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<h1>BISAG</h1>	
<ul style="list-style-type: none"> <li>• Preface</li> <li>• Services</li> <li>• Organization Setup</li> <li>• SATCOM</li> <li>• Remote Sensing and GIS</li> <li>• Software Development</li> <li>• Academy of Geo-Informatics</li> <li>• eGov News</li> </ul>	

<b>Courtesy</b>
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## (Bhaskaracharya Institute for Space Applications and Geo-informatics)

### PREFACE

Formerly known as "Remote Sensing and Communication Centre (RESECO)" is being newly named after the great Indian Mathematician "Bhaskaracharya" of 12th century. BISAG is a State level nodal agency to facilitate the use of spatial and geo-spatial technologies for the developmental and planning activities pertaining to Agriculture, Land and Water Resource Management, Wasteland / Watershed Development, Forestry, Disaster Management, Infrastructure and Education using Remote sensing and Geographic Information System (GIS).



**Inauguration Ceremony of BISAG**



The Institute started its operations in April 1997 and was renamed as "**Bhaskaracharya Institute for Space Applications and Geo-informatics**" in December 2003.

## SERVICES

**BISAG provides services in the field of:**

### Satellite Communication

for the promotion and facilitation of the use of teleconferencing networks for distant interactive training, education and extension.

### Remote Sensing

applications for Inventory, Mapping, Developmental planning and monitoring of natural & man-made resources.

### Geographic Information System

for conceptualisation, creation and organisation of multi purpose common digital database for sectoral/ integrated decision support systems.

**Software Development** for wider usage of geo-spatial applications and to provide decision support systems to users.

### Education, Research and Training

Academy of Geo-informatics provides Education, Research, Training & Technology Transfer to large number of end users & collaborators.

..... also institute is looking forward to strengthen its activities by providing online geo-spatial information and emergency communication facility across the state.

## OBJECTIVES

**To act as a nodal agency to help in the planning process related to natural resources and environment and to prepare baseline inventory of**

**resources on a spatial format at different levels of details and hierarchy (scale, administrative /physical units).**

Its main objectives are:

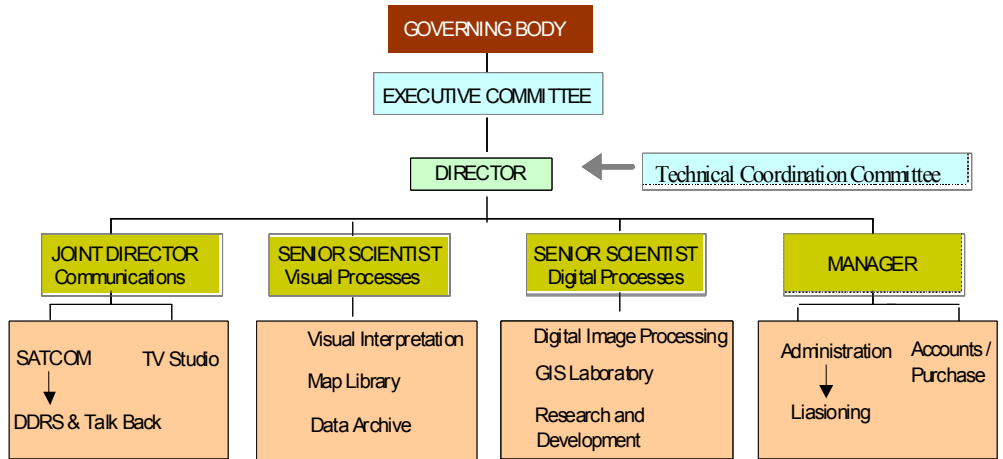
- To setup a State Natural Resource Management System (SNRMS).
- To develop approaches for integrated resources data management.
- To promote the use of SATCOM networks for distant interactive training and education in the State.
- To provide services consultancy based on specific user needs in the field of Remote Sensing and GIS.
- To transfer applied technologies to a large number of end users in the State Government through training programme /seminars.
- To provide wider usage of geo-spatial applications through simultaneous support systems / software.

## ORGANIZATION SETUP

The Centre started its operation in April 1997, as a part of Government of Gujarat's policy to promote applications of Science and Technology for developmental activities of the State.

