

# Performance Based Contract (PBC)

## Annex P: Navy Canada Maintenance Management System Data Initialization Process Model

Note: This process model document should be read in conjunction with the associated process models that depict how DND conducts and executes maintenance. The focus of this document is centered on the Performance Based Contracting perspective and Electronic Information Exchange enablement.

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# 1 CMMS DATA INITIALIZATION REQUIREMENTS

## 1.1 Introduction

Canada Maintenance Management System (CMMS), which is an integral part of Defence Resource Management Information System (DRMIS), needs to have the latest Master Data to ensure that most up-to-date maintenance information is available for Department of National Defence (DND) Platform Systems.

The required Master Data for platform can be grouped into three categories:

1. Material Master data
  - a. Material Master Record (MMR)
  - b. Alternate Parts (Form-Fit-Function class (FFFC) class)
  - c. Bill of Material (BOM)
2. Technical Structure
  - a. Function Location (FLOC)
  - b. Equipment Master Records (EMR)
  - c. Measurement Point (MPOINT)
  - d. Master Part List (MPL)
3. Maintenance Program
  - a. Maintenance Plan (MP)
  - b. Maintenance Task List (MTL)
  - c. Measurement Document (MDOC).

Refer to the table of [References](#) in section **Error! Reference source not found.** for supplementary reading for this document.

## 1.2 Master Data Load Scenarios

The In Service Support (ISS) Contractor will provide CMMS Data Loads in the following scenarios:

- Approved Engineering Change(s) update(s) which result in Master Data updates
- Periodic Update requests by CMMS for updated data (MMR and Alternate Parts (FFFC), EMR for Support Tools and Test Equipment, etc.)
- ISS Contractor Maintenance Program updates which need to be shared with CMMS.

When an Engineering Change or an ISS Contractor Maintenance Program update becomes available, the ISS Contractor will provide Canada with a unique authorizing data package key (via agreed upon

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protocols), which Canada will then use to request data through the EDE. Canada will receive Periodic Update data on a predefined schedule. In either case, data is received using the following process:

1. Canada requests data based on a unique authorizing data package key, or Date via the EDE.
2. ISS Contractor makes the data available to Canada via the EDE.
3. Once Canada has successfully loaded the data in CMMS, Canada will send an acknowledgement to the ISS Contractor via the EDE, indicating that the new Master Data is available to transact against.

### 1.2.1 Engineering Change Data Loads

To inform Canada of a pending data update to the as-maintained platform configuration captured in the CMMS, the ISS Contractor will submit a formal contract document which provides Canada a description of the change (e.g., Engineering Change) and lists within the engineering and contractual authorization to implement the corresponding change. This contract document will contain a unique document number, i.e., Work Authorizing document.

Canada will initiate a Master Data request corresponding to the engineering change [N2.2.2.1.1] that will be evaluated by the ISS Contractor. If the request is invalid, the ISS Contractor will send the 'Master Data Request Error' [N2.2.2.1.2] message to Canada, otherwise the ISS Contractor will dispatch the Master Data to Canada via the EDE.

Depending on the nature of the engineering change, any of the Master Data objects may be included in the change set. The Master data load sent to Canada may include material master data (MMR [N2.2.2.1.5], FFFC [N2.2.2.1.7], BOM [N2.2.2.1.12]), technical structure data (MPL [N2.2.2.1.6], FLOC [N2.2.2.1.8], EMR [N2.2.2.1.9], MPOINT [N2.2.2.1.13]), and/or maintenance program data (MTL [N2.2.2.1.10], MPLAN [N2.2.2.1.11], and MDOC [N2.2.2.1.14]). Canada reviews and validates the received Master data as per established and adopted standards for the respective data. If the validation is not successful, Canada terminates processing the Master data and notifies the ISS Contractor of the error condition. Upon successful validation of the Master Data, Canada loads the Master Data into the CMMS and sends the acknowledgement of data acceptance [N2.2.2.1.4] to ISS Contractor through the EDE.

For details of the engineering change process as it pertains to EDE, refer to **Annex O – Navy Configuration Management Process Model**.

