



Electronic Information Environment (EIE) Project

Master Data and Engineering Change Service Operational Model

EIE Project

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1 Overview

In the context of In-Service Support Contracting Framework (ISSCF) or Performance Based Contracting (PBC) Canada performs first line maintenance, as well as applicable second line maintenance as per the specific platform requirement. As such Canada will use Canada Maintenance Management System (CMMS) to record the maintenance activities.

In the ISSCF/PBC model, industry is responsible for defining and providing all of the required information that needs to be populated within CMMS. Industry is also measured on the effectiveness of the maintenance regime and thus is interested in data collected that will enable industry to monitor and report serviceability of a fleet based on the maintenance data that is captured within CMMS.

The master data operational information exchange model has been designed and implemented with awareness as to the various validation phases that will occur on the data. Thus the model will support receiving data as a collection of datasets from industry, after which it can be processed and validated within CMMS with all of the relationship across the set of master data being preserved during the entire processing phase.

1.1 *Intended Audience*

The intended audience for this business use case includes:

- Industry partners who require detail of their business service-level interactions, benefits, and obligations under ISSCF/PBC.
- All Canada personnel implementing ISSCF/PBC.
- Solution Architects who will define a Business Service Model for the business service(s) described here.
- Functional Testers who will use the business use case to define test scenarios for Integration testing.
- Designers who will perform detailed design and unit test.

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1.2 References

[Ref. 1] Electronic Data Exchange (EDE) Service Interaction Model: In the Context of In-Service Support Contracting Framework (ISSCF)/Performance Based Contracting (PBC)

[Ref. 2] Annex O - Navy Configuration Management Process Model

Note1: Only applicable references will be made available to industry partner based on the adoption by the platform authority within Canada – DND. Since not all references are applicable to all platforms/fleet

Note2: In order to determine the specific version of references included in here, the reader is advised to read the accompanying ‘Release Notes’ for the Supply business domain that accompanied the release of this document.

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2 Principles of data transfer and subsequent exchange

The driving principles of master data for exchange with Canada are established based on the need for the data to support broadly the following categories of the Weapon System Program in the In-Service-Support (ISS) phase namely:

- Reliability and Maintainability of the Platform
- Configuration Management Requirements for the As-Maintained Configuration
- Performance Based Accountability (PBA).

Each of the above categories warrants data to be defined with various characteristics as part of industry's responsibility of defining the maintenance program in support of the maintenance of the weapon system. Industry will assemble the required data from its respective sources such as engineering, logistical support analysis, materiel management and configuration management systems. The data that is collected will be constructed as per the defined interfaces and associated data structures that Canada has defined and disseminated to industry.

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3 Constraints/Behaviours of the Data Exchange

1. Canada conducts first and second level maintenance based on the defined model as provided by industry partner who has assumed the responsibility for the PBC phase of the platform.
2. Canada's Maintenance Management System is used to conduct the maintenance and will store the master data that has industry has provided.
3. Canada will use the master data and execute maintenance and other transaction within CMMS using the master data provided by industry.
4. A predetermined release model will be defined between industry and respective in-service support Weapon System Management office for release of master data to Canada.
5. Master data that is received will be technically validated for technical compliance using the EDE and CMMS capabilities
6. Master data will always be business validated by the respective data owners for the specific weapon system prior being transacted within CMMS.

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4 Master Data Operational Model

Master data that is required by Canada and furnished by industry will adhere to the following process model shown in Figure 4-1 and as described below:

