



PC software v.2.0.0.1
User manual

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PC database software Marker Database® v.2.0.0.1

Dear user! Thank you for choosing our RFID tracing system. This manual helps you to work correctly with our PC database software.

Software description

Marker Database® software is used for managing of data about your underground pipelines and cables. It allows you to easily edit data about each marker. You can download your data from locator to PC or from PC to locator. By clicking on one button you can immediately see your pipeline or cable with all markers in the digital map. Marker Database® enables you to upload your data to the Marker Database® server for backup or online edit.

Software downloading

Ensure that your PC is connected to internet.

This software is free of charge. It is available in www.markerdatabase.net. You must be registered before you download the software. For registration and downloading of the software please follow the instruction on the web page www.markerdatabase.net.

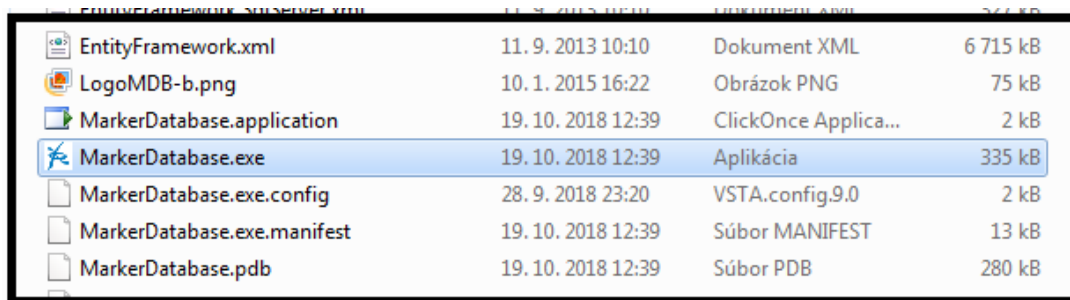
Software installation

1. After your downloading is completed find and open the MarkerDatabase.zip file in your PC
2. Extract the content of zip file to the target folder in your PC
3. **No installation is needed**

In case of any problems during your software downloading, installation or registration please contact us by using the email address: support@markerdatabase.net

Start

1. Run the software by double click on the “Marker Database.exe” file



EntityFramework.xml	11. 9. 2013 10:10	Dokument XML	6 715 kB
LogoMDB-b.png	10. 1. 2015 16:22	Obrázok PNG	75 kB
MarkerDatabase.application	19. 10. 2018 12:39	ClickOnce Applica...	2 kB
MarkerDatabase.exe	19. 10. 2018 12:39	Aplikácia	335 kB
MarkerDatabase.exe.config	28. 9. 2018 23:20	VSTA.config.9.0	2 kB
MarkerDatabase.exe.manifest	19. 10. 2018 12:39	Súbor MANIFEST	13 kB
MarkerDatabase.pdb	19. 10. 2018 12:39	Súbor PDB	280 kB

Fig.1 Exe file for running the software

Login to software

The software starts with the login window. Please enter your user name and password to login to your account. You must use the same login information, what you have used for the registration.



Fig.2 Login window

After successful login into the software, the main window of the software will appear (Fig.3)



Fig.3 Main window of the software

Marker Databases storage types

There are two storage types of your databases, with the data about the markers:

1. **Local PC Database** – is a basic and primary database.

The data in this database can be created by:

- Downloading data from SML locator
- Downloading data from Cloud database
- Manual creating of the data

2. **Cloud Database** – is secondary database. It is used for:

- Backup of the Local PC database
- Sharing of the data between your computers/laptops and mobile application
- As source data for Marker Database mobile application

