USA Ballot Comments on FCD 15414 – RM-ODP Enterprise Language

The USA is concerned that some readers may find our text under Rationale awkward in some cases. We wish to follow the template prescribed for comments, but do not want to repeat our proposal in the text of the rationale. In some cases, our rationale may be clearer if our proposal is read first.

USA 1 E throughout

Rationale

This is a relatively heavyweight method of making minor editorial comments. We understand that the working group does not wish the project editor to make such changes on his own.

Proposal

The USA proposes to take the liberty of suggesting minor editorial changes during the editing meeting.

USA 2 G Action

Rationale

This is parallel with:

2-8.1 Object: A model of an entity.

It is consistent with the rest of the text of Parts 2 and 3.

This will help to clarify the distinction between the elements of the universe of discourse and the elements of a specification, model, or abstraction (i.e., simplified model).

In the Madrid meeting dispositions, this was marked Category 4, Noted. In making these comments, we have interpreted this disposition as meaning that the working group agrees with this reading of Part 2. If we are mistaken, we apologize for not having had this clarified earlier.

Proposal

Proceed, in our work, as if the Part 2 definition of ‘action’ were:

2-8.3 Action: A model of something which happens.

USA 3 G TH Composition of communities

Rationale

The consensus that was reached in Paris on composition of communities has not been carried through in the text.

Proposal

Follow the approach explained by Reenskaug in Paris.

If the working group does not accept this proposal, then the text needs to get more clear and specific about the alternative approach to composition of communities. In particular, the standard needs to clearly specify what it means for an object to participate in an action of a role of a community when that object is not a member of that community.

If there are going to be two approaches to composition of communities, this needs to be made explicit and each needs be described separately.

USA 4 TH Page 5, 5, lines 14-15, 21-22 Overview and motivation

Rationale

The overview and motivation are formulated mostly in terms of the behaviour of an ODP system. At the same time, Part 2 states that state and behaviour are dual concepts. The choice of a concept is often determined by the ease of understanding by human readers as well as by the elegance of the specification. Since invariant properties of communities often determine the behavioural properties of these communities, and since the invariant properties (such as constraints) are often more stable than the volatile behavioural properties, it makes sense to make a more explicit emphasis on the invariant properties.

Note. This rationale and proposal apply also to page 28, lines 3-7 (9.3 Scoping statement).

Proposal

Change: An enterprise specification describes the behaviour of the system within the environment...

To:

> An enterprise specification described the structural and behavioural properties of the system within its environment...

Change: what the system is expected to do

To:

> what the system is expected to be and to do

USA 5 H Page 5, 5, line 34 Overview and motivation

Rationale

Compliance with the rules for presentation of ITU-T | ISO/IEC common text.

The USA made this same proposal in its ballot comments on the previous committee draft. The working group gave as its reason for rejecting the proposal: "it's not a Reference Model." The Enterprise Language is a part of the Open Distributed Processing Reference Model, so we again propose this change.

Proposal

Change: this Recommendation | International Standard

To:

> this Reference Model

USA 6 H Page 5, 5, line 34 Overview and motivation

Rationale

Compliance with the rules for presentation of ITU-T | ISO/IEC common text.

This was proposed in earlier ballot comments. The working group gave as its reason for rejecting the proposal: "the WG did not feel that this is a good name." This document prescribes and specifies the Enterprise Language. We urge the working group to not again reject this proposal without making some change to comply with the common text rules.

Proposal

Change: this Recommendation | International Standard

To:

> this prescription of the ODP enterprise language

or

> this specification of the ODP enterprise language

USA 7 TL Page 7, 6.1.2, lines 6-7 Objective

Rationale

This is briefer, makes the point, and avoids questions about choices in other contexts than a within some behaviour.

Proposal

Change:

> **6.1.2 Objective**: ~~Statements of~~ Preferences about possible future states, which influence the choices within some behaviour.

USA 8 TH Page 7, 6.1.3, line 14 Scope

Rationale

Responding to the invitation to comment for the need for an additional concept: The distinction between expected behaviour and delivered behaviour is important. However, this subject is well covered by the ODP approach to conformance. [2-15] No additional concept is needed.

Proposal

?

USA 9 TH Page 7, 6.1.6, lines 32-33 Step

Rationale

This has the same meaning, but avoids the new usage by which an object ‘associated’ with an action.

Proposal

Change:

> **6.1.6 Step:** An abstraction of an action, used in a process, that may hide the objects ~~with which that action is associated~~ that participate in that action.

USA 10 TH Page 7, 6.1.8, lines 32-33 C-object

Rationale

The consensus that was reached in Paris on composition of communities does not require this concept.

Proposal

Remove: **6.1.8 C-object:** A composite enterprise object that represents a community. Components of a c-object are objects of the community represented.

USA 11 TH Page 7, 6.1.10, line 44 Machine

Rationale

Responding to the invitation to comment on the need for this concept: It is difficult and awkward to model machine responsibility without a concept with this meaning. The Part 2 concept, system, is not suited to this meaning, since 1) ‘system’ may be used both for entities in the universe of discourse and for elements of the model and 2) it is desired to use ‘system’ for systems that are not automated.

USA 12 TL Page 8, 6.1.11, lines 4-9 Owner

Rationale

To be an owner is to fulfil a role.

