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Appendix A (Reference - Informative)

IPR-DB Access Protocol

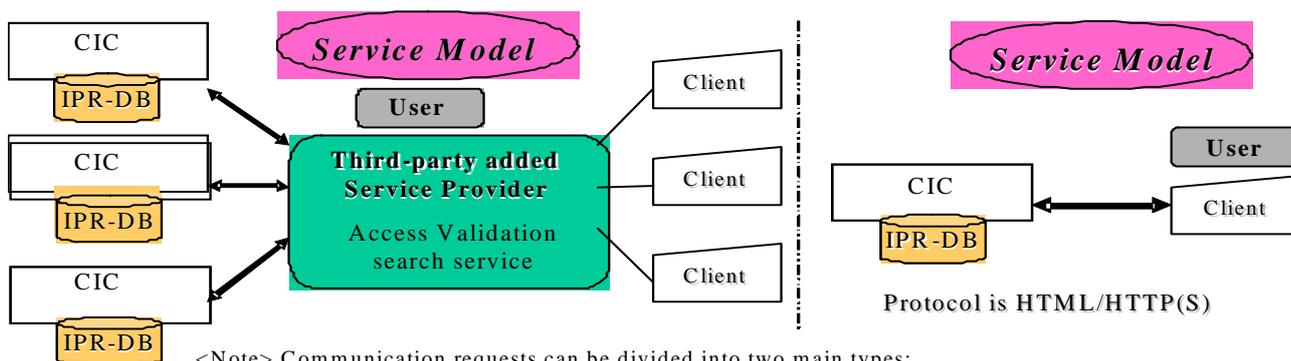
5 At present, transactions between different IPR-DBs, and those between IPR-DBs and the various players in the digital content distribution chain, are conducted using HTTP, as this protocol is used throughout the Internet world. In support of these transactions, mutual validation of identity is undertaken by the transacting parties to the extent that this may be necessary for the requirements of the specific transaction.

10

When it is assumed that there will be very large numbers of transactions among multiple parties (and this assumption lies at the heart of this Specification), then it will evidently become advisable if not essential to be able to call on the services of a third party service provider to undertake this process of validation of identity amongst the various players and the multiple Content ID Management Centers (CICs). In such a situation, it will be preferable to define a common IPR-DB access protocol. The validation procedures would of course, be carried out in accordance with the particular set of policies established by each CIC.

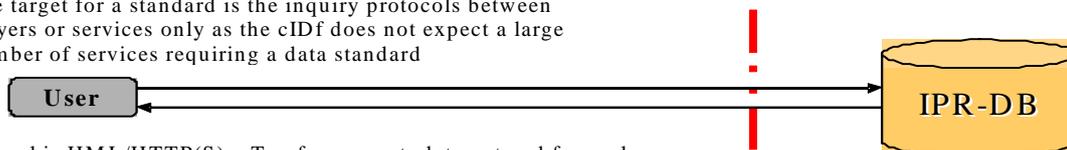
15

IPR-DB Access Protocol



<Note> Communication requests can be divided into two main types:
1) CIDCMN sent – associated metadata returned
2) Part or all associated metadata sent – CIDCMN returned

- The target for a standard is the inquiry protocols between players or services only as the cIDf does not expect a large number of services requiring a data standard



- Protocol is HML/HTTP(S) – Tag for request; data entered for reply
- When there is no data for the tag in question, or when it is decided that the data will not be shown, the reply “no tag” or “nil” is returned
- The Access Validation service may be inserted between the request and the reply. The policies regarding the validation are set by each Content ID Management Center. Replies are made without additional validation. (Details are defined in the Content ID Management Center Operation Conditions)

Appendix B (Reference)

Process Models for Registration of Digital Content Metadata and Content IDs

5 cIDf metadata elements are registered at the point when all the attributes are known. A number of different process model scenarios are possible depending on the manner in which CIC manages registration amongst the players to which it provides a service; for example, in some cases the player will conduct the registration, in others the CIC will conduct these operations on behalf of the supplier of the metadata.

10

The issuing of Content IDs may also take different forms as well; for example, the process will be different when a Content ID(Digital Item)s are issued for each instantiation of an item of digital content registered by different players in the digital content distribution chain, compared to when a Content ID(CIDCMN) is issued for packages of digital content ready for distribution.

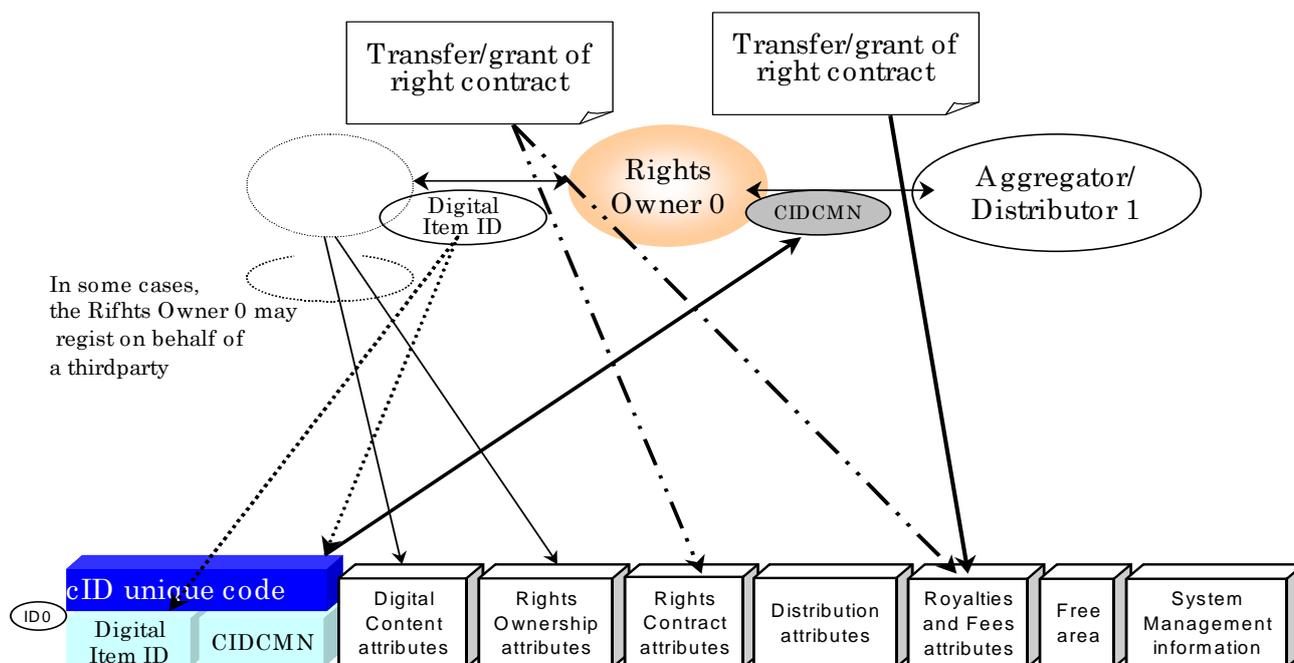
15

Below, a number of possible scenarios have been illustrated. These illustrations are intended to act as a reference for implementations of the cIDf Specification.

20 Example process model where Content IDs are allocated for each individual instantiation of an items or packages of digital content

A Content IDs are allocated when the Rights Owner receives the assignment of rights or where the Aggregator/Distributor is granted rights by the upstream Rights Owner or where the Aggregator/

Fig.1



Distributor sub-licenses a downstream Aggregator/Distributor. When the Aggregator/Distributor that receives a sub-license repeats this transfer to a further downstream Aggregator/Distributor, a separate Content ID is allocated.

- 5 As far as the cIDf metadata relating to the identification of an item of digital content and the original rights ownership attributes is concerned, in this model this is seen as being registered at the point when the item of digital content is created. In cases where a grant of rights takes place between the original Rights Owner and a subsequent party (perhaps a second Rights Owner, a Rights Administrator or an Aggregator/Distributor), metadata describing the contract would be registered at the point when the grant of rights has been concluded.
- 10 In the same way, license terms metadata would be registered when the contract is completed between the Rights Owner and the Aggregator/Distributor. Initial metadata describing the distribution attribute is also registered at this time.
- 15 Distribution attribute metadata is generated in part as a result of the upstream contracts relating to grants of rights or other licenses and would be registered at the point when the conditions for exploitation by Consumers are issued relating to the package of digital content, that is, when the relevant Content ID (CIDCMN) is issued.
- 20 This model contains no definitions related to the management of rights but these could be processed in the same way as in a case of transfer or granting of rights.

Fig.2

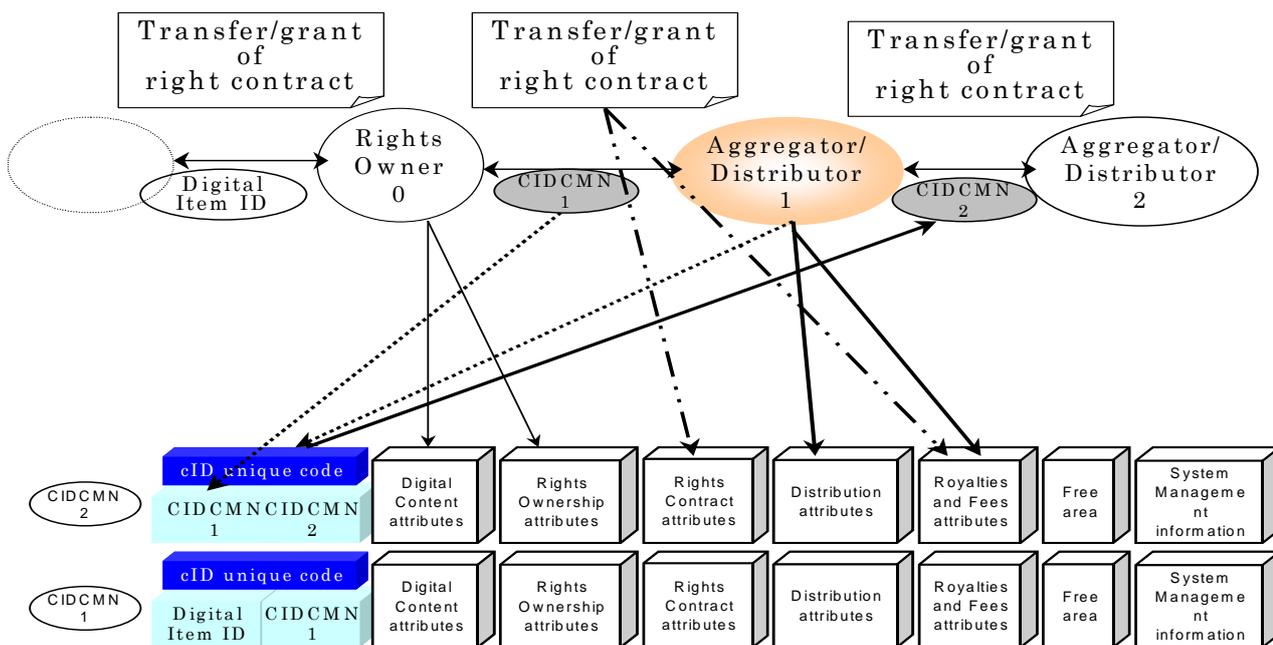
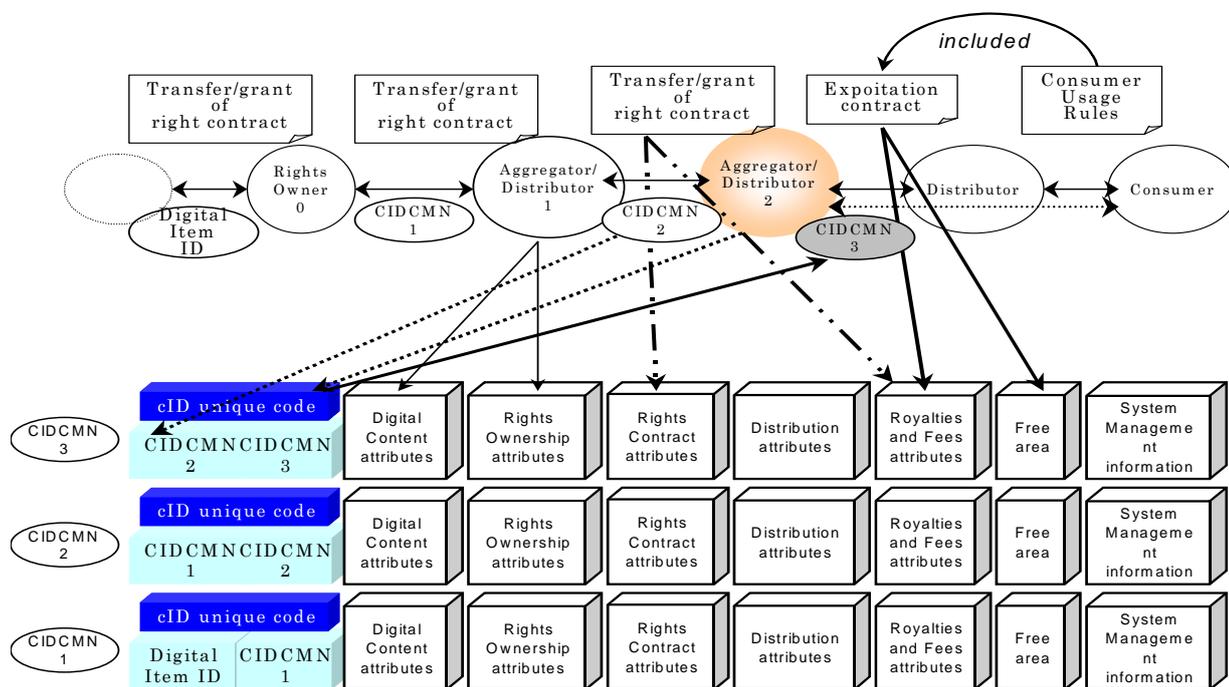


Fig.3



Example process model when Content ID is assigned to a package of digital content for distribution.

It is possible that Content IDs will not issued at every stage along the chain of contracts between multiple Rights Owners and Aggregator/Distributors. Initial contract transaction processing may be managed using a local proprietary IDs. Content IDs may only be assigned after this chain of contracts is complete, and the digital content is finally to be made available for exploitation by Consumers.

In this model, the cIDf metadata relating to digital content attributes and rights ownership attributes is still registered at the point at which the content is created.

License terms attributes are registered at the point when the rights transfer or license for grant of rights contract is completed between the Rights Owner and the Aggregator/Distributor. Initial metadata concerning the distribution attribute metadata is also obtained at this time.

Distribution attribute metadata is confirmed at the point when the conditions for exploitation of the package of digital content are issued for Consumers This process model contains no definitions related to the management of rights but these can be handled in the same way as in the case of transfer or granting of rights.

Fig.1

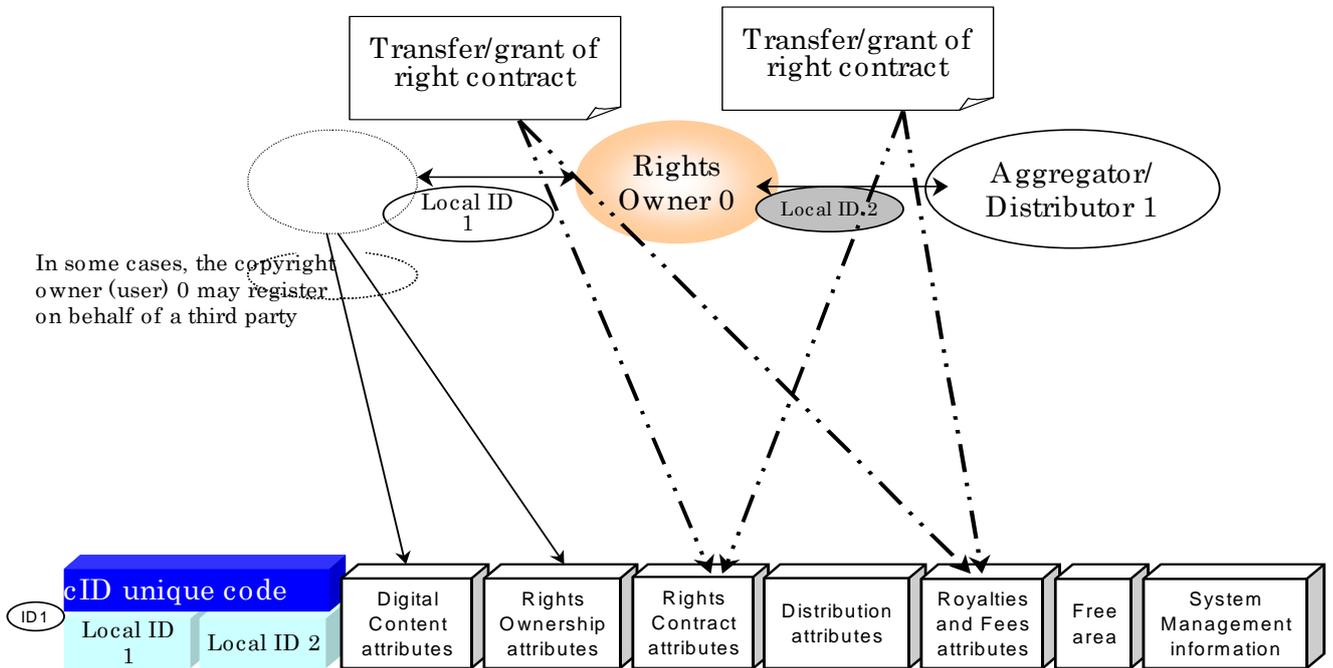


Fig.2

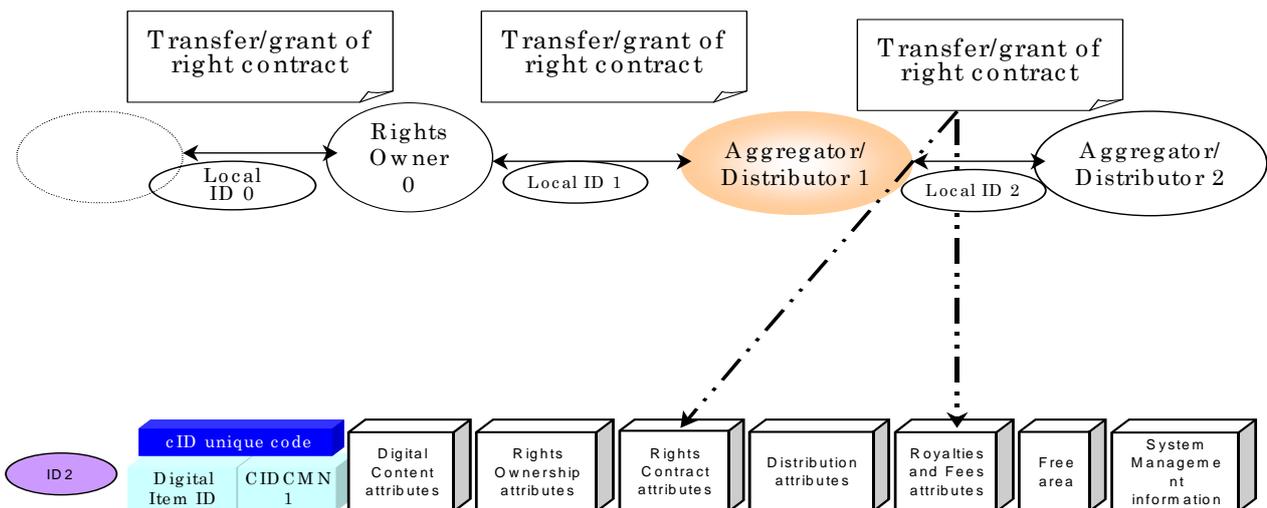
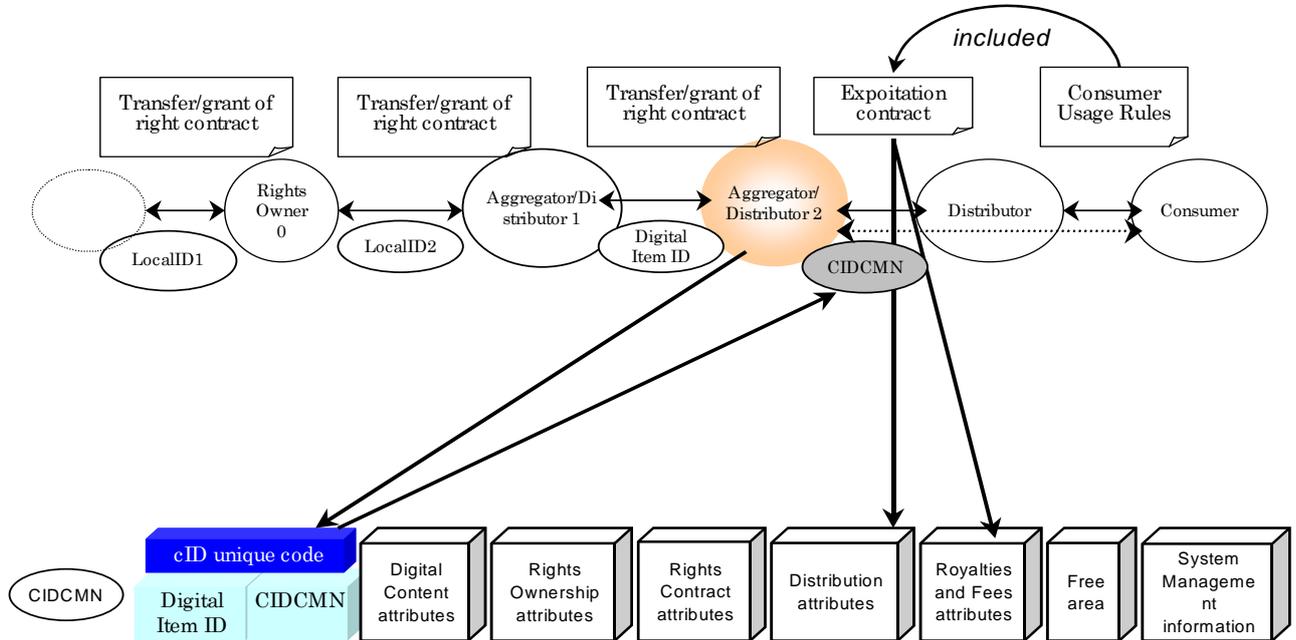


