



# RSI SOFTECH INDIA PVT LTD

## Company Profile

### 24 years of excellence

From Opto-Mechanical Remote Sensing Hardware Manufacturing and Supply, to the latest Digital Solutions and Internet Geo Portals, RSI SOFTECH deployed every Geospatial IT solution to its users

- Hardware & Software tool for creating stunning 3D City Models
- 3D GeoSpatial solutions & GeoPortals
- Supplied Remote Sensing Instruments
- Software tools for Creation and Management of GIS data

[www.rsisoftech.com](http://www.rsisoftech.com)





## ABOUT RSI SOFTECH

**Remote Sensing Instruments(RSI) is the first company started by Mr T Sesha Rao (an ex-scientist from NRSC, ISRO, Department of Space).** RSI started as an opto mechanical manufacturing unit manufacturing remote sensing instruments. Mr T Sesha Rao has started a group company RSI SOFTECH for propagating the digital technology. RSI SOFTECH is a long standing player of the Geospatial Industry and has strong presence in the Indian Subcontinent. RSI SOFTECH is specialized in providing Enterprise Geospatial Solutions and to the geospatial community of the world.

It has expertise in medium and large scale application development involving the latest web technology in the areas of Web GIS, Utility Mapping (AM/FM), BIM Technology, Geospatial Data Mining Applications and providing Spatial Database Infrastructure Portal Applications and Services. It is also involved various Survey and Mapping projects like mapping of tsunami vulnerable areas and software development, mapping of ULBs and software development for property mapping, flying drones and mapping cities and various other mapping projects. Based on the years of effort and geospatial knowledge RSI SOFTECH is fully geared to provide the applications to suite the current geospatial user needs and specializes in providing turnkey geospatial solutions integrating precise hardware and software and customized apps for today's enterprise geospatial needs.

## RSI SOFTECH OVERVIEW



### Company Focus

Since inception, RSI SOFTECH has been totally focusing on building a strategic and state of the art geospatial technology company.



### Markets Served

Agriculture, Business/Marketing, Cadastral, Cartography, Defence, Internal Security, Electric, Emergency, Environmental Engineering, Environmental Planning, Forestry, Land Use, Gas, Oil, Mineral Exploration, Oceanography, Meteorology, Photogrammetry, Survey, Pipeline, R&D, Educational, Telecommunications, Transportation, Water Resources, etc.



### Technical Services

RSI SOFTECH provides a variety of Geospatial Customer Support Services for customers in India, including online, telephone and fax support for technical issues. It also provides custom development services, on a project-by-project basis, to assist customers with tailoring to their specific needs. Additional project consulting services are provided to help clients re-engineer their project management approach and optimize their hardware and software to provide enterprise GIS solutions.



### Development Services

RSI SOFTECH, Software Engineering Division designs, develops, customizes and integrates a comprehensive range of geographic imaging products stand alone or web-based applications based on years of experience and knowledge in the geospatial technology. The products are tightly integrated, highly customizable, and easy-to-learn-and-use.



### Infrastructure Facilities

RSI SOFTECH INDIA PVT LTD is headquartered in Hyderabad, India with 35000sqft of work area with state-of-the-art IT infrastructure and Lab Facilities. It also maintains its regional offices in New Delhi, Kolkata, Bangalore and in many other locations of India.



### Global Presence

RSI SOFTECH INDIA PVT LTD is the leading provider of GIS, Remote Sensing and GPS hardware and software products and related services to clients in India, Nepal, Bhutan, Bangladesh, UAE, Algeria, Tanzania and Uganda. RSI SOFTECH business encompasses software development, sales, technical support and training for numerous GIS/RS/GPS products, custom applications development, project consulting services.

## AWARDS

### PRESIDENT AWARD

For his pioneering efforts in establishing the company and significant contribution in the field of Remote Sensing (RS) by RSI, Mr. Sesha Rao was awarded Udyogpatra award (Instituted by the Trade & Industrial Development, New Delhi) by the Govt. of India.

**President of India Award for the BEST ENTREPRENEUR of the year 1994.**



### MIN. OF FINANCE, CERTIFICATE OF APPRECIATION



### INDUSTRY AWARD

RSI SOFTECH has been awarded as the best Geospatial Services Company of the year 2009 – 2010 by a popular local media group.

# RSI SOFTECH TIMELINE



**1985**



REMOTE SENSING  
INSTRUMENTS

First RS & GIS  
company started  
in India

**2000**



ERDAS INDIA  
Is formed as JV  
between RSI and  
ERDAS, USA.

**1985 - 1989**



Manufactured &  
Supplied Remote  
Sensing  
Instruments

**2008**



ERDAS INDIA  
Renamed to RSI  
SOFTECH INDIA

**1989 - 2000**



Introduced ERDAS  
and sold it across  
India

**2021**

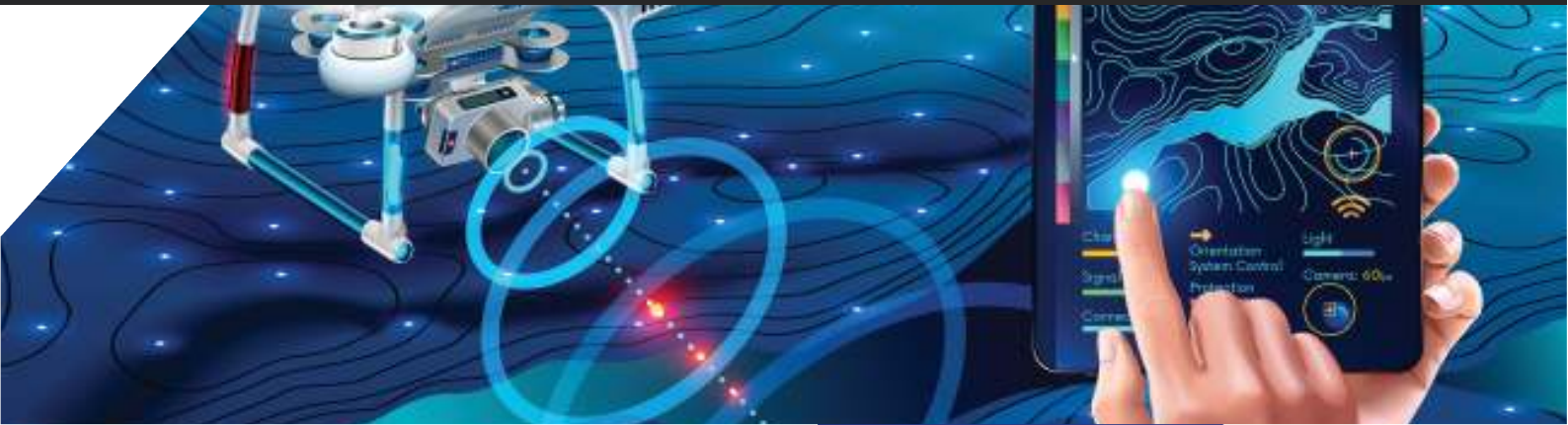


RSI SOFTECH INDIA  
Is operational since  
2008 & providing  
total solutions in  
the field of Geo  
Spatial IT



# OFFERED SERVICES SECTION

## PROFESSIONAL SERVICES OFFERED



### ✔ Image Analysis

- Satellite Image Processing
- GCP Survey and Library Creation

### ✔ Natural Resources Management

- Land Use Land Cover Mapping
- Forestry Mapping
- Resource Inventory
- Environmental Impact Assessment Studies

### ✔ Mineral Exploration

- Geological Mapping
- Geo chemical Survey
- Heavy mineral separation
- Exploration for Gold & Diamond

### ✔ Spatial Database Creation

- ORACLE SPATIAL, SQL & SPATIAL
- 3D Visualization and Modeling
- Seamless Country Level Database Development
- Integrated Information Systems Development
- SDI Portal Creation and maintenance

### ✔ Urban Mapping & GIS

- Mapping using UAV Photo/Sat Images
- Municipal Mapping, Property Tax Mapping
- Digital Door Numbering
- Detailed Contact Surveys
- Comprehensive GIS Development
- Customized GIS Applications

### ✔ Topographical Surveys

- GPS & Total Station Surveys
- Aerial surveys
- 360 degree panoramic video mapping
- LiDAR survey
- Utilities Mapping
- Site Investigations
- Alignment Surveys

### ✔ Cadastral Surveys

- Computerization of Land Records
- Survey of Land Holdings
- Total Station/GPS/Drone/Manned Aerial
- Preparation of Village / Regional Maps

### ✔ Photogrammetry Services

- Aerial Data Capture Manned/Unmanned
- Aerial triangulation
- Orthophoto generation
- DEM / DTM
- Contouring
- 2D & 3D mapping
- 3D City Modelling
- Custom Software Development for 3D Cities
- Smart City Solutions

### ✔ ERP integrated GIS Services

- Telecom ERP solutions
- Electrical ERP solutions
- Water ERP Solutions and services

# DELIVERED SOLUTIONS SECTION

RSI SOFTECH has a large customer base in India and Abroad. It also has the best range of products to suite the defense and security needs of its clients. Some of the important clients are mentioned below.

