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# Introduction

This document is a compilation of Media Value Chain Ontology requirements gathered through a process beginning at the 81st Lausanne MPEG meeting through to the 84th Archamps MPEG meeting.

Additional requirements related to time segments and multi-track audio introduced during the 112th Warsaw MPEG meeting.

The reader is informed that terms beginning with a capital letter are used according to definitions given in Annex I.

# Requirements

## Common core semantics

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| Requirement 1 | **It shall define a core set of terms common to any IP management** |
| Description | * The ontology shall maintain a basic core set of terms for:   + IP Entities   + Rights and actions   + Roles * The ontology shall support the common IP Entities, such as:   + Work   + Adaptation   + Manifestation   + Instance   + WorkInstance   + AdaptationInstance   + WorkManifestationCopy   + WorkInstanceCopy   + AdaptationManifestationCopy   + AdaptationInstanceCopy   + Product * The ontology shall maintain a set of terms for IP Entities related to Segments and Tracks:   + Timeline   + Interval   + Segment   + Track * The ontology shall support a complete array of actions that users can perform on or with IP Entities. Examples are:   + CreateWork   + MakeManifestation   + MakeWorkManifestation   + MakeAdaptationManifestation   + MakeInstance   + MakeWorkInstance   + MakeAdaptationInstance   + MakeCopy   + MakeAdaptationInstanceCopy   + MakeAdaptationManifestationCopy   + MakeWorkInstanceCopy   + MakeWorkManifestationCopy   + Copy   + PrivateCopy   + Distribute   + Produce   + PublicCommunication   + Broadcast   + download   + Stream   + Render   + ReuseIPEntity   + Synchronize * The ontology shall support the Rights in the REL extensions:   + Adapt   + Delete   + Delist   + Diminish   + Embed   + Enhance   + Enlarge   + Enlist   + Execute   + Export   + GovernedAdapt   + GovernedCopy   + GovernedMove   + Install   + Modify   + Move   + Play   + Print   + Reduce   + Uninstall * The ontology shall represent a wide array of Users through adoption by any user of any number of Roles they may require with respect to any content item. Examples are:   + Creator     - author     - composer     - photographer     - etc.   + Adaptor     - arranger     - translator     - etc.   + Instantiator     - performer     - editor     - etc.   + Producer     - recording labels     - movie producers     - etc.   + Distributor     - retailers     - p2p Users     - webcaster   + End User |
| Rationale | The very notion of Intellectual Property implies that there exists a starting point or origin where an intellectual or artistic creation is said to be the original product of one or more persons. From the existence of an original creation comes the notion of the subsequent dependent yet unique modifications and expressions of the original. The objects and events used to communicate the original creation, its adaptations and expressions can be referred to collectively as Intellectual Property Entities (IP Entities).  A direct corollary to the existence of a basic set of IP Entities is the existence of a minimum set of actions required to bring them about (e.g. Create, Adapt and perform/render (instantiate) and Roles specific to those actions (e.g. Creator, Adaptor and performer (Instantiator)). |
| Benefit | Since all IP management recognises:  - A minimum and necessary set of common IP Entities;  - A minimum and necessary set of common dependencies between IP Entities;  - Ownership and attribution of related IP Entities by otherwise independent persons or legal entities belonging to different jurisdictions or under different regimens of IP management;  - That these common entities can be represented digitally and communicated across a common digital communications infrastructure.  It follows that users that require or desire IP management of the IP Entities that they are singularly or collectively responsible for will benefit from the existence of a common minimum set of standardised terms that accurately represent their relationship with these entities in any and all IP management scenarios.  The following illustrates where and how these benefits can be obtained:  - Classification of IP Entities understandable by any IP management system and jurisdiction  - Common classification across a wide array of digital management networks  - Interoperability of content use and licensing across diverse digital content management systems |
| Example | An individual Creates a Work in Japanese that is adapted through translation to French and is performed in both Japan and Belgium. |

## Consistency

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| Requirement 2 | **The ontology shall be consistent and all relations explicit** |
| Description | All relations in the ontology shall be explicit in order to guarantee requirements 3 and 4.  The ontology shall prove to be as consistent as can be determined by available reasoners and human evaluation. |
| Rationale | In order to be machine readable and dependable, Ontologies must be consistent. |
| Benefit | Interoperability |
| Example | Ontologies that are not consistent either because their relators are not explicit or because their underlying logic is flawed will not produce predictable results between varying use case scenarios. |

