INTERNATIONAL STANDARD

ISO/IEC 15476-6

First edition
2006-02-15

Information technology — CDIF semantic metamodel —

Part 6: State/event models

Technologies de l'information — Métamodèle sémantique CDIF —

Partie 6: Modèles «state/event»

Reference number
ISO/IEC 15476-6:2006(E)

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 15476-6 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Software and system engineering.*

ISO/IEC 15476 consists of the following parts, under the general title *Information technology — CDIF semantic metamodel*:

— *Part 1: Foundation*

— *Part 2: Common*

— *Part 3: Data definitions*

— *Part 4: Data models*

— *Part 5: Data flow models*

— *Part 6: State/event models*

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Introduction

This International Standard will assist the vendors and users of modelling tools and meta-data repositories in developing mechanisms for interchanging information. This International Standard specifies an element of a family of related International Standards. When used together, these International Standards specify a mechanism for transferring information between tools.

ISO/IEC 15474-1:2002**,** *Information technology - CDIF framework - Part 1: Overview* and ISO/IEC 15474-2:2002**,** *Information technology - CDIF framework - Part 2: Modelling and extensibility* should be read first when initially exploring CDIF. The first explains the overall CDIF architecture and how the family of International Standards fits together. The second explains the scope, and modelling approach in CDIF. The CDIF meta-metamodel and extensibility mechanism are also defined in that document.

This International Standard explains the State/event models subject area of the CDIF semantic metamodel, that defines objects in state transition diagrams and state transition tables. The CDIF semantic metamodel is used to ensure that the information transferred by tools communicating using CDIF is expressed with an agreed meaning.

This International Standard has been developed with the wide support and participation of vendors, users, academia and government involved in or familiar with the CASE industry, its products and the general requirements associated with interchanging information between these products.

This document is organized into the following Clauses:

— Clause 1 to 5 are prescribed ISO/IEC Clauses.

— Clause 6: Subject area overview:

  This Clause gives an overview of the coverage of this subject area.

— Clause 7: Subject area summary:

  This Clause gives an overview of the content of this subject area.

— Clause 8: Subject area specification:

  This Clause gives the formal specification of all the objects defined in the subject area, and the formal reference to those used, but not defined in the subject area.

This document is intended to be used by anyone wishing to understand and/or use CDIF. This document provides a definition of a single subject area of the CDIF semantic metamodel. It is suitable for:

— Those evaluating CDIF;

— Those who wish to understand the principles and concepts of a CDIF transfer; and

— Those developing importers and exporters.

This document, ISO/IEC 15474-1:2002*, Information technology - CDIF framework - Part 1: Overview,* and the framework document ISO/IEC 15474-2:2002*, Information technology - CDIF framework - Part 2: Modelling and extensibility,* should be read first when initially exploring CDIF and before attempting to read other documents in the CDIF family of standards.

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While there are no specific prerequisites for reading this document, it will be helpful for the reader to have familiarity with the following:

— Entity-Relationship-Attribute modelling;

— Modelling (CASE) tools;

— Information repositories;

— Data dictionaries;

— Multiple meta-layer modelling.

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Information technology — CDIF semantic metamodel —

Part 6:
State/event models

1 Scope

The CDIF family of International Standards is primarily designed to be used as a description of a mechanism for transferring information between modelling tools. It facilitates a successful transfer when the authors of the importing and exporting tools have nothing in common except an agreement to conform to CDIF. The language that is defined for the transfer format also has applicability as a general language for import/export from repositories. The CDIF semantic metamodel defined for CASE also has applicability as the basis of standard definitions for use in repositories.

The International Standards which form the complete family of CDIF standards are documented in ISO/IEC 15474-1:2002*, Information technology — CDIF framework — Part 1: Overview.* These standards cover the overall framework, the transfer format and the CDIF semantic metamodel.

