

OV-6b : Operational State Transition Description

This document defines the mapping between the DODAF OV-6b Operational State Transition 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 1.02.

Table of contents

1 Introduction.....	3
2 OV-6b Concepts.....	3
3 OV-6b AP233 Mapping Issues.....	3
4 Mapping OV-6b CADM XML to AP233 XML.....	4
4.1 OV-6b Operational State Transition Description Mapping.....	4
4.2 OV-6b Process State and Process Pseudo State Mapping.....	6
4.3 OV-6b Composite Process State Mapping.....	8
4.4 OV-6b Nesting Process State Mapping.....	8
4.5 OV-6b Transition Process Mapping.....	9
4.6 OV-6b Process Event and Event Mapping.....	10
4.7 OV-6b State and Transition Action Mapping.....	12
5 Example OV-6b CADM XML Data.....	15
5.1 Example ST_TRANS_DESCR.....	16
5.2 Example PROC_PSEUDO_STATE (Initial State).....	16
5.3 Example PROC_STATE (Simple State).....	16
5.4 Example TRANS_PROC.....	16

OV-6b : Operational State Transition Description

6 Example OV-6b AP233 XML Data..... 17
6.1 Example State_definition (Simple State)..... 17
6.2 Example State_transition_definition..... 17

1. Introduction

The OV-6b Operational State Transition Description Product Description in the DoDAF Volume II: Product Descriptions document defined OV-6b as follows.

The Operational State Transition Description is a graphical method of describing how an operational node or activity responds to various events by changing its state. The diagram represents the sets of events to which the architecture will respond (by taking an action to move to a new state) as a function of its current state. Each transition specifies an event and an action.

DoDAF Volume II also describes the use of UML 1.1 Statecharts and possibly Petri Nets for representing OV-6b content. However, the technical content of CADM says it is designed around UML 1.1 Statecharts. This may be a concern as UML 2 is now available and the UML metamodel of Statecharts is somewhat changed. Where possible, the CADM concepts are mapped to align with the UML 2 Statechart mapping.

2. OV-6b Concepts

An Operational State Transition Description may be used to represent the following concepts. These concepts were adapted from the UML Version 1.1 State Machine concepts.

Process State

an observable mode of behaviour

Composite Process State

a Process State made up of Substates

Transition Process

a method of relating a target and source Process State

Action

an activity

Event

a significant occurrence

3. OV-6b AP233 Mapping Issues

Warning:

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

This section describes the issues in mapping between OV-6b Operational State Transition

Description 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. OV-6B CADM is based on UML 1.1 concepts which have been updated through UML 1.3/1.4/1.5 and SysML/UML 2.
2. It is not yet clear how to deal with CADM Nesting States (from UML 1.1). How does UML 2 do this?
3. CADM has the concept of TRANSITION-PROCESS-ASSOCIATION which can be categorized as a "Matching transition". This concept is not currently mapped as it is not supported in AP233. It is not clear whether this is a requirement on AP233 so further study is needed.
4. The TIME_EVENT / TIMEV_ELAP_TM_QY mapping needs to be aligned with the UML 2 mapping of TimeEvent.
5. AP233 support for Boolean and Logical Expressions is under study. The CHANGE_EVENT / CHG_EV_BOOLEXP_TX and similar mappings may need to be changed in the future.
6. Whether to use AP233/STEP Activity, Actual_activity and Activity_method for all cases of CADM ACTION, PROCESS-ACTIVITY and EVENT needs further discussion. That may be preferred to using the AP233/STEP the concept of Event.
7. The difference between the CADM EVENT / EVT_TY_CD and the use of CADM EVENT_TYPE is not clear.
8. It is not clear how to map the CADM TRANSITION_PROCESS_RESSULTING_ACTION and PROCESS-STATE-ACTION sequence attribute.

4. Mapping OV-6b CADM XML to AP233 XML

This section defines the mapping from the CADM XML representation of OV-6b Operational State Transition Description into an ISO AP233 XML representation of that same data. The mapping is defined at the detailed level of the XML elements and attributes themselves as it is aimed at implementors. 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. OV-6b Operational State Transition Description Mapping

This section describes the mapping for the CADM OV-6b STATE-TRANSITION-DESCRIPTION itself. It is represented by the ST_TRANS_DESCR XML element.