Reference: [CMMS Data Initialization - Master Data Update](#)

### 1.2.2 On-Demand Loads

Some of the data may change for factors outside an engineering change (e.g., Cage Code changes, Miscellaneous Small Part (MSP) additions, new substitute parts). In order to provide these changes to Canada, the ISS Contractor will make available the relevant data for Canada to request via the established electronic interfaces. These updates are made available to Canada and will include all the changes to the

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material master data loaded into CMMS since the previous request by Canada. Canada will use the date request as the unique Authorizing Document number for the periodic master data request.

Canada will initiate an On-Demand Master Data Request [N2.2.2.1.1] using the Date as a request key that will be evaluated by the ISS Contractor. If the request is invalid, the ISS Contractor will send the 'Master Data Request Error' [N2.2.2.1.2] message to Canada, otherwise the ISS Contractor will dispatch the Master Data to Canada via the EDE.

The On-Demand Master data load sent to Canada may include any or all material master data objects. (MMR [N2.2.2.1.5], FFFC [N2.2.2.1.7], BOM [N2.2.2.1.12]). Canada validates the received Master data. If the validation is not successful, Canada terminates processing the Master data and notifies the ISS Contractor of the error condition. Upon successful validation of the Master Data format, Canada loads the Master data into the CMMS and sends the acknowledgement of data acceptance [N2.2.2.1.4] to the ISS Contractor through the EDE.

Reference: [CMMS Data Initialization - Master Data Update](#)

### 1.2.3 ISS Contractor Maintenance Updates

The ISS Contractor may determine that maintenance plans or task lists need to be updated or optimized. It is anticipated that these changes would be processed through the Engineering Change procedure. For details of the engineering change process as it pertains to EDE, refer to **Annex O – Navy Configuration Management Process Model**.

Reference: [CMMS Data Initialization - Master Data Update](#)

### 1.2.4 Data Load Exceptions

Data load exceptions are grouped into two general categories:

- Technical Exception – issue with the data feed between the ISS Contractor and Canada's EDE resulting in an incorrectly transmitted message,
- Data Exception – issue with the values of the data contained in a correctly transmitted message that may cause an exception either in the loading of data into CMMS or in the usage of the data for operational purposes.

Technical Exceptions are resolved at the ISS Contractor and Canada schema level. If a Technical Exception occurs, Canada may continue to request the same authorizing document until there is a successful transfer.

Data Exceptions are usually not identified by the technical team, but by functional end users. In this case, Canada must submit a Technical Problem report identifying and describing the data issue.

Upon identifying the data exception, the ISS Contractor will:

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- Correct the issue in the source system in agreement with Canada,
- Once the errors are resolved the entire data is re-sent to the EDE,
- Present a new contract letter with a new authorization number containing the data fix to an ISS Contractor document control system,
- Canada will use the Contract Letter as the authorizing document to re-request the updated information from the EDE.

### 1.3 Send Platform Data to the ISS Contractor

The Master Data Load business process defines the loading of maintenance planning source data into the Canada Maintenance Management System (CMMS) to set up the system for future maintenance inputs. This will allow the CMMS to track and provide appropriate data used at different points during the overall maintenance process for the fleet.

The initial LSAR data set for the ship is provided to Canada by the shipbuilder and will be the basis for the initial data load. The Fleet Data Management (FDM) team will validate the Master Data in a validation environment and then load the data into CMMS.

Canada will provide CMMS master data associated with platform to the ISS Contractor through the EDE. The required Master Data for a platform required by the ISS Contractor can be grouped into three categories:

1. Material Master data
  - a. Material Master Record (MMR)
  - b. Alternate Parts (Form-Fit-Function class (FFFC) class)
  - c. Bill of Material (BOM)
2. Technical Structure
  - a. Function Location (FLOC)
  - b. Equipment Master Records (EMR)
  - c. Measurement Point (MPOINT)
  - d. Master Part List (MPL)
3. Maintenance Program
  - a. Maintenance Plan (MP)
  - b. Maintenance Task List (MTL)
  - c. Measurement Document (MDOC).

