Electronic Information Environment (EIE)

Service Specification Document/Interface Control Document

Navy Industry Data Exchange

Data Package Service - External

External – In the above context is intended to reflect that this content is for Industry partners who have been contracted to participate in an In-Service-Support phase of a Weapon System or Platform that the Department of National Defence has acquired

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Table of Contents

List of Figures

1   Introduction

This document establishes an interface between Canada Electronic Data Exchange (Canada EDE) system and Industry responsible for maintenance of a ship class subject to Performance Based Contracting (PBC). This interface will be used by Industry to send a request to Canada for download of a previously prepared package of business objects to Industry. Secondly, when the package of business objects is successfully saved in Industry's production system, this interface can be used by Industry to send a message to Canada confirming the data package was deployed.

To support the initiation of a data package transfer between Canada EDE and Industry, both systems need to support specific Web Service operations as well as request and response Extensible Markup Language (XML) schemas as described in this document.

1.1 Intended Audience

- Industry Partner System Designers

- Canada EDE Designers

- Industry Testers

- Canada EDE Testers.

1.2 References

[Ref. 1]   Business Process Catalogue Annex P: Navy Canada Maintenance Management System Data Initialization In Support of Performance Based Contracting (PBC)

[Ref. 2]   Electronic Information Exchange Service Interaction Model

[Ref. 3]   Electronic Information Environment Unit of Work Service Specification

[Ref. 4]   Master Data Initialization for Industry/IISC Service Operational Model

2 Business Information

Business Information is based on the EIE Business Process model for Data Initialization [Ref. 1].

According to PBC, Industry assumes the responsibility for Configuration Management (CM) of every Weapon System (WS) in a ship class. With this responsibility Industry must be certain of the consistency of Master Data between their source system and Canada's production system. This is particularly difficult as data packages may be very large (e.g., thousands of business objects on new WS delivery) and there is a high degree of inter-dependence between Master Data business objects.

Within Canada, maintenance business processes are supported by two types of information systems, known generically as:

- Canada Maintenance Management System (CMMS), and

- Canada Supply System (CSS).

Currently both functions are supported within Canada by the Defence Resource Management Information System (DRMIS).

2.1 Business Processes

This section provides a high level view of business processes to establish the role of the Data Package service.

When Canada has a data package ready to send to Industry a direct[1] communication will take place between Industry and Canada DND to advise Industry of the availability of a new data package and the identifier to be used to request the data. The identifier should be unique and meaningful to Canada. In typical usage the identifier is based on the purpose or scope of the data package. For example, a data package for delivery of a new WS may be identified with the WS identifier; a data package associated with an Engineering Change may be identified by an Engineering Change number.

Once Canada has advised Industry of the data package availability, then Canada must be prepared to actually send the data package at any time. When Industry is ready to receive the data package the Class Program Manager (or authorized official) initiates the download.

Upon receipt of a download request, Canada must begin to send the content of the data package within an agreed *business response time* (see Section 5.2). The content consists of various business objects sent using the usual EIE services defined for various exchange types. Typically, the data package is sent as a single Unit of Work (see [Ref. 3]). On successful completion of the download by Industry and confirmation the data package is deployed to Industry's production system, Industry advises Canada EDE of the fact. If the download from Canada EDE does not begin within the business response time Industry may re-request the data package.

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[1] Phone, fax, email, etc., but not through Canada EDE services.

This service is designed to be generic to support Industry data packages without limitation to Master Data business processes.

For any business process which sends business objects in a data package the message operating model document for the business process should specify the required behaviour when message faults occur during exchange of business objects. For example, if a business object in a data package fails schema validation, would the process allow for the business subject to be fixed (possibly manually) or re-generated and re-sent as part of the same data package? Questions such as this should be addressed in the domain specific message operating model.

2.2   Business Triggers

As per the EIE Business Process model for Data Initialization [Ref. 1], the following business events may result in a Data Package request being sent to Canada EDE:

3   The ISS Contractor initiates a Master Data demand request for a ship Business Constraints

Terminology

The input to the service is a **Data Package message** which consists of a single *"business object"* (the Data Package identifier) and metadata (e.g., message header) required for correct message processing between Canada and Industry.

Constraints on *Usage* of the Service

1) The Canada EDE Data Package service shall only be invoked by the Industry System. Canada DND systems shall ensure the Data Package for a WS is sent only to the Industry system which is properly authenticated and authorized to see maintenance and materiel data for that Ship Class.

2) Data Package messages will be signed using digital certificates between Canada EDE and Industry. Please see Service Interaction Model [Ref. 2] for details.

3) The Data Package identifier can be set to any unique value which is meaningful to Canada EDE. The Data Package service has no dependency on particular values of formats.

4) For periodic requests the Data Package identifier may be a date (with an optional prefix[2]) which is a request for accumulated data to that date. The format should be '[prefix] YYYYMMDD'.

5) If Industry requests the same Data Package identifier more than once, the data package content must be identical for all requests.

6) A business object may only be in one data package.

Constraints on *Behaviour* of the Service

7) The Data Package service shall operate in near-real time.

8) Canada EDE will hold the data package until Industry downloads it or until a mutually agreed expiration time.

9) Canada EDE will authorize invocations of operations of the Data Package service.

10) Canada EDE does not guarantee that Data Package request messages will be sent to the Industry in the same order they were created.

11) Canada EDE will report any business processing errors through the Data Package Error operation exposed by Industry using a distinct and separate invocation.

12) Canada does **not** expect to report successful conclusion of business processing of the Data Package request, other than the creation of a unit of work and/or commencement of sending business objects to Industry as per the Unit of Work Service Specification [Ref. 3].

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[2] Canada and Industry may agree on a prefix to be used in periodic requests.

13) Industry may attempt to repeat operation invocations in response to technical faults. This behaviour is controlled by parameters for each operation. Please see Service Interaction Model [Ref. 2] for details.

4   Service Use Case

The requirements for the Data Package service are defined by one use case with several scenarios.

This use case describes the steps in sending the data package request to Canada EDE. Subsequent sending of the data package to Canada is described in the Unit of Work Service Specification [Ref. 3] and service specifications for the particular exchange types.