## Concurrence between Machine and Human Readable Semantics

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| Requirement 3 | **It shall convey a strict correspondence between machine and human based interpretation and understanding** |
| Description | The ontology shall be explicit and transparent in all its relations such that machine readable semantics and the human readable semantics concur.  The relationships between terms interpreted by a machine shall be shown to concur with the human readable semantics used to describe the ontology |
| Rationale | In order to be machine readable, ontologies must be consistent both in part and as a whole. Care must be taken to avoid that the goal of making the machine readable ontology consistent does not require the use of arbitrary relators that can alter the concurrence between the machine readable and human readable semantics |
| Benefit | Confidence and trust in the ontology and its implementation for all value chain players |
| Example | In order to make some complex ontologies without a clear enough scope consistent, the use of arbitrary relators have been used such that the transparency and predictability between the machine implementation and the human expected results are lost. |

## Machine readable

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| Requirement 4 | **It shall be machine readable** |
| Description | The ontology shall be expressed in an ontology language, such as OWL, allowing machine processing, copying and transfer in its entirety.  Furthermore, a basic API shall be specified as a set of functions accessing the data model. This API shall provide basic functionality to:   * Query the ontology for key class properties. * Manage class individuals with basic common operations. * Store and retrieve information about class individuals. |
| Rationale | Given the broad spontaneous array of IP Entity representation and communication through digital means and the subsequent need to represent one to millions relationships, automation of IP representation and management is obligatory. |
| Benefit | Interoperability of IP management across varying systems.  Software able to read and reason over computer ontologies has long since existed and may be considered to be mature. |
| Example | Attribution of IP as represented digitally can be consistently maintained across varying systems and jurisdictions |

## Core extensions

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| Requirement 5 | **It shall support the extension of common core concepts** |
| Description | The ontology shall be able to be extended by adding new IP entities types, actions, rights and roles (including their descriptions). The extensions shall be compatible and consistent with the core. |
| Rationale | Through the refinement and specialisation of basic common core terms, new terms can be introduced to express a broader set of specific scenarios.  Basic working of particular sub-models (for different media, etc.) must remain all in all compatible and consistent. This can be done through the specialisation of concepts. |
| Benefit | The model can be extended to several specific cases of IP management. |
| Example | Extensions can be defined to cover IP entities as manifested in different media, text, audio, video as well as different jurisdictional regimens.  The actions create, adapt, perform and play, can retain their meaning while being applied to different types of media in different jurisdictions.  The “play” action, can be understood as displaying an image or performing some music, and each of the cases with a different name fall into the group “play”. |

## One to many communication

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| Requirement 6 | **IP Management across one to many digital communication** |
| Description | All forms of Intellectual Property management necessarily and minimally require the recognition of fundamental IP entities. These can be attributable to uniquely identifiable persons or groups thereof that take on Roles capable of minimum and necessary Actions for which the transfer of Rights are required.  The ontology shall represent relationships between:   1. IP Entities 2. IP Entities and Roles 3. Roles 4. Roles and actions 5. IP Entities and actions 6. Rights, Roles and actions |
| Rationale | An important aspect of the digital media environment is the unprecedented autonomy of effective expression of key roles associated with content such as Creator, performer (Instantiator), Producer, Distributor, etc., now virtually accessible to anyone with respect to not only registered IP Entities but also new IP Entities being created and represented digitally on the fly. Thus, a much larger array of business entities including individuals effectively perform these Roles and increasingly require common semantics to benefit from the “one to millions” relationships inherent in digital media technology.  However and presently, the process of formalising and recording interactions between such a broad array of users that assume these Roles is performed through disparate means that are sometimes only partially mechanised and certainly not interoperable. |
| Benefit | The benefits of such a machine readable ontology include great simplification of licensing of a large array of user generated IP represented in content as well as greater interoperability of IP use in digital networks. |
| Example | Eva can create an MP3 file and declare herself Creator of the IP represented therein and declare the MP3 to be only a Manifestation of her Work. By representing her Work and corresponding Manifestation in a DI and associating the appropriate REL, Eva can require that all and any user throughout the web wishing to access the MP3 file, declare themselves vis à vis the MP3 to be only Instantiator and/or Adaptor. |

