

Software Requirements Specification (SRS)

For

Integrated Software Based Automation System

(ERP) For

Chittagong Dry Dock Limited

Version 1.0

Prepared by Imran Khan

NeuroStorm

Date: 27/05/2019

Table of Contents

Table of Contents	2
Revision History	2
1. Introduction	2
1.1 Purpose.....	3
1.2 Product Scope	3
1.3 References.....	4
1.4 Overview.....	4
2. Overall Description	4
2.1 Operating Environment.....	4
3. External Interface Requirements	5
3.1 User Interfaces	5
3.2 Hardware Interfaces	5
3.3 Software Interfaces	5
3.4 Communications Interfaces	5
4. System Features	5
4.1 System Module 1: Planning And Estimation	6
4.2 System Module 2: Ship Repair	10
4.3 System Module 3: Commerce/Purchase	13
4.4 System Module 4: Human Resource (Admin)	17
4.5 System Module 5: Administration	18
4.6 System Module 6: Berthing (Admin).....	21
4.7 System Module 7: Legal (Admin)	22
4.8 System Module 8: Security (Admin)	23
4.9 System Module 9: Medical (Admin)	24
4.10 System Module 10: Pay Section and Provident Fund (Accounts)	24
4.11 System Module 11: Store Accounts (Accounts)	25
4.12 System Module 12: Insurance and Cash and Bank (Accounts)	26
4.13 System Module 13: Finance and Accounts (Accounts)	27
4.14 System Module 14: Costing and Customer (Accounts)	28
4.15 System Module 15: Store and Inventory.....	29
4.16 System Module 16: DPM (Production)	30
4.17 System Module 17: Electrical Section (Production).....	30
4.18 System Module 18: Civil Section and Fabrication Section and Maintenance (Production)	31
5. Other Nonfunctional Requirements	32
5.1 Performance Requirements	32
5.2 Security Requirements	32
6. Document Approval.....	32

Revision History

Name	Date	Reason For Changes	Version

Introduction

The introduction of the Software Requirements Specification (SRS) provides an overview of the entire SRS with purpose, scope, definitions, acronyms, abbreviations, references and overview of the SRS. The aim of this document is to gather and analyze and give an in-depth insight of the complete **Integrated Software Based Automation System (ERP) For Chittagong Dry Dock Limited** by defining the problem statement in detail. Nevertheless, it also concentrates on the capabilities required by stakeholders and their needs while defining high-level product features. The detailed requirements of the **Integrated Software Based Automation System (ERP) For Chittagong Dry Dock Limited** are provided in this document

1.1.Purpose

The purpose of the document is to collect and analyze all assorted ideas that have come up to define the system, its requirements with respect to consumers. Also, we shall predict and sort out how we hope this product will be used in order to gain a better understanding of the project, outline concepts that may be developed later, and document ideas that are being considered, but may be discarded as the product develops.

In short, the purpose of this SRS document is to provide a detailed overview of our software product, its parameters and goals. This document describes the project's target audience and its user interface, hardware and software requirements. It defines how our client, team and audience see the product and its functionality. Nonetheless, it helps any designer and developer to assist in software delivery lifecycle (SDLC) processes

1.2.Product Scope

Primarily, the scope pertains to the complete product features for making **Integrated Software Based Automation System (ERP) For Chittagong Dry Dock Limited** project live. It focuses on the company, the stakeholders and applications, which allow for product planning, development, manufacturing, stock, accounting in a single database, application and user interface.

This SRS is also aimed at specifying requirements of software to be developed but it can also be applied to assist in the selection of in-house and commercial software products. The standard can be used to create software requirements specifications directly or can be used as a model for defining a organization or project specific standard. It does not identify any specific method, nomenclature or tool for preparing an SRS

1.3.References

The references are:

- ✓ Purchase Manual of CDDL

1.4.Overview

The remaining sections of this document provide a general description, including characteristics of the users of this project, the product's hardware, and the functional and data requirements of the product. General description of the project is discussed in section 2 of this document. Section 3 gives the essential Interface types. Section 4 gives the module wise functional requirements, data requirements and constraints and assumptions made while designing the **ERP** System. It also gives the user viewpoint of product. Section 4 also gives the specific requirements of the product. Section 4 also discusses the external interface requirements and gives detailed description of functional requirements.

2. Overall Description

This document contains the problem statement that the current system is facing which is hampering the growth opportunities of the company. It further contains a list of the stakeholders and users of the proposed solution. It also illustrates the needs and wants of the stakeholders that were identified in the brainstorming exercise as part of the requirements workshop. It further lists and briefly describes the major features and a brief description of each of the proposed system.

The following SRS contains the detail product perspective from different stakeholders. It provides the detail product functions of **ERP** with user characteristics permitted constraints, assumptions and dependencies and requirements subsets

2.1.Operating Environment

The server side operating system is Ubuntu Server 18.04 LTS (Linux). The Application will be web based application. The server side language is Asp.Net Core 2.2 and the database is Ms SQL 2017 express edition

3. External Interface Requirements

3.1. User Interfaces

3.1.1. Logical Characteristics: The GUI of the product shall be designed in HTML/CSHTML, allowing a multitude of different users access. The HTML design will remove most limits of access because every popular operating system has HTML viewing capabilities.

3.1.2. Aspects: The system shall have content that will only be viewable to the user if they are logged in correctly. Also, there shall be different types of users having different accessing/viewing/modification privileges.

