

Electronic Information Environment (EIE)

Service Specification Document/Interface Control Document

Navy Part Return Receipt – External

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

EIE Project

document identification	identifrier du document
issue date	date de diffusion 22 September 2015
version	version 1.0
OPI designator	BPR BPR EIE Solution Office designation EIE Project
group / division	groupe / division ADM(IM) / DGEAS

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.



Table of Contents

1	Introduction.....	1
1.1	Intended Audience.....	1
1.2	References	1
2	Business Information.....	2
2.1	Business Processes.....	2
2.2	Business Triggers.....	2
2.3	Business Error Processing	3
3	Business Constraints.....	4
4	Service Use Case.....	5
4.1	Service Context	5
4.2	Successful Request and Technical Response	6
4.3	Alternate Scenarios.....	7
5	Service Description – Part Return Receipt Service	11
5.1	Service Overview	11
5.2	Service Properties	11
5.3	Service Operations.....	12
5.4	Message Interaction	12
6	Information Model	13
6.1	Purchase Order	13
7	Operation Message Model.....	15
7.1	Part Return Receipt Message Constructs	15
7.2	Part Return Receipt Error Message Constructs	18
8	Service Operation Details	20
8.1	Detailed Operation Characteristics – SendPartReturnReceipt	20
8.2	Detailed Operation Characteristics – SendPartReturnReceiptError.....	21
8.3	Service Bindings	23
9	Definitions, Acronyms, Abbreviations.....	24
10	Appendix A – Information Model Entity Relationship View.....	25
11	Document History	26

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.



List of Figures

Figure 4-1 Part Return Receipt Service Context.....	5
Figure 4-2 Part Return Receipt Message Flow	6
Figure 4-3 Part Return Receipt Business Validation Failure Message Flow	9
Figure 6-1 Information Model – Purchase Order for Part Return Receipt	14
Figure 7-1 Exchange Messages – Part Return Receipt Input Message	15
Figure 7-2 Part Return Receipt Output Message	16
Figure 7-3 Part Return Receipt Fault Message.....	18
Figure 7-4 Exchange Messages – Part Return Receipt Error Input Body	19

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 Introduction

This document establishes an interface between Canada Electronic Data Exchange (EDE) system and the In-Service Support (ISS) Contractor systems to send Part Return Receipt messages for Canada Platforms subject to Performance Based Contracting (PBC) to the ISS Contractor responsible for maintenance of the platform. To support the Part Return Receipt message exchange between Canada EDE and ISS Contractor, 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.

The Part Return Receipt service is a service for ISS Contractor to report receipt of parts returned with a message back to Canada EDE system.

1.1 Intended Audience

- ISS Contractor System Designers
- Canada EDE Designers
- ISS Contractor Testers
- Canada EDE Testers

1.2 References

- [Ref. 1] Electronic Information Exchange Business Use Case - BUC 3.46 Navy - Exchange Part Return Receipt Data
- [Ref. 2] PBC Business Process Catalogue Annex M: Navy Supply Process Model - In the Context of Performance Based Contracting (PBC)
- [Ref. 3] Electronic Information Exchange Service Interaction Model
- [Ref. 4] Electronic Information Exchange Materiel Management Service Operational Model – External

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.

2 Business Information

Business Information is based on the EIE Business Use Case for Part Return Receipt [Ref. 1].

The goal of the Part Return service is to send to ISS Contractor¹, in a near real-time manner, messages indicating Canada is returning to ISS Contractor parts which have been removed from a Platform in the course of performing tasks defined in a Work Orders (WOs), or other parts to be returned including Special Tools and Test Equipment (STTE)², and parts received for a WO which were not used.

The goal of the Part Return Receipt service is to allow ISS Contractor to inform Canada EDE, in a near-real-time manner, that ISS Contractor has received a returned part/STTE, so that both parties will have a formalized custodianship record of a part.

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

- Canada Maintenance Management System (CMMS)
- Canada Supply System (CSS)

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

2.1 Business Processes

The ISS Contractor-owned, managed and delivered Platform spares and consumables required for the platform maintenance activities performed by Canada personnel will only be requested on as-needed basis during maintenance activities. The parts required to complete maintenance tasks will be listed in the WO in CMMS. Each part will be identified as either Canada or ISS Contractor-owned/managed. Part Returns to ISS Contractor take place after tasks in a WO are completed.

Once a Canada technician has determined to return parts there is a physical handover of the parts to ISS Contractor and the technician must update CMMS/CSS to indicate the parts were returned. ISS Contractor will send a business response through this Part Return Receipt service to a Part Returns to ensure Canada and ISS Contractor agree on the custody of all parts. ISS Contractor will require the up-to-date maintenance history data for the returned parts. This is addressed through regular Maintenance History services.

2.2 Business Triggers

The following actions within ISS Contractor systems, the business triggers, will result in Part Return Receipt data being sent by ISS Contractor:

¹ In this document the terms Industry and ISS Contractor are synonymous. The term ISS Contractor is used during description of the business process to align with the Business Use Cases. The term Industry is used during description of service interactions and service descriptions.

² Wherever the word “part” is used, this also encompasses Special Tools and Test Equipment (STTE). The service is designed to support STTE but may or may not be used for STTE for a specific ship class.

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.

-
- ISS Contractor has physically received a returned part/STTE and ISS Contractor supply technician has updated ISS Contractor system to record the returned part.

For further information, including cross-references to business processes, please refer to the EIE Business Use Case for Part Return Receipt [Ref. 1].

2.3 Business Error Processing

In the event Canada encounters business errors while attempting to post Part Return Receipt data to their backend systems, Canada will report errors on all line items within a Part Return Receipt message Purchase Order in one error message.

Where possible, ISS Contractor will correct line item data based upon reported errors, and generate a new Part Return Receipt message using the same Purchase Order number.

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.

3 Business Constraints

Constraints on *Usage* of the Service

- 1) Canada EDE shall ensure a Part Return Receipt message is only processed from an Industry which is properly authenticated and authorized to see maintenance and materiel data for that ship class.
- 2) Every invocation of a service operation shall be secured using secure credentials such as PKI Certificate.

Constraints on *Behaviour* of the Service

- 3) The Part Return Receipt service shall operate in near-real time³.
- 4) Canada EDE does **not** expect that Part Return Receipt messages will be received in the same order they were created by Industry. It is the responsibility of the CSS to collate Part Return Receipt messages based on the Purchase Order Identifier within each Part Return Receipt message.
- 5) Canada will report any business processing errors through the Part Return Receipt Error operation exposed by Industry using a distinct and separate invocation.
- 6) Canada will **not** report successful conclusion of business processing of the Part Return Receipt to Industry. There is no business response.
- 7) Part Return Receipt Messages will be signed using digital certificates between Canada EDE and Industry. Please see Service Interaction Model [Ref. 3] for details.
- 8) 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. 3] for details.

³ This will be discussed further in EDE Service Interaction Model.

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.