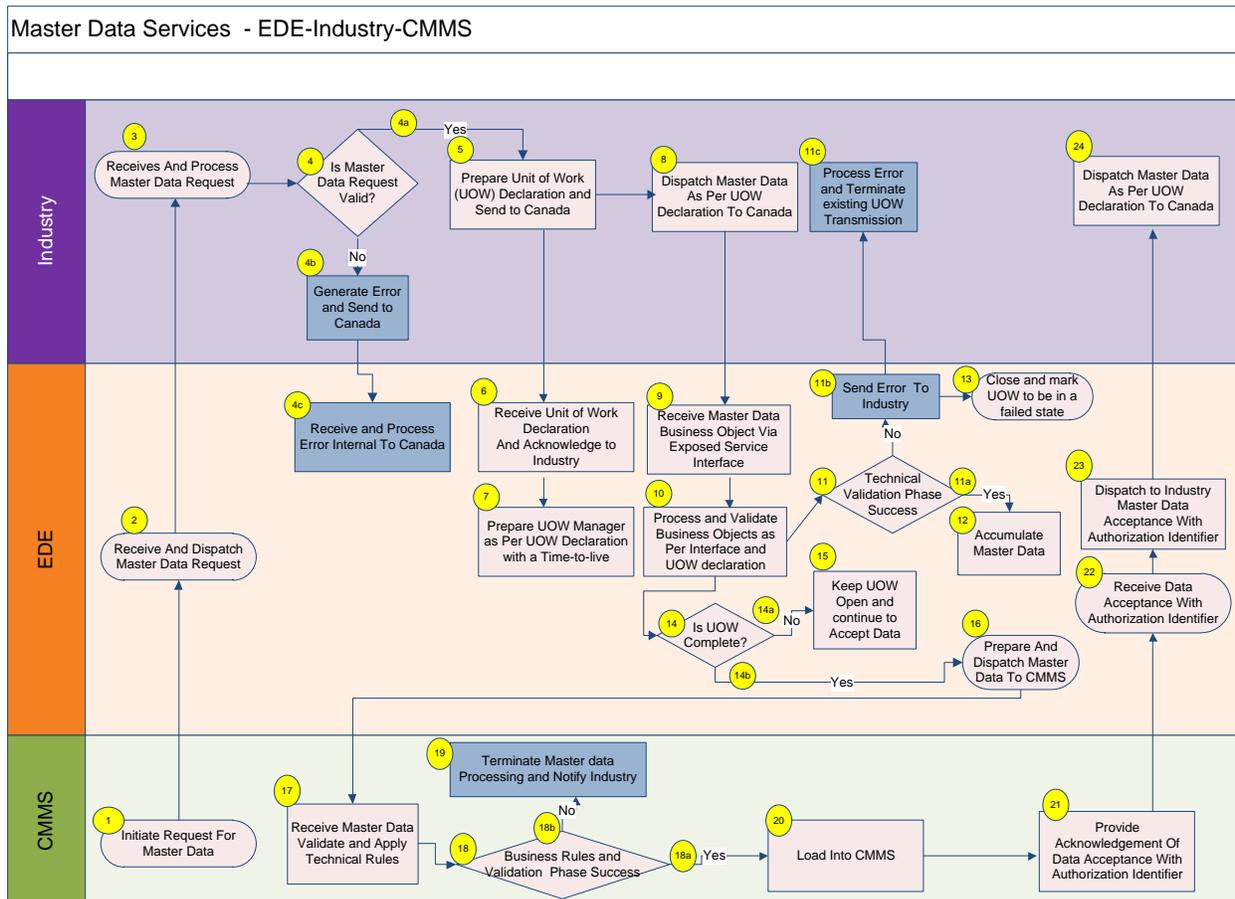


Figure 4-1 Master Data Process Model

Pre Condition: The operational model for master commences with industry notifying Canada through an external communication that data is available for Canada to request.

Basic Information Exchange Flow

1. Canada creates a request for Master Data with an industry furnished authorization identifier for the following reasons:
 - a. Initial Weapon System Delivery for each instance of the Weapon System.
 - b. Engineering Change.