OV-6b : Operational State Transition Description

CADM XML Concept(s)	AP233 XML Element(s) or Attributes(s)
ST_TRANS_DESCR / ST_TR_DSC_DOC_ID	A Document with related version and definition, as specified in CADM Documents , as in AP233 approach to documents .
ST_TRANS_DESCR / TOPCMP_PROC_STV_ID	The Document_assignment child element Assigned_document linking the AP233 representation of the CADM State Transition Description topmost state with the Document_definition representing the State Transition Description itself which is referenced through the Is_assigned_to child element.
ST_TRANS_DESCR / ST_TRND_CMP_CAT_CD	<p>The classification of the Document representing the State Transition Description depending on the following values.</p> <ul style="list-style-type: none"> • 01 = COMPLETE classified as STATE-TRANSITION-DESCRIPTION-COMPLETE • 02 = INCOMPLETE classified as STATE-TRANSITION-DESCRIPTION-INCOMPLETE • 08 = NOT SPECIFIED is not classified. • 09 = NOT KNOWN classified as STATE-TRANSITION-DESCRIPTION-COMPLETENESS-NO
ST_TRANS_DESCR / ST_TRND_USE_TY_CD	<p>The classification of the Document representing the State Transition Description depending on the following values.</p> <ul style="list-style-type: none"> • 01 = OPERATIONAL STATE TRANSITION DESCRIPTION PRODUCT classified as OPERATIONAL-STATE-TRANSITION-DESCRIPTION-PRO • 02 = SYSTEMS STATE TRANSITION DESCRIPTION PRODUCT classified as SYSTEMS-STATE-TRANSITION-DESCRIPTION-PRODUCT • 03 = OTHER classified as STATE-TRANSITION-DESCRIPTION-USAGE-OTHER • 08 = NOT SPECIFIED is not classified. • 09 = NOT KNOWN classified as STATE-TRANSITION-DESCRIPTION-USAGE-NOT-KNOWN
ST_TRANS_DESCR / ACT_ID, SWI_MATI_ID, and SYS_ID	An Applied_state_definition_assignment linking the top State_definition with the AP233 concept representing the CADM concept that is the context of the State Machine as specified in AP233 Statecharts .

Table 1: STATE-TRANSITION-DESCRIPTION (ST_TRANS_DESCR element)

Mapping

4.2. OV-6b Process State and Process Pseudo State Mapping

This section describes the mapping for the CADM PROCESS-STATE-VERTEX, PROCESS-STATE and PROCESS-PSEUDO-STATE Concepts as represented by the PROC_STATE_VERTEX , PROC_STATE and PROC_PSEUDO_STATE XML elements.

CADM XML Concept(s)	AP233 XML Element(s) or Attributes(s)
PROC_STATE_VERTEX	A <i>State_definition</i> as specified in AP233 Statecharts . The <i>State_definition</i> is classified to specify its type. See PROC_STATE / PROC_ST_CAT_CD and PROC_PSEUDO_STATE / PROC_PS_TY_CD .
PROC_STATE_VERTEX / PROC_STV_ID	The assigned identifier classified as a State Identifier of the <i>State_definition</i> .
PROC_STATE_VERTEX / PROC_STV_CAT_CD	Not mapped directly but handled by other classification of the <i>State_definition</i> for more specific kinds of CADM Process State Vertex.
PROC_STATE	A <i>State_definition</i> as specified in the more general PROC_STATE_VERTEX mapping.
PROC_STATE / PROC_ST_CAT_CD	<ul style="list-style-type: none"> 01 = SIMPLE PROCESS STATE classified as Simple State 02 = COMPOSITE PROCESS STATE classified as Composite State 03 = NESTING PROCESS STATE To Be Done??? 08 = NOT SPECIFIED and 09 = NOT KNOWN are not classified.
PROC_STATE / PROC_ST_DESCR_TX	The <i>State_definition</i> child element Description containing the text.
PROC_STATE / PROC_ST_NM	The assigned identifier classified as a State Name of the <i>State_definition</i> .
PROC_STATE / PROC_STV_ID	Not mapped directly but is addressed by more general PROC_STATE_VERTEX mapping.
PROC_PSEUDO_STATE	A <i>State_definition</i> as specified in the more general PROC_STATE_VERTEX mapping.
PROC_PSEUDO_STATE / PROC_PS_TY_CD	The <i>State_definition</i> is classified and depending on the value as follows.