Fig.3



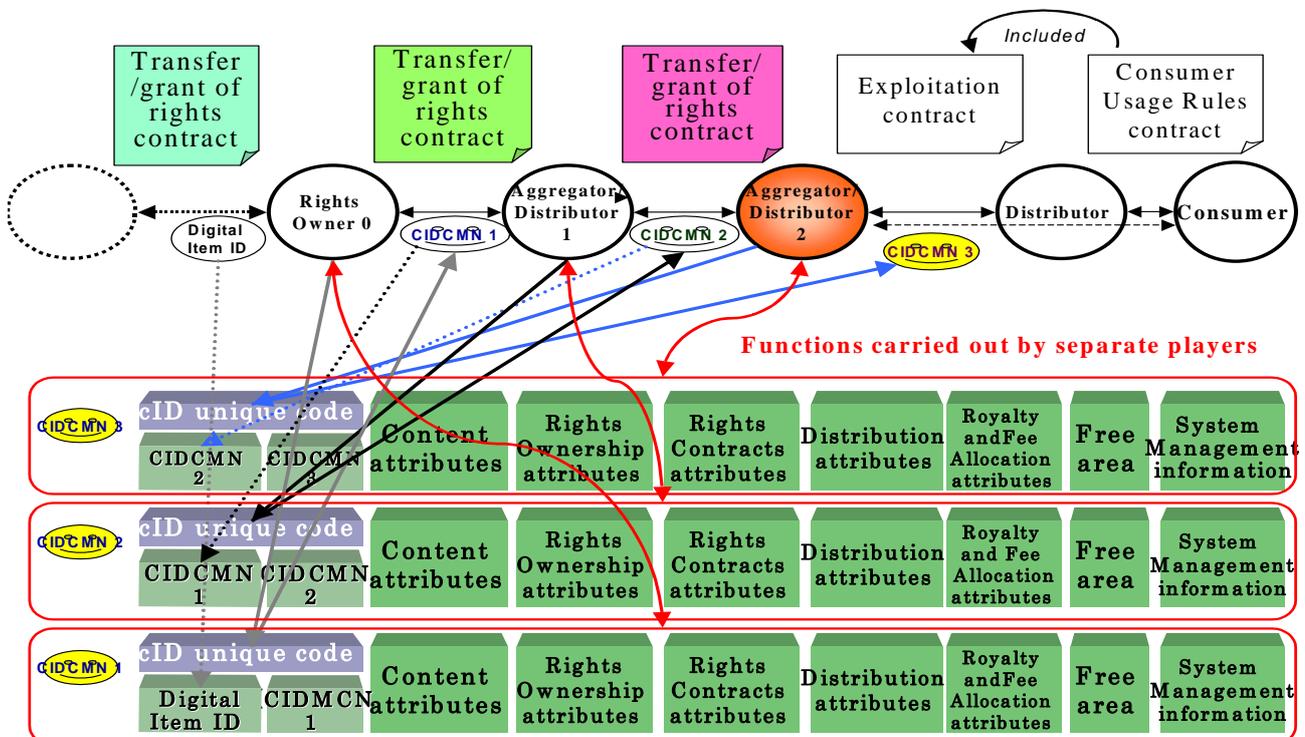
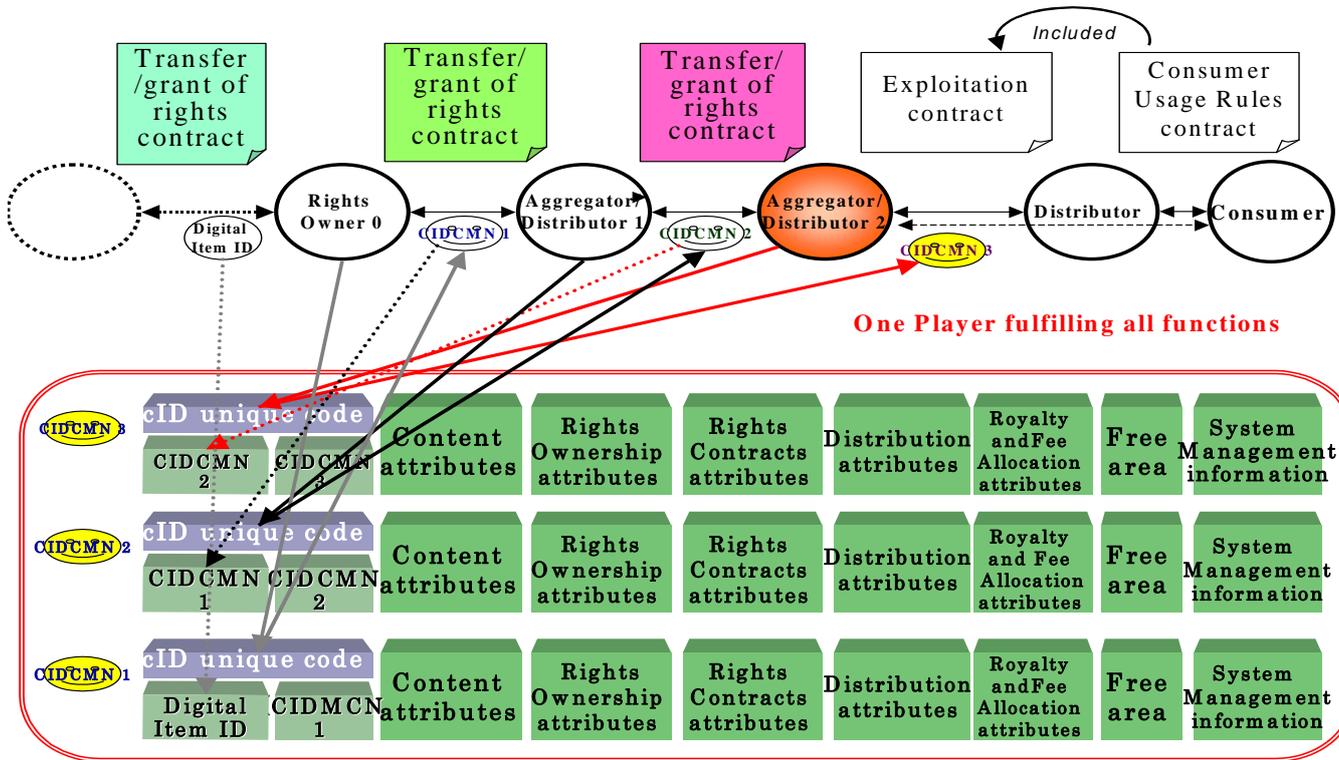
(More than one set of Rights Contract attributes may exist.)

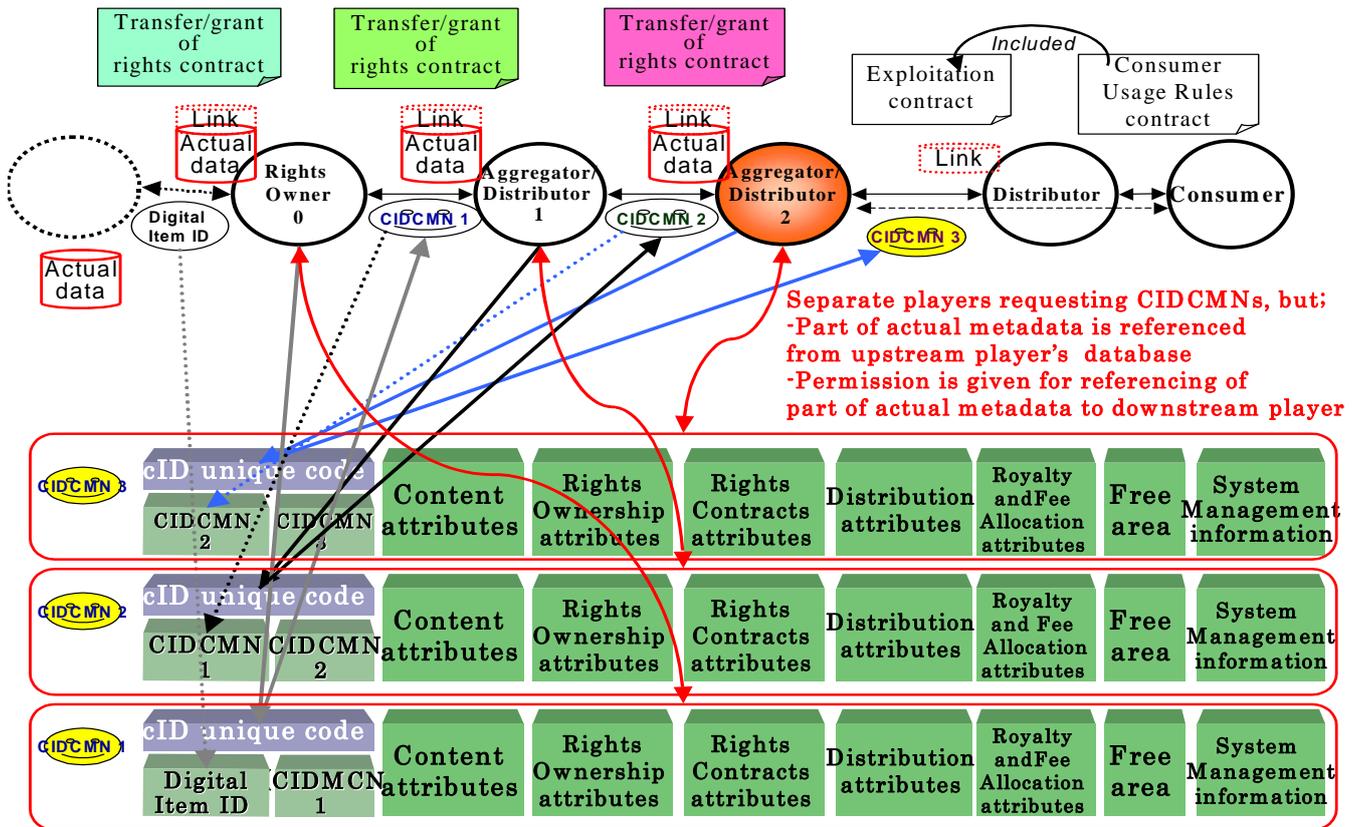
The Relationship between Content ID Management Centers and the different players in the digital content distribution chain

5 In the context of the cIDf Specification, it is possible that a CIC will have transaction relationships with only a single party that fulfills all of the different functions within the digital content delivery chain. In such a case, the third party's activities and therefore, transactions with the CIC will be conducted from a single location.

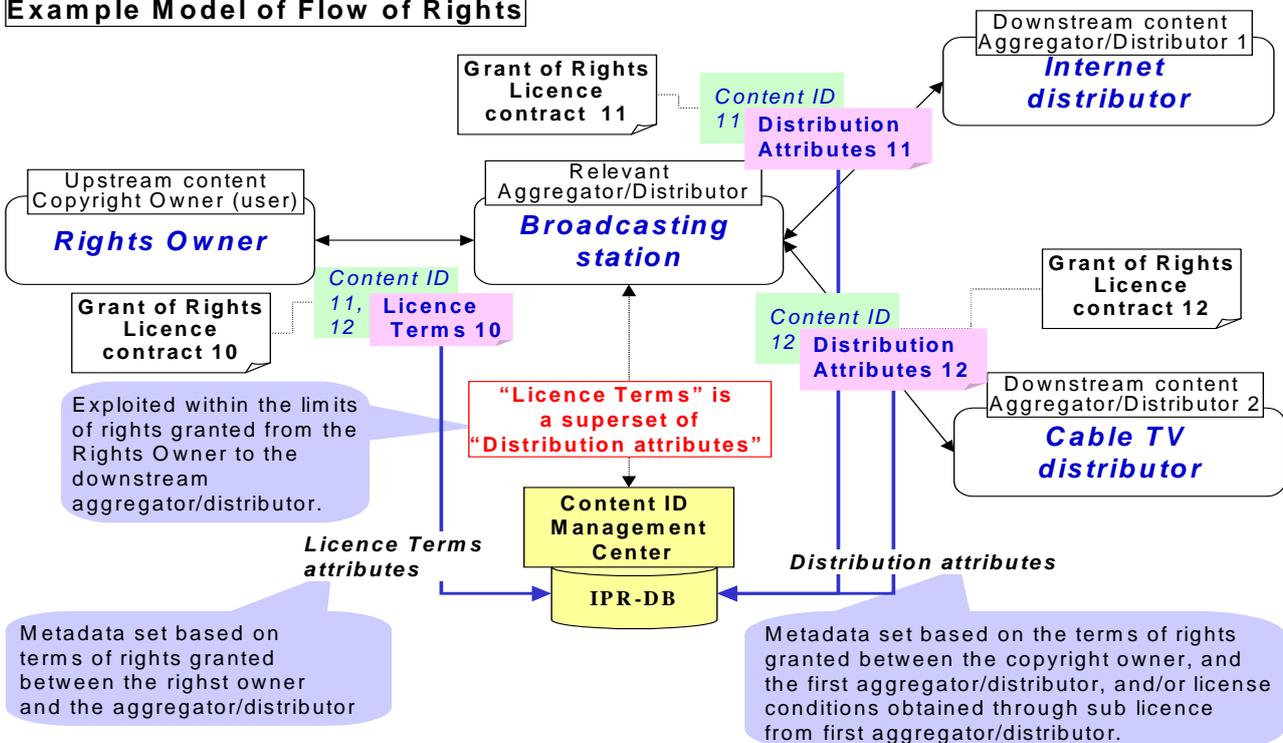
10 Conversely the players in any particular distribution chain may be completely independent of each other in requesting the assignment of Content IDs. In either case, cIDf metadata can be physically managed centrally by the CIC, or it can be logically managed by individual players, with centralized access management. "Logical centralized management" describes a situation in which the actual physical metadata is stored and managed by each individual player, and a link is established to it by the CIC; alternatively, the original data might be stored and managed by each player, but a mirror copy stored at the Content ID Management Center, and synchronized as necessary.

15





Example Model of Flow of Rights



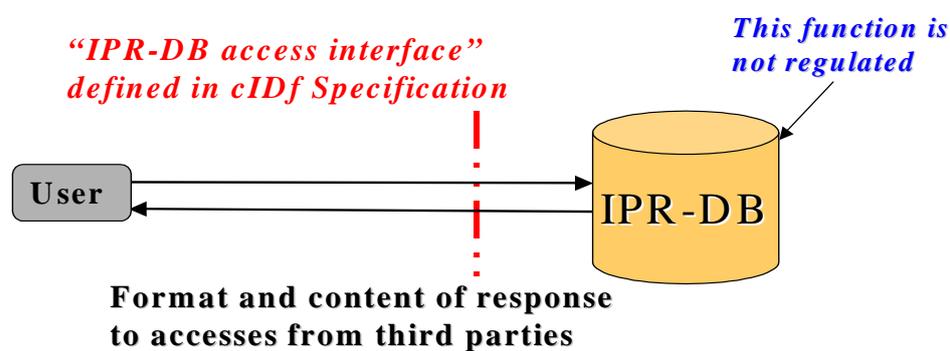
Appendix C (Reference)

Outline of IPR-DB Regulations

- 5 The cIDf Specification will not define the IPR-DB data model or the internal IPR-DB schema definitions. In future, it will however define the access interface that all users have with the IPR-DB.

Annex C (Informative)

Outline of IPR-DB Access Interface



Appendix D (Regulations - Normative)

Notation of players information

5 This section describes how to create metadata, e.g. name, contact point, etc., identifying the various players concerned with digital content distribution such as the Creator and Rights Owner. The notation refers to the specification of vCard (RFC2426). The details are given below.

Tag name

10 The words defined by “Type name” and “Type parameter value of Type name” for vCard (RFC2426) are used as tag names. URL, which is not defined in vCard, is also used as a tag name. The table below shows the tag names used in the XML expression of IPR-DB attribute elements.

15 The attribute name by which the name should be described is assumed to be a prefix. The table below shows the prefix.

Tag name prefix

Prefix	Attribute name
Creator	Creator
Rights Administrator	Rights Administrator
Rights Owners	Author’s rights owner / Neighboring rights owner
Rights Contract Deposit	Rights contract storage point
Rights Owner	Licensor
Aggregator/Distributor	Licensee
Rights Administrator	Organization receiving rights of administration
Destinations	Destinations of royalty

The tables below show the suffix.

20 Suffix of tag name by which name is written

Tag name	Meaning
IDO *1	Identifier (Type 0). Common player ID (Type 0).
FN	Name
SOUND *2	Pronunciation
NICKNAME	Alias

*1: The identifier by non-cIDf may be added in future revision.

*2: SOUND is different from its original meaning.

Suffix of tag name written in inquiry

Tag name	Meaning
ADR	Address
TEL	Telephone number
FAX	Facsimile number
EMAIL	E-mail address
URL	WEB page address (URL)

25 (Note) The telephone number (voice telephone) is normally TEL.; TYPE=VOICE

Actual XML descriptions are assumed to be tag name (prefix) + (suffix).

Examples:

Inquiries of Rights Agents by E-mail: RightsAgentsEMAIL

Name of Permission point of rights: LicenseeFN

Facsimile number of Destinations of Royalty: DestinationsFAX

Suffix of tag name by which other information is written

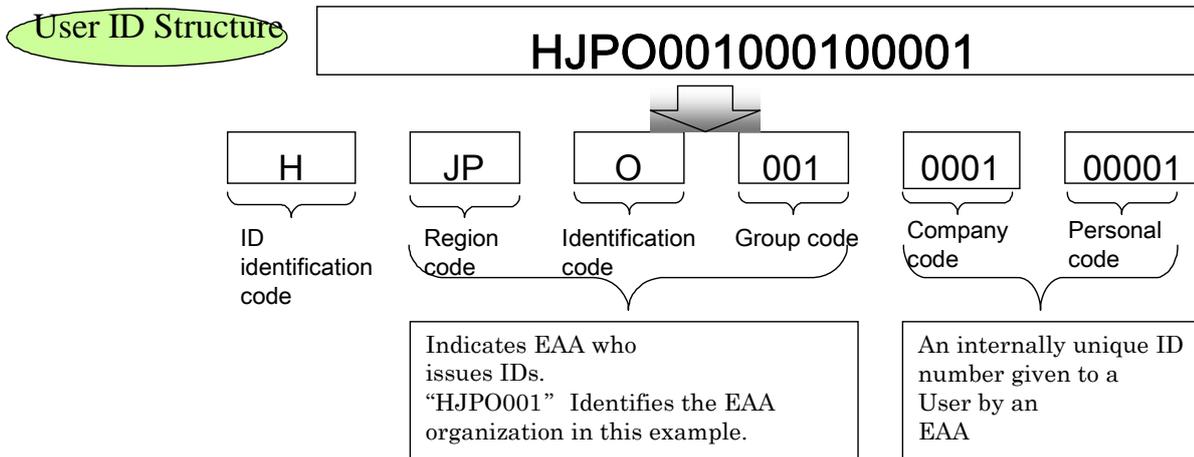
Tag name	Meaning
ROLE	Function
AFFILIATION	Membership of professional institutions
BIRTHDAY	Birthdate
PERSONALHISTORY	Background

Moreover, the language by which the content of the element is described is set by *attribute lang*. The property value of *attribute lang* follows the standards ISO639-1 and RFC1766 as well as the value for "Language" in the "Content attributes".

User IDs

The players who are involved in the distribution of digital content include Rights Owners (group, company, and individual) and Aggregator/Distributors (broadcasting companies are included). Moreover, archivists (library function) and Rights Administrators, also exist in the value chain. User IDs are assigned to these players.

The basic code system of the User ID is as follows:



ID identification code

Country code

Group identification code

Rights Administrator	A
Rights Owner	H
Distributor	D
Aggregator	G

Registry	ISO 3166 form
----------	---------------

Organization	O
Company	C
Individual	I

A detailed User ID can be added after this syntax to enhance the functionality of the overall User ID where 16 character syntax is considered insufficient. User IDs are managed and maintained by RA (Registration Authority) or an Electronic Authentication Authority.

Example

A typical XML expression representing the creator is shown below as an example.

```

10 <Creator>
    <CreatorID>HJPI001000100001</CreatorID>
    <CreatorNICKNAME lang="en">Yama-chan</CreatorNICKNAME >
    <CreatorFN lang="en">Taro Yamada</ CreatorFN>
    <CreatorADR lang="en">3-2-1 Taiyoudai, Minato-ku, Tokyo, 123-4567</ CreatorADR>
15 <CreatorTEL>+81-3-1234-5678</CreatorTEL>
    <CreatorFAX>+81-3-1234-0123</CreatorFAX>
    <CreatorURL>http://www.gekka.ac.jp/baseball/</CreatorURL>
    <AFFILIATION>Gekka high school</AFFILIATION>
    <BIRTHDAY>2000-05-05</BIRTHDAY>
20 <PERSONALHISTORY>Won Championship at National Baseball matsch</PERSONALHISTORY>
    </Creator>

```

Others

There are other types of metadata related to players such as bank account information for royalty distribution. It is assumed that this metadata will usually be separately administered and the User IDs are used as an access key to them. However, even if they are administered together, it should not break the management guidelines of IPR-DB.

References

ISO639
ISO3136
RFC1766
RFC2426

Appendix E (Regulations - Normative)

Standard Content Identifiers

- 5 The cIDf Specification enables Content IDs to be linked directly to other unique identifiers that are conformant with international standard identification systems. Metadata defining links between Content IDs and other unique identifiers can also be stored in the IPR-DB in the attribute element “other unique identifiers”.
- 10 The table below shows a list of values used to identify other standard content identifiers within the cIDf Specification’s metadata. These values make reference to regulations within the MPEG-4 standard. It is intended that these data values should be centrally stored and managed in the future by a non-profit third party organizations.

Table: Standard Content Identification Systems’ Values

Standard Identifier Value	Standard Identifier System Namespace/Acronym	Standard Identifier System Full Name
0	ISAN	International Standard Audio-Visual Number
1	ISBN	International Standard Book Number
2	ISSN	International Standard Serial Number
3	SICI	Serial Item and Contribution Identifier
4	BICI	Book Item and Component Identifier(this standard as never been developed or approved)
5	ISMN	International Standard Music Number
6	ISRC	International Standard Recording Code
7	ISWC	International Standard Work Code
8	ISTC	International Standard Text Code
9	SPIFF	Still Picture ID
10	DOI	Digital Object Identifier
11-127	Reserved for ISO use	
128	CID	Content ID Unique Code
129	MMG	Melodies & Memories Global Content ID Code
130	CM	CM code
131	ISMC	International Standard MIDI Code
132-255	Reserved for Local use	

- 15 <Ref> MPEG-4 Par1/System (ISO/IEC 14496-1:1999)

Appendix F (Reference - Informative)

Content ID Center Management Number used as Watermark Metadata

The cIDf Specification defines how the Content ID Management Center Number can, on an optional basis, be embedded in digital content as metadata within a watermark. Here, the guidelines shows the creation of a Content ID Management Center Number for embedding as metadata within a watermark.

When embedding a Content ID Management Center Number in a watermark, the essential data segments are: a version number (4 bits), a region number (4 bits), and the CIC Number (8 bits). Optionally, it is possible to embed in addition the variable length CIC Internal Management Number element of the Content ID Management Center Number.

The determination of which segments of the CIDCMN should be mandatorially embedded in digital content is based on the following considerations:

1) Consideration should be given to the length¹ of data which can be embedded by watermarking. This should be kept to less than a half the entire length of the CIDCMN. This enables the remaining half to be available to be embedded by watermarking for other business purposes by any of the distribution chain players.

2) However, the CIC which issued the CIDCMN must be identifiable from the data embedded in digital content watermark. The decision as to whether or not to embed all of or part of the CIC Internal Management Number in the watermark must be made depending on the length of the CIC Internal Management Number and in consideration of technical developments in watermarking capabilities. Furthermore, consideration must also be given to issues relating to why and how the CIDCMN embedded in digital contents watermark will be used in business processing.

In the case of Type '0/1':

cIDf binary expressions 16+ α bits			
Content ID Center Management Number (essential items)			
Version number. 4 bits	Region number 4 bits	CIC Number 8 bits	CIC Internal Management Number α bits

¹ At the time of publication of the cIDf Specification version 1.0 the maximum length of metadata that can be successfully stored in a watermark is considered to be 40 bits.

Appendix G (Regulations - Normative)

Genres

This attribute is divided into Genre Identifier and Genre Value defined by each Genre Identifier.

Genre Identifier

Genre Identifier is defined as the identification standard for efficient rights licensing, and it can act as a header for distributing and licensing. It is expressed as a combination of Primary Type and Secondary Type(omissible) and their code(optional), as "*Primary Type.Secondary Type*", as follows.

Example

```
<GENRE>
  <GN_IDENTIFIER code="VM">Visual.Music</GN_IDENTIFIER>
  <GN_VALUE type="Primary" code="4.4.1">Music.Pop/rock/pop-rock.World Music</GN_VALUE>
  <GN_VALUE type="secondary" code="4.4.2.1">Music.Pop/rock/pop-rock.Folk.Traditional</GN_VALUE>
</GENRE>
```

Primary Type

Primary type is used for proper processes objectively, and is classified by the appearance of content and by perception with senses.

