National Défense
Defence nationale

Electronic Information Environment (EIE) Project

Business Use Case (BUC)

BUC 3.52 Navy - Exchange Supply EMR Data

EIE Project	
document identification	identifier du document
issue date	date de diffusion
	09 September 2015
version	version
	1.0
OPI	BPR
	PBC - EIE Solution Office
designator	désignation
	EIE Project
group / division	groupe / division
	ADM(IM) / DGEAS

Table of Contents

List of Figures

1. EIE BUSINESS USE CASE[1] OVERVIEW

1.1 Introduction

Performance Based Contracting (PBC) is a set of guidelines to Canada 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 some corrective and/or preventive maintenance activities on the Platform. The ISS Contractor will own, manage and deliver to the specified Hand-Over Point (HoP) all materiel required to support the Platform, with the exception of excluded systems. In order for Canada and the ISS Contractor to fulfill their obligations under PBC, specific datasets must be exchanged between Canada and ISS Contractor.

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

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

Given the significance of materiel demand and supply in the overall success of contracted performance objectives of PBC and platform operational availability, all data exchange between Canada Supply System (CSS) and the ISS Contractor systems will have to occur in near real-time via EDE.

1.2 Purpose

Canada Maintenance Management System (CMMS) tracks all Canada-performed maintenance activities. Exchange of maintenance-related data involves new exchange business processes between CMMS and ISS Contractor, which complement already documented maintenance business processes. The ISS Contractor will send the Equipment Master Record (EMR) data for serialized parts issued (if applicable) to Canada.

This Business Use Case (BUC) describes the receiving by Canada of the Equipment Master Record (EMR) data sent by the ISS Contractor for a platform managed according to PBC. EMR data includes counters and measurement readings of an EMR – maintenance plans, measurements, and counter readings may include several reading points for the equipment. As such, both measurement point and measurement reading information are sent. The measurements and counters readings are the critical information

---

[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/.

necessary for CMMS to operate in accordance with platform maintenance plan and for ISS Contractor to determine the next steps after a component has been taken off the platform, e.g., repair or discard.

Current measurement and counter values, and maintenance plans, for any component being given to Canada will be sent to CMMS via EDE and saved in the CMMS as new measurement documents.

For complex assemblies, EMR data includes actual component configuration, which describes structural component information on which parts/equipment – identified by serial numbers – are installed at which locations on a complex assembly, such as an engine.

EMR data also includes the Maintenance Plan information that describes the maintenance cycle requirements for the part(s)/ equipment.

1.3   Intended Audience

The intended audience for this BUC includes:

- ISS Contractors who require detail of their business service-level interactions, benefits and obligations under PBC.
- All Canada personnel implementing the PBC.
- Solution Architects who will define a Business Service Model for the business service(s) described here.
- Functional Testers who will use the BUC 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 M: Navy Supply Process Model - In the Context of Performance Based Contracting (PBC)

[Ref. 2]   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 M	Annex M – Navy Supply Process Model
[Ref. 2] PBC Business Process Catalogue Annex L	Annex L – Navy Maintenance Process Model

2. BUC 3.52 NAVY - EXCHANGE SUPPLY EMR DATA

This BUC will identify processes and activities and define scenarios, which apply to EMRs (including structural and measurement data) and Maintenance Plans for the related part/equipment. The term "related dataset" will be used to refer to these types of data. When a specific data type is involved, it will be explicitly named[2].

