

SV-2 : Systems Communications Description

This document defines the mapping between the DODAF SV-2 Systems Communications Description 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 1.01 Draft for Review dated 11 July 2003.

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1. Introduction

The SV-2 System Communications Description Product Description in the DoDAF Volume II: Product Descriptions document defined SV-2 as follows.

The Systems Communications Description depicts pertinent information about communications systems, communications links, and communications networks. SV-2 documents the kinds of communications media that support the systems and implement their interfaces as described in SV-1. Thus, SV-2 shows the communications details of SV-1 interfaces that automate aspects of the needlines represented in OV-2.

DoDAF Volume II also describes the use of various types of diagrams for representing SV-2 content.

2. SV-2 Concepts

A Systems Communications Description may be used to represent the following concepts.

- Communication systems (e.g. satellite)
- Communication links
- Communication paths - a series of communication links

3. SV-2 AP233 Mapping Issues

This section describes the issues in mapping between SV-2 Systems Communications Descriptions 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. This mapping omits the Network Path concept. This is a gap in AP233 as of the writing of this document. An approach might be to use AP233 Interface Connections but there is no current support for linking a sequence of AP233 Interface connections.
2. This mapping omits the Communication paths concept. This may be a gap in AP233.

4. Mapping SV-2 CADM XML to AP233 XML

This section defines the mapping from the CADM XML representation of SV-2 Systems Communications Descriptions 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-2 maps like SV-1

Many of the concepts in SV-2 are specializations of the concepts in SV-1. In AP233, those concepts are represented using a consistent pattern and semantics are added using classification. Therefore, to map SV-2 start by following the mappings for SV-1 but apply external classes appropriate to communications systems.

4.2. SV-2 Mapping

This section describes the mapping for the CADM SV-2 itself.

See Example SYS_COMM_DESCR for example CADM XML SV-2 System Communications Description data.

The following table documents the System Communication Description mapping. Please see CADM Document mapping under SV-1 where the mapping of the CADM Document concept is specified. SV-2 are kind of Document.

CADM XML Element(s)	AP233 XML Element(s) or Attributes(s)
SYS_COMM_DESCR	A Document with related version and definition as specified in AP233 approach to documents. The Document and related version and definition are classified as SYSTEM-COMMUNICATION-DESCRIPTION .
SYS_COMM_DESCR / DOC_ID	The identifier for the Document assigned by the owning organization.
SYS_COMM_DESCR / NTWK_ID	The identifier for the AP233 representation of the described CADM Network.

Table 1: Within the SYS_COMM_DESCR_TBL CADM XML Element

4.3. SV-2 Communication Network Mapping

This section describes the mapping for the CADM Network and related concepts.

See Example NTWK for example CADM XML SV-2 Network data.

The following table describes the CADM Network concept mapping. The CADM Nodes making up the Network are represented as AP233 System elements (see SV-1 Node and Node Relationship Mapping. The CADM Network itself is then represented as an AP233 Product and related AP233 System element linked through the AP233 Breakdown of relationship. The set of System elements, one per Node in the Network, are then specified as

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being part of the Network by using the AP233 concept of System element usage to link the child Nodes to the parent Network. This then supports the concept of multiple views of the same Network being managed using AP233 versioning and change control processes.

CADM XML Element(s)	AP233 Representation
NTWK	A Product with related version and definition and a System_element, with related version and definition as described in AP233 System breakdowns each classified as NETWORK . The Breakdown_of relates the Product_view_definition and System_element_definition.
NTWK / CSC_ID	
NTWK / MNG_ARCH_ORG_ID	An Organization_or_person_in_organization_assignment following the pattern in AP233 Assignment classified as MANAGING ORGANIZATION linking an Organization with the Product and System_element representing the CADM Network.
NTWK / NTWK_ACRON_NM	An assigned identifier of the Product and System_element classified as a ACRONYM NAME .
NTWK / NTWK_AREA_SIZE_CD	A classification of the Product and related version and definition and the and System_element and related version and element based on the following values. In each case, External Classes must be defined with the name based on the text, not the number. <ul style="list-style-type: none"> • 01--Local Area Network (LAN) maps as NETWORK AREA LAN • 02--Metropolitan Area Network (MAN)maps as NETWORK AREA MAN • 03--Wide Area Network (WAN)maps as NETWORK AREA LAN • 04--Enterprise-Level Networkmaps as NETWORK AREA ENTERPRISE • 98--Not specified maps as NETWORK AREA NOT SPECIFIED • 99--Not known maps as NETWORK AREA NOT KNOWN
NTWK / NTWK_DESCR_TX	The Description child element of the Product and System_element.

