Deliverable D3.1

D3.1 Report on Rights Management requirements

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Table of Contents

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Executive Summary

This deliverable is part of WP3, a work package that will (1) clarify intellectual property aspects of the ACE, (2) relate them to the different Creative Commons licensing strategies, (3) define procedures that explain to content creators, content providers, tool developers and content users how to interact with the ACE, (4) and study emerging business models and long-term sustainability models for the ACE.

The present deliverable addresses requirements for the rights management procedures involved in the ACE. This task investigates rights management requirements from an industry perspective and outlines user actions and initial use cases and rights management provisions that should be taken into account in the Audio Commons Ontology and API specification. This task is intended to enable future developers and service consumers to be able to granularly specify rights in use cases so that they can be taken care of from within ACE.

The task informs the definition of the Audio Commons Ontology and API. Yet, deliverable 2.1. (a user survey) has uncovered the current state-of-the-art of our target domains and directed us towards the path for improvement in a very complex way. This deliverable complements these findings by adding license-specific information that should be taken into consideration when designing and integrating Audio Commons content in the existing workflows.

For this deliverable we have concentrated on describing the legal background of rights management in the audio industry. We shortly described key documents influencing international copyright practice. We pointed out that the current copyright regime favors powerful intermediaries, such as music labels, giving little power to artists and causing the progressing commodification of creations, based on copyright speculation. We then introduced Creative Commons (CC) licensing, identified as a form of the countermovement towards the existing copyright regime, and showed its application in audio platforms. Then, we clarified user actions predicted in CC licenses, such as redistribution or creation of derivative sounds. This deliverable also contains initial use cases, which illustrate different licensing needs, specific to different users. Five profiles described in section 3 of this document outline hypothetical needs of: a professional musician, an amateur foley, a game developer, an app creator, and a procedural content generation algorithm. Using these profiles we developed a range of rights use cases, which need to be taken into account when developing the ACE.

The final section contains a list of recommendations, based on problems highlighted in the user survey and observations of the current practices of platforms such as Jamendo. Firstly, we describe issues connected to licensing facilitation, especially making licensing understandable to users and facilitating human- and machine-readable attribution. Secondly, we elaborate on the directions of machine-based licensing and negotiation. Thirdly, we address licensing features of plug-ins and add-ons developed within the project.

This deliverable clarifies issues connected to licensing and establishes licensing needs that must be considered when designing the ACE. The issues identified in this deliverable will also be utilized in the next task, aimed at clarifying and interpreting existing Creative Commons licensing procedures.

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Background

This Deliverable is part of the WP3 work package, which concentrates on understanding the rights management requirements and business models for the ACE. Both clarification of intellectual property aspect of the ACE and information provided in this document about the requirements for the rights management procedures involved in the ACE are intended to support the development of Audio Commons API specification.

This deliverable shortly addresses current international copyright regime in the audio sector, shows the role and importance of Creative Commons licensing and presents a series of use cases connected to licensing and rights management provisions that should be taken into account in the Audio Commons Ontology and API specification.

The document is interconnected with Task 2.1, which analyses the requirements from creative industries. Using the input from this task, which has revealed user problems connected to transparency and the ease of understanding of licensing, this Deliverable also provides recommendations for organization of licensing process in Audio Commons plug-ins and website.

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1 Introduction

The AudioCommons Ecosystem (ACE) presents several opportunities and challenges for established gaming, music, and film/advertising industry entities. This deliverable investigates rights management requirements from an industry perspective by considering current industry practice, user needs and input from the project's commercial partner in the catalogue music-provision industry (Jamendo). It provides initial use cases and rights management provisions that should be taken into account in the Audio Commons Ontology and API specification. Additionally, as commonly understood frameworks for publishing and master rights to particular audio and music recordings will be challenged within the ACE's framework, this Deliverable also identifies possible directions of development of the ACE in order to enable future developers and service consumers to be able to granularly specify rights use cases and have taken care of from within the ACE.

1.1 Main objectives and goals

Objectives:

- Clarification of intellectual property aspects of the ACE.
- Analysis of requirements for the rights management procedures involved in the ACE.
- Documentation with different use cases that exemplify all possible rights and IP situations and provide solutions.
- Explanation of how the ACE might fit or disrupt current creative industries IP models.

1.2 Terminology

AudioCommons: reference to the EC H2020 funded project AudioCommons, with grant agreement nr 688382.

