

SOFTWARE REQUIREMENT SPECIFICATION (SRS)

BANGLADESH NAVY ARMAMENT MANAGEMENT SYSTEM (BNAMS)



INFINITY TECHNOLOGY INTERNATIONAL LTD.





SOFTWARE REQUIREMENT SPECIFICATION (SRS) BANGLADESH NAVY ARMAMENT MANAGEMENT SYSTEM(BNAMS)

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1. TECHNICAL REQUIREMENT

1.1 Introduction

Naval Stores Sub Depot (NSSD) Dhaka of Bangladesh Navy has issued a work order No. 23.02.2608.212.07.364.18-19.0869.322 dated 24-02-2019 for Design and Development of NAVAL ARMAMENT MANAGEMENT SOFTWARE (NAMS) to Infinity Technology International Ltd. BDBL Bhaban, 12 Kawran Bazar (Level-6), Dhaka-1215. As per term and condition of work order and agreement the technical consultant of Infinity has study the present existing system and of NSSD with the co-ordination of NSSD representative. At the same time the up gradation requirement has been collected from the representative of NSSD. Therefore, the proposed software will be developed, install, implement and maintain in NSSD according to the following specification considering the requirement of work order, agreement and collected information.

1.2 Objective of this Document:

Following are the main objective of this document.

- Clearly identify the customer (NSSD) requirement.
- Easily point out the up gradation of the system
- Help the system designer to design the system.

1.3 Limitation of this Document

This document is not hundred percent limited of the requirement. If it is deemed necessary to introduce any features and function for the system for better operation than it will be included in the system with mutual consultations of NSSD and ITIL representative.

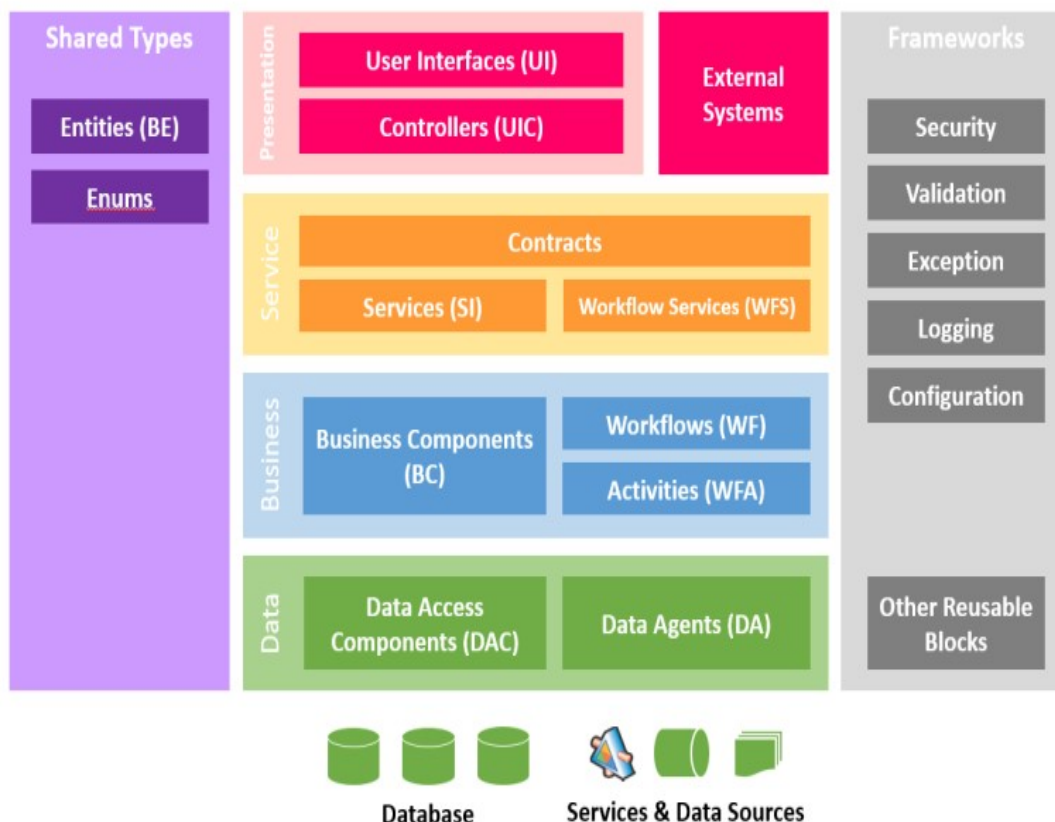
1.4 SYSTEM DATABASE AND PLATFORM& HARDWARE SPECIFICATION

1.4.1 SYSTEM DATABASE AND PLATFORM

The entire solution will be platform independent and database will be centralized and robust. Database will be designed by following multi-layer architecture and it can be migrated or customized in any time. The system will be able to run in both Microsoft and Oracle platform.



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System/Platform	Recommended Software
Operating System	MS windows 2012 R2 /Latest Version/ Linux
Database Platform	MS SQL server 2014/ Latest Version
Development Platform	MS visual studio 2012 with .NET framework 4.5&MVC4 / Latest Version
Development Language	Angular JS, ASP.NET/C#.NET2012/JAVA Script/JQuery.
Report Platform	Crystal report or Report Builder /HTML report
Web Server	MS Internet Information service (IIS)

1.4.2 Hardware Specification

SL	Items	Product Model	Qty.
<i>A. Data Centre Server and Components:</i>			
01	Server	Dell PowerEdge R740 Server	04



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02	DB & Backup Server	Dell PowerEdge R740 Server	04
03	Networking Switch	Cisco 2960X24TSSL	04
04	Router	Cisco 2911SEC/K9 with Card	04
05	Firewall	Cisco ASA5516	04
06	Server Rack	Data Rack J2M-6042	04
07	UPS	NPS 3KVA On-Line (1hr)	08

1.5 Requirement Analysis

The requirement analysis is defined by following two methods.

- Technical Requirement
- Software Requirement

1.5.1 Technical Requirement

The proposed BNAMS software must have the following technical features.

