



Electronic Information Environment (EIE) Project

**Business Use Case (BUC)
BUC 4.22 Navy - Exchange
Maintenance Work Order Data**

EIE Project

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Table of Contents

1.	EIE BUSINESS USE CASE OVERVIEW	1
1.1	INTRODUCTION	1
1.2	PURPOSE	1
1.3	INTENDED AUDIENCE	1
1.4	REFERENCES AND TRACEABILITY	2
2.	BUC 4.22 NAVY - EXCHANGE MAINTENANCE WORK ORDER DATA	3
2.1	OVERVIEW	3
2.2	SUB PROCESSES AND ACTIVITIES SUPPORTED	4
2.3	BUSINESS RULES AND ASSUMPTIONS	4
2.4	ACTORS	4
2.5	COMMON PRE-CONDITIONS	6
2.6	COMMON POST-CONDITION(S)	6
2.7	COMMON BUC STEPS	6
2.8	SCENARIOS	7
2.8.1	4.22.1 Maintenance Work Order – Full [N1.4.3.2.1]	8
2.8.2	4.22.2 Maintenance Work Order – System Status [N1.4.3.2.2]	10
2.8.3	4.22.3 Maintenance Work Order – User Status [N1.4.3.2.4]	12
2.8.4	4.22.4 Maintenance Work Order – Goods Issue [N1.4.3.2.6]	13
2.9	INFORMATION REQUIREMENTS	14
2.10	SPECIAL REQUIREMENTS	14
3.	FUNCTIONAL DATA DEFINITION	15
3.1	DATA ENTITIES DEFINITION	15
4.	ISSUES AND EXCEPTIONS	25
5.	BUSINESS PROCESS FLOWS	25
6.	DEFINITIONS, ACRONYMS, ABBREVIATIONS	25
7.	DOCUMENT CONTROL	26
7.1	DOCUMENT HISTORY	26

List of Figures

Figure 2-1 Navy - Exchange Maintenance Work Order Data	5
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List of Tables

Table 3-1 Data Entities Definition	15
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The information being provided is to illustrate the model that exists for business processes and information exchange within the Performance Based Contracting (PBC) solution for the Department of National Defence. The information is provided to facilitate an understanding of the business architecture and the solution architecture that exist for the PBC program. The content is not intended to reflect the end state specifications for all of the PBC EIE related services.

1. EIE Business Use Case¹ Overview

1.1 Introduction

Performance Based Contracting (PBC) is a set of guidelines to Canada DND Major Capital Projects (MCPs) on how to model a Platform acquisition and in-service support (ISS) processes. Under these guidelines Canada is responsible to perform corrective and/or preventive maintenance activities on the Platform. In order for Canada and an ISS Contractor partner to fulfill their obligations under PBC specific datasets must be exchanged between Canada and the ISS Contractor.

The collection of information systems provided by DND and the ISS Contractor used to maintain the Platform and the various information exchange mechanism between Canada and the ISS Contractor Partner, is collectively known as the Electronic Information Environment (EIE).

The collection of web services and supporting infrastructure which enables exchange of data between the ISS Contractor and Canada's operational systems in support of PBC is collectively known as Electronic Data Exchange (EDE) within Canada. The EDE components span application nodes, network zones and the Internet.

1.2 Purpose

DND maintenance activities are tracked in the Canada Maintenance Management System (CMMS). Exchange of maintenance-related data involves new exchange business processes between CMMS and the ISS Contractor data consumers which complement already documented maintenance business processes.

This Business Use Case (BUC) describes the exchange of maintenance work order records between Canada and the ISS Contractor for a Platform managed according to PBC. This BUC does not capture the complete maintenance activities and events that occur in the CMMS. Only CMMS events that trigger the sending of maintenance relevant data to the ISS Contractor are emphasized in the presented BUC activities.

1.3 Intended Audience

The intended audience for this business use case includes:

- The ISS Contractor(s) who require detail of their business service-level interactions, benefits and obligations under PBC.
- Canada Program Management Offices implementing PBC.
- Solution Architects who will define a Business Service Model for the business service(s) described here.

¹ "Business Use Case: A business process, representing a specific workflow in the business; an interaction that a stakeholder has with the business that achieves a business goal. It may involve both manual and automated processes and may take place over an extended period of time." - <http://www.ibm.com/developerworks/rational/library/apr07/english/>.

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- Functional Testers who will use the business use case to define test scenarios for Integration testing.
- Designers who will perform detailed design and unit test.

1.4 References and Traceability

Business Process documents

[Ref. 1] PBC Business Process Catalogue Annex L: Navy Maintenance Process Model - In the Context of Performance Based Contracting (PBC)

With respect to the referenced documents this BUC addresses the following sections:

Reference	Section
[Ref. 1] PBC Business Process Catalogue: Annex L	Annex L – Navy Maintenance Process Model

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2. BUC 4.22 Navy - Exchange Maintenance Work Order Data

This Business Use Case will identify processes and activities and define scenarios which apply to maintenance work orders.

