SCOPE OF WORK – E-Nagar

1 Background

Urbanization has emerged as the key trends in India, with share of urban population to total population growing from 17.3 per cent in 1951 to 31.16 per cent in 2011. The urban population of India has rapidly increased in recent years. In 1961 about 79 million persons lived in urban areas of the country, by 2001, their number had gone up to over 285 million, an increase of over 350

percent in the last four decades, which will increase to over 400 million by the year 2011 and 533 million by the year 2021. In 1991 there were 23 metropolitan cities, which have increased to 35 in last decade. As a result, most urban settlements are characterized by shortfalls in housing and water supply, inadequate sewerage, traffic congestion, pollution, poverty and social unrest making urban governance a difficult task.

Urban Local Bodies [ULBs] which are statutorily responsible for provision and maintenance of basic infrastructure and services in cities and towns are under tremendous stress. With little or no computerization, to even operate and maintain existing services, let alone augment them, is presently difficult. According to Census of India, there are 3255 ULBs in the country classified into four major categories of municipal corporations, municipalities (Municipal council, municipal board and municipal committee), town area committees and notified area committees and Gujarat has total 167.

2 Goals

The eNagar project aims at creating economically productive, efficient, equitable and responsive cities. The reforms seek to strengthen Municipal Governments and their functioning.

The Goals emerging from the eNagar project are as follows:

- Improved Service Delivery to citizens
- Better Information Management
- Efficiency and Effectiveness
- Community Participation
- Transparency and Accountability
- Improve Local Government Operation
- Interface between Municipalities and citizens

3 Benefits

The service levels are desired to ensure efficiency, transparency and reliability of such services at affordable costs to realize the basic needs of the common man. The impact of successfully achieving this vision would be a more satisfied citizen/business/ government. Similarly, the goals specific to BBMP would also significantly impact the stakeholders. In the following table we summarize the Key benefits for each stakeholder, against each of the goals stated above

Sr. No.	Goals	Benefits to Stakeholder
1.	Improved Service Delivery to citizens	• Provision for e•Governance services can enable citizens to avail of services such as status tracking, information requests etc. without making visits to offices or civic center's reducing the cost of availing services. • e•Governance services could also bring about a reduction in time and number of visits. • Integrated back office operations and information flow between departments could reduce time taken by citizens to avail citizen services. • Implementationof an integrated system could enable various checks and validations into the process and reduce subjective assessment. • An integrated system would enable the access to information as and when required. This would also optimize exchange of information between departments.
2.		• Integrated back office operations and information flow between departments could reduce time taken by citizens to avail citizen services. • Implementationof an integrated system could enable various check sand validations into the processand reduce subjective assessment. • An integrated system would enablethe access to information as and when required. This would also optimize exchange of information between departments.

3.	Transformation of existing systems and tackling issues such as integration and scalability	• Building on the existing systems could enable optimum re•use of applications and data structures on an integrated platform across the departments of the ULB's
4.	Efficiency and Effectiveness	• An integrated MIS system could assist in easily recognizing inefficiencies and taking initiatives to reduce them. Key information needs can be made GIS enabled so that decision / action can be taken as per the geographic jurisdiction. • Suitable parameters could be identified and tracked through the MIS system to measure effectiveness. • Monitoring of critical parameters could be done to generate alerts for the appropriate authority.
5.	Community Participation	• Information on how to register feedback couldbe made available online and in civic centers. • The citizen should be able to provide feedback through multiple channels (SMS, emails)
6.	Transparency and Accountability	• SMS based services could be implemented for tracking statusof various requests and information onwho / which department is in charge ofa particular service. • Information on various assessment parameters could be made available to citizens so that there is no subjectivity in the processes and outcomes in citizen facing processes. • Information of contacts numbers of peoplein charge should continue to be displayed for each of the services offered.
7.	Improve ULB Operation	• Service levels could be defined for and made available in an integrated information management system. The system could also enable executivestoaccess proper operating guidelines. • MIS system would enable defining and tracking clear service levels forsuppliers and service providers. • MIS system would enable policy makers to make important decisions.

8.	Effective coordination between the Elected and Executive wing and between departments	• A document management and file tracking system would enable greater visibility of documents moving in andout of the offices. • E•mail id to employees to disseminate the key information like minutes of the meetings, discussion points or any other important communication from Commissioner's office / Council meetings. • A system that tracks policies, directives and decisions etc.of the standing committee could be implemented. Department Officials could have accessto this system so that progress of the department can be indicated against each directive. • Adocument management and file tracking system would enable greater visibility of documents moving in and out of the departments. • An integrated system could improve coordination and tracking of tasks performed by the zonal office.
9.	Reduction in cost of providing and availing services	• Service can be availed by citizens across all income groups through multiple modes • Optimized costs could enable operational efficiency and promote fiscal discipline amongst departments
10.	Accessibility of services through alternative modes of delivery	• Multiple modes of delivery could enableeasy access to municipal services • Parameters that track performance ofthe citizen•ULBinterface can be integrated with the MIS system. • The nagarpalika could define targetsfor the specified measures of eGovernance services which can betracked through MIS system.

4 Objectives

The objective is to have a cost & time efficient, transparent and scalable Web based citizen centric service and back office operation support system which is easily distributable and customizable for further replication in all Municipalities across the Gujarat. It will:

- Make all Government services accessible to the common man in his locality, through common service delivery outlets and ensure efficiency, transparency & reliability of such services to realize the basic needs of the common man.
- Enhance citizen service through efficient, responsive and transparent e•Governance systems which reduces the time frame for approving and fast realization of the revenue.

- Standardize e•Governance solutions across different ULBs, on interoperable technology platforms with compatibility for forward and backward integration.
- Capacities of selected State and city/town governments are strengthened to effectively implement pro•poor and sustainable reforms and program under JNNURM.

5 Current Status

In order to strengthen the project requirements and focus on current issues being faced on ground level and incorporate the basic necessities in the proposed eNagar project, GIPL team has carried out survey to understand the existing status of IT/ITeS at ULB's.

This survey provided the current status to understand the project requirements and focus on the actual needs and better address & overcome current issues. This analysis is based only on the information provided in the survey form submitted by ULB's.

