Application Software for Procurement and Inventory Management (extendable to HR & Finance modules)

A Proposal from Nortcele to Indian Institute of Astrophysics, Bengaluru

Version: 1.0

Date: May,24th, 2024

Author: Shikhar Tiwari

Approved by: Ashok Kumar Singh

Submitted on: May, 24th,2024

Submitted by: Shikhar Tiwari

About the Document			
Title: Proposal for Development of Application Software for Procurement and Inventory Management (extendable to HR & Finance modules) compatible to existing IT ecosystem as well as future technology vision and roadmap.			
Current Version: 1.0			
Revision History			
Version	**Date**	**Description of Change(s)**	**Author(s)**
1.0	24/5/2024	Creation of Original document	Shikhar

Table of Contents

1. Overview

Implementation of Web-based Application Software to automate Procurement & Inventory activities / functions extendable to HR & Finance modules covering the entire Institute (India Institute of Astrophysics, Bengaluru).
IIA is a growing organisation. The number of students, faculty, staff, students, research/project staff, research projects, etc. is continuing to grow. The number of Departments, Sections, Divisions and programmes offered will also continue to grow.
The proposed Application Software should facilitate the smooth creation of new Departments/Sections/Divisions etc. and also should enable smooth functioning, integration and coordination of all units of IIA.
The design should support cross browser rendering across all prominent operating systems as well as platforms such as desktops, laptops, and mobile devices. Users can open on any Smartphone, Tablet, iPhone, and all other capable phones & mobile devices with the gadget compatibility like windows/ios/android/etc.
Interactive CMS and dashboard wherein required. Reports for all modules (Excel/ PDF). Security audit certification (by CERT-In empanelled agency) and SSL certified. All the server/VMs, hosting the public facing portals should be periodically assessed for vulnerabilities and they must be patched periodically as per the Guidelines for Indian Government websites and should be bilingual. Software and modules to be upgradable and has 2- tier access authentication.

2. Project Scope

3.1 PROCUREMENT MODULE

3.1.1 Vendor Master:

(a) Should have a Form to register vendors, by filling in details such as Vendor Name, Address, Email, Contact Number, Primary Business category, Account details, if registered in GeM/ CPPP etc., accessible to all users subject to approval by the Purchase Officer.

(b) Unique code based on vendor category should be generated. And to be able to search/ filter on vendors based on the product category, purchase history etc.,

(c) Provision to categorise vendors based on criteria such as – Indigenous/ Foreign, PSU/Non- PSU, MSE, Proprietary etc.,

(d) Provision to debar a vendor in the master, and update the reason for the same. And, to remove from the debarred list of vendors.

3.1.2 Material/ Job/ Works Master:

(a) Should have a Form for creating material/ job/ works code by an end user, indicating ‘Mode of procurement’ with necessary Annexure to be filled in as per mode:

(i) Proprietary: Then select the vendor for Proprietary along with justifications.

(ii) Limited Preferred Vendor Tender: Choose a minimum of four vendors for sending out the tender enquiries and justification for choosing preferred vendors.

(iii) Open Tender

(iv) Brand Specific Open Tender

(v) Global Tender.

(b) Should have the option to create material for goods (automatic generation of material code) based on categories such as Capital & Consumable and customizable sub-category such as Computer & Peripherals, Equipment, Furniture etc., in material master with UOM, end of life and book value.

(c) Should have the option to create a job for service (automatic generation of job code) based on categories such as AMC, Repair, Consultancy, Rate Contract etc.,) in Job master with UOM, Value.

(d) Should have the option to create works (automatic generation of works code) with customizable sub categories.

(e) Should have provision to update depreciation rate for each material (categorised as Capital) based on the subcategory of the material.

(f) Provision to update and identify if the material is indigenous or imported.

(g) Provision to update minimum, maximum and re-order level for the material.

(h) Search/ filter on materials based on material code/ category/ description of materials.

(i) Maintain and track information regarding the condition of material such as good, obsolete, broken etc.,

(j) Shall display storage location of the material – shelf, rack, zone, building etc.,

(k) Shall allow you to upload images, drawings against each material code for identification.

(l) Provision to update and track shelf life of perishable materials.

3.1.3 Indent Creation:

(a) Should capture the contact details of the Indentor (to be reflected in every screen of the workflow from Indent Creation till Invoice Processing), need aspect details and provision for uploading Prior Approvals like Budget Provision, Recommendations by relevant authorities etc.

(b) Should have option to create Indent by Indentor by choosing material/ job/ works and filling in following details in a form:

(i) Choosing Quantity, Consignee(s) (pre-defined customizable locations).

(ii) Update Budget Code.

(iii) Select Project Name, if it pertains to any project.

(iv) Provision to upload tender documents such as Technical specifications or GeM link, Scope of Work etc.

(v) If a pre-bid meeting is required for the tender, and the details such as date, venue etc.

(c) Upon choosing pre-approved material/ job/ works code, the corresponding mode of procurement details, value shall be auto populated from the master.

(d) For Rate Contract indents, entering the estimated rate, period of contract and option to choose single or multiple jobs.

(e) Notifications to each approving authority on receiving the indent in their approval queue.

(f) Notifications to purchase dept. and end user once approved, along with auto generated unique indent number.

(g) Functionality to assign the indent by Purchase Head to a particular employee in Purchase Dept. and the employee/ Indentor being notified after assigning of indent.

(h) On selection of the Indent, the current approval status and Stage of the Indent (Tender Request / Tender Evaluation/ PO, Delivery, Invoice Process etc.).

(i) All indents to be sent for approval as per the customizable (by IIA personnel) predefined approval workflow depending on Indent for, type, Project, Department, Value.

(j) Based on the Material Master Wherever Proprietary or Brand Specific items are selected, the Indent Workflow should be routed to Competent Authority and Proprietary Article Certificate, Brand-PAC should be generated automatically.

(k) Provision to hold the approval of an indent, if there are insufficient funds.

(l) Should have provision to capture the status of Indent based on the corresponding entries generated against the indent, such as Tender Request, Tender Evaluation, PO/ SO/WO.

(m) Provision to re-submit the indent after changes and editing, if returned seeking information during the approval process. Notification to all the recommenders who have already approved the indent, regarding the information requested, and the changes made before re-submission by the indentor.

(n) Auto-reminders to the respective approvers, if pending in their queue for more than 3 days.

(o) Provision to capture the status of indent based on the corresponding entries generated against the indent, such as Tender Request, Tender Evaluation, PO/ SO/ WO.

(p) Provision to view purchase history of a material/ Job chosen by the Indentor, while creating the indent. The history shall display details of corresponding previous orders issued, along with vendor details.

(q) The upper price limit for sub-categories: Desktop and laptop shall be as per the predetermined amount, based on the department of the Indentor.

(r) Provision to update multiple UoM (Unit of Measurement) for materials while raising indent and releasing of PO.

(s) Maintain user defined/ standard templates for Expression of Interest (EoI), Request for Proposal (RFP) etc.,

(t) Provision to collect requirements from various departments for commonly used and required materials.

(u) Provision to cancel the indent while the approval process is in progress. The indentor shall reach out to Purchase Dept. for cancellation of indent along with reason. Purchase Dept. shall update the status as 'Cancelled' in the application. The same shall be notified to all the recommenders who have already recommended the indent, with the reason for cancellation.

(v) Provision to close an approved indent by the Purchase Dept., based on the request received from the indentor. If the indent processing is in progress and the good/ service is no more required, then indentor requests Purchase Dept. for closing the indent. The Purchase Dept. shall close the indent along with reason for closure. Provision to also cancel the corresponding entries generated against this indent. The notification to all the recommenders and approver of the indent upon closure, and reason for closure.

(x) Notification to all the recommenders in the approval workflow, who have already approved the indent, regarding rejection by one of the recommenders.

3.1.4 Tender Request Creation:

(a) Should have the option to create Tender Request against an approved indent.

(b) The following Fields are to be populated in the Tender Request screen:

(i) Title of the Tender

(ii) Opening and Closing Date of Tender

(iii) Selection of mode of procurement (GeM, CPPP, Proprietary or Limited tender enquiry)

(iv) GeM: Provision to update details such as Direct Purchase up to Rs.25,000/-, Direct Purchase with comparison up to Rs.5 Lakhs, and GeM Bid. If chosen as GeM Bid, provision to update the material category and auto send notification to all the GeM registered vendors in the master under that material category.

(v) CPPP: Provision to update CPPP Tender ID and Tender details such as Published Date, Last Date, Opening Date. Provision to update the material category for the tender and auto send notification to all the CPPP registered vendors in the master under that material category.

(vi) Type of Tender Enquiry: Proprietary & Limited Tender Enquiry.

(vii) Selection of Indent(s), along with the materials.

(viii) Updating Tender terms such as last date for submission, applicable taxes, consignee & billing address, Inco Terms, Payment Terms, LD Clause, applicable Performance & Warranty Security, Bid Security Declaration, MII Status Declaration.

(ix) Uploading of Tender documents such as RFP, Technical Specifications, Scope of Work etc., and automatically import these documents from indent.

(x) Provision to choose single or multiple vendors on the screen.

(c) Should have the option to auto-generate by default and upload General Terms and Conditions.

(d) Should have provision to choose/ upload Special Terms and conditions, specific to a tender.

(e) Notification to approving authority on receiving the same in their approval queue.

(f) Notification to the creator, end user on approval of tender request.

(g) On approval, there should be provision to send the PDF format of the Tender Request (in a prescribed format) to the selected vendors through IIA email, along with uploaded tender documents.

(h) Record and update pre-bid discussions held, during the pre-bid meetings, and arrive at necessary amendments to be made, for issuing corrigendum. Track the amendments in Tender Documents, and various versions.

(j) Provision to cancel the Tender Request, if the corresponding indent is closed.

3.1.5 Tender Evaluation:

(a) Mode of Procurement: The data relating to the mode of procurement shall be auto populated from the Tender Request screen.

(i) Proprietary: The vendor for proprietary chosen in the tender request to be auto populated.

(ii) Limited Tender Enquiry: The vendors chosen while sending limited tenderenquiry to be auto populated.

(iii) CPPP or GeM: CPPP Tender ID or GeM Bid ID with Tender details such as Published Date, Last Date, Opening Date.

(b) Provision to choose type of Bid: Single Bid or Two Bid system.

(c) If chosen as Single bid, then provision to upload techno-commercial offer(s) in spreadsheet format with bidders' names, quoted prices and other commercial terms such as delivery period, INCO term, payment term, warranty period, LD clause applicability, Performance & Warranty Security, Taxes & other applicable charges, EMD (if applicable), bid validity, Contract Period (if applicable). This data should be generated in tabular format on screen.

(d) Provision to generate Comparison Sheet for Proprietary and Limited Tender.

(e) Provision to upload Comparison Sheet for GeM Bids & CPP Tenders.

(f) If Indent value is less than Rs.5 Lakhs, then provision to notify Indentor after uploading the offers(s) along with comparative statement, by the Purchase Department.

