

TENDER SPECIFICATIONS FOR MANAGEMENT INFORMATION AND PLANNING SUPPORT SYSTEM (MIAPSS) UPGRADE AND INSTALLATION FOR CSD (CHATTOGRAM & MONGLA) ORGANIZATIONS

1. **Name of the Software.** Management Information and Planning Support System (MIAPSS) Upgradation.
2. **Supplier.** Name and full address of the supplier is to be mentioned.
3. **Background of the System Development.** MIAPSS is customized database software, designed and developed both in LAN and web-based platform. This system was implemented in 2013 under supervision of Commodore Superintendent Dockyard (CSD). The objective of MIAPSS is to automate the day-to-day repair works and other administrative activities such as attendance, salary, overtime etc. of CSD organizations (Chattogram & Mongla). This software was designed to ensure optimum utilization of resources in methodical and planned way. MIAPSS is expected to enhance the operational capability of BN Dockyard and thereby enable to face the upcoming challenges in the days to come. It facilitates to monitor daily information on man-hour, statistics of incoming jobs, jobs in hand, in progress, completed job, detailing list, and weekly job schedule and so on along with facilities to get print out of need basis customized reports. **After completion of the upgradation work, the software will be installed in both CSD (Chattogram and Mongla) Organizations.**
4. **Existing MIAPSS Overview.** Management Information and Planning Support System (MIAPSS) has main 03 (three) basic modules, namely Human Resource Management (HRM) Module, Job Processing (JP) Module and Central Store (CS) Module which are describe below:
 - a. **Module**
 - (1) **Human Resource Management Module.** Human Resource Management (HRM) Module has three sub modules which are – Employee Information Sub Module, Admin and Attendance Management Sub Module and Payroll Sub Module. In Employee Information Sub Module, MIAPSS handles employees' service and personal information for day-to-day administrative needs. In Admin and Attendance Management Sub Module, MIAPSS handles daily attendance such as present, Leave, Absent, Ty States generated by this sub module. Moreover overtime, man detailing activities are also incorporated with this module and this sub module is integrated with JP and HRM module. In Payroll (Accounts) Module, MIAPSS handles employees' salary, Festival bonus, various allowances, Overtime Payment. It is also integrated with JP and HRM Modules.
 - (2) **Job Processing Module.** Job Processing Module is the core of the MIAPSS Software. The functionality of this software starts from submission of work requisition and ended to the costing upon getting satisfactory certificate from the users. Job Processing Module has more than nine (09) sub modules which are as follows:
 - (a) Ship/ Establishment Sub Module.
 - (b) Planners Sub-Module.
 - (c) Group Officers Planning and Estimating Sub Module.
 - (d) General Managers Sub Module.
 - (e) Deputy General Managers Sub Module.
 - (f) Deputy General Managers (ship repair) Sub Module.
 - (g) Fleet HQ Sub Module.
 - (h) Workshop Sub Module.
 - (j) Costing Sub Module.
 - (k) Quality Control (QC) Sub Module (Under Construction).
 - (l) Outside Agency Sub Module.

(3) **Central Store Module.** Central Store (CS) is another major and important module of MIAPSS Software. Central Store keeps the all materials for repair works. Planners and workshop raised materials for repair works. CS received the demand and distributes the material according to demands. If materials are not available in CS then CS raised demands to NSD and after receiving the item from NSD, CS updates the ledger and distributes the item according to demands and updates the ledger again.

b. **Architecture.** In Primary Stage, MIAPSS software was developed by Visual Basic and back end was MySQL. At that time desktop-based client –server model was introduced. But after the up gradation of this software, web-based client-server model has been introduced. Currently, the design and architectural aspects of existing software are as follows:

1. **Hardware.** The following are the current hardware, server and network states:

- (a) 1 x Server as Application Server (Windows server + Web server(Apache).
- (b) 1 x Server as Data Server (Windows server + MySQL Server).
- (c) 1 x Server as backup server for Data warehouse (Windows server + MySQL Server).
- (d) Existing backbone structure with optical fibre and UTP cable connectivity.

2. **Software.** The following are the current Operating system and Application software used:

- (a) OS: Windows Server 2016.
- (b) Apache server is used for web server.
- (c) Dynamic modules with PHP, CSS, Bootstrap, AJAX, JavaScript.
- (d) Browser-side language: HTML, XHTML, JavaScript.
- (e) Server-side Language: PHP.
- (f) Database platform: MySQL.

5. **Purpose of the development of New MIAPSS system.**

- a. To replace the current MIAPSS system with new system that is completely owned, controlled, user friendly and managed by **CSD organizations (Chattogram & Mongla)** including it's all data and source code.
- b. To enhance the capacity of existing system to accommodate future expansion of three-dimensional Navy.
- c. To secure and protect all data in CSD (Chattogram & Mongla) MIAPSS online system so that no external entity can access the data.
- d. To integrate the system with all existing IT system of **CSD organizations (Chattogram & Mongla)**.