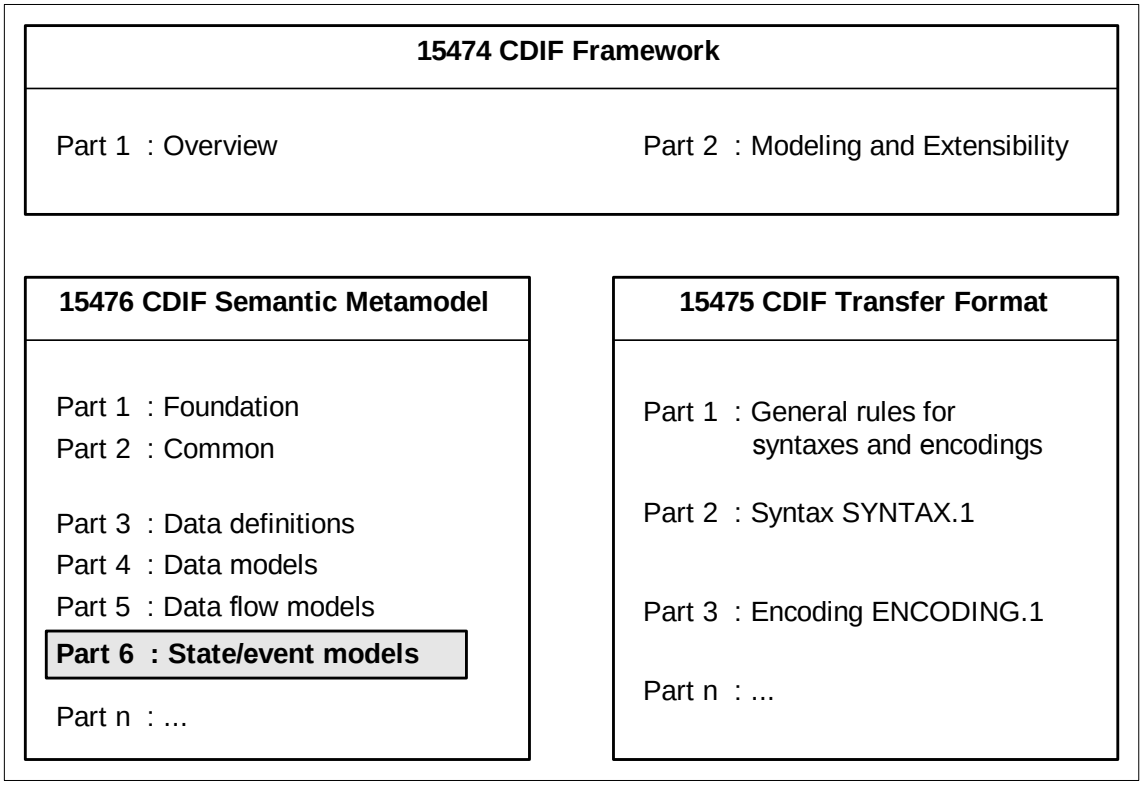


Figure 1 – CDIF family of International Standards

The diagram in Figure 1 depicts the various International Standards that comprise the CDIF family of standards. The shaded box depicts this International Standard and its position in the CDIF family of standards.

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This International Standard defines the State/Event Subject Area of the CDIF semantic metamodel. This subject area contains meta-objects that describe the entities of state transition diagrams and state transition tables, and also meta-relationships and meta-attributes that are necessary for available state transition.

2 Conformance

2.1 General

A product is fully standards conformant to a CDIF subject area standard if and only if it is input-conformant, output-conformant and round-trip conformant to each and every *MetaEntity*, *MetaRelationship*, *MetaAttribute*, and *AttributableMetaObject* which is defined and/or used in that standard, and it is also CDIF architecture conformant. A product may be partially input-conformant, and/or partially output-conformant, and/or partially round-trip conformant to a CDIF subject area standard.

2.2 Input conformance

Input conformance for a specific *MetaEntity*, *MetaRelationship*, *MetaAttribute*, or *AttributableMetaObject* (short: *CollectableMetaObject*) is determined by applying the following test:

A set of meta-data containing all meanings and structures standardized by a CDIF subject area is imported by the product under test. Then the meta-data which has arrived in the product is examined. The following options exist for the relation between the input (CDIF) meta-data and the imported (product) meta-data:

For a specific *CollectableMetaObject*:

1 The product is input conformant if each instance of the specific *CollectableMetaObject* has arrived in the product without change of meaning or structure. If the *CollectableMetaObject* is a meta-entity or meta-relationship, its structural relationships to other *CollectableMetaObjects* have been preserved. If the *CollectableMetaObjec*t is a meta-attribute, the value of the meta-attribute has been preserved.