OV-6b : Operational State Transition Description

	<ul style="list-style-type: none"> • 01 = INITIAL is classified as Initial State • 02 = JOIN is classified as Join State • 03 = FORK is classified as Fork State • 04 = BRANCH is classified as Choice State • 05 = FINAL is classified as Final State • 06 = SHALLOW HISTORY is classified as Shallow History State • 07 = DEEP HISTORY is classified as Deep History State • 08 = NOT SPECIFIED and 09 = NOT KNOWN are not classified.
--	---

Table 1: PROCESS-STATE-VERTEX (PROC_STATE_VERTEX), PROCESS-STATE (PROC_STATE) and PROCESS-PSEUDO-STATE (PROC_PSEUDO_STATE) Mapping

The following table defines the CADM Process State Action concept mapping as represented by the PROC_STATE_ACT XML element.

CADM XML Concept(s)	AP233 XML Element(s) or Attributes(s)
PROC_STATE_ACT	An AP233 Applied_activity_method_assignment.
PROC_STATE_ACT / ACT_ID	The AP233 Applied_activity_method_assignment element child Assigned_activity_method element refers to the Activity_method representing the CADM ACTION.
PROC_STATE_ACT / PROC_STA_ROLE_CD	The Applied_activity_method_assignment is classified and depending on the value as follows. <ul style="list-style-type: none"> • 01 = ENTRY is classified as State Entry • 02 = EXIT is classified as State Exit • 03 = DEFERRED is classified as State Deferred • 08 = NOT SPECIFIED is classified as State tbd • 09 = NOT KNOWN is classified as State tbd
PROC_STATE_ACT / PROC_STA_SEQ_ID	Not currently mapped (see OV-6b Issues).
PROC_STATE_ACT / PROC_STV_ID	The AP233 Applied_activity_method_assignment element child Items element refers to the State_definition representing the CADM PROCESS-STATE.

Table 2: PROCESS-STATE-ACTION (PROC_STATE_ACT) Mapping

4.3. OV-6b Composite Process State Mapping

This section describes the mapping for the CADM COMPOSITE-PROCESS-STATE and COMPOSITE-PROCESS-STATE-SUBSTATE Concepts as represented by the COMP_PROC_ST and COMP_PROC_ST_SUBST XML elements.

CADM XML Concept(s)	AP233 XML Element(s) or Attributes(s)
COMP_PROC_ST and COMP_PROC_ST / PROC_STV_ID	A State_definition as specified in the more general PROC_STATE_VERTEX mapping.
COMP_PROC_ST / COMP_PR_ST_CONC_CD	The State_definition is classified and depending on the value as follows. <ul style="list-style-type: none"> 0 = FALSE is classified as State Substates Not Orthogonal 1 = TRUE is classified as State Substates Orthogonal
COMP_PROC_ST_SUBST	A Composition_of_state_definition relating the Composite and a Substate.
COMP_PROC_ST_SUBST / PARNT_PROC_STV_ID	The Composition_of_state_definition child element Relating referring to the AP233 State_definition representing the Composite State.
COMP_PROC_ST_SUBST / SUBST_PROC_STV_ID	The Composition_of_state_definition child element Related referring to the AP233 State_definition representing the Substate.

Table 1: COMPOSITE-PROCESS-STATE (COMP_PROC_ST) and COMPOSITE-PROCESS-STATE-SUBSTATE (COMP_PROC_ST_SUBST) Mapping

4.4. OV-6b Nesting Process State Mapping

This section describes the mapping for the CADM NESTING-PROCESS-STATE Concept as represented by the NESTG_PROC_STATE XML element.

