

Popularity of Government portal bhuvan

921. SHRI TARUN VIJAY: Will the PRIME MINISTER be pleased to state:

(a) the reasons Government portal bhuvan is not being able to get popularity and be an effective alternative to Google Earth whose all data is parked abroad; and

(b) what are Government's plans to empower and help gain principal position for C-DAC and Survey of India to become modernized and provide an effective Indian alternative to foreign based agencies in their respective fields?

THE MINISTER OF STATE IN THE PRIME MINISTER'S OFFICE (DR. JITENDRA SINGH): (a) ISRO's BHUVAN (www.bhuvan.nrsc.gov.in) is a well known national geo-portal, which is being widely, used by the Government, public, NGOs and Academia. Bhuvan is developed with a clear focus of addressing Indian requirements of satellite Images and theme-oriented services to enable planning, monitoring and evaluation of stakeholder's activities in governance and development. Bhuvan provides nation- wide seamless ortho-corrected image base, thematic datasets for many natural resources, transport network, Digital Surface Model, hydrologic base from basin to watershed, 10 Million Points of Interest (POI) data. Bhuvan services include visualisation of remote sensing data (India-centric), free satellite data download, geophysical products, host of thematic services and customised application tools for Government data collaboration and enabling G-governance. It also renders near real-time data and information support towards management of natural disasters in the country.

Some of the basic statistics of Bhuvan usage indicates that the portal is gaining importance in the country. In less than 6 years of its existence, it has more than 70,000 registered users; 800 GB of data is transacted per month and it witnesses 60 Million hits per month. About 4.6 lakh satellite data products, including derived products, have been downloaded by users. The ortho-corrected images and seamless thematic databases are being consumed, as a service in public domain, by many organisations. The customised application tools and datasets are being used by more than 30 Central Ministries and about 20 State Governments in various sectors, which include, land and water resources, agriculture, forestry, watershed, urban and infrastructure development, environment, de-centralised planning, asset geo-tagging and mapping, including monitoring of G-governance programmes. A few examples of Government data collaboration/applications are given in the Statement (*See below*).

Bhuvan is designed, developed, deployed and managed by a small team of scientists within ISRO. It primarily focuses on societal-benefits and is not a commercial venture. On the contrary, Google Earth is a commercial enterprise with a large investment

and large resource base and makes a huge business through advertisements and products. Google has a definite business model (in positioning and maintaining very high resolution satellite images) that is directly dealt with satellite operators/services providers. The business model that is being operated is not in the public domain. Google Earth does provide very high to high resolution remote sensing data (World-wide) for visualisation with advanced value added services, but does not provide India specific seamless multi-thematic GIS data sets, free satellite data downloads and customised application tools for Government data collaboration.

Thus, Bhuvan and Google Earth are two different platforms developed for different purposes and objectives.

(b) Department of Science and Technology has taken the following measures in respect of Survey of India (SOI):

- (i) Indian Institute of Surveying and Mapping (IISM) infrastructure is being revamped to improve basic training/teaching in IISM, Hyderabad so as to impart training to the officers and staff of SOI to keep abreast of state-of-the-art techniques in surveying and mapping.
- (ii) Optimal use of space borne earth observation data for generating topographical and other geo-spatial data for use in preparing user specific products from SOI.
- (iii) Focus on the primary geospatial data collection with a view to maintain the temporally accurate departmental geospatial data.

Department of Electronics and Information Technology (DeitY) has taken following measures in respect of C-DAC:

- (i) Originally established to carry out research and to develop High Performance Computing, the R&D of C-DAC has expanded to various other areas such as grid and cloud computing, multilingual computing, heritage computing, professional electronics including VLSI and embedded systems, cyber security and cyber forensics, health informatics, software technologies and education related to these technologies.
- (ii) In the area of High Performance Computing (HPC) and Grid Computing, C-DAC is playing an important role in building HPC technologies and developing software parallelisation tools and solutions for Science and Engineering applications.
- (iii) Further, C-DAC has now been entrusted with the implementation of the National Supercomputing Mission (NSM) announced by Government of India.

Statement*A few examples of Government data collaboration/applications*

Bhuvan acts like Cloud for Government departments by providing standardised set of geographical data and application tools. These are being used by stakeholders in governance and development. To name a few:

- Irrigation infrastructure monitoring—Ministry of Water Resources, RD and GR
- Monitoring and Evaluation of 52,000 micro watersheds—Department of Land Resources
- National Urban Information System and Master Plan preparation—Ministry of Urban Development
- Ground water prospects—Ministry of Drinking Water and Sanitation
- Islands Information System and National Database for Emergency Management—Ministry of Home Affairs
- Site Management Plans for heritage sites—Ministry of Culture
- Geo-spatial Inventory of Post Offices—Department of Post
- De-centralised planning at Panchayat level—Ministry of Panchayati Raj
- Biennial Forest inventory and Forest Fire—Forest Survey of India
- Thunderstorm and Fog alerts—Indian Meteorological Department
- Monitoring of dwelling construction—A.P. State Housing Corporation
- Know your Forest, Forest Fire alert/regimes, Change Monitoring—State Forest departments of Karnataka, HP and Uttarakhand
- Municipal GIS (Ludhiana), Amritsar Tourism Web GIS

Bhuvan is also rendering support to many flagship programmes of Government of India viz. AMRUT, Housing for all by 2022, National Mission for Clean Ganga, PMKSY, MNREGA etc.

Launching of satellites in the country

922. SHRI VIVEK GUPTA: Will the PRIME MINISTER be pleased to state:

(a) the total number of satellites which have been launched by India both successfully and unsuccessfully along with their break up according to their purpose into military satellites, commercial satellites and the rest during last three years;

(b) the expenditure incurred on and revenue earned from these satellites, satellite-wise;