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ISO/TC 46/SC 9 N 334
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To: Yukiko Ogura, ISO/IEC JTC 1/SC 29 Secretariat
Leonardo Chiariglione, Convenor of ISO/IEC JTC 1/SC 29/WG 11

c.c. P-members of ISO TC 46/SC 9
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Marie-Martine Guillabert, Secretariat of ISO TC 46

From: Jane Thacker, ISO TC 46/SC 9 Secretariat

Subject: Liaison statement to ISO/IEC JTC 1/SC 29 on ISO/IEC Committee Draft 21000-3, *Information Technology – Multimedia Framework – Part 3: Digital Item Identification and Description* (ISO/IEC JTC 1/SC 29/WG 11 N 4532)

ISO TC 46/SC 9 has reviewed ISO/IEC Committee Draft 21000-3 from the perspective of existing ISO identifier systems and projects for the content industries. TC 46/SC 9 is responsible for the following ISO identifier systems and projects:

- ISO 2108, International Standard Book Number (ISBN);
- ISO 3297, International Standard Serial Number (ISSN);
- ISO 3901, International Standard Recording Code (ISRC);
- ISO 10444, International Standard Technical Report Number (ISRN);
- ISO 10957, International Standard Music Number (ISMN);
- ISO/FDIS 15706, International Standard Audiovisual Number (ISAN);
- ISO 15707, International Standard Musical Work Code (ISWC);
- ISO PWI 20925, Version identifier for audiovisual works (V-ISAN);
- ISO/CD 21047, International Standard Textual Work Code (ISTC).

Our comments on CD 21000-3 appear below, arranged according to the relevant clause numbers in JTC 1/SC 29/WG 11 N 4532. Comments submitted on behalf of the Registration Authority for ISO 3297 which administers the ISSN (International Standard Serial Number) system are included with this liaison statement as Attachment A.

Clause 1, "Scope"

The DII&D Committee Draft states that the specification covers the identification and description of "Digital Items (and parts thereof) and other Entities". ISO TC 46/SC 9 would like clarification as to whether the scope of the DII&D specification, as defined, will encompass the entities identified by the ISAN, ISBN, ISRC, ISSN, ISTC, and ISWC. These identifiers have been developed by and for the content industries and reflect a substantial industry investment in infrastructure and implementation. Therefore it is crucial to ensure that the DII&D specification does in fact accommodate these industry identifiers before CD 21000-3 is advanced to the DIS stage. We note that this request is also a generic requirement for Digital Item Identification and Description in the MPEG-21 framework according to DTR 21000-1, i.e.

> *[DTR 21000-1, clause 4.2.3.1.7:] "The Digital Item Identification and Description framework shall accommodate and support existing ISO-standardised and other identification systems".*

ISO TC 46/SC 9 respectfully requests confirmation from JTC 1/SC 29 that the DII&D specification in CD 21000-3 meets that basic requirement for the MPEG-21 framework. We provide the following notes on specific areas of concern.

The concept of "Digital Items" would likely cover entities identified by the ISBN (assuming that the entity is in a digital form). It *may* also cover digital entities identified by the ISSN *assuming that* a digital "serial" qualifies as a "Digital Item" and is not simply a "container". The ambiguities in question and the underlying causes are described in the attached comments from the ISSN International Centre. Many of the same concerns were submitted in a joint response from ISO TC 46/SC 9 identifier systems to the MPEG Call for Proposals on DII&D (see MPEG2001/M7001, section 6 on "Interface with the Digital Item Declaration schema…"; also attached to TC 46/SC 9 liaison statement N 303, submitted to JTC 1/SC 29 and WG 11 in February 2001).

"Parts" may cover the entity identified by the ISRC (*assuming that* the ISRC is associated with the entity the DII&D defines as a "media resource", and that the "media resource" in turn is considered to be a "part" of the "Digital Item"). "Parts" might also be interpreted as covering abstract entities such as those identified by the ISAN, ISTC, and ISWC, but the relationship between the "Digital Item" and those entities is not one that would be regarded intuitively as a "whole/part" relationship. The same would apply to the ISRC, if the entity it is associated with is regarded as an abstract entity (i.e., the "phonogram" as an instance of the entity defined in the Content Delivery and Rights Management (CDRM)[1] model as "property" as

[1] The Content Delivery and Rights Management model is described in ISO Draft Technical Report 21449, *Content Delivery and Rights Management - Functional Requirements for Identifiers and Descriptors for Use in the Music, Film, Video, Sound Recording, and Publishing Industries*. An advance copy of DTR 21449 was submitted to JTC 1/SC 29/WG 11 in May 2001 as an attachment to the TC 46/SC 9 liaison statement in document N 307.

distinguished from the "recording" as an instance of the entity defined in DII&D as "media resource").