2 The product is input morphing conformant if each instance of the specific *CollectableMetaObject* has arrived in the product, but with some changes in meaning or structure. If the *CollectableMetaObject* is a meta-attribute, the value(s) for some instances of the meta-attribute have changed.

3 The product is not input conformant for that *CollectableMetaObject* if neither of the previous tests is satisfied.

2.3 Output conformance

Output conformance for a specific *CollectableMetaObject* is determined by applying the following test:

For the product being tested, a set of meta-data that includes all possible meanings and structures representable in that product is exported. Then the meta-data that has been exported is examined. The following options exist for the relation between the product's meta-data and the exported (CDIF) meta-data:

For a specific *CollectableMetaObject*:

1 The product is output conformant if all of the meaning and structure for the specific *CollectableMetaObject* has been represented as meta-data in the product and has been exported as one or more instances of that *CollectableMetaObject*. If the *CollectableMetaObject* is a meta-attribute, the correct value of the meta-attribute has been exported.

2 The product is output morphing conformant if each instance of meta-data in the product that has the same meaning and structure as the *CollectableMetaObject* has been exported, but some instances have been exported as a different *CollectableMetaObject* or some of the meaning and structure has been changed.

3 If the product does not represent the meaning and structure associated with the *CollectableMetaObject*, output conformance for that *CollectableMetaObject* is not applicable to the product.

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4 In all other cases, the product is not output conformant for that *CollectableMetaObject*.

2.4 Round-trip conformance

Round-trip conformance for a specific *CollectableMetaObject* is determined by applying the following test:

A set of meta-data containing all meanings and structures standardized by a CDIF subject area is imported by the product under test. Then the meta-data is exported again. The following options exist for the relation between the input meta-data and the output meta-data:

For a specific *CollectableMetaObject*:

1 The product is round-trip conformant if the meaning and structure of each instance of the *CollectableMetaObject* is preserved without changes during the round-trip. For a vendor to claim round-trip conformance, it is also necessary for the tool to be able to perform create, read, update, and delete operations on the imported (product) meta-data corresponding to the instances of the *CollectableMetaObject*.

2 The product is round-trip morphing conformant if each instance of the input *CollectableMetaObject* is preserved, but with some changes in meaning and/or structure. If the *CollectableMetaObject* is a meta-entity or meta-relationship, some of its instances' structural relationships to other *CollectableMetaObjects* have changed, or some instances have been transformed into other *CollectableMetaObjects*, or instances of other *CollectableMetaObjects* have been transformed into instances of the *CollectableMetaObject.* If the *CollectableMetaObject* is a meta-attribute, the values of some instances of the meta-attribute have changed or the domain of the meta-attribute has changed.

3 In all other cases, the product is not round-trip conformant for that CollectableMetaObject.

3 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 11411, *Information technology — Representation for human communication of state transition of software.*

ISO/IEC 13238-1, *Information technology — Data management export/import — Part 1: Standardization framework.*

ISO/IEC 15474-1, *Information technology — CDIF framework — Part 1: Overview*

ISO/IEC 15474-2, *Information technology — CDIF framework — Part 2: Modelling and extensibility*

ISO/IEC 15476-1, *Information technology — CDIF semantic metamodel — Part 1: Foundation*

ISO/IEC 15476-2, *Information technology — CDIF Semantic metamodel — Part 2: Common.*

4 Terms and definitions

For the purposes of this document, the following definitions apply. Unless otherwise noted, the definitions are specific to this International Standard.

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4.1 From other International Standards

4.1.1 ISO/IEC 15474-1

This part of ISO/IEC 15476 makes use of the following terms defined in ISO/IEC 15474-1:

CDIF
CDIF family of standards
CDIF semantic metamodel
CDIF meta-metamodel
CDIF transfer
Instance
Meta-attribute
Meta-entity
Metamodel
Meta-object
Meta-relationship
Model
Subject area
Transfer
Transfer format

4.1.2 ISO/IEC 13238-1

This part of ISO/IEC 15476 makes use of the following terms from ISO/IEC 13238-1:

Exporter
Importer

4.1.3 For this International Standard

For the purpose of this part of ISO/IEC 15476 new terms are defined when introduced. Double quotes are used to introduce new terms (e.g., "model layer")

5 Symbols (and abbreviated terms)

5.1 Naming, diagramming and definition conventions

Conventions for naming, diagramming, describing and defining meta-objects can be found in Clause 7 of the framework document (ISO/IEC 15474-2:2002*, Information technology - CDIF framework - Part 2: Modelling and extensibility*).