2.1 Overview

Identifier	BUC 4.22
Name	Navy - Exchange Maintenance Work Order Data
Business goal	Send maintenance work order dataset to the ISS Contractor as necessary to allow the ISS Contractor to fulfill its obligations under PBC.
Stakeholders	Canada and the ISS Contractor(s)
Workflow/interaction	Exchange of maintenance work order dataset from Canada to the ISS Contractor as defined at multiple points in corrective and preventive maintenance business processes. Reference [Ref. 1].
Processes	Information exchange is automated (system to system). The frequency of exchange is determined by Canada and each ISS Contractor. Some error scenarios may require manual intervention.
Context	Business Domain: Maintain Platform Functional Area: Preventive and Corrective Maintenance <ul style="list-style-type: none"> Preventive Maintenance (PM) Planning <ul style="list-style-type: none"> PM Initialization Maintenance Planning - Fleet Maintenance Facility (FMF) Corrective Maintenance Planning Execute Corrective or Preventive Maintenance <ul style="list-style-type: none"> Execute Maintenance - Ship/FMF Execute Maintenance - ISS Contractor Cancel
Period of Time	The full lifecycle of the subject Platform.
Description	This use case describes the exchange of maintenance work order information between CMMS and the ISS Contractor in the context of PBC. As part of Canada's responsibility within the PBC is the execution of 1st and 2nd level maintenance (corrective and preventive) activities on a Platform. A maintenance work order is created in the CMMS from a maintenance notification or directly from Deadline Monitoring (scheduled maintenance that is due). Relevant functions of the work order are to define, record, and execute the steps and results of the corrective or preventive maintenance work on the Platform. The maintenance work order is created in accordance with the ISS Contractor furnished task lists (when provided), and may indirectly result in the generation of part demands to the ISS Contractor to fulfill the tasks listed within a work order. In accordance with the ISS

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contract, all maintenance work orders associated with the Platform will be transferred to the ISS Contractor in order to facilitate contractually agreed obligations.

On a pre-determined, periodic basis, Canada will transfer to the specific ISS Contractor, all maintenance work orders that are created/updated/closed and which are permitted by the business to be shared with the specific ISS Contractor.

2.2 Sub Processes and Activities Supported

The activities within the 1st and 2nd level maintenance business process result in activities that change data within the Work Order data map. This use case supports transferring these data changes to the ISS Contractor.

2.3 Business Rules and Assumptions

1. The system shall ensure maintenance work order dataset for a Platform is sent only to the ISS Contractor system which is properly authenticated and authorized to see maintenance work order dataset for that fleet.
2. As a result of Canada operational and security policies, the system may impose a latency (or delay) prior to releasing maintenance work order dataset to the ISS Contractor.
3. CMMS, as the system of record for maintenance data, will determine when data can be released to the ISS Contractor and will initiate data transfer to the ISS Contractor.
4. Any created, updated, or closed maintenance work order which is managed in a disconnected instance of CMMS will not be released to the ISS Contractor until the disconnected CMMS instance is synchronized with the central CMMS.

2.4 Actors

The following actors have been identified as performing the documented business activities:

Role Name	Role Description / Responsibilities
Canada DND Authorized Person	<ul style="list-style-type: none"> • Participates in planning of the overall fleet maintenance schedule. • Decides whether to proceed with creation of corrective maintenance work order in the CMMS when a notification is created as a result of a fault. • Updates the work order as maintenance tasks / operations are planned, executed and completed. • Closes off work order tasks as they are completed by the maintainers.
CMMS system	<ul style="list-style-type: none"> • Creates, processes and sends the work order dataset.
EDE	<ul style="list-style-type: none"> • Transports and transforms the work order data.

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Role Name	Role Description / Responsibilities
ISS Contractor	<ul style="list-style-type: none"> Provides a system that will have the ability to: <ul style="list-style-type: none"> Accept and process maintenance work orders data sent from Canada, and Acceptance of the Acknowledgement of data from Canada.