RSI SOFTECH HAD UNDERTAKEN DEVELOPMENT PROJECTS IN SOFTWARE IN THE FIELD OF GEOMATICS.

- Multi Spectral Interactive Data Analysis System (**MIDAS**) for Dept. of Space
- PC based Digital Browsing Facility Developed for the Department of Space
- Battlefield Surveillance System (**BSS**) for **Indian Army**.
- **Simulation** Software for **Indian Air Force**.
- **CARTOSAT** Data Processing Software for Antrix, Govt. of India.
- Bhoomi Cadastral **Land Records** Management Software for Karnataka State.
- Supplied Image Analysis and Photogrammetry solutions to **Indian Navy** and **NHO**
- Deployed custom solutions to **INCT, Algeria** in consortium with ANTRIX and SAC Ahmedabad:
  - **ALGIERS:** Algerian Image Exploration and Remote Sensing
  - **GDPS:** Geographic Data Production System
  - **ALIAS:** Algerian Image Analysis System (For Algerian Defense)
  - **JANES:** Janes Search Engine (For Algerian Defense)
  - **IMINT:** Imagery Intelligence System (For Algerian Defense)
- **MMS:** Mobile Mapping System for Survey of India
- **Geo Data Manager:** GDM a custom developed software for the data archival and retrieval, deployed in **55 Div locations** of **MI17**.
- GOA **CRZ** Mapping (Web based)
- One of our Dept of Space project is **BHUVAN (Bhuvan.nrsc.gov.in)** was initially launched with our solution on 12th August 2009 as an **Indian equivalent of Google Earth**.
- RSI SOFTECH has implemented a massive project for **Indian Border Security Force** at 270 locations of BSF across the country taking the technology up to the battalion level for the first time in the country.
- 3D modelling software for **ADRIN**.
- RSI SOFTECH is now currently working with the **Central Reserve Police Force** for implementing full scale Internal Security Application.
- RSI SOFTECH has given its **Security** solutions to seven state police departments' viz., Andhra Pradesh, Kolkata, Jharkhand, Meghalaya, Tripura, Assam and Madhya Pradesh.
- RSI SOFTECH is currently executing a 3000KMs OFC fiber laying project for Indian Navy. Activity involves mapping of the **NAVY** facilities and creating databases and setting up 2 NOCs.
- RSI SOFTECH is currently deploying **NDR (National Data Registry)** for National Spatial Data Infrastructure (NSDI), Dept of Science and Technology, Govt of India.



## RSI SOFTECH Defense & Internal Security Expertise

knowledge in this field. RSI SOFTECH Defense Systems has provided the military with deployed COTS and Customized geographic imaging technology. Customized Image Processing software is the tool of choice for the digital battlefield, providing proven image exploitation visualization and GIS solutions. knowledge in this field. RSI SOFTECH Defense Systems has provided the military with deployed COTS and Customized geographic imaging technology. Customized Image Processing software is the tool of choice for the digital battlefield, providing proven image exploitation visualization and GIS solutions.

A long-standing leader in the GIS market, RSI SOFTECH is a dependable partner for GIS, 3D data analysis, processing and visualization. With the recent integration of Enterprise GIS products, RSI SOFTECH has expanded its product areas to offer four ranges of GIS and mapping solutions - airborne data acquisition, geographic imaging, GPS/GIS, and land information systems. RSI, field data collectors, workstations and software allow users to create and update GIS databases rapidly, accurately and cost effectively.

RSI SOFTECH products and related services help organizations visualize, manipulate, analyze, measure, and integrate any type of geographic imagery and geospatial information into 2D and 3D environments. Technical support, training, custom applications development, and project consulting services aid the RSI SOFTECH client in their post-purchase needs. Our solutions run on Windows 8 & 10, Linux and UNIX platforms.

### Some of the RSI SOFTECH defense specific solutions are,

- Rapid Image mapping
- Intervisibility and Threat Analysis
- 3 D Mission Planning, Rehearsal and Training
- Scenario Evaluation
- Targeting and Strike Graphics Generation
- Simple and Effective Customization for Broad system Integration
- Line of Sight Analysis and View Shed Analysis
- Mobility Corridors
- Trafficability and Supply routes
- Hazard mapping (landslides, flood, fire)
- VR, Fly and Walk through
- Terrain Parameters
- Advance Landing Zones /Dropping zones
- DTED Generation
- Target Detection / Change Detection
- 3D Terrain Data Generation and Visualization.
- 3D modelling of UAV data.
- 360 degree video GIS.

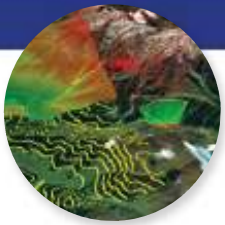
## RSI SOFTECH Defense & Internal Security Applications

Military applications of RSI SOFTECH are as varied as the missions of our end users. COTS and Open Source GIS tools were used to build target graphics for defense applications. The solutions are being used by DIPAC, NTRO, DRDO, BEL, PMO BSS, NTRO MII7, CAMS etc. If the mission requires the extraction of information and decisions from GIS, then RSI SOFTECH provides a solution. Following are some of the most common applications of RSI SOFTECH Defense solutions:



## Terrain Information System for Combat and Terrain Intelligence

The mission of the Combat Terrain Information Systems is the material development and acquisition of topographic support systems to meet the terrain intelligence requirements of the Army warfighter. The current terrain analysis, topographic and reproduction support provided are slow, labor intensive processes that do not meet the needs of the Force on digital battlefield on which the commander must have the ability to rapidly obtain terrain information and topographic information products. CTIS provides digital maps and updates to commanders and weapon platforms in support of mission planning (e.g. Intelligence Preparation of the Battlefield (IPB), rehearsal (e.g. simulations), and executions (e.g. Common Operating Picture (COP)). CTIS also provides automated terrain analysis and visualization, terrain database development / update / management / distribution and graphics reproduction.



### Terrain/Topographic Support System & Tactical Decision Aids.

The Terrain / Topographic Support System provides quick and accurate tactical terrain analyses and digital topographic products in support of mission planning, decision making and combat operations that enhances the effectiveness of the army in meeting its combat mission. The DTSS mission includes generating and collecting geospatial information, developing and managing a geospatial database, and providing of a suite of geospatial information and capabilities that support the war fighter with terrain analysis products, special map reproduction and geodetic survey support.

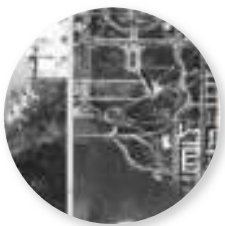
By taking the advantage of the powerful GIS tools the DTSS can generate Tactical Decision Aids (TDAs) from input terrain data. The DTSS provides the user with an easy to use interface to defense standard models to generate a variety of Intervisibility and mobility TDAs. Tools are also provided to allow the user to create custom TDAs based on the Area-of -Operation and mission requirements. Image backgrounds can be added to TDAs to provide the user with more map-like product. Image maps and perspective views can also be created using standalone image processing software. TDAs generated on the DTSS can be output as map overlays for use on other Defense Force Battle Command System.



### Imagery Intelligence Utilities and Capabilities

The Imagery Intelligence (IMINT) functionality within Defense ensures the accurate and timely reporting of essential elements of information (EEI). We provide tools that GIS and imagery analysts around the world rely on to digitally exploit imagery from a variety of air and space borne sensors to include: Electro Optical, Multi-Spectral, Synthetic Aperture Radar, Thermal Infrared and UAV. The unmatched affordable versatility of the IMINT functionality is making it the imagery exploitation system of choice in defense.

Defense user would require the photo-lab, exploitation light table, and graphics shop all in one system. In addition to standard procedures such as filter sharpening the image, digitally adjusting the contrast and brightness, and mensuration features, we can accomplish other tasks unique to digital image processing.



The advanced image processing functions include automatic change detection, feature extraction and the creation of geo-referenced intelligence databases. The resulting databases are capable of illustrating the spatial relationships between different intelligence targets. The Feature Counting Tool allows imagery analysts to quickly identify, quantify, and annotate targets, which can be stored in a database for later retrieval to support change analysis.





