

# ITU-T

TELECOMMUNICATION  
STANDARDIZATION SECTOR  
OF ITU

## X.906

**Corrigendum 1**  
(10/2009)

SERIES X: DATA NETWORKS, OPEN SYSTEM  
COMMUNICATIONS AND SECURITY

Open distributed processing

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Information technology – Open distributed  
processing – Use of UML for ODP system  
specifications

**Technical Corrigendum 1**

Recommendation ITU-T X.906 (2007) – Technical  
Corrigendum 1

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**INTERNATIONAL STANDARD ISO/IEC 19793  
RECOMMENDATION ITU-T X.906**

**Information technology – Open distributed processing – Use of UML  
for ODP system specifications**

**Technical Corrigendum 1**

**Source**

Corrigendum 1 to Recommendation ITU-T X.906 (2007) was approved on 29 October 2009 by ITU-T Study Group 17 (2009-2012) under Recommendation ITU-T A.8 procedures. An identical text is also published as Technical Corrigendum 1 to ISO/IEC 19793.

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In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

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## **Introduction**

This corrigendum corrects the following three defects:

- 1) The standard currently proposes attaching a UML comment to a piece of behaviour to express that it requires, creates or fulfils an obligation, permission, prohibition or authorization, i.e., to express deontic rules. Concerns have been expressed about the traceability and management of UML comments, particularly in the specifications of very large-scale systems.
- 2) The standard currently uses the UML construct "note" where it should use "comment".
- 3) The standard has a typographical error in the cardinalities of Figure 9.

**INTERNATIONAL STANDARD  
RECOMMENDATION ITU-T**

**Information technology – Open distributed processing – Use of UML  
for ODP system specifications**

**Technical Corrigendum 1**

**1) Scope**

**1.1) Defect 1**

This Technical Corrigendum changes the use of UML comments to the use of UML constraints. A UML constraint is a packageable element (and therefore has a name, and can be traced and managed, since it can be directly owned by a package), which declares some of the semantics of one or more elements. UML superstructure 2.1.1, section 7.3.10, justifies the representation of rules with constraints, and using constraints leaves room to specify such rules using more powerful languages, such as those specific for policies and rules (the UML spec explicitly mentions that "A user-defined constraint is described using a specified language, whose syntax and interpretation is a tool responsibility. One predefined language for writing constraints is OCL. In some situations, a programming language such as Java may be appropriate for expressing a constraint. In other situations natural language may be used"). A constraint is associated with an ordered set of elements to which the constraint applies. In this way, we can trace these elements.

**1.2) Defect 2**

This Technical Corrigendum changes the use of UML note to UML comment. According to the UML Superstructure, a note is precisely different from a comment (metaclass Comment) because a note is just considered as a notational element (it cannot be instantiated from any UML element and, in consequence, it cannot be stereotyped).

However, an UML comment is instantiated from its given metaclass and can be stereotyped, as really stated by the standard.

**1.3) Defect 3**

This Technical Corrigendum changes the cardinality between PolicyA and PolicyValue from 1..0 to 0..1. This was a typographical error.

**2) Changes**

**2.1) Defect 1**

*Replace subclauses 7.2.15 to 7.2.18 with:*

**7.2.15 Obligation**

If required, the fact that some behaviour places or fulfils an obligation may be stated in a constraint stereotyped as «EV\_Obligation» on that behaviour.

**7.2.16 Authorization**

If required, the fact that some behaviour requires or creates an authorization may be stated in a constraint stereotyped as «EV\_Authorization» on that behaviour.

**7.2.17 Permission**

If required, the fact that some behaviour requires or creates a permission may be stated in a constraint stereotyped as «EV\_Permission» on that behaviour.

## 7.2.18 Prohibition

If required, the fact that some behaviour requires or creates a prohibition may be stated in a constraint stereotyped as «EV\_Prohibition» on that behaviour.

## 2.2) Defect 2

Use UML **comment** instead of UML **note** in all the following references:

Subclause 7.2.14: *replace "note" by "comment" so that the sentence now reads (changes marked for easy recognition):*

The *policy* envelope is expressed by a `class` stereotyped as «EV\_PolicyEnvelope», with a **comment** stereotyped as «description» which explains the *policy* and its rules in natural language.

Subclause 11.3: *replace "note" by "comment" in the two following sentences (changes marked for easy recognition):*

- a taxonomy of such specifications, which may be provided with name(s) of *implementable standards* described in stereotyped **comments** attached to a deployment diagram including a component instance diagram.
- information required from implementers to support testing, which may be specified with a stereotyped **comment** describing IXIT.

