

Geographic Information System Mechanism for the Terrain Overlay of the Intelligence Preparation of Battlefield Process

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Abstract

Geographic Information Systems (GIS) could be identified as a leading geospatial analysis system which able to apply for multiple purposes. Spatial Information analysing for the military applications by using GIS technology is the trend of the modern warfare. Intelligence Preparation of Battlefield (IPB) is the process of defining the battlefield environment that supports commander's decision making process. The Sri Lankan military is far behind in using digital technology in comparison to defense forces of other countries. The design of this research was accomplished reviewing the existing IPB process in Sri Lanka and developing a GIS based IPB model using model builder application of Arc GIS software. By leveraging GIS technology, this research seeks to enhance the efficiency and effectiveness of IPB through the utilization of geospatial data and advanced analytical capabilities. This study based on land use data, soil data, elevation data, road network, military deployment and water bodies covering the whole country and create the terrain, weather overlays of the IPB process. Final output contains go, no go, slow go areas of the terrain using GIS technology accurately compared to the manual process. Therefore suggest utilizing this product efficiently for the spatial analysis tasks in the military exercises and operations.

Keywords: *Intelligence Preparation of the Battlefield, Geographic Information System, Model Builder*