All of this data will be passed to the ISS Contractor on a ship by ship basis. Refer to the table of [References](#) in section **Error! Reference source not found.** for supplementary reading for this document.

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The ISS Contractor will initiate a Master Data request using the document authorization number corresponding to the ship data being requested, [N2.2.2.1.15] that will be evaluated by Canada. If the request is invalid, Canada will send the 'Master Data Request Error' [N2.2.2.1.16] message to the ISS Contractor; otherwise Canada will dispatch the Master Data to the ISS Contractor via the EDE.

The Master data load sent to the ISS Contractor may include material master data (MMR [N2.2.2.1.18], FFFC [N2.2.2.1.20], BOM [N2.2.2.1.25]), technical structure data (MPL [N2.2.2.1.19], FLOC [N2.2.2.1.21], EMR [N2.2.2.1.22], MPOINT [N2.2.2.1.26]), and/or maintenance program data (MTL [N2.2.2.1.23], MPLAN [N2.2.2.1.24], and MDOC [N2.2.2.1.27]). The ISS Contractor validates the received Master data. If the validation is not successful, the ISS Contractor terminates processing the Master data and notifies Canada of the error conditions. Upon successful validation of Master data, the ISS Contractor loads Master data into their systems and sends the acknowledgement of data acceptance [N2.2.2.1.4] to the ISS Contractor through the EDE. At this point, transactions may proceed against this data.

Reference: [CMMS Data Initialization - Ship Initial Master Data Load](#)

## 1.4 Maintain EMR

While conducting maintenance Canada may determine that the physical part does not match the electronic EMR record in CMMS (e.g. Serial number incorrect, incorrect MPN or Cage). Canada will correct the electronic EMR record, and send the corrected EMR to the ISS Contractor [N2.2.2.1.28] via the EDE. The ISS Contractor will validate the received EMR, and send error or acceptance [N2.2.2.1.29] to Canada via the EDE.

Reference: [CMMS Data Initialization – Correct EMR](#)

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## 2 EDE TRANSACTIONS

The following Table 2-1 summarizes EDE Transactions between the ISS Contractor and Canada.

**Table 2-1 EDE Transactions**

EDE Transaction	Source	Destination
Master Data Request	Canada	ISS Contractor
Master Data Request Error	ISS Contractor	Canada
Acknowledgement of Data Acceptance	Canada	ISS Contractor
MMR Data	ISS Contractor	Canada
FFFC Data	ISS Contractor	Canada
BOM Bill of Material	ISS Contractor	Canada
FLOC Data	ISS Contractor	Canada
EMR Data	ISS Contractor	Canada
MPL Data	ISS Contractor	Canada
Measurement Data	ISS Contractor	Canada
Measurement Point Data	ISS Contractor	Canada
MP Data	ISS Contractor	Canada
MTL Data	ISS Contractor	Canada
EMR Correction	Canada	ISS Contractor
EMR Correction Error	ISS Contractor	Canada
Master Data Request	ISS Contractor	Canada
Master Data Request Error	Canada	ISS Contractor
Master Data Response	Canada	ISS Contractor
Acknowledgement of Data Acceptance	ISS Contractor	Canada
MMR Data	Canada	ISS Contractor
FFFC Data	Canada	ISS Contractor
BOM Bill of Material	Canada	ISS Contractor
FLOC Data	Canada	ISS Contractor

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Annex P: Navy CMMS Data Initialization Process Model

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EDE Transaction	Source	Destination
EMR Data	Canada	ISS Contractor
MPL Data	Canada	ISS Contractor
Measurement Data	Canada	ISS Contractor
Measurement Point Data	Canada	ISS Contractor
MP Data	Canada	ISS Contractor
MTL Data	Canada	ISS Contractor

