
**Content Delivery and Rights
Management — Functional requirements
for identifiers and descriptors for use in
the music, film, video, sound recording
and publishing industries**

*Mise à disposition de contenus et gestion de droits — Spécifications
fonctionnelles des identificateurs et descripteurs à l'usage des
industries musicales, cinématographiques, vidéographiques,
phonographiques et de l'édition*

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Foreword

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In exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

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ISO/TR 21449 was prepared by Technical Committee ISO/TC 46, *Information and documentation*, Subcommittee SC 9, *Identification and description*.

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Introduction

This Technical Report was prepared by Tom Delsey for organizations involved in the administration of identifier systems and projects within ISO/TC 46, SC 9.

Recent advances in digital technology have prompted significant change within the music, film, video, sound recording and publishing industries. These so-called “content” industries are all actively engaged in adapting conventional modes of production and distribution to exploit new technologies for the creation, storage and communication of information. Major industry players are repositioning themselves in relation not only to their traditional competitors but to new entrants in the field as well, many of which have emerged from other industries within the broader information/communications sector. The new technologies and a new competitive environment together are driving industries right across that broader sector to develop new business models in order to maintain and strengthen their respective positions in the marketplace.

Within this new technological and economic environment, infrastructure has become a key factor for strategic positioning. It is no longer sufficient to have in place an infrastructure designed to support a specific industry; increasingly all industries within the information/communications sector rely on a technological infrastructure that is cross-sectoral and, in effect, global in design and scope. In that context, standardization becomes an issue of much greater significance. Within the content industries, increased recognition of the strategic importance of standardization is evidenced by a growing number of industry-wide and cross-sectoral initiatives aimed at developing the models, standards and protocols that are needed to support electronic commerce more efficiently and effectively. The development of a Multimedia Framework (MPEG-21) by the joint ISO/IEC Moving Picture Expert Group is the most recent, and perhaps the most far-reaching of such initiatives.

As one element of the new multimedia infrastructure, standardized mechanisms for the identification and description of digital items are becoming increasingly important as a means of supporting content-related business transactions on a cross-sectoral and global basis. Within the publishing and sound recording industries, standard identifiers have been used for decades as a means of facilitating product distribution and remuneration. With the transition to networked delivery of digital content, there is a growing need for efficient and reliable mechanisms for identifying not only the product as such, but the intellectual property embodied in the product as well. Standard identifiers play an increasingly important role in facilitating and tracking a multitude of transactions conducted throughout the lifecycle of a digital item and across the spectrum of the supply chain. As a result, issues relating to integrity, scalability and flexibility in the design of standard identifiers take on new importance, and “interoperability” becomes a key consideration.

From a business perspective, the interest of the content industries in networking infrastructure stems primarily from a recognition of the essential role that infrastructure will play in future exploitation of market potential. Digital item identification and description will serve as key elements of that infrastructure, and will form an integral part of the technology that will support efficient business transactions and protect commercial rights and interests in a networked environment.

From an operational perspective, the effective design and application of standards for digital item identification and description will be critical for the support of activities throughout the supply chain, from content creation and production through to distribution and the tracking of usage. To be fully effective in a multimedia environment, digital item identifiers and descriptions will have to function on an all-inclusive scale. They will have to encompass a broader range of content than they do currently; they will have to differentiate between product and property; and they will have to be applied at multiple levels of aggregation and decomposition. Scalability and flexibility will be essential. Above all, digital item identifiers and descriptions will have to function in a multifaceted, cross-sectoral environment where interoperability is critical.

This Technical Report was developed to provide the content industries with a shared frame of reference for describing the nature of the business and information transactions that take place between and among them in the course of production, distribution, and rights management, and a structured statement of requirements to guide the further development of identification and description schema in support of those functions.

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Content Delivery and Rights Management — Functional requirements for identifiers and descriptors for use in the music, film, video, sound recording and publishing industries

1 Scope

The business and information architectures outlined in this Technical Report are designed specifically to assist organizations involved in the development and administration of identification and description schemas for intellectual content and products in understanding the relationships between their organizations and other content industry players involved in production, distribution, and rights management. This Technical Report does not preclude the possibility of other perspectives on the same environments or other business and information architectures designed to serve other purposes.