2.1 Overview

Identifier	BUC 3.52
Name	Navy - Exchange Supply EMR Data
Business goal	Receive the following information when a part/equipment is being supplied by the ISS Contractor: • Equipment Master Record data for the creation of a serialized part record. • For complex assemblies, EMR hierarchy which reflect the actual component configuration, which describes structural component information on which parts/equipment – identified by serial numbers – are installed at which locations on a complex assembly, such as an engine. • Measurement point and measurement readings of an EMR – measurements and counters readings may include several reading points of the equipment. • Maintenance Plan information that describes the maintenance cycle requirements for the part(s)/equipment.
Stakeholders	Canada and ISS Contractor(s)
Workflow/interaction	Transmission of EMR dataset from ISS Contractor to Canada as defined at multiple points in supply business processes. Reference [Ref. 2].
Processes	Information exchange is automated (system to system). The frequency of transmission is determined by Canada and each ISS Contractor. Some error scenarios may require manual intervention.
Context	Business Domain: Supply Materiel Functional Area: • Part Demand and Fulfillment • PUK Demand and Fulfillment • PUK Replenishment

---

[2] The same terminology is used in Section 2.8 Scenarios.

	• Inventory Replenishment
Period of Time	The full lifecycle of the subject platform.
Description	In accordance with PBC, EMR data sets associated with the platform shall be sent to CMMS in order to facilitate contractually agreed obligations of keeping the platform configuration synchronized between Canada and ISS Contractor systems and applications. In order to track the usage of a part that is structurally identified in CMMS as an EMR, its place in the structure will have to be defined and previous usage/life data will have to be loaded into CMMS. This data will be provided by ISS Contractor and sent to Canada every time a serialized part that is an EMR is physically sent to Canada. To inform Canada of the part/equipment's maintenance requirements, the ISS Contractor will also send the Maintenance Plan information.

2.2   Sub-Processes and Activities Supported

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

2.3   Business Rules and Assumptions

- Serialized parts received by Canada will require an associated EMR record.

2.4   Actors

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

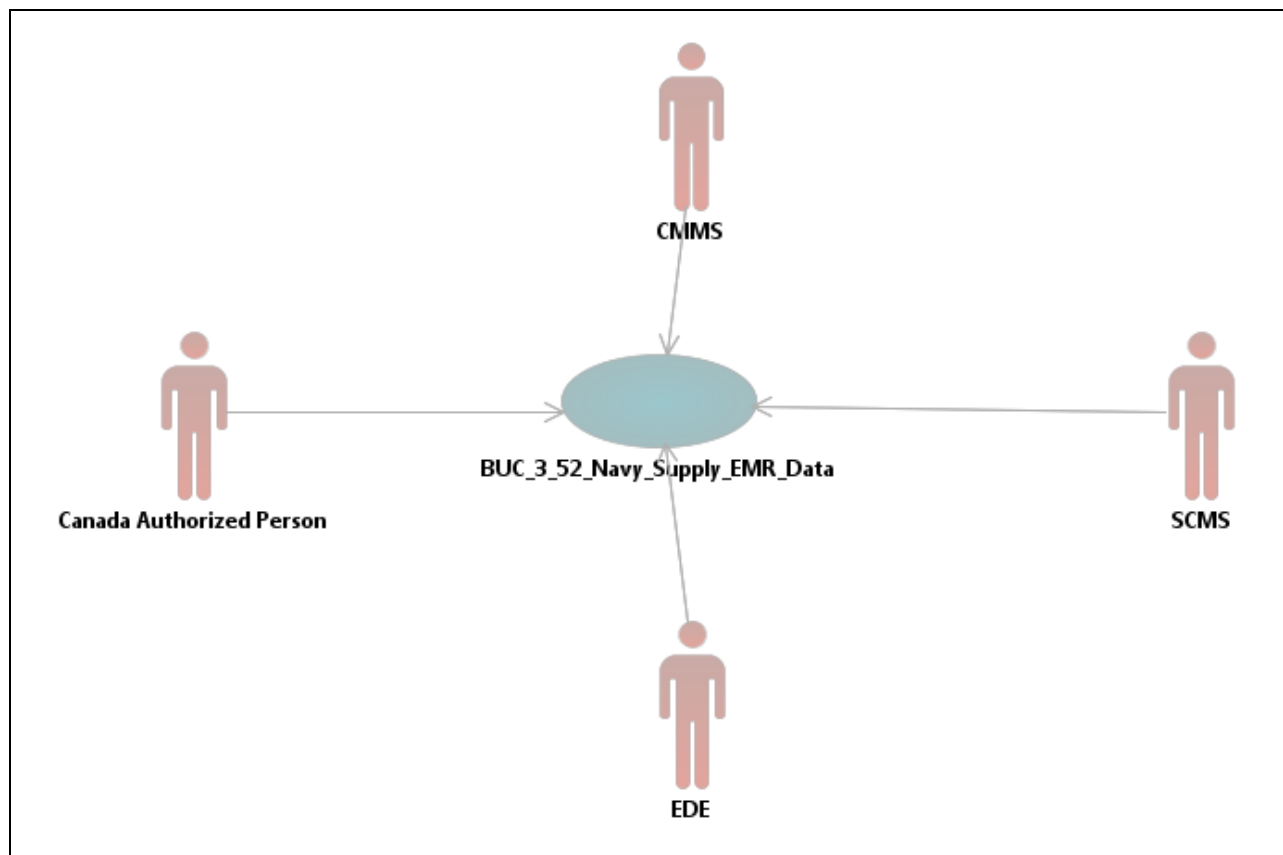| Role Name	Role Description / Responsibilities
Canada Authorized Person	• Validates that data loaded in CMMS is sufficient for Canada personnel to perform maintenance tasks.
CMMS	• Processes the EMR data
EDE	• Transports and transforms the EMR data.
ISS Contractor (ISS Contractor's Supply Chain Management System (SCMS))	• Provides a system that will have the ability to prepare and send EMR datasets to Canada.

