REAL TIME GIS MAPPING SOLUTION FOR GPS ENABLED REMOTELY OPERATED DEMINING PLATFORMS

A PROJECT REPORT PRESENTED BY
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ABSTRACT

Detecting and removing of landmines is generally expensive, dangerous and difficult task where mines were buried on random basis. Manual clearing is the most common technique for clearing minefields. People are exposed to a high risk when they are using hand bomb detecting devices to detect landmines.

Using a remotely controlled platform, which carries the bomb detector, can reduce the risk. Mine clearance project can be done in an efficient way if we can implement a GIS System to locate the exact positions of the detected landmines on a local map of the area. Then the GIS database can also be used to educate the community about the landmine contamination of their environment. Main purpose of this project is to detect landmines by using a GPS enabled remotely controlled robot and inserting the position data of the detected landmines into a GIS database. Positions of landmines are displayed on a GIS map. A robot can be used to detect landmines in a remotely controlled way. User can navigate the robot and locate the landmines and update them into a GIS database. Updated locations can be viewed by the desktop application or the web based GIS system. The developed software will indicate the location of the external device in real-time. Other supportive GIS layers like roads, railway, administrative boundaries, forests and tanks will also be displayed on the control screen. These supportive layers will be helpful to the user for getting an idea about the surrounding area, which is contaminated with land mines. When the de-mining robot detects a landmine then the system will add the position of the detected landmine into the GIS database.

A prototype system was developed to store and display the locations of landmines which are detected by an external demining platform. The system was tested for its validity. The test results indicated that the system functions efficiently and effectively.