
G - Revolution

A Technology for NOW

Hyderabad

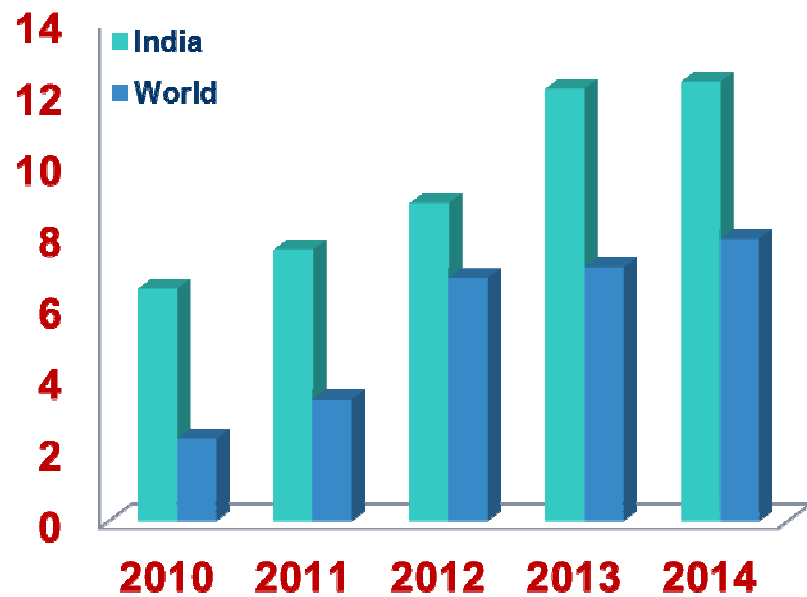
10th February 2015



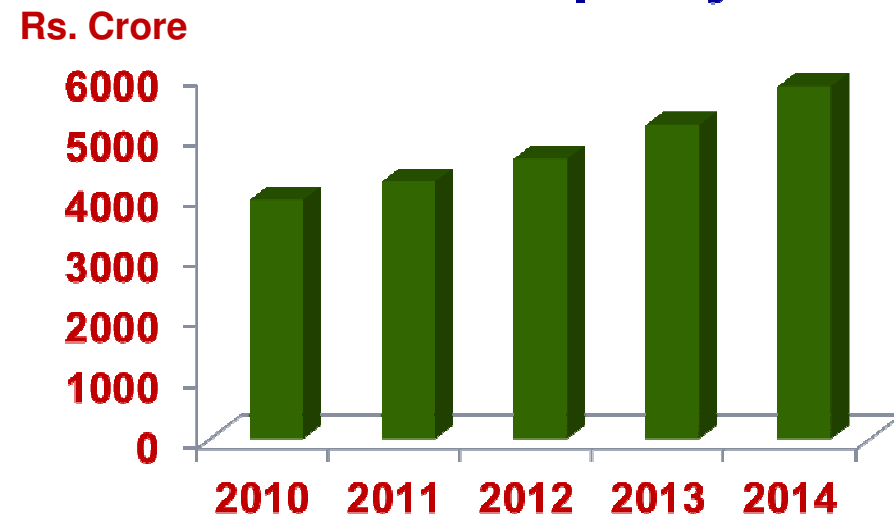


Indian Geospatial Industry

Growth Rate (%)



Revenue Capacity





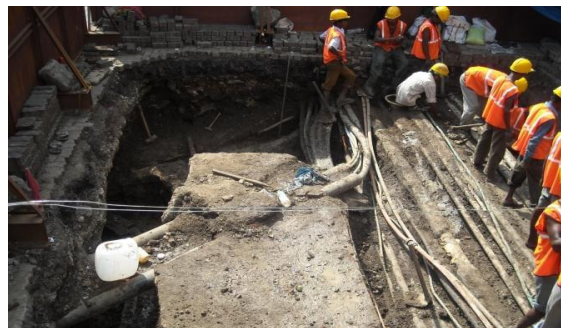
Applications of Geospatial Technology

Urban Transit Planning

Synergized Approach of Mapping and Modelling technologies

Integration of Ground Penetration Data (for uncharted utilities) and Aerial LiDAR holds vital importance in projects like Mumbai Monorail wherein high presence of uncharted utilities along with co-ordination with various government stakeholders comprised a crucial element of the project.