6. **Overview of New MIAPSS System.**

a. **System Target User.** There are following 4 types of users for the system:

- (1) **BN Ships/ Establishments.** BN ships and establishments who log into the system and will submit, track and notify (after job completion) their defect requests regarding equipment and accessories (only for PLR items). The demand of spares placed by the workshop will be sent to respective ship/establishment through MIAPSS.
- (2) **CSD Staff (Chattogram & Mongla).** Ship/Establishment sends a work requisition mentioning the 04 (Four) major department for normal defects raising CR and without mentioning any department for DR while proceeding for refit and docking through MIAPSS. After submission of CR/DR the following process are to be carried out through MIAPSS software until the final completion report is generated for the respective CR/DR:

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- (a) **Planner.** Planners are to select appropriate workshop, estimate MH and materials for the respective work requisition or can reject the work requisition and send back to Ships/Establishments.
- (b) **GPE.** Group Officers are to check and receive the work, receive the estimated material request and forward further to GMPE or GPEs can reject the inappropriate work.
- (c) **GM (P&E).** GM (P&E) are responsible to finally check the working plan with material demand and forward to Chief Planner.
- (d) **Chief Planner.** Chief Planner will maintain final register of all incoming the work requisition and forward to Production DGM.
- (e) **DGM (Prod).** DGM (Prod) will give approval to the submitted work requisition and forward that to GM (Prod).
- (f) **GM (Prod).** GM (Prod) will give final approval to the work requisition and forward that to the respective Workshop.
- (g) **Workshop.** Workshop will maintain daily attendance, work schedule, man detailing, material re-estimation, spares demand, assumed overtime for the work requisition and also raise sub-work through the software. After successful work completion final quantity of material used will be determined and after completion of the work, the work requisition will be closed.
- (h) **Outside Agency.** If for any work requisition, working facility is not available at the workshops then the work requisition will be completed by the help of outsourcing companies which is processed by outside agency under Planning and Estimation Department.
- (i) **Central Store.** Central store will supply the material demanded based on the availability for respective the work requisition to conduct repair work by the work shop and maintain material inventory.
- (j) **QC Team.** Quality Inspection of the work requisition after receiving by the GPEs and completion by the workshop is done by the QC team and after the QC approval further process will be continued. QC feedback regarding the completed works, satisfactory/dissatisfactory certificate will be generated by the system and send it to shop. QC is also responsible to create a log for GM (P&E) and CSD (Chattogram & Mongla).
- (k) **Costing.** Costing receives serviceable, non-serviceable, NRC, completed job and closes the work by estimating the overall expenses of the CR/DR. Costing section is also responsible to calculate the used material expenditure, MH rate, docking charge, crane charge, outside agency bills after satisfactory certificate is obtained from Ships / Estb and close the work.
- (l) **GM (Admin).** GM (Admin) office is to maintain Employee Information, Admin and Attendance Management along with Payroll system of the entire civilian staffs working in this organization. In MIAPSS, employees' service and personal information for day-to-day administrative needs, daily attendance such as present, Leave, Absent, Ty States and generated overtime, man detailing activities are also to be incorporated. Payroll (Accounts) is to be handled, i.e. employees' salary, Festival bonus, various allowances, Overtime Payment through MIAPSS.
- (3) **FMHQ.** Fleet Maritime HQ will be responsible to forward OPS Immediate work requisitions for any defect which is major in nature and requires urgent rectification requirement.
- (4) **Administrators from CSD(Chattogram & Mongla).** Administrator user manages all the system settings and has privileged to add/ modify process and workflow. The administrator can access the system only from within CSD organizations (Chattogram & Mongla). They are responsible to manage the users, access control of the system etc.

(5) **NHQ (Naval Headquarters)**. NHQ to provide approval of defect requisition submitted during annual refit and docking, final costing after work completion, tender raised by outside agency. NHQ will be also able to get system generated work progress report of MIAPSS operation according to therequirement.

7. **Work Requisition Processed by MIAPSS.**

a. **Types of Work Requisition.** Three types of work requisition is to be processed by MIAPSS which is elaborated below:

(1) **CR.** Casual (to be marked 'Normal') Requisitions cover defects that do not affect seagoing or fighting efficiency of the ship/submarine, but affect the habitability to such extent that cannot wait until the next planned refit.