Proposal

Move **Owner** to **6.2 Role Concepts**

> **6.2.n Owner (of an <X>)**: The role (of a party or one of several parties) having the right to control the use and disposal of that <x>.
>
> NOTES

> 1 – Commonly, this role is fulfilled by the party (or parties) paying for the specification, construction, instantiation, or current operation of the <x>. This party will typically grant authorisation to use the <x> to other parties or their agents.
>
> 2 – Ownership is restricted to parties to enable assignment of responsibility for actions.

USA 13 TL Page 8, 6.1.11, line 7 Owner

Rationale

Payment may be a somewhat narrow concept, 'consideration' (from the contract law, see OED) may be a better term.

Proposal

Change:

> ~~paying~~ providing consideration for the specification, ...

USA 14 TH Page 8, 6.2.1, line 16 Actor

Rationale

Several actors may collectively initiate an action.

Proposal

Change:

> ...which ~~of the~~ actors ~~involved~~ initiates the action

USA 15 TL Page 8, 6.2.3, lines 19-21 Resource

Rationale

A resource will often participate in the behaviour in which it fulfils the role of resource. In those cases it is not an artifact. (See page 18, lines 3-6.)

Proposal

Change:

> **6.2.3 Resource**: An ~~artefact~~ object that is essential to some behaviour and which requires allocation or may become unavailable because it is in use or used up.
>
> NOTE – A consumable resource may become unavailable after some amount of use.

USA 16 TH Page 8, 6.2.3, lines 19-21 Resource

Rationale

The definition appears to be ambiguous. Specifically, it is unclear whether because it is in use or used up" applies only to "may become unavailable". Also, the term "consumable" is introduced implicitly only in a note. Finally, in accordance with the definition of behaviour in 2-8.6, "essential to some behaviour" ought to be rephrased.

Lines 41-42 on page 17 should be appropriately rephrased.

Proposal

Change:

> **6.2.3 Resource** An ~~artefact~~ object which is essential for some behaviour to occur and which requires allocation ~~or may become unavailable because it is in use or used up~~.
>
> As a result of allocation, a resource may constrain the occurrence of other behaviours. A consumable resource may become unavailable after some amount of use.

USA 17 TL Page 8, 6.2.6, lines 26-27 Resource role

Rationale

'any actions … only as' is unclear. 'Any' might mean any one or might mean all.

Proposal

Change:

> **6.2.6 Resource role (with respect to a community)**: A role in that community in which the enterprise object filling the role is involved in all actions of the role only as a resource.

USA 18 TL Page 8, 6.2.1-6.2.6, lines 15-28 Actor, &c. role

Rationale

Responding to the invitation to comment for the need for these three role concepts: This was an earlier ballot comment:

"The style of specification we have used uses actor roles with respect of the community and itemizes artefact roles with respect to each individual action. We suggest that only the terms actor and artefact were defined, and additional sentences are used to explain that there is a need to indicate whether the use is with respect to an action or with respect to a community. Each specification should be consistent in the chosen style, but the choice rests with text organisation decisions within individual tools that help in composing enterprise specifications."

This was rejected, as lacking replacement text.

We make these additional observations:

1) As we understand the ITU rules, use of the parenthetical form, '(with respect to a community)' restricts the ways in which the term can be used. We do not see a reason to so restrict the use of these terms.

2) The definitions prohibit many reasonable usages. For example, if a role includes on action in which the object fulfilling the role is an actor, it is not permitted to say, for example, of a role which provides an important resource to a community, that "this is a resource role for this community."

As the working group knows, in an enterprise specification the term ‘<x> object’, where <x> is a role, is interpreted as meaning an enterprise object fulfilling an <x> role. [3-5.2]

We believe this proposal meets the objective of including the concepts, actor, artefact, and resource in the language, answers the concerns of the earlier comments shown above and deals with our observations above.

We believe it is closer to the original intent of the concepts to consider actor and artefact to be roles.

Incidentally, this conforms to the UML actor, which is a role, rather than an object, a small bonus at no extra cost.

Proposal

Replace 6.2.1 thru 6.2.6 with:

> **6.2.1 Actor**: A role that includes at least one action in which the object fulfilling the role participates.
>
> > NOTE – It may be of interest to specify which of the actors involved in such an action initiates that action.
>
> **6.2.2 Artefact**: A role in which the object fulfilling the role is, in every action of the role, referenced, but does not participate.
>
> > NOTE – An enterprise object that is an artefact in one role can be an actor in another role.
>
> **6.2.3 Resource**: A role that is essential for some behaviour to occur and which requires allocation or may become unavailable because it is in use or used up.
>
> As a result of allocation, a resource may constrain the occurrence of other behaviours. A consumable resource may become unavailable after some amount of use.

USA 19 TH Page 9, 6.4.3, lines 24-25 Declaration

Rationale

Conform to the principle that truth applies to propositions, rather than the sentences which express them.

Proposal

Change:

> **6.4.3 Declaration**: An act that establishes the truth of a ~~sentence~~ proposition referring to the environment of the object making the declaration.

USA 20 TH Page 8, 6.2.7, lines 29-31 Interface roles

Rationale

The consensus that was reached in Paris on composition of communities has not been carried through in the text.

Proposal

We propose that an e-mail meeting be started to work out an explanation of interface roles and interactions between communities that corresponds to the consensus reached in Paris. At the same time, language can be worked out that more clearly explains the approach of this text.

USA 21 TH Page 8, 6.2.7, lines 29-31 Interface roles

Rationale

The actions referred to in the text are performed collectively by the c-object and some other objects. It is too restrictive to request a performer for each action (collective behaviour does not have this restriction). See also Editor's note.