CADM XML Concept(s)	AP233 XML Element(s) or Attributes(s)
NESTG_PROC_STATE	A State_definition as specified in the more general PROC_STATE and PROC_STATE_VERTEX mappings.
NESTG_PROC_STATE / NST_STTRDSC_DOC_ID	A Composition_of_state_definition with child element Related referring to the

OV-6b : Operational State Transition Description

	AP233 State_definition representing the topmost Composite Process State in the used State Transition Description. The Composition_of_state_definition is classified as What does UML 2 call this? .
--	--

Table 1: NESTING-PROCESS-STATE (NESTG_PROC_STATE) Mapping

4.5. OV-6b Transition Process Mapping

This section describes the mapping for the CADM TRANSITION-PROCESS Concept as represented by the TRANS_PROC XML element.

CADM XML Concept(s)	AP233 XML Element(s) or Attributes(s)
TRANS_PROC	A State_transition_definition as specified in AP233 Statecharts .
TRANS_PROC / TRANSPR_ID	The assigned identifier classified as a State Transition Identifier of the State_transition_definition .
TRANS_PROC / TRANSPR_LABEL_NM	The assigned identifier classified as a State Transition Name of the State_transition_definition .
TRANS_PROC / TRANSPR_DESCR_TX	The State_transition_definition child element Description containing the text.
TRANS_PROC / PROC_EVENT_EVT_ID	A Event_assignment with child element Items referring to the State_transition_definition and Assigned_event child element referring to the AP233 representation of the CADM EVENT.
TRANS_PROC / SRC_PROC_STV_ID	The State_definition_transition child element Relating referring to the AP233 State_definition that is the source of the transition.
TRANS_PROC / TGT_PROC_STV_ID	The State_definition_transition child element Related referring to the AP233 State_definition that is the target of the transition.
TRANS_PROC / TRANSPR_EVQUAL_NM	An Activity_method representing the CADM ACTION and related Applied_activity_method_assignment linking the Activity_method and the

OV-6b : Operational State Transition Description

	State_transition_definition representing the CADM TRANSITION-PROCESS. The Applied_activity_method_assignment is also classified to specify its type as being State Transition Activity . The value is mapped as the assigned identifier for the Activity_method classified as a Name .
TRANS_PROC/ TRANSPR_EVQU_TY_CD	The classification of the Activity_method representing the CADM ACTION. <ul style="list-style-type: none"> • 01 = ATTRIBUTE maps as tbd • 02 = ACTION maps as tbd • 03 = GUARD maps as tbd • 04 = EXPORT EVENT maps as tbd • 05 = NONE maps as tbd • 08 = NOT SPECIFIED maps as tbd • 09 = NOT KNOWN maps as tbd
TRANS_PROC/ TRANSPR_EVQU_VA_TX	The Activity_method child element Description .
TRANS_PROC / TRANSPR_GUBLEXP_TX	A Condition and related Condition_assignment . The Condition_assignment Item child refers to the State_transition_definition and the Assigned_condition child refers to the Condition . The value is mapped to the Condition child element Description .

Table 1: TRANSITION-PROCESS (TRANS_PROC) Mapping

4.6. OV-6b Process Event and Event Mapping

This section describes the mapping for the CADM PROCESS-EVENT (PROC_EVENT) and EVENT (EVENT) Concepts.

CADM XML Concept(s)	AP233 XML Element(s) or Attributes(s)
EVENT	An AP233 Event (see OV-6b Issues).
EVENT / ACT_ID	Not mapped.
EVENT / CSC_ID	Not currently mapped, see SV-1 Issues
EVENT / EVT_BGN_CALDTTM	See Date . The Date_or_date_time_assignment element child Items element refers to the AP233 concept representing the event and the

