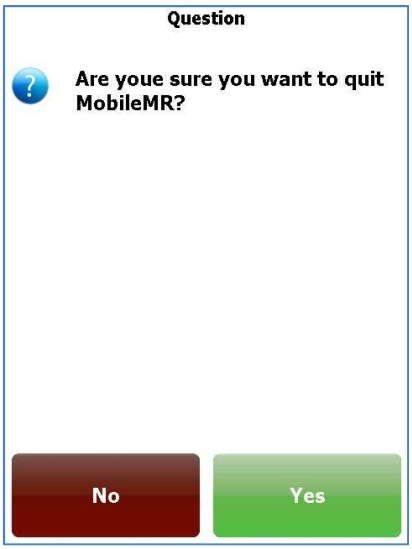
- Serial number of meter
- Type of meters
- Values of counter

Function keys are different on different types of terminals.

- **Motorola MC75** – key F3
- **HELM RT818** – key F1

4.10 Close application

To close application user must click on the “Exit” button on main menu (picture 11). By pressing on the “Exit” button application will ask you to confirm exiting (picture 32).



Picture 32. Exit

If you press “Yes” application will be closed. During the closing process, the application will create an output XML document with all collected data.