3.2. Hardware Interfaces

A LAN connection to allow the browser software interfaces to connect to the Local Server to access the files of the website.

3.3. Software Interfaces

All Modern Browsers.

3.4. Communications Interfaces

Internet Protocol (IP) shall be used by the software interfaces to connect to the Lan Network.

4. System Module

This subsection contains the requirements for the **Integrated Software Based Automation System (ERP) For Chittagong Dry Dock Limited**. The features discussed with the corresponding department stakeholders organize these requirements. Features from this documents are then refined into use case diagrams and to sequence diagram to best capture the functional requirements of the system.

4.1. System Module 1: Planning And Estimation

Sub-Modules:

4.1.1. Checking Dock :

- I. **Description:**
Calendar View of docking/undocking schedules. Ship docking can be applied either via booking with money (Private Ship) or Letter (Govt. Ship).
- II. **Stimulus/Response Sequences:**
Assistant Naval Architect will Create/Manage the Calendar information
- III. **Functional Requirements**
Schedule Block: Schedule block will contain the ship name, docking/undocking duration, ship length
Search Schedule: Search Docking Schedule by ship Name
Calendar View: The entire module will be in calendar view

4.1.2. Department Wise Budget Prepare :

- I. **Description:**
Planning and Estimation Department will prepare the Yearly budget. This report will contain **Corrected Budget of** current fiscal year and **Estimated Budget** of next fiscal year
- II. **Stimulus/Response Sequences:**
GM of Planning and Estimation will approve and send it to Accounts Department
- III. **Functional Requirements**
Corrected Budget Report: An input form (Not automated)
Estimated Budget Report: An input form (Not automated)

4.1.3. Monthly Report :

- I. **Description:**
This report will contain ongoing and upcoming project status of both ship repair and DPM and Allied Product
- II. **Stimulus/Response Sequences:**
 1. Sub Asst. Eng will generate state of ship repairs report
 2. DPM will generate the state of DPM and Allied Product
- III. **Functional Requirements**

State of Ship Repair Report: An input form containing Name of Ship owners, Date of Docking, Undocking, Completion and Work in percentage, Remarks (Not automated)
State of DPM and Allied Product: This report will be generated by DPM

4.1.4. Docking Plan :

- I. **Description:**
This report will contain how the ship will be docked in Dry Dock.
- II. **Stimulus/Response Sequences:**
Sub Asst. Eng. will generate and upload docking plan file
- III. **Functional Requirements**

Docking Plan: Files Input (CAD, PDF) , containing corresponding information (Not automated)

4.1.5. Tariff/Cost Plus :

- I. **Description:**
This is functional
- II. **Stimulus/Response Sequences:**
Static Data
- III. **Functional Requirements**

Tariff-1: This tariff is for ocean going vessel
Tariff-2: This tariff is for Inland/Costal vessel upto 1000GTR
Tariff-3(Sub-Contractor): This tariff is for Sub-Contractor
Cost Plus: Cost plus items as per MMM reports

4.1.6. Estimate Approval:

- I. **Description:**
This contains the estimated price according to clients defect list.
- II. **Stimulus/Response Sequences:**
 1. Asst. Naval Arch. will generate Estimation
 2. Approval is required from All GM and MD
- III. **Functional Requirements**

Estimation: Input Form, containing corresponding information

4.1.7. Quotation:

- I. **Description:**
This contains the estimated price according to clients defect list.
- II. **Stimulus/Response Sequences:**
 1. Asst. Naval Arch. will generate Estimation
 2. Approval is required from only GM of Planning and Estimation.
- III. **Functional Requirements**

Estimation: Input Form (Same as Estimation), containing corresponding information

4.1.8. NOA or Contract Agreement:

- I. **Description:**
This contains the brief description of work, date of commencement, contract period, and remarks of the contract with additional corresponding files.
- II. **Stimulus/Response Sequences:**
 1. Asst. Naval Arch. will generate NOA
 2. Approval is required from MD.
- III. **Functional Requirements**
Files: Input File (Same as Estimation), containing corresponding information
LD/SD: Notes/Paragraph text input

4.1.9. Work Order:

- I. **Description:**
Preformatted work order.
- II. **Stimulus/Response Sequences:**
 1. Asst. Naval Arch. will generate work order
 2. Approval is required from MD.
- III. **Functional Requirements**
Forms: Preformatted Work order Document
Attachment Files: Defect List, Drawing

4.1.10. Procurement Plan:

- I. **Description:**
NA
- II. **Stimulus/Response Sequences:**
NA
- III. **Functional Requirements**
NA

4.1.11. CPF/SPR/Notes:

- I. **Description:**
CPF/SPR/Notes Create/Get Approval.
- II. **Stimulus/Response Sequences:**
Any User can Create SPR/CPF/Notes and can forward
- III. **Functional Requirements**
Forms: Preformatted Input Form

4.1.12. Commerce:

- I. **Description:**
Receive Purchase Information from Commerce Dept. for a project.
- II. **Stimulus/Response Sequences:**
Receive Purchase Information from Commerce Dept.
- III. **Functional Requirements**
Purchase Information: A Basic List of Price and Quantity

4.1.13. Ship Repair:

- I. Description:**
Receive Work done Report from Ship Repair Department.
- II. Stimulus/Response Sequences:**
Planning and Estimation department will receive work done report from Ship repair department
- III. Functional Requirements**
Work Done: Preformatted Work Done Document
Additional Files: Additional Work Done Document

