Electronic Information Environment (EIE)

Service Specification Document/Interface Control Document

Navy Part Issue – 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.

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

Table of Contents

List of Figures

1 Introduction

This document establishes an interface between Canada Electronic Data Exchange (EDE) system and the In-Service Support (ISS) Contractor responsible for maintenance of a ship class, subject to Performance Based Contracting (PBC). This interface will be used by ISS Contractor to send Part Issue messages to Canada EDE. To support the Part Issue transfer 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 Issue service requires a service for Canada to report acknowledgement messages back to ISS Contractor, known as a Part Receipt. This is specified in a separate document.

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 3.43 Navy - Exchange Part Issue 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.

2 Business Information

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

The goal of the Part Demand service is to send to ISS Contractor[1], in a near real-time manner, requests for ISS Contractor owned and managed parts and/or Special Tools and Test Equipment (STTE) [2]. The Part Issue service is used by ISS Contractor to inform Canada that parts are available for pick-up. ISS Contractor will then supply the actual parts and/or STTE(s) to allow for timely completion of tasks on maintenance Work Orders (WOs).

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 a maintenance tasks will be listed in the WO in CMMS. Each part will be identified as either Canada or ISS Contractor-owned. For all ISS Contractor-owned/managed parts, the CSS checks for availability of the parts at Canada storage locations. If the required parts are available at either one of the supplying locations, a reservation will be created for the part(s). If the ISS Contractor-supplied parts are available at Canada storage locations, and issuing 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 and sent to the ISS Contractor. If the ISS Contractor supplied parts are not available at the supplying storage locations, a Part Demand transaction for the required parts is generated in CSS and sent to the ISS Contractor. Part Demands to ISS Contractor are typically for immediate fulfillment. In response, ISS Contractor will send Part Demand Response messages indicating Estimated Date of Delivery (EDD) of the demanded parts.

Once a part is available to Canada, ISS Contractor will send a Part Issue message through Canada EDE to CSS. A Canada technician will pick up the part(s) from a designated location and acknowledge the receipt of the part in CSS. CSS will send a part receipt message through Canada EDE to ISS Contractor, completing the transaction cycle for a part that has been demanded and supplied 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 STTE’s. The service is designed to support STTE but may or may not be used for STTE.

ISS Contractor will also send the Equipment Master Record (EMR) data for serialized parts issued (as applicable) to Canada as required through separate services. This EMR data is colloquially known as "part history" data, and is required to properly initialize the Canada CMMS and CSS systems prior to acceptance of the Part Issue Advanced Shipping Notice (ASN) notice.. This data is a touch point between supply operations and information required when conducting the maintenance.

2.2 Business Triggers

The following actions within ISS Contractor systems, the business triggers, will result in Part Issue data being sent to Canada EDE.

- Parts have been delivered to the HoP.
- If an STTE is given to Canada for use, it will be demanded through a standard Part Demand message. The Part Issue shall be sent for the item when shipped.

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

2.3 Business Error Processing

In the event Canada encounters business errors while attempting to post Part Issue data to their backend systems, Canada will report errors on all line items within a Part Issue message Purchase Order in one message. Canada will also have processed all line items that do not report an error.

Where possible, ISS Contractor will correct erroneous line item data based upon reported errors, and generate a new Part Issue message using the same Purchase Order number and including only the corrected line items within the Part Issue message.

2.4 Part Issue Unit of Work

As noted above, ISS Contractor is responsible for sending EMR data for parts issued to Canada with the Part Issue notification, in near-real time if data exist, although via separate service interfaces. Typically this "part history" data is required for serialized parts; that is any part where Canada is required to track the serial number and may perform or use in the conduct of maintenance activities for the part or STTE.

To achieve consistency, the Part Issue record and associated "part history" records are always sent from ISS Contractor to Canada EDE in a single ***unit of work (UOW).*** The unit of work is a logical "package" of discrete business objects (possibly of more than one type) with a unique identifier. Every individual message sent as part of the Part Issue "package" has a reference to its containing unit of work. A unit of work will have a ***manifest*** which explicitly defines the exchange (message) types and number of business objects per exchange type that are being encapsulated within the unit of work. The manifest message is a declaration of the expected data and will be used by Canada EDE to manage the receipt of the subsequent messages with a reference to the UOW.

If there is no associated "part history" data for a Part Issue message, then the Part Issue message does not need to be encapsulated within a unit of work and associated manifest.

For further discussion on units of work, see the EIE Service Interaction Model [Ref. 3].

3 Business Constraints

Constraints on *Usage* of the Service

1) Canada EDE shall ensure a Part Issue message is only processed from the Industry which is properly authenticated and authorized to see maintenance and materiel data for that ship class.
2) If any of the parts issued to Canada have associated “part history” data, Industry must define a unit of work with a unique identifier prior to sending Part Issue data and any of its “part history” data. Each Part Issue message and its associated “part history” data messages must reference its containing unit of work.
3) The unit of work for Part Issue always contains an explicit manifest. Please refer to **Materiel Management Services Operational Model** for details on the Manifest [Ref.4].
4) Every invocation of a service operation shall be secured using secure credentials such as PKI Certificate.