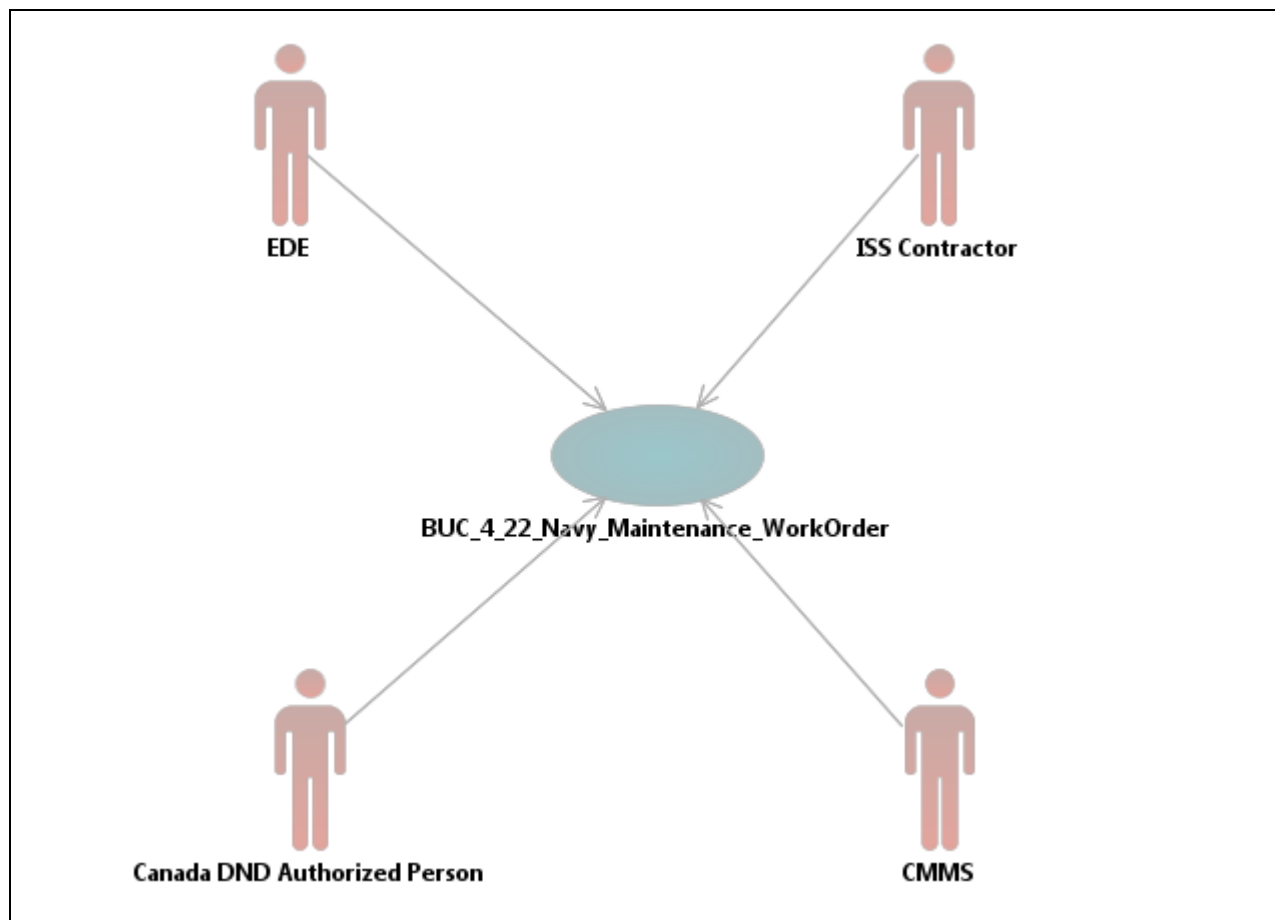


Figure 2-1 Navy - Exchange Maintenance Work Order Data

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2.5 Common Pre-Conditions

These apply to every scenario unless explicitly stated otherwise.

1. As per PBC, the ISS Contractor requires that the maintenance work order datasets be sent to the ISS Contractor Data Consumers/Systems.
2. Canada and the ISS Contractor have agreed upon maintenance work order dataset content and format (see [Functional Data Definition](#)).
3. Canada and the ISS Contractor have agreed upon maintenance work order data exchange mechanism.

2.6 Common Post-Condition(s)

The following applies to every scenario unless explicitly stated otherwise.

1. Maintenance work order dataset has been received by the ISS Contractor and an acknowledgement has been received by Canada.

2.7 Common BUC Steps

Each scenario defined below includes the following common steps:

Common Steps	Step Description	Actor
Determine which work order records are to be sent to the ISS Contractor	CMMS determines which work order data is applicable for a given ISS Contractor, fleet, and business event and may apply latency conditions to work order data to determine what is available for release to the ISS Contractor.	CMMS
Prepare and send maintenance work order data	CMMS creates and sends maintenance work order records as per input parameters and record definition provided by EDE.	CMMS
Convert maintenance work order data to the ISS Contractor format	EDE converts data to a format that has been adopted by Canada and the ISS Contractor.	EDE
Send maintenance work order data to the ISS Contractor	EDE sends maintenance Work Order dataset to the ISS Contractor exposed System, in accordance to transmission definition agreed to with the ISS Contractor.	EDE
Acknowledge receipt of maintenance work order data	The ISS Contractor system sends an acknowledgement receipt to EDE for maintenance work order records.	ISS Contractor
Forward acknowledgement to CMMS	EDE forwards the acknowledgement receipt to CMMS.	EDE

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Mark work order records as sent	CMMS updates its work order records as being sent to the ISS Contractor.	CMMS
Send data integrity validation acknowledgement	ISS Contractor System conducts data integrity validation as per established business rules as agreed between Canada and ISS Contractor. ISS Contractor system sends acknowledgement to Canada EDE. Note: ISS Contractor will send error information if the data fails integrity validation	ISS Contractor
Receive data integrity validation acknowledgement from ISS Contractor	EDE receives the data integrity validation acknowledgement and dispatches the information to CMMS.	EDE
Mark maintenance work order records as being business acknowledged	CMMS updates its maintenance work records as being business acknowledged by ISS Contractor System.	CMMS

2.8 Scenarios²

In the following scenarios the pre-condition and trigger serve to uniquely identify the maintenance work order exchange in the context of a maintenance business process. This supports direct traceability between maintenance business processes and exchange use case scenarios.

Note: The numeric identifier that appears in square brackets besides each scenario name is an identifier that can be used to locate the event in the business process flow as per [Ref. 1].

² A scenario corresponds to a specific activity in a maintenance business process when a triggering event occurs which causes a maintenance Work Order dataset exchange. Picture the maintenance business process as proceeding horizontally through recognition of a corrective or preventive maintenance situation, through fault isolation, initiation through completion of maintenance activities, certification of completion of maintenance activity, possibly a functional test, and reconciliation of the Work Order. Each exchange use case scenario corresponds to a vertical slice from a maintenance business process which results in a maintenance work order being transferred to the ISS Contractor.