4 Service Use Case

The requirements for the Part Return Receipt service are defined by one use case with several scenarios.

4.1 Service Context⁴

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 Service Use Case Scenarios.

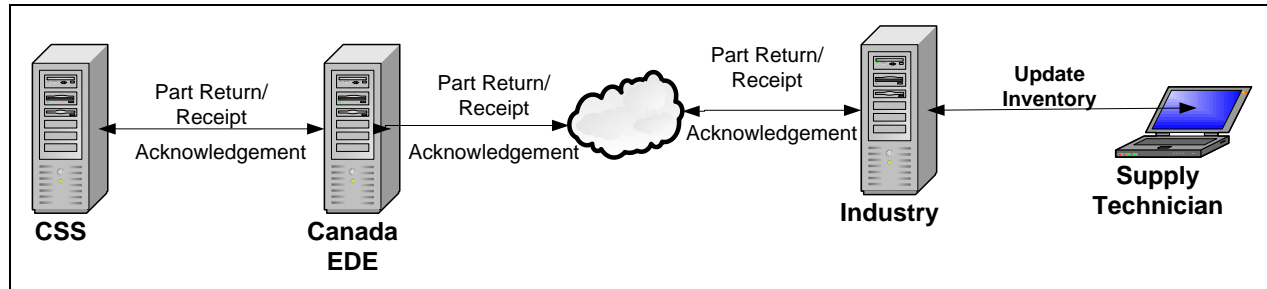


Figure 4-1 Part Return Receipt Service Context

The following activities occur:

- 1) A Part Return message has been received by Industry in the usual way— see [Ref. 2].
- 2) Industry generates a Part Return Receipt message.
- 3) Industry sends Part Return Receipt to Canada EDE – Canada EDE accepts the message and returns a ‘technical’ response.
- 4) Canada EDE sends Part Return Receipt to CSS – CSS accepts the message and returns a ‘technical’ response.
- 5) CSS performs the required “back-end” processing including checking of business rules.

Once the Part Return Receipt is sent the Industry supply technician does not have to wait for any response from Canada, he/she may pursue other activities. This mode of interaction is termed *Business Asynchronous*.

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.

⁴ The terms Industry and ISS Contractor are used interchangeably in this document.

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.

4.2 Successful Request and Technical Response

This is the main or “Happy Day” scenario as shown in [Figure 4-2](#)~~Figure 4-2~~.

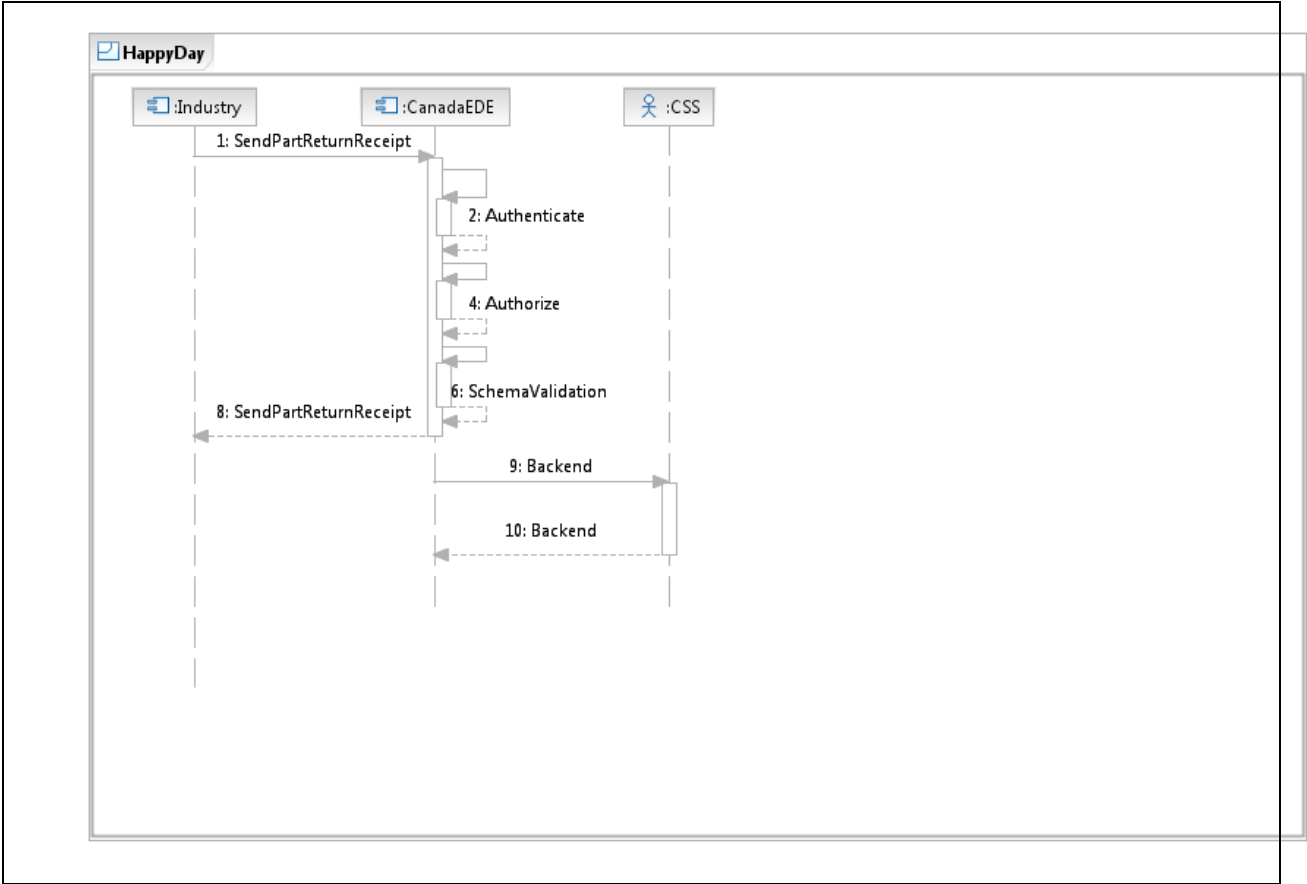


Figure 4-2 Part Return Receipt Message Flow

Main Flow	
Scenario	“Happy Day:” Industry successfully sends Part Return Receipt to Canada.
Pre-Condition	A Part Return message has been received by Industry from Canada. Industry supply technician has the physical part(s)/STTE(s).
Post-Condition	Part Return Receipt message is successfully received by Canada. CSS is updated.

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.

Steps	1) Industry invokes SendPartReturnReceipt operation of the Part Return Receipt service. 2/3) Canada EDE successfully Authenticates the service consumer. 4/5) Canada EDE successfully Authorizes the service consumer. 6/7) Canada EDE performs a successful technical compliance checks. 8) Canada EDE sends technical response to Industry indicating message was accepted. 9/10) Canada EDE invokes back-end processing in CSS.
-------	---

4.3 Alternate Scenarios

The following scenarios apply to all uses of the Part Return Receipt service.