This short report provides a quick snapshot of the status of e•Governance initiatives in ULBs across the state of Gujarat. The general summary of status of the initiatives is provided in terms of the operational functional modules, with additional focus on the technical infrastructure available at present.

Having seen the status and technical attributes of various initiatives, this section discusses the details of the assessment carried out in various ULBs. The state level assessment shows various similarities and differences.

Service Provision Facilities - The ULBs have their own City Civic Centers across the city. Given that not many services are available through all the City Civic centers, these may be sufficient or on a lower side, but with the objective of making many more services available through ICT, the Service centers spread will need to be increased. The CCC standard is approx. 3000 population per service center.

TheULBs can move closer to this benchmark by putting up more centers or adopting the existing CCC within the ULB boundary, with ULB service appending existing services from eth State Government. The ULB Civic Centers also need to be fully equipped to provide uninterrupted services, with the Trained Manpower, Hardware, Connectivity, Power back up etc.

Power availability- Barring few major Municipal Corporations the power situation is not very satisfactory from the point of continuous availability of power throughout the day. As a fallback the UPS or Generators that could be used for keeping the IT Infrastructure on, but the Power Backup is generally available only at the HO of ULB and not at the

Service points. There are no power backup facilities at the Ward level Service Centers or the CFC (Citizen Facilitation Centers), barring few cities.

Network Connectivity - Most of the ULB's are connected through GSWAN. The bandwidth available to ULBs for service provision varies from 10MBPS to very low. Those who have good connectivity have taken services of BSNL broadband services. This is a critical success factor in the plan of giving improved Citizen Services through an integrated Solution across the ULBs. In addition to the Internet connectivity the intranet connectivity within a ULB, connecting various offices can also be addressed through this.

Data Centre Availability & Data Security - Some of the large ULBs have good data centers, but the situation across the ULBs in the state demands a well-connected and hence accessible & available data center to all the ULBs, to achieve the objective of an integrated Service Portal and future ERP solution common for all ULBs. This will also address the current challenge of connectivity backup and failures.

CSS Modules - Current Solutions are mainly offline and they are not consistently available in localized form so the solution interface as well as the data entry is mostly in English, which can be a challenge if the intent is to have common service interface with spread out population across the state. So localized solution with interface and data entry in local language is a critical change required. Further the integrated solution must have a single payment interface irrespective of the no of services required by a citizen, more like a shopping mart for citizen services.

The brief current statuses of service delivery in use at various ULB's are as follows:

    a. Mostly offline or Manual
    b. Legacy system
- Offline
- Standalone
- Only in English or non•uniform Gujarati fonts
- Different platforms / versions

1. Birth & Death Certificate - Mostly offline or manual
2. Property Tax billing - Mostly offline or manual with a few large ULBs providing facility of online payment but it does not have an integrated accounting facility so that the online payments also get internally accounted for completely.
3. Utility Billing & Payment - Mostly offline and manual billing and payments.
4. Public Grievances - Some ULBs have an online grievance submission (acceptance)

solutions, but it needs to be an integrated Grievance cum RTI application which informs, accepts grievances or applications for information and has internal escalation method in case of delays etc. with clear citizen charter, uniform across the state

5. Building plan approval - Still in manual mode across the state. This has a tremendous possibility of automation & hence transparency, mainly because of a limited no of stakeholders and their IT readiness being good. This is a low hanging fruit, which can be an early transformation that can be achieved in ULBs across the state.

6. Licenses - Mostly offline or manual activity. The renewal and new licenses -Food (health), hawkers, hoardings or other can be a good administration &revenue activity which can be easily standardized across the various ULBs. x Other Services - Hospitals related Services &Management, Crematorium related services & Management, Schools related services & management, Slums related Services & management and other services lie caste certificate, income certificate, disability certificate etc. are not touched by any of the ULBs and need thorough Process Re•engineering so that the Citizen Centricity of ULB functioning can be achieved better.

7. File Tracking System - Only few ULB has an offline file tracking system, all others are still manual mode inward - outward of files & documents. With the interoffice, interpersonal communication moving to the e•mail based and virtual documents based one, it is important to initiate, track, action and monitor documents, tasks & related files in government / administrative ecosystem through an integrated File Tracking system for physical and virtual correspondence, documents, files etc.

8. Planning Software for preparing Annual plan & Action Plan - None of the ULBs have any planning or budgeting solutions. With Citizen participation in the Budgets becoming a norm, the facility for the citizen and interested groups to be able to contribute, interact through an online medium and for the ULB to consolidate such development requests and include those in the Budgetary and planning process necessitates a Budgeting and Planning solution for a ULB, which becomes and input for the accounting activity for the year.

9. Accounting System - Accounting is the hub of all Organizational management activities since it is the source for all the activities. Very few ULBs have Online Accounting with integrated data from all other activities helping them to manage treasury well. With financial autonomy, the Accounting function becomes critical to ensure ULB's sustenance and management. With an integrated solution with accounts as hub for all other activities giving accurate and timely data on all functions' operational status is important for better financial health and hence better service provision ability of ULBs.

- Most of the ULB's use Tally system locally
- Revenue data entered manually

10. Personnel Information System

    Few of the ULBs have an offline Payroll solution but no HR solutions really**.** Employee self-services& Training portal (for training needs of citizens, feedback, training material etc.) - None of the ULBs have an automated or even manual system to track the employees' training need and actual training they would go through. With Citizen becoming more& more demanding the ULB staff has to be more capable and multi•faceted in administration, governance and service provision. This makes the HRD very important and hence the focus on training activity becomes critical for the employees of ULB.

11. Monitoring of Projects - Project/ Ward Works - The works is the main cost center of all ULBs and hence needs better management to ensure costs control, all the ULBs manage this in manual mode. Beyond the work orders the works can be monitored and managed through a common platform of Projects Management across the state. Reducing the complexity for management at the ULB level without compromising the ULB level decision making and controls.

