



Electronic Information Environment (EIE)

Business Use Case (BUC) BUC 3.42 Navy - Exchange Part Demand Response Data

EIE Project

document identification	identifrier 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	



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1. EIE Business Use Case¹ 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

When a work order is released in the Canada Maintenance Management System (CMMS) or when a maintenance task or operation is added to a work order that requires ISS Contractor-owned parts, the system checks for availability of the parts at the Canada storage locations dedicated to holding ISS Contractor-owned stock. If the required parts are available, a reservation will be created, parts will be committed and then will be issued to the work order in the Canada Supply System (CSS). If the ISS Contractor-supplied parts are not available at Canada storage locations, a Part Demand for the required parts is generated in the CSS and sent to the ISS Contractor via the EDE.

The ISS Contractor will respond to the Part Demand by providing a near-real time Part Demand Response via the EDE. If the demanded parts are immediately available, the Part Demand Response will state the current date. If not immediately available, the Part Demand Response will provide scheduled availability

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/>. Also defined as such in EIE Solution Architecture.

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with an estimated delivery date (EDD) and quantity. The ISS Contractor is required to provision requested materiel within the contractually agreed time in order to meet PBC parameters. Any subsequent updates to the scheduled EDD will be sent from ISS Contractor to CSS via the EDE for the total outstanding amount.

In preparation for deployment, Canada may request a Pack-up Kit (PUK) through the Part Demand service. The ISS Contractor will respond with an EDD for the PUK items.

This Business Use Case (BUC) describes the exchange of Part Demand Response data between Canada and the ISS Contractor for a platform managed according to PBC.

1.3 Intended Audience

The intended audience for this BUC includes:

- ISS Contractor who requires 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) that are described.
- 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

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2. BUC 3.42 Navy - Exchange Part Demand Response Data

This Business Use Case will identify processes and activities and define scenarios which apply to Part Demand Response data exchange.

2.1 Overview

Identifier	BUC 3.42
Name	Navy - Exchange Part Demand Response Data
Business goal	Receive Part Demand Response dataset from ISS Contractor as necessary to allow timely provisioning of materiel as required by Canada Authorized Person to complete maintenance activities.
Stakeholders	Canada and ISS Contractor(s)
Workflow/interaction	<p>Exchange of Part Demand datasets between Canada and ISS Contractor when:</p> <ul style="list-style-type: none"> • A part demand has been received by ISS Contractor • ISS Contractor is providing a part demand response to the part demand with an Expected Delivery Date • ISS Contractor is providing an updated Expected Delivery Date for an existing unfulfilled part demand. <p>Refer to the corrective and preventive maintenance business process flows that identify supply materiel touch-points. Reference [Ref. 2].</p>
Processes	<p>Information exchange is automated (system-to-system). The exchange is immediate upon a triggering event has occurred in the source system.</p> <p>Some error scenarios may require manual intervention.</p>
Context	<p>Business Domain: Supply Materiel</p> <p>Functional Area:</p> <ul style="list-style-type: none"> • Part Demand and Fulfillment • PUK Demand and Fulfillment
Period of Time	The full lifecycle of the subject platform.
Description	<p>When a work order (WO) is released in Canada Maintenance Management System (CMMS) or when a maintenance task or operation is added to the work order that requires an ISS Contractor-owned materiel, the system checks for availability of the materiel at Canada storage locations. If the required materiel is available at one of the Canada storage locations, a reservation will be created for the materiel. If the ISS Contractor-supplied materiel is not available at the storage locations, a Part Demand transaction for the required materiel is generated in CMMS and sent to the ISS Contractor via the EDE. If the ISS Contractor-supplied parts are available at Canada storage locations, and issuing</p>

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the part reduces Canada inventory below the established minimum inventory threshold, a Part Demand for the quantity required to reach the established maximum inventory threshold for that part is generated in the CSS.