Audio Commons Initiative: understanding of the AudioCommons project core ideas beyond the lifetime and specific scope of the funded project. The term "Audio Commons Initiative" is used to imply i) our will to continue supporting the Audio Commons Ecosystem and its ideas after the lifetime of the funded project, and ii) our will to engage new stakeholders which are not officially part of the project consortium.

Audio Commons: generic reference to the Audio Commons core ideas, without distinguishing between the concept of the initiative and the actual funded project.

Audio Commons Ecosystem (ACE): series of technologies and actors involved in publishing and consuming Audio Commons content.

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Audio Commons content (AC): audio content released under Creative Commons licenses and enhanced with meaningful contextual information (e.g., annotations, license information) that enables its publication in the ACE.

Content creator: individual users, industries or other actors that create audio content and publish in the ACE through content providers.

Content provider: services that expose content created by content creators to the ACE.

Content user: individual users, industries or other actors that use the content exposed by content providers and created by content creators in their creative workflows.

Ontology: In the context of computer and information sciences, an ontology defines a set of representational primitives with which to model a domain of knowledge or discourse. The representational primitives are typically classes (or sets), attributes (or properties), and relationships (or relations among class members). The definitions of the representational primitives include information about their meaning and constraints on their logically consistent application. In the context of database systems, ontology can be viewed as a level of abstraction of data models, analogous to hierarchical and relational models, but intended for modelling knowledge about individuals, their attributes, and their relationships to other individuals. Ontologies are typically specified in languages that allow abstraction away from data structures and implementation strategies; in practice, the languages of ontologies are closer in expressive power to first-order logic than languages used to model databases. [Gruber]

Tool developer: individual users, industries or other actors that develop tools for consuming (and also potentially publishing) Audio Commons content.

Embeddable tools: tools for consuming Audio Commons content that can be embedded in existing production workflows of creative industries.

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2 Introduction to Right Management Procedures

Audio communities face a multitude of problems when working with open audio content from the internet. Many of these problems are related to the rules of usage and licensing, which for many users are not clear enough. The multiplicity of platforms, ways of accessing and downloading the content and licensing information is challenging and difficult, given the amount of files that users deal with. One of the conclusions of Deliverable 2.1. emphasizes the issues with communication:

> *What users want is clear and easily understandable licensing information, intelligent interfaces with drop down functionalities straight into their workflows, high quality recommendation, rich metadata describing the audio content and availability of services that are capable of conducting various task in the audio domain.*

This chapter provides a brief introduction to the legal frameworks informing practice in the audio industry. Even though neither of the documents is explored in detail, we provide a concise list in order to ensure that the basic legal framework of the audio industry is concisely outlined. We start from laying the foundation by addressing acts that influenced international copyright practice. Then, we move to describing alternative copyright regime and licensing available under Creative Commons (CC). We outline license types, explain how attribution works and show the usage of CC by platforms hosting open sound.

2.1 Rights Management in the Audio Industry: A Background

This sub-section lays out the foundations of current rights management practices in the audio industry. It gives special consideration to showing how modern copyright law and current licensing practices can handle user-generated content. As this chapter's function is to provide concise and introductory information, for the sake of simplicity we refrain from addressing differences between national copyright regulations. Instead, we aim at addressing the most important regulations that have influenced copyright practice in the audio industry and in the digital context.

Copyright is an exclusive right that exists in creative works that have enough originality (individual character) to warrant such a right. Copyright provides its right holder with an exclusive right to copy, reproduce, distribute, adapt, perform or display the work of creative expression. In general, copyright's function is to protect and reward creativity, uniqueness and specificity of works. In the first instance copyright, equips the artist with "the right to control copying", which means that it secures the artist's exclusive right to copy, reproduce, share and broadcast his or her creative work. This right is obviously transferable and might be transferred to any other party, such as a distributor, publisher or music label.

Copyright protects different types of works, from literary and academic to all artistic domains. The type of expression makes no difference in terms of protection, and the right is given automatically to the creator of the original work. For instance, an unpublished song recorded on a home PC can receive similar copyright protection to a song by a world-known artist, as long as it is original. The only

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conditions are (1) originality and that (2) the work is recorded or saved to any medium, such as a computer, paper, tape.