- The system must be Web Based, should be run in LAN and WAN environment
- Application Model: web-portal based three tier architecture.
- The software will be developed on SQL Server 2012 or any update version.
- The font end should be ASP .Net MVC/latest/better Compatible
- Existing Crystal report 10 will be updated by RDLC/latest/better compatible (license version)
- The system should run on in Windows 2012 or any update version as server and Windows XP/Windows Vista/Windows 7 or above as workstation.
- The system must support Internet Explorer (version 7 or latest), Opera (latest Version), Google Chrome (latest version) or Firefox (version3 or latest) as web browser.
- The system must have Sensitive Data Encryption though MD5, SSL. SSL must be enable for 3 years.
- The system should Comprehensive Security that complies Role Based Access Control (RBAC)
- The system will be able to provide an audit trail facility like user Audit Log and timing detail for every action and entry.
- System must be Services Oriented Architecture (SOA) compliant and support API based framework.
- The software should have capability to provide API or 2^o d layer database connectivity for other software like BN-Software etc.
- Seamless integration with each module.
- To ensure cyber security. (Any security device purchase by Authority & system integrated by ITIL)
- To protect from cyber attract such as SQL Injection, DOS attach, cross site security etc.



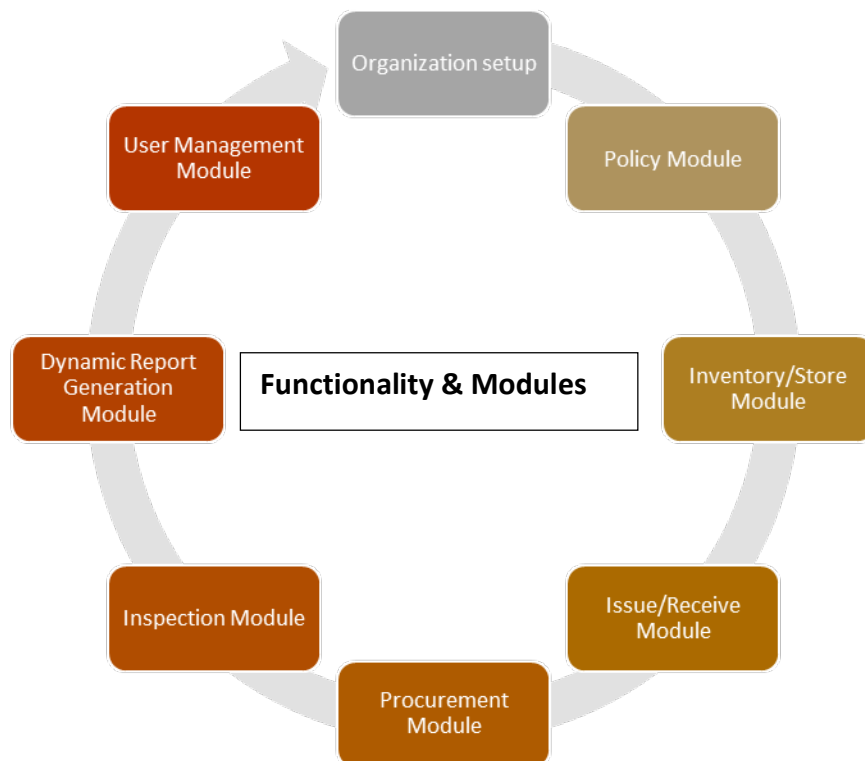
2 Software Requirement /Functionality & Modules

The system must have the following modules to comply the existing system at DNAI&S, BNS ULKA, BNS BHATIARY and NASD.

Any activity of a user in the Application System for the above module will be executed through Menu/Sub-Menu under modules. The **Main Menu** which is introduced in the system with its Object Name only by System Administrator of Application Server.

The Application System should not allow any update delete option after final approval of the system. Administrator will allow update or delete after final customization of the system.

- Organization setup
- Policy Module
- Inventory/Store Module
- Issue/Receive Module
- Procurement Module
- Inspection Module
- Dynamic Report Generation Module
- User Management Module
- Provision to adding another module during development period required by user.





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2.1 Functionality of the BNAMS Software.

The BNAMS will maintain the following functions

➤ **Organization Setup**

- ✓ NHQ
- ✓ Directorate Info
- ✓ Unit Info (Establishment unit/ Ship/ Organization)

➤ **Policy Setup**

- ✓ CFO (Ship, Mtg, Gun, Outfit Type, Practice Type, Annual Practice Allowance)
- ✓ Fiscal Year
- ✓ Item Category
- ✓ Item Status
- ✓ Item Unit
- ✓ Item Price Type
- ✓ Ship Capability Setup
- ✓ Ship/Gun Model
- ✓ Country
- ✓ Supplier Category
- ✓ Procurement Type
- ✓ Technical Data
- ✓ All Policy

➤ **Inventory/Store Module**

- ✓ Deport Stock (Individual Entry Screen. Like. ULKA, BHATERY, NASD)
- ✓ Ship Stock
- ✓ Store Information
- ✓ Repair/ Maintenance History

➤ **Issue/Received Module**

- ✓ Received Item (Supplier/ Ship/ Establishment)
- ✓ Issue Item (Ship/ Establishment)

➤ **Procurement Module**

- ✓ Supplier Information
- ✓ Procurement Category
- ✓ Procurement History
- ✓ Purchase Information