The functional requirements for identifiers and descriptors set out in this Technical Report are centred on intra- and inter-industry business transactions relating to production, distribution, and rights management in the content industries (i.e., the music, film, video, sound recording and publishing industries).

The information model presented in this Technical Report is focussed specifically on the requirements of the originators, producers, distributors, registration authorities, and rights administrators involved in the development and delivery of intellectual and artistic content. It does not reflect business functions such as marketing and archiving, nor does it directly reflect transactions between secondary service providers such as libraries, archives and museums.

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2 Approach

This analysis of functional requirements for identifiers and descriptors, for use in the content industries, is set out in four segments.

The first segment defines a **conceptual business architecture** that identifies the functions performed by individuals and organizations involved in the production and distribution of intellectual or artistic content and the management of rights associated with that content, and highlights the key business relationships between those functions. The conceptual business architecture provides a perspective on the business environment designed specifically to assist the organizations responsible for the development and administration of identification and description schemas for intellectual content and products in understanding the relationships between their organizations and other content industry players involved in production, distribution, and rights management. Details of the conceptual business architecture are documented in Clause 4.

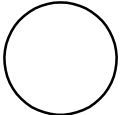
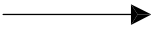
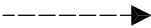
The second segment defines an **information architecture** that provides a structured representation of, and definitions for, the key entities (i.e., the objects, agents, activities, events, etc.) involved in each of the business functions and the primary relationships between those entities. Details of the information architecture are documented in Clause 5.




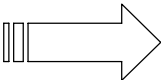
The third segment identifies and defines the **attributes and relationships** associated with each of the entities identified in the information architecture. Details of the attribute and relationship definitions are documented in Annex A.

The fourth segment defines a generic set of **user transactions** and maps the attributes and relationships associated with the three entities of primary focus in the information architecture (*content*, *product* and *property*) to those transactions. The mapping of attributes and relationships to transactions is intended to

serve as the basis for defining a common set of descriptors required for the registration of content, products and property. Details of the user transaction definitions and mapping are documented in Clause 7.

3 Diagramming Conventions

Conceptual Business Architecture (Figure 1)	
	A circle represents a function performed by an individual or organization operating within the overall context of production, distribution, and rights management.
 	The lines and arrows between the circles represent transactions between individuals and organizations performing the designated functions. Transactions of secondary relevance are represented by dashed arrows.

Information Model (Figures 2, 3 and 4)	
	A rectangle represents an entity (i.e., an object, agent, activity, event, etc.) about which information is needed in order to support an intra- or inter-industry business function.
	The lines and arrows connecting the rectangles represent relationships between the designated entities.
	A dashed-line rectangle surrounding a group of two or more entities indicates that a relationship represented by an arrow contiguous with the dotted line may apply to any and/or all of the entities represented within the rectangle.
	A block arrow functions as a page connector. The connector serves as a shorthand method of linking an entity to all related entities represented in the diagram referenced by the block arrow.

4 Conceptual Business Architecture

The purpose of the conceptual business architecture depicted in Figure 1 is to identify the functions performed by individuals and organizations involved in the production and distribution of intellectual or artistic content and the management of rights associated with that content, and to highlight the key business relationships between those functions. The architecture outlined here provides a perspective on the business environment designed specifically to assist the organizations responsible for the development and administration of identification and description schemas for intellectual content and products in understanding the relationships between their organizations and other content industry players involved in production, distribution, and rights management. It does not preclude the possibility of other perspectives on the same business environment or other conceptual business architectures designed to serve other purposes.

The diagram depicts nine distinct business functions (each of which is defined in Table 1). The business functions represent roles performed by individuals and organizations within the business environment. Any individual or organization may perform more than one designated function or role. Any function may be performed by a number of individuals and/or organizations. Functions may be performed simultaneously, in parallel or sequentially.

The transactions depicted in the diagram reflect business dealings that take place between individuals and organizations in the course of performing the designated functions. The diagram reflects all intra- and inter-industry transactions of relevance within the context of content production, distribution, and rights

management. However, for the purposes of focusing further analysis of functional requirements, a distinction has been made between transactions of primary relevance from the perspective of organizations providing registration services for content and products and those that are of secondary relevance from that perspective. Transactions considered to be of secondary relevance include those that currently fall outside the normal pattern of business associated with content production, distribution, and rights management, and those that involve no direct dependency on the services or information provided by the registration authorities.