4.1   Service Context

A high level view of the context of the service is shown in Figure 4-1 below. For simplicity this view omits error scenarios. These are discussed in the section 'Alternate Scenarios' below.
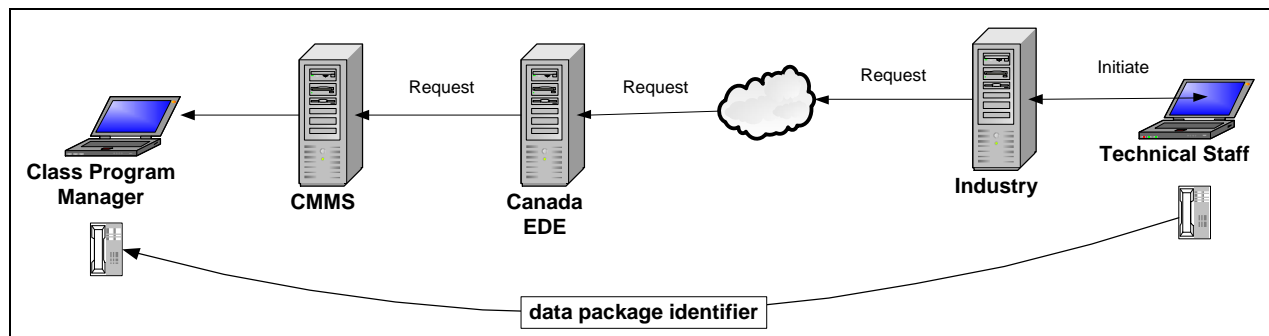

Figure 4-1 Data Package Request Service Context

The following steps occur:

- Class Program Manager (CPM) create a new Data Package.
- Class Program Manager (CPM) advises Industry through direct communication[3] of the availability of a data package and its Data Package identifier.
- Industry initiates, through EDE, transfer of the Data Package to Industry.
- Canada EDE sends a technical response to acknowledge receipt of the Data Package request.

For the confirmation of deployment of the data package the context is the same as per the request, but confirmation is always for a previously requested data package identifier.

The "technical response" referred to above either (*i*) confirms a party in the exchange has accepted a message for further processing, or (*ii*) contains a fault message. A technical acceptance does not preclude subsequent "business" errors. Error scenarios are described below.

Business errors are handled with direct communication between the CPM and Industry technical staff.

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[3] Phone, email, fax, …

4.2   Successful Request and Technical Response

This is the main or "Happy Day" scenario. This scenario describes the interaction between Canada EDE and Industry for the Data Package Service. Figure 4-2 presents the data package request main flow sequence diagram.

Figure 4-2 Data Package Request Main Flow

Main Flow	
Scenario	"Happy Day:" Industry successfully sends Data Package request to Canada EDE.
Pre-Condition	CPM has advised Industry of the availability of new Data Package. Industry has initiated request.
Post-Condition	Data Package request successfully received by Canada EDE.
Steps	1) Industry invokes SendDataPackageRequest() operation passing Data Package ID as previously supplied by Canada (See Input Body definition.) Canada EDE validates the message. (Validation and error handling details are internal to Canada.) 2) Canada EDE initiates "Type 1" validation. In this scenario there is no error. Canada EDE accepts custody of the Data Package request. 3) Canada EDE returns to Industry a "success" technical response for the SendDataPackageRequest () operation. (See Output Body definition.) **After some period of time, after the data package is downloaded and if it is successfully deployed by Industry, the following steps occur.** 1) Industry invokes SendDataPackageDeployed() operation passing Data Package ID as deployed (See Input Body definition.) Canada EDE validates the message. (2) Canada EDE initiates "Type 1" validation. In this scenario there is no error. Canada EDE accepts custody of the Data Package request. 3) Canada EDE returns to Industry a "success" technical response for the SendDataPackageDeployed () operation. (See Output Body definition.)

Any errors occurring **during** the download of the data package itself would be handled by the services being used for the business objects in the data package.

It is possible that when Industry requests data Canada EDE may not have any data to send. This could occur on a periodic request for accumulated data when there has not been any data accumulated. This is a valid business outcome and not an error.

Figure 4-3 represents the flow.

Figure 4-3 Data Package Request – No Data

Main Flow – No Data	
Scenario	Industry successfully sends Data Package request to Canada EDE and Canada has no data to provide.
Pre-Condition	Industry has initiated a request .
Post-Condition	Data Package request successfully received by Canada EDE. Canada advises Industry the data package requested is empty.

Steps	1) Industry invokes SendDataPackageRequest() operation passing Data Package ID as supplied by Canada EDE.
	2) Canada EDE initiates "Type 1" validation. In this scenario there is no error. Canada EDE accepts custody of the Data Package request.
	3) Canada EDE returns to Industry a "success" technical response for the SendDataPackageRequest () operation. (See Output Body definition.)
	If Canada determines the requested data package is empty, the following steps occur.
	1) Canada EDE invokes SendDataPackageStatusUpdate() operation passing Data Package ID and a status value (See Input Body definition.) Industry validates the messageIndustry initiates "Type 1" validation. In this scenario there is no error. Industry accepts custody of the Data Package Status Update.
	2) Industry returns to Canada EDE a "success" technical response for the SendDataPackageStatusUpdate() operation. (See Output Body definition.)

In the event of a "Type 1" fault in the SendDataPackageStatusUpdate() operation invocation direct communication can occur to co-ordinate on the data package request status.

4.3 Alternate Scenarios

The Data Package Alternate Flow 1 with Type 1 Error sequence diagram is shown in Figure 4-4. The following scenarios are written in terms of the Data Package Request operation – for Data Package Deployed the behaviour is the same.

Alternate scenario 1 applies to Type 1 errors - namely those errors detected prior to the service provider accepting custody of a message.

For the Data Package service the only "business" error (Type 2) is if Canada cannot find a data package with the requested Data Package identifier.

- Invalid Data Package ID - no data package exists for the given Data Package ID.

For Data Package Request only:

- Data Package Closed - the given Data Package ID has already been used or has expired.

Please see Service Interaction Model [Ref. 2] for details on Type 1 and Type 2 errors.