5.2 Abbreviations

The following abbreviation is used in this International Standard:

CDIF CASE Data Interchange Format (originally)

6 State/Event subject area overview

6.1 Introduction

State/Event models based on “finite state machine” are effective to describe dynamic behavior or specification of software. Graphical notations and semantic concepts of state diagram and state table based on the State/Event

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models are defined in ISO/IEC 11411 ”Information technology – Representation for human communication of state transition of software”. This International Standard provides machine readable semantic metamodel of the State/Event models.

6.2 Diagram

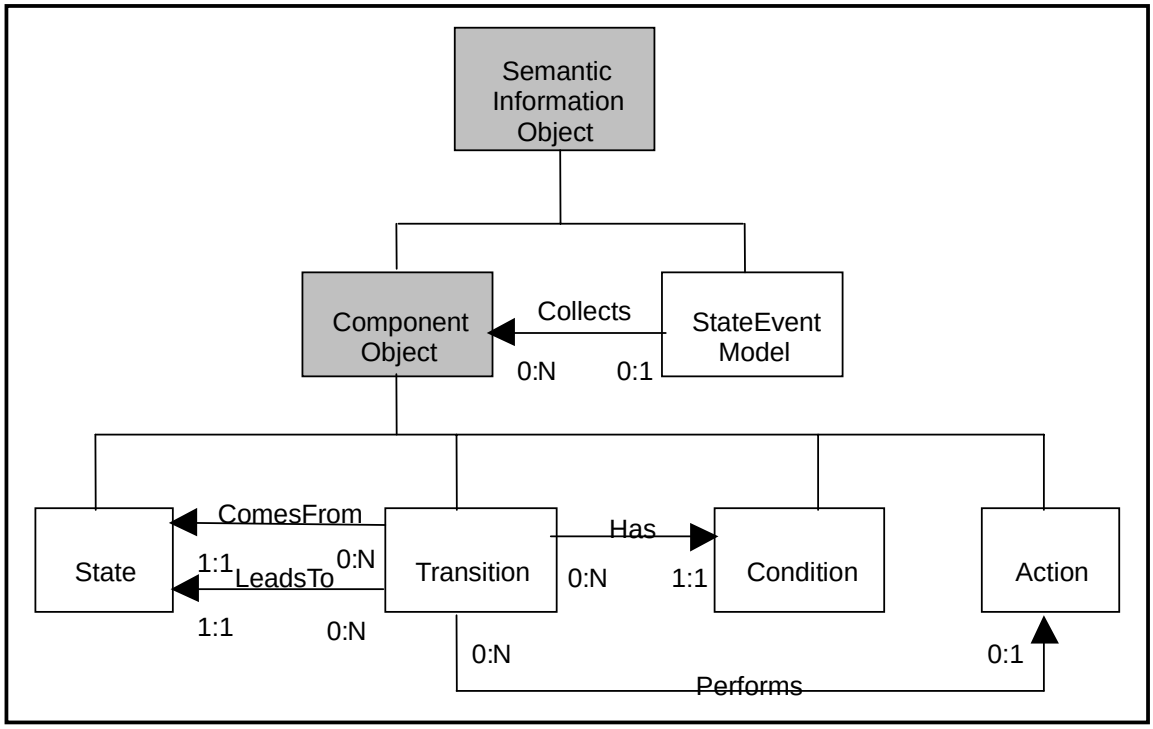


Figure 2 — State/Event Models subject area subtypes

6.3 State/Event model

A State/Event model consists of states, transitions between states, conditions which are the selection conditions for the transitions and actions performed with transitions. A software behavior or specification modeled by a State/Event model is represented as sequentially executed machine triggered by sequential events such as data input from outside of the model. And there are not any parallel executions in a State/Event model.

In State/Event models, the software is waiting on one of the states for the expected events. It is triggered by the event, selects the transition using the condition from among the potentially possible transitions. And selected transition and an action accompanied by the transition are performed. After those, on the next state, the next event will be waiting.

In the case of describing software behavior/specification by “finite state machine” model, which tries to represents all accumulated history by states, it is often necessary many states without number. To avoid this problem, to make it practical, State/Event models of this International Standard introduces variables which have memory within a model. The variables can be used in describing conditions or actions.