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➤ Inspection Module

- ✓ Inspection History

➤ Dynamic Report Generation Module

- ✓ Searching
- ✓ Report

➤ User Management Module

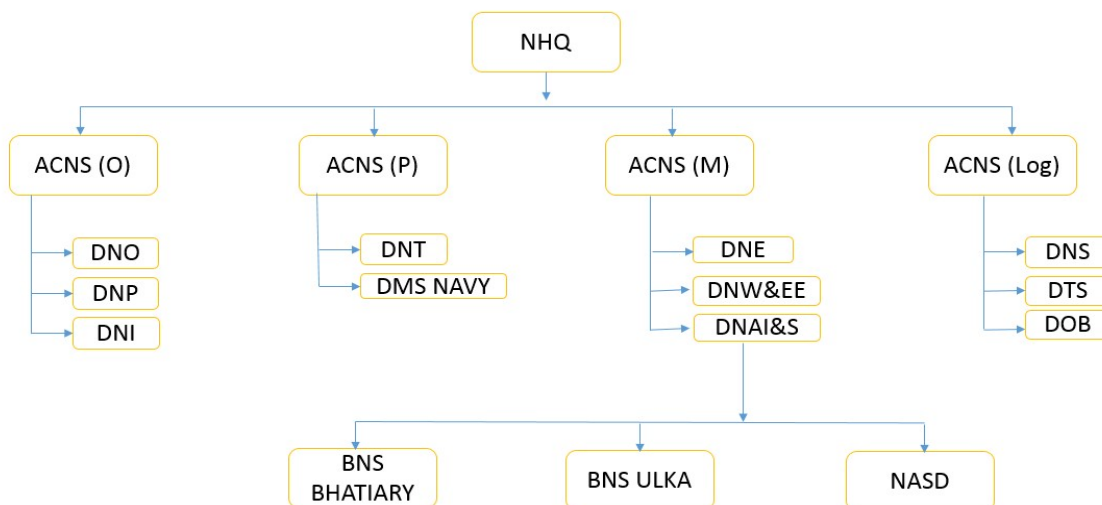
- ✓ User Management Info
- ✓ Rule Setup
- ✓ User Create
- ✓ Password Change

2 ORGANIZATION SETUP

The “Organization Setup” will maintain the organization name, office address, financial year. It also maintains the Directorate and unites.

- Organization info. (NHQ, ACNS, COMKUL etc.)
- Directorate Info
- Unit info (Establishment unit, Sub unit, Ship, Sub marine)

2.1 Organization Flowchart of NHQ





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2.1.1 Functionality of Directorate and Unit.

Directorate and units have the following functional activities:

Sl. No.	Directorate and unit	Functionality
01.01	Directorate of Naval Armament Inspection and Supply (DNAI&S)	Policy and Decision Making, All user under this Director.
01.01.01	BNS ULKA	Receive store, maintenance, raising demand acceptance and Supply/Issue and other related module required by user.
01.01.02	BNS BHATIARY	Receive Store, maintenance, raising demand acceptance and Supply/Issue and other related module required by user.
01.01.03	Naval Armament Stores Depot (NASD)	Receive Store, maintenance, raising demand acceptance and other related module required by user.

2.2 Admin Authority/ Directorate information

The organization information must content the following information

Organization code	:------(Auto Generate)
Admin Authority Name	:-----
Address	:-----
Telephone No.	:-----
Fax No	:-----
Web site Address	:-----
Organization Logo	:-----
Area	:------(Drop Down)

2.3 Ships/Depot Information:

Each Ship (unit) will contain specific Item with its capacity and use. Considering on this the system will setup the items and item wise quantity and other criteria as follow



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Ships/Depot code	:----- (Auto Generate)
Admin Authority	:----- (Drop Down) (Comban, Conkhul)
Category	:----- (Drop Down) (Office or Ship & Other)
Ships / Deport Name	:-----
Date Of Commission	:-----
W/T Call Sign	:-----
Capability of weapons	:----- (Drop Down) FS, Corvette, LPC, PC
Type of The Ship	:----- (CO, EXO, GO)
Telephone	:-----
Email	:-----
Fax No.	:-----
Web site Address	:-----

3 INVENTORY AND PRODUCT INFORMATION

3.1 Warehouse Information under depot:

BNS BHATIARYWAREHOUSE

Program Name	Process Date:99-99-999
Warehouse Type :---- (For example S=Store/W=Warehouse/R=Repair, P=Purchased, US= Unserviceable, PES = Primary Explosive Store, PS= Pyrotechnic store-----etc)	
Warehouse Code :---(auto Generate N= N+1)	
Warehouse Name :- Sugandh (input)	
Address1:------xxxxxxx	
Address2:------yyyyyyy	
Warehouse Belong to :----- (Under Unit)	
Save	Cancel
Delete	Edit



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BNS ULKA WAREHOUSE

Program Name	Process Date:99-99-999		
Warehouse Type :---- (Saylow-1, 2 ----- etc)			
Warehouse Code :---(auto Generate N= N+1)			
Warehouse Name :- Sugandh (input)			
Address1:------xxxxxxx			
Address2:------yyyyyyy			
Warehouse Belong to :----- (Under Unit)			
Save	Cancel	Delete	Edit

NASD WARHOUSE

Program Name	Process Date:99-99-999		
Warehouse Type :---- (Gun 4.5" UK, Gun 4" (UK), Gun 76.2mm (CHN)----- etc.)			
Warehouse Code :---(auto Generate N= N+1)			
Warehouse Name :- Sugandha (input)			
Address1:------xxxxxxx			
Address2:------yyyyyyy			
Warehouse Belong to :----- (Under Unit)			
Save	Cancel	Delete	Edit

3.2 Bin Location Information

Bin location is mandatory for each warehouse to quick search and find out the item. Bin Location is composed of Zone, Self, Row and Column Id.