Subclause 3.3: *add "comment" and remove "note" in the list of terms (changes marked for easy recognition):*

abstract class; action; activity; activity diagram; aggregate; aggregation; association; association class; association end; attribute; behaviour; behaviour diagram; binary association; binding; call; class; classifier; classification; class diagram; client; collaboration; collaboration occurrence; communication diagram; **comment**; component; component diagram; composite; composite structure diagram; composition; concrete class; connector; constraint; container; context; delegation; dependency; deployment diagram; derived element; diagram; distribution unit; dynamic classification; element; entry action; enumeration; event; exception; execution occurrence; exit action; export; expression; extend; extension; feature; final state; fire; generalizable element; generalization; guard condition; implementation; implementation class; implementation inheritance; import; include; inheritance; initial state; instance; interaction; interaction diagram; interaction overview diagram; interface; internal transition; lifeline; link; link end; message; metaclass; metamodel; method; multiple classification; multiplicity; n-ary association; name; namespace; node; object; object diagram; object flow state; object lifeline; operation; package; parameter; parent; part; partition; pattern; persistent object; pin; port; postcondition; precondition; primitive type; profile; property; pseudo-state; realization; receive [a message]; receiver; reception; refinement; relationship; role; scenario; send [a message]; sender; sequence diagram; signal; signature; slot; state; state machine diagram; state machine; static classification; stereotype; stimulus; structural feature; structure diagram; subactivity state; subclass; submachine state; substate; subpackage; subsystem; subtype; superclass; supertype; supplier; tagged value; time event; time expression; timing diagram; trace; transition; type; usage; use case; use case diagram; value; visibility.



### 2.3) Defect 3

In Figure 9 (subclause 7.2.14), change the cardinality between *PolicyA* and *PolicyValue* to: "0..1". The new diagram for Figure 9 should be the following:

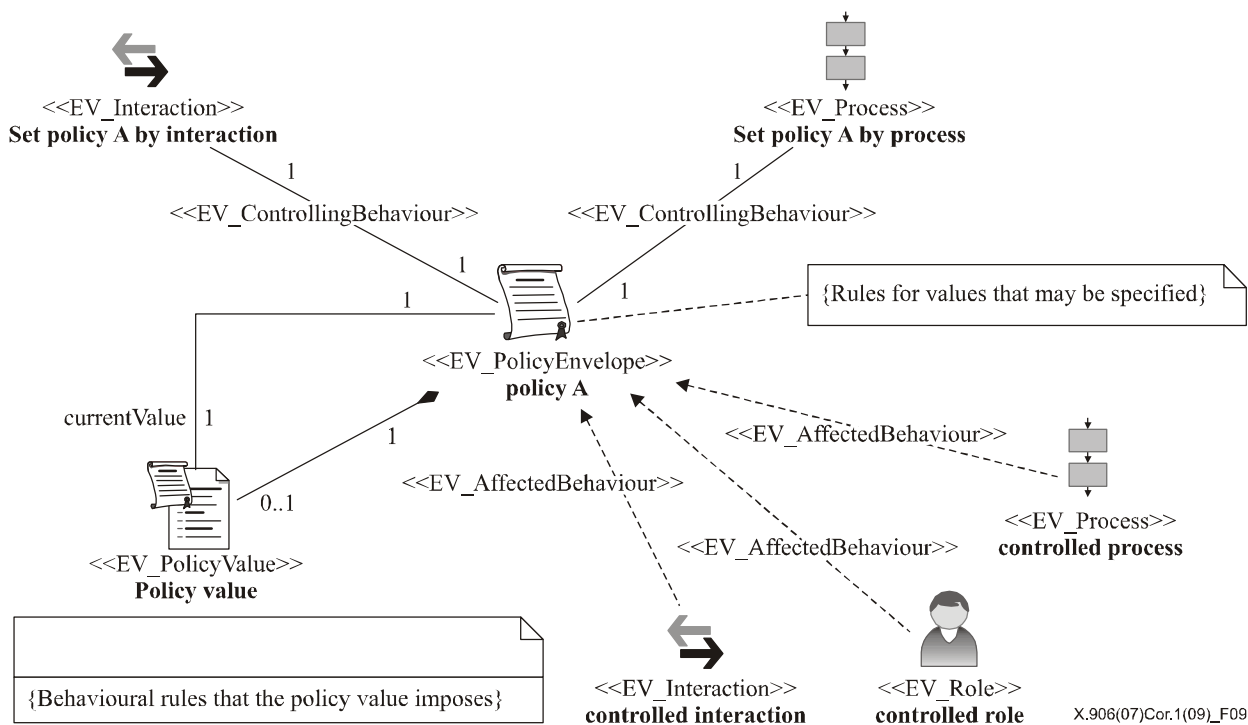


Figure 9 – Pattern for UML expression of a policy





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