Proposal

Change: ...actions that can be performed by a c-object representing that community

To:

> ...interactions in which a c-object representing that community participates.

USA 22 TL Page 8, 6.2.8, lines 32-43 Agent

Rationale

The definition may be somewhat different from the one implied by 3-5.2 Note: "An important special case of acquisition is where the permitted action is performative, i.e., when an object in a subordinate role is enabled to issue further permissions or obligations on behalf of an object fulfilling a superior role. This leads to the notion of agency or delegation." Is this the case? Is there a need to refine or change that Note?

Proposal

> ?

USA 23 TH Page 9, 6.3.3, line 11 Violation

Rationale

A rule may provide behaviour to occur upon violation of that, or some other, rule or policy. The existing text is too restrictive.

Question: Is it possible to prescribe rules or policies to be used upon violation of specific rules or policies? If so then the Note referred to above ought to be rephrased appropriately.

Proposal

Change:

> A rule or policy may provide behaviour to occur upon violation of ~~that~~ <u>some</u> rule or policy.

USA 24 TL Page 9, 6.4.4, line 33 Delegation

Rationale

This is responsive to a comment on the previous ballot which was marked as noted, but resulted in no change to the draft.

Proposal

Add:

> NOTES:
>
> 3 – A delegation, once made, may be withdrawn.

USA 25 TH Page 10, 7.1, lines 3-43 Overall structure

Rationale

This clause mixes explanatory material with structuring rules.

Proposal

> Move text that is not a structuring rule to the explanatory annex.

USA 26 E Page 10, 7.1, lines 6-9 Overall structure

Rationale

The draft text omits the essential concept of community, objective.

Proposal

Change:

> A community is a configuration of enterprise objects modelling a collection of entities (e.g. human beings, information processing systems, resources of various kinds and collections of these) that is formed to meet an objective, which entities are subject to some implicit or explicit contract governing their collective behaviour.

USA 27 TL Page 10, 7.1, lines 6-14 Overall structure of an enterprise specification

Rationale

On the one hand, a community is described as a configuration of enterprise objects without any reference to roles. On the other hand, immediately afterwards the ODP system is described in terms of roles in communities, but it is not clear here how roles participate in a community specification. Thus, the description here ought to be clarified.

Proposal

> ?

USA 28 TH Page 10, 7.1, lines 6-9 Overall structure

Rationale

The draft text unnecessarily combines a discussion of the universe of discourse with structuring rules.

The text unnecessarily gives examples and thereby may be read to restrict the specifier's use of community.

The contract (or contracts) governing the collective behaviour has to be specified explicitly; this follows from the definition of a contract in 2-11.2.1 and from the need to be explicit about the constraints imposed by the contracts on the community participants. If the contract remains implicit then reasoning about the system in the context of its communities becomes impossible ("miracles happen"). Those fragments of the contract(s) that are considered irrelevant for the enterprise specification may be suppressed by appropriate usage of abstraction (2-6.3).

Note. The same considerations apply to page 11, line 20.

Proposal

Change:

> A community is a configuration of enterprise objects ~~modelling a collection of entities (e.g. human beings, information processing systems, resources of various kinds and collections of these)~~ that is formed to meet an objective. Those objects are subject to ~~some implicit or explicit~~ a contract governing their collective behaviour. That contract specifies how the objective can be met.

USA 29

No comment.

USA 30 E Page 10, 7.1, line 10 Overall structure

Rationale

Usage.

Proposal

Change:

> The ODP system may play a role in more than one community. ~~Thus,~~ The enterprise specification describes …

USA 31 TL Page 10, line 10 7.1 Overall structure of an enterprise specification

Rationale

The text elsewhere consistently uses "roles fulfilled by objects" rather than "roles played by objects".

Proposal

Change:

> The ODP system may ~~play~~ fulfill a role...

USA 32 TH Page 10, 7.1, line 13 Overall structure

Rationale

The draft language introduces a new concept, 'activity within a process,' and contradicts the text at 6.1.5 Note 2.

Proposal

Change:

> -- ~~activities undertaken by the ODP system~~ steps within processes in which the ODP system participates;

or

> -- ~~activities undertake~~n by the ODP system within steps of processes in which ~~it~~ the ODP system participates;

USA 33 TH Page 10, 7.1, line 14 Overall structure

Rationale

The draft language introduces a new useage, 'policies about.'

Proposal

Change:

> -- ~~policy statements~~ policies ~~about~~ for the system, including those relating to environment contracts.

USA 34 E Page 10, 7.1, lines 15-18 Overall structure

Rationale

Style

Proposal

Change:

> An enterprise specification of an ODP system includes ~~at least~~ a description of the community in which that system may be represented as a single enterprise object interacting with its environment. This is referred to as the s-community. Whether the specification ~~actually~~ includes that level of abstraction is left for the specifier to decide.

USA 35 TH Page 10, 7.1, lines 15-18 Overall structure

Rationale

The draft text contradicts itself.

Proposal

Change:

> An enterprise specification of an ODP system includes ~~at least~~ a description of the community in which that system may be represented as a single enterprise object interacting with its environment. This is referred to as the s-community.~~ Whether the specification actually includes that level of abstraction is left for the specifier to decide.~~

Or:

> An enterprise specification of an ODP system includes at least a description of the community in which that system may be represented as a single enterprise object interacting with its environment. ~~This is referred to as the s-community.~~ ~~Whether the specification actually includes that level of abstraction is left for the specifier to decide.~~ The specifier may choose to decompose that ODP system in the specification of that community.