In response, the ISS Contractor will respond to the part demand message by providing a near-real time Part Demand Response transaction via EDE. If demanded materiel(s) is immediately available, the Part Demand Response should state the current date. If not immediately available, the Part Demand Response will provide scheduled availability with an EDD and quantity. Any subsequent updates to scheduled EDD shall be sent from ISS Contractor to CSS via EDE for the total outstanding amount.

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

1. The CMMS/CSS and EDE systems shall ensure Part Demand Response dataset for a platform is received from the ISS Contractor system which is properly authenticated and authorized to send the maintenance and/or materiel data for that ship class.

2.4 Actors

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

Role Name	Role Description / Responsibilities
Canada Authorized person	<ul style="list-style-type: none"> • Creates and releases WO and manages the maintenance task list(s) on the WO, resulting in a parts request for unavailable ISS Contractor-supplied material. • Creates a demand for a PUK
ISS Contractor (ISS Contractor's Supply Chain Management System (SCMS))	Provides a system that will have the ability to: <ul style="list-style-type: none"> • accept and process Part Demand data sent from Canada • acknowledge acceptance of the data, and • provide response to Canada's Part Demand
CMMS / CSS	Receives and processes Part Demand Response data
EDE	Transports and transforms the Part Demand Response data

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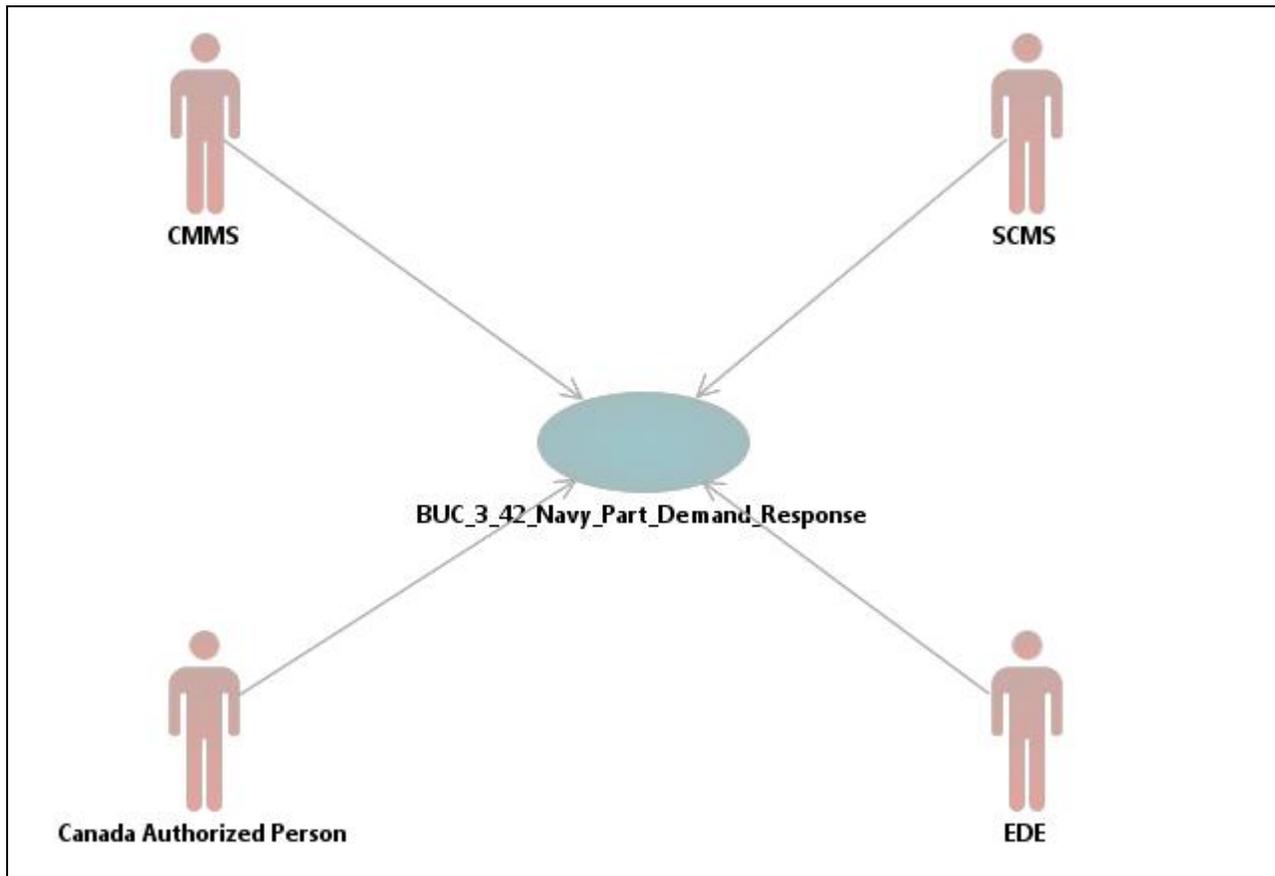