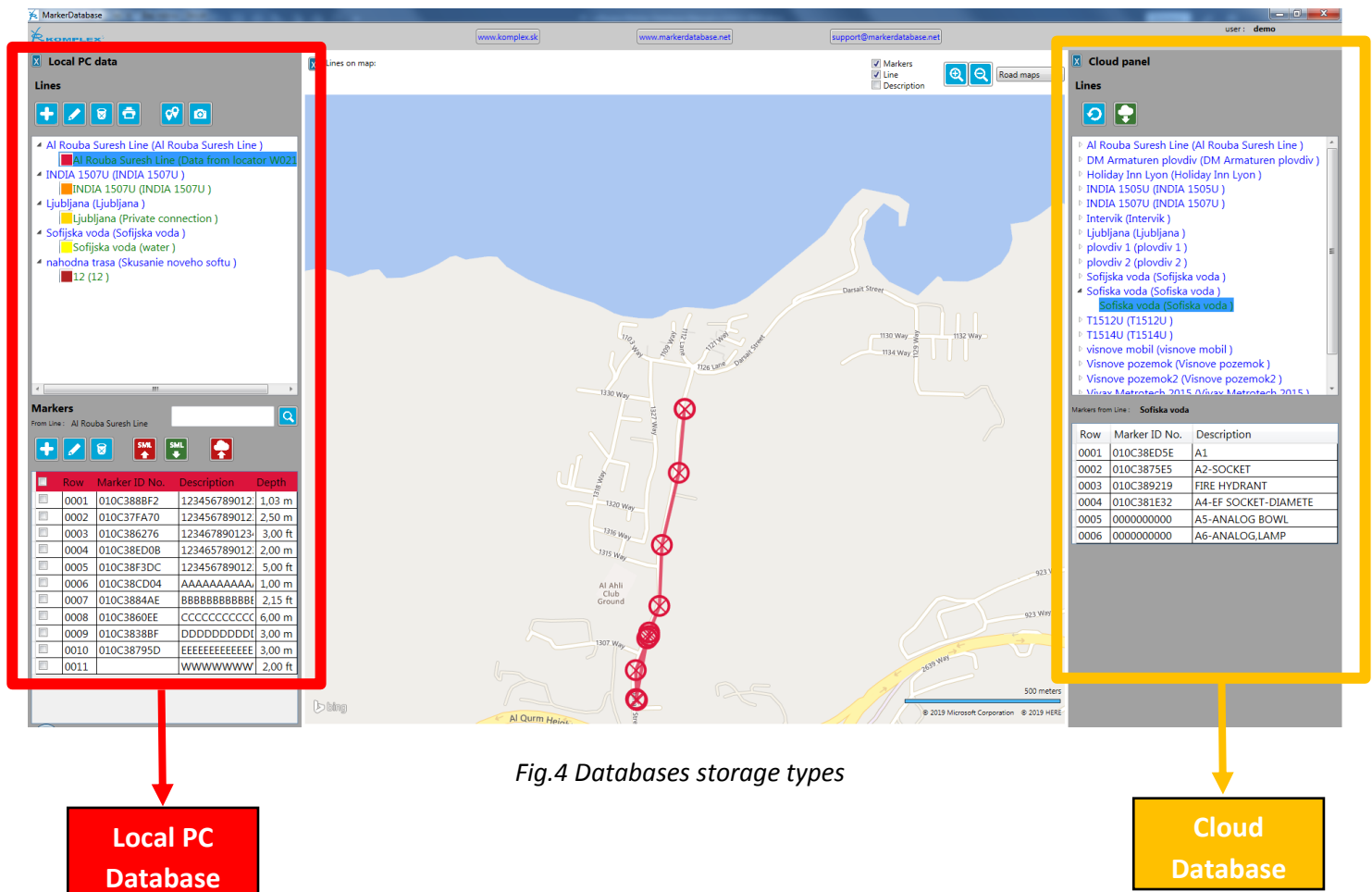


Fig.4 Databases storage types

Data structure

Data about markers is structured into **LINES** and **PROJECTS**.

LINE contains markers and it is used for simple markers set. Each line must be included in PROJECT.

Project can contain more Lines for better administration of complex underground structures.

Local PC Database

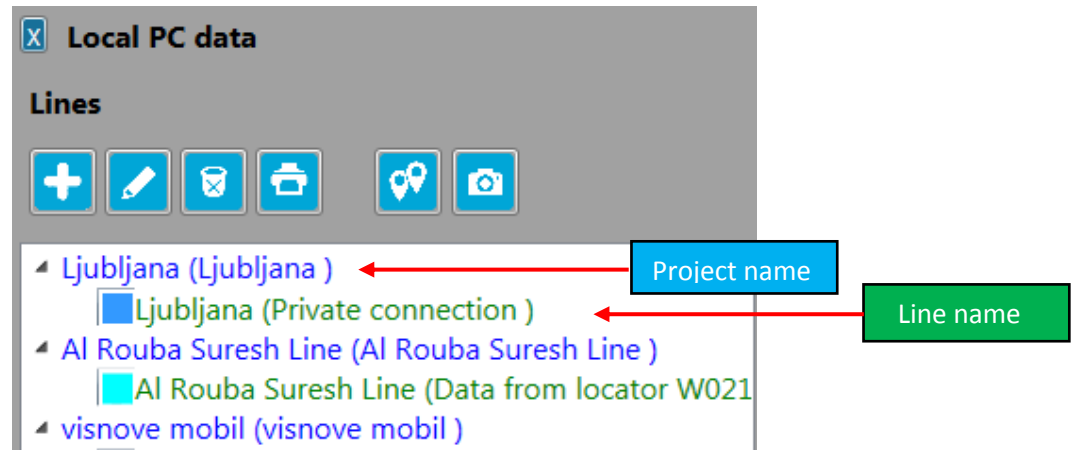
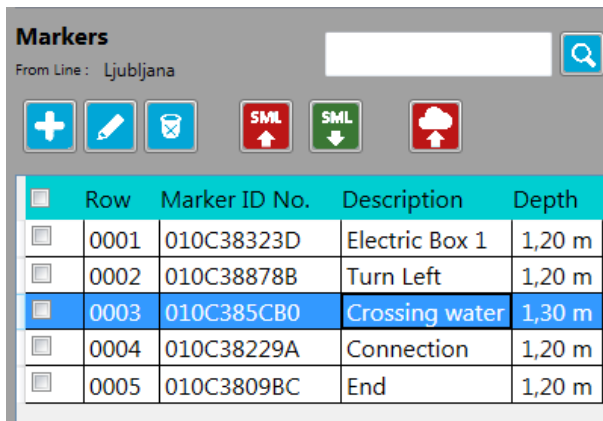


Fig.5 Local PC Database

Local PC Data Lines menu buttons:

-  Add new Line
-  Edit Line
-  Delete Line / Delete project
-  Print report
-  Turn ON Map view
-  Turn ON Picture view

Markers menu buttons:

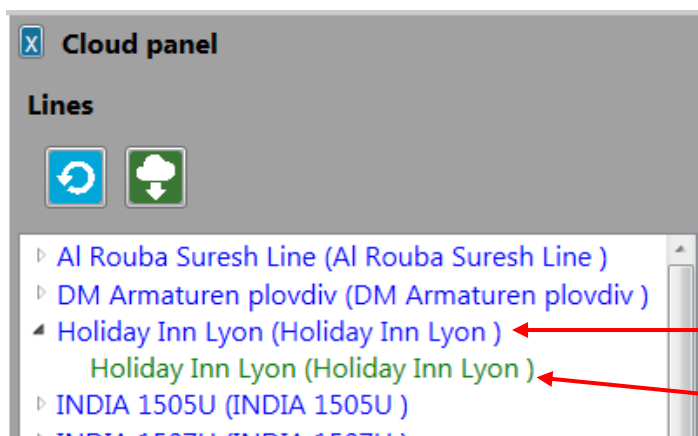


-  Add new Marker
-  Edit Marker
-  Delete Marker
-  Send Markers to SML Locator
-  Receive Markers from SML Locator
-  Upload data to Cloud Database

Fig.6 Menu with markers

Cloud Database

Cloud Database buttons:



-  Refresh data from the Cloud Database
-  Download selected Line from Cloud to Local database

Project name

Line name

Fig.7 Cloud Database panel

Active window

Is window in the red square on the Fig.8 below.