Figure 4-4 Data Package Alternate Flow 1 with Type 1 Error

Alternate Flow 1	
Scenario	Type 1 Errors detected by Canada EDE prior to accepting custody of the message. Detailed specification of Type 1 errors are in Service Interaction Model [Ref. 2].
Pre-Condition	Same as Main Flow.
Post-Condition	Industry and Canada personnel communicate directly to resolve error(s) and initiate a new request.
Steps	1) Industry invokes SendDataPackageRequest() operation passing Data Package ID as previously supplied by Canada EDE. Industry validates the message. Canada EDE initiates "Type 1" validation. Canada EDE finds an error. Canada EDE does not accept custody of the Data Package request. 2) Canada EDE returns to Industry a "fault" technical response for the SendDataPackageRequest () operation. (See Fault Body definition.)

The Type 2 Error in Data Package Message Flow sequence diagram is shown in Figure 4-5.
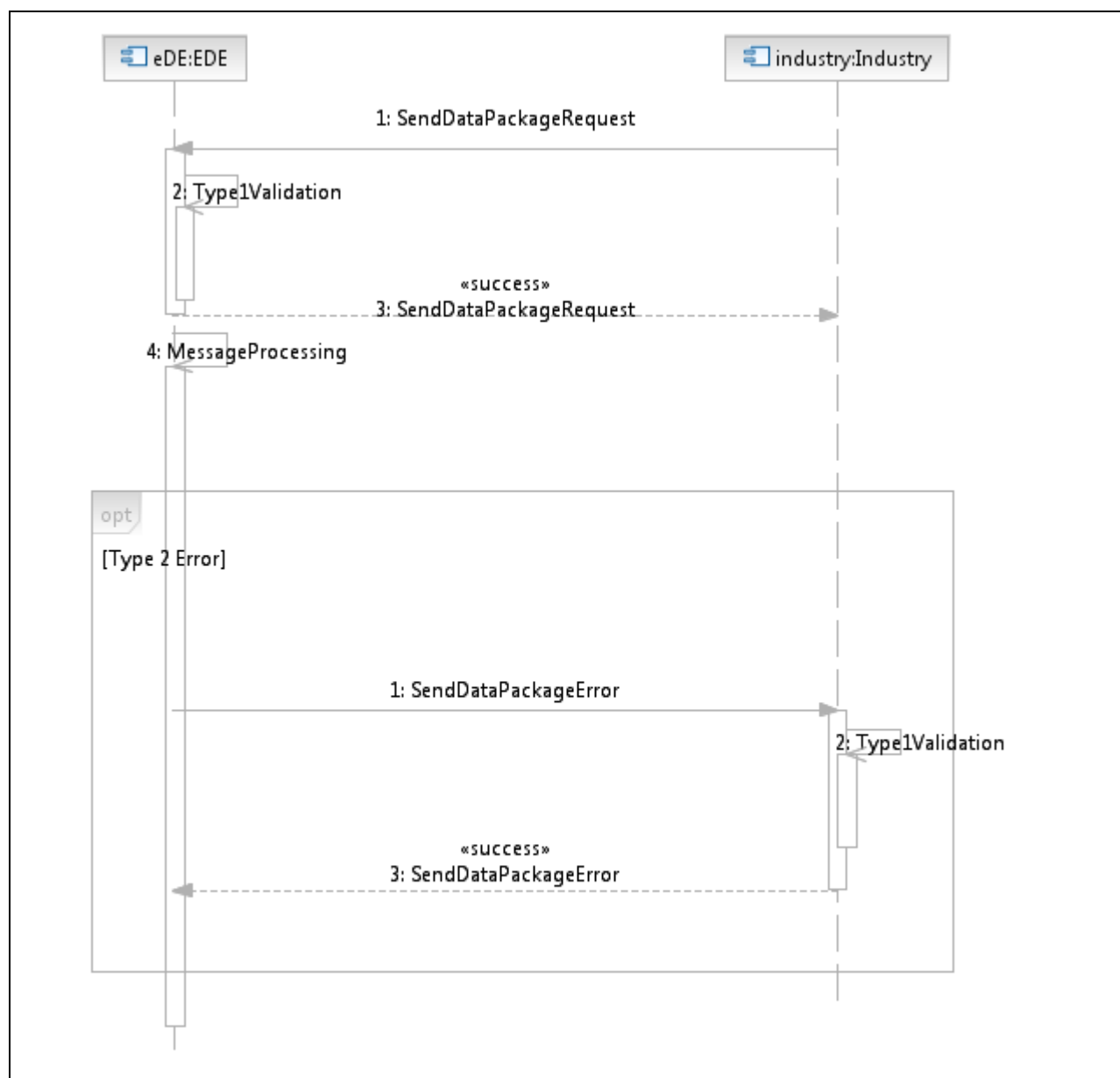
Figure 4-5 Type 2 Error in Data Package Message Flow

Alternate Flow 2	
Scenario	Internal processing detects Type 2 Error.
Pre-Condition	Same as Main Flow.

Post-Condition	Canada EDE sends error message to Industry.
	Industry and Canada communicate directly to resolve error and initiate a new request.
Steps	1) Industry invokes SendDataPackageRequest() operation passing Data Package ID as previously supplied by Canada EDE (See Input Body definition.) Canada EDE validates the message.
	2) Industry invokes Canada EDE SendDataPackageRequest() operation.
	3) Canada EDE initiates "Type 1" validation. In this scenario there is no error. Canada EDE accepts custody of the Data Package request.
	4) Canada EDE returns to Industry a "success" technical response for the SendDataPackageRequest () operation. (See Output Body definition.)
	Canada detects a Type 2 error.
	1) Canada EDE invokes 'SendDataPackageError()' operation onIndustry. Canada EDE waits for technical response. (See Error Input Body definition.)
	2) Industry returns a "success" technical response to Canada EDE.

Alternate Flow 3 (Canada EDE Service unresponsive)	
Scenario	Industry does not receive technical response within ACK_TIME_INTERVAL.
Pre-Condition	Industry has invoked the SendDatapackageRequest() operation but does not receive the technical response within the time specified for the service.
Post-Condition	Industry marks the message as Dead Message.
Steps	1) Industry does not receive any response from Canada EDE within the allowed ACK_TIME_INTERVAL.
	2) Industry will retry sending the message up to the defined maximum retry count and/or Time to Live interval.
	3) If there is no response, then Industry marks the request message as Dead and handles it via the Dead Message protocol (See Service Interaction Model [Ref. 2]).