Figure 2-1 Navy - Exchange Part Demand Response Data

2.5 Common Pre-Conditions

These apply to every scenario unless explicitly stated otherwise:

1. Canada and ISS Contractor have agreed upon Part Demand Response dataset format (see [Functional Data Definition](#))
2. Canada and ISS Contractor have agreed upon near real-time exchange mechanism of Part Demand Response data

2.6 Common Post-Condition(s)

The following applies to every scenario unless explicitly stated otherwise:

1. Part Demand Response dataset has been received by Canada and an acknowledgement has been received by ISS Contractor.

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2.7 Common BUC Steps

Each scenario defined below includes the following common steps:

Common Steps	Step Description	Actor
Receive Part Demand Response dataset	The EDE receives a Part Demand Response transaction from an ISS Contractor.	EDE
Verify Part Demand Response dataset as per EDE standards	EDE verifies the data received from ISS Contractor.	EDE
Convert Part Demand Response dataset to common format	EDE converts data to XML-based format that has been adopted by Canada and ISS Contractor	EDE
Send Part Demand Response dataset to CMMS / CSS	EDE sends Part Demand Response dataset to CMMS / CSS, in accordance to transmission definition as per Canada EDE defined standard	EDE
Acknowledge Receipt of Part Demand Response dataset	CMMS/CSS acknowledges part demand response dataset from EDE.	CMMS / CSS
Send acknowledgement to ISS Contractor Data Consumer	EDE acknowledges to ISS Contractor the receipt of the part demand response data by Canada.	EDE

2.8 Scenarios²

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

² A scenario corresponds to a specific activity in the maintenance or supply materiel business processes when a triggering event occurs which causes a Part Demand / Response dataset exchange. Picture the maintenance or supply 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 or supply business process which may result in a Part Demandt / Response dataset being transferred from Canada to ISS Contractor and vice versa.

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2.8.1 3.42.1 Part Demand Response [N1.5.3.1.2]

Scenario Name	3.42.1 Part Demand Response [N1.5.3.1.2]		
Business Process	<p>This scenario occurs in the following Supply Materiel business processes:</p> <ul style="list-style-type: none"> Part Demand and Fulfillment PUK Demand and Fulfillment 		
Business Context	<p>Part Demand Responses are received from the ISS Contractor to CMMS / CSS, via the EDE, in response to the part demand being sent to the ISS Contractor.</p> <p>Part Demand and Fulfillment</p> <ul style="list-style-type: none"> The ISS Contractor will respond to the Part Demand by providing a near-real time Part Demand Response via the EDE. If the demanded parts are immediately available, the Part Demand Response should state the current date. If not immediately available, the Part Demand Response will provide scheduled availability with an EDD and quantity. Any subsequent updates to the scheduled EDD will be sent from the ISS Contractor to the CSS via the EDE. <p>PUK Demand and Fulfillment</p> <ul style="list-style-type: none"> The ISS Contractor will respond by sending a PUK Demand Response via the EDE using the common Part Demand Response interface indicating the EDD. 		
Precondition(s)	See Common Pre-Conditions .		
Trigger event	ISS Contractor has received and accepted a part demand or PUK demand from Canada.		
Steps	Step Name	Step Description	Actor
	Create Part Demand Response	ISS Contractor prepares a part demand response data based on the previously accepted part demand request.	ISS Contractor (SCMS)
	Send Part Demand Response	ISS Contractor sends Part Demand Response dataset to CMMS/CSS.	ISS Contractor (SCMS)
	Continue with Common BUC Steps		
Postcondition(s)	See Common Post-Conditions .		
Notes			