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NTWK / NTWK_EST_USER_QY	A property (see AP233 Properties) assigned to the Product_definition where the Assigned_property is classified as a ESTIMATED USER QUANTITY with an associated number value and a Unit of Count .
NTWK / NTWK_ID	The assigned identifier of the Product and System_element.
NTWK / NTWK_IMPLM_TY_CD	<p>A classification of the Product and related version and definition based on the following values. In each case, External Classes must be defined with the name based on the text, not the number.</p> <ul style="list-style-type: none"> • 04 = TEL--TELEPHONE NETWORK maps as IMPLEMENTATION TYPE TELEPHONE NETWORK • 05 = RGH--TELEGRAPH NETWORK maps as IMPLEMENTATION TYPE TELEGRAPH NETWORK • 06 = BDX--BROADCAST NETWORK maps as IMPLEMENTATION TYPE BROADCAST NETWORK • 07 = PKT--PACKET SWITCHING NETWORK maps as IMPLEMENTATION TYPE PACKET SWITCHING NETWORK • 08 = CIR--CIRCUIT SWITCHING NETWORK maps as IMPLEMENTATION TYPENETWORK AREA LAN • 09 = MSG--MESSAGE SWITCHING NETWORK maps as IMPLEMENTATION TYPE MESSAGE SWITCHING NETWORK • 10 = RFN--RADIO FREQUENCY NETWORK maps as IMPLEMENTATION TYPE RADIO FREQUENCY NETWORK • 98 = NOT SPECIFIED maps as IMPLEMENTATION TYPE NOT SPECIFIED • 99 = NOT KNOWN maps as IMPLEMENTATION TYPE NOT KNOWN
NTWK / NTWK_LOGC_TOPO_L_NM	An assigned identifier of the Product classified as a Logical Topology Name .
NTWK / NTWK_MAXSIM_USR_QY	A property (see AP233 Properties) assigned to the Product_definition where the Assigned_property is classified as a MAXIMUM SIMULTANEOUS USER QUANTITY with an associated number value

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	and a Unit of Count .
NTWK / NTWK_MAX_THRU_RT	A property (see AP233 Properties) assigned to the Product_definition where the Assigned_property is classified as a MAXIMUM THROUGHPUT RATE with an associated number value and a Numerical_item_with_unit of Bits per second .
NTWK / NTWK_NM	An assigned identifier of the Product classified as a Name .
NTWK / NTWK_COT_ID	A classification of the Product and related version and definition. In each case, External Classes must be defined with the name based on the text, not the number.
NTWK / NTWK_ECH_ID	A classification of the Product and related version and definition. In each case, External Classes must be defined with the name based on the text, not the number.
NTWK / NTWKT_ID	A classification of the Product and related version and definition. In each case, External Classes must be defined with the name based on the text, not the number.
NTWK / OF_ECH_CD	<p>A classification of the Product and related version and definition. In each case, External Classes must be defined with the name based on the text as follows.</p> <ul style="list-style-type: none"> • 0 = MULT--MULTIPLE ECHELONS OF TOES maps as OPERATIONAL FACILITY ECHELON MULTIPLE • 1 = CONUS maps as OPERATIONAL FACILITY ECHELON CONUS • 2 = THEATER/ARMY/EAC--THEATER/ARMY/ECHELON ABOVE CORPS maps as OPERATIONAL FACILITY ECHELON THEATER/ARMY/ECHELON • 3 = CORPS maps as OPERATIONAL FACILITY ECHELON CORPS • 4 = DIV--DIVISION maps as OPERATIONAL FACILITY ECHELON DIVISION • 5 = BDE/RGT--BRIGADE/REGIMENT maps as OPERATIONAL FACILITY ECHELON BRIGADE/REGIMENT