## Common model and relations

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| Requirement 7 | **Common core terms and concepts shall be related in a common model** |
| Description | As a corollary of the definitions of the common core terms, an equally common set of minimum and necessary relationships between the terms can be inferred. These in turn represent a minimum common core IP model. |
| Rationale | Common Roles, Actions and IP Entities are related consistently in any IP management system and value chain at the very least temporally. |
| Benefit | A minimum common IP model based on at least temporal common IP Entity and role relationships. |
| Example | Producer requires an Instantiator’s performance that requires an Adaptor’s arrangement (Adaptation) that requires Creator’s Creation. |

## Compatibility with existing IP representation

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| Requirement 8 | **It shall support existing IP management databases** |
| Description | Ontology terms shall correspond adequately to terms commonly used in existing IP management related public databases. |
| Rationale | Different databases relating different Roles, IP Entities and Rights exist. |
| Benefit | Past systems of IP related classification are not lost |
| Example | Mapping to IPI, CISAC, ISWC, ISRC databases etc. |

## Authorisation, attribution and licensing

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| Requirement 9 | **It shall support specific authorisation, attribution and licensing** |
| Description | Automated recognition of relationships within the common core can verify validity of:   * attributions * authorisations * licensing |
| Rationale | The common core describes a generic set of relationships between rights, actions, roles and IP entities that need to be expressed in particular instances |
| Benefit | Individuals of the classes defined in the common core and its extensions can benefit from the relationships and associations expressed in the model for automated transactions of their IP. |
| Example | User 1 creates and registers a Work and decides to represent and communicate a Manifestation of it digitally. User 1 registers his digital representation of his Work as IP Entity “WorkManifestation” and his person as the corresponding Role “Creator”. User 2 realises a particular rendition of User 1’s Work and tries to register the Instance under the Role “Creator”. However and according to the ontology, Creator has cardinality 1 to many Manifestations, Instances etc. and the Instance does not correspond to any Creator output, therefore the declaration is not accepted and the incorrect attribution avoided and any corresponding license avoided. All this done between machines and across IP management systems |

## Common digital and non digital governance

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| Requirement 10 | **It shall support governance of digital representations of IP in accordance with governance of non digital representations** |
| Description | The ontology shall allow differing representations of the same IP both digital and non digital to be represented and managed through it. |
| Rationale | IP is only represented and communicated digitally while being common to both the digital and non digital spaces. Nonetheless and irrespectively of whether the final use of IP is digital or analogue, its use in general is greatly enhanced due to the ability for it to be represented and communicated digitally. Therefore, any underlying IP management must be agnostic to the media (digital or analogue) used to represent IP. |
| Benefit | Maximum benefit of digital technology in support of any IP management |
| Example | A Creator represents and communicates his theatre play worldwide in digital format and receives royalties through digital means directly from world wide ticket sales of live (i.e.non digital) performances of his Work. |

## Copyright exceptions

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| Requirement 11 | **The model must be able to express copyright exceptions** |
| Description | * The ontology shall provide representation means and the formal semantics to express special permissions such as: * quotation * education * official act * private copy * parody * temporary reproduction |
| Rationale | End-users do not hold rights. Therefore they need to acquire usage licenses from rights-holders. However, in order to establish some kind of balance, provisions in some jurisdictions exist for special permissions for certain usages, such as quote, education, private copy, etc. |
| Benefit | Confidence and trust in the ontology and its implementation for all value chain players including end users. |
| Example | Rights management systems should never unduly impede an artist's ability to create a new creation such as a remix. In a DRM environment it could be a problem that sampling is impossible because licenses are not explicit about the sampling policy and because all 'copy' actions are blocked by default, even if such copies are intended to be private copies. At this point, we argue that Sampling should be possible as long as its purpose is private and the ontology should express the special permission for private use. |

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## REL integration and support

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| Requirement 12 | **Support IP Right based REL expression determination and authorization** |
| Description | It should support development of an REL profile for expressing IP rights and enabling determination and authorization of IP rights according to REL expressions defined in the REL profile. |
| Rationale | REL statements are used to govern access to content since such access depends also on the IP represented therein use of REL in the context of the IP model is required |
| Benefit | REL statements can be used consistently across the value chain |
| Example | A creator makes a personal recording of his Work, since he does not want to distribute it as a performance per se he labels it as his Manifestation of his Work and issues a REL license free of charge but that requires that only Producers and/or performers may access his MP3 i.e. the file may not be communicated publically or to end users. In this example, the issuance of REL statements would require the creation of a REL profile to include IP Entity, Role and Rights of the ontology. |