Program Name	Process Date:99-99-999
Warehouse Code :--- (Warehouse info)	
Name:---- (Auto Display)	



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Self-ID:-----			
Row ID:-----			
Product Category: --- (Arm. Gun, Mine etc).			
Save	Cancel	Delete	Edit

3.3 Gun Information

3.3.1 Gun Information Entry Screen

System will maintain the each Gun/Armaments information under main group; sub-group with the following information:

Program ID	Date:99/99/9999
Name of Gun	:------(Drop Down)
Gun Model / Mark/ Type	:------(Drop Down) (Small, Big, Large)
Gun Registration No	:----- (Unique)
Year of Manufacture	:-----
Country of Manufacture	:----- (Drop Down) (India, Belgium)
Country Of Origin	:----- (Drop Down) (India, Belgium)
Purpose (AA/ASu/AA Short range)	:-----
Year of Procurement	:----- (Drop Down) (Fiscal year)
Warranty Period	:-----
Price Type	:----- (Drop Down) (BD, Dollar)
Unit Price	:-----
Total Price	:-----
Local Agent	:----- (Drop Down)
Principal Agent	:----- (Drop Down)
Manufacture Agent	:----- (Drop Down)



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Quantity Category	: ----- (Drop Down) (KG,Unit.)
Image	:----- (Scan and save with Image ID)
Depot Name	:----- (Drop Down) (ULKA, NASD)
Procurement Category	:----- (Drop Down)(Tender/Certification/Paper Transaction)
Self-Name	:----- (Drop Down)
Row Name	:----- (Drop Down)
Technical Specification	:-----
Weight (Gun / Mounting)	:-----
Dimension (Height/Breath / length)	:-----
Maximum Range	:-----
Effective Range	:-----
Muzzle Velocity	:-----
Barrel Life	:-----
Operating Temperature in °C	:-----
Storing Temperature in °C	:-----
Preservation Temperature in °C	:-----
Status	:----- (Drop Down) (Serviceable , Un Serviceable or Defect, Other)
Date of Received after acceptance	:-----
Contract / work order Number	:-----
Other Remarks	:-----

3.3.2 Web Equipment Information (Entry Screen)

Program ID	Date:99/99/9999
------------	-----------------



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Name of Web Equipment	:------(Drop Down) (Helmet, Whistleetc)
Date Of Received	:-----
Fiscal year	:----- (Drop Down)
Brand/Model/Type	:-----
Year of Manufacture	:-----
Country of Manufacture	:----- (Drop Down) (India, Belgium)
Country of Origin	:----- (Drop Down) (India, Belgium)
Purpose	:-----
Year of Procurement	:----- (Drop Down) (Fiscal year)
Warranty Period	:-----
Price Type	:----- (Drop Down) (BD, Dollar)
Unit Price	:-----
Total Price	:-----
Procurement Category	:----- (Drop Down)(Tender/Certification/Paper transaction)
Local Agent	:----- (Drop Down)
Principal Agent	:----- (Drop Down)
Manufacture Agent	:----- (Drop Down)
Quantity Category	:----- (Drop Down) (Unit)
Image	:----- (Scan and save with Image ID)
Depot Name	:----- (Drop Down) (ULKA, NASD)
Self-Name	:----- (Drop Down)
Row Name	:----- (Drop Down)
Technical Specification	:-----
Weight	:-----
Status	:----- (Drop Down) (Serviceable , Un Serviceable, Repair)
Other Option	:----- (Input)



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3.3.3 Spare Parts Information

Program ID	Date:99/99/9999
Name of Spare Parts	:------(Drop Down) (-----)
Type	:------(Drop Down) (Gun/Ammunition/Missile)
Brand	:-----
Model	:-----
Weight	:-----
Year of Manufacture	:-----
Country of Manufacture	:----- (Drop Down) (India, Belgium)
Country of Origin	:----- (Drop Down) (India, Belgium)
Purpose	:-----
Technical Specification	:-----
Year of Procurement	:----- (Drop Down) (Fiscal year)
Warranty Period	:-----
Price Type	:----- (Drop Down) (BD, Dollar)
Unit Price	:-----
Total Price	:-----
Local Agent	:----- (Drop Down)
Principal Agent	:----- (Drop Down)
Manufacture Agent	:----- (Drop Down)
Quantity Category	:----- (Drop Down) (KG,Unit.pic)
Serial Number	:-----
Image	:----- (Scan and save with Image ID)
Depot Name	:----- (Drop Down) (ULKA, NASD)



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Procurement Category	:----- (Drop Down)(Tender/Certification/Paper transaction)
Self-Name	:----- (Drop Down)
Row Name	:----- (Drop Down)
Operating Temperature in C°	:----- (Input)
Storing Temperature in C°	:----- (Input)
Preservation Temperature in C°	:----- (Input)
Date Of Received	:-----
Status	:----- (Drop Down) (Serviceable , Un Serviceable)
Other Option	:----- (Input)

3.3.4 Gun Maintenance Information

Maintenance Code	:----- Auto Generated
Registration Number	:----- (Searching)
Name	:----- (Auto Display)
Present Location	:----- (Auto Display)
Last Maintenance Date	:----- (Auto Display)
Maintenance Year	:----- (Auto Display)
Maintenance Detail	:----- (Auto Display)
Last Maintenance Date	:-----
Present Location	:----- (Drop Down) (NASD , Bhatary)
Maintenance Year	:-----
Maintenance Location	:-----
Defect Information	:-----
Maintenance Detail	:-----
Maintenance Type	:----- (Drop down) (Monthly, Quarterly, Half yearly & yearly)



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Next Maintenance due	:-----
----------------------	--------

3.3.5 Status of Gun after Maintenance

Maintenance Code	:----- Auto Generated
Registration Number	:----- (Searching)
Maintenance Result	:-----
Maintenance Status	:----- (Drop Down) (serviceable, un serviceable, Damage)
Remarks	:-----
Next Maintenance Date	:-----

3.4 Ammunition Information

3.4.1 Ammunition Information (Entry Screen)

(All Ammunition item lot wishes entry not individual item wish entry)

Ammunition Code	:----- Auto Generated
Caliber	:----- (Drop Down) (100mm, 25mm)
Ammunition Type	:----- (Drop Down) (HE/HEI/HEIT/DPT)
Quantity	:-----
Lot Number	:----- (Searching) (Lot number + Menuf: Year+ Country)
Year of Manufacture	:----- (Drop Down) (Country)
Country of Manufacture	:----- (Drop Down) (Country)
Country of Origin	:----- (Drop Down) (Country)
Year of Procurement	:----- (Drop Down) (Country)
Local Agent	:----- (Drop Down) (Supplier Name)
Principal Agent	:----- (Drop Down) (Supplier Name)
Manufacturer Agent	:----- (Drop Down)
	:----- (Drop Down) (All Currency)