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2.8.1 4.22.1 Maintenance Work Order – Full [N1.4.3.2.1]

Scenario Name	4.22.1 Maintenance Work Order – Full [N1.4.3.2.1]
Business Process	<p>This scenario occurs in the following business processes:</p> <ul style="list-style-type: none"> Preventive Maintenance (PM) Planning: <ul style="list-style-type: none"> PM Initialization Maintenance Planning - FMF Corrective Maintenance Planning Execute Corrective or Preventive Maintenance <ul style="list-style-type: none"> Execute Maintenance - Ship Staff/FMF Execute Maintenance - ISS Contractor Cancel
Business Context	<p>The creation and technical and business closure of a work order as described in the following maintenance business processes will trigger sending the Full record of data to the ISS Contractor.</p> <p>PM Initialization</p> <ul style="list-style-type: none"> Deadline monitoring for preventive maintenance performed by ship staff runs weekly and creates work orders one month in advance (maintenance work order type N017) with the creation and auto- release of the corresponding maintenance notifications (maintenance notification type N9). The preventive maintenance notifications and/or work orders that are created as a result of deadline monitoring are sent from CMMS to the ISS Contractor, via the EIE EDE on a predefined periodicity/ frequency. <p>Maintenance Planning - FMF</p> <ul style="list-style-type: none"> If the FMF accepts the maintenance tasking, the notification user status is set to 'Accepted by Repair Facility' (ACRF), and a maintenance work order is created and released. <p>Corrective Maintenance Planning</p> <ul style="list-style-type: none"> If the notification is approved for work by ship staff, or a ship staff maintainer is ordering serialized parts on behalf of FMF, a corrective maintenance work order is created. <p>Execute Maintenance - Ship Staff/FMF</p> <ul style="list-style-type: none"> A work order is created and released from the originating notification if the work order does not already exist. Upon completion of the maintenance execution, the technician records their hours against the work order, and the work order is set to technically complete (TECO). After a predetermined time, the CMMS will 'business close' the

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	<p>maintenance work order (CLSD).</p> <p>Execute Maintenance - ISS Contractor</p> <ul style="list-style-type: none">• Upon acceptance of the maintenance notification for conducting the corrective and/or preventive maintenance execution, the ISS Contractor creates a maintenance notification and work order in their Maintenance Management System and sends the work order record once it is scheduled to the CMMS via the EIE EDE. CMMS creates and releases a corresponding notification/work order in CMMS, including reference to the ISS Contractor’s work order identifier.• Upon completion of the maintenance execution, the ISS Contractor will close its work orders and send the work order complete records to CMMS via the EIE EDE. CMMS will update its work orders with this data, and set the work order status to technically complete (TECO).• After a predetermined time, the CMMS will business close the maintenance work order (CLSD). <p>Cancel</p> <ul style="list-style-type: none">• The work order user status will be set to ‘Cancelled’ (CANC), followed by the work order being technically completed (TECO) and eventually business closed (CLSD). The appropriate transactions will be sent to the ISS Contractor via the EIE EDE.												
Precondition(s)	See Common Pre-Conditions .												
Trigger event	<ul style="list-style-type: none">• Creation of a new work order• Technical closure of maintenance work order• Business closure of maintenance work order.												
Steps	<table><tr><th>Step Name</th><th>Step Description</th><th>Actor</th></tr><tr><td>Maintenance work order activities of: Creation Technical Closure Business Closure</td><td>The Actor's action results in maintenance work order dataset being impacted.</td><td>Canada DND Authorized Person, CMMS</td></tr><tr><td>Capture in CMMS maintenance work order Full record</td><td>The system will create a maintenance work order snapshot record, containing all available maintenance work order data as per the data map.</td><td>CMMS</td></tr><tr><td colspan="3">Common BUC Steps</td></tr></table>	Step Name	Step Description	Actor	Maintenance work order activities of: Creation Technical Closure Business Closure	The Actor's action results in maintenance work order dataset being impacted.	Canada DND Authorized Person, CMMS	Capture in CMMS maintenance work order Full record	The system will create a maintenance work order snapshot record, containing all available maintenance work order data as per the data map.	CMMS	Common BUC Steps		
Step Name	Step Description	Actor											
Maintenance work order activities of: Creation Technical Closure Business Closure	The Actor's action results in maintenance work order dataset being impacted.	Canada DND Authorized Person, CMMS											
Capture in CMMS maintenance work order Full record	The system will create a maintenance work order snapshot record, containing all available maintenance work order data as per the data map.	CMMS											
Common BUC Steps													
Postcondition(s)	See Common Post-Conditions .												
Notes													

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2.8.2 4.22.2 Maintenance Work Order – System Status [N1.4.3.2.2]

Scenario Name	4.22.2 Maintenance Work Order – System Status [N1.4.3.2.2]
Business Process	<p>This scenario occurs in the following business processes:</p> <ul style="list-style-type: none"> Preventive Maintenance Planning: <ul style="list-style-type: none"> PM Initialization Maintenance Planning - FMF Corrective Maintenance Planning Execute Corrective or Preventive Maintenance <ul style="list-style-type: none"> Execute Maintenance - Ship Staff/FMF Execute Maintenance - ISS Contractor Cancel
Business Context	<p>The creation, release and technically closure of the work order will trigger sending of system status information to the ISS Contractor.</p> <p>PM Initialization</p> <ul style="list-style-type: none"> Deadline monitoring for preventive maintenance performed by ship staff runs weekly and creates work orders one month in advance (maintenance work order type N017) with the creation and auto-release of the corresponding maintenance notifications (maintenance notification type N9). The preventive maintenance notifications and/or work orders that are created as a result of deadline monitoring are sent from CMMS to the ISS Contractor, via the EIE EDE on a predefined periodicity/frequency. <p>Maintenance Planning - FMF</p> <ul style="list-style-type: none"> If the FMF accepts the maintenance tasking, the notification user status is set to 'Accepted by Repair Facility' (ACRF), and a maintenance work order is created and released. <p>Corrective Maintenance Planning</p> <ul style="list-style-type: none"> If the notification is approved for work by ship staff, or a ship staff maintainer is ordering serialized parts on behalf of FMF, a corrective maintenance work order is created. Following the creation and release of the work order, the maintenance execution process can begin. <p>Execute Maintenance - Ship Staff/FMF</p> <ul style="list-style-type: none"> A work order is created and released from the originating notification if the work order does not already exist. Upon completion of the maintenance execution, the technician records their hours against the work order, and the work order is set to technically complete (TECO).

