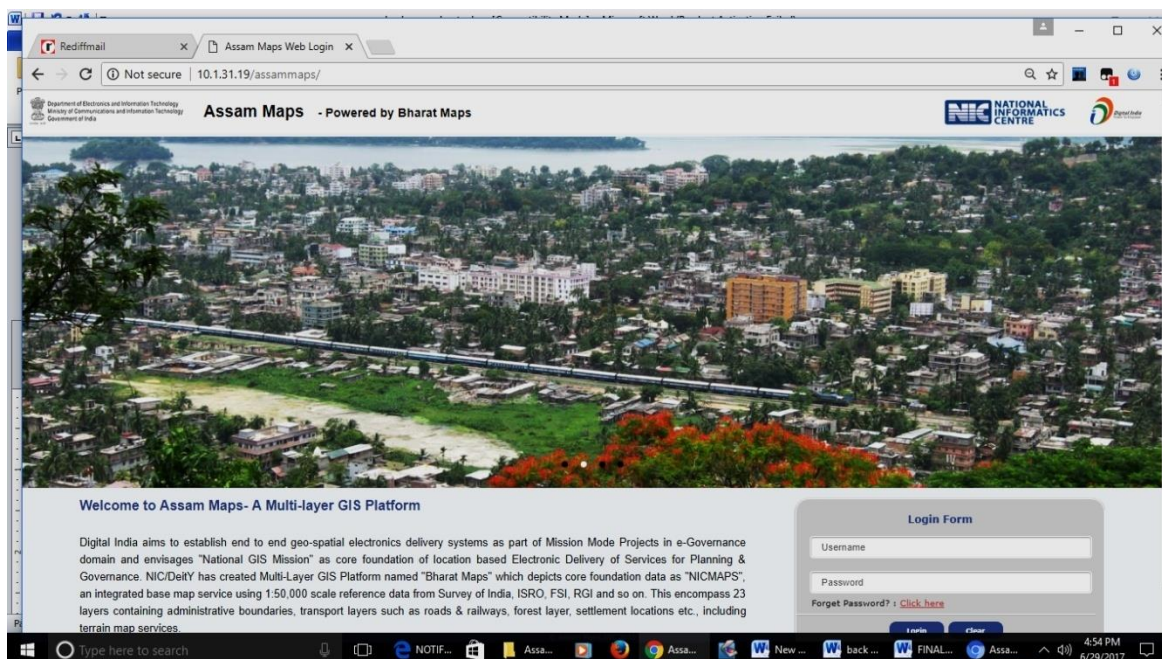


Report of the Subcommittee to The Committee of Secretaries on GIS/RS initiative in Assam