4.1.14. Production & Maintenance:

- I. Description:**
Receive Work done Report from Production.
- II. Stimulus/Response Sequences:**
Planning and Estimation department will receive a work done report from Production & Maintenance department
- III. Functional Requirements**
Work Done: Preformatted Work Done Document
Additional Files: Additional Work Done Document

4.1.15. Sub-Contractor:

- I. Description:**
Request Quotation from Sub-Contractors. After receiving, prepare comparative statement. After that issue work order
- II. Stimulus/Response Sequences:**
User will request a quotation from Sub-Contractors. After receiving, prepare comparative statement. After that issue work order
- III. Functional Requirements**
Quotation: Preformatted Document
Comparative Statement: generate CS by quotation (Partial Automated)
Work Order: Preformatted Document

4.1.16. Quality Control:

- I. Description:**
Prepare Work done Report on QC Related Matters.
- II. Stimulus/Response Sequences:**
QC Team will prepare Work done Report on QC Related Matters.
- III. Functional Requirements**
Work Done: Preformatted Work Done Document

4.1.17. Work done Report:

- I. Description:**
Receive Work Done Reports from other Executive Department/Section.
- II. Stimulus/Response Sequences:**
Other Dept. will prepare Work done Report and send it to the Planning and Estimation dept.
- III. Functional Requirements**
Work Done: Preformatted Work Done Document

4.1.18. **Bill Preparation:**

- I. **Description:**
Generate Bill according to Work Order and Acceptance Report/Work Done Report (Signed by Ship Authority) Prepared by executive Dept.
- II. **Stimulus/Response Sequences:**
Department Executive will prepare the bill.
- III. **Functional Requirements**
Bill: Generate Bill according to Work Order and Acceptance Report/Work Done Report (Automated)

4.1.19. **Work Completion Certificate:**

- I. **Description:**
Receive Work Completion Certificates of Sub Contractors Issue by Executive Dept.
- II. **Stimulus/Response Sequences:**
Department Executive will prepare the certificate.
- III. **Functional Requirements**
Work Completion Certificate: Preformatted Document

4.1.20. **Bill Certify:**

- I. **Description:**
Certify Bill of Sub-Contractors according to work Order, Work Completion Certificates & Performance Report.
- II. **Stimulus/Response Sequences:**
Department Executive will certify the bill.
- III. **Functional Requirements**
Bill Certify: Certify the bill according to Work Order, Work Completion Certificates & Performance Report.

4.2. System Module 2: Ship Repair

Sub-Modules:

4.2.1. Receive Work Order, Docking Plan, Defect List :

- I. **Description:**
Ship Repair department will receive Work Order, Docking Plan, and Defect List from Planning and Estimation Department
- II. **Stimulus/Response Sequences:**
Executive of Ship Repair department will receive these documents from Planning and Estimation Department
- III. **Functional Requirements**
Work Order: Preformatted Work order Document/ Compiled Document
Docking Plan: Preformatted Document (Calendar Data)/ Compiled Document
Defect List: Preformatted Document / Compiled Document

4.2.2. Forward Job according to Work Order :

- I. **Description:**
Forward/assign Job according to Work Order to corresponding sections
- II. **Stimulus/Response Sequences:**
Executive of Ship Repair will forward/assign to corresponding sections
- III. **Functional Requirements**
Job Assign: Assign job to the sections according to their type on the work order

4.2.3. Work Plan:

- I. **Description:**
After getting the work order, the section executives will prepare the a work plan
- II. **Stimulus/Response Sequences:**
Section executives will prepare the a work plan and forward the plan to the Ship Repair department's executive
- III. **Functional Requirements**
Calendar View: This view should contain To-Do list of every sections planning
Material Consumption: This report will contain the amount of consumption
Bar Chart: This chart will show the ongoing project progress
BOQ: This is a simple list, which will contain the estimated amount of materials for particular project/work order

4.2.4. BOQ to Sub-Store :

- I. **Description:**
The BOQ of all sections will be send to the sub-store. The sub-store will send requisition to the main store
- II. **Stimulus/Response Sequences:**
Section executives will send their BOQ list to the Main Store
- III. **Functional Requirements**
BOQ: This is a simple list, which will contain the estimated amount of materials for particular project/work order

4.2.5. Sub-Store :

- I. **Description:**
Sub-Store is a section of Ship Repair department. This section manage the material consumption and requisition of other sanctions
- II. **Stimulus/Response Sequences:**
Executives of Sub-Store will manage and maintain the material consumption and requisition of other sections
- III. **Functional Requirements**
Communication: Communication between Main Store and Planning and Estimation Department
Manage Requisition: Manage requisition of all other sections
Manage Material Consumption: Manage material consumption of all other sections.