5 Service Description – Data Package Service

5.1 Service Overview

Data Package service requires interacting web services exposed by Canada EDE System and Industry. Canada EDE will implement and expose a service and two operations:

- One operation which Industry will use to send the Data Package Request message to Canada EDE.
- A second operation which Industry will use to send the Data Package Deployed message to Canada EDE.
- An error operation which Canada EDE may use to send an error message to Industry if a Type 2 error is found.

After receipt of either type of input message, Canada EDE will return a technical response back to Industry.

Successful processing by Canada EDE of the Data Package request is closely followed by creation of a Unit of Work, and/or by messages with business objects. The normal sequence of messages provides implicit positive acknowledgement of the correctness of a Data Package request. Therefore there is no explicit Data Package Acknowledgement operation.

Message interaction is further described in Service Interaction Model [Ref. 2].

5.2 Service Properties

Service Property	Description
Enterprise Service Name (Business)	Data Package Service
Enterprise Service Name (Technical)	DataPackageService_Industry
Purpose	This service supports the requesting of a package of data that contains multiple business object types and are required by Industry and provided by Canada. On successful deployment to Industry systems of the delivered data package, Industry will inform Canada EDE as per the deployed status.
Business Response Time Interval	Nominal value is 2 hours – to be confirmed between Canada and Industry on a per-ship class basis.
Service Domain	Cross Domain
Business Owner	ADM (IM)
Service Grouping	Cross Domain / Data Package

Service Property	Description
Service Provider	Canada EDE
Target Service Consumers	Industry
Business Process Supported (now)	Master Data processes: • Send Master Data to ISS Contractor
Business Process Supported (future)	None currently identified.
Business Objective Supported	See Section 2: Business Information.
Expected life time	The full lifecycle of the subject weapons system.

5.3 'SendDataPackageRequest()' Operation

This operation is used by Industry to send a Data Package Request input message to Canada EDE. Canada EDE's implementation of this operation will perform Type 1 validation on the Data Package Request message. Canada EDE will return a status or fault information to Industry in a technical response. If the status is "**success**", Canada EDE accepts custody of the message for further processing. Any returned fault implies Canada EDE does **not** accept the message and error processing (as per Section 4.3 Alternate Flow 1) is performed.

5.4 'SendDataPackageDeployed()' Operation

This operation is used by Industry to send a Data Package Deployed input message to Canada EDE. Canada EDE's implementation of this operation will perform Type 1 validation on the Data Package Deployed message. Canada EDE will return a status or fault information to Industry in a technical response. If the status is "**success**", Canada EDE accepts custody of the message for further processing. Any returned fault implies Canada EDE does **not** accept the message and error processing (as per Section 4.3 Alternate Flow 1) is performed.

5.5 'SendDataPackageError()' Operation

This operation is used by Canada EDE to send an error message to Industry after internal message processing detects a Type 2 error condition (see Service Interaction Model [Ref. 2]). The specific Data Package identifier which is in error is identified in the business identifier (see Section 7) input to the operation. Industry's implementation of this operation will perform Type 1 validation on the error message. Industry will return a technical response to Canada.

5.6 'SendDataPackageStatusUpdate()' Operation

This operation is used by Canada EDE to send to Industry an update to status of a data package request. At this time the only status update is to indicate a status of "Empty". Any future addition of status values

will be managed as reference data. Industry's implementation of this operation will perform Type 1 validation on the error message. Industry will return a technical response to Canada.

6   Information Model

This section describes the **business objects** which are used in the Data Package service.

Note that all date or time values must be in **Coordinated Universal Time (UTC).** If an explicit time zone offset is not provided it is assumed to be zero.

The XML Schema is the authoritative source for purpose of the information exchange.

6.1   Data Package Request

A Data Package business object is used to describe the requested data package, as shown in Figure 6-1. The DataPackageIdentifier attribute is the value previously communicated to Industry by Canada EDE. The RequestTime is the time of the business trigger. Note the same DataPackageRequest objects are used in both SendDataPackageRequest() and SendDataPackageDeployed() operations.
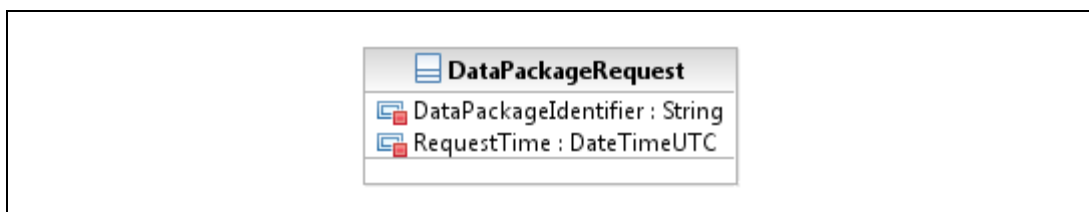

Figure 6-1 Information Model –Data Package Request

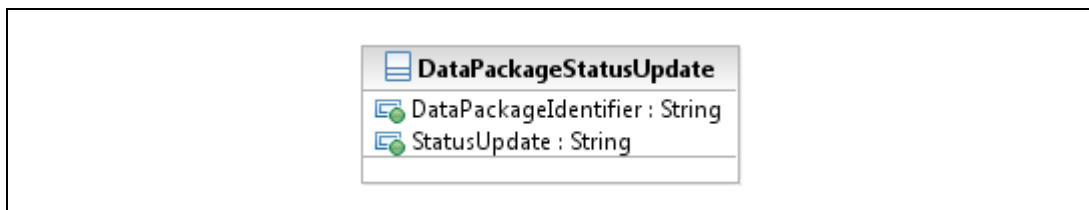For a status update the input business object is shown in Figure 6-2.

Figure 6-2 Information Model –Data Package Status Update

7 Operation Message Model

This section describes how the business objects described above (Section 6 Information Model) are aggregated for the purpose of PBC information exchange.

The Data Package service follows the request/response model and each operation definition includes an input, output and fault message. See Service Interaction Model [Ref. 2] for definition of the common MessageHeader element.

Note that all date or time values must be in **Coordinated Universal Time (UTC).** If an explicit time zone offset is not provided it is assumed to be zero.

7.1 Data Package Request and Deployed Input Body

As shown in Figure 7-1, a Data Package input body consists of:

- A Message Header;
- A Security Block;
- A Data Package business object.

The same Data Package input body type is used for both SendDataPackageRequest() and SendDataPackagCanadaDeployed() operations.