30-06-2017

**How to Take Forward the GIS/RS Initiative in the State
for Planning, Management and Monitoring for Service Delivery**



**Transformation & Development Department
Government of Assam**

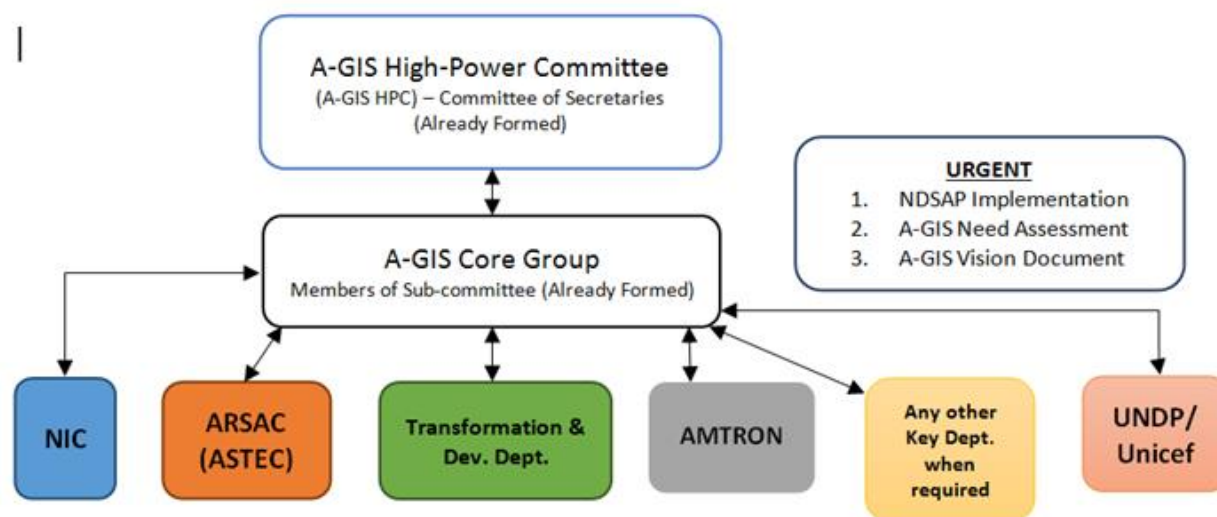
Report of the Subcommittee (GIS/RS)

To assist the Committee of Secretaries (GIS/RS initiatives), a Sub Committee was constituted on 23-02-2017. The Subcommittee was advised to report on the following -

1. Chalk out an action plan to suggest a way forward for storing the GIS data as available with different departments in the server/portal available with NIC, ASTEC and how it can be made accessible for use of all the departments.
2. Suggest ways to collaborate with NESAC for sharing of data as per the mechanism suggested by NESAC.
3. Suggest capacity building measures for the officers/staff of line departments and necessary steps required.
4. Suggest agencies like UNICEF and UNDP can associate themselves in the plan of action.

While preparing the action plan, the subcommittee has taken into consideration the available infrastructure and other logistics and the support that might be forthcoming from all agencies engaged in GIS/RS activities in their respective capacities.

Role of different agencies in the implementation process may be broadly defined as follows:



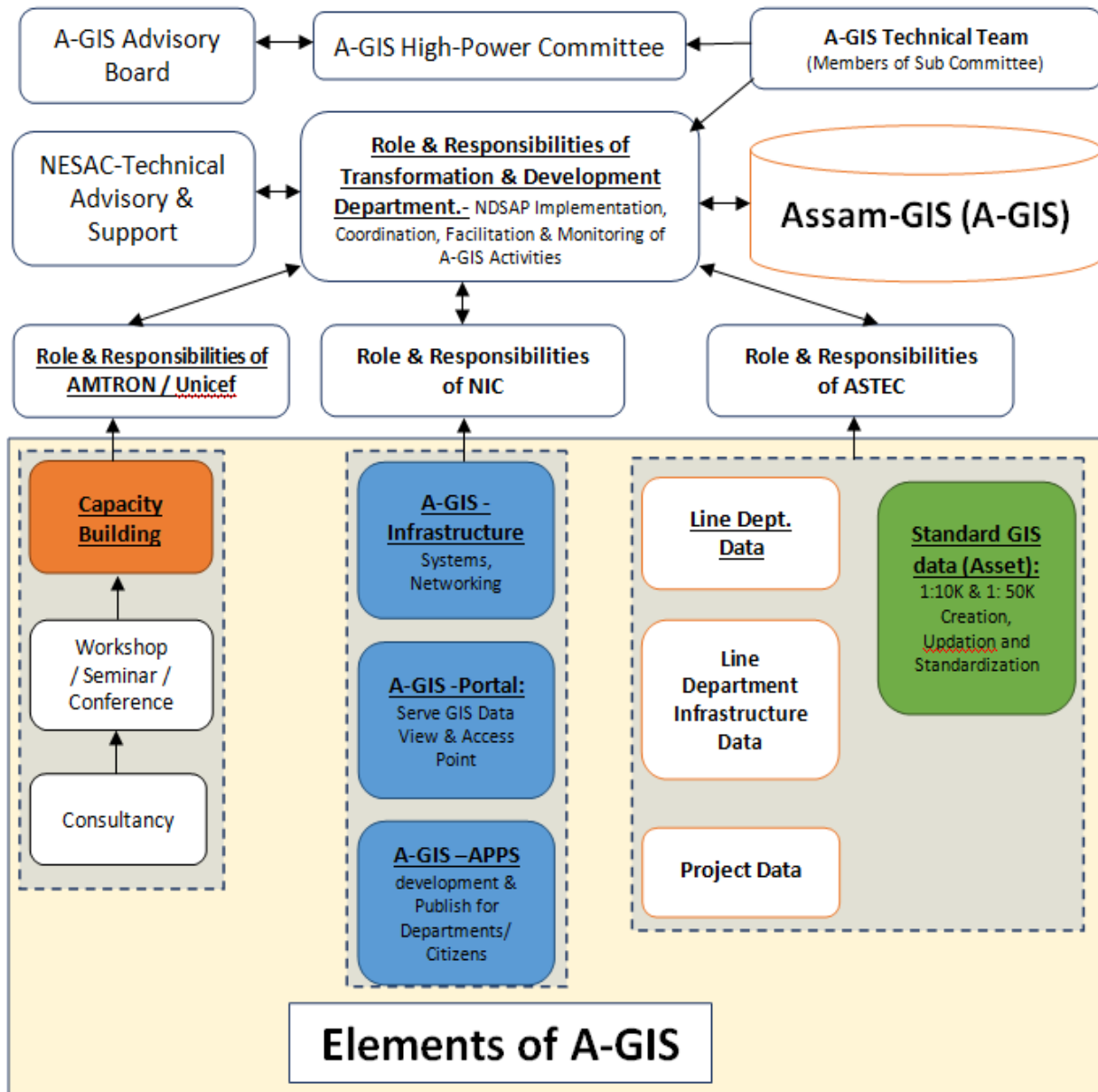
Action Points	Action Required to be taken	Department/ Agency to be involved	Timeline/Action initiated/Remarks
1. Chalk out an action plan to suggest a way forward for storing the GIS data as available with different departments in the server/portal available with NIC, ASTEC and how it can be made accessible for use of all the departments.	a) NIC to provide their cloud service for a Central Data Repository for convergence of all spatial and non spatial data of the state government and the Assam GIS will be integrated with Bharat Map under digital India initiative . As discussed with NIC there is no cost involvement for cloud service initially. Assam Maps portal which will form the BHARATMAPS of Govt. of India already designed and developed for trial viewing and accessible on NICNET at- 10.1.32.19/assammaps	a) NIC Assam b) T&D Dept.	• June-July, 2017.
	b) Implementation of NDSAP is a prerequisite to take forward the GIS initiative successfully to achieve the intended goals of data convergence. To facilitate sharing of available data (both Spatial & Non Spatial) among the government departments, Assam Government adopted the National Data Sharing and Accessibility Policy (NDSAP 2012) in 2013 through a Government Notification. Implementation of the same will require the following steps: i. A Circular/office order to be issued by the Chief Secretary to all line departments to nominate the Chief Data Officer at the level of Joint Secretary or above and to set up an NDSAP Cell for the Department. ii. Nomination of One Nodal Officer for the state at the rank of Joint Secretary and above iii. Nominate Chief Data Officer, at the level of Joint Secretary or above for respective Department iv. Chief Data office to nominate data Contributors for Cooperating from respective Divisions/Units/Projects/Schemes etc. v. Create Data Contributor's Login id using Chief Data Officer's Login account vi. Setup NDSAP Cell vii. Identify Datasets viii. Prepare Negative List ix. Publish Non-spatial and Spatial datasets on Open Govt Data (ODG) platform and Bhuvan portal with the help of NIC/AMTRON/ASTEC respectively.	a) All state government departments/agencies, b) Coordination / Supervision by T & D, NIC, ARSAC division of ASTEC (S&T), AMTRON (IT), NESAC, NIRD, OKD under the guidance of Committee of Secretaries c) Recruited Professionals mentioned under point 4 (a) will support and work with Department's NDSAP cell related works	• Sept-Oct, 2017 assuming that support received as shown at 4(a) 'Recruitment of Professionals' under col.2.