Alternate Flow 1 (Authentication Failure)	
Scenario	Industry does not provide appropriate credentials to Canada EDE.
Pre-Condition	Industry has invoked the Canada EDE Part Return Receipt Service.
Post-Condition	Canada EDE sends an Authentication Failure fault response
Steps	1) The authentication credentials are either not provided or are incorrect. 2) Canada EDE sends an Authentication Failure fault as the technical response. 3) Industry processes the error.
Alternate Flow 2 (Authorization Failure)	
Scenario	Industry is not authorized to use a service.
Pre-Condition	Industry has invoked the Canada EDE Part Return Receipt Service. Canada EDE has completed Authentication successfully.
Post-Condition	Canada EDE sends an Unauthorized Request fault response.
Steps	1) The request message does not pass Canada EDE authorization. 2) Canada EDE sends an Unauthorized Request fault as the technical response. 3) Industry processes the error.
Alternate Flow 3 (Technical Validation Failure)	
Scenario	Industry sends a malformed message to Canada EDE.
Pre-Condition	Industry has invoked the Canada EDE Part Return Receipt Service. Canada EDE has completed Authentication and Authorization successfully.
Post-Condition	Canada EDE sends a Malformed Message fault response.

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.

Steps	<ol style="list-style-type: none"> 1) The message does not pass validation as per agreed schema. (Regardless of the number and types of errors). 2) Canada EDE sends Malformed Message error information as the technical response. 3) Industry processes the schema validation error.
Alternate Flow 4 (Canada EDE Service unresponsive)	
Scenario	Industry does not receive technical response within ACK_TIME_INTERVAL.
Pre-Condition	Industry has invoked the operation but does not receive the technical response within the time specified for the Part Return Receipt service.
Post-Condition	Industry marks the message as Dead Message.
Steps	<ol style="list-style-type: none"> 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 DeadMessageHandlerService.

The Part Return Receipt Business Validation Failure Message Flow is shown in [Figure 4-3](#)~~Figure 4-3~~.

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.

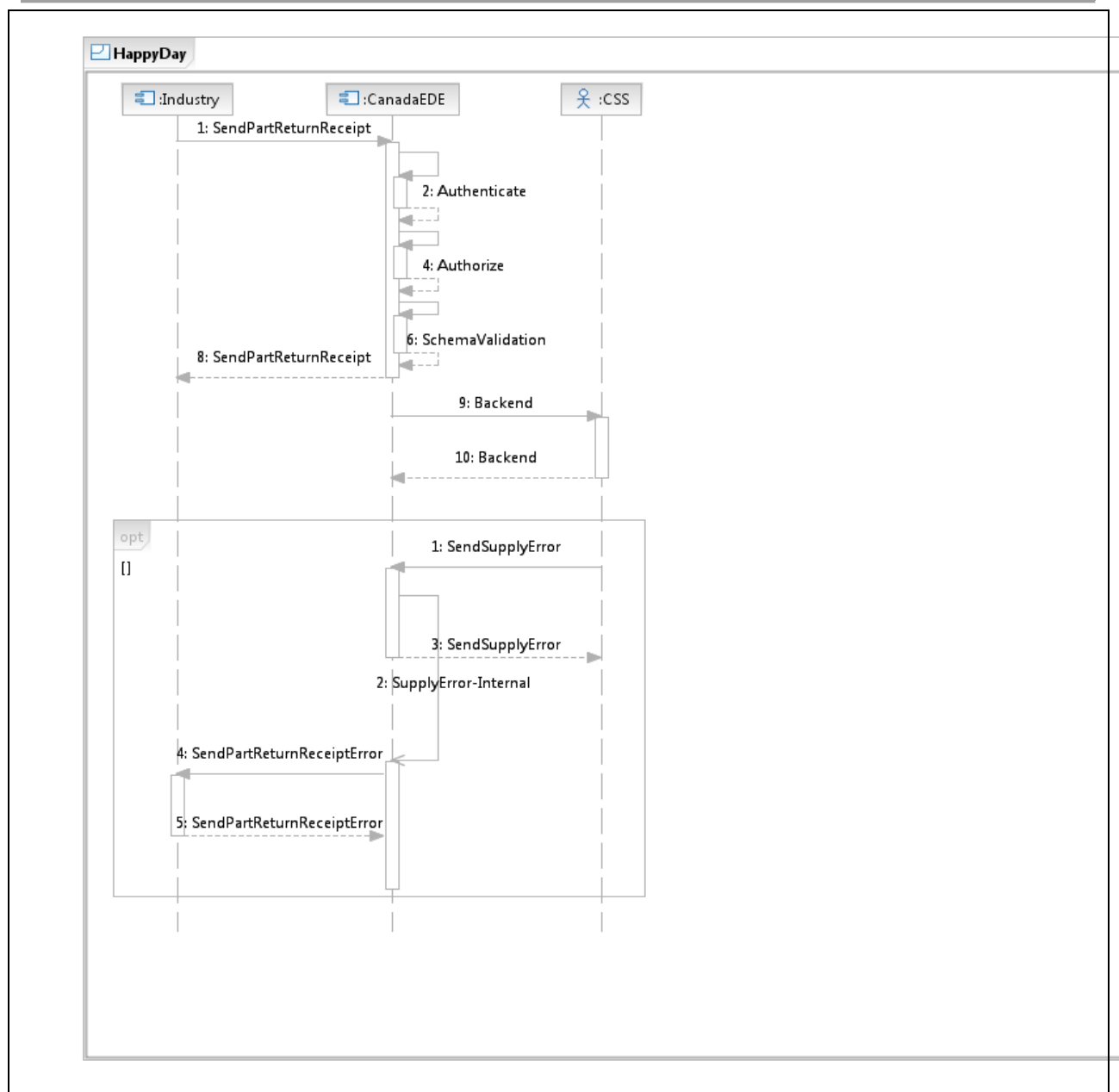


Figure 4-3 Part Return Receipt Business Validation Failure Message Flow

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.

Alternate Flow 5 (Business Validation Failure)	
Scenario	Canada CSS business validations fail on one or more Part Return Receipt data records.
Pre-Condition	Industry has invoked the Canada EDE Part Return Receipt service, the message has passed Authentication, Authorization and Schema Validation and a successful technical response has been received by Industry.
Post-Condition	Canada EDE sends error information to Industry.
Steps	<ol style="list-style-type: none"> 1) The Part Return Receipt data records failed the Canada CSS business validation process. 2) Canada EDE sends Business Error information by invoking the Part Return Receipt Error operation. 3) Industry's business user is notified of the error 4) Industry initiate internal error handling procedures 5) Where possible, Industry will correct line item data based upon reported errors, and generate a new Part Return Receipt message with corrected line items.

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.