Figure 7-1 Data Package Input Body

The MessageHeader UnitofWorkID and Correlation ID are not required for input message.

The Data Package InputBody also contains an attribute "Release" which designates the release of the Data Package InputBody and the Data Package service. The "Release" attribute appears in every instance of the InputBody to allow any input body instance to be traced back to the appropriate release. A "Release" attribute also appears in output and fault message bodies.

7.2   Data Package Output Body

The output of the Data Package service's operations is the Data Package OutputBody. As shown in Figure 7-2, the output body consists of:

- A Message Header;
- A Custody object.

The same Data Package output body is used for both SendDataPackageRequest() and SendDataPackagCanadaDeployed() operations.

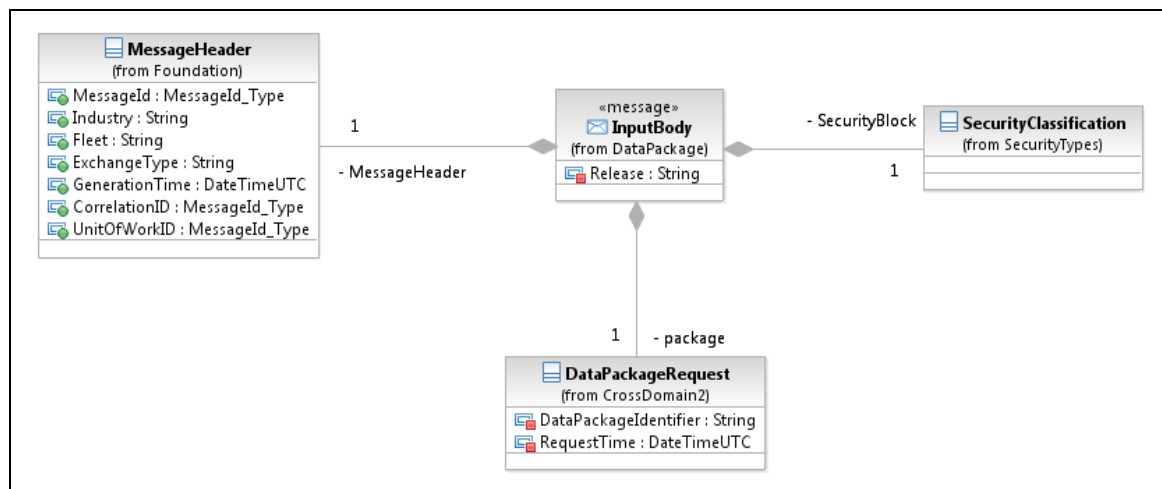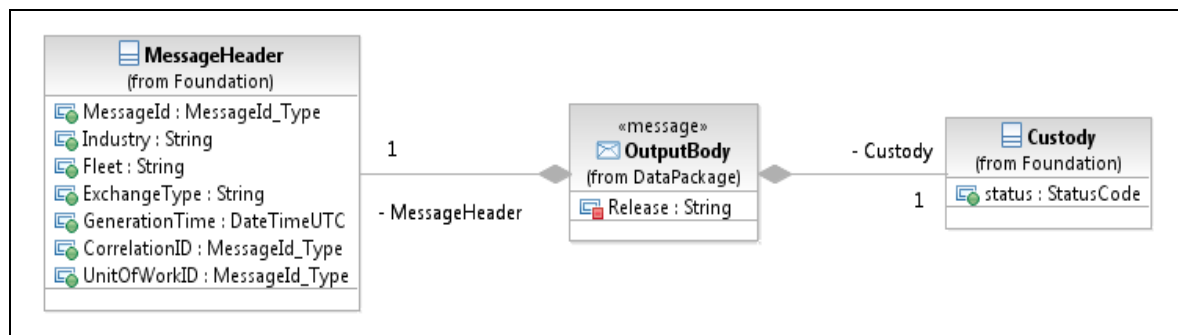**Figure 7-2 Data Package Output Body**

For a Data Package OutputBody:

- The MessageHeader Message Id is a new unique value;
- The MessageHeader Correlation ID is set to the MessageID of the Data Package Input Body;
- The MessageHeader Exchange Type must be set to the Exchange Type of the Data Package InputBody;
- The value of the Custody status field is "success".

7.3   Data Package Fault Body

A fault returned by the Data Package service's operations uses the Data Package FaultBody element. As shown in Figure 7-3, the Data Package FaultBody consists of:

- A Message Header;
- A Security Block;
- A FaultBlock.

If the system cannot determine a Business Identifier, then this is omitted. To report faults on more than one business object, extra fault blocks can be included in the fault message.

The same Data Package fault body is used for both SendDataPackageRequest() and SendDataPackagCanadaDeployed() operations.
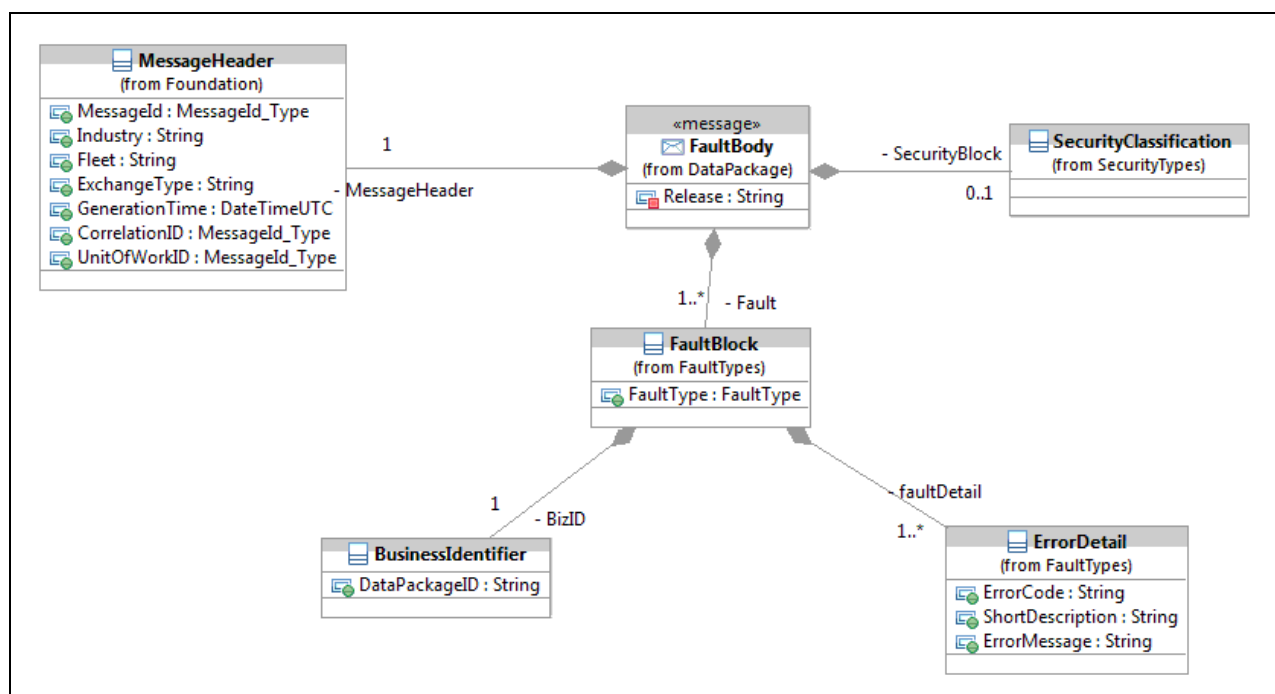
Figure 7-3 Data Package Fault Body

