Terms of Reference for Implementation of IFMIS for Government of Bhutan

3/13/2025

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Table 1: List of Acronyms

ADB	Asian Development Bank
AMC	Annual Maintenance Cost
APP	Annual Procurement Plan
BI	Business Intelligence
BoB/BoBL	Bank of Bhutan Limited
BOM	Bills of Materials
BRF	Budget Release Forecast
CD	Current Deposit
CFC	Central Finance Cluster
CS-DRMS	Commonwealth Secretariat Debt Recording Management System
DB	Database
DCDMD	Development Coordination and Debt Management Division
DMDF	Department of Macro-Fiscal and Development Finance
DRC	Department of Revenue and Customs
DR	Disaster Recovery
DTA	Department of Treasuries and Accounts
DV	Disbursement Voucher
CMS	Construction Management System
e-CMS (DRC)	Electronic Customs Management System
e-DATS	Electronic Daily Allowance & Travel System
e-GP	Electronic Government Procurement
e-PEMS	Electronic Public Expenditure Management System
ERP	Enterprise Resource Planning
FIFO	First In First Out
FRS	Functional Requirement Specification
GCF	Government Consolidated Fund
GIMS	Government Inventory Management System
GPS	Government Payroll System
GRN	Goods Receipt Note
IFMIS	Integrated Financial Management Information System
IT	Information Technology
LC	Letter of Credit
MoF	Ministry of Finance
MoIT	Ministry of Infrastructure and Transport
MYRB	Multi Year Rolling Budget
OD	Overdraft

OEM	Original Equipment Manufacturer
PFM	Public Financial Management
PLC	Project Letter of Credit
PMU	Project Management Unit
PO	Purchase Order
PR	Purchase Requisition
RCSC	Royal Civil Service Commission
RMA	Royal Monetary Authority
SDD	System Design Document
SLA	Service Level Agreement
SOE	State Owned Enterprise
SRS	System Requirement Specification
SSO	Single Sign On
ToR	Terms of Reference
TSA	Treasury Single Account

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1. Background

The Ministry of Finance (MoF), Royal Government of Bhutan (RGoB) has been implementing various reforms for strengthening and modernization of Public Financial Management (PFM) in the country. The modernization (or automation) journey for the PFM commenced two decades ago and most functions in PFM have been automated to varying degree. Following systems are currently in use for PFM catering to specific needs of PFM functions and the stakeholders:

Multi-Year Rolling Budget (MYRB) – MRYB supports in preparation and finalization of annual budget including its revisions (supplementary budgets, reappropriations etc.)

Electronic Public Expenditure Management System (e-PEMS) – e-PEMS supports budget execution, particularly for managing the public expenditure. System supports the creation and the disbursement vouchers and releasing payments for all categories of expenditure including accounting and reporting for public expenditure. e-PEMS also has payroll module for generation of payroll for all the government employees. System is interfaced with the IT systems in the Bank of Bhutan to support in e-payments to the payees. With the introduction of e-payments, a significant portion of public expenditure now is paid through electronic fund transfer to the bank accounts of payees.

Financial Documentation (FinDocs) –the supporting documents for disbursement vouchers are captured in FinDocs in electronic format. Softcopies of the documents are tagged to the voucher number generated from e-PEMS.

Electronic Daily Allowance & Travel System (e-DATS) – eDATS supports in processing the travel authorizations for the official travels of the staff in the government and is interfaced with the e-PEMS for payments for advances and for settling the expenditure incurred during such travels.

Meridian/ Commonwealth Secretariat Debt Recording Management System (CS-DRMS) – Is in use for managing the public debt, particularly for the external debt. System supports recording the details of debt instruments, accounting for funds received and repayments for the external debt including generation of reports for debt monitoring and reporting.

The ICT systems for PFM are hosted in the Government data center being managed by the GovTech, an autonomous agency established by the Royal Government for providing ICT systems and infrastructure planning, coordination, implementation and maintenance across the Government in the country.

The government implemented several other IT systems for automation of other related functions for PFM. Some of these systems have electronic data exchange mechanisms in place with the core IT systems in PFM as referred to above.

IT systems at Department of Revenue and Customs (DRC) – DRC has implemented several key systems for modernization of tax and customs administration and related revenue collection. Key systems at DRC include (a) Revenue Administration Management Information System (RAMIS) for collection of major taxes such as income tax, sales tax etc., (b) Property Tax System for administration and collection of property tax, (c) Electronic Customs Management System (e-CMS) for administration and collection of customs duties and taxes and (d) Bhutan Integrated Revenue Management System (BIRMS) for collection of non-tax revenues. These systems are interfaced with the banking systems to support online payments for tax and non-tax revenues.

E-Government Procurement (e-GP): e-GP system is supporting in various public procurement functions including creation of annual procurement plans, creation of tender

documents through electronic bidding document creation facility in the system, publishing bidding documents, receiving tenders/proposals, evaluation and award of contracts. e-GP is also interfaced with MYRB and e-PEMS.

Government Inventory Management System (GIMS) – Supports recording details of assets procure/constructed through public expenditure and tracking their allocation. GIMS is also interfaced with the e-GP system currently.

ZESt System – The Royal Civil Service Commission has introduced the ZESt system, which supports Human Resource Management for Government employees, for both regular and contractual staff. The system supports recording details of staff, their qualifications, designation, paygrade and structure, details of training and certifications, processing payments for certain specific benefits extended to the employees etc.

Contract Management System (CMS) – System has been developed by the Ministry of Infrastructure and Transport and supports in managing the works contracts awarded by the Ministry. System has key features such as preparation of estimates for the work contracts, capturing details of contracts and the contractors, monitoring the progress of the contracts, receiving and approval of the bills from contractors and interfacing with e-PEMS for sharing details of approved invoices. e-CMS development has been concluded recently and the system is currently undergoing internal testing within the Ministry.

Through these modernization efforts over the years, the Government made some key achievements in improving PFM processes, systems and institutional capacities. Some of these achievements are as follows:

a. Critical functions in PFM are automated, which is supported in improving efficiency in managing the public expenditure and revenue collections. IT systems are already in place for budgeting, submission of monthly cash flow requirements and applying monthly cash ceilings, processing public expenditure, revenue collections, payroll, public procurement, inventory/asset management, debt management, contract management, accounting and reporting etc.

b. A significant portion of public expenditure is currently processed and paid through electronic payment channels with minimal dependency on cash payments, except for etc. petty cash expenses and for expenditure needs in remote locations with minimal access to ICT infrastructure for day-to-day expenditure needs. Cheque based payments have been largely eliminated.

c. Approved payments are processed, and payment is released in near real time with payment instructions sent to the bank every two minutes improving the speed in release of payments.

d. Most of the revenue administration functions, including revenue collections, are automated in the current environment.

e. Adopted Treasury Single Account (TSA) for revenue collections and public expenditure with significant portion of public revenues pooled into treasury single account maintained at Royal Monetary Authority (RMA) through intermediary accounts maintained in Bank of Bhutan.

f. Established IT infrastructure and created good IT literacy in the finance cluster/section staff across the country, which created a positive culture for adoption of new systems or changes in existing IT systems.

These achievements are also complemented with a strong intent for further reforms and modernization across the PFM lifecycle for addressing the gaps and challenges remaining in the current environment.

Challenges in the current ICT Systems in PFM

While several ICT systems have been introduced and most of the PFM functions have been modernized by the Govt, certain critical gaps exist in the current environment leading to initiation of steps for introduction of a new Integrated Financial Management Information System (IFMIS) for the Government. Following summarizes the key gaps/challenges in the current environment:

a. Existing IT systems, such as MYRB, e-PEMS etc., were developed in 2010 in Microsoft .Net platform and system enhancements were undertaken over the years to add new features to cater to the emerging needs of the Government for PFM. The architecture and development approach for the systems has become redundant and adequate documentation has not been created to support continuity in systems development and maintenance.

b. While most of the PFM functions are currently automated, substantial scope exists for process improvement and minimizing the administrative burden in managing the PFM functions. Implementing such changes in the current environment would require substantial enhancements to the existing systems.

c. Most of the PFM functions are carried out at the implementing agency level and the current systems design and ICT enabled procedures do not include the implementing agencies as a stakeholder/user in the business processes. This is leading to implementing agencies relying on manual procedures and documentation for PFM. Such manually processed and approved records are shared with the finance section/finance cluster staff for recording the transactions in IT systems and their further processing for release of payments to the payees. Such an environment is resulting in dependence on manual procedures and IT enabled systems in parallel.

d. The integration of IT systems and automated data exchange among existing ICT systems needs substantial improvement. Data exchange with the banking systems for e-Payments is an exception, and most of the remaining data exchange among the systems require manual interventions.

e. The ownership for maintenance and enhancements has been recently transferred from MoF to the GovTech, an autonomous agency created by the Royal Government for ICT systems development and maintenance across the Government. Lack of adequate documentation and inadequate knowledge transfer to GovTech is posing constraints in implementation of needed changes to the systems.

For addressing these critical challenges and for further improving the operational efficiencies in managing the public finances, the Government has initiated implementation of a new Integrated Financial Management Information System (IFMIS). The IFMIS Implementation Partner (IIP) selected through this bidding document will support the Government in design, development, implementation of the solution including its warranty and maintenance for the duration defined in this bidding document.

2. Overview of current ICT systems in PFM

This section provides an overview of existing ICT systems in PFM in the country. Several initiatives have been undertaken for automation of PFM functions carried out by the Government agencies. While such systems provided certain benefits in transaction recording and reporting, the challenges in fragmented data, records and reporting in manual operations continued with these systems due to parallel dependence on manual and IT enabled operations for PFM in the Government.

IFMIS is envisaged to support RGoB in phasing out the existing disparate systems and in implementation of a common, modern, integrated, accurate, reliable and secure information system for PFM operations. The table below summarises the IT systems currently used by the stakeholders for administration of PFM functions.

Table 2: Current ICT Systems for PFM

Existing IT Systems	Brief Description
Electronic Public Expenditure Management System (e-PEMS)	Electronic Public Expenditure Management System (e-PEMS) is supporting the government in processing all categories of public expenditure and in e-payments to the recipients through interface with the IT systems in the Bank of Bhutan. e-PEMS also has payroll module for generation of payroll for both regular and contractual staff and for release of salary payments. e-PEMS has been rolled out to all the Ministries, Dzongkhags, Gewogs, Judiciaries and autonomous bodies across the country. e-PEMS is a major stepping stone in modernization of Public Financial Management in Bhutan. Following summarises the key features supported by the e-PEMS system: a. Upload budget data from MYRB to support in budget execution for expenditure management. b. Payee registration, including suppliers, employees, utility service providers and other recipients for the public expenditure. c. Integration with the other Government IT systems (e.g. DRC systems) and banking systems for validation of payee details. d. Maintenance of bank accounts, their balances and reconciliation, including maintenance of data on LC/PLC accounts. e. Preparation of Budget Release Forecast (BRF) and their approval and loading LC/PLC accounts based on approved BRF. f. Preparation and approval of disbursement vouchers for all categories of payments. g. Interface with the banking systems and generation of electronic payment instruction to the bank for release of payments to the payees.

Existing IT Systems	Brief Description
	h. Interface with the IT systems at DRC, Royal Civil Service Commission (ZESt) and e-GP for updating and validation of data for payees (e.g. suppliers, employees) i. Capture details of employee pay structure and generation of payroll and release of salary payments. j. Accounting and reporting for public expenditure etc. e-PEMS is a shared and centralized application and has supported in successful adoption of electronic payments for most part of the public expenditure.
Multi-Year Rolling Budget (MYRB)	The Multi-Year Rolling Budget (MYRB) system is supporting the Government agencies in submission of budget proposals, their consolidation, review and approval of the budget by relevant stakeholders and in transfer of approved budget to e-PEMS for budget execution. MYRB also supports budget amendments including supplementary budget allocations, reappropriations etc. **Key Features of the System:** a. Definition of budget calendar with specific milestones to be achieved during each month in the budget cycle and the responsibilities for such milestones. b. Download data on programs, sub-programs, activities and sub-activities (Annual Work Program) from the planning system. c. Submit budget proposals for applicable sub-activities with needed budget estimates for the budget year and two out years. d. Submission, review and approval and consolidation of budget proposals including their revisions based on reviews across the levels in the Government. e. Budget revisions including supplementary budget requests, withdrawals, re-appropriations and transfers. f. Month- closure for the budget. g. Definition of master data and their values to support in preparation of cost estimates for the line items in the budget estimates h. Interface with e-PEMS for uploading the approved budget data for budget execution
FinDocs	FinDocs system has been developed recently to support the field offices in submission of softcopies for the supporting documents needed for processing the disbursement vouchers. Such uploaded documents are accessed by the staff in the Finance Section or the Central Finance Cluster to verify their authenticity and completeness for creation and processing the disbursement vouchers for expenditure incurred by the agencies. The deposit voucher number generated from e-PEMS is captured by the FS/CFC staff in FinDocs

Existing IT Systems	Brief Description
	to tag the corresponding documents with the deposit voucher for future reference. **Key Features of the System:** a. Upload the scanned supporting documents as needed for the Finance Section or Central Finance Cluster staff to review the bills submitted by the agencies and for creation of disbursement vouchers for releasing payments for the expenditure b. Minimize the need and dependency for the field offices to submit the hard copies of the documents to the staff in finance section/CFC for processing the bills and the disbursement vouchers c. Establish the link between the disbursement voucher in e-PEMS with the documents in FinDocs based on the DV number generated from e-PEMS, which is manually updated in FinDocs. d. Minimize the cost overheads for the field offices in sending the hard copies of the documents to the FC/CFC etc.