"Other Entities" may cover the "abstract" entities identified by the ISAN, ISTC, ISWC, and possibly the ISRC, but it is not entirely clear whether "other Entities" is an open-ended category to cover any type of entity other than a "Digital Item" or a "part" thereof. If the "other Entities" category is open-ended, all non-digital entities associated with an ISBN, ISRC or ISSN presumably would fall within that category as well, inasmuch as they would not qualify as either "Digital Items" or as "parts" thereof.

Clause 1.3, "Relationship between Digital Item Declaration and Digital Item Identification & Description"

CD 21000-3 indicates that identifiers and descriptors covered by the DII&D specification "can be associated with Digital Items by including them in a specific place in the Digital Item Declaration."

Clarification is needed on whether and how identifiers and descriptors covered by the specification might function within the MPEG-21 framework independently of a Digital Item Declaration (DID).

Since the specification covers the identification and description of "other Entities" (i.e., entities other than Digital Items or parts thereof) there would appear to be an implicit acknowledgement that the MPEG-21 framework would accommodate identifiers and descriptors for entities other than Digital Items and their parts independently of their inclusion in a Digital Item Declaration. However, the only provisions made in the DII&D specification for descriptors (page 11) is to include them in the appropriate STATEMENT element of a DID.

Logically it would seem unreasonable to require identifiers and descriptors for "other Entities" such as the ones given as examples on page 10 (Users, events, locations, etc.) to function solely within the context of a Digital Item Declaration. By the same token, if the abstract entities associated with the ISAN, ISTC, ISWC (and possibly the ISRC as well) are categorized as "other Entities" for the purposes of the DII&D specification, the MPEG-21 framework ought to accommodate the use of identifiers and descriptors for those entities outside the Digital Item Declaration.

Instantiating both the identifier and the descriptors for an abstract entity such as an audiovisual, musical, or textual "work" in a DID for every Digital Item containing an instance of "content" (as defined in the CDRM model) that embodies that "work" (or "property" as defined in CDRM) would clearly be inefficient. It would also increase the potential for inaccuracies and inconsistencies, inasmuch as any correction or update to the description of the abstract entity would have to be made in every DID in which descriptors for the entity were incorporated. As a solution, the DII&D specification notes (on page 11) the possibility of linking identifiers to related

metadata through a mechanism such as a resolution service. That kind of linking would presumably entail the use of a REFERENCE (as defined in the Digital Item Declaration specification) to point from an element within the Digital Item Declaration to a description of a related entity (such as a "work" embodied in the content of the Digital Item) without instantiating the description of the related entity in the Digital Item Declaration itself.

It is clear that a REFERENCE of that kind could be used to link to metadata that is external to the architecture defined by MPEG-21. However, there may be a question as to whether it would be possible to use the REFERENCE to link to a description that resides within the architecture defined by MPEG-21 (i.e., a description that otherwise conforms with the DII&D specification) but is not incorporated into a Digital Item Declaration. It needs to be made clear whether a REFERENCE of that kind is permitted, and if so, where the description of the entity referred to (in this case the "work") would reside within the overall MPEG-21 framework. In other words, while the MPEG-21 framework defines Digital Item Identification and Description as a key element of the conceptual architecture, and relates DII&D to Digital Item Declaration, whether and how the framework accommodates identification and description of "other Entities" independently of a Digital Item Declaration, is not entirely clear. Will the IPMP element of the MPEG-21 architecture provide a mechanism analogous to the Digital Item Declaration to house descriptors (formulated according to MPEG-21 specifications) for abstract entities such as those associated with the ISAN, ISTC, and ISWC? If not, will such descriptions always reside outside the MPEG-21 framework, where they can be accessed through a REFERENCE but will not be directly intelligible to MPEG-21 applications?

Clause 4.1, "Identification of Digital Items and their Parts"
Clause 4.3, "Identification of other Entities"

CD 21000-3 includes the ISAN, ISBN, ISRC, ISSN, ISTC, and ISWC in its list of "Identification Systems for Digital Items and their Parts" (Table 1).

As noted in comments above on the scope of the DII&D specification, there is a question as to whether the abstract entities associated with the ISAN, ISTC, ISWC (and possibly the ISRC) could be considered to qualify as either "Digital Items" or as "parts" thereof. Their inclusion in Table 1 begs a question as to their perceived function within the MPEG-21 framework. If those identifiers are not directly associated either with "Digital Items" or with "parts" thereof, why were they included in Table 1? If the abstract entities associated with those identifiers would qualify as "other Entities", why were they not listed in Table 2 as "Identification Systems for Entities other than Digital Items"?