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	<ul style="list-style-type: none">After a predetermined time, the CMMS will 'business close' the maintenance work order (CLSD). <p>Execute Maintenance - ISS Contractor</p> <ul style="list-style-type: none">Upon acceptance of the maintenance notification for conducting the corrective and/or preventive maintenance execution, the ISS Contractor creates a maintenance notification and work order in their Maintenance Management System and sends the work order record once it is scheduled to the CMMS via the EIE EDE. CMMS creates and releases a corresponding notification/work order in CMMS, including reference to the ISS Contractor's work order identifier.Upon completion of the maintenance execution, the ISS Contractor will close its work orders and send the work order complete records to CMMS via the EIE EDE. CMMS will update its work orders with this data, and set the work order status to technically complete (TECO).After a predetermined time, the CMMS will business close the maintenance work order (CLSD). <p>Cancel</p> <ul style="list-style-type: none">The work order user status will be set to 'Cancelled' (CANC), followed by the work order being technically completed (TECO) and eventually business closed (CLSD). The appropriate transactions will be sent to the ISS Contractor via the EIE EDE.									
Precondition(s)	See Common Pre-Conditions .									
Trigger event	Canada DND Authorized Person creates, releases or technically closes the work order.									
Steps	<table><tr><th>Step Name</th><th>Step Description</th><th>Actor</th></tr><tr><td>System Status of a maintenance work order in CMMS is created or updated</td><td>The Actor chooses to assign or update the system status of a maintenance work order.</td><td>Canada DND Authorized Person, CMMS</td></tr><tr><td>Capture in CMMS maintenance work order System Status record</td><td>The system will create a maintenance work order System Status record, containing work order unique identifier and the associated system status value.</td><td>CMMS</td></tr></table> Common BUC Steps	Step Name	Step Description	Actor	System Status of a maintenance work order in CMMS is created or updated	The Actor chooses to assign or update the system status of a maintenance work order.	Canada DND Authorized Person, CMMS	Capture in CMMS maintenance work order System Status record	The system will create a maintenance work order System Status record, containing work order unique identifier and the associated system status value.	CMMS
Step Name	Step Description	Actor								
System Status of a maintenance work order in CMMS is created or updated	The Actor chooses to assign or update the system status of a maintenance work order.	Canada DND Authorized Person, CMMS								
Capture in CMMS maintenance work order System Status record	The system will create a maintenance work order System Status record, containing work order unique identifier and the associated system status value.	CMMS								
Postcondition(s)	See Common Post-Conditions .									
Notes										

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2.8.3 4.22.3 Maintenance Work Order – User Status [N1.4.3.2.4]

Scenario Name	4.22.3 Maintenance Work Order – User Status [N1.4.3.2.4]		
Business Process	This scenario occurs in the following business processes: <ul style="list-style-type: none"> Cancel 		
Business Context	Cancel <ul style="list-style-type: none"> A work order may be closed without further progress, if it is decided that it has to be cancelled. In this case, the work order and corresponding notification will be closed. The work order user status will be set to ‘Cancelled’ (CANC), followed by the work order being technically completed (TECO) and eventually business closed (CLSD). The appropriate transactions will be sent to the ISS Contractor via the EIE EDE. 		
Precondition(s)	See Common Pre-Conditions .		
Trigger event	<ul style="list-style-type: none"> Work order cancelled 		
Steps	Step Name	Step Description	Actor
	Open work order in CMMS	The Actor chooses to open and set the work order User Status values in a work order.	Canada DND Authorized Person
	Capture in CMMS the work order User Status record	The system will create a work order User Status record.	CMMS
	Common BUC Steps		
Postcondition(s)	See Common Post-Conditions .		
Notes			

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2.8.4 4.22.4 Maintenance Work Order – Goods Issue [N1.4.3.2.6]

Scenario Name	4.22.4 Maintenance Work Order – Goods Issue [N1.4.3.2.6]														
Business Process	<p>This scenario occurs in the following business processes:</p> <ul style="list-style-type: none">• Execute Corrective or Preventive Maintenance<ul style="list-style-type: none">– Execute Maintenance - Ship Staff/FMF• Cancel														
Business Context	<p>The technical completion and closure of a work order as described in the following maintenance business processes will trigger sending the Goods Issue record of data to the ISS Contractor.</p> <p>Execute Maintenance - Ship Staff/FMF</p> <ul style="list-style-type: none">• Upon completion of the maintenance execution, the technician records their hours against the work order, and the work order is set to technically complete (TECO). <p>Cancel</p> <ul style="list-style-type: none">• A work order may be closed without further progress, if it is decided that it has to be cancelled. In this case, the work order and corresponding notification will be closed. The work order user status will be set to ‘Cancelled’ (CANC), followed by the work order being technically completed (TECO) and eventually business closed (CLSD). The appropriate transactions will be sent to the ISS Contractor via the EIE EDE.														
Precondition(s)	See Common Pre-Conditions .														
Trigger event	<ul style="list-style-type: none">• Technically closure of maintenance work order.														
Steps	<table><tr><th>Step Name</th><th>Step Description</th><th>Actor</th></tr><tr><td>Close maintenance work order in CMMS</td><td>The Actor's action results in a technically closure of a maintenance work order.</td><td>Canada DND Authorized Person, CMMS</td></tr><tr><td>Capture in CMMS maintenance work order Goods Issue record</td><td>The system will collect and transmit existing information on Goods Issue to the work order.</td><td>CMMS</td></tr><tr><td colspan="3">Common BUC Steps</td></tr></table>			Step Name	Step Description	Actor	Close maintenance work order in CMMS	The Actor's action results in a technically closure of a maintenance work order.	Canada DND Authorized Person, CMMS	Capture in CMMS maintenance work order Goods Issue record	The system will collect and transmit existing information on Goods Issue to the work order.	CMMS	Common BUC Steps		
Step Name	Step Description	Actor													
Close maintenance work order in CMMS	The Actor's action results in a technically closure of a maintenance work order.	Canada DND Authorized Person, CMMS													
Capture in CMMS maintenance work order Goods Issue record	The system will collect and transmit existing information on Goods Issue to the work order.	CMMS													
Common BUC Steps															
Postcondition(s)	See Common Post-Conditions .														
Notes															