Constraints on *Behaviour* of the Service

5) The Part Issue service shall operate in near-real time.
6) In the event parts issued to Canada have associated “part history” data, Industry must first send Canada a Supply Manifest message, and await acknowledgement from Canada, prior to sending Part Issue and associated “part history” messages to Canada.
7) Canada EDE does not mandate that Part Issue messages and their associated “part history” messages will be received in the same order they were created by Industry. It is the responsibility of the Canada EDE to collate Part Issue and “part history” messages based on the Unit of Work identifier and the associated Time-to-Live contained within each related message.
8) Canada expects all line items available for a Part Demand to be included in a single Part Issue message, i.e., not a single Part Issue message per line item or serial number.
9) Canada EDE does expect there can be more than one Part Issue message for an individual preceding Part Demand message. This can occur with partial delivery.
10) Canada EDE will report any business processing errors through the Part Issue error operation exposed by Industry using a distinct and separate invocation.
11) Canada will not report successful conclusion of business processing of the Part Issue to Industry. The Part Receipt Service is used for the business response.
12) Part Issue messages will be signed using digital certificates between Canada EDE and Industry. Please see Service Interaction Model [Ref. 3] for details.
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. 3] for details.

4 Service Use Case

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

4.1 Service Context [3]

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.

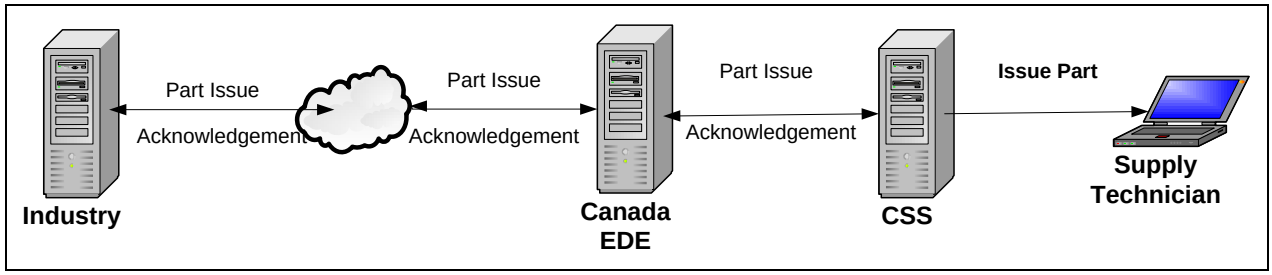


Figure 4-1 Part Issue Service Context

The following steps occur:

- A Part Demand message has been received by Industry in the usual way – see [Ref. 2]. Industry will send a Part Demand Response message.
- Industry allocates the demanded parts and records in the Industry supply system.
- Industry generates a Part Issue message.
- Industry sends Part Issue to Canada EDE – Canada EDE accepts the message and returns a 'technical' response.
- Canada EDE sends Part Issue to CSS – CSS accepts the message and returns a 'technical' response.
- CSS performs the required "back-end" processing including checking of business rules.
- If there is an error in "back-end" processing CSS will send a business error to Canada EDE.
- Canada EDE sends business error information to Industry.

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.

4.2 Successful Request and Technical Response

Figure 4-2 presents the Part Issue message flow sequence diagram. This is the main or "Happy Day" scenario.

[3] The terms ISS Contractor and Industry are used interchangeably in this document.