The image processing tools of RSI SOFTECH are the primary software tools used to create EEI from raw imagery. Those tools are fully integrated with the advanced terrain analysis, feature extraction, geospatial data production, and terrain visualization functions. The tight integration of the capabilities gives the analyst a truly scalable solution to imagery exploitation and intelligence materials production.

Defense user requires an assortment of high-speed image visualization and manipulation tools for Phase 1 exploitation. Complex intelligence graphics can be generated through Maps to support Phase 2 reporting requirements. The development of Phase 3 intelligence databases is supported through high-end exploitation tools such as rule-based change detection capability, and built-in linkage to geo-spatial databases. If mission requirements include all phases of imagery exploitation, then RSI SOFTECH has solutions that minimizes software development time, money and training overhead while enhancing productivity.



## RSI SOFTECH Home Land Security Utilities and Capabilities

Strategic targeting in advance of any potential contingency is essential to the national security of all countries. Upon the outset of conflict, time is of the essence and does not permit the proper detailed analysis of targets. By establishing a national targeting program, all potential targets can be properly analyzed and prioritized based upon the security needs of the targeting country. Upon the outbreak of hostilities, a country can use the information gained in the targeting process to rapidly respond in a proactive way striking those targets that yield the highest possible benefit with minimal risk to high value, deep strike assets. Targeting allows rapid offensive action, which in modern day warfare, is the best form of defense and essential for survival.

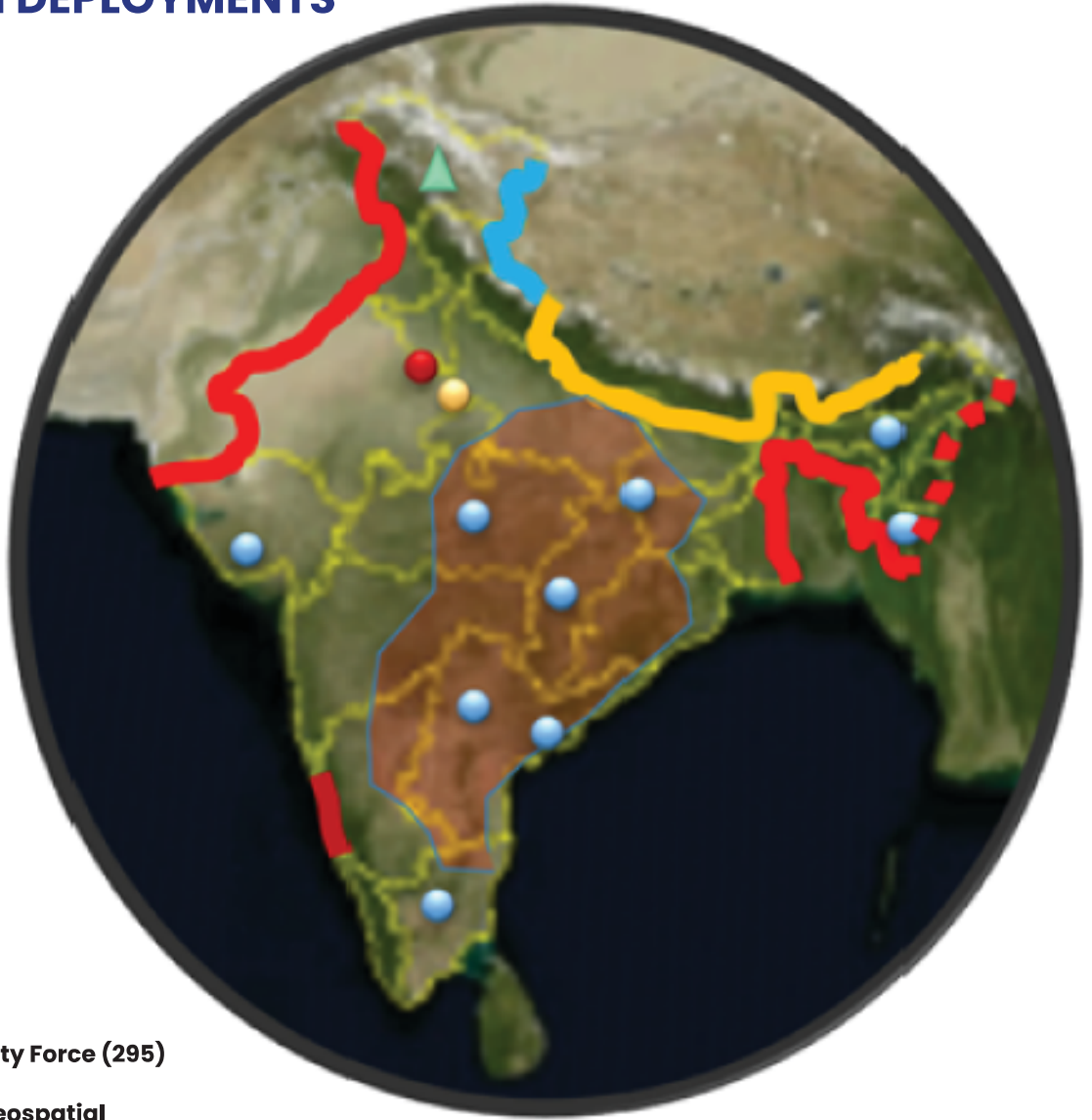
RSI SOFTECH can provide targeting tools based on the use of embedded target graphic templates. This functionality is a digital production capability dedicated to the conversion of raw imagery into the Basic Target Graphic (BTG). A BTG is a multi-page document, similar to a brochure, containing text and detailed graphics of a specific named target. It includes special IMINT and annotation information, extracted from the imagery, used in the targeting process. It also includes special symbology and vector information which can have attributes stored in a database for later retrieval and/or database query. If the targeting mission demands accurate and complex targeting materials, then RSI SOFTECH provides a complete targeting solution.












# DEFENSE & HOME LAND DEPLOYMENTS SECTION

RSI SOFTECH DEFENCE & INTERNAL SECURITY USERS

## RSI SOFTECH DEPLOYMENTS



-  Border Security Force (295)
-  Mission for Geospatial Application (350 Licenses)
-  SSB (OPS Room & FRTs)
-  ITBPF (Ordered > 22 Licenses)
-  Central Reserve Police Force (>100 Licenses)
-  9 State Police Control Rooms
-  Delhi C4I, Octopus, Greyhounds
-  55 Locations of MI17
-  Northern Command Army



# QUALITY CERTIFICATIONS SECTION

RSI SOFTECH HAS THE FOLLOWING CERTIFICATIONS,

- ISO 9001:2015 Quality Management System
- ISO/IEC 27001:2013 for Information Security Management System.
- ISO/IEC 20000-1:2011 for Information Technology Service Management System.
- ISO 14001:2015 for Environmental Management System.
- ISO 45001:2018 for Occupational Health & Safety Management System.
- CMMi Maturity Level-3.
- CMMI Development V2.0 (CMMI - DEV) ML5