- SOUND: content by hearing
- VISUAL: content of moving pictures, sometimes with sound
- TEXT: textual items
- IMAGE: content of still(not moving) and visible pictures
- PROGRAM: a set of instructions in code to control the operations by a machine, and a data base that is an organized set of data stored in a computer and can be looked at and used in various ways

Items that do not fall under any of these classifications will be added as new items in the future. Optionally, these are expressed in character codes for short, i.e., "S" for SOUND, "V" for VISUAL, "T" for TEXT, "I" for IMAGE, and "P" for PROGRAM.

Secondary Type

The Secondary Type is basically classified by subjective wishes or a consensus of Right Owners. Character codes are given to them as in the Primary Type case, but this is optional.

Genre Type should be chosen from one in the table below.

Primary Type	Secondary Type	code
Sound	Music	SM (Sound Music)
	Drama	SD (Sound Drama)
	Program	SP (Sound Program)
	Speech	SS (Sound Speech)
	News	SN (Sound News)
	Advertisement	SA (Sound Ad)
	Sound Effects	SE (Sound Effect)
	Other	SO (Sound Object)
Visual	Music	VM (Visual Music)

	Drama	VD (Visual Drama)
	Program	VP (Visual Program)
	Speech	VS (Visual Speech)
	News	VN (Visual News)
	Advertisement	VA (Visual Ad)
	Other	VO (Visual Object)
	Comic	VC (Visual Comic)
	Computer Graphics	VG (Visual Graphics)
Text	Music	TM (Text Music)
	Musical Composition	TC (Text Composition)
	Lyrics	TL (Text Lyrics)
	Drama	TD (Text Drama)
	Program	TP (Text Program)
	Review	TR (Text Review)
	Thesis	TT (Text Thesis)
	News	TN (Text News)
	Advertisement	TA (Text Ad)
Image	Drama	ID (Image Drama)
	Comic	IC (Image Comic)
	Photograph	IP (Image Photo)
	Illustration	II (Image Illustration)
	News	IN (Image News)
	Advertisement	IA (Image Ad)
	Other	IO (Image Object)
	Computer Graphics	IG (Image Graphics)
Program	Game	PG (Program Game)
	Software	PS (Program Soft)
	MIDI	PM (Program MIDI)
	Database	PD (Program Database)

Genre Value

Genre Value is defined by each Primary Type of Genre Identifier and is assigned a code.

The type indicates the priority of the genre defined as follows.

- 5 *main* – The specified genre is the main, or primary one.
 secondary – The specified genre is a sub-genre.

Thus, Genre Value is described by a type and a code (omissible) and a selected term up to 10.

Example:

10 <GENRE>
 <GN_IDENTIFIER code="VM">Visual.Music</GN_IDENTIFIER>
 <GN_VALUE type="main" code="6.7">Music. Pop</GN_VALUE>
 <GN_VALUE type="secondary" code="6.7.4.1">Music.Pop.Folk.Traditional</GN_VALUE>
 </GENRE>

Sound

These are classified according to MPEG Audio Tag ID3v1.

Code	genre	Code	Genre	Code	Genre
0	Blues	42	Soul	84	Fast Fusion
1	Classic Rock	43	Punk	85	Bebob
2	Country	44	Space	86	Latin
3	Dance	45	Meditative	87	Revival
4	Disco	46	Instrumental Pop	88	Celtic
5	Funk	47	Instrumental Rock	89	Bluegrass
6	Grunge	48	Ethnic	90	Avantgarde
7	Hip-Hop	49	Gothic	91	Gothic Rock
8	Jazz	50	Darkwave	92	Progressive Rock
9	Metal	51	Techno-Industrial	93	Psychedelic Rock
10	New Age	52	Electronic	94	Symphonic Rock
11	Oldies	53	Pop-Folk	95	Slow Rock
12	Other	54	Eurodance	96	Big Band
13	Pop	55	Dream	97	Chorus
14	R&B	56	Southern Rock	98	Easy Listening
15	Rap	57	Comedy	99	Acoustic
16	Reggae	58	Cult	100	Humour
17	Rock	59	Gangsta	101	Speech
18	Techno	60	Top 40	102	Chanson
19	Industrial	61	Christian Rap	103	Opera
20	Alternative	62	Pop/Funk	104	Chamber Music
21	Ska	63	Jungle	105	Sonata
22	Death Metal	64	Native American	106	Symphony
23	Pranks	65	Cabaret	107	Booty Brass
24	Soundtrack	66	New Wave	108	Primus
25	Euro-Techno	67	Psychadelic	109	Porn Groove
26	Ambient	68	Rave	110	Satire
27	Trip-Hop	69	Showtunes	111	Slow Jam
28	Vocal	70	Trailer	112	Club
29	Jazz+Funk	71	Lo-Fi	113	Tango
30	Fusion	72	Tribal	114	Samba
31	Trance	73	Acid Punk	115	Folklore
32	Classical	74	Acid Jazz	116	Ballad
33	Instrumental	75	Polka	117	Poweer Ballad
34	Acid	76	Retro	118	Rhythmic Soul
35	House	77	Musical	119	Freestyle
36	Game	78	Rock & Roll	120	Duet
37	Sound Clip	79	Hard Rock	121	Punk Rock
38	Gospel	80	Folk	122	Drum Solo
39	Noise	81	Folk-Rock	123	A Capela
40	AlternRock	82	National Folk	124	Euro-House
41	Bass	83	Swing	125	Dance Hall

Any other value should be considered as 'Unknown'

Ref. ; <http://www.dv.co.yu/mpgscript/mpeghdr.htm#MPEGTAG>

Visual

- 5 Visual contents are classified according to Appendix B,"TV-Anytime Genre Dictionary in TV-Anytime Forum Specification Series S-3 : SP003v11".

3 INFORMATION

- 3.1 Pure information
 - 3.1.1 Infotainment
 - 3.1.2 Advice
 - 3.1.3 Politics / the Diet
 - 3.1.4 Economy / Market conditions
 - 3.1.5 Overseas / international
 - 3.1.6 Commentary
 - 3.1.7 Debates / conferences
 - 3.1.8 Social issues
 - 3.1.9 Economics advisory
 - 3.1.10 Discussion
 - 3.1.11 Social advisory
 - 3.1.12 Interviews
- 3.2 Information/ tabloid
 - 3.2.1 Entertainment / tabloid
 - 3.2.2 Fashion
 - 3.2.3 Lifestyle / living space
 - 3.2.4 Health / medical
 - 3.2.5 Shopping / mail order & telephone shopping
 - 3.2.6 Gourmet eating / cooking
 - 3.2.7 Special Events
 - 3.2.8 Program introductions / notices
 - 3.2.9 Remarkable people
- 3.3 General non-fiction topics
 - 3.3.1 Daily news
 - 3.3.2 Current affairs
 - 3.3.3 Weather forecasts
 - 3.3.4 Service information
 - 3.3.5 Special news programs
 - 3.3.6 Local / regional
 - 3.3.7 Traffic
 - 3.3.8 Magazines
 - 3.3.9 News magazine
- 3.4 Philosophies of life
 - 3.4.1 Religious philosophies
 - 3.4.1.1 Buddhism
 - 3.4.1.2 Hinduism

	3.4.1.3	Christianity
	3.4.1.4	Islam
	3.4.1.5	Judaism
3.4.2	Non-religious philosophies	
	3.4.2.1	Communism
	3.4.2.2	Humanism
3.5	Social/Political	
	3.5.1	Political
	3.5.2	Social
	3.5.3	Economical
	3.5.4	Legal
3.6	Sports	
	3.6.1	Aeronautics
	3.6.2	Aikido
	3.6.3	American Football
	3.6.4	Archery
	3.6.5	Athletics
	3.6.6	Badminton
	3.6.7	Bandy
	3.6.8	Baseball
	3.6.9	basketball
	3.6.10	Biathlon
	3.6.11	Bicycle
	3.6.12	Billiards
	3.6.13	Bobsleigh/tobogganing
	3.6.14	Body-building
	3.6.15	Boules sport
	3.6.16	Bowling
	3.6.17	Boxing
	3.6.18	Canoeing
	3.6.19	Casting
	3.6.20	Cricket
	3.6.21	Croquet
	3.6.22	Curling
	3.6.23	Cycling
	3.6.24	Dance sport
	3.6.25	Diving
	3.6.26	Equestrian
	3.6.27	Faustball
	3.6.28	Fencing
	3.6.29	Fishing
	3.6.30	Flying disc
	3.6.31	football
	3.6.32	golf

3.6.33	gymnastics
3.6.34	handball
3.6.35	hockey
3.6.36	ice-hockey
3.6.37	jai-alai
3.6.38	judo
3.6.39	ju-jitsu
3.6.40	karate
3.6.41	korfball
3.6.42	lacrosse
3.6.43	luge
3.6.44	maccabi
3.6.45	Marathon
3.6.46	modern pentathlon
3.6.47	motor boating
3.6.48	motor racing
3.6.49	motor cycling
3.6.50	mounteneering
3.6.51	netball
3.6.52	orienteering
3.6.53	polo
3.6.54	powerlifting
3.6.55	racquetball
3.6.56	roller skating
3.6.57	rowing
3.6.58	rugby
3.6.59	Running
3.6.60	shooting
3.6.61	skating
3.6.62	skiing
3.6.63	skibob
3.6.64	sleddog
3.6.65	soccer
3.6.66	softball
3.6.67	soft tennis
3.6.68	sombo
3.6.69	sport acrobatics
3.6.70	squash
3.6.71	subaquatics
3.6.72	surfing
3.6.73	swimming/diving
3.6.74	table tennis
3.6.75	tekowondo
3.6.76	tennis

- 3.6.77 trampoline
- 3.6.78 Track/Field
- 3.6.79 triathlon
- 3.6.80 tug-of-war
- 3.6.81 volleyball
- 3.6.82 water polo
- 3.6.83 water-skiing
- 3.6.84 weightlifting
- 3.6.85 wrestling
- 3.6.86 yachting
- 3.6.87 Other ball games
- 3.6.88 combative sports
- 3.6.89 Snowboarding
- 3.6.90 Team sport (excluding football / soccer)
- 3.6.91 Martial sports
- 3.7 Sport Events
 - 3.7.1 international competitions
 Horseracing / Government-sponsored sporting events (cycling, boat races, etc.)
 - 3.7.2 Marine
 - 3.7.3 Sports Event
 - 3.7.4 winter sports
 - 3.7.5 Sports Non-Event
 - 3.7.6 Sports Talk
 - 3.7.7 track and field
 - 3.7.8 Special Events
 - 3.7.9 Olympic games
 - 3.7.10 World cup
 - 3.7.11 Sports magazine
 - 3.7.12 Water sport
- 3.8 Human interest
 - 3.8.1 Reality
 - 3.8.2 Show business
 - 3.8.3 Notable personalities
 - 3.8.4 Personal problems
- 3.9 Leisure
 - 3.9.1 Do-it-yourself
 - 3.9.2 Cookery
 - 3.9.3 Gardening
 - 3.9.4 Tourism
 - 3.9.5 Travel
 - 3.9.6 fishing
 - 3.9.7 Outdoors
 - 3.9.8 Motoring

- 3.9.9 Keep-fit
- 3.9.10 Fashion
- 3.9.11 Computing
- 3.9.12 handicrafts
- 3.9.13 pets
- 3.9.14 Music
- 3.9.15 Igo / shogi (Japanese chess)
- 3.9.16 Mah-jongg / pachinko
- 3.9.17 Fitness
- 3.9.18 Health / medical
- 3.9.19 Advertisement / Shopping
- 3.10 Arts & Media
 - 3.10.1 Music
 - 3.10.2 art
 - 3.10.3 industrial arts
 - 3.10.4 Plastic Arts
 - 3.10.5 Theater/Cinema
 - 3.10.6 Advertising
 - 3.10.7 Press
 - 3.10.8 Performing
 - 3.10.9 Fine arts
 - 3.10.10 Traditional arts
 - 3.10.11 experimental arts
 - 3.10.12 New Media
- 3.11 Humanities
 - 3.11.1 Literature
 - 3.11.2 Languages
 - 3.11.3 History
- 3.12 Sciences
 - 3.12.1 Applied sciences
 - 3.12.2 Natural sciences
 - 3.12.3 Physical sciences
 - 3.12.4 Medicine
 - 3.12.5 Technology
 - 3.12.6 Physiology
 - 3.12.7 Psychology
 - 3.12.8 Social
 - 3.12.9 Spiritual
- 3.13 Documentary
 - 3.13.1 Society
 - 3.13.2 current events
 - 3.13.3 History
 - 3.13.4 travelogues
 - 3.13.5 Nature

- 3.13.6 animals
- 3.13.7 the environment
- 3.13.8 Space
- 3.13.9 science
- 3.13.10 medicine
- 3.13.11 Culture
- 3.13.12 tradition
- 3.13.13 Literature and the arts
- 3.13.14 Sports
- 3.13.15 General documentaries
- 3.13.16 Interviews
- 3.13.17 debates
- 3.13.18 Discussion
- 3.13.19 Lecture
- 3.13.20 Speech
- 3.13.21 Presentation
- 3.13.22 Textual (incl. relayed teletext)
- 3.13.23 Special features
- 3.13.24 Foreign countries
- 3.13.25 Expeditions
- 3.14 Education
 - 3.14.1 Education
 - 3.14.2 Further education
 - 3.14.3 Languages
- DRAM**
- 4 A**
- 4.1 Popular drama
 - 4.1.1 General light drama
 - 4.1.2 Comedy
 - 4.1.3 "Broken" comedy
 - 4.1.4 Sitcom
 - 4.1.5 Soap
 - 4.1.6 Soap Opera
 - 4.1.7 Soap Special
 - 4.1.8 Soap Talk
 - 4.1.9 Medical melodrama
 - 4.1.10 Legal melodrama
 - 4.1.10.1 Adventure/disaster
 - 4.1.10.2 Detective/thriller
 - 4.1.10.3 Epic
 - 4.1.10.4 Horror
 - 4.1.10.5 Science fiction
 - 4.1.10.6 War
 - 4.1.10.7 Western

- 4.1.10.8 Folkloric
- 4.1.11 Fantasy/Fairy tale
- 4.1.12 Erotica
- 4.1.13 Romance
- 4.2 Serious drama
 - 4.2.1 Classical drama
 - 4.2.2 Contemporary drama
 - 4.2.3 Religious
- 4.3 Docudrama
- 4.4 Poems
 - 4.4.1 Readings
- 4.5 Stories
 - 4.5.1 Readings
- 4.6 Performed drama
- 4.7 Drama with puppets
- 4.8 Animated drama
- 4.9 Action
- 4.10 Japanese dramas
- 4.11 Foreign dramas
- 4.12 Samurai dramas
- 4.13 Kabuki / classical theater
- 4.14 Adult
- 5 ENTERTAINMENT**
 - 5.1 Pure entertainment
 - 5.2 Informative entertainment
 - 5.3 Hosted show
 - 5.4 Panel-show
 - 5.5 Non-hosted show
 - 5.6 Simple game show
 - 5.7 Game show
 - 5.8 Big game show
 - 5.9 Game shows
 - 5.10 Quiz/Contest
 - 5.11 Variety Show
 - 5.12 Surprise show
 - 5.13 Talk shows
 - 5.14 Humour
 - 5.15 Comedy
 - 5.16 Standup comedian(s)
 - 5.17 “Rakugo” / stand-up performance
 - 5.18 Candid camera etc.
 - 5.19 Surprise show
 - 5.20 Travel variety
 - 5.21 Music variety

- 5.22 Musicals
- 5.23 Musical comedy
- 5.24 Musical romance
- 5.25 Cooking variety

6 MUSIC

- 6.1 Serious music
 - 6.1.1 Early
 - 6.1.2 Classical and Romantic
 - 6.1.3 Contemporary
 - 6.1.4 Light classical
 - 6.1.5 Opera
- 6.2 Popular music
 - 6.2.1 Foreign rock / pop
 - 6.2.2 Japanese rock / pop
 - 6.2.3 Japanese ballads / “Enka”
 - 6.2.4 Live performances / concerts
 - 6.2.5 Rankings / requests
 - 6.2.6 Karaoke / singing contests
 - 6.2.7 Folk music / (Japanese) folk music
 - 6.2.8 Nursery songs / children’s music
 - 6.2.9 Culture-specific music / world music
- 6.3 Ballet
 - 6.3.1 Ballet
- 6.4 Dance
 - 6.4.1 Dance
- 6.5 Jazz
 - 6.5.1 Jazz / fusion
 - 6.5.2 Traditional
 - 6.5.3 modern
- 6.6 Middle-of-the-road
- 6.7 Pop
 - 6.7.1 European popular traditional
 - 6.7.2 Ethnic
 - 6.7.3 World Music
 - 6.7.4 Folk
 - 6.7.4.1 Traditional
 - 6.7.4.2 Contemporary
- 6.8 Rock
- 6.9 Pop-Rock
- 6.10 Traditional

7 ENRICHMENT

- 7.1 General enrichment
- 7.2 Inspirational enrichment
- 7.3 Education

- 7.4 language studies
- 7.5 Foreign language conversation
- 7.6 Informational
- 7.7 School programmes
- 7.8 entrance exams
- 7.9 Lifelong education
- 7.10 certification
- 7.11 Educational issues

8 **Movies**

- 8.1 Eastern
- 8.2 Effect Movies
- 8.3 Fiction
- 8.4 Science Fiction
- 8.5 Horror
- 8.6 Romance
- 8.7 Romance comedy
- 8.8 Thriller
- 8.9 War
- 8.10 Western
- 8.11 Western comedy
- 8.12 Detective
- 8.13 Adventure
- 8.14 Fantasy
- 8.15 Comedies
- 8.16 Romance
- 8.17 Historical
- 8.18 Adult

9 **Animations / special effects**

- 9.1 Animated films
- 9.2 Animated musical
- 9.3 Japanese animations
- 9.4 Foreign animations

-Ref.: TV Anytime Forum specification SP003V11

-Note: Some terms that appear to be spelling errors, were corrected above.

5 Text

Terms were classified in accordance with the Nippon Decimal Classification(NDC) system, which was derived from the Dewey Decimal Classification (DDC),as a guide. These placed too much emphasis on Japanese culture. However, non-Japanese cultures and other contents not mentioned below should also be considered as being new items.

10

Code	Genre	Code	Genre
00	Generalities	53	Mechanical engineering
01	General encyclopedic work	54	Electrical engineering

02	Year book	55	Electronics & communication engineering
04	Information science	56	Ocean engineering
10	Philosophy	57	Mining, metallurgy
11	Psychology	58	Engineering & allied operations
12	Ethics	60	Industry
14	Religion	61	Agriculture, forestry
15	Buddhism	62	Fisheries
16	Christianity	63	Commerce
20	General history	65	Communications, transportation
21	General history of Japan	70	The arts
22	General history of other areas	71	Sculpture, Plastic arts, Painting
23	Biography	72	Photography, photographs, handicrafts
25	Geography	73	Music, dancing
26	Travel	74	Theater, motion pictures
30	Social sciences	75	Sport ,physical training
31	Politics & military science	76	Accomplishments, amusements
32	Law	77	Home economics, family living
33	Economics, public financial, statistics	79	Comic
34	Management	80	Language
36	Sociology	81	Japanese Language
37	Education	82	English
39	Folklore	84	Germanic languages German
40	Natural sciences	85	Romance languages French
41	Mathematics	87	Other languages
42	Physics	90	Literature
43	Chemistry & allied sciences	91	Japanese literature
44	Astronomy & earth science	92	Japanese poetry
45	Life science	93	Japanese fiction
47	Medicine & Pharmaceuticals	95	Japanese Essays
50	Technology, Engineering	97	Fiction of other languages
51	Civil engineering	98	Literature of other languages
52	Architecture		

Image

5 Image contents are classified according to Appendix B, “TV-Anytime Genre Dictionary in TV Anytime Forum Specification Series S-3 : SP003v11“, in the same way as VISUAL.

Program

Program contents are classified according to Appendix B, “TV-Anytime Genre Dictionary in TV Anytime Forum Specification Series S-3 : SP003v11“, in the same way as VISUAL.

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Encoding

“Encoding” is the term used in this specification to describe the form in which digital content is physically stored. The cIDf Specification has adopted MIME encoding, with some extensions. Specifically, codes can be selected from the following list.

5 Following CODE, leave one or more open space and then indicate the identifier.

CODE	Identifier	CODE	Identifier
application/envoy	evy	application/octet-stream	bin
application/fractals	fif	application/octet-stream	class
application/futuresplash	spl	application/octet-stream	dms
application/hta	hta	application/octet-stream	exe
application/internet-property-stream	acx	application/octet-stream	lha
application/java-archive	jar	application/octet-stream	lzh
application/mac-binhex40	hqx	application/postscript	ai
application/msword	doc	application/postscript	eps
application/msword	dot	application/postscript	ps
application/oda	oda	application/rtf	rtf
application/olescript	axs	application/set-payment-initiation	setpay
application/pdf	pdf	application/set-registration-initiation	setreg
application/perl	per	application/vnd.ms-pkicertstore	sst
application/pics-rules	prf	application/vnd.ms-pkiseccat	cat
application/pkcs10	p10	application/vnd.ms-pkistl	stl
application/pkix-crl	crl	application/vnd.ms-powerpoint	pot
application/vnd.ms-excel	xla	application/vnd.ms-powerpoint	pps
application/vnd.ms-excel	xlc	application/vnd.ms-powerpoint	ppt
application/vnd.ms-excel	xlm	application/vnd.ms-project	mpp
application/vnd.ms-excel	xls	application/vnd.ms-works	wcm
application/vnd.ms-excel	xlt	application/vnd.ms-works	wdb
application/vnd.ms-excel	xlw	application/vnd.ms-works	wks

application/winhelp	hlp	application/vnd.ms-works	wps
application/x-bcpio	bcpio	application/x-director	dcr
application/x-cdf	cdf	application/x-director	dir
application/x-compress	z	application/x-director	dxr
application/x-compressed	tgz	application/x-dvi	dvi
application/x-cpio	cpio	application/x-gtar	gtar
application/x-csh	csh	application/x-gzip	gz
application/x-internet-signup	ins	application/x-hdf	hdf
application/x-internet-signup	isp	application/x-msdownload	dll
application/x-iphone	iii	application/x-msmediaview	m13
application/x-javascript	js	application/x-msmediaview	m14
application/x-latex	latex	application/x-msmediaview	mvb
application/x-matryoshka	mtr	application/x-msmetafile	wmf
application/x-msaccess	mdb	application/x-msmoney	mny
application/x-mscardfile	crd	application/x-mspublisher	pub
application/x-msclip	clp	application/x-msschedule	scd
application/x-msterial	trm	application/x-perfmon	pma
application/x-mswrite	wri	application/x-perfmon	pmc
application/x-netcdf	cdf	application/x-perfmon	pml
application/x-netcdf	nc	application/x-perfmon	pmr
application/x-pkcs12	p12	application/x-perfmon	pmw
application/x-pkcs12	px	application/x-sh	sh
application/x-pkcs7-certificates	p7b	application/x-shar	shar
application/x-pkcs7-certificates	spc	application/x-stuffit	sit
application/x-pkcs7-certreqresp	p7r	application/x-sv4cpio	sv4cpio
application/x-pkcs7-mime	p7c	application/x-sv4crc	sv4crc
application/x-pkcs7-mime	p7m	application/x-tar	tar
application/x-pkcs7-signature	p7s	application/x-tcl	tcl
application/x-tex	tex	application/x-ustar	ustar
application/x-texinfo	texi	application/x-wais-source	src
application/x-texinfo	texinfo	application/x-x509-ca-cert	cer
application/x-troff	roff	application/x-x509-ca-cert	crt

application/x-troff	t	application/x-x509-ca-cert	der
application/x-troff	tr	application/ynd.ms-pkipko	pko
application/x-troff-man	man	application/zip	zip
application/x-troff-me	me	application/x-troff-ms	ms
audio/basic	au	audio/x-mpegurl	m3u
audio/basic	snd	audio/x-pn-realaudio	ra
audio/mid	mid	audio/x-pn-realaudio	ram
audio/mid	rmi	audio/x-wav	wav
audio/mpeg	mp3	audio/x-ms-wma	wma
audio/x-aiff	aif	audio/x-twinvq	vqf
audio/x-aiff	aifc	audio/x-twinvq	vql
audio/x-aiff	aiff	image/bmp	bmp
image/cis-cod	cod	image/x-cmu-raster	ras
image/gif	gif	image/x-cmx	cmx
image/ief	ief	image/x-xwindowdump	xwd
image/jpeg	jpe	image/x-icon	ico
image/jpeg	jpeg	image/x-portable-anymap	pnm
image/jpeg	jpg	image/x-portable-bitmap	pbm
image/jpeg2000	jpg	image/x-portable-graymap	pgm
image/pipeg	jfif	image/x-portable-pixmap	ppm
image/png	png	image/x-rgb	rgb
image/tiff	tif	image/x-xbitmap	xbm
image/tiff	tiff	image/x-pixmap	xpm
message/rfc822	mht	text/html	htm
message/rfc822	mhtml	text/html	html
message/rfc822	nws	text/html	stm
text/css	css	text/iuls	uls
text/h323	323	text/plain	bas
text/plain	c	text/tab-separated-values	tsv
text/plain	h	text/webviewhtml	htt
text/plain	txt	text/x-component	htc
text/richtext	rtx	text/x-setext	etx

text/scriptlet	sct	text/x-vcard	vcf
video/mpeg	mp2	video/mpeg2-v	mpv2
video/mpeg	mpa	video/quicktime	mov
video/mpeg	mpe	video/quicktime	qt
video/mpeg	mpeg	video/vnd.rn-realvideo	rv
video/mpeg	mpg	video/x-la-asf	lsf
video/mpeg-s	mpg	video/x-la-asf	lsx
video/mpeg-v	mpg	video/x-ms-asf	asf
video/mpeg2-ps	mpg	video/x-ms-asf	asr
video/mpeg2-ts	mpg	video/x-ms-asf	asx
video/mpeg2-v	mpg	video/x-ms-wmv	wmv
video/mpeg4	mpg	video/x-msvideo	avi
x-world/x-vrml	flr	video/x-sgi-movie	movie
x-world/x-vrml	vrml		
x-world/x-vrml	wrl		
x-world/x-vrml	wrz		
x-world/x-vrml	xaf		
x-world/x-vrml	xof		

Source: MIME TYPE LIST

<http://www.microsoft.com/japan/TechNet/iis/mimejis.asp>
<http://www.plala.or.jp/access/community/phps/mime.html>

Appendix I (Reference - Informative)

Outline of the CNRI Handle System

5 1. Introduction

This appendix explains the processes and functions of the CNRI Handle System used in the Content ID Forum. This is based on the published sources detailed below. The specification for the CNRI Handle System is available on the "The Handle System" Web site (www.handle.net) Handle published by the Corporation for National Research Initiatives (CNRI). The Handle System's functionality, service definitions, and communication protocols have been submitted to the IETF as an Internet draft, and are currently awaiting comment.