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2.9 Information Requirements

Each record has a primary key consisting of:

- CMMS Customer Identifier;
- Unique Canada Part Demand Identifier, i.e. Purchase Order Number;
- Demanded Part Identification Data (Line number)

In addition, each record consists of:

- Demanded Part Identification Data (MPN, CAGE);
- Quantity Demanded including unit of issue;
- Estimated Delivery Date;
- Scheduled Delivery Data (quantity per schedule), if demanded quantity is not immediately available.

2.10 Special Requirements

None identified.

3. Functional Data Definition³

The data elements which make up a Part Demand Response 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 Business Entity Definition – Part Demand Response

The Data Entities Definition Table 3-1 below contains 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.

Table 3-1 Data Entities Definition

Name	Definition	Type	Length
Customer Identifier	CMMS generated a unique identifier of the ISS Contractor. Note: This value is received in a part demand and replayed in the response message	Char	10
Purchase Order Number	CMMS internally generated Purchasing document item number identification per PO/demand.	Char	10
Comments	Open text field from the Delivery text segment of the Purchase Order header. (Additional instructions or notes for the Item Manager).	Char	120
Work Order Number	CMMS internally generated unique identifier of a Work Order for which demand is created. (not populated for Navy)	Char	12
Manufacturer Part Number (MPN)	Designated Manufacturer's Part Number (MPN) <i>Note:</i> Canada-supplied parts may have an MPN up to 34 characters in length ISS Contractor-supplied parts must have an MPN of 31 characters or less.	Char	34
CAGE Code	Commercial And Government Entity (CAGE) code number that uniquely identifies the manufacturer of the part or product, sometimes produced under government contract.	Char	5

³ This is a *functional* view of the data. A detailed schema including fields for parent/child structure, metadata to manage exchange with ISS Contractor, more specific types, etc. will be designed in a subsequent activity.

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BUC 3.42 Navy - Exchange
Part Demand Response Data

Name	Definition	Type	Length
Line Item Number	This number corresponds to CMMS originating PO line item number. A unique identifier for a specific demand quantity by part within a Part Demand.	Num	5
Total Quantity	The total quantity by MPN+CAGE Code for each Line Item Number.	Float	13,3
Unit of Issue	The Unit of Issue of the demanded quantity.	Char	3
Ship To Code	Location to ship the materiel to satisfy the demand. It is an enumerated field that shall be defined jointly by Canada and ISS Contractor. Each ship class / ISS Contractor may have differently agreed values for this field.	Char	4
Ship To Code Description	English description of the Ship To Code value.	Char	16
Estimated Delivery Date (EDD)	The Estimated Delivery Date (EDD) as determined by ISS Contractor. If part is issued and there are still outstanding quantities the EDD shall be provided for the outstanding quantities.	Datetime	
Estimated Delivery Quantity	Quantity estimated to be available for the materiel demand for that given EDD as determined by ISS Contractor	Float	13,3
Service Request Number	ISS Contractor generated number for unserviceable backshop repair to be performed by Canada.	Char	26

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4. Issues and Exceptions

None identified.

5. Business Process Flows

Refer to EIE Supply Materiel 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
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
WO	Work Order

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7. Document Control

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