Action Points	Action Required to be taken	Department/ Agency to be involved	Timeline/Action initiated/Remarks
	c) Prioritization of the GIS data/ Line Department to include in A-GIS i. Priority 1: Core A-GIS Group with which GIS Ready Data is available	a) Core A-GIS Group i.e. NESAC, ASTEC, NIC, AMTRON, etc	Oct-Nov, 2017 assuming that support received as shown at 4(a) 'Recruitment of Professionals' under col.2.
	ii. Priority 2: Those Line Departments with sufficient GIS data generated under projects / schemes and available for display with prior validation	b) Health, Education, Power, PHED, etc	
	iii. Priority 3: Line Departments to be covered under CMSGUY	c) Fishery, AH&V, Agriculture, Soil Conservation, PWD, Industry, IT, Sports & Youth Welfare, Power, Environment & Forest, P & RD.	
2. Suggest ways to collaborate with NESAC for sharing of data as per the mechanism of NESAC	a) Collaboration with NESAC (North East Space Application Centre): Discussion with NESAC scientists held. NESAC is ready to share the North East District Resource Plan (NEDRP) Data of Assam. A MoU/MoA to be signed by T&D Department with NESAC. b) Necessary process has started. Dr. Dibyajyoti Chutia, Sr. Scientist, NESAC who attended a discussion of the subcommittee on behalf of Director NESAC will guide/advise the Subcommittee in the matter. MoU template/format to be provided by NESAC c) As informed by Dr. Chutia, a batch of four staff from Assam secretariat is presently (June/July 2017) undergoing training at NESAC.	Under the guidance of Committee of Secretaries a) T & D Department b) NESAC	• July, 2017.

Action Points	Action Required to be taken	Department/ Agency to be involved	Timeline/Action initiated/Remarks
3. Suggest capacity building measures for the officers/staff of line departments and necessary steps required.	a) A-GIS Capacity Building activities list: <ol style="list-style-type: none"> Offline & Online Training Module to be designed by GIS Consultant in association with line departments need assessment. Training Content Module on - e-Governance, Planning, Evaluation, Monitoring, Data creation/collection at Lab/field, data Retrieval, Analysis & Map Preparation. GIS Software both- Open Source / Commercial-of-the-shelf (COTS) as available Levels of Training – Decision Makers, Management & Technical Hardware – GNSS/GPS, etc. 	<ol style="list-style-type: none"> Priority Line Dept. i.e. Health, Education, Power, PHED CMsGUY line Dept. - Fishery, AH&V, Agriculture, Soil Conservation, PWD, Industry, IT, Sports & Youth Welfare, Power, Environment & Forest, P & RD. 	Sept-Nov, 2017 assuming that support received as shown at 4(a) 'Recruitment of Professionals' under col.2.
	b) A-GIS Applications list <ol style="list-style-type: none"> Offline Field data collection tool for line departments Online Web editing tool. 	c) Subcommittee (GIS/RS), Core A-GIS Group and Recruited A-GIS Professionals.	August-Sept, 2017, Assuming that support received as shown at 4(a) 'Recruitment of Professionals' under col.2.
	c) DESIGN of Standard Operating Procedure of A-GIS for all the associates / stakeholders / Departments. d) NEED ASSESSMENT on GIS Application of the prioritised Line Departments <ol style="list-style-type: none"> Announcement of Need Assessment Start Date – End Date Schedule /Questionnaire /Format Design on Infrastructure (SW/HW), Manpower, etc requirement (Format) SWOT Analysis of the prioritised Line Department (Format) Sub-Committee to evaluate the assessment & report to HPC. 	<ol style="list-style-type: none"> Subcommittee (GIS/RS), Core A-GIS Group and Recruited A-GIS Professionals. Unicef Priority Line Depts. And CMsGUY Depts. will participate in need assessment process 	Nov-Dec, 2017 assuming that support received as shown at 4(a) 'Recruitment of Professionals' under col.2.
	e) AWARENESS/CAMPAIGN on A-GIS / NDSAP through <ul style="list-style-type: none"> Workshops and seminars https://assam.mygov.in/, http://mmscmsquy.assam.gov.in/ Social Media etc. 	g) NIC / Official Govt. /department Websites	<ul style="list-style-type: none"> From August, 2017 onwards