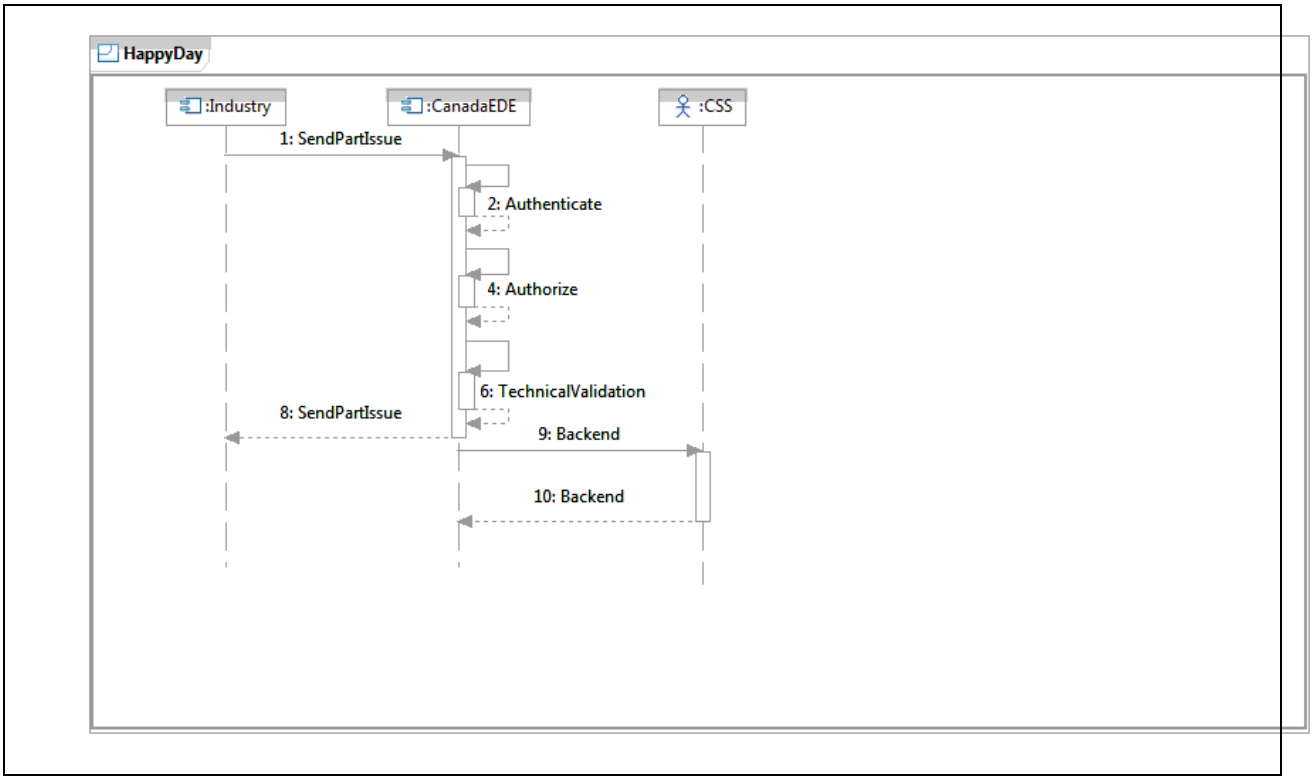


Figure 4-2 Part Issue Message Flow

Main Flow	
Scenario	"Happy Day:" Industry successfully sends Part Issue to Canada.
Pre-Condition	A Part Demand message has been received by Industry from Canada. A Part Demand Response message has been received by Canada from Industry. Industry has available parts for the Part Demand.
Post-Condition	Part Issue message is successfully received by Canada. CSS is updated.
Steps	1) Industry invokes SendPartIssue operation of the Part Issue service. 2) Canada EDE successfully Authenticates the service consumer. 3) Canada EDE successfully Authorizes the service consumer. 4) Canada EDE performs a successful schema compliance check 5) Canada EDE sends technical response to Industry indicating message was accepted. 6) Canada EDE invokes back-end processing in CSS.

Implicit in the above diagram is that a service Consumer may re-try to send a message to the service Provider in the event there is no technical response from the Provider or if the Provider response

indicates a technical error. Resend behaviour is governed by parameters in the non-functional requirements of each operation.

4.3 Alternate Scenarios

The following scenarios apply to all uses of the Part Issue 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 Issue 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 Issue 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 (Message Technical Validation Failure)	
Scenario	Industry sends a malformed message to Canada EDE.
Pre-Condition	Industry has invoked the Canada EDE Part Issue Service. Canada EDE has completed Authentication and Authorization successfully.
Post-Condition	Canada EDE sends a Malformed Message fault response.
Steps	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 message technical validation failure.
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 Issue 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 DeadMessageHandlerService.

Figure 4-3 presents the Part Issue Business Validation Failure Message Flow.

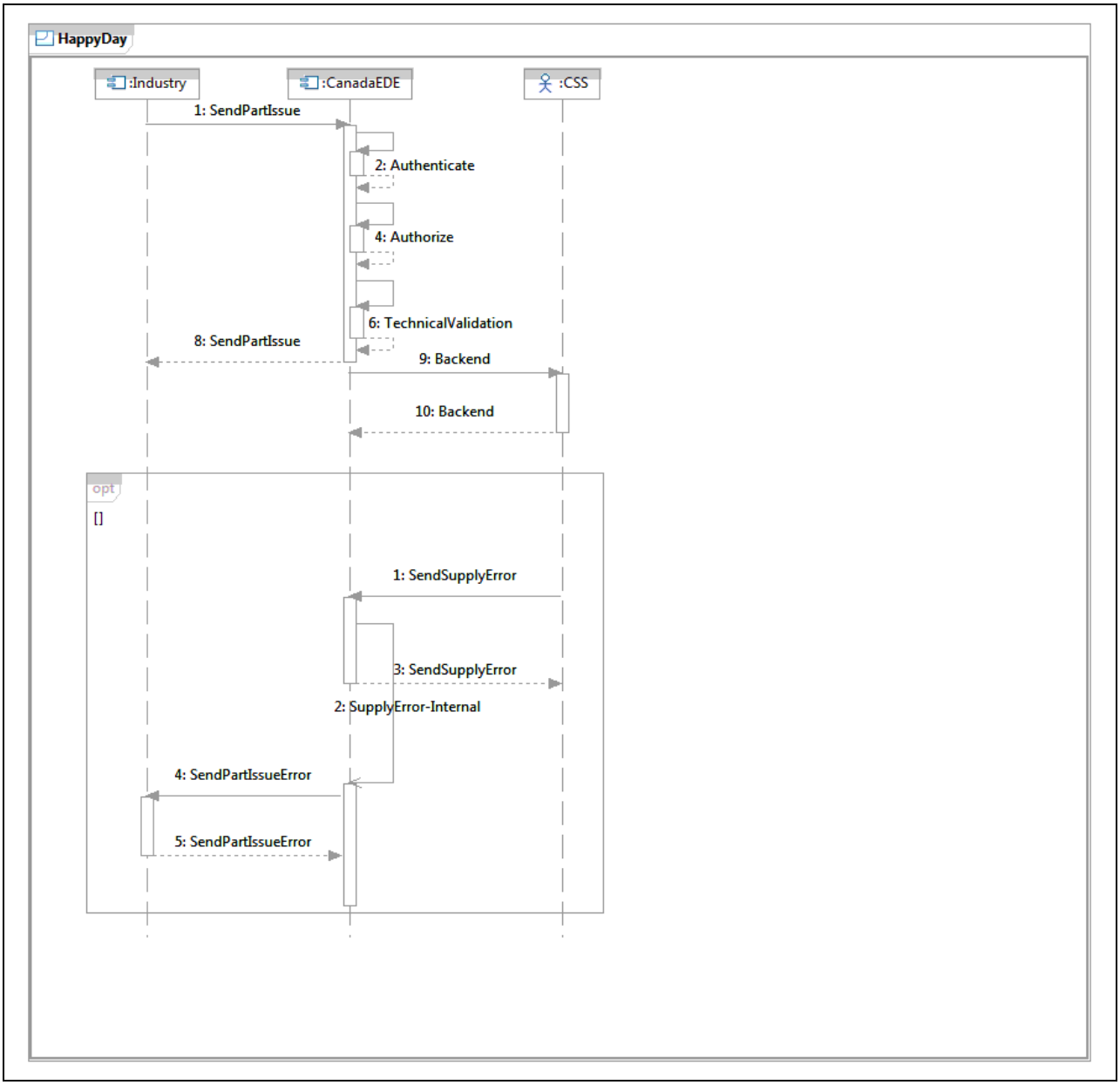


Figure 4-3 Part Issue Business Validation Failure Message Flow

Alternate Flow 5 (Business Validation Failure)	
Scenario	CSS business validations fail on one or more Part Issue data records.
Pre-Condition	Industry has invoked the Canada EDE Part Issue 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	1) The Part Issue data records failed CSS's business validation process. 2) Canada EDE sends business error information to Industry using the Part Demand Response Error operation. 3) Industry will correct erroneous line item data based upon reported errors, and generate a new Part Issue message using the same Purchase Order number and including all of the corrected line items.