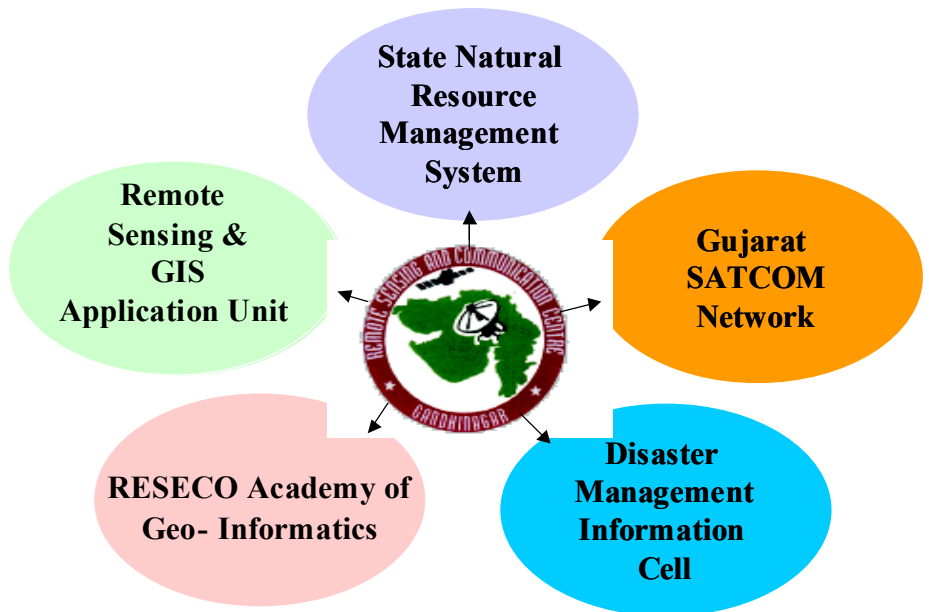
The setting up of the Centre was spelt out by the Government Resolution of the Education Department: GR No. STC - 1096 - 21 - S & T dated 26th February 1997. RESECO has been registered as a society under the Societies Registration Act 1860 on July 9, 1997.

The Centre is functioning under the Department of Science and Technology since February 2003 after its transfer from the Department of Higher and Technical Education.



The organizational set up of BISAG is shown in the chart above. The functions of the Centre are governed by the Governing Body and an Empowered Executive Committee. The Scientific staff is drawn on deputation from ISRO and Water Resources Department, Government of Gujarat.

Two engineers are employed by the Centre from the surplus staff. Project Scientists are recruited by the Centre from time to time on contractual basis.



## SATELLITE COMMUNICATION

**With a view to meet the emerging need of distant interactive education, training and extension "Gujarat SATCOM Network" has been set up.**

The SATCOM facility comprises of an uplink earth station, control room, TV studio, and a network of receiving classrooms distributed across the State. Dedicated frequency on board extended 'C' band transponder on INSAT 3B has been allocated to Gujarat by way of Training and Development Communication Channel (TDCC) provided by ISRO.

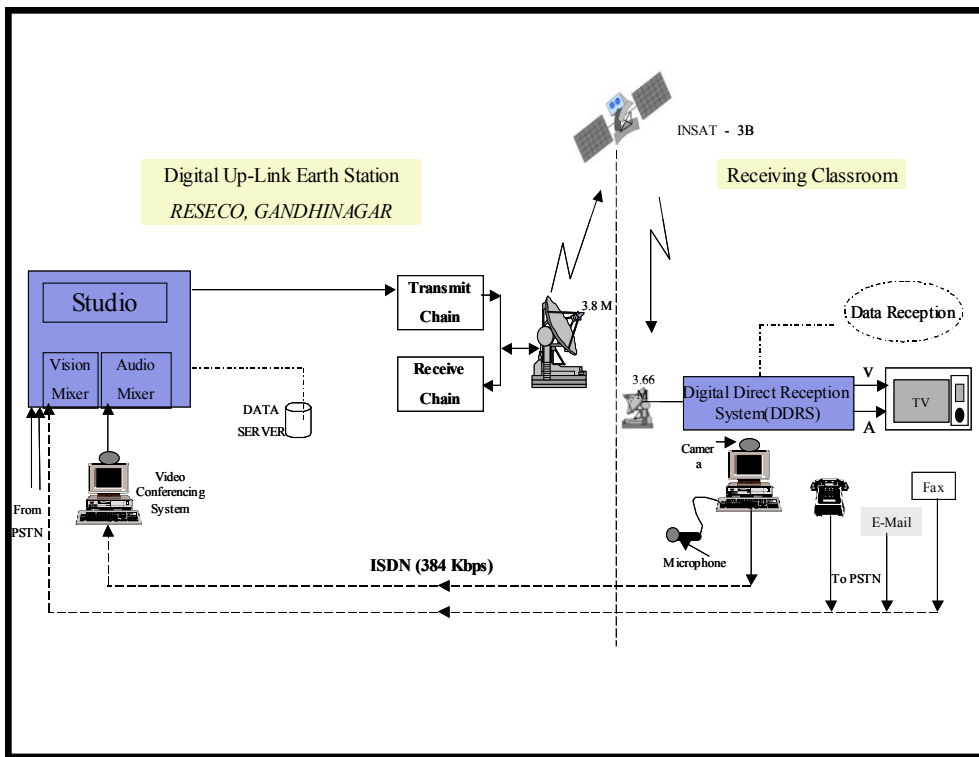
The receiving classroom facilities consists of 3.66m perforated dish antenna, extended C-Band Digital Direct Reception System (DDRS), TV/ Multimedia Projector, STD Phone/Fax/E-mail and have been established by various user departments /organisations.