(g) Upon reviewing the offers(s), the Indentor shall submit their response/ recommendation as 'Qualified' or 'Not Qualified', along with reasons/ remarks for 'Not Qualified' bidders.

(h) Notification to Purchase Department on submission of response by Indentor, in order to propose PO/SO/ WO.

(i) Provision for Purchase Dept. to send back the evaluation to the Indentor for review, if any.

(j) If chosen as Two Bid System:

(i) Technical Bids:

(A) Provision to upload technical bids received for all modes of procurement (Proprietary, Limited Tender, Global, GeM and CPP), along with bidders' names in spreadsheet format. This data should be generated in tabular format on screen.

(B) Provision to generate Technical Compliance Sheet for Proprietary and Limited Tender.

(C) Provision to upload Technical Compliance and Comparison Sheet for GeM Bids and CPP Tenders in spreadsheet format. This data should be generated in tabular format on screen.

(D) If Indent value is less than Rs. 5 Lakhs, then provision to notify Indentor after uploading the technical offers(s) along with comparative statement, by the Purchase Department.

(E) Upon reviewing the technical offers (s), the Indentor shall submit their response/ recommendation as ‘Qualified’ or ‘Not Qualified’, along with reasons/ remarks for ‘Not Qualified’ bidders.

(F) Notification to Purchase Department on submission of response by Indentor, for opening of financial bids.

(G) Provision to upload financial bids of technically qualified bidders, and view the ranks (L1, L2 etc.,) and propose PO/ SO/ WO.

(H) Notify Indentor on submission of financial bids and proposal of PO/ SO/WO.

(ii) Formation of Techno-Commercial Evaluation Committee:

(A) If Indent Value above Rs. 5 Lakhs, then provision to send request to the director, for formation of Techno-Commercial Committee. The details such as– Indentor, Indented materials, value, mode of procurement, participated bidder(s), technical bids, Technical Compliance and Comparison Sheet shall be visible and accessible by the Director for formation of Committee.

(B) Provision for the Director to nominate the members of the Committee along with a Chair, by choosing their names from the list of users, and assign the role of members (Chair & Member) accordingly.

(C) Once nominated by the Director, the committee members are to receive notification on formation of the committee by the Director. The members shall have access to view all the details of the technical bid – bidders’ details, technical offer(s), Technical Compliance and Comparison Sheet etc.,

(iii) Technical Evaluation:

(A) Upon reviewing the technical offer(s), each committee member shall have provision to submit the response as ‘Qualified’ or ‘Not Qualified’, along with reasons/ remarks for ‘Not Qualified’ bidders.

(B) On submission of response from all the members, provision for the Chair to view the responses and submit their response accordingly.

(C) Upon submission of response from the Chair, notification to the Purchase Department, in order to open the financial bids.

(D) Provision for Purchase Dept. to send back the evaluation to the Chair for review, if any.

(iv) Financial Bids & Evaluation:

(A) Financial bids of technically qualified bidders are opened accordingly by the Purchase Department, and uploaded in spreadsheet format which will be displayed in tabular format on screen.

(B) Notification to Committee members to view and access the financial bids and view the ranks (L1, L2, etc.,)

(C) Upon reviewing the price bids and commercial terms, members submit the response as approved, along with respective remarks/ comments.

(D) Upon submission of response from the members, notification to Chair for submission of their response as approved.

(E) Once approved by Chair & members, notification to the Purchase Department and provision for them to further submit it to the Director for final approval.

(F) Upon approval from the Director, notification to the Purchase Department & Committee members, and provision to generate the 'Techno- Commercial Evaluation Committee's Recommendation Report', in a predefined format.

(G) The details to be populated in the Techno-Commercial Evaluation Committee's Recommendation Report: – Indent No, Indentor's Name, Indent Date, Indented Material(s), Mode of Procurement, Enquiry No/ GeM ID/ CPPPTender ID, Participated Bidders, Technical Qualification Status & Remarks, Quoted Price details with rank (such as L1, L2, L3 etc.,), Successful L1 Bidder's Name with other tender terms such as Delivery Period, Warranty, LD clause applicability, Performance & Warranty Security, Taxes & other applicable charges, Payment terms, INCO Term, EMD (if applicable), bid validity, Contract Period (if applicable).

(H) Provision to propose PO/ SO/ WO, on approval and generation of 'Techno-Commercial Evaluation Committee's Recommendation Report'.

(k) Track bid validity period, and provision to generate notifications for extensions if required.

(l) Provision to track EMD received and notifies to arrange for returning to vendors.

3.1.6 Purchase Order Generation:

a) Should be able to create Purchase Order (PO) based on the tender request(s) and corresponding indent(s).

b) Should have the provision to update details under following fields in the PO screen:

a. Choose tender request(s), and corresponding indent(s) with material details.

b. Update Material description, quantity, rate, currency, exchange rate etc.

c. Enter details of additional applicable charges such as GST, Duties, Freight charges etc.

d. Enter details relating to Warranty, Consignee address, Billing address, Delivery period, if LD clause applicable, INCO Terms, Payment Terms.

e. Select vendor name from the master (for Non-GeM orders). For GeM orders, P.O. to be generated with a Generic Name with a provision to update the vendor details after., approval.

f. Update additional terms and conditions such as applicable PBG to be submitted, transporter/ freight forwarder details etc..

g. The budget code & project details to be automatically populated from the corresponding indent & material master.

h. Provision to fetch Bank Account details of the vendor from the bid documents submitted.

c) Upon filling in relevant details in the PO screen, the purchase order shall be submitted for approval.

d) Notifications to each recommending/ forwarding/ approving authority on receiving the PO in their dashboard and Auto-reminders on a daily basis to the respective recommenders/ forwarders/ approvers, if pending. During the approval process, if the PO is returned to the creator for more information and once resubmitted after changes, then all the recommenders in the workflow who had already approved the PO, shall be notified of the process trail and changes done.

e) The approval workflow shall be based on the predefined workflow for respective departments, projects, and PO value limits.

f) On approval, notification to Purchase Dept., along with the Indentor, consignee/ field station in-charge with the PDF format of the PO doc in a prescribed format.

g) Two versions of PO to be generated: Internal copy with all the notings/ remarks during approval process, and an external copy to be shared with vendors.

h) The PO doc shall contain the details of Competent Authority approving the PO.

i) Provision to update and upload GeM contracts against the corresponding PO.

j) Provision to update Performance & Warranty security details in the approved PO, once it is submitted by the vendor. This shall be provided in the form of Bank Guarantee, Fixed Deposit Receipt, Demand Draft etc. Auto-reminder to purchase department on expiry of validity of performance & warranty security, to return to the vendor.

k) Auto alerts to purchase and stores personnel and the indentor, on completion of warranty period.

l) Provision to email the external copy of PO (in PDF format) to the vendor.

m) Provision for displaying the notings / remarks by recommending/ forwarding/ approving authorities during the approval process and thereafter.

n) Notification to Purchase Dept., for those purchase orders' whose delivery period is expiring in a week's time, and Provisional Goods Receipt Note (Provisional GRN) is not generated yet.

3.1.7 Service Order Generation:

(a) Should be able to create Service Order (SO) for Services' Indents for any job such as AMC, Servicing/ Repair etc., from tender request(s).

(b) Provision to update details under following fields in the SO screen:

(i) Choose tender request(s), and corresponding indent(s) with activity details.

(ii) Update activity description, quantity, rate, currency, exchange rate etc.,

(iii) Enter details of additional applicable charges such as GST, Duties, etc.,

(iv) Details relating to Consignee address, Billing address, Job Completion period/ contract period, if LD clause applicable, INCO Terms, Payment Terms.

(v) Select vendor name from the master (for Non-GeM orders). For GeM orders, S.O. to be generated with a Generic Name with a provision to update the vendor details after approval.

(vi) Update additional terms and conditions such as applicable PBG to be submitted etc.,

(vii) The budget code & project details to be automatically populated from the corresponding indent & activity master.

(c) Upon filling in relevant details in the SO screen, the work order shall be submitted for further approval.

(d) Notifications to each recommending/ forwarding/ approving authority on receiving the SO in their dashboard and Auto-reminders on a daily basis to the respective recommenders/ forwarders/ approvers, if pending. During the approval process, if the SO is returned to the creator for more information and once resubmitted after changes, then all the recommenders in the workflow who had already approved the SO, shall be notified of the process trail and changes done.

(e) The approval workflow shall be based on the predefined workflow for respective departments, projects, and SO value limits.

(f) On approval, notification to Purchase Dept., along with the Indentor, Consignee, field station in charge with the PDF format of the SO doc in a prescribed format.

(g) Two versions of SO to be generated: Internal copy with all the notings/ remarks during approval, and an external copy to be shared with vendors.

(h) The SO doc shall contain the details of Competent Authority approving the SO.

(i) Provision to update and upload GeM contracts against the corresponding SO.

(j) Provision to update Performance & Warranty security details in the approved SO, once it is submitted by the vendor. This shall be provided in the form of Bank Guarantee, Fixed Deposit Receipt, Demand Draft etc. Auto-reminder to purchase department on expiry of validity of performance & warranty security, to return to the vendor.

(k) Provision to email the external copy of SO (in PDF format) to the vendor.

(j) Provision for displaying the notings/ remarks by recommending/ forwarding/ approving authorities during the approval process and thereafter.

(k) Auto alerts to Purchase Dept. and the indentor, two months before the expiry of an AMC.

3.1.8 Work Order Generation:

(a) Should be able to create Work Order (WO) for Works' Indents for any works from tender request(s).

(b) Provision to update details under following fields in the WO screen:

(i) Choose tender request(s), and corresponding indent(s) with works' details.

(ii) Update works description, quantity, rate, currency, exchange rate etc.,

(iii) Enter details of additional applicable charges such as GST, Duties, etc.,

(iv) Details relating to Consignee address, Billing address, Work Completion period/ contract period, if LD clause applicable, INCO Terms, Payment Terms.

(v) Select vendor name from the master (for Non-GeM orders). For GeM orders, W.O. to be generated with a Generic Name with a provision to update the vendor details after approval.

(vi) Update additional terms and conditions such as applicable PBG to be submitted etc.

(vii) The budget code & project details to be automatically populated from the corresponding indent & works master.

(c) Upon filling in relevant details in the WO screen, the work order shall be submitted for further approval.

(d) Notifications to each recommending/ forwarding/ approving authority on receiving the WO in their dashboard and Auto-reminders on a daily basis to the respective recommenders/ forwarders/ approvers, if pending. During the approval process, if the WO is returned to the creator for more information and once resubmitted after changes, then all the recommenders in the workflow who had already approved the WO, shall be notified of the process trail and changes done.

(e) The approval workflow shall be based on the predefined workflow for respective departments, projects, and WO value limits.

(f) On approval, notification to Purchase Dept., along with the Indentor, Consignee, field station in-charge with the PDF format of the WO doc in a prescribed format.

(g) Two versions of WO to be generated: Internal copy with all the notings/ remarks during approval, and an external copy to be shared with vendors.

(h) The WO doc shall contain the details of Competent Authority approving the WO.

(i) Provision to update and upload GeM contracts against the corresponding WO.