6.4 State

A state is a accumulated history of the data which the software accepted till then, and also it represents the stage of progress of software in this execution. A state is the “state waiting for the events”. In the states, the software is

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waiting for expected events such as data input from outside of the model, therefore no other function shall not be provided.

A complete State/Event models shall have one and only one initial state and shall have zero or more final state. In initial sate, the software starts its activity. In final states, the software terminated its activity.

6.5 Transition

A transition is a change from one state to another state or the same state. In State/Event models, transitions represent all potential traces of state changes between states. These transitions triggered by events such as data input from outside of the model, and a transition whose condition is satisfied takes place. And an action may take place along with the transition. Description of a transition may represent consisting of following three parts

— direction part : To describe from which state the transition starts, and to which state the transition terminates;

— condition part : To describe the condition for selecting one transition;

— action part : To describe the action takes place along with the transition.

6.6 Condition

Transition conditions are the conditions that describe which transition must take place. In complete State/Event models, conditions related to transitions which start from one state shall be mutually exclusive and cover all expected case.

Conditions shall be described in text data. In the text data, the condition may be described using variables which have memory within a model as well as data accepted from outside of the model. For example, there is a character-input-wating state which have transitions depending on the input character. In this case, one of the condition is follows: If "a Roman letter, a numeral letter or a hyphen is received,and the number of stacked letters which had already accepted is smallerthan 30", then the transition takes places. This condition shows there is one variable, "the number of stacked letters which had been alreadyaccepted", in this State/Event model.

6.7 Action

It is nesesarry to specify the action when the transition takes place. An action shall be describe in text data, such as data processing function, data outputting function to the outside of the model.

7 State/Event subject area summary

7.1 AttributableMetaObject hierarchy

MetaObjectName	Subject Area
RootEntity	Foundation
SemanticInformationObject	Common
ComponentObject	Common
Action	State/Event Models
Condition	State/Event Models
State	State/Event Models
Transition	State/Event Models
StateEventModel	State/Event Models
RootEntity.IsRelatedTo.RootEntity	Common
StateEventModel.Collects.ComponentObject	State/Event Models
Transition.ComesFrom.State	State/Event Models
Transition.Has.Condition	State/Event Models

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Transition.LeadsTo.State	State/Event Models
Transition.Performs.Action	State/Event Models

7.2 MetaEntity summary

MetaEntity Name	
Inherited MetaAttribute Name	
Local MetaAttribute Name	Mandatory/Optional
Action	
BriefDescription	*Optional*
CDIFIdentifier	*Mandatory*
DateCreated	*Optional*
DateUpdated	*Optional*
FullDescription	*Optional*
Name	*Optional*
TimeCreated	*Optional*
TimeUpdated	*Optional*
ActionText	Mandatory
ComponentObject	
BriefDescription	*Optional*
CDIFIdentifier	*Mandatory*
DateCreated	*Optional*
DateUpdated	*Optional*
FullDescription	*Optional*
TimeCreated	*Optional*
TimeUpdated	*Optional*
Name	Optional
Condition	
BriefDescription	*Optional*
CDIFIdentifier	*Mandatory*
DateCreated	*Optional*
DateUpdated	*Optional*
FullDescription	*Optional*
Name	*Optional*
TimeCreated	*Optional*
TimeUpdated	*Optional*
ConditionText	Mandatory

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SemanticInformationObject	
CDIFIdentifier	*Mandatory*
DateCreated	*Optional*
DateUpdated	*Optional*
TimeCreated	*Optional*
TimeUpdated	*Optional*
BriefDescription	Optional
FullDescription	Optional

State	
BriefDescription	*Optional*
CDIFIdentifier	*Mandatory*
DateCreated	*Optional*
DateUpdated	*Optional*
FullDescription	*Optional*
Name	*Optional*
TimeCreated	*Optional*
TimeUpdated	*Optional*
IsFinalState	Mandatory
IsInitialState	Mandatory
SequenceNumber	Optional

StateEventModel	
BriefDescription	*Optional*
CDIFIdentifier	*Mandatory*
DateCreated	*Optional*
DateUpdated	*Optional*
FullDescription	*Optional*
TimeCreated	*Optional*
TimeUpdated	*Optional*