- **Utility Departments** (MCGM, MTNL, BEST)
- **Railways** (for Rail over Rail Bridges)
- **Horticulture Dept.**
- **Ministry of Env. & Forest**



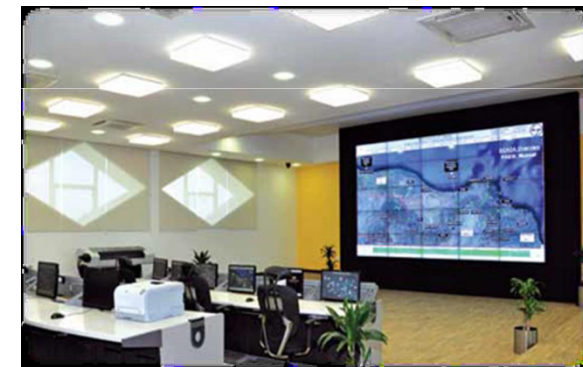
Water & Waste-Water Networks

Preparation of Digital Base Map including Layout and Topology of the Network

Contour Mapping for Water Transmission Lines

Water Network Management including Leak Detection Surveys

Study of Operational Area, Demand and Customer Base

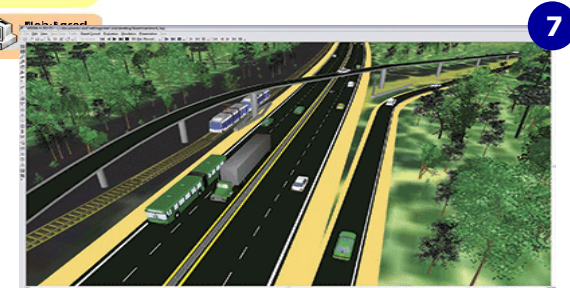
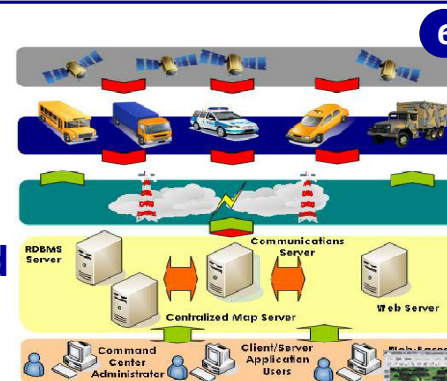
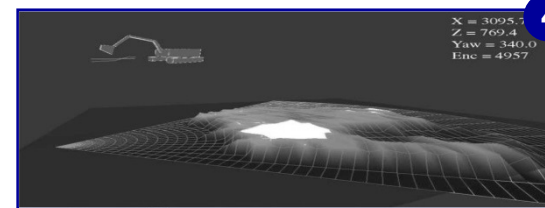
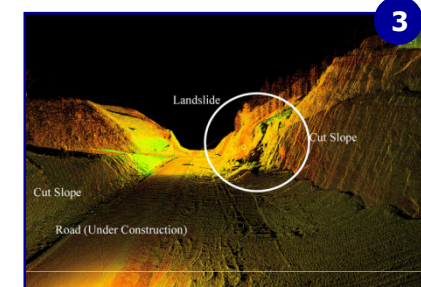
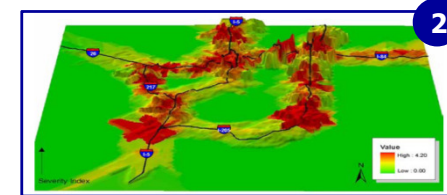
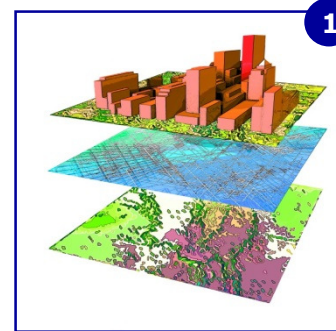


**Bhatpara Sewer Network & Waste
Water Treatment,
West Bengal**

**Bangalore Water Distribution
Network
Minimizing “Un-Accounted Water”**

Transportation Engineering

1. Surveying & Site /Alignment selection
2. Engineering design
3. Cut and Fill Computation for the Road Network
4. Construction automation using machine control solutions
5. Transportation Infrastructure Management
6. Traffic Surveillance, Monitoring and Management
7. Environmental Assessment, Integration and Streamlining