5 Service Description – Part Issue Service

5.1 Service Overview

Part Issue service requires interacting web services exposed by Canada EDE System and Industry. Canada EDE will expose a service which Industry will use to send the Part Issue message (see Section 7 for message definition). After receipt of the message, Canada EDE will return a technical response back to Industry.

Industry will provide a Part Issue Error operation to be used by Canada EDE to report a Technical or Business Fault if errors are found during Canada processing. See [Ref. 4].

5.2 Service Properties

Service Property	Description
Enterprise Service Name (Business)	Part Issue Service
Enterprise Service Name (Technical)	PartIssue_Canada PartIssue_Industry
Purpose	This service supports the Canada EDE Maintenance process for scheduled and unscheduled maintenance tasks. On the occurrence of business triggers, Industry uses this service to send Part Issue messages to Canada EDE on a near-real time basis. This service also supports reporting of business errors encountered while processing Part Issue messages within the Canada supply systems.
Business Response Time Interval	8 hours (time for Canada to respond with Part Receipt message) and will vary with each WS/platform operational model for generating part receipt transactions.
Service Domain	Supply Management
Business Owner	ADM (IM)
Service Grouping	Supply Materiel / Part Issue
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)	Based on Service Level Agreements (SLA) to be determined between Canada and Industry on a per ship class basis.

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

5.3 Service Operations

Provider	Consumer	Operation
Canada EDE	Industry	SendPartIssue
Industry	Canada EDE	SendPartIssueError

5.3.1 SendPartIssue Operation

This operation is used by Industry to send a Part Issue message to Canada EDE. Canada EDE's implementation of this operation will perform authentication, authorization and technical message validation on the Part Issue message. Canada EDE 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 Canada accepts custody of the message for further processing. If Canada does NOT accept the message, Canada will return one or more fault blocks.

5.3.2 SendPartIssueError Operation

This operation is used by Canada to send a Part Issue Error message to Industry in the event a business error is encountered by Canada backend supply system. Industry's implementation of this operation will perform authentication, authorization and technical message validation on the Part Issue 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 error message for further processing. If Industry does NOT accept the message, Industry will return one or more fault blocks. Irrespective of outcome, if Canada reports a business error through this service, no further processing of the originating Part Issue message takes place.

5.4 Message Interaction

As defined in Section 4: Service Use Case, the Part Issue 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 Issue web service operation must be defined with an input, output and fault element.

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

6 Information Model

This section describes the **business objects** which are used in the Part Issue service. The Unified Modeling Language (UML) notation is used. A functional view[4] of the information model is provided in the EIE Business Use Case for Part Issue Data [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 Schema.

Note: In the case of the discrepancy between various representations of the information model, the authoritative definition of the information model will always be the XML schema that is defined for the service.

6.1 Purchase Order

A Part Issue message contains a Purchase Order business object. The Purchase Order information model is shown below in Figure 6-1.

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

Supplied parts are transferred to a certain location – the PickupLocation (class PartCustody) – all parts are of a common type (class PartType). A part may be batch managed, with Batch Lot and ExpiryDate defined. A part may be serialized, with serial numbers (class PartDetail). A PartCustody must be contained in a LineItem.

