Scope of Work

Design, Development, Re-engineer and Implementation of Organizational Process Automation Platform

for

Geological Survey and Mines Bureau

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1 Background

1.1 Geological Survey and Mines Bureau

Geological Survey and Mines Bureau (GSMB) is a successor to the Geological Survey Department, established under the Mines and Minerals Act No 33 of 1992. The mission of the GSMB is to provide Geo-Scientific information, advice and services to the policy makers and the community and to promote and manage the mineral resources of the country for economic development while ensuring environmental sustainability. It regulates exploration, extraction, processing, value addition, transportation, trading, export and import of minerals.

GSMB mainly consist of two divisions (Geology and Mining) and several support divisions (Finance, Human Resources, Internal Audit, Legal and IT) that serve to the two core divisions.

1.1.1 Mines Division

Mines division is operational under Mining (Licensing) Regulations made under the Mines and Minerals Act No. 33 of 1992 and the amended Act No. 66 of 2009. The main tasks of the division are;

- Issue License for exploration, extraction, processing, value addition, transportation, trading, export and import of Minerals
- Conduct ongoing monitoring on the licenses that have been issued
- Royalty collection
- Information exchange and continuous communication with law enforcement organisations in monitoring and controlling mineral related activities in Sri Lanka.

All the regional offices of GSMB and authorized activities based on Divisional Secretariats Offices are directly under the Mines Division.

1.1.2 Geology Division

GSMB Geology division is the national authority on any Geology related activities and Geological research, and acts as the central hub of knowledge on any geological information in Sri Lanka. It consists of several sub divisions as listed below, providing variety of services to individuals, organisations, public and government.

- Analytical Laboratory — Provide chemical analysis of rocks, minerals, ores, ground water, surface water, industrial effluents and other miscellaneous minerals using international standards.
- Petrology Laboratory — Provides mineralogical and petrographic analysis of rocks, minerals, ores and allied materials.
- Geophysical Laboratory — Provide services on analysing the geophysical characteristics of the mineral components. This section is equipped with instruments that would be used in their analysis and would conduct major part of their analysis in the field.
- Seismic Data Analysis and Tsunami Alert — The main objective of this unit is monitoring of seismic activities coming from local and international seismic centers and provides information and warning on

Center	probable Tsunami occurrences.
• Cartography	Cartography is the unit which is responsible for development of geological maps of Sri Lanka. A cross divisional team of professionals is involved in ongoing national plan to produce the geological maps with involvement of external experts that contribute their knowledge in verification of information on maps.
• Drilling	GSMB supplies the specialized service on drilling for mineral exploration, mining, engineering activities related to geology etc. this division is also a consumer of specialized equipment and services involves many field investigations.
• Library	GSMB library contain valuable collection of literature that is specialised in Geology. GSMB staff can borrow the books and general public can refer the books with permission from DG. Addition to managing the books and publication, library manages the selling of GSMB merchandise such as maps and research publications
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1.1.3 Finance Division

Finance division manages financial side of the GSMB operations. The scope of the Finance division pans across the organisation in handling all incoming and outgoing monitory transactions.

1.1.4 Legal Division

This division handles the legal matters related to GSMB. This division carries out the law enforcement related activities in the mining industry. It's an autonomous unit reporting to Director General.

1.1.5 Internal Audit

Internal Audit division plan and carry out Audit process for GSMB to comply with the government regulations and assist government auditors with their tasks.

1.1.6 Human Resources Division

Administration Division is responsible for managing the operational aspects of GSMB. It is responsible for management of human resource, procurement, transport, etc.

1.1.7 Mineral Intelligence Unit

This is a team made out of members of both Geology and Mines Divisions. It is responsible for making recommendations to the Director General on nationally important issues that concerns both Geology and Mining fields of Sri Lanka.