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	<ul style="list-style-type: none">• 6 = GP/RGT--GROUP/REGIMENT maps as OPERATIONAL FACILITY ECHELON GROUP/REGIMENT• 7 = TO BE DETERMINED (TBD) maps as OPERATIONAL FACILITY ECHELON TO BE DETERMINED• 8 = BN/SQDN--BATTALION/SQUADRON maps as OPERATIONAL FACILITY ECHELON BATTALION/SQUADRON• 9 = HOSPITAL maps as OPERATIONAL FACILITY ECHELON HOSPITAL• A = HHB/HHC/HHD--HQ & HQ UNITS (for Btry, Co, & Det) maps as OPERATIONAL FACILITY ECHELON HQ AND UNITS• B = CO/BTRY/TRP--COMPANY/BATTERY/TROOP (not a Hq & Hq) maps as OPERATIONAL FACILITY ECHELON COMPANY/BATTERY/TROOP• E = DET--DETACHMENT (not a Hq & Hq) maps as OPERATIONAL FACILITY ECHELON DETACHMENT• F = PLT--PLATOON maps as OPERATIONAL FACILITY ECHELON PLATOON• G = SQD--SQUAD maps as OPERATIONAL FACILITY ECHELON SQUAD• H = SEC/PARTY/BR--SECTION/PARTY/BRANCH maps as OPERATIONAL FACILITY ECHELON SECTION/PARTY/BRANCH• I = TM/ELEM/CREW/CELL--TEAM/ELEMENT/CREW/CELL maps as OPERATIONAL FACILITY ECHELON TEAM/ELEMENT/CREW/CELL• J = NODE maps as OPERATIONAL FACILITY ECHELON NODE• L = CEN--CENTER maps as OPERATIONAL FACILITY ECHELON CENTER• M = CMD--COMMAND maps as OPERATIONAL FACILITY ECHELON COMMAND• N = DIVARTY--DIVISION ARTILLERY maps as OPERATIONAL FACILITY ECHELON DIVISION ARTILLERY• P = CORPS ARTY--CORPS ARTILLERY maps as OPERATIONAL FACILITY ECHELON CORPS ARTILLERY
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	<ul style="list-style-type: none"> • Q = DISCOM--DIVISION SUPPORT COMMAND maps as OPERATIONAL FACILITY ECHELON DIVISION SUPPORT COMMAND • R = COSCOM--CORPS SUPPORT COMMAND maps as OPERATIONAL FACILITY ECHELON CORPS SUPPORT COMMAND • S = TAACOM/TSC--THEATER AR AREA CMD/THEATER SPT CMD maps as OPERATIONAL FACILITY ECHELON TAACOM/TSC • Y = EAC (NON ARMY) maps as OPERATIONAL FACILITY ECHELON EAC • Z = SUPPORTED UNIT (SPTD UNIT) maps as OPERATIONAL FACILITY ECHELON SUPPORTED UNIT
NTWK / OWN_ARCH_ORG_ID	An Organization_or_person_in_organization_assignment following the pattern in AP233 Assignment classified as OWNING ORGANIZATION linking an Organization with the Product representing the CADM Network.
NTWK / PREDOM_COMM_SYS_ID	A classification of a View_definition_relationship linking the AP233 element representing the Network and the AP233 element representing the predominate system as Predominant Communication System .
NTWK / REPRESENT_NODE_ID	A classification of a View_definition_relationship linking the AP233 element representing the Network and the AP233 element representing a representative node as Representative Node .
NTWK / SC_CD	The assignment of a Security_classification to the Product and its related version and definition.

Table 1: Within the NTWK_TBL CADM XML Element

4.4. SV-2 Network Node Mapping

This section describes the mapping for the CADM Network Node and related concepts.