Following other IT systems are currently in use in PFM. However, the below systems will not be replaced by the proposed IFMIS.

e-DATS (Electronic Daily Allowance & Travel System (e-DATS) – Supports in processing the travel authorizations for the official travels of the staff in the government and is interfaced with the e-PEMS for payments for advances and for settling the expenditure incurred during such travels.

Meridian/ Commonwealth Secretariat Debt Recording Management System (CS-DRMS) – Is in use for managing the public debt, particularly for the external debt. System supports recording the details of debt instruments, accounting for funds received and repayments for the external debt including generation of reports for debt monitoring and reporting.

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Construction Management System (CMS) – System has been developed by the Ministry of Infrastructure and Transport and supports in managing the works contracts awarded by the Ministry. System has key features such as preparation of estimates for the work contracts, capturing details of contracts and the contractors, monitoring the progress of the contracts, receiving and approval of the bills from contractors and interfacing with e-PEMS for sharing details of approved invoices. CMS development has been concluded recently and the system is currently undergoing internal testing within the Ministry.

3. Overview of IFMIS Scope and Functionality

This section summarizes the functional overview of the IFMIS for the RGoB including scope of the system, functional architecture for IFMIS, key features of IFMIS and target users of the system etc. The detailed functional requirements specifications for each of the proposed functions are included in Annexure 1.

3.1. Scope of IFMIS

The RGoB intends to develop a new custom or bespoke software for modernization of the Public Financial Management (PFM) in the country and to replace the existing IT systems catering to various requirements in the PFM. The Intellectual Property Rights (IPR) for the custom developed IFMIS software for Bhutan shall be exclusively with the RGoB.

The table below summarizes the overall scope of the proposed new custom/bespoke IFMIS for RGoB. The IIP will be required to design, develop and implement the IFMIS solution addressing the requirements from 'a' to 'h' as listed under scope of IFMIS in the table below.

Table 3: Scope of IFMIS including proposed system interfaces

Scope of IFMIS	PFM functions out of scope for IFMIS
a. Budget Preparation	a. Five Year National Planning (FYP)
b. Budget Management (revisions)	b. Human Resource Management
c. Commitments Management	c. Tax and Revenue Administration
d. Cash Management	d. Debt Management
e. Expenditure Management	e. Public Procurement
f. Payroll Management	f. Asset Management
g. Revenue Accounting	g. Audit Management
h. Accounting and Fiscal Reporting	

System Interfaces for IFMIS

The interfaces shall be established between the IFMIS and the below systems to enable necessary data exchange between the systems to enhance efficiency in performing the PFM functions and in ensuring transaction integrity and completeness across PFM functions. IIP shall be responsible for establishing such interfaces for IFMIS with all the systems referred below.

Table 5: Interfacing IT systems for IFMIS

IT systems requiring interface with IFMIS	
a. ZESt (RCSC)	j. Electronic Daily Allowance and TravelSystem (e-DATS)
b. RAMIS & BIRMS (DRC)	k. FYP system of OCASC
c. Core banking system of Bhutan	l. NPPF system (National Pension and Provident Fund)
d. RMA IT System	m. Royal Insurance Corporation of Bhutan
e. E-Government Procurement System (e-GP)	n. National Housing Development Corporation (NHDC)

IT systems requiring interface with IFMIS	
f. Construction Management System (CMS)	o. Bhutan Construction and Transport Authority (BCTA)
g. Government Inventory Management System (GIMS)	p. Dept of Civil Registration and Census (National ID validation)
h. Meridian (Debt Management System)	q. Education Management Information System
i. Audit Information Management System (AIMS) at RAA	r. Government g-mail suite

3.2. Users of IFMIS

The following presents an overview of the end user agencies for the IFMIS.

a. ***Ministries***: The Central Government has nine Ministries. Certain Ministries have finance personnel within the Ministry Office. Certain Ministries also have regional and field offices and the financial management requirements for such field/regional offices are catered to by the Cluster Finance Services (CFS). Please refer to the point 'd' below for the details on the role of CFS. The staff from the Government Ministries and the CFS will perform relevant activities in IFMIS in line with their assigned role in the system.

b. ***Departments***: Certain Ministries have their departments co-located under the same building and have their physical offices set up in the same office compound of the Ministry. However, for certain Ministries (e.g. Ministry of Finance), the Minister portfolio office is inside the Dzong and its department offices (e.g. DTA, DPBP, DRC, DMFDF & DPP) are located outside the Dzong. The Departments will have relevant staff as users of IFMIS, in addition to the finance personnel in CFS supporting the departments in processing financial management transactions.

c. ***Field Offices or Regional offices***: The finance services for the field or the regional offices of the Ministries are catered to by the Cluster Finance Services. In addition to such staff in CFS, the relevant staff from the field and regional offices will also have access to IFMIS to perform their assigned tasks in IFMIS.

d. ***Dzongkhag (districts, no: 20)***: Each dzongkhag has a Cluster Finance Service (CFS) established within the office of the Dzongkhag headquarters.

The CFS caters to the financial management needs of all the regional offices, field offices and the Gewog's within the Dzongkhag. In addition to the CFS's in each Dzongkhag Headquarters or office, there are five additional CFS's established to cater to

Role of Cluster Finance Service (CFS): Prior to establishing the CFS, each Ministry/Department/Regional/field office had finance personnel for managing the financial management functions within the office. However, considering the shortage of finance personnel, government established shared service centers (CFS) for the finance function and collocated the finance personnel in few central offices, which caters to the FM needs of all offices within its geographical coverage. As an illustration, for payments for contractor invoices, the invoices are received by the field offices and are approved as per the delegation of powers within the field offices. Approved invoices and supporting documents are forwarded to the CFS for further processing them through e-PEMS and for release of payments. CFS performs scrutiny of the received documents from the field offices for their compliance with financial management rules and the successfully validated payments are processed through e-PEMS. This is resulting in continued dependence on manual procedures for financial management at field offices while such procedures are automated from the CFS level in the workflow. Unlike in existing systems, IFMIS proposes to include the staff at field offices as users within the IFMIS and to initiate the transaction in electronic mode from source, to discontinue the dependence on manual procedures and documents. However, in phase 1 of IFMIS, it is proposed to extend system access only to the finance personnel in CFS and other designated locations and system access to the staff in the field offices shall be extended once the system is stabilized. An estimated 600 finance personnel exist across CFS and other offices in the Government.

the financial management requirements of other stakeholders. These five CFS's are physically located outside the offices of Dzongkhag's.

e. ***Gewog's (blocks, no: 205)***: Each Gewog has a physical office; however, finance personnel are clustered under Dzongkhag/District Cluster Finance Services.

f. ***Municipal bodies (Thromde, no: 4):*** e-PEMS is currently in use at the Thromde's for their financial management needs and they will also have access to IFMIS once implemented.

The IFMIS is estimated to have 1500 (max.) users from the Government. In addition to the above, IFMIS end users will also include external stakeholders including suppliers/contractors, representatives from the civil society requiring relevant information on the public revenue and expenditure etc.

3.3. Overview of System Functionality

The diagrams in the following pages present a functional overview of the IFMIS outlining the specific PFM functions to be supported by IFMIS and interfaces with other related functions/systems of the Government.

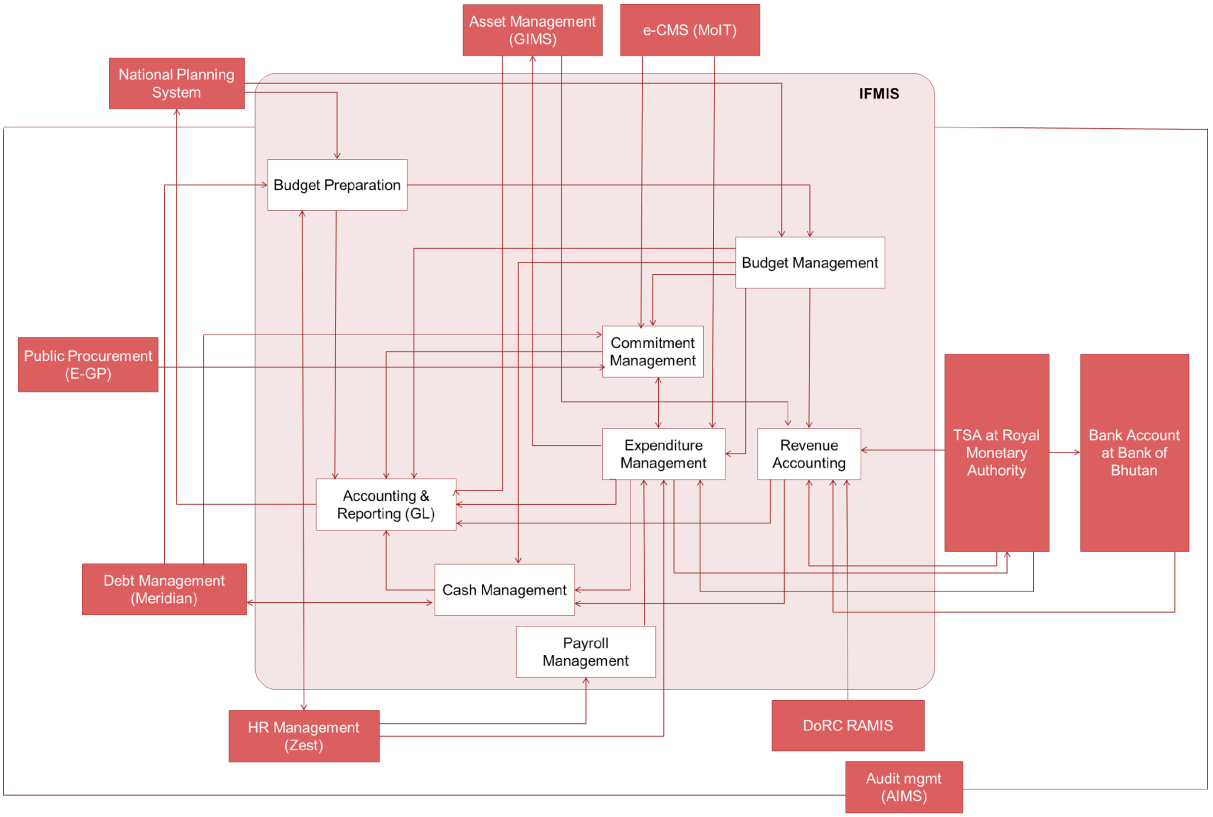


Figure 1: functional overview of IFMIS

The diagram below presents the overall scope of IFMIS implementation including PFM functions to be covered in IFMIS, the end users of the IFMIS system, connectivity options for the users, and the systems with which necessary interfaces will be established to enable data exchange with IFMIS. Please refer to table 5 for an exhaustive list of interfacing IT systems for IFMIS.

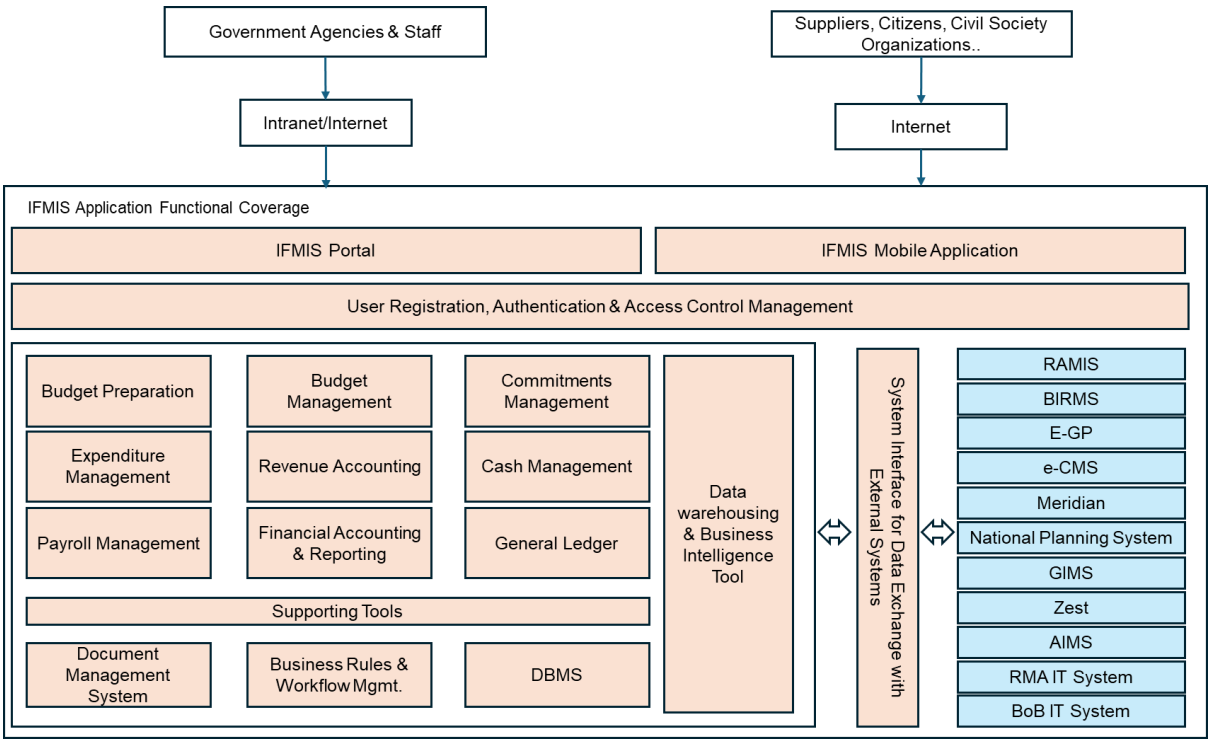


Figure 2: Functional Architecture for IFMIS

The following provides an overview of key functions to be supported by the IFMIS. Please refer to Annexure 1 for a comprehensive list of functional requirements specifications for IFMIS.