4.2.6. Final Work Plan:

- I. **Description:**
Ship Repair department will prepare the final work plan of a work/project based on the planning of the corresponding sections.
- II. **Stimulus/Response Sequences:**
Executives of the sections of Ship Repair department will submit their work plan to the executives of Ship Repair department to prepare the final Work Plan
- III. **Functional Requirements**
BOQ: This is a simple list, which will contain the estimated amount of materials for particular project/work order
Material List: Total amount of material required to complete the work/project
Time Frame: Summation of individual time of every work done by corresponding sections

4.2.7. Work Execution:

- I. **Description:**
Gather work done report from every sections during work execution.
- II. **Stimulus/Response Sequences:**
Executives of the sections of Ship Repair department will submit their work done and remarks to the executives of Ship Repair department
- III. **Functional Requirements**
Work Done Progress: Report of total progress of a particular work
Work Detail: Details of a particular work
Material Involvement: Material used in a particular work/project
Facilities Work: Other facilities work

4.2.8. Work Plan, Work Done (Sub-Contractor):

- I. **Description:**
Sub-Contractor will also submit their work plan and work done report to the Ship Repair department.
- II. **Stimulus/Response Sequences:**
Sub-Contractor will send their work plan and work done report.
- III. **Functional Requirements**
Work Plan Report: Calendar View or period of a particular job/work
Work Done Report: Preformatted Document/Compiled Document

4.2.9. Final Work Done :

- I. **Description:**
After gathering all of the data from every corresponding sections and sub-contractors, the Final work done report will be prepared.
- II. **Stimulus/Response Sequences:**
Executives of Ship Repair will prepare the work done Report and send it to the Planning and Estimation department for billing
- III. **Functional Requirements**
Work Done Report: Preformatted Document/Compiled Document

4.2.10. Performance Evolution :

- I. **Description:**
Performance of the corresponding sections and sub-contractors will be reported in score based evaluation.
- II. **Stimulus/Response Sequences:**
Executives of Ship Repair.
- III. **Functional Requirements**
Performance Evaluation List: Performance evaluation of corresponding sections and sub-contractors will be reported in score based system for every project.

4.2.11. Work Completion :

- IV. **Description:**
After work done report, Ship Repair department will prepare Work Completion Report.
- V. **Stimulus/Response Sequences:**
Ship Repair department's Executive will prepare work Completion Report
- VI. **Functional Requirements**
Work Completion Report: This report will contain the completion status of works according to work done report

4.2.12. IDN:

- IV. **Description:**
This is communication between departments via notes.
- V. **Stimulus/Response Sequences:**
Executives of Ship Repair department will send notes between Production or Planning & Estimation department
- VI. **Functional Requirements**
IDN: simple notes/messages.

4.3. System Module 3: Commerce / Purchase

Sub-Modules:

4.3.1. CPF/SPR Assignment :

- I. **Description:**
After receiving CPF/SPR from other department, Commerce department will assign the CPF/SPR to a specific employee in order to process.
- II. **Stimulus/Response Sequences:**
Executives/Officers of Commerce department will receive these documents from every departments will assign these SPR/CPF to corresponding employee
- III. **Functional Requirements**
CPF/SPR: Preformatted Document/ Compiled Document
Approval: Digital Approval/Signature System

4.3.2. Vendor/Supplier :

- I. Description:**
List of all Vendors or Suppliers / Shops
- II. Stimulus/Response Sequences:**
Executives/Officers of Commerce department will manage the Vendor/Supplier Information
- III. Functional Requirements**
Manageable Information List: All of the vendor supplier data.

4.3.3. User Wise CPF/SPR History:

- I. Description:**
Commerce executives can search or view history of a particular user
- II. Stimulus/Response Sequences:**
Executives/Officers of Commerce department can view the history and details
- III. Functional Requirements**
History of User: History of a user's CPF/SPR

4.3.4. CDDL Job Number Wise Purchase Report :

- I. Description:**
This report shows the full purchase history of a particular job
- II. Stimulus/Response Sequences:**
Executives/Officers of Commerce department can view the purchase history and details
- III. Functional Requirements**
Job Wise Purchase History: Purchase history of a particular job

4.3.5. Staff wise Report of Commerce department:

- I. Description:**
This report shows the full activity history of a particular commerce employee
- II. Stimulus/Response Sequences:**
Executives/Officers of Commerce department can view the activity (CPF/SPR) history of an employee
- III. Functional Requirements**
Activity History: Activity (CPF/SPR) history of an employee

4.3.6. Vendor Wise Purchase History:

- I. Description:**
This report shows the full purchase history of a particular vendor.
- II. Stimulus/Response Sequences:**
Executives/Officers of Commerce department can view the purchase history and details
- III. Functional Requirements**
Vendor Wise Purchase History: Purchase history of a particular Vendor

4.3.7. CPF/SPR Priority:

- I. **Description:**
Priority of CPF/SPR. Notify corresponding user based on priority
- II. **Stimulus/Response Sequences:**
Executives/Officers of Commerce department can set the priority of CPF/SPR
- III. **Functional Requirements**
Separate Priority System: Commerce department own priority system
Notification: Notify corresponding user based on priority

4.3.8. Tender Process :

- I. **Description:**
Process every steps of a Tender.
- II. **Stimulus/Response Sequences:**
Executives/Officers of Commerce department will process tender
- III. **Functional Requirements**
Tender Notice: Process Tender Notice
Local/International Tender Schedule: Manage Local and International Tender
IDN to cash for selling schedule: Notes with approval System
Opening Committee and Technical Committee Setup: Setup Committee
Tender Opening Form: Form
IDN to Technical Committee: Notes to technical committee
Notes for Purchase Order: Notes for Purchase Order
Purchase Order: Process Purchase Order
Optional Letter/IDN: Optional Letter

4.3.9. Tender Participated Vendor Information (Enlisted/Not Enlisted):

- I. **Description:**
Information of vendor who participated in tender.
- II. **Stimulus/Response Sequences:**
Executives/Officers of Commerce department will manage the Vendor/Supplier Information
- III. **Functional Requirements**
Manageable Information List: All of the vendor supplier data

