SYMPOSIUM ON INTEGRATED APPLICATIONS (B5)
Integrated Applications End-to-End Solutions (2)

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GOVERNANCE - HOW SPACE-BASED EO, POSITIONING AND MODELLING POWERS INTEGRATED GIS SOLUTIONS

Abstract

Space-based Earth Observation images and data have become a part and parcel of many human activities and, coupled with space-based positioning data that provide precise position information, are powering a new-wave of Geographical Information Systems (GIS) services. Applications of such integrated GIS have shown great societal relevance and supports many governance activities – as they provide an "integrated view" of the earth and are powerful tools for access to any citizens.

Recognising the potential of an integrated information system based on space services, the state of Karnataka (in India) has developed a state-wide GIS and offers specialized services for grass-root governance and citizens. The Karnataka-GIS has 300+ feature content – out of which almost 50-60

Because of these space foundations, technologies like automated EO image interpretation and feature extraction, advanced precision surveying of features, standards for GIS in layered formats, advanced real-time GIS services on the web, advanced cloud-computing and spatial-crunching of multi-layered data, spatial analytics etc have been adopted and utilised for the state-wide GIS to be made operational.

This on-line GIS provides services for planning/monitoring developments, for sustainable watershed development, city planning and management, crop monitoring, health programmes management, infrastructure development, mining, horticulture development, slum areas mapping, irrigation planning and services, wasteland development, taxation applications in cities, cadastral and land ownership services, forest monitoring, disaster management support, groundwater mapping, e-gov services for citizens and many others. Thus, the GIS has become a "single window" data source in the state and is constantly updated and maintained using fresh space based services.

The paper outlines the architecture of the state-wide-GIS, how space based integrated services have helped the state-GIS and also provides a full perspective of the wide range of GIS applications that have been made operational in different sectors. The papers also covers the "soft aspects" of how technology assimilation challenge was overcome by a vibrant policy and programmatic thrust of the government to bring local managers to utilise the GIS services. Specific examples of K-GIS Applications in public spend analysis, landuse changes, school amenity planning, city planning, watershed development, citizen e-gov services etc will be provided.