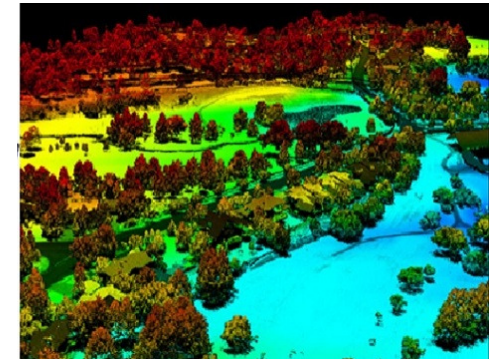
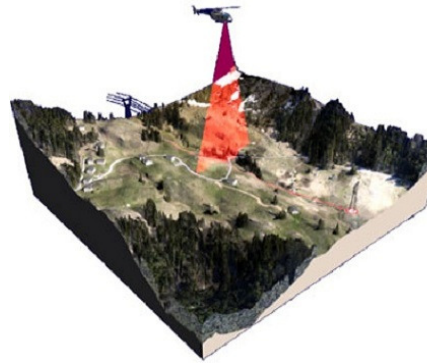


Railways & Metros

Aerial LiDAR (Light Detection and Ranging)

High potential to support rapid inception of new Projects through detailed Corridor Mapping

- Speed up Feasibility studies, Detailed Project Report
- Accurate estimation for the purpose of appropriate budgetary support
- Enable early level integrated approach among various stake holders
- Excellent tool for survey and detailed corridor mapping
- Penetration through vegetation and detect ground surface
- Generation of a 'point cloud' of 10 points / m²
- Digital images with ground resolution better than 5 cm GSD (ground sample distance).



Riyadh Metro



Qatar Metro

City Surveillance, Intelligent Traffic Management & Emergency Response System

Preparation of Digital Base Map including Layout and Topology of the City

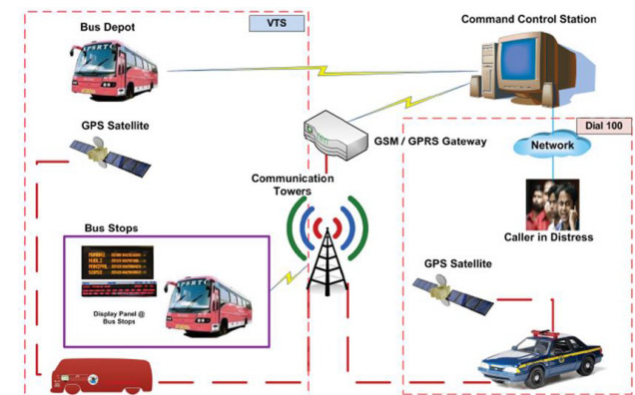
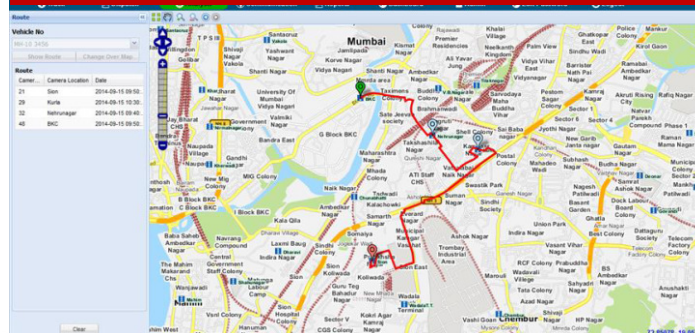
Marking the positions of Junctions, Edge Devices in the GIS Map

Integration of various Applications with GIS based on client's requirements

Integration of GIS with Automated Vehicle Location System, Computer Aided Dispatch

