

Our MobileSweep® technology has been developed in order to solve two critical issues related to search and rescue:

- 1) Ability to accurately locate victims or dispersed people in difficult terrain
- 2) Communication between rescue crews and victims in areas without GSM network coverage

Based on 15 years of experience producing GSM systems sold globally and extensive research by international team of experts we have developed the MobileSweep®, the most advanced GSM based search and rescue technology. Packed inside one extremely durable case and proven during numerous trials in various locations with several rescue agencies it is ready to operate in the most demanding conditions.



None of the functions requires GSM network coverage as our System creates its own network using GSM channels that are free from transmission in a specific area.

**Search and Rescue System offers following functions:**



### Locate

System enables the user to locate mobile phones within 0.5 meter accuracy. Its range largely depends on the terrain and whether the system is operated from ground or air. The range is up to:

- 1,400 m while operating from the ground
- 3,000 m while operating from a helicopter



### Message (SMS)

System enables the rescue team to send text messages to every cell phone within the operating range simultaneously or to individual cell phones selected from the list. Text messages can either be selected from previously composed standard messages or customized. However sender ID cannot be modified, it will be the same as the search and rescue hotline number.



### Call

System can maintain up to 3 simultaneous calls between mobile phones in its range. This function enables communication between rescue teams and people who have gone missing and remained conscious. Additionally, the rescue professionals can use the GSM network created by the system to communicate with each other.

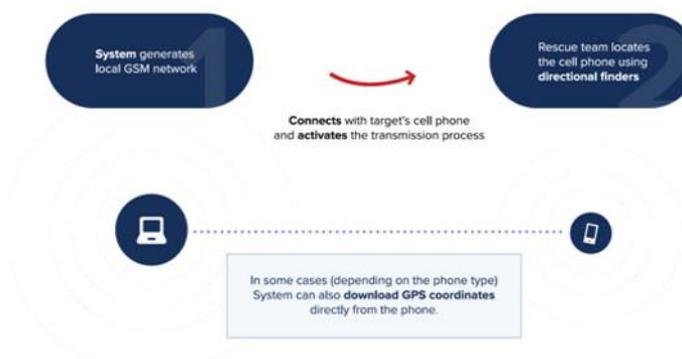
Caller ID displayed during every connection is predefined and will be the same as the search and rescue hotline number.



## How does MobileSweep® work?

Our System uses advanced GSM tracking technology MobileSweep®, which we have developed based on 15 years of experience producing various GSM solutions.

GSM network generator is one of the core elements of the System, as it registers mobile phones within System's range. Upon registration the operator can send text messages, call or locate the phone by activating its transmitter. Source of the transmission originating from the phone can then be located using special directional finders.

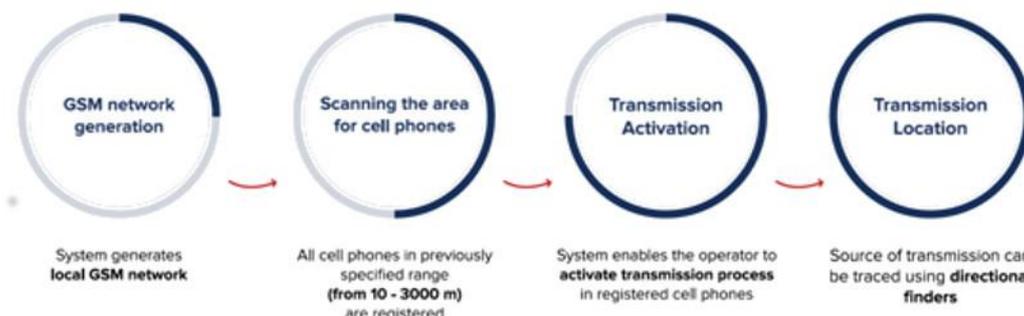


## Operating modes

Our System offers **two operating modes**. Their use largely depends on the type of rescue mission and environment in which the system will be used.

### Area mode

Allows search of all mobile phones in the area specified by the operator from (10 up to 3,000m).



In area mode the System generates local GSM network in radius selected by the operator (from 10 to 3,000m). System then registers all active mobile phones located in its range and allows the operator to activate the transmission process in selected phones. Source of the transmission can be traced using directional finders.