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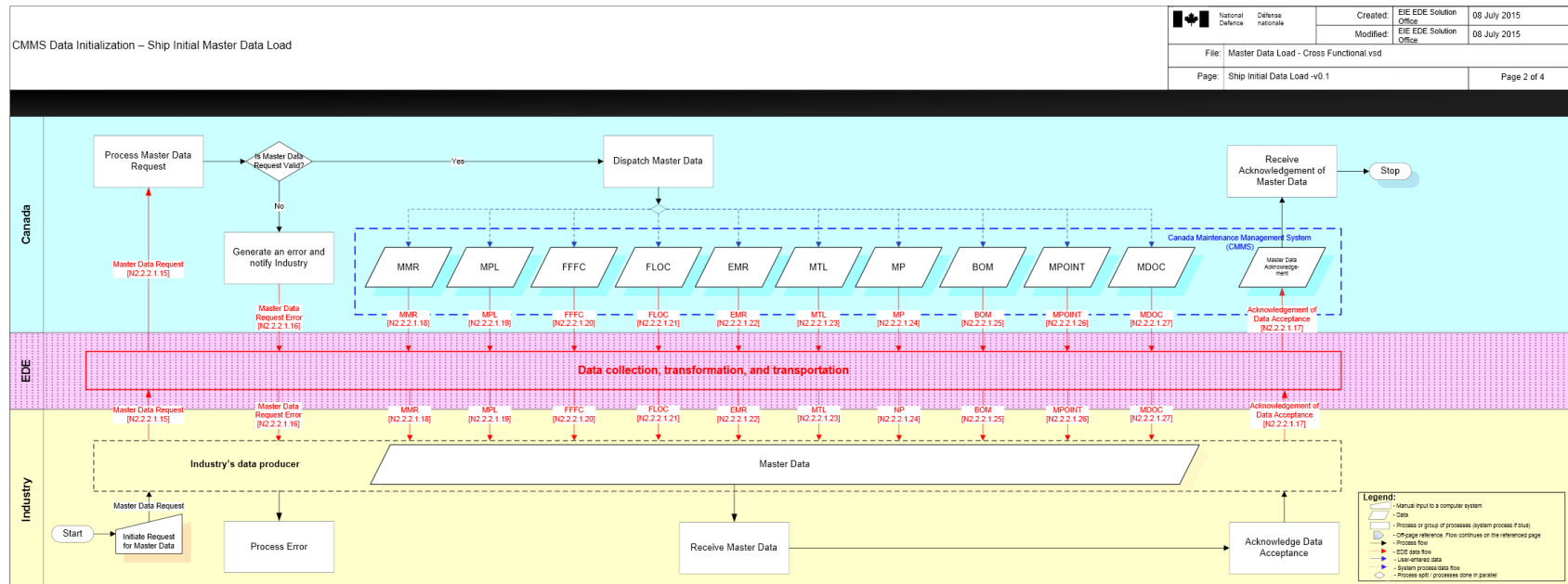
### 3 MASTER DATA CROSS-FUNCTIONAL PROCESS FLOWS

The Master Data Load processes are depicted in the process flows below.