## Unfettered access

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| Requirement 13 | **The ontology shall be universally accessible** |
| Description | Access to the ontology should be made as easy and inexpensive as possible i.e. machine readable formalisations of the ontology must be replicable and copies allowed to be distributed and maintained anywhere. |
| Rationale | Rights owners that use the ontology to define their relationships to digital representations of their IP require that all and any other value chain users have unfettered access to the same underlying logic contained in the ontology to appropriately define their roles vìs á vìs those same representations . If access to the ontology is in any way limited, access to and transactions with their IP will be unduly hampered. |
| Benefit | Optimum efficiency of digital based IP transactions and REL deployment |
| Example | Two copies of the same ontology can be validated against each other and therefore can be used to the same end. |

## Extension of ISO/IEC 21000 standards

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| Requirement 14 | **The ontology must complement the suite of ISO/IEC 21000 standards** |
| Description | The ontology must complement the ISO/IEC 21000 standards by providing a new scope and new scenarios in which existing ISO/IEC standards can be implemented. |
| Rationale | Digital technology can be considered a multiplier of relationships by virtue of the extent to which content can be created and distributed anywhere. Thus, without new tools that take the burden of managing enumerable relationships between agents, much of the potential of global digital networks is lost. |
| Benefit | Automate and replicate common scenarios in which digital representations (DIs) and corresponding MPEG-21 features are deployed. |
| Example | Presently the number of IP owners being represented by conventional means are small the use of a common value chain ontology would assist in providing services to much larger numbers of already manifest IP owners and collaborators in a consistent and ordered manner throughout the global web. |

## Social tagging

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| Requirement 15 | **The ontology shall support tags that users may associate to content, metadata, roles, etc. through social tagging**. |
| Description | Users interact spontaneously content and produce text or commentaries that are specifically associated with them. Among such commentaries are “social tags”, “critiques”, “synopsis” etc.. |
| Rationale | These commentaries can not only be associated with resources but also can be associated with any particular instance of a concept or term represented in a value chain ontology such as particular DIs and/or Resources, IP Entities, Roles, etc. |
| Benefit | Provide the means to tag not only the digital DI/Resource but also what is being represented as well as the Roles, corresponding agents involved and other aspect such as the existing metadata etc. |
| Example | The user role in the ontology can be given the properties of associating social tags to any of the objects, entities or elements of content represented in the ontology. |

## User Use Data Rights Representation

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| Requirement 16 | **The Ontology shall support representation of Use Data on behalf of Users including End-Users** |
| Description | The media value chain ontology shall be able to represent the generation, flow and processing of Use Data generated by Users. This involves , as a minimum, End Users, and value chain users through which content has reached the end user and users who monitor/report how content is used |
| Rationale | Any data that is generated by a User has rights associated that must be granted to other Users that wish to use that data |
| Benefit | All Users are included in the exercising of rights independently of the data they create and the Role they have assumed |
| Example | An End User responds to an offer to have his access to a set of content monitored for the benefit of another User(s) by providing a license that allows the user to determine to obtain reports as to how and by whom his Use Data is being exploited. |

## Advertising Business Models

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| Requirement 17 | **The Ontology shall support Advertising creation and distribution Business Models** |
| Description | The media value chain ontology shall support relationships that enable various forms of creation and distribution of content associated with advertisements |
| Rationale | Advertising uses push distribution tactics yet content rights exist and often the flow of remuneration is not realised in the same way as in pull distribution. |
| Benefit | Support of varying business models |
| Example | Advertiser commissions the creation of content to a Producer who synchronising IP Entities belonging to Creators and Instantiators and pays Users to render and distribute the content. |

## Use data and advertising model payment

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| Requirement 18 | **The Ontology shall support payment for advertising and Use Data exploitation scenarios** |
| Description | MCVO shall support scenarios where remuneration may be done in support of content, advertisement and content + advertisement distribution, and in permitting the use of Use Data of Users by another User |
| Rationale | Different types of content exploitation may require different payment models |
| Benefit | Any content creator can define adequate means of remuneration for the exploitation of their content |
| Example | See Requirement 17 where the push technology may on the one hand remunerate the content providers as well as the Users that render their advertisements. |