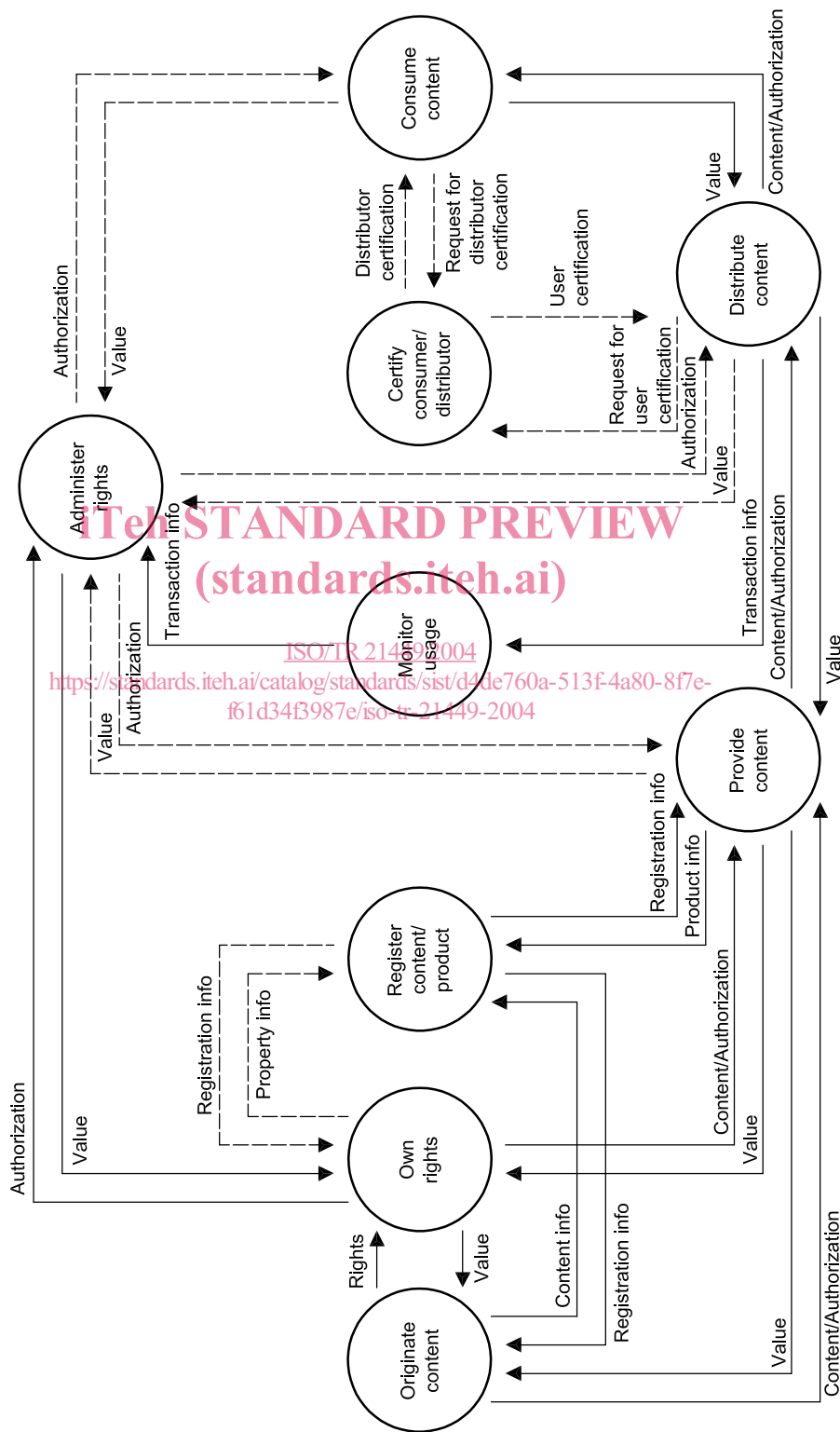


Figure 1 — Conceptual Business Architecture for Content Delivery and Rights Management