5 Service Description – Part Return Receipt Service

5.1 Service Overview

Part Return Receipt service requires interacting web services exposed by Canada EDE System and Industry. The Canada EDE will expose a service which Industry System will use to send the Part Return Receipt message (see Section 7 for message definition). Upon receipt and acceptance of the message, the Canada EDE will return a technical response back to Industry System as per the request-response message pattern as defined in the Service Interaction Model [Ref. 3] .

Industry will provide a Part Return Receipt Error operation to be used by Canada EDE to report a Business error if errors are found during Canada processing of the part return receipt request by its internal Supply Systems that are within the scope for Industry to rectify.

5.2 Service Properties

Service Property	Description
Enterprise Service Name (Business)	Part Return Receipt Service
Enterprise Service Name (Technical)	PartReturnReceipt_Canada PartReturnReceipt_Industry
Purpose	<p>This service supports the Canada PBC Maintenance process for scheduled and unscheduled maintenance tasks. On the occurrence of business triggers, this service sends Part Return Receipt messages to Canada on a near-real time basis.</p> <p>This service also supports reporting of business errors encountered while processing Part Return Receipt messages within the Canada supply systems.</p>
Business Response Time Interval	N/A. Part Return Receipt completes the business transaction.
Service Domain	Supply Management
Business Owner	ADM (IM)
Service Grouping	Supply Materiel / Part Return Receipt
Source Provider	Canada EDE
Target Service Consumers	Industry
Business Process Supported (now)	Perform 1st and 2nd level maintenance Execute Corrective or Preventive Maintenance
Business Process Supported (future)	None currently identified.

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.

Service Property	Description
Business Objective Supported	See Section 2: Business Information .
Expected life time	The full lifecycle of the subject platform using PBC.

5.3 Service Operations

Provider	Consumer	Operation
Canada EDE	Industry	SendPartReturnReceipt
Industry	Canada EDE	SendPartReturnReceiptError

5.3.1 SendPartReturnReceipt Operation

This operation is used by Industry to send a Part Return Receipt message to Canada. Canada's implementation of this operation will perform authentication, authorization and schema validation on the Part Return Receipt message. Canada will return a status or fault information to the consumer.

If Canada accepts the message for further processing an output message is returned. The content of the output indicates SUCCESS, Industry accepts custody of the message for further processing. If Canada EDE does NOT accept the message, Canada EDE will return one or more fault blocks.

5.3.2 SendPartReturnReceiptError Operation

This operation is used by Canada to send a Part Return Receipt Error message to Industry. Industry's implementation of this operation will perform authentication, authorization and schema validation on the Part Return Receipt Error message. Industry will return a status or fault information to the consumer.

If Industry accepts the message for further processing an output message is returned. The content of the output indicates SUCCESS, Industry accepts custody of the message for further processing. If Industry does NOT accept the message, Industry will return one or more fault blocks.

5.4 Message Interaction

As defined in [Section 4: Service Use Case](#), the Part Return Receipt service supports a business-asynchronous interaction with a message-passing paradigm. Each Web Service operation must be defined such that the messages required by the system use case (faults in particular, see Section 4.3 Alternate Scenarios) are explicit in the Web Service definition. This implies each Part Return Receipt web service operation must be defined with an input, output and fault element. This corresponds well to an http transport where the output or fault elements would be in the http response.

Message interaction is further described in Electronic Information Exchange Service Interaction Model [Ref. 3].

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.

6 Information Model

This section describes the **business objects** which are used in the Part Return Receipt service. The Unified Modeling Language (UML) notation is used. A functional view⁵ of the information model is provided in the EIE Business Use Case for Part Return Receipt [Ref. 1], Section 3: Functional Data Definition, and an Entity-Relationship diagram (ERD) is provided in Appendix A of this document.

The purpose of this section is to provide a bridge between the functional view of the information model and the concrete details of the design as expressed in an XML Schema⁶.

Note: The only authoritative source for purpose of the information exchange will be the specific XML Schema for the business object.

6.1 Purchase Order

A Part Return Receipt message contains a Purchase Order business object. The Purchase Order information model is shown in ~~Figure 6-1~~ [Figure 6-1](#) below.

The Purchase Order (class Purchase Order) is used to manage “goods movement” between Canada and Industry. A Purchase Order contains one or more Line Items (class LineItem).

A Line Item represents a return for a certain quantity of parts – all of the same type. A Line Item must be contained in a Purchase Order.

The return receipt transaction includes the Received Date and Quantity. Elements populated in the initiating Part Return will be echoed back to Canada in the Part Return Receipt. Note that not all of these fields are necessarily populated in the Part Return transaction. These may include:

- BatchLot and ExpiryDate, if batch managed
- SerialNumber (class PartDetail), if serialized
- Service Request Number
- Tracking Number
- Work Order Number
- ShipToCode and ShipToCode Description
- UnserviceableCode and UnserviceableCode Description

The field descriptions are elaborated in the Functional view (please see EIE Business Use Case for Part Return Receipt [Ref. 1]).

⁵ The Functional View details the collection of fields which make up a purchase order and its sub-records.

⁶ The XML Schema may not preserve the exact same generalization and composition associations used in the UML representation.

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.