12. Other modules • all other modules listed below are offline or manual, in a standalone mode. The ability of the ULB to get the MIS on the operations of these modules needs a lot of manual intervention and also the accuracy of the data available is suspect. The integrated solution for ULB would help in better management of ULB, simply through quick data availability and data accuracy.
    - Solid Waste Management
    - Regulation of land use and construction of buildings
    - Public health, Sanitation, Conservancy
    - Hospital Management System
    - Stores Inventory Control System
    - IT Asset Management System
    - Land & Asset Management System
    - Hawkers Management System
    - Disaster Management System

    13. Area Profiler to capture the geographic, demographic, Socio•economic and natural resources profile - Few ULBs has initiated the GIS work to achieve this, but these haven't really progressed beyond the initial data readiness. The data hasn't got converted to useful decision oriented information

6 Project Scope

Geographical Scope

The implementation is state wide for all the municipalities of Gujarat and the scope of locations is mentioned in **Annexure A**. Total numbers of locations are as below

State/ Union Territory	Municipal Corporation	Municipality	Total
Gujarat	8	159	167

Further, all municipal Corporations across Gujarat are well equipped with IT/ITeS and have implemented e-Governance applications which are functional and up to the standards. The service implementations for all such Municipal corporations and other ULBs where the services are already functional and upto satisfactory level are excluded from the scope of this project.

However, to have a consolidated MIS of entire state, the scope includes integration of various applications used by this Municipal corporations and ULB's through API to have data consolidation and availability on a single platform. This shall also ensure de-duplication of application implementation and help minimize the project cost by using existing infrastructure and applications already functional and cost already incurred by individual Municipal corporations & ULB's.

Functional Scope

1. Supply of Software application with five years post goes live AMC which shall include:
   a. Web based application
   b. Mobile based application for citizen centric services only (With payment gateway integration and Cross Platform (Windows, iOS, Android)
2. Solution integration and implementation services
   a. Business design or blue print based on the assessment of the operations of municipalities and the current IT applications in use
   b. Configuration / customization of the proposed Solution
   c. Data migration for each of the applications, functions into the proposed solution.
   d. Formulation of cut over strategy and go live
   e. Integration with other applications if required and the web portal of the municipalities and municipal corporations

3. Team & Activity Management services
   a. Deployment of a competent team of experts in the area of the proposed solution, specific functional areas and in project management
   b. Deployment of resources to ensure that the project activities are carried out as per plan
   c. Deployment of a project structure for effective monitoring, review and risk mitigation

4. Deployment services
   a. Deployment of templates and standard accepting mechanisms for the project deliverables

5. Feedback, monitoring and adoption
   a. There will institutionalize mechanisms to adopt the feedback and ensure quality of work, without affecting the project timelines
   b. There will be effort to put together a structure and mechanism for ensuring that all the key functional areas, users of each of the enterprises are consulted, feedback adopted and key differences identified, so as to facilitate standardization as well as user adoption.

6. Training and documentation
   a. Training all the users
   b. Preparation of user manuals
   c. Documentation of processes
   d. Training the key executives for monitoring the performance and using the reports effectively

7. Support services
   a. Facilitating user adoption
   b. Continuous improvement and refinement of the processes, reports
   c. Operations of help desk and refresher training.
   d. Institutionalizing structures and processes for management of SLA, strategic control

8. Hardware Supply
   a. Supply of requisite hardware and deployment of server to host the services
   b. Maintenance of Hardware and system software for 5 years

Manpower Deployment Plan during implementation & AMC

The bidder shall provide minimum of following qualified team at site for execution / implementation support during the implementation and support & Hand holding phase of the project.

Sr. No	Post	No. of Resources	Stage of Project
1.	Project Manager	01	Implementation till Go•Live
2.	Business Analyst/Domain Experts	10	Implementation till Go•Live
3.	Support Engineers	33	Annual Maintenance Period of 5 year
4.	Software Application development Team Leader	2	Implementation till Go-Live

Exit Management and Transition

On go live of the application; Each municipality shall take up the management of the Application. Therefore before the cross over, each municipality will identify the resources to be associated to support application. The support of application in respect to Administration of application, operational support and maintenance.

During the cross over, GIPL shall provide the plan for capacity building initiative to enable each Municipality to manage the e•Governance application. As per the proposal on capacity planning from GIPL, Municipality shall work on the plan for Capacity Building (CB) required at Municipality to manage the application and a Transition Plan to affect the handover; And implement the same in collaboration with each Municipality before the completion of the engagement.

Exclusions

- The bidder shall not be liable for any data entry work of past records. If required the same shall be done on chargeable basis.
- SMS Gateway rates are controlled by TRAI regulations and telecom operators. Any changes in rates due to direct/indirect changes in TRAI regulations &/or Operators rate revision, the same shall be applicable.
- Any additional usage of SMS will be charged extra
- 5 days training on each stage of deployment for each municipality is proposed in this proposal. Any additional training requirement will be at extra cost
- The Financials proposed for the resource in project is on T & M basis.
- The financials to be quoted in this tender does not include costing for phase II & III respectively.
- The transactional cost for online payment gateway will be charged as per payment gateway selected and as per RBI regulations from time to time.
- GIPL has tie-up with Bill Desk & Atom Payment Gateway providers and same shall be used for eNagar.

- Data entry/Digitization is not a part of this tender and separate tender will be carried out for the same.
- Any delay in execution of project due to delay in resources / approvals at various stages from department / ULB's shall not be considered as delay by bidder.
- It is expected that existing data will be provided in formatted excel sheets or web services will be provided to get the data from existing application.
- Networking equipment, System software (Operating System for server, DB etc.) and client machines with required operating software on client machine will be provided by the UDD.

List of services identified in Service Groups

Sr. No.	Services List
1	Main portal (EMS / Dashboard)
2	New assessment of property tax
3	Name Change in property
4	Grievances & redressal in New assessment of property tax
5	Tenant Name Change/cancellation
6	New water connection
7	New drainage connection
8	Residential (Personal) Building permission
9	Residential (Society/Complex) Building permission
10	Industrial /Commercial/Others Building permission
11	Birth Certificate
12	Death Certificate
13	New license for Shops & Establishment
14	License renewal for Shops & Establishment
15	License for Edible non- edible
16	Registration of engineer/architect/structural designer/plumber/contractor
17	Hawkers Registration
18	Professional Tax Registration
19	NOC for Fire
20	NOC for the Layout (Non-Agricultural permission)
21	NOC for sub-planning
22	NOC for plan renewal
23	NOC for Building Utilization Permission
24	Copy of Town planning (T.P.) Form - F
25	Part Town planning (T.P.) plan
26	Zoning Certificate
27	Permission for individual toilet
28	Certificate (MA AMRUTAM YOJNA)
29	SUVRNA JAYANTI SAHERI YOJNA (Backable)
30	Complaints to lift animal carcasses