Annex C, "List of existing Identification and Description Schemes"

Annex C requires extensive editing to ensure that the schemes are described according to comparable criteria. At present, many of the descriptions appear to be excerpts from the promotional literature of the schemes described. Use of prejudicial adjectives (e.g. "perhaps the most significant…") and unsubstantiated claims should be avoided in the descriptions. Annex C also makes no distinction between *claims* of future usefulness for schemes that are still under development and the *proven track record* of existing industry identifier systems. It is therefore difficult to distinguish fact from wishful thinking among the schemes described.

A common template should be used to describe each scheme, including: its scope of application (i.e. the type of entity or entities covered by the standard); user community; administration system; date of origin; extent of implementation; etc. Where applicable, CD 21000-3 should indicate a preference for existing industry identifier systems, and particularly for those systems that have already been adopted as international standards.

In Annex C the entries for the ISAN, ISBN, ISRC, ISSN, ISTC, and ISWC are in some cases out of date. Information on these identifier systems and projects was submitted previously to JTC 1/SC 29/WG 11 in an attachment to TC 46/SC 9 liaison statement N 303 (responding to the MPEG Call for Proposals for Digital Item Identification and Description). That submission could have been used for compiling the information in Annex C.

ISO TC 46/SC 9 would be willing to assist in correcting and updating the entries for ISAN, ISBN, ISRC, ISSN, ISTC, and ISWC but would prefer to have those corrections done within the context of a complete revision of <u>all</u> the entries in Annex C using a common template to ensure that the descriptions are more objective and comparable.

Comments on CD 21000-3
submitted on behalf of the Registration Authority for ISO 3297
(International ISSN Centre)

General Comments

The Digital Item Identification and Description (DII&D) Committee Draft raises a number of key questions related to the intended scope of application of the DII&D specification as well as to the positioning of identification and description more generally within the MPEG-21 framework. The relationship of the DII&D specification to the identification and description of a Digital Item *per se*, as distinct from the identification and description of other entities that operate within the context of the overall framework needs to be clarified. Ambiguities arise in part from the imprecise manner in which Digital Item is defined in Part 1 of the MPEG-21 Multimedia Framework. The issues with respect to identification and description are compounded by ambiguities in the abstract model that underlies Part 2 (Digital Item Declaration). The latter is particularly problematic inasmuch as at this stage the DID appears to be the only structure defined in the MPEG-21 framework within which identifiers and descriptors can be instantiated.

The comments that follow examine the broad issues noted above with particular reference to the International Standard Serial Number (ISSN) and its associated metadata. The comments raise specific questions as to the applicability of the DII&D specification and the incorporation of the ISSN and associated descriptors into a Digital Item Declaration (DID).

Detailed Comments

1. Scope (page 1)

The DII&D Committee Draft states that the specification covers the identification and description of "Digital Items (and parts thereof) and other Entities".

The International ISSN Centre would like confirmation from the drafters of the DII&D specification that the concept of Digital Item is sufficiently broad in scope to cover the entity that is identified by the International Standard Serial Number (ISSN).

The ISSN standard (ISO 3297) defines a serial as a "publication, in any medium, issued in successive parts, usually having numerical or chronological designations and intended to be continued indefinitely." By definition, the entity identified by the ISSN and described by the metadata set associated with the ISSN consists of more than one "part," and the extent of the entity remains indeterminate (at least until the serial ceases publication, or changes its title).

It is reasonably clear from the DII&D specification that a Digital Item may contain "parts." The abstract model in the draft Digital Item Declaration (DID) specification also allows an *item* (i.e., the declarative representation of a Digital Item) to contain *sub-items*. In that instance, the containing *item* is considered a compilation. With respect to the ISSN, there are two questions to be addressed. The first is whether the "parts" of a serial publication (typically, the volumes, issues, etc.) are consistent with the concept of *sub-items* as defined in the draft DID specification.

The second is whether the serial as a whole (i.e., the entity identified by the ISSN) is consistent with the concept of *item* (i.e., a compilation).

The first question has particular relevance to the International ISSN Centre because the ISSN functions not only as a standard numbering system in its own right but as a component of the Serial Item and Contribution Identifier (SICI) as well. The entity identified by the SICI may be a volume or issue of a serial, or it may be an article or other contribution contained in an issue of the serial. From an implementation perspective, it is critical for the International ISSN Centre to confirm the relationship of each of the entity types that use or incorporate the ISSN as an identifier to the concepts in the abstract model in the DID specification. The definitions of *container*, *item*, *component*, and *resource* in the draft DID specification are not sufficiently clear for the International ISSN Centre to establish unequivocally whether a volume or an issue of a serial would be considered an *item* (or more specifically a *sub-item*). Likewise, it is unclear whether an article or contribution contained in an issue of a serial would be considered an *item* or a *resource*. For the purposes of implementing the DII&D specification, those correspondences have to be established unequivocally, so that the ISSN and the SICI can be associated with the correct element in the DID.