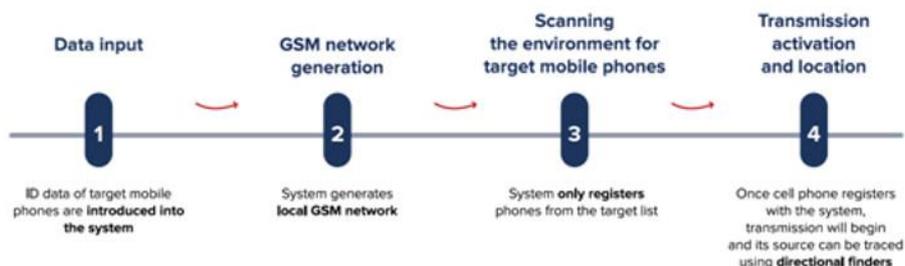
### POSSIBLE APPLICATIONS:

1. Avalanche search and rescue
2. Estimating the number of people that might still be present in natural disaster sites, establishing contact and locating them
3. Patrolling



## Target Mode

Enables search of specific mobile phones



In order to use the System in target mode operator has to input basic user information such as the phone number (MSISDN) of the victim will be sufficient. System can generate local GSM network and begin searching for multiple target phones simultaneously, after their basic information have been added to target list. Only phones from the target list will be allowed to register in the network. Upon registration the operator can activate the transmission process in selected phones, and the source can be traced using directional finders

### POSSIBLE APPLICATIONS:

Searching for specific person or a group of people after receiving a report that they have gone missing. (Basic information is required – phone number (MSISDN)).

## FEATURES



Operating range  
Up to 3,000m using directional antennas



Battery  
Built-in battery lasts up to 90 minutes at full capacity



Charging using external power source from 9 to 36V DC or 110/240V AC



## SYSTEM COMPONENTS

System was developed specifically for search and rescue agencies. This is why from the beginning our team has strived to achieve the greatest degree of resistance to conditions in which it will be used, while simultaneously maintaining high user comfort. Solid water and ash proof B&W case and highest quality connectors that fulfill IP67 waterproof standards produced by NEUTRIK and HUBER+SUHNER guarantee durability of our System. Furthermore, we have developed a rigid custom-made aluminum frame with additional vibro-isolation to protect it against shocks that could normally lead to transmission of overloads to electronic system. High user comfort is a result of our close cooperation with Polish search and rescue agencies. Numerous tests, prototypes and constant feedback proved absolutely invaluable to achieving the current high level of comfort and practicality. Solutions that significantly improve the ergonomics include the custom made construction of antenna mount, design of directional finders and the backpack system.



### BASE TRANSCEIVER STATION (BTS)

One BTS enables the user to search for cell phones that belong to one GSM operator at certain frequency. Upon request more than one BTS can be installed in the system in order to:

- Simultaneously search for mobile phones that are registered with different GSM network operators
- Monitor more than one frequency (2G, 3G and 4G)
- Built-in battery provides 90 minutes of battery life when the System is operating at full capacity. Applying external battery can increase the battery life to approximately 6 hours
- Built-in WiFi module allows wireless communication with system notebook.



### SYSTEM NOTEBOOK PANASONIC TOUGHBOOK CF-19

Ruggedized notebook with tablet function is to a great extent shock, impact, ash and waterproof. At first sight it might resemble military gear more than typical notebook, – in fact many armies around the world use products from Toughbook range to control electronic military equipment at the battlefield. Small size of CF-19 (10" screen) can also be deceiving, as it has many



features that larger Toughbooks lack. Additionally, to further increase comfort, we provide the notebook with Xstrap harness that allows the user to control the system directly from his hand.

### DIRECTIONAL FINDER

Directional finder and special antennas have been adapted to searching for mobile phones that use the following frequencies 2G, 3G and 4G

#### DIRECTIONAL FINDER SET CONTAINS:

- GSM signal receiver
- Directional antenna
- Earphones
- Bluetooth earphones





## **EQUIPMENT DESCRIPTION:**

- Small size
- Large range (up to 1150 meters on open space)
- 2 hour battery life
- Possibility to connect external battery that will extend the battery life to 6 hours
- Directional Antenna
- Log periodic antenna with frequency range from 700MHz to 2.5GHz

Its light and ergonomic design combined with vast power transfer (50W at 800 MHz) make this antenna suitable for a wide range of measurements such as resistance to electromagnetic interference or emission of radio radiation.

## **SUMMARY**

- 1.** Operating range up to 1400m (open space while the system is on the ground) or up to 3000m when used from a helicopter
- 2.** Locate the phone within 0.5m accuracy
- 3.** Send SMS to one mobile phone or all mobiles located within System's range
- 4.** Make calls between phones within the range of the system, even if there is no actual GSM network coverage
- 5.** Two modes of operation – area and target
- 6.** Works on the following frequencies: 2G, 3G, 4G