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Currency	:-----
Unit Price	:-----
Total Price	:-----
Purpose	:-----
Technical Specification	:-----
Shelf life	:-----
Proof Firing	:-----
Proof Firing Date	:-----
Storing Temperature in °C	:-----
Operating Temperature in °C	:-----
Humidity	:-----
Remarks	:----- (Drop Down) (NASD/ Bhatiry)
Depot name	:----- (Drop Down)
Shelf Name	:----- (Drop Down)
Row name	:-----
Warranty	:-----
Image	:----- (Drop Down)(serviceable, un serviceable, Damage)
Status	

3.4.2 Ammunition Maintenance Information

Maintenance Code	:----- Auto Generated
Registration Number	:----- (Searching) (Lot Number)
Name	:----- (Auto Display)
Present Location	:----- (Auto Display)
Last Maintenance Date	:----- (Auto Display)
Present Stock	:----- (Auto Display)



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Maintenance Year	:----- (Auto Display)
Maintenance Detail	:----- (Auto Display)
Last Maintenance Date	:-----
Present Location	:----- (Drop Down) (NASD , Bhatiary)
Maintenance Year	:-----
Maintenance Location	:-----
Defect Information	:-----
Maintenance Detail	:-----
Maintenance Type	:----- (Drop down) (Monthly, Quarterly, Half yearly & yearly)
Next Maintenance due	:-----

3.5 Missile/Torpedo/Mine/RDC & LDC Information

3.5.1 Missile Information (Entry Screen)

Missile Code	:----- Auto Generated
Name of Missile	:----- (Drop Down) (C80/C804)
Missile Type	:----- (Drop Down) (SAM/SSM)
Quantity	:-----
Serial Number	:-----
Year of Manufacture	:-----
Country of Manufacture	:-----
Country of Origin	:-----
Year of Procurement	:-----
Local Agent	:----- (Drop Down)
Principal Agent	:----- (Drop Down)
Manufacturer Agent	:----- (Drop Down)
Currency	:-----
Unit Price	:-----



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Total Price	:-----
Purpose	:-----
Technical Specification	:-----
Shelf life of Missile	:-----
Shelf life of Launcher	:-----
Missile Preparation Time	:----- (Peace/War)
Combat Duration	:-----
Test Firing	:-----
Test Firing Date	:-----
Storing Temperature in °C	:-----
Operating Temperature in °C	:-----
Humidity	:-----
Remarks	:-----
Depot name	:-----
Date Of Received	:-----
Shelf Name	:-----
Row name	:-----
Warranty	:-----
Status	:----- (Drop Down)(serviceable, un serviceable, Damage)

3.5.2 Torpedo Information (Entry Screen)

Torpedo Code	:----- Auto Generated
Name of Torpedo	:----- (Drop Down) (C80/C804)
Torpedo Type	:----- (Drop Down) (SAM/SSM)
Quantity	:-----



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Serial Number	:-----
Year of Manufacture	:-----
Country of Manufacture	:-----
Country of Origin	:-----
Year of Procurement	:-----
Local Agent	:----- (Drop Down)
Principal Agent	:----- (Drop Down)
Manufacturer Agent	:----- (Drop Down)
Currency	:-----
Unit Price	:-----
Total Price	:-----
Purpose	:-----
Technical Specification	:-----
Shelf life	:-----
Shelf life	:-----
Preparation Time	:----- (Peace/War)
Combat Duration	:-----
Test Firing	:-----
Test Firing Date	:-----
Storing Temperature in °C	:-----
Operating Temperature in °C	:-----
Humidity	:-----
Remarks	:-----
Depot name	:-----
Date of Received	:-----
Shelf Name	:-----



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Row name	:-----
Warranty	:-----
Status	:----- (Drop Down)(serviceable, un serviceable, Damage)

3.5.3 Mine Information (Entry Screen)

Missile Code	:----- Auto Generated
Name of Mine	:----- (Drop Down) (C80/C804)
Mine Type	:----- (Drop Down) (SAM/SSM)
Quantity	:-----
Serial Number	:-----
Year of Manufacture	:-----
Country of Manufacture	:-----
Country of Origin	:-----
Year of Procurement	:-----
Local Agent	:----- (Drop Down)
Principal Agent	:----- (Drop Down)
Manufacturer Agent	:----- (Drop Down)
Currency	:-----
Unit Price	:-----
Total Price	:-----
Purpose	:-----
Technical Specification	:-----
Shelf life	:-----
Shelf life of Launcher	:-----
Preparation Time	:----- (Peace/War)
Test Firing	:-----



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Test Firing Date	:-----
Storing Temperature in °C	:-----
Operating Temperature in °C	:-----
Humidity	:-----
Remarks	:-----
Depot name	:-----
Date of Received	:-----
Shelf Name	:-----
Row name	:-----
Warranty	:-----
Status	:----- (Drop Down)(serviceable, un serviceable, Damage)

3.5.4 RDC Information (Entry Screen)

RDC Code	:----- Auto Generated
Name of RDC	:----- (Drop Down)
RCD Type	:----- (Drop Down)
Quantity	:-----
Serial Number	:-----
Year of Manufacture	:-----
Country of Manufacture	:-----
Country of Origin	:-----
Year of Procurement	:-----
Local Agent	:----- (Drop Down)
Principal Agent	:----- (Drop Down)
Manufacturer Agent	:----- (Drop Down)
Currency	:-----



SOFTWARE REQUIREMENT SPECIFICATION (SRS) BANGLADESH NAVY ARMAMENT MANAGEMENT SYSTEM(BNAMS)

Unit Price	:-----
Total Price	:-----
Purpose	:-----
Technical Specification	:-----
Shelf life	:-----
Preparation Time	:----- (Peace/War)
Test Firing	:-----
Test Firing Date	:-----
Storing Temperature in °C	:-----
Operating Temperature in °C	:-----
Humidity	:-----
Remarks	:-----
Depot name	:-----
Date of Received	:-----
Shelf Name	:-----
Row name	:-----
Warranty	:-----
Status	:----- (Drop Down)(serviceable, un serviceable, Damage)