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See Example NTKW_NODE for example CADM XML SV-2 Network Node data.

The following table describes the CADM Network Node concept mapping.

CADM XML Element(s)	AP233 Representation
NTWK_NODE	A System_element_usage linking the System_element_definitions representing the CADM Network and CADM Node.
NTWK_NODE / NTKW_ID	The Relating_view child of the System_element_usage referring to the System_element_definition representing the Network.
NTWK_NODE / NTKW_ND_ID	An assigned identifier classified as a ACRONYM NAME .
NTWK_NODE / NTKW_ND_ROL_CD	<p>A classification of the xxxx and related version and definition. In each case, External Classes must be defined with the name based on the text as follows.</p> <ul style="list-style-type: none"> • 01 = HAS A GATEWAY REPRESENTED BY maps as NETWORK-NODE ROLE HAS A GATEWAY REPRESENTED BY • 02 = HAS AS A SUBSCRIBER maps as NETWORK-NODE ROLE HAS AS A SUBSCRIBER • 03 = HAS AS A CONTROLLING NODE maps as NETWORK-NODE ROLE HAS AS A CONTROLLING NODE • 04 = HAS AS A SECURITY MONITORING NODE maps as NETWORK-NODE ROLE HAS AS A SECURITY MONITORING NODE • 05 = IS CONTAINED IN maps as NETWORK-NODE ROLE CONTAINED • 06 = IS A NETWORK ENTIRELY REPRESENTED BY maps as NETWORK-NODE ROLE REPRESENTED BY • 08 = NOT SPECIFIED maps as NETWORK-NODE ROLE NOT SPECIFIED • 09 = NOT KNOWN maps as NETWORK-NODE ROLE NOT KNOWN
NTWK_NODE / NODE_ID	The Related_view child of the System_element_usage referring to the System_element_definition representing

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	the Node.
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Table 1: Within the NTWK_NODE_TBL CADM XML Element

4.5. SV-2 Network Path Mapping

This section describes the mapping for the CADM Network Path, and Network Path Link and related concepts.

See Example NTWK_PATH for example CADM XML SV-2 Network Path data.

The following table describes the CADM Network Path concept mapping.

CADM XML Element(s)	AP233 Representation
NTWK_PATH	A System_element with related version and definition as described in AP233 System breakdowns each classified as NETWORK PATH
NTWK_PATH / END_NTWK_ND_ID	Not mapped. This is a gap in the current AP233, see SV-2 Issues
NTWK_PATH / END_NODE_ID	A View_definition_relationship classified as END NODE where the Relating_view child element refers to the the System_element_definition representing the CADM Network Path and the Related_view refers to the the System_element_definition representing the CADM Node.
NTWK_PATH / NTWK_ID	Not currently mapped.
NTWK_PATH / NTWK_PTH_DIR_CD	Not currently mapped.
NTWK_PATH / NTWK_PTH_ID	Not currently mapped.
NTWK_PATH / NTWK_PTH_NM	Not currently mapped.
NTWK_PATH / NTWK_PTH_STA_CD	Not currently mapped.
NTWK_PATH / NTWK_PTH_SPTD_CD	Not currently mapped.
NTWK_PATH / START_NTWK_ND_ID	Not mapped. This is a gap in the current AP233, see SV-2 Issues
NTWK_PATH / START_NODE_ID	A View_definition_relationship classified as END NODE where the Relating_view child element refers to the the

	System_element_definition representing the CADM Network Path and the Related_view refers to the the System_element_definition representing the CADM Node.
--	---

Table 1: Within the NTKW_PATH_TBL CADM XML Element

The following table describes the CADM Network Path Link concept mapping.