3.3.1. Creation of Master Data

Once IFMIS is implemented, the government agencies are envisaged to adopt the system in a phased manner (Please refer to section 4 for phasing plan). It requires establishment of common data sets for use across all the functions of the system and by all the users. IFMIS shall support in creation and maintenance of master data as referred to in the Table below. The list of requirements in table below on master data requirements are illustrative only and the system should support in creation and maintenance of master data as required for all functions and modules covered in IFMIS implementation. The system shall also support in implementing necessary authorizations and controls to ensure that master data creation and any further changes are approved by the designated personnel.

Table 4: Master Data Creation Requirements

S. N	Creation of Master Data
1.	Budget classification codes
2.	Chart of accounts
3.	Government Ministries, agencies, agencies and SoEs
4.	Local government bodies (Dzongkhags, Gewogs, Thromdes)
5.	Third parties including Banks, donor agencies, creditors.

S. N	Creation of Master Data
6.	Locations (cities, districts, towns.)
7.	Taxes, charges, duties and applicable rates
8.	Source of funds/funding type
9.	Program/Sub-Program/activities and sub-activities as included in the Five-Year Plan (FYP)
10.	Allowances, their mapping to employee grades and applicable rates etc

3.3.2. Budget Preparation

The budget preparation module shall support the stakeholders in capturing the macro-economic assumptions governing the budget preparation and in initiation, processing and completion of annual budgeting exercise. The budget preparation module shall enable Department of Planning, Budget and Performance (DPBP) to initiate budget preparation exercise (budget call and budget ceilings) and shall support agencies in preparation and submission of medium-term budget proposals to the DPBP for their review and finalization with the inputs from the Cabinet and the Parliament. The system shall support in capturing the budget proposals at the field office level and in consolidation, revision and finalization of budget proposals for the Ministries and further rolling up the Ministry budget proposals into the national budget. The system should support necessary revisions to the budget estimates based on reviews at various levels (Ministries, DPBP, Cabinet, Parliament etc.) for producing approved appropriations. The outputs from budget preparation module (appropriations) shall be transferred to the budget management module to support in preparation of annual cash-flow projections for revenue and expenditure and in budget releases, reappropriations, supplementary budgets etc. based on the needs of the agencies and as approved by the concerned. System functionality for budget preparation shall include advanced features to simplify and reduce the efforts of the agencies in preparation and finalization of the budget proposals.

The table below captures the summary of transactions, which shall be supported by the system for budget preparation.

Table 5: Envisaged IFMIS Features for Budget Preparation

S. N	Features to be provided by the system for Budget Preparation
	Basic Features needed for budget preparation
1.	Upload the five-year plan (FYP) data including programs, sub-programs, activities, sub-activities, approved outlay at program, sector and Ministry/agency level, KPIs and their targets including updating data in IFMIS based on changes to FYP data in the national planning system.
2.	Initiation of budget preparation exercise including definition of budget preparation calendar, formats and ceilings for agencies.

S. N	Features to be provided by the system for Budget Preparation
3.	Capturing the calendar of events for budget preparation exercise and monitoring the compliance of the agencies to the prescribed schedule.
4.	Categorization of budget heads into centrally estimated and agency estimated budget heads and facility for agencies to review centrally estimated budget heads and request for changes needed for the same
5.	Preparation and finalization of budget proposals at agencies including consolidation of budget proposals for Ministries based on the budget proposals of various administrative units within the Ministries and agencies.
6.	Aggregation of budget proposals from the Ministries and agencies and generation of consolidated draft budget for National Government
7.	Modifications to the draft budget proposal including version management (based on changes made at different level of reviews)
8.	Variance analysis of the budget proposals prepared by the agencies with the ceilings at the agency and the whole of government level
9.	Variance analysis with the previous year's budgets and allocations
10.	Generation of budget summary and draft budget appropriation bill
11.	Capture feedback and supporting documents from cabinet and the parliament during review and finalization of the budget
12.	Printing of budget book
	Advanced features needed for budget preparation
13.	Auto-population of relevant forms/formats of the budget proposal based on the data already existing in the system (actuals for the past year, estimates and actuals for current year) and the data received from the other systems as referred in page 16.
14.	Auto-computation of budget estimates for personal services components based on the data from the ZESt system and relevant formulae for estimating such expenditure items
15.	Auto-computation of social and other benefits related budget for the benefits provided by the Government to the citizens through maintenance of relevant master data and data for the beneficiaries (e.g. student stipend)
16.	Categorization of recurrent expenditure items to inflation indexed (Yes/No) and preparation of draft budget for recurrent expenditure items based on past/current year actuals and the inflation indexation parameters defined by the Government (and configured in the system).
17.	Interface with the contracts data master in expenditure management module and auto-populate the budget requirements for ongoing projects and related contracts

S. N	Features to be provided by the system for Budget Preparation
18.	Support in centralized budget preparation for select budget items and their review and finalization by the DPBP and the respective agencies
19.	Auto-generate the debt servicing related budget estimates based on the data from Meridian
20.	Auto-generate the draft revenue estimates based on prior years revenue actuals and the assumptions for revenue estimates configured for the budget year
21.	Auto-adjustment of budget proposals for all the agencies based on the common adjustments decided during review/budget finalization.
22.	Data capture from users only once or from other existing data sources and auto-population of relevant forms as may be needed at summary/aggregate level

Data inputs and outputs for Budget Preparation

The table below presents an overview of inputs into budget preparation module based on the data available within IFMIS and related external systems and outputs from the budget preparation function, which forms an input into other functions performed within IFMIS and to the external systems.

Table 3: Data inputs and outputs for budget preparation function in IFMIS

IFMIS Modules/ External Systems	Data Exchange Requirements with Budget preparation
National Planning System (FYP)	The data on the five-year plan including the approved list of programs, sub-programs, activities and sub-activities, approved outlay at the sector, ministry, agencies, local government bodies, key performance indicators (outcomes and outputs and their targets) shall be uploaded into Budget preparation module to enable respective agencies to prepare and submit the budget estimates for their assigned programs and sub-programs.
Budget Management	The data existing in the system on the budgets and actuals for the past years, budget estimates, revised estimates and actuals YTD for the current year shall be auto populated in the budget proposal for the budget year. Once the budget is prepared and approved, the approved estimates are transferred to the budget management module to support the commencement of budget execution.
Commitments & Expenditure Management	Data on the ongoing capital expenditure (contracts) shall be auto populated based on data for existing contracts /projects recorded in the system, which have payment milestones due for the budget year. Data on the ongoing projects, planned payments (schedules) for the budget year, and other commitments data recorded in the system shall form an input for auto-population of relevant data in budget preparation module.

IFMIS Modules/ External Systems	Data Exchange Requirements with Budget preparation
Revenue Accounting	Data on the receipts for the current (YTD) and the past years (as base line) shall be auto populated into the relevant formats for revenue estimates in the budget preparation module.
ZESt	The data maintained in ZESt on the staff (both contractual and regular) including the total number of positions for the government agencies, filled positions, their salary costs and benefits shall form an input into the budget preparation exercise.
Meridian/CS-DRMS	The data on debt servicing requirements for loans, government securities and other liabilities as recorded in Meridian/CS-DRMS for the budget and outyears shall be auto-populated in the draft budget proposal in the budget preparation module.

3.3.3. Budget Management

The IFMIS budget management module shall support recording the budget estimates (General Appropriations) finalized in the budget preparation module and in commencement of budget execution activities. The system shall support in maintaining the complete trail of approved appropriations, allocations/releases, budget amendments and budget balances for each agency, program/sub-program/ activity/ sub-activity level and at an aggregate level for the whole of government. In case of delays in approval of the budgets, the budget management function will also support recording interim appropriations (based on last year's appropriations or the estimates as determined by the government).

Table 6: Envisaged IFMIS Features for Budget Management

1. **Recording/uploading general appropriations from the budget preparation module**
2. Budget allocations and releases to the ministry's/agencies/ operating units
3. Submission of budget amendment requests including (re-appropriations, supplementary budgets, withdrawals and transfers) by agencies
4. Processing and approval of budget amendment requests
5. Maintain the data on updated/current version of budget appropriations
6. Share the data on the current version of budget appropriations, commitments, budget balances etc. with other systems (e-GP etc.)

Data inputs and outputs for Budget Management

The table below presents an overview of inputs into the budget management module based on the data available within IFMIS and related external systems and outputs from the budget management module, which forms as an input into other functions performed within IFMIS and to the external systems.

Table 4: Data inputs and outputs for budget preparation function in IFMIS

IFMIS Modules/ External Systems	Data Exchange Requirements with Budget preparation
Budget Preparation	The approved version of the budget appropriations is transferred from the budget preparation module to the budget management module to support the commencement of budget execution activities.
Commitment Management	The commitment management module shall refer to the updated budget balances in the budget management module for initiation and processing the fund commitment requests related to the contracts and other expenditure categories earmarked for commitment of funds. Once the commitment requests are approved through the commitments management module, the corresponding funds shall be blocked in the budget management module for respective budget codes to disallow their utilization for any other expenditure needs.
Cash Management	The data from the budget management module shall form the basis for preparation/updating the annual and monthly cashflow flow projections for the expenditure and revenues and in finalizing the monthly cash ceilings for the respective agencies.
Expenditure Management	The data in the budget management module shall form the basis for incurring the expenditure and for processing the payments for all expenditure categories. Based on the expenditure processed through expenditure management module, the budget balances for respective budget heads shall be kept updated and current in the budget management module.
Revenue Accounting	The data in the budget management module shall form the basis for tracking the revenue collections progress with the budgeted revenue estimates and in generation of reports for YTD revenue collection performance in comparison with the revenue estimates.
Accounting and Reporting	The data from the budget management module shall form the basis for booking the expenditure and the revenue and in tracking the expenditure and revenue progress in comparison with the budget estimates and in performance gap/variance analysis.
National Planning System, e-GP and Zest, CMS Systems	Provide updated and current budget estimates data, either through on demand data access or data refresh, from IFMIS to other systems such as e-GP, and National Planning System to support in maintaining current budget balances data in respective systems. Similarly, update the budget estimates and balances in IFMIS based

IFMIS Modules/ External Systems	Data Exchange Requirements with Budget preparation
	on data received from external systems (e-GP for contractual commitments, NPS for any changes in approved outlay, Zest for any changes in employee data and related benefits.

3.3.4. Commitment Management

Commitment Management module in IFMIS shall support in managing the expenditure controls more efficiently to minimize the expenditure arrears, and to forecast and manage the cash resources efficiently. System shall support in specifying the expenditure heads that require commitment of funds prior to incurring the expenditure, recording the commitments for such expenditure heads, and in updating the budget balances under respective budget heads based on recorded commitments. The commitments management function shall support in managing the following categories of commitments:

a. **In-Year commitments:** Recording the commitments for expenditure expected to be incurred within the year. Such examples include commitment for the contracts to be issued and concluded within the year. Commitment of funds for such contracts shall be performed prior to initiation of the contract (soft commitment, based on estimated value of contract) and update such commitment values based on actual value of the contract. For such commitment values, the budget balances should be updated to allow initiation of procurement or signing the contracts within the remaining budget balances (net off committed budget already).

b. **Multi-year commitments:** Recording the commitments in the system for multi-year contracts including breakdown of contractual expenditure for each year in the contract. For the approved multi-year commitments and signed contracts, the system shall support populating budget estimates during preparation of budget estimates for the following years and in the medium term.

System shall support in configuring commitment control requirements for each category or sub-category of budget heads and in managing the commitment of funds and managing the budget balances based on such configuration.

The table below captures the summary of transactions, which shall be supported by the system for commitment management.

Table 7: Envisaged IFMIS Features for Commitment Management

S. N	Features to be provided by the system for Commitment Management
1.	Configuration support for specifying the specific categories and sub-categories of expenditure heads that require commitment of funds prior to incurring the expenditure
2.	Configuration support for specifying the levels of commitment (one or two stage commitments) for each category of expenditure
3.	Recording the commitments depending on the configuration in the system for respective expenditure heads and in blocking the budget balances depending on the committed expenditure

S. N	Features to be provided by the system for Commitment Management
4.	Interfacing with other systems such as e-GP, CMS etc to enable two-way data exchange in managing the commitments. For e-GP, IFMIS shall provide data on commitments recorded in the system to enable initiation of the procurement or in award of the contract in the system only for committed expenditure.
5.	Update the budget and commitment balances in IFMIS based on values of contracts awarded through the e-GP system and for the contracts recorded in CMS by the Ministry of Infrastructure and Transport.
6.	Recording multi-year commitments for the committed multi-year expenditure requirements (e.g. multi-year contracts) and in preparation of annual and medium-term budget ceilings and estimates considering the committed expenditure.
7.	Capturing the amendments to the commitments including their validation with the budget balances and updating the budget balances based on revised commitments
8.	Ensuring expenditure for budget heads with corresponding commitments within the committed expenditure values etc.