Table 1 — Conceptual Business Architecture – Role Definitions

Function	Scope
Originate Content	The creation, expression, or production of intellectual or artistic content. Includes the creation of content by writers, composers, artists, etc. (as authors of literary, musical and artistic works) and by film and video producers (as authors of audiovisual works), the expression of content by performers, and the production of content by recording companies (as producers of phonograms) and broadcasters (as producers of broadcast signals), etc.
Own Rights	The ownership of legal title to a right or rights in a property. Includes ownership by first owners (authors, producers, performers, etc.), ownership by assignees, transferees, successors in title, etc.
Register Content/Product	The registration of content, products or property. Includes registration by authorities and agencies responsible for the registration of monographic and serial publications, literary, musical, artistic and audiovisual works, sound recordings, broadcast signals, etc.
Provide Content	The production and release of a product. Includes production and release of products by publishers, record producers, film and video producers, multimedia producers, etc.
Monitor Usage	The monitoring of distribution and usage of products. Includes monitoring the distribution of monographic and serial publications, sound recordings, films, video recordings, multimedia products, etc.
Administer Rights	The administration of intellectual property rights by, or on behalf of, an owner. Includes the direct administration of rights by the owner, the authorized administration of rights on behalf of the owner by agents, executors, publishers, film producers, collecting societies, etc., and the administration of rights by boards, trustees, etc. established by law to act on behalf of rights owners.
Certify Consumer/Distributor	The certification or authentication of consumers or distributors of products. Includes certification or authentication of consumers or distributors of monographic and serial publications, sound recordings, films, video recordings, multimedia products, etc.
Distribute Content	The distribution of a product. Includes distribution of publications, sound recordings, films, video recordings, multimedia products, etc.
Consume Content	The consumption of intellectual or artistic content. Includes purchase, licensing, use, etc. by consumers of monographic and serial publications, sound recordings, films, video recordings, multimedia products, etc.

5 Information Architecture

The information architecture for content delivery and rights management is depicted in a set of three interconnected entity-relationship diagrams (Figures 2, 3 and 4). Each of the diagrams focuses on a major business function: rights management (Figure 2); content production (Figure 3), and content distribution (Figure 4).

The entity-relationship diagrams provide a structured representation of the key entities (i.e., the objects, agents, activities, events, etc.) involved in each of the business functions and the primary relationships between those entities. Each diagram is accompanied by a table containing definitions for the entities depicted in the diagram.

The legal framework for the management of intellectual property rights depicted in Figure 2 is based on an analysis of four key documents: the *Berne Convention*, the *Rome Convention*, the *WIPO Copyright Treaty*, and the *WIPO Performances and Phonograms Treaty*. Those documents reflect international agreements on intellectual property rights and serve as the basis for copyright and neighbouring rights legislation in more than 140 countries throughout the world.

Figure 2 is centred on the *property* (i.e., the work, performance, phonogram, broadcast signal, etc.) and its relationships (both direct and indirect) with the various objects, agents, activities, events, *et cetera* that form the legal framework for the management of intellectual property rights. Table 2 defines the entities shown in Figure 2.

Figure 3 is centred on the *product* (i.e., the publication, sound recording, film, video recording, etc.) and its relationships (both direct and indirect) with the various objects, agents, activities, events, *et cetera* that come into play in the production cycle of content delivery. Table 3 defines the entities shown in Figure 3.

Figure 4 is centred on the *product* as well, and highlights the relationships (both direct and indirect) of the *product* with the various objects, agents, activities, events, *et cetera* that come into play in the distribution cycle of content delivery. Table 4 defines the entities shown in Figure 4.

Although each business function (rights management, production and distribution) has been represented in a separate entity-relationship diagram, all three diagrams are linked through the *property*, *product*, *authorization* and *use* entities. Each diagram can therefore be viewed as a segment of a larger diagram representing the information architecture for content delivery and rights management as a whole.

The diagrams depicting the information architecture also have a direct relationship with the conceptual business architecture (Figure 1). The entities representing agents in Figures 2, 3 and 4 (*originator*, *owner*, *agent*, *competent authority*, *user*, *producer*, *creator*, *registration authority*, *distributor*, *monitoring service*, *certification authority*, and *consumer*) parallel the business functions depicted in Figure 1.