Fig.8 Active window

Active window can work in following modes:

- **Welcome window** – appears after Log in to the software. This window has only informative character. You can see here the software version number.
- **Map view** – In this view you can work with the markers and lines in the Bing map application. To run Map view please click on following button in the Local Data section : 
- **Pictures view** – is view in which you can add, edit and see the photos and pictures which belong to your markers or lines. To run this mode please click on following button in the Local data section: 
- **Markers from SML view** – This mode shows all markers received from SML locator. It allows you to store only selected markers to your PC Local database. In this view can be shown data from the last reading from SML. Data received from SML stay in cache memory of the software and are shown in this view until:
 - are replaced by data from new reading from SML
 - are deleted by user
 - the program is closed

Map view

In this view you can work with the markers and lines in the Bing map application. To run Map window please click on following button in the Local Data section: 

Map modes

The map can work in following modes:

- Road maps (default mode)
- Areal maps
- Hybrid maps

The map mode you can select in the options shown in red field in the Fig.9

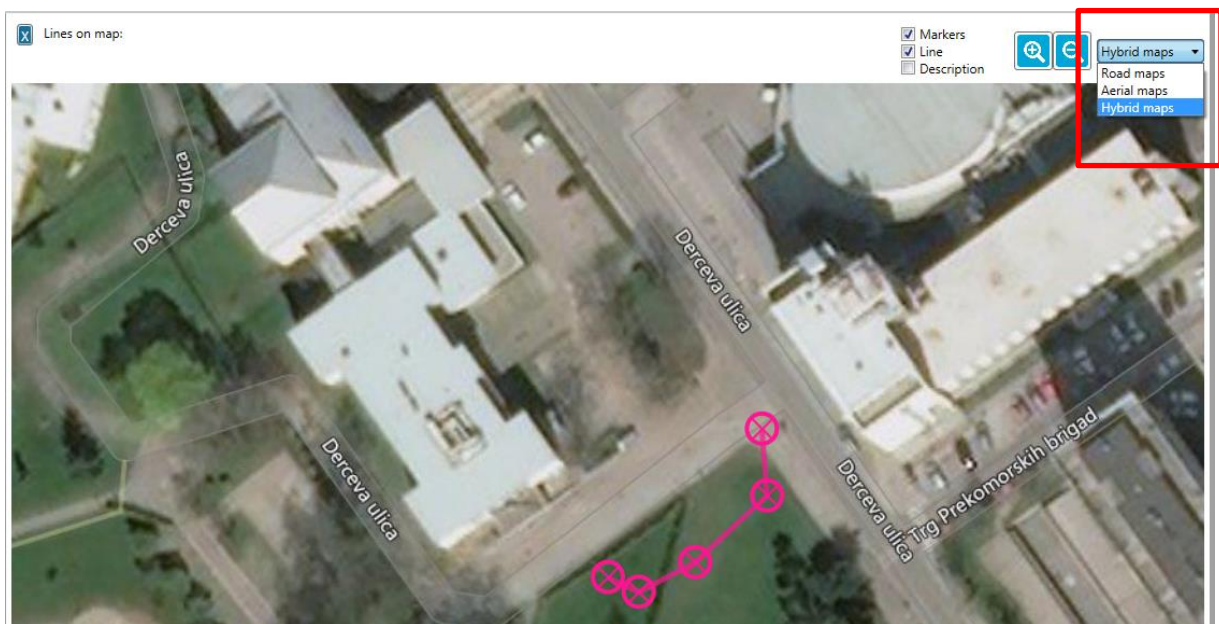


Fig.9 Map mode options

Line display mode

Line with markers can be displayed in combination of these modes:

- Markers
- Lines
- Description

The default mode is Markers+Line

The line display mode can be chosen by selecting of the target mode in the options shown in green field in the Fig.10

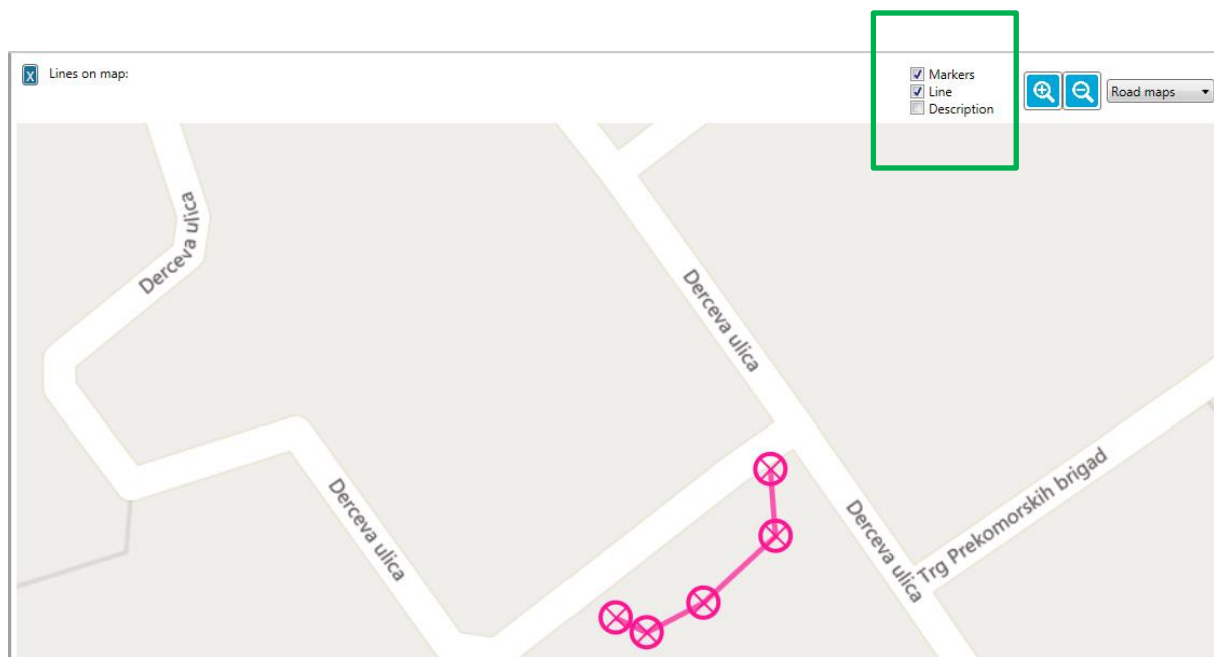


Fig.10 Line display mode options

Line color

The software allows user to choose optional color of the line with the markers on the map. This is big advantage for cases when two and more lines with markers are highlighted on the map in the same time. When the line with markers is highlighted first time on the map, the software chooses a random color for this line. User can change the color by clicking on the color square, located just before the line name. (Fig.11)

To turn OFF the line on the map, choose “no color” option in the Standard colors section (Fig.11)