There are exceptions in copyright, which permit copying of work to some parties, which intend to use the work under the term of "fair use". Fair use refers to acceptable ways of using copyrighted works in cases when it is to provide commentary, criticism, news reporting, research, teaching, library archiving and scholarship (Aufderheide and Jaszi, 2011; Gasaway, 2013). To determine whether a particular use is fair, courts consider four factors, including whether the use is commercial, whether creative rather than factual elements of the existing copyrighted work were used, how much of the existing work was used, and whether the market for that work has been harmed (Westbrook, 2009). Artistic activities, such as sampling for composition or mixing does not fall under fair use and requires receiving permissions for "transformation".

2.2 Fundamental Legal Documents of International Copyright Protection

In today's globalizing world, copyright protection spreads across national borders, alongside with economic and political integration (Haggart, 2014; Makeen, 2000; Allgrove, 2013, Bently et al. 2010). Most nation states have their own specific regulations but in order to integrate national regulations, several documents had laid down the foundation of international copyright protection. Their goal is not only to regulate their cross-national usage but also to address issues such as translation to different languages or adaptation of works to make them understandable in different cultural contexts. Below, a short overview of major acts that influence today's international copyright practice.

The Berne Convention (last amendment: 28. 09. 1979)[1]

The Berne Convention for the Protection of Literary and Artistic Works created an international treaty for signing countries in 1886 and formally mandated several aspects of modern copyright law. The convention creates a union, composed of signatory countries, within which the members are obliged to recognize and respect copyright of works. It is the first international act to recognize copyright protection in the moment of creation of a work (as opposed to registering copyright). It has also defined notions such as fair use, country of origin or specified artists' right to authorise translations, reproductions, adaptations, performances, broadcasts or other communication of their work. There are a number of recognized issues regarding Berne Convention's application to digital creations, such as recognition of country of origin (Fitzgerald et. al., 2011). Currently there are 171 signatories of the Berne Convention (UN members plus Vatican), which have adopted the convention to suit local needs.

Rome Convention, WPPT and WCT

Mass popularization of copy technology and booming film and music industry in mid-twentieth century have created challenges for existing copyright law. Several acts have responded to this developments.

[1] Full text: http://www.wipo.int/treaties/en/text.jsp?file_id=283698

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The Rome Convention was signed in 1961 by the members of *United International Bureaux for the Protection of Intellectual Property*. This act extends copyright protection from the author of works to creators and holders of particular physical manifestations of intellectual property (at that time tapes or vinyl records) (WIPO, 1981). Today the Convention is considered outdated, but it was the basis for inclusion of provisions on the rights of performers, producers of phonograms, and broadcasting organizations.

WPPT[2] (WIPO Performances and Phonograms Treaty) has extended and clarified issues addressed in the Rome Convention by dealing with the rights of two kinds of beneficiaries, particularly in the digital environment: (1) performers (actors, singers, musicians, etc.); and (2) producers of phonograms (persons or legal entities that take the initiative and responsibility for the fixation of sounds).

WCT[3] (WIPO Copyright Treaty) further extends existing Conventions and addresses issues regarding the dissemination of copyrighted material in the digital world. For instance, it recognizes copyright protection of computer programmes and databases (named as "compilations of data") and addresses the issues of on-line rental and distribution.

EU Directive 2001/29/EC[4]

The European Union has strongly influenced integration of copyright protection. *Directive 2001/29/EC* (*InfoSoc* Directive), implements *WCT* in the European Union countries as well as brings together various elements of copyright law in Europe. InfoSoc Directive also responds to technological development and attempts to harmonize European Union's internal market.

DMCA[5] **in the United States**

The Digital Millennium Copyright Act (DMCA) is an United States adoption of WCT and WPPT but it also regulates a number of issues related to management and enforcement of copyrights online. DMCA provides a mechanism for copyright holders to protect their content online, for instance by ensuring the ease of infringement-related removal of content and protecting internet service providers from liability of such infringement.

The UK Digital Economy Act 2010[6]

The Digital Economy Act provides legal tools of enforcing copyrights by limiting, suspending, or terminating Internet service to copyright infringers. It also requires service providers to notify copyright owners of potential infringement.