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2.9 Information Requirements

The following maintenance work order types are created in CMMS for preventive and corrective maintenance:

1. Maintenance Order – Other Plant (N001), used by the FMF and ISSC.
2. Military Corrective Maintenance Order (N016), used by Ship Staff only.
3. Military Preventive Maintenance Order (N017), used by Ship Staff only.
4. Quick Response Order (N002), used by the FMF only.
5. NP Configuration Change Order (N005), used by the FMF and ISSC for Engineering Change implementation.
6. Capital Work Order (N006), used by the FMF and ISSC for Engineering Change implementation.
7. FMF Facilitated R&O Order (N008), used by the FMF for backshop work.

In general, events requiring a complete maintenance work order be transmitted will contain the following information:

- Work order ID
- Record snapshot timestamp
- Work order type and description
- Related Notification, Maintenance Plan and Maintenance Task Lists references
- Requirements for resources
- Required operational steps (maintenance task list and/ or operations)
- Required parts, consumables, and Support and Test Equipment (STE)
- Required quantity of parts, consumables, and STE
- User Status
- System Status

Events requiring transmission of work order User Status data only will contain the user status relevant information.

Events requiring transmission of work order System Status data only will contain the system status relevant information.

Further details on the data elements of a maintenance work order are provided in Section 3.

2.10 Special Requirements

None identified.

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3. Functional Data Definition

The data elements which make up a maintenance work order are enumerated here. A detailed technical message schema for exchange of datasets will be provided following the awarding of the ISS contract.

3.1 Data Entities Definition

The Data Entities Definition Table 3-1 below contains examples of the reference data. Specific and accurate reference data should be obtained from DND through official channels prior to using the reference data in downstream design and implementation activities.

Table 3-1 Data Entities Definition

Name	Description	Type	Length
Work Order Number	A unique identifier of a work order in CMMS. Always present	Char	12
Record Timestamp	The timestamp a work order snapshot is saved in the CMMS	Datetime	
External work order number	The ISS Contractor work order number	Char	64
Work Order Type	Defines a type of the work order. This field determines the usage and system workflow. Different work order types have different data layout, e.g. fields' definition, status profile. Values: <i>Work Order Type</i> (Example, N001 - Maintenance Order - Other Plant N016 - Military Corrective Maintenance Order N017 - Military Preventive Maintenance Order)	Char	4
Work Order Type Description	The description of the work order Type.	Char	40
Work Order Short Description	Short description of the problem reported within the work order. It may come from the associated maintenance notification's short text.	Char	40
CAGE	Commercial And Government Entity (CAGE) code number of the manufacturer associated to the equipment	Char	5
MPN	Manufacturer Part Number Note: DND-supplied parts may have an MPN up to 34 characters in length. Industry-supplied parts must have an MPN of 31	Char	34

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Name	Description	Type	Length
	characters or less.		
Serial No	Manufacturer's Serial number of the part	Char	30
External FLOC Identifier	Functional Location. Equipment may or may not be installed in the functional location.	Char	30
FLOC description	Description of the External FLOC Identifier	Char	40
Assembly CAGE	The CAGE code of the MMR (assembly) in the work order (header level)	Char	5
Assembly MPN	The MPN of the MMR (assembly) in the work order (header level) Note: DND-supplied parts may have an MPN up to 34 characters in length. Industry-supplied parts must have an MPN of 31 characters or less.	Char	34
Frame ID	A reference point annotated on ship drawings used to denote major watertight sections within a ship upon a given deck. This field can be used to denote work that cannot be pinned down to a specific compartment.	Char	20
Compartment	An Identification Code used in reference drawings to identify the relative position of major and minor compartments within a ship. Values: <i>Compartment</i> (Example, 01DA = bridge 01DB0 = Chart room 01DC0 = Fire control equipment)	Char	5
Compartment Description	A description of the Compartment (Example, 'bridge')	Char	80
Customer reference number	This is a free text field with multiple uses. (Example, Populated with an Engineering Change Number during EC Changes.) This field will be automatically populated in the Order based on the value in the attached Notification (if one exists)	Char	26
Main Work Centre	A unique identifier of a work centre that has overall responsibility for all the work performed	Char	8