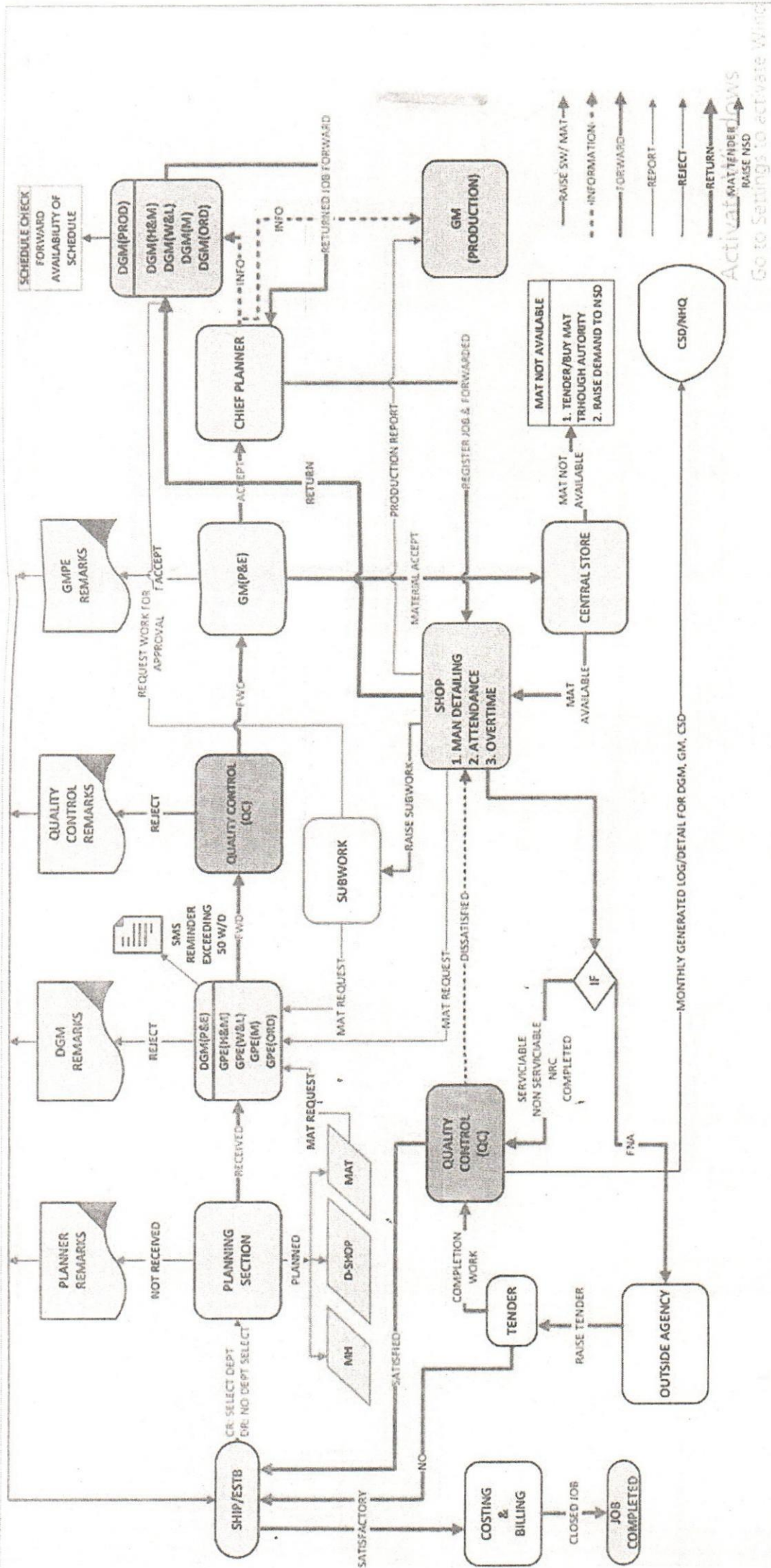
(2) **DR.** In case of scheduled refit and docking, the ship will forward the Defect List to her Admin Authority, and the Admin Authority will forward that to CSD (Chattogram & Mongla) (in hard and soft copies). For Defect Work Requisitions (DR), the ship will prepare that and that will be received by P&E Department. GPEs and Planners concerned will examine the work and carryout onboard investigations as required and prepare final Defect List and raise DR.

b. **Ops-Immediate Work Requisitions.** In case of operational requirements the ship will prepare the work requisition on F(NE)-4 and it is to be approved and forwarded by FEO/FLO/BEO/BLO or any other officer of such authority. The requisition directly will be sent to the DGM (Prod). On receipt of such requisitions the GM (Prod) will forward the requisition to shops concerned for immediate action.

c. **Architecture/ Flow Diagram of New MIAPSS.** The system architecture and flowdiagram is as follows:

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(1) Architecture/ Flow Diagram of Processing a Work Order (CR/DR)



WORK ORDER PROCEDURE (CR/DR)

(2) Architecture/ Flow Diagram of Processing a Work Order (OPS Immediate)



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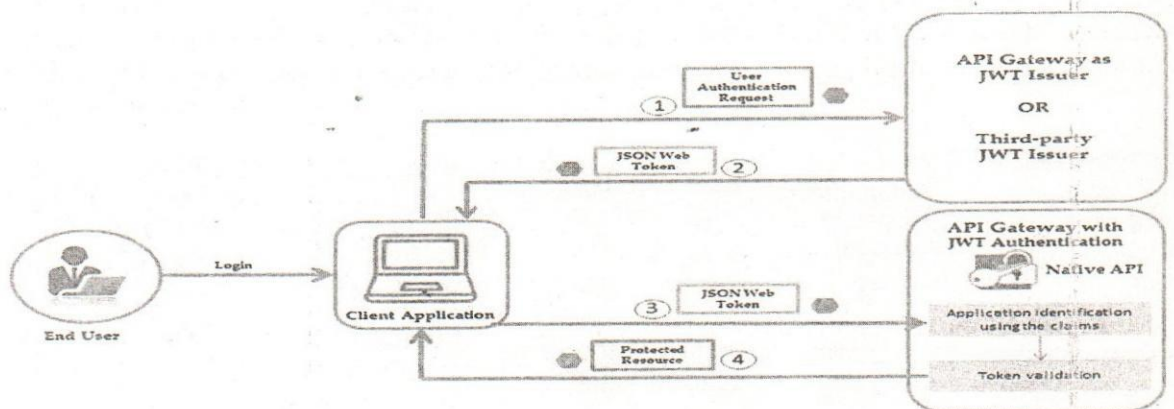
d. Software Requirements of New MIAPSS.