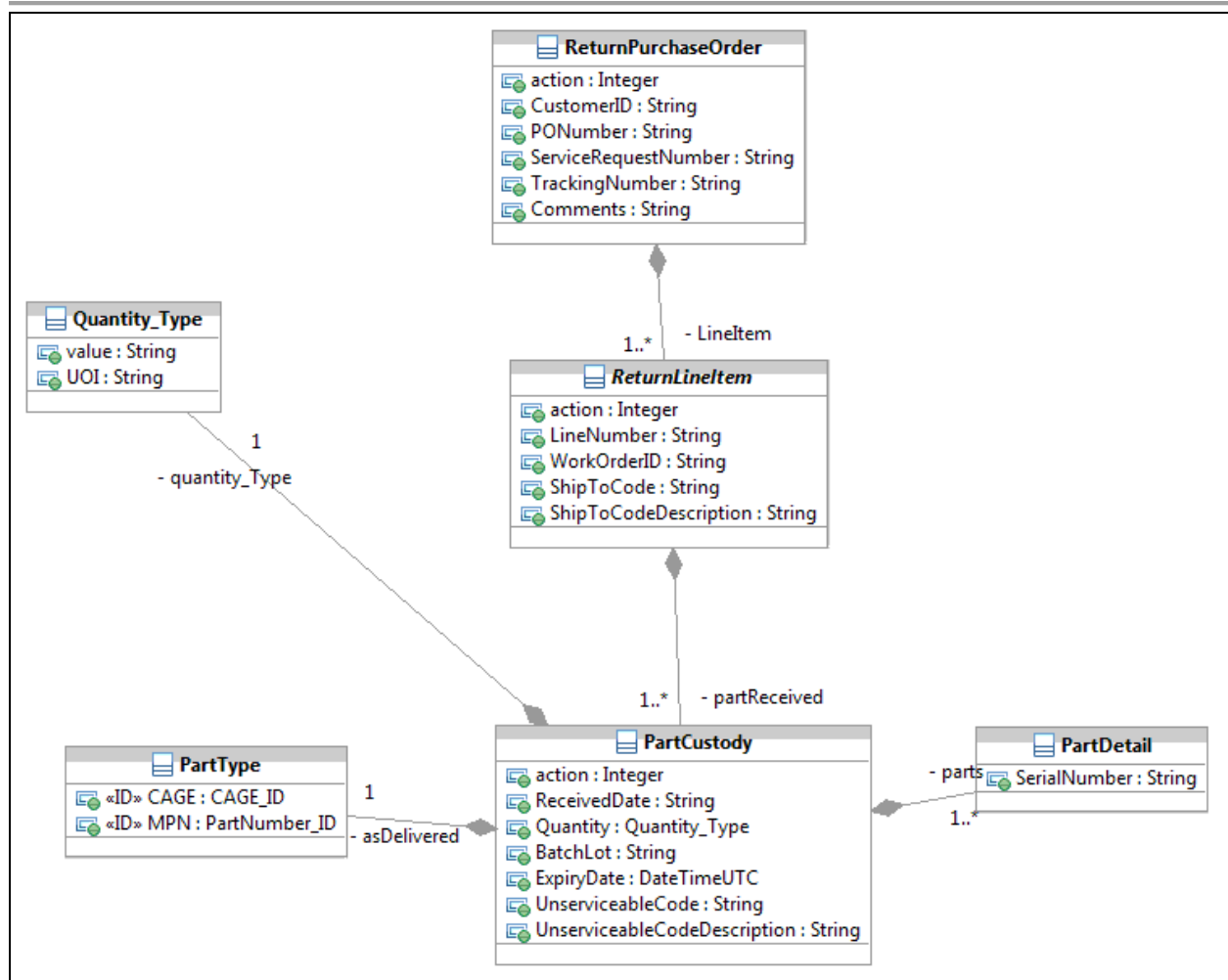


Figure 6-1 Information Model – Purchase Order for Part Return Receipt

The 'action' attribute is discussed in [Section 7.1.1 Part Return Receipt Input Messages](#).

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.

7 Operation Message Model

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

Since EIE Supply services are request/response, each operation requires input, output and fault message definitions. Message definitions use a common supply message header definition, as well as a common security block definition. Please refer to Electronic Information Exchange Service Interaction Model [Ref. 3] for details on message header and security block definition.

7.1 Part Return Receipt Message Constructs

7.1.1 Part Return Receipt Input Body

As shown in [Figure 7-1](#), a Part Return Receipt input message consists of:

- A Message Header;
- A Security Block;
- A Purchase Order (with contained LineItems etc.).

In order to uniquely identify data from a business payload, certain elements will be identified as elements that can make up the unique Business identifier for each business object that has been transmitted. These elements will then be used by either the consumer or provider to report any errors with associated with the contained business payload.

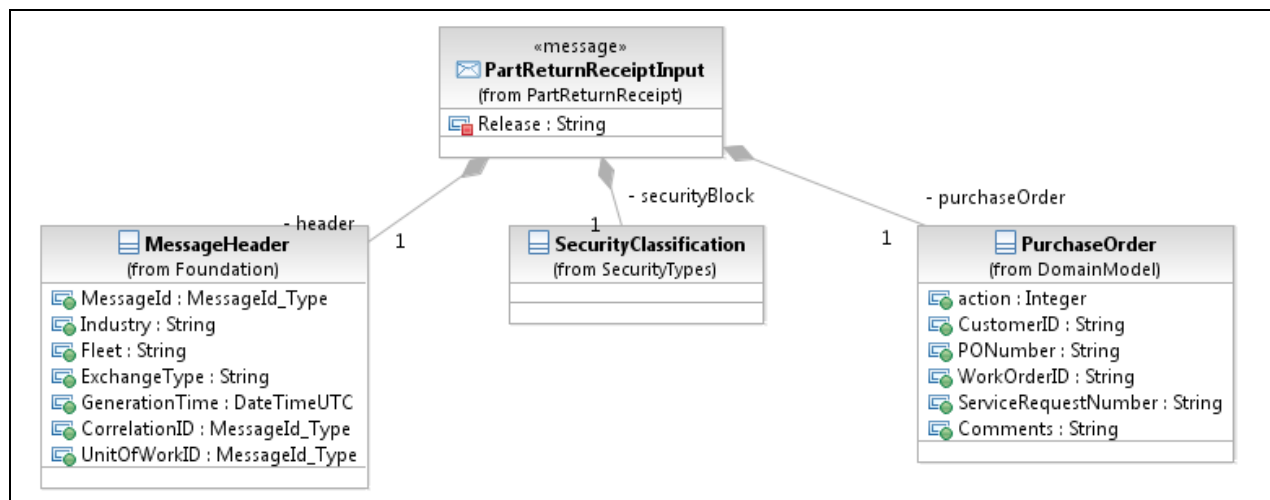


Figure 7-1 Exchange Messages – Part Return Receipt Input Message

For a PartReturnReceiptInputMessage the MessageHeader Correlation ID and Unit of Work ID are not used.

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.

Within the PurchaseOrder, Lineltem, and PartCustody business objects (the latter two not shown here) there is an attribute named 'action' which is set by the service consumer as a directive to Industry on handling the business object. Valid values for 'action' are:

- Create a new business object: action = 1;
- Edit an existing business object: action = 2;
- Delete a business object: action = 3.

In the context of a Part Return Receipt, action will always equal 1.

7.1.2 Part Return Receipt Output Body

The output of the SendPartReturnReceipt operation is the PartReturnReceiptOutputBody. As shown in [Figure 7-2](#), the output body consists of:

- A Message Header;
- A PartReturnReceiptOutput indicating acceptance.

The output message has no security block. The output does not contain any sensitive or protected information.