CADM XML Element(s)	AP233 Representation
NTWK_PATH_LINK	Not mapped. This is a gap in the current AP233, see SV-2 Issues
NTWK_PATH_LINK / CMMNS_ID	Not currently mapped.
NTWK_PATH_LINK / NTKW_ID	Not currently mapped.
NTWK_PATH_LINK / NTKW_PTH_ID	Not currently mapped.
NTWK_PATH_LINK / NTKW_PTHL_SEQNO_ID	Not currently mapped.
NTWK_PATH_LINK / NODE_1_NODE_ID	Not currently mapped.
NTWK_PATH_LINK / NODE_2_NODE_ID	Not currently mapped.
NTWK_PATH_LINK / NA_ID	Not currently mapped.
NTWK_PATH_LINK / NLCRS_ID	Not currently mapped.

Table 2: Within the NTKW_PATH_LINK_TBL CADM XML Element

5. Example SV-2 CADM XML Data

This section contains example SV-2 CADM XML data.

5.1. Example SYS_COMM_DESCR

```
<DOC>
  <DOC_ID>330</DOC_ID>
  <DOC_NM>TRP SYSTEM COMMUNICATION DESCRIPTION (SV-2)</DOC_NM>
  <SC_CD>14</SC_CD>
  <CSC_ID>20000001</CSC_ID>
  <TIME_FRAME_PRD_ID>20102341</TIME_FRAME_PRD_ID>
  <DOC_APP_CALDT>20031126</DOC_APP_CALDT>
  <DOC_ABBRV_NM>TRPSYSCOMDESC</DOC_ABBRV_NM>
  <DOC_ARCHPROD_TY_CD>35</DOC_ARCHPROD_TY_CD>
  <DOC_ORIGINATOR_NM>AIP PHASE II TEAM</DOC_ORIGINATOR_NM>
  <DOC_CRTN_CALDT>20031203</DOC_CRTN_CALDT>
  <DOC_DESC_TX>A DOCUMENT THAT REPRESENTS THE SPECIFIC COMMUNICATIONS
SYSTEMS PATHWAYS OR
```

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```
NETWORKS AND THE DETAILS OF THEIR CONFIGURATIONS THROUGH
WHICH THE PHYSICAL NODES
AND SYSTEMS INTERFACE FOR THE TRP ARCHITECTURE
</DOC_DESC_TX>
<DOC_NOTATION_TX>TEXT</DOC_NOTATION_TX>
<DOC_CAT_CD>J</DOC_CAT_CD>
<DOC_PROMULG_CD>998</DOC_PROMULG_CD>
<DOC_RMK_TX>VALIDATED FOR AIPP PHASE II UNDER OASD(NII)
GUIDANCE</DOC_RMK_TX>
<DOC_TMPRL_SCP_CD>3</DOC_TMPRL_SCP_CD>
<DOC_VER_ID>VERSION 1.0</DOC_VER_ID>
<DCMNT_RNG_CD>B</DCMNT_RNG_CD>
<DOC_URL_TX>NONE PROVIDED</DOC_URL_TX>
<DOC_TY_CD>21</DOC_TY_CD>
<DOC_PUB_DT>20031203</DOC_PUB_DT>
</DOC>
<SYS_COMM_DESCR>
  <DOC_ID>330</DOC_ID>
  <NTWK_ID>505051</NTWK_ID>
</SYS_COMM_DESCR>
```

5.2. Example NTWK

```
<NTWK>
  <NTWK_ID>505051</NTWK_ID>
  <NTWK_NM>TRP Network Alpha K-0</NTWK_NM>
  <NTWK_ECH_ID>200001</NTWK_ECH_ID>
  <OF_ECH_CD>J</OF_ECH_CD>
  <SC_CD>14</SC_CD>
  <NTWKT_ID>60001</NTWKT_ID>
  <NTWK_COT_ID>100111</NTWK_COT_ID>
  <NTWK_DESCR_TX>Planned network for the Army TR
generation.</NTWK_DESCR_TX>
  <CSC_ID>20000001</CSC_ID>
  <PREDOM_COMM_SYS_ID>21050316</PREDOM_COMM_SYS_ID>
  <NTWK_IMPLM_TY_CD>9</NTWK_IMPLM_TY_CD>
  <MNG_ARCH_ORG_ID>101013</MNG_ARCH_ORG_ID>
  <NTWK_ACRON_NM>TRP-ARCH-NTWK-K0</NTWK_ACRON_NM>
  <OWN_ARCH_ORG_ID>101013</OWN_ARCH_ORG_ID>
  <REPRES_NODE_ID>606073</REPRES_NODE_ID>
  <NTWK_EST_USER_QY>1000</NTWK_EST_USER_QY>
  <NTWK_MAXSIM_USR_QY>250</NTWK_MAXSIM_USR_QY>
  <NTWK_MAX_THRU_RT>10000000000</NTWK_MAX_THRU_RT>
  <NTWK_LOGC_TOPOL_NM>TRP ARCH LAN TOPOLOGY ALPHA</NTWK_LOGC_TOPOL_NM>
  <NTWK_AREA_SIZE_CD>1</NTWK_AREA_SIZE_CD>
</NTWK>
```

5.3. Example NTWK_NODE