OV-6b : Operational State Transition Description

	Date_or_date_time_assignment is classified as an Date_actual_start .
EVENT / EVT_DESCR_TX	The Event child element Description .
EVENT / EVT_END_CALDTTM	See Date . The Date_or_date_time_assignment element child Items element refers to the AP233 concept representing the event and the Date_or_date_time_assignment is classified as an Date_actual_end .
EVENT / EVT_ID	The assigned identifier of the Event
EVENT / EVT_NM	The assigned identifier classified as a Name of the Event
EVENT / EVT_OBSVR_TY_CD	The classification of the Event based on the value as follows. <ul style="list-style-type: none"> • 1 = VISUALLY OBSERVED maps as Observation Type Visual • 2 = SUSPECTED maps as Observation Type Suspected • 98 = NOT SPECIFIED maps as not classified • 99 = NOT KNOWN. maps as Observation Type Not Known
EVENT / EVT_TY_CD	The classification of the Event based on the value as follows. Note that not all values are listed here as there are many possible. 001 = COMMUNICATIONS maps as Event Type Communications 002 = CIVIL maps as Event Type Civil 003 = DISASTER maps as Event Type Disaster 004 = ECONOMIC maps as Event Type Economic 005 = ENVIRONMENTAL maps as Event Type Environmental 998 = NOT SPECIFIED not classified 999 = NOT KNOWN maps as Event Type Not Known
EVENT / EVT_TY_ID	Not currently mapped (see OV-6b Issues) .
EVENT / SC_CD	The assignment of a Security_classification to the Event .
PROC_EVENT	An Event and Event_assignment referring to that Event and related State_transition_definition as specified in AP233 Statecharts. The Event is

OV-6b : Operational State Transition Description

	classified to specify its type as a Call Event, Signal Event, Time Event or Change Event .
CHANGE_EVENT / PROC_EVENT_EVT_ID	Maps as specified earlier for CADM PROCESS-EVENT.
CHANGE_EVENT / CHG_EV_BOOLEXP_TX	The Event child element Description (this may change as better support for Boolean and Logical Expressions is specified in AP233).
CALL_EVENT / PROC_EVENT_EVT_ID	Maps as specified earlier for CADM PROCESS-EVENT.
CALL_EVENT / CALL_EV_OPDESCR_TX	The Event child element Description.
TIME_EVENT / PROC_EVENT_EVT_ID	Maps as specified earlier for CADM PROCESS-EVENT.
TIME_EVENT / TIMEV_ELAP_TM_QY	A Duration with child element Value_component containing the value and child element Unit referencing an AP233 Unit that is an SI time unit of seconds.
SIGNAL_EVENT / PROC_EVENT_EVT_ID	Maps as specified earlier for CADM PROCESS-EVENT.
SIGNAL_EVENT / SIGEV_SIG_DESCR_TX	The Event child element Description.

Table 1: EVENT (EVENT), PROCESS-EVENT (PROC_EVENT) and related subtype Mappings

CADM XML Concept(s)	AP233 XML Element(s) or Attributes(s)
EVENT	.

Table 2: EVENT Mapping

4.7. OV-6b State and Transition Action Mapping

This section describes the mapping for the PROCESS-STATE-ACTION Concept.

CADM XML Concept(s)	AP233 XML Element(s) or Attributes(s)
PROC_STATE_ACT / ACT_ID and / PROC_STV_ID	An Applied_activity_method_assignment linking the State_definition and the Activity_method representing the CADM ACTION.
PROC_STATE_ACT / PROC_STA_SEQ_ID	Not currently mapped (see OV-6b Issues).

OV-6b : Operational State Transition Description

PROC_STATE_ACT / PROC_STA_ROLE_CD	<p>A classification of the AP233 concept representing the CADM Process-State-Action as follows depending on the value.</p> <ul style="list-style-type: none"> • 01 = maps as ENTRY ACTIVITY • 02 = maps as EXIT ACTIVITY • 03 = maps as DEFERRED ACTIVITY • 08 = NOT SPECIFIED maps as not classified • 09 = maps as STATE ACTIVITY ROLE NOT KNOWN
-----------------------------------	---

Table 1: PROCESS-STATE-ACTION (PROC_STATE_ACT) Mapping

This section describes the mapping for the TRANSITION-PROCESS-RESULTING-ACTION Concept.

CADM XML Concept(s)	AP233 XML Element(s) or Attributes(s)
TRANS_PROC_RES_ACT / ACT_ID and / TRANSPR_ID	An Applied_activity_method_assignment linking the State_transition_definition and the Activity_method representing the CADM ACTION.
TRANS_PROC_RES_ACT / TRANSPRRA_SEQ_ID	Not currently mapped (see OV-6b Issues).