Action Points	Action Required to be taken	Department/ Agency to be involved	Timeline/Action initiated/Remarks
4. Suggest ways that agencies like Unicef and UNDP can associate themselves in the plan of action.	a) Recruitment of Professionals to assist/support the A-GIS Team: <ul style="list-style-type: none"> Developer-1 no. (Role & Responsibilities : Annexure – I) Consultant-1 no. (Role & Responsibilities : Annexure – II) Data Administrator-3 no. (Role & Responsibilities : Annexure – III) 	a) Professionals will be working with Subcommittee (GIS/RS) for functioning of A-GIS	<ul style="list-style-type: none"> July-August 2017,
	b) Sub Committee discussed with Unicef and UNDP officials.	b) Unicef	<ul style="list-style-type: none"> Unicef to support state government to avail fund for this financial year Till December' 17. New proposal with Unicef for next year (From January 2018)
	c) Unicef agreed to fund government agencies in organising workshop/seminar/awareness drives on NDSAP and in capacity building activities through departments of T&D, Finance, IT & S&T.	d) Unicef	
	e) UNDP is already organizing workshop/seminar at national level in collaboration with NITI Aayog. Workshop held in Ahmedabad (Gujarat) on 9 th Jne'17 was such an initiative.	d) UNDP	

Elements of Assam GIS



Subcommittee also discussed in depth the issues that might crop up once the process of implementation was started. Therefore, the following actions are required to be taken for effective implementation of the project.

1. **Formation of a Core Group** : Constitution of a Core Group to carry forward the Assam GIS initiative encompassing **CMSGUY** (Chief Minister's Samagra Gramya Unnoyan Yojana) and **DES's Village Profile and Block Planning Atlas**. In the process the **SDGs monitoring mechanism to be linked to GIS/RS platform**. The Core Group will consist of Sub Committee members (T&D, ARSAC, AMTRTON, NIC), Director Economics & Statistics, Chief Data Officers of selected sectors/departments, NIRD representative and the officials of Centre for SDGs. The Core Group will be guided by the Committee of Secretaries.
2. **SUBMISSION / PREPARATION of tasks/Check lists by Core Group:**
 - a. **Preparation of Activity List**
 - i. A-GIS Infrastructure details /requirement
 - NIC Bharat Map Platform - Multi-Layer GIS for E-governance & Planning developed under Digital India.
 - ii. A-GIS Asset Database Standard Document /A-GIS Database Schema Design
 - GIS Ready data - 1: 50000
 - GIS Ready data - 1: 10000 (SISDP)
 - Existing Line Dept. data through NDSAP
 - iii. A-GIS Portal – Domain, Content details, etc.
 - A-GIS Portal developed (yet to be released with more updates)
 - More features to be design /added by NIC and the Core group in consultation
 - iv. A-GIS Capacity Building activities lists
 - Offline & Online Training Module to be designed by GIS Consultant in association with line department's need assessment.
 - Training Content Module on - E-Governance, Planning, Evaluation, Monitoring, Data creation/collection at Lab/field, data Retrieval, Analysis & Map Preparation.
 - GIS Software both- Open Source / Commercial-of-the-shelf (COTS) as available
 - Levels of Training – Decision Makers, Management & Technical
 - Hardware – GNSS/GPS, etc.
 - v. A-GIS Applications list
 - Offline Field data collection tool for line departments
 - Online Web editing tool.
 - b. **Summary of all the Activities under A-GIS with Start and End date.**

