

Preserving Intellectual Property Rights in the long term

- slide 1** This presentation concerns the way to address some digital preservation issues regarding digital rights.
- slide 2** Two different testbeds on contemporary arts, from INA and CIANT respectively, show how the Digital Right Manager (DRM) key component and the Digital Rights Ontology can be validated in two different scenarios: an ingestion scenario which regards the creation of provenance data objects, and a preservation scenario concerning the update of provenance Preservation Description Information (PDI), with reference to rights, especially in the case of a change in the law.
- slide 3** Every archive has to deal with rights since the many kinds of contents that they hold have property rights on them, for instance, there is copyright on literary, artistic and scientific works; neighbouring rights on performance databases and software programs; industrial property rights on scientific inventions, discoveries, trademarks and industrial design and so on. All these rights impose limitations to the actions that people can take on the objects that are preserved, for both the curator and the end user. This means that a preservation institution must consider rights and put itself and the potential consumer in the condition to be able to exploit the materials lawfully, both now and in the future.
- slide 4**
first scenario In order to maintain the rights condition updated and consistent, storing and preserving the rights themselves is not enough; properly capturing and preserving all those provenance events that originated the rights is necessary too, because if something changes then one must reconstruct the rights starting from the creation history. To that purpose, a tool was purposely-developed for the artistic community. It allows the creation of provenance PDI in a very user-friendly way. The output of one session consists of two objects: a provenance data object which contains the life cycle, and another object that contains the description of intellectual property rights.

live
demonstration

This tool is called Cyclops and was specifically thought of for the documentation of artistic works.

It allows the building of the life cycle of works graphically.

To take an example, opening an existing documentation regarding the work *Spaces of mind*, an acousmatic music piece that comes from INA-GRM, a graph says that its author was Daniel Teruggi. Moreover, the graph describes the whole creation process: which the intermediate results were, which resources were used, in addition to information concerning the public performances and associated dates and places.

The user can compose such a graph by using a set of pre-defined entities and relationships from a menu.

From the OAIS reference model point of view this documentation represents provenance.

The benefit obtained from this tool is that it automatically transforms this description into a formalism that is suitable to be stored and preserved along with the work. CASPAR has chosen the CIDOC as a representation language for provenance.

Exporting that documentation, an RDF file is obtained which contains instances of the CIDOC ontology. The file can be saved on the laptop and can be used later as provenance data object, for instance, with MustiCASPAR to upload it in one tool.

Cyclops is also integrated with the DRM key component.

Selecting, for example, the option of updating DRM information, the tool sends some information that is useful to derive rights to the DRM key component, i.e. the title and the type of the work, what its constituent parts are, who contributed to it and how, the date and place of its first public manifestation and so on. From that information, the DRM derives all the details concerning intellectual property rights: who owns the rights, what kind of rights they are, the expiration date and the country of validity.

Once the DRM has derived the rights it sends this information back to the tool serialized as RDF data which contains, in particular, instances of the rights ontology. The file can be saved and used later in order to be preserved along with the work.

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The Digital Rights Ontology is a domain ontology which has been developed in CASPAR. It contains entities and relationships which permit the description of all aspects that are somehow relevant to the evaluation of rights, not only attributes concerning rights, but also those that refer to validity in time and space, laws and agreements, people, actions, licenses, constraints and conditions.

This ontology is harmonized with CIDOC and FRBRoo and as a

consequence the two data objects that have been presented above, are integrated.

live
demonstration

Using an RDF visualization tool and opening the rights file it is possible to see that there are a lot of instances. This is a rather complex file because of the quantity of rights on the various constituent parts and because it includes all the involved people too; including the creation history and the life cycle that has previously been exported by Cyclops, it becomes possible to identify the two parts which contain the rights and the creation history respectively, and to see that they are inter-connected. This means that it is possible to query by navigating from one part to the other, an opportunity that could be useful, for instance, in implementing search and retrieval that are based on provenance, where both rights information and creation history can be included.

What has just been shown is how CASPAR deals with ingestion of rights: not only the rights are preserved but also the creation history, using the rights ontology and CIDOC as presentation languages, and using provenance data as the descriptive information, in order to implement search and retrieval.