Transition	
BriefDescription	*Optional*
CDIFIdentifier	*Mandatory*
DateCreated	*Optional*
DateUpdated	*Optional*
FullDescription	*Optional*
Name	*Optional*
TimeCreated	*Optional*
TimeUpdated	*Optional*

7.3 MetaRelationship summary

MetaRelationship Name	
Inherited MetaAttribute Name	
Local MetaAttribute Name	Mandatory/Optional

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StateEventModel.Collects.ComponentObject

CDIFIdentifier	*Mandatory*
DateCreated	*Optional*
DateUpdated	*Optional*
TimeCreated	*Optional*
TimeUpdated	*Optional*

Transition.ComesFrom.State

CDIFIdentifier	*Mandatory*
DateCreated	*Optional*
DateUpdated	*Optional*
TimeCreated	*Optional*
TimeUpdated	*Optional*

Transition.Has.Condition

CDIFIdentifier	*Mandatory*
DateCreated	*Optional*
DateUpdated	*Optional*
TimeCreated	*Optional*
TimeUpdated	*Optional*

Transition.LeadsTo.State

CDIFIdentifier	*Mandatory*
DateCreated	*Optional*
DateUpdated	*Optional*
TimeCreated	*Optional*
TimeUpdated	*Optional*

Transition.Performs.Action

CDIFIdentifier	*Mandatory*
DateCreated	*Optional*
DateUpdated	*Optional*
TimeCreated	*Optional*
TimeUpdated	*Optional*

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8 State/Event subject area specification

8.1 Introduction

This clause provides the full definition of each object used in the State/Event Models subject area of the CDIF semantic metamodel.

8.2 Subject area definition

SUBJECT AREA DEFINITION	
NAME	**State/Event Models**
VERSIONNUMBER	15476-6:2000
CDIFMETAIDENTIFIER	76600
DESCRIPTION	The State/Event Models subject area covers state diagrams and state tables on the CDIF semantic metamodel.
USAGE	It provides meta-objects that describe the entities of state diagrams and state tables, and also meta-relationships and meta-attributes that are necessary for available state transition.
ALIASES	
CONSTRAINTS	

8.3 Meta-entity definitions

8.3.1 Action

META-ENTITY DEFINITION	
NAME	**Action**
CDIFMETAIDENTIFIER	76601
SUBJECTAREANAME	State/Event Models
SUBJECTAREAVERSION	15476-6:2000
DESCRIPTION	The action which is performed by the software processing according to the transition.
USAGE	
ALIASES	
CONSTRAINTS	
TYPE	Kernel
ISABSTRACT	False
LOCAL SUBTYPES	
LOCAL METARELATIONSHIPS	Transition.Performs.Action
LOCAL METAATTRIBUTES	ActionText Name

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META-ATTRIBUTE DEFINITION	META-ATTRIBUTE OF **Action**
NAME	**ActionText**
CDIFMETAIDENTIFIER	76602
SUBJECTAREANAME	State/Event Models
SUBJECTAREAVERSION	15476-6:2000
DESCRIPTION	The descriptive text of the action which is performed by the software processing according to the transition.
USAGE	This is used for the explanation of the action or the name of the procedure associated with the action, etc.
ALIASES	
CONSTRAINTS	
DATA TYPE	Text
DOMAIN	
LENGTH	
ISOPTIONAL	False

8.3.2 ComponentObject

META-ENTITY REFERENCE	
NAME	**ComponentObject**
CDIFMETAIDENTIFIER	8000
SUBJECTAREANAME	Common
SUBJECTAREAVERSION	15476-2:2000
LOCAL SUBTYPES	Action Condition State Transition
LOCAL METARELATIONSHIPS	StateEventModel.Collects.ComponentObject
LOCAL METAATTRIBUTES	

8.3.3 Condition

META-ENTITY DEFINITION	
NAME	**Condition**
CDIFMETAIDENTIFIER	76603
SUBJECTAREANAME	State/Event Models
SUBJECTAREAVERSION	15476-6:2000
DESCRIPTION	This is the condition, when which is satisfied, the corresponding transition takes place.
USAGE	
ALIASES	
CONSTRAINTS	
TYPE	Kernel
ISABSTRACT	False
LOCAL SUBTYPES	
LOCAL METARELATIONSHIPS	Transition.Has.Condition
LOCAL METAATTRIBUTES	ConditionText Name