Referenced materials and Web sites

- CNRI

15 Corporation for National Research Initiatives (CNRI)

<http://www.cnri.org/>

- The Handle System

<http://www.handle.net/>

- The Internet Engineering Task Force (IETF)

20 <http://www.ietf.org/>

- Handle System Internet Draft

"Handle System Overview"

<http://www.ietf.org/internet-drafts/draft-sun-Handle System-05.txt>

- "Handle System Protocol (ver 2.0) Specification"

25 <http://www.ietf.org/internet-drafts/draft-sun-Handle System-protocol-00.txt>

- "Handle System Namespace and Service Definition"

<http://www.ietf.org/internet-drafts/draft-sun-Handle System-def-03.txt>

- RFC

RFC1737, "Functional Requirements for Uniform Resource Names"

30 <http://www.ietf.org/rfc/rfc1737.txt>

RFC2044, "UTF-8, a transformation format of Unicode and ISO 10646"

<http://www.ietf.org/rfc/rfc2044.txt>

- Unicode Consortium

<http://www.unicode.org/>

35 - ISO

International Organization for Standardization

<http://www.iso.ch/>

- Handle Syntax

ANSI/NISO Z39.84

40 2. Explanation of terms

Table 2-1 provides definitions of the terms used in the Handle System.

Table 2-1: Explanation of terms

Term	Abbreviation	Definition
Handle	-	An identifier associated with metadata describing a specified digital resources
Naming Authority	NA	The element of the Handle identifier prefix, and indicates which Local Handle Service an identifier is registered with. The identifier is issued and registered with CNRI, which operates the Global Handle Registry. "1702" is used as an example of an NA identifier in this Specification.
Local Name	-	Unique value making up the identifier within the domain of a NA. The NA mandates the syntax of the suffix. In the case of cIDf, this is the Internal Center Management Number.
Global Handle Registry	GHR	The authority that manages the Handle globally via the Internet. LHS servers must be registered on the Global Handle Server. Currently, CNRI itself operates the GHR, but in the near future, a separate operating company may be established to fulfill this role.
Local Handle Service	LHS	The Handle management unit in the layer below the GHR. In cIDf identifier resolution, the LHS is operated by the cIDf's RA.
Uniform Resource Names	URN	Identifier indicating the location of a resource on the Internet. Example of notation: URN::=1702.120A/0102, etc. ¹ RFC1737(http://www.ietf.org/rfc/rfc1737.txt)

3. CNRI's Handle System

5 3.1 Overview of the Handle System

The Handle System comprise a technology and infrastructure which enable the global management of Handle identifiers which are expressed in the form of URNs within a unique namespace on the Internet. A Handle identifier is associated with one or more pieces of Handle metadata, and the Handle metadata is obtained by a user of the Handle System via the Handle identifier through a process of Handle Resolution (known here as "Resolution") through the Handle System. Figure 3-1 shows the relationship between the Handle identifier and its metadata.

Handle System clients use Handle System Resolution functions to "resolve" various items of Handle metadata (also described as "state data") through the registered Handle identifier. This resolution process can be carried out securely, through the use of authentication and encoding between clients and servers making up the Handle System, thus ensuring the reliability of Handle metadata. The management of the Handle System involves the addition, modification, and deletion

of Handle metadata registered in the Handle server. These management functions are carried out securely through the use of authenticating and encoded communications between the clients and Handle servers used.

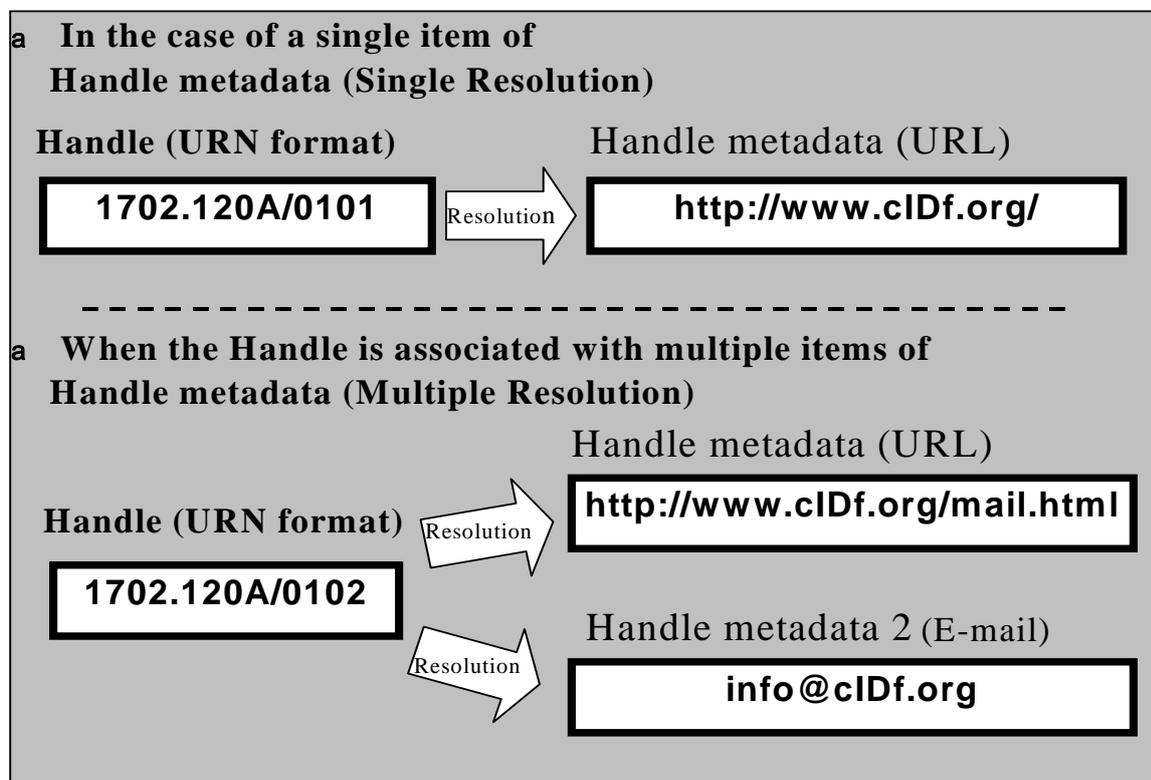


Fig. 3-1: The Relationship between Handle Identifiers and Handle Metadata.

3.2 Features of the CNRI Handle System

3.2.1 Uniqueness

All Handles identifiers assigned in the Handle System are unique. In this way, the Handle System enables users to uniquely identify Handle metadata from Handle identifiers.

3.2.2 Persistence

Handle identifiers can be used as long as they are registered in the Handle System, and even if the Handle metadata associated with the Handle identifier is changed, there is no need to change the Handle identifier itself. For example, if the Handle metadata is a URL, and that URL is changed, the Handle identifier itself does not need to be changed provided the user to which the Handle identifier was assigned notifies the change of Handle metadata (the new URL) to the LHS.

3.2.3 Management of multiple items of metadata

¹ The Handle NA(1702) used here only as an example; cIDf plans to apply for a new Handle NA identifier.

In the Handle System, one Handle identifier can be associated with multiple items of Handle metadata. In this way, different data types, such as URLs and e-mail addresses, can be associated with the Handle as Handle metadata. Each of these individual items of Handle metadata is given a different index value to enable ease of management.

5

3.2.4 Scalability

The Handle System can be expanded as required, by registering new Local Handle System Handle namespaces within the Handle System registry. In this way, a layered namespace configuration can be created within the Handle System although this is not the only mechanism for system scalability within the Handle System.

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3.2.5 Accommodates internationalization

The Handle system use Unicode 2.0 to express Handle identifiers, so diverse languages can be used for the Handle itself. For example, it is possible to utilize Japanese or Korean characters in a Handle, so long as these are expressed in Unicode.

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3.2.6 Distributed service model

The Handle System operates on a layered service model. By creating a layered service model, it is possible to distribute Handle management and resolution. When there is a request for Handle resolution, the GHR, located in the top layer, routes the request to the appropriate Local Handle Service located on a lower level for Handle response.

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3.2.7 Secure Resolution Services

In the Handle System protocol, secure communications can be provided, requiring the client to undergo authentication by the Handle server. This authentication can use either public/private key or secret key cryptography, which enables secure resolution of Handle identifiers, and assures the authenticity of Handle metadata. Within this authentication process, there should be no possibility of misidentification of parties and no chance that the details of the resolution can be seen by parties other than those for which it was intended.

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3.2.8 Distribution of management servers

The Handle System, through authentication between Handle server and client Handle, is able to protect management transactions from any location on the network. "Management transactions" in this context means registration, amendments, and other operations involving the Handle identifier and the Handle metadata.

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3.2.9 Efficient Resolution

The infrastructure for resolution within the Handle System is an efficient architecture that

ensures a constant high level of performance.

4. Handle™ Identifiers

5 4.1 Handle format

- Handle

Handle ::= <Naming authority> / <Local name>
Prefix Suffix

- Prefix

< Naming authority >= *(Naming authority.)<NA segment>
 "*" indicates optional characters
 (0 characters or more)
 Naming Authority is abbreviated as NA

<NA segment >= A unique value identifying a subsidiary naming center under the control of the NA (character string)
 1 or more characters; value is Unicode 2.0 characters encoded in UTF-8. Note, however, that ASCII codes “.” and “/” are defined in the Handle format to express other specific functions, so cannot be used.

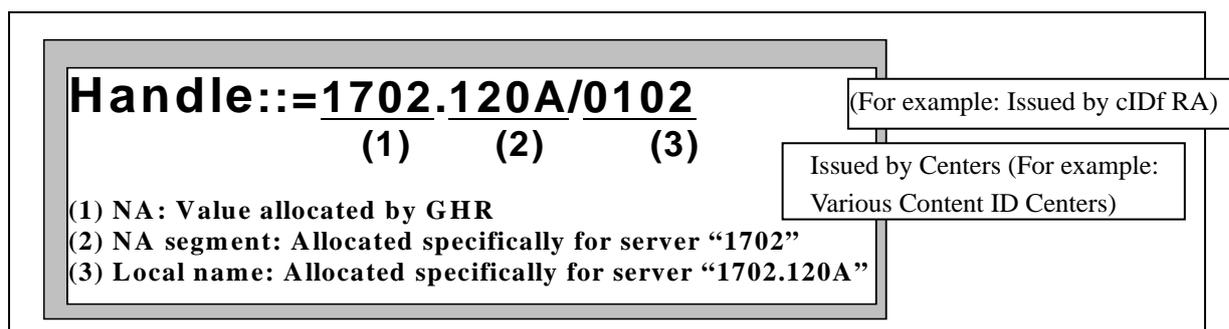
- Suffix

<Local name>= Unique value
 *Value of the range (%x00 to FF)
 The value is Unicode 2.0 characters encoded in UTF-8.

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4.1.1 Handle identifiers

Handle identifiers are made up of a prefix and a suffix. The prefix and suffix are divided by the separator symbol “/”.



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Fig. 3-2: Handle Identifier Format

4.1.2 Prefix

The first element of the prefix is the value allocated by the Global Handle Registry (GHR) to the Naming Authority (NA) . The second element of the prefix (the “NA Segment”) is the value allocated by the Naming Authority (NA) to the individual naming center. Two characters are

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reserved for specific use: “.” (period) and “/” (slash). The period is the symbol used to divide the NA the prefix, and the slash is the symbol used to divide the prefix and the suffix.

4.1.3 Suffix

5 The local name is a unique value. The characters that express the suffix use Unicode¹.

4.1.4 Separator

Expressed as the symbol “/” separating the prefix and suffix.

10 4.2 Character code

The values expressing the Handle identifier use Unicode 2.0 characters. Using Unicode 2.0² makes it possible to use languages other than English and numerals for the Local Name. UTF-8³ is used for Unicode encoding.

15 5. Handle metadata

A single Handle identifier can be associated with more than one item of Handle metadata, and multiple items of Handle metadata are categorized using an Index. Table 5-1 shows the Handle metadata categories. Figure 5-1 shows a Handle metadata model for multiple resolution in cases where the Handle has multiple items of Handle metadata.

20

cIDf Handle metadata must always include identification of the digital content location in URL format. A user wishing to resolve a Handle identifier obtains the URL which is the Handle metadata. In the case of multiple resolution, it obtains the first URL value returned by the server.

¹ Unicode is a code system for expressing the languages of various countries in double byte characters. Unicode has been standardized by ISO as UCS-2(*2) in ISO/IEC10646. Unicode is now able to express Japanese, as well as Korean, Chinese, and other languages using two bytes in the same way. Unicode is a Java standard character code used in Handle System installations. Unicode Consortium: <http://www.unicode.org/>

² UCS-2 is an international character set stipulated by ISO as ISO/IEC 10646-1. UCS stands for “Universal Character Set.” It defines the characters of most of the world’s languages. UCS-2 expresses these language characters in double byte form. UCS-2 includes Unicode. **International Organization for Standardization (ISO):** <http://www.iso.ch/>

³ UTF-8 is a method of encoding that enables computers to easily handle characters defined in Unicode (a part of UCS-2). UTF stands for “UCS Transformation Format.” UTF-8 encodes each character in variable lengths from 1-6 bytes. **RFC2044:**<http://www.ietf.org/rfc/rfc2044.txt>

Table 5-1: Handle metadata categories

Category	Details
<index>	Unique value for Handle metadata. Expressed as a non-encoded 32-bit integer.
<type>	Value that expresses the data storage format. Expressed as a value encoded in UTF-8. In the Handle System, a specified format is established in advance.
<data>	Data value (format according to data type). Set as specific information.
<permission>	Status of authority for accessing Handle metadata. Expressed as an 8-bit flag.
<TTL>	“Time To Live”— validity period for Handle metadata.
<timestamp>	Value for date and time of last Handle metadata update. Expressed as a non-encoded 8-bit integer.
<reference>	Handle metadata for reference. Expressed as a non-encoded 4-bit integer.

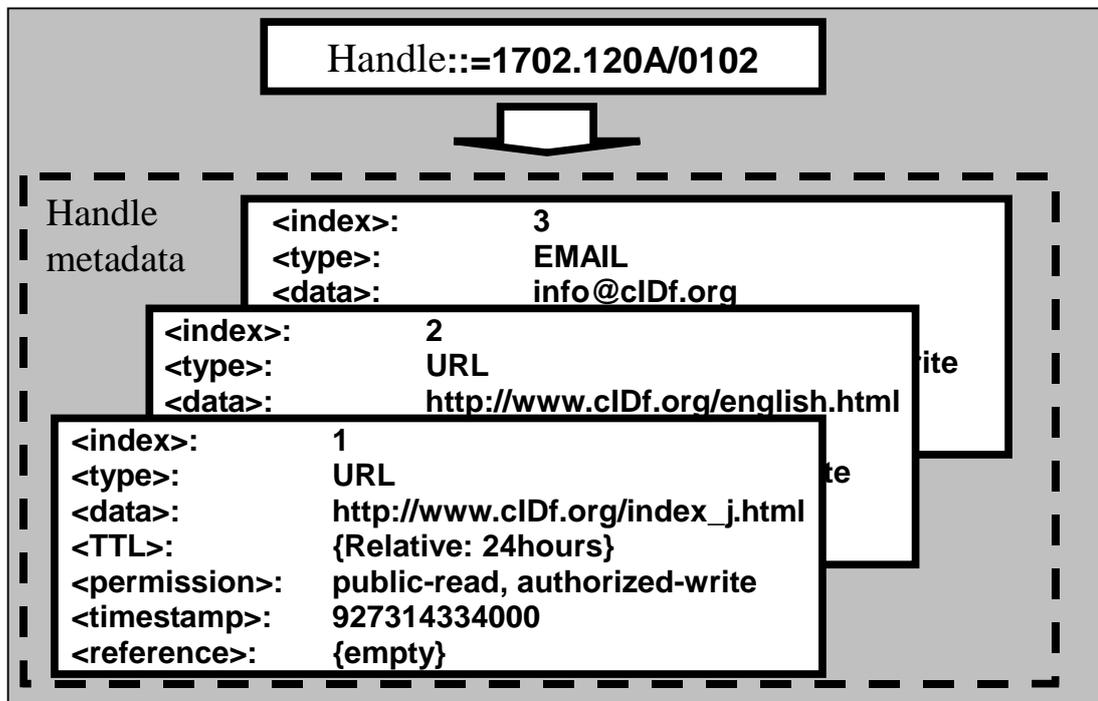


Fig. 5-1: Handle metadata

5 **6. Handle System Architecture**

The Handle System has a layered service model. The highest layer of the Handle System is the Global Handle Registry (GHR), being the only layer in the Handle System that provides services on a global scale. All individual Local Handle Services (LHS) operate under the GHR. In the LHSs, the server itself becomes the Naming Authority, and other LHSs can be placed under this for
10 management and execution of Handle Resolution.

In this way, the Handle System is comprised of individual Handle services, each of which providing independent Handle services to make up a distributed layered system. In the Handle System,

there is no limit to the number of these layers or the number of Handle Systems.

Figure 6-1 shows the structure of GHR and LHSs in the Handle System. Table 6-1 shows how the Handle NA are allocated using the example shown in Figure 6-1. although the actual identifiers are fictitious.

5

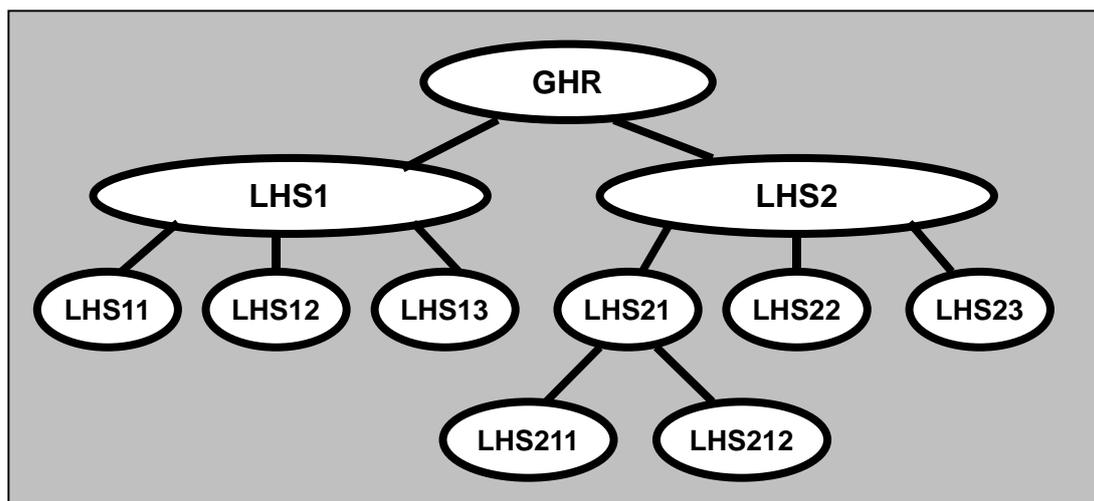


Fig. 6-1: Handle System structure

Table 6-1: Example of NA allocation

LHS	NA*	Management LHS
LHS1	1702	GHR
LHS11	1702.111	LHS1
LHS12	1702.222	LHS1
LHS13	1702.333	LHS1
LHS2	20	GHR
LHS21	20.10	LHS2
LHS211	20.10.10	LHS21
LHS212	20.10.20	LHS21
LHS22	20.12345	LHS2
LHS23	20.777	LHS2

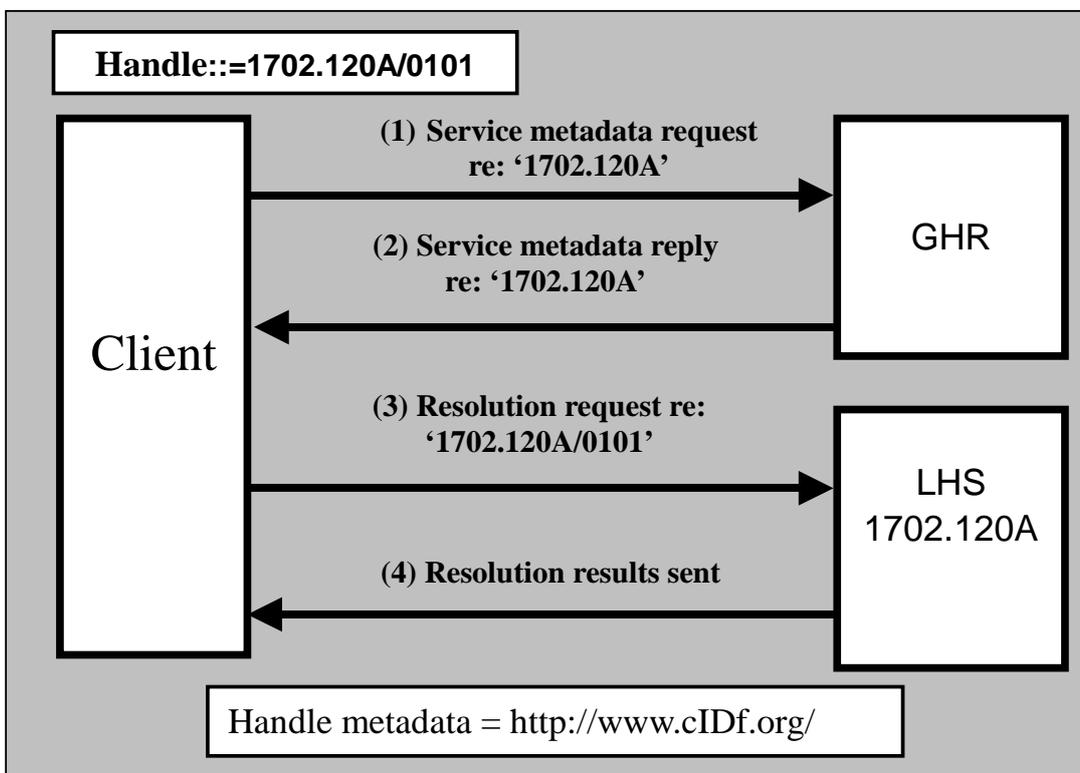
7. The Handle Resolution Process

10 Using the Handle System, it is possible to conduct a Handle resolution from a Client via the Internet. Each individual Handle is associated with an item of Handle metadata. Using the Handle System service, the Client resolves the Handle in question to the Handle metadata. The Handle metadata include values, data formats, and a unique identifier (index). The client can thus designate either the index number or and the data format for the Handle metadata, and derive the

required values.

