

# TECHNICAL ANNUAL PROGRESS REPORT OF SIR M. VISVESVARAYA GEOSPATIAL CHAIR

The undersigned accepted the Chair Professorship and reported for duty on the forenoon of October 29, 2012. The following various activities are carried out by the undersigned during the period from 29<sup>th</sup> October 2012 to 30<sup>th</sup> September 2014.

## TRAINING / WORKSHOPS ORGANISED TO POPULARISE GEOSPATIAL TECHNOLOGY

### Awareness Training Program on Geospatial Technology for School Students and Teachers.

*Eight Training Programs* of two days duration of each one were organised during June 2013, July 2013, August 2013, November 2013, January 2014, June 2014 and August 2014 **for High School students and teachers of 9<sup>th</sup> & 10<sup>th</sup> Std.** And about **25 members per batch from different Schools participated in the program.** The **first day's** program included lectures on **Remote sensing, Rockets and Satellites, Cartography, Geographic Information System** and a video show and the **second day's** program included **field work to Ghati Subramanya/Nandi Hills** wherein the participants were explained regarding the **use of topo maps, to handle GPS, Satellite image of the area and their application on the field.** The participants were awarded Participation Certificate at the end of the program.

### A Divisional Level Training Workshop for District Officials in four divisions of Karnataka State.

**A Divisional Level Training Workshop** was organized during August and September 2013 **for District Officials in four divisions namely Belgaum, Mysore, Gulbarga and Bangalore,** wherein each division covered seven to eight districts. In each division, more than 80 field level officials attended the workshop. The workshop covered various aspects of **Remote Sensing applications, GIS and GPS** which can be used for the various Water Shed and other development programs in the grass root level.

## **Workshop on Geospatial Technology and its applications for Engineering College Faculty**

*A three days Workshop on Geospatial Technology and its applications for Engineering College Faculty was organized at RV College of Engineering, Bangalore from 4<sup>th</sup> to 6<sup>th</sup> December 2013. 21 participants from various Engineering Colleges attended this workshop. The morning session of the workshop included lectures on the topics such as **Introduction to GIS and Remote Sensing, Maps, Projections and Datums, Earth Observations Systems and different Satellites, various Satellite Products, Introduction to Photogrammetry, Digital Image Processing, Mobile GIS concepts and applications, Applications of GIS for Natural Resource Management, Introduction to GPS and Total Station, Microwave Remote Sensing and its applications and Snow and Glacial Hydrology, and the afternoon sessions were devoted for practicals and hands on experience.***

## **Training Workshop on Western Ghats Biodiversity using Free and Open Source Geospatial (FOSS4G) Tools.**

*A five days Training Workshop on Western Ghats Biodiversity using Free and Open Source Geospatial (FOSS4G) Tools was organized by KSCST, IISc, Bangalore, jointly with Sir M.V.Chair, IISc, DST, OSGEO-India and Energy and wetlands Research Group, CES, IISc, Bangalore at New Biological Science Building, IISc, Bangalore from 24 – 28 February 2014, wherein 48 participants from different parts of the country participated. The sessions included lectures by eminent Resource Persons on various topics like **Introduction to Remote Sensing, Digital Image Processing, GIS, Cartography, Conservation of biodiversity, Web application for Geospatial Data dissemination and processing Geo web 2 and AJAX, Geospatial Technologies - an overview of Karnataka, Spatial data base organization and management of geo server, Cloud GIS and hands on experience on GPS device and softwares such as Open jump, Q GIS, GRASS, Geo server, etc.***

## **Training workshop on “Geospatial Technology for Planning and Management.**

*A five days Training workshop on “Geospatial Technology for Planning and Management” was Jointly organized by Karnataka State Council for Science and Technology(KSCST),Indian Institute of Science (IISc) , Bangalore and Visvesvaraya Technological University (VTU), Belgaum from 16<sup>th</sup> to 20<sup>th</sup> September 2014*, where in about 45 participants from different AICTE approved Engineering faculties, Polytechnic institutions faculties, Research Scholars, Professionals of R&D & other organizations were participated. Following topics were covered during the training program,