(1) **Deployment Infrastructure.** The whole system should be developed in a micro service-based Dockers driven platform that will be able highly scalable with auto-scaling. The horizontally scalable option is most desirable so that to coup- up with future growth can be obtained only by adding additional hardware. The auto-scaling feature should be turned on based on traffic request matrix to the services but not limited to CPU utilization only. The system also should be Highly Available means service can be restarted automatically on failure, so that disruption will not be experienced from a user perspective. The majority of services including frontend and backend applications need to be developed and deployed in a Dockers container. For efficient handling of Dockers, starting from deployment, operation, scaling, networking and load balancing, the orchestration platform should be positioned. Followings are a few of orchestration platforms:

- (a) Kubernetes.
- (b) Dockers Swarm.
- (c) Apache Mesos.
- (d) Nomad.

Among the above-listed orchestration platform, Kubernetes is the most preferred as it has a large, rapidly growing ecosystem. Kubernetes services support and tools are widely available. Moreover a modernized service networking layer like service mesh can be adopted to automate application network functions in more efficient manner.

(2) **Identity and Access Management.** User management is critical in this System. A battle-tested IAM (Identity & Access Management) with a large community is required to fulfill the requirement. It should be an absolute role- based access management system with a large number of user and credential management capabilities. The proposed IAM framework should enable the admin to control user access to critical information within Bangladesh Navy. IAM should be capable to handle role-based access control, which lets system administrators regulate access to systems or networks based on the roles of individual users within the enterprise. User credentials should be managed solely by the IAM and capable to handle a large number of the user. The systems should reduce the time it takes to complete the processes of user management with a controlled workflow that decreases errors and the potential for abuse (brute force attack) while allowing automated account fulfillment. Authorization for accessing the individual software function needs to be controlled by the JWT (JSON Web Token). When a user will try to access through the front-end system, credentials will be forwarded to IAM for authentication. For the authenticated user, IAM will generate JSON web token in encrypted form with includes payload from authorization information.



IAM platform should have the following features:

- (a) Capable to cater Single-Sign-On (If required in future).
- (b) Active Directory integration capabilities.
- (c) Should support standard protocol like Open ID Connect, OAuth 2.0 and SAML 2.0.
- (d) Support for Clustering.
- (e) Centralize management.
- (f) Support for 2FA.

Recommended Open Source IAM Solution

- (a) Keycloak (<https://www.keycloak.org/>).
- (b) Auth0 (<https://auth0.com/>).
- (c) Gluu (<https://gluu.org/>).
- (d) Apache Syncope (<https://syncope.apache.org/>).
- (e) OpenIAM (<https://www.openiam.com/>).

(3) **API Gateway.** An API gateway or API management tool is required to sit between a client and a collection of backend services. API gateway needs to act as a reverse proxy to accept all application programming interface (API) calls, aggregate the various services required to fulfill them and return the appropriate result. API gateway needs to handle common tasks that are used across a system of API services, such as user authentication, rate limiting, and statistics. To offer users of the system a simple and dependable experience in the face of all complexity, the proposed API gateway will decouple the client interface from backend implementation. When a client makes a request, the API gateway breaks it into multiple requests, routes them to the right places, produces a response, and keeps track of everything. API gateway will be the only component of the system exposed to the public Internet or enterprise-wide Intranet and will be within secured server firm zone protected by server firm firewall which can safeguard application and another platform component from a security breach and as result, extra security layer to save from malicious attack, especially DDoS attack on application level can be down to network level. API gateway needs to allow adding of a dedicated orchestration layer on top of backend APIs and services. It can leverage the governance capabilities of API Manager to apply, among other capabilities, throttling, security, caching, and logging API requests and responses. Recommended Open Source API Gateway Solution are given below:

- (a) Kong API Gateway (<https://konghq.com/kong/>).
- (b) KrakenD (<https://www.krakend.io/>).
- (c) Apache APISIX (<https://apisix.apache.org/>).
- (d) Gloo (<https://www.solo.io/products/gloo-edge>).

(4) **Language & Framework.** As the system will be micro service based system and is loosely coupled and only communicates via language-agnostic way with each other. So development language for front-end and back-end is not strict. However modern development language is preferred which can have following features.

- (a) Architectural Neutral.
- (b) Robust in nature.
- (c) Enforce security in development and run-time.
- (d) Perfect one for distributed environment.
- (e) Multi-threaded.
- (f) High Performance.