**SATCOM Earth Station**



RECEIVING CLASSROOMS IN GUJARAT



## REMOTE SENSING AND GIS

**Remote sensing and GIS applications have provided impetus to planning and developmental activities at grass root level as well as monitoring and management potential in various disciplines.**

Through Remote sensing, meticulous information can be deduced by interpreting, analyzing and monitoring the spatial natural resources. The information combined with the

spatial data in GIS environment can prove to be a versatile tool giving exhaustive information of a particular area. BISAG has developed an integrated approach towards enriching the developmental planning process using satellite remote sensing data and Geo-informatics.

The Institute is engaged in generation, creation, organization and management of geo-spatial databases on natural resources, infrastructure, demography, socio-economic aspects, etc. A multi-purpose common geo-spatial digital database for the entire state

is being created by the Institute. Efforts are being made towards data standardization to facilitate data exchange among organisation. The Institute has facilitated the use of geo-spatial technologies for the developmental and planning activities pertaining to the fields of

### Remote Sensing and Geo-Informatics

#### Applications Areas :

- Natural Resources
- Watershed
- Forestry
- Environment
- Infrastructure
- Land Information System
- Geology and Mining
- Health
- Education
- Regional Planning
- Disasters
- Training

## SOFTWARE DEVELOPMENT

**To provide wider usage of remote sensing and GIS technology to its users, BISAG has developed user friendly and cost effective solutions for easy retrieval of spatial, non spatial and satellite data.**

The process of software development along with strengthening the potential and working of users has resulted in:

- Increased user base of Remote sensing and GIS technologies
- Promoting self reliance among users
- Development of human resources

Some of the accomplishments in these endeavors are:

### Gujarat Geographic Information System Software (GGIS)

- State Component of Natural (National) Resource Information System (NRIS) to generate, organise and manage digital database in

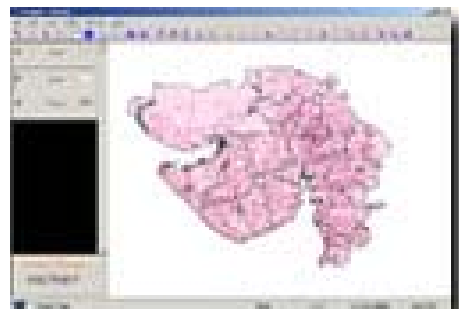
GIS environment.

- Multipurpose common geospatial database of Gujarat.
- Natural resource and Socio-Economic information for systematic resource utilisation and decision making.

### PRAGATI – A GIS Software

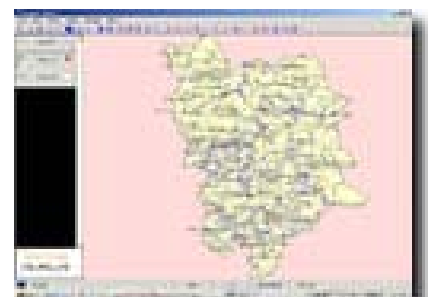
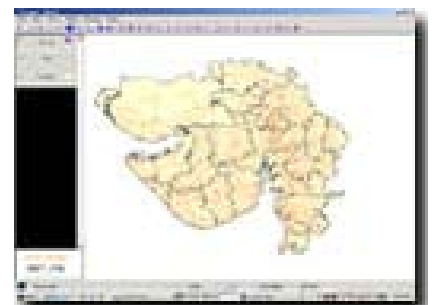
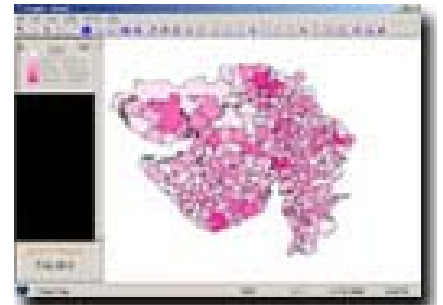
Pragati is a desktop application which provides various GIS functionalities like visualization of spatial data, map navigation tools, mathematical and logical queries, rendering, print layouts, linking of external database tables, geo-processing operations.