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

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

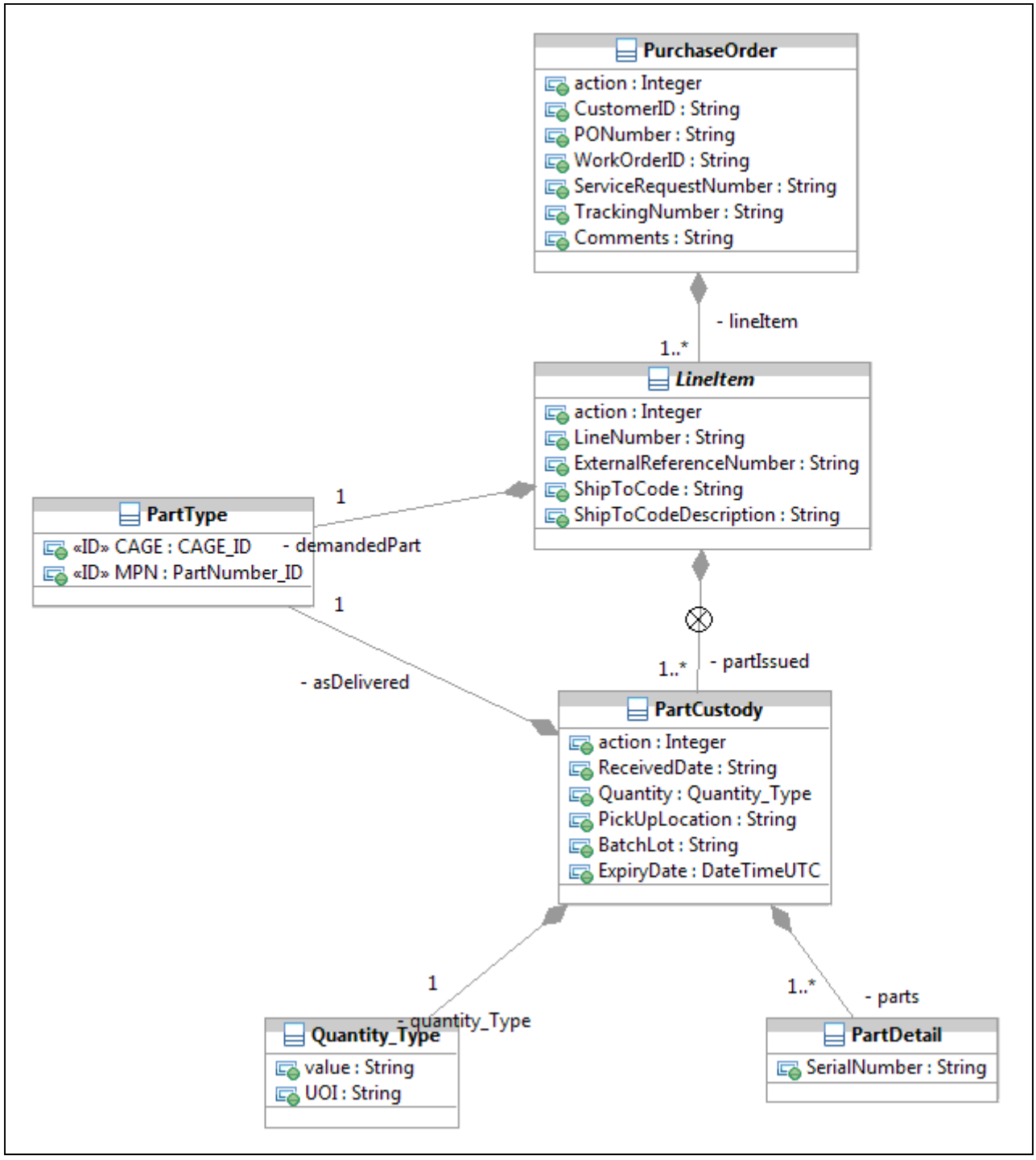


Figure 6-1 Information Model – Purchase Order for Part Issue

The 'action' attribute is discussed in Section 7.3.1 Part Issue Input Messages.

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.

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

7.1 Part Issue Input Message Constructs

7.1.1 Part Issue Input Body

As shown in Figure 7-1, a Part Issue input message consists of:

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

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 associated with the contained business payload.

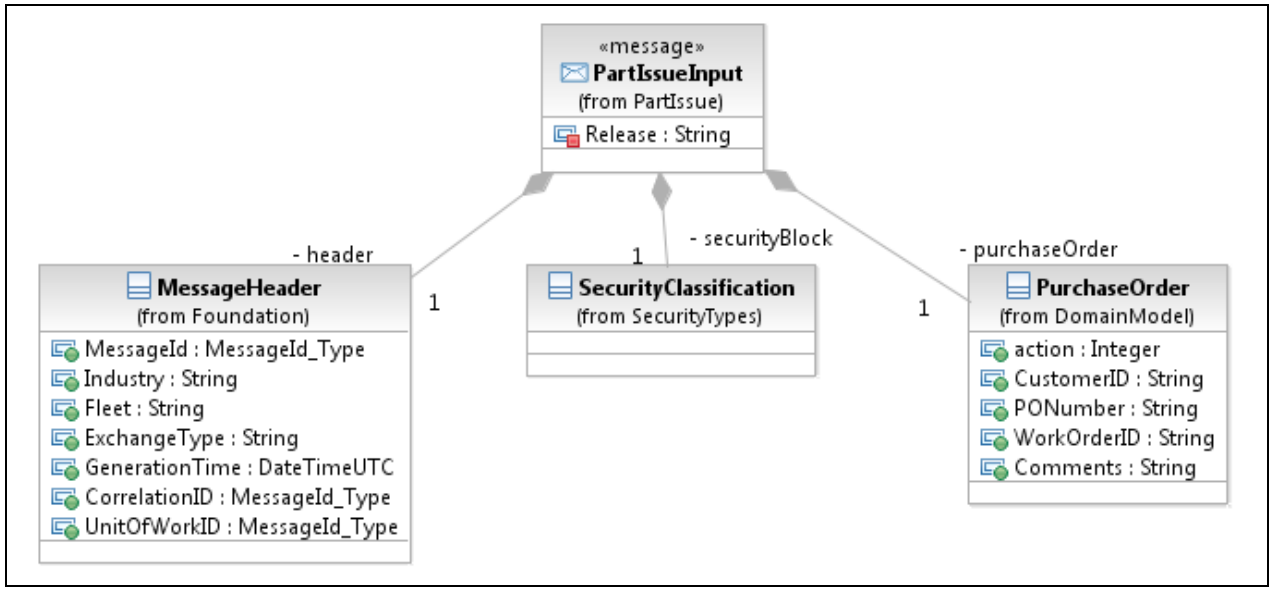


Figure 7-1 Part Issue Input Message

- For a PartIssueInputMessage the MessageHeader Correlation ID is not used if the PartIssue message is standalone and not part of a Manifest.
- If the PartIssue is sent in the context of a manifest, then the MessageHeader UnitofWorkID must equate to the UnitofWorkID value set within the Manifest message, and the MessageHeader Correlation ID must equate to Message ID set within Manifest Message header.

Within the PurchaseOrder, LineItem 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 CSS 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.

