Working Implementation Agreements for Open Systems Interconnection Protocols: Part 6 - Registration Authority Procedures for the OSI Implementors Workshop (OIW)

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Foreword

This part of the Working Implementation Agreements was prepared by the Registration Special Interest Group (RSIG) of the National Institute of Standards and Technology (NIST) Workshop for Implementors of Open Systems Interconnection (OSI). See Procedures Manual for Workshop charter.

Text in this part has been approved by the Plenary of the above-mentioned Workshop. This part replaces the previously existing chapter on this subject.

Annex A is for information purposes only.

Future changes and additions to this version of these Implementor Agreements will be published as a new part. Deleted and replaced text will be shown as strikeout. New and replacement text will be shown as shaded.

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Part 6 - Registration Authority Procedures for the OSI Implementors Workshop (OIW)

Editor's Note - Refer to the Stable Implementations Agreement, Version 4, Edition 1.

Annex A (informative)

Guidelines for Registering Changes to Technical Objects

Part 6 of the OIW Agreements document describes the process for registering technical information objects that are defined in the development of OIW implementation agreements. However, the process does not describe a criteria for determining when a change to an object definition is of sufficient magnitude to require registration of a new object with a new OID. Such criteria would be useful when changes are proposed to technical object definitions that have already been registered.

The registration procedures for technical information objects in OIW Implementation Agreements assumes that each object is uniquely different in particular ways from all other registered technical information objects, and requires that there is exactly one definition for each registered object identifier (OID). Therefore, when an object definition is to be changed, it must receive a new OID if the change is "sufficiently significant", in order to signal to all concerned parties that something significant has been changed.

The purpose of this tutorial section is to provide a guide for the evaluation of proposed changes to the definition of a technical object. Many of the changes will fall in a gray area between an obvious "editorial change" with no change to the operational characteristics of the registration and "significant change" that will require the requested change to be registered as a new technical object with a new Object Identifier (OID).

These guidelines are presented to assist in providing a consistent approach for reviewing requests and making changes to any registered technical object.

A.1 Evaluating Registered Technical Objects

Technical objects in the NIST OIW registers include a functional definition describing the object, its states and the actions that can change the object's states. The definition and actions of the object are usually presented as descriptive text, while the state may be defined by a data structure and a set of values such as constants or ranges, having a particular syntax. It should be recognized as stated above that modifying or deleting one or more parts of the definition may not be of sufficient importance to require the registration of the registered technical object under another identifier (OID).

For example, we should note that sometimes a change may be desired to specifically reduce confusion that stems from different interpretations of a given definition. In this case, the change might require some implementations to be modified to conform to a chosen interpretation, but who is to say that the definition was changed, versus saying that the original intent was finally made clear? It is a matter of judgement by the responsible OIW SIG to decide whether a new OID should be assigned in this case, or not.

When a change is sufficiently significant to require a new OID, then the old object must remain unchanged with its old OID.

Review criteria must consider the relative importance of the parts of the technical object definition that are affected by a change before determining whether to approve the proposed change. Deciding not to accept a proposed change may result in a need to create a new technical object very similar to the one being reviewed.

A.2 A Registration Review Criteria

The significant components of the technical definition, to which a criteria can be applied include the text description of the technical object, the definitions of the state values, and the definitions of the data structures. The criteria is not intended to be regulatory in nature, but to provide some direction in reviewing each of the three components when evaluating change requests for registered technical objects.

A.2.1 The Technical Object Description

Does the proposed definition change or require a uniquely different set of functions or state conditions, or does the proposed change alter the relationship between functions of the registered object?

If the proposed definition change adds another function or creates another state, or modifies the relationship between functions or state conditions of the object, or deletes a defined function or state condition then the proposed change should be registered as a new technical object with a new OID, provided that the proposed change would have a significant impact upon the implementation or operation of the technical object when changed.

Editorial changes can be made to correct grammatical errors or to improve clarity, without changing the definition. For changes that require additions or deletions of text to the definition, an evaluation must be made to determine if the changes when applied are optional or will apply only to a local implementation, or are extensive enough to require a new implementation.

Deciding what change means with respect to the functional definition is a subjective view and will require that each SIG establish some guidelines for its particular object types. Consistency of application of a registration policy within each SIG would be most helpful to the process.