7.1 The Process Flow of Handle Resolution

- 5 In the process of resolution in the Handle System, the client makes a request to the Global Handle Registry for service metadata identifying the Handle identifier's Naming Authority, and obtains that Naming Authority service metadata. The client then executes Handle resolution to the relevant Local Handle Service based on the metadata obtained, and then receives the targeted Handle metadata.



10 Figure 7-1 The process flow of the Handle resolution.

7.2 The Handle Resolution method

The resolution technology provided by CNRI includes both libraries of client software routines and a Web browser plug-in.

15 (1) The library

CNRI provides a C Client Library and a JAVA Client Library, which can be used for the development of client applications. In this way, Handle resolution can be enabled from within various programs.

(2) The plug-in

- 20 CNRI enables resolution from a Client in the form of a Web browser plug-in. Using this plug-in,

the Client can execute Handle resolution and derive Handle metadata (URLs) by specifying the Handle identifier described as an anchor (<a> tag) in HTML. Operating systems currently accommodated are Windows 95, Windows 98, and Windows NT.

5 **8. Handle System cache service**

The Handle System cache service is a service that temporarily stores Handle metadata derived by the Client from the Local System Server. In this way, from the next Handle resolution undertaken, the speed of responses between the Client and the same LHS increases, and at the same time the volume of network traffic is be reduced.

10

Handle metadata stored by the Handle System cache service updates the TTL (validity time) included in the Handle metadata. When the TTL reaches '0' the Handle metadata is deleted from the cache service.

15 **9. Handle System proxy service**

The Handle System can resolve the Handle identifier using a Handle System proxy server. The proxy server is accessed using an HTTP request, sending the Handle to the URL of the proxy server. The request redirected by the Handle System proxy and the Handle System responds with the appropriate Handle metadata.

20

CNRI proxy server address: <http://hdl.handle.net/>

Resolution example) <http://hdl.handle.net/1702.120A/0102>

↓

25

<http://www.cIDf.org> can be obtained

10. Handle System authentication

10.1 Authentication and complete data provision service

30

During the process of Handle resolution, client authentication is not typically undertaken. However, in the case of Clients seeking to maintain the System, such as the addition or amendment of Handles™, authentication is carried out. The Handle Client can communicate using either public or private key encryption for authentication.

35

The Handle System Client can also request a digital signature from the Handle server to obtain guaranteed Handle metadata from a resolution request. Encoded sessions in which the confidentiality of data is guaranteed can be used for forwarding Handle metadata safely.

10.2 Server-based client authentication

Because Handle System management is carried out via the Internet, only authorized Handle managers can execute these operations. At the moment the Handle System authentication protocol is used by authorized Handle managers for communications between the Handle server and the authorized Client. The Handle System protocol does not provide server authentication. The Client can, however, confirm the server's response by requesting a digital signature from the server. Client authentication is required for regular Handle management requests such as additions, deletions, and changes in Handle metadata. Only the authorized Handle manager for the Naming Authority can add or delete Handle identifiers, or conduct management of sub-Naming Authorities. Local Handle Services can conduct authentication and define authority levels at their own discretion. Normally, the authentication is conducted using public keys.

10.3 Authentication sequences

The Handle System undertakes Client authentication using the "Challenge Response Protocol." After receiving the Client's request, in situations where authentication is required, the server issues a random number for the Client and adds to it an MD5 hash value of the Client's original request. The Client must then carry out a key exchange in order to receive authentication as a manager by the Handle server. The key exchange may use either a private key or the Client Handle manager's personal key. When a private key is used, the Client returns the message authentication code (MAC) from the Handle server's random number using the Handle manager's private code. If a public key is used, a digital signature is derived from the random number originally sent by the Handle server and the manager's private key and then returned. The server can confirm the response signature by using the manager's public key, thus allowing authentication of the Client.

25

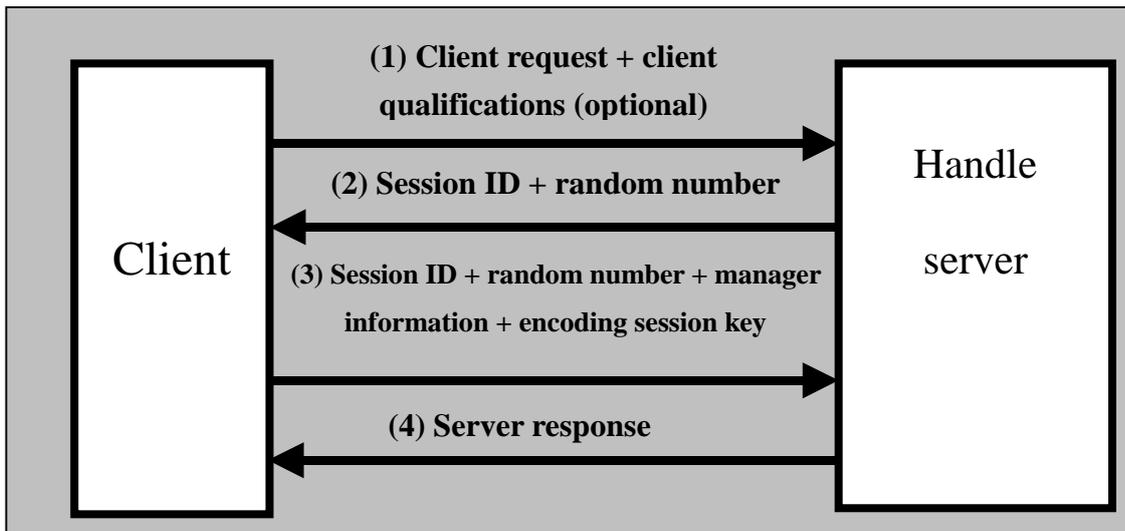


Fig. 10-1: Handle System Authentication Process

11. Handle System Management Service

5 The Handle System management service conducts processes such as additions, changes, and deletions at the request of Clients. Handle System management can be conducted by a Naming Authority provided it has appropriate management authority. It is possible to set authority levels for at the level of individual Handle identifiers, which thus enables the separate management of each individual Handle. When carrying out management tasks through the Handle System management service, a protocol is used whereby the tasks can only be carried out after authentication of the Client wishing to carry out the task.

11.1 Handle managers

15 A Manager ID and Manager Handle is required to conduct Handle System management. The Handle server conducts authentication using this Manager ID and Manager Handle.

(1) Manager ID

The Handle Systems uses Handle management identifiers to uniquely identify Handle managers.

(2) Manager Handle

20 Manager Handles (unique identifiers of those authorized to manage Handles) are an integral part of the process of authentication for the purposes of Handle management.

11.2 Manager Handle metadata

(1) Administration value

25 "HS_ADMIN" type is one item of Manager Handle metadata. There is a special index value for management of this handle, and a manager value (starting from 100) is allocated. When the Handle information has more than one manager index, the index numbers are allocated in order in the 100s, (101, 102...). This manager type value can be maintained by parties that have received

manager authentication, or by members of manager groups.

(2) Public key

Another item making up the Manager Handle is a public key (“HS_DSAPUBKEY”). The public key index is allocated starting from 300. When the Handle has multiple public key associations, index numbers are allocated in order (301, 302...). This index is required for Handle management authentication.

(3) Private key

Another item making up the Manager Handle is a private key (“HS_SECKEY”). The secret key index is allocated starting from 300, as in the case of public keys. This index is required for Handle maintenance authentication. Secret keys must as a rule be unreadable, so do not appear in Handle authentication.

(4) Group value

Group values are set in the Handle list. Group values enable differentiate of public keys, secret keys, and other groups. If the manager group is used as the administration value, then all group values will be managers.

11.3 Addition of managers under the Naming Authority, and the generation of Management Handles

When creating a new Naming Authority, the new Naming Authority is granted authority for Handle generation and management. This enables the addition of Manager IDs and Manager Handles to the manager list.

When Manager Handle generation is actually requested in the Handle System, metadata is sent to the Naming Authority to enable authentication of the intended Handle Manager. If this request is for authentication is accepted, the Manager Handle is generated.

Appendix J (Reference - Informative)

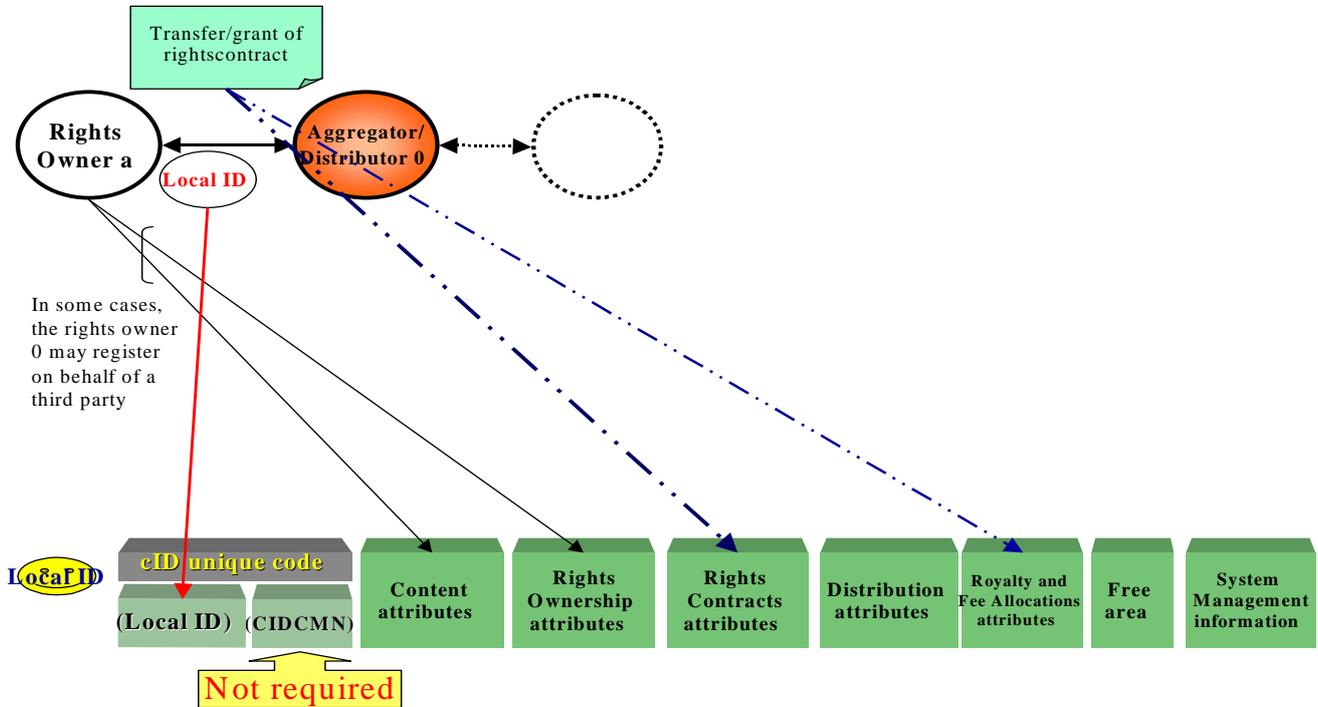
Explanation

In this appendix cIDf illustrates a number of issues, as a supplement to the main Specification. These examples are not based on actual implementations, but are representations of abstract ideas from the developers of the Specification. This should be taken into account if seeking to apply these examples to real systems.

Examples of the application of cIDf for various Digital Content Distribution Models

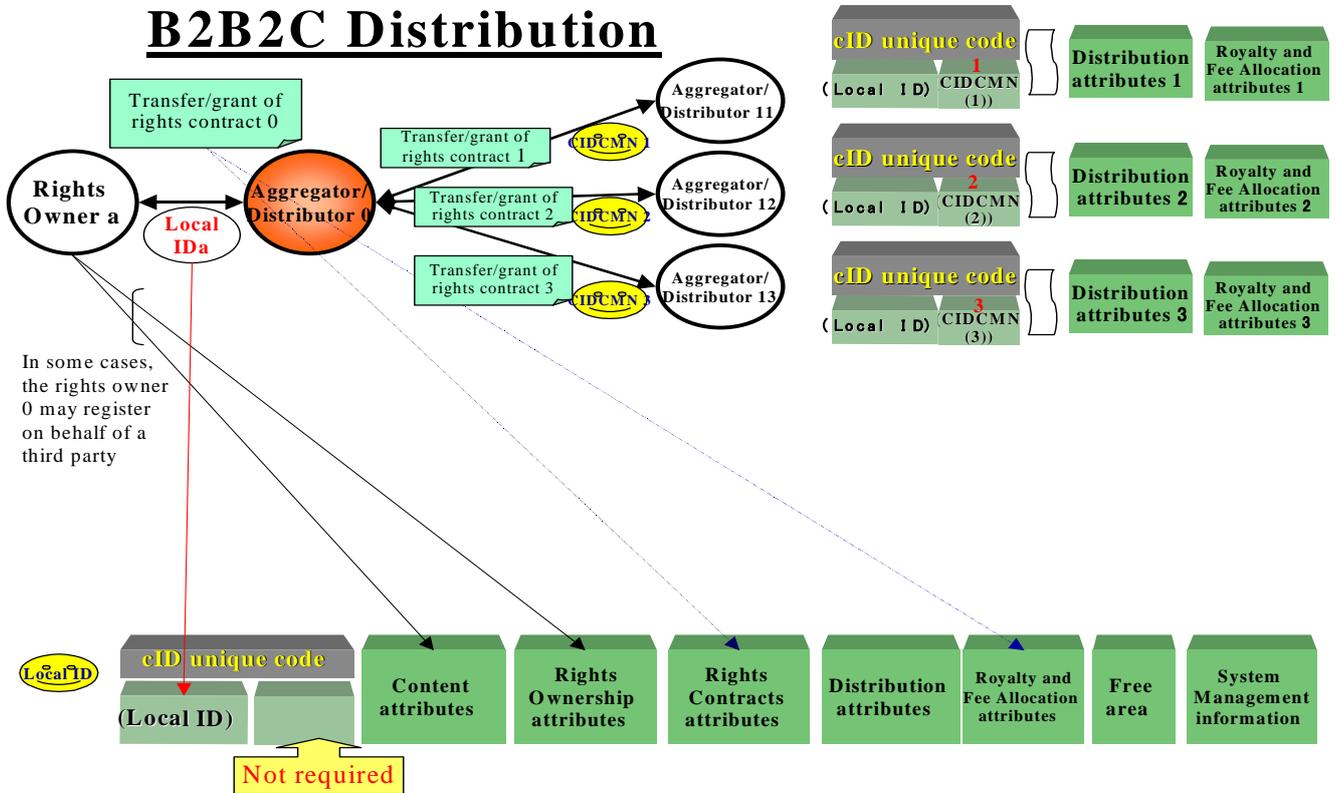
There are various models of Digital Content Distribution, including B2B, B2C, B2B2C, and P2P. Taking a broader view, there are also models such as trade markets and archives. cIDf consider that its Specification can be applied to all these various models. Some examples are described below. It should be borne in mind that the descriptions given here are only examples, and should not be considered to have the force of regulation for actual implementations of the Specification. In the future there may be actual implementations of or prototype experiments for this Specification. cIDf anticipate debate about these implementations or prototype experiments, which will contribute to future revisions of the Specification.

B2B Distribution



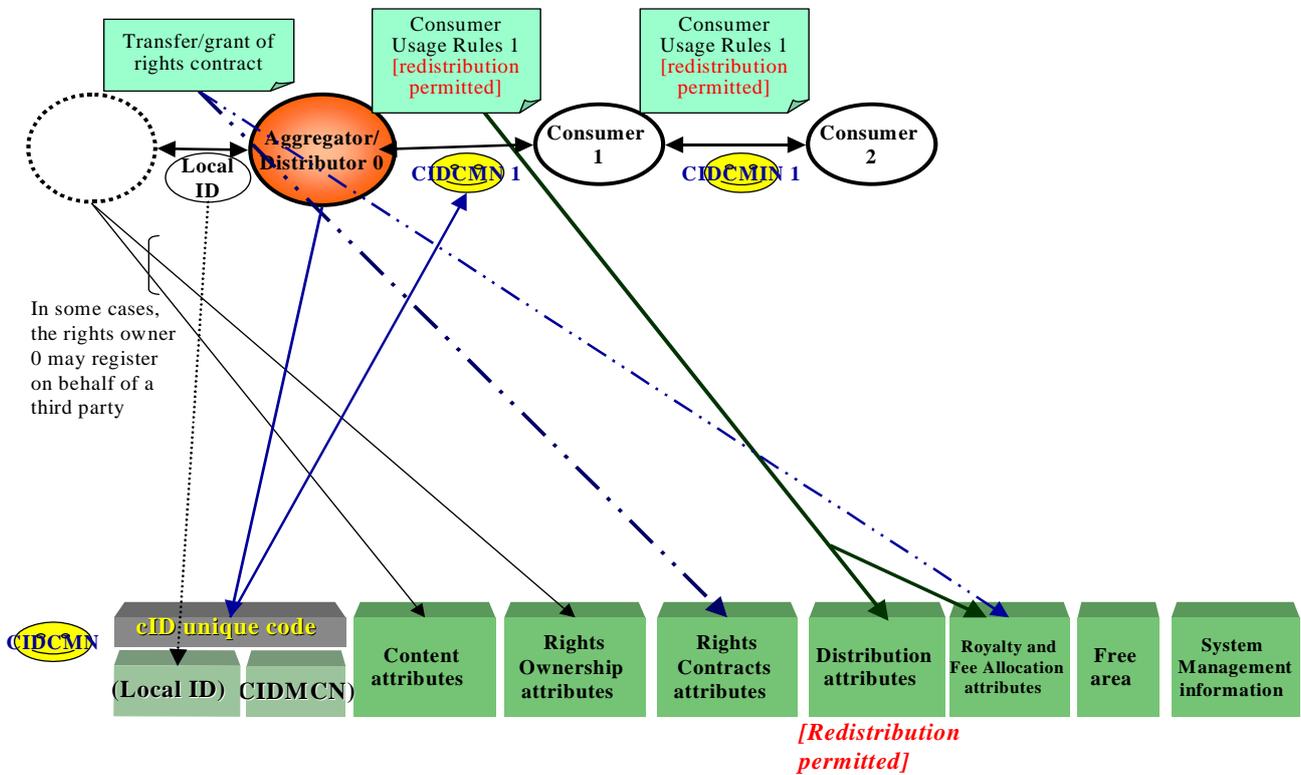
The goal of B2B distribution models is to conduct digital content management between business operators based on a common framework. For this reason, local IDs agreed between the parties are used as the initial identifier. In this example, as the digital content is not for distribution, a CIDCMN and related Distribution Attributes are not required. If Aggregator/Distributor 0 carries out digital content distribution in the future, a CIDCMN can be issued and the Distribution Attributes defined at that point.

B2B2C Distribution



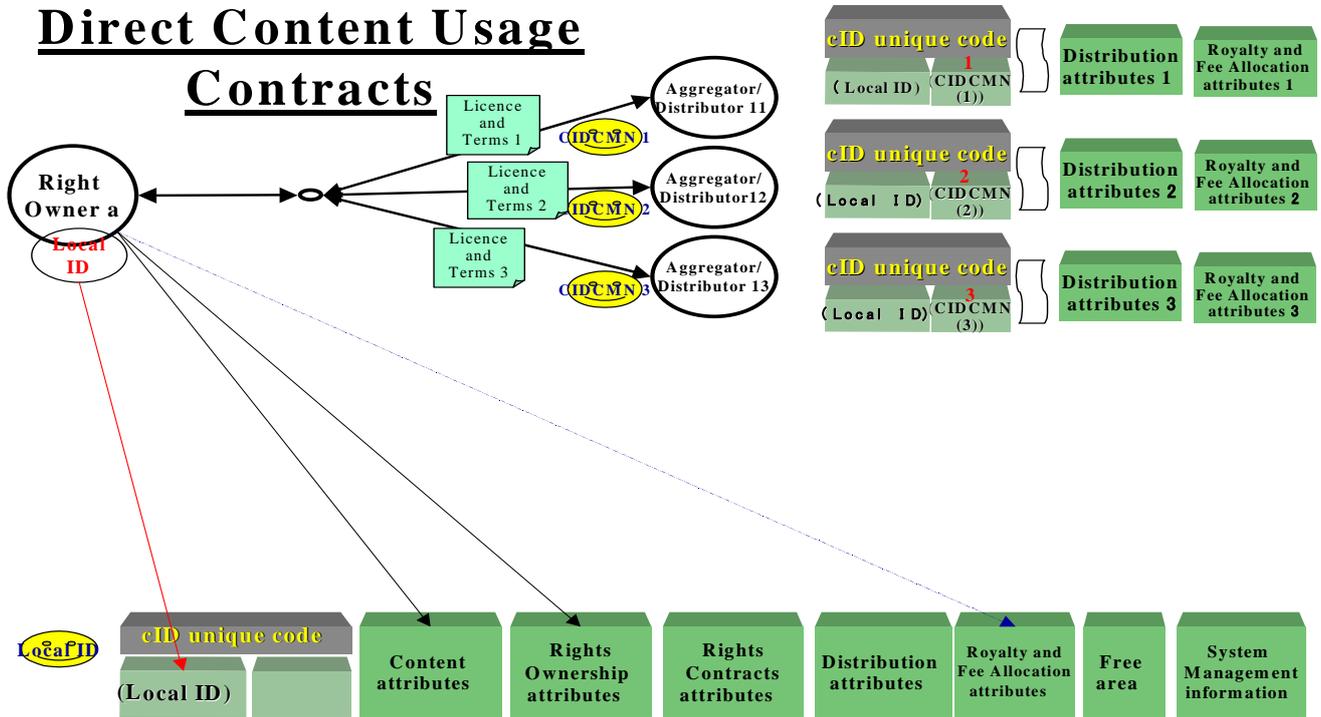
The B2B2C Distribution model is a combination of the B2B and B2C models. In this context, Aggregator/Distributor 0 issues a separate CIDCMN for each subsequent Aggregator/Distributor (e.g., for each broadcaster, communications operator, or other intermediate distributor). At this time, the local ID remains unchanged, but a different value is allocated for each instantiation of the digital content. In the metadata associated with each new CIDCMN, the metadata associated with the Local ID from the B2B model are copied, and the distribution attributes are set based on the license terms for each subsequent Aggregator/Distributor with royalty and fee allocation attributes being updated as required. There may be changes in other attributes as well.