4.3.10. Documents of Vendor:

- IV. **Description:**
Manage all the tender documents of vendor.
- V. **Stimulus/Response Sequences:**
Executives/Officers of Commerce department can View/Manage the files of vendor
- VI. **Functional Requirements**
File Management: Attached Tender Files

4.3.11. Manage All Purchase Related of Forms:

- VII. Description:**
Manage all kind of purchase related forms of CDDL.
- VIII. Stimulus/Response Sequences:**
Executives/Officers of Commerce department can View/Manage the Forms
- IX. Functional Requirements**
Forms: Manage and Process all kind of purchase related forms

4.3.12. Notes:

- VII. Description:**
Create notes based on CPF/SPR/Tender/Purchase.
- VIII. Stimulus/Response Sequences:**
Executives/Officers of Commerce department can View/Manage/Approve the Notes
- IX. Functional Requirements**
Notes: Preformatted Document/ Compiled Document

4.3.13. Adjustment (Financial Balance):

- I. Description:**
Process adjustment of financial balance.
- II. Stimulus/Response Sequences:**
Executives/Officers of Commerce department will process adjustment
- III. Functional Requirements**
Staff wise note record: Manage and Process all kind of purchase related forms
Note wise Adjustment: Manage and Process all kind of purchase related forms
Balance with Account department: Manage and Process all kind of purchase related forms

4.3.14. Purchase Procedures in Marketplace :

- X. Description:**
Manage all kind of purchase procedures in Market Place.
- XI. Stimulus/Response Sequences:**
Executives/Officers of Commerce department can View/Manage the procedures
- XII. Functional Requirements**
Purchase Committee: A purchase committee consisting of Account, Commerce and user's representative
Quotation Collection: Collect submitted quotations.
Quality Check: Check the Quality of the product in marketplace

4.4. System Module 4: Human Resource (Admin)

Sub-Modules:

4.4.1. Employee Data :

- I. **Description:**
Manage all employee data including retirement information.
- II. **Stimulus/Response Sequences:**
Executive of Human Resource Management (Personal) will manage all the employee data
- III. **Functional Requirements**
Employee Record: Records of all employee
Retirement Notification: Notification for upcoming employee retirements (before 2 month)

4.4.2. Promotion :

- I. **Description:**
Manage promotion of employees
- II. **Stimulus/Response Sequences:**
Executive of Human Resource Management (Personal) will manage promotions of employees.
- III. **Functional Requirements**
Promotion: Promotion of all types of employee.
Promotion Notification: Notification for upcoming employee promotions (before 2 month)

4.4.3. Recruitment:

- I. **Description:**
Manage recruitment of all type of employees.
- II. **Stimulus/Response Sequences:**
Executive of Human Resource Management (Personal) will manage recruitment of new employees.
- III. **Functional Requirements**
Recruitment Form: Form of recruitment.

4.4.4. Master Roll Contract Renewal :

- I. **Description:**
Renew the contract of Master Roll employee.
- II. **Stimulus/Response Sequences:**
Executive of Human Resource Management (Personal) will renew the contracts of Maser Roll employees.
- III. **Functional Requirements**
Renew Contract: Renew contract.
Renewal Notification: Notification for upcoming maser roll contract Renewal (before 15 days)

4.4.5. Contractual :

- I. Description:**
Manage All Contractual Contract.
- II. Stimulus/Response Sequences:**
Executive of Human Resource Management (Personal) will manage Contract of contractual employees.
- III. Functional Requirements**
Renewal Notification: Notification for upcoming maser roll contract Renewal (before 1 month)

4.4.6. Loan:

- I. Description:**
Manage applications of employee loans.
- II. Stimulus/Response Sequences:**
Executive of Human Resource Management (Personal) will manage/Process loans of employees.
- III. Functional Requirements**
Process Loan: Process the applied loan of the employees.

4.4.7. Long Time Training:

- I. Description:**
Manage the long time training course employee wise.
- II. Stimulus/Response Sequences:**
Executive of Human Resource Management (Personal) will manage/Process long time training of employees.
- III. Functional Requirements**
Manage Training: Manage long time training.
Manage Course: Manage training courses.

4.5. System Module 5: Administration (Admin)

Sub-Modules:

4.5.1. Notice/News :

- I. Description:**
Manage and publish all types of news and notices.
- II. Stimulus/Response Sequences:**
Officers of Admin will manage and publish all types of news and notices which will notify other department users.
- III. Functional Requirements:**
Manage News: Manage all types of news.
Manage Notices: Manage all types of notices.
Notification of notices/news: Notify corresponding user.

4.5.2. Office Order :

- I. Description:**
Manage and publish all types of office orders.
- II. Stimulus/Response Sequences:**
Officers of Admin will manage all types of office order and will publish office order to corresponding user.

III. **Functional Requirements:**

Office Order: Manage all kind of office order and notify/forward this to corresponding user.

4.5.3. **Transfer Order :**

I. **Description:**

Manage and publish all types of Transfer order.

II. **Stimulus/Response Sequences:**

Officers of Admin will manage all types of transfer order and will publish office order to corresponding user.

III. **Functional Requirements:**

Transfer Order: Manage all kind of transfer order (PDF or Formatted Document) and notify/forward this to corresponding user.

4.5.4. **Managing Director's Memorandum :**

I. **Description:**

Manage MD's memorandum.