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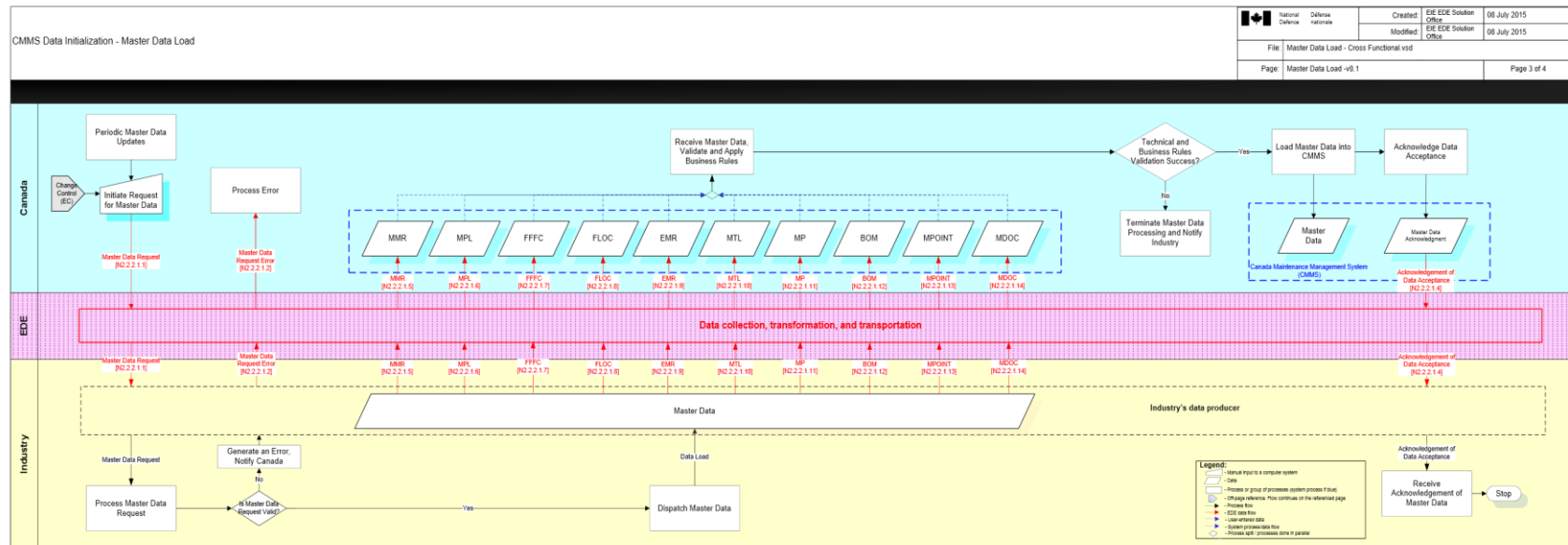
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### 3.1 Ship Initial Data Load from Canada to ISS Contractor



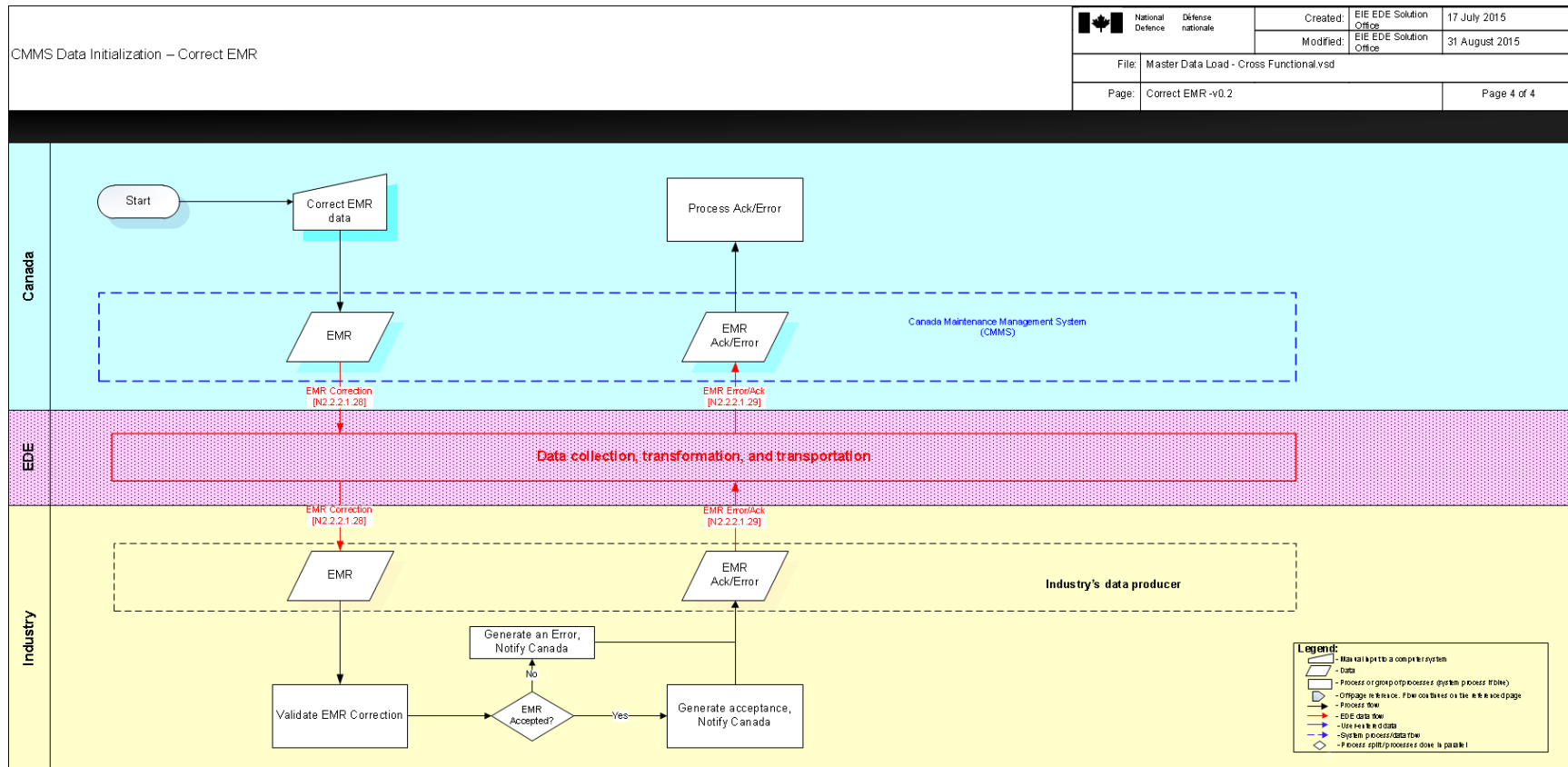
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### 3.2 Master Data Update from ISS Contractor to Canada