P2P (Peer-to-Peer) Distribution



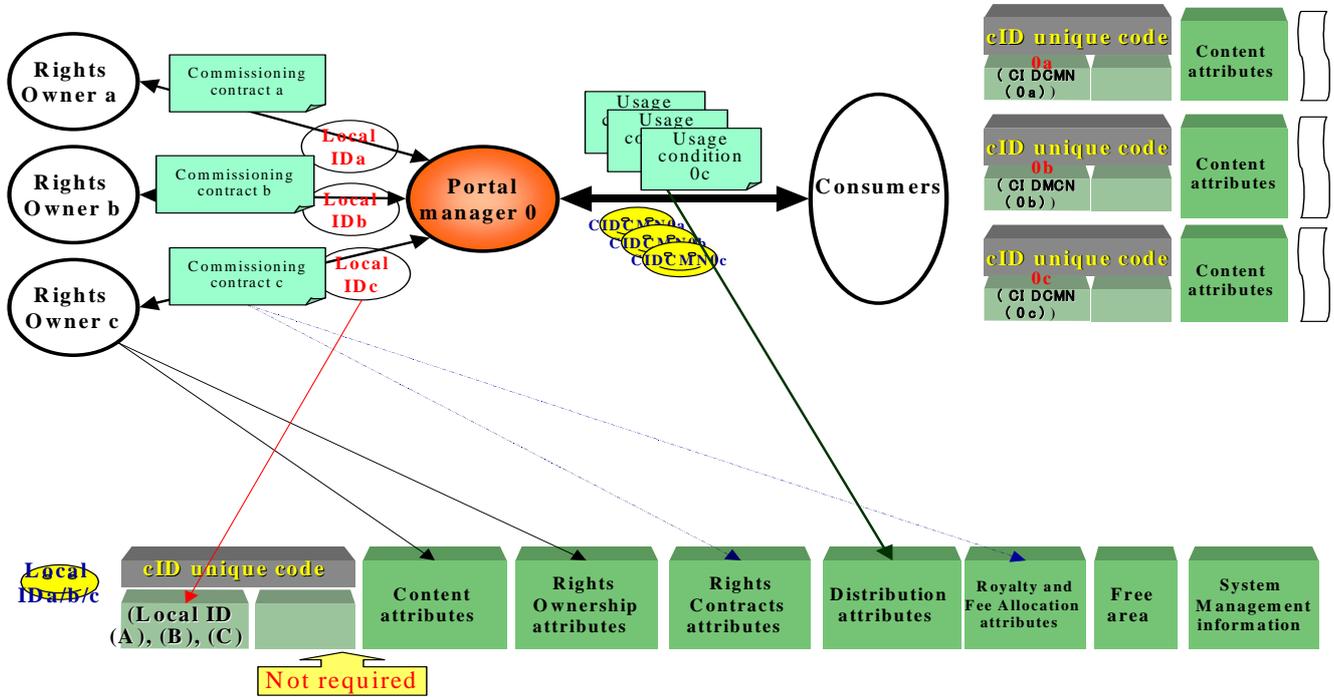
In the context of applications using the P2P model, redistribution is permitted and is set as a Distribution attribute for digital content distributed by Rights Owner 0. The Consumer can then redistribute the digital contents received based on the distribution attributes without changing the CIDCMN. It is however possible to give the contents a new CIDCMN if preferred.

Direct Content Usage Contracts



The direct content usage contract model is equivalent to the B2B2C model although there is no preliminary Aggregator/Distributor acting as a mediator. In this model, Rights Owner A directly issues a separate new CIDCMN for each Aggregator/Distributor (e.g. for each broadcaster, communications operator, or other intermediate distributor). At this time, the Local ID maintains the same value, but a different value is allocated for each instantiation as CIDCMNs (1),(2) and (3). The Rights Contracts attributes remain open as these are being determined directly with the three Aggregator/Distributors. The common Local ID may also be issued.

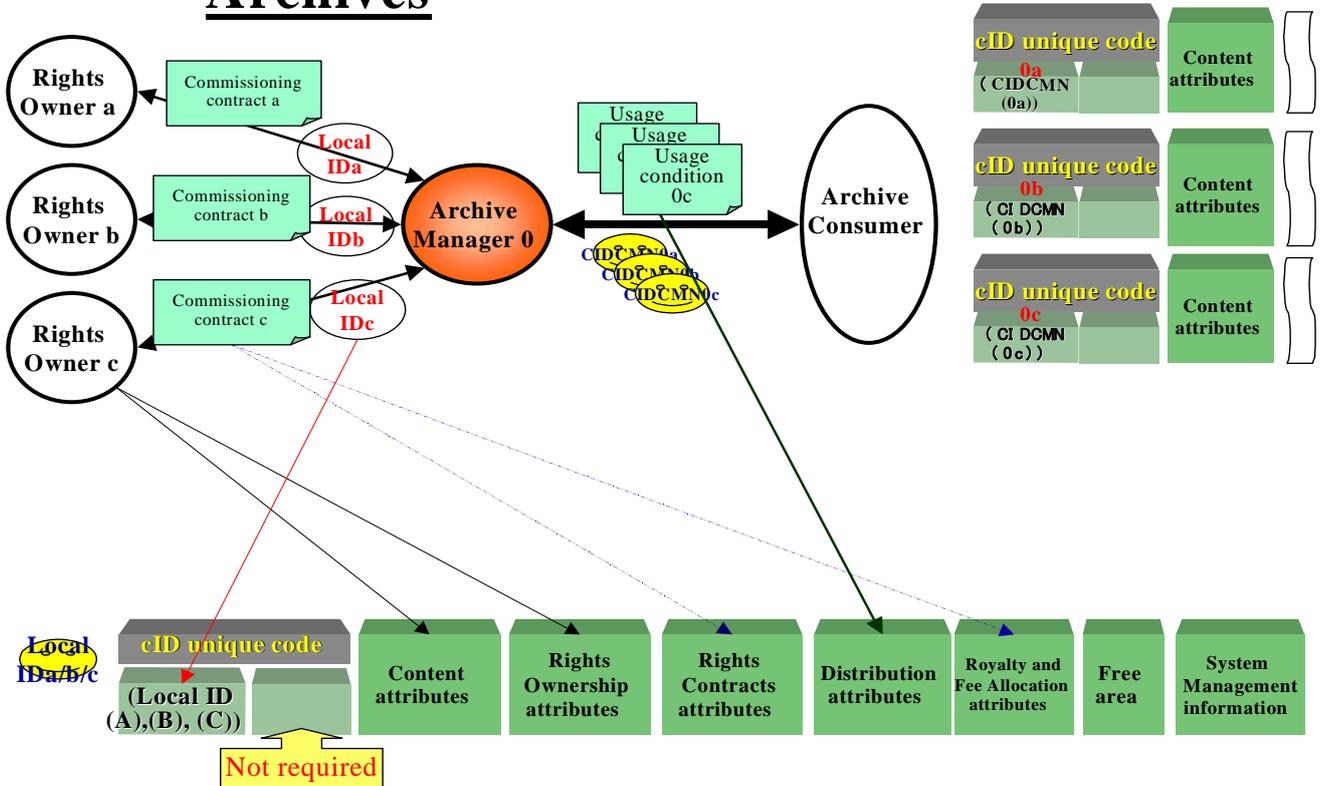
Content Portal Model



5

In a Content Portal Model each Rights Owner attaches individual License Terms to his own content item, and makes them available through the Content Portal by placing them with the Content Portal manager 0. At this time, a Content ID (Digital Item ID) segment in the form of a Local ID is given to each content item. The Content Portal manager 0 defines the Distribution attributes for Consumers which take into account the License Terms granted for the digital content placed on the portal and presents these to Consumers.

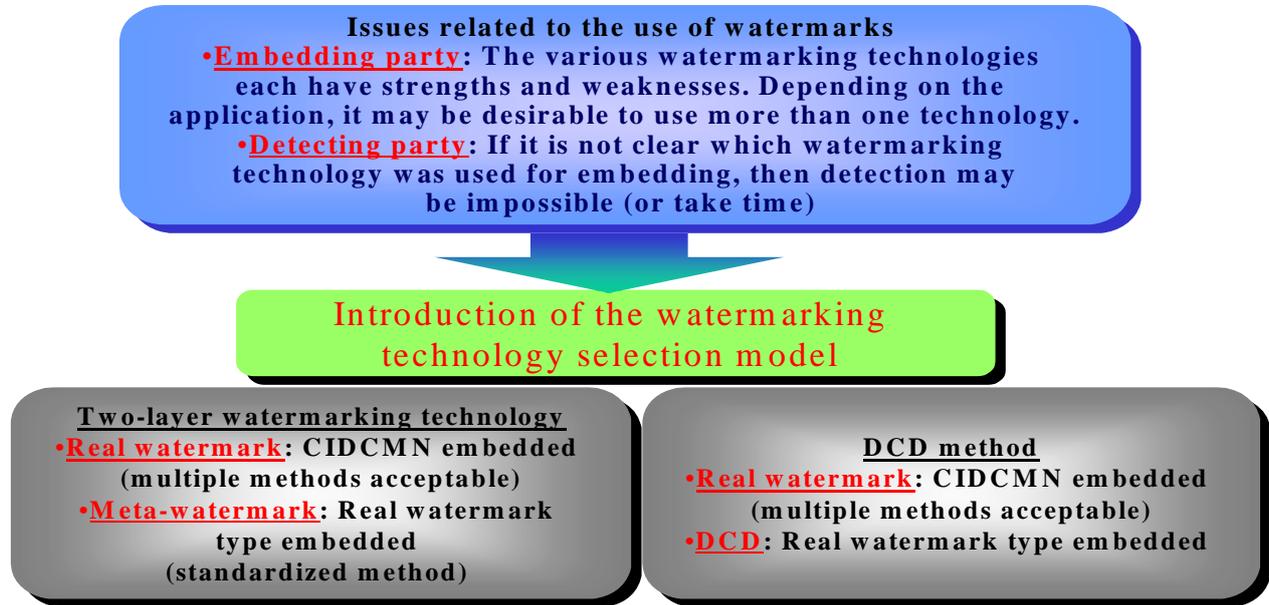
Archives



5 In Archives, each Rights Owner attaches License Terms to his own digital content items and places them in the care of Archive Manager 0. At this time, a Content ID (Digital Item ID) segment in the form of a Local ID is given to each content item. Archive Manager 0 sets Distribution attributes for the archived digital content within the scope of the License Terms granted and presents these to the Archive Consumers.

10

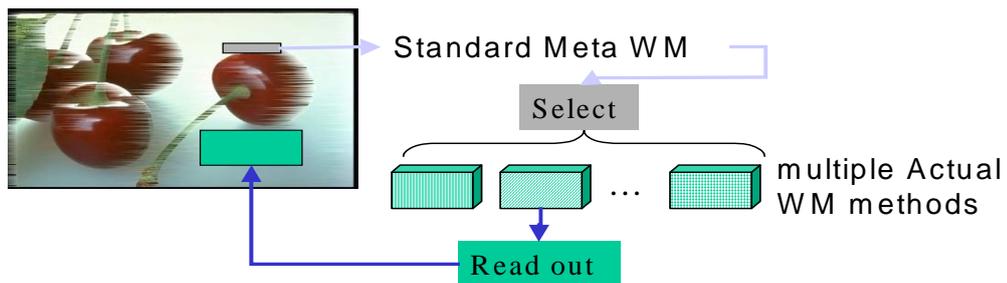
Watermarking Technology Selection Model



- Two Layered Watermarking (Meta-Watermarking) -

Embed two different messages into each content by two-layered WM.

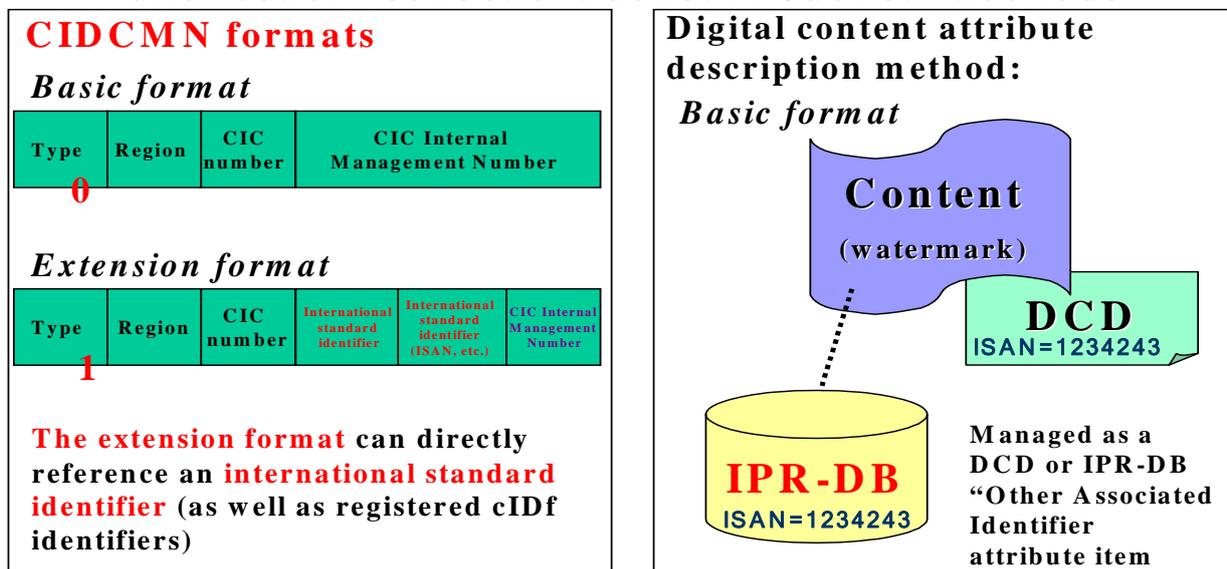
- **Meta WM:** To identify the actual watermarking method.
- **Actual WM:** To embed the CIDCMN.



Benefit: **Embedding side** can select a watermark method depending on application needs and the properties of a content, while **detection side** can know which watermark method is used for a content.

The principle of the two-layered watermarking

Content ID Center Management Number Formats and Other Content Identification Methods



Content ID Formats and Other Content Identification Methods

5 These different formats can be applied to different usage scenarios. For example, consider a case in which a movie purchased from Hollywood is distributed in Japan. At this time, it can be assumed that a unique identifier (ISAN=e.g. 1234243) has already been assigned to the movie.

<Use basic format (type 0) for CIDCMN >

10 The CIDCMN has been allocated based on standard policies of the CIC that manages the digital content in question. Also, attributes describing the digital content are registered. The ISAN code, based on the ISAN notation method, is included in the metadata (in the "other code systems" element)

15 <Use extension format (type 1) for CIDCMN >

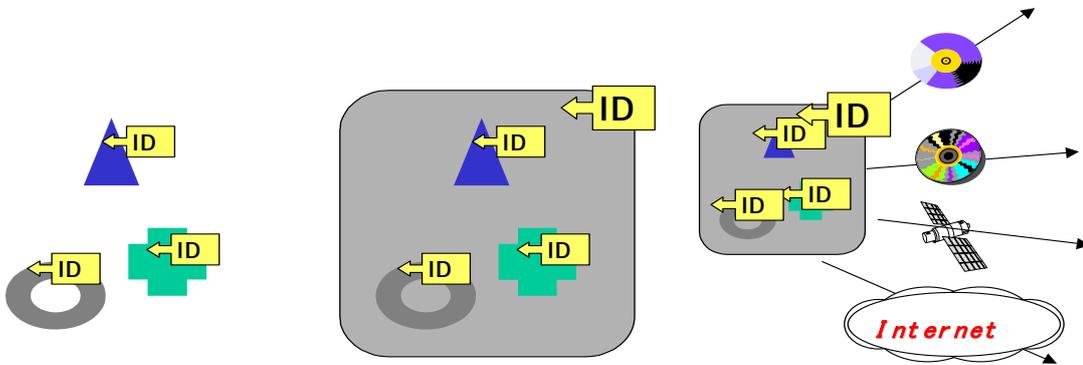
20 Within the CIC Internal Management Number which makes up part of the CIDCMN the value for expressing ISAN (Value = '0') is set in the Identifier System Type identifier sub-field, and the actual ISAN identifier is the value given to the CIC Internal Management Number value sub-field. A further sub-identifier¹ is set in the distribution identifier sub-field following allocation of the above identifiers in accordance with the identification allocation standards devised for the CIC that manages the digital content in question.

¹ There are many standard identification systems operating today, such as those allocated to sound recordings or motion pictures. The cIDf Specification includes the significant feature of permitting the assignment of separate identifiers to each package of digital content items that is distributed.

Both the basic format and the extension format can be used, in the context of cIDf resolution, to the Local code system registered with and managed by the cIDf Registration Authority. An example of where this might be necessary would be a situation in which the digital content, for which the CIDCMN has already been assigned by a CIC is purchased, and then re-distributed within a different CIC environment .

In this type of situation, if consent is given by the various parties involved, the following would be possible: the information embedded in the content item using electronic watermarking remains and the CIDCMN to be put in the header becomes the new CIDCMN for the package digital content issued by the CIC where the package of digital content for distribution is registered.

Methods of Allocating Identifiers to Digital Content

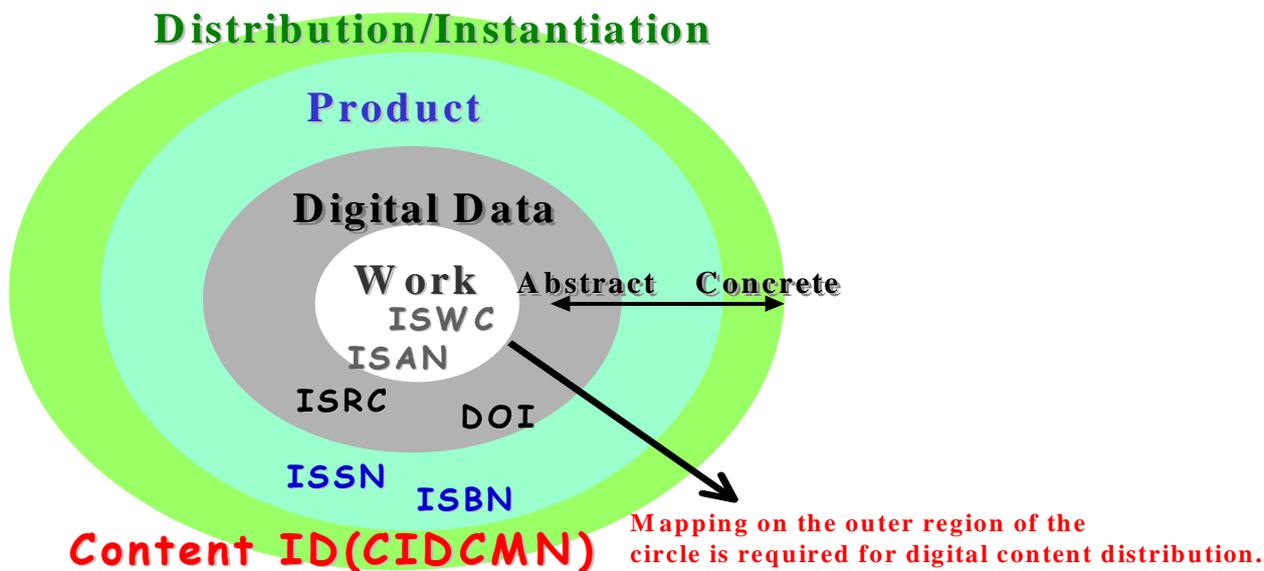


Allocation to items of digital content at the time of creation

Allocation to packages of digital content

Allocation at the point of distribution of packages of digital content

Unique Identifier Targets



Unique Identifier Targets

5

The cIDf Specification is an identification system which targets the distribution of digital content (on the extreme outer circle). It allows differentiation of digital content items based on the identification of different distribution instantiations, even where the digital content contained in those different instantiations contains:

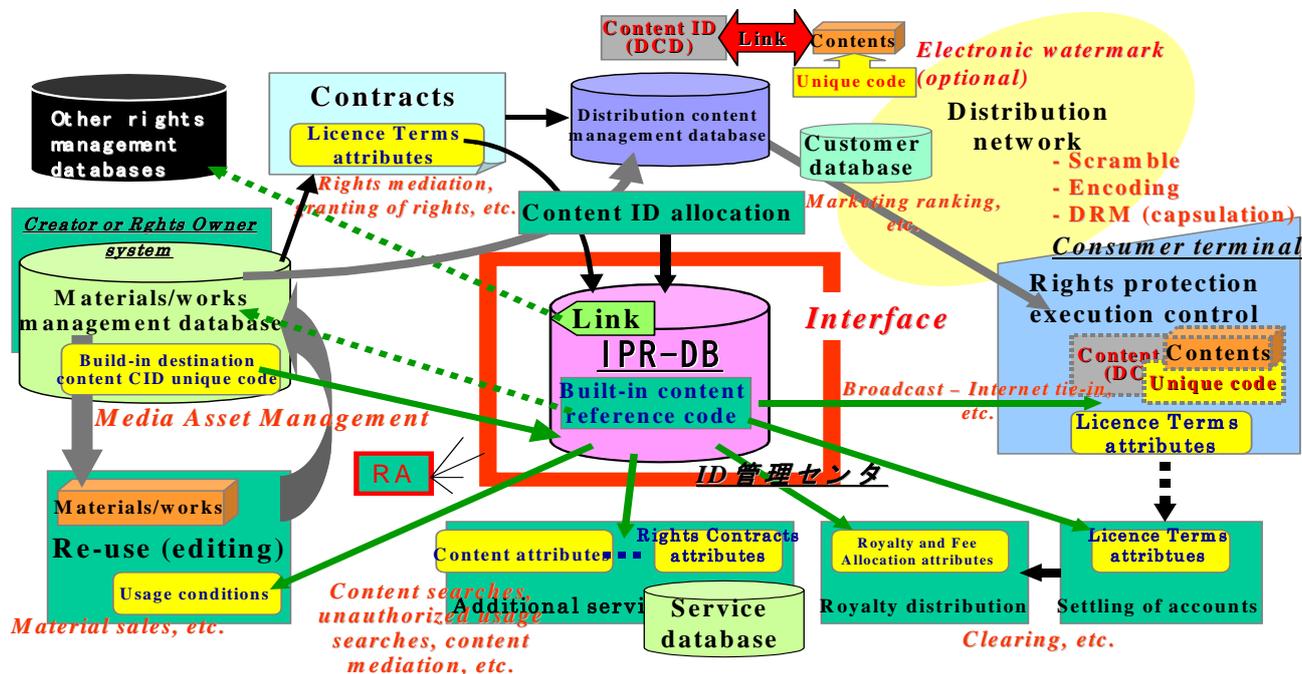
10

- ❑ An identical content item
- ❑ Identical digital data or
- ❑ An identical package of content items.

15

The cIDf Specification allows differentiation, by means of separate identification, between a free sample version of a piece of music and the paid version of the same music.