USA 36 TL Page 10, lines 15-18 7.1 Overall structure of an enterprise specification

Rationale

There may be more than one community in which the ODP system may be represented as a single enterprise object. The term "s-community" appears not to be used anywhere else and thus may not be explicitly needed.

Proposal

Consider deletion of 6.1.7.

USA 37 TH Page 10, 7.1, lines 32-33 Overall structure

Rationale

Community and contract are two key concepts of the enterprise language, given by Part 3.

Proposal

Change:

> The scope of the system is defined in terms of its intended behaviour and in enterprise language this is expressed in terms of <u>communities</u>, roles, <u>contracts</u>, processes, policies and their relationships.

USA 38 TL Page 10, 7.1, lines 32-33 Overall structure

Rationale

Scope is defined as expected behaviour.

Proposal

Change:

> The scope of the system is defined in terms of its ~~intended~~ expected behaviour and in the enterprise language this is expressed in terms of roles, processes, policies and their relationships.

USA 39 TH Page 10, 7.1, lines 36-37 Overall structure of an enterprise specification

Rationale

Analysis is "breaking down a whole into its components and their mutual relations" (Bunge). Thus, it is not clear how to separate parts of a specification included for the purposes of analysis. Similarly, it is difficult to separate the parts of the specification included for the purposes of understandability and communicability since such separation may imply that some (other) parts of the specification are included for the purposes of not being understood or not being communicable.

Proposal

Change:

A complete ODP system specification indicates rules for internal consistency in terms of relationships between various viewpoint specifications. Furthermore, a complete enterprise specification contains conformance rules that define the required behaviour of the described ODP system~~, thus separating out the parts of the specification included for the purposes of analysis, understandability and communicability of the specification~~.

USA 40 TL Page 10, lines 40-43 7.1 Overall structure of an enterprise specification

Rationale

This text is presented, perhaps in a better way, in Clause 7.2

Proposal

Remove:

> NOTE – This Recommendation | International Standard makes no prescriptions about either the most detailed or the most abstract levels of any enterprise specification, nor does it make any recommendations about the relative merits of modelling from 'top-down' or 'bottom-up'. The approach taken is a modelling choice based on the ODP system being specified and the purpose of the modelling.

USA 41 TH Page 11, 7.2, lines 2-4 Contents of an enterprise specification

Rationale

The elements referred to in these lines were not explained in Clause 7.1; at best, they were referred to. Not all concepts referred to in 7.1 are included as elements (e.g., scope is not included, and it does not follow from 7.2 that scope is included in the contents of the enterprise specification). It may be reasonable and useful to provide a set of the possible elements (i.e., to complete the enumeration). Moreover, each of these elements does not exist in isolation, and therefore relationships between these elements ought to be explicitly referred to; it is possible to include such relationships as elements since they also may have types and templates.

Note. It may be worthwhile to replace "elements" with "components" elsewhere, for example, in line 13 of page 12.

Proposal

Change: An enterprise specification is composed of specifications of the elements explained in clause 7.1 (communities, objects, roles, behaviour, ...).

Depending on the specifier's choice and desired level of detail, each of these elements may be specified by

To:

> An enterprise specification is composed of specifications of communities, contracts, objects, roles, actions, behaviour, etc., and relationships between them. The characteristics of this composition include the purpose, scope and policies of the ODP system.
>
> Depending on the specifier's choice, each of these components may be specified by

USA 42 TH Page 11, 7.3.1, lines 20-22 Specification of a community

Rationale

In its comments with the previous CD ballot, the USA gave this rationale: The only reason for a set of entities to be modelled as a community will be some reason of the person making the specification. That is to say: it is up to that person to decide which entities are in the universe of discourse, and which sets of those entities will be modelled as members of communities. Generally, there need be no explicit or implicit agreement between the entities.

In the interest of moving the meeting to other topics, the proposal was withdrawn at that meeting.

We make this proposal again, and add these comments:

It is true that the agreement might be between entities other than those modelled as objects in the community, e.g. designers or developers.

Still: USA position is: It is up to the person making the specification to chose which entities are in the universe of discourse, to choose which of those entities are modelled in the enterprise specification (that is, appear as enterprise objects in that specification), and to choose which sets of those entities are modelled as communities.

This standard has no business limiting these choices.

Proposal

Replace: For a set of entities to be modelled as a community there must be some implicit or explicit agreement about the set covering the reason for its existence, how it is organised, what it does, and what entities comprise its membership. This agreement is expressed as the contract for the community that:

With:

The objective of a community is expressed as a contract that specifies how the objective can be met. This contract:

USA 43 TH Page 11, 7.3.1, lines 20-22 Specification of a community

Rationale

This is an alternative to the proposal in the preceding comment.

It may be that the intent of this structuring rule is this: every community must have a contract which specifies how its objective can be met. If so, the rule should state that intent.

Proposal

If the preceding comment is not accepted: ***Replace:*** For a set of entities to be modelled as a community there must be some implicit or explicit agreement about the set covering the reason for its existence, how it is organised, what it does, and what entities comprise its membership. This agreement is expressed as the contract for the community that:

With:

The specification of a community states the reason for its existence, how it is organised, what it does, and what objects comprise it. The objective of the community is expressed as a contract that specifies how the objective can be met. This contract:

USA 44 TH Page 11, 7.3.1, lines 20-22 Specification of a community

Rationale

The concept, 'structure of a community' is not defined.

