UCI를 위한 식별 메타데이터 설계

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Design of Identification Metadata for UCI

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Although UCI Identification metadata is not represented in the UCI syntax, it means a set of elements that enable users to easily and quickly identify. Against this backdrop, we research on how to design identification metadata for UCI. First of all, we check ISO/IEC 11179 and compare this with UCI properties. And then we defines nine components (such as UCI, Identifier, Title, Type, Mode, Format, Contributor, ContributorEntitiy, and ContributorRole) as elements of the identification metadata and establish encoding scheme with several parts (such as List of Encoding Scheme, Encoding Scheme of Identifier, Encoding Scheme of Type, Encoding Scheme of Mode, Encoding Scheme of Format, and Encoding Scheme of ContributorRole).

키워드: UCI, Metadata, Identification

I. 서 론

Metadata is generally called as "data of data," and is defined as a data describing the properties of the information resources. It provides information such as the characteristics and details of content. Of course, although UCI Identification metadata is not represented in the UCI syntax, it means a set of elements that enable users to easily and quickly identify. UCI identification metadata has the following characteristics such as Uniqueness, Simplicity, Expansibility, Openness, and Interoperability, Also, Identification metadata provides the following usefulness to resource users, resource providers, and resource distributors. The metadata enables quick access to the resource from the resource user side, and easy use of the desired resource. From the resource provider side, they can provide additional information though the use of metadata, to enable the user's effective access to the resource, which will diversify the access routes of the resource. A resource distributor collects information about resources from many resource providers and uses a standard metadata structure in distributing information about resources to many distributors. Therefore the distributor can collect or distribute information as a single form.

II. Related Works

In order to design identification metadata for UCI, we should check ISO/IEC 11179 and compare this with UCI properties. As a principle to describe identification metadata, on the basis of a standard for data elements description, ISO/IEC 11179 (Fig. 1(a)), two standards are defined, Identification metadata elements description (Fig. 1(b)) and UCI metadata encoding scheme description (Fig. 1(c)).

No	ISO 11179 property	(a)
1	Name	
2	Identifier	
3	Version	
4	Registration Authority	
5	Language	
6	Definition	
7	Obligation	
8	Datatype	
9	Maximum Occurrence	
10	Comment	

No	ISO11179 property	UCI property
1	Identifier	URI
2		Korean vocabulary name
3	Name + Language	Label
4		Korean label
5	Registration Authority	Terms management agency
6	Definition	definition
7	Datatype	Vocabulary type
8	Comment	Comment
9	Obligation + Maximum Occurrence	frequency

(b)

No	ISO11179 property	UCI property
1	Identifier	URI
2	Name	Label
3	Registration Authority	Terms management agency
4	Definition	Definition
5	Datatype	Vocabulary type
6	Qualifiers	Element value restriction
7	Comment	Comment

(c)

Fig. 1. ISO11179 vs. UCI

Fig. 1(a) shows ISO/IEC 11179 properties of data elements description. Fig. 1(b) shows properties of UCI identification metadata elements description. And Fig. 1(a) shows properties of UCI encoding scheme definition for UCI identification metadata. To explain properties of identification metadata element description, Fig. 1(b) compares the ISO11179 and the UCI identification metadata elements, where URI is identifier plus the URI restriction, vocabulary names in Korean, label, and Korean label is a kind of Name, and frequency is the Obligation and Maximum Occurrence represented in one property. Fig. 1(c) explains properties of identification metadata encoding scheme description, which adds qualifiers to properties of ISO11179 for limiting element

values.

III. Elements of the Identifacation Metadata for UCI

Elements of the identification metadata have 9 components including 1 container for elements as UCI, Identifier, Title, Type, Mode, Format, Contributor, ContributorEntitiy, and ContributorRole. (1) UCI is an unique content identification code provided by Korea. UCI is the unique resource identifier issued by the National Information Society Agency. The issue of UCI is performed when registering elements of UCI identification metadata. And there are two methods for issuing UCI; one is to be automatically issued and the other is to be assigned with the code that a user wants. (2) Identifier is an existing identifier. Since it is assigned to existing resources before UCI assigned, the existing identifier is named; for example, ISBN for independent volumes, In case there is an existing identifier, identifier supports interoperability with UCI elements. (3) Title is a known name for the resource. It is a critical element to identify a resource accurately and it serves the convenience of access to a user through a function of information retrieval in the UCI service. It is possible to input many values. (4) Type is the kind of the resource. The structuralType as an expanded element of identification metadata is reorganized according to the UCI structure. Type has uciType as an encoding scheme and 'Digital' and 'Physical' as an allowed value. (5) Mode is a major representation type of the resource (visual, audio, audio-visual, abstract). Mode has uciMode as an encoding scheme and is composed of three allowed values like 'Visual', 'Audio', and 'AudioVisual'. To identifying the representation types is based on human senses for digital resources; 'Visual' for the sense of sight, 'Audio' for the sense of hearing, and 'AudioVisual' for the sense of both sight and hearing. (6) Format is data type of resource. Form has uciFormat as an encoding scheme. The allowed value is rearranged on the basis of file extension according to the domestic environment by use of classification of MIME. (7) Contributor is a term that broadly stands for the subject responsible for the content of the resource and its roles. It is an element to support to make identifying resources easy regardless of representation of copyright information. (8) ContributorEntitiy is a name of the subject responsible for the content of the resource (for instance, sub-element of the contributor). (9) ContributorRole is a role of the subject responsible for the content of the resource (for instance,

sub-element of the contributor). It has uciRole as an encoding scheme and its allowed values are composed of the role of a person or organization related to manufacturing, managing, and distributing of resources. Plural roles of contributor can be for one contributor.

IV. Encoding Scheme of the Identifacation Metadata for UCI

Encoding Scheme sets a domain of the value registered in a target element and limits its allowed value. There exist encoding schemes in six elements among total thirteen elements of UCI and the list is as follows; Syntax Structure, ISBN, uciType, uciMode, uciFormat, and uciRole. List of encoding scheme can be added by a demand of a registrant through the prescribed formalities and is managed on the UCI homepage. For example, if there an existing identifier personally used in an organization, it can be applied to the central system through the procedure of registration application.

V. Conclusions

To distribute digital contents is the whole process of digitalized contents from a manufacturer to a customer. In order to distribute them effectively and efficiently, we should design its syntax, identification metadata, and management systems. Moreover, administrative procedure is absolutely prepared. Even though we already researched on how to design identification metadata, we should firstly define syntax for UCI and declare administratvie procedure for to-be UCI management systems.

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