Data inputs and outputs for Commitment Management

The table below presents an overview of inputs into commitment management module based on the data available within IFMIS and related external systems and outputs from the commitment management function, which forms an input into other functions performed within IFMIS and to the external systems.

Table 5: Data inputs and outputs for commitment management function in IFMIS

IFMIS Modules/ External Systems	Data Exchange Requirements with Budget preparation
Budget Management	The updated budget balances from the budget management module shall form the basis for recording or updating commitments. For recording new commitments or for revising the existing, system shall verify the sufficiency of budget balances for respective budget heads, failing which system shall restrict the users in recording and approving the commitments. The budget balances in budget management module shall also be revised based on the new or revised commitments.
Expenditure Management	Recording new contracts or revising existing contracts data in the expenditure management module shall be allowed only for if corresponding commitments exist in the system. The value of contracts and related payments shall be restricted within the funds committed for each contract. Any changes made to the contracts (e.g. terminating the contract or amendment to the contract values etc) shall be adjusted accordingly in commitments recorded for respective budget codes.

IFMIS Modules/ External Systems	Data Exchange Requirements with Budget preparation
Cash Management	The commitment data shall form a key input for recording or revising the cashflow projections for the year and for the respective periods during the year.
E-GP, CMS etc.	The data on contracts awarded shall result in automatic commitment funds in IFMIS and initiation of new procurements/contracts through e-GP for corresponding budget head shall be allowed only within the available budget balances net off funds already committed for that budget head. Similarly, any contract recorded in CMS shall automatically commit the funds in IFMIS for respective budget code and recording any new contract in CMS shall be allowed only if budget balance exist in the budget code net-off funds already committed.

3.3.5. Cash Management

The Cash Management function in IFMIS shall support the Government in (i) effective planning and management of cash resources to address the expenditure needs, (ii) managing the cash surplus/deficit requirements to minimize the cost of borrowings and to maximize the returns on the idle cash balances. The Cash management module shall support in progressing from responding to the daily cash flow needs to proper planning and managing the cash resources for improving the overall fiscal management for the government. System shall support following key functions for the Government in cash management:

a. Interfacing with respective modules within IFMIS and with other external systems to obtain data on expenditure needs and revenue inflows to support in preparation and management of cashflow projections at the whole of government level.

b. Preparation of annual, quarterly and monthly cashflow projections for revenues and expenditure for agencies and the entire government

c. Approval of quarterly and monthly cash ceilings for the agencies.

d. Processing the release of payments for approved bills and invoices

e. Managing the data on bank accounts, their balances and daily reconciliation of bank statements

f. Estimating the borrowing needs for various periods within the year with reasonable accuracy etc.

The table below summarizes the key functions to be supported by Cash Management function of IFMIS to support the asset management division in BTr in effectively performing the cash management function.

Table 8: Envisaged IFMIS Features for Cash Management

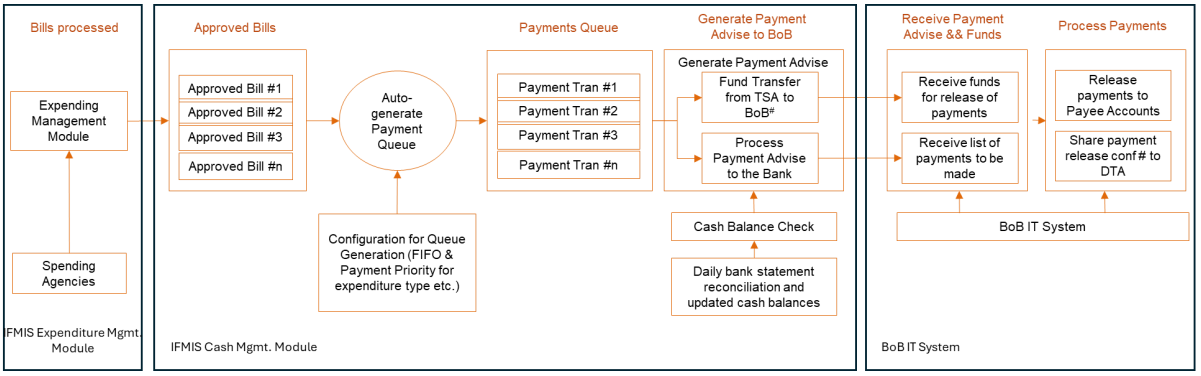
S. N	Features to be provided by the system for Cash Management
	Basic Features needed for Cash Management

S. N	Features to be provided by the system for Cash Management
1.	Support agencies in preparation and finalization of draft cashflow plans and their consolidation at Ministry level.
2.	Central adjustments for cashflow projections by the DTA for all agencies
3.	Finalizing the annual and quarterly cashflow projections and approval of cashflow ceilings for each agency on a quarterly/monthly basis depending on the system configuration for period (quarterly/monthly) for cashflow ceilings
4.	Bank account data management including master data creation for banks, their branches, bank accounts and mapping the respective accounts for corresponding budget heads for receipts/payments
5.	Generate payment instruction to the bank, with one to one or one to many payments, including specific list of payees, their bank account information and amounts to be transferred along with the summary of payment instruction (total amount, total number of payees etc)
6.	Receive daily electronic bank statements and reconcile the opening bank balance, payment instructions issued during the day, closing balances and address any gaps thereof.
7.	Reconciliation of revenue collection data (summary) from revenue accounting module with the funds received into the bank accounts daily
	Advanced features needed for cash management
8.	Configuration of budget heads and business logic/formulas for auto-generation of cash flows (e.g. equal distribution, %'s from prior year data, formula-based projections, data sources maintained in IFMIS/other systems etc)
9.	Auto-generation of draft cashflow plans for agencies for expenditure and revenue estimates as per predefined configuration for each budget head for auto-generation of cash flows
10.	Auto-generation of draft cashflow plans for debt based on predefined schedules of receipts and debt servicing, as per data from meridian and other data captured in IFMIS for other debt instruments
11.	Auto-generation trends in cashflow projection requirements for expenditure with %'s of total budget needed for each month and for each agency/ministry, variance from prior year expenditure for the same period etc
12.	Variance between cash-inflows, outflows, cash surplus/deficit for each period in the year
13.	Maintain queue or list of approved payments (bills) from stakeholders based on First – In – First – Out Principle for release of payment instructions to the bank based on cash available in the Bank and/or OD limits configured in the system.

S. N	Features to be provided by the system for Cash Management
14.	Facility to override the system generated payment queue with remarks for overriding the queue, approvals in the workflow and related audit trail

The diagram below provides an overview of recommended (illustrative at this stage) IFMIS functionality to support payments processing based on fund availability with the Government.

Figure 8: Illustrative model for release of payments for expenditure through cash management



Data inputs and outputs for Cash Management

The table below presents an overview of inputs into cash management module based on the data available within IFMIS and related external systems and outputs from the cash management module, which forms as an input into other functions performed within IFMIS and to the external systems.

IFMIS Modules/ External Systems	Data Exchange Requirements with Budget preparation
Budget Management	The data from the budget management module shall form the basis for key activities in cash management module including preparation of cashflow requirements projections, their revision and for processing the payments under various expenditure heads.
Commitments Management	The commitments approved in the commitment management module shall form input into preparation and revision of cash flow projections for the agencies. Any revisions in commitments for expenditure shall be approved based on validation with the approved cashflow plans and quarterly/ monthly cash ceilings for the agencies.
Expenditure Management	The data captured in expenditure management module, particularly for the contracts and their payment schedules, shall form a key input for preparation of cash flow projections and in finalization of cash ceilings for the quarter/month. The approved cash ceilings for the quarter/month shall form the basis for processing the expenditure and for approval of bills for payment for respective month/quarter.

Revenue Accounting	The reconciled revenue collections data from revenue accounting module shall form the basis for tracking the performance of revenue collections vis-à-vis the cash flow projections planned in cash management module and for recalibrating the revenue inflows for future periods based on revenue collection performance for the YTD.
Meridian	The receivables (from loans and grants) and the debt servicing schedule data from Meridian will form a key input into generation of cash flow projections for the expenditure.
Banking Systems at RMA and BoB	The payment instructions shall be generated from the cash management module to the RMA for fund transfer from TSA to BoB account for downward release of payments from BoB to the payees and in issuing payment instructions to the BoB with list of payees and corresponding amounts for payment release through BoB. The TSA cash balances data from RMA shall form input into generation of payment advise to the RMA and to the BoB, including generation of request for OD as applicable.

3.3.6. Expenditure Management

The expenditure management module in IFMIS shall support in processing expenditure and payment instructions for all categories of public expenditure. Among the key changes to be introduced by the IFMIS is in expenditure management function i.e. to extend the bill creation and processing functionality to the staff in agencies minimizing the administrative burden for the staff in Finance section/ central finance cluster in receiving the manually processed bills and capturing such manual bills data into IFMIS. System shall support in following key functions:

a. Recording the details of contracts/POs signed by the agencies including related payment schedules
b. Recording and processing the invoices from suppliers/ contractors for goods/works/services rendered to the agencies
c. Processing salary and other related payments and benefits for the staff
d. Processing the debt service repayments due for the period
e. Processing the payments for recurrent expenditure
f. Processing the payments fund transfers to local government bodies and SoEs
g. Integration with IT systems at banks (RMA and BoB) for release of payments through Electronic Fund Transfer (EFT)
h. To support in application of necessary controls for bill processing and approval as prescribed in the government rules
i. Capture supporting documents for bill processing etc.

Table 9: Envisaged IFMIS Features for Expenditure Management

S. N	Features to be provided by the system for Expenditure Management
	Payments Processing for Suppliers/Contractors
1.	Registration of suppliers as payees
2.	Recording purchase orders/ contracts and their payment schedules, including interface with e-GP for receiving data on awarded contracts
3.	Updating contracts data including variations to the contract values, payment schedules
4.	Supplier self-services functionality to allow e-submission (by supplier) of bills for supply of goods/works/services and for agencies for recording bills received from suppliers
5.	Interface with CMS for receiving the data on bills approved in CMS for works contracts and receiving Goods Received Notes (GRN) from GIMS
6.	Processing of bills and authorizations for payment including reversal of payment authorizations (if applicable) by agencies
7.	Transfer data on approved bills for payment to the cash management module
8.	Updating the budget, commitment and contract balances based on approved bills for payment.
9.	Revision of payment schedules for contracts for any delays in contracts execution
	Employee Payroll/Benefits Payment Processing
10.	Maintain data for government employees as needed for payroll generation including interface with Zest for receiving changes to the pay components and the employees.
11.	Capturing business rules and formulae for auto-generation of monthly payroll
12.	Support agencies in updating data for staff to support in payroll generation
13.	Payroll generation and transfer of payment instructions to the cash management module for transfer of salary payments
	Debt Servicing
14.	Recording debt servicing schedule for the financial year
15.	Processing debt servicing transactions
16.	Transfer payment instructions to the cash management module for releasing payments to donors/creditors
	Other key features

S. N	Features to be provided by the system for Expenditure Management
17.	Capture billing information from utility service providers for all agencies across the country and support in centralized payments for utility bills based on approved budget for respective agencies
18.	Data synchronization with cash management module to capture confirmations on payments released to the payees
19.	**Support in processing release of funds for other categories of expenditure.**

Data inputs and outputs for Expenditure Management

The table below presents an overview of inputs into expenditure management module based on the data available within IFMIS and related external systems and outputs from the expenditure management module, which forms as an input into other functions performed within IFMIS and to the external systems.

Table 7: Data inputs and outputs for expenditure management function in IFMIS

IFMIS Modules/ External Systems	Data Exchange Requirements with Budget preparation
Budget Management	The data from the budget management module shall form the basis for tracking the budget availability for processing and releasing the payments for respective budget heads. The budget balances in the budget management module shall be updated based on approved bills in the expenditure management module.
Commitments Management	The data from the commitment management module shall form the basis for processing the contractor and other related expenditure categories with corresponding funds committed through the commitment management module. The commitment balances shall be updated based on approved bills in the expenditure management module.
Cash Management	The list of approved bills/payment transactions shall be transferred to the cash management module for processing release of payments to the payees. Payment transaction reference numbers from the cash management module shall be shared with the expenditure management module for further tracking purposes.
Meridian	The debt servicing schedule data from Meridian will form an input into the expenditure management module for processing the debt servicing payments.
ZESt	The data on employees, their pay components and related revisions shall be transferred from Zest to the Expenditure management module to maintain master data for employees as needed for payroll generation.

IFMIS Modules/ External Systems	Data Exchange Requirements with Budget preparation
CMS and GIMS	CMS implemented by MoIT will support in receiving the bills from contractors for work contracts and data on approved bills from CMS will be received into IFMIS for processing and release of payments. Similarly, for goods received and accepted through GIMS, IFMIS will receive GRN (Goods Receipt Note) to support in creating bills and release of payments for such goods.

3.3.7. Revenue Accounting

Majority of the Government revenues are currently administered and collected by the DRC through a network of the banking arrangements and the electronic payment facilities provided to the taxpayers. DRC has established IT systems for revenue administration including interface with the banking IT systems to receive data on daily collections and their reconciliation with the receivables data in DRC IT systems.