(j) Provision to update Performance & Warranty security details in the approved WO, once it is submitted by the vendor. This shall be provided in the form of Bank Guarantee, Fixed Deposit Receipt, Demand Draft etc. Auto-reminder to purchase department on expiry of validity of performance & warranty security, to return to the vendor.

(k) Provision to email the external copy of WO (in PDF format) to the vendor.

(l) Provision for displaying the notings/ remarks by recommending/ forwarding/ approving authorities during the approval process and thereafter.

3.1.9 PO/ SO/ WO Amendment:

(a) Should have the provision to create Purchase Order / Service Order/ Work Order Amendment with the flow of approval as in original PO/ SO/ WO. Provision to create amendment in the PO/ SO/ WO with respect to following fields:

(i) Value of the order.

(ii) Any change in one or more terms of the order. Such as Delivery Period, Consignee location, Taxes/ Duties etc.,

(iii) Cancellation of Order.

(iv) Short-closure of Order.

(b) Inputs for generation of amendment to PO/SO/WO with details of amendment listed as FOR, READ AS and the reasons for amendment with provision to attach recommendations.

(c) The amendment (along with number) and the reason for amendment shall be reflected in the PO/ SO/ WO screen after approval.

(d) And, the same details shall be accessible and viewed in the amendment screen as well (i.e., both approved & in progress amendments). The complete process trail of the PO/ SO/ WO changes shall be visible.

(e) Provision to email the amended PO/ SO/ WO (in PDF format) to the vendor.

3.1.10 Contingency Purchase (CP) Invoices:

(a) Any user should be able to create & submit Contingency Purchase/ Direct Purchase bills by selecting a predefined list of materials. If assets are purchased through contingency, material code to be generated by Stores.

(b) Fields to be updated in CP Bill screen:

(i) Vendor's Name

(ii) Vendor's Invoice Number & Date.

(iii) Create & choose material code from material master.

(iv) Choose quantity and unit price.

(v) Validate that total cost of the purchase should not exceed Rs. 25,000/-.

(vi) Project Details, if any.

(vii) Remarks for the purchase (reason/ purpose).

(viii) Amount to be paid to – Employee/ Vendor (option to choose).

(ix) Upload the scanned copy of the invoice.

(x) Select predefined purchase statement (validation required) Project Details.

(xi) Remarks for the purchase (reason/ purpose).

(xii) Amount to be paid to – Employee/ Vendor (option to choose).

(xiii) Upload the scanned copy of the invoice.

(c) Upon filling in the details, the CP is submitted for approval.

(d) The approval work-flow shall be based on the predefined workflow for respective departments, projects, and CP value limits (same as indent approval workflow).

(e) On approval, notification to creator and Purchase & Stores.

(f) Auto-issuance of material to the creator on generation of CP.

3.1.11 Generation of Reports:

(a) Generation of various reports such as Indent list, Indent history, Purchase/ Work orderlist, Monthly Quarterly or Yearly reports for POs/ WOs, Commitment to Vendors, Contingency Purchase, Status of PO/WO in respective prescribed format for chosen period, with various filters, such as individual user wise or department wise.

(b) Provision to download any document uploaded (such as Techno-Commercial, Minutes of Meeting (MoM), etc.) for a set of POs & WOs during a particular period of time.

(c) Provision to choose the format of the report (Excel or PDF) before generating the report.

(d) Should have the ability to generate any kind of report by sorting/ grouping/ selecting any parameters (customizable Report Builder).The reports shall be in bi-lingual (English and Hindi) format.

(e) The following standard reports to be available readily, apart from customizable reports:

- Approved Indent Status: Report with all the details of the indent, such as approved date, assigned to, Tender Request, Tender Evaluation details, mode of tendering, corresponding PO/ SO & approved date, material (with sub-category), vendor name, Indentor name, value of indent & PO, project (if any), GRIN No, Invoice No, GISS No, with provision to generate the report for chosen period. The report should be able to indicate the current stage of the indent, until payment & material issuance. Shall allow generating the report, as an Indentor or as one of the approvers of the indent.

- PO/ SO List: Generate reports of all the POs and SOs released in a month, quarter or financial year, with approved date, indent no, vendor name, value, material, mode of procurement, tender ID/ bid ID (if any), project (if any), Indentor etc.,

- Commitment to Vendors: Generate report on all those Indents in progress, on which the invoice is yet to be approved, with all the required fields such as corresponding PO/ SO (if issued), Indentor name, approved date, assigned to, vendor name, value of indent, material (with sub-category), value pending to paid (balance amount, in case of partial payments), corresponding GRIN (if generated), invoice (if approval in progress), for a chosen period, or an on current date.

- Contingency Purchase: Generate report on all the Contingency Purchases with details of material, end user, value, paid to (employee/ vendor), vendor name and project (if any), for a chosen period or as on current date.

- Status of PO/ SO: Report on list of PO/ SO, which are yet to be approved, with details of PO/ SO, indent no, Indentor, value range, vendor name, material, submitted date, pending approval with & pending from, as on current date.

- Techno-Commercial MoM: Run a query to download all the uploaded Techno-Commercial Committee's MoM reports for chosen period.
- Short-closed & Cancelled Orders: Generate report for all those orders which were short-closed and cancelled through amendment, along with the reason for shortclosure & cancellation, for chosen period.
- List of Indents: Generate report for all indents (submitted, in progress, pending with & approved) for a chosen period of time.
- AMC Orders: Generate report for current AMC orders, with details of AMC period (expiry date/ last date), AMC for, end user, value, location, vendor name etc., along with provision to view the previously renewed AMCs for the same orders. Performance & Warranty Security: Generate report for list of Performance & Warranty Securities provided by the vendors for a chosen period of time. Provision to choose the category of security such as BG, FDR, DD etc., along with details of validityof security.
- Quarterly Vigilance Report: Generate report for list of PO/SO released in the previous quarter, along with order details such as value, description of goods/ services, indentor, vendor name etc.
- Monthly Data for Procurement: Provision to generate report for orders released on a monthly basis, with GeM and Non-GeM Categorization for vendors, and also with subcategorization for Non-GeM orders such as PAC, Limited Tender, Brand PAC etc.,

3.1.12. Dashboard

Customisable Dashboard for various roles: End User, Purchase & Stores Personnel, Recommender, and Approver, to display status of all the entries submitted for approval in Procurement module. The data should also be represented in the form of charts/ graphs, tables etc., and should be real-time.

3.2 INVENTORY MANAGEMENT MODULE

3.2.1 Master Material/ Job/ Works List

(a) All Material Category, Sub Categories & Material Description are to be generically named except for any scientific items with auto populated Code Number.

(b) Even for Scientific Items, Material Description should be generically named with consultation of Scientists, Engineers, and Technical staff.

3.2.2 Goods Provisional Receipt Note

(a) Goods Receipt Note page should populate the following details automatically from purchase order:

(i) P.O. Number, Indentor name, Field Station, Consignee, Expected Date ofSupply, Vendor Name, Email & Mobile No., Warranty Years etc.

(b) Should have the option to attach photograph and enter Make, Model, Serial Number(if any), Warranty, Other details, etc.

(c) Should have the option to update received Quantity.

(d) A new Field of Material Description (linked to Unique Asset Number/ ID) needs to be generated with a link to all the values mentioned in the Master Material List of the particular item(s).

(e) Option for generation of Provisional Receipt Certificate in pre-defined format denoting all the details mentioned above.

3.2.3 Goods Inspection

(a) Inspection page should fetch all the details from Good Provisional Receipt page & notify End User for updation.

(b) Option for entering Accepted / Rejected Qty, Installation Date, Commissioning Date (if any) & uploading Installation Report.

(c) Option for Goods Return (either Permanent or Replacement) should be included in the page.

(d) Goods Return may either be in full or in partial.

(e) Option to enter the reason(s) for goods return.

(f) In case of Goods Return against P.O., immediate mail to vendor for Material Rejection Advice/Rejection Memo.

(g) Goods permanently returned should have the option to notify Purchase Dept. for amendment of P.O.

3.2.4 Goods Receipt & Inspection Report (GRIN)

(a) Should populate all details automatically from P.O., Goods Receipt Note & Goods Inspection.

(b) Should fetch details about End User.

(d) Unique Asset Number/ ID should be automatically generated retaining the values from the Material/ Job/ Works Master and adding Material Description which should be fetched from Provisional Goods Receipt.

(e) Option for printing Label (QR / Barcode) indicating P.O., Item Description, Serial Number (if any), Indentor Name, and Asset Number & Barcode Generation.

(f) Goods Receipt & Inspection Number (GRIN) should be generated automatically after submission and saving all the details in the screen with a check for mandatory fields.

3.2.5 Inventory Integration

(a) Once GRIN is generated, auto population into Asset Register, Stock Register & Inventory of End User.

(b) Goods Issue Number should be auto populated (linked to Issue Register).

(c) Option for transferring the Material/ Item from one Field Station to another & one person to another directly.

3.2.6 Payment Voucher

(a) Payment voucher page should fetch all details from P.O. & GRIN page automatically.

(b) Option for Advance, Partial and Full Payment as per P.O./ SO/ WO.

(c) Goods only that are accepted in the Inspection page should be auto populated.

(d) Option to create supplementary Invoice by adding the balance Goods also once the replacement is received.

(e) Option to enter/alter GST, TDS under various sections, other charges like Freight/ Handling Charges etc.

(f) Balance payable amount should be calculated automatically.

(g) Should provide an option to integrate with tally account software.

(h) Should provide an option to export/ import data to/from tally.

(i) Should have the option to enter Exchange Rate and calculate the payable amount in INR, if the PO amount is in any currency other than INR.

(k) The approval workflow shall be based on the customisable predefined workflow.

(l) On approval, notification to Stores Dept., along with the Indentor and the recommenders & approvers.

3.2.7 Payment for Import Orders:

(a) Imports Invoice processing page should auto fetch the following details from selected P.O./ W.O./ S.O. Number:

- (i) Indentor Name
- (ii) Item Description(s) and Qty
- (iii) Supplier Name & Address
- (iv) P.O. Value (Amount & Currency Unit)
- (b) Should have the option to fill the following details:
- (i) Mode of Transaction (Wire Transfer, Letter of Credit, Others)
- (ii) Account Number to be Debited

(iii) Title of the Account (Name)

(iv) Foreign Bank Name & Address

(v) Branch Name

(vi) Account No./ IBAN

(vii) Swift Code / BIC

(viii) Sort Code

(ix) Remarks

(c) Should print the page in pre-defined format as provided by IIA at the time of designing/

implementation.

3.2.8 Demand & Issue of Consumables

(a) There should be a screen for Demand & Issue of Consumables.

(b) End User can have the option to enter the Items required where material-in-stock is displayed to him/ her.

(c) Store Keeper/ Store in-charge should have the option to check history of End User &Item and hence amend the “Items Issued” field & submit for approval.

3.2.9 Store Return & Re-Issue

(a) This page should automatically populate Item details from P.O. Number, GRINnumber, Item Code etc.

(b) Option to edit quantity.

(c) Option to mark either for Repair or for Disposal.