Figure 2-1 Navy - Exchange Supply EMR Data

2.5   Common Pre-Conditions[3]

These apply to every scenario unless explicitly stated otherwise.

1. Canada requires that the EMR datasets be sent to CMMS so that the part can be instantiated in the CMMS to facilitate maintenance activities.

2. Canada and ISS Contractor have agreed upon EMR datasets format (see Functional Data Definition)

3. Canada and ISS Contractor have agreed upon EMR data exchange mechanism.

---

[3] A pre-condition is something which happens or is established outside the scope of the normal day-to-day operation of CMMS and EDE.

2.6   Common Post-Condition(s)

The following applies to every scenario unless explicitly stated otherwise.

1.   EMR datasets have been received by Canada.

2.7   Common BUC Steps

Common Steps	Step Description	Actor
Determine which datasets are to be sent to Canada	ISS Contractor determines which EMR datasets are applicable for a given ship class, and determines what is available for release to Canada.	ISS Contractor (SCMS)
Prepare and send EMR datasets	SCMS creates and sends EMR sets as per input parameters and record definition provided by EDE.	ISS Contractor (SCMS)
Convert EMR dataset to common format	EDE converts data to XML-based format that has been adopted by Canada and ISS Contractor.	EDE
Send EMR dataset to CMMS	EDE sends EMR dataset to CMMS.	EDE
Forward acknowledgement to ISS Contractor's SCMS	EDE sends acknowledgement receipt to ISS Contractor's SCMS	EDE

2.8   Scenarios[4]

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

---

[4] A scenario corresponds to a specific activity in a maintenance business process when a triggering event occurs which causes a Supply EMR dataset exchange. Picture the maintenance business process as proceeding horizontally through recognition of a corrective or preventive maintenance situation, through fault isolation, and maintenance activities. Each exchange use case scenario corresponds to a vertical slice from a maintenance business process, which results in a supply EMR dataset being transferred from the ISS Contractor.