3.5.5 LDC Information (Entry Screen)

LDC Code	:----- Auto Generated
Name of LDC	:----- (Drop Down)
LDC Type	:----- (Drop Down)
Quantity	:-----
Serial Number	:-----
Year of Manufacture	:-----



SOFTWARE REQUIREMENT SPECIFICATION (SRS) BANGLADESH NAVY ARMAMENT MANAGEMENT SYSTEM(BNAMS)

Country of Manufacture	:-----
Country of Origin	:-----
Year of Procurement	:-----
Local Agent	:----- (Drop Down)
Principal Agent	:----- (Drop Down)
Manufacturer Agent	:----- (Drop Down)
Currency	:-----
Unit Price	:-----
Total Price	:-----
Purpose	:-----
Technical Specification	:-----
Shelf life	:-----
Preparation Time	:----- (Peace/War)
Combat Duration	:-----
Test Firing	:-----
Test Firing Date	:-----
Storing Temperature in °C	:-----
Operating Temperature in °C	:-----
Humidity	:-----
Remarks	:-----
Depot name	:-----
Date Of Received	:-----
Shelf Name	:-----
Row name	:-----
Warranty	:-----
Status	:----- (Drop Down)(serviceable, un serviceable, Damage)



SOFTWARE REQUIREMENT SPECIFICATION (SRS) BANGLADESH NAVY ARMAMENT MANAGEMENT SYSTEM(BNAMS)

3.6 Test/Inspection Item Ammunition, Missile, Torpedo & Mine for Bhatiary, ULKA.

Program ID	Date:99-99-9999
Directorate/ Depot	:----- (Drop Down) (Bhatiary, ULKA)
Item Category	:----- Drop Down (Ammunition , Missile, Torpedo, Mine)
Lot / Registration No	:----- Searching
Item Name	:----- (Auto Display)
Warranty Date	:----- (input)
Last Maintenance date	:----- Supplier ID and Name/Directorate
Supplier Information	:----- (Auto Display)
Next Inspection Date	:----- (input)
Install Date	:-----
Install By	:-----
Install At	:----- Inspection Date:----- (input)
Inspection Method	:----- (By operate/By observation)
Inspection By	:----- (input)
Commence	:

3.7 Test/Inspection Item Gun for NASD.

Program ID	Date:99-99-9999
Directorate/ Depot	:----- (Drop Down) (NASD)
Item Category	:----- Drop Down (Gun)
Caliber	:----- Searching



SOFTWARE REQUIREMENT SPECIFICATION (SRS) BANGLADESH NAVY ARMAMENT MANAGEMENT SYSTEM(BNAMS)

Item Name	:----- (Auto Display)
Warranty Date	:------(input)
Last Maintenance date	:-----
Supplier Information	:----- (Auto Display)
Next Inspection Date	:------(input)
Install Date	:-----
Install By	:-----
Install At	:----- Inspection Date:------(input)
Inspection Method	:------(By operate/By observation)
Inspection By	:------(input)
Commence	:



SOFTWARE REQUIREMENT SPECIFICATION (SRS) BANGLADESH NAVY ARMAMENT MANAGEMENT SYSTEM(BNAMS)

3.8 Training Information

The system will maintain the following Training Information for operating equipment.

Training Code	:----- Auto Generated
Name of Equipment	:----- (Drop Down) (Gun/ Ammunition/ Missile)
Course Name	:-----
Course Ref No	:-----
P.NO/ O.NO	:----- (Searching Name & P.NO)
Start Date	:-----
End Date	:-----
Name of Country	:----- (Drop Down) (Local/ Foreign)
Organization	:----- (Drop Down) (ARMY/ Navy/ Air Force)
Local/Abroad	:-----

3.9 Trainee Person Bio Data

BIO Data Code	:----- Auto Generated
P.NO/O.NO	:-----
Rank	:----- (Drop down)
Name	:-----



SOFTWARE REQUIREMENT SPECIFICATION (SRS) BANGLADESH NAVY ARMAMENT MANAGEMENT SYSTEM(BNAMS)

3.9.1 Store/Purchase Information

Perpetual inventory system updated inventory accounts after each Received or Issue. Inventory subsidiary ledger is updated after each any transaction. The register / ledger account is updated at the end, periodic or calculation period of each accounting or transaction. This system automatic generated the all reports (Daily, Weekly, Monthly, Quarterly, Half Yearly, and Yearly)

- Inventory quantities are updated continuously.
- Inventory quantities updated by Entry Basis.
- Inventory quantities are updated calculation basis on a periodic.
- Pipeline (Contracted but not yet received).

The Store Information System follows the following three methods.

- Tender Method System
- Certification Method System
- Paper Transaction Method System

Certification Method System means: Any Gun/ Ammunition & Missile get from the outsourcing. If this item registered in our ledger, then this item is Certification item. (Without Purchase or Tender.) For example Ex-Bhatiary items.

Paper Transaction Method System: Any Gun/ Ammunition & Missile get from the purchase new Ship. If this item registered in our ledger, then this item is Certification item. (Without Purchase or Tender.)