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Name	Description	Type	Length
	on a work order. This resides in the work order header,		
Main Work Centre Description	The description of the main work centre	Char	40
Class of Ship/platform	The class that a ship belongs to	Char	3
Class of Ship/platform description	The description of the Class of Ship/platform	Char	30
Revision	A revision is used to group together multiple, discrete maintenance objects (such as notifications or work orders) under a single identifier	Char	8
Description of Revision	A description of the revision	Char	40
PM Activity Type	Used to specify the type of work that is required. The list of valid PM activities depends on the work order type. Values: <i>PM Activity Type</i> (Example, N01 – Corrective, N02 – PM Arising, N04 – Safety) Note: The values of the PM Activity Type should be identical to the values within the Notification Activity Type of the corresponding Notification. While the activity type values are not mandatory for a notification, they are mandatory for a work order.	Char	3
PM Activity Type Description	Text description of the PM activity type.	Char	30
WO Long Text	Long text of the Work Order. For the PBC fleets, this entity may contain the references to Maintenance Manuals used in the work order. The references to maintenance manuals, if available, will be loaded from the Maintenance Task List into this field on the work order creation and it can be edited by the end user. Note: There will be no truncation of user-entered text.	Char	2 GB

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Name	Description	Type	Length
Notification Identifier	A reference to the CMMS notification number from which the work order is generated.	Char	12
Work Order Start Date	Expected start date of maintenance activities.	Date	
Work Order Finish Date	Expected end date of maintenance activities	Date	
Scheduled Start Date	The scheduled start date for the entire work order	Datetime	
Scheduled Finish Date	The scheduled finish date for the entire work order	Datetime	
Actual Start Date	The actual start date for the work order	Datetime	
Actual Finish Date	The actual finish date for the work order	Datetime	
Total Order Quantity	Quantity of the component required for the work order execution. Applies to backshop.	Decimal	13.3
Priority	Priority of the work being given by the planner / scheduler of the job. Values: <i>WO Priority</i> (Example, High priority (code 101) for work order types N016, N017)	Char	1
Priority Description	The description of the WO Priority Code.	Char	20
External Maintenance Plan Identifier	A unique the ISS Contractor's identifier of the preventive maintenance plan that is used to generate the WO. It will be blank if no maintenance plan is used, e.g., corrective maintenance WO.	Char	40
User Status Code	More than one status can be selected per WO. Values: <i>User Status Code</i> (Example, SSWO Ship Staff Work Outstanding FILV First Level System AMAT Awaiting Material)	Char	4
User Status Description	The description of the WO User Status.	Char	30
User Status Start Date	Date and time the WO user status set event is logged in CMMS.	Datetime	
User Status Stop Date	Date and time the work order user status un-set event is logged in CMMS.	Datetime	

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Name	Description	Type	Length
System Status Code	An attribute of a work order set by the CMMS. It is defined by the system workflow and it will change through the lifecycle of the WO. Values: <i>System Status Code</i> (Example, CRTD Created REL Released TECO Technically Completed CLSD Business Closed	Char	4
System Status Description	The description of the WO system status.	Char	30
System Status Start Date	Date and time the WO system status is set and saved in the CMMS	Datetime	
External Maintenance Task List Identifier	The ISS Contractor's identifier for a Task List. Note: External Maintenance Task List Identifier is also known as Orig_MTL_No, terminology used by CMMS.	Char	40
External Operation Identifier	The ISS Contractor's identifier for a Task List Operation (or combination operation / sub-operation)	Char	65
Operation Number	A unique identifier of an operation within a Work Order in the CMMS that is displayed to the user. The combination of Operation Number Sub-Operation Number is unique within the Work Order. Note: Operation Number is also known as OpAc, terminology used by CMMS.	Number	4
Internal Operation ID	System generated unique identifier of an operation within a Work Order in the CMMS that cannot be changed	Number	8
Sub-Operation Number	An identifier of a sub-operation within an operation of the Work Order. Blank sub-operations are possible.	Number	4
Normal Duration	The planned duration of operation	Decimal	5.1
Number of resources	The number of resources planned for the activity	Integer	3
Planned Work	A number representing sum of amount of work planned per operation	Decimal	7.1

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Name	Description	Type	Length
Planned Work UOM	Unit of measure for planned work	Char	3
Actual Start Date - Operation	The date that the work started for the operation	Datetime	
Actual Execution Finish Date - Operation	The date that the work was completed for the operation	Datetime	
Latest Planned Finish Date - Operation	The planned finish date for the operation	Datetime	
Latest Scheduled Finish Date - Operation	The planned finish date for the operation based on scheduling	Datetime	
Operation / Sub-operation Scheduled Start Date	The scheduled start date of the operation/sub-operation	Date	
Operation System Status Code	A status of an operation set by the CMMS. It is set by the system based on user actions.	Char	4
Operation System Status Description	The description of the WO Operation's System Status	Char	30
Operation System Status Start Date	Date and time the WO Operation system status set event is logged in CMMS.	Datetime	
Operation User Status Code	A user status manually set against an operation or sub-operation.	Char	4
Operation User Status Description	The description of the WO Operation's User Status.	Char	30
Operation User Status Start Date	Date and time the WO user status set event is logged in CMMS.	Datetime	
Operation User Status Stop Date	Date and time the WO user status un-set event is logged in CMMS.	Datetime	
Performing Work Center	A unique identifier of a work center that is in overall charge when a maintenance task is carried out in the CMMS. A work center may be representing a trade group. The trades are mapped to generic Work Centers in the CMMS to fleet's specific Work Centers. The mapping has to be agreed between DND and the contractor.	Char	8
Performing Work Center Description	The description of the performing work center.	Char	20