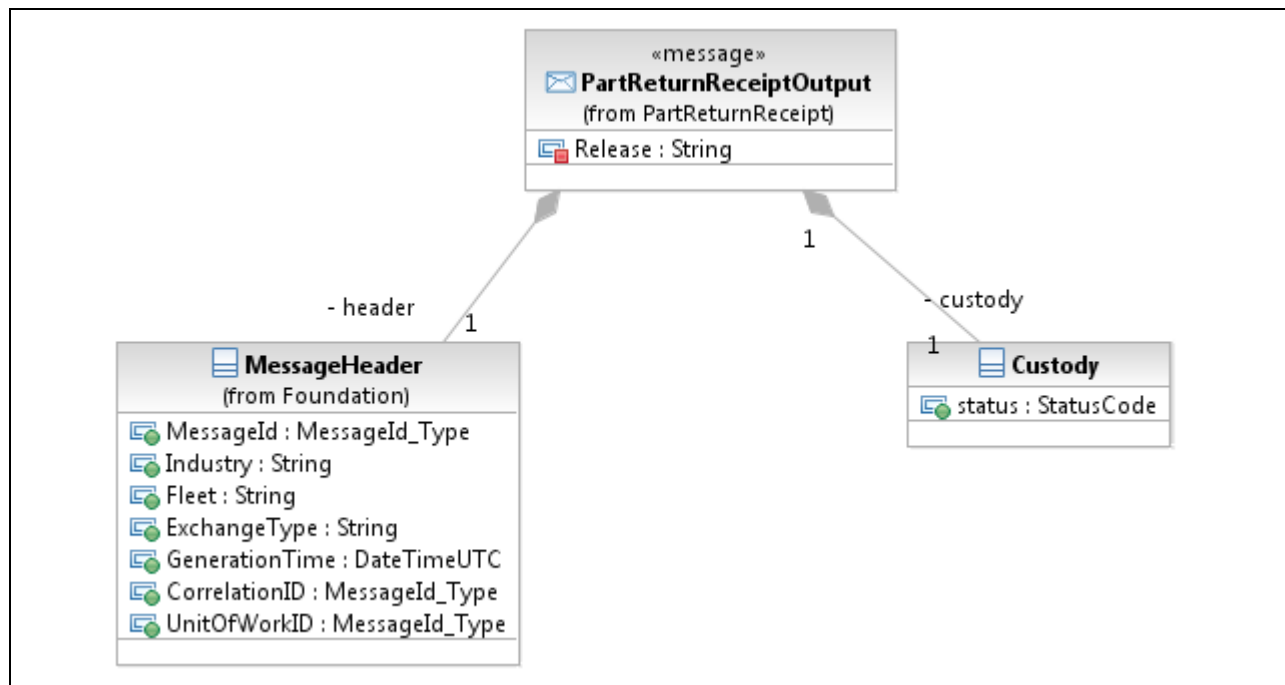


Figure 7-2 Part Return Receipt Output Message

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.

For a PartReturnReceiptOutputBody:

- The MessageHeader Correlation ID will reflect the Message ID of the originating Part Return Receipt input message.
- UnitOfWorkID is not used or applicable for this type of message.
- The MessageHeader Exchange Type must be set to the Exchange Type of the PartReturnReceiptInputMessage.
- The value of the PartReturnReceiptOutput 'Custody' evaluates to "success".

7.1.3 Part Return Receipt Fault Body

A fault returned by the SendPartReturnReceipt operation uses the PartReturnReceiptFaultBody element.

As shown in ~~Figure 7-3~~ **Figure 7-3**, the fault message consists of:

- A Message Header;
- A Security Block;
- One or more FaultBlocks.

Each fault block pertains to zero to many business objects, to the level of granularity which the Service Provider can provide. If the system cannot determine a Business Identifier then this is omitted. To report differing faults on more than one business object extra fault blocks can be included in the fault message.

Note: Follow implementation direction as per the [Ref. 3] – Service Interaction Model for the Fault Message in addition to what has been specified above.

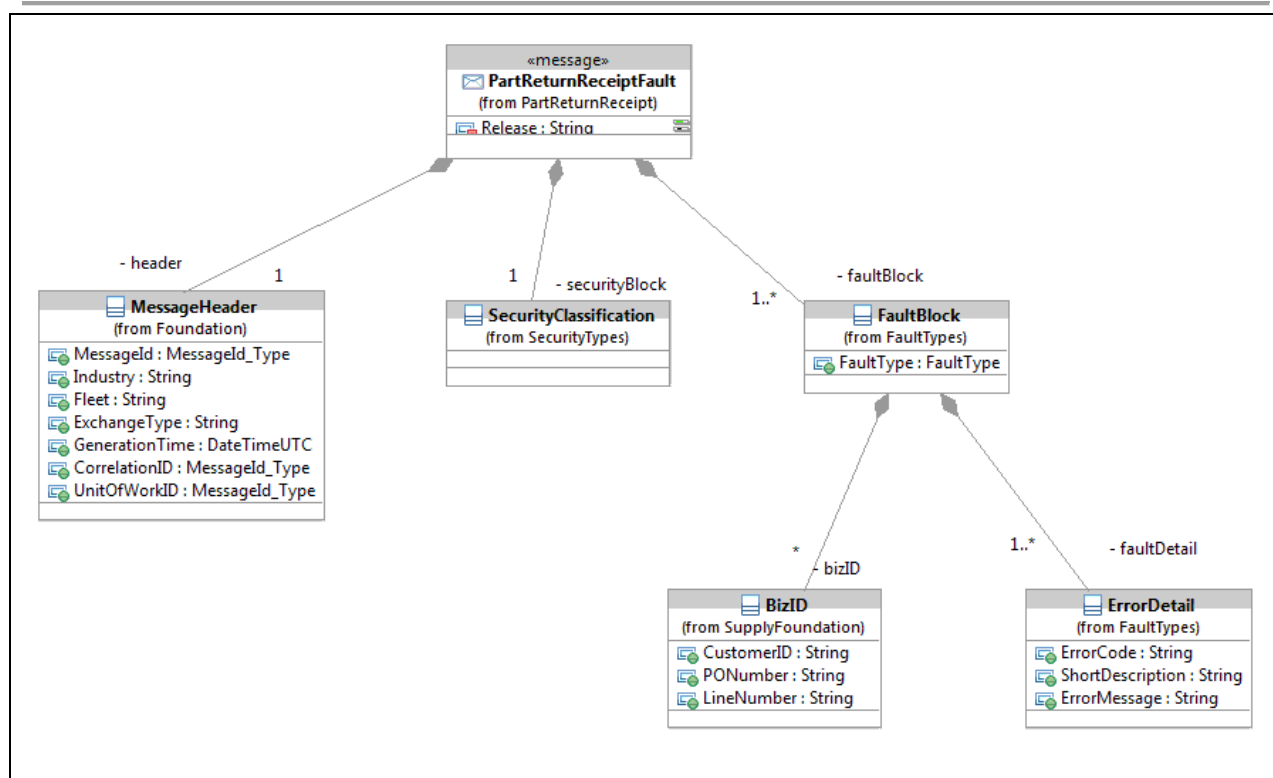


Figure 7-3 Part Return Receipt Fault Message

For a **PartReturnReceiptFaultBody**:

- The **MessageHeader** Correlation ID will reflect the Message ID of the originating Part Return Receipt input message.
- **UnitofWorkID** is not used.
- The **MessageHeader** Exchange Type must be set to the Exchange Type of the **PartReturnReceiptInputBody**.

7.2 Part Return Receipt Error Message Constructs

In the event Industry encounters a business error while processing the purchase order in their backend supply system, Industry will send Canada a Part Return Receipt Error message through the following constructs.

7.2.1 Part Return Receipt Error Input Body

As shown in [Figure 7-4](#), a Part Return Receipt Error input message consists of:

- A Message Header;
- A Security Block;
- One or more Error body.

Within the Error Body, at least one **BizID** must be provided, along with at least one **ErrorDetail** block.

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.

- If appropriate, multiple BizIDs may be provided referencing a common error(s).
- If appropriate, multiple errors can be defined within the error body. These errors would apply to all BizIDs defined within the ErrorBody construct.