3.9.2 Item Category:

The BNAMS will maintain the Item category as follow:

- Gun
- Ammunitions
- Web Equipment
- Missile
- Torpedo
- Mine
- Spare Parts
- RDC, Pyrotechnic, Demolition Item
- Non Explosive Items
- Other Items (If any)

3.9.3 Item Status

Each Items must be defined with following status according to the condition of the Item

- Serviceable
- Un Serviceable
- Repairable
- Lost Item
- Used Item
- Overaged
- Other Option



SOFTWARE REQUIREMENT SPECIFICATION (SRS) BANGLADESH NAVY ARMAMENT MANAGEMENT SYSTEM(BNAMS)

3.9.4 Item Unit

Each Item must be defined with following units according to item quality:

- Pieces
- Dozen
- KG
- Pound
- Quintile
- Kilometer
- Nos
- Set
- Rds
- Gm
- Mtr
- Cm
- Bar
- Pa
- Other Option

3.9.5 Item Price Type

Each Items must following price type according to particular quantity and Value

- Unit Price – in foreign currency & Local currency- Procurement Year
- Total Price

3.9.6 Item Category Information

Goods/Item is the main focal point of Inventory in BNAMS. The Goods and Item will be first categories according to functionality and use of goods and Item. Under category there may be Main Group and Sub Group of Goods and Items. Therefore the Goods and Items may be classified as

- Category (as like Explosive Item/Non-Explosive Item)
- Main Group (as like Arms/Gun/Web Equipment/Missile/Torpedo/Mine/RDC/LDC etc.)
- Sub Group (as like caliber)

The system must be kept N-level of Goods and Item Code in each category in such a way that the software user may add new Group in the system as when required.

3.9.7 Financial Year

The Financial Year for Bangladesh Navy Armament Management Software (BNAMS) will be Maintain July to June for each year.

The Fiscal Year Information must content the following information under the use this system.

Fiscal year Code	:----- Auto Generated
Fiscal Year Name	:-----



SOFTWARE REQUIREMENT SPECIFICATION (SRS) BANGLADESH NAVY ARMAMENT MANAGEMENT SYSTEM(BNAMS)

Short Name	:-----
Start Date	:-----
End Date	:-----

3.9.8 Admin Authority (use by Ships/Depot Information)

Admin Authority code	:----- (Auto Generate)
Admin Authority Name	:----- (Drop Down)
Area	:----- (Drop Down) (Dhaka/CTG/Khulna)
Contract	:-----
Email	:-----

3.9.9 Capability of weapons (use by Ships/Depot Information)

Capability code	:----- (Auto Generate)
Capability Name	:-----
Telephone	:----- (CO, EXO, GO)
Email	:-----

3.9.10 Gun Model / Mark/ Type (use by Gun/Ammunition entry screen)

Gun Model code	:----- (Auto Generate)
Gun Type Name	:----- (Small, Big, Large)
Short Name	:-----
Create Date	:-----

3.9.11 Name of Gun (use by Gun/Ammunition entry screen)

Name of Gun code	:----- (Auto Generate)
Name of Gun	:----- (Gun, Ammunition, Missile, Torpedo)
Short Name	:-----
Create Date	:-----



SOFTWARE REQUIREMENT SPECIFICATION (SRS) BANGLADESH NAVY ARMAMENT MANAGEMENT SYSTEM(BNAMS)

3.9.12 Country (use by Gun/Ammunition entry screen)

Country code	:----- (Auto Generate)
Country Name	:-----
Short Name	:-----
Dollar Type	:-----
Create Date	:-----

3.9.13 Local Agent/ Supplier Information (use by Gun/Ammunition entry screen)

Local Agent code	:----- (Auto Generate)
Supplier Name	:-----
Address	:-----
Enlistment Type	:----- (Yes/No)
Email	:-----
Contract Number	:-----
Country	:-----

3.9.14 Procurement Category (use by Gun/Ammunition entry screen)

Procurement code	:----- (Auto Generate)
Procurement Name	:----- (Tender/Certification/Paper Transaction)
Create Date	:-----

3.9.15 Quantity Category (use by Gun/Ammunition entry screen)

Quantity code	:----- (Auto Generate)
Quantity Name	:----- (KG/Killo/GR)
Create Date	:-----

3.9.16 Status Information

Status code	:----- (Auto Generate)
-------------	------------------------



SOFTWARE REQUIREMENT SPECIFICATION (SRS) BANGLADESH NAVY ARMAMENT MANAGEMENT SYSTEM(BNAMS)

Status Name	:----- (Serviceable, Unserviceable, Repairable)
Short Name	:----- (S,UNS,R)
Create Date	:-----

3.9.17 Location / Shelf Information System

Through the use this method, the current position of the any Gun / Ammunition & Missile can be known.

Shelf Management

Add New Shelf

Shelf-5

Create / Edit / Delete

+

5-A

Create / Edit / Delete

+

5-B

Create / Edit / Delete

+

5-C

Create / Edit / Delete

+

5-D

Create / Edit / Delete

3.9.18 Flash Rules Setup

The system must have the provision to notification/alert to the designated authorized official of respective office regarding specific shortage of item ship (unit) for fulfillment of desired requirement. DNAI&S will also to the respective depot or get notification/alert.

Program Name	Process Date:99-99-999
Depot/Unit :----- (Select)	
Item Code :----- (Select)	
Notification Less Than Balance :----- (input)	
Notification to Office :----- (input)	
Notification to Officer :----- (input)	
Notification Method :----- (Letter/E-mail/Flashing)	
Save	Cancel
Delete	Edit

4 PROCUREMENT



SOFTWARE REQUIREMENT SPECIFICATION (SRS) BANGLADESH NAVY ARMAMENT MANAGEMENT SYSTEM(BNAMS)

Procurement will be done on the basis of indent. After getting indent from depot and unit, DNAI&S will take action to purchase after approval of respective authority.