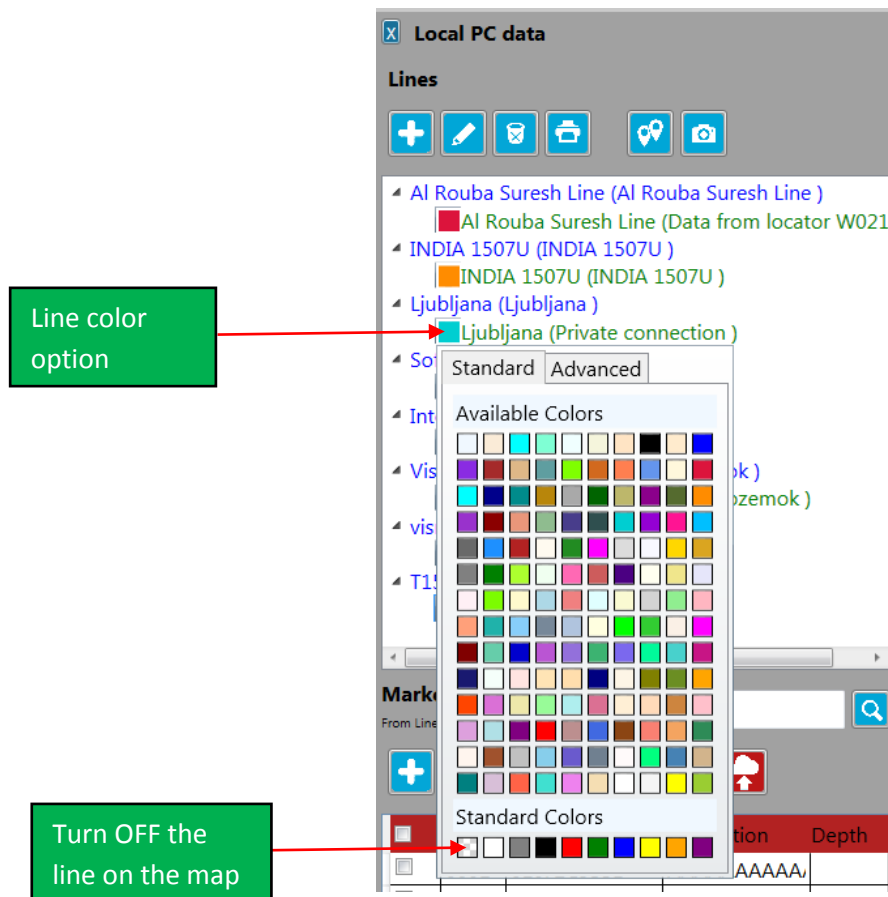


Fig.11 Line color option

Picture view

In this view you can add, edit and see the photos and pictures which belong to your markers or lines. To run this window please click on following button in the Local data section:



Picture window is divided in two parts:

- Line photos (highlighted in red field in Fig.12)
- Markers photos (highlighted in blue field in Fig.12)

Each of these parts can be managed separately:



Add new picture



Edit picture



Delete picture

Please note, that you must select line or markers for which you want to add new picture.

To open target picture make the double click in the picture name.

The screenshot shows the MarkerDatabase application interface. The top bar includes the 'MarkerDatabase' logo and the 'KOMPLEX' logo. The main interface is divided into several sections:

- Local PC data**: A section on the left containing a list of lines and markers. The 'Lines' section lists various lines like 'Al Rouba Suresh Line', 'INDIA 1507U', 'Ljubljana', 'Sofijska voda', 'Intervik', 'Visnove pozemok', 'visnove mobil', and 'T1514U'. The 'Markers' section shows a table of markers with columns for Row, Marker ID No., Description, and Depth.
- Line photos**: A section on the right, highlighted by a red box. It shows a table with columns 'name' and 'desc'. The first row contains 'DSC_0621.JPG' and 'Connection photo'.
- Marker photos**: A section on the right, highlighted by a blue box. It shows a table with columns 'name' and 'desc'. The first row contains '20130130_213943.jpg' and 'reparation'.

The 'Markers' table in the 'Local PC data' section is as follows:

Row	Marker ID No.	Description	Depth
0001	010F2C933E	AAAAAAAAAA	
0002	010C7EE2C8	BBBBBBBBBB	
0003	01061C4325	CCCCCCCCCC	
0004	010C388268	DDDDDDDDDD	
0005	010C391BFC	EEEEEEEEEEEE	
0006	01061C5093	FF	

Fig.12 Picture view

Markers from SML view

This view will be described detailly in the part Communication (page 13).

Communication

The Marker Database® software enables following type of communications:

- Read Markers from SML 
- Write Markers to SML 
- Download Line from Cloud 
- Upload Line to Cloud 

Receiving Data from Locator

To receive Data from Locator please follow the instructions written below:

1. Connect the locator with your PC with the USB cable
2. Ensure that the USB drivers in your PC for the locator are installed properly
3. Press button for Read from SML in your software 
4. The active window will change to “Markers from SML” window
5. Select the button Read from SML in the “Markers from SML” window again (Fig.13)

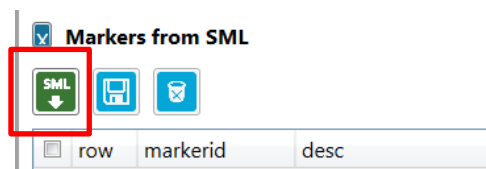


Fig.13

6. Select the port, where the SML locator is connected (Fig.14)

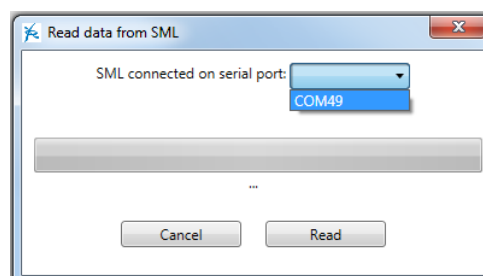


Fig.14 Port selecting

7. Press button Read (Fig.15)

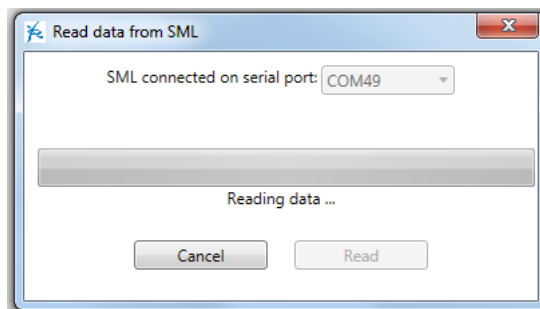


Fig.15 Start data reading in PC

8. Turn ON the locator and go to Flash Memory/Send data and press ENTER button on the Locator to start the data transfer between SML and PC (Fig.16)