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- c. Periodic Updates for certain class of master data – Note: A periodic schedule under which a request for Master data will be initiated will be agreed to between Canada and Industry prior to inducting a fleet into operations.
2. EDE will dispatch the request to industry using the predefined web service interface that has been defined namely the Data Package Request service.
3. Industry accepts the data package request and dispatches for validation.
4. On validation of the data package request by industry:
 - a. If the data package request passes validation. Industry will acknowledge with a technical acknowledgment.
 - b. In the event the data package request fails validation industry will generate an error and notify Canada of the error.
 - c. Canada will receive and process the error internal to Canada as per the error handling procedures in place.
5. In the successful path Industry will prepare a Unit of Work (UOW) declaration message as per the Unit of Work Service interface and invoke the Canada hosted Unit of Work Service.
6. Canada EDE will receive the UOW declaration message that will contain the information identified below:
 - a. An Authorization Identifier.
 - b. The Business Object Type and the associated count.
 - c. The purpose of the Unit of Work.
 - d. Core message identifying elements such as: Message Identifier and a Unique Unit of work identifier.
 - e. As well as other elements required as per the [Ref.1] and UOW Service Specification.
7. Canada will create a UOW context in order to receive the data declared as per the UOW message. Canada will provide a technical acknowledgement of the UOW message to Industry (Please refer to the UOW service specification for specific details).
8. Industry will disseminate the master data as per the UOW declaration via the exposed service interfaces
9. Canada receives the specific master data object via the published master data interface.
10. Canada will validate the received business objects and ensures that it is based on the UOW based declaration.
11. The received message will go through a technical validation phase:

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- a. If successful, proceed to step 12 – Accumulate Data.
 - b. If unsuccessful, an error message will be sent to Industry and proceed to step 13.
 - c. Industry will process the received error message and process as per its error handling procedures.
12. Canada EDE will accumulate the received data.
 13. Canada EDE will close the UOW and mark it to be in a failed state.
 14. Canada will validate if the UOW declaration is complete:
 - a. If the UOW is complete, then proceed to step 16.
 - b. If the UOW is incomplete and not in failure state, proceed to step 15.
 15. Update UOW Manager to indicate what has been received and keep the UOW open.
 16. EDE will prepare and dispatch the data to CMMS.
 17. CMMS will receive the master data in its entirety and apply the required technical validation.
 18. Validation of the business rules will occur as follows:
 - a. If the data passes all of the business rules validation processes, proceed to step 20.
 - b. If the data fails business rules validation, proceed to step 19.
 19. CMMS will terminate the processing of the data package and notify industry via the appropriate error reporting channels that have been defined and agreed to between Canada and Industry.
 20. The entire data package that has passed validation will be loaded into CMMS and made available for conducting transactions.
 21. CMMS will provide acceptance event signal with the authorization identifier that accompanied the data to indicate that the data has been accepted by CMMS.
 22. EDE will accept the acceptance event with the authorization identifier.
 23. EDE will dispatch the acceptance event to industry with the authorization identifier using the Data Package's – Deployed service operation.
 24. Industry will receive the acknowledgement of the acceptance of the data package associated with the authorization identifier.

4.1 Benefits

Based on the model described above, a summary of benefits is listed below:

- a. A complete and accurate picture of the data being provided is clearly established prior to the commencement of dispatching the data from industry.

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- b. Industry is in control of the data that is being sent and will be able to determine the relationship integrity is maintained across the data sets.
- c. Canada will initiate processing when all of the declared data is delivered and the integrity of the data is preserved during transmission to CMMS.
- d. CMMS will have the entire dataset and can validate the data against the respective business rules for the data.

4.2 Responsibilities

Based on the model described above, associated responsibilities that both Canada and Industry have to accept are listed below:

- a. Canada is responsible for initiating data requests.
- b. Canada will notify industry on acceptance of the transferred data.
- c. Industry is responsible to define and transfer data as per the scope of the authorization identifier.
- d. Industry is responsible for assembling the data and ensuring integrity across the various business objects that make up the dataset.

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5 Definitions, Acronyms, Abbreviations

| Term | Description |
|-------|--|
| CMMS | Canada Maintenance Management System |
| DND | Department of National Defence |
| EDE | Electronic Data Exchange |
| ISS | In Service Support |
| ISSCF | In Service Support Contracting Framework |
| PBA | Performance Based Accountability |
| PBC | Performance Based Contracting |
| UOW | Unit of Work |

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6 Document History

| Revision Number | Description | Date |
|-----------------|--|-------------------|
| 1.0 | Baselined for release to Boeing | 17 January 2012 |
| 1.1 | Removed PROTECTED-A markings from document and add proviso to page footer. | 12 June 2013 |
| 1.2 | Included Navy Process Model reference | 30 September 2015 |

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