## Content Handling Roles

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| Requirement 19 | **The Ontology shall support the definition of Roles that represent agents that act on behalf of other agents to which rights have been granted** |
| Description | The media value chain ontology shall support the roles of service providers that handle content under the provisions of the license of another value chain user for that content. |
| Rationale | Handling of content for different purposes may be performed by trusted agents other than those to which content is licensed |
| Benefit | Flexibility in handling content while maintaining simplicity of licensing |
| Example | A broadcaster used to have a department for its headend that later becomes an independent company. The broadcaster assigns the new entity to be one of its “content handler” and continues operating as before when both were part of the same licensed entity. |

## 2.20 Audio Segments

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| Requirement 20 | **The Ontology shall support the description of IP Entities that appear in defined segments on the timeline of a composite IP Entity.** |
| Description | MVCO shall be able to represent the content of individual segments of an audio IP Entity, defined by a start and end point. A Segment may contain an individual IP Entity and is defined by an interval with a start and end point on the Timeline of a composite IP Entity. |
| Rationale | Composite IP Entities may consist of existing IP Entities that appear within a specific time segment, associated with individual rights. |
| Benefit | Flexibility in rights association for individual parts of composite audio IP Entities. |
| Example | A broadcaster produces a podcast consisting of multiple speech and music segments. The rights holders of the songs in the podcast issue licenses for the use of the IP Entities. The rights holders for specified time segments can be identified. |

## 2.21 Multi-Track Audio

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| Requirement 21 | **The Ontology shall support the description of individual tracks of an audio multi-track entity.** |
| Description | MVCO shall be able to represent the content of individual tracks of an audio multi-track IP Entity. The content of audio tracks may be treated as individual IP Entities as part of a composite IP Entity. |
| Rationale | Audio IP Entities may consist of multiple tracks. The tracks of a multi-track audio IP Entity may contain existing IP Entities associated with individual rights. |
| Benefit | Flexibility in rights association for individual tracks of multi-track audio IP Entities. |
| Example | Music files may be distributed in a multi-track format. Different rights holders and permissions can be represented for the IP Entities that appear on individual tracks. |

# ANNEX I – Definitions

The definitions given in this Annex are mainly taken from Approved Document 6 of the Interoperable DRM Platform version 3.0 of DMP [http://www.dmpf.org/ open/dmp1006.zip]. These are given here as a help to interpret the requirements in a consistent fashion. Definitions with “REL” between brackets are taken from ISO/IEC 21000-5 (MEPG-21 Rights Expression Language) and its Amendments.

