

# 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,

This application is available online to the overall Forest Department of Gujarat.

(ii) Number of delivery centres

This system is being successfully used in following Forest Boundaries:

**Circle Offices (District level): 24**

**Division Offices (Taluka level): 85**

**Range Offices (Village level): 498**

**Round Offices (Village level): 1533**

**Beat Offices (Village level): 2977**

(iii) Geographical

(a) National level – Number of State covered

1 State (Gujarat)

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

26

(c) District level- Number of Blocks covered

226

Please give specific details:-

(iv) Demographic spread (percentage of population covered)

Approximately 8000 employees of Gujarat Forest Department are applicable to use this application.

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

Map work was done manually in physical format. There was no application available with the Gujarat Forest Department to carry on GIS analysis. Hence, Visual Representation of real time event plotting and taking immediate measures was not possible. More time consumption in Data Mining. Decision Support Systems are feeble in absence of real time compilation of data & analysis.

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

Functionalities like Map Display, Table of Content, Print Map, Navigation, Analysis (Tree cutting, Encroachment, Grazing, Animal Sighting, Rescue, Release), Employee Track log, GIS Data Editing, Spatial query for events & searching nearby employees

### 4. **Strategy Adopted**

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

Base line study have been done in various forest Offices (Nodal, Circle, Division, Range etc.)

#### (ii) Problems identified,

The Problems are identified that the data are not updated, improper and redundant.

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

Using with Agile Model, GIPL Developed GIS Integrated Forest Management Information System Integrated with PDA Application

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

The communication between the forest officials and application is the 24 \*7 internet connectivity and secure Authorization and authentication of users, roles and rights based on SQL server encryption certificates.

### 5. **Technology Platform used-**

#### (i) Description,

C# .Net Framework 4.0 with Visual studio 2010 IDE,  
Uniform Programming Model – LINQ,  
ADO.NET Synchronizing Services,  
SQL Server 2008 R2 database  
Arc GIS Server for propriety maps and Bing Maps

#### (ii) Interoperability

Segregation of map services based on functionalities i.e. tracklog, Mobile GIS, Web GIS and Geo processing service for analysis.

#### (iii) Security concerns

System is highly secured with user authentication and reliable role management

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(iv) Any issue with the technology used

NA

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

Service Level Agreement has been documented with Gujarat Forest Department.

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)

With the help of GIS app we can know the dispersal pattern of wildlife animals and events over period of time. Tight coupling of MIS and GIS entries. Sending SMS/ Email for different types of Events , Calling Solution Integration with online GIS Portal.

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

Segregation of map services based on functionalities i.e. tracklog, Mobile GIS, Web GIS and Geo processing service for analysis. Authorization and authentication of users by their roles and rights using SQL server encryption certificates.

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

N-tier Architecture using Ling, C# .Net Framework 4.0 with Visual studio 2010 IDE, ESRI Arc Mobile, WCF Service for Mobile Technology Integration. Windows Server 2008 which provides scalability through scale-up, enabled by symmetric multiprocessing (SMP), and scale-out, enabled by clustering. SIEMENS Calling Solution is used for web calling & iDashboard tool is used for "Dashboard"

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

N tier Architecture with ADO.net technology is sustainable to all the scales of application supporting dual language (English & Gujarati).spatial data updation can be done using Rest Services. Forest Employees have been trained for period of 1 month.

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## 10. Adaptability Analysis

### (i) Measures to ensure adaptability and scalability

To ensure that the Forest Employees are highly familiar with the system, they have been trained for period of 1 month. Also each location is equipped with one support engineer to hence make the forest employees get used to the system.

### (ii) Measures to ensure replicability

On the basis of requirement analysis, the system is hence been designed ensuring no replication of data.

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

The system designed hereby provides alerts to user for entering only unique data into the system, thus ensuring no replication.

### (iv) Risk Analysis

The system has been designed in a way to avoid all the risks related to data entry, Data Synchronization, user friendliness, etc.

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

Gujarat forest Department has many roles and each role is assign to particular post. According to post GIS Integrated FMIS has different rights (View, Add, Update & Delete) for different Modules. Audit trial keeps Tracks of each activity person attempted in the System

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

Delivery of service model is for local Government (Gujarat Forest Department).It improves relationship between NGO likes (EC, PO, SHG) and Gujarat Forest Department. RTI is also included for citizen help.

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

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

As the officers are not required to maintain the physical formats, effort required in searching a particular record decreases largely. Storage of data is done automatically. It hence decreases the time required and cost incurred by GFD.

### (ii) Feedback/grievance redressal mechanism,

The system has been designed for Gujarat Forest Department only. And there was no requirement for any feedback/grievance redressal mechanism.

### (iii) Audit Trails,

There was no requirement for Audit Trails by Gujarat Forest Department.

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(iv) Interactive platform for service delivery,

NA

(v) Stakeholder consultation

NA

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

(i) Volume of transactions processed,

All the data that was being maintained in a physical paper format is now being digitized through this system.

(ii) Coping with transaction volume growth

SQL Server provides a large amount of data storage. So, Transaction Volume growth has never been an issue. Apart from that, Database Mirroring and regular backups are taken.

(iii) Time taken to process transactions,

The system has been designed so as to process the transactions within seconds.

(iv) Accuracy of output,

The system has been designed and tested properly to validate the accuracy of the data. Gujarat Forest Department also has validated the data.

(v) Number of delays in service delivery

Service Delivery is always done on time.

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

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

The service is delivered through Web, email and SMS.

(ii) Completeness of information provided to the users,

As per the requirement analysis for this application, the entire information is provided to the Gujarat Forest Department

(iii) Accessibility (Time Window),

The application is available for use 24X7 to all the officers of the Gujarat Forest Department.

(iv) Distance required to travel to Access Points

NA

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

Yes, there is a facility for online download and submission of forms.

(vi) status tracking

There has been provided various Reports, Alerts and Dashboards which provide a perfect status of the current scenario.

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**

With the accomplishment of this project the forest officials can now synchronize and analyze their data simultaneously with the online GIS Integrated MIS application which includes various GIS Events Analysis (Tree cutting, Encroachment, Grazing, Animal Sighting, Rescue, Release) as well as the details of knowing the pattern of movement for wildlife animals and events over period of time which further is integrated with Calling Solution for quicker response.

**(ii) To citizen**

NA

**(iii) Other stakeholders**

NA

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):

The Objective of the project is to fulfill the requirement of all the employees belonging to various Offices of Gujarat forest department, it helps to analyze the activity of Beneficiary (EC, PO, SHG) which are associated with the selling of Forest products.

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

**Earlier System:** There was no application available with the Gujarat Forest Department to carry on GIS analysis.

**New System:** The new system provides an interface to get a visual presentation of different land marks and forest areas. Get real time notifications of various offences on the maps. Surveying, Boundary Mapping and confirming the demarcation. Ability to calculate distance traveled and route between two points, etc.

19. Other distinctive features/ accomplishments of the project:

1. Ability to create and modify Points of Interest and other Landmarks.
2. Ability to associate alerts corresponding to the landmarks.
3. Ability to calculate the distance traveled and route between the two points.
4. Integrate with the Digital Maps of Forest (Presuming that GIS data is available). It shall be sole responsibility of GIPL / Gujarat Forest department to provide digital data.
5. Presentation of the different Layers of forest areas that are in the trail path and Enable / Disable the overlays as required.
6. Ability to perform query on the Geo-database on points of Interest Information.
7. Ability to integrate to standard Mapping Formats

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