



GPS & GIS BASED MINEFIELD RECORDING SYSTEM

Rolta provides a GPS/ GIS based solution for the Mine Field Recording System that involves seamless integration of GPS hardware with hand-held and ruggedised Tablet PC that has inbuilt GIS based system. This allows mine laying parties to lay and record mine location during military operations. This solution also provides Mil users the facility to navigate to the minefields for maintenance and demining operations.

Introduction

Mines destroy, delay, disrupt, and lead enemy forces to a selected area for complete annihilation. They provide an effective means to implement offensive or defensive strategies in the area of control and cause maximum casualty infliction on the enemy.

Mine laying is a complex task and usually requires extensive planning prior to laying of the mines. Since the laying / maintenance of mines involves considerable risks to men and material, it is of utmost importance to have the most accurate and updated data that will enable the location of a mine with approximately 4 cm accuracy.

Rolta's Minefield Recording System depends upon plotting and recording coordinates of the minefield that includes the layout of strips, density, Start Strip Markers (SSM) location, Turning Points (TP), End Strip Markers (ESM), Gaps, Lanes and Perimeter Fencing. When all these are displayed on a GIS based system, it not only provide details of these areas with respect to the geographical location of the mines, types of mines, names of the unit laying the mines, etc., but also other relevant details like the diagrammatic plot of the mine, etc. Such information proves to be of critical importance to the Sapper who needs to maintain, manage and operate in these areas.



Components of the Base Station

Tools with in GIS solutions



Customised tools for GIS operations within the MRS



Rover GPS

Benefits

- Rolta Minefield Recording System records details of mines to an accuracy of 4cm or better
- System is based on dual frequency (L1 and L2) Real Time Kinematics (RTK)
- A unique Rolta controller with inbuilt GIS and Rolta customised solutions available with base and rover station
- Rolta MineField Recoding System can be used during night hours as back light facility is provided to receiver, Rolta controller and Tablet PC
- The GPS receiver updates at rate of 20Hz.
- GPS receiver at base station can be interchanged with rover stations, to enable leap frogging and enhance the range of operation without loss of accuracy
- User can precisely navigate to desired location by entering coordinates
- Rovers with multi channel UHF are connected to base stations using unique ID'S
- Mine Field Recording System is rugged, handy and easy to use
- Displays location coordinate in Lat/ Long, Mil GR, Northings/ Eastings
- This utility provides functions to display data/maps created/consumed using Data Management module
- Solution will allow user to record a strip which comprises of Start Strip Marker (SSM), Turning Points (T P's) and End Strip Marker (ESM)
- Mines will be generated automatically according to rules for different methods for mine laying and depending on type and densities of mines selected for the strip
- MRS also has data maintenance and reporting capabilities to generate tabular as well as graphical reports to get the progress of mine laying operation at any given point of time, to generate minefield recording forms and other reports



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