For Purchasing following cycle and information is mandatory

Purchasing Cycle:

- Issue and Receive Indent from Depot and unit.
- After approval and Tender process Issue Purchase Order. By DGD/NSSD/NSD.
- Item Received.
- Installation
- Test/Trial
- Acceptance
- Ledger entry

4.1 Issue and Receive Item from Depot and Units:

Program ID	Date:99-99-9999
Date	:----- (Auto Display from System)
Indent No.	: ----- (Auto Generate with Sequence No.)
Indent from/To	:----- (Select from) (Issue/ Received)
Issue Person	:----- (Drop Down) (All Ship & Depot)
Item Code	:----- (Searching)
Item Name	:----- (Auto Display)
Composite Code	:----- (Select)
Composite Name	:----- (Auto Display)
Product Supplier Name	:----- (Supplier ID and Name)
Indent Quantity	:----- Unit
Indent Validity	:----- 30 days
Indent Type	:----- (Issue/Receive)
Other Options	:-----



SOFTWARE REQUIREMENT SPECIFICATION (SRS) BANGLADESH NAVY ARMAMENT MANAGEMENT SYSTEM(BNAMS)

4.2 Cancel/Change/Performed Indent from DNAI&S/Depot and Units'

Program ID	Date:99-99-9999
Date	:----- (Auto Display from System)
Indent No.	: ----- (Auto Generate with Sequence No.)
Indent No	:----- (Searching)
Indent Type	:----- (Issue/Receive)
Indent Status	:----- (Cancel/Change/Performed)
Status Date	:----- (date)
Issue/ Received Date	:----- (input)
Remarks	:----- (input)
Others Option	:-----

5 REPORT GENERATION

The system has the provision to print out the different type of report as required by the user.
The following report is mandatory for the system

- Quarterly Return (Quarterly, Half Yearly & Yearly Inventory) Report
- Monthly Return (Monthly Inventory) Report
- Report on any ammunition giving it detail information.
- Report on stock position of armaments and ammunition of different ship and establishments.
- Report on totals stock position at any time
- Report on procurement showing earlier procurement related data.
- Report on ship's state of armaments and ammunitions
- Report on shortage of any ammunition at any moment
- Provision to showing any other report required for concerned establishment.
- Report on overaged ammunition state.
- Report on expenditure of ammunition as caliberwise
- Report of ledger entry
- Report of trainee person of any gun & arms in abroad or home.
- Provision to showing any other reports as required by user.
- Report of any spec of arms, gun & ammunition
- Report of defective arms , gun & ammunition

The Report format and layout with contains will be designed with the consultation of DNAI&S.



6 SECURITY AND USER MANAGEMENT

The System will be developed for Central Database System which will be hosted in NHQ and managed by Directorate of Naval Armament Inspection and Supply (DNAI&S) as per requirement of Bangladesh Navy. The Directorate BNS ULKA, BNS BHATIARY and NASD and each Ship (Unit) will be connected with the Central Database. The system will operate on three tier architecture. The database, Network and Application security will be controlled by its environment and integrated to each other. The Application **BANGLADESH NAVY ARMAMENT MANAGEMENT SYSTEM (BNAMS)** Security will be controlled by User, User Role, User Password, and User Access Right of Menu and Sub-menu.

6.1 Data Encryption

All Transaction and updated of Data by different authorized User must be encrypted. special stock balance and quantity of each Item must store in database with encrypted format.

6.2 User Roles/Functional Category.

The system will maintain multiple level of user role (functional category) which will be defined by the DNAI&S according to their level of office like Head office Division, Directorate and Ship (Unit) Offices. This functional category of user will setup at the initial stage of the system implementation with the consultation of DNAI&S. The system will keep provision to add new Functional Category of user of the system as per requirement of the DNAI&S.

DNAI&S, BNS ULKA, BNS BHATIARY and NASD and each Ship (Unit) have different entity so each have separate administrator, control and supervisor level as defined by DNAI&S. Therefore no one could access beyond their authorization limit.

It will be maintained only by System Admin of Application Server/Administrator of DataCenter for Application Server. The system should not allow any update delete option after final customization of the system. Administrator will allow update or delete after final customization of the system.

Example of User Roles/Functional Category may as Follow

- DNAI&S
 - ✓ Admin Officer.
 - ✓ Control Officer
 - ✓ Supervisor or Data Operator
- BNS Ulka, BNS Bhatiary, NASD
 - ✓ Admin. Officer
 - ✓ Control Officer
 - ✓ Data Operator
- Ship (Unit) Office
 - ✓ Unit Admin.



SOFTWARE REQUIREMENT SPECIFICATION (SRS) BANGLADESH NAVY ARMAMENT MANAGEMENT SYSTEM(BNAMS)

- ✓ Unit Control Officer
- ✓ Unit Data Operator

6.3 Role/Functional Categories wise Menu and Submenu Right

The system has the provision to define Menu and Sub-Menu right on Role/Functional Categories of the system on the basis of Office Category (HO/Directorate/Ship (unit) Office etc.). It is the work group of predefine menu and sub-menu against the role of the system Head Office Admin, Head Office Control Officer, Head Office Data Operator etc. Similarly for Directorate Office, Ship (Unit) Office and other Control Offices etc.. It will be maintained only by System Administrator of Application Server.

6.4 Rules and Regulation of user Setup Parameter

The system has the provision to define the user parameter setup option as per Navy ICT security policy to maintain user access control of the system. The access control may be Bio-metric identification or Digital identification. The system firstly maintain the identification type. On the basis of identification type the system must maintain the other related field.

In case of Bio-metric identification it should maintain Image Category, image size, storing path, control no., authentication by, authentication date etc.

In case of Digital Identification it should maintain the Maxi. Password length, Min. Password length, Minimum number of numeric, alphanumeric digit etc. Maximum number of unsuccessful log-in attempt etc.

6.5 Employee Information

The System will maintain the physical information of Employee of the user of the system. The Employee information must be maintained from employee personal information. For system user employee information is mandatory. The mandatory fields of the employee information are EMP_ID, USER_NAME and ACTIVE_STATUS.

6.6 Grant Role/Functional Category with Menu and Submenu to an Employee

The Grant Role of a user (Employee) is the most important features of the system. It define the functional Category of the User with corresponding assign right of MENU and SUB_MENU of the system. If an Employee's Role is assigned as Administrator of the Ship (Unit)/Directorate/Head Office Division than it is assigned by its upper control offices administrator or data center. Other than Administrator the user Role /Functional category is assigned against the employee by administrator of the respective offices.



SOFTWARE REQUIREMENT SPECIFICATION (SRS) BANGLADESH NAVY ARMAMENT MANAGEMENT SYSTEM(BNAMS)

SYSTEM PROCESS FLOW