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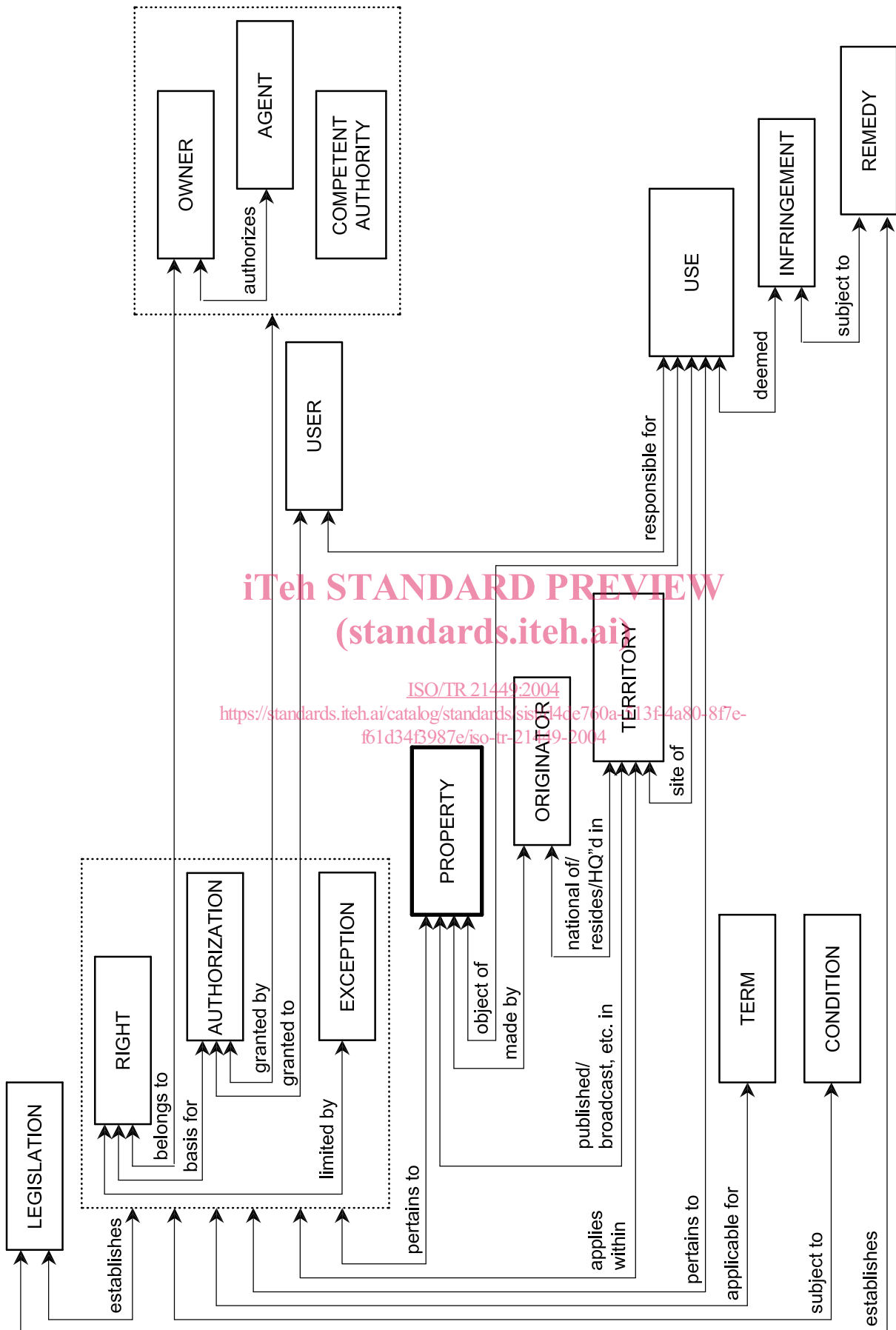