MessageHeader is mandatory, but only MessageID and GenerationTime are mandatory within the header. This is for the scenario where the input message is so damaged that the necessary attributes cannot be found.

If a Message Header is present, it has a new unique Message Id and the Correlation ID is set to the Message Id of the Data Package Input Body – whenever the initial Message ID is available.

7.4   Data Package Error Input Body

The input to the SendDataPackageError() operation consists of a Message Header, a Security Block and a list of Error Blocks, as shown in Figure 7-3. Each Error Block references a business object (by business identifier) and a list of one or more errors pertaining to the business object.
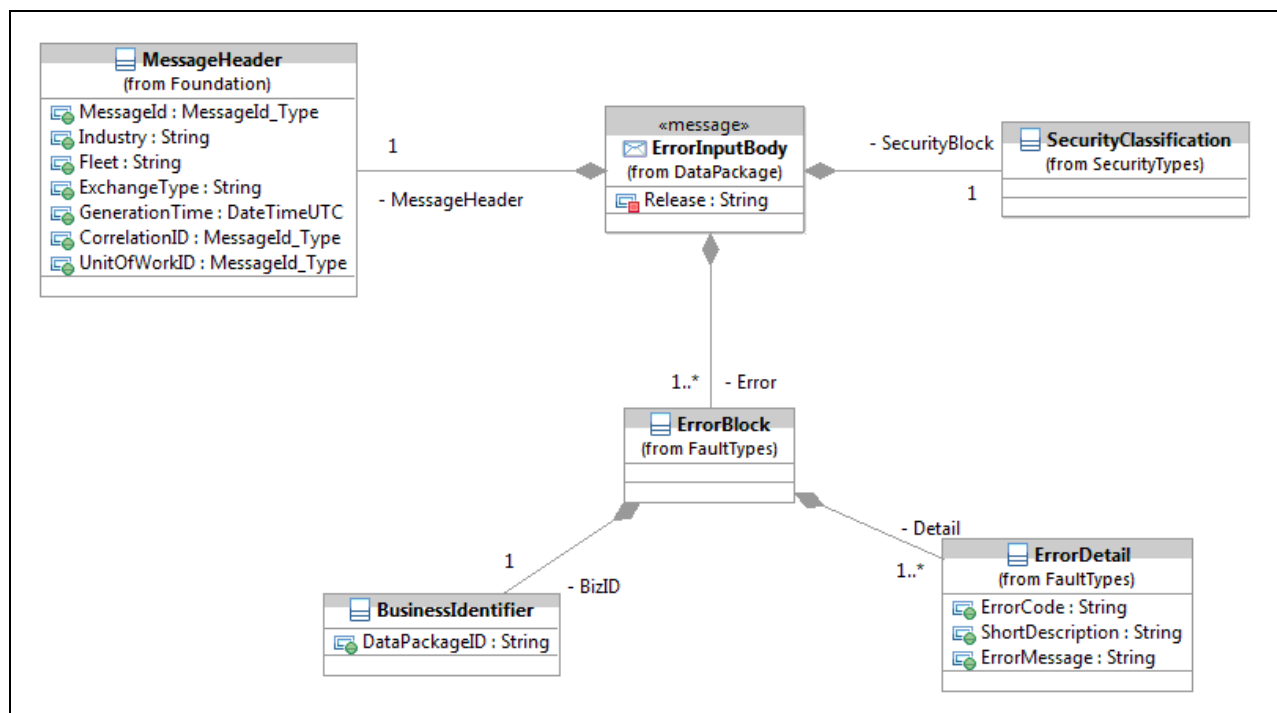
Figure 7-4 Data Package Error Input Body

MessageHeader and SecurityClassification are mandatory as in this scenario (after Type 1 validation has passed) the input message is well-formed. UnitOfWorkID is not used.

The Message Header has a new unique Message ID.

If the error is a Type 2 error detected by Industry, then the Correlation ID and are set based on the Message Header of the Data Package Input Body for which the errors are being reported.

If the error is a Business error from Canada EDE, then the Correlation ID and UnitOfWorkID are omitted.