II. **Stimulus/Response Sequences:**

Officers of Admin will manage the MD's memorandum.

III. **Functional Requirements:**

Memorandum: PDF File.

4.5.5. **Committee Form :**

I. **Description:**

Form a committee on particular matter/event/incident/issues.

II. **Stimulus/Response Sequences:**

Officers of Admin can form a committee.

III. **Functional Requirements:**

Committee Details: Information of committee and all of the participated members.

4.5.6. **NOC (Admin) :**

I. **Description:**

Manage NOC (Passport).

II. **Stimulus/Response Sequences:**

Officers of Admin will manage NOC (Passport).

III. **Functional Requirements:**

NOC: PDF File.

4.5.7. **Movement Order :**

I. **Description:**

Manage and process all types of Movement orders.

II. **Stimulus/Response Sequences:**

Officers of Admin will manage all types of movement order and will forward movement order to corresponding user.

III. **Functional Requirements:**

Movement Order: PDF or Formatted document.

4.5.8. Downloadable Forms :

- I. Description:**
Manage common downloadable forms.
- II. Stimulus/Response Sequences:**
Officers of Admin will manage all types of downloadable forms.
- III. Functional Requirements:**
Downloadable Forms: PDF Files.

4.5.9. Laws/Rules/Policies :

- I. Description:**
Manage laws/rules/document/policies information.
- II. Stimulus/Response Sequences:**
Officers of Admin will manage all types of service rules.
- III. Functional Requirements:**
Service Rules: PDF File.

4.6. System Module 6: Berthing (Admin)

Sub-Modules:

4.6.1. State Of Berth:

- I. **Description:**
Manage state of berth of ships.
- II. **Stimulus/Response Sequences:**
Executive of Admin (Berthing) will manage state of berth.
- III. **Functional Requirements:**
State of Berth: PDF File.

4.6.2. Work Order :

- I. **Description:**
Provide work order for internal department.
- II. **Stimulus/Response Sequences:**
Provide work order to the concerned department.
- III. **Functional Requirements:**
Work Order: Preformatted document.

4.6.3. Work Done :

- I. **Description:**
Generate work done report from Ship Repairs, Electrical etc.
- II. **Stimulus/Response Sequences:**
Executive of Admin (Berthing) will generate work done report from concerned department and prepare the bill accordingly.
- III. **Functional Requirements:**
Work Done: Preformatted document

4.6.4. Billing With Interdepartmental Link :

- I. **Description:**
Prepare bill with interdepartmental link and submit to the concerned party.
- II. **Stimulus/Response Sequences:**
Executive of Admin (Berthing) will manage and process billing with interdepartmental link.
- III. **Functional Requirements:**
Billing Report: PDF File.

4.6.5. NOC for Vessel :

- I. **Description:**
No Objection Certificate (NOC) of Vessel.
- II. **Stimulus/Response Sequences:**
Executive of Admin (Berthing) will provide NOC (Vessel).
- III. **Functional Requirements:**
NOC: PDF File.

4.6.6. Refund :

- I. **Description:**
Receive refund application and manage Refund.
- II. **Stimulus/Response Sequences:**
Executive of Admin (Berthing) will process Refund.
- III. **Functional Requirements:**
Refund Report: PDF File.

4.6.7. Tariff :

- I. **Description:**
Manage tariff.
- II. **Stimulus/Response Sequences:**
Executive of Admin (Berthing) will manage all types berthing tariff.
- III. **Functional Requirements:**
Tariff: PDF or Formatted document.

4.6.8. Shipping History :

- I. **Description:**
Berthing section will keep record of ships.
- II. **Stimulus/Response Sequences:**
Executive of Admin (Berthing) will manage shipping history.
- III. **Functional Requirements:**
Shipping History: PDF File or List View.

4.7. System Module 7: Legal (Admin)

Sub-Modules:

4.7.1. Land And State Affairs:

- I. **Description:**
Manage land and state affairs information.
- II. **Stimulus/Response Sequences:**
Legal Officers will manage land and State affairs.
- III. **Functional Requirements:**
Land and State Affairs: PDF File or Formatted Document.

4.7.2. Running Suits/Cases :

- I. **Description:**
Information of ongoing suits.
- II. **Stimulus/Response Sequences:**
Legal Officers will manage and maintain information of running suits/cases.
- III. **Functional Requirements:**
Running Suits: PDF File.

4.7.3. Internal Legal Dispute Settlement :

- I. Description:**
Information of internal legal dispute settlement.
- II. Stimulus/Response Sequences:**
Legal Officers under direction of GM (Admin) will manage information about internal legal information.
- III. Functional Requirements:**
File: PDF File

4.7.4. State of Cases :

- I. Description:**
Manage state of cases.
- II. Stimulus/Response Sequences:**
Legal Officers will manage and maintain state of cases.
- III. Functional Requirements:**
State of Cases: PDF File or Formatted Document.

4.7.5. Contracts :

- IV. Description:**
Manage details of all contracts.
- V. Stimulus/Response Sequences:**
Legal Officers will manage details of all contracts.
- VI. Functional Requirements:**
Contracts: PDF File.

4.8. System Module 8: Security (Admin)

Sub-Modules:

4.8.1. Berthing Permission:

- IV. Description:**
Process berthing permission.
- V. Stimulus/Response Sequences:**
Executive of Admin (Security) will process berthing permission and forward it to the corresponding user.
- VI. Functional Requirements:**
Berthing Permission: PDF File or Formatted Document.

