

## Vision Talk

### TECHNOLOGIES, APPLICATIONS AND POLICIES FOR SDI – A FUTURE PERSPECTIVE

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#### **ABSTRACT**

Since the beginning of civilisation, maps and drawings have been the most effective means of describing events and information as individuals relate to spatial definitions and spatial relationships more comprehensively than a "bundle of text and tables". With recent advances in satellite-based imaging, modern surveying, aerial data collection, precise positioning, GIS, internet and web technology, semantics and visualization and information presentation, the concept of Spatial Data Infrastructures (SDI) has evolved. Many nations, including India, have programmes for establishment of SDI and the concept is evolving to regional and global levels. More recently, an order improvement in basic computing; database technologies; internet technologies with merger of data, voice and video; appropriate miniaturisation; use of wireless and VSAT technologies has further made establishment and accessibility of SDIs more easy and available.

Applications of SDI have also developed - encompassing governance, societal development, education, business and meeting citizen's demand for information. The SDI is now an essential tool that not only brings in transparency and "openness" in information availability and access but also in its utilisation to support sustainable economic growth.

Of course, the use of spatial information is impacted by various policy considerations. Advocates of public information access are challenged - not only by national security concerns, but also by rights to privacy, intellectual property rights, copyright and profit objectives of spatial data. Liability issues of GIS database use are yet another area that needs to be considered.

How has India addressed these issues? India is in the fore-front of providing spatial data services and solutions through its Indian Remote Sensing (IRS) satellites - recognising that EO images are a critical part of SDI. The recently launched Resourcesat-1 is the main source of high-quality images to users all over the world and specifically contributes to the national development process, through the National Natural Resources Management System (NNRMS). NNRMS is a national system that has worked for providing user-oriented solutions in governance; meeting societal requirements (like drinking water targeting, disaster management support etc); environmental monitoring (of coasts, forests, bio-diversity, wetlands etc); infrastructure development support (road, telecom; rail; power etc) and is now envisioning a Natural Resources Repository. Forward-looking programmes include the conduct of a unique and repetitive Natural Resources Census in the country; generating a new set of Large Scale Maps and positioning thematic systems - like, National Urban Information System (NUIS). This NNRMS Information Enterprise will be networked for access at village to national level through an integrated network of terrestrial and satellite-based connectivity. Our vision is to make NNRMS a truly vibrant infrastructure of spatial data, solutions, value-addition and commerce - taking spatial data and solutions to the end beneficiary.

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