31	Complaints to clear garbage
32	Complaints for water connection leakage
33	Complaints for water chlorination
34	Complains for drainage overflow
35	Cleaning of public toilets
36	Complaints for polluted water
37	Complaints for the maintenance/repairing of road
38	Complaints for repairing of open drainage
39	Complaints to cover man-hole
40	Complaints for water low pressure
41	Complaints for cleaning of Roads/public Area
42	Complaints to lift filled dustbin
43	Complaints for funeral of unclaimed dead body
44	Complaints for touring roaming animals (Dog/Pig/Cow/Buffalo)
45	Complaints for maintenance/repair of street light bulbs/tube lights
46	Fire extinguisher Services
47	Medical Services
48	Marriage Registration
49	Grievance redressal
50	Estate rent
51	Community hall & parks
52	Signage board lease

The scope of work of above mentioned services includes but not limited to the following:
- Online Registration / application
- Dynamic configuration for Localization at ULB level
- Application for change in details (name/address/etc.)
- Online payment (wherever applicable)
- Generation & certificate issuance
- Workflow / approval processes
- Information distribution (SMS/Email)
- Receipt issue
- Application status tracking
- Duplicate certificate / receipt

Following is added in to the scope of work as stated below:

❖ **Internet Bandwidth supply (Newly Added):**

The Internet Service Provider has to supply, install & commission (1) 45 Mbps dedicated internet bandwidth initially at State Data Center, Gandhinagar (2) 5 Mbps dedicated internet bandwidth at all 08 municipal corporations & (3) 2 Mbps dedicated internet bandwidth at all 158 municipalities. The Internet Service Provider shall be responsible for establishing setup to utilize GSWAN network as primary & own internet bandwidth supply as backup source to access application at all remote locations using secure VPN channel without change in IP scheme in coordination with DST.

## 7 Technology Requirement for Application Development

This section gives details pertaining to the aspects associated with the Solution architecture that has to be adopted by the bidder while designing the solution. The bidder has to take into consideration all components required for the solution development and deployment. The proposed architecture has to be designed in such a way that it is capable of accommodating future enhancements in terms of functional and non-functional requirements.

The Application architecture is revised from hybrid architecture to centralized architecture.

The bidder has to provide a common mechanism for user authentication & information distribution (Email/SMS Gateway) is under development through common service portal and the same should be used to ensure single sign-on for all government services. Once the development is completed the bidder is required to use the same through web services to be provided by DST.
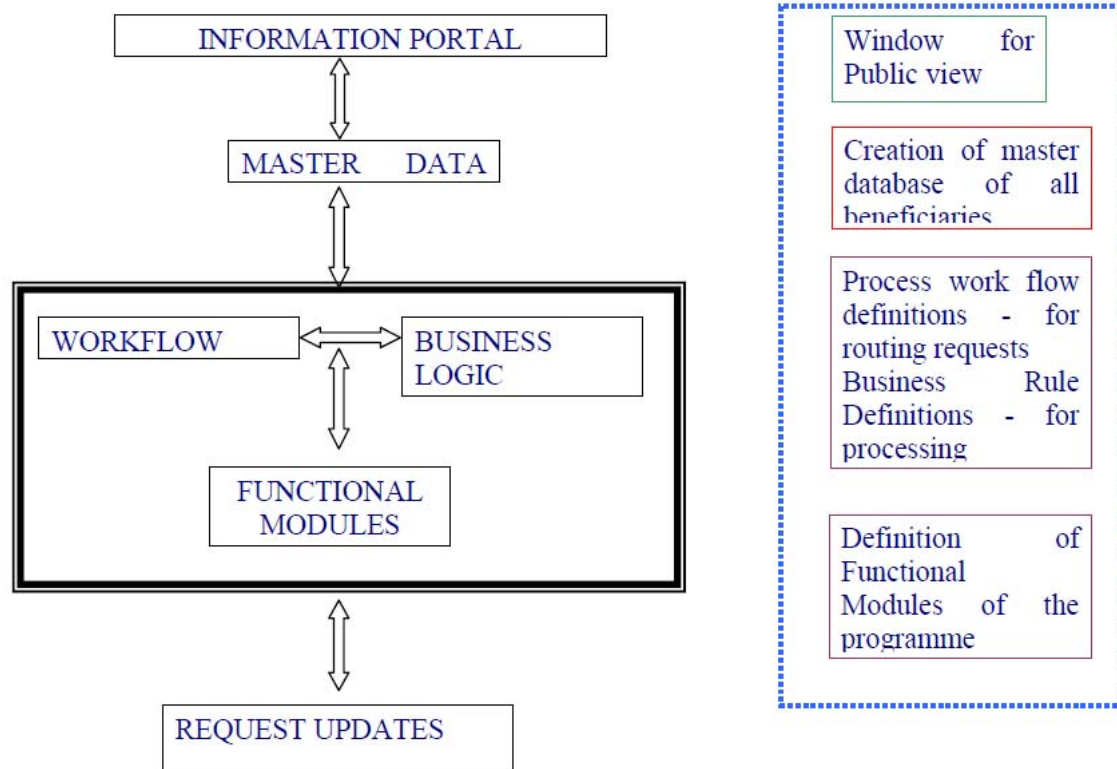
Technical Architecture