7.5   Data Package Status Update Input Body

The input to the SendDataPackageStatusUpdate() operation consists of a Message Header, a Security Block and a status update object, as shown in Figure 7-5.
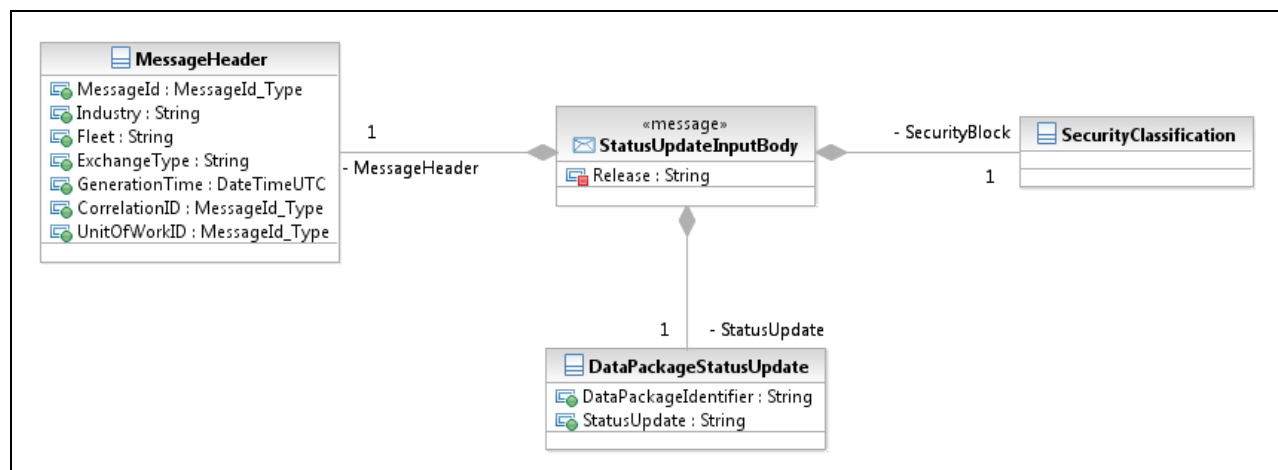
Figure 7-5 Data Package StatusUpdate Input Body

MessageHeader and SecurityClassification are mandatory. The Message Header has a new unique Message ID. Correlation ID and UnitOfWorkID are not used.

8 Service Operation Details

8.1 Detailed Operation Characteristics – SendDataPackageRequest()

Industry will invoke the exposed Canada EDE Data Package service through this operation. The input will consist of a Data Package InputBody (as above).

Please refer to Service Interaction Model [Ref. 2] for definitions of the terminology used in the non-functional requirements section.

Please refer to Data Package wsdl files for implementation details.

Detailed Operation Characteristics

Interface Definition	Description
Operation Name	Send Data Package Request
Operation Technical Name	SendDataPackageRequest()
Operation Description	This operation is invoked by Industry to initiate a subsequent transfer of a data package of multiple business objects from Canada EDE to Industry.
Target Operation Provider	Canada EDE
Target Operation Consumer	Industry
Properties	*Request/Response* message exchange pattern.
Input Message Definition	Please refer to Operation Message Model Section 7.1 Data Package Input Body for details.
Output Message Definition	Please refer to Operation Message Model Section 7.2 Data Package Output Body for details.
Fault Definition	Please refer to Section 7.3 Data Package Fault Body for details. Please refer to Service Interaction Model [Ref. 2] for Type 1 faults.

Non Functional Requirements

Non Functional Requirements/Technical Details	
Frequency	A-periodic
Peak Throughput Time	Regular business hours of the Main Operating Base (MOB).
Peak Throughput Volume	Likely less than ten per week.
Payload Size	1kB.
Attachments	None

Non Functional Requirements/Technical Details	
Attachment Size	N/A
ACK Time Interval	Nominal value is 2 minutes – to be confirmed between Canada and Industry on a per-ship class basis.
Retry Time Interval	Nominal value is 10 minutes – to be confirmed between Canada and Industry on a per-ship class basis.
Number of Retries	Nominal value is 3 retries – to be confirmed between Canada and Industry on a per-ship class basis.
Biz. Response Time Interval	N/A
Time to Live Span	Nominal value is 8 hours – to be confirmed between Canada and Industry on a per-ship class basis.
Service Op Availability	During core processing hours. The specific period will be defined during later phases of service realization 95% available uptime is the goal of the service
Downtime Requirements	The service cannot be used during established maintenance windows, which is currently expected to be for about 2 hours per week. The unavailability window may be accumulated and invoked during major maintenance periods, but ensuring that the overall availability of the service is still maintained.
Dead Message Handling	Alternative communication channel applies to report that this operation is not available when Canada EDE cannot successfully send Data Package business objects to Industry. See Service Interaction Model [Ref. 2].

8.2 Detailed Operation Characteristics – SendDataPackageDeployed()

Industry will invoke the exposed Canada EDE Data Package service through this operation. The input will consist of a Data Package InputBody (as above).

Please refer to Service Interaction Model [Ref. 2] for definitions of the terminology used in the non-functional requirements section.

Please refer to Data Package wsdl files for implementation details.

Detailed Operation Characteristics

Interface Definition	Description
Operation Name	Send Data Package Deployed
Operation Technical Name	SendDataPackageDeployed()

Interface Definition	Description
Operation Description	This operation is invoked by Industry to confirm the business objects in a data package have been deployed to Industry's Production system.
Target Operation Provider	Industry
Target Operation Consumer	Canada EDE
Properties	*Request/Response* message exchange pattern.
Input Message Definition	Please refer to Operation Message Model Section 7.1 Data Package Input Body for details.
Output Message Definition	Please refer to Operation Message Model Section 7.2 Data Package Output Body for details.
Fault Definition	Please refer to Section 7.3 Data Package Fault Body for details. Please refer to Service Interaction Model [Ref. 2] for Type 1 faults.

Non Functional Requirements

Non Functional Requirements/Technical Details	
Frequency	A-periodic
Peak Throughput Time	tbd.
Peak Throughput Volume	Likely less than ten per week.
Payload Size	1kB.
Attachments	None
Attachment Size	N/A
ACK Time Interval	Nominal value is 2 minutes – to be confirmed between Canada and Industry on a per-ship class basis.
Retry Time Interval	Nominal value is 10 minutes – to be confirmed between Canada and Industry on a per-ship class basis.
Number of Retries	Nominal value is 3 retries – to be confirmed between Canada and Industry on a per-ship class basis.
Biz. Response Time Interval	N/A
Time to Live Span	Nominal value is 8 hours – to be confirmed between Canada and Industry on a per-ship class basis.

Non Functional Requirements/Technical Details	
Service Op Availability	During core processing hours. The specific period will be defined during later phases of service realization 95% available uptime is the goal of the service
Downtime Requirements	The service cannot be used during established maintenance windows, which is currently expected to be for about 2 hours per week. The unavailability window may be accumulated and invoked during major maintenance periods, but ensuring that the overall availability of the service is still maintained.
Dead Message Handling	Alternative communication channel applies to report that this operation is not available when Canada EDE cannot successfully send Data Package business objects to Industry. See Service Interaction Model [Ref. 2].

8.3 Detailed Operation Characteristics – SendDataPackageError()

Canada EDE will use this operation to inform Industry of errors detected in internal processing.

