FOSS GIS INITIATIVES of DIGITAL INDIA

1. The Indian Government has issued a formal policy in 2015 for all government departments to shift to Free and Open Source Software. The major policy initiatives in e-governance are supported by the National Resource Centre for Free and Open Source Software (NRCFOSS) established as part of the Centre for Development of Advanced Systems (CDAC).

2. CDAC hosts and supports a customised Debian variant of Linux, termed BOSS Linux. It also has developed a complete Cloud suite, the Meghdoot Cloud suite based on OpenStack.

3. India established the Geographic Information System (GIS) based decision support system (DSS) platform under the National Centre of Geo-Informatics (NCoG). The NCoG platform is totally based on Open Source Software. Some of the key features of NCoG based applications include:

i. Basemap available at 1:5000 scale
ii. Ensures compatibility of multi-purpose geo-datasets
iii. Allows user to plot assets/ features on their own
iv. Self-sustainable and Cost effective

4. The platform is a single source GIS platform for sharing, collaboration, location based analytics and decision support system, catering to Central and State government departments across the country. The GIS platform has provision to integrate with MIS data of Ministries/Departments. The following open technology platforms have been used under NCoG:

i. Web Server: Tomcat 7.0
ii. GIS server: GeoServer
iii. Database: PostgreSQL 9.4
iv. Java JDK 1.8.0
v. JRE 1.8.0
vi. GIS Scripting Library: Open Layer 3.0
vii. Other GIS libraries: QGIS

5. Select GIS libraries have been created / modified to provide for features such as:

1. Show / hide layers based on zoomed scale level.
2. Showing map of select State / District boundaries only on login for portals created for their own use.
3. Custom detailed form on clicking a point of interest and ‘identifying’ it.
4. Search based on particular latitude / longitude.
5. Custom ‘Query Builder’ to perform logical / Boolean based search on multiple attributes.

6. The presentation showcases some of the FOSS-based GIS initiatives of the GoI. We expect that other governments in Asia will find synergies in the development and implementation of these solutions. The GoI would be able to support our neighbours in adoption of these solutions. Some of the GIS applications developed / under implementation are:-

1. Government Land Bank Information System: Map all Central government land parcels including that of Central Public Sector Enterprises (CPSEs).
2. Rural Electrification System: Identify and map electrification status of villages.
3. Mining Surveillance System: Curb illegal mining including coal through automatic remote sensing detection.
4. Industrial Information System (DIPP): GIS based master plan for industrial areas, zones, parks etc.
5. Geographic Indications Web Portal – A web portal to promote and undertake GIS mapping of Geographic Indications under the Department of Industrial Policy and Promotion
6. E-District services with Citizen Service Centre locations and e-District services available across India.
7. Road Information System (MoRTH): Geo-mapping present status of lanes, impedances of national highways, state highways etc.
8. Delhi Police GIS system and Mobile App for Dark Spot Area (MHA): Web/mobile based application to represent operational status of light poles and dark areas in Delhi.
9. Mapping of water resources under Accelerated Irrigation Benefits Programme and Repair, Renovation & Restoration of Water Bodies.
10. GIS system to plot national highways alongwith advanced analytics for basic details, construction progress matrix, land status, clearance status, commercial operations, and focus projects.
11. Soil Information System - Integration of Soil Health Card with soil survey data to represent soil information on GIS platform including crop recommendations.
12. Mapping of mortgaged land assets of companies
13. Logistics Information System for Commerce & Industry
14. Training Institute Mapping
15. Electronic Manufacturing Units Mapping - MeitY