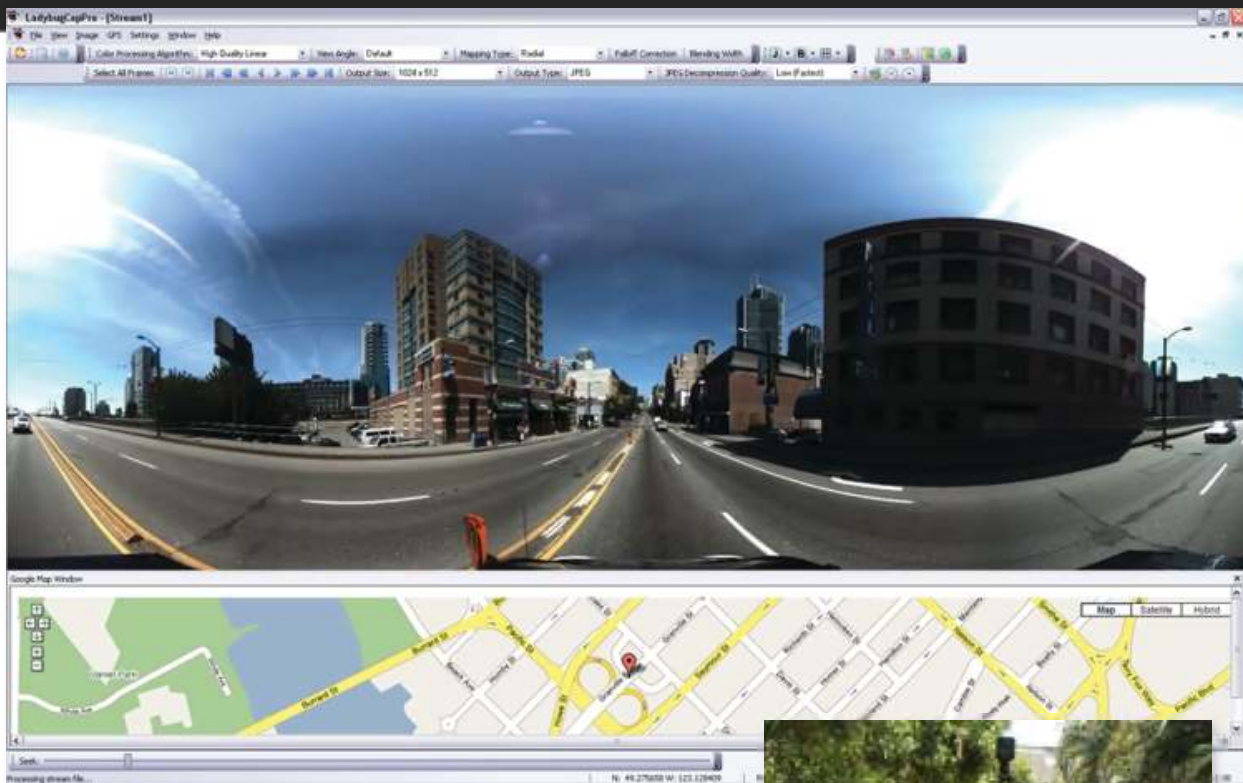


# RSI SOFTECH INDIGENOUS SOLUTIONS

## OPS 360 System for 360 Degree Panoramic Video Capturing for Police

RSI SOFTECH indigenously developed 360 Degree video capturing equipment for the Police Department and is an innovative and powerful georeferenced imagery product which provides valuable information to the user, whether it is commercial or industrial complexes, individual floors of a building can be captured along with road assets. The GPS data captured during recording ensures the applications of this data are endless.

THE SYSTEM BASIC COMPONENTS ARE LISTED BELOW,



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- ❑ Camera: Spherical Imaging Camera with 30MP resolution.
- ❑ Mounts: Back Pack Mount, Wheel Chair and Vehicle Mounts for 360 Video capture in non-road areas, indoors and on roads respectively.
- ❑ Tracking: Complete Integrated system with GPS (additionally IMU).
- ❑ Hardware: Fully integrated rugged computer hardware with SSD storage and battery systems for mobile data capture.

Software: tracking software and 3D viewing software. Tightly integrated with Skyline Terra Explorer Pro.



The spherical imaging system boasts an impressive 30 MP resolution covering 90% of a full sphere; a 5 Gbit/s USB 3.0 interface; and a ground-breaking post-processing workflow that provides high dynamic range, superb image quality and maximum user flexibility. It is an excellent choice for applications in geographic information systems (GIS); vehicle-based photogrammetry; situational awareness; and entertainment solutions for lighting models, full dome projection content, and other immersive experiences. In addition to this personal point of view window, the Spherical Video image streams are also suitable for direct projection onto a dome screen, providing the audience with a communal experience.



# RSI SOFTECH INDIGENOUS SOLUTIONS

## OPS GIS Desktop Indigenously Developed GIS Software Product RSI SOFTECH INDIGENOUS PRODUCT

- RSI SOFTECH India has developed an indigenous GIS product known as OPS GIS and initially deployed for Army then later deployed it to Internal Security, Ministry of Home, CAPFs.
- OPS GIS software is also passed through the OGC tests and is certified OGC Compliant.



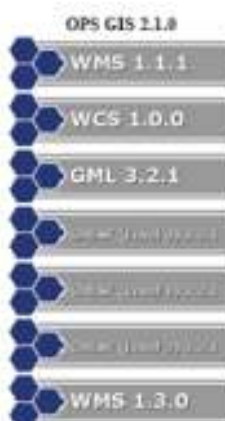
**OPS GIS is a complete set GIS tools developed by RSI Software to meet the most of the requirements of a GIS user in general**

**RSI SOFTECH'S INDIGENOUSLY DEVELOPED SOFTWARE.**

**OPS GIS 2.1.0**

**IS CERTIFIED**

**OGC COMPLIANT**



# RSI SOFTECH has indigenously developed a GIS software known as OPS GIS.

## Product Major Features

### Overview

OPS GIS meets the requirements of the professional GIS users by providing tools to build and manage a complete GIS, it is a powerful desktop mapping and GIS software tool. As an analysis and management tool aiming at spatial information, OPSGIS has solutions catering to the fields such as land, forestry, power, telecom, traffic, environment, planning, travel, water conservancy, aviation, etc. OPS GIS is a comprehensive GIS software for data management, visualization, modeling, and analysis.



### SUPPORTS CAD AND GIS

- Supporting CAD data structure (object-based structure) and CAD functionality.
- Software will support Complete GIS and all GIS data formats.

### IMPORTING VECTOR DATA VECTOR DATA OF CAD TYPE

- CAD data type contains several layers and maybe different objects have different styles, OPS GIS provides several importing modes.

User can import it as CAD dataset which will keep all its original styles. User can select Union Layers option to merge all the original layers into one CAD dataset, or each layer into a separate CAD dataset.

- User has an option to import CAD datasets as a GIS dataset which will lose all the original styles. User can Union Layers to merge objects of one type to one GIS dataset or import each layer into GIS dataset separately

### VECTOR DATA OF NON CAD TYPES

- Other data Commonly you may want to import data of this type to GIS dataset. Just input the file and the system will generate datasets according to object types it has.

### IMPORTING RASTER DATA

OPS GIS Raster Import Formats are WMF image file, MrSID, TIF, ERDAS IMG, BMP, PNG, Arc/Info Grid, ECW, etc.

### DATA EXPORT

OPS GIS supports exporting of the datasets to formats like E00 (Arc/Info), MIF (MapInfo), SHP (ArcView), DGN (MicroStation), Coverage (Arc/Info), DXF (AutoCAD), etc.

### VECTOR CREATION AND EDITING TOOLS

**Trim** – Trims objects at a cutting edge of the specified object.

**Extend** – Extends a line to meet another object.

**Break** – Breaks a line from the vertices to form many lines in its least unit

**Smooth** – Smoothens poly lines, converting them into continuously smoothing curves

**Resample** – Removes some points in a line when it is too dense at the same time keeps the shape at the best of possibilities

**Joint** – Joins two or more lines into one line in an editable line layer.

**Mirror** – Creates a mirror copy of the selected object(s) by using a temporary line as the mirror.

**Chamfer** – Creates a line between two nonparallel lines.

**Fillet** – Connects two lines with a smoothly fitted arc of a specified radius.

**Offset** – Creates a new object whose shape parallels the shape of a selected object at a specified distance. Offsetting a circle or an arc creates a larger or smaller circle or arc depending on which side you specify for the offset.

**Reverse Line** – Changes the direction of a line.

**Add vertex** – Adds vertices at the selected points for a line/region, for the convenience of editing vertex or other operations.

**Edit vertex** – Changes the shape of a region/line by moving/deleting their vertices.

**Rotate** – Rotates objects in an editable layer.

**Move** – Displaces objects a specified distance in a specified direction. Style Brush – Applies the style of a selected object to other objects in a CAD layer.

**Attribute Brush** – Applies the non-system field values of a selected object to other objects.

**Good Snapping Tools** – Strong CAD like snapping tools are provided.

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### DRAWING TOOLS

- Draw point, line, poly line, polygon, Parallel, Arc, Curver, Multiline, Freehand line, Ellipse Arc, Rectangle, Rounded Rectangle, Parallelogram, Circle (2 points, 3 points, center and radius), Ellipse, Oblique Ellipse, Text, Splined Text.

### 3D SURFACE MODELING

- Convert from 2D dataset -> 3D dataset
- Create TIN
- Line -> DEM
- Point/Line -> DEM
- DEM Lake
- TIN -> ISO Line

### GRID ANALYSIS

- Surface Analysis supports functions like, ISO Lines, Custom ISO lines, ISO Line Tools, Slope, Aspect, Viewshed, Visibility Analysis, Surface Area, Surface Distance, DEM Incision, Profile Graph, Hill shade, 3D Orthographic Image, Cut/Fill, Volume Analysis, Find Extremum Point, Query Value, Identify Value.

Hydrological Surface Analysis

- Fill Sinks, Identify Sinks, Flow Direction, Flow Accumulation, Flow Length, Basin, Watershed, etc.