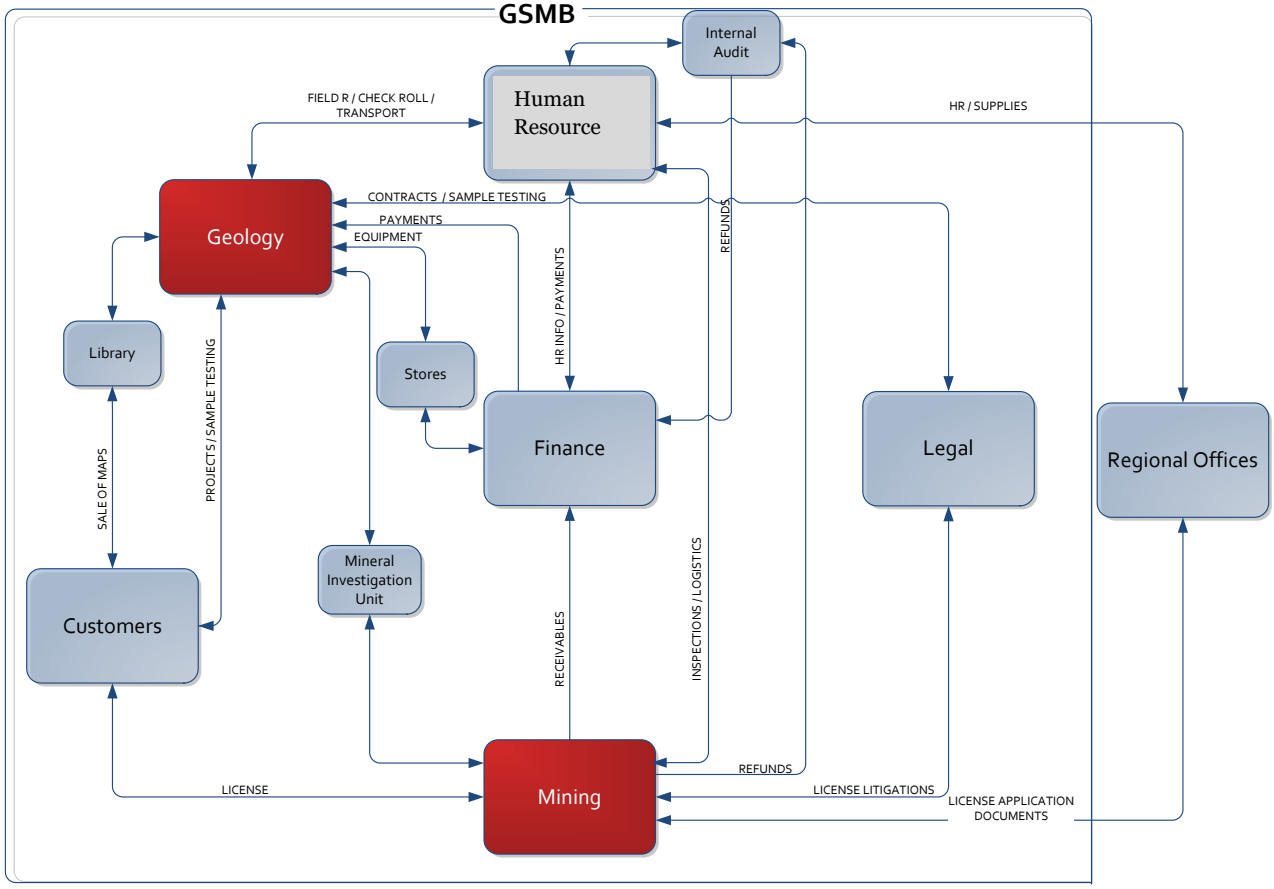


Figure 1: GSMB Current Organisational Structure

1.2 Current Situation in Operations

GSMB operations has been modified, altered and added on for many years as for the requirements of the Government, customers, law enforcement authorities and public. These changes has been added to GSMB in an ad hoc manner and resulted in unstructured growth throughout the organization.

Currently there are several isolated systems that are running that assist finance, payroll, mining license issuing, human resource management and library management.

Structure of operations in GSMB has been disrupted due to these reasons. The process and service levels are not consistent and heavily dependent on the GSMB personnel that is delivering the service to the client in Mines Division. In Geology Division there is an issue in managing both human and physical resources. Support service division such as finance, administration faces problems due to lack of communication and information in carrying out their operations.

Under these circumstances, GSMB has undertaken to carry out a Government Process Reengineering (GPR) project. The project under discussion to Design, Development, Re-engineer and Implementation of Organisational Process Automation Platform, is based on those GPR recommendations.

1.3 Government Process Reengineering Project

Government Process Reengineering (GPR) study is conducted to identify improvement opportunities available prior to automation of their processes.

This mainly includes improving the efficiency of issuing licenses for the regulation of exploration, mining, processing, value addition, trading, transporting, export and import of minerals. GSMB also intends to conduct Geo-scientific research, projects and maintain national geo-science database and ensure proper dissemination of information to the public.