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### 3.3 Correct EMR



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## 4 TOUCH POINT REFERENCE TABLE

Reference numbers below are used for touch points in the Functional Decomposition, Business Process Catalogue and Business Use Case documents.

Reference #	Industry / Canada Touch-point	Source
<b>N2.2.2.1</b>	<b>CMMS Data Initialization</b>	
N2.2.2.1.1	Master Data Request	Canada
N2.2.2.1.2	Master Data Request Error	ISS Contractor
N2.2.2.1.4	Acknowledgement of Data Acceptance	Canada
N2.2.2.1.5	MMR	ISS Contractor
N2.2.2.1.6	MPL	ISS Contractor
N2.2.2.1.7	FFFC	ISS Contractor
N2.2.2.1.8	FLOC	ISS Contractor
N2.2.2.1.9	EMR	ISS Contractor
N2.2.2.1.10	MTL	ISS Contractor
N2.2.2.1.11	MPLAN	ISS Contractor
N2.2.2.1.12	BOM	ISS Contractor
N2.2.2.1.13	MPOINT	ISS Contractor
N2.2.2.1.14	MDOC	ISS Contractor
N2.2.2.1.15	Master Data Request	ISS Contractor
N2.2.2.1.16	Master Data Request Error	Canada
N2.2.2.1.17	Acknowledgement of Data Acceptance	ISS Contractor
N2.2.2.1.18	MMR	Canada
N2.2.2.1.19	MPL	Canada
N2.2.2.1.20	FFFC	Canada
N2.2.2.1.21	FLOC	Canada
N2.2.2.1.22	EMR	Canada
N2.2.2.1.23	MTL	Canada
N2.2.2.1.24	MPLAN	Canada
N2.2.2.1.25	BOM	Canada
N2.2.2.1.26	MPOINT	Canada
N2.2.2.1.27	MDOC	Canada
N2.2.2.1.28	EMR Correction	Canada
N2.2.2.1.29	EMR Correction Error	ISS Contractor

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## 5 DOCUMENT REFERENCES

1. EIE-DRMIS master data - Business guidelines ISSCF - v30.pdf
2. Annex O – Navy Configuration Management Process Model.pdf

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## 6 DOCUMENT HISTORY

Revision No.	Description	Date
1.0	Ready for Navy RFP	28 September 2015

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