- Statistics Calculation like, Common Statistic, Neighborhood Statistic, Zonal Statistics

- Miscellaneous Programs like Convert from Raster to Vector and Vector to Raster, Raster Calculator, Interpolating Raster (Inverse Distance Weighted, Kriging), Resample and Reclassify.

### NETWORK ANALYSIS

- Very Strong Network Analysis Algorithms like Adjacent Node, Connected Node, Critical Node, Critical Edge, Connectivity, Connectivity Setting, Path Finding, Service Area, Closest Facility, Allocation, Location-Allocation, Barrier Node, Barrier Arc, Center, Traffic Rule, Turn Table, Display Style, Network Settings.

### QUERY TOOLS

- Attribute Query
- Spatial Queries
- Advanced Spatial Queries
- Find Text

### SYMBOLOLOGY

- Symbol Library for Symbol, Line, Polygon
- Make user defined symbology
- Import and export symbology.



# Data Management Solution

## Geo Data Manager

**RSI SOFTECH has developed Geo Data Manager for 55 Div Locations of MI 17, deployed with complete server and storage at all locations**



Description: Geo Data Manager (GDM) is a Geospatial Data Mining Application Software is built on industry standard ORACLE and open source Postgres. GDM is a Geospatial Data Management system for networked workstation environment. It performs Archive, Query, Retrieve and Update of Image, Vector and other spatial and non spatial data. Practically and digital file can be archived and indexed for future retrieval.

The system is secured operation-based access control tool which archives data by capturing the metadata information of the files being stored. GDM provides easy to use tools for retrieving the data thru Geographical Queries on a Geo Viewer with point, polygon, buffer location query, SQL based and various other geospatial based queries. GDM reads almost all of the industry standard formats



✔ Supports all commercial and open standard formats of spatial and non-spatial files.

✔ Simple and easy data organization and management.

✔ Supports any file size that a standard OS can support Query by Metadata, AOI, Point Buffer, Geospatial Borders and on Date & Time

✔ Implementing OGC/ISO Standards

✔ Quick retrieval, user defined and spatial metadata information preview and image thumbnail view.

✔ Customizable event-based history logging for administrative auditing and reporting functionality

✔ Future Data Formats, OS Support, Support for Various Online and Offline Storage Devices.

# Skyline Globe Enterprise

## 3D GIS Software

Skyline provides software tools for enabling 3D geospatial applications. With support for real-time fusion and streaming of massive data sets, OGC certified open standards and a full API, you can use the SkylineGlobe tools to easily embed interactive 3D geospatial visualization capabilities in any web-based or desktop application.

- Fly through SkylineGlobe to view our highly detailed 3D Terrain and Host Pits bytes of data.
- View street and traffic cameras, weather and other live content.
- Take your friends or customers on interactive guided tours.
- Add 3D and animated models like buildings and vehicles.
- Develop tools and customize SkylineGlobe using the robust, open API.



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- **SPEED**

With SkylineGlobe products, you can make geospatial data instantly accessible to your users via an interactive 3D environment.

- **MAXIMUM FLEXIBILITY**

With the capability to fuse massive amounts of raster and feature data on-the-fly, SkylineGlobe products provide a turn-key system that doesn't change the way you work and store your data.

- **COST EFFECTIVENESS**

SkylineGlobe products eliminate the need for expensive and resource intensive data pre-processing by streaming component data in its native format.

- **OPEN STANDARDS**

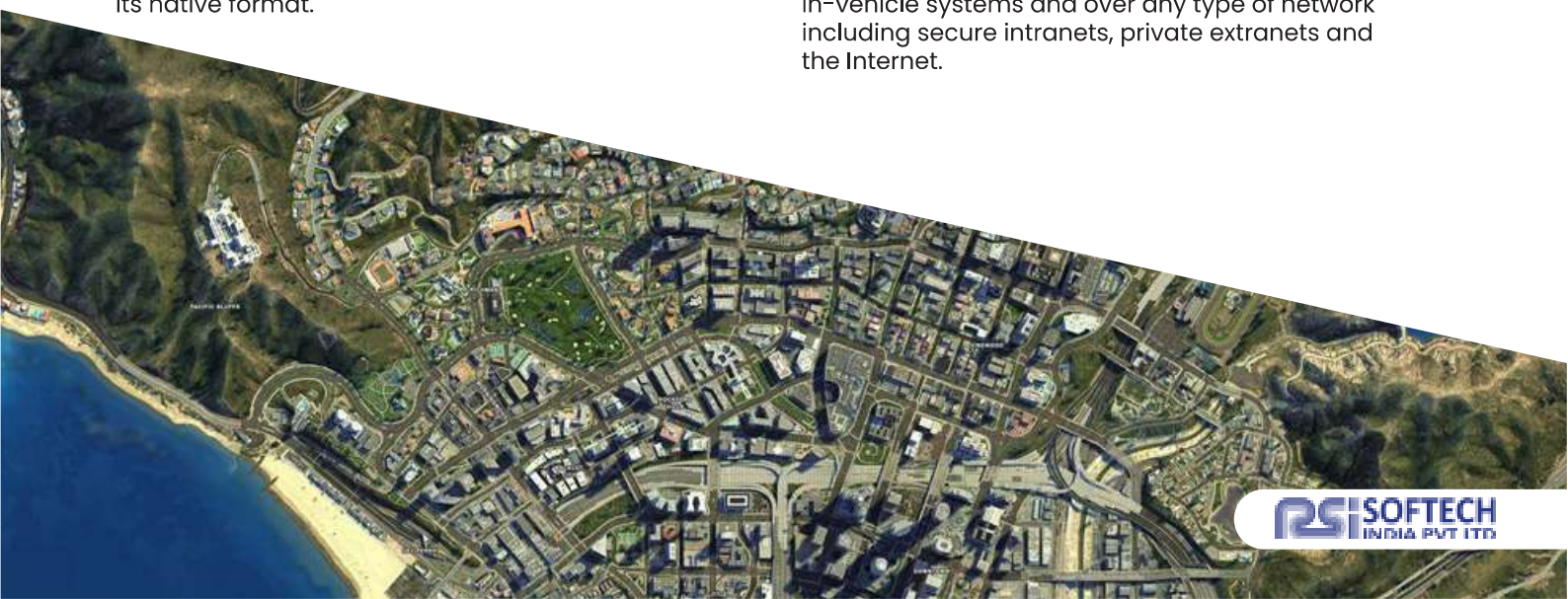
Because SkylineGlobe products are based on open OGC standards, you can share geospatial map and feature data with any application that reads the standard OGC WMS/WFS protocols.

- **ROBUST INTUITIVE API**

Using our powerful API, you can easily customize the interface and functions of the SkylineGlobe 3D application or build your own 3D web application based on SkylineGlobe technology.

- **MAXIMUM COMPATIBILITY**

SkylineGlobe technology works on any platform including desktops, wireless handheld devices and in-vehicle systems and over any type of network including secure intranets, private extranets and the Internet.





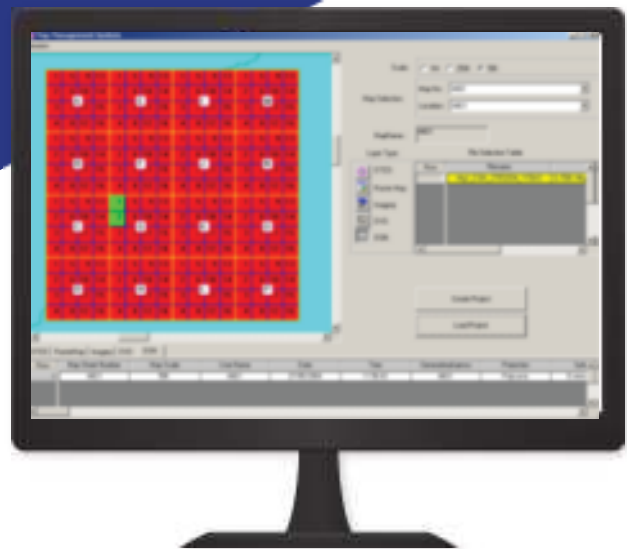
# DEPLOYED PROJECTS

## Battle Surveillance System

One of our prestigious projects done as a pilot was Project Sanjay, a major installation at Indian Army along with BEL, Ghaziabad where we have provided GIS Software and have customized our software to suite the need of the client. An extensive development work was undertaken, and the solution has been INSTALLED and TESTED successfully.

Description: Customization of the Image Processing Software for BSS (Battlefield Surveillance system) for defence purposes in India.