Distributed Architecture

APP SYNC

APP SYNC

ACTIVE -
ACTIVE

D
B
S
Y
N
C

D
B
S
Y
N
C

SHARED STORAGE
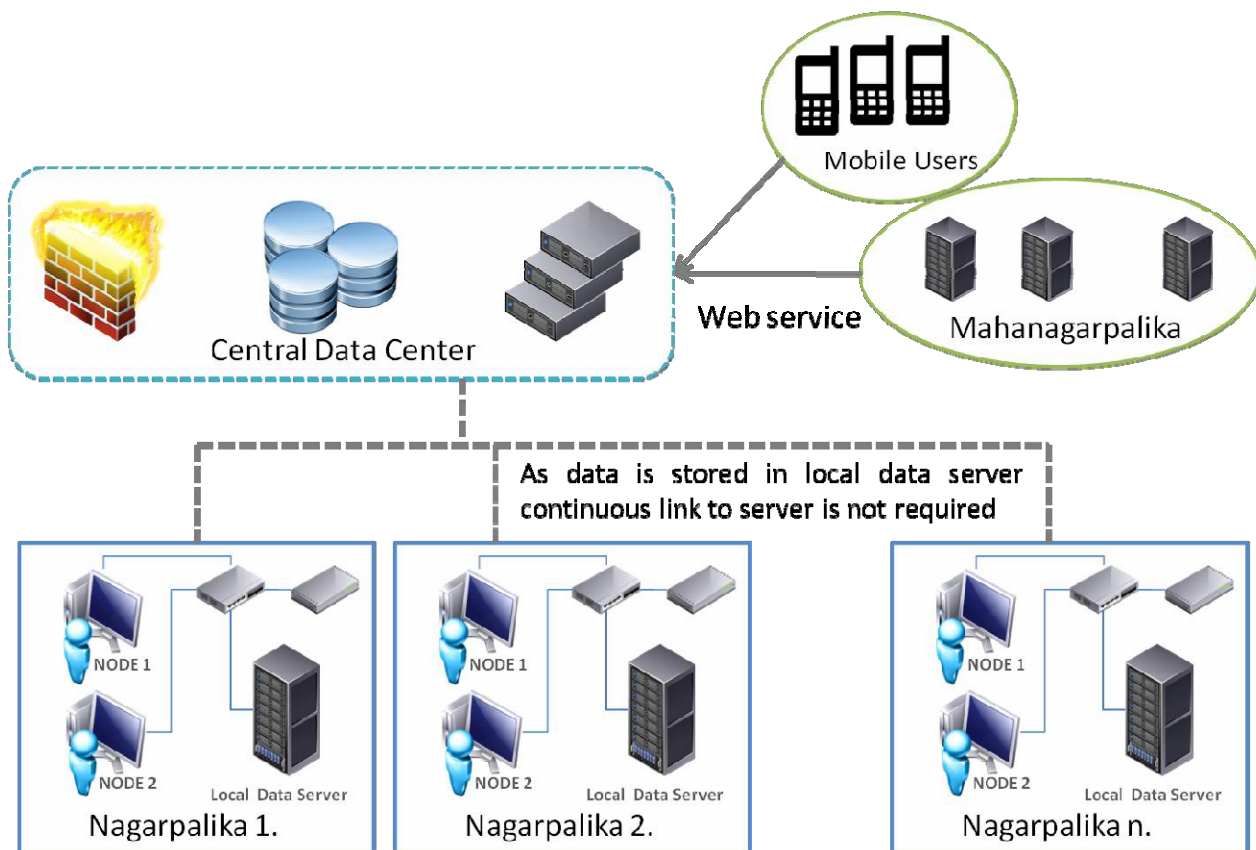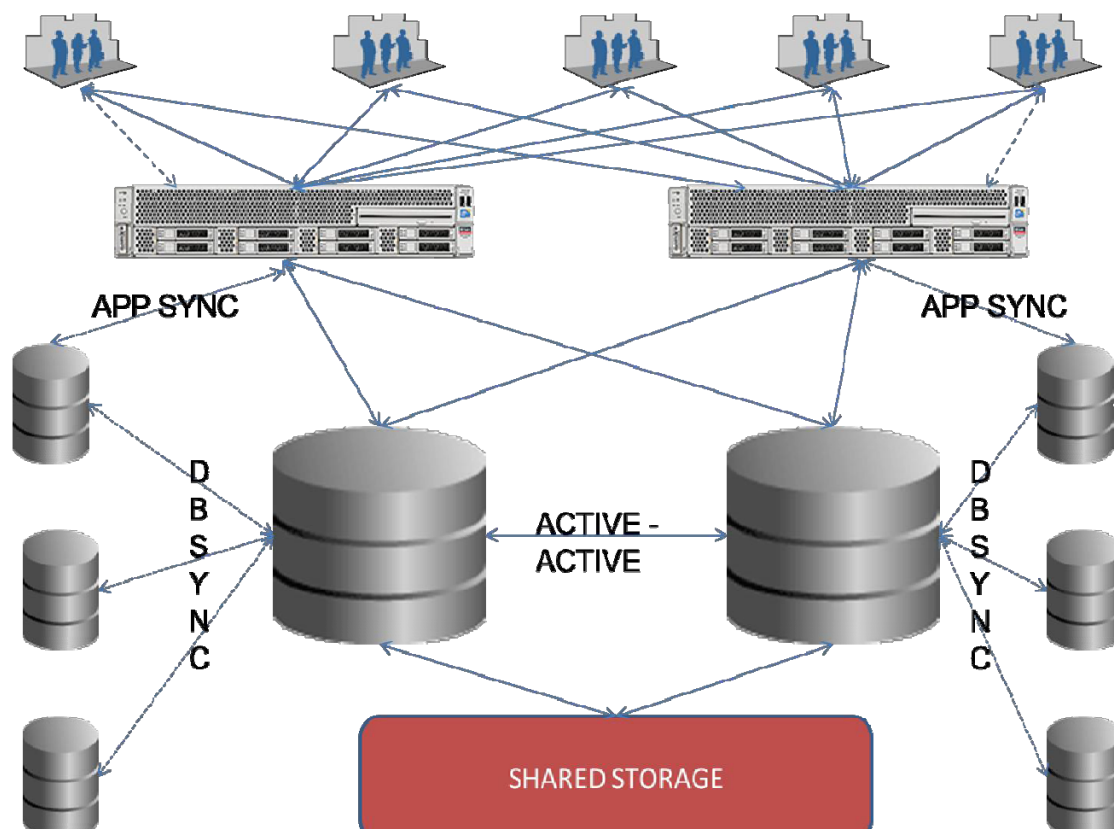
Logic Map:

The proposed logic map explains the functions and processes involved in the solution. The beneficiary at the lowest level would send the requests to the concerned officers through a portal available over the Local Area Network (LAN) / Internet. These requests would follow the general business rules governing the various schemes and workflow logic of the departmental hierarchy. The data would be updated in a master database and further all the processing would be dependent on this database. There will be an information portal for the public / beneficiaries to access the database and avail the necessary information through the internet. The scheme management application normally contains four typical modules: Planning, Implementation, Monitoring and Reporting. The scheme activities at various levels will be planned. The plan approvals will be sought from the department. Funds will be requested from bottom to top and will be allocated. The scheme progress will be reported on the planned activities and the evaluation can be done outside the system and report will be filed in the system.