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| Adapt (REL) | The act of changing transiently an existing Resource to derive a new Resource. |
| Adaptation | A Work that is derived from another Work |
| AdaptationInstance | An object or event which is an example of an Identified Adaptation Manifestation (e.g. a File) |
| AdaptationInstanceCopy | A copy of an AdaptationInstance |
| AdaptationManifestation | An object or event which is an expression of an Adaptation |
| AdaptationManifestationCopy | A copy of an AdaptationManifestation |
| Adaptor | A User who produces an Adaptation |
| Broadcast | The function that delivers Content to a Device in a point-to-multipoint modality |
| Content | A defined structured of Content Elements e.g. Digital Item |
| Content Elements | Any of the following types of data: Resource, metadata, nested Content, license, IPMP data, IPMP tools and Use Data |
| Copy | The function by which Device A Stores content in Device B, preserving the original content in Device A |
| CreateWork | | The action of creating a Work without any previous IP Entity |
| Creator | A User who generates a Work and makes its first Manifestation, also referred to as author |
| Delete (REL) | The act of destroying a Resource. |
| Delist (REL) | The act of removing the Resource from a Resource which is a list of Resources and contains the Resource to be removed. |
| Diminish (REL) | The act of deriving a new Resource which is smaller than its source Resource. |
| Distribute | Sell, rent or lend |
| Distributor | A User who distributes a Product |
| Device | A combination of hardware and/or software that allows a User to execute functions over Content and/or IP Entities |
| Embed (REL) | The act of putting a Resource into another Resource. |
| End-User | A User in a Value-Chain who ultimately consumes content |
| Enhance (REL) | The act of deriving a new Resource which is larger than its source Resource. |
| Enlarge (REL) | The act of modifying a Resource by adding to it. |
| Enlist (REL) | The act of adding the Resource into a Resource which is a list of Resources. |
| Execute (REL) | The act of executing a digital Resource. |
| Export (REL) | The act of releasing a Resource in the current repository from explicit protection and(or) management by current DRM system to another controlled system or an untrusted space. |
| GovernedAdapt (REL) | The right to Adapt a Resource and at the same time to result in certain Rights being associated to the adapted Resource. |
| GovernedCopy (REL) | The act of performing Copy to the Resource and associating right expressions with that copied Resource in compliance with the compliance rules identified by this Right. |
| GovernedMove (REL) | The act of performing Move to the Resource and associating right expressions with that moved Resource in compliance with the compliance rules identified by this Right. |
| Identify | The function of assigning a unique signifier that establishes the identity of entities, Devices, Content and Content Elements |
| Install (REL) | The act of following the instructions provided by an installing Resource. |
| Instance | An object or event which is an example of an Identified Manifestation (e.g. a File) |
| Instantiator | A User who produces an Instance |
| Intellectual Property (IP) | Any identifiable product of the mind attributable to any person(s) or legal entitie(s) that can be represented or communicated physically and protectable by copyright or similar laws. |
| Interval | A temporal entity with specified duration |
| IP Entities | Types of IP Represented as content: Work, Adaptation, Manifestation, Instance |
| MakeAdaptation | | The action of making an Adaptation |
| MakeAdaptationManifestationCopy | | The action of making a ManifestationCopy |
| MakeAdaptationInstanceCopy | | The action of making an Adaptation InstanceCopy |
| MakeAdaptationInstance | | The action of making an Instance from an Adaptation |
| MakeAdaptationManifestation | | The action of making an Adaptation Manifestation. |
| MakeCopy | | The right to make a copy of a Representation |
| MakeInstance | | The action of making an Instance from a Manifestation. |
| MakeManifestation | | The action of making a Manifestation. |
| MakeWorkInstanceCopy | | The action of making a Work InstanceCopy |
| MakeWorkManifestationCopy | | The action of making a Work ManifestationCopy |
| MakeWorkInstance | | The action of making an Instance from a Work Manifestation. |
| MakeWorkManifestation | | The action of making a Manifestation from Work. |
| Manifestation | An object or event which is an expression of a Work |
| Modify (REL) | The act of changing a Resource, preserving the alterations made. |
| Move (REL) | The act of relocating a Resource from one place to another. |
| Play (REL) | The act of deriving a transient and directly perceivable representation of a Resource. |
| Print (REL) | The act of deriving a fixed and directly perceivable representation of a Resource. |
| Private Copy | The function of storing content and hold it private for non commercial purposes |
| Produce | The function of making Products |
| Producer | A User that makes Products |
| Product | A content item that adds value to IP Entities by including them with an appropriate licence for the purpose of publishing |
| Public Communication | The function of publicly displaying/performing, e.g. live performance, radio, television, internet streaming, multicast of Instances and Manifestations, and download |
| Reduce (REL) | The act of modifying a Resource by taking away from it. |
| Render | The function of converting a Resource to a human-perceivable form |
| Represent | Expressing information in a form that can be processed by either a digital or analogue Device |
| Resource | Data, whose Representation is not specified by DMP (e.g. an MP3 file or an executable code), that can be processed by a Device |
| ReuseIPEntity | The action of using one IP Entity in the creation of a composite IP Entity. |
| Right | A consequence of ownership of Intellectual Property yielding the ability of performing one or more functions over the Intellectual Property |
| Role | A defined set of actions and corresponding conditions attributed to and required of a User |
| Segment | An identifiable part of an IP Entity |
| Synchronise | The function of concurrently performing/displaying two or more distinct IP Entities each for a different human sense e.g. text and audio or video and song |
| Track | A single track of a multi-track audio IP Entity |
| Timeline | Represents the passage of time in relation to time-based IP Entities |
| Uninstall (REL) | The act of following the instructions provided by an uninstalling Resource |
| Use Data | Data documenting the functions performed by a Device on a content item and the associated context |
| User | Any person or legal entity in a Value-Chain connecting (and including) Creator and End-User. |
| Value-Chain | A group of interacting Users, connecting (and including) Creators to End-Users |
| Work | A creation that retains intellectual or artistic attributes independently of its Manifestations |
| WorkInstance | An object or event which is an example of an Identified Manifestation of a Work (e.g. a file) |
| WorkInstanceCopy | A copy of a WorkInstance |
| WorkManifestation | An object or event which is an expression of a Manifestation of a Work |
| WorkManifestationCopy | A copy of a WorkManifestation |