Background: The purpose of the Battlefield Surveillance System is to collect data from a variety of sensors which include radars, aerial sensors etc. The raw data received from these sensors will include information regarding the targets. BSS will allow operations like Target Analysis, Imagery Analysis. Image Processing software with its rich set of functionalities on both raster and vector data has been chosen to be the user interface for performing various functions on Maps. IBSS has been developed in accordance with the specifications required for the functioning of BSS. These specifications have been provided by BEL to RSI SOFTECH to perform the required customization.



### Main Features:

Following are the salient features of the software:

- Map Management System for 1M, 250K and 50K maps with SOI Grid Numbering scheme.
- Colouring of the maps based on their availability. (Green indicates availability and Red indicates Non availability of maps)
- Option to display the selected map layers in the viewer.
- Option is provided to create a new project or open an existing project.
- Option is provided to import DGN, DVD, DTED, Raster and satellite data.
- Display of coordinates in IMGRS (Indian Military Grid Reference System).
- Option to Create and Mark IB (International Boundary), LOC (Line of control), Deployment layers and Sectors is provided.
- Line Of Sight, Visibility Analysis and Flythrough.
- Display of layers in Tree View. Grouping and separation of layers.
- Product Metadata
- Creation and display of target Layers.
- Reading of DGN oracle Dump data.
- Query based on targets.

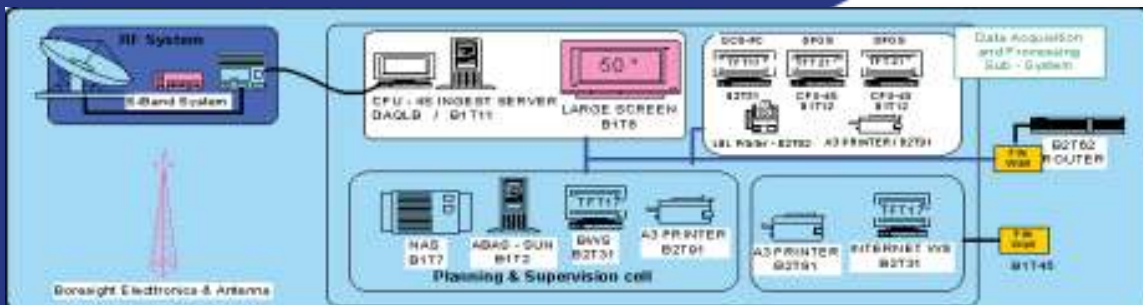
# DEPLOYED PROJECTS

## Algeria GDPS : Geographic Data Production System

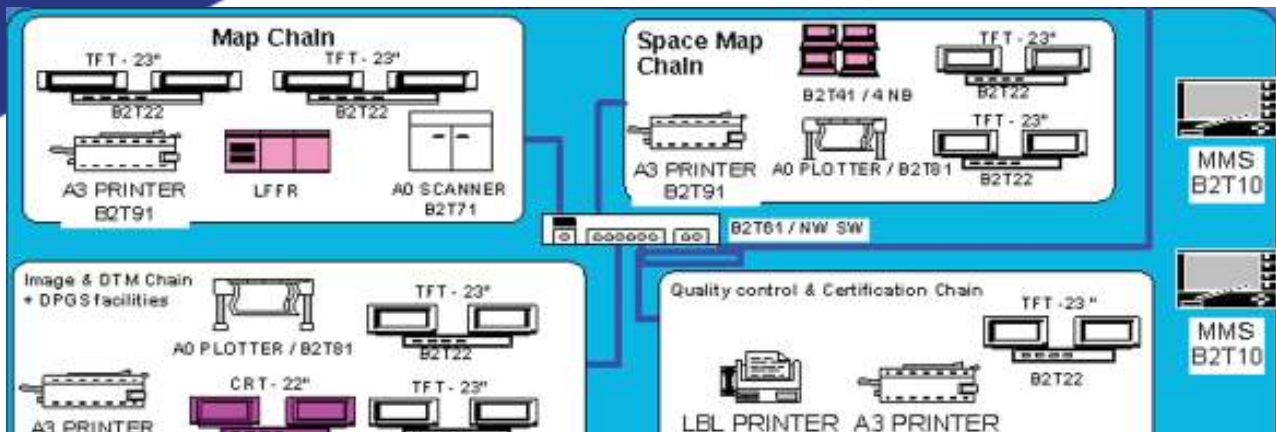
Antrix Corporation, the commercial arm of **Indian Space Research Organization (ISRO)** of Department of Space, in consortium with RSI SOFTECH has entered into a contract with National Institute for Cartography and Remote Sensing (INCT) (Department is under MOD or Algeria), Algeria to supply the hardware for reception and acquisition of satellite data, processing equipment and software, installation and commissioning as well as the training and transfer of know-how meant for the implementation of a Centre for Reception and Processing of Satellite Imagery (CREIS) at Algeria.

Geographic Data Production System [GDPS] Work Flow is for updating of existing topographic maps/toposheets and generation of space maps using the IRS-P6 LISS-IV MX (multi-spectral) data and the existing hardcopy/softcopy maps/toposheets. It will define the work flow of activities in GDPS as well as built the standards for 1:50,000 scale toposheet & space map as defined by the project.

### IRS SATELLITE DATA RECEIVING CENTER



### GEO DATA PRODUCTION CENTER



RSI SOFTECH responsibility was to supply the Complete Hardware, COTs Software and Customization for setting up the production centre for the INCT, Algeria defense client.



# DEPLOYED PROJECTS

## Algeria ALIAS: Algerian Image Analysis System (ALIAS)

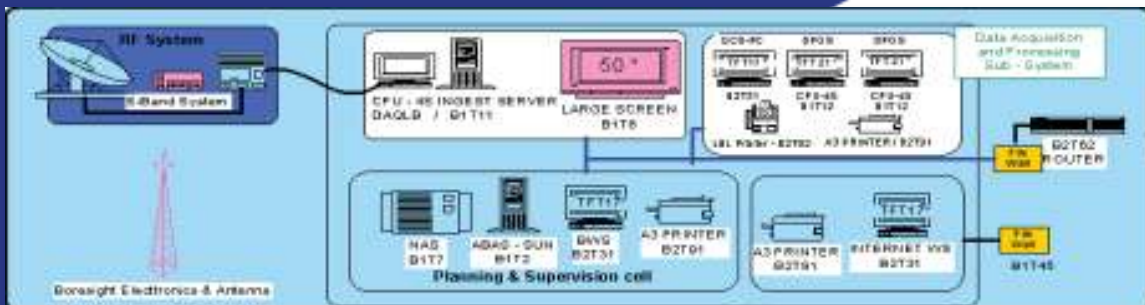
Antrix Corporation, the commercial arm of **Indian Space Research Organization (ISRO)** of Department of Space, in consortium with RSI SOFTECH has entered into a contract with National Institute for Cartography and Remote Sensing (INCT), Algeria to supply the hardware for reception and acquisition of satellite data, processing equipment and software, installation and commissioning as well as the training and transfer of know-how meant for the implementation of a Centre for Reception and Processing of Satellite Imagery (CREIS) at Algeria. Closely attached to this another center **Defense Intelligence Production Center** under name Algerian Image Analysis System (ALIAS) an **Intelligence Production Center** was setup by RSI.

### ALIAS Work Flow

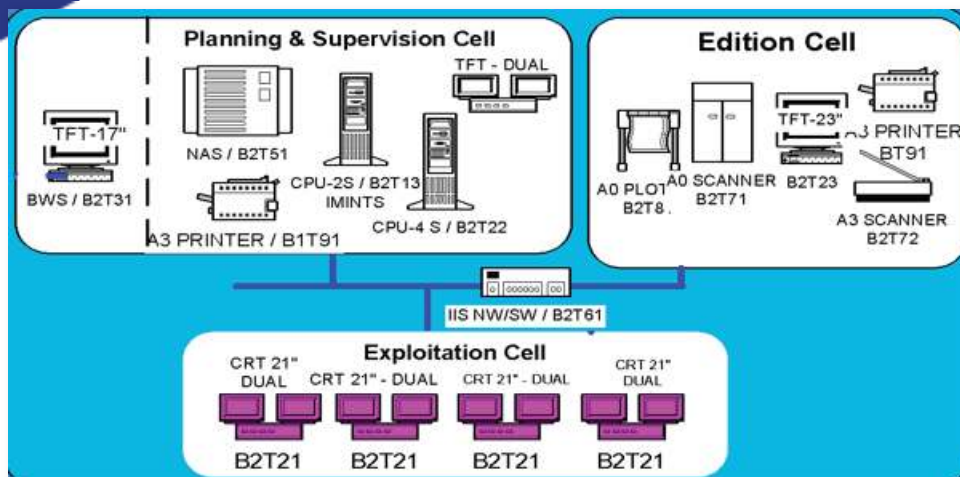
ALIAS will provide facilities for Project planning, scheduling & tracking, generation of textual and static/animated graphical image exploitation reports in English & French languages. Jane's Data Services

(JDS) will be used as part of ALIAS to refer information on various equipments and material details during the image analysis tasks. ALIAS will facilitate storing all the derived image information and reports in a centralized database (called Geospatial database system or Digital Target Folder) for the permanent archival; and retrieval for further analysis work, as and when required.