Existing Scenario Survey results

Services	Yes	No
Connectivity – GSWAN	40	11
Broadband	49	2
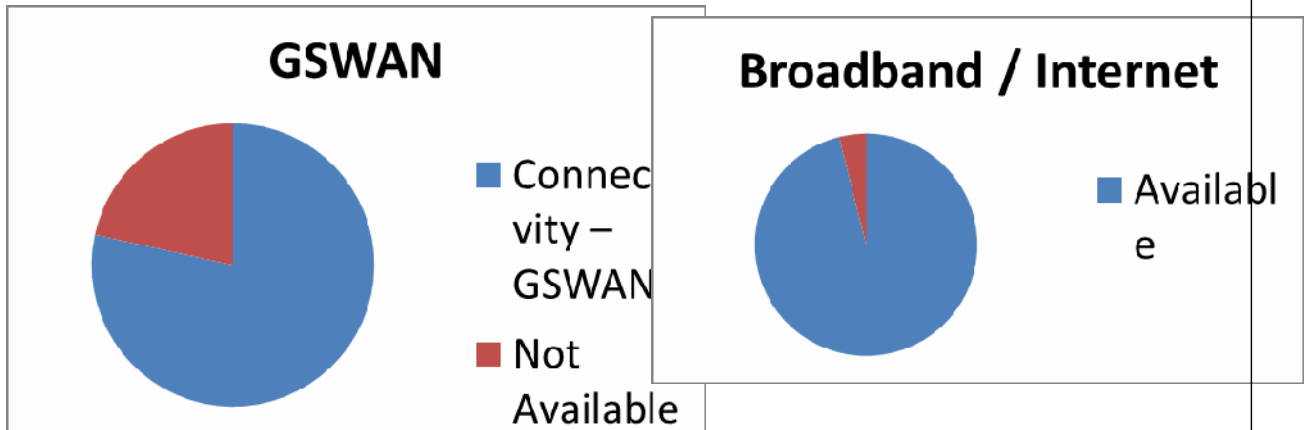
Hardware Specifications

Specification of Database Servers, Application servers, Portal Servers & User Authentication Server

Please find new technical specifications of applicable to Database Servers (03 Nos.), Application Servers (02 Nos.), Portal Servers (02 Nos.) & Quality Control / Development Server (01 No.) as stated below:

Sr. No:	Features	Specifications Required
1	CPU	64 Bit, 2*Intel® Xeon® **E5-4600 or higher CPU (2.6 GHz**, 8-core, **20MB** cache, **7.2** GT/Sec) Processor.
2	Architecture	Intel
PROCESSOR BUS ARCHITECTURE		
3	Form Factor	Blade Form Factor
4	No. of CPUs	16 cores using minimum 2 processor sockets
5	Scalability	Upgradable up to 32 cores using 4 processor sockets. When it is required to upgrade the CPUs to 4, No other component other than CPU / Memory are required
System Memory		
6	Memory	Minimum 128 GB DDR3 Memory should be configured with future scalability upto 1.5TB (48 DIMM Slots)
Hard disk internal		

7	Controller	SAS/SCSI/SSD
8	Internal hard disk Bays	hot-plug SAS/SATA/SSD drive bays
9	Disk capacity	2 x 300 GB SAS/SCSI with 15K rpm or more OR 2 x 300 GB SSD
Networking		
10	Ethernet	4*10 Gbps ports or more
Input / Output		
11	FC HBA	2*dual port 8Gbps FC HBA
12	PCI Slots	Minimum 4 PCIE Slots
13	RAID features (Hardware RAID)	RAID 1,0
14	Miscellaneous	LCD / LED indicators to identify System Health & failed components. System management should be through dedicated ports and should not use the adapters provided for the application
		All servers shall be booted through Internal SAS drives with HW RAID.
		Should support remote console sharing upto 10 users simultaneously during pre-OS and OS runtime operation, Console Replay that captures and stores and supports replay of the console video during a server's last major fault or boot sequence, Microsoft Terminal Services Integration, 128 bit SSL encryption and Secure Shell Version 2 support.
		Should provide support for AES and 3DES on browser. Should provide remote firmware update functionality. Should provide support for Java free graphical remote console.
15	Products Certifications	UL / FCC, Should be in the in the list of top 5 server brands as per IDC latest report published for India.

> **Please find new technical specifications as stated below & will be applicable to following only:**

(1) User Authentication Server (01 No.)
(2) SMS / Email Gateway Server (01 No.) &
(3) Sandbox Server (01 No.)

Sr. No:	Features	Specifications Required
1	CPU	64 Bit, 2*Intel® Xeon® **E5-4600 or higher CPU (2.6 GHz**, 8-core, **20MB** cache, **7.2** GT/Sec) Processor.
2	Architecture	Intel
PROCESSOR BUS ARCHITECTURE		
3	Form Factor	Blade Form Factor
4	No. of CPUs	16 cores using minimum 2 processor sockets
5	Scalability	Upgradable up to 32 cores using 4 processor sockets. When it is required to upgrade the CPUs to 4, No other component other than CPU / Memory are

		required
System Memory		
6	Memory	Minimum 64 GB DDR3 Memory should be configured with future scalability upto 1.5TB (48 DIMM Slots)
Hard disk internal		
7	Controller	SAS/SCSI/SSD
8	Internal hard disk Bays	hot-plug SAS/SATA/SSD drive bays
9	Disk capacity	2 x 300 GB SAS/SCSI with 15K rpm or more OR 2 x 300 GB SSD
Networking		
10	Ethernet	4*10 Gbps ports or more
Input / Output		
11	FC HBA	2*dual port 8Gbps FC HBA
12	PCI Slots	Minimum 4 PCIE Slots
13	RAID features (Hardware RAID)	RAID 1,0
14	Miscellaneous	LCD / LED indicators to identify System Health & failed components. System management should be through dedicated ports and should not use the adapters provided for the application
		All servers shall be booted through Internal SAS drives with HW RAID.
		Should support remote console sharing upto 10 users simultaneously during pre-OS and OS runtime operation, Console Replay that captures and stores and supports replay of the console video during a server's last major fault or boot sequence, Microsoft Terminal Services Integration, 128 bit SSL encryption and Secure Shell Version 2 support.
		Should provide support for AES and 3DES on browser. Should provide remote firmware update functionality. Should provide support for Java free graphical remote console.
15	Products Certifications	UL / FCC, Should be in the in the list of top 5 server brands as per IDC latest report published for India.