Proposal

Change:

-- governs the ~~structure~~ <u>configuration</u>, the behaviour and the policies of the community,

USA 45 TH Page 11, 7.3.1, lines 27-28 Specification of a community

Rationale

The specifier need not use a process in the sense defined in the language. The objects forming the contract need not be objects of the community.

Proposal

Change:

> The contract can be formed either by a defined ~~process~~ behaviour carried out by ~~some or all of the~~ enterprise objects at the time of community establishment, or in an earlier epoch (for example, as a design decision).

USA 46 TL Page 11, 7.3.1, line 37 Specification of a community

Rationale

The behavior ***is*** how the community meets its objective.

Proposal

Change:

> The behaviour of the community ~~expresses~~ is how it meets its objective.

or delete.

USA 47 TL Page 11, 7.3.1, lines 37-38 Specification of a community

Rationale

The concept, 'conform to an objective,' raises the question, what it means to conform to an objective. The alternative text proposed below express what may be intended. "A contract specifies [rules] for the objects involved." [2-11.2.1] "The objective [of a community] is expressed as a contract which specifies how the objective can be met." [3-5.1.1]

Proposal

Remove: In the context of the community, the objectives of members of the community are constrained to conform to its objective.

Or: ***Replace with***:

> The objects of a community are constrained by the rules of the community contract.

USA 48 TH Page 12, 7.3.1, line 1 Specification of a community

Rationale

Unclear and not specific.

Proposal

Replace: -- the way the roles and processes are combined and,

With:

> -- the assignment of roles to steps in processes and,

USA 49 TH Page 12, 7.3.2, lines 32-33 Relationships between communities

Rationale

The meaning of the relationships between communities is defined by the invariants of these relationships. These invariants determine constraints on the collective behaviour of these communities. The list in lines 35-43 provides for important examples.

Proposal

Change: These communities may be related in various ways, including relationships when

To:

> The invariants of these relationships between communities determine constraints on the collective behaviour of these communities. This includes relationships when

USA 50 TH Page 12, 7.3.2, lines 39-40 Relationships between communities

Rationale

This does not correspond the consensus reached at the Paris meeting.

Proposal

From the list headed by: A community can be considered in the context of some other community or communities to which it is related. These communities may be related in various ways, including relationships when:

Remove:

> -- A c-object of one community is part of another community, fulfilling a certain role in that community.

USA 51 TL Page 12, 7.3.2, lines 39-40 Relationships between communities

Rationale

This example may be generalized. Such a generalization is recommended since it will demonstrate an important example of a non-binary relationship.

Proposal

Change: A c-object of one community is part of another community, fulfilling a certain role in that community

To:

> One or more objects of one or several communities (e.g., c-objects or their components) are parts of another community, fulfilling certain roles in a manner prescribed by the invariant of the composition relationship of that community

USA 52 TL Page 13, lines 1-2 7.3.2 Relationships between communities

Rationale

It is not clear that this example belongs in this list.

We do not suggest that the idea behind this list item should not be included in the draft. However, this does appear to be a different kind of relationship than the others.

Proposal

Remove: -- A portion of the text of the specification of one community is reused in the specification of another community.

USA 53 TL Page 13, 7.3.2, lines 4-5 Relationships between communities

Rationale

The text does not say "partitioning" of what.

Proposal

Clarify or delete: 1 – Partitioning may be done because of readability, reuse of specification fragments or interoperability of enterprise objects.

USA 54 TL Page 13, 7.3.2, lines 6-10 Relationships between communities

Rationale

The objectives and policies of component communities may be mutually inconsistent, and may be inconsistent with the objectives and policies of the composite community. The composition rules should determine how to resolve these inconsistencies.

Proposal

Add:

> **Note** — The objectives and policies of component communities may be mutually inconsistent, and may be inconsistent with the objectives and policies of the composite community. The composition rules determine how to resolve these inconsistencies.

USA 55 TL Page 13, 7.3.2, lines 11-13 Relationships between communities

Rationale

This Note relates to specification development in general. The rest of the standard does not deal with these issues. It would be preferable to delete the note. If it is decided to retain this note then it should belong elsewhere.

Proposal

Remove: 4 - The role and community specifications, as well as type and template specifications, can be private to a specification and development environment, or they can be stored to a repository that can be shared by a wider audience of several development environments and groups.

USA 56 TH Page 13, 7.3.2, lines 14-15 Relationships between communities

Rationale

Relationships do not have to be binary

Proposal

Change:

For interaction between ~~two~~ several communities to be meaningful, there must be some element of shared objective, which itself implies a higher level of community of which ~~both~~ these communities will be members, and a common set of policies will apply.

USA 57 TL Page 13, 7.3.2, lines 18-20 Relationships between communities

Rationale

This statement is not formulated in specification terms

Proposal

Change: 1 – The element of shared objective and the common set of policies can be formed either at design time and included in the specifications of the communities or left for run-time negotiation or more straightforward testing of acceptability during community population.

To:

> 1 – The common set of policies can be explicitly included in the specification of the communities or can be included as parameter(s) to be instantiated during community population.

USA 58 TL Page 13, 7.3.2, lines 21-22 Relationships between communities

Rationale

Mutually inconsistent policy rules were referred to earlier, in comments related to lines 6-10 on page 13.