### IRS SATELLITE DATA RECEIVING CENTER



### INTELLIGENCE PRODUCTION CENTER



RSI SOFTECH spearheaded this block by designing, developing, integrating multiple hardware and software systems in to one cohesive Intelligence Production System. Provided 5months extensive training to 30 of INCT Army officers in India and two months training in Algiers, Algeria. There is no system in the world setup in this fashion by an Indian Firm like what is done by RSI SOFTECH.

## DEPLOYED PROJECTS

# BHUVAN

ISRO, Dept. of Space has embraced the RSI's Skyline Globe technology and implemented the prestigious project "BHUVAN" for 3D Globe.

Bhuvan is an initiative to showcase this distinctiveness of Indian imaging capabilities including the thematic information derived from such imagery which could be of vital importance to common man with a focus on Indian region. Bhuvan, an ambitious project of ISRO to take Indian images and thematic information in multiple spatial resolutions to people through a web portal through easy access to information on basic natural resources in the geospatial domain.

Bhuvan showcases Indian images by the superimposition of these IRS satellite imageries on 3D globe. It displays satellite images of varying resolution of India's surface, allowing users to visually see things like cities and important places of interest looking perpendicularly down or at an oblique angle, with different

perspectives and can navigate through 3D viewing environment. The degree of resolution showcased is based on the points of interest and popularity, but most of the Indian terrain is covered up to at least 5.8 meters of resolution with the least spatial resolution being 55 meters from AWiFS Sensor. With such rich content, Bhuvan opens the door to graphic visualization of digital geospatial India allowing individuals to experience the fully interactive terrain viewing capabilities.

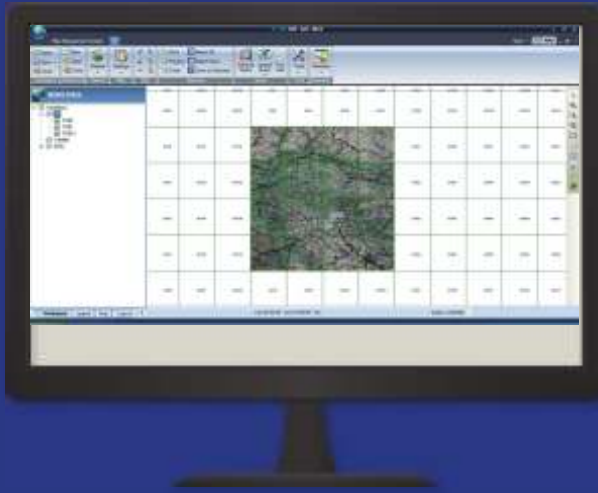




# DEPLOYED PROJECTS

## BSF GIS

Border Security Force is responsible for guarding Countries borders during peace time and prevent trans-border crimes, intrusion/insurgency and border terrorism. Geospatial Information along the borders is vital input for fast and effective decision making in the border security management. Timely, accurate information easily accessed and capable of being shared across the border, units and sector jurisdictions is fundamental to the decision-making capability of those tasked with the Border Security Mission.



<b>Project Status:</b>	Currently (In Maintenance Mode)
<b>Systems Supplied:</b>	50 Servers. One Central server at HQ.
<b>Workstations:</b>	270 Workstations for all the units.
<b>Peripheral to Support GIS:</b>	Peripheral to Support GIS: 48 Plotters, 207 Printers, 48 Scanners, Network Equipment.
<b>Application Software:</b>	<b>Developed BSF GIS and deployed in 270 locations and connected all to the FHQ at Delhi.</b>
<b>Other Software:</b>	Oracle10g, OS- Windows XP.
<b>Work Completed:</b>	Installation of H/W & S/W, Networking locally ,Training GIS Staff, customization and maintenance.
<b>Location:</b>	270 different locations as per the deployment all along the Indian border and Bn's deployed for internal security duty.

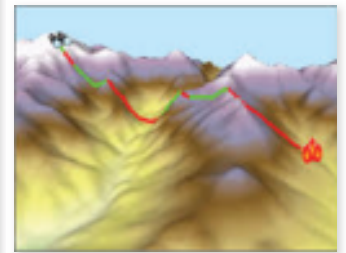
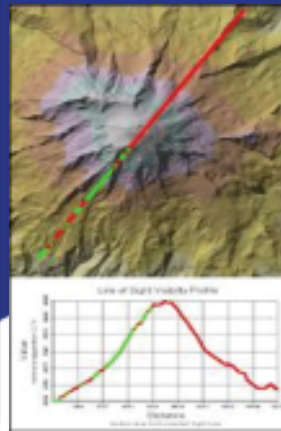
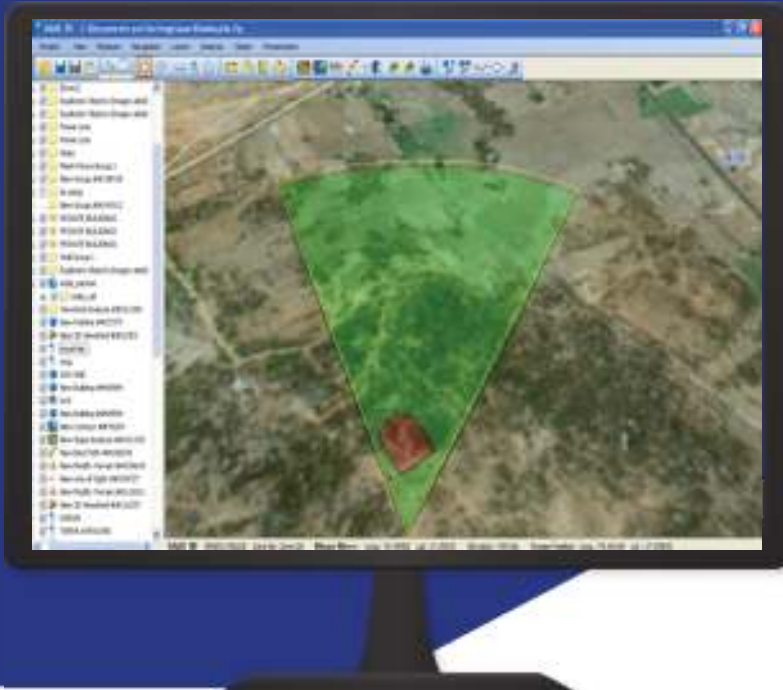
### BSF GIS Major Features:

- Terrain analysis using dynamic 2D/3D features and flythrough.
- Automatic route analysis and convoy move planning.
- OPS planning including mine fds/ptls/ambushes etc
- Deployment management down to bops / smallest det. deployed.
- Management of the IB, border pillars, border fence & border road.
- Line of sight analysis for deployment/constr of OP towers and bops.
- Map Updating based on Recce reports/satellite images/air photos.
- Creation of clutter free map boards for making and analysis of OPS plan/SITREP/INTREP/TRN updates etc.
- Details of counterpart defense including gun positions, anti-tank ditches, individual weapon sites, strong points and defense works.
- Counterpart activities over the entire corps sector wise
- Going in particular areas showing the state of roads, tracks and classification of bridges
- Gaps in terrain information for tasking.

# DEPLOYED PROJECTS

## SAAS for DTRL

SAAS-3D is military application enable GIS software with limited image processing functionalities. It has both 2D and 3D GIS application tools. SAAS-3D is released in two variants viz., stand alone as well as enterprise mode (with POSTGRE database support). Its layered architecture enables visualization of multiple layers of image over the terrains, which include Toposheets, Panchro and Multi-spectral and scanned images. Seamless transition between 2D and 3D visualization enables user to switch between different views for best information extraction as needed for IMINT.