7.1.2 Part Issue Output Message

The output of the SendPartIssue operation is the PartIssueOutputBody. As shown in Figure 7-2, the output body consists of:

- A Message Header;
- A PartIssueOutput indicating acceptance; the Part Issue message Purchase Order is accepted in its entirety only.

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

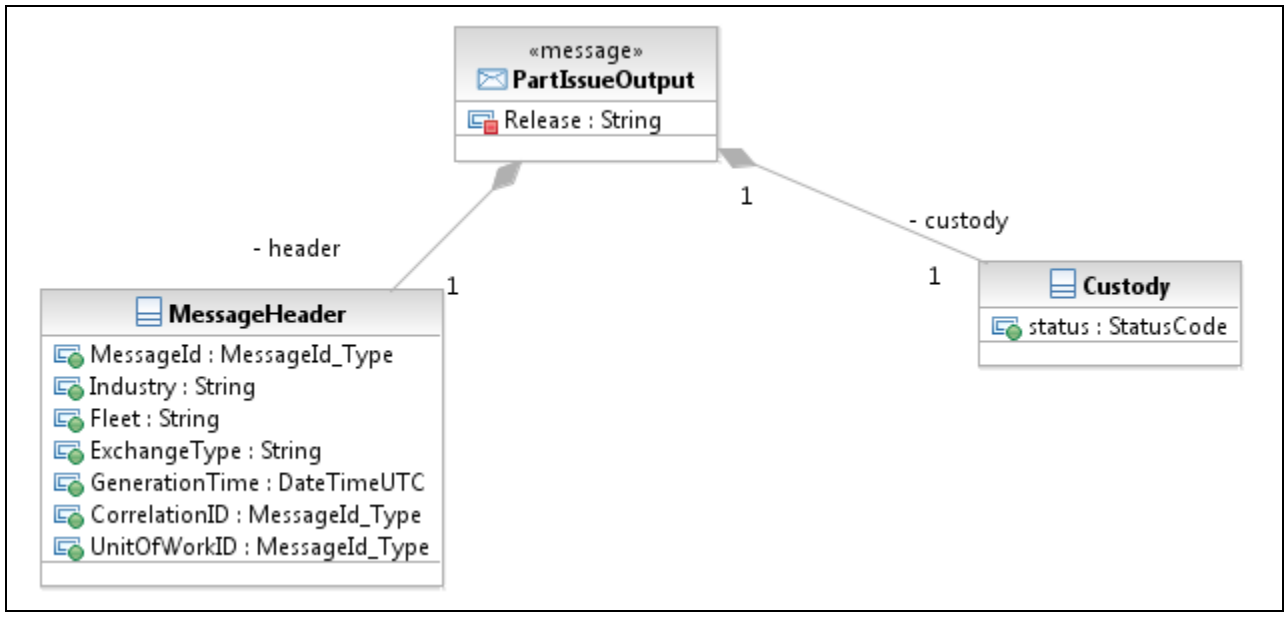


Figure 7-2 Part Issue Output Message

For a PartIssueOutputBody:

- The MessageHeader Correlation ID will reflect the Message ID of the originating Part Issue input message.
- If the PartIssue is sent in the context of a manifest, then the MessageHeader UnitofWorkID must equate to the UnitofWorkID value set within the Manifest message.
- The MessageHeader Exchange Type must be set to the Exchange Type of the PartIssueInputBody.
- The value of the PartIssueOutput 'Custody' evaluates to "success".

7.1.3 Part Issue Fault Messages

A fault returned by the SendPartIssue operation uses the PartIssueFaultBody element. As shown in 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.

