AWARDS SCHEME FOR EXEMPLARY IMPLEMENTATION OF e-GOVERNANCE INITIATIVES

NAME OF CATEGORY- 'INNOVATIVE USE OF MOBILE TECHNOLOGY IN e-GOVERNANCE'

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

(i) Comprehensiveness of reach of delivery centres,

> PDA / MOBILE based tracking & Surveillance system is extensively used by ground staff of Gujarat Forest Department

(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)

> Approximate **5000 Employees of Gujarat Forest Department** are covered

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

> ➢ Storage of all kinds of information was being done on paper.
>
> ➢ Financial transactions were done manually.
>
> ➢ As all the procedures were carried out manually, more time consumption was a problem.
>
> ➢ Difficult to track daily work progress of Forest Dept. as well as their employees.
>
> ➢ Difficult to calculate different aspects and create consolidated reports.

> ➢ Faced difficulties to respond in critical situations due to lack of communication resources.

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

Core functionalities of Mobile App are Surveillance & Tracking of Forest areas, SOS (Emergency help), Offence Event Recording, Wildlife Animal, Human Injury & Death Details, Geo-Location on Map- through GPS , GIS & MIS Data Entry & Approval, Geo-Coding of Forest Boundaries & Forest Landmarks (Pillar, check dam etc.) identification.

4. Strategy Adopted

(i) The details of base line study done,

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

(ii) Problems identified,

Non availability of mobile network in many parts of forest.

Untrained staff in IT technology as well as English language.

(iii) Roll out/implementation model,

To roll out above issue, we have developed Application in Disconnected architecture (Mobile Local Storage) providing offline synchronization via local storage.

(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,

Front-End: Microsoft Windows Mobile 6.5 with Visual Studio 2008 using C#.net

Database: Sql Server Compact

Communication Services: WCF services, Sql Synchronization services and ArcGIS service with Multiple Language support (English & Gujarati)

(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.

(iv) Any issue with the technology used

> Not Applicable

(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 (GFD)

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

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

> With the help of PDA based Mobile application , time , effort and cost are reduced

(ii) Feedback/grievance redressal mechanism,

> No such Feedback mechanism is covered in PDA based Mobile application

(iii) Audit Trails,

> Not Applicable

(iv) Interactive platform for service delivery,

> Not Applicable

(v) Stakeholder consultation

> Not Applicable

7. **Demonstrate Innovation in use of Mobile Technology for e-governance**
(Give details about the mobile technology used (platforms, SMS, Pull & Push, Apps, Mobile Payment,), innovation applied in use of mobile technology to deliver information or Services to target audience #)

> Innovation like Over the Air Updates for Application, Offline Data Storage, Synchronization of Data on Network Availability.
>
> Capturing Photos of Offences with Geo-Location (Longitude & Latitude) is implemented. Live display of Mobile on Arc Map. Integrated with Forest MIS (Management Information System) & GIS (Geographic Information System) And with Dual Language (Gujarati & English) support

8. **Adaptability and Scalability** (Give details about Local language support, ability to leverage shared Government infrastructure, Standardization of technology used (hardware, software, application etc. #)

> System is developed for Microsoft Windows Mobile 6.5 in Visual Studio 2008 with C#, SQL Server Compact, WCF Services, SQL Synchronizing Service, and Arc GIS Mobile with Globalization (Multi-Language) Support i.e. both in English & Gujarati.

9. 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 Live support is provided to employees of Forest Department.

(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

> Battery Drainage risk.

10. **New Models of Service Delivery** (Give details about type of partnership model used, Links to/Supported by Public/Private Organization, Links provided to relevant websites etc. #)

> PDA Based Tracking & Surveillance System (Mobile App) is tightly coupled with GIS Based Forest MIS (Web Application).
>
> Mobile App is combined effort of GIPL team & Gujarat Forest Department for making innovation in Forestry Surveillance & Tracking using Mobile GIS & MIS technology.

11. **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

> Transaction volume growth have never been a issue.

(iii) Time taken to process transactions,

> If GPRS is connected with PDA based Mobile application, very less time is required to process.

(iv) Accuracy of output,

> 100% of Accuracy using PDA based Mobile Application.

(v) Number of delays in service delivery

> Due to unavailability of GPRS Connectivity & Battery draining issue, delay can be happened.

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

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

> The service is delivered through GPRS 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 beat level guard of the Gujarat Forest Department.

(iv) Distance required to travel to Access Points

> Not Applicable

(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.

13. **Sustainability** (Give details about sustainability w.r.t. technology (technology used, user privacy, security of information shared – Digital Encryption etc. #), Organization (hiring trained staff, training etc. #), financial (Scope for revenue generation etc. #)

> Regular Updates of App is released with changes required & suggested by Forest officials. MD5 Algorithm is used to encrypt password based roles and rights which are fetched from dedicated Forest Database Server. In all the districts training to Forest staff is provided for Configuration, Handling & Support for Application by GIPL. Conversion of current app. in the new Android & windows platform will be next in the scope.

14. **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

Flow of information within Forest department have speeded up as ground level staff reports instantly to head offices.

Different analysis on thematic maps based on time, month, season, employee and much more helped forest department plan accordingly for future strategy.

At any time they can view employee locations and also Geo Fence the forest areas.

(ii) To citizen

Not Applicable

(iii) Other stakeholders

Not Applicable

15. 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):

Project is a G2G initiative with combined effort of Gujarat Forest department and GIPL.

It helped forest department grow technologically and digitize their MIS & GIS data to large extent.

It has benefited ground staff of forest department (Approx 5000) making their working easier and paperless.

16. 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 such PDA application available with the Gujarat Forest Department to perform such kind of operation or their daily work online.

New System: PDA application is used for real-time tracking of Forest beat security with position information such as exact location, speed and time.

Surveyed boundary mapping and confirming the demarcation

Registering forest offences like cutting of trees, fire, Encroachment electronically on GPS facilitated PDAs at the location of offence itself to the Central Control station and subsequently updating the MIS Database of GIPL

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.

Ability to calculate the distance traveled and route between the two points.

Ability to associate alerts corresponding to the landmarks.

Enabling Hot-keys for calling / sending message to their higher officers in emergency, so that beat guards can easily contact their superior.

17.   Other distinctive features/ accomplishments of the project:

1.   Real time Updating of incidents like:

- Offences / illegal items carrying.

- Tree cutting.

- Encroachment

- Man and Animal conflict.

- Animal Rescue.

- Animal killing.

2.   Analysis of movement of the forest personnel using the positional data captured by the PDA and developing a data model and movement pattern which gives a holistic view to forest officials about the areas that are regularly surveyed and areas that needs spatial attention.

3.   Capturing and Uploading Polygon details, drainage lines, boundary lines etc. from PDA   application to the Central server in the DC and Processing the captured data from PDA, generating MIS reports, alerts, etc.

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