



## IMSMA MOBILE – EXTENDING IMSMA<sup>NG</sup> TO THE FIELD

Responding to calls from GICHD partners for a mine action field survey application compatible with the Information Management System for Mine Action *Next Generation* (IMSMA<sup>NG</sup>), IMSMA Mobile was designed as the optional extension to the field of IMSMA<sup>NG</sup> for data collection and data verification tasks, particularly with regards to geographic coordinates. IMSMA Mobile software can be installed on most handheld computers that support Microsoft Windows Mobile 5 or 6. Bluetooth compatibility gives connection to external devices such as Global Positioning System (GPS) and laser rangefinder binoculars. The field survey software is also compatible with selected handheld multisensor devices. The different type of platforms on which the IMSMA Mobile software can be installed present pros and cons that should be carefully studied by mine action programmes in relation to their specific needs and requirements.

IMSMA Mobile has been used with success since 2007. The needs of the mine action community for a field survey application, was determined through an evaluation of latest automated field data collection tools that handle a georeferenced map and positioning data. Since its first release, the IMSMA Mobile software has been refined to allow for additional features. A variety of handheld computers, GPS units and rangefinders have then regularly been tested to determine best compatibility with the field survey software and quality results. More recently, additional devices that propose a handheld computer with integrated GPS, laser rangefinders and even a camera have also been evaluated.

### COLLECTING DATA WITH IMSMA MOBILE

IMSMA Mobile is meant to work in conjunction with IMSMA<sup>NG</sup>. Mine action survey forms that are created in IMSMA<sup>NG</sup> are uploaded to IMSMA Mobile. It is important to note that IMSMA Mobile allows for the collection of any type of data according to the exact same structure defined in IMSMA<sup>NG</sup>. As is the case in IMSMA<sup>NG</sup>, data collected through IMSMA Mobile will populate one of the core item categories of IMSMA<sup>NG</sup>, which are:

- Hazards (suspected hazardous areas, minefields, ERW / UXO spots, etc.)
- Hazard reductions (technical survey, non-technical survey, clearance, released land, etc.)
- Accidents
- Victims
- Mine risk education
- Quality control / quality assurance

The field software also holds the same useful wizards and auxiliary tables contained in IMSMA<sup>NG</sup> that ease the input of information.

A key feature of IMSMA Mobile is the automated capture of geographic coordinates. Using ESRI ArcPad through a built-in wizard in IMSMA Mobile, users can open a georeferenced map and collect geographic coordinates from the GPS device, such as:

- Single points (benchmark, landmark, reference points, etc.) or;
- Interconnected points of polylines or polygons (start point, turning point, end point, etc.).

### **CHOOSING THE DEVICE(S) YOU NEED – FROM SEPARATE DEVICES TO ALL-IN-ONE UNITS**

IMSMA Mobile software is provided free of charge by the GICHD to mine action programmes. However, as is the case with the baseline IMSMA<sup>NG</sup> software, interested users must purchase the hardware units and other relevant devices according to their needs and requirements. In addition, they also need to acquire ArcPad licences.

There are three main categories of devices that are possible to select for the implementation of IMSMA Mobile:

- **Conventional handheld computers wirelessly connected to GPS.** Approximate price start at \$500. Rangefinders and camera with Bluetooth<sup>TM</sup> can be added as optional devices.
- **Professional handheld computer with integrated GPS.** Approximate price start at \$800. Rangefinders and camera with Bluetooth<sup>TM</sup> can be added as optional devices.
- **Handheld computer that are combined sensor platforms.** Approximate price start at \$3500. This type of devices may offer GPS, rangefinders, camera, compass and inclinometer all integrated in the same unit.

*Please note that price indications do not include additional devices or ArcPad licence.*

The main advantage of separate devices able to communicate via Bluetooth<sup>TM</sup> technology is the freedom it provides to the buyer in selecting the appropriate level of quality required for each device. Another advantage is that any individual device lost or damaged can be easily replaced by a new one.

While integrated GPS units or multisensor devices offer the advantage of combining sensors into one unit – hence might ease the data collection tasks – it must be pointed out however, that the level of quality of some of the included sensors might be short for the purpose that is needed. Besides, combined platforms, whether these offer only GPS or more devices, run their own software that is not systematically compatible with IMSMA Mobile. In most cases, IMSMA Mobile software must be adapted – hence additional costs for the development of an interface should be considered.



### **IMPROVING EFFICIENCY FOR DATA ENTRY PROCESS**

Choosing the right device is critical and depends on the intended use and funding. Electronic transfer has the potential to improve efficiency and accuracy of both data entry and mine action field survey. IMSMA Mobile offers an efficient solution to traditional transfer from paper survey forms into IMSMA<sup>NG</sup>. The latter is time-consuming and often carries errors that result from mistyping. Back to the office, information collected through IMSMA Mobile is uploaded to IMSMA<sup>NG</sup>, stored into one of the classic items categories of IMSMA<sup>NG</sup> so that it might be analysed further.

Furthermore, IMSMA Mobile can serve the purpose of verifying data in the field. Information previously entered in IMSMA<sup>NG</sup> that is found to be incorrect or only partially completed, can be uploaded to IMSMA Mobile. Incomplete or incorrect mine action survey forms can hence be reopened through IMSMA Mobile and modified as necessary in the field.

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