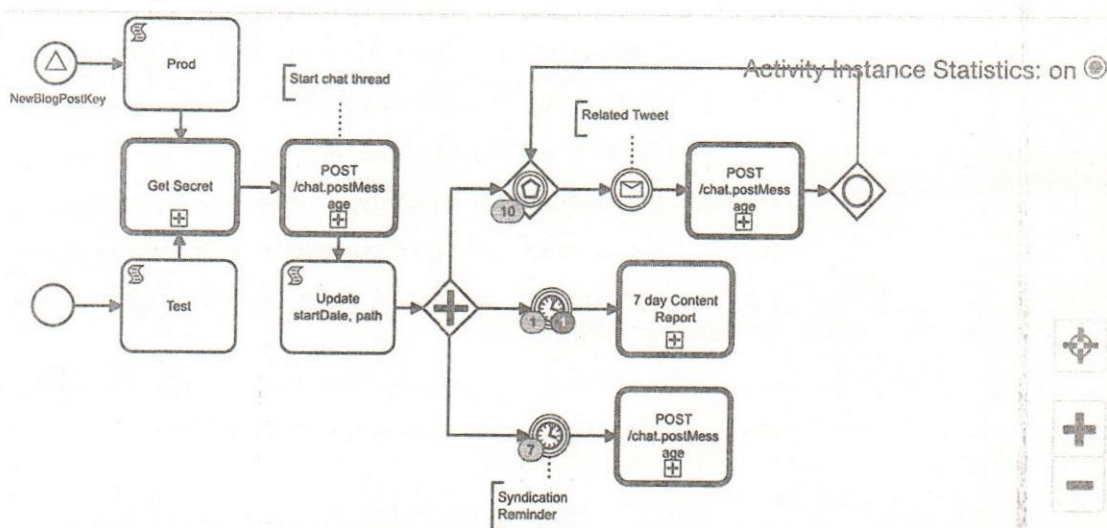
Note: Java, GO & Python are the preferred language for back-end, React.js, Angular.js, Python are preferred for front-end.

Framework driven approach is most preferred for the development of the system. In this circumstance Spring Boot & Django is the preferred framework.

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(5) **Database.** A powerful, open-source object-relational database system is required that uses and extends the SQL language combined with features that safely store and scale the most complicated data workloads. Database systems should have a strong reputation for their proven architecture, reliability, data integrity, robust feature set, extensibility, and the dedication of the open-source community behind the software to consistently deliver performant and innovative solutions. Should have the ability to run on all major operating systems, has been ACID-compliant and has powerful add-ons in the context of a relational database of choice for many people and organizations. Recommended Database Solution are provided herewith:

- (a) MySQL (<https://www.mysql.com/>).
- (b) PostgreSQL (<https://www.postgresql.org/>).
- (c) MariaDB (<https://mariadb.org/>).



(6) **Workflow Engine.** The workflow engine is the heart of the whole System which maintain core functionality. It is discouraged to develop own property system rather a well-established workflow engine with following requirements is preferred.

- (a) Open source with large user community.
- (b) Supports BPMN 2.0 standard or supports user-defined workflow with loop, branching and multiple lanes (user group).
- (c) Support for graphical representation and editing of BPMN 2.0 workflow definition.
- (d) Support for integration with external systems and Web interface via API (preferably Restful).
- (e) Support for container-based deployment and clustering.

Example of BPMN 2.0 notation of workflow is shown below. In workflow engine, this is not just a diagram but a definition of workflow to be executed. Recommended open source workflow engines:

- (1) Activity (<https://www.acivity.org>).
- (2) Bonitasoft (<https://www.bonitasoft.com>).
- (3) Camunda (<https://camunda.com>).
- (4) Flowable (<https://flowable.com>).
- (5) Apache Airflow (<https://airflow.apache.org>).
- (6) ProcessMaker (<https://www.processmaker.com>).

Expected usage of workflow engine in the System is as follows:

- (1) The administrator of the System defines/edits a business process (workflow) for each individual.
- (2) When a requirement is submitted through the portal, the corresponding workflow will be triggered to start the workflow engine.

- (3) According to the workflow definition, the workflow engine will forward the submitted requirement to the individual section for evolution & planning, cost estimation, approval, spare part procurement and cost determination purpose etc.
- (4) The workflow will initiate any external API call if required to communicate for approval or notification purposes to the external System.
- (5) The workflow will initiate any Document generation process for approval, record keeping or notification.

(7) **Document Store.** All attached documents/files that come in a different step of the workflow process must be stored in the dedicated Document store of the Document Management System (DMS), and must not be stored directly in a database or a plain file server. The database for the System should hold the location of those files stored in the Document store. The requirements for the Document store subsystem are as follows:

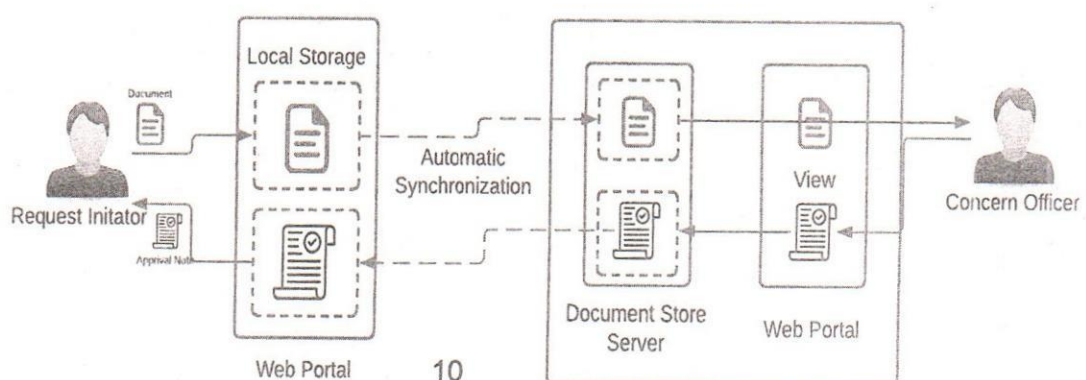
- (a) Open source of freely available technology with the large usercommunity.
- (b) Supports full-text search capability (allows search for the filecontents).
- (c) Support versioning of the files.
- (d) Support container-based deployment and clustering.
- (e) Support automatic synchronization for mirroring or backup purpose.
- (f) Supports for integration with external systems and Web interface via API (preferably-restful).
- (g) Supports secure access control (especially TLS access and userauthentication).