2.8.1   3.52.1 Receive and Process Part History [N1.5.3.1.4]

Scenario Name	3.52.1 Receive and Process Part History [N1.5.3.1.4]
Business Process	This scenario occurs in the following Supply Materiel business processes: • Part Demand and Fulfillment • PUK Demand and Fulfillment • PUK Replenishment • Inventory Replenishment
Business Context	Part Demand and Fulfillment • If the materiel being issued is serialized and requires an Equipment Master Record (EMR) within the CMMS (as indicated in the Material Master Record (MMR) master data), the ISS Contractor will also send the Equipment Master Record (EMR) data and, if applicable, the EMR's associated maintenance plan(s), measurement point data and most recent measurement data for parts issued to DND as required. This part history data, along with the data in the Part Issue, is required to properly initialize the CMMS and CSS with the part operating hours, maintenance and repair history, and other required parameters and documentation. This data is a touch point between the supply and maintenance operations. PUK Demand and Fulfillment • If the PUK includes materiel that is serialized and requires an EMR within the CMMS (as indicated in the MMR master data), the ISS Contractor will also send the EMR data and, if applicable, the EMR's associated maintenance plan, measurement point data and most recent measurement data for the parts via the EDE. PUK Replenishment • If the ISS Contractor schedules replenishment to a deployed PUK, the CSS will be notified of each part issued through a PUK Issue including the EMR part history (EMR, maintenance plan, measurement point, measurement reading) where applicable. Inventory Replenishment • If the ISS Contractor schedules replenishment of stock, Inventory Replenishment transaction(s) and EMR history data (if applicable) will be sent to the CSS via the EDE.
Precondition(s)	See Common Pre-Conditions.
Trigger event	A serialized part is sent to Canada.

Steps	Common Steps	Step Description	Actor
		Continue with Common BUC Steps	
Post condition(s)	See Common Post-Conditions.		
Notes			

2.9 Information Requirements

The data elements details are provided in Section 3.

2.10 Special Requirements

None identified.

3. FUNCTIONAL DATA DEFINITION[5]

The data elements which make up an EMR dataset are enumerated in this section. 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 tables below contain examples of the reference data. Specific and accurate reference data should be obtained from Canada through official channels prior to using the reference data in downstream design and implementation activities.

3.1.1 EMR Structure

Refer to *Master Data BUC 2.2 Exchange Master Data – Inbound*, Table **3.6 Business Entity Definition - EMR** for the definition of data elements that make up the EMR Structure datasets.

3.1.2 Measurement Point

Refer to *Master Data BUC 2.2 Exchange Master Data – Inbound*, Table **3.10 Business Entity Definition - MPOINT** for the definition of data elements that make up the Measurement Point datasets.

3.1.3 Measurement Document

Refer to *Master Data BUC 2.2 Exchange Master Data – Inbound*, Table **3.11 Business Entity Definition - MDOC** for the definition of data elements that make up the Measurement Document datasets.

3.1.4 Maintenance Plan

Refer to *Master Data BUC 2.2 Exchange Master Data – Inbound*, Table **3.8 Business Entity Definition - MP** for the definition of data elements that make up the Maintenance Plan datasets.

---

[5] This is a *functional* view of the data. A detailed schema including fields for parent/child structure, metadata to manage exchange with Industry, more specific types, etc. will be designed in the ICDs.

4. ISSUES and EXCEPTIONS

None identified.

5. BUSINESS PROCESS FLOWS

Refer to EIE Maintenance [Ref. 2] and Supply [Ref. 1] Business Process documents 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
CSS	Canada Supply System
DND	Department of National Defence
EDD	Estimated Delivery Date
EDE	Electronic Data Exchange
EIE	Electronic Information Exchange
HoP	Hand-Over Point
ISS	In Service Support
MCP	Major Capital Project
MPN	Manufacturer's Part Number
PBC	Performance Based Contracting
PO	Purchase Order
PUK	Pack-Up Kit
SCMS	Supply Chain Management System
STTE	Special Tools and Test Equipment
WO	Work Order

7. DOCUMENT CONTROL

7.1   Document History

Version Number	Description	Date
1.0	Release to the Navy RFP	09 Sept 2015