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META-ATTRIBUTE DEFINITION	META-ATTRIBUTE OF **Condition**
NAME	**ConditionText**
CDIFMETAIDENTIFIER	76604
SUBJECTAREANAME	State/Event Models
SUBJECTAREAVERSION	15476-6:2000
DESCRIPTION	The descriptive text of the condition.
USAGE	This is used for describing the condition in text style such as boolean expressions or event names.
ALIASES	
CONSTRAINTS	
DATA TYPE	Text
DOMAIN	
LENGTH	
ISOPTIONAL	False

8.3.4 SemanticInformationObject

META-ENTITY REFERENCE	
NAME	**SemanticInformationObject**
CDIFMETAIDENTIFIER	4
SUBJECTAREANAME	Common
SUBJECTAREAVERSION	15476-2:2000
LOCAL SUBTYPES	StateEventModel
LOCAL METARELATIONSHIPS	
LOCAL METAATTRIBUTES	

8.3.5 State

META-ENTITY DEFINITION	
NAME	**State**
CDIFMETAIDENTIFIER	76605
SUBJECTAREANAME	State/Event Models
SUBJECTAREAVERSION	15476-6:2000
DESCRIPTION	A State is the unique value that represents the stage of progress of software in its execution.
USAGE	
ALIASES	
CONSTRAINTS	
TYPE	Kernel
ISABSTRACT	False
LOCAL SUBTYPES	
LOCAL METARELATIONSHIPS	Transition.ComesFrom.State Transition.LeadsTo.State
LOCAL METAATTRIBUTES	IsFinalState IsInitialState Name SequenceNumber

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META-ATTRIBUTE DEFINITION	META-ATTRIBUTE OF **State**
NAME	**IsFinalState**
CDIFMETAIDENTIFIER	76606
SUBJECTAREANAME	State/Event Models
SUBJECTAREAVERSION	15476-6:2000
DESCRIPTION	This shows whether the state is one of the final states or not, i.e. the software may terminate its activity in the state if the value of this meta-attribute is TRUE.
USAGE	
ALIASES	
CONSTRAINTS	
DATA TYPE	Boolean
DOMAIN	
LENGTH	
ISOPTIONAL	False

META-ATTRIBUTE DEFINITION	META-ATTRIBUTE OF **State**
NAME	**IsInitialState**
CDIFMETAIDENTIFIER	76607
SUBJECTAREANAME	State/Event Models
SUBJECTAREAVERSION	15476-6:2000
DESCRIPTION	This shows whether the state is the initial state or not, i.e. the software starts its activity in the state if the value of this meta-attribute is TRUE.
USAGE	
ALIASES	
CONSTRAINTS	
DATA TYPE	Boolean
DOMAIN	
LENGTH	
ISOPTIONAL	False

META-ATTRIBUTE DEFINITION	META-ATTRIBUTE OF **State**
NAME	**SequenceNumber**
CDIFMETAIDENTIFIER	76608
SUBJECTAREANAME	State/Event Models
SUBJECTAREAVERSION	15476-6:2000
DESCRIPTION	The unique number that is allocated to the. (See the Constraints meta-meta-attribute of StateEventModel meta-entity.)
USAGE	
ALIASES	
CONSTRAINTS	
DATA TYPE	Integer
DOMAIN	Non-negative Integer
LENGTH	
ISOPTIONAL	True

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8.3.6 StateEventModel

META-ENTITY DEFINITION	
NAME	**StateEventModel**
CDIFMETAIDENTIFIER	76609
SUBJECTAREANAME	State/Event Models
SUBJECTAREAVERSION	15476-6:2000
DESCRIPTION	This is the meta-entity that covers a state transition diagram or a state transition table.
USAGE	
ALIASES	
CONSTRAINTS	The SequenceNumber of each State shall be unique among all the States that are collected by a StateEventModel when the model is complete.
TYPE	Kernel
ISABSTRACT	False
LOCAL SUBTYPES	
LOCAL METARELATIONSHIPS	StateEventModel.Collects.ComponentObject
LOCAL METAATTRIBUTES	Name