4.9. System Module 9: Medical (Admin)

Sub-Modules:

4.9.1. Medical Leave:

- VII. Description:**
Process medical leave of an employee.
- VIII. Stimulus/Response Sequences:**
Executive of Admin (Medical) will process medical leave of employee.
- IX. Functional Requirements:**
Medical Leave: Formatted Document.

4.10. System Module 10: Pay Section And Provident Fund (Accounts)

Sub-Modules:

The following sub-module's **Stimulus/Response Sequences** and **Functional Requirements** will be determined during implementation period.

Pay Section:

- 4.10.1. Officer Salary for the month**
- 4.10.2. Staff Salary for the month**
- 4.10.3. Worker wages for the month**
- 4.10.4. Staff Overtime for the month**
- 4.10.5. Worker Overtime for the month**
- 4.10.6. Contract Officer Salary for the month**
- 4.10.7. Contract Staff Salary for the month**
- 4.10.8. Contract Staff Overtime for the month**
- 4.10.9. Daily Related Security Salary & Overtime for the month**
- 4.10.10. Daily Related Worker Wages & Overtime for the month**
- 4.10.11. Boishaki Allowance Statement on 20% of Basic**
- 4.10.12. Bank Statement as per Bank Account wise**
- 4.10.13. Add Deduction List**
- 4.10.14. Pay Slip**
- 4.10.15. Festival Bonus Statement**
- 4.10.16. Bank Statement As per Bank Account wise**
- 4.10.17. Incentive Bonus Statement**
- 4.10.18. Journal Voucher**
- 4.10.19. All Backup**
- 4.10.20. All kind of Ledger**

Provident Fund:

- 4.10.21. Provident Fund Contribution Statement**
- 4.10.22. Provident Fund Loan Statement**
- 4.10.23. Person Wise Provident Fund Statement**
- 4.10.24. Trail Balance**
- 4.10.25. Income Statement**
- 4.10.26. Balance Sheet**
- 4.10.27. Provident Fund**
- 4.10.28. All kind of Ledger**

4.11. System Module 11: Store Accounts (Accounts)

Sub-Modules:

The following sub-module's **Stimulus/Response Sequences** and **Functional Requirements** will be determined during implementation period.

- 4.11.1. Stock Group**
- 4.11.2. Item Wise and Job Wise Stock Position**
- 4.11.3. Add Purchase**
- 4.11.4. General MMR/ Purchase Statement with quantity & Rate**
- 4.11.5. Add SRM**
- 4.11.6. Other Addition**
- 4.11.7. Journal Voucher**
- 4.11.8. Less. SR Entry/ Issue Statement with quantity and Rate**
- 4.11.9. Accounts payable (Creditors for goods supplies)**
- 4.11.10. Checking Stock With price as per Code**
- 4.11.11. TDS & VDS file maintain & Payment**
- 4.11.12. Sale of Scrap file maintenance**

4.12. System Module 12: Insurance and Cash and Bank (Accounts)

Sub-Modules:

The following sub-module's **Stimulus/Response Sequences** and **Functional Requirements** will be determined during implementation period.

Insurance:

- 4.12.1. All Insurance File management and Renewal Related Job**
- 4.12.2. Group Term Insurance**
- 4.12.3. Fire Insurance**
- 4.12.4. Vehicle Insurance**
- 4.12.5. Marine Open Policy**

Cash and Bank:

- 4.12.6. Cash Receive and Payment**
- 4.12.7. Cheque Receive and Payment**
- 4.12.8. Cash Scroll / Draft Cash Book**
- 4.12.9. Cheque Receive and Payment Register**
- 4.12.10. FDR Planning**
- 4.12.11. FDR Issue**
- 4.12.12. FDR Statement**
- 4.12.13. FDR Interest Calculation**
- 4.12.14. Fund Management**

4.13. System Module 13: Finance and Accounts (Accounts)

Sub-Modules:

The following sub-module's **Stimulus/Response Sequences** and **Functional Requirements** will be determined during implementation period.

- 4.13.1. Preparation of Financial Statement (Monthly & Yearly):**
 - I. Statement of Financial Position**
 - II. Statement of Comprehensive Income**
 - III. Statement of Cash Flow**
 - IV. Statement of Fund Flow**
 - V. Statements of Changes in Shareholder's Equity**
- 4.13.2. Notes of Financial Statement**
- 4.13.3. Trail Balance**
- 4.13.4. Schedule of Ledger**
- 4.13.5. All kind of Ledger Maintain:**
 - I. Statement of Financial Position**
 - II. Statement of Comprehensive Income**
 - III. Statement of Cash Flow**
- 4.13.6. Main Cash Book**
- 4.13.7. Bank Reconciliation Statement**
- 4.13.8. Fixed Assets Register & Schedule**
- 4.13.9. MIS Report (Monthly & Yearly)**
- 4.13.10. Budget & Budgetary**
- 4.13.11. Note's Budget**
- 4.13.12. Journal Voucher**

4.14. System Module 14: Costing And Customer (Accounts)

Sub-Modules:

The following sub-module's **Stimulus/Response Sequences** and **Functional Requirements** will be determined during implementation period.