Please refer to DataPackage WSDL files for implementation details.

Detailed Operation Characteristics

Interface Definition	Description
Operation Name	Send Data Package Error
Operation Technical Name	SendDataPackageError()
Operation Description	This operation is invoked by Canada EDE to send one or more DataPackage errors to Industry.
Target Operation Provider	Industry
Target Operation Consumer	Canada EDE
Properties	*Request/Response* message exchange pattern.
Input Message Definition	Please refer to Operation Message Model Section 7.4 Data Package Error Input Body for details. Please refer to Service Interaction Model [Ref. 2] for Type 2 faults for the error inputs which may be sent in this operation.
Output Message Definition	Please refer to Operation Message Model Section 7.2 Data Package Output Body for details.

Interface Definition	Description
Fault Definition	Please refer to Section 7.3 Data Package Fault Body for details. Please see Service Interaction Model [Ref. 2] for faults which may be returned by this operation.

Non Functional Requirements

Non Functional Requirements/Technical Details	
Frequency	Same as SendDataPackageRequest() operation. Worst case is one error per data package request.
Peak Throughput Time	Same as SendDataPackageRequest () operation.
Peak Throughput Volume	Same as SendDataPackageRequest () operation.
Payload Size	5KB – estimated for one ErrorBlock with one BizID and two ErrorMessage's
Attachments	None
Attachment Size	N/A
ACK Time Interval	Nominal value is 2 minutes – to be confirmed between Canada and Industry on a per-ship class basis.
Retry Time Interval	Nominal value is 10 minutes – to be confirmed between Canada and Industry on a per-ship class basis.
Number of Retries	Nominal value is 3 retries – to be confirmed between Canada and Industry on a per-ship class basis.
Biz. Response Time Interval	N/A
Time to Live Span	60 minutes.
Service Op Availability	During core processing hours. The specific period will be defined during later phases of service realization 95% available uptime is the goal of the service
Downtime Requirements	The service cannot be used during established maintenance windows, which is currently expected to be for about 2 hours per week. The unavailability window may be accumulated and invoked during major maintenance periods, but ensuring that the overall availability of the service is still maintained.

Non Functional Requirements/Technical Details	
Dead Message Handling	Alternative communication channel applies to report that this operation is not available when Canada EDE cannot successfully send MMR business objects to Industry. See Service Interaction Model [Ref. 2].

8.4 Detailed Operation Characteristics – SendDataPackageStatusUpdate()

Canada EDE will use this operation to inform Industry when a requested data package is empty[4].

Please refer to DataPackage WSDL files for implementation details.

Detailed Operation Characteristics

Interface Definition	Description
Operation Name	Send Data Package Status Update
Operation Technical Name	SendDataPackageStatusUpdate()
Operation Description	This operation is invoked by Canada EDE to send a DataPackage status update to Industry.
Target Operation Provider	Industry
Target Operation Consumer	Canada EDE
Properties	*Request/Response* message exchange pattern.
Input Message Definition	Please refer to Operation Message Model Section 7.5 Data Package Error Input Body for details. Please refer to Service Interaction Model [Ref. 2] for Type 2 faults for the error inputs which may be sent in this operation.
Output Message Definition	Please refer to Operation Message Model Section 7.2 Data Package Output Body for details.
Fault Definition	Please refer to Section 7.3 Data Package Fault Body for details. Please see Service Interaction Model [Ref. 2] for faults which may be returned by this operation.

Non Functional Requirements

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[4]When further status values are determined they will be managed as reference data.

Non Functional Requirements/Technical Details	
Frequency	Same as SendDataPackageRequest() operation. Worst case is every data package request is empty.
Peak Throughput Time	Same as SendDataPackageRequest() operation.
Peak Throughput Volume	Same as SendDataPackageRequest() operation.
Payload Size	2KB – estimated for one status update
Attachments	None
Attachment Size	N/A
ACK Time Interval	Nominal value is 2 minutes – to be confirmed between Canada and Industry on a per-ship class basis.
Retry Time Interval	Nominal value is 10 minutes – to be confirmed between Canada and Industry on a per-ship class basis.
Number of Retries	Nominal value is 3 retries – to be confirmed between Canada and Industry on a per-ship class basis.
Biz. Response Time Interval	N/A
Time to Live Span	60 minutes.
Service Op Availability	During core processing hours. The specific period will be defined during later phases of service realization 95% available uptime is the goal of the service
Downtime Requirements	The service cannot be used during established maintenance windows, which is currently expected to be for about 2 hours per week. The unavailability window may be accumulated and invoked during major maintenance periods, but ensuring that the overall availability of the service is still maintained.
Dead Message Handling	Alternative communication channel applies to report that this operation is not available when Canada EDE cannot successfully send business objects to Industry. See Service Interaction Model [Ref. 2].

8.5   Service Bindings

8.5.1   SOAP Over http

The implementation of this service will use a Simple Object Access Protocol (SOAP) binding with document style messages and http transport.

The business objects (Section 6) are bound to the SOAP Body element. The SOAP Header is used for EIE adopted WS-* standards-based elements (e.g., WS_Security assertions) and, typically, MessageHeader elements. See the Data Package Service WSDL file for the precise binding.

In this binding the http response is used for each operation's technical response (i.e., output or fault messages).

8.5.2 SOAP Over JMS

Not currently supported.

8.5.3 XML files via SFTP

As an interim measure while an industry partner implements their web service infrastructure, Canada EDE supports sending XML files to a secure DND SFTP site for Industry consumption.

9 Definitions, Acronyms, Abbreviations

Term	Description
CM	Configuration Management
CMMS	Canada Maintenance Management System
CPM	Class Program Manager
CSS	Canada Supply System
DND	Department of National Defence
DRMIS	Defence Resource Management Information System
EDE	Electronic Data Exchange
EIE	Electronic Information Environment
ISS	In Service Support
ISSCF	In Service Support Contracting Framework
MOB	Main Operating Base
PBC	Performance based Contracting
PKI	Public Key Infrastructure
SOAP	Simple Object Access Protocol
UTC	Coordinated Universal Time
WS	Weapon System
WSDL	Web Service Definition Language
XML	Extensible Markup Language

10   Document History

Revision Number	Description	Date
1.0	Ready for Navy RFP	10 November 2015