DEVELOPED  
FOR DTRL

### SALIENT FEATURES OF DTRL SAAS-3D

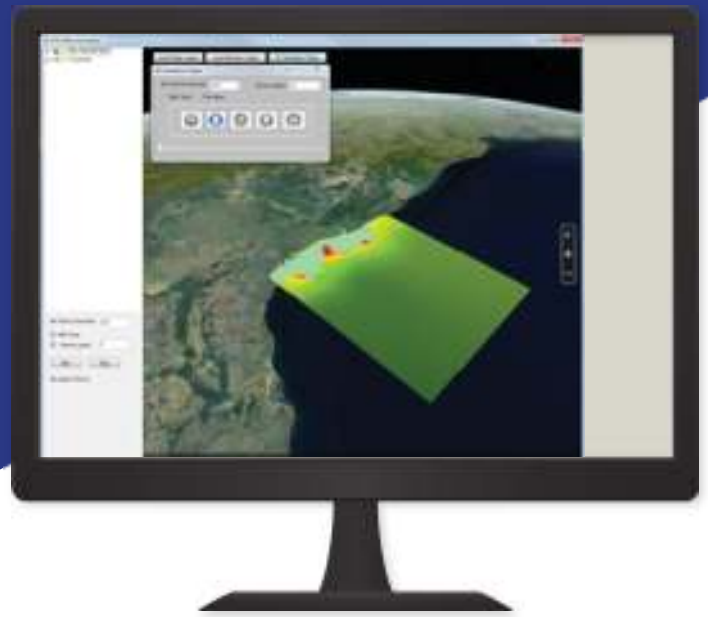
- Support for wide variety of raster file formats (TIF/TIFF, .img, .jpg, .jpp2, .bmp, .dted, .dt0/dt1/dt2, .ecw and many more)
- Most of the standard vector formats viz., .shp, .dgn, .gml, .kml and many other are supported.
- Easy to use and easy to add new functionality using plug-in approach.
- Various analysis features are included in SAAS-3D enabling the user to carry out
  - Measurements – horizontal, vertical, ground-hugging, point-point, area, surface area, volume estimates etc.,
  - DEM based analyses such as Terrain profiling, contour generation, slope & aspect map, hill shading, Line of sight, 2D and 3D view shed analysis.
  - Image analysis features such as change detection, density slicing, image enhancements, and histogram analysis & statistics generation.
- Military specific analysis functionality such as Map Locator, MILGrid and Map Index display, MIL specific symbology, MIL specific report generation and navigate to specified MGRS etc.,
- Various basic GIS capabilities are built in SAAS-3D enable user to carry out simple analysis such as buffer analysis, on-the-fly projection changes, overlay creation, attribute and spatial queries, annotation, mosaic, clip geo-reference and display of coordinates in user desired formats.
- Enabled with real-time display of elevation, lat-long, sensor roll-pitch-yaw, altitude & distance from field of view centre.
- Ability to setup Sunlight / Fog control and visualize the terrain in modified conditions.
- Ability to control vertical exaggeration – enabling user to make close observations in critical areas of interest
- Smooth rendering of the terrain and draping of desired image layer alongwith fly-through and walk-through capability.



## DEPLOYED PROJECTS

### 3D – VISUALISATION AND ANALYSIS SYSTEM (3D-VAS)

A state-of-the-art National Tsunami Early Warning System (NTEWS) established at INCOIS with all the necessary computational and communication infrastructure enables reception and processing of real-time data from various sensors (seismic, tide gauge, bottom pressure recorders, etc) and generation of Tsunami warnings / watches. As part of this, large 2D/3D spatial database is generated, in addition to tsunami modeling scenarios. 3D-VAS is specifically designed to effectively utilise the 2D and 3D spatial data (topographic, bathymetric, geophysical and historical) as well as modeling results.



#### SALIENT FEATURES OF 3DVAS

- Ability to ingest data from multiple sources and formats into 3DVAS and ability to integrate with 2D and 3D geospatial data.
- Ability to integrate with geophysical/scientific datasets and execution of tsunami, storm surge and other allied models. Decision support capability that enables integration of the model results with the existing geospatial database, analysis and generation of geospatial outputs for decision making
- Compatible mechanism in 3DVAS with the existing web map services of INCOIS, Bhuvan, Google Earth, etc. for dissemination of geospatial outputs.
- Ability to display / animate the results obtained from storm-surge and Tsunami Models as time series data.
- Handling of large volumes of textured data layers and ability to display inundated areas and high-risk area based on built-in decision support tools.

3D-VAS is an interactive software package for maintaining and visualization of spatial data and model results. This is GIS based viewer, and integrates both 2D and 3D visualisation capabilities. Enables visualisation of 3D Building models, Landuse, locations, administrative boundaries, inundation maps, vulnerability maps, etc., and facilitates display of tsunami and storm surge models as animated time-series, providing near-realistic tsunami scenarios. Various decision support tools enable scientists of INCOIS to create various scenarios and identify and categorize the vulnerable zones. Various tools of 3D-VAS enable the scientists to calculate the maximum run-up heights, directivity maps and to generate travel-time contours. Various custom components added to this product enable all the above mentioned functionality and smooth three dimensional data visualisation and animation of model data.

**Navigation to any part of the globe with ease and ability to display various coordinate, altitude, elevation and viewer position allows visualisation of the event from various viewer positions**

# ONGOING PROJECTS SECTION

## Current Projects in Execution

RSI SOFTECH is currently developing and deploying various GeoSpatial Software Solutions the major ones are mentioned below,

- **NDR (National Data Registry):** Identification, registration, and maintenance of metadata of the feature data sets and related services from the national- and state-level partnering agencies in a central metadata registry, called the National Data Registry (NDR), are essential for improving data utilization. NSDI, India's mandate is to create an NDR for India and for which RSI SOFTECH was chosen after fierce competition from more than 10 companies.
- **National Data Registry (NDR)** is being created to compile and serve metadata of different agencies and re-engineer the feature data sets for improving their use. The registry will also serve as a source of authenticated information. The Department of Science and Technology (DST) will be the nodal coordinating agency of the NDR. NDR will require all agencies state, private and academic, collecting and storing geospatial data to provide details of data they store.
- **Geospatial Cloud:** RSI SOFTECH has deployed India's first Geospatial Cloud for NSDI as a POC and the same got operational and also got into the upgrade mode also as the usage of the cloud grew. RSI SOFTECH has done the drone flying over city of Varanasi and developed a 2D/3D data sets and deployed inside the Cloud for the stake holders to use this data. Developed Mobile application for field data collection.
- **Haldia Port Trust:** RSI SOFTECH is Deploying a complete land information and management system with hardware, software and ground survey. Integration of cadastral base, Industrial Complex/ SEZ area layout map with the orthoimage in GIS environment Generation of geo-referenced map layers from ortho-image and DEM. Portal with Haldia land parcels is deployed and is in the maintenance mode.
- **Haryana Industrial Development Corporation:** Haryana government wants to identify polluting and nonpolluting industries of the state as per the High Court Directive and RSI SOFTECH is doing the survey on ground with Tabs and manual methods. Once the survey is done the data would be disseminated over the web.
- **Kolkata Port Trust:** Estate Management for Kolkata Port Trust, KOPT has huge land bank which is being leased and licensed to anyone using the port facilities. KOPT wanted an enterprise-wide GIS based web application for their estate management and RSI SOFTECH has deployed it and it is currently live.
- **SIPCOT:** Integration of digitized Land records with the land occupancy spatial data sets and preparation of geo database with the following data layers. Development of Web GIS based Land & Asset Information system. GIS Mapping & preparation of Geo-database for SIPCOT Industrial Complexes in Tamil Nadu. GIS Mapping & Preparation of Enterprise Geo Database of SIPCOT Industrial Complexes in Tamil Nadu, Development of enterprise Web GIS based Land & Asset Information System, Development of Mobile GIS Application.
- **Delhi Development Authority:** Development of Web Based Portal to display all the DDA Maps after Digitization, Ground Truthing and Superimposition of Layout Plans, Zonal Plans etc., integrate with related Land and Property Information System of DDA. Provide access to the complete DDA organization at all levels.
- **SAAS 2.0 for DTRL:** SAAS 2.0 is the upgraded version of the original SAAS-3D which is military application enable GIS software with limited image processing functionalities. It has both 2D and 3D GIS application tools. SAAS-3D is released in two variants viz., stand alone as well as enterprise mode (with POSTGRE database support). Its layered architecture enables visualization of multiple layers of image over the terrains, which include Toposheets, Panchro and Multi-spectral and scanned images. Seamless transition between 2D and 3D visualization enables user to switch between different views for best information extraction as needed for IMINT.
- **CRPF :** RSI SOFTECH has deployed the first 3D GIS Enterprise version software with more than 2000 users and customized to the software to suite CRPF needs. The project is currently on going.



# RSI SOFTECH INDIA PVT LTD

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