

SV-6 : Systems Data Exchange Matrix

NOTICE: At the time this document was written, AP233 was still undergoing development.

This document defines the mapping between the DODAF SV-6 Systems Data Exchange Matrix and the ISO 10303 AP233 Systems Engineering information model. This mapping is defined for the purpose of enabling data exchange between computer applications supporting the ISO AP233 standard and those supporting the US DoDAF CADM format, specifically CADM 1.02.

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1. Introduction

The SV-6 Systems Data Exchange Matrix Product Description in the DoDAF Volume II: Product Descriptions document defined SV-6 as follows.

The Systems Data Exchange Matrix specifies the characteristics of the system data exchanged between systems. This product focuses on automated information exchanges (from OV-3) that are implemented in systems. Non-automated information exchanges, such as verbal orders, are captured in the OV products only.

2. SV-6 Concepts

An Systems Data Exchange Matrix may be used to represent the following concepts in addition to the System concepts defined in other DoDAF Views.

- Characteristics of the exchange (e.g. Security classification)

3. SV-6 AP233 Mapping Issues

Warning:

At the time this document was written, AP233 was still undergoing development.

This section describes the issues in mapping between SV-6 Systems Data Exchange Matrix and ISO AP233 as of the date of publication of this document. These issues may be addressed in future work by the DoDAF Working Group, the ISO AP233 development team or others.

1. No issues yet.

4. Mapping SV-6 CADM XML to AP233 XML

This section defines the mapping from the CADM XML representation of SV-6 Systems Data Exchange Matrix into an ISO AP233 XML representation of that same data. See AP233 for more information on the AP233 XML Schema and the AP233 EXPRESS schema.

Please review the rules for AP233 XML data production as they are applicable to all implementations.

4.1. SV-6 Mapping

This section describes the mapping for the CADM SV-6 itself.

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See Example INFO_EXCH_MATRX for example CADM XML SV-6 Systems Data Exchange Matrix data.

The following table documents the Systems Data Exchange Matrix mapping.

CADM XML Element(s)	AP233 XML Element(s) or Attributes(s)
INFO_EXCH_MATRX	When the CADM XML element INFO_EXCH_MATRX / IEM_TY_CD does not = 1, then the SV-6 mapping does not apply. When the CADM XML element IEM_TY_CD = 1 (i.e. it is a System Data Exchange Matrix), an AP233 Document with related version and definition as specified in AP233 approach to documents. An AP233 Group is associated with the Document_definition using an AP233 Document_assignment. The Document and related version and definition and the Group and Document_assignment are each classified as SYSTEM-INFORMATION-EXCHANGE-MATRIX . See the CADM Document mapping for more.
INFO_EXCH_MATRX / IEM_DOC_ID	The identifier for the Document assigned by the owning organization.

Table 1: Within the INFO_EXCH_MATRX_TBL CADM XML Element

See Example INFO_EXCH_MATRX_EL for example CADM XML SV-6 System Data Exchange Matrix Element data.

The following table documents the System Data Exchange Matrix Element mapping.

CADM XML Element(s)	AP233 XML Element(s) or Attributes(s)
INFO_EXCH_MATRX_EL	An AP233 Group which relates the various AP233 representations of CADM Communication Medium, etc. This Group is related to the AP233 Group representing the matrix by being referenced in the Elements child of that Group.
INFO_EXCH_MATRX_EL / COMM_MED_ID	A reference to the AP233 representation of the CADM Communication Medium within the AP233 Elements child of the Group representing the matrix element.
INFO_EXCH_MATRX_EL / DATA_ITEM_MATI_ID	A reference to the AP233 representation of the CADM Material Item within the AP233 Elements child of the Group representing the