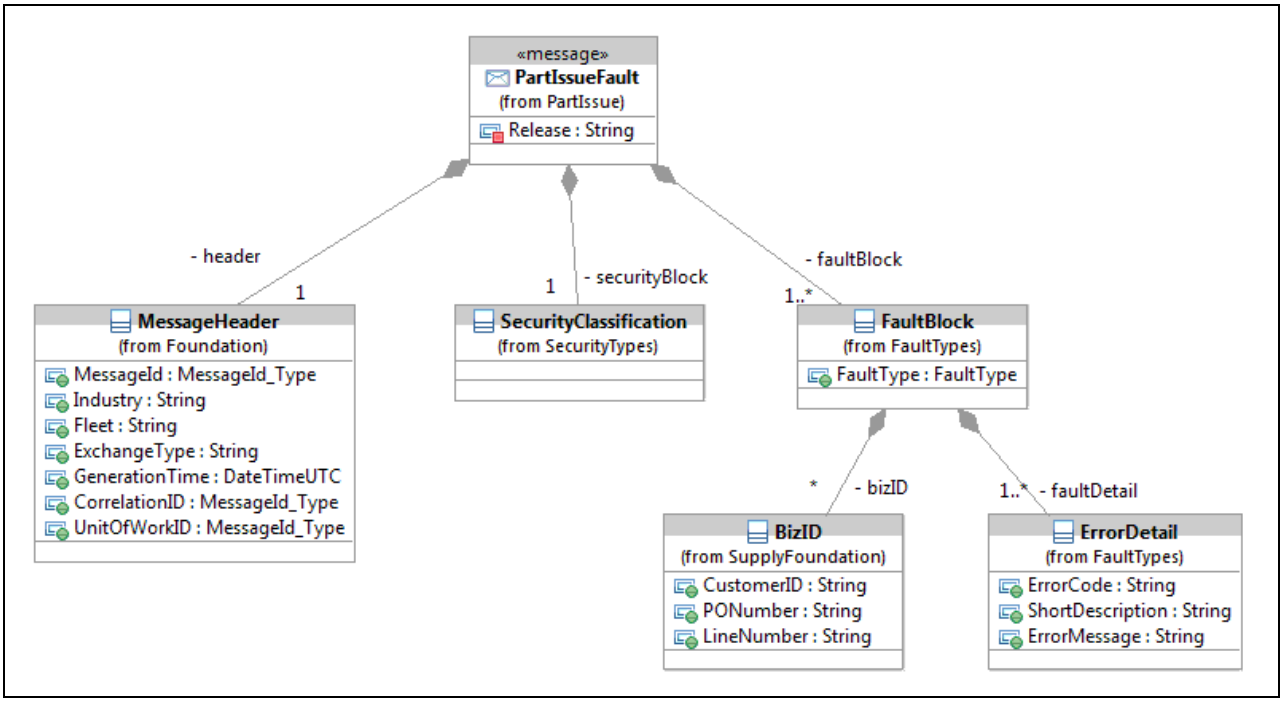


Figure 7-3 Part Issue Fault Body

For a PartIssueFaultMessage:

- The MessageHeader Correlation ID will reflect the Message ID of the originating Part Issue input message.
- If the PartIssue is sent in the context of a manifest, then the MessageHeader UnitofWorkID must equate to the UnitofWorkID value set within the Manifest message.
- The MessageHeader Exchange Type must be set to the Exchange Type of the PartIssueInputBody.

7.2 Part Demand Response Error Message Constructs

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

7.2.1 Part Issue Error Input Body

As shown in Figure 7-4, a Part Issue 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.
        - 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.

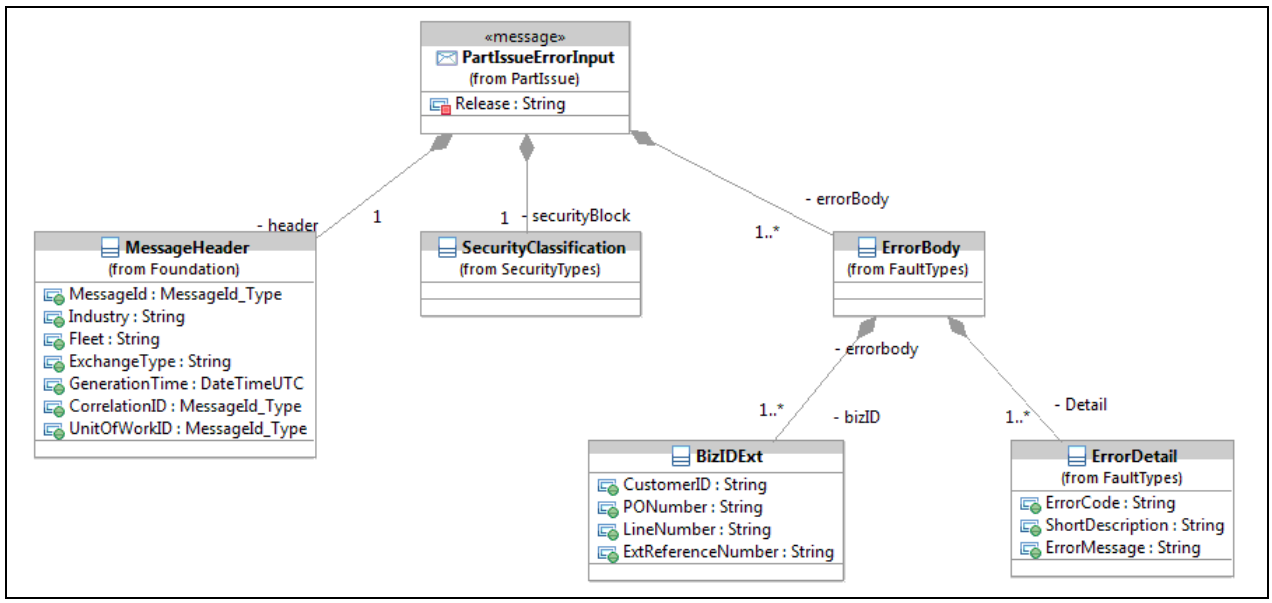


Figure 7-4 Exchange Messages – Part Issue Error Input Body

For a PartIssueErrorInputBody 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 Issue Error Output Body

The output of the SendPartIssueError operation is the PartIssueErrorOutputBody. The output body is similar to the PartIssueOutputBody.

Please refer to 7.1.2 Part Issue Output Body for this definition

7.2.3 Part Issue Error Fault Body

A fault returned by the SendPartIssueError operation uses the PartIssueErrorFaultBody element.

Please refer to 7.1.3 Part Issue Fault Body for this definition.

8 Service Operation Details

8.1 Detailed Operation Characteristics – SendPartIssue

Industry will invoke the exposed Canada EDE Part Issue service through this operation. A Part Issue message will contain a purchase order.

Refer to PartIssue_Canada.wsdl for implementation details.

Detailed Operation Characteristics

Interface Definition	Description
Operation Name	Send Part Issue
Operation Technical Name	SendPartIssue
Operation Description	This operation is invoked by Industry to send a Purchase Order record to Canada EDE. The Purchase Order describes parts issued to Canada.
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 7.1.1 Part Issue Input for details.
Output Message Definition	Please refer to Operation Message Model Section 7.1.2 Part Issue Output for details.
Fault Definition	Please refer to Operation Message Model Section 7.1.3 Part Issue Faults for details. As discussed in Section 4: Service Use Case, the following faults may be reported: 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.
Peak Throughput Time	Based on Service Level Agreements (SLA) to be determined between Canada and Industry on a per ship class basis.

Non Functional Requirements/Technical Details	
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 Issue 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	Business Response to a Part Issue message is a Part Receipt message. Response Time Interval based on Service Level Agreements (SLA) to be determined between Canada and Industry on a per ship classbasis.
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 to convey the error being observed by Industry when Industry cannot successfully send Part Issue message to Canada EDE.