Content Distribution and Content ID

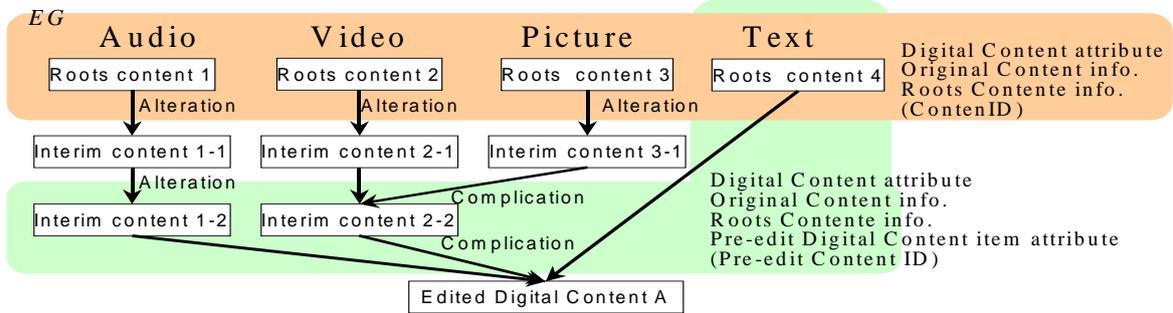


Content Distribution and Content ID

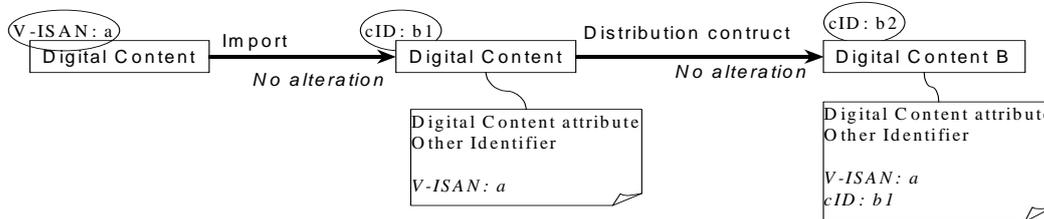
5 The scope of standardization within the cIDf Specification encompasses unique identification and description (attribute metadata), DCDs, methods of linking identifiers to digital content, IPR-DB
 10 access interfaces, Registration Authorities, and Resolution. The functionality enabled by the cIDf Specification could be used in a variety of digital content distribution scenarios. For example, digital content attributes could be referenced in search services by third parties, while distribution attributes and royalty and fee allocation attributes could be referenced by a clearing house service
 15 run by a third party. Furthermore, distribution attributes can be used in the generation of Consumer usage "rules and limitations" metadata for incorporation in the DRM systems used to protect the digital content delivered to the Consumer.

20 The cIDf Specification enables logical, centralized management within each individual CIC. Because cIDf metadata attributes are made up of items generated by various players involved in digital content distribution, however, there may be cases in which it is inappropriate for the original metadata associated with an item of digital content to be managed at source. In these cases, a link can be established from the CIC IPR-DB to the original metadata, and copies of the original metadata can be forwarded regularly to the CIC, in order that the player from whom the metadata was received is also able to manage physical distribution of their content.

Metadata description script; Format

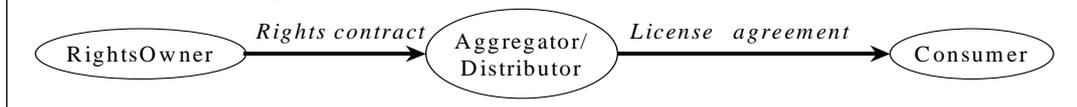


* The attribute express "format" and the Linkage with rights information are't specified. But they may be described in the attribute "Annotations".



Metadata description script; Contract

Model Rights Licensing



Digital Content 1

Rights contract 1		Rights contract 2		Rights contract 3	
Rights Owner 1		Rights Owner 2&3		Rights Owner 4	
Aggregator/ Distributor 1		Aggregator/ Distributor 1		Aggregator/ Distributor 1	
Rights A	License term A-1	Rights C	License term C-1	Rights A	License term A-1
	License term A-2		License term C-2		License term A-2
	License term A-3		License term C-3		License term A-3
Rights B	License term B-1	Rights D	License term D-1	Rights E	License term E-1
	License term B-2		License term D-2		License term E-2

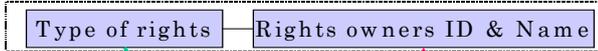
Digital Content 1

License agreement				
Usage rules				
A-11	B-11	C-11	D-11	E-11
A-21	B-21	C-21	D-21	E-21
A-31		C-31		

* It is not specified whether the contract among rights owners for Rights A should be signed by all signees together or individually.

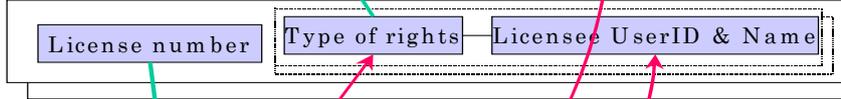
Metadata description script - Contract and Metadata -

Rights Ownership attributes*



Rights Contracts attributes

License to Exploit Rights/ Appointment of Rights Administrator/ Assignment of Rights



License term



* It may include Rights Administrator attributes. The same goes for Neighboring rights and Moral rights of Creators.

<i>Rights contract 1</i>	
Rights Owner 1	
Aggregator/ Distributor 1	
Rights A	License term A-1
	License term A-2
	License term A-3
Rights B	License term B-1
	License term B-2

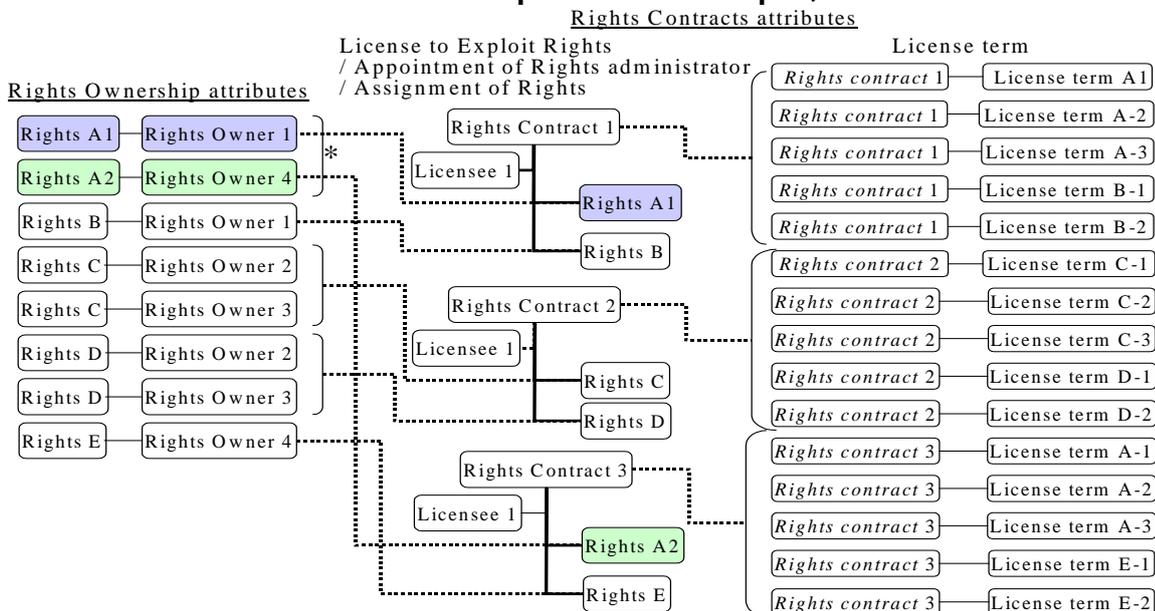
Distribution attributes

Usage rule



<i>License agreement</i>				
Usage rules				
A-11	B-11	C-11	D-11	E-11
A-21	B-21	C-21	D-21	E-21
A-31		C-31		

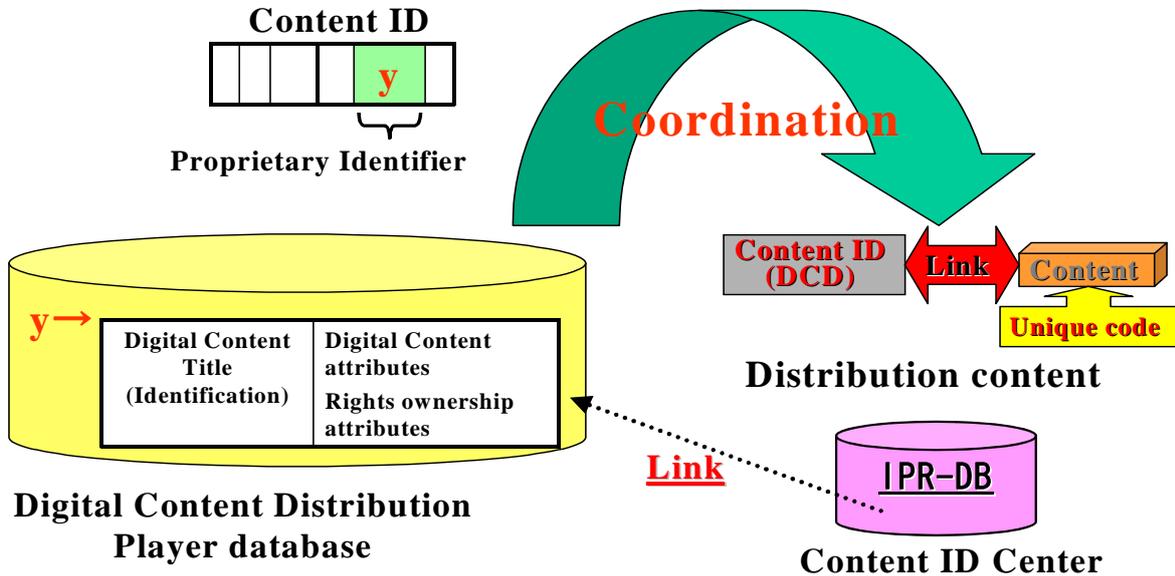
Metadata description script; Metadata



* Rights Owners in Rights Contracts are identified by the word "Rights" with further clarification provided by notes such as "Rights A1" and "Rights A2"

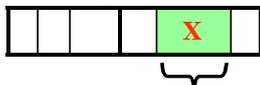
Integration of CIDf Functions with Third Party Services

Coordination of Proprietary Identification with Content IDs

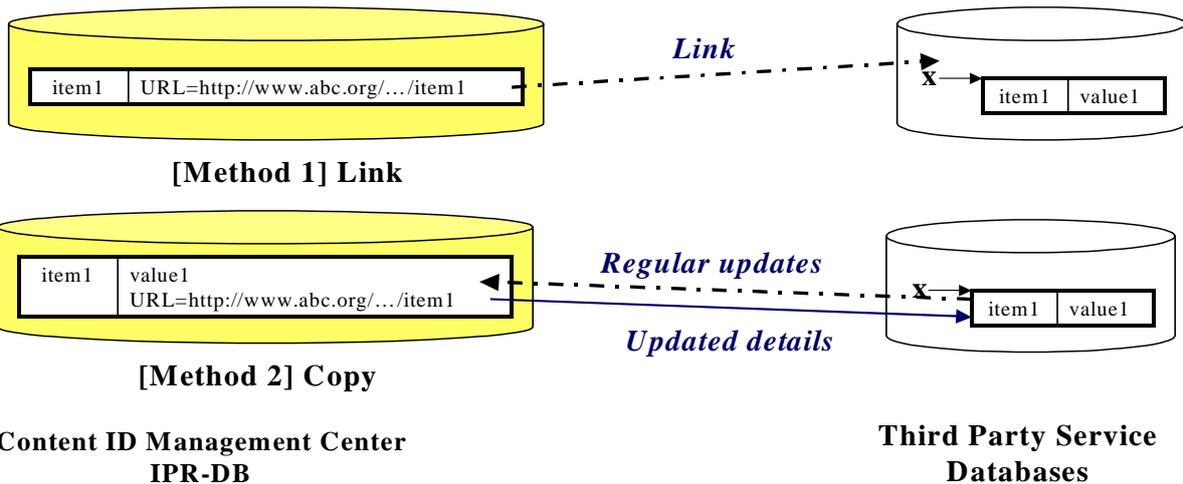


Integration of cIDf functions with third party services

CIDCMN unique code



- (1) Database access (metadata reference or updating)
- (2) Royalty and fee allocation
- (3) Consumer usage rules



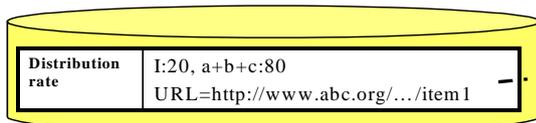
Integration of cIDf functions with Third Party Services

CIDCMN unique code

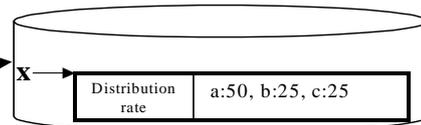


Other standard identifier value

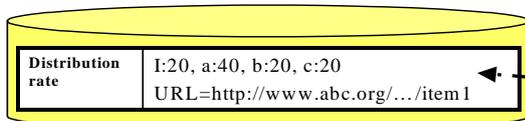
- (1) Database access (metadata reference and updating)
- (2) **Royalty and fee allocation**
- (3) **Consumer usage rules**



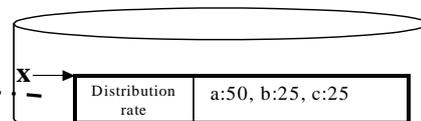
Link



(1) [Method 1] Separate distribution



Regular updates



(2) [Method 2] **Integrated distribution**

Content ID Management Center
IPR-DB

Third Party Service Database

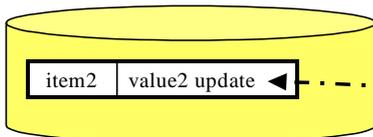
Integration of cIDf Functions with Third Party Services

CIDCMN unique code

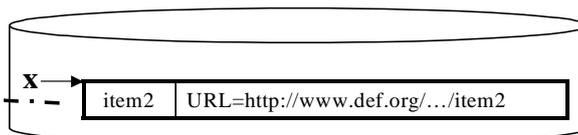


Other standard identifier value

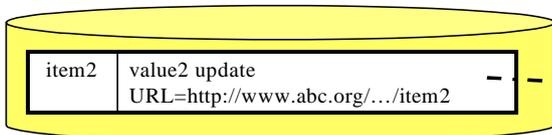
- (1) Database access (metadata reference and updating)
- (2) **Royalty and fee allocation**
- (3) **Consumer usage rules**



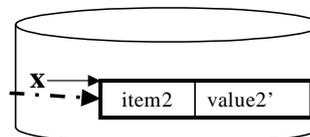
Link



[Method 1] Integrated distribution



Updated information

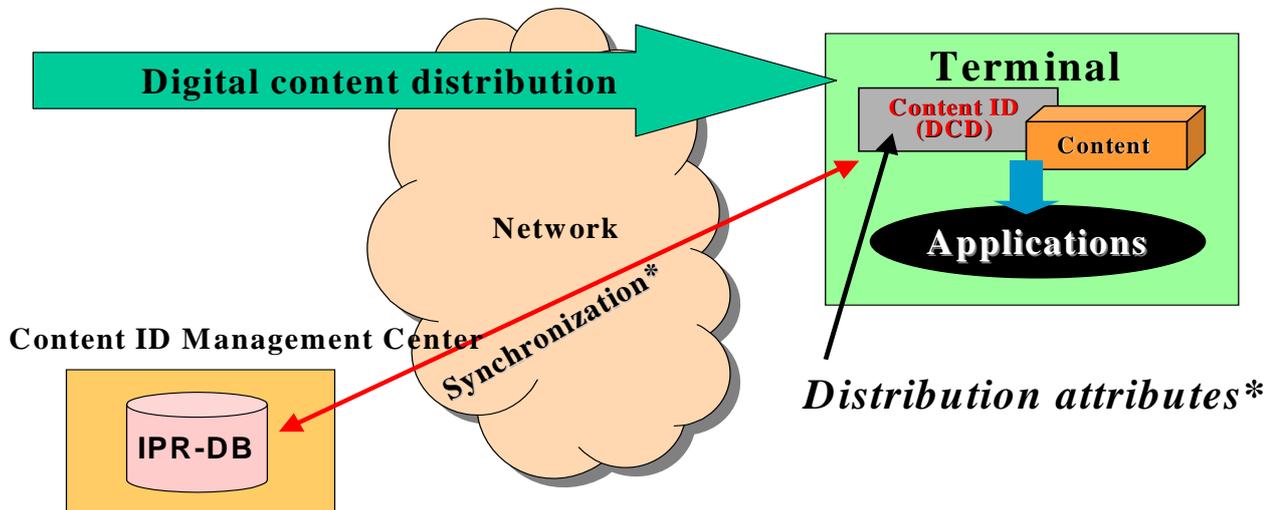


[Method 2] Separate distribution

Content ID Management Center Metadata

Third Party Services Database

The Model of DCD Synchronization



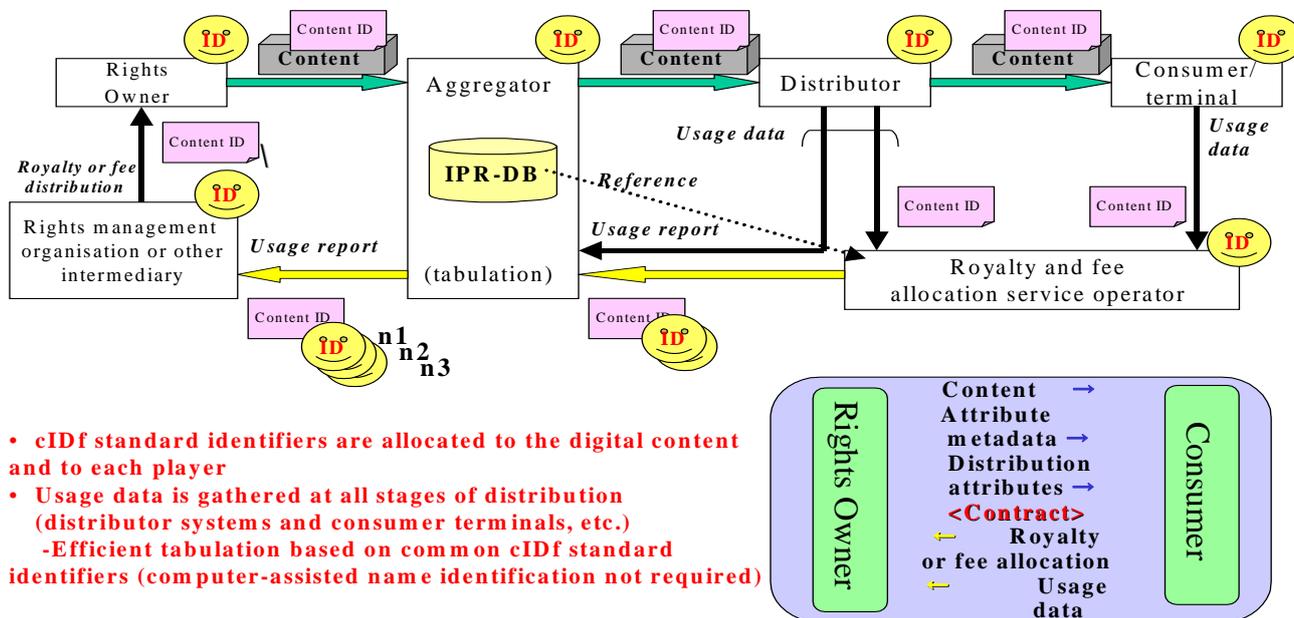
Concept of DCD Synchronization

5 The requirements established for cIDf metadata attributes contained in DCD stipulate that they will be referenced with high frequency, and that they cannot be changed. Once a package of digital content incorporating a DCD has been distributed, it is technically difficult to change the metadata attributes associated with the digital content.

10 If the digital content metadata in CIC IPR-DB is considered as the authoritative version of the metadata, then the ability to synchronize this with distributed digital content metadata would enable updated metadata to be added to the DCD. For example, if the digital content distribution attributes (price per usage) were set in the DCD, it could still be processed even if the distribution attributes (price) changed after a certain period of time, or even changed on a regular basis depending on the time, day of the week, or season in which the digital content was being exploited.

15 This version of the cIDf Specification does not define how DCD metadata could be synchronized, This will be left to future technological developments. cIDf will not prevent such technological development from taking place through independent organizations.

The Capture of Accurate Usage Data



Capture of Accurate Usage Data

5 Current digital content distribution involves the generation of content from a wide variety of sources. In this context, operators conducting royalty and fee allocation services, for example, must accurately measure usage of each of the specific items or packages of digital content, create usage reports, collect royalty and fees, and distribute these payments appropriately to the various players.

10 If these types of processes are carried out using a wide range of different identification standards for different types of digital content, for rights owner identification, or for identification of other players, the result will be inefficiency and low accuracy. Adoption of a common identification system to identify all these different entities is essential.

15 There are a number of ways of establishing a common system for a range of identifiers of this nature. For example:

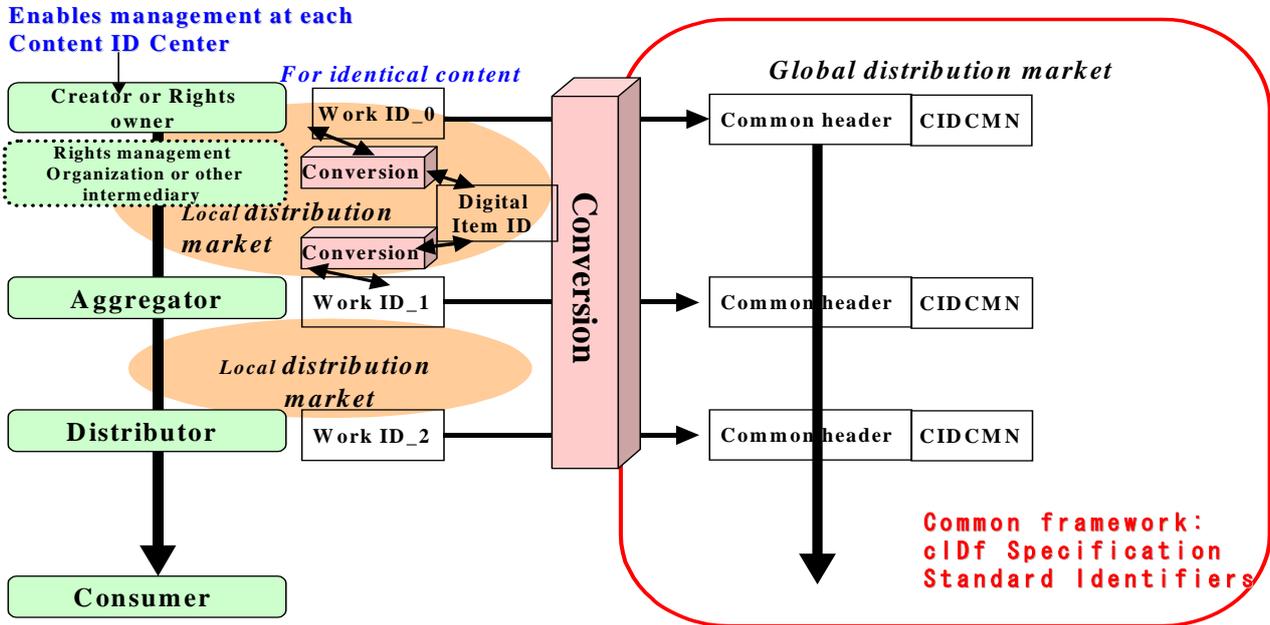
<Example in the case of new content>

20 A downstream player in a given digital content distribution model issues their own Content ID (distribution identifier) by adding it to the Content ID allocated by the upstream player.