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	matrix element.
INFO_EXCH_MATRX_EL / EXNDLN_REQ_GUID_ID	A reference to the AP233 representation of the CADM Guidance, classified as an Exchange Need Line Requirement , within the AP233 Elements child of the Group representing the matrix element.
INFO_EXCH_MATRX_EL / IMPL_TF_CD	The classification of the AP233 Group representing the matrix depending on the specified value as follows: <ul style="list-style-type: none"> • When 1, Implementation-Timeframe-BASELINE • When 2, Implementation-Timeframe-INTERMEDIATE • When 3, Implementation-Timeframe-OBJECTIVE • When 8, Implementation-Timeframe-NOTSPECIFIED • When 9, Implementation-Timeframe-NOTKNOWN
INFO_EXCH_MATRX_EL / IEM_DOC_ID	An AP233 Group_relationship linking the AP233 Group representing the element to the AP233 Group representing the maxtix.
INFO_EXCH_MATRX_EL / INFOEXCREQ_GUID_ID	A reference to the AP233 representation of the CADM Guidance, classified as an Information Exchange Requirement , within the AP233 Elements child of the Group representing the matrix element.
INFO_EXCH_MATRX_EL / INFO_REQ_GUID_ID	A reference to the AP233 representation of the CADM Guidance, classified as an Information Requirement , within the AP233 Elements child of the Group representing the matrix element.
INFO_EXCH_MATRX_EL / IEM_ELEM_ID	The identifier for the Group representing the element.
INFO_EXCH_MATRX_EL / IEME_PRIORITY_CD	A classification of the Group representing the element as follows based on the specified value. <ul style="list-style-type: none"> • When 1, classified as INFORMATION-EXCHANGE-MATRIX-ELEMENT-PRIORI • When 2, classified as INFORMATION-EXCHANGE-MATRIX-ELEMENT-PRIORI • When 3, classified as INFORMATION-EXCHANGE-MATRIX-ELEMENT-PRIORI • When 8, lassified as

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	<p>INFORMATION-EXCHANGE-MATRIX-ELEMENT-PRIORIT</p> <ul style="list-style-type: none"> When 9, classified as INFORMATION-EXCHANGE-MATRIX-ELEMENT-PRIORIT
INFO_EXCH_MATRX_EL / IEME_USE_CD	<p>A classification of the Group representing the element as follows based on the specified value.</p> <ul style="list-style-type: none"> When 01, INFORMATION-EXCHANGE-MATRIX-ELEMENT-USE-CODE When 02 = INFORMATION-EXCHANGE-MATRIX-ELEMENT-USE-CODE When 03 = INFORMATION-EXCHANGE-MATRIX-ELEMENT-USE-CODE When 04 = INFORMATION-EXCHANGE-MATRIX-ELEMENT-USE-CODE When 08 = INFORMATION-EXCHANGE-MATRIX-ELEMENT-USE-CODE When 09 = INFORMATION-EXCHANGE-MATRIX-ELEMENT-USE-CODE
INFO_EXCH_MATRX_EL / MSGST_ITSTD_AGR_ID	<p>A reference to the AP233 representation of the CADM Agreement, classified as a Message Standard, within the AP233 Elements child of the Group representing the matrix element.</p>
INFO_EXCH_MATRX_EL / PRACTEXREQ_GUID_ID	<p>A reference to the AP233 representation of the CADM Guidance, classified as a Process Activity Exchange Requirement, within the AP233 Elements child of the Group representing the matrix element.</p>
INFO_EXCH_MATRX_EL / PROV_SWI_MATI_ID	<p>A reference to the AP233 representation of the CADM Material Item, classified as an Information Exchange Matrix Provider Software Item, within the AP233 Elements child of the Group representing the matrix element.</p>
INFO_EXCH_MATRX_EL / PROV_SYS_ID	<p>A reference to the AP233 representation of the CADM System, classified as an Information Exchange Matrix Provider System, within the AP233 Elements child of the Group representing the matrix element.</p>
INFO_EXCH_MATRX_EL / RECIP_SWI_MATI_ID	<p>A reference to the AP233 representation of the CADM Material Item, classified as an Information Exchange Matrix Recipient Software Item, within the AP233 Elements child of the Group representing the matrix element.</p>

INFO_EXCH_MATRX_EL / RECIPI_SYS_ID	A reference to the AP233 representation of the CADM System, classified as an Information Exchange Matrix Recipient System , within the AP233 Elements child of the Group representing the matrix element.
INFO_EXCH_MATRX_EL / SYSA_ID	A reference to the AP233 representation of the CADM System Association, classified as an Information Exchange Matrix System Association , within the AP233 Elements child of the Group representing the matrix element.
INFO_EXCH_MATRX_EL / TECHIF_ID	A reference to the AP233 representation of the CADM Technical Interface, classified as an Information Exchange Matrix Technical Interface , within the AP233 Elements child of the Group representing the matrix element.
INFO_EXCH_MATRX_EL / TIME_FRAME_PRD_ID	A reference to the AP233 representation of the CADM Period, classified as an Time Frame , within the AP233 Elements child of the Group representing the matrix element.