EU Directive 2011/77/EU[7] **and national regulations of protection periods**

Additionally there are regulations specifying the period of protection of copyrighted works. For instance, *EU Directive 2011/77/EU,* obliges EU member states to implement regulations that extended the period

[2] Full text: http://www.wipo.int/treaties/en/ip/wppt/
[3] Full text: http://www.wipo.int/treaties/en/ip/wct/
[4] Full text: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2001:167:0010:0019:EN:PDF
[5] Full text: http://www.copyright.gov/legislation/dmca.pdf
[6] Full text: http://www.legislation.gov.uk/ukpga/2010/24/pdfs/ukpga_20100024_en.pdf
[7] Full text: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:265:0001:0005:en:PDF

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of protection from 50 to 70 years for copyright and performers` rights in most published sound recordings.

2.3 Creative Commons Licensing

Existing legal frameworks have given a significant amount of protection to copyright holders. Unfortunately, as commentators note, existing copyright regime favour powerful intermediaries, such as music labels, who hold the copyrights of artists (Garcelon, 2009; McLeold and DiCola, 2011). This power imbalance stimulated the commodification of creations, based on copyright speculation, to progress. On the business side, it signifies that the profits generated by new business models benefit these powerful intermediaries rather than creators (Marshall, 2015). This situation is especially difficult for creators. In response, a strong opposition emerged. Movements, known as "copyleft" promote freedom of knowledge, information and art, at the same time trying to break existing imbalances in the creative industry (Berry, 2008; Shemtov and Walden, 2013; Weber, 2004).

One of the most successful projects in this domain has been the Creative Commons (CC) initiative, which has achieved global scope and recognition. Creative Commons have developed a series of standard-form licenses that allow creators to permit wide dissemination and transformative uses of their works, without forfeiting copyright. While copyright law creates the default rule of *All Rights Reserved*, making permission necessary for each and every use of a work, Creative Commons seeks to facilitate an environment in which *Some Rights Reserved* or even *No Rights Reserved* become the norm.

Creative Commons, widely and successfully adopted, make it easier to share content generated by users due to standardisation of licensing and clear rules about re-use. In general, there are six license types and two public domain tools that users can apply. The license is irrevocable. In nearly all cases, this content remains owned by the user, and the platform gets the rights to host it via the CC license that is applied or via a separate license in the terms of service (Creative Commons, 2016).

Creative Commons supports platforms to integrate CC licensing. The most successful initiatives that implemented CC and have full support for licensing include: Flickr, Vimeo or Jamendo. Some platforms permit users to upload content they do not own so long as it is available under a Creative Commons license (or one of some particular subset of CC licenses). The decision to allow users to upload third party content, and if so, which particular Creative Commons licenses are permitted, comes down to how the content on the platform is and could be used by both the platform itself and other users.

2.3.1 CC License types (4.0.)

Below, a short description provided by Creative Commons, outlining the characteristics of six license types and public domain tools that users can apply.

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CC0 1.0 Universal (CC0 1.0) Public Domain Dedication 

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Additionally, users can waive all their copyright and related rights in their works to the fullest extent allowed by law, by using **CC 1.0 — "No Rights Reserved".**

Figure 1. CC License strength - graph adapted from:
http://www.dontwasteyourtime.co.uk/elearning/creative-commons-infographic-licenses-explained/

2.3.2 Attribution

Even though CC-licensed materials facilitate sharing of content, it is essential to follow the license conditions. All CC licenses contain the condition of attribution. In order to fulfill it, a user is recommended to attribute audio works either by mentioning them in a recording, or by displaying the information on the page where a piece is shared. Some platforms establish their conventions of attribution, where mentioning the author of a work is facilitated by the functionality of the platform. For instance, **Freesound** lists all downloaded files and lists licenses on a user's account, simplifying the process of attribution.

There are several plugins facilitating attribution, for instance:

- Open Attribute - a browser plugin for Firefox and Chrome that grabs the CC license metadata on a web page and turns it into an attribution

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- Commons Machinery - a suite of plugins for Firefox and Open Office tools that enables copying and pasting images with the attribution info already attached

Besides human-readable attributions there are several ways of making machine-readable attributions for the web. For audio files, such as MP3 or OGG, XMP-embedded metadata is often used.

2.3.3 Application of Creative Commons in the Audio Sector (Platforms)

To summarise, the table below presents the usage of CC-Licenses by the most important platforms hosting audio content under CC-license. The sizes shown in this table are rough estimates based on either information provided in the site or other sources found elsewhere.