(d) Should temporarily add the item to Store Account & after Re-Issue, to the account ofthe End User automatically.

(e) Provision to re-appropriate certain goods into multiple components. Eg: If a material code for a desktop is ABC, then the different components under the desktop such as CPU, Monitor, Keyboard etc., shall be ABC-1, ABC-2, ABC-3 etc. This shall enable to re-issue different components of the same desktop to different end users.

(f) Material once accepted for Disposal should be automatically removed from Individual Inventory and added to the Store Disposal Account. Appropriate entries to be added to e-Asset Register against particular material.

(g) Material disposed should populate the current Book Value from the GRIN page which should be calculated automatically.

(h) Provision to upload acceptance (email/ transfer form) from the user for transfer of material.

(i) Provision to view the complete transfer history of any material from the date of procurement until the current date, along with custodian details.

3.2.10 Material Disposal

(a) Material Disposal page should be able to automatically fetch Item Details from P.O. Numbers, Goods Issue Number and Item Name etc.

(b) Option to edit quantity.

(c) Material once accepted for disposal should be automatically removed from Individual Inventory and added to the Store Disposal Account.

(d) Material disposed should fetch Current Book Value from GRIN page which should be calculated automatically.

(e) Option to enter category – Surplus, Obsolete, Unserviceable / BER, Scrap, Empties, Others etc.

(f) Should have a sub page to enter details of Committee Members for Disposal.

(g) Should have the option to enter Mode of Disposal (Auction, Forward Auction or External Agency Auction)

(h) Option to Amend/ Edit value of the Condemned Materials/ Items & Reserve Price.

(i) Option to enter the Final Bid Value, Vendor Name, Date of Disposal etc.

(j) Report of materials disposed off should be generated with Auto Generated Number & Option to upload a Sale Note.

3.2.11 Loans

(a) Should populate item details from P.O., GRIN, Goods Issue or directly from Store Account.

(b) Should have the option to enter to whom issued, Qty issued, Issued Up to Date, Name of End User Etc.

(c) Should issue a pop-up message on Issued Up to Date.

(d) Option to enter the Return Date.

(e) Should have the option to temporarily transfer the custody of the item from loaner to loanee and vice versa after return.

3.2.12 Gate Pass (In & Out)

GATE PASS (OUT)

(a) Gate Pass (OUT) page should be able to automatically fetch Material List from P.O. Number, Goods Issue Number, Goods Disposal Number& Unique Asset Number/ ID.

(b) Option to amend quantity.

(c) Option to add Items that are not in Master Material List (This list should be maintained separately other than Master List / Unique Asset Number/ ID).

(d) Option to mark either Returnable or Non-Returnable.

(e) In case of Returnable, pop-up message on entered EDR (Expected Date of Return).

(f) In case of Non-Returnable, should automatically remove the Item from the Inventory of the Individual & add to Suspense List.

GATE PASS (IN)

(g) Gate Pass (IN) page should have the option to add Items that are not in Master Material List (This list should be maintained separately other than Master List / Unique Asset Number/ ID).

(h) Option to mark either Returnable or Non-Returnable.

(i) In case of Returnable, pop-up message on entered EDR (Expected Date of Return).

(j) In case of Non-Returnable, should automatically add the Item to the Inventory of the Individual (In Separate Category).

3.2.13 Registers

(a) The following Store e-Registers are to be automatically generated with user defined fields and updated with the details that are input into the system in various pages starting from Purchase Order.

(i) Assets Register (Capital, Furniture, IT Assets & Fixed)

(ii) Stock Register (Capital, Furniture & Consumables)

(iii) Inward & Outward Registers (Capital, Furniture, IT Assets & Consumables)

(iv) Daily Receipt Register (Capital, Furniture, IT Assets & Consumables)

(v) Issue Register (Capital , Furniture, IT Assets & Consumables)

(vi) Condemned Materials Register (Capital, Furniture & IT Assets)

(vii) Loan Register (Capital , Furniture, IT Assets & Consumables)

(viii) Miscellaneous Condemned Register (Empties, Cans, Paper, Books etc)

(b) Should have View, Edit & Amend access to Stores Personnel with appropriate approvals. (corrections based on physical stock verification).

(c) Any edited data should automatically take effect in all Parent/ Child Documents created earlier.

(d) The registers shall be in bi-lingual (English & Hindi) format.

3.2.14 Reports

(a) Should have the ability to generate any kind of report by sorting/ grouping/ selecting any parameters (customizable Report Builder).

(b) The reports shall be in bi-lingual (English and Hindi) format.

(c) However, the following reports are to be standard available [both pdf and excel format] with Date Range.

(i) Personal Inventory Report (Capital and Consumables)

(ii) Material Disposal Report (based on dates)

(iii) Goods Issue Report (based on Individual Name/ID, Division, Section, Location, Type of Goods, etc.)

(iv) Physical Stock Verification Report (as on date mentioned)

(v) Closing Asset Report (Value of Stock-In-Hand at end of FY)

(vi) Pending Payment Report for Invoices generated.

3.2.15 Dashboard

Customisable Dashboard for various roles: End User, Purchase & Stores Personnel, Recommender, and Approver, to display status of all the entries submitted for approval in Inventory Management module. The data should also be represented in the form of charts/ graphs, tables etc., and should be real-time.

3. Technical Proposal

3.1. Client Requirement

The following are the broad functional requirements of this Institute.

Table 1: ***Functional Requirement***

4.1 FUNCTIONAL REQUIREMENT OF PROCUREMENT & INVENTORY MODULE	
Requirement ID	**Functionalities**
A. Classification of Assets	
FR001	Maintains the records of movable assets like Furniture & Fixture, Office Equipment, Other Equipment and Machinery
FR002	Capture Various details like Ownership, Cost Details Depreciation, etc. for the Assets.
B. Asset Transactions	
FR003	Records of Purchase of new Assets
FR004	Maintains the Asset Register
FR005	Provide a supplier/ PO listings of assets by supplier or by purchase order
FR006	Asset acquisitions, Transfers and all movements can be initiated and tracked
FR007	The following data are required to identify, specify, track and report assets by location characteristics, including: ● Person ● Building ● Room Number ● Location ● Other Unique Identifier(s)
FR008	Ability to update the Bill of Materials for all the assets
C. Products, Services & Categories	
FR009	Ability to classify materials in to group & sub-group as per the requirement such as Inventory, Raw materials, Spares, Stationeries, Tools, etc.
FR010	System should be able to maintain Material Code, Description, Type (Electrical, Electronics, Mechanical, etc.) and Category (Capital & Consumables)
FR011	Ability to have a centralised item master across the organisation for all categories of items (Raw materials, Consumables, Spares, Tools, Components, Semi-Finished Items, Finished Items, Services Items, Work Items, etc.)
FR012	Ability to capture critical material relevant information such as material specification, key characteristics etc.
FR013	Ability to capture whether the item is imported or indigenous
FR014	Ability of the system to capture minimum, maximum and re- order level for the inventory.

FR015	Ability of System to define and handle items having different unit of measurement (UOM)
FR016	Ability of System for searching item based on its characteristics
FR017	Ability to link each item of an indent to equipment / project, department wise
FR018	Facility to enter details of the Vendor/ Supplier profile like Name, address, work location, items/ service supplied, business history, contact details, distribution channel, payment profile, bank details, registration details, etc.
FR019	Facility to classify vendor on criteria like indigenous/ foreign, GeM registered, CPPP registered etc.,
FR020	Facility to classify vendor based on products supplied/ category of product.
FR021	Ability to debar / unblock a vendor for further processing of any transaction. Also, ability to capture reasons for debarment/ unblocking of vendor.
FR022	System ability to support catalogue management (Catalogues from various vendors provided in soft form should be able to be uploaded in Application Software)
FR023	Maintain information about the condition of the items (e.g., good, idle, obsolete, broken, unserviceable, BER, etc.)
FR024	System tracks items purchased with various funding sources (i.e. grants, funds, or other cost objects)
FR025	System should be able to classify items into Consumable & Capital
FR026	System should be able to have the storage hierarchy such as location-Bin-Racks-Shelves-Zones mapped into the system.
FR027	System should be able to link each and every item image, photos, and/or drawing with its item code for physical identification.
FR028	Ability to capture, maintain and track shelf life of perishable items.
FR029	Ability to identify services as per the works
FR030	Ability to assign name corresponding to service code
FR031	Ability to enter unit of measure of goods / service
FR032	Ability to maintain unique service item codes
FR033	Ability to assign /edit/ modify description of the service/ item (activity) of service

FR034	Ability to check existence of rate contract for individual services or service groups
FR035	Provision for traceability of materials
FR036	Ability to maintain and run the Stores Ledger detailing the opening and closing stock, receipts, issues, price and quantity
FR037	Ability to do stock verification based on perpetual / cycle/ physical counting or any other defined method and periodicity
FR038	Ability to perform perpetual inventory verification by group wise, location wise, item wise etc.
FR039	Ability to record receiving information: receiving staff, shipping carrier with tracking number, date and time received, complete/ partial and comments/ notes.
FR040	Ability to allow images to be attached to inventory items in the system
FR041	Ability to accommodate items with Zero Rupees Value and / or Zero Quantity.
D. Indent/ Requisition, Tendering, Quotations, Contracting, etc.	
FR042	Facility to each department/ specific users to raise the Indent.
FR043	Configure workflow to route the Indent/ Requisition via various levels of online approvals and budget sanctioning
FR044	For Proprietary Indents, ability to capture details of Proprietary Certificates
FR045	Ability to rework and resubmit the Indent for approval after necessary modifications
FR046	Provision to scrutinise the Indent online and enter remarks if required, by approver/ recommender.
FR047	Ability to generate a unique Indent Number
FR048	Ability to support multiple UOM (Unit of Material) for items for inventory and for placing Indents, and releasing of Purchase Order
FR049	Enable stakeholders to approve Indent, approve with changes or reject the Indent.
FR050	System should have the provision for the Indent to undergo various status changes like created, submitted, in progress, approved, closed, rejected and cancelled.
FR051	Allows online Indent / requisition approval at multiple (sequential and / or hierarchical) levels with capacity to “trace” current location.
FR052	Ability to use multiple criteria to evaluate Indent/ requisition work flow (approvals and insufficient funds, etc.)