Table 2: Within the INFO_EXCH_MATRX_EL_TBL CADM XML Element

5. Example SV-6 CADM XML Data

This section contains example SV-6 CADM XML data.

5.1. Example INFO_EXCH_MATRX

```
<INFO_EXCH_MATRX>
<IEM_DOC_ID>66660000</IEM_DOC_ID>
<IEM_TY_CD>2</IEM_TY_CD>
</INFO_EXCH_MATRX>
<DOC>
  <DOC_ID>66660000</DOC_ID>
  <DOC_NM>SAMPLE SV-6</DOC_NM>
  <CSC_ID>20000001</CSC_ID>
  <TIME_FRAME_PRD_ID>20102341</TIME_FRAME_PRD_ID>
  <DOC_APP_CALDT>20031126</DOC_APP_CALDT>
  <DOC_ARCHPROD_TY_CD>16</DOC_ARCHPROD_TY_CD>
  <DOC_CRTN_CALDT>20031203</DOC_CRTN_CALDT>
  <DOC_CAT_CD>J</DOC_CAT_CD>
  <DOC_VER_ID>VERSION 1.0</DOC_VER_ID>
</DOC>
```

5.2. Example INFO_EXCH_MATRX_EL

```
<INFO_EXCH_MATRX_EL>
```

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```
<COMM_MED_ID>44444444</COMM_MED_ID>
<DATA_ITEM_MATI_ID>39009303</DATA_ITEM_MATI_ID>
<IMPL_TF_CD>1</IMPL_TF_CD>
<IEM_DOC_ID>66660000</IEM_DOC_ID>
<IEM_ELEM_ID>66660001</IEM_ELEM_ID>
<IEME_PRIORITY_CD>1</IEME_PRIORITY_CD>
<IEME_USE_CD>04</IEME_USE_CD>
<PROV_SYS_ID>30007887</PROV_SYS_ID>
<RECIP_SYS_ID>30008595</RECIP_SYS_ID>
<SYSA_ID>50008938</SYSA_ID>
<TIME_FRAME_PRD_ID>60606060</TIME_FRAME_PRD_ID>
</INFO_EXCH_MATRX_EL>
```

6. Example SV-6 AP233 XML Data

This section contains example SV-6 AP233 XML data.

6.1. Example Group

```
<ap233:Group id="id-group20000">
  <Id>99999999</Id>
  <Name>Group for the System Data Exchange Matrix</Name>
  <Elements>
    <ap233:Group ref="id-group16650" xsi:nil="true" />
  </Elements>
</ap233:Group>
<ap233:Group id="id-group16650">
  <Id>99991007</Id>
  <Name>The Group for matrix element 1</Name>
  <Elements>
    <ap233:System_element ref="id-syse1111" xsi:nil="true" />
    <ap233:System_element ref="id-syse2222" xsi:nil="true" />
    <ap233:Interface_connection ref="id-intconn3333" xsi:nil="true" />
    <ap233:Interface_connection ref="id-intconn4444" xsi:nil="true" />
  </Elements>
</ap233:Group>
<ap233:Security_classification_assignment id="id-secclassassn16650">
  <Classification>
    <ap233:Security_classification ref="id-Unclassified" xsi:nil="true" />
  </Classification>
  <Items>
    <ap233:Group ref="id-group16650" xsi:nil="true" />
  </Items>
</ap233:Security_classification_assignment>
```

6.2. Example Document_assignment

```
<ap233:Document_assignment id="id-docassn36022">
  <Assigned_document>
    <ap233:Document_definition />
  </Assigned_document>
  <Is_assigned_to>
    <ap233:Group ref="id-group20000" xsi:nil="true" />
  </Is_assigned_to>
</ap233:Document_assignment>
```

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```
</Is_assigned_to>
  <Role>System_information_exchange_matrix</Role>
</ap233:Document_assignment>
<ap233:Classification_assignment id="id-260229494">
  <Items>
    <ap233:Document_assignment ref="id-docassn36022" xsi:nil="true" />
  </Items>
  <Assigned_class>
    <ap233:External_class ref="id-System_information_exchange_matrix"
xsi:nil="true" />
  </Assigned_class>
</ap233:Classification_assignment>
```