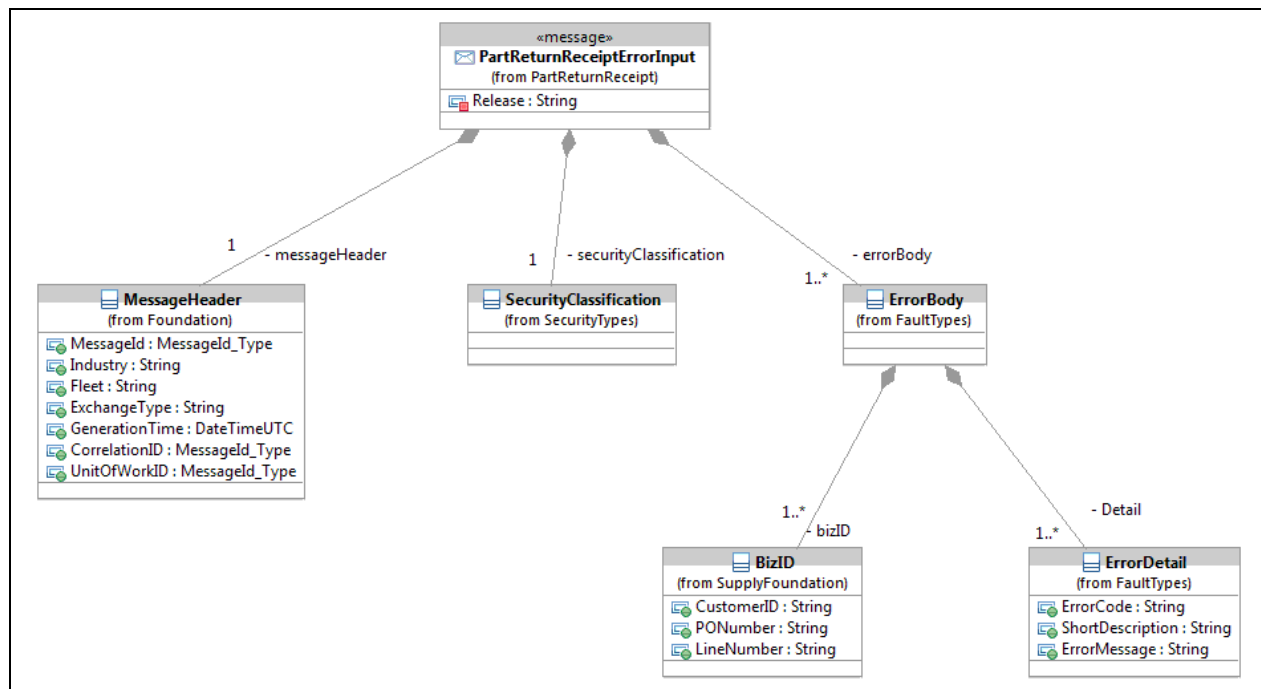


Figure 7-4 Exchange Messages – Part Return Receipt Error Input Body

For a Part Return ReceiptError InputBody the MessageHeader CorrelationID and UnitOfWorkID are not used.

Each error pertains to one or more business objects, to the level of granularity which the Service Consumer can provide. To report differing errors on more than one business object extra error blocks can be included in the error input message.

7.2.2 Part Return Receipt Error Output Body

The output of the SendPartReturnReceiptError operation is the PartReturnReceiptErrorOutputBody . The output body is similar to the PartReturnReceiptOutputBody.

Please refer to [7.1.2 Part Return Receipt Output Body](#) for this definition.

7.2.3 Part Return Receipt Error Fault Body

A fault returned by the SendPartReturnReceiptError operation uses the PartReturnReceiptError FaultBody element.

Please refer to [7.1.3 Part Return Receipt Fault Body](#) for this definition.

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.

8 Service Operation Details

8.1 Detailed Operation Characteristics – SendPartReturnReceipt

Industry system will invoke the exposed Canada EDE Part Return Receipt service through this operation. A Part Return Receipt message will be based on a Part Return message originally generated by CSS.

Refer to PartReturnReceipt_Canada.wsdl for implementation details.

Detailed Operation Characteristics

Interface Definition	Description
Operation Name	Send Part Return Receipt
Operation Technical Name	SendPartReturnReceipt
Operation Description	This operation is invoked by Industry to send a Purchase Order record to Canada EDE. The Purchase Order describes returned parts which Industry is confirming were received.
Target Operation Provider	Canada EDE
Target Operation Consumer	Industry
Properties	<i>Request/Response</i> message exchange pattern.
Input Message Definition	Please refer to Operation Message Model Section 7.1.1 Part Return Receipt Input for details.
Output Message Definition	Please refer to Operation Message Model Section 7.1.2 Part Return Receipt Output for details.
Fault Definition	Please refer to Operation Message Model Section 7.1.3 Part Return Receipt Faults for details. As discussed in Section 4: Service Use Case the following faults may be reported: <ol style="list-style-type: none"> 1) Unauthenticated access 2) Unauthorized request 3) Malformed message 4) Service Unavailable

Non Functional Requirements

Non Functional Requirements/Technical Details	
Frequency	Based on Service Level Agreements (SLA) to be determined between Canada and Industry on a per ship class basis.

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.

Non Functional Requirements/Technical Details	
Peak Throughput Time	Based on Service Level Agreements (SLA) to be determined between Canada and Industry on a per ship class basis.
Peak Throughput Volume	Based on Service Level Agreements (SLA) to be determined between Canada and Industry on a per ship class basis.
Payload Size	~ 2KB per Part Return Receipt Line Item
Attachments	None
Attachment Size	N/A
ACK Time Interval	2 minutes
Retry Time Interval	5 minutes
Number of Retries	5
Biz. Response Time Interval	N/A
Time to Live Span	Nominally 1 hour – if message cannot be delivered within 1 hour, revert to secondary delivery channel, which may be manual.
Service Op Availability	During core processing hours. 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 for this operation when Canada EDE cannot successfully send Part Return Receipt message to Industry.

8.2 Detailed Operation Characteristics – SendPartReturnReceiptError

Canada system will invoke the exposed Industry Part Return Receipt Error service through this operation. A Part Return Receipt error message will contain Canada CSS-reported business errors encountered while attempting to process a Part Return Receipt message generated by Industry.

Refer to PartReturnReceipt_Industry.wsdl for implementation details.

Detailed Operation Characteristics

Interface Definition	Description
Operation Name	Send Part Return Receipt Error
Operation Technical Name	SendPartReturnReceiptError

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.

Interface Definition	Description
Operation Description	This operation is invoked by Canada EDE to send a Business Error message to Industry. The Business Error describes errors encountered while processing Industry's Part Return Receipt message.
Target Operation Provider	Industry
Target Operation Consumer	Canada EDE
Properties	<i>Request-Response</i> message exchange pattern.
Input Message Definition	Please refer to Operation Message Model Section 7.2.1 Part Return Receipt Error Input for details.
Output Message Definition	Please refer to Operation Message Model Section 7.2.2 Part Return Receipt Error Output for details.
Fault Definition	Please refer to Operation Message Model Section 7.2.3 Part Return Receipt Error Fault for details.