	Content type	**Size**	**CC-licenses**
Jamendo	Music pieces	525k	All 6 CC variants + CC0
Freesound	Music samples, sound effects, field-recordings	300k	CC0, CC-BY, CC-BY-NC
CC-mixter	Music stems, music pieces	38k (music pieces), data not available for their types	All 6 CC variants + CC0
Free Music Archive	Music pieces	89k	All 6 CC variants + CC0
Internet Archive	Music pieces, radios, live concerts	2.6M	All 6 CC variants + CC0 + non-CC licenses
Europeana		574k	All 6 CC variants + CC0 + non-CC licenses
Looperman	Music stems, music pieces	196k	No (looperman open license)
Soundcloud	Music pieces, audiobooks	?	All 6 CC variants + non-CC licenses

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Bandcamp	Music pieces	?	CC-BY, CC-ND, CC-NC, CC-BY-NC-SA, CC-BY-NC-ND
Magnatune	Music pieces	?	CC-BY-NC-SA

2.3.4. User Actions in the ACE

Creative Commons licensing meets the diverse preferences of authors, while at the same time keeping it simple and easy to employ for both authors and users of copyrighted material. They provide the necessary technological and legal infrastructure, and the model they offer addresses the uncertainty of (prospective) users about what they can do with content – especially on the internet – without risking claims of copyright infringement (van Eechoud and van der Wal, 2008). For the user that has intentions to use the content, the licenses provide a guideline for usage possibilities, also by describing user actions.

Deliverable 2.1. points out that it is necessary to build a vocabulary of actions that are related to licensing and which can be used in constructing ACE ontology. Considering different actions mentioned in Creative Commons licenses (see: figure 2), Deliverable 2.1. asserts that those actions will need to be assessed and modeled inside the ACE ontology. One of the possibilities of ontology classes and properties used in ontology might be coming from Media Value Chain Ontology[8] (MVCO) or W3's PROV Ontology[9].

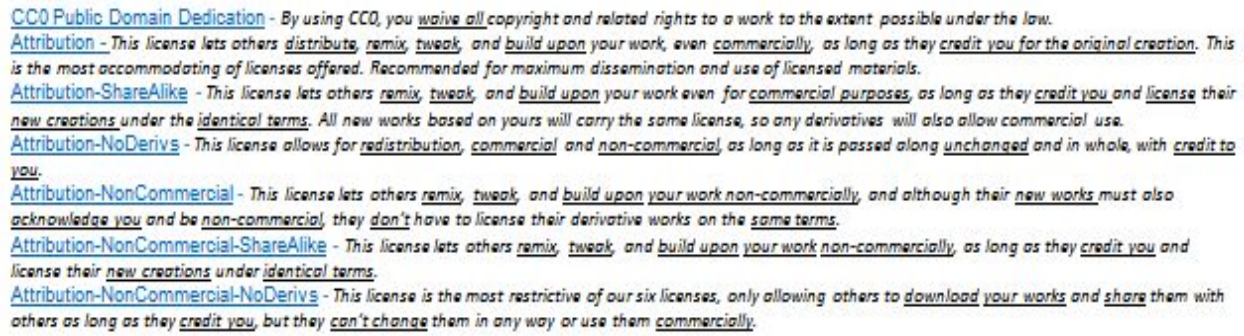

Figure 2: User actions in CC Licenses

Below, we outline main categories of user actions predicted by CC licensing.

[8] More information: http://dmag.ac.upc.edu/ontologies/mvco/
[9] More information: https://www.w3.org/TR/2013/REC-prov-o-20130430/

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Redistribution and Copying

Two CC licenses: Attribution-NonCommercial-NoDerivs (CC BY-NC-ND) and Attribution-NoDerivs (CC BY-ND) permit only **redistribution and copying** of copyrighted material (with proper attribution), with no possibility of distribution of remixed or transformed material. This means that users are not allowed to do significant modification or altering.

Creating derivative works (new sounds that include / modify / remix other sounds)

Four other licenses permit creation of derivative works: CC BY, CC BY-SA, CC BY-NC, CC BY-NC-SA. A derivative work is any new work based on an existing creation. It might for instance be a soundtrack created from using drum and piano samples and applying reverb and pitch processing. In general it is accepted that derivative works modify the original copyrighted source substantially but there is a grey area around the issue how much modification is required. There are several ways in which derivative works can be created, for instance:

- **Processing & modifying**

Deliverable 2.1. points out a lot of users spend most of their time processing chosen audio files. A large majority of them find that task a part of their creative work, processing files in terms of EQ, pitch, and dynamics and then re-using in a composition or soundtrack. If a user will use a function of ACE and process a sound piece online and prior to download (in order to use it in DAW) , this would be enough to create a derivative work.