Figure 2 — Legal Framework for Intellectual Property Management and Protection

Table 2 — Entity Definitions

Entity	Definition
Legislation	An enactment of a legislative body. Includes laws, statutes, orders, directives, regulations, etc. established pursuant to a law relating to intellectual property.
Right	An entitlement established by legislation. Includes both economic and moral rights pertaining to all forms of intellectual property (literary, musical, artistic and audiovisual works, performances, phonograms, broadcast signals, etc.).
Authorization	Permission granted by a rights owner, the owner's agent, or a competent authority. Includes written permissions, licences, contractual agreements, compulsory licences, etc.
Exception	An exclusion or limitation established by legislation. Includes exclusions of designated classes of intellectual property, limitations of designated rights, exceptions for designated non-infringing uses, etc.
Owner	An individual or organization holding legal title to a right or rights in a property. Includes first owners (authors, producers, performers, etc.), assignees, transferees, successors in title, etc.
Agent	An individual or organization authorized by an owner to act on his/her behalf. Includes literary agents, publishers representing anonymous authors, executors, collective societies, etc.
Competent Authority	A body authorized by legislation to act on behalf of an owner. Includes boards, trustees, etc. established by law, order, regulation, etc.
User	An individual or organization utilizing a property. Includes users authorized by licence, contract, permission, etc., users operating within the parameters of an exception, users engaged in infringing use.
Property	An entity to which property rights apply. Includes literary, musical, artistic and audiovisual works, performances, phonograms, broadcast signals, etc.
Originator	An individual or organization responsible for the creation or production of a property. Includes authors (as creators of literary, musical and artistic works), performers (as creators of performances), film and video producers (as authors of audiovisual works), recording companies (as producers of phonograms), broadcasters (as producers of broadcast signals), etc.
Territory	A geographical area belonging to, or under the jurisdiction of, a governmental authority.
Term	A period of time during which a right is enforceable. Includes fixed periods linked to a designated event (e.g., the production, first publication, first broadcast, etc. of a property), periods extending from a designated event (e.g., the creation of a property) through a fixed length of time following a subsequent event (e.g., the death of an author), etc.
Condition	A stipulation, proviso, or limitation. Includes conditions attached to the enjoyment of a right or the exercise of an authorization or exception, payment of a royalty or tariff, etc.
Use	An act entailing utilization of a property. Includes reproduction, adaptation, translation, public performance, communication to the public, broadcasting, distribution, rental, etc.
Infringement	An encroachment or trespass on a right. Includes unauthorized use, use that exceeds the limitations stipulated in a licence, use that exceeds the parameters established for an exception, etc.
Remedy	A legal means to recover a right or to prevent or obtain redress for an infringement. Includes penalties established in law, judgments issued by the courts, settlements agreed to by the contestants in a dispute, etc.