Recommended Open source Document store /DMS:

- (i) Mayan EDMS (<https://www.mayan-edms.com>).
- (ii) Nextcloud (<https://nextcloud.com>).
- (iii) OwnCloud (<https://owncloud.com>).
- (iv) Samba or a similar file server can't be used because they are primarily designed for LAN environment and can't serve other requirements of file storage.

(8) **Expected usage of Document store in the System.**

- (a) Uploaded files by the initiator are stored in the DMS. Later all files can be visible from the DMS using local caching through the portal. Access information for these files (such as URL, to the location of the file in the Document store) will be stored in the database together with the submitted application form data.
- (b) The local file (uploaded by the initiator if in the local web portal) will be automatically synchronized into the main Document store server. The behavior is similar to any cloud storage service such as Google Drive or One Drive.
- (c) All generated Certificate/Approval Note will be first stored in the main Document store server. Later may be automatically synchronized with the Web portal server.
- (d) The main Document store supports the versioning of the files so that the revision history is also stored in the main Document store server.
- (e) Concern officers sometimes need to search a document for itsfilename or possibly for keywords in the file content. So full-text index search capability is required.
- (f) The automatic synchronization mechanism can also be used for an automatic backup of the Document store.



(9) Development Strategy.

(a) Simple Architecture with Maximum Flexibility. Instead of creating a single, overly complex and rigid system that contains all functions with proprietary components, the System should be built on the combination of globally acknowledged general-purpose software components (i.e., package, frameworks, etc.) with absolutely no dependencies on proprietary or privately owned software libraries/middleware, while maintaining the maximum flexibility.

(b) Maximum Utilization of Open-source Packages. To speed up the development process, the System should employ internationally acknowledged stable open source packages for the following subsystem instead of coding from the ground up. Requirements for the following subsystem should be constructed with an open-source component as mentioned earlier.

- (i) Identity & Access Management.
- (ii) Workflow Engine.
- (iii) Document Store.
- (iv) Reporting.

Note: In case the developer already has developed such existing software component that has been developed before, it might also be acceptable to use these existing components as far as they are stable enough and its source code is available to Bangladesh Navy (i.e. the component is not a black box to Bangladesh Navy). The acceptance of such a component is subject to the approval of the project management team of the Bangladesh Navy.

(i) Collaboration with Project Team. The project team from Bangladesh Navy will be actively involved in the development process through collaboration. System Design, UIX design, Platform Development, CI/CD pipeline establishment, coding and testing must proceed cooperatively with the project team.

(ii) Transparent Development Process. During development, every development step must be transparent to the Bangladesh Navy project team and IT engineers. This means the progress of development (such as revision of the design, code, testing results, etc.) must be shared with the project/engineering team through the revision control system (Git is the preferred tool). The project/engineering team should have access to the repository for the revision control system despite whoever is managing the repository.

(iii) Agile Project Management. Development of projects should be managed in an agile manner with the frequent and short iteration of the review process such as the Scrum method. Jira is the preferred tool for project management. The whole development lifecycle should be managed from agile boards, backlogs, roadmaps, reports, to integrations for planning and tracking from a single tool. Scrum, an agile methodology should be used where products are built in a series of fixed-length iterations by maintaining four pillars of Scrum that bring structure to this framework: sprint planning, stand-ups (also called daily scrums), sprints, and retrospectives. Sprint planning meetings should be carried out bi-weekly in the early stage and frequency may be increased at a later stage which will determine what the team should complete in the coming sprint from the backlog, or list of work to be done so that both teams can estimate stories, adjust sprint scope, check velocity, and re-prioritize issues in real-time. Appropriate tools and a Scrum template should be used that can help to run sprint planning smoothly. The project team and engineers from Bangladesh Navy should have access to Jira in all aspects starting from issue tracking, planning and testing.

(10) Portability. Portability is not required for the system. However each micro service component (especially Web portals, Document store, Workflow engine, etc.) will be independently deployable in multiple container and vertical & horizontal auto scaling will be maintained automatically based on the demand from the user load.

(11) Security. The System must employ the latest and tight security measures including but not limited to the following:

(a) The Internet/Intranet application portal will employ full-time TLS. This means that accessing to system portal by normal HTTP protocol is not allowed and HTTPS protocol is always required. Internet based system portal will always allow HTTPS access only by CA signed TLS certificate.

