

**Subject: Comments on Draft EFC Note for National GIS Mission, Ministry of Earth Science**

The total cost of National **GIS Mission, Ministry of Earth Science** project is estimated as **Rs. 4545.11 crores**. The total cost for establishment of National GIS, including the Version 1.0 and subsequent Version 2.0, is INR **2926.85 crore (refer Table 1) below**. Within this total cost, the Version 1.0 would cost INR **245.88 crores**. Additionally, the recurring expenditure is in 2 parts:

- a. The total cost for Indian National GIS Organisation (INGO) establishment and its operational cost for 5 years period is **INR 198.20 crores**.
- b. The cost for Maintenance/Updation/Annual Maintenance Cost (AMC) of National GIS IS **INR 1417.00 crores** over the 5 year period

Table 1: Breakup of Total Cost

<i>No</i>	<i>MAJOR ITEM</i>	<i>TOTAL COST IN INR CRORES</i>	
		2012-2017	% of Total cost
A	<b>National GIS ESTABLISHMENT COST</b>		
1	NATIONAL GIS INFRASTRUTURE:	224.10	4.4%
2	NATIONAL GIS ASSET:	2095.83	46.1%
3	NATIONAL GIS APPLICATIONS:	420	9.2%
4	NATIONAL GIS PORTAL:	23.60	0.5%
5	NATIONAL GIS CAPACITY BUILDING:	150.25	3.3%
	NATIONAL GIS MISSION MANAGEMENT	13.07	0.2%
	<b>TOTAL FOR NATIONAL GIS</b>	<b>2926.85</b>	<b>63.8%</b>
B	<b>INGO ESTABLISHMENT AND OPERATIONS COST</b>	<b>198.20</b>	<b>4.3%</b>
C	<b>NATIONAL GIS MAINTENANCE COSTS</b>	<b>1417.06</b>	<b>31.2%</b>
	<b>GRAND TOTAL</b>	<b>4542.11</b>	

The major areas where National **GIS Mission, Ministry of Earth Science** project will incur cost are as follows -

- **Version 1:** The project is proposed to be completed in two phases termed in EFC note as Version 1 and Version 2. Version 1 will be completed in 18 months by October, 2013. It will be built up at top of available National GIS Framework in 1:50 K as developed by NIC with Interim National GIS Facility (NGIF). It will be built using Interim Limited & Compact Infrastructure, enough to accommodate GIS – Asset for version 1.0 and 4 ministry applications.
- **Version 2:** It envisages enhancement & scaling up of National GIS Version 1.0 with 1:10 K data and 24 \*7 services and operations. It will be completed in 36 months. Under it, 21 government ministries are identified and DSS applications for them will be built. Moreover National GIS Portal- front-end interface will also be built during it.
- INGO establishment and operations which includes **Completing Infrastructure build up for continuing services will be completed in 54 months starting from 6 months.**
- Fourth major cost is on Annual Maintenance Cost (AMC) for various elements of National GIS which is envisaged for 60 months from the start date of project.

### **Observations:**

The major observations given here under are with respect to item number 3 - National GIS Applications and item number 4 - National GIS Portal mentioned in Table-A: National GIS & INGO Project Activities of Budget Document for National GIS Mission report. The following are the observations -

1. **Use of Existing GIS Data:** As part of Space Based Information System-Decentralised Planning (SIS-DP) application of ISRO, GIS data of 1:10K is being collected. The current proposal should leverage the data collected as part of SIS-DP and ensure that there is no duplication of data generation. For this activity the proposal mentions an outlay of Rs. 1933.83 crores. Survey of India being a government organization and partner of this proposal may also make its data available to bring down the overall GIS assets cost which is constituting Rs. **2095.83 crores out of the total cost of Rs. 4542.11 crores.**
2. **Generate 1:0K Data from outset:** In version 1 of the application GIS data of 1:50K is to be populated, and then in Version 2 data of 1:10K is to be generated so the data of 1:10K be populated from the beginning.
3. **SLA's for Partners:** As there are multiple partners, so there has to be a partner institutional mechanism to ensure that partners adhere to the SLA's such as timely delivery of data.
4. **No breakdown for server cost:** At Page 21 of the Budget Document for National GIS Mission, it is stated that 200 servers will be required at an estimated cost of Rs30 Crores. But no breakdown or justification has been provided in the report for the number of servers required.

5. **Cloud Computing:** A Cloud Architecture based model may be adopted as it will bring down the number of servers and hence result in lower Capex and Opex (which is currently at Rs 1417 crores).
6. **No breakdown for Edge Application cost:** At Page 21 of the Budget Document for National GIS Mission, it is mentioned that 50 licenses for Edge Appliances will be required at an estimated cost of total 0.5 Crore. But there is no breakdown or justification provided to arrive at this number for the Edge Application in the report.
7. **No reasoning for the third virtualization license:** At Page 21 of the Budget Document for National GIS Mission, it is mentioned that 3 licenses of Virtualization Software will be required at a total cost of 48 crores. If we assume that one license is required for Primary Data Centre and other one for DRC, the purpose to acquire a third license is not very clear from the report.
8. **Duplication of GIS DSS Apps Suite:** At Page 36 of the Budget Document for National GIS Mission, an estimated total cost of 48 Crores is mentioned for 4 GIS DSS Apps Suite (Plg Comm, MORD,MUD, PIII). Again at page 39, there is a mention of 31 GIS DSS Apps Suite for Ministry/Dept Apps and citizen Apps at a total cost of total 372 crores. So, the total of above mentioned 35 DSS App suites is 420 crores. The department should consider the possibility of reusing one GIS DSS Apps Suite developed for one ministry to be used by other departments to bring down the cost and time for subsequent departments.
9. **No citizen-centric services delivered through portal:** At Page 36 of the Budget Document for National GIS Mission, there is a mention of GIS portal software which will cost total of 2 crores. Again on Page 40 of the same report, GIS Portal software cost of 21.6 crores has been estimated. It is not very clear from the report as to what services will eventually be delivered via the portal to departments. It is also not very clear from the report whether services delivered through portal are citizen-centric. The cost of the portal software includes the hardware which seems to be separate from 200 servers already mentioned above. And this cost seems to be on a high side with each server costing on an average Rs. 15 lakhs.
10. **Avoid vendor names:** In Table 3 at Page 21 of the Budget Document for National GIS Mission, under the item "Server", the name of the vendor is mentioned. The name of the vendors should be avoided in the report.
11. **Data Centre location not specified:** In Table 2 at page 14 of the Budget Document for National GIS Mission, it is proposed to create a modern and state-of-art Data Centre (DC) under National GIS Central Infrastructure Facility (NGCIS). But the location of the interim data centre (DC) during version 1 of the application is not mentioned anywhere in the report.
12. **Use Existing DC Facilities:** The project should use the existing State data centre (SDC) facilities created by DeitY or NIC data centre. This will bring down the cost.