Specification of Blade Enclosure

Sr. No:	Specifications Required
1	Blade Server Chassis/Enclosure must be quoted as required by OEM solution architecture
2	Up to 10U chassis with minimum 7 Full Height Blades/14 half Height blades/28 quarter height blades
3	Must be configured for redundant power supplies, fans. Necessary PDUs to be provided. Power supplies, fans should be capable of reconfigure without manual intervention
4	Redundant 10Gbps L2/L3 Ethernet switching module to be provided to connect all the blades to the LAN and should be configured to minimize the no. of ports in the external switch as also to reduce the no. of cables coming out of the chassis.

5	Should be configured with redundant hot pluggable management module to manage the blades using GUI
6	Should support simultaneous remote access of different servers in the chassis
7	At least two chassis to be provided for production environment for ensuring chassis level redundancy
8	Redundant FC pass-through modules to be provided to connect with external san switches. So as to all blade to have redundant FC adapters to ensure no single point of failure
9	Each blade enclosure should have cooling subsystem consisting of fully redundant hot pluggable fans or blowers. In case of failure the balance fans/blower should ensure the smooth
10	functioning of the blade system with all servers populated till the fan is replaced
11	Must have at least one DVD(R/W) drive per chassis (Internal /External through USB cable)
12	Necessary FC Cable & Ethernet cable for connectivity to be supplied by SI/OEM with respect to their hardware requirement

Specifications of Load Balancer

Sr. No.	Description
1	**Architecture**
1.1	Should be appliance based solution
1.2	Should have minimum 10 Gigabit Ethernet Optical Fiber Ports
1.3	Should have further port scalability by adding additional SFP Modules
1.4	Should have minimum 4 GB memory
1.5	Should support1 Gbps throughput and scalable in future with just license upgrade and no additional hardware
1.6	Should have capability to support port trunking
1.7	High MTBF of more than **70,000 or higher Hours,** validated by third party
1.8	Should have Quad Core CPU
1.9	Should support up to **20,000** SSL TPS of 2048 bit key strength.
2	**Mode of integration, IP Addressing (IPv4 and IPv6) and Routing features**
2.1	System supports routed mode
2.2	System supports transparent mode
2.3	System supports one-leg mode
2.4	System supports direct server return mode
2.5	Should have capability to integrate in Virtualized Environment
2.6	Should have capability Automatic synchronization of VMWare virtualization changes to the ADC, out-of-the-box
2.7	Should support IPv4 addressing
2.8	Should support IPv6 addressing
2.9	Should support IPv6 client and IPv4 servers
2.10	Should support IPv4 client and IPv6 servers
2.11	Should support routing protocols RIP, OSPF and BGP to participate in Dynamic routing
2.12	System should have IPv6 Ready logo (www.ipv6ready.org)
2.13	Should be IPv6 certified by TEC of DOT (www.tec.gov.in/IPv6/proceedings/guidelines/IPv6certifiedproductsList.pdf)

3	Load Balancing Features
3.1	Minimum support for 100 Servers & Maximum for 3000
3.2	Should support load balancing algorithms
3.2.1	Least amount of Bytes to specific server or specific server in specific farm
3.2.2	Least number of users/session to specific server or specific server in specific farm
3.2.3	Round Robin / Cyclic
3.2.4	Weighted Cyclic
3.2.5	SNMP Parameters, like Server CPU utilizationetc.
3.3	In case of Server / Application failure device should detect it in not more than 30 seconds
3.4	Should support TCP, UDP and SCTP based applications load balancing
3.5	Should able to load balance traffic based on Source IP, Destination IP & TCP PORT
4	**Server Management and NAT Feature**
4.1	Should support Graceful shutdown of Servers
4.2	Should support GracefulActivation of Servers
4.3	Should support Server NAT
4.4	should support Outbound NAT
4.5	Should support Client NAT (Proxy)
6	**Server and Application Health Check features**
6.1	Should provide individual health check for each Server & Application and In case of Server or Application failure device should detect it in not more than 30 seconds
6.2	Should be able to do health check on protocols like HTTP, SMTP, POP etc
6.3	Should able to check the health of Server OS, Application & contents as well
6.4	Should provide AND , OR mechanism between health check
6.5	Should provide GUI interface to configure any health check
6.6	Solution should support detection of application performance issues
6.7	Solution should support monitoring end-to-end SLA of applications
6.8	Solution should provide complete visibility into your applications' performance with a breakdown by application, location or specific transaction.
6.9	Solution should provide historical reports with drilldown-able granular analysis providing measurements of the delay per each application, including data center time, network latency and browser rendering time
6.10	Should support extraction of performance information from the end-user devices to reflect actual end-user QoE - wherever the clients are, at all times
6.11	Should support drilling down the application SLA to the geo-location level, allowing administrators to determine if there's a problem with users from a specific region.
7	**Redundancy**
7.1	Should Support VRRP
7.2	Should support **USB based fast** failover between 2 devices **for HA**
7.3	Should support Client table Mirroring from Active to Backup Device
7.4	Should support Persistency / stickiness information mirroring from Active to Backup device for persistent /sticky sessions, like JSESSIONID, ASP.NetSESSIONID, Cookies
8	**Application Acceleration Feature**
8.2	Should support http compression & Caching features
8.3	Should support Trusted-Services status List (TSL) for Client Authentication
8.4	Should support SHA-2 signing algorithm for server's and client's certificates
8.5	Should able to validate any client certificate field/extension value against a configured list of allowed values without the need for scripting solutions

