

AV-2 : Integrated Dictionary

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

This document defines the mapping between the DODAF AV-2 Integrated Dictionary 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 AV-2 Overview and Summary Information in the DoDAF Volume II: Product Descriptions document defined AV-2 as follows.

The Integrated Dictionary contains definitions of terms used in the given architecture. It consists of textual definitions in the form of a glossary, a repository of architecture data, their taxonomies, and their metadata (i.e., data about architecture data), including metadata for tailored products, associated with the architecture products developed. Metadata are the architecture data types, possibly expressed in the form of a physical schema. In this document, architecture data types are referred to as architecture data elements.

2. AV-2 AP233 Mapping Issues

Warning:

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

This section describes the issues in mapping between AV-2 Integrated Dictionary 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. For AP233 use, the concept of an Integrated Dictionary is applied through the use of AP233 classification and specifically the AP233 `External_class` concept. It is expected that the Taxonomy used is likely made available as a W3C Web Ontology Language (OWL) ontology.

3. Mapping AV-2 CADM XML to AP233 XML

This section defines the mapping from the CADM XML representation of AV-2 Integrated Dictionary 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.

See AV-1 Architecture-Document Mapping which is used to specify the link between an Architecture and a Data Dictionary.

3.1. AV-2 Mapping

This section describes the mapping for the CADM AV-2 DATA-DICTIONARY-SPECIFICATION itself. AP233 is not an information modeling or glossary language and therefore does not support all the concepts necessary for CADM AV-2. The AV-2 mapping therefore applies the simplest possible mapping described in the DODAF Volume II as

An offline dictionary whose terms are stored in a document. Reference to it is stored in DOCUMENT using DOCUMENT Name to store the filename and DOCUMENT Universal Resource Locator Text to store its location.

See Example DATA_DICT_SPEC for example CADM XML AV-2 data.

CADM XML Element(s)	AP233 XML Element(s) or Attributes(s)
DATA_DICT_SPEC	A Document with related version and digital definition as specified in AP233 approach to documents. The Document and related version and definition are classified as Data-Dictionary-Specification . An AP233 File_location_identification is linked to the Digital_document_definition and has an assigned identifier that is classified as the Uniform-Resource-Locator for the CADM Dictionary file.
DATA_DICT_SPEC / DATA_DICT_IA_ID	Not currently mapped.
DATA_DICT_SPEC / DAT_DICT_SP_DOC_ID	The identifier for the AP233 Document assigned by an owning organization.

Table 1: Within the DATA_DICT_SPEC_TBL CADM XML Element

3.2. AV-2 Future Mapping Possibilities

The additional requirements specified in DODAF Volume II for AV-2 are as follows.

An online dictionary whose terms are included in a CADM-structured database. The identity of the dictionary is stored in DATA-DICTIONARY (as an INFORMATION-ASSET); and each term is identified, named, and described as an instance of DATA-DICTIONARY-ELEMENT. Reference to the DATA-DICTIONARY is included in DATA-DICTIONARY-SPECIFICATION through the use of the attribute, Data Dictionary INFORMATION-ASSET Identifier, in that entity. All architectures using a

specific DATA-DICTIONARY-SPECIFICATION are specified by populating ARCHITECTURE-DOCUMENT.

Future efforts should consider the use of an industry or International Standard for the dictionary. There are several that already exist, so there is little reason for DODAF CADM and AP233 communities not take advantage of that fact. ISO 11179 is one example of a possibility for AV-2 support.

4. Example AV-2 CADM XML Data

This section contains example AV-2 CADM XML data.

4.1. Example DATA_DICT_SPEC

```
<DATA_DICT_SPEC>
  <DAT_DICT_SP_DOC_ID>20003227</DAT_DICT_SP_DOC_ID>
</DATA_DICT_SPEC>
<DOC>
  <DOC_ID>20003227</DOC_ID>
  <DOC_NM>TRP DATA-DICTIONAY-SPECIFICATION {AV-2}</DOC_NM>
  <DOC_URL_TX>HTTP://WWW.DOD.COM/TRP_DICTIONARY.OWL</DOC_URL_TX>
  <DOC_ARCHPROD_TY_CD>07</DOC_ARCHPROD_TY_CD>
</DOC>
```

5. Example AV-2 AP233 XML Data

This section contains example AV-2 AP233 XML data.

5.1. Example Document

```
<ap233:Document id="id-doc12771" >
  <Name>TRP DATA-DICTIONAY-SPECIFICATION {AV-2}</Name>
</ap233:Document>

<ap233:Identification_assignment id="id-doc12771-idassign">
  <Identifier>20003227</Identifier>
  <Items>
    <ap233:Document ref="id-doc12771" xsi:nil="true" />
  </Items>
</ap233:Identification_assignment>

<ap233:Classification_assignment
id="id-doc12771-idassign-classification_assignment">
  <Items>
    <ap233:Identification_assignment ref="id-doc12771-idassign"
xsi:nil="true" />
  </Items>
  <Assigned_class>
    <ap233:External_class ref="id-Document_identification_code"
```

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```
xsi:nil="true" />
  </Assigned_class>
</ap233:Classification_assignment>

<ap233:External_class id="id-Document_identification_code">
  <Id>http://www.cadm.org#Document_identification_code</Id>
  <Name>Document Identification Code</Name>
  <External_source>
    <ap233:External_class_library xsi:nil="true" ref="id-cadmlib" />
  </External_source>
</ap233:External_class>
```

5.2. Example Document_version and Digital_document_definition

```
<ap233:Document_version id="id-docver12804">
  <Of_product>
    <ap233:Document ref="id-doc12771" xsi:nil="true" />
  </Of_product>
</ap233:Document_version>

<ap233:Digital_document_definition id="id-docdef12804">
  <Defined_version>
    <ap233:Document_version ref="id-docver12804" xsi:nil="true" />
  </Defined_version>
  <Initial_context>
    <ap233:View_definition_context ref="id-av2" xsi:nil="true" />
  </Initial_context>
</ap233:Digital_document_definition>

<ap233:Classification_assignment
id="id-docver12804-classification_assignment">
  <Items>
    <ap233:Document ref="id-doc12771" xsi:nil="true" />
    <ap233:Document_version ref="id-docver12804" xsi:nil="true" />
    <ap233:Digital_document_definition ref="id-docdef12804" xsi:nil="true"
/>
  </Items>
  <Assigned_class>
    <ap233:External_class ref="id-Data-Dictionary-Specification"
xsi:nil="true" />
  </Assigned_class>
</ap233:Classification_assignment>
```

5.3. Example File_location_identification

```
<ap233:File_location_identification>
  <Item>
    <ap233:Digital_document_definition ref="id-docdef12804" xsi:nil="true"
/>
  </Item>
</ap233:File_location_identification>

<ap233:Identification_assignment id="id-file12771-idassign">
  <Identifier>HTTP://WWW.DOD.COM/TRP_DICTIONARY.OWL</Identifier>
```

```
<Items>
  <ap233:Digital_document_definition ref="id-docdef12804" xsi:nil="true"
/>
</Items>
</ap233:Identification_assignment>

<ap233:Classification_assignment
id="id-file12771-idassign-classification_assignment">
  <Items>
    <ap233:Identification_assignment ref="id-file12771-idassign"
xsi:nil="true" />
  </Items>
  <Assigned_class>
    <ap233:External_class ref="id-Uniform_resource_locator" xsi:nil="true"
/>
  </Assigned_class>
</ap233:Classification_assignment>
```