GPR study has focused on a diagnostic study on the current processes, IT structure and regulatory structure in order to identify where the efficiency can be improved at GSMB. The detailed analysis of the organisation identified lack of standardisation and process inefficiency as the main issues. Unavailability of a central information repository has caused a lot of difficulties in the sharing of information across the organisation which ultimately result in a vast amount of paper work and physical file movements. Isolated IT solutions that are currently available serves the relevant department, but these systems are not integrated properly for information dissemination.

Based on the above diagnostic, recommendations are made and are to be implemented within this project.

1.4 Stakeholders of the Project

GSMB Staff	The proposed project would automate and standardise the processes that would assist the GSMB in delivering a more effective and efficient service to its internal and / or external customers.
GSMB Management	Would give access to higher quality information on GSMB activities.
GSMB Customers	GSMB will be able to deliver better service through the implementation of proposed recommendations. Service delivery is expected to be efficient, consistent and of high quality.
Law Enforcement Organisation	Law enforcement organizations such as police would get accurate and fast information for them to carry out their monitoring activities and to prevent illegal mineral related activities.
Public	General public would have more access to the services supplied by GSMB and better information regarding Geological data in Sri Lanka.
Government	Would be able to have better information and monitoring system enforced in dealing with mineral extraction and trading activities in Sri Lanka.
Related Organisations	There are several organizations with which GSMB is exchanging information and sharing operational activities. Through the proposed system, there collaboration would have an enhanced value. Information access will be streamlined and would be made to flow in both directions efficiently.

2 Objectives of the Project

The main vision of this project is to standardize, re-engineer and increase efficiency and effectiveness of GSMB processes and deliver an efficient public service. This vision is further segregated as specified. Each objective is then segregated to the task levels that need to be achieved through this project implementation.

2.1 Improving Efficiency & Effectiveness through re-engineering of overall process

This is the objective with which the consultant has greatest involvement in. Automation and related process improvements are addressed mainly within this objective. Consultants are expected to manage the technology development as well as process implementation to achieve this objective.

- Technology advancements
- Process advancements
- Internal process transparency improvement
- Improving physical structure of the organisation

2.2 Standardisation of processes

As specified GSMB growth has been ad hoc and process has grown unstructured. Within this objective all the processes are standardised and risk management policies and procedures are placed.

- Establish Risk Management Policies
- Establish work practices
    - Streamlining regulatory framework
    - Reduce paperwork

2.3 Improve Public Service Delivery

GSMB staff constantly supplies services to the public in various capacities. It is vital that this project enhance the quality of service supplied as its ultimate goal.

- External customer related process transparency
- Customer relationship management

Simplification of customer interaction processed and documentations

2.4 Employee Performance Evaluation through the System and Management of Resource Utilization (Human & Other)

3 Scope of Work

3.1 Approach and Tasks

a) The selected consultant shall base the development of the solution on the BPR performed at the Geological Survey and Mines Bureau (GSMB)

b) The selected consultant shall verify the requirements specified in the GPR with all the relevant stakeholders in GSMB and produce a detail software requirement specification.

c) Produce the detail technical design including the architecture, test plans, project implementation plans, detail test cases, specifications for the necessary hardware, data migration plan, deployment guide, UAT test cases and user manuals

d) The selected consultant shall adopt an iterative approach where the users should accept each iteration release into production.

e) The selected consultant shall design/develop the relevant re-engineered forms for GSMB

f) The consultant shall comply with the independent quality assurance process

g) The consultant shall conduct a user acceptance testing and obtain the necessary sign off for the complete solution.

h) The consultant shall complete the solution implementation within in 9 months period including the operational acceptance.

i) The consultant should follow agile development methodology.

j) The consultant should provide a turnkey solution with the necessary queue ticket printers, queue display, security stickers and sticker printers/ scanners. Hardware such as servers and computers for the users will be provided by GSMB. However the vendor should provide a detail analysis and the requirement of hardware to GSMB for the smooth running of the proposed solution

k) The solution should be deployed in Lanka Government Cloud (LGC).

l) The consultant should provide user manuals in proper format. All manuals should be in English.The user manuals should be available in electronic format.

m) The consultant should provide adequate training for the users of envisaged solution using operation documentations.

n) The system administrators of the GSMB should also be trained in relation to the system administration activities such as creating users, assigning user rights and back up procedures.

3.2 Final outputs ,Reporting Requirements and Payment Schedules;

Project duration is **6 months** including requirement gathering, designing, and developing, support & maintenance.