3. Advisory Board on GIS/RS: NOMINATION of members from

- Chief Secretary
- Addl. Chief Secretary T&D
- Commissioner & Secretary Finance
- Commissioner & Secretary IT
- Commissioner & Secretary S&T
- Eminent GIS personality from Assam
- IIT Guwahati
- Director/Principal Scientist, NESAC
- Director ARSAC (ASTEC)
- MD AMTRON
- Director, SOI, GSI etc
- Eminent personality from ISRO/DOS
- Eminent Personality from K-GIS/Rajdhara/OridsaGeoPortal/Gujarat

4. Preparation of a Vision Document (Format)

- 5. Assam-GIS Portal:** A portal designated as the 'ASSAM-GIS' is being developed and designed by NIC for dissemination of GIS based data to all line departments. To begin with, the portal will link all GIS/RS services/applications/information relating to Assam owned by different departments/agencies of the government on their respective portal/servers for viewing on a common platform i.e. on Assam-GIS portal till the data sharing process is completed. **Bhuvan portal with state node will be linked.** These links along with 23 layers of GIS data already available with NIC at 1:50000 scale for the state will provide a basis for a single source of information on GIS/RS activities in the state for the viewers. **This perhaps will serve as an awareness exercise for the officials/staff of Government of Assam in understanding the basics of Geographic Information System and Remote Sensing.**

Achievement so far (Assam GIS):

A Central Repository of Spatial Data with Remote Sensing and GIS applications will provide impetus to planning and development activities at grass root level as well as monitoring and management of various disciplines. Introduction of GIS technologies will bring focus on existing spatial reality which will lead to dynamism and transparency in the nature of working, in order to overcome problem issues related to planning, development monitoring & decision-making. Establishing GIS system for data organization and management for existing infrastructure and

its coverage, with appropriate technology framework and standards may go a long way in reaping benefits of collaborative dynamic environment and may lead to large scale benefits.

Accordingly, Assam GIS portal is being developed by T&D Department with the help of NIC involving all concerned (ARSAC, AMTRON, NESAC and others) in the process of developing GIS solutions for various users in the Govt. sector at the state level. The main aim of the Project is to establish “Assam GIS” as a tool to represent resources (Natural as well as man-made) of Assam for **location specific planning, decision-making and monitoring**. The Project envisages establishment of Assam State Spatial Data Infrastructure for Multi-Layer GIS for planning and e-governance by taking advantage of existing & available data and ICT infrastructure resources at NIC HQ as well as State involving various stakeholders in Assam.

NIC is providing their cloud service for a Central Data Repository for convergence of all spatial and non spatial data of the state government and the Assam GIS will be integrated with Bharat Map under digital India initiative.

Assam-GIS is prepared taking into consideration the initiatives under CMSGUY and SDGs . All logistics including hardware and software components of the Project will be borne by NIC (Government of India) while the state government with its partner agencies like Unicef will have to contribute in terms of necessary man power support and on awareness, workshop, seminar and capacity building measures.

In the beginning the **ASSAM MAP website will be accessible on NIC network only** using the user id and passwords as follows-

- | | |
|-------------------------------|--|
| 1. Website | : 10.1.31.19/assammaps/ |
| 2. user id for Addl. CS | : kveapen |
| 3. user id for Commissioner & | |
| 4. Secretary Finance (DES) | : sjagannathan |
| 5. user id for Secretary T&D | : msmanivannan |
| 6. user id for MD AMTRON | : mkyadava |
| 7. user id for PSO ARSAC | : usarma |
| 8. password | : to be shared by e-mail |



A Note on the GIS/RS activities of Gujarat Government in service delivery (planning management and monitoring)

The **Bhaskaracharya Institute for Space Applications & Geo-informatics** popularly known as **BISAG** at Gandhi Nagar is the state level nodal agency to facilitate the use of satellite communication and geo-spatial technologies in the Gujarat State. BISAG played the pivotal role in ushering in an era of high-end technology in resource mapping and in effective management of the system for sustenance.