One approach is to rule that any change, other than a spelling or grammar change requires a new technical object registration. However, the consequence of such a rule would be a large number of registered technical objects with very similar definitions that can create considerable confusion for implementors. The opposite position is to treat any change to the functional description as an editorial change, and only changes to the other criteria like the state values or data structures are evaluated to make a decision about registration of the changed object as a new technical object.

Between the two is a more acceptable view that provides for the evaluation of the proposed change to decide whether the change is editorial only, NOT affecting implementation; or if it is a change in functionality that MAY affect implementation. If it does NOT affect implementation, then it is an editorial change. If it MAY affect the implementation, then the change requested should be evaluated for registration as a new technical information object with a new OID.

An Example:

Change#1. A given registered object includes a range of values for a particular attribute called TIMEOUT. It includes the following two facts:

a) a definition of the TIMEOUT attribute;

b) the range of values for the TIMEOUT attribute.

If the range of the TIMEOUT attribute is changed from 10..100 to be 10..1000, it is possible that the change is not significant enough to warrant a new registration, if the parameter is only applied locally. (We will assume that this is the case for this example.)

Change#2. Suppose the same attribute is to be deleted. Then some assessment is needed, regarding the impact of the change to the global operational environment in which the technical object is to function, to determine if a new registration is required with a new OID.

The relative significance of the two changes to the operational requirements are clear (given our assumptions here) in these two cases. Changing the values of the range of the TIMEOUT parameter is a relatively minor change which affects only local operation. Depending on other operational considerations, and the relation of the TIMEOUT to other facts about the technical object it could be changed without a new registration. But the elimination of the TIMEOUT attribute altogether would be much more significant, and more than likely require a new registration, since current implementations would be expecting the existence of such an attribute in any operating environment, and future implementations would not include it.

A.2.2 Evaluating the State Values

Within the registered technical object description there may be a number of constants, ranges of values, and syntaxes specifically defined for the object. They are all subject to change. The evaluation criteria applied to requests for changes to state values has to consider the kind of operation that the technical object is performing.

EXAMPLE: The range of accepted values is changed from 1-128 to 0-127, or the default value of a parameter is changed from 32 to 128.

Understanding the implications of what is changing helps to measure the impact of the proposed changes. The shift of the range from 1-128, to 0-127 could be trivial, depending on the scope of its use and would not alone necessarily warrant a new registration. However to change a default value from 32 to 128 (if the attribute applies to the availability or limit of some external system or network resource) would clearly be cause for much concern over how the change impacts implementations of the technical object.

A.2.3 Evaluating The Data Structure

Each technical information object may have one or more data structures defined within the description of the object. Changes can be made to the data structures in a umber of ways. Data field sizes can change, and the number of data fields can change. As with the state values, they should be considered in a very broad sense that is within the definition and the extent of the use of these data structures beyond local system usage.

One must be aware that all syntactical changes in a technical definition need not be mandatory; they may be optional. Given that the changes are mandatory, they are most likely to affect every implementation, and are going to impact the functioning of the object. Such a case would warrant that the change be registered as a new technical object.

EXAMPLE: A defined data field is changed from 3 octets to 4 and another field is reduced from 2 octets to 1.

Changing the data structure is probably the clearest case of a requirement to change an implementation. One must be aware that all syntactical changes in a technical definitions need not be mandatory, they may be optional. But if the changes are mandatory, they will most likely affect every implementation, and in such a way that they will not interoperate properly with old implementations. Such cases warrant that the change be registered as a new technical object with a new OID.

With respect to applying these criteria, it should be emphasized that it is most important to be consistent in making subjective judgments concerning changes to registered technical objects, rather than being 'correct'.

There may be more than one interpretation or 'correct' view regarding any proposed change, but if the application of the guidelines are consistent, then the implementations are more likely to be consistent.

A.3 The Change Process

Responsibility for evaluating the change requests is assigned to each SIG. The SIG makes its determinations by voting on changes to each registered object as it is defined in the SIG text in the OIW Implementation Agreements Documents. Any SIG approved changes must also be voted in the OIW Plenary using the rules of the SIG and the Plenary.

An object definition in a Working Agreement text is not registered until it has been voted into the Stable Agreements Document, so it is possible to modify an as yet "unregistered" object in the Working Agreements Document.