Time plan for these deliverables and the iteration schedule is to be produced by the vendors. The solution implementation shall commence with the acceptance of this schedule by GSMB.

Consultancy firm is required to submit the following list of deliverables;

Phase	**Deliverables**
Inception	1. Detail Requirement verification report and specification of solution 2. Solution implementing schedule 3. QA Plan and Test Cases 4. Specifications for hardware/ devices 5. Acceptance criteria for Deliverables, UAT
Elaboration	1. Solution Architecture and Detail Solution Design document 2. Data migration and integration plan (if applicable)
Construction	1. Proper maintenance of source code (should be available for review upon request of GSMB technical review committee) 2. Working modules of the solution at each iteration
Transition	1. Solutions installation guide 2. User manual in three languages 3. QA Status Report 4. Successful UAT acceptance of the eService
Support and Maintenance	1. Support and Maintenance Plan for a period of three years 2. Monthly support and maintenance status reports

3.3 Solution Scope

3.3.1 Assignment 1: Mining License Issuance System

The Mines Division is the major revenue generator for GSMB. The main task of the Mines Division is to issue license to explore, mine, process, value addition, transport, trade, export and import minerals. The aim is to regulate the mining industry in Sri Lanka and minimise the environmental damage caused by mineral extraction.

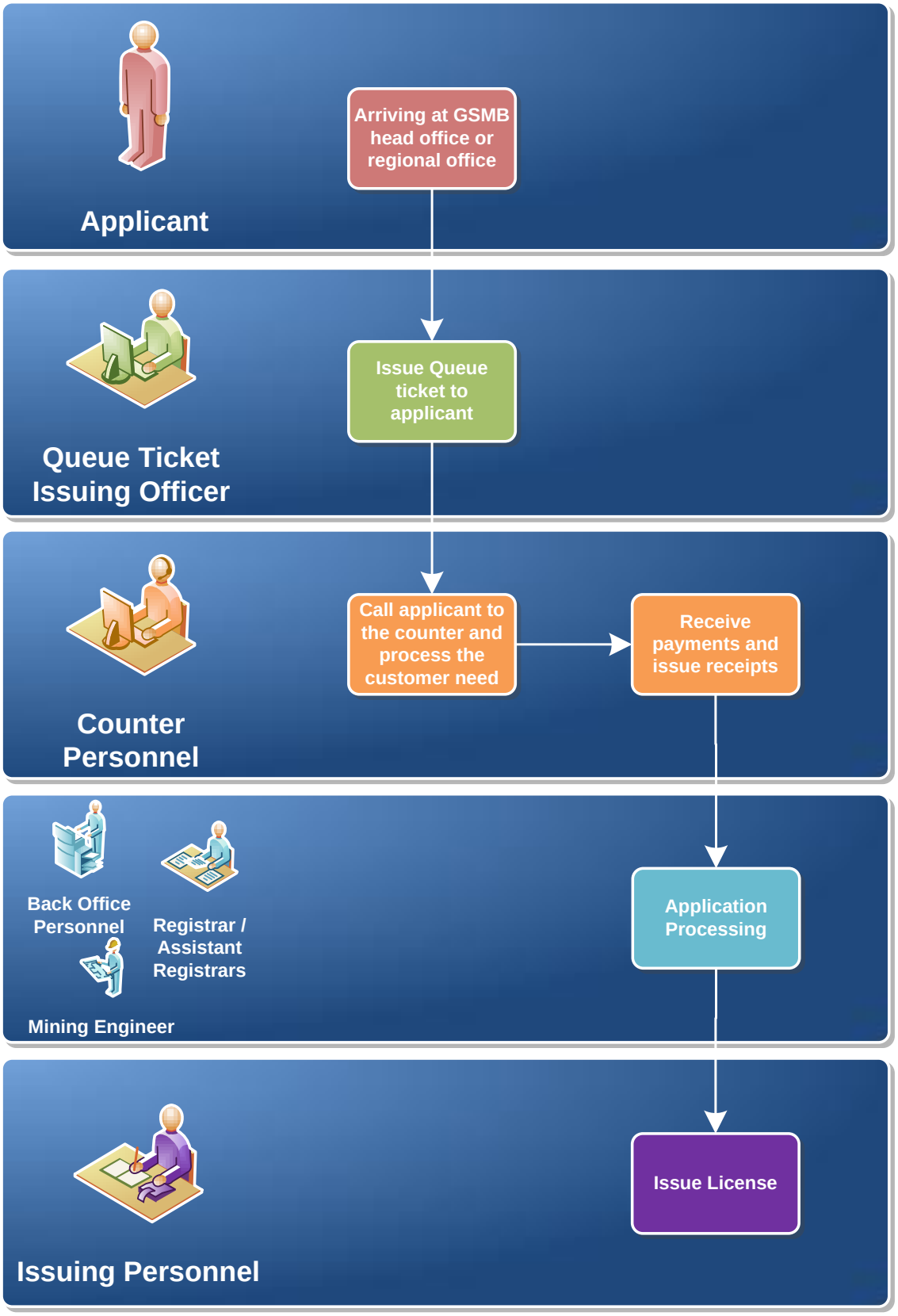
The eight types of licenses issued via GSMB;