While DRC IT systems will continue to support in tax administration and revenue collections, including their reconciliation with the banks, IFMIS will support in revenue accounting at an aggregate level to support in revenue reporting, cashflow forecasting and cash management and in budgeting revenue estimates for the following years. IFMIS shall support in following key functions for revenue accounting:

Table 10: Envisaged IFMIS Features for Receipts Management

S. N	Features to be provided by the system for Revenue Accounting Module
1.	Maintain master data for all revenue heads, agencies collecting such revenues, their collection channels etc
2.	Interface with DRC IT system to receive data on daily receipts, at an aggregate level, for each revenue category
3.	Interface with banking system for receiving data on daily recollections for each revenue category at an aggregate level
4.	Reconciliation of revenue collection data at total revenue per day, revenue collection per revenue head etc as reported by the DRC and the banks
5.	Validation of reconciled revenue collection details between DRC and the banks with the cash inflows as reflected in the bank statements
6.	Support in recoding refundable deposits and other cash inflows (proceeds from loans, grants from donors, dividends from SOEs etc)
7.	Revenue reporting as per stakeholder needs etc.

Data inputs and outputs for Revenue Accounting

The table below presents an overview of inputs into the revenue accounting module based on the data available within IFMIS and related external systems and outputs from the revenue accounting module, which forms as an input into other functions performed within IFMIS and to the external systems.

Table 8: Data inputs and outputs for revenue accounting function in IFMIS

IFMIS Modules/ External Systems	Data Exchange Requirements with Budget preparation
IT Systems at BoB, RMA and other banks	The banks assigned for collection of government tax receipts, including RMA that will host TSA and collecting other receipts, shall establish interface with IFMIS to share the data on the daily revenue collections. Such data from banks shall include total receipts per day for each revenue head and the overall revenue collections per day. In addition, the banks shall also share electronic bank statement with the IFMIS, through cash management module, to support in reconciling the total revenue collections data with the cash inflows into the bank account of the Government.
IT Systems at DRC	DRC shall establish an interface with IFMIS to share the data on the daily revenue collections. Such data from DRC shall include total revenue collections per day for each revenue head and the overall revenue collections per day. Such data received from the banks shall be reconciled with the revenue collections data received from the bank (s) and the cash-receipts into the bank account.
Cash Management	The data on summary of daily revenue collections, per revenue head, shall be shared with the cash management module to support in comparing the revenue collection performance with the planned cash inflows, gap analysis and for planning decisions needed for managing any cash surplus/deficit.
Meridian	The data on receipts from the donors/creditors is recorded and processed in IFMIS. Such data on receipts from donors/creditors is also updated in the debt management systems to support in debt servicing planning, forecasting and analysis. Such receipts data shall be shared between IFMIS and Meridian to ensure consistency on donor receipts data across both the systems.

3.3.8. Debt Management

Debt management and debt servicing for external and domestic debt, except for T-Bills, are managed by the Development Coordination and Debt Management Division (DCDMD) in the Department of Macro-Fiscal and Development Finance (DMFDF), MoF. DCDMD has been using CS-DRMS for debt recording and management for domestic and external debt and currently is in transition to Meridian, a latest web-based version of debt recording and management system from the Commonwealth Secretariat. The Department of Treasury and Accounts (DTA) manages the debt servicing for T-Bills and the debt servicing data for T-Bills is managed through the excel sheets and is not currently recorded in the Meridian. The debt servicing activities are carried out by the Back Office (BO) in the DCDMD. The debt servicing schedules are maintained in Meridian and are monitored by the back office for initiation of repayments as per schedule.

In the context of IFMIS coverage for Debt Management, RGoB will continue to use the existing systems (Meridian) to manage the debt portfolios for loans and government securities including capturing details of all debt instruments, related repayment schedules,

changes to debt instruments data and to conduct debt sustainability analysis and reporting etc.

While the existing systems are envisaged to support in the above debt management functions, IFMIS is envisaged to support RGoB in (i) capturing necessary data from Meridian to support in preparation of budget estimates, cashflow projections, recording the receipts from donors/creditors (towards loans/grants/securities), processing the debt servicing requirements for the interest and principal amounts etc.

The table below summarizes the key functions to be supported by the IFMIS for debt management related operations.

Table 11: Envisaged IFMIS Features for Debt Management

S. N	Features to be provided by the system for Debt Management
1.	Capturing the data of donors, creditors and debt instruments to support in recording the receipts from donors/creditors, in processing the debt servicing requirements etc.
2.	Establishing interface with Meridian to capture and update (i) master data, (ii) debt servicing requirements, (iii) receipts and repayment details
3.	Capturing the schedule of receipts (loans, grants), debt servicing requirements/schedule (principal and interest) for domestic and foreign debt, including assumed and contingent liabilities, on a medium-term basis (three years horizon) to support in preparation and updating budget estimates and cash flow projections
4.	Updating schedule of receipts and debt servicing based on changes to implementation schedules of programs/projects
5.	Commitment of funds for debt servicing based on the debt servicing schedule updated and maintained in IFMIS
6.	Updating the commitments data for debt servicing requirements data based on changes to the debt servicing requirements
7.	Recording and processing the loan/grant disbursement requests by the DCDMD
8.	Recording the receipts from borrowings (loans/grants/securities)
9.	Processing the debt servicing requirements and issuing payment instructions to the bank (BoB/RMA)
10.	Reconciliation of receipts (*from government securities/loans/grants*)/payments (*debt servicing*) data updated in the system with the electronic bank statements received from the bank and posting necessary adjustments.

3.3.9. Accounting and Reporting

The IFMIS shall support accounting and reporting requirements for Government of Bhutan in line Finance and Accounting Manual of the Government. Government currently is following cash basis accounting and intends to migrate to an accrual-based accounting in near future.

The design of GL and accounting framework in IFMIS shall support both cash basis and accrual-based accounting and reporting.

3.3.10. Audit Management

IFMIS shall provide sufficient data to support the auditors of the Royal Audit Authority (RAA) of RGoB in conducting the audit for financial transactions performed by the agencies. The system shall support the implementation of necessary controls to ensure transaction integrity across the lifecycle of transactions performed in the system. The RAA has established an Audit Information Management System (AIMS) to support in managing the lifecycle of audits and for capturing the audit observations and decisions from the audit. IFMIS shall include an interface with the AIMS to support in tagging the specific transactions with audit observations and for recording details of audit decisions for such transactions including data capture for any audit recoveries from the employees or contractors or other related stakeholders.

4. Implementation Approach for IFMIS

This section discusses the implementation approach for IFMIS including phasing requirements for PFM functions and agencies to be covered in system implementation. The project plan to be submitted by the bidders should take the implementation approach and timelines indicated in this section into consideration.

4.1. Phasing Plan for implementation of PFM Functions in IFMIS

IFMIS system development for all the modules shall be performed in parallel and shall be completed as per the timelines indicated in section 6. While system development for all the modules is expected to be done in parallel, system adoption by the national government agencies is planned in a phased manner.

Table 9: Proposed modules for IFMIS Phase 1 Launch

Scope of IFMIS	System Interfaces
a. Budget Management b. Commitments Management c. Cash Management (Part 1) d. Expenditure Management e. Payroll Management f. Accounting and Fiscal Reporting	a. ZEST (RCSC) b. Bank of Bhutan IT System c. RMA IT System d. E-Government Procurement System (e-GP) e. Construction Management System (CMS) f. Government Inventory Management System (GIMS) g. Meridian (Debt Management System)

Table 10: Proposed modules for IFMIS Phase 2 Launch

Scope of IFMIS	System Interfaces for IFMIS
a. Budget Preparation b. Cash Management (Part 2) c. Revenue Accounting d. Accounting and Fiscal Reporting (Part 2)	a. RAMIS (DRC) b. Audit Information Management System (AIMS) at RAA

Please refer to Table 5 for an exhaustive list of interfaces required for IFMIS with the other systems in the Government. Apart from the interfaces listed in table 9, all other interfaces for IFMIS shall be established in phase 2 of the project implementation.

4.2. Phasing of system implementation for Government Agencies

Rollout of new IFMIS for all the government agencies, despite extensive testing and quality assurance procedures, could pose severe challenges in case of any unforeseen developments during its implementation and rollout. It is also critical to pilot the system functionality to verify the adequacy, comprehensiveness and the completeness of the system prior to its rollout across the Government. Upon completion of the system stabilisation period successfully and addressing the gaps identified during this stage, the system shall be rolled out to all the users across the Government. Following summarises the proposed approach for rollout of IFMIS for the stakeholders:

a. The e-PEMS system is currently utilized by the Finance staff across the Ministries, Districts, Thromde's, Judiciary bodies, Defence, Medical services, Embassies, missions and consulates. The total number of such users include approx. 600.

b. IFMIS phase 1 functionality shall be launched for all the existing users at the same time. Upon successful system testing, certification and training of the end users (600), MoF, RGoB shall provide system access to all such users with the test data for trial run of the system for 4-6 weeks. During such a period, the system shall be provided with the test data to the users for familiarizing them with the system functionality and to perform test transactions in the system to verify system functionality. During such a period, apart from the end user training, the end users shall be provided with the user manuals and the videos for guiding the users in utilizing the system functionality. Issues reported by the users during such trial runs shall be addressed before the cut-off date for production go-live of the system.

c. Prior to the cut-off date for production go-live of the system, data migration activities shall be completed for migrating the required data to IFMIS including migration of necessary transaction records from e-PEMS and MYRB as required for IFMIS go live.

d. For the data that does not exist in the current environment (e-PEMS, MYRB), specific user ids should be provided to all the agencies during the trial run for capturing the data needed for IFMIS (e.g. data on contracts, their current balances etc which is currently not available in e-PEMS). During the trial run phase, agencies should be provided with two categories of user ids. One for the test and trail run purposes and other for capturing the data needed for the production instance of IFMIS. For the data digitized by the end users during this phase, as needed for the production environment, the system implementation partner shall perform data quality assessment and shall provide necessary reports (online in IFMIS) for the agencies to address the gaps in the digitized data.

e. Prior to the production go-live, necessary reports shall be made available for the agencies to verify the data in the IFMIS production instance with the data/records in e-PEMS, MYRB or in other systems or manual records. Each agency should provide a sign-off upon review and certification of the reports available in the system and any gaps in the data shall be addressed by the agency in collaboration with the central support team established for IFMIS.

f. Upon Production go-live, e-PEMS shall be decommissioned and shall be kept as a standby for use for any major unforeseen issues with the IFMIS. During this phase, necessary data exchange mechanisms shall be implemented between IFMIS and e-PEMS by the IFMIS implementation partner to update e-PEMS database daily to support in switchover to e-PEMS for any unforeseen conditions.

g. Upon successful production usage and stabilization of the system for a minimum three to four months and upon resolving issues and blockers in the system functionality, the RGoB shall initiate measures for rolling out the system functionality to the end users in the Ministries and agencies. Such end users in the Ministries and agencies shall include the staff in the HR section, users currently involved in approval of transactions which result in financial aspects (e.g. approval of contracts, approval of bills, preparation of payroll, updating the data for staff which impact the payroll etc). Such users currently are not provided access to e-PEMS and they are performing the financial management transactions through manual procedures. Post IFMIS implementation, it is envisaged to eliminate or reduce the manual procedures at the agencies resulting in automation of PFM procedures from the transaction initiation at source till completion of the transaction. During this phase, system access shall also be made available to the external users such as suppliers or contractors to enable them in online submission of bills/invoices for their contracts.

h. Depending on the system implementation progress and stabilization, the phase 2 modules of IFMIS (e.g. budget preparation) shall be launched in time for initiation of budget preparation for the following financial year. Phase 2 modules shall be launched upon successful system stabilization for phase 1 modules.

i. Following summarizes the proposed phasing plan for IFMIS rollout for the agencies:

   a. System testing and certification by the designated user group from the IFMIS including technical testing and certification by GovTech or agency designated for this purpose.

   b. Extend system access to the existing e-PEMS users for trial run/test transactions for 4-6 weeks along with system support for digitizing the data needed for IFMIS that is currently not available in e-PEMS, MYRB or other IT systems

   c. Resolution of issues in trial run, data migration and production go-live of phase 1 functionality for all existing e-PEMS users at the same time.

   d. Production system stabilization for 3-4 months, resolution of any issues in production go-live and system stabilization

   e. Launch system access to other users in the Government agencies for capturing all financial transactions in IFMIS at source including system launch for external users (e.g. suppliers)

   f. Launch phase 2 modules upon successful launch of phase 1 functionality and in the interim continue the use of MYRB for budget preparation related activities.

5. Scope of Work for the Service Provider

The implementation approach and plan for IFMIS shall ensure project economy and sustainability as crucial factors throughout the project lifecycle. After a careful evaluation of specific goods and services required for IFMIS, certain activities during the project implementation lifecycle are carved out for designating the national firms/resources for undertaking such activities and to blend such firm (s)/resources with the IFMIS implementation partner selected through this procurement to ensure handholding such national resources and to build their capacity from the inception of the project implementation.

The table below summarizes the specific responsibilities proposed for the IFMIS Implementation Partner (IIP) and the activities earmarked for the national firm (s) and resources. Such national firm (s)/resources shall be onboarded by the Government through separate contracts. In addition, all the bidders are encouraged to partner with the local firms to incorporate the national experts/resources, as appropriate, into their team structure. However, the overall responsibility for delivering the activities listed in the table below and the other activities and deliverables designated for the IIP shall rest solely with the IIP.