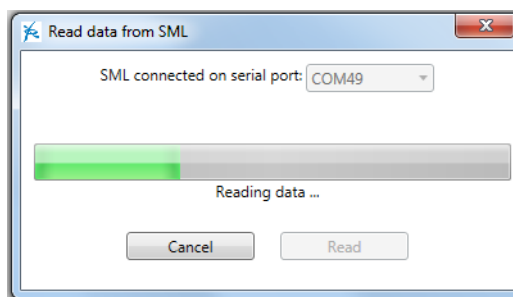


Fig.16 Data transferring process

9. When the data transfer is completed, press OK to confirm (Fig.17)

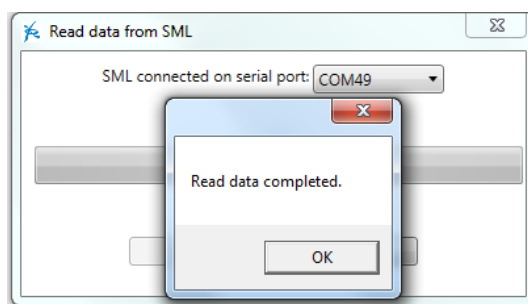


Fig.17 Data reading completed

10. The received markers appear in the “Markers from SML” view (Fig.18)

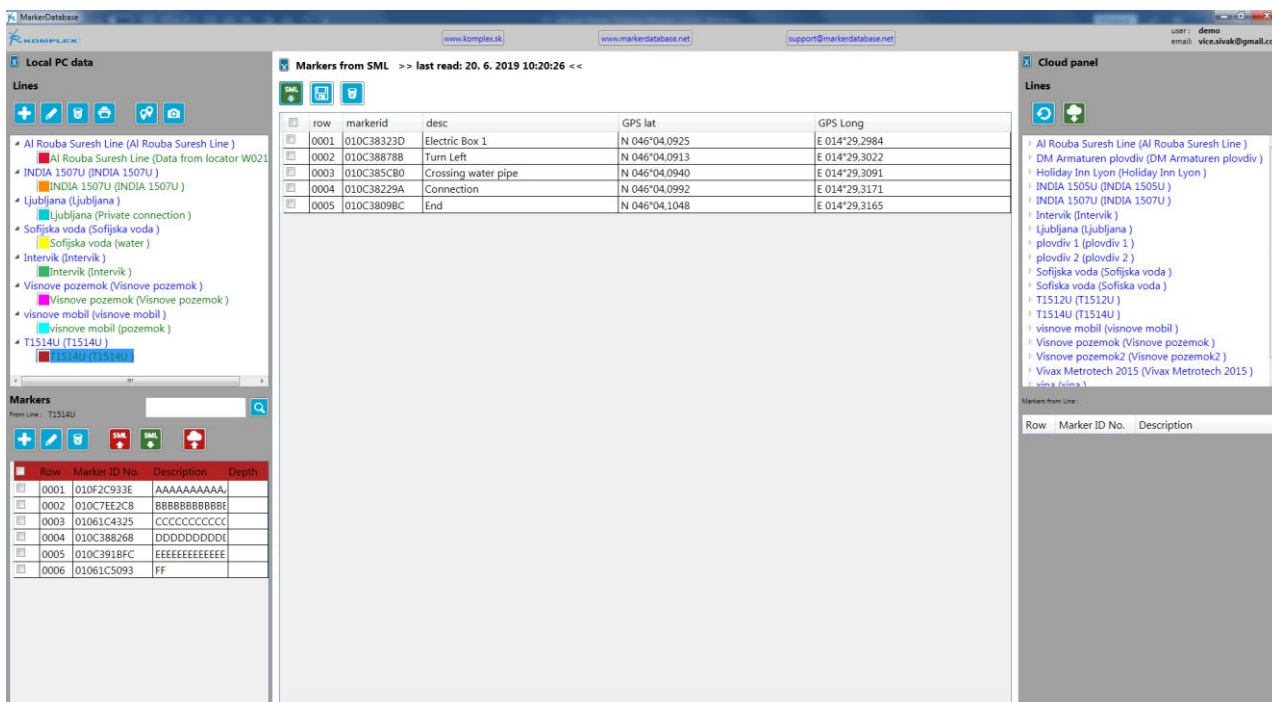


Fig.18 List of markers received from Locator

Note: In the view “Markers from SML” can be shown data from last reading from SML. Data received from SML stay in cache memory of the software and are shown in this window until:

- are replaced by data from new reading from SML
- are deleted by user
- the program is closed