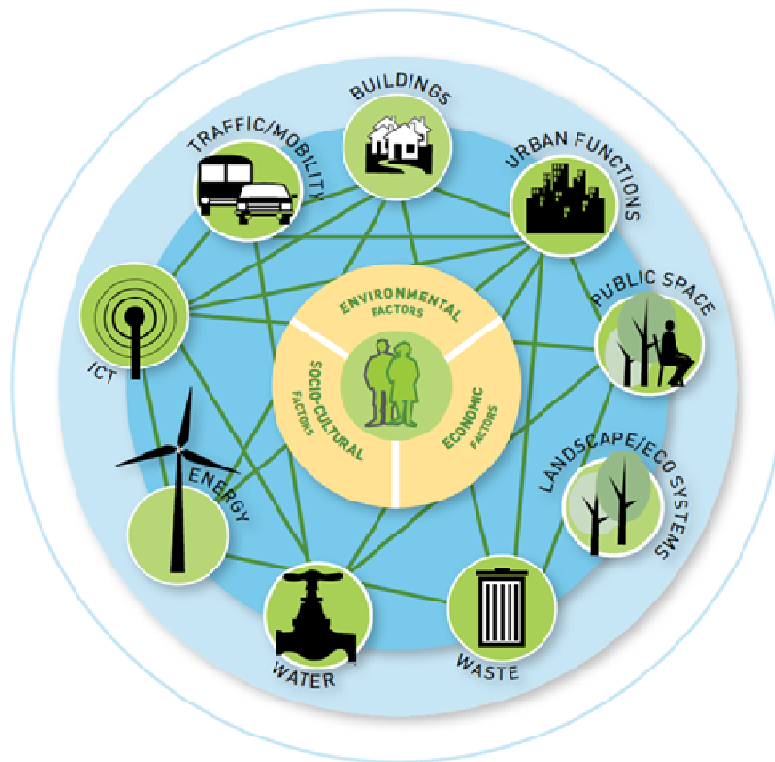


Vehicle Tracking System Using GPS/GIS

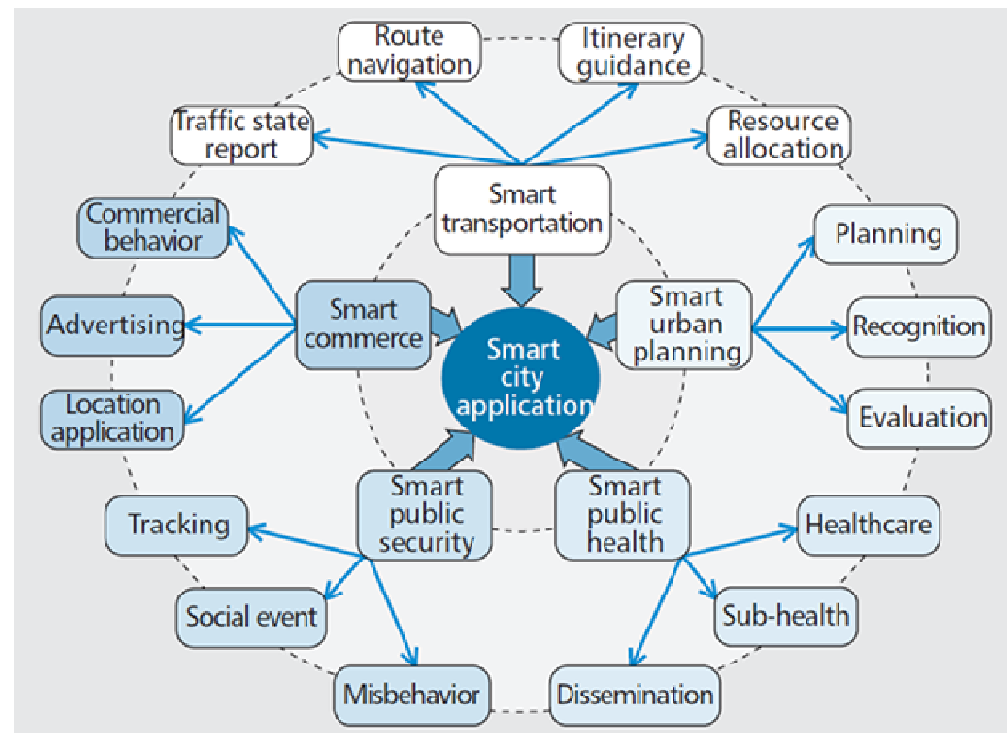


Traffic/Transportation Management & Emergency Response System

Geospatial Technology Applications for Smart Cities



Smart City Concept



Smart City Application

Solar Power Plants

Preparation of Digital Base Map including Layout and Topology of the Site

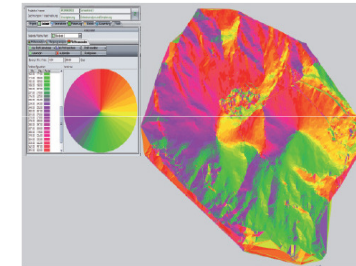
Terrain Modelling and 3D Terrain Analysis