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The second scenario concerns preservation: it is an accelerated lifetime test where the goal is to demonstrate that the system withstands changes in the law.

Supposing there is an amendment to the copyright law which extends the definition of artistic performer to include not only traditional instrument players but also musical assistants who project sound files during an acousmatic music piece; so, in this case, there would be more right holders on *Spaces of mind*.

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In this scenario the actor is a DRM preservation expert who would use the CASPAR web desktop to access some of the CASPAR key components. Here, five components are involved: the Orchestration Manager, which can be used to send notifications concerning the need of intervention; the Finding Aids, that may be used to retrieve all the affected Archival Information Packages (AIPs) and all those acousmatic works which have new rights on them; the DRM that is used to update the rights derivation rules and to derive the rights again, and finally, the Packaging and the Preservation DataStore (PDS) which are used to substitute the old provenance with the new updated one.

live

From the CASPAR web desktop it is possible to choose the user interface of

demonstration the digital rights management component. Here, for instance, there is the feature, a part of the API, which allows one to register some parts of the creation history. This is in fact the part that was used by Cyclops to register the life cycle.

Examining the creative activity part, it is possible to see that some activities that are related to *Spaces of mind* have been reduced.

In the scenario, if one chooses the option for checking the rights and selects *Spaces of mind*, a great deal of specialized types of rights can be found, and these are all associated to Daniel Teruggi, but none of them is associated with the performer.

If a change in the law occurred, then the DRM preservation expert would have to go onto the administration menu and update the categorization of the activity of performing sound projection. After the modification of the classification, the DRM preservation expert can then export the derived rights again. Checking now *Spaces of mind*, some new rights associated to the sound performer may be found. The type of the new rights is seen to be identified, together with its expiry date.

slide 18 Shifting the attention to a more concrete example, in April '09, the European Parliament voted for the extension of some performers rights and extended them from 50 to 70 years post mortem. This has still to be approved by the European Council but if it is, then all the EU states will have 2 years time to transpose these directives into their own national law.

In this case there would presumably be a point in time where some countries would have already implemented the law.

Supposing that France is among them, and that some other countries had not yet transposed these directives, i.e. the Czech Republic.

The objective which is pursued in this scenario is that the rights on the various works are interpreted correctly, taking into consideration the discrepancies in the various countries that have been introduced by this change in law.

To make a comparison, another work has been uploaded in the DRM component, for example *Golem*, a dance and technological art performance, coming from the CIANT testbed and which is located in the Czech Republic. In relation to the rights, this is quite complex work because there are a lot of constituent parts: sound, lights, 3D rendering, choreography, dance performance, recording production and the work ideation.

The DRM derives quite a large amount of rights associated with the various people. Focusing only on one person who was in charge of the sound, it is possible to find that he also has rights related to the creation of the audio page, he also did the sound control during the performance and the audio

recording and so there are rights associated to these contributions too. While in the previous example the expiry date of the economic rights was 2170, now, after the change in the law, it is 2115, although the two people have the same expiry date registered. This example permits us to highlight that, if an archive decides to deal with rights, then it must be able to handle the changing validity of rights in time and in space.

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This presentation closes with just a few words about validation. The suitability to represent rights of the Digital Rights Ontology has been checked and, in particular, against real examples from INA and CIANT. Quite a good job has been done in validating the representation of intellectual property rights (the suitability of representing licenses has not been demonstrated in the previous example above, although it is included in the rights ontology). The interoperability of the ontology with other standards or other well-known ontologies, like CIDOC and FRBRoo, has been demonstrated and mainly positive feedback has been obtained from the reviewers on the paper that was submitted and accepted at ECDL 2009 (this paper speaks about how the digital rights ontology was used to describe and to preserve rights). Furthermore, the capability of a CASPAR archive to handle changes of rights has been tested, in particular resisting changes in the law and considering that there are multiple legal frameworks. Finally, the proposal which was submitted to the OAIS to include a new PDI section concerning the access rights in particular, has been accepted, and this is an important contribution to the state of art in digital preservation.

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Further information can be found on various websites where various documents are available: the source code and the documentation of the DRM key component, as well as those concerning all other key components, the rights ontology with the associated documentation and the Cyclops prototype.