FR053	Ability to block / hold the Indent if there is no sufficient funds available.
FR054	System should be able to track status of Indent/ demand
FR055	System should have a provision to edit the Indents that are returned.
FR056	System should have the provision to notify the appropriate persons for the Indents waiting for approval.
FR057	System should have the provision to notify the Indentor and all approvers when a Indent is approved.
FR058	System should have the provision to capture the remarks by different approvers.
FR059	System should have the provision to set up an Approval Authority for Indent based on the Indent Value, Department, Project etc.,
FR060	Ability to store and maintain the user-defined / standard templates for creating Expression of Interest (EoI), Request For Proposal (RFP)/ Tender Document, Contract Documents, etc. Also provides version control on all these documents and attachments therein.
FR061	Ability to collect requirements from various departments and procure strategically for common and similar items.
FR062	System to enable generation of Notice Inviting Tender (NIT)
FR063	System should have the ability to record the pre-bid discussions held during the Pre-Bid conference and record the necessary amendments to be made.
FR064	System should be able to amend bid documents and keep track of the versions and approvals of the same from competent authority as per delegation of powers.
FR065	Ability of the system to track bid validity dates for various bids and take necessary actions if extensions are required.
FR066	System should be able to initiate the re-tendering process with respect to original tender if necessitated.
FR067	Ability to choose the mode and type of tendering.
FR068	System to support the following types of tendering:- ● Open (GeM/ CPPP) ● Limited ● Single / PAC (Proprietary Article Certificate) ● Global

FR069	System should allow single tendering on the grounds of urgency or operational or technical requirements after capturing the reasons for single tender enquiry (STE) and selection of a particular firm is recorded and approved by competent financial authority prior to single tendering.
FR070	Ability to execute contingency purchase (direct purchase) in case of emergency.
FR071	Ability to capture monthly, quarterly, half-yearly and annual requirement plan
FR072	Ability to specify whether 'Sample' is to be submitted with offer or after placement of order and attach 'sample approval criteria' to the Indent.
FR073	System to grant user the flexibility to select the suitable stages for processing the tendering process (two bid type): ● Technical Evaluation Stage ● Price Bid Evaluation Stage
FR074	Ability of the system to generate Bid opening statements with details of quoted prices, EMD and conditions to contract etc and provide access to only authorised persons.
FR075	System should create and monitor the two bid tendering process: In case of IIA, the Techno-Commercial Evaluation is normally carried out by a Techno-Commercial Evaluation Committee. The Techno-Commercial Evaluation Committee report, once finalised, is sent to the Competent Authority (Director) for acceptance.
FR076	System to capture Names and details of Techno-Commercial Evaluation Committee members.
FR077	System to configure workflow, for obtaining approval of Techno-Commercial Evaluation Committee members
FR078	System to support formation of various committees for evaluation to be done.
FR079	System to enable identification of committees by a unique number that will be associated with the respective activities of a particular task.
FR080	System to maintain the entire Minutes of Meeting (MoM), notes, communication, etc. for specific tasks to be maintained and managed by the system in repository.
FR081	System should not allow entry of commercial quotes whose technical bids are rejected by the committee.

FR082	System to support validation of the received bids with respect to the tender due dates.
FR083	System to prepare bid opening statement along with the details of the EMD, the bidder and the price quoted.
FR084	System to prepare the comparative statement of the bid.
FR085	System to enable prepone or extend bid opening dates along with generation of intimation letters to vendors to be supported by the system.
FR086	System to track waiver of EMD requirements in Vendor Database for each vendor / class of vendor along with the reasons thereof for waiver.
FR087	System to enable capturing of performance guarantees in the system
FR088	System to generate the alerts prior to a specified period before expiry of the performance guarantee.
FR089	System to capture the commercial evaluation details as per criteria and provide analysis on factors such as: ● Duties & Taxes ● Delivery Period ● All Inclusive Cost on Delivery etc.
FR090	Provision to capture taxes like GST, Service Tax, Customs Duties, Insurance Charges, Packing Charges, etc.
FR091	Provisions to capture Tax Exemption details that are applicable for Customs Duty, Excise Duty, etc.
FR092	System to prevent bids from black listed vendors from being processed.
FR093	System to maintain the EMD amount and performance guarantees, to be defined and managed in the system.
FR094	System to generate a list of EMD’s to be released to unsuccessful bidders based on information by the finance team.
FR095	System to calculate and display overall L1 and item wise L1.
FR096	System to compare between Indian vendors and Foreign Vendors by taking into account cost, insurance and Freight (CIF) value / Custom Duty (CD) exemption
FR097	Provide the capability to track milestone dates mentioned in the Tender document, contracts, etc.
FR098	Option to include Delivery Schedules and Quality Specs with support for manual entry and special text within the Requisitions.
FR099	Facility to send multiple tenders against single requisition.

FR100	System should automatically generate cost comparison statements highlighting all of these; Price (including breakup of taxes), Lead time for Delivery, Credit Terms, Other Terms & conditions.
FR101	Ability to generate requisitions automatically for items replenished frequently like consumables, based on Re-Order level.
FR102	Ability to check the availability of free or reserved stock available at different storage locations while creating requisitions.
FR103	System should be able to issue Non-Availability Certificate (NAC) against demands for which item is not available in the stock.
FR104	Ability to send requirement details, documents like drawings and request for specifications along with RFP.
FR105	Ability to enter quotations in the system against RFP, including taxes
FR106	System to allow deletion / re-tendering of Ordered Items / tendered items lines.
FR107	System to allow amendment of orders having financial and non-financial implications.
FR108	Maintains a prospective bidders' list.
FR109	Ability to approve bids of the recommended vendor in the system and add reason for approvals and bid rejections.
FR110	Ability to create a PO in the system after quotation approval / bid evaluation.
FR111	Provide the integration with Govt. e-marketing (GeM) portal and Govt. e-Procurement system i.e. Central Public Procurement (CPP) portal.
FR112	Route all GeM shopping carts / requisitions through an approval workflow.
FR113	Integration of e-Tendering website i.e. CPP Portal for upload of tender documents, and track the tender process / phases.
FR114	System should have all the standard formats, guidelines and terms and condition of tenders for floating / loading it to the CPP portal
FR115	System should generate tender documents on the click of a button from available templates and forms information held within. System should also support generation of tender document offline using desktop office tools.

FR116	System shall define the hierarchy for approval of Tender so generate and forward the document and record their comments with a time stamp. System should also support digital signing of the comments.
FR117	Upon approval, the system shall generate the final tender doc, get it signed digitally by appropriate authority and forward the documents along with the tender calendar, base attributes, etc to the e-tender system for uploading to the CPP portal.
E. Purchase Order (PO) / Contracts and Payments against Invoice	
FR118	Ability of the system to capture PO information like PO number & date, Item details like code, description, UOM, rate, Quantity, Delivery Schedule, Consignee Name & Address, applicable taxes, Performance Guarantees, other terms, etc.
FR119	System should segregate PO based on the category of procurement such as Cash Purchase, Direct Purchase and Local Purchase.
FR120	System to handle the Cash Purchases, Local Purchase to meet immediate requirements of items required in small quantities and up to certain value limits within the prescribed cash purchase powers of the CFA.
FR121	Ability to directly create POs with different number series based on purchase type or categories such as location/ material type/ department etc.
FR122	Ability to create PO templates.
FR123	Attach supporting documentation and notes to a PO
FR124	The system shall provide the ability to perform mass editing of Pos based on user defined criteria.
FR125	Ability to create a single PO in the system from multiple requisitions or multiple PO against single requisition.
FR126	Ability to specify payment terms in the PO
FR127	Allow payment terms to be displayed and tracked with POs.
FR128	Allow delivery date terms to be displayed and calculated with Pos
FR129	Ability of the system to print PO in a User defined format on pre-printed stationery.
FR130	Ability to link PO with all previous transactions/ documents of the system.
FR131	The system shall provide the ability to reopen closed POs within the current fiscal year
FR132	Ability to inquire on a PO status by PO number, requisition number or Invoice Number and goods receipt.

FR133	Ability to process changes to POs without having to re-enter purchasing information
FR134	Ability of the system to update budget utilisation automatically at PO release.
FR135	Create the necessary accounting adjustments automatically from a PO change/ amendment.
FR136	Ability of the system to generate and send soft copy of PO in PDF format to supplier via e-mail.
FR137	Ability of the system to send reminders to suppliers through e-mail in case of delay in receipt of goods.
FR138	Ability of the system to receive advance intimation from supplier for receipt of goods with transportation details.
FR139	Ability to automatically track and categorizer line items on PO.
FR140	Ability to search for an issued PO by number, requisition number, cost, vendor/ supplier name or number.
FR141	Ability to view balance quantity and payments made against PO in PO screen of the system.
FR142	Allows for multiple budgetary accounts to be applied to each line item.
FR143	Ability to initiate and track payment of received PO line items.
FR144	Ability to cancel individual PO line items.
FR145	Ability to re-order individual PO line items.
FR146	Ability to record and track changes made to issued PO line items.
FR147	Ability to select a different account number distribution for each line item on the PO.
FR148	Ability to modify the PO line items with the new accounts/ fiscal years.
FR149	Ability to update outstanding PO line items with account numbers in the new fiscal year.
FR150	Provide complete online reporting of POs issued and goods received.
FR151	Send an email to the requestor when the item is received when receiver is different from the requestor.
FR152	Attach receiving notes to the PO
FR153	Provide standard reports and inquiry screens for POs in process.
FR154	Provide standard reports and inquiry screens for POs out/ goods not received.

FR155	Provide standard reports and inquiry screens for POs out/ goods received / invoice not received.
FR156	Provide standard reports and inquiry screens for POs involved but not receipted and paid.
FR157	Track PO items received.
FR158	Automatically update Accounts Payable with the receipt of goods, including the associated PO number.
FR159	Provide for the receipt of goods and services to be recorded online by PO number.
FR160	Ability to record receiver's name / ID on receipts.
FR161	Ability to track the recording of goods returned to the vendor.
FR162	Provides a three-way match for the receipt of goods, the PO and Invoice.
FR163	Provides a two-way match for the PO and Invoice.
FR164	Ability to validate three/ two way match based on user defined criteria.
FR165	Provide the ability to send notifications, via e-mail, to persons within the approval workflow process, in a customizable process based on user defined criteria.
FR166	Support a bar coded tracking system from incoming delivery point to end user.
FR167	Ability to capture the details in the contract like contract validity dates, location of delivery, Material code with description and quantity, agreed upon rates including breakup of taxes, payment terms, other terms and conditions, VAT/ GST.
FR168	Ability to maintain the standard templates for the creation of Contracts or Letter of Award etc.
FR169	Ability to define and configure the workflow for approval of amendments to the contract terms.
FR170	Ability to generate the changed Contract once the amendments are made.
FR171	Ability to store scanned / soft copy of each external / internal correspondence against a contract for issue handling and progress review.
FR172	The system shall allow for the ability to perform invoice entry with the following capabilities, including but not limited to: ● Multiple levels of invoice approval workflow ● Ability to manage required supporting documentation in electronic format (e.g. vendor invoice, claim forms etc.)