Shading Scene Analysis

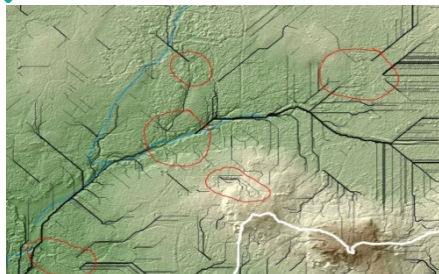
Water Shed and Drain Flow Analysis



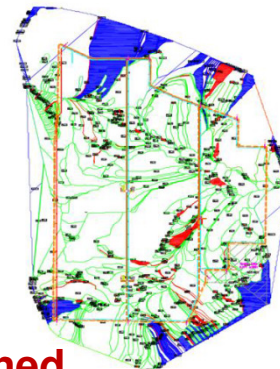
Satellite Image



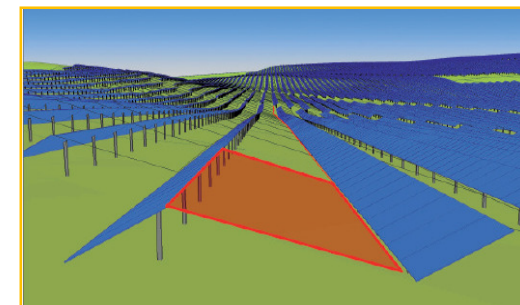
3-D Terrain Image



Drain Flow Path Analysis



Water Shed Analysis

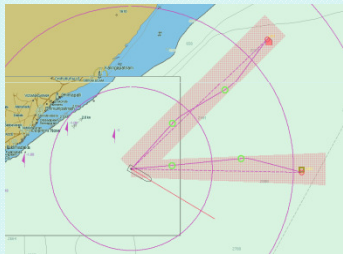


Shading Scene Analysis

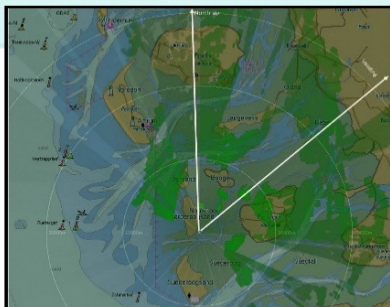
Cartography and GIS in Defence Programs

Naval Programs (Tool - SevenCs ECDIS)

- BrahMos Fire Control System
- Mission Planning

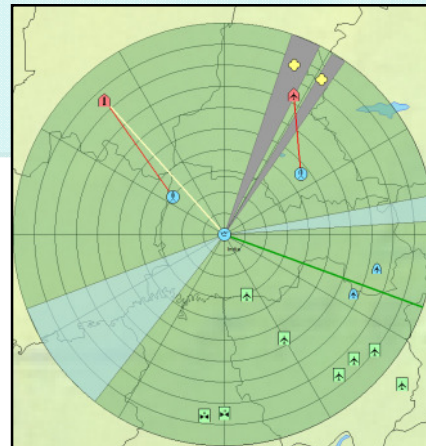


- Surface Surveillance RADAR (SSR)
- RADAR Overlay



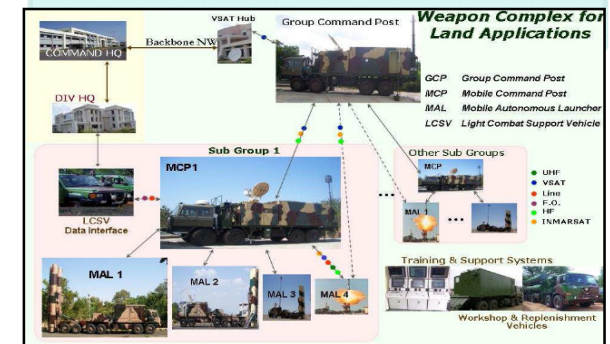
Air Defence (Tool - ARC GIS)