Table 2: TRANSITION-PROCESS-RESULTING-ACTION (TRANS_PROC_RES_ACT) Mapping

This section describes the mapping for the CADM ACTION, PLANNED-ACTION and UNPLANNED-ACTION Concepts.

CADM XML Concept(s)	AP233 XML Element(s) or Attributes(s)
ACTION	Maps to a either a typical activity and in some cases a related actual activity (see AP233 activity approach) depending on the following: <ul style="list-style-type: none"> • when the action is an UNPLANNED-ACTION, then it maps to an actual activity
ACTION / ACT_ATLEND_CALDTTM	See Date . The Date_or_date_time_assignment element child Items element refers to the AP233 concept representing the planned action and the Date_or_date_time_assignment is classified as an Date_actual_end .
ACTION / ACT_ATL_ST_CALDTTM	See Date . The Date_or_date_time_assignment element child Items element refers to the AP233

OV-6b : Operational State Transition Description

	concept representing the planned action and the Date_or_date_time_assignment is classified as an Date_actual_start .
ACTION / ACT_CAT_CD	A classification of the AP233 concept representing the CADM Action as follows depending on the value. <ul style="list-style-type: none"> • 01 = PLANNED ACTION • 99 = UNPLANNED ACTION • 98 = NOT SPECIFIED maps to not classified • 99 = NOT KNOWN
ACTION / ACT_DESCR_TX	The Description child element containing text.
ACTION / ACT_ID	The assigned identifier of the Activity_method
ACTION / ACT_NM	The assigned identifier classified as a Name of the Activity_method
ACTION / ACT_PRTY_CD	A classification of the AP233 concept representing the CADM Action as follows depending on the value. <ul style="list-style-type: none"> • 01 = maps as ACTION TOP PRIORITY • 02 = maps as ACTION URGENT PRIORITY • 03 = maps as ACTION PRIORITY 3 • 04 = maps as ACTION NORMAL PRIORITY • 05 = maps as ACTION PRIORITY 5 • 06 = maps as ACTION ROUTINE PRIORITY • 98 = maps as not classified • 99 = maps as ACTION PRIORITY NOT KNOWN
ACTION / ACT_STA_CD	AP233 Activity_status Status child element.
ACTION / AV_CD	A classification of the AP233 concept representing the CADM Action as follows depending on the value (only a subset of the possible values are described here, there are many more and they follow the same pattern. <ul style="list-style-type: none"> • 1 = DESTROY • 2 = CAPTURE • 3 = NEUTRALIZE • 4 = DENY • 5 = MOVE • 6 = AVOID • 7 = INTERDICT

OV-6b : Operational State Transition Description

	<ul style="list-style-type: none"> • 8 = HARASS • 9 = STOP • 10 = SEIZE • 11 = PREPARE • 998 = NOT SPECIFIED maps to not classified • 999 = NOT KNOWN
PLND_ACT / ACT_ID	As the ACTION / ACT_ID mapping above.
PLND_ACT / PLND_ACT_CAT_CD	<p>A classification of the AP233 concept representing the CADM Action as follows depending on the value.</p> <ul style="list-style-type: none"> • 1 = maps as PLANNED ACTIVITY PROJECT • 2 = maps as PLANNED ACTIVITY ANALYSIS PROCESS • 8 = NOT SPECIFIED maps as not classified. • 9 = maps as PLANNED ACTIVITY NOT KNOWN
PLND_ACT / PA_PLN_END_CALDTTM	See Date . The Date_or_date_time_assignment element child Items element refers to the AP233 concept representing the planned action and the Date_or_date_time_assignment is classified as an Date_planned_end .
PLND_ACT / PA_PLN_ST_CALDTTM	See Date . The Date_or_date_time_assignment element child Items element refers to the AP233 concept representing the planned action and the Date_or_date_time_assignment is classified as an Date_planned_start .
PLND_ACT / PLND_ACT_PRP_TX	The Activity_method element Purpose child containing the text.
PLND_ACT / TSK_ID	Not yet mapped.
UNPLND_ACT / ACT_ID	As the ACTION / ACT_ID mapping above.
UNPLND_ACT / EVT_ID	Not yet mapped.

