

# AWARDS SCHEME FOR EXEMPLARY IMPLEMENTATION OF e-GOVERNANCE INITIATIVES

## NAME OF CATEGORY- 'INNOVATIVE USE OF GIS TECHNOLOGY IN e-GOVERNANCE'

### 1. Coverage – Geographical and Demographic:-

(i) Comprehensiveness of reach of delivery centres,

Currently in Sikkim , potentially all over India

(ii) Number of delivery centres

Department of Economics, Statistics, Monitoring & Evaluation, Gangtok  
Sikkim, Government of Sikkim

(iii) Geographical

(a) National level – Number of State covered

1

(b) State/UT level- Number of District covered

4

(c) District level- Number of Blocks covered

163 GPU  
453 Revenue Blocks

Please give specific details:-

All the GPU, Revenue Blocks and District Administrative Centers in Sikkim

(iv) Demographic spread (percentage of population covered)

100%

2. Situation Before the Initiative (Bottlenecks, Challenges, constraints etc with specific details as to what triggered the Organization to conceptualize this project):

In the past the census records of the state was maintained in hardcopy which is usually a hand written, where at a time when information and data are becoming an integral part of every organization, people have realized that paper records, books, and journals are not as handy or safe as digitized record. Information must be stored in such media that the storage is safe and the retrieval is quick.

So an effective and innovative method was developed for keeping the data safe and accurate using mobile technology. A simple android tablet accounts for portability in comparison to carrying large volumes of census forms

3. **Scope of Services** (Relevance of application for e-governance, extent to which service is delivered through GIS)

The mobile application is used to collect census data along with the

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geographical and demographic details for each household from all districts of the state which is then updated to the back-end server. The application is designed to perform as an offline version as well ,meaning the census agents can effectively collect data from places where the network coverage is zero .The data once fed into the back-end server can be used to generate reports based on any census requirements

#### 4. Strategy Adopted

##### (i) The details of base line study done,

A centralized system in electronic format would eliminate errors and limitations associated with manual storage and tracking of hand-written paper census records

##### (ii) Problems identified,

The manual process of collecting data is not secure and can be damaged and lost .The process of collecting data in paper forms is tedious .Entering data on paper forms and subsequently digitizing them in electronic media is the traditional way to maintain a record keeping system. Direct data entry using an electronic device avoids this two-step process.

##### (iii) Roll out/implementation model,

The traditional way was unacceptable as data verification was not possible. Also both speed and accuracy could not be achieved.

We decided to innovate a solution of which had never been done before with hardware technology that had not been utilized for solutions such as this

##### (iv) Communication and dissemination strategy and approach used.):

The census data collected using the android application is synchronized to the back-end server

#### 5. Technology Platform used-

##### (i) Description,

Android based Mobile application with Server backend Software built on PHP, MySQL

##### (ii) Interoperability

Currently the solution is built exclusively for the Android platform –

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however it support any device using Android 4.2.2 onwards.

**(iii) Security concerns**

None

**(iv) Any issue with the technology used**

None

**(v) Service level Agreements(SLAs) (Give details about presence of SLA, whether documented, whether referred etc. #)**

NA

**6. Demonstrate Innovation in use of GIS Technology for e-Gov** (Give details of technology used - Architecture, Platform, Open Source tools, Front-end development, Remote Sensing & Mobile Technology integration, SMS & email)

- The Tablet based Mobile enumerator application allows the enumerator to seamlessly capture all relevant census information, GPS (lat/long) for the building and a photo of the building. The application works both online and in off-line mode in order to cover geographies that do not currently support 2G/3G Network Connections.
- The officers of the department needed to be able to sift thru volumes of data quickly. The server side application is optimized to handle many simultaneous connections from the Mobile End Points by utilizing an asynchronous queuing system based on REST API's.
- The first BIGDATA solution in Government of Sikkim

**7. Interoperability & security** (Give details about ability to leverage sharing amongst stakeholders in accordance with map policy, Token services, SSL)

Through Lat/Long GPS data enumerators are tracked on a MAP in realtime. The application platform is highly interoperable and secure.