- ❖ Introduction to Remote Sensing.
- ❖ GIS and its application.
- ❖ Global Positioning Systems and error propagation & type in spatial data.
- ❖ Introduction to Cartography, Coordinate system, Projection system, Datum etc.
- ❖ Spatial Data Types and models, Spatial data gathering technologies, The production and management of Geospatial databases and the transformation and analysis of Geospatial data with GIS software(Hands on Training).
- ❖ Status of Spatial data: commercial and governmental datasets-an Indian Perspective.
- ❖ Application of Geospatial Technologies for governance, Spatial Data Infrastructure and National GIS.
- ❖ Introduction to Free and Open Source Software’s National data Sharing and access policy etc.,

## **Research Projects**

- A Study was carried out for Kudapura Campus of IISc, Challakere Taluk, Chitradurga district to understand the Morphology, sub surface Lithology, Land use, Land cover and the Ground Water prospects of the terrain using remote sensing and GIS. The study has been completed and final report has been submitted to IISc.
- A Research Project has been taken up to study Hesaraghatta Lake and its catchment area using Remote Sensing and GIS Technology to understand the reasons for drying up of large water body using time series analysis of Remote Sensing data – Study taken up by JRF and it is in the final stage.

- A Project on Solid Waste Management Study in and around Yeshwanthpur and Malleswaram area using Remote Sensing and GIS has also been taken up by one of the JRF and the work is in progress.

### **Following Workshops/Meetings attended and contributed towards popularizing Geospatial Technology**

- Meeting at Andhra University on Eastern Ghat Orogeny organized by Dept. of Science & Technology, Govt. of India and Andhra University.
- International Regional Science Meet of Land Cover and Land Use Change in South Asia organized at Karunya University, Coimbatore.
- Workshop on Urban Water Challenges at Institute of Agricultural Technologies, Bangalore.
- Round Table Meeting on Drinking Water Problems in Bangalore.
- Participated in Scientific Review Meetings at KSCST.
- Indo French Workshop at IISc.
- FICCI Meeting on Location Based Services at New Delhi.
- State Science and Technology Meet and SAC-PM Meeting at IISc.
- Meeting on Kumudavathi River Rejuvenation Project Proposal discussion.

### **Lectures delivered**

- Delivered Lecture on Remote Sensing and GIS Applications for Geological Study to M Tech students of KRSAC.
- Delivered Lecture to State Officers who attended the Training Program on Remote Sensing and GIS at KRSAC.
- Delivered Presidential speech at JSS Medical University on the occasion of World Water Day.
- Delivered keynote talk on Remote Sensing and GIS applications for the Natural Resources Management at Dr.Ambedkar Institute of Technology, Bangalore.
- Invited talk delivered on Remote Sensing and GIS application for Natural Resources Management at Institution of Engineers, Bangalore.
- Guest Lecture was delivered on Natural Resources Management using Remote Sensing and GIS in the Department of Management Studies, IISc, Bangalore.
- Delivered lecture on Application on Geospatial Technology on Natural resources management with the special reference to drought monitoring at BMS engineering college. Workshop organized by BMS under UGC programme.

- Delivered lecture on geospatial Technology at Angadi Institute of Technology and Management, Belagaum on July 2013.

### **Review of R & D Project Proposals**

Various Project Proposals relating to Remote Sensing applications were reviewed as and when requested by Dept. of Science & Technology, Govt. of India, National Institute of Advanced Studies etc.,

### **Others**

Participated in the following discussions /Meetings -

- Karnataka Science and Technology Academy Meet at Sagar Institute, Bangalore.
- Visit to the Water Shed area in Mulehole and Maddur which is taken up under Indo-French Hydrology study.
- Review of Engineering College Students' Project Proposals for funding from KSCST.
- Selecting and Ordering Satellite data products from NRSC, Hyderabad and organizing the data at KSCST.
- Visit to Hesarghatta catchment area for field work, Bangalore.
- Visit to Chanakeshvapura( C K Pura), Pavagada taluk on HRD project mainly for the purpose of watershed development work.
- As an Expert committee, Chaired the Student Project Programme (SPP) Session at B V Boomaraddi College of Engineering and Technology, Hubli which was jointly organized by Karnataka State Council for Science and Technology(KSCST), Karnataka State Biofuel Development Board (KSBDB) Government of Karnataka (GOK) and B V Boomaraddi College of Engineering and Technology, Hubli.

(A. PERUMAL)  
Chair Professor