Abstract:
Several of the Liberty specifications make use of identifiers that consist of constants and other well-known values. For example, in the Liberty ID-SIS Personal Profile Specification [LibertyIDPP], we define a list of messaging technologies (fax, email, icq to name a few). It is conceivable that we would need to add further items to such lists over time. To ensure interoperability between implementations, it may be necessary to maintain central registries of these, and similar enumerated values.

In order for Liberty to manage such registries prudently, guidelines are needed that describe the conditions under which new values can be assigned. This document discusses issues that should be considered in formulating a policy for assigning values to a registry and provides guidelines to document authors on the specific text that must be included in Liberty documents.
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1. Introduction

Some Liberty protocols make use of XML schema elements and attributes that contain enumerations of values, such as the \texttt{MsgTechnology} attribute in the Liberty Personal Profile ([LibertyIDPP]). Even after a protocol has been defined and deployment has begun, new values may need to be assigned (for example, a new messaging technology). To ensure that such fields have consistent values and interpretations in different implementations, their assignment should be administered by a central authority. For Liberty protocols, that assignment is administered by the Liberty Enumeration Registry.

In this document, we call the set of possible values for such a field an enumeration; the set may contain URIs, strings, or other kinds of values.

Not all enumerations require centralized administration. Only enumerations whose values are required to be set for interoperability between implementations will be administered by the Liberty Enumeration Registry.

This document uses the terms 'MUST', 'SHOULD' and 'MAY', and their negatives, in the way described in [RFC2119].
2. Issues To Consider

2.1. Reasons for central administration of an enumerated value

Not every enumeration of values need be controlled by Liberty. If a particular set of values is specified, and these must be supported for interoperability, then the specification MUST state this. That alone is not enough to indicate that the enumeration must be administered centrally. If, however, such a list of values is likely to grow, and other values may be added to the enumeration that should be interpreted similarly by all implementations conforming to the specification, this would indicate that the enumeration should be administered centrally. There may be other reasons that indicate central administration of a list of values. Any such reasons MUST be clearly stated when registering a new enumeration.

2.2. Submissions review process

The author of an enumeration registration should submit an email containing the information noted below in Section 5 to the email address noted below in Section 7.

The registration will undergo a review period of 4 weeks during which time the registration will be examined by a sub-group of the Technology Expert Group (TEG). Such a group may invite an acknowledged expert to review and comment on the registration, or open up the registration to comments from the full TEG.

Should registration of the enumeration succeed, the enumeration will be listed on the Liberty Alliance website (see Section 7). If, however, the registration is denied, the author of the registration MAY appeal the decision, providing any additional supporting information that would aid the decision process.

If the submission is for the update of an existing registry with a new value, then a similar (but hopefully shorter) review period may be necessary.
3. Registration maintenance

3.1. Updating the Registration Details

Registrations are requests for centrally-registered and maintained enumerations, including the related information needed to evaluate and document the request. Even after a value has been assigned, some types of registrations contain additional information that may be updated over time. Example information can include point of contact information, security issues, pointers to updates, literature references, etc. In such cases, the document must clearly state who is responsible for maintaining and updating a registration. It is appropriate to:

- Let the specification author update the registration, subject to the same constraints and review as with new registrations.
- Allow some mechanism to attach comments to the registration, for cases where others have significant objections to claims in a registration, but the author does not agree to change the registration.
- Designate Liberty or another authority as having the right to reassign ownership of a registration. This is mainly to get around the problem of some registration owner being unreachable to make necessary updates.

3.2. Adding New Values to the Enumeration

If a new value should be added to the enumeration, then the requestor should submit an email to Section 7, stating clearly the name of the enumeration that is being updated, and details about the new value or values as noted below in Section 6.
4. What To Put In Documents

The previous sections presented some issues that should be considered in formulating a policy for assigning enumerated values and other protocol constants. It is the specification author’s job to formulate an appropriate policy and specify it. In some cases, having a "Liberty Enumeration Considerations" section may be appropriate.

Documents that create an enumeration (or modify an existing enumeration) and that expect Liberty to play a role in maintaining that list (e.g., serving as a repository for registered values) MUST document the process through which future assignments to that enumeration are made. Such a section SHOULD state clearly that Liberty is the central authority for the values allowed in the enumeration, and provide a reference to this document for the general process in assigning new values to a registered enumeration.

If a centrally maintained registry is used for such an enumeration, then it MUST be noted in the specification that the specification itself is not the normative reference for the correct and current list of values in the enumeration.

The specification MUST provide a name identifying the enumeration, which, in conjunction with this document will specify the location of the currently approved enumeration of values.

Any Liberty specification requesting the creation and administration of an enumeration registration MUST contain a section entitled Liberty Enumeration Considerations

The following text MUST be included in this section:

This specification contains an enumeration of values that is centrally administered by the Liberty Alliance Project. Although this document may contain an initial enumeration of approved values, implementors of the specification MUST implement the list of values whose location is currently specified in [LibertyReg] according to any relevant processing rules in both this specification and [LibertyReg].

Any Liberty specification requesting the creation and administration of an enumeration registration MUST contain a bibliographic entry for [LibertyReg], referring to this document.

Sample Docbook XML that will meet this requirement is shown below:

```
<bibliomixed id="LibertyReg"/>
```
5. Information required to register an enumeration

Name
The XML Schema ([XML]) name for the element that contains the enumeration.

Description
A textual description of this element.

Initial list of values,
A simple list of the values that should appear in the initial enumeration.

Format
Are these strings, URIs, integers or something else?

Specification(s) defining this field and enumeration
A reference to the Liberty specification that defines this enumeration

Reasoning for central administration
What considerations should be used to determine whether this enumeration requires central administration?
For example, does interoperability between Liberty implementations depend on them similarly interpreting values from this enumeration? Will this enumeration grow more quickly than we will release new versions of this specification?

Requestor
Name and contact details of the individual requesting this registration. This section MUST contain at minimum, a name and email address, and SHOULD contain a contact telephone number.

Owner for updates
Name and contact details of the individual responsible for updates to this registration (if the requestor is not also the owner). This section MUST contain at minimum, a name and email address, and SHOULD contain a contact telephone number.

Comments
Any additional comments or information about the registration request

Note:
It may also be helpful for the requestor to submit the XML schema fragment that defines the field and its enumeration.
6. Modifying registrations

Occasionally, it may be necessary to change registration details, or to request the addition of new values to the enumeration. In such a case the following information should be submitted to Section 7:

Name
The XML Schema ([XML]) name for the element that contains the enumeration.

Requestor
Name and contact details of the individual requesting this change. This section MUST contain at minimum, a name and email address, and SHOULD contain a contact telephone number.

Description of change
A textual description of the required change.

Comments
Comments on the change, or general comments about the registration.
7. Accessing the registries

http://www.projectliberty.org/registries will contain the current list of registries.

Registrations, and changes to existing registrations MUST be sent to registrations@projectliberty.org.
References

Normative


Informative


A. Sample Registration (non-normative)

Name: script

Description: Defines a language writing system (for example Japanese Kanji)

Initial list of values:

- urn:liberty:dst:script:kana
- urn:liberty:dst:script:kanji

Format: anyURI

Specification(s):
- Liberty ID-WSF Data Services Template Specification, Kainulainen, Jukka, eds. Version 1.0

Reasoning: N/A

Requestor: Jukka Kainulainen (jukka.kainulainen@nokia.com)

Owner for updates: John Kemp (john.kemp@ieee-isto.org)