12. Select the markers which you want to store into your Local PC database and press button Save Markers to DB (Fig.19)

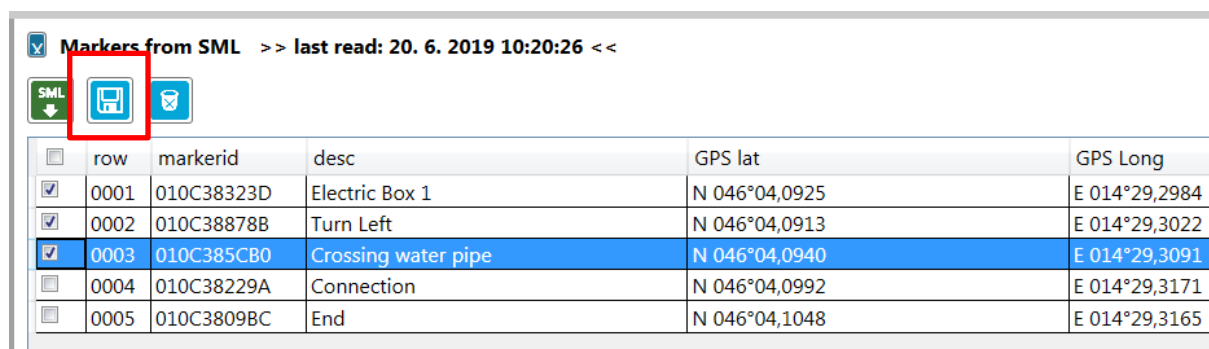


Fig.19 Selecting and saving of the markers into Local PC database

13. For finishing the data saving choose the target line where the markers will be saved, or create a new one (Fig.20)

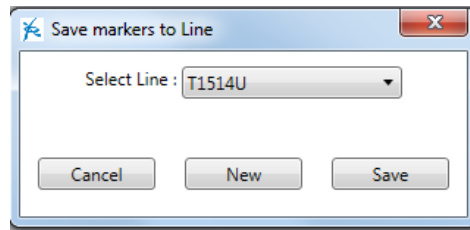


Fig.20 Selecting of the target line for saving of the markers

14. For new line please fill all required information (Fig.21a, b, c)

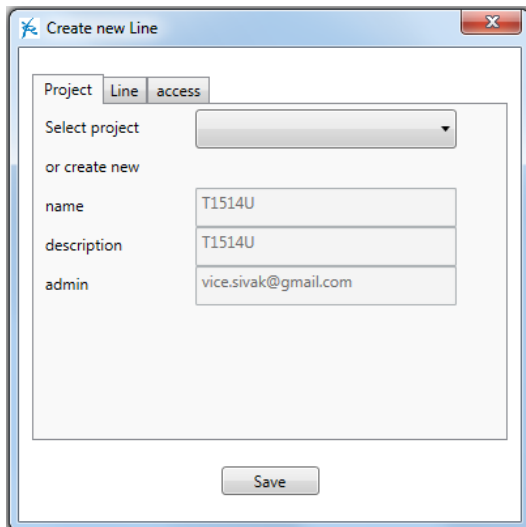


Fig.21a Project setup

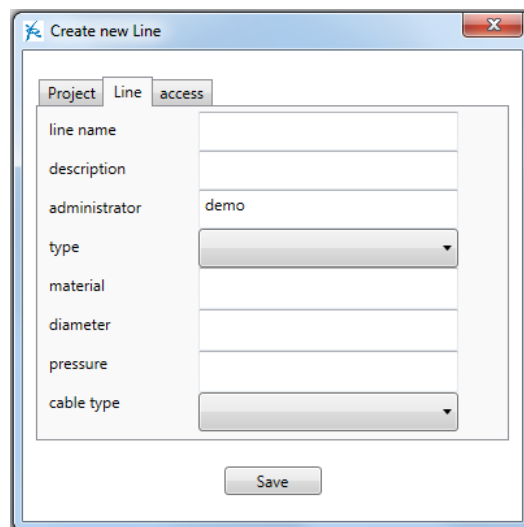


Fig.21b Line setup

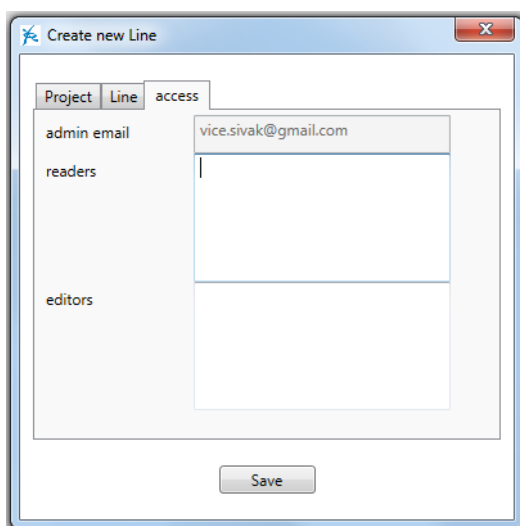


Fig.21c Access setup (optional parameter, more information you can find on pages No.23,24)

15. Once filling of all information is completed, confirmation window will appear. After pressing OK, the data from SML locator are stored in your local database. (Fig.22)

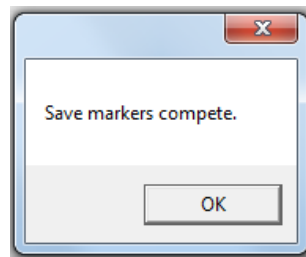


Fig.22 Confirmation window for saving of data

Sending data from PC Local Database to SML Locator

To send Data from PC Local Database to SML Locator, please follow the instructions written bellow:

1. Connect the locator with your PC with the USB cable
2. Ensure that the USB drivers in your PC for the locator are installed properly
3. Choose the Project and Line, from which you want to send the markers to SML
4. Press button for Write markers to SML in your software 
5. Following window will appear (Fig.23)

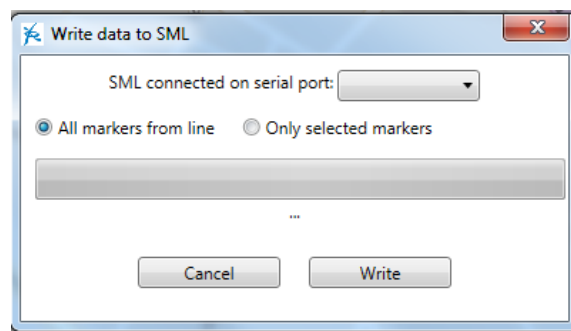


Fig.23 Window for sending data from PC to SML

6. Choose whether you want to send all markers from the line, or only selected markers (Fig.23)
7. Choose the serial port (Fig.23)
8. Press button "Write" to start the communication with SML (Fig.24)

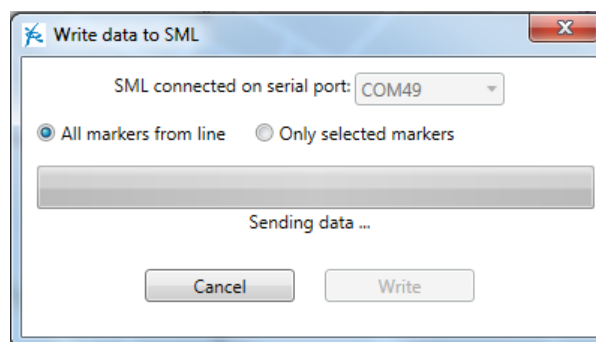


Fig.24 Preparing for sending data from PC to SML

9. Turn ON the locator and go to Flash Memory/Receive data and press ENTER button on the Locator to start the data transfer between PC and SML (Fig.25)