- 4.14.1. Received Job Order and Job Number**
- 4.14.2. Received Job related Documents**
- 4.14.3. Received Work Done Certificate**
- 4.14.4. Sales Bill Prepare**
- 4.14.5. Sales Register**
- 4.14.6. Daily Labour Hour entry with labour Payment auto generate as per Job**
- 4.14.7. Daily Labour OT entry with labour Payment auto generate as per Job**
- 4.14.8. Charges Entry (Materials / Sub Contractor) as per Job**
- 4.14.9. Job wise party bill payment & party wise bill register entry**
- 4.14.10. WIP Report prepare**
- 4.14.11. Production Report Prepare**
- 4.14.12. Account Receivable Statement & Account Analyses**
- 4.14.13. All Journal Voucher Preparation**
- 4.14.14. All kind of Ledger Maintain**
- 4.14.15. Outward Bill Section**

4.15. System Module 15: Store and Inventory

Sub-Modules:

The following sub-module's **Stimulus/Response Sequences** and **Functional Requirements** will be determined during implementation period.

- 4.15.1. Process CPF**
- 4.15.2. Process SPR**
- 4.15.3. Group Information**
- 4.15.4. Item Information**
- 4.15.5. Unit Information**
- 4.15.6. Specification**
- 4.15.7. Opening Stock**
- 4.15.8. Materials Receipt**
- 4.15.9. CPF Entry**
- 4.15.10. Issue Entry**
- 4.15.11. Issue Return Entry**
- 4.15.12. Scrap Received**
- 4.15.13. Scrap Delivery**
- 4.15.14. Wastage entry**
- 4.15.15. Item Details**
- 4.15.16. Group Information Report**
- 4.15.17. Item Information Report**
- 4.15.18. Purchase Report**
 - I. GRR Register**
 - II. CPF Register**
- 4.15.19. Issue Report**
- 4.15.20. Wastage Report**
- 4.15.21. Scrap Report**
 - I. Receipt**
 - II. Delivery**
 - III. Job Wise**
- 4.15.22. Stock Report**
 - I. Item Opening Stock**
 - II. Store Ledger**
 - III. Stock Summary**
 - IV. Stock Details as on date**
- 4.15.23. Stock Search**

4.16. System Module 16: DPM (Production and Maintenance)

Sub-Modules:

The following sub-module's **Stimulus/Response Sequences** and **Functional Requirements** will be determined during implementation period.

- 4.16.1. IDN/CPF/SPR/SR/CS/PTC**
- 4.16.2. Sub-Contractor/Client details**
- 4.16.3. Letter to Planning and Estimation**
- 4.16.4. Budget (Formatted Document)**
- 4.16.5. Job Status**
- 4.16.6. Document Files (PDF)**
- 4.16.7. Refreshment (Over Time)**
- 4.16.8. TA/DA**
- 4.16.9. Leave (CL/EL)**
- 4.16.10. Project Fund (Honarium Form, Fund Status)**
- 4.16.11. TDS & VDS file maintain & Payment**
- 4.16.12. Sale of Scrap file maintenance**

4.17. System Module 17: Electrical Section (Production and Maintenance)

Sub-Modules:

The following sub-module's **Stimulus/Response Sequences** and **Functional Requirements** will be determined during implementation period.

- 4.17.1. IDN/CPF/SPR/SR/CS/PTC**
- 4.17.2. Sub-Contractor/Client details**
- 4.17.3. Receive Work Order From Ship Repair**
- 4.17.4. Send Work Done to Ship Repair**
- 4.17.5. Power Requisition from Ship Repair/Berthing**
- 4.17.6. Man Hour Calculation**
- 4.17.7. Equipment Maintenance**
- 4.17.8. Electrical Store (inventory)**

4.18. System Module 18: Civil and Fabrication Section and Maintenance (Production and Maintenance)

Sub-Modules:

The following sub-module's **Stimulus/Response Sequences** and **Functional Requirements** will be determined during implementation period.

Civil:

- 4.18.1. IDN/CPF/SPR/SR/CS/PTC**
- 4.18.2. Search Store for Civil Section goods**

Fabrication:

- 4.18.3. IDN/CPF/SPR/SR/CS/PTC**
- 4.18.4. Project wise steel plate status**
- 4.18.5. Day Labour working time**
- 4.18.6. Man Hour Calculation**

Maintenance

- 4.18.7. IDN**

5. Other Nonfunctional Requirements

5.1. Performance Requirements

The product shall be based on web and has to be run from a web server.

The product shall take initial load time depending on internet connection strength which also depends on the media from which the product is run.

The performance shall depend upon hardware components of the client/customer

5.2.Security Requirements

5.2.1. Data Transfer

- I. The system shall use secure sockets in all transactions that include any confidential customer information.
- II. The system shall automatically log out all customers after a period of inactivity.
- III. The system shall confirm all transactions with the customer's web browser.
- IV. The system shall not leave any cookies on the customer's computer containing the user's password.
- V. The system shall not leave any cookies on the customer's computer containing any of the user's confidential information

5.2.2. Data Storage

- I. The customer's web browser shall never display a customer's password. It shall always be echoed with special characters representing typed characters.
- II.
- III. The customer's web browser shall never display a customer's credit card number after retrieving from the database. It shall always be shown with just the last 4 digits of the credit card number.
- IV.
- V. The system's back-end servers shall never display a customer's password. The customer's password may be reset but never shown.
- VI.
- VII. The system's back-end servers shall only be accessible to authenticated administrators.

6. Document Approval

Neurostorm's representative

Chittagong Dry Dock Limited's representative