Table 12: Key Roles & Responsibilities of IFMIS Implementation Partner

IFMIS Services and Goods Requirements	IIP	National Firm/ Resources
Project Management for system development and maintenance	✓	
Establish development, test and training instance needed for the system	✓	
System design & development	✓	
Provide system software needed for IFMIS for development and test instances	✓	
Sizing of infrastructure and system software required for the production instance	✓	
System testing	✓	
Development of system technical documentation	✓	
Development of user and training manuals		✓
Development of end user training videos in the local language and English		✓
Conduct the Train the Trainer programs	✓	
End user training		✓
Data migration	✓	
System integration with other systems	✓	
System implementation & go-live support	✓	
Stakeholder awareness building and sensitization		✓
Level 1 Helpdesk		✓

IFMIS Services and Goods Requirements	IIP	National Firm/ Resources
Level 2 and Level 3 support for system maintenance and issue resolution	✓	
Software change management and enhancements	✓	
Train the designated national personnel on technical maintenance of the system including on application stack, development, enhancements, source code and technical documentation	✓	

This section provides the scope of work for the IFMIS Implementation Partner (IIP) during the lifecycle of the project. In summary, the scope of services to be provided by the IIP includes following:

Table 13: Summary of Scope of Work for the IIP

Scope of Work	Coverage
IFMIS Implementation Requirements	a. Design, development and implementation of application software b. *IT Infrastructure sizing for IFMIS* c. Capacity Building for IFMIS d. Data Migration
IFMIS Support Services Requirements	a. Warranty and Maintenance Support of Application and System Software

5.1. IFMIS Implementation Requirements

This section discusses the scope of services to be provided by the IIP during the implementation phase of IFMIS.

5.1.1. Design, development and implementation of application software

The table below includes the scope of work for IIP for design and implementation of application and system software for IFMIS.

Table 14: Detailed scope of work for IIP for IFMIS design and development

Milestone	Scope of work for IIP
Activity #1: Project Planning	Bidder must include in their Bids a Preliminary Project Plan containing sufficient details on work breakdown structure, sequencing and time frame for every activity for implementation phase of IFMIS. The plan must include the proposed staffing plan including numbers, roles, and responsibilities of team members. The plan must have a practical phasing of the IFMIS design, development, testing, implementation and roll out including project milestones and performance indicators that may be used to monitor progress, and specific deliverables to be submitted to the RGoB. The plan must also include:

Milestone	Scope of work for IIP
	● the project management tool to be used (project management software or other tool(s)). ● project communication plan ● project schedule, by item and start and end dates. ● risk management plan. ● work breakdown structure. ● schedule of project review etc. The preliminary plan submitted in the bid shall be further strengthened and finalized by the IIP upon commencement of the engagement. The IIP need to submit a comprehensive project plan and project management approach to RGoB within four weeks from signing the agreement for the project based on discussions with the RGoB.

Outputs at this activity:

1. Detailed project plan
2. Project management approach document

Activity #2: Systems Requirement Study for IFMIS	For the functional scope of IFMIS, the IIP shall perform the following key activities: ● Detailed as-is process study including review of existing acts and regulations of RGoB, stakeholder consultations for understanding the detailed business processes, conducting management interviews and workshops for identification of key issues and challenges in the current environment, validation of as-is study outputs and observations and finalization of as-is study report. The IIP shall be provided with the recent reports available on current processes and related assessment. However, IIP is responsible for conducting its comprehensive study to ensure completeness of requirements gathering and design for IFMIS. ● Detailed assessment of current business processes adopted by the stakeholders for PFM functions covered under IFMIS, to identify the redundant, non-value-added activities and other critical areas which are impacting the operational effectiveness and performance of Government of Bhutan. ● Detailed assessment of current forms and formats used by the stakeholders for performing the PFM functions and transactions proposed to be covered under IFMIS to identify the redundant and unused information captured currently and to identify the redundant forms/formats used in current environment ● Reengineering the business processes, using the best practices-based business process reengineering (BPR)

Milestone	Scope of work for IIP
	principles and guidelines, to eliminate the process deficiencies identified during the as-is process assessment ● Application of best practices for Government financial management and administration in reengineering the business processes of PFM stakeholders ● Reengineering the application forms used by PFM stakeholders to eliminate the redundant and unused information captured now and to eliminate the redundant forms/formats as applicable ● Conducting the workshops to present the recommendations on to-be processes and to-be forms/ formats recommended for PFM stakeholders ● Preparation of to-be process maps based on the reengineered business processes and inputs gathered during the validation workshops ● Study the system integration/ interfacing requirements to and from IFMIS with the other related ICT systems implemented within and outside RGoB and finalization of system integration requirements in consensus with RGoB. ● Finalization of target operating model, to-be report and sign-off from RGoB on the to-be report. IIP shall ensure that its team has experts in public finance including fiscal planning, budgeting, treasury and cash management operations, expenditure and receipts management, debt management, accounting, auditing and reporting for providing best practice inputs in to-be process design. It is to be noted that RGoB may deploy an independent team of experts (both internal and external) who will work in close coordination with IIP in identification of process improvement opportunities and IIP shall take cognizance of such recommendations from the RGoB team in finalizing the to-be processes and system requirements.

Outputs at this activity:

3. As-Is study report for functions and services related to Government financial management including the gaps and challenges identified in the current environment covering processes and forms of RGoB.
4. Workshops for As-Is validation and to-be process validation
5. To-be report detailing the recommendations on reengineering the current business processes, forms and formats, to-be process (including IT enabled process points) maps for identified functions and services, functional requirements etc.

Activity #3: System Design for IFMIS	● During the functional design, the IIP shall perform the functional prototyping, including the user interface design and workflows, using a prototyping tool for every screen in

Milestone	Scope of work for IIP
	the system and such prototype shall be presented for validation and signed-off by the Government. The prototyping shall be performed by a well-recognized tool that should enable intuitive UI/UX design for the screens for all the processes included in the scope of IFMIS. Such a prototype should also support workflow-based transition for the transactions to provide near real application experience for the functional team designated by the Government for providing sign-off on the system design. ● Preparation of system requirements specifications for IFMIS based on the signed-off to-be process report (in case of bespoke development approach for IFMIS) and the approved prototypes. ● Obtaining sign-off on the requirements specifications report/gap analysis report and the prototypes from the RGoB. ● Perform detailed system design for IFMIS. The system architecture, design and development for IFMIS shall be based on micro-services-based architecture. ● Consultations with RGoB on SDD report, incorporate the feedback and finalization of the SDD report. ● All the deliverables submitted by the IIP shall also include editable version of all artefacts.

Outputs at this activity:

6. System Requirements Specifications for IFMIS based on the approved to-be process report including system integration/interfacing requirements
7. System Design Document (SDD) for IFMIS

Activity #5: IT Infrastructure sizing for IFMIS	● IFMIS shall be hosted in the Government data and the disaster recovery centres. The network and security infrastructure required for IFMIS shall be provided by the RGoB through the existing shared infrastructure in the data centre and DR site. However, exclusive server and storage infrastructure shall be implemented for the IFMIS collocated in the data centre and the DR sites of RGoB. ● Upon completion of detailed system requirements study, system architecture and design for IFMIS, the IIP shall undertake IT infrastructure sizing for the production and DR instance for IFMIS. IIP shall submit a detailed IT infrastructure assessment report for IFMIS capturing the recommended specifications for server and data storage infrastructure and related system software requirements for IFMIS. Such a report shall include a comprehensive bill of material and specifications for the server and storage infrastructure, related system software including

Milestone	Scope of work for IIP
	assumptions and justification for the recommended infrastructure. ● IIP shall ensure that the recommended specifications are OEM neutral and shall also support RGoB in responding to any clarifications sought by the bidders on the BOM and specifications during procurement of IT infrastructure for IFMIS.

Outputs at this activity:

8. IT Infrastructure Requirements Report for IFMIS

Activity #4: System Development	● The IIP shall provide necessary hardware and system software as needed for development of the software as per signed-off System Requirements Specifications. For development of IFMIS, the IIP shall adopt open-source tools and technologies, to the extent feasible, for components such as workflow engine, business rules management, user activity logging (audit tracking), user authentication and access control management etc. The development approach should minimize the hard coding and shall leverage configurable tools to minimize the development effort during the IFMIS development and maintenance. The tools proposed for IFMIS shall have an established track record in similar environments and should have sustainable support arrangements for the foreseeable future. ● The IIP shall perform the development of the proposed solution based on the functional, system requirement specifications and designs finalized for the IFMIS. ● The IIP shall also supply and implement a source code management tool, which shall be handed over to the RGoB post implementation of IFMIS. ● The IPR for the custom developed IFMIS software for Bhutan shall be exclusively with the RGoB. ● The source code shall include configuration level changes related to various modules

Outputs at this activity:

9. Development of solution for the IFMIS
10. Source code and other related outputs/artefacts for the software

Activity #5: Software Testing	● The IIP shall design the software testing strategy including traceability matrix, test cases and conduct testing of various components of the software developed for IFMIS project. The software testing shall include full system testing including functional (*e.g. unit, integration testing*) and

Milestone	Scope of work for IIP
	non-functional (*e.g. integration, performance, security and stress testing*) etc. ● The IIP shall obtain the sign-off from RGoB on the testing approach and plan. The IIP shall perform the testing of the solution based on the approved test plan, document the results and shall fix the issues identified during the testing. ● The IIP shall arrange to deploy necessary infrastructure and tools for conducting testing including integration, performance, security and stress testing and shall also provide outputs of such tools to RGoB for verification purposes. ● Similarly, the IIP shall supply and implement necessary tools for tracking the bugs/issues/gaps identified during the testing. The tools to be utilized by IIP should be included as part of its proposal/bid and shall ensure that such proposed tools have established track record in similar conditions. ● Though RGoB is required to provide formal approval for the test plan, it is the ultimate responsibility of IIP to ensure that the product delivered by IIP meets all the requirements of the IFMIS signed-off with the RGoB. ● The responsibility of testing the system lies with IIP. RGoB may also engage a third-party quality assurance service provider to perform independent verification and validation of solution delivered by the IIP to assess the solution across various dimensions such as functionality, security, scalability, integration performance etc. The acceptance testing by the RGoB, or any third party identified by the RGoB is for ensuring that systems provided by IIP meets the IFMIS requirements. ● IIP shall provide and ensure all the necessary support to the RGoB or any third party in conducting the acceptance testing including providing access to system, sharing necessary project documentation, testing strategy, test cases developed for the IFMIS, test results, action taken report on issues identified during testing and relevant corrective actions taken etc., including access to the test instance established by the IIP for the IFMIS. ● IIP shall address all the gaps identified during the acceptance testing, which will be revalidated by the third party/ RGoB. IIP shall deliver an error free solution upon addressing all the identified gaps and shall submit an action taken report for the issues reported during UAT.

Outputs at this activity:

11. Test strategy, test plans, test cases
12. Test results for testing carried out by IIP

Milestone	Scope of work for IIP
13. Action Taken report on issues identified during the acceptance testing and relevant corrective actions. 14. Fully tested, error free version of the software for IFMIS including updated source code and related artefacts for an error free version of the application software for IFMIS	
Activity #8: Documentation	• The IIP shall prepare/update the documents including that of as-is and to-be reports, functional requirements specifications, systems requirement specifications, system design documents, test cases and results, technical and administration manuals, operations/maintenance manual etc. as per applicable standards. • The IIP shall obtain the sign-off from RGoB for all the documents submitted for IFMIS and shall make necessary changes as recommended by RGoB before submitting the final version of the documents. • During the entire lifecycle of the project, IIP shall ensure that the project documents are kept up to date.
Activity #9: Implementation of IFMIS	• IIP is required to perform all the necessary tasks to implement IFMIS and to make the system ready for commencement of system usage by the users covered in trial run and in phase 1 and phase 2 of the system implementation. • The IT infrastructure solution provider shall provide the installed infrastructure up to the operating system level including supply of all other system software as required for production and DR instances. IIP shall be responsible for installation and configuration of all other components, system software and application software for the production and DR instance of IFMIS. Installation of data backup management solution shall be the responsibility of the IT infrastructure solution provider in coordination with the IIP. • During the trail run, IIP shall support in extending the system access to the existing e-PEMS users for trial run/test transactions for 4-6 weeks along with system support for digitizing the data needed for IFMIS that is currently not available in e-PEMS, MYRB or other IT systems. IIP shall provide necessary support to ensure that the system is available for all the users during the trial run phase and all the issues highlighted by the end users are addressed in a timely manner. For the data digitized by the users during the trial run phase, as needed for the production environment, shall be migrated by the IIP into the production environment after necessary data validation and testing.