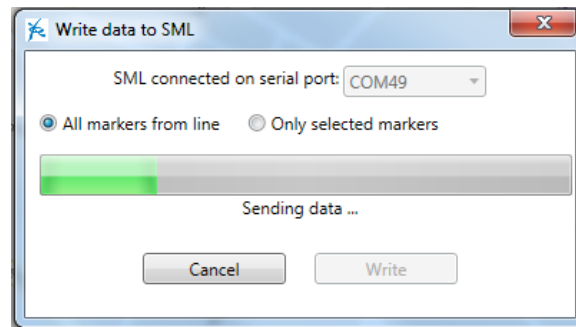


Fig.25 Data transfer process between PC and SML

10. Once the sending data is completed, following window will appear (Fig.26)

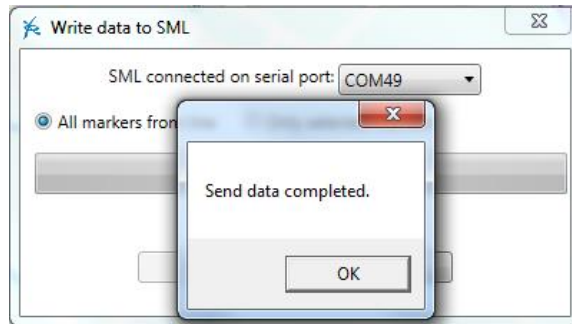


Fig.26 Send data completed

Uploading data from Local PC Database to Cloud

You can upload your Lines from Local PC database to Cloud Database to make backup of your Local Database or to use the data with the **Marker Database® Mobile application** or to share the data with your partners.

To upload the data from Local PC Database please follow the instructions written bellow:

1. Open the Project and Select the Line which you would like to upload to Cloud (Fig.27)

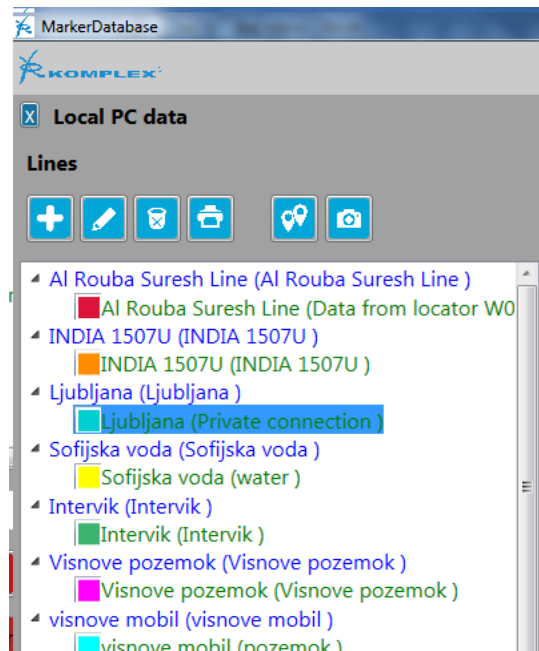


Fig.27 Selecting of the target line for uploading

2. Press the button "Upload Line to Cloud" 
3. Confirm or Cancel the uploading of the data by clicking one of the buttons YES or NO (Fig.28)

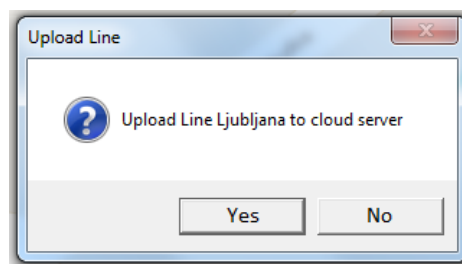


Fig.28 Uploading the data to Cloud

- When uploading is successfully completed, window on Fig.29 will appear. Now you can use these data on the cloud as back up data, or you can use them in the **Marker Database® Mobile application** or you can share them with your partners.

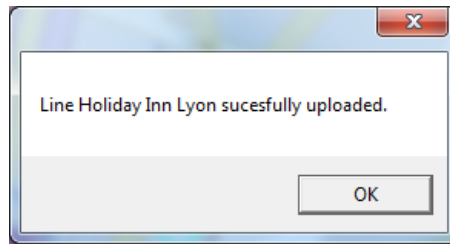


Fig.29 Uploading completed

Downloading data from Cloud to Local PC Database

To download the data from Cloud to Local PC Database follow the instructions written bellow:

- Open the target Project and select the Line which you want to download from the Cloud (Fig.30)

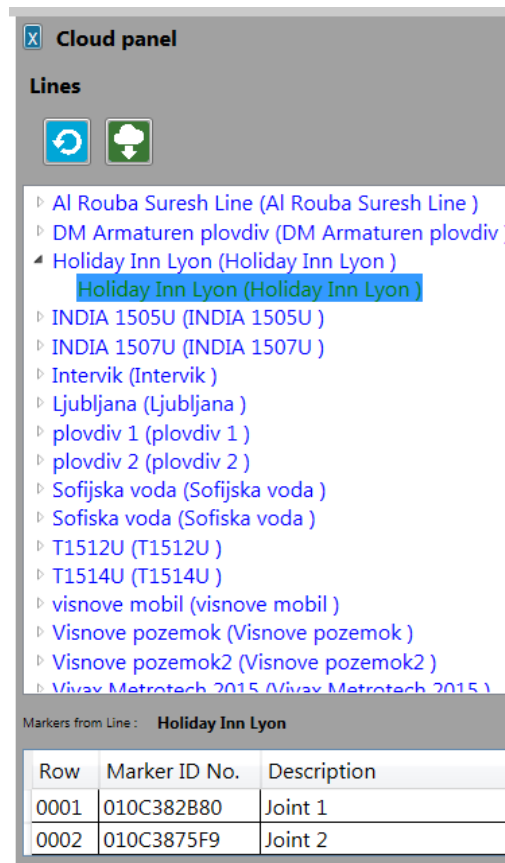


Fig.30 Selecting Line for downloading from Cloud to PC

2. Press the button "Download Line from Cloud"



3. Confirm or Cancel the downloading of the line from Cloud by clicking on of the button Yes or No (Fig.31)

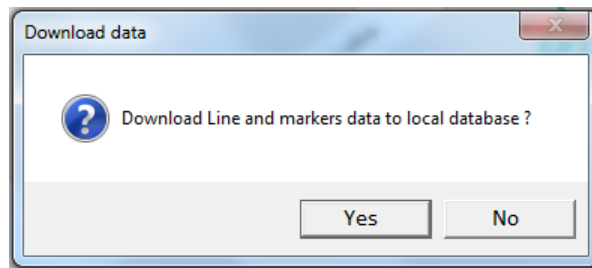


Fig.31 Downloading data from Cloud

4. When downloading is complete, window on Fig.32 will appear

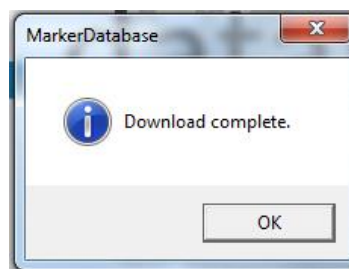


Fig.32 Download complete

5. After clicking on button OK, the downloaded Line will be automatically displayed on the map with random color of the markers.