8.3.7 Transition

META-ENTITY DEFINITION	
NAME	**Transition**
CDIFMETAIDENTIFIER	76610
SUBJECTAREANAME	State/Event Models
SUBJECTAREAVERSION	15476-6:2000
DESCRIPTION	A Transition is a change from one state to another state or the same state. It takes place when the corresponding condition is satisfied.
USAGE	
ALIASES	
CONSTRAINTS	
TYPE	Kernel
ISABSTRACT	False
LOCAL SUBTYPES	
LOCAL METARELATIONSHIPS	Transition.ComesFrom.State Transition.Has.Condition Transition.LeadsTo.State Transition.Performs.Action
LOCAL METAATTRIBUTES	

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8.4 Meta-relationship definitions

8.4.1 RootEntity.IsRelatedTo.RootEntity

META-RELATIONSHIP REFERENCE	
NAME	**RootEntity.IsRelatedTo.RootEntity**
CDIFMETAIDENTIFIER	3
SUBJECTAREANAME	Foundation
SUBJECTAREAVERSION	15476-1:2000
LOCAL SUBTYPES	StateEventModel.Collects.ComponentObject Transition.ComesFrom.State Transition.Has.Condition Transition.LeadsTo.State Transition.Performs.Action
LOCAL METAATTRIBUTES	

8.4.2 StateEventModel.Collects.ComponentObject

META-RELATIONSHIP DEFINITION	
NAME	**StateEventModel.Collects.ComponentObject**
CDIFMETAIDENTIFIER	76611
SUBJECTAREANAME	State/Event Models
SUBJECTAREAVERSION	15476-6:2000
DESCRIPTION	This relates a StateEventModel to all the States, Transitions, Conditions and Actions contained within it.
USAGE	
ALIASES	
CONSTRAINTS	
ISABSTRACT	False
MINSOURCECARD	0
MAXSOURCECARD	1
MINDESTCARD	0
MAXDESTCARD	N
LOCAL SUBTYPES	
LOCAL METAATTRIBUTES	

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8.4.3 Transition.ComesFrom.State

META-RELATIONSHIP DEFINITION	
NAME	**Transition.ComesFrom.State**
CDIFMETAIDENTIFIER	76612
SUBJECTAREANAME	State/Event Models
SUBJECTAREAVERSION	15476-6:2000
DESCRIPTION	This relates the transition to its previous state.
USAGE	
ALIASES	
CONSTRAINTS	
ISABSTRACT	False
MINSOURCECARD	0
MAXSOURCECARD	N
MINDESTCARD	1
MAXDESTCARD	1
LOCAL SUBTYPES	
LOCAL METAATTRIBUTES	

8.4.4 Transition.Has.Condition

META-RELATIONSHIP DEFINITION	
NAME	**Transition.Has.Condition**
CDIFMETAIDENTIFIER	76613
SUBJECTAREANAME	State/Event Models
SUBJECTAREAVERSION	15476-6:2000
DESCRIPTION	This relates the transition to its corresponding condition.
USAGE	
ALIASES	
CONSTRAINTS	
ISABSTRACT	False
MINSOURCECARD	0
MAXSOURCECARD	N
MINDESTCARD	1
MAXDESTCARD	1
LOCAL SUBTYPES	
LOCAL METAATTRIBUTES	

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8.4.5 Transition.LeadsTo.State

META-RELATIONSHIP DEFINITION	
NAME	**Transition.LeadsTo.State**
CDIFMETAIDENTIFIER	76614
SUBJECTAREANAME	State/Event Models
SUBJECTAREAVERSION	15476-6:2000
DESCRIPTION	This relates the transition to its next state.
USAGE	
ALIASES	
CONSTRAINTS	
ISABSTRACT	False
MINSOURCECARD	0
MAXSOURCECARD	N
MINDESTCARD	1
MAXDESTCARD	1
LOCAL SUBTYPES	
LOCAL METAATTRIBUTES	

8.4.6 Transaction.Performs.Action

META-RELATIONSHIP DEFINITION	
NAME	**Transition.Performs.Action**
CDIFMETAIDENTIFIER	76615
SUBJECTAREANAME	State/Event Models
SUBJECTAREAVERSION	15476-6:2000
DESCRIPTION	This relates the transition to the action that takes place along with it.
USAGE	
ALIASES	
CONSTRAINTS	
ISABSTRACT	False
MINSOURCECARD	0
MAXSOURCECARD	N
MINDESTCARD	0
MAXDESTCARD	1
LOCAL SUBTYPES	
LOCAL METAATTRIBUTES	

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