- Customization in Microsoft Visual Basic, Microsoft Visual C++, Delphi, Visual Studio.Net
- Also available as a JAVA based, platform independent Application



### Satellite Data Information System (SDIS) with IRS Browser

- Menu driven software for satellite database creation and information retrieval.
- Information retrieval of any geographic location based on SOI toposheet, city / town.
- IRS Browser is an independent tool to display IRS data with various image processing functions.



## ACADEMY OF GEO- INFORMATICS

**provides education, research, training and technology transfer to large number of end users and collaborators. It also participates & organizes theme based workshops and awareness programmes to promote educational uses of space technology.**

BISAG conducts "on-the-job" training for various collaborators, government departments, user organizations and institutes. It also provides guidance to students from Engineering, Computer science, and Planning disciplines.

Some of the **major PROJECTS executed** by BISAG are:

- National (Natural) Resource Information System (NRIS)
- Gujarat Geographic Information System (GGIS)
- Crop Acreage and Production Estimation
- Integrated Mission for Sustainable Development

- Watershed Development Programme
- Wasteland Mapping
- Census-2001, Gujarat
- Disaster Management Information System
- Flood Mapping
- District Planning Atlas
- Land use / Land Cover Mapping
- Action Plan for Water harvesting
- Command area Development
- Geological Information Systems
- Gulf of Khambhat development project (Kalpasar)
- Thematic mapping for Zoning Atlas
- Coastal Zone Management Information System
- School Mapping
- Selection of sites for Industries



## FACILITIES

**BISAG has a rich satellite data archive, an experienced multi-disciplinary team and a well equipped Remote sensing, GIS and Image processing laboratory with state of the art technology.**

**More Information about BISAG can be obtained from**

**Bhaskaracharya Institute for Space Applications and Geo-Informatics,  
Nr. CH '0' Circle,  
Indulal Yagnik Marg,  
Gandhinagar – 382 007,  
Gujarat, INDIA**

**Web:  
[bisag.gujarat.gov.in](http://bisag.gujarat.gov.in)**

## eGovernance News

# Gujarat will ride GSWAN: Modi

TIMES NEWS NETWORK

Ahmedabad: Calculated initiative to take off is how 'CIT' was interpreted by Chief Minister Narendra Modi during his inaugural speech at the Communication & Information Technology (CIT) 2004 here on Friday.

"Those who have propagated the idea that Gujarat is lagging in the IT area are those who have no knowledge of IT. The Gujarat state wide area network (GSWAN) is not only the largest in India, it is the largest in Asia and the second largest network globally. GSWAN will enable the state to take a big leap forward in future," said Modi. While admitting that the state is lagging behind in the software sector and knowledge of English, he did not perceive these issues as major challenges.

Tata Consultancy Services CEO, S Ramadorai, said that e-enablement is to be measured by how it empowers citizens and not by the number of computers and Net connections added. "Spreading primary education in rural areas through a web-based strategy is vital due to the severe shortage of teachers. A

special software has been developed by TCS for spreading adult literacy. Bridging the IT divide by using regional languages is another focus area to reach out to the masses," said Ramadorai.

The CIT 2004, the annual IT conference-cum-exposition organised by the Confederation of Indian Industry (CII), theme was "Harnessing IT for Enterprise and Socio-Economic Development."

For the future growth of IT in the state, an IT-Ashram, an IT-Vishwavidyalay and IT-Prachar Abhiyan need to be developed according to CII-Gujarat chairman, Piruz Khambatta.

The Indian ITES/BPO sector is growing at a compounded annual growth rate of about 60 per cent according to Sandeep Madan, president of Hero ITeS. BPO is more than just voice according to Rajiv Prakash, associate director of Business Advisory Services at KPMG. "Transaction processing can grow to become double the size of call centres. Gujarat needs to attract some big players in the BPO sector to set up base here and more would follow automatically according to Prakash.

**CIT  
2004**

### Web Corner

The Gujarat Bank of Wisdom  
<http://www.gujaratbankofwisdom.com>

Vibrant Gujarat  
<http://www.vibrantgujarat.com>

Gujarat Sales Tax  
<http://gujaratsalestax.gov.in/>

Please look out for this section for URLs of Government websites

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