NITI AAYOG in association with UNDP organized a workshop on GIS/RS based service delivery in planning management and monitoring at Ahmedabad (Gujarat) on 9-6-2017. During the workshop presentations on different aspects of GIS based planning/monitoring at state/district level have been made and participants from different parts of the country representing the states were acquainted with the high level of standards achieved in the process by the Gujarat Government in creating an environment of technology driven governance in delivery of services.

Directorate of Economics & Statistics under Gujarat Planning Department has successfully created Village Profile & Taluka Planning Atlas for the State in sectors like Demography, Education, Health, Electrification, Animal Husbandry, Irrigation, Land Use, Roads & Transport, Communication, Water Supply & Sanitation and in Community Development with 300+ no. of data items/attributes. BISAG is now in a position to offer consultancy services to the state governments, if required and ready with some national level resource maps/data at their disposal. Other states viz. **Madhya Pradesh and Andhra Pradesh** also showcased their abilities in evolving service delivery mechanism using GIS/RS technologies.

Directorate of Economics & Statistics Government of Assam needs to develop a similar service delivery mechanism for the state. Field offices of the Directorate should be strengthened/streamlined and, statistical cells of all development departments to be aligned to create a network in data collection in a methodical, systematic approach. Assam GIS would provide the access point for all service delivery interface- both Macro approach for gap identification in development planning and monitoring as well. In its Micro approach all departments to develop analytics and tools to arrive at decisions based on authentic data to ensure service delivery in a professional way.

The state of Assam will be benefited, if BISAG is made a partner in its efforts to develop ARSAC division of ASTEC in line with BISAG as a self sustaining entity in the field of research, service delivery and capacity building with diversification of activities like DTH satellite service to cater

to rural empowerment in the fields of agriculture, animal husbandry, health, education, P&RD and similar activities which are directly linked to welfare and prosperity of rural Assam. Concerned Ministry of Government of India may perhaps be followed up and once implemented might prove to be a 'game changer' in CMSGUY initiatives and in awareness drives for SDGs implementation.

Important Observations:

- Spatial data inventory are available using satellite data on 1:250K, 1:50K and 1:10K under various National Missions initiated by NNRMS, ISRO under NRC, SIS-DP.
- Mention may be made of empowering Panchayati Raj Institutes Spatially (EPRIS) for Asset Mapping and Activity Planning. Sonitpur and Kamrup district are taken up on pilot basis and Capacity building activity are in progress.
- For proper convergence and quality assurance it is advisable to notify a State Nodal Centre in respect of spatial database. The same Centre may further be developed as local training Centre for capacity building of user's departments. the Centre may further be equipped to facilitate Research Scholars to get involved in real life projects to enhance their knowledge and activity.
- State data sharing and accessibility policy in line with Maharashtra/Odisha/Gujrat required to be explored while preparing the road map for Assam.
- Issues regarding already developed mobile apps by NRSC/ISRO and its integration may be taken into consideration.
- In line with National Meet for use of Space inputs for Governance & Development (Hon'ble PM shared the concluding session and suggested to replicate the same in each and every state) Assam State Space Meet was held as a follow up on 3rd of December, 2016. 23 line departments presented their activities in which Space Inputs could be utilized for Governance and Development. 50 Nos. of potential areas were identified having relevance to Vision Document of the present Government. There should be certain definite guidelines or policy regarding implementation of the same in road map for the state.