Non Functional Requirements

Non Functional Requirements/Technical Details	
Frequency	Based on Service Level Agreements (SLA) to be determined between Canada and Industry on a per ship class basis.
Peak Throughput Time	N/A
Peak Throughput Volume	N/A
Payload Size	~ 5KB per Error
Attachments	None
Attachment Size	N/A
ACK Time Interval	2 minutes
Retry Time Interval	5 minutes
Number of Retries	5
Biz. Response Time Interval	N/A
Time to Live Span	Nominally 1 hour – if message cannot be delivered within 1 hour, revert to secondary delivery channel, which may be manual.
Service Op Availability	During core processing hours. 95% available uptime is the goal of the service

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.

Non Functional Requirements/Technical Details	
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 for this operation when Industry cannot successfully send Part Return Receipt Error message to Canada.

8.3 Service Bindings

8.3.1 SOAP Over http

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

The business objects (Section 6), MessageHeader and SecurityMarkings elements⁷ are bound to the SOAP Body element. The SOAP Header is used for EIE adopted WS-* standards-based elements (e.g., WS_Security assertions element).

In this binding the http response is used for operations' output or fault messages.

8.3.2 SOAP Over Java Message Service

Not currently supported for this service.

⁷ See the PartReturnReceipt Service WSDL file for the precise binding.

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.

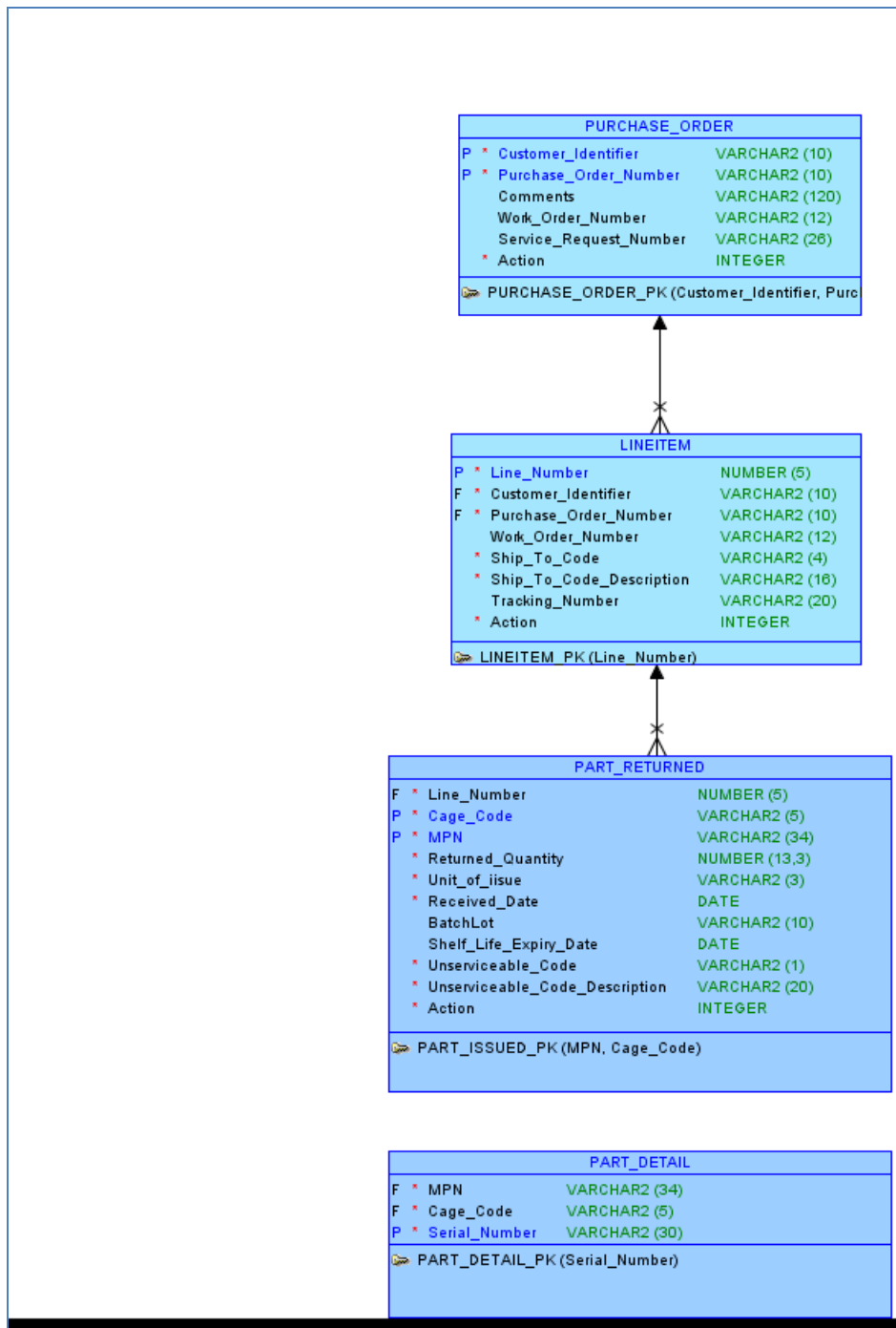
9 Definitions, Acronyms, Abbreviations

Term	Description
ADM (IM)	Assistant Deputy Minister (Information Management)
ADM (Mat)	Assistant Deputy Minister (Materiel)
BUC	Business Use Case
CMMS	Canada Maintenance Management System
CSS	Canada Supply System
DND	Department of National Defence
DRMIS	Defence Resource Management Information System
EDD	Estimated Delivery Date
EDE	Electronic Data Exchange
EIE	Electronic Information Environment
EMR	Equipment Master Record
HoP	Hand-Over Point
HTTP	Hyper Text Transfer Protocol
HTTPS	Hyper Text Transfer Protocol Secure
ICD	Interface Control Document
ISS	In-Service Support
JMS	Java Message Service
MER	Master Equipment Record
MP	Maintenance Plan
MPN	Manufacturer Part Number
MSN	Manufacturer Serial Number
PBC	Performance Based Contracting
PO	Purchase Order
SLA	Service Level Agreement
SOAP	Simple Object Access Protocol
STTE	Special Tools and Test Equipment
UML	Unified Modeling Language
URL	Uniform Resource Locator
WO	Work Order
WS	Weapon System
WSDL	Web Service Definition Language
XML	Extensible Markup Language
XSD	XML Schema Definition
XSL	Extensible Stylesheet Language

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.

10 Appendix A – Information Model Entity Relationship View

Information Model – Entity-Relationship View



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.

11 Document History

Revision Number	Description	Date
1.0	Initial release for Navy RFP	22 September 2015

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.