```
<NTWK_NODE>
  <NTWK_ID>505051</NTWK_ID>
  <NODE_ID>606061</NODE_ID>
  <NTWK_ND_ID>80801</NTWK_ND_ID>
  <NTWK_ND_ROL_CD>8</NTWK_ND_ROL_CD>
```

```
</NTWK_NODE>
```

5.4. Example NTWK_PATH

```
<NTWK_PATH>
  <NTWK_ID>505051</NTWK_ID>
  <NTWK_PTH_ID>80801</NTWK_PTH_ID>
  <START_NODE_ID>606061</START_NODE_ID>
  <START_NTWK_ND_ID>80801</START_NTWK_ND_ID>
  <END_NODE_ID>606062</END_NODE_ID>
  <END_NTWK_ND_ID>80801</END_NTWK_ND_ID>
  <NTWK_PTH_DIR_CD>1</NTWK_PTH_DIR_CD>
  <NTWK_PTH_NM>Node-606061 to Node-606062</NTWK_PTH_NM>
  <NTWK_PTH_STA_CD>A</NTWK_PTH_STA_CD>
  <NTWK_PTH_SPTD_CD>1</NTWK_PTH_SPTD_CD>
</NTWK_PATH>
```

5.5. Example NTWK_PATH_LINK

```
<NTWK_PATH_LINK>
  <NTWK_ID>505051</NTWK_ID>
  <NTWK_PTH_ID>80801</NTWK_PTH_ID>
  <NTWK_PTHL_SEQNO_ID>101</NTWK_PTHL_SEQNO_ID>
  <CMMNS_ID>40550</CMMNS_ID>
  <NODE_1_NODE_ID>606061</NODE_1_NODE_ID>
  <NODE_2_NODE_ID>606062</NODE_2_NODE_ID>
  <NA_ID>101</NA_ID>
  <NLCRS_ID>55501</NLCRS_ID>
</NTWK_PATH_LINK>
```

6. Example SV-2 AP233 XML Data

This section contains example SV-2 AP233 XML data.

6.1. Example AP233 Product, Breakdown, and System_element

This example shows a CADM Network represented as an AP233 Product and related AP233 System_element connected via the AP233 Breakdown concept.

```
<ap233:Product id="id-Product-8769">
  <Id>505051</Id>
  <Name>TRP Network Alpha K-0</Name>
  <Description>Planned network for the Army TR generation.</Description>
</ap233:Product>