FR173	The system shall provide the ability to process multiple invoices against the same PO.
FR174	The system shall provide the ability to process once invoice against multiple POs.
FR175	The system shall provide the ability to perform Electronic Fund Transfer (EFT), and deposit to vendor bank accounts.
FR176	The system shall provide the ability to prevent duplicate payments by matching, at a minimum, supplier./ vendor and invoice number.
FR177	The system shall provide the ability to process invoice payments for different charges that are not mentioned in the PO or not included in the PO amount.
FR178	The system shall provide the ability to automatically select payments based on due date and discount rate/ date.
FR179	The system shall provide the ability to list invoices by date range.
FR180	The system shall provide the ability to list invoices by Accounts Payables' receiving date.
FR181	The system shall provide the ability to produce a single claim/ payment register at year end for both the prior and new fiscal year.
FR182	The system shall provide the ability to put invoices on hold and release for later payment.
FR183	The system shall provide the ability to annotate transactions with comments.
FR184	While processing payment against each Invoice, the following data shall be stored: ● Payment Date & Time ● Mode of Payment ● Payment Number (in alphanumeric form) ● Payee Name & Address ● Invoice Number/ Description ● Invoice amount without taxes ● Taxes & Tax Deducted at source (TDS) ● Net Amount (In figures & in Words) ● PO Number & Date ● Paying Authority ● Comments to the Vendor, if any.
FR185	Ability to have an integrated Document Management System where you can view all related documents within the Purchase Module (Requisition, PO, Invoice, Quality Checks, Payments, etc)

FR186	Provision to pay through Letter of Credit (LOC) and wire transfer for purchasing from foreign suppliers.
FR187	Provision to capture the details related to application for irrevocable documentary credit (Letter of Credit)
F. Services Procurement / Work Order	
FR188	Ability of the system to support work orders for any job with material, without material, manpower supply, civil works, etc.
FR189	Ability of the system to capture terms of issuing material to Successful Bidder on chargeable basis, non-chargeable basis etc.
FR190	Ability of the system to support recurring bill.
FR191	Ability to check in the system remaining amount outstanding in the contract before making payment.
FR192	Ability of the system to generate necessary tax certificates
FR193	Ability to generate work completion notes in the system by the Indentor to certify quality and quantity.
FR194	Ability to capture key information in the service purchase orders like type of service (security, consultancy, transportation, job, etc.), rate of services, applicable taxes, financial agreement, etc.
G. Goods Receipt & Movement	
FR195	Ability to create an Inward & Inspection note before creation of Goods Receipt Note (GRN). Inward will contain details such as PO number, date of receipt and other consignment information.
FR196	Ability of the system to create GRN from Inward and Inspection note.
FR197	Ability to have a single GRN form to handle multiple types of GRN like Store receipt, Direct Consumption, etc.
FR198	Ability of the system to generate GRN Number automatically or manual link with Inward.
FR199	Ability of the system to receive partial consignment/ delivery from PO.
FR200	Ability of the system to show remaining PO quantity when creating GRN.
FR201	Ability of the system to receive goods in a measurement unit different from the measurement unit in which the order was placed.
FR202	Ability to define & control GRN against PO.
FR203	Ability of the system to show a list of test certificates required to pass a quality check.
FR204	Ability of the system to capture the QC results.

FR205	Ability of the system to capture quantities rejected by QC against GRN.
FR206	Ability of the system to automatically generate a rejection / shortage note and rejection / shortage letter in case of rejection/ shortage.
FR207	Ability of the system to generate a Debit note to be sent to the vendors for all rejection / shortage. The Debit Note should be linked to the Rejection/ shortage note in the system.
FR208	Ability of the system to highlight pending overdue and non- overdue POs and pending quantity.
FR209	Ability to generate instructions / labels for the storing of the items in the Stores including bar codes.
FR210	The ability to provide views of inventory balances, in-transit, and on-order across all Stores and for individual stores.
FR211	System should be able to provide gate Entry & Exit monitoring processes for the materials & Vehicle movements linking with Supply Order or others. It includes capture of Date, time, transportation type, carrier details, dimensions, weights, etc.
FR212	System should capture From place, To place for the goods that are transported.
FR213	It should also capture by whom it is moved, Date of Movement, receiving person, Date, Mode of Transport and vehicle number.
FR214	System should have the provision to create gate pass for the items to be dispatched e.g. for repair, replacement, permanent transfer, etc.
FR215	System should be able to maintain System generated Gate Pass No., Date, Item Code, Item Description, Supplier, Location, Address and Remarks.
H. Stores Management	
FR216	Ability of the system to select any valuation method i.e. FIFO, LIFO, or weighted average method for valuation of stock.
FR217	Reporting of overstock and Understock Exceptions.
FR218	Ability to support the issue of materials having shelf life on FIFO basis.
FR219	Ability to support the issue of Materials by Store Staff.
FR220	System should be able to transfer of items from Central Store to Divisional/ Departmental Stores, Stores of Field Stations, if required
FR221	System should be able to view and track real time stock position.

FR222	System should be able to issue and monitor inventory items on loan to other departments and thereafter return the item after usage.
FR223	Ability to track hazardous/ environmental materials.
I. Key Management	
FR224	Ability to identify which keys each key holder has and the doors they can open.
FR225	Ability to track issuing keys to people..
FR226	Ability to create key records or reports, and tracking lost or damaged keys and related responsibility.
FR227	Ability to track keys by department, function or other user determined groupings.
FR228	Ability to manage master keys, sub-master keys and change keys.
FR229	Ability to log quantities of keys created, issued, lost and destroyed.
J. Disposal of Dead Stock	
FR230	Department wise submission of details.
FR231	Tendering by Procurement & Inventory Department
FR232	Disposal of Dead Stock
K. Work Requisition	
FR233	Ability to create, maintain and review the section wise work requisitions.
FR234	Ability to raise maintenance Work Requisitions after receiving feedback from operations about faults. The Work Requisitions should be capable of auctioning/ triggering electronic notification to the concerned technical Staff.
FR235	Facility to copy tasks with materials and resource requirements to the Work Order (WO) from standard procedures, Facility to attach notes, equipment drawings/ documents, standard operating guidelines for each task in a WO.
FR236	Ability to classify Work requisitions / WO by user defined variables. For example safety, modification, new work, rework, breakdown, preventive etc. It should be possible to report by each of these classifications.
FR237	Ability to assign a priority among work requisitions.
FR238	Ability to view details of any outstanding Work Requisitions on a specific job or related piece of equipment in order to avoid duplicating work requisitions.
FR239	Ability to record the status of a Work Requisitions via user defined variables e.g. Awaiting approval, etc.

FR240	Ability to inform the Indentor/ Requestor via email or otherwise upon approval / rejection of Work Requisitions.
FR241	Ability to establish targets against a Work Request. These targets could be time, financial and / or quality based. The ability to report on these targets should also exist.
FR242	Ability to define critical dates against a Work Request e.g. Required by Date.
FR243	Ability to approve, maintain, complete and close Work Request.
FR244	Ability to link a WO to a financial Account Code.
FR245	Ability to create multiple job/ tasks against a single WO.
FR246	Ability to create multiple WO against a single Work Request.
FR247	Ability to define work requirements (plan/ labour/ equipment/ tools/ spares / other) against the WO.
FR248	Ability to make changes to a WO.
FR249	The ability to approve WOs online via workflow is required. This could be performed by different incumbents within the Institute, depending on WO size/ cost, priority, mode and Delegated Financial Authority levels etc. If a WO is not approved within a specified time, it should be forwarded to next appropriate person.
FR250	Ability to maintain, complete and close WOs online.
FR251	Ability to adjust all elements for the WO including: ● Materials ● Resources ● Tools ● Timings
FR252	Ability to create and issue an emergency WO.
FR253	Ability to attach documents to a WO including detailed Work instructions, safety requirements and checklists, drawings etc. Upon issue of a WO, it should be optional as to whether attachments are printed automatically or at the discretion of the user.
FR254	Ability to notify relevant personnel or issue a warning/ alarm, if a WO has not been completed after certain period of time.
FR255	Ability to record the consumption and return of the materials that were issued against the individual WO.

FR256	Ability to report on WOs that have been delayed due to: ● Materials not being available in time for the maintenance work. ● Insufficient Internal/ External labour resources. ● Lack of permit being issued ● Other User defined fields.
FR257	Ability to record status of a WO such as approved, not approved, wait on materials, wait on Successful Bidders, wait on labour etc.
FR258	Ability to allow authorised employees to enter text in a free format against the WO. These comments should be able to be forwarded to the concerned Authority.
L. Other Requirements	
FR259	List of Vendor wise/ Material wise orders.
FR260	Material wise, Department wise consumption report.
FR261	Comparison of price bids with history prices
FR262	Alerts if the Asset Numbers, Batch or Serial Numbers are not in order.
FR263	Vendor Performance Analysis Rating & Reports (on the basis of quality of item/ services offered, quantities supplied, delivery / timely completion performance and cost/ price)
FR264	Register for Inward, Inspection, Receipt, Issue etc on user defined period.
FR265	Facility to provide slow moving and non-moving items report
FR266	Rate variance report from Receipts.
FR267	Date Porting/ Data Entry Suite.
FR268	Provides an online item catalog and search capability.
FR269	Ability to load internal materials in order to create an Internal catalog.
4.2 INTER-LINKED AND COMMON FUNCTIONAL REQUIREMENTS	
A. General	
FR270	Ability to initiate and track the approval process.
FR271	Ability to assign different levels of approval for the same user.
FR272	Provide workflow functionality in all system modules.
FR273	Reminders/ Notification to the employee for change or requirement of any additional data through mails/ SMS/ self service etc.
FR274	Ability to allow temporary status changes of the users (e.g., unavailable due to vacation, deputation, Study leave, etc.)

FR275	Ability to re-route workflow assignments based on availability triggered by unavailability status.
FR276	Ability to re-route workflow assignments based on availability triggered by system administration defined periods of no response.
FR277	Ability to maintain various Sections/ Divisions Sub-Sections of the Institute.
FR278	Ability to define various roles based on the nature of responsibility.
FR279	Ability to assign employees to their Sections/ Divisions/ Sub- sections.
FR280	Ability to attach document or add notes wherever needed.
FR281	Ability to view the list of alerts received by the employee.
FR282	Ability to view the list of records submitted by the employee based on the process.
FR283	System should have provision to store order / circular / notification which effected an organisational change for an employee and related reports should be developed.
FR284	System should have functionality to search orders/ circular/ notification through name, keyword, date, number and archive/ discard any order / circular / notification.
FR285	Ability to seek confirmation after every change made in the structure, changes to be made permanent only on authentication by the controller of the authorised person – Multi Stage process.
FR286	Ability to change/ restore/ rollback changes to a previous (given) dates and report inconsistencies.
B. Reports	
FR287	Data filtering by various attributes can be used to limit the report to only desired information
FR288	Ability to provide pre-defined reports.
FR289	Custom data fields can be added to predefined report templates.
FR290	Charts and graphs can be added to the predefined report templates.
FR291	Report output can also be displayed in graphic and/ or chart format.
FR292	System must have the ability for appropriate users to create and print reports on their dashboard.