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Name	Description	Type	Length
Rectification Block Text <i>(Not applicable for the Navy)</i>	Text that may be entered when an operation / sub-operation is signed digitally.	Char	2 GB
Operation Short Text	Operation short text - may come from associated Task List or manually input.	Char	40
Operation Long Text	Long text associated to operation.	Char	2 GB
Planned Work for the activity	The planned work targeted for a specific activity. The Planned Work and the Actual Work share the same unit of measure (UOM)	Decimal	7.1
Actual Work	A number representing sum of amount of work done per operation. User entered value.	Decimal	13.3
Actual Work UOM	Unit of measure of the actual time of work performed per operation. (Example, HR (hour)).	Char	3
Actual Number of Resources	Actual Number of people who worked on the operation/sub-operation	INT	3
Component Item Number	A unique identifier of a component line item number against an operation. (CMMS will use the system's internal field "reservation item number" since the actual component's item number can be changed).	Char	4
Component Cage Code	Commercial And Government Entity (CAGE) code number that uniquely identifies the manufacturer of the part or product defined in the Operation, sometimes produced under government contract.	Char	5
Component MPN	Manufacturer Part Number (MPN) of the component – a combination of numbers, letters, and symbols assigned by a designer, a manufacturer, or vendor to identify a specific part or item of materiel defined in the Operation. Note: DND-supplied parts may have an MPN up to 34 characters in length. Industry-supplied parts must have an MPN of 31 characters or less.	Char	34
Component Description	Short description of the component.	Char	40

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Name	Description	Type	Length
Component Long Text	Free form text field that may be populated by a maintainer to capture additional information about the component. Note: There will be no truncation of user entered text.	Char	2 GB
Required Quantity	Quantity of the component required for the operation execution.	Decimal	13.3
Component Unit of Measure	Unit of measure for the component.	Char	3
Goods Issue Cage Code	Commercial And Government Entity (CAGE) code number that uniquely identifies the manufacturer of the part or product issued to the Work Order or its Operation.	Char	5
Goods Issue MPN	Manufacturer Part Number (MPN) of the part or product issued to the Work Order or its Operation. Note: DND-supplied parts may have an MPN up to 34 characters in length. Industry-supplied parts must have an MPN of 31 characters or less.	Char	34
Goods Issue Serial No	Serial Number of the part or product issued to the WO or its operation	Char	30
Goods Issue Date	Date the part or product was recorded as being issued to the Work Order or its operation.	Datetime	
Issued Quantity	Issued quantity of the part or product against the Work Order or its Operation.	Decimal	13.3
Issued Unit of Issue	Unit of issue for the issued part or product.	Char	3
Required STE Cage Code	Commercial And Government Entity (CAGE) code number that uniquely identifies the manufacturer of the support and test equipment to be used on the WO.	Char	5
Required STE MPN	Manufacturer Part Number (MPN) of the support and test equipment to be used on the WO – a combination of numbers, letters, and symbols assigned by a designer, a manufacturer, or vendor to identify a specific part or item of materiel. Note: DND-supplied parts may have an MPN up to 34	Char	34

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Name	Description	Type	Length
	characters in length. Industry-supplied parts must have an MPN of 31 characters or less.		
Required STE Part Description	Short Description of the required STE.	Char	40
Required STE Quantity	Quantity of the STE required for the operation execution.	Decimal	13.3
Required STE Unit of Issue	Unit of issue of required STE	Char	3
Assigned STE Cage Code	Commercial And Government Entity (CAGE) code number that uniquely identifies the manufacturer of the support and test equipment used on the WO.	Char	5
Assigned STE MPN	Manufacturer Part Number (MPN) of the support and test equipment used on the WO – a combination of numbers, letters, and symbols assigned by a designer, a manufacturer, or vendor to identify a specific part or item of materiel. Note: DND-supplied parts may have an MPN up to 34 characters in length. Industry-supplied parts must have an MPN of 31 characters or less.	Char	34
Assigned STE Quantity	Quantity of the STE used for the operation execution.	Decimal	13.3
Assigned STE Unit of Issue	Unit of issue of used STE	Char	3
Assigned STE Serial Number	A unique identifier of a support and test equipment used on the WO.	Char	30
Business Correlation ID	Canada CMMS identifier used with Business Sequence number to uniquely identify a business object sent to the ISS Contractor	Char	40
Business Sequence Number	Canada CMMS identifier used with Business Correlation ID to uniquely identify a business object sent to the ISS Contractor	Char	2
Reservation number	A unique number assigned to the Work order for the purpose of tracking planned components. (A numeric with leading zeros)	Integer	10

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Name	Description	Type	Length
Source System	An identifier as to where an event occurred that resulted in a web service being generated. Can be used to determine, for example, which ship created a work order	Char	10

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4. Issues and Exceptions

None identified.

5. Business Process Flows

Refer to EIE Maintenance Business Process document, [Ref. 1] for diagrams that capture business process flow supported by this BUC.

6. Definitions, Acronyms, Abbreviations

Term	Description
BUC	Business Use Case
CAGE	Commercial And Government Entity
CMMS	Canada Maintenance Management System
DND	Department of National Defence
E&M	Engineering and Maintenance
EDE	Electronic Data Exchange
EIE	Electronic Information Environment
EMR	Equipment Master Record
FMF	Fleet Maintenance Facility
ISS	In Service Support
MCP	Major Capital Project
MER	Master Equipment Record
MPN	Manufacturer Part Number
MTL	Maintenance Task List
PBC	Performance Based Contracting
PM	Preventive Maintenance
PMO	Project Management Office
STE	Support and Test Equipment
UOM	Unit Of Measure
WO	Work Order

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7. Document Control

7.1 Document History

Revision Number	Description	Date
1.0	Final ready for Navy RFP	17 August 2015

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