Proposal

Remove: 2 – The communities involved may have differing policy rules all of which the enterprise object should be able to conform to.

Or: reformulate the text in accordance with the proposal regarding lines 6-10

USA 59 TH Page 13, 7.4, lines 31-33 Enterprise object rules

Rationale

This does not correspond the consensus reached at the Paris meeting.

Proposal

Remove: An enterprise object may be refined as a community at a greater level of detail. All enterprise objects in an enterprise specification fulfil at least one role in at least one community. In fulfilling their roles, enterprise objects participate in actions, some of which are interactions with other enterprise objects.

USA 60 TH Page 14, 7.5.3, lines 26-27 Enterprise object rules

Rationale

This will not change the meaning but avoids a possible question about the use of authorization here.

Proposal

Change:

> The owner may either prescribe policies of the community or delegate ~~an authorization to do so~~ that to an agent. This ~~authorization~~ delegation may also be withdrawn.

USA 61 TL Page 14, 7.6.1, line 36 Establishing a community

Rationale

This note may not be needed.

Proposal

Remove:

> NOTE – The role/object relationship is not a type/instance relationship.

USA 62 TH Page 14, 7.6.1, lines 37-39 Establishing a community

Rationale

This is repeated in 7.6.2.

Proposal

Remove: The enterprise objects assigned to roles in the community can be dynamically changed during the lifetime of the community. As a consequence, a role can, subject to other constraints, be empty. Still, the community is continuously responsible for the obligations placed on that role.

USA 63 TL Page 14, 7.6.2, lines 41-42 Changes in a community

Rationale

This paragraph does not consider open systems, the structure or behaviour of which can change due to previously unspecified and unanticipated changes in the environment (due, for example, to a previously unspecified change of epoch). The restriction in this paragraph is unrealistic. It is essential at the very least to recognize that and provide appropriate formulation. (For example, some communities are resilient so that their objectives and important fragments of their invariants tend to be preserved under changes in their environments.)

Proposal

?

USA 64 TH Page 15, 7.7, line 11 Objective rules

Rationale

It was agreed at Madrid not to introduce unnecessary differences with Part 3. (Disposition of USA-5)

Proposal

Change:

> Every community has exactly one objective. ~~This objective is stated in its contract.~~ <u>The objective is expressed as a contract which specifies how the objective can be met.</u>

USA 65 TH Page 15, 7.7, lines 11-12 Objective rules

Rationale

This text is redundant with the next paragraph.

Proposal

Remove: An objective can be a composition of sub-objectives.

USA 66 TH Page 15, 7.7, lines 13-15 Objective rules

Rationale

A sub-objective may be assigned to a collection of roles rather than to a single role (collective behaviour). Also, in accordance with the definition of action in 2-8.3 (“Every action of interest for modelling purposes is associated with at least one object.”), the concept of “actions of the role” ought to be replaced with the concept of “actions in which the role participates”.

Proposal

Change:

An enterprise specification may decompose the objective of a community into sub-objectives. A sub-objective may be assigned to a collection of roles; in that case, the behaviour of the collection of roles is specified to meet the sub-objective and the sub-objective is met by the collection of objects performing the actions of the collection of roles.

USA 67 E Page 15, 7.7, lines 16-17 Objective rules

Rationale

Clarity. Style

Proposal

Change:

A sub-objective may be assigned to a process; in that case, the process is specified to meet the sub-objective and the sub-objective is met by ~~objects performing~~ the actions of objects performing the process.

USA 68 TH Page 15, 7.7, lines 20-22 Objective rules

Rationale

This does not conform to the consensus reached at Paris.

Proposal

Remove:

Hence, where a c-object fulfils a role in a community, the objective of the community of which the c-object is an abstraction is consistent with the objective expressed by this role.

USA 69 TL Page 15, 7.7, lines 20-22 Objective rules

Rationale

Style. Consistency.

Proposal

Change:

The objective of an enterprise object is consistent with objectives expressed by the role that it fulfils. Hence, where a c-object fulfils a role in a community, the objective of the community of which the c-object is an abstraction is consistent with the objective ~~expressed by~~ assigned to this role.

USA 70 TH Page 15, 7.8.1, lines 27, 35 Roles and processes

Rationale

Since collective behaviour has to be considered in a consistent manner, the concepts of “action of an object” or “action of a role” ought to be replaced with the concepts of “actions in which an object participates” or “actions in which a role participates”.

Comment. Can we say that an interaction (of several objects) is a way to represent collective behaviour?

Proposal

Change:

All of the actions ~~of that~~ in which this abstraction participates.

USA 71 TH Page 15, 7.8.1, lines 28-33 Roles and processes

Rationale

Style. Consistency.

Proposal

Change:

The behaviour of a community is a composition of the ~~expected~~ actions in which the objects of the community participate in fulfilling the roles of the community, together with a set of constraints on when these actions may occur. These constraints may define the possible ordering of these actions and the decomposition of some actions.

NOTE – There are many specification styles for expressing ~~the ordering of~~ when actions may occur. The modelling language chosen for expressing an enterprise specification may impose certain styles.

USA 72 TH Page 15, 7.8.1, lines 34-40 Roles and processes

Rationale

Style. 'Structure of the community' is not defined.