FR293	Report shall be prepared by any day of the week by Individual, Department, User defined.
FR294	The ability to format reports (e.g. headings, font, bolding, underlines, currency signs, etc.)
FR295	The ability to include headers, footers, pagination, etc.
FR296	The ability to produce reports that can be edited in MS Word / Excel or in the report writer itself.
FR297	Ability to export queries and reports to standard MS formats (Excel, Word, CSV, etc.) and PDF.
FR298	System will provide the ability to search for specific values within a report.
FR299	System will support simple and complex search and reporting functionality, using user defined criteria.
FR300	Ability for multiple users to access the same document/ reports simultaneously.
FR301	Ability to have access to data and report based on user authorizations.
FR302	Ability to provide standard report templates.
FR303	Ability to create custom reports using wizard.
FR304	Ability to print reports directly through networked printers.
FR305	System supports a graphical display of a wide variety of charts and graphs.
C. Constituting of Various committees & Meetings	
FR306	The system should have the capability to constitute the committee with its member and convener details.
FR307	The system should have the capability to capture various details of the committee such as terms of reference, tenure, committee members etc.
FR308	The system should have the capability to define the role of each committee member.
FR309	The system should have the capability to define the committee members from the internal departments as well as external users along with required details.
FR310	The system should have the capability to define the message template for sending the notification to respective committee members.
FR311	The system should have the capability to define the approval process for committee constituted.
FR312	The system should have the capability to circulate the Office Memoranda with the respective committee members/ stakeholders having details about the committee.

FR313	The system should have the capability to define the Meeting invitation templates for sending the notifications to all the committee members.
FR314	The system should provide the calendar view having details about the meeting schedule on a weekly / monthly basis.
FR315	The system should provide the capability to submit the response about their availability for the meeting scheduled.
FR316	The system should have the capability to capture the Minutes of Meeting.
FR317	The system should have the capability to assign the actionable to the respective committee members based on meeting decisions.
FR318	The system should provide the capability to define the deadlines of submitting the response for defined actionable.
FR319	The system should provide capability to design the template for circulating the Minutes of Meeting (MoM).
FR320	The system should provide the capability to send the MOM notification through email.
FR321	The system should allow allocating responsibilities and making online status updates.
FR322	The system should allow maintaining attendance records and drafting agendas, reports, and minutes of meetings.

4.3 OTHER TECHNICAL FUNCTIONAL REQUIREMENTS

A. General

FR323	All parts of Solution should support compulsorily English language formats
FR324	Should support any operation system like Windows, Linux, etc.
FR325	The interface design of the application should be simplified enough that the end user can easily understand all the working i.e. user friendly interface design.
FR326	All components of the proposed solution to the interoperable and seamlessly integrated.
FR327	Customise personalised views based on user defined criteria without impact to system functionality or support process.
FR328	Ability to create ad hoc reports, generate reports at various levels, facility to download reports in various formats like image/ Excel / CSV / Doc / PDF / Text / XML etc. and send reports electronically.

FR329	System will support uploading/ downloading in common formats (MS Office / Adobe / etc.)
FR330	System should have mail service integration. Ability to send email notification wherever needed.
FR331	The system shall allow adding documents to the electronic file directly from the scanner or internal / external drive or email.
FR332	Bulk data upload / change should be possible.
FR333	Solution to provide integrated user management.
FR334	Ability to provide access level security for Entry forms at Field level – Allow, Read only, hide, etc.
FR335	Ability to configure the number of permissible log-in attempts.
FR336	The system will create user roles and access rights based on user-defined criteria (role-based access control)
FR337	Ability to provide multiple roles to a single user and bulk user maintenance and access management options.
FR338	Solution to provide access level security for data at transactional level.
FR339	Ability to delegate roles and permissions in case an employee is absent and his / her work (approvals/ rejections in a workflow environment) needs to be carried out
FR340	Ability to revoke roles and permissions after the original employee joins back whose role was delegated to an alternate supervisor.
FR341	Accepts the user-defined templates for leave, tender, travel/tours, etc.
FR342	System should have inbuilt features like workflows, file tracking, and knowledge repository.
FR343	The system should be format agnostic and should allow storage of any digital data like images, Office files, engineering drawings, PDF, PDF/A, photographs, video & audio files.
FR344	System should allow creation of custom indexing fields/ tags for different documents at Folder & File level.
FR345	System shall provide the standard file hierarchy structure of folders and sub-folders to allow users and groups of users to manage and organise their documents.
FR346	The departmental officials should be able to index folders, files, letters and documents on user-defined indexes like department, Letter No. file No., year, etc.

FR347	The system's inbuilt viewer should have the capability to perform annotations such as highlight, sticky note, underline, hide certain text etc. on the documents image with user name, date and time of putting the annotations.
FR348	System should have facility to set notifications (e.g. Notifying change of version of a file to all stakeholders) & Alarms (e.g. Delay in Approval) by email.
FR349	System should have comprehensive & easy to set access rights controls at Folders & File level as well as Groups and users with Inheritance.
FR350	The system should allow defining multiple levels of access rights (Delete / Edit / View / Print / Copy or Download) to officers based on their profile.
FR351	The system should maintain audit-trail of all activities being done in the system, documents, etc. by users as well as administrators.
FR352	Provides system audit-trail tracking by user defined parameters.
FR353	System to maintain logs of all the transactions and audit-trails.
FR354	System should support creating Additional custom fields in each module for storing additional data, as per requirements.
FR355	The database should run with multiple nodes to provide a high level of availability and load sharing.
FR356	Ability to produce customizable error messages.
FR357	Ability for multiple windows to be open at the same time.
FR358	Ability to support full functional operation on Laptops & Desktops.
FR359	System permits multimedia file attachments (Word files, graphic images, audio or video clips) to records as work orders.
B. Security Requirement & Features	
FR360	All the necessary procedures/ infrastructure/ technology / personnel should be established to ensure that the Security in the IIA APPLICATION SOFTWARE system is not compromised.
FR361	The solution should have integrated security features that are configurable by the Master User or System Administrator to control access to the application, functional modules, transactions and data.
FR362	The solution should require the use of unique user IDs and passwords for authentication purposes, and Biometric and other devices as applicable.

FR363	The application should allow for the following: ● The enforcement of password standards ● The establishment of a specified period for password expiration. ● The prohibition of recent password reuse.
FR364	Only the Master User or designated authority should be able to define functional access rights and data access rights to the users. He / she should be able to restrict access to sensitive data elements by named user, groups of users, or functional role.
FR365	The systems should permit the Master User to assign multiple levels of approval for a single user.
FR366	System should be auditable as per requirements from time to time.
FR367	System should have audit logging capability to record access activity, including the following: ● All log-in/log-out attempts by the individual users. ● User submitted transactions ● Initiated process ● System override events, and direct additions, changes or deletions of data
FR368	System should have the provision for Dashboard to view and analyze the log details.
FR369	System should provide the ability to query the audit log by type of access, date and time stamp range, user ID and IP address.
FR370	All the information assets (Information and Information systems) should be classified and security should be defined according to criticality of the information asset.
FR371	System should ensure proper protection against malicious software. This would include implementation of an effective anti-virus solution, scanning for viruses at regular intervals or on certain triggers.
FR372	Should have a disaster recovery plan and robust backup procedures.
FR373	Provide security at the following levels: Department, Division, Role or Group, User ID, Screen, Menu, Report, Database Table, Object, Record, Field, Job Function, Transaction Type, etc.
FR374	Ability for the system administrator to determine which fields are visible to users.

FR375	Provide role-based security.
FR376	Provide document-based security.
FR377	Provide functional security to control what processes can be performed by certain users.
FR378	Ability to log users off the system after an administrator-defined period of inactivity.
FR379	Data Encryption – The login passwords of all the users and the suppliers are to be encrypted at the database level.
FR380	Secure Administrator Access – To prevent an administrator from misusing his access privileges, the system shall have dual level password verification before allowing an administrator access to a confidential module. The first password is to be provided by the administrator himself/herself and the second password is to be provided by the highest authority of the Institute, or his/ her designated official.
C. Documentation Requirement (General List)	
FR381	All Architecture documents, operating specifications, and system Flowcharts
FR382	Database entity relationships, table formats, and data element descriptions; and Program module descriptions.
FR383	Quality Assurance Plan stating the planned actions to ensure satisfactory delivery conforming to functional and technical requirements of Application Software.
FR384	Interface Control Document, documenting the interface characteristics of the modules.
FR385	Test Plan containing information on the software Test Environment to be used for independent testing, the test cases to be performed, and the overall testing schedule. This includes, schedule, resources, tools, procedures, environment definition, test cases, and software test results. The test plan document should have the information about the methodology, tools, etc. The Bidder has to provide the tools that are proposed to be used in the testing.
FR386	Troubleshooting Guide / Handbook for Helpdesk which describes various troubleshooting methods for various problem scenarios.

FR387	Operation Manual providing instructions for installing the application, troubleshooting, interpreting message logs, error codes with full descriptions and recovery steps, user screen and reports layouts and contents, application security and Frequently Asked Questions (FAQs)
FR388	User Manual (online or downloadable content) providing detailed instructions in the form of a narrative on how to use the application. In addition, it shall describe how to access, submit inputs to, and interpret outputs from the application.
FR389	Application Software Applications Training manual Module wise.
FR390	A data dictionary listing out all the data elements shall be prepared.
FR391	The Administrator shall maintain all documentation related to the Application Software including software artefacts and database with adequate traceability matrix and version control.
FR392	All the documents/e-registers, reports mentioned in Points / clauses of Section III of this RFP.
D. Software Essentials	
FR393	Entire source code for the Application Software solution to be provided to IIA without charge. However, to secure the ownership of the Bidder or its OEM, cost-less non-disclosure agreement (NDA) may be signed in this regard between the selected Bidder and IIA.
FR394	Only the latest versions of software application, and integration tools, wherever applicable, shall be used.
FR395	The software license must allow modifications and derived works.

3.2. Technical Approach.

Software is expected to be multi-user and hosted on server.

The functionality has been split in Front End, Back End, Interface between backend and front end and Data Base.

1. Frontend - Keeping the scalability in mind, we have planned to use Flutter or React frameworks for all frontend development.

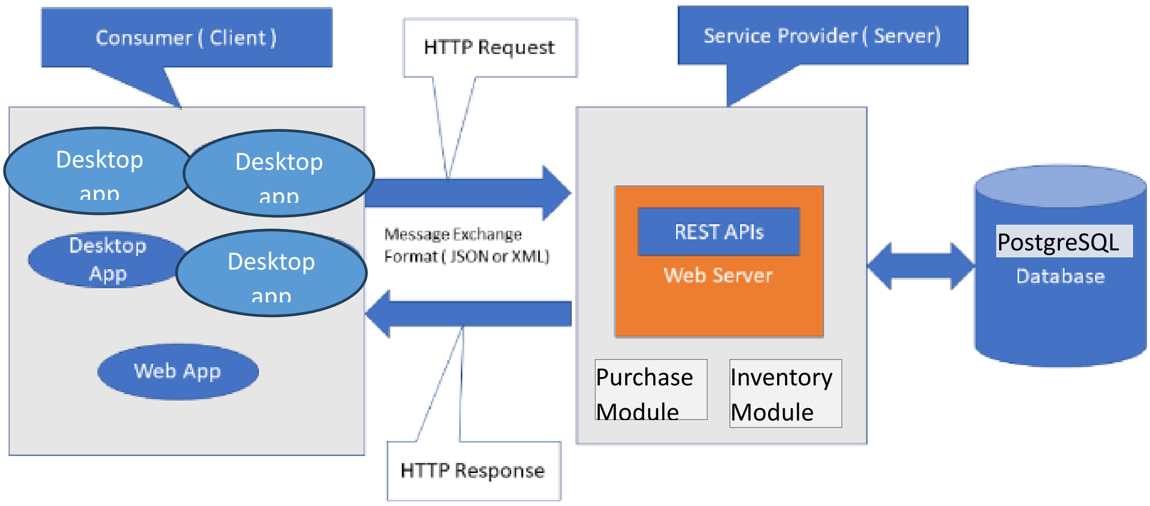
2. Backend – Back end will be very structured in terms of scalability and maintainability.