1. Exploration License
2. Mining License
3. Processing License
4. Trading License
5. Transport License
6. Import License
7. Export License
8. Special Permission

Process illustrates the high level process flow of the proposed license issuance process. This will be the standard process through which a license or any other query sent to GSMB would travel. There will be exceptions and diversions of process flows according to the requirements of different types of queries/ licenses.

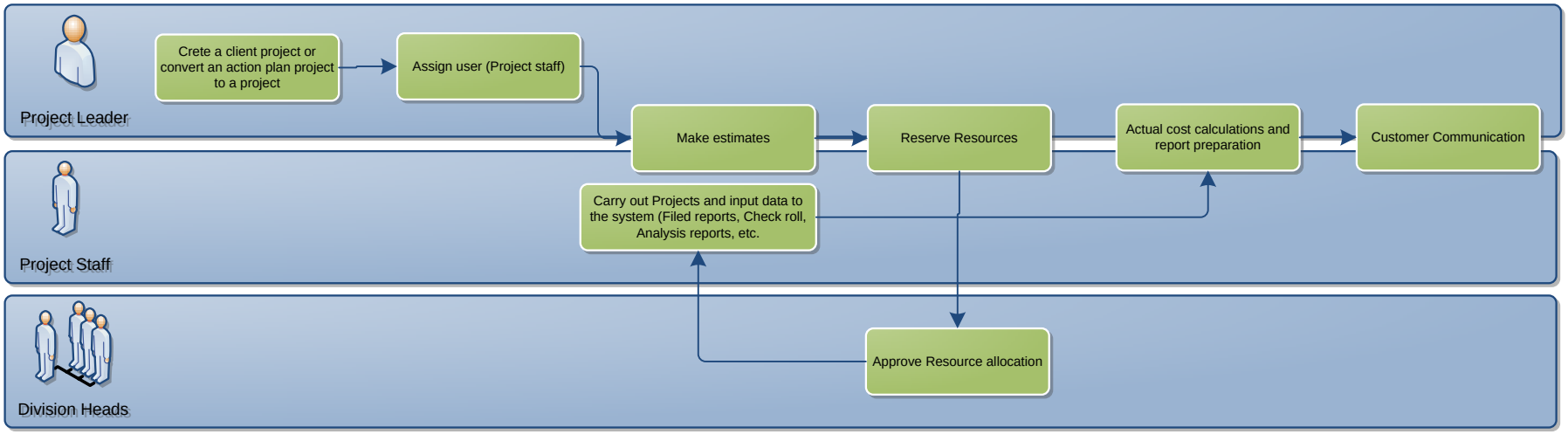
The main point of this process design is to minimise the customer point of contact. In the proposed process all customer queries are handled at customer facing counter. All the counter personnel need to be conversant in handling all types of queries received at the counter, who would be backed by the automated system for all the queries and requirements that would come from the customers. This can be facilitated by constant job rotation. The Information System outlined in the Technology section would assist them to provide better and faster service to customers.

The solution will consist of counter/ online application submissions, manual/ online payments, automated workflow management related to issuing the various types of licenses, printing/ issuance of licenses and monitoring of the consumption of the licenses. Further, solution providers are encouraged to come up with Electronic version of licenses.


Applicant
Arriving at GSMB head office or regional office
Queue Ticket Issuing Officer
Issue Queue ticket to applicant
Counter Personnel
Call applicant to the counter and process the customer need
Receive payments and issue receipts
Back Office Personnel
Registrar / Assistant Registrars
Mining Engineer
Application Processing
Issuing Personnel
Issue License

3.3.2 Assignment 2: Project Management System

Every activity that is undertaken as a project by GSMB will be handled via PMS may it be Geology, Laboratory, Mines or any other. The process is illustrated below;



Depending on the type of project undertaken, PMS would give functionalities to manage the system. This will be directly linked with the finance module to get estimates, actual and variance reports.