**8. Scalability** (Give details with respect to technology (Platform, Hardware & software) & data (high and low Geographical and Demographic scale)

The platform we built is flawless in the management of data. The solution has two major components: Mobile tablet enumerator application and a BigData server. We built a census capture platform that has a Mobile Tablet Enumerator application, a Data Management Server, and a Reporting Server with full User and Role permissions. Tasks are assigned to enumerator by sector or GPU basis. The mobile application captures all relevant census information + GPS coordinates. The system allocates house numbering as part of a new initiative by the Government of Sikkim.

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9. **Sustainability & adaptability** (Give details w.r.t architecture/ technology, updation of spatial data, training, human resource, research, local language)

The system is designed with a flexible architecture which allows it to adapt and become sustainable.

10. **Adaptability Analysis**

- (i) Measures to ensure adaptability and scalability

MDM (Mobile Device Management)

- (ii) Measures to ensure replicability

Can be replicated on any device supporting android 4.2.2 and above.

- (iii) Restrictions, if any, in replication and or scalability

NONE

- (iv) Risk Analysis

NONE

11. **Accountability** (Give details in regard to roles, responsibility, facility for audit trails)

The hierarchy in the system is based on a maker-checker concept like in the banking systems. It has an auto history/audit trail so that any abuse of the systems or its data is automatically flagged.

12. **New Models of service delivery** (Give details about Public/ private/ NGO/ academic linkages/ citizens)

This links the G2C and all other participants be it public or private in delivery of the service. Once this data is made available the public, government entities can build other services around it.

13. **Citizen Centricity** (Give specific details on the following#)

- (i) Impact on effort, time and cost incurred by user,

This technology proves to be more feasible, more accurate and time-saving as compared to hand written forms. The mobile TABLET used is energy- saving, portable and user-friendly which thus generates more productivity as lower

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cost to the environment and exchequer.

(ii) Feedback/grievance redressal mechanism,

The department notifies the vendor if there is malfunction or new requirements. The vendor patches it and send out an update notification through the MDM.

The entire process is electronically based. Thus entertains easy access and also allows quick responses to the feedback being provided and rectifications to any errors (if any) can be redressed immediately.

(iii) Audit Trails,

Auto

(iv) Interactive platform for service delivery,

Most interactive

(v) Stakeholder consultation

Yes

### 14. Efficiency Enhancement (Give specific details about the following #)

(i) Volume of transactions processed,

NA

(ii) Coping with transaction volume growth

NA

(iii) Time taken to process transactions,

1 minute

(iv) Accuracy of output,

100%

(v) Number of delays in service delivery

NA

### 15. User convenience (Give specific details about the followings #)

(i) Service delivery channels (Web, email, SMS etc.)

Web, Mobile, EMAIL & SMS

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(ii) Completeness of information provided to the users,

100%

(iii) Accessibility (Time Window),

Throughout the enumeration process.

(iv) Distance required to travel to Access Points

Door to door service

(v) Facility for online/offline download and online submission of forms,

NA

(vi) status tracking

Yes

16. **Result Achieved/ Value Delivered** to the beneficiary of the project-(share the results, matrices, key learning's, feedback and stakeholders statements that show a positive difference is being made etc):

**(i) To organization**

Credible, Reliable and Rich data. Database of every person in the state with the location of their homes.

**(ii) To citizen**

Easy accessibility, accountability and time-saving

**(iii) Other stakeholders**

Better synchronization, maintenance with much reduced work-burden and easy answerability to the general public

17. Extent to which the Objective of the Project is fulfilled-(benefit to the target audience i.e.G2G, G2C, G2B, G2E or any other, size and category of population/stakeholder benefited etc):

100%

18. Comparative Analysis of earlier Vs new system with respect to the BPR, Change Management, Outcome/benefit, Change in legal system, rules and regulations

In the past we have seen other services. Vendors use means to do this conversion using existing software like Microsoft Excel and save data as a

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CSV. The other vendors would typically give hard copies of the data to be digitized to data operators for direct entry. This meant that once the data was entered there was no way to verify the entry.

19. Other distinctive features/ accomplishments of the project:

1. Reliable Data
2. Accountable Data
3. Transparent Data

# This is just an indicative list of indicators. Applicant can add on more information based on suitability of the project nominated.