- Air Defence Fire Control RADAR
- Air Picture Display and Engagement Planning

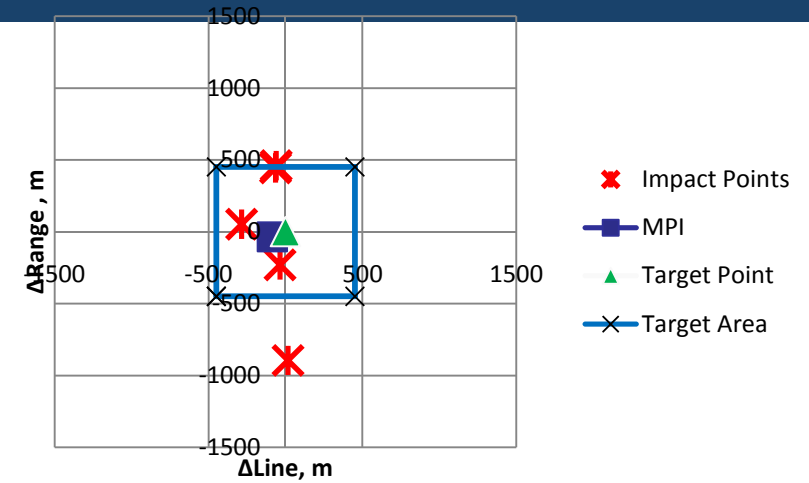


DRDO (Air Force) (Tool - Open Source)

- Command Control Complex for Proof of Concept of Surface to Air Missile Applications
- Group Command Post Software for:
 - Mission Planning,
 - Multiple Sensor Data Fusion for effective utilization of Assets
 - Threat Evaluation and Engagement Planning



INS, GPS in Fire Controls for Artillery Programs



Use of Geospatial Technologies for the Navy

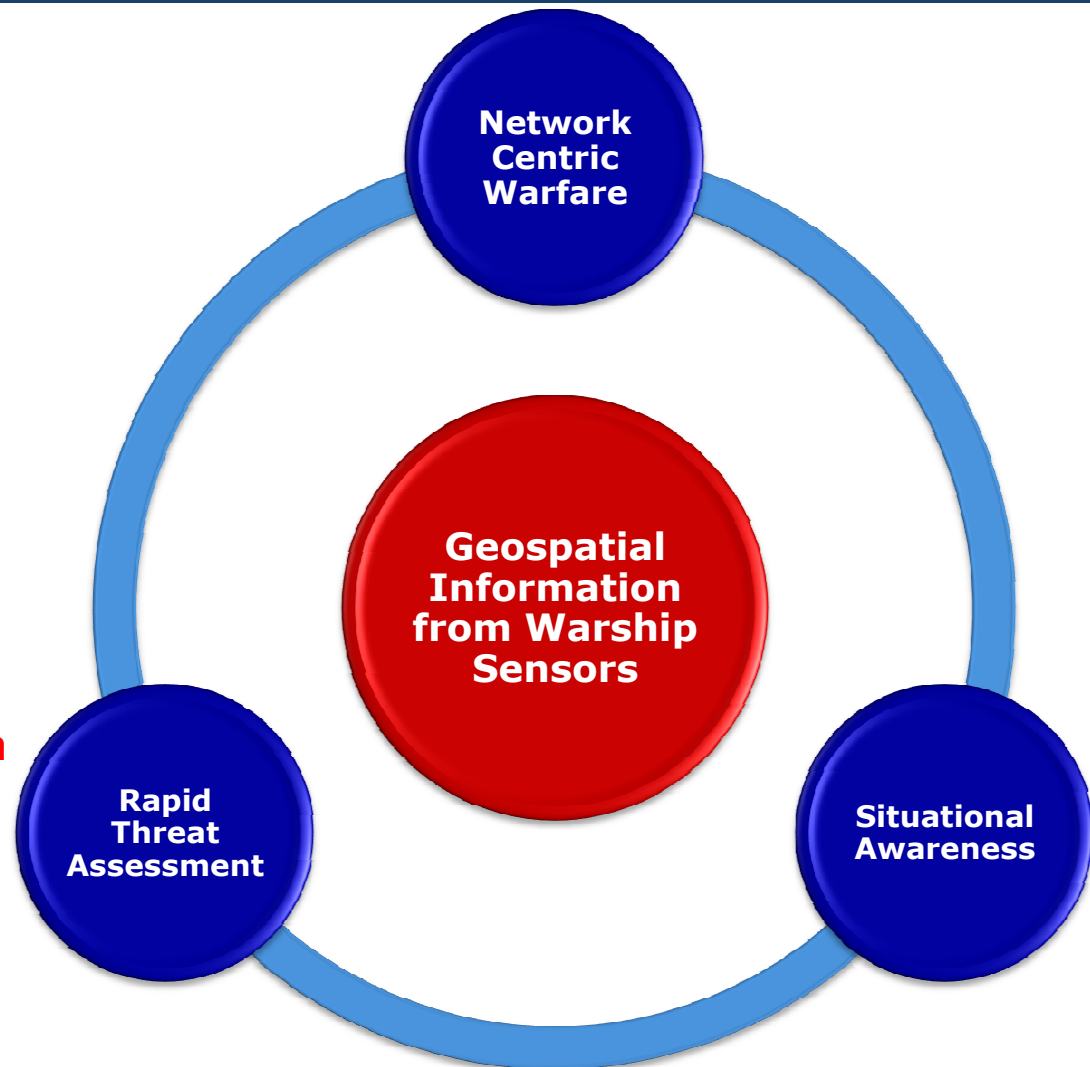
Bathymetry :