Milestone	Scope of work for IIP
	• For creation of system users and their profiles and roles in the system, IIP shall provide excel based templates for the agencies to provide the details of users, their roles/privileges needed in the IFMIS, applicable workflow etc... and based on such data received from the agencies, IIP shall configure the workflow for such users in the system. • The system shall be declared as 'Live' upon completion of the trial run phase, upon migration of all the data needed for production use and upon completion of all activities needed for production launch successfully. The operations and maintenance phase for IFMIS shall commence upon RGoB declaring the IFMIS system as 'live' through a formal document issued from the Government to the IIP. The Government will not use the system in the production environment for its financial management functions without issuing the 'Go-Live' certificate to the IIP. • Upon go-live, the system shall be utilized by the existing e-PEMS users for 3-4 months (system stabilization period). IIP shall be responsible for resolving all the issues identified during the system stabilization period. Any system enhancements or functionality change requests submitted by the users shall be handled through the software change management procedures agreed between RGoB and the IIP. • Upon successful completion of the system stabilization phase and upon resolution of critical issues identified during the system stabilization phase, IFMIS access shall be extended to the users in the Ministries, Departments, Agencies, suppliers etc. (system rollout). • IIP shall prepare a detailed plan for rollout of the System, in consultation with RGoB, for all other agencies. The plan shall address sequencing of the agencies for rollout, activities and timelines, roles and responsibilities etc. • During rollout, IIP shall be responsible for the following minimum activities: a. Preparation of necessary templates and documents to obtain information required from the agencies to support in system rollout for respective agencies b. Conduct workshops and system walkthrough for select staff from the agencies on system functionality and migration strategy (including details needed as per prepared templates) c. Coordinate with the agencies for obtaining the filled-up templates with the data required for system configuration for respective agencies

Milestone	Scope of work for IIP
	d. System configuration and workflow customization based on requirements provided by the agencies e. Configuration of users and authorizations f. Data migration for agencies covered in rollout phase g. IIP shall be responsible for addressing any issues or gaps identified by the agencies during the rollout phase ● While the system development activities may be carried out by the IIP in the interim, the phase 2 modules shall be launched for the end users only upon successful stabilization of phase 1 modules. Approach discussed in this document for phase 1 modules shall also be followed for phase 2 modules and the responsibilities for IIP remain the same for both the phases.

Outputs at this activity:

15. System go-live for Phase 1 and Phase 2

16. IFMIS Rollout Strategy
17. Templates needed for obtaining information from agencies for system rollout
18. System configuration and implementation for agencies covered in rollout phase
19. Workshops on system rollout for staff identified for support in system rollout
20. System rollout for agencies covered in rollout phase including system rollout completion report for each agency
21. Issue Log and Action Taken Report

5.1.2. Capacity Building for the Stakeholders

This section discusses the scope of services to be provided by IIP for building necessary capacities in the stakeholders during the project implementation lifecycle to support in usage, operations and maintenance of IFMIS application software and associated IT infrastructure for development, test and training instances. The table below lists the training programs for development and delivery by the IIP.

Table 15: List of training programs in scope for IIP.

S. N	Training Course
1.	Power User/ Functional Training on IFMIS Application and its functions
2.	Technical training on IFMIS application software
3.	Training of Trainers Program for IFMIS Functionality and Usage for each category of users
4.	Information Security Management for IFMIS Software

S. N	Training Course
5.	DB Administration

In addition to the above training programs, the designated staff from the Government shall work along with the maintenance and support staff of IIP deployed for IFMIS. IIP shall continue the capacity building and handholding activities for such designated staff to enable them to take over maintenance and support for IFMIS upon conclusion of the contract for IIP. The training programs and related activities from IIP shall ensure that necessary skills are imparted to the designated staff to enable them in taking over maintenance and support functions post conclusion of IIP's contract. For technical training programs (e.g. S.No 2, 4 and 5 in the table above), IIP shall plan building the capacity of RGoB staff in a phased manner through a series of training programs in such areas.

The table below discusses the broad coverage of training programs courses to be conducted by IIP.

Table 16: Coverage of training courses

S. N	Training Program	Brief Overview
1.	Power User/ Functional Training on IFMIS Application and its functions	RGoB will create a Core Functional Team for each module to be implemented under IFMIS, which shall be responsible for coordinating with IIP during requirements study, finalization of functional requirements, system design, system development, system implementation, training and post go-live support. IIP shall be responsible for complete knowledge transfer on respective modules of IFMIS to core functional team and shall conduct training program covering following minimum areas: a. Features and functionality of the module b. Business process and workflows c. Configuration and implementation of the module d. Inputs to and outputs from module e. Implementation of the module including necessary configuration as applicable for the module f. Creation of users, workflows, allocation of user rights/authorizations g. Creation and generation of reports h. Managing the interfaces relevant for the module etc.
2.	Technical training on IFMIS application software	Similar to the core functional team, RGoB will identify a core technical team (IFMIS Technical Team) for the software, which will focus and coordinate with IIP on the technical aspects (non-functional) of the system such as application installation, configuration, administration etc.

S. N	Training Program	Brief Overview
		The technical training program on IFMIS software should focus on building necessary capacities for the IFMIS technical team and should cover following minimum areas: a. Technical features and specifications of the product b. Installation of the product and related tools/services c. Configuration of the system and related tools d. Administration of the system including performance management, security management etc. e. Data management and system backup/restore operations f. User administration including creation of users, allocation of user rights etc.
3.	Train the Trainer Program for IFMIS Functionality and Usage	The user base for IFMIS will be in the few thousands and it will be difficult for IIP or the core functional team to undertake training programs for all the users. Considering this, a team of trainers will be identified from the agency who shall be provided with detailed training on IFMIS and its functionality. Such trainers (who participated in the Training of Trainer Program) will plan and conduct training sessions for the users in respective agencies. Train the Trainer programs shall be conducted for each module/function covered under IFMIS implementation and each program shall cover the following minimum areas: a. Scope of system implementation for respective functions b. Key changes made to the current business processes c. Business processes implemented in the system for respective function (to-be processes) d. Process flows, transactions, system features e. Generation of reports f. Do's and don'ts in the system g. How to plan and conduct the training programs for their agencies etc. The participants should be provided by IIP with the standard training material, user manuals, training manuals, handouts etc to support in conducting the training programs for the staff in their agencies. Training program and content for train the trainer programs shall be customized for each category of stakeholder based on their specific role and transactions that will be performed in IFMIS.

S. N	Training Program	Brief Overview
4.	Information Security Management for IFMIS Software	This training program shall be conducted for the technical team identified by RGoB for coordinating with IIP on operations and maintenance of IFMIS software and shall cover the following minimum areas: a. Information Security risks for IFMIS b. Approach for information security management c. Security and controls management in IFMIS d. Standard measures for addressing information security risks e. SOPs for addressing risks f. Need for security audit, scope and timing of the audit g. Continuous monitoring and management of information security etc.
5.	DB Administration	The training program on DB administration shall be conducted by the IIP for the team identified by RGoB for coordination with IIP on database installation, configuration, maintenance and related support operations. The training program shall focus on following minimum areas: a. Installation b. Configuration c. Database creation and database management d. DB design and data model implemented for IFMIS e. Performance monitoring and management f. Security management g. Scalability and availability management h. Data backup, restoration and related operations etc.

Following summarizes the responsibilities of IIP and RGoB on infrastructure and logistics requirements for conducting the training programs.

RGoB	RGoB shall be responsible for providing the following infrastructure and logistics support for training programs: ● Training venue and facility ● Training infrastructure including projector, screen, flip charts, workstations for training participants and other supporting material needed for the program ● Transportation, boarding and lodging facilities for the participants ● Food and snacks during the training program
IIP	IIP shall be responsible for providing the following infrastructure and logistics support for training programs:

- Training instance including server, application and system software with fully loaded software and tools to facilitate in training program. Such system shall support in conducting at 4-5 training programs in parallel without any performance and availability issues and IIP shall accordingly design and implement the training instance to address this requirement
- Development of training material and providing training material in soft and hard copies (*except for the end user training programs, which shall be developed by the RGoB*) for the participants for training programs conducted by IIP.
- All the training programs shall be conducted in either Thimphu or in Paro locations in the country. Accordingly, the cost for conducting the training programs by the IIP shall take this into consideration as no additional costs shall be paid for conducting the training programs in regions.
- Transportation, boarding and lodging expenses for trainers
- Each training program shall be conducted by at least two experienced trainers.

5.1.2.1. Scope of work and deliverables for IIP for Conducting Capacity Building Programs

The table below presents the scope of services related training programs to be conducted by IIP for IFMIS.

Table 17: Scope of Services related to training requirements for IFMIS

Scope of work	Description
Activity #1 Preparation of Training Plan for IFMIS	The list of training programs and their broad coverage is provided in the earlier pages. During the implementation phase, the IIP shall prepare a detailed training plan including training program, detailed training curriculum, delivery methods, schedules and locations for training, roles and responsibilities for conducting the training programs covering training requirements across the project phases. The training instructors proposed and deployed by the IIP should have relevant experience in their specific areas.
Deliverables: 1. Training Plan for IFMIS	
Activity #2 Development of Training Material	The training programs shall be developed and conducted in the English Language. All training programs shall be instructor led and following minimum training material shall be provided by IIP for each participant in the training program: ● Course content in hardcopy and softcopy ● Participant handouts/handbook For train the trainer programs, in addition to the above material, IIP is required to provide following additional material to the participants:

Scope of work	Description
	• Trainer handbook, detailing the guidance and instructions on conducting respective programs. All the training material developed by IIP shall be made available for registered and authorized users in the IFMIS portal.

Deliverables:

2. Training material for IFMIS for training programs within the scope of IIP

Activity #3 Conduct training programs	IIP shall be responsible for conducting the training programs mentioned in the earlier pages across the project implementation lifecycle. IIP may be asked to conduct additional programs for each training course as per emerging needs of the project. For each training program conducted by IIP, a training completion report shall be prepared and submitted to RGoB covering the details and schedule of training program, list of participants, findings from training program etc. Based on the initial training programs conducted by IIP and feedback received from the participants, the training material shall be updated and submitted by IIP to RGoB addressing the feedback/concerns identified by the participants, if any.

Deliverables:

3. Training completion report for each training program

4. Updated Training Material

Activity #4 Clarifications support during rollout of training programs	IIP shall provide clarifications support on a continuous basis for training programs conducted by the trainers from train the trainer programs. Such support may cover providing necessary clarifications to the trainers on course content, coverage, functional and technical aspects delivered through the training course etc.

Deliverables:

5. Clarifications and advisory support for rollout of training programs

5.1.3. Data Migration

This section discusses the scope of work for IIP for data digitization and migration for IFMIS.

Table 18: Data migration requirements for IFMIS

Scope of work	Description
Activity #1 Development of Data Digitization	Based on the approved SRS, IIP shall undertake an assessment of data digitization requirements for each module and shall prepare a data digitization and migration strategy capturing the specific data elements needed for IFMIS, data quality criteria for data elements required for IFMIS, source data for each data element, data

Scope of work	Description
and Migration Strategy	conversion and migration plan, roles and responsibilities of stakeholders etc.

Deliverables:

1. Data digitization and migration strategy

Activity #2 Development of templates for data preparation	For the data, which need to be digitized for IFMIS, the IIP is required to provide necessary templates for RGoB for providing such data by the agencies. The templates shall be developed in MS Excel or similar tools to enable the agencies to provide the data, and such templates shall include inbuilt controls to ensure that complete and appropriate data is captured by the agencies. For the data available in the existing information systems, IIP shall design and develop the system procedures for data mapping, conversion and migration from existing systems to the IFMIS.

Deliverables:

2. Templates for preparation of data by the government agencies
3. System procedures for migration of data from existing systems to the IFMIS

Activity #3 Coordinate with agencies for obtaining data	For data to be digitized for IFMIS, the IIP shall coordinate with the respective resources identified by the agencies for obtaining the filled-up templates for data. IIP shall prepare and submit status reports to RGoB on submission of filled up data formats by the agencies. Any delays in receiving the filled-up data formats shall be escalated by the IIP to RGoB in a timely manner through status and escalation reports.

Deliverables:

4. Status Reports
5. Escalation Reports for delays in receipt of filled up data formats

Activity #4 Data Quality Assessment and Reports	For the filled-up data formats provided by the agencies, the IIP shall perform data quality assessment using necessary tools and scripts to validate the digitized data against the defined data quality criteria for respective modules. IIP shall prepare/generate a report on data/records not complying with the defined data quality criteria and shall submit the same to the respective agency for corrections.

Deliverables:

6. Data Quality Assessment Reports

Activity #5 Data Migration	Upon completion of data quality assessment and necessary corrections in data by respective agencies, the IIP shall perform data migration to the IFMIS. The data migration activity performed by IIP shall ensure that the data is migrated completely and accurately. The IIP shall design and implement necessary validation checks and controls to ensure that migrated data is accurate and complete in

Scope of work	Description
	comparison to the data provided by respective agencies. Based on the data migration activities completed for each agency, the IIP will be required to submit status reports on data migration for each agency.

Deliverables:

7. Migration of updated and corrected data into IFMIS
8. Data migration status reports

5.2. IFMIS Support Services Requirements

The IIP shall provide warranty, operations and maintenance services for IFMIS solution including application and system software provided by the IIP for a period of three years from commencement of trial run for the IFMIS. Such support services shall commence from the system launch for trial run for phase 1 for thirty six months or three years.. The scope of warranty, maintenance and support services will expand based on the progress with implementation and rollout of IFMIS.

The warranty and support for IT infrastructure provided by the IIP for the development, test and training instances shall commence from the date of implementation of such infrastructure and shall be valid until the end of the contract period.

The IIP should have a back-to-back arrangement with the OEMs (for all software, hardware components and any other items supplied by IIP during the contract period) for warranties for the entire contract period. Such agreement with all OEMs shall be transferred by the IIP to the RGoB in the event of any extreme and unforeseen circumstances, such as the withdrawal or termination of IIP contract from the project at any time after implementation, for any reason whatsoever. Bidders are required to submit the documentation related to such warranty with OEMs in their bid documents.