Table 3: ACTION (ACTION), PLANNED-ACTION (PLND_ACT) and UNPLANNED-ACTION (UNPLND_ACT) Mapping

5. Example OV-6b CADM XML Data

This section contains example OV-6b CADM XML data.

5.1. Example ST_TRANS_DESCR

```
<ST_TRANS_DESCR>
  <ST_TR_DSC_DOC_ID>33300000</ST_TR_DSC_DOC_ID>
  <ST_TRND_USE_TY_CD>01</ST_TRND_USE_TY_CD>
  <ACT_ID>98760000</ACT_ID>
</ST_TRANS_DESCR>
<DOC>
  <DOC_ID>33300000</DOC_ID>
  <DOC_NM>SAMPLE OPERATIONAL STATE TRANSITION DESCRIPTION {OV-6b}</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>28</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 PROC_PSEUDO_STATE (Initial State)

```
<PROC_PSEUDO_STATE>
  <PROC_PS_TY_CD>01</PROC_PS_TY_CD>
  <PROC_STV_ID>56780000</PROC_STV_ID>
</PROC_PSEUDO_STATE>
<PROC_STATE_VERTEX>
  <PROC_STV_CAT_CD>01</PROC_STV_CAT_CD>
  <PROC_STV_ID>56780000</PROC_STV_ID>
</PROC_STATE_VERTEX>
```

5.3. Example PROC_STATE (Simple State)

```
<PROC_STATE>
  <PROC_ST_CAT_CD>01</PROC_ST_CAT_CD>
  <PROC_ST_DESCR_TX>Monitoring the execution of a battle
plan.</PROC_ST_DESCR_TX>
  <PROC_ST_NM>Monitoring Execution</PROC_ST_NM>
  <PROC_STV_ID>56781111</PROC_STV_ID>
</PROC_STATE>
<PROC_STATE_VERTEX>
  <PROC_STV_CAT_CD>02</PROC_STV_CAT_CD>
  <PROC_STV_ID>56781111</PROC_STV_ID>
</PROC_STATE_VERTEX>
```

5.4. Example TRANS_PROC

```
<TRANS_PROC>
  <SRC_PROC_STV_ID>56780000</SRC_PROC_STV_ID>
  <TGT_PROC_STV_ID>56781111</TGT_PROC_STV_ID>
  <TRANSPR_GUBLEXP_TX>Authorized Command Received =
TRUE</TRANSPR_GUBLEXP_TX>
  <TRANSPR_ID>33440000</TRANSPR_ID>
  <TRANSPR_LABEL_NM>Mobilization Command Received</TRANSPR_LABEL_NM>
```

OV-6b : Operational State Transition Description

```
</TRANS_PROC>
```

6. Example OV-6b AP233 XML Data

This section contains example OV-6b AP233 XML data.

6.1. Example State_definition (Simple State)

```
<ap233:State_definition id="id-State_definition-2819">
  <Name>Monitoring Execution</Name>
  <Description>Monitoring the execution of a battle plan.</Description>
</ap233:State_definition>
<ap233:Classification_assignment
id="id-sysel269System_element_identification_code-idassign-classification_assignment">
  <Items>
    <ap233:State_definition ref="id-State_definition-2819" xsi:nil="true"
  />
  </Items>
  <Assigned_class>
    <ap233:External_class ref="id-External_class-100" xsi:nil="true" />
  </Assigned_class>
</ap233:Classification_assignment>
<ap233:External_class id="id-External_class-100">
  <Id>http://schema.omg.org/spec/UML/2.1/State</Id>
  <Name>State</Name>
</ap233:External_class>
```

6.2. Example State_transition_definition

```
<ap233:State_transition_definition
id="id-State_transition_definition-3017">
  <Name>Mobilization Command Received</Name>
  <Relating>
    <ap233:State_definition ref="id-State_definition-2819" xsi:nil="true"
  />
  </Relating>
  <Related>
    <ap233:State_definition ref="id-State_definition-2835" xsi:nil="true"
  />
  </Related>
</ap233:State_transition_definition>
```