We have planned to use JAVA language for same, also we can evaluate the possibility of using Node JS as well.

2. Database – we have planned to use PostgreSQL, a light and simple database.

Below is the typical architecture keeping the distributed system in mind.

Please note, all the component used will be open source to avoid the licensing fee and all.



3.3. Project Activities and Work Breakdown.

3.4. Development Approach

Waterfall model will be followed to develop this application software. The Top-Down Waterfall Model is a classic approach to software development that follows a linear and sequential process. It is divided into distinct phases, each with specific goals and deliverables. Below is a detailed development approach for application software using the Top-Down Waterfall Model:

3.5. Testing Approach.

The testing approach for aforesaid application software developed will use the Top-Down

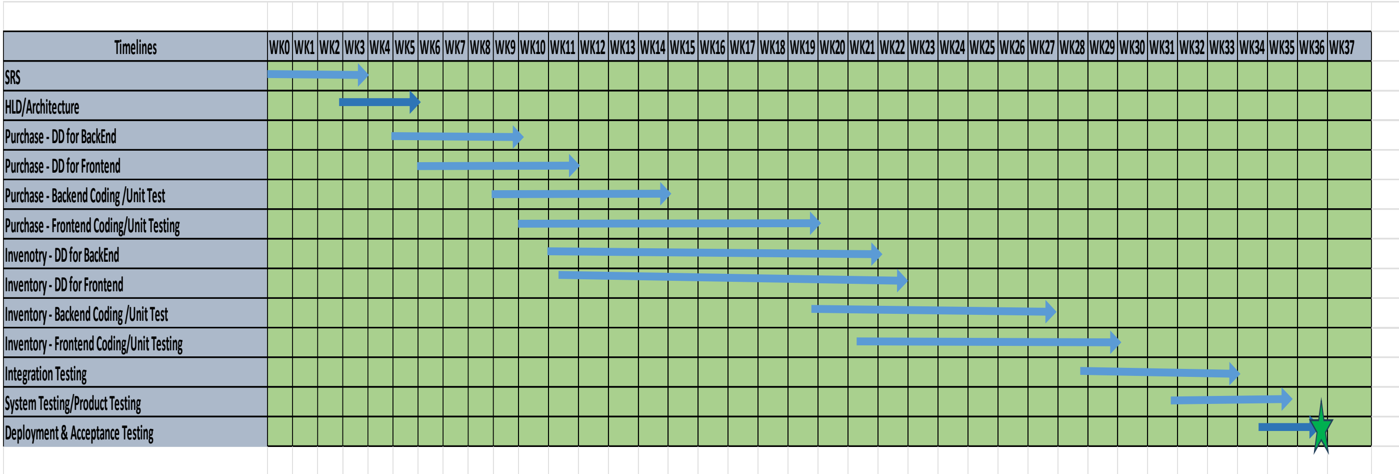
Waterfall Model involves a series of well-defined and sequential testing phases. This ensures that each component and the integrated system as a whole meet the specified requirements and function correctly. Below is a detailed testing approach:

Conclusion

The delivery content for application software developed using the Top-Down Waterfall Model is comprehensive and covers every aspect of the development lifecycle. Providing detailed and well-organized documentation ensures that the client and stakeholders have all the necessary information to effectively use, maintain, and enhance the software, ensuring its long-term success and usability.

4. Project Execution & Schedule

High level schedule and execution plan has been shown in below plan. Plan is based in high level WBS . There will be a detailed execution plan with more granular task will be built after allocation of project.



5. Project Execution & Responsibilities

5.1. Project Execution

The project execution has been depicted in below diagram

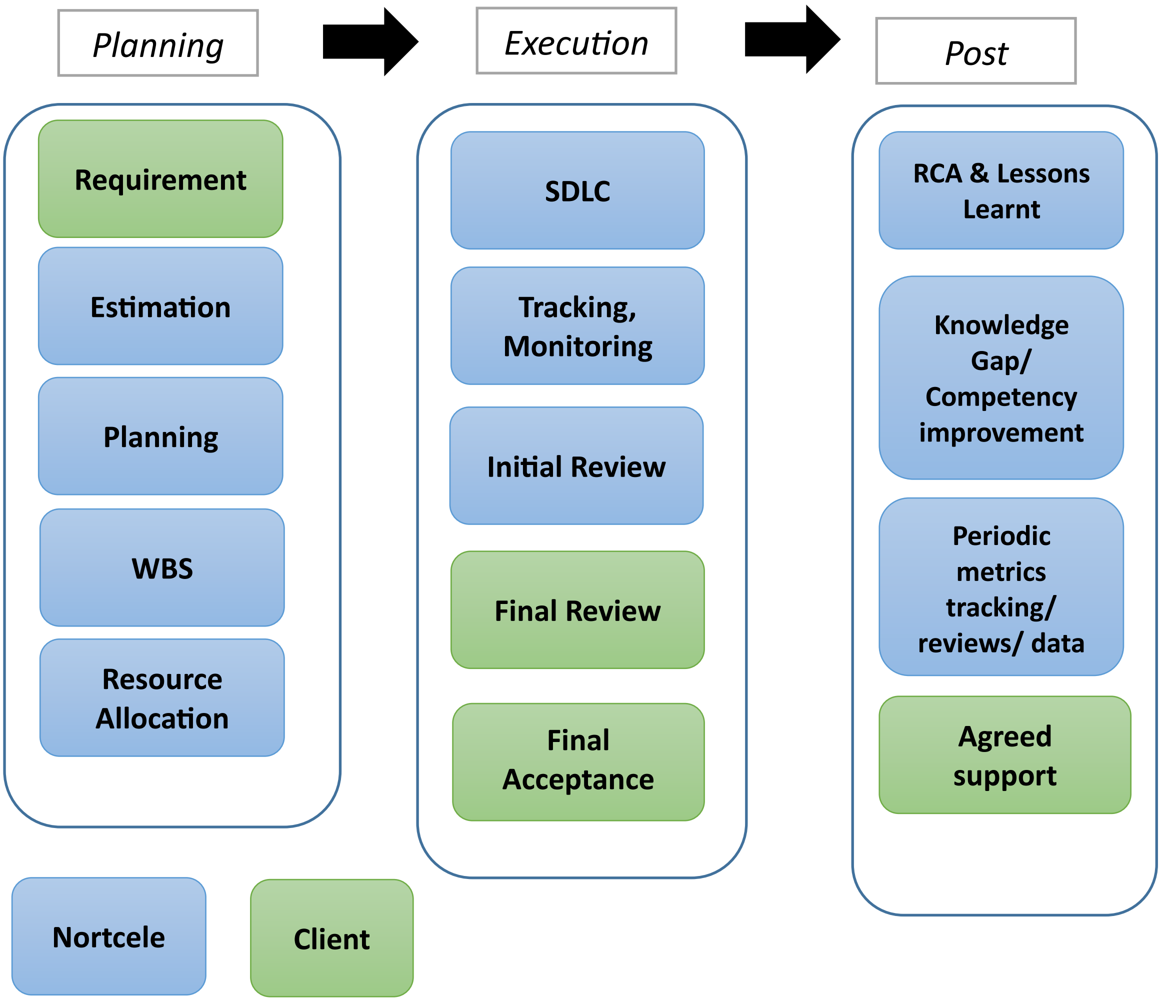


Figure 1: Project Execution

5.2. Single Point of Contact (SPOC) Responsibilities

The delivery team with R&R

Table 2: ***Resource Planned and R&R***

#	Name	R&R	Comments
1	Shikhar Tiwari	Product Manager & SPOC	For Interaction with client, planned to place on client site
2	Mr. Ashok Kumar Singh	Project Manager/Project Leader	
3	Mr. Raghu VT	Product Architect	Will do coding and testing as well
4	Mr. Rajesh P	Software Architect & Techlead	Will do coding and testing as well
5	Mr. Arun Radhakrishnan	Software Engineer	Will do coding and testing as well

Note: on need basis software engineers will be added.

Table 3: Resource – Team composition

- SPOC shall be identified as single point of contact for Technical and project management for all deliveries of this project.
- Escalation point of contact shall also be SPOC
- SPOC shall provide staffing for this project.

6. Dependencies from IIA

- IIA shall provide the required information about the existing database and shall provide the
- legacy data in the form it is available in IIA.
- IIA shall cleanse, rationalise and validate the data with Development Team of Nortcele assistance for migration.
- Data Entry, if required, shall be the IIA's responsibility and the same shall be done with the Team Nortcele guidance and assistance using the data entry programs/ applications / tools developed and deployed by the Nortcele Systems.

7. Assumptions

The Application Software implementation at IIA, Bangalore is to be carried out in a single phase approach to cover the requirements of all business functions and divisions. This approach would involve implementation of Application Software across all applicable business functions and locations for Application Software systems in the same phase.

The existing applications will be retired (functionality being merged in New Application Software).

8. Warranty

- **Warranty Period of Application Software:** 1(One) Year after Go-Live stabilisation period and shall include Development Change Requests to allow enhancements (based on the capacity / effort estimates required and captured as part of this RFP).
- **Maintenance Support for Application Software start from the end date of warranty period:** 5 (Five) years
- **Development Change requests to allow enhancements to Application Software as requested by IIA, Bangalore start from the end date of warranty period:** 5 (Five) years

9. Work Location, Security & Confidentiality

Work Location - work location is Bangalore, Nortcele office or in the premises of IIA, Bengaluru (if required)

10. Schedule and Payments

Payments

Completion of Milestone	Payment Milestones	Schedule	Comments
SOFTWARE LICENSING & APPLICATION SOFTWARE IMPLEMENTATION			
M1	Delivery (Licensing) of Application Software & any other 3rd party License required for implementation of Software in IIA.	30% of Total Price captured for line item A in BOQ	
M2	At the time of issue of Provisional Acceptance Certificate for Procurement Module as per the scope of this RFP.	25% of Total Price captured for line item A in BOQ	
M3	At the time of issue of Provisional Acceptance Certificate for Inventory Management Module as per the scope of this RFP.	25% of Total Price captured for line item A in BOQ	
M4	At the time of issue of Final Acceptance Certificate	20% of Total Price captured for line item A in BOQ	
ANNUAL MAINTENANCE & ENHANCEMENT SERVICES & SOFTWARE LICENSES RENEWAL			

M5	Subject to placement of AMES WORK ORDER, Half-Yearly payment in advance on receipt of invoice.	As per	
CHANGE REQUEST– DEVELOPMENT CHANGES DURING AMES PERIOD (IF ANY)			
M6	Change Request - Completion of development changes requests scheduled for the period.		