The second question (i.e., whether the serial as a whole is consistent with the concept of *item*) arises because of a similar ambiguity as to whether a "grouping" of issues and volumes into a serial would be considered a compilation of the type that is recognized as an *item* in the DID abstract model, or whether such a "grouping" would be considered a *container*. The DID standard is not clear on what the operative difference is between a *container* (a grouping of *items* and/or *containers*) and a compilation (an *item* that contains *sub-items*). The question is further complicated by the fact that the "grouping" identified by the ISSN has no pre-determined boundaries. Again, for the purposes of implementing the DII&D specification, those ambiguities have to be resolved so that the ISSN can be associated with the correct element in the DID. Moreover, if the concept of an entity without pre-determined boundaries is not consistent with the concepts of either a *container* or an *item*, and the entity identified by the ISSN is consequently viewed as something other than a Digital Item, it is essential to have that confirmed. If the serial (as identified by the ISSN) does not qualify as a Digital Item, it is essential to clarify where it would be positioned in relation to the DII&D specification.

4.1 Identification of Digital Items and their Parts (pages 7-10)

The Committee Draft includes the ISSN in its list of "Identification Systems for Digital Items and their Parts" (Table 1).

As noted in comments above on the scope of the specification, there may be a question as to whether the entity identified by the ISSN does in fact qualify as a Digital Item. If it does not, and assuming it does not qualify as a "part," then a question has to be raised as to why it is listed in Table 1.

4.3 Identification of Other Entities (pages 10-11)

If it is determined that the entity identified by the ISSN does not qualify as either a Digital Item or a "part," the subsidiary question arises as to whether it would fall within the scope of "other Entities" covered in section 4.3. It is not entirely clear whether "other Entities" is an open-ended

category to cover any type of entity other than a "Digital Item" or a "part" thereof. If it is open-ended, and if it is determined that serials (as identified by the ISSN) do not qualify as either "Digital Items" or as "parts," presumably the ISSN should be listed in Table 2.

Appendix C

The entries in Appendix C would be more pertinent if they reflected more directly the relevance of each standard to the DII&D specification. Each entry should state clearly the scope of application of the standard (i.e., the type of entity or entities covered by the standard), the specification for the identifier, the scope of descriptive data covered by the standard, and the relevant provisions for administration of the standard.

In the interests of enhancing the informative value and pertinence of the entry for the ISSN, the International ISSN Centre would propose substituting the following for the text in the Committee Draft:

> *The ISSN is an ISO standard for the identification of serials. A serial (as defined in ISO 3297) is a publication, in any medium, issued in successive parts, usually having numerical or chronological designations and intended to be continued indefinitely. Serials include magazines, newspapers, annuals (such as reports, yearbooks, and directories), journals, memoirs, proceedings, transactions of societies, and monographic series. ISSN are currently assigned to serials in electronic media as well as to printed serials and serials in other physical media.*
>
> *For each serial that is assigned an ISSN there is a corresponding 'key title' which is based on a commonly acceptable form of the title established at the time the serial is registered. If the title of the serial changes over the course of its publication, a determination is made as to whether the change would require the establishment of a new 'key title'. If a new 'key title' is required, a new ISSN is assigned to identify what at that point is regarded as a new serial.*
>
> *The ISSN consists of eight digits. The first seven digits are in arabic numerals in a range from (0 to 9). The last digit (a check digit calculated on a Modulus 11 basis) may be an arabic numeral (0-9) or a roman numeral (X) representing the number 10). The ISSN functions simply as a unique identifier; the number conveys no meaning with respect to the language, country, publisher, or other attribute of the serial it identifies.*
>
> *For purposes of display, the ISSN is presented as two groups of four digits separated by a hyphen, and is preceded by the prefix "ISSN" and a space. The prefix functions as an identifier for the ISSN identification system. The International ISSN Centre has registered the prefix as a Uniform Resource Name (urn : issn).*
>
> *The International ISSN Centre has established a common set of data elements (ISO 3297 – Annex A) that is used for the registration of serials in the ISSN international database. The data element set includes, in addition to the ISSN and Key title, descriptors such as title proper, imprint, date(s) of publication, publication status, frequency, physical medium, language of publication, classification, and a number of links to related serials (other language editions, other physical media, succeeding titles, supplements, etc.). An exchange format for the data has been defined in conformance with ISO 2709.*

As the registration authority for the ISSN, the International ISSN Centre is responsible for the overall governance of the identification system, the certification of the national and regional registration agencies, and the maintenance of a central database of all ISSN assignments and descriptive data. The ISSN system encompasses a world-wide network of registration agencies that are responsible for processing registrant applications and maintaining databases of national and regional registrations.

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