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- (b) Core component of the system will not be exposed to public Internet or enterprise wide Intranet. Full system will be deployed within secured server firm zone protected by server firm firewall. Client communication will be accomplished through API gateway or any other reverse proxy agent placed in DMZ or secured zone.
- (c) Communication between micro service based subsystems will employ TLS. All micro service components will communicate among themselves through encrypted communication method. Key management process will be managed dynamically through an automated process.
- (d) All services will authenticate a request via access token. A standard practice of token generation will be maintained through any standard IAM system with preferred protocol Open ID Connect or OAuth 2.0.
- (e) User password will not be stored as plain text or plain hash. It will be stored as salted hash with different salt value for each user.
- (f) Protection against all popular intrusion attacks will be implemented in the system. The protection will comply with OWASP standard.
- e. **Hardware Requirements.** The developer shall study the existing system and the additional requirements proposed for upgradation of MIAPSS. Accordingly the developer shall propose for additional hardware specification as necessary.

8. **System Study.** The developer firm will carry out a detailed system study in both CSD Organizations (Chattoogram and Mongla). The system study shall encompass the present system upgrade and developed different features of the intended software. However the major headlines of the study are given below:

- a. Study and evaluate the existing system.
- b. Identify the new requirements (if any).
- c. Usability of present hardware and software in up gradation and development work.
- d. Detailed specification of hardware (if any) and software.
- e. Identify functionality (inputs, processes, outputs etc.) of the software.
- f. Identify the deliverables in different phases.
- g. Design preliminary solution.
- h. Prepare software requirement specification (SRS).

The scopes for works will include the followings:

- a. Prepare and submit detailed Draft Software Requirement Specification (SRS) and finalize the document with mutual agreement (approval).
- b. Develop the complete software system as per approved SRS.
- c. Carry out installation, Test and Trial of the software system.
- d. Provide detailed technical manuals and user manuals for complete software system.
- e. Provide comprehensive training to all users of the software system.
- f. Provide data entry support to implement the software system.
- g. Provide complete installers and source-code packages of the software system.
- h. Do Data migration from existing MIAPSS to new MIAPSS without hampering any existing data.
- j. Implement Data guard.

Timeline of the Project. The time line for implementation of the software is as follows:

| | | | |
|----|--|---|-----------|
| a. | System Study and Submission of SRS | - | 60 days. |
| b. | Development after approval of SRS | - | 120 days. |
| c. | Implementation (deployment, Testing and Training) | - | 30 days. |
| d. | Sample data entry and train up the personnel for data entry work | - | 30 days. |

(All days above are calendar days and not working days)

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11. **Qualification of the Bidder.** Only renowned Bangladeshi software firms that fully meet the under mentioned criteria will participate in this tender:
- The participating firm shall have own valid trade license with 5 years' experience in software development. The software firms shall have Automation Software implementing work experiences. Joint venture/ third party offer, and incomplete or partial compliance shall not be accepted.
 - The firm shall have 5 number of qualified software developer.
The firm shall be a registered member of BASIS.
 - Be willing and able to fully demonstrate their 'Management Information and Planning Support System (MIAPSS)' software project to the Tender Evaluation Committee at NHQ.
12. **Validity of Offer.** The offer shall remain valid for at least for 6 (six) months from the date of submission of the tender.
13. **Pre-bid Meeting.** A pre-bid meeting may be arranged at NHQ after about one week from the floating date of this tender (the date on which the tender is posted on NSSD Dhaka notice board and its Website). To know the meeting schedule, interested bidders are requested to contact telephone no: 9836141-9 Ext. 2348 or mobile No: 01769702348 and 01769702344.
14. **Bid Document.** Each bidder shall submit his offer containing the following documents:
- Copy of Trade License (Renewed up to June 2022).
 - Copy of TIN Certificate.
 - Copy of VAT Certificate.
 - Copy of BASIS Certificate.
 - Submit resume of 5 key software engineers who shall work for the project.
15. **Tender Evaluation Process.** The tender evaluation process will be carried out as per BN procedure. BN reserves the right to accept the whole or part of any offer without showing any reason.
16. **Terms of Payment.** Payment will be made as per the following:
- 30% of the contract price will be paid after the supplier submits the SRS and BN approves the same.
 - 60% of the contract price will be paid on acceptance by BN.
 - 10% of the contract price for the Software will be paid after completion of warranty period.
17. **Other Conditions.**
- All payments will be made by BN to the supplier through SFC (Navy) in accordance with the relevant payment terms of the Contract. VAT and Tax will be deducted from the payment as per government rules.
 - BN will not consider increase of any price component over the contracted values, either due to higher inflation-rate in the country or for increased taxation rate by the Government.
18. **Price Quotation.** Price is to be quoted in local currency inclusive of VAT and TAX. For imported item, it is to be quoted without custom duty.
19. **Employment of Data Entry Operator.** The bidder will employ 2 (two) data entry operators for 60 days in both CSD Organizations (Chattogram & Mongla). All cost (food, accommodation, transportation etc.) will be borne by the bidder.
20. **Training.** After successful implementation of the software, the bidder will provide training to BN personnel (minimum 10 persons) in both CSD Organizations (Chattogram & Mongla). The duration of operator and maintainer's training will be of 2 (two) weeks. Training will include the following but not limited to:
- Operating procedure of the said software.
 - Software installation, configuration and database structure.
 - Software fault identification and troubleshooting.
 - Database maintenance, backup and recovery.