This would allow the GSMB to allocate costs, revenues and profit/loss to where it is due.

The Geology Division activities will have a better tracking ability and transparency in management and resource allocations.

Annual Corporate Planning process will be fully automated through the Project Management System as well. It will appear as a specific project of the PMS created by DG with access to authorised staff. At the initiation every one with access will be sent a notification to manage their assigned tasks. A GSMB staff member would insert his proposal and make and estimate as a subproject of that. After the deadline, section heads and DG would short list and send this to the Board of Management for approval of the next year action plan.

3.3.3 Assignment 3: Queue Management System

Every customer that arrives to get any type of service from the Mines Division of GSMB would be issued a queue ticket. The ticket will be issued at a ticketing counter situated at the entrance to the Mines Division. This ticket will be used throughout the process to call applicants to relevant counters.

The payment queue ticket holder would be directed to the "Express Counter", while normal ticket holders would be directed to the other counters randomly on a first come first served basis. Normal Tickets would also be directed to "Express Counter", in the absence of Payments Queue Tickets.

At the counter, depending on the type of activity performed the queue ticket would be linked with an application number.

3.3.4 Assignment 4: e-Record Room

e-Record Room is where all the digital records are stored. There is a large amount of documents and digital contents coming from all integrates system. This system would act as the hub for all those. The storing and retrieval of records from this system should be seamless to the users of other systems.

3.3.5 Assignment 5: Finance System

Financial transaction plays a major part of GSMB operations. All the major activities in all sections link to the Finance system making it the central financial hub of the integrated system.

3.3.6 Assignment 6: Issue Handling System

GSMB receives a bulk of communication from its customers and public regarding many issues from discrepancies in issued license to personal and public damage and miscarriages of justice related to mining activities. Currently these are not being managed in a properly and issues get aggravated to bigger problems. In order to mitigate this problem and provide a better quality public service, an Issue Handling System is recommended in GPR Study.

3.3.7 Hardware, Network Equipment and Peripheral Items

The vendor should provide a detail analysis and the requirement of hardware to GSMB for the smooth running of the proposed solution.

3.3.8 Other Considerations

3.3.8.1 Language Support

The entire range of solution to be implemented MUST support English, Sinhala and Tamil. All three language should have Unicode support and compliant with the government language requirements.

3.3.8.2 Software Licenses

All software should be loyalty free and licensed to GSMB on a perpetual basis and should be valid for use within all related sites. All custom build Software License should not be restricted on a user or seat basis.

3.3.8.3 Information System Security

The proposed system should be protected from unauthorized access, use, disclose, destruction, modification or disruption. The proposed Information Security Model could be integrated with the work flow model of the proposed system where it will work as an intelligent security management system.

3.3.8.4 User Training

Consultant MUST provide User Training for the users of GSMB on following areas at a minimum, before the commencement of operations. Consultant may propose any other User Training modules in addition to what is stated below.

- Application specific training
- System operation training
- User administration and management training
- System maintenance training

Consultant MUST provide User and Technical training in English and Sinhala.

3.3.8.5 Maintenance and Support Services

Consultant shall prepare detailed proposals on System Maintenance and Support Services. These proposals should reflect best industry practice. Consultant must provide System Maintenance and Support Services during the first three years starting from the date of acceptance of the System.

3.4 Minimum Qualifications of Software Development Service Provider

Key Professional Staff	**Academic**	**Experience in the <u>PROPOSED ROLE</u>**	**Experience in working in SOA / web services / integration projects**	**Experience in working in large scale integrated application implementations**
Project Manager	BSc in Computer science or equivalent	5 years	3 Projects	3 Projects
Software Architect	BSc/ MSc Computer science or equivalent	5 years	5 Projects	5 Projects

Technical Lead	BSc in Computer science or equivalent	3 years	3 Projects	3 Projects
Senior Software Engineer	BSc in Computer science or equivalent	2 years	3 Projects	3 Projects
Senior Business Analyst	BSc in Computer science or equivalent	3 years	n/a	5 Projects
Network/ Infrastructure/ Implementation Specialist	BSc in Computer science or equivalent	2 years	3 Projects	
Quality Assurance Lead	BSc in Computer science or equivalent	2 years	3 Projects	