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Expectations for Presentation of Engineering and Scientific Mobile Platform Information within a Virtual Globe Geographic Information Systems

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ABSTRACT

Layered information systems like Google Earth have revolutionized public access to and visualization of geographic information through virtual globes. Separately, geo-specific technical information has been advanced in mobile platforms, both handheld and embedded devices, for the engineering and scientific communities. However, engineering and scientific information has had limited penetration into virtual globe Geographic Information Systems (GIS). This article explores unmet expectations which may be at the root of the issue. These expectations include design of the architecture within the originating mobile platform as well as expression of the level of accuracy and precision necessary for validity of the simulation displayed through the virtual globe GIS. The article below discusses architecture and validity research that advances real-time generation of simulated electro-magnetic coverage maps as composed layers within a mobile platform. Further, the research also enables real-time visualization of the simulated coverage maps by a global team through a virtual globe. Finally, for communication assurance purposes, the level of validity of the generated simulated coverage maps are analyzed from the perspective of an analog celestial body exploration mission by a mobile rover and its supporting organization analysis needs.

KEYWORDS

Communication Simulation, Layered Architecture, Validity

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