21. **Documentations.** The bidder will provide the following documentation after satisfactory test and trial.
- User manual in soft and printed copy – 2 copies.
 - Technical manual in soft and printed copy – 2 copies. The technical manual will contain but not limited to information software modular architecture, database structure, network configuration, software configuration and front-end windows.
22. **Installation, Test- Trial and Acceptance.** The bidder will install and configure the software in accordance with the network diagrams and software requirement in designated places **in both CSD Organizations (Chattogram & Mongla)**. Final acceptance will be issued thereof by CINS after satisfactory installation, test and trial.
23. **Warranty Support Service.** Warranty support service will be for 2 (two) year from the date of acceptance. The service includes the following:
- Ensure software is free from bugs and errors and remains fully functional.
 - Ensure software trouble shooting.
 - Performance monitoring.
 - Technical support assistance (on call/ online/ on site) as required.
 - Ensure security of the software from malware, virus and spam.
 - Any new addition or modification in existing modules, forms and reports.
 - Database protection, backup and recovery.
 - The bidder will be responsible for keeping the supplied software up and running in the system during the support period by deploying a dedicated resource person for the purpose.
 - If the software remains non-operational for a certain period within support service time, the support service time will be extended by the same period.
 - If any defect occurs with the application during the stipulated period, BN will inform the supplier about the defect by quickest means. Upon receipt of such information, the supplier will deploy its representative to the BN site at the earliest (by 6 hours within Dhaka and 48 hours outside Dhaka) and troubleshoot the system.
24. **Maintenance Support Service.** Maintenance support service for a duration of 3 years (after the completion of warranty support period) should be quoted separately as an optional item. During maintenance period, bidder will provide all support services as mentioned in para 23.
25. **Additional Development.** The software will have the provision to add new module (for future use) other than the modules mentioned in Para 4. Development of any new module or application work will be out of the current scope. The development cost will be considered based on the scope of additional work and upon the mutual consent of BN and the bidder. For this development, a separate contract may be contracted in future.
26. **Ownership of the Software.** The System Study Reports, SRS, the developed Software System (Executable and Source-Codes with .dll files), Databases (Structures/ Contents) etc. will be classified materials and sole property of BN. Bidder will provide all to BN in hard/ soft copies. None of these materials (whole or part) will be communicated by the bidder to any third-party (person or organization) without BN approval. All informations are to be considered as BN confidential property.
27. **Security Clearance.** Immediately after signing of the Contract, the bidder will submit the bio-data of his engineers/ technicians to BN for obtaining security clearance. If any employee is not security cleared' by BN, he/she will be substituted. In any case, the bidder (or his employees) will ensure complete 'security of information' while working with this Projects.
28. **Breach of BN Data Integrity and Facilities.** The bidder shall undertake utmost measures to preserve the integrity of BN data, records and IT facilities. For any breach of such integrity due to bidder activities, the bidder will be liable and subject to compensation and legal measures as applicable.
29. **Compliance Statement.** A clear and complete compliance statement of the tender specification supported by the original catalogue is to be submitted with the order. Any deviation from this specification is also to be clearly mentioned in the offer. Mentioning of yes/no shall not be enough and detailed technical data/information is to be provided. The price of each equipment is to be shown separately so that BN may select the item as deemed necessary.

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30. **Liquidated Damage.** LD for late delivery will apply as per existing BN procurement practice.
31. **Additional Information.** The bidder shall submit the additional list of Hardware and Network items (if any) to enhance/ update the software functionality for BN consideration.
32. **Termination of the Contract.** At any time during the tenure of this contract, the buyer shall have right to terminate the contract under following reasons:
- If the contractor fails to complete the additional development issues within the specified or extended date by the buyer.
 - If the contractor fails to complete the project in due time under normal circumstances.
33. **Settlement of Dispute.** If any dispute arises between the user (BN) and the contractor, it has to be settled on mutual consent. If the dispute couldn't be solved through this, then a board could be formed in order to resolve the issues.
34. **Delivery.** The system will be installed at both CSD Organizations (Chattogram and Mongla). All documents and deliverables are to be delivered at the following address:


Commanding Officer
Naval Stores Depot Chattogram
New Mooring Chattogram



09/11/22
ASHRAFUL ISLAM
Lt BN
SO (IT-SD) (Information & Technology)
Naval Headquarters
Banani, Dhaka-1213
DNIT (Rep) Member Secy

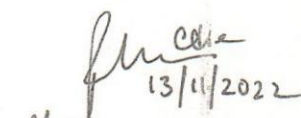

09/11/22
MEHRAB HASSAN
Lt Commander BN
DNS (Rep) Member
Naval Headquarters
Banani, Dhaka-1213


09.11.22
MD ASIB RAIHAN
Lt Commander BN
DNP (Rep) Member
Staff Officer (Plans-II)
Naval Headquarters
Banani, Dhaka-1213


09/11/22
AHAMED AMIN ABDULLAH
Captain BN
DNIS Member
Director of Naval Information & Technology
Inspection and Supply
NHQ, Banani, Dhaka-1213


09/11/22
M MESBAH UDDIN
Captain BN
DNIT Member
Director of Naval Information & Technology
Naval Headquarters
Banani, Dhaka-1213


13.11.22
M MOHIDUL HASSAN
Commodore BN
DNE Member
Director of Naval Engineering
Naval Headquarters
Banani, Dhaka-1213


13/11/2022
M RUHUL MINHAZ
DNW&EE, President
Director of Naval Weapons
and Electrical Engineering
NHQ, Banani, Dhaka-1213