8.6	Should not compress objects that are known to have problem with specific browsers. This ability should be scoped per object type and client browser type, and allow the user to review and modify the list of predefined compression exceptions
8.7	Should have caching solution optimize client browser caching time by changing objects headers
8.8	Should allow user to define whether server selection is done per connection or per request
8.9	System supports passing client IP addresses through Secure Socket Layers (SSL) on server
8.10	Should support client CA (2 way SSL handshake)
9	**Support for Global Server Load Balancing**
9.1	Should support DNS based redirection
9.2	Should support HTTP redirection
9.3	Should support Global Triangulation
9.4	Should support VIP advertisement via Dynamic Routing
9.5	GSLB Should be supported on same hardware appliance without any additional hardware
9.6	GSLB should work in Active-Active mode for Minimum 4 Sites
9.7	System supports global response time optimization in real-time through advanced load and proximity measurements, load and proximity
9.8	System Should support Static and Dynamic Proximity Both
10	**Support for Persistency mechanism**
10.1	Should supports session persistency based on Cookie
10.2	Should able to maintain server persistency based on OMPC filters
10.3	Should supports session persistency based on IP Hashing
10.4	Should supports session persistency based on Session ID (text match (IP/Port))
10.5	Should supports session persistency based on Pattern match (URI, offset value, and so on)
10.6	Should supports session persistency based on Generic packet-header bit / data patterns
10.7	Should supports session persistency based on SIP tags
10.8	Should supports session persistency based on HTTP header value
10.9	Should supports session persistency based on RADIUS
10.10	Should supports session persistency based on UDP session tracking
10.11	Should supports session persistency based on DNS request
10.12	Should support server persistency based on XML tags attributes or XML tags values, without the need for scripting solutions. The solution should allow matching different tags in requests and responses.
11	**Device Management & Reporting**
11.1	Should provide GUI interface for configuration & reporting
11.2	Should provide HTTP / HTTPS interface management
11.3	Should provide SSH / Telnet / CLI interface
11.4	Should support SNMP V1, V2c, V3
11.5	Should provide Detailed LIVE reporting for traffic on each server / Farm
11.6	Should provide detailed historic reporting for each server / farm traffic
12	**OEM's Install Base**
12.1	The OEM should have min. of 10 clients or installations in India for proposed product
12.2	OEM should have their own Technical Assistant Centre & R&D center in India for 24/7 online Tel. / remote support
12.3	OEM should be present in Gartner's Leader Quadrant/IDC in recent report for the proposed Product line.

12.4	OEM should be present in **Gartner's Leader Quadrant / IDC in recent report.**
12.5	Compliance should be supported by cross reference in public domain
12.6	OEM should have min. of 8 certified engineers in India for Onsite support
12.7	Should be present in India for minimum **8 or higher** Yrs.

Roles & Responsibilities of Stakeholders

1. The purpose of stakeholder involvement analysis is to assess the overall project environment and to help identify key persons, groups or institutions with an interest in the project or program and assess how their interests may affect its success.

2. As part of the project management, each selected Municipalities shall appoint a Project Implementation Core Group (PICG). The PICG will have the mandate to approve processes and stages and take all decision with regard to project Implementation. The PICG shall form sub committees for Evaluation, Testing, and Monitoring etc which shall evaluate the business solutions, processes and documents, proposed and submitted by GIPL for piloting from time to time as well as the project timelines.

3. The PICG shall be headed by a senior official designated as the Head, PICG who shall be the responsible for all day to day decision making for this project.

4. The sub committees will be formed on the directions of PICG for specific functions as mentioned above (but not limited to) and will report to the PICG, which will evaluate the fit of the workflows as proposed by the consultants. In addition, this team will be involved in supporting the implementation phase.

5. Each Municipality will provide secured place and furniture for staff for uninterrupted operations within its premises.

6. Timesheets maintained by clients/ consultants will be approved by PICG officer on monthly basis and send to GIPL.

7. On the commencement of the project, data to be migrated will be provided by Municipalities. The same data entered by consultant and will be verified and approved by the Municipalities.

8. Conduct User Acceptance Testing and give suggestions to PICG.

9. Put in place a system to create and manage public opinion for acceptance of new system including awareness campaigns.

The Project Implementation Team

1. The Bidder shall submit to Project Implementation Core Group (PICG) for approval of the Client a list of persons who shall be designated as Authorized Team and shall be issued a means of identification and authentication by PICG.

2. The Project Manager shall be responsible for the day-to-day management and technical supervision of the Authorized Team for the performance of the Project. Such person shall have single point responsibility for ensuring that all Authorized personnel are complying

with the terms and conditions set out in the Contract and the Tender Document. All instructions/communications from PICG to such persons shall be deemed to have been duly provided to the PICG.

3. The Bidder shall ensure that the Authorized Team is aware of and abide by the applicable computer use and misuse laws and regulations, intellectual property laws and regulations and the privacy laws and regulations and any other laws and regulations that may apply in relation to this Contract and the Tender Document. The Bidder shall ensure that sufficient training is given to keep the Authorized Users familiarized and updated on these subjects.

4. Except with PICG's prior written consent, the Bidder shall ensure that the Authorized Team do not install and / or cause to be installed any hardware, software, electronic, or other security mechanism or any computer virus or other disablement, deactivation, reinstallation, damage or deletion mechanism which will hinder use of any of PICG's systems.

5. PICG shall at all times reserve the right, at its sole discretion and upon written notice to the Bidder, to require the immediate removal of any Authorized Team Member. The Bidder shall, forthwith, at its own expense comply with any such request and provide a suitable replacement. In the event that the Bidder wishes to replace or remove any Authorized Team Member, the Bidder shall only do so with PICG's prior written consent.

Bidder

1. Customize, Test and Install a scalable and secure product so as to make product compliant with requirements

2. Prepare System Requirements Specifications (SRS) and get it approved

3. Provide training to core users of each Municipalities and make them familiar and conversant with operations of the application.

4. Provide one mass/public training to all registered architects of each ULB to make them familiar with the operations of the system the facilities provided by the ULB for building permission system.

5. Meet the functional requirements specified in this RFP

6. Provide one soft copy of user manual to each Municipality.

7. Provide Post implementation support to the Municipality as specified.

8. Prepare and submit reports at periodic intervals on the progress of the project

9. Follow terms and conditions as finalized

10. The Bidder will be open for Third Party Evaluation of the piloting of project during the entire period of the pilot and provide all information as required