Proposal

Change:

The assignment of actions to the enterprise objects that comprise a community is defined in terms of roles. A role identifies an abstraction of the community behaviour. All of the actions of that abstraction are associated with the same enterprise object in the community. Each action of the community is either part of a single role behaviour or is an interaction that is part of more than one role behaviour. Each of those abstractions is labelled as a role. The behaviour identified by that role is subject to the constraints specified in the contract of the community and in the ~~structure~~ configuration of the community. The emphasis is on the enterprise objects that participate in the particular behaviour.

USA 73 E Page 16, 7.8.1, lines 1-2 Roles and processes

Rationale

Style

Proposal

Change:

> ~~Role behaviour~~ Roles are used to decomposes the behaviour of the community into roles that can each be performed by an enterprise object in the community

USA 74 TH Page 17, 7.8.3, lines 19-20 Interface roles and interactions between communities

Rationale

Relationships do not have to be binary

Proposal

Change:

> either ~~an~~ a non-empty set of objects outside the community and ~~an~~ a non-empty set of objects inside the community interact as part of another community

USA 75 TH Page 17, 7.8.3, lines 16-33 Interface roles and interactions between communities

Rationale

The consensus that was reached in Paris on composition of communities has not been carried through in the text.

Proposal

We propose that an e-mail meeting be started to work out an explanation of interface roles and interactions between communities that corresponds to the consensus reached in Paris. At the same time, language can be worked out that more clearly explains the approach of this text.

USA 76 TH Page 17, 7.8.4, lines 35-45 Enterprise objects and actions

Rationale

The text repeats what has already been said.

Proposal

Remove:

> An enterprise object fulfils at least one role in at least one community. ~~and can be involved in actions in the following ways:~~
>
> ~~– The object can participate in carrying out the action; in this case it is said to be an actor with respect to that action.~~
>
> ~~– The object can be mentioned in the action; in this case it is said to be an artefact with respect to that action.~~

~~– The object can both be essential for the action and require allocation or possibly become unavailable; in this case it is said to be a resource with respect to that action.~~

> ~~NOTE – For every action there is at least one participating enterprise object. Where two or more enterprise objects participate in an action, it is an interaction. When only one enterprise object participates in an action, it may be an interaction, if the object interacts with itself. [2-8.3]~~

USA 77 TH Page 18, 7.8.4, lines 1-2 Enterprise objects and actions

Rationale

We do not understand the example. We expect it will confuse others.

Proposal

Change:

In the special case where an enterprise object is mentioned in an action in which it also participates ~~(e.g. an enterprise object reporting its state)~~ it is both an actor and an artefact with respect to that action.

USA 78 TH Page 18, 7.8.4, lines 8-13 Enterprise objects and actions

Rationale

The text repeats what has already been said.

Proposal

Remove: Where a role in a community involves an enterprise object in actions only as an artefact, then it is an artefact role in that community.

Where a role in a community involves an enterprise object in any action as a resource, then it is a resource role in that community.

Where a role in a community involves an enterprise object in any action as an actor, then it is an actor role in that community.

USA 79 TH Page 18, 7.8.4, lines 15-16 Enterprise objects and actions

Rationale

The note is false. (Line 4 states that a role may involve an enterprise object both as a resource and as an actor even in the same action.)

Proposal

Remove:

> 1 – Therefore, roles in a community can be partitioned into actor roles, artefact roles and resource roles with respect to that community.

USA 80 TL Page 18, 7.8.4, lines 17-23 Enterprise objects and actions

Rationale

The text should take into account collective behaviour. Specifically, it is not necessary to specify behaviour, policies and relationships in which a role participates in the specification of that role. Such a prescription imposes unnecessary modelling restrictions and choices such as the need to determine the specific role in the specification of which the collective behaviour of several roles will be included ("owner of the behaviour"). Also, editor's notes ought to be taken into account.

Proposal

Change:

> 2 – ~~A~~ Roles is specified in such a way that the behaviour associated with the roles, the policies applying to the roles, the responsibilities associated with the roles, and the relationships ~~with other~~ between roles are stated. For example, for each actor role ~~there are complete descriptions of all actions of objects fulfilling that role~~ the specification includes descriptions of all actions in which the objects fulfilling that role participate, and for each action, ~~identification of all the artefact roles mentioned in the action~~ the specification includes descriptions of all the artefact and resource roles mentioned in the action.

USA 81 TL Page 18, 7.8.4, lines 17-20 Enterprise objects and actions

Rationale

The text repeats what is said elsewhere.

Proposal

Remove:

> 2 – A role is specified in such a way that the behaviour associated with the role, the policies applying to the role, the responsibilities associated with the role, and the relationships with other roles are stated. For example, for each actor role there are complete descriptions of all actions of objects fulfilling that role, and for each action, identification of all the artefact roles mentioned in the action.

USA 82 TL Page 18, 7.8.4, lines 17-20 Enterprise objects and actions

Rationale

If the previous comment is not accepted, make the prescriptive part normative. Remove 'complete.'

Proposal

Change:

> The specification of a role ~~is specified in such a way that~~ includes the behaviour associated with that role, the policies applying to that role, the responsibilities associated with that role, and the relationships with other roles ~~are stated~~.

NOTE- For example, for each actor role ~~there are complete descriptions of~~ all actions of objects fulfilling that role are specified, and for each action, ~~identification of~~ all the artefact roles mentioned in the action are identified.

USA 83 TH Page 18, 7.9, lines 12-16 Policy rules

Rationale

The last two items are the same. (Or, if different, the meanings are not clear.)

Proposal

Remove:

-- constraints on changing the rules;

Leave:

-- rules for changing the policy.