The level 1 helpdesk support shall be provided by the national resources (individuals or the entity) engaged by the RGoB. Level 1 helpdesk staff shall be the first point of contact for the users of the IFMIS through email, call or the online requests submitted to the helpdesk. RGoB shall establish the IT infrastructure required for the helpdesk staff including the helpdesk management system, computers, printers, local area network and access to the IFMIS and the helpdesk management system. The nature of support services provided by the level 1 helpdesk team will include:

a. Clarifications to the users on the system functionality
b. User administration including creation of users and changes to the user profiles and privileges in the system as per the standard operating procedures established for this purpose
c. Master data management, through the front end, including creation of new master data or implementing amendments to the master data.
d. Recording the technical issues and functional enhancements/changes requested by the end users and coordination with the IIP staff for their resolution.

All other issues, apart from the above category of issues, shall be addressed by the IIP as part of warranty and maintenance support for IFMIS. Access to the helpdesk management system shall be provided to the designated IIP staff for addressing level 2 and level 3 issues reported by the users. Access to the helpdesk management system shall also be provided to

the users to facilitate in reporting the issues related to IFMIS, which requires support from helpdesk or IIP support team.

5.2.1. Warranty and Maintenance Support of Application and System Software (IFMIS Support Services)

The IFMIS support services from IIP shall include, but not limited to, ensuring defect free operation of the IFMIS, monitoring the application software, database and related components for their uptime, performance and security incidents, troubleshooting and addressing the functionality, availability and performance issues, implementing proactive measures for minimizing any system downtime or performance degradation and implementing the system change requests. The IIP shall ensure upkeep of the IFMIs in good working order; perform changes and upgrades to applications as requested by the RGoB. The IIP shall be responsible for addressing all the defects identified by the users during the support period. The following outlines the scope for such IFMIS support services.

Table 19: Scope of support services for IFMIS

Requirement	**Scope**
Compliance to SLA	Any upgrades/ changes to the software shall be planned accordingly by IIP for ensuring the SLA requirements.
Application Software Maintenance	The IIP shall address all the errors/bugs/gaps in the functionality offered by IFMIS solution (*vis-à-vis the FRS, SRS and System Design signed off for IFMIS*) at no additional cost during the maintenance period. IIP shall implement necessary tools for monitoring the IFMIS application software, database and related system components availability, performance, security etc and address any issues identified in the system. RGoB shall formally communicate in writing for software changes (functional enhancements or changes to the system functionality agreed during the SRS sign-off stage) from time to time. Based on such requests from RGoB, the IIP shall undertake requirements and impact analysis, assess the efforts and timelines required for implementation of proposed change and shall submit a formal change request to RGoB capturing the required resources, timelines and total man-month inputs required for implementation of the change request. The effort estimates provided by IIP for change request will be reviewed and finalized by RGoB in consultation with IIP. Based on agreed total man-month inputs required for the change request and the blended man-month cost quoted by IIP in its commercial proposal for software change management, the total cost for implementation of change request shall be agreed and signed-off between RGoB and IIP. Payment for change requests shall be made by RGoB upon successful implementation of the change request by the IIP and conclusion of user acceptance testing successfully by RGoB and deployment of system enhancement on the production environment successfully.

Requirement	Scope
Database Management	Performance management of the database systems implemented for IFMIS including continuous monitoring of the performance of the system, ensuring system performance in line with the defined SLA and undertaking necessary maintenance activities needed to ensure uptime and performance of the IFMIS.
Problem identification and Resolution	Identification and resolution of application problems (e.g. system malfunctions, performance problems and data corruption etc.)
Maintain configuration information	Maintain version control and configuration information for application software and any system documentation.
Maintain System documentation	Maintain and update documentation of the software system. Ensure that: a. Source code for the system is updated and documented at regular intervals**.** **(**Compliance: The source code shall comply with the attached documents, which will be subjected to change: (Software Delivery Standards [DRAFT]) b. Functional specifications for system changes/enhancements are documented**.** c. Application documentation is updated to reflect on-going maintenance and enhancements including FRS and SRS/ To Be report, in accordance with the defined standards**.** d. User manuals and training manuals are updated to reflect on-going changes/enhancements**.** e. Standard practices are adopted and followed in respect of version control and management.

5.2.1.1. Transition Management

a. At the end of the contract period or during the contract period, if any other agency is identified or selected by RGoB for providing Operations and Maintenance Services for IFMIS application, IIP selected through this bid is required to provide necessary handholding and transition support to the complete satisfaction of the RGoB.

b. The ownership of the assets (including soft and hard components existing and procured through this tender), at any point of time during the contract or expiry of the contract, shall rest with the RGoB.

c. During the contract period, IIP shall ensure that all the documentation including policies, procedures, asset registers, configuration documents etc. are kept up to date and all such documentation is handed over to the RGoB during the exit management process.

6. Implementation and Payment Schedule for IFMIS

This section includes the implementation and payment schedules for IFMIS projects.

6.1. Implementation Schedule for IFMIS

The table below presents the implementation schedule for IFMIS. The timelines for completion, as referred in the table below, are the number of months within which the activity or milestone should be completed by IIP. 'T' referred to in the table below indicates the date of signing the Contract. 'PM' as referred to in the table below indicates payment milestones.

Table 20: IFMIS implementation schedule and deliverables

S. N	Milestone	Deliverables from IIP	Timelines for completion
1.	Signing the agreement and commencement of services	1. Signed agreement. 2. Submission of Performance bank guarantee	T
2.	Submission of detailed project plan **(PM1)**	3. Detailed project plan 4. Project management approach document	T + 1
3.	Completion of process design for IFMIS for Phase 1	5. As-Is study report for functions and services for Phase 1 6. To-be report detailing the recommendations for reengineering the current business processes, forms and formats, to-be process maps 7. Workshops for As-Is validation and to-be process validation	T + 3
4.	Sign-off on As-Is and To-Be Reports for IFMIS **(PM2)**	Updated Reports for deliverables listed in S. No 3 above based on feedback provided by RGoB during review	T + 4
5.	Completion of System Design for IFMIS for phase 1	8. Prototypes for UI/UX for Phase 1 processes 9. System Requirements Specifications for IFMIS based on the approved to-be process report including system integration/interfacing requirements. 10. System Architecture & Design Document (SDD) for IFMIS 11. Training Plan for IFMIS 12. Data digitization and migration strategy 13. IT Infrastructure sizing report for Production and DR instance	T + 6

S. N	Milestone	Deliverables from IIP	Timelines for completion
6.	Installation of development and test instances for IFMIS **(PM3)**	14. IT Infrastructure delivery & installation report for development, test and training instances	T + 6
7.	Sign-off on System Design for IFMIS **(PM 4)**	15. Updated Reports for deliverables listed above based on feedback provided by RGoB during review. 16. Test strategy, test plans, test cases 17. Templates for preparation of data by the government agencies	T + 8
8.	Completion of System Development and provide system for third party acceptance testing and QA for Phase 1 modules. **(PM5)**	18. Design and development of solution proposed for IFMIS (*developed IFMIS solution submitted for UAT*) 19. Test results for testing carried out by IIP 20. Preliminary review report from RGoB to verify whether the delivered system covers all the processes as signed off for phase 1 (prior to acceptance of system for UAT)	T + 15
9.	Submission of third party and user acceptance testing reports for IFMIS	None (Deliverables for this milestone shall be responsibility of RGoB and is dependent on conformance of IIP's performance against the above-mentioned activities and milestones).	T + 17
10.	Addressing the gaps identified in Third party audit	21. Action Taken reports on issues identified during the acceptance testing and relevant corrective actions	T + 19
11.	Data Quality Assessment and Data Migration	22. Status Reports (*multiple during data receipt and migration stages*) 23. Escalation Reports for delays in receipt of filled up data formats 24. Data Quality Assessment Reports (*multiple during data receipt and migration stages*) 25. Migration of updated and corrected data into IFMIS 26. Data migration status reports (*multiple during data receipt and migration stages*)	T + 17
12.	Operational acceptance of	27. Fully tested, error free version of the software for IFMIS (*including systems*	T + 19

S. N	Milestone	Deliverables from IIP	Timelines for completion
	IFMIS for Phase 1 Modules **(PM6)**	*and sub-systems along with source Code, library files, DLL's, Setup programs, Documentation etc.*)	
13.	IFMIS Launch for Trail Phase	28. System Launch for trial phase	T + 19
14.	System Stabilization	29. Updated reports for the deliverables listed above based on issues identified and resolved during system stabilization period and submitted to RGoB. 30. Issue Log and Action Taken Report	T+ 21
15.	IFMIS Go-Live for Phase 1 **(PM 7)**	31. Updated reports for the deliverables listed above based on issues identified and resolved during system stabilization period and submitted to RGoB. 32. Go-Live Certificate from RGoB 33. Issue Log and Action Taken Report	T+ 21
16.	Warranty, Maintenance and Support Services for Phase 1	34. Warranty and AMC for the products deployed by the IIP for IFMIS 35. Post Implementation Support for IFMIS application software and supporting system components including issue resolution, bug fixing etc. 36. Performance Monitoring Reports for the IFMIS Solution 37. Updated system design documents, specifications 38. Updated source code, application deployment files, configuration files for entire solution 39. Updated user manuals, administration manuals, training manuals etc 40. Software change logs etc	Starting from Go-live of IFMIS Phase 1 and to last until end of the contract.
17.	Sign-off on As-Is and To-Be Reports for IFMIS Phase 2 **(PM 8)**	41. Same outputs as applicable for process and functional design for Phase 1 modules	T + 12 Months
18.	Completion of System Design for Phase 2 Modules **(PM 9)**	42. Same outputs as applicable for system design for phase for Phase 1 modules	T + 15 Months

S. N	Milestone	Deliverables from IIP	Timelines for completion
19.	Completion of Development for Phase 2 modules **(PM 10)**	43. Same outputs as applicable for system development phase for Phase 1 modules	T + 24 Months
20.	Completion of Acceptance Testing and Certification of application software (Phase 2) **(PM 11)**	44. Same outputs as applicable for acceptance testing and certification for Phase 1 modules	T + 26 Months
21.	Go-Live for Phase 2 Modules (**PM 12**)	45. Same outputs as applicable for go-live for Phase 1 modules	T + 28 Months

Key Notes for above Table:

a. **"Go-live"** is the date on which the proposed IFMIS solution is completely operational as per the requirements specifications signed-off between the RGoB and IIP and all the acceptance tests are successfully concluded to the satisfaction of RGoB.

b. It is to be noted that upon completion of Go-live and at the end of each quarter of operations and maintenance support, IIP is required to submit all the updated system design documents, specifications, source code, application deployment files, user manuals, administration manuals, software change logs and all other applicable deliverables as listed in this section and payment of fees related to these mile stones is subject to receipt of such deliverables.

c. All the documents/manuals as referred to above shall be kept up to date by IIP based on the changes to the system functionality performed during the contract period. The revision history shall be maintained by IIP for all such changes. It may be noted that the timeline for each milestone shown in the table above will be enforced independently, even though some of them are inter-dependent. This will have the cascading effect of penalties for delays in all other milestones dependent on the precedent milestone. Hence IIP will have to be extremely careful in establishing an excellent project management set-up.

d. The payment during O and M phase is also subject to successful demonstration of SLA measurement process/reports for the SLA's indicated in annex 2.

6.2. Payment Milestones

The table below details the proposed payment schedule for IFMIS project during the project lifecycle. The % of Payment indicated in the table below is the % of the total cost towards application software design, development, implementation, IT infrastructure supply and implementation for development, test and training instances, and data migration related services, including all the project expenditure excluding warranty, operations and maintenance support for IFMIS.

For claiming the payment associated with each payment milestone, the IIP shall complete all the necessary activities, submit related deliverables and obtain the sign-off from the stakeholders for completion of the activities and deliverables due up to such payment milestone.

Table 21: Payment Schedule for IFMIS Application Software and IT Infrastructure

Payment Milestone Ref	Milestone	Timelines for completion (Months)	% of payment
PM 1	Signing the agreement, submission of performance bank guarantee, commencement of services and submission and acceptance of detailed project plan	T + 1	5%
PM 2	Completion of Functional Design (To-Be design) for Phase 1	T + 4	5%
PM 3	Installation of development and test instances for IFMIS	T + 6	2.5 %
PM 4	Completion of System Design for Phase 1	T + 8	5%
PM 5	Completion of application development and provide system for UAT for Phase 1	T + 15	10%
PM 6	Operational acceptance of IFMIS for Phase 1	T + 19	12.5%
PM 7	Go-live of IFMIS for Phase 1	T + 21	15%
PM 8	Completion of Functional Design (To-Be design) for Phase 2	T + 12	5%
PM 9	Completion of System Design for Phase 2	T + 15	5%
PM 10	Completion of development and provide system for third party acceptance testing and QA for Phase 2	T + 24	10%
PM 11	Operational acceptance of IFMIS for Phase 2	T + 26	15%
PM 12	Go-live of IFMIS for Phase 2	T + 28	10%

For any delays in achieving the milestones above, for the reasons attributable to the IIP, RGoB may levy a penalty up to 5% of the fee applicable for the milestone for each week of the delay. Any foreseen delays which are discussed, documented and approved by the RGoB may be exempted from the penalties.

For warranty, operations and maintenance services, the payment shall be made on a quarterly basis, at the end of the quarter, subject to compliance with the service level agreement.