8.2 Detailed Operation Characteristics – SendPartIssueError

Canada system will invoke the exposed Industry PartIssueError service through this operation. A part issue error message will contain Canada-reported business errors encountered while attempting to process a PartIssue message generated by Industry.

Refer to PartIssue_Industry.wsdl for implementation details.

Detailed Operation Characteristics

Interface Definition	Description
Operation Name	Send Part Issue Error
Operation Technical Name	SendPartIssueError

Interface Definition	Description
Operation Description	This operation is invoked by Canada to send a Business Error message to Industry. The Business Error describes errors encountered while processing Industry's Part Issue message.
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 7.2.1 Part Issue Error Input for details.
Output Message Definition	Please refer to Operation Message Model Section 7.2.2 Part Issue Error Output for details.
Fault Definition	Please refer to Operation Message Model Section 7.2.3 Part Issue 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

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 to convey the error being observed when Canada EDE cannot successfully send Part Issue Error message to Industry.

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 elements[5] are bound to the SOAP Body element. The SOAP Header is used for EIE adopted WS-* standards-based elements (e.g., WS_Security assertions) elements.

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

8.3.2 SOAP Over JMS

Not currently supported for this service.

[5] See the Part Issue Service WSDL file for the precise binding

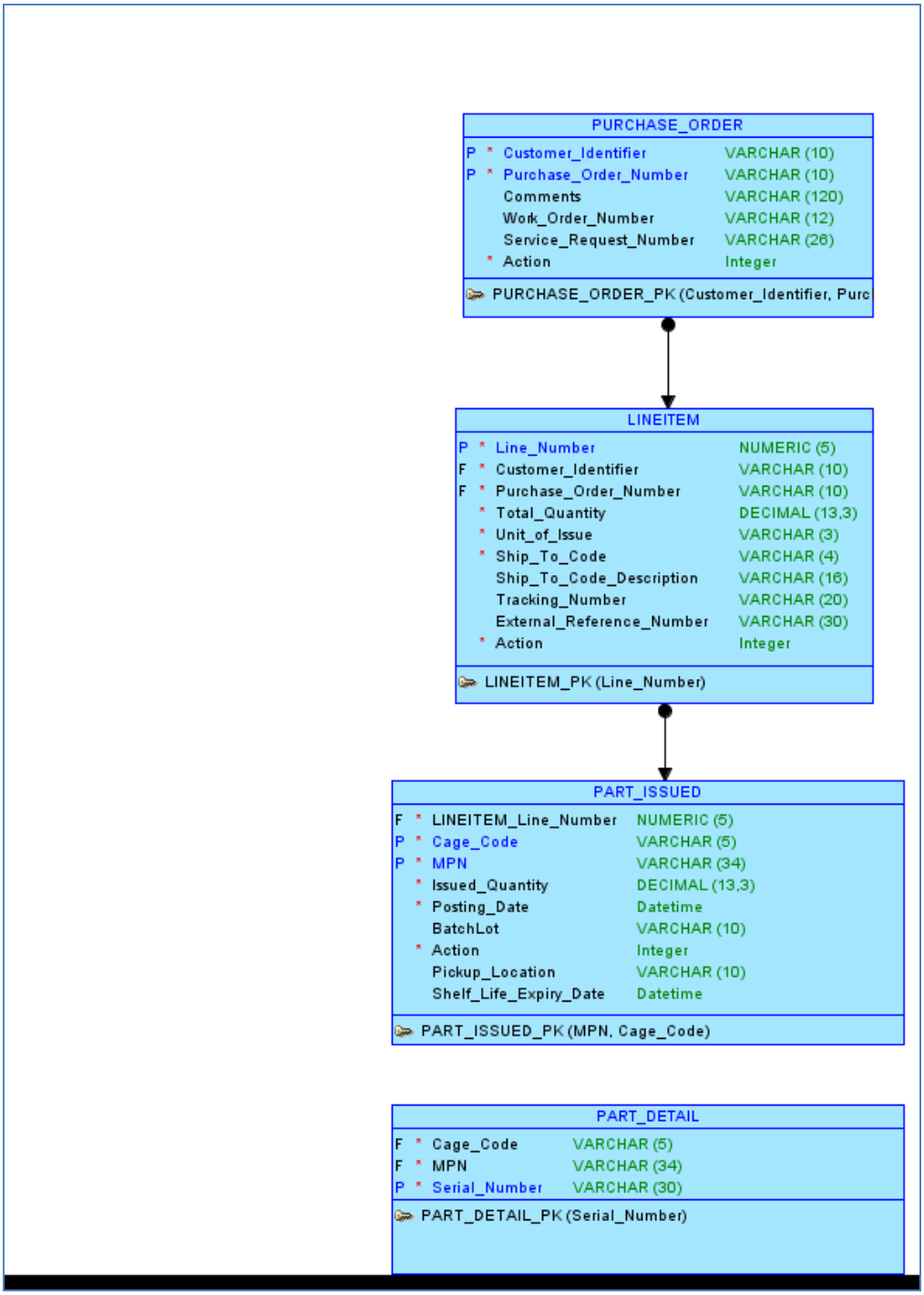
9 Definitions, Acronyms, Abbreviations

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

Term	Description
URL	Uniform Resource Locator
WO	Work Order
WS	Weapon System
WSDL	Web Service Definition Language
XML	Extensible Mark-up Language
XSD	XML Schema Definition
XSL	Extensible Stylesheet Language

10 Appendix A – Information Model Entity Relationship View

Information Model – Entity-Relationship View



11 Document History

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