USA 84 TH Page 18, 7.8.5.1, line 42 Specifying processes

Rationale

Collective behaviour should be taken into account. A step need not be performed by a single object; "performance" in this context is a concept from the message-oriented object model.

Proposal

Change:

Each step need not be ~~performed by the same enterprise object in the community~~ an abstraction of the behaviour of the same configuration of objects in the community.

USA 85 TH Page 19, 7.9, lines 12-16 Policy rules

Rationale

The last two items are the same. (Or, if different, the meanings are not clear.)

Proposal

Remove:

-- constraints on changing the rules;

Leave:

-- rules for changing the policy.

USA 86 TH Pages 19-20, 7.9.2.1 to .3, lines 36-39 and 1-33 Obligations, permissions and prohibitions

Rationale

This text prescribes a theory of policy on which there is not consensus. Subclauses 7.9.2.1 thru 7.9.2.3 prescribe a particular language for specifying rules.

It is not in the best interests of the RM-ODP to prescribe in this standard a particular theory of policy or the elements of a language for specifying policy. There is much research in this area and many languages may be suitable. Prescribing a specific language prevents other languages from being ODP compliant.

Proposal

Delete subclauses 7.9.2.1 thru 7.9.2.3 and the Editor's Notes.

USA 87 TH Pages 20-21, 7.9.3, lines 35-39, 1-4 Nesting of policy frameworks

Rationale

The term "nesting" is unclear; specifically it is unclear whether it implies hierarchy. In addition, policies of various interrelated communities may be mutually inconsistent, and composition rules should prescribe how to determine and resolve such inconsistencies. Thus, the text appears to be overly restrictive. The text in the second paragraph also proposes a way to make specification fragments mutually inconsistent; in fact, composition rules should prescribe the way(s) to resolve these inconsistencies. Finally, the concept of a c-object inheriting its policy requirement is unclear. Thus, the text does not add value; the concept of using composition rules to determine and resolve inconsistencies has been described elsewhere.

Proposal

Remove: The enterprise specification must indicate the possible nesting of communities and thus all the policy rules governing the behaviour of the enterprise objects fulfilling roles in a community. An enterprise object must conform to all policies in all communities it participates.

The enterprise specification must also indicate whether possible dynamic changes in policy rules of the community (for instance, caused by federation negotiations) should be enforced on subcommunities or peer communities. A community may require that the peer communities co-operating with it follow the same method of adopting dynamic changes to policies as it itself follows.

Note: In practice, this currently means static policies in each community, but a c-object may inherit its policy requirement from several outer communities.

Alternatively, rewrite the text along the lines of the Rationale.

USA 88 TH Page 21, 7.9.5, lines 39-41 Organization of policy

Rationale

This text is not sufficiently clear and precise.

[What it means to pass the absence of a prohibition (i.e., a permission) is not clear to the USA.]

Proposal

Remove:

Objects can pass permissions between themselves. This passing is itself an interaction, and is subject to same permission rules.

USA 89 TH Page 23, 8.1, lines 23-28 Viewpoint correspondences

Rationale

The text refers to entities which exist in UoD. Objects are models of entities. Thus, if the term "entities" is used then entities are "modelled" rather than "represented" in a viewpoint specification. In addition, the text refers only to entities in isolation, and thus does not directly deal with the need for collective state and behaviour specified in one viewpoint specification to be consistent with collective state and behaviour specified in another viewpoint specification. A better terminology can be borrowed from the definition of a proposition, 2-6.2.

Proposal

Change: "Represented"

To:

"modelled"

Change: ...about an entity... ...about the same entity...

To:

...about one or more entities... ...about the same entities...

USA 90 TH Page 28, 10, lines 12-17 Enterprise Language Compliance

Rationale

Concepts defined in Part 2 are to be used in all viewpoint specifications. [3-4.2.2] Furthermore, "objects identified in one viewpoint can be specified using the viewpoint language associated with that viewpoint or using the viewpoint languages associated with other viewpoints." [3-4.2.2]

Proposal

Change:

An enterprise specification compliant with this Recommendation | International Standard shall use the concepts defined in clause 6 and those in clause 5.1 of ITU-T Rec. X.903 | ISO/IEC 10746-3, as well as the concepts defined in ITU-T Rec. X902 | ISO/IEC 10746-2, structured as specified in clause 7.

~~Concepts from ITU-T Rec. X.902 | ISO/IEC 10746-2 not refined in this Recommendation | International Standard may also be employed. Where such concepts are employed, the specification concerned shall include explanations of the relationships between the concepts concerned and those defined in clause 6.~~

USA 91 TH Pages 30-31 Annex A

Rationale

The Annex as presented now has very weak semantics and appears not to correspond to the normative text. (As a simple but important example, "A step in a process may itself be modelled as a (sub-)process." is not shown.) If UML is to be used for representation purposes then all UML elements chosen ought to have well-defined semantics. It is possible to do that for relationships provided that the semantics of the relationships will be defined using UML stereotypes. These relationships will include RM-ODP composition as defined in 2-9.1 and RM-ODP subtyping as defined in 2-9.9. These relationships do not have to be binary; if their semantics (invariants) so requires they will not be binary. For all other relationships, their invariants (rather than just names) should be provided. Some relationships are not shown at all, such as between an owner and a community (and other <X>s); neither is an <X> shown. Finally, arrows at the end of some relationships should not be shown.

Proposal

Redraw the diagram in accordance with the Rationale after the normative text will be finished.