<ap233:Classification_assignment
id="id-Product-8769-classification_assignment">
  <Items>
    <ap233:Product ref="id-Product-8769" xsi:nil="true" />
  </Items>
  <Assigned_class>
    <ap233:External_class ref="id-Network" xsi:nil="true" />
  </Assigned_class>
</ap233:Classification_assignment>
```

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```
</Assigned_class>
</ap233:Classification_assignment>

<ap233:Product_version id="id-Product_version-8769">
  <Id>1</Id>
  <Of_product>
    <ap233:Product ref="id-Product-8769" xsi:nil="true" />
  </Of_product>
</ap233:Product_version>

<ap233:Product_view_definition id="id-Product_view_definition-8769">
  <Id>1</Id>
  <Name>TRP Network Alpha K-0</Name>
  <Defined_version>
    <ap233:Product_version ref="id-Product_version-8769" xsi:nil="true" />
  </Defined_version>
  <Initial_context>
    <ap233:View_definition_context ref="" xsi:nil="true" />
  </Initial_context>
</ap233:Product_view_definition>

<ap233:System_element id="id-sysel8769">
  <Id>505051</Id>
  <Name>TRP Network Alpha K-0</Name>
  <Description>Planned network for the Army TR generation.</Description>
</ap233:System_element>

<ap233:Classification_assignment
id="id-sysel8769-classification_assignment">
  <Items>
    <ap233:System_element ref="id-sysel8769" xsi:nil="true" />
  </Items>
  <Assigned_class>
    <ap233:External_class ref="id-Network" xsi:nil="true" />
  </Assigned_class>
</ap233:Classification_assignment>

<ap233:System_element_version id="id-syselver8769">
  <Id>1</Id>
  <Of_product>
    <ap233:System_element ref="id-sysel8769" xsi:nil="true" />
  </Of_product>
</ap233:System_element_version>

<ap233:System_element_definition id="id-syseldef8769">
  <Id>1</Id>
  <Name>TRP Network Alpha K-0</Name>
  <Defined_version>
    <ap233:System_element_version ref="id-syselver8769" xsi:nil="true" />
  </Defined_version>
  <Initial_context>
    <ap233:View_definition_context ref="id-sv2" xsi:nil="true" />
  </Initial_context>
</ap233:System_element_definition>
```

```

<ap233:System_breakdown id="id-System_breakdown-8769">
  <Id>505051</Id>
  <Name>Breakdown of: TRP Network Alpha K-0</Name>
  <Description>Breakdown of network</Description>
</ap233:System_breakdown>

<ap233:System_breakdown_version id="id-System_breakdown_version-8769">
  <Id>1</Id>
  <Of_product>
    <ap233:System_breakdown ref="id-System_breakdown-8769" xsi:nil="true"
  />
  </Of_product>
</ap233:System_breakdown_version>

<ap233:Breakdown_of id="id-Breakdown_of-8769">
  <Id>505051</Id>
  <Name>Breakdown of: TRP Network Alpha K-0</Name>
  <Description>Breakdown of network</Description>
  <Breakdown>
    <ap233:System_breakdown_version ref="id-System_breakdown_version-8769"
xsi:nil="true" />
  </Breakdown>
  <Of_view>
    <ap233:Product_view_definition ref="id-Product_view_definition-8769"
xsi:nil="true" />
  </Of_view>
</ap233:Breakdown_of>

<ap233:Breakdown_context id="id-Breakdown_context-8769">
  <Id>505051</Id>
  <Name>Breakdown of: TRP Network Alpha K-0</Name>
  <Description>Breakdown of network</Description>
  <Breakdown>
    <ap233:System_breakdown_version ref="id-System_breakdown_version-8769"
xsi:nil="true" />
  </Breakdown>
  <Breakdown_element>
    <ap233:System_element_definition ref="id-syseldef8769" xsi:nil="true"
  />
  </Breakdown_element>
</ap233:Breakdown_context>

```

6.2. Example AP233 System_element_usage

```

<ap233:System_element_usage id="id-vdr8865">
  <Id>99999903</Id>
  <Relation_type>Network_node_role_contained</Relation_type>
  <Description />
  <Relating_view>
    <ap233:System_element_definition ref="id-syseldef8769" xsi:nil="true"
  />
  </Relating_view>
  <Related_view>

```

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```
<ap233:System_element_definition ref="id-syseldef71604" xsi:nil="true"
/>
</Related_view>
</ap233:System_element_usage>
<ap233:Classification_assignment id="id-vdr8865-classification_assignment">
  <Items>
    <ap233:System_element_usage ref="id-vdr8865" xsi:nil="true" />
  </Items>
  <Assigned_class>
    <ap233:External_class ref="id-Network_node_role_contained"
xsi:nil="true" />
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</ap233:Classification_assignment>
```