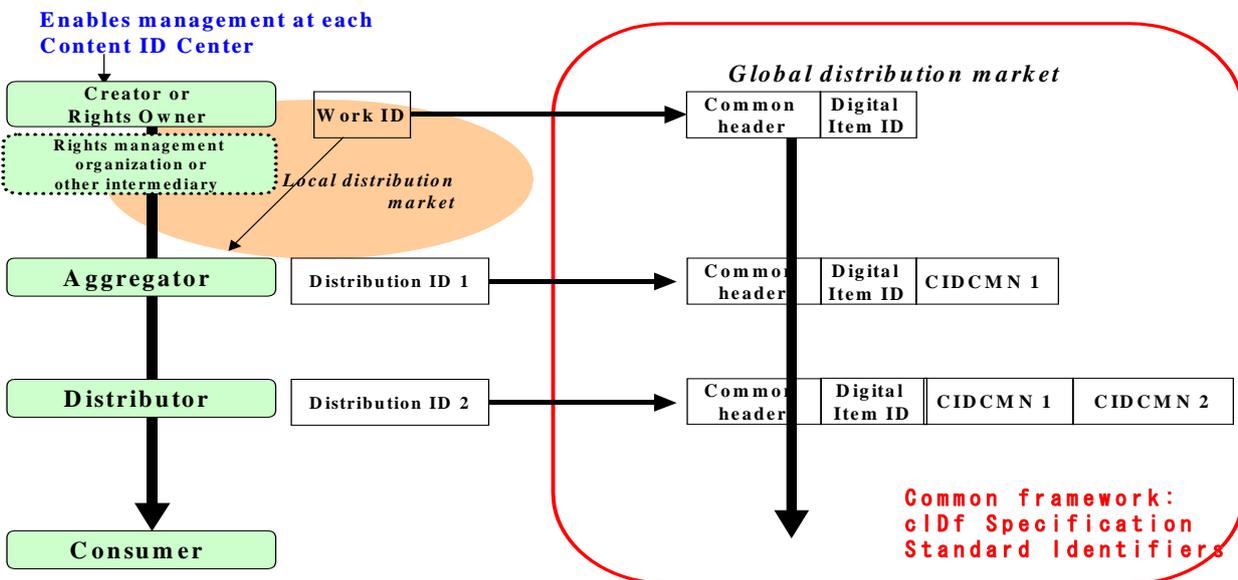
<Example in the case of legacy content>

25 Identifiers in a global distribution market are integrated into cIDf Identifiers allocated by an upstream player, in accordance with an agreement between the players involved in any given distribution model or environment. If, in these circumstances, each player also conducts their own internal processing, a conversion will have to take place between this integrated cIDf Identifiers and the proprietary or standard identification system used by the player.

Common Identification Systems (legacy content)

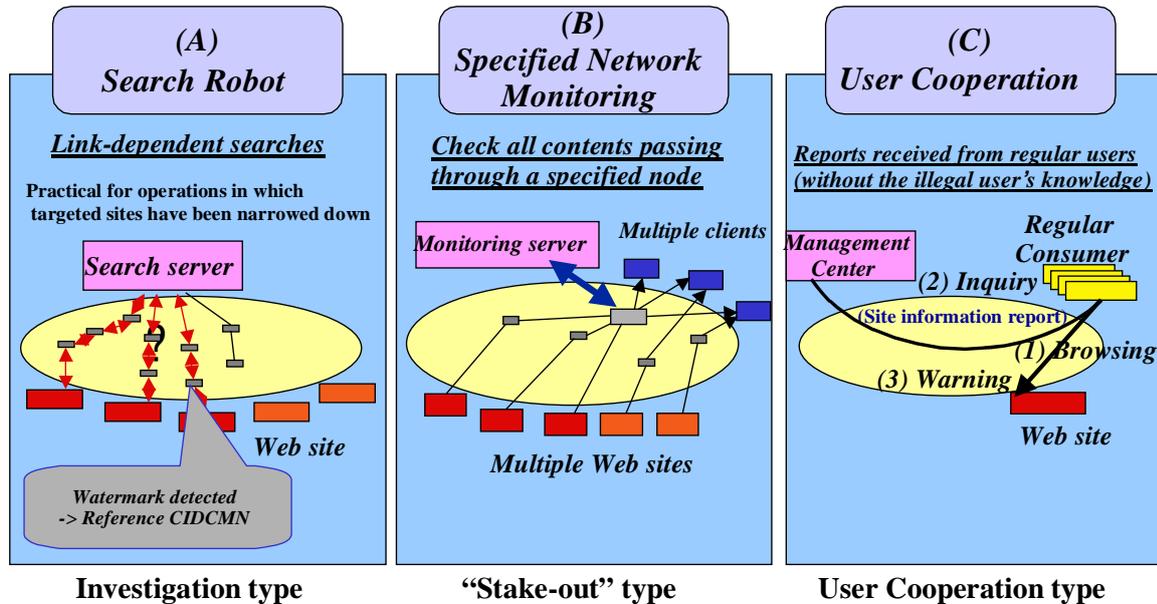


Common Identification Systems (new content)



Trend method

Unauthorized Content Usage Monitoring (NetWatcher)



Unauthorized Content Usage Monitoring ("Net Police" or "Netwatcher")

By using identifiers in the ways defined in the cIDf Specification, it is possible to monitor and detect unauthorized digital content usage over networks (Netwatcher).

There are various forms of unauthorized digital content usage, including uploading digital content items to one's own Web server or FTP server without authorization, or forwarding digital content to a third party without authorization. There are three main methods of monitoring and detecting these activities:

- (A) "Search robots" which check homepage data on Web sites one after another, operating in a similar manner to an Internet search engine;
- (B) "Specified Network Monitoring" which checks the legality of digital content as it is forwarded in e-mail or file transfer over networks; and
- (C) "Consumer Cooperation" which operates on the basis of regular consumer Web browsers, checking digital content items as they are browsed.

It is, of course, possible to identify variations on these three methods. Using these methods, the CIDCMN for the digital content in question is detected, and the CIC is contacted to check whether the current location or destination of the digital content is properly authorized. Data required for this checking procedure, such as the authorized user metadata, is not defined in this Specification.

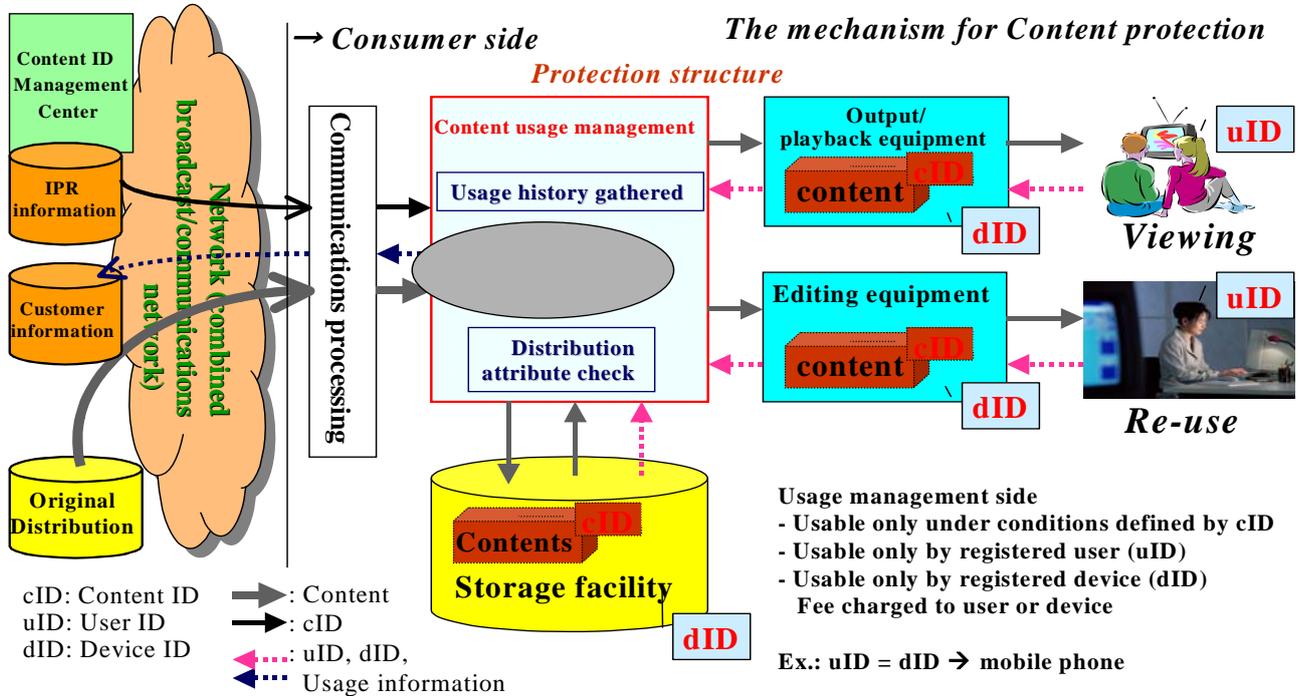
These attributes are contained in the cIDf metadata in the free area, or managed using a separate database.

5 By using a technology called “characteristic extraction” (commonly referred to as “fingerprinting”) it is even possible to monitor digital content items that are not associated with a CIDCMN, using similar mechanisms. This is useful as a system for monitoring and detecting unauthorized usage in legacy content as well.

10 This type of unauthorized usage monitoring can be undertaken within the framework of many types of operational model, including operation of the services by the individual CIC, joint operation of the service by multiple CICs, and operation of the service by a third party institution. Monitoring necessarily entails a tradeoff between control of unauthorized access and the protection of privacy, particularly in the case of Method (2) above. Specified Network Monitoring can involve monitoring confidential communications as well. Future technological developments which affect
15 privacy issues can only be introduced through social consensus..

Nevertheless, there is a general requirement to educate the public with regard to the value and protection of copyright digital content.

Example of Execution Control in Terminal Devices



Example of Execution Control in Terminal Devices

5 cIDf Identifiers could be used in the execution control required for consumer terminal devices. For example, it is possible to imagine the following:

After the digital content has been forwarded to a consumer terminal, the distribution attributes for the digital content are checked.

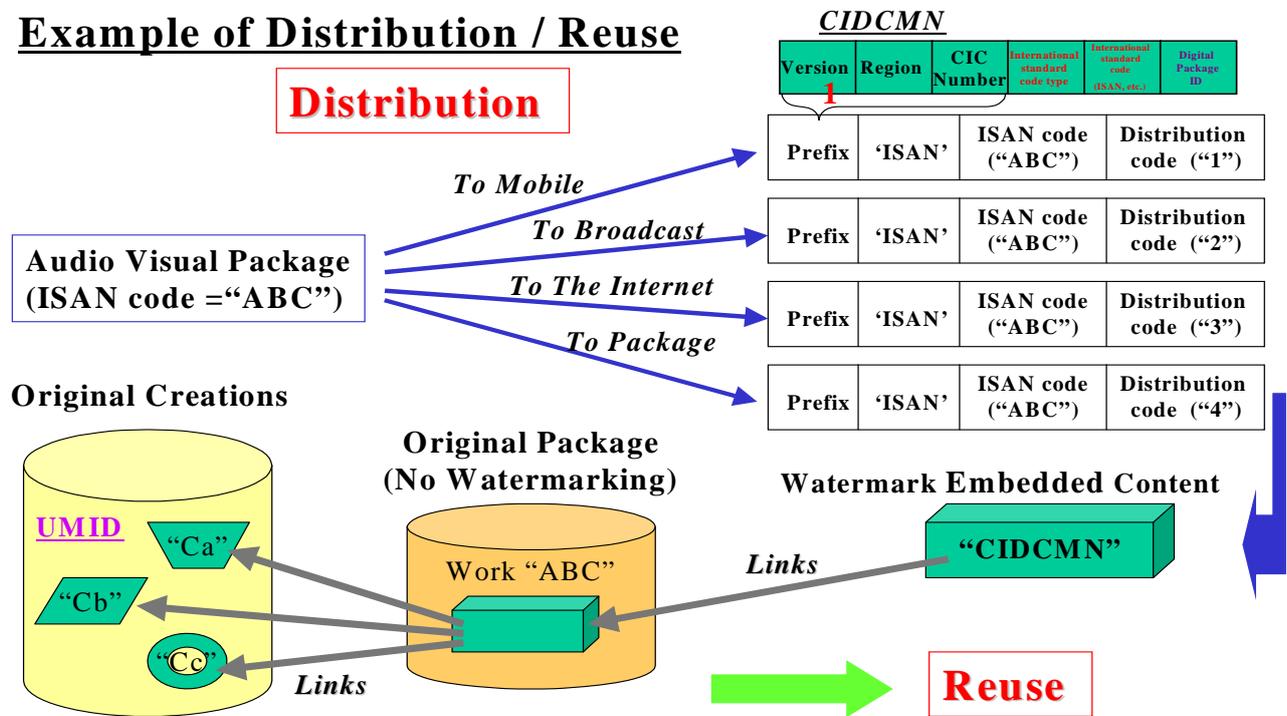
10 This may involve comparing the Content ID with the terminal equipment ID stored in the Consumer terminal. If the ID for that equipment is registered, then storage of the digital content is permitted, but if the equipment ID is not registered then the storage of the digital content is not permitted.

15 In another example, the Content ID is compared with the Consumer User ID and the ID for the Consumer playback terminal. If these match then the digital content can be “played back” (i.e. viewed or heard) by a registered user on registered equipment.

20 If editing of digital content is permitted, then the Content ID is compared with the User ID and the ID for the editing equipment. If these match, the contents can be edited by a registered user on registered equipment (i.e. the equipment will only operate under these conditions).

Each time the digital content is played back or used by a Consumer terminal device, the transaction is recorded, and usage information periodically forwarded to the Content ID Center or other specified service operator.

Example of Distribution / Reuse



5

Example of Distribution / Reuse

The cIDf Specification defines a framework whereby a different identifier value is allocated to each distribution instantiation of an item or package of digital content even where this may contain identical digital content.

Watermarks cannot normally be removed, so when digital content with a watermark embedded reused and a new watermark (that is, a second watermark) is embedded in the re-used digital content, the quality of the digital content will deteriorate. To prevent this occurring, in the case of reused digital content, one option would be to use an original version of the digital content in which no watermark has been embedded.

Appendix K (Regulation - Normative)

Profile information of cIDf Metadata sets

Profile information consists of both “Profile Number” and “Version Number in Profile” as below.

5

1. Profile Number

Profile Number is assigned to each standardized Metadata set using 2 byte-code format. The default or omission of a number or the number = "00" in HEX identifies the metadata sets in the cIDf specification. A Profile Number list is shown in Table K-1.

10

Profile Number	Meaning
00	Metadata sets defined by cIDf
01	Metadata sets defined by DOI

Table k-1: Profile Number

2. Version Number in Profile

It identifies the implementation version of metadata sets defined by each standard.

2-1. Version Number in Profile for Profile Number 00 by cIDf

(1)List of Version Number in Profile

15

Version Number in Profile	Meaning
10	Metadata sets defined by cIDf Specification ver. 1.0
11	Metadata sets defined by cIDf Specification ver. 1.1
20	Metadata sets defined by cIDf Specification ver. 2.0

Table k-2-1: Version Number in Profile

(2) The content of the metadata sets
Refer to this Specification.

20

2-1. Version Number in Profile for Profile Number 01 by DOI

(1)List of Version Number in Profile

25

Version Number in Profile	Meaning
20	Metadata sets defined by DOI Specification From ver. 2.2.0 to 2.3.0

Table k-2-2: Version Number in Profile

(2)The content of the metadata sets

DOI Profile means the attributes of DOI “Kernel Elements” equivalent to the cIDf attributes. For more details of the DOI Metadata sets, refer to “DOI Handbook Version 2.2.0 July 2002”.

30

DOI Kernel Element	Meaning	Value	Attributes by CIDf	Tag Name	Note
DOI Application Profile	Name of Application	<i>Name</i>	Content attributes, Note	<Content><Notes>	As “DOIApplicationProfile= <i>NAME</i> ”
DOI Identifier	DOI identifies the entity	DOI	Content attributes, Other identifier system	<Content><OtherCode>	
Identifier	Identifier except DOI	<i>Alphanumeric characters</i>	ContentIDCenterManagement Number, Unique code	<IDCenter><UniqueID>	
Title	Name	<i>Alphanumeric characters</i>	Content attributes, Title	<Content><Title>	
Structural Type	Structure of the entity.	PhysicalFixation/ DigitalFixation/ Performance/ Abstract	Content attributes, Content class, Notes	<Content><Class><NotesCT>	As “Structural Type = PhysicalFixation”
Mode	Classification by perceptions	Visual/ Audio/ Audiovisual/ Abstract	Content attributes, Content class, Type	<Content><Class><Ctype>	
PrimaryAgent(s)	First person or group like Creator who have a hand in the digital content	<i>Creator’s Name</i>	Content attributes, Creator information, Creator name	<Content><Creator><CreatorName>	
PrimaryAgent Role(s)	Role of PrimaryAgent	<i>Alphanumeric characters</i>	Content attributes, Creator information, Creator name	<Content><Creator><CreatorName>	There isn’t any Creator attributes in cIDf Specification equivalent of Role in DOI

Table k-2-3: Mapping table of DOI Kernel Element and cIDf Metadata equivalents

Appendix X (Regulation - Normative)

Intellectual Property Rights

The IPR Information discerned by cIDf Secretariat is described. Note that these are not finally-settled
5 Intellectual Property Rights, but a proposition by a third party; they may have some bearing on the cIDf
Specification.

1. Meta-watermarking method

“ Information Processing Systems, information processors and machine-readable storage medium”.

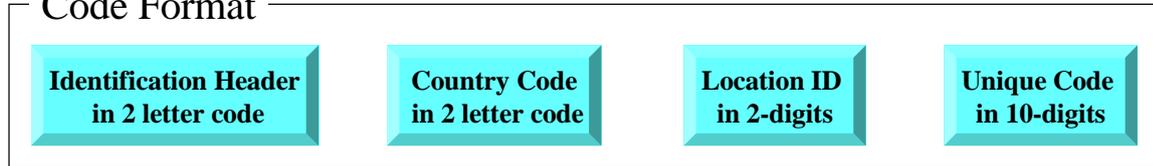
10 Japanese patent application No. Hei-11-93000
Disclosed patent application No. 2000-287067
The filling date: 31, Mar. 1999
The disclosure date:13, Oct. 2000

15 2. A proposition by Melody & Memory Global, Limited

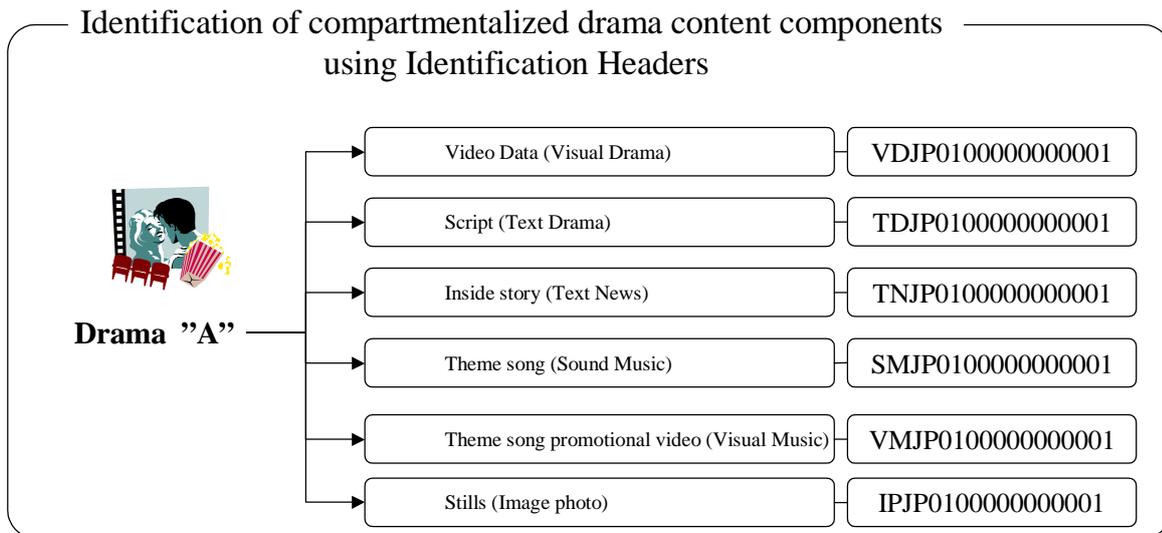
Date (in Japanese) received: Aug. 31 2001
Date Intellectual Property Right claim was accepted: Sep. 07 2002

Content ID

Code Format



Identification of compartmentalized drama content components using Identification Headers



Copyright by Melodies & Memories Global Limited. 2001

Identification Header

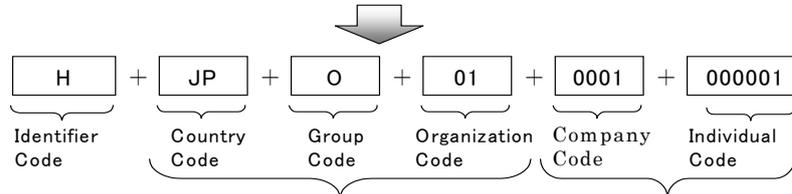
Primary Category	Secondary Category	Header	Primary Category	Secondary Category	Header		
Sound	Music	SM	Text	Music	TM		
	Drama	SD		Composite	TC		
	Program	SP		Lyrics	TL		
	Speech	SS		Drama	TD		
	News	SN		Review	TR		
	Advertisement	SA		Thesis	TT		
	Effects	SE		News	TN		
	Other	SO		Image	Drama (Manga)	ID	
	Visual	Music			VM	Comic	IC
		Drama			VD	Photograph	IP
Program		VP	Illustration		II		
Speech		VS	Advertisement		IA		
News		VN	Other		IO		
Advertisement		VA	Program		Game	PG	
Other		VO			Software	PS	
Comic		VC			Original work	OW	

Copyright by Melodies & Memories Global Limited. 2001

User ID

Code Format

Case HJPO01000100001



Represents the Permission Administrator. In this example, JP1001 is the Permission Administrator's ID.

A unique internal ID assigned by the permission administrator to the rights holder

Identifier Code

Permission Administrator	A
Content Holder	H
Content Distributor	D
Content Aggregator	G

Country Code

Country	ISO 3166
---------	----------

Group Code

Organization	O
Company	C
Individual	I

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Permission Table

Content					License Term		
Music	Visual	Program /Game	Text	Picture /Photo	Genre ID	Genre	multiple selection
X	X	X	X	X	1	Content	NG
X	X	X	X		2	Usage rule	NG
X					3	Compilation	NG
X	X	X	X		4	Territory	OK
X	X	X	X		5	Sales model	OK
X	X	X	X		6	Transmittal form	OK
X	X	X	X		7	Encryption	NG
X	X	X	X		8	Watermark	NG
X	X	X	X		9	Digital Rights Management	OK
X	X				10	Audio-compression format	OK
	X				11	Video-compression format	OK
X	X				12	Audio sampling rate	OK
	X				13	Audio bit rate	OK
	X				14	Visual bit rate	OK
	X				15	Screen size	OK
X	X	X	X	X	16	Primary Recording Media	NG
X	X	X	X	X	17	Secondary Recording Media	OK
	X		X		18	User class	NG
X	X	X	X		19	Playback control	OK
X	X		X		20	Copy	NG
X	X		X		21	Transfer	NG

1	Music
2	Visual
3	Program/Game
4	Text
5	Picture/Photo

1	Free
2	Preview
3	Sale
4	Broadcasting

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