For Ocean Temp versus Depth Profiling,
used in Anti Submarine Warfare

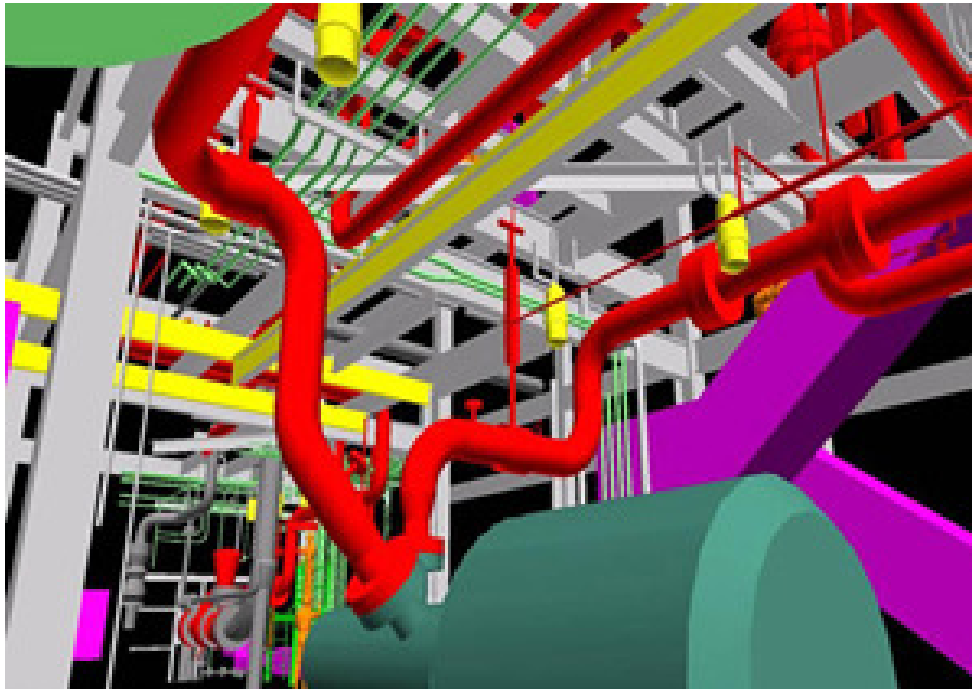
Echo Sounding :

For Depth Mapping

Satellite Communication & Navigation



Use of Laser Scanning Technology Shipbuilding



**Laser Scanning Used Extensively for
Ship / Submarine Equipment Layout & Optimum Routing of Piping & Cabling**

Taking G-Revolution Forward

- **Conducive policies for geospatial data and faster approvals**
- **Change in mindset over Data Secrecy**
- **Collaboration among geospatial stakeholders**
- **Good governance & accountability in planning, building & maintaining geospatial infrastructure**
- **Building service delivery platforms on robust, proven & standards based geospatial technology**
- **Effective Public Private Partnerships (PPP) and facilitation through industry bodies**
- **Holistic approach in capacity build-up, skill development**
- **Introducing Geospatial Technology in education system at various levels**



Thank You