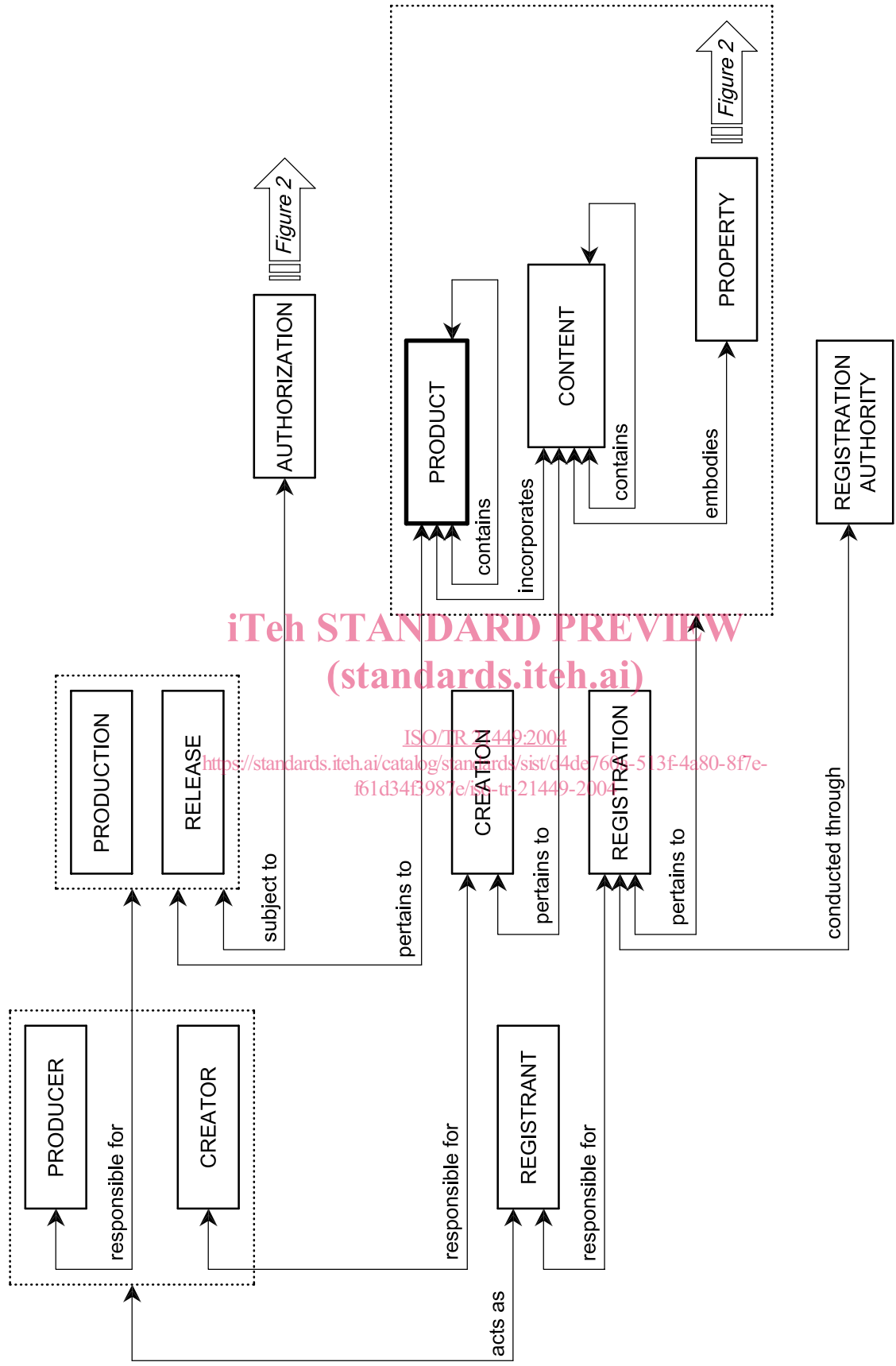


Figure 3 — Production Cycle for Content Delivery

Table 3 — Content Production — Entity Definitions

Entity	Definition
Producer	An individual or organization responsible for the making of a product. Includes publishers, record producers, film and video producers, etc.
Production	The act of making a product. Includes production of monographic and serial publications, sound recordings, films, video recordings, multimedia products, etc.
Release	The act of making a product available to the public. Includes publication, release of a sound recording, film, or video, broadcasting, communication to the public via electronic networks, etc.
Authorization	Permission granted by a rights owner, the owner's agent, or a competent authority. Includes written permissions, licences, contractual agreements, compulsory licences, etc.
Product	An object resulting from an act of production. Includes monographic and serial publications, sound recordings, film, video recordings, multimedia products, etc. Includes intermediate as well as final products. Includes product components and aggregate products as well as single-entity products.
Creator	An individual or organization responsible for the intellectual or artistic creation of content. Includes writers, composers, artists, performers, producers of sound recordings and films, etc.
Creation	The act of originating intellectual or artistic content. Includes the creation of literary, musical, artistic and audiovisual works, the performance of such works, the original fixation of sound in a recording medium, etc.
Content	The intellectual or artistic substance of a product. Includes literary, musical, artistic and audiovisual works, the performance of such works, the fixation of sound in a recording medium, etc. Includes content components and aggregate content as well as single-entity content.
Registrant	An individual or organization responsible for registering a product, content, or property. Includes producers, creators, rights owners, rights administrators, and other individuals and organizations with an interest in having a product, content, or property registered (e.g., national bibliographic agencies, information service providers).
Registration	The act of registering a product, content, or property. Includes registration of monographic and serial publications, literary, musical, artistic and audiovisual works, sound recordings, broadcast signals, etc.
Registration Authority	An organization responsible for the registration of products, content, or property. Includes authorities responsible for the registration of monographic and serial publications, literary, musical, artistic and audiovisual works, sound recordings, broadcast signals, etc.
Property	An entity to which property rights apply. Includes literary, musical, artistic and audiovisual works, performances, phonograms, broadcast signals, etc.