SML Communication troubleshooting

Following troubles may appear during the process of transferring data between SML and PC:

1. There is no serial port for SML Fig.33 a, b

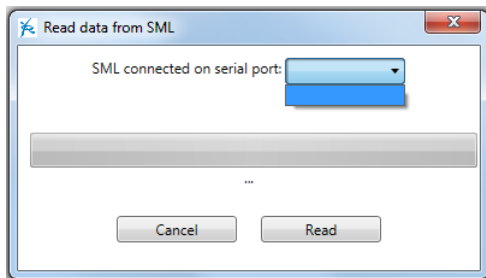


Fig.33a No port for SML

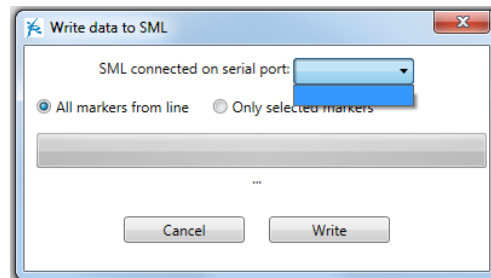


Fig.33b No port for SML

Solution:

- Please check if the USB cable is plugged in properly
- Check if the USB drivers are properly installed in your PC
- If the drivers are missing, please connect the SML with your PC. The windows update will find and install the drivers automatically within few minutes. Ensure that the PC has proper internet connection

2. Access to port is denied (Fig.34)

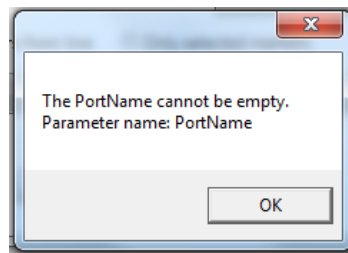


Fig.34 Access to port denied

Solution:

This trouble can be caused by any application in your PC, which use the USB ports. Please try to switch such application or try to repeat the data transfer several times.

3. Error message on your SML Locator: *Error. Check cable*

Solution: Please check the USB cable and correct port selection

Printing reports

To print a report about your line use the button Print Line in the Local PC Data section (Fig.35)

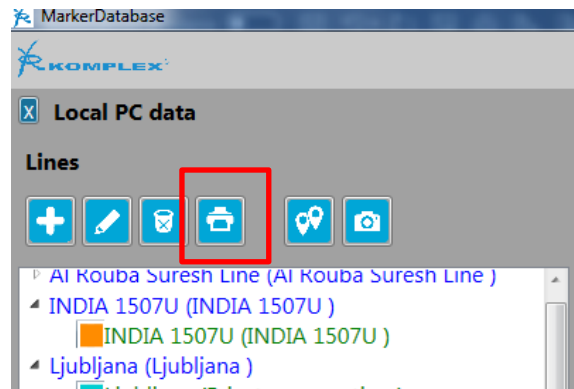


Fig.35 Print report

The printed report is file in pdf format. It contains all information about your line and markers. It also contains map preview.

Line access setup

Access to each Line can be protected by setting of different rights for different users.

For setup of the Line Access, use double click on the target line. Access setup window is shown on Fig.36

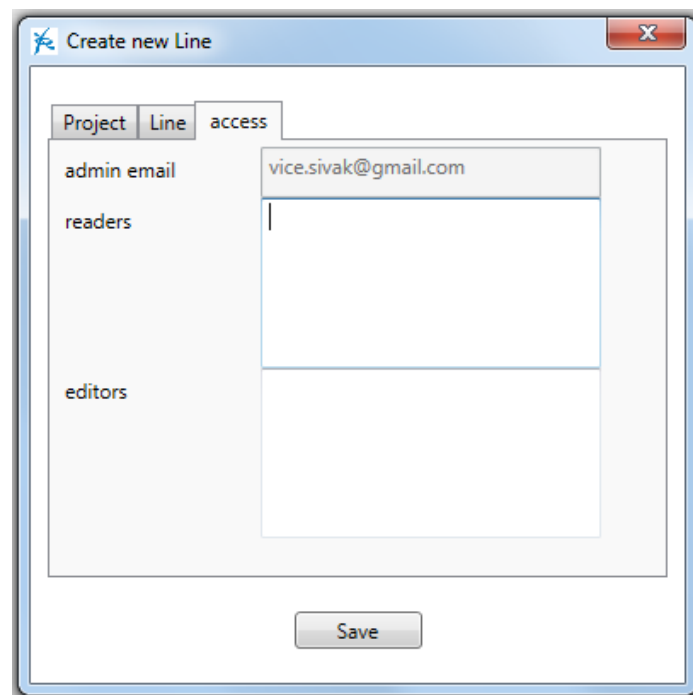


Fig.36 Line Access window

Type email address of your partner or colleague to “readers” or “editor” window to setup the access right.

Please be sure that the email address is registered address and belongs to existing account on www.markerdatabase.net.

Once you type the email address of your colleague or partner into the “reader” or “editor” window of the target Line, will be this Line visible in the account of your partner whom belong the typed email address.

The Line will be visible in Cloud panel in PC software and also in the account of the partner on www.markerdatabase.net

Users types

There are three user types in the software:

- Admin – is user who create the account
- Editor – is user created by Admin. Writer has limited rights to manage and edit selected lines
- Reader is user created by admin. Reader has limited rights to preview the lines and markers. He has no right to edit data.

Rights description of the different types of users is described in the Table 1 bellow .

Rights	View Markers data	Edit Markers	Edit Lines	Receive data from SML	Send data to SML	Download data from Cloud	Rewrite existing data on Cloud
User type							
Admin	YES	YES	YES	YES	YES	YES	YES
Editor	YES	YES	YES	YES	YES	YES	NO
Reader	YES	NO	NO	YES	YES	YES	NO

Table 1: Users rights

For any other question please feel free to contact us at support@markerdatabase.net or komplex@komplex.sk

Thank you!