- **Sampling**

Sampling is a form of borrowing from someone else's music or soundtrack. Using any sample requires clearing its legal situation so which traditionally has involved the prior permission of the copyright owners (McLeold and DiCola, 2011). The sample used will infringe copyright in the music and/or the sound recording, as the case may be, if it is a 'substantial part' of the original and is used without the necessary permissions (MPA, 2016). The sample is considered 'substantial' by reference to its quality rather than its length. If it is recognisable, however short, as coming from the original piece of music or recording then it should be regarded as being substantial and the necessary permissions should be sought.

On the user side, uploading a derivative work into the ACE will require choices regarding licensing of work. Even though the matter might be simple with pieces involving a few samples, this situation might get complicated, for instance in musical pieces that use extensive number of sound effects. Currently this situation requires verification of all sound samples and looking for pieces that might be under licenses prohibiting derivative works or commercial use (see table 3). This process might need to be improved by introduction of tools allowing both tracking of downloaded samples and summarizing permissions of derivative work of chosen samples - functioning as a "license calculator".

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License of sound of A	B wants to distribute the new sound under	Can B do this?
cc0	cc0	Yes
cc0	by	Yes (*)
cc0	by-nc	Yes (*)
by	cc0	No
by	by	Yes (**)
by	by-nc	Yes (**)
by-nc	cc0	No
by-nc	by	No
by-nc	by-nc	Yes (**)

(*) If a third user C uses the sound from B, she must attribute to B.

(**) B must attribute the sound to A. If a third user C uses the sound from B, she must attribute both A and B.

Figure 3: License permissions of new sounds containing other sounds under CC license (source: www.freesound.org)

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3 Initial Use Cases

In order to better illustrate different licensing needs we developed five user profiles. Each of them outlines different requirements in regards to design and functions of the ACE.

3.1 Professional Musician

An enthusiast of open content, who admits facing problems when searching for good (and free) sounds/samples and sometimes finding it difficult understand licensing.

Profile:

This user has significant experience in the music industry. For several years he has been involved in music production. He has used sound repositories in the past. He admits that it is challenging to locate interesting pieces of sufficient quality and that the search process takes a long time. He has also faced difficulties understanding the licensing procedures concerning the samples that he reused in his songs.

Needs:

- wants to easily filter through high quality results,

- wants to be able to better understand licensing, for instance by:

1) knowing about the permissions of newly created compositions (e.g. a song containing over 15 pieces using a variety license types – “under what license can I publish?”),

2) browsing through content only under one type of license (e.g. CC-BY).,

3) being able to learn when any license permissions of a sample expire or are changed.

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3.2 Amateur Foley

A hobbyist who is passionate about recording high quality sound effects and would like to increase his own recognition and possibly generate a new source of income.

Profile:

For several years this user has been involved in recording high quality sound effects in the field. His sound pieces have been used professionally, appearing in a number of movie soundtracks and radio commercials. He is familiar with sound repositories, having shared and uploaded some of his works. He understands licensing procedures well. For this user making his own content available is a way of achieving recognition and gaining new industry contacts. He mostly enjoys hearing his production being re-used, however he regrets that the re-usage cannot be tracked more easily.

Needs:

- would like to reach the broadest audience possible,

- would like to have more precise information about who reuses his content.

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3.3. Game Developer

Gaming industry professional who is looking for the opportunity to integrate a large library of sound into his game.

Profile:

This user has professionally worked in the game industry for over 10 years. He is enthusiastic about open content and has used it in his games in the past. Currently, he is working on an open-world multiplayer game, which he intends to integrate with a large library of sound effects. He is looking for high quality content.

Needs:

- would like to have access to a large library of sound and integrate quality pieces into the game,

- would like to automatically add new sounds to the game if new matching pieces are added to the platform,

- would like to automate the licensing/attribution process.

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3.4. App Creator

A startup owner looking for music pieces that could be integrated into her app.

Profile:

This user has significant IT experience but has no background in the audio industry. She is currently running a startup aimed at delivering background sounds to food consumers. She is looking for diverse and quality music pieces, which the startup is going to describe and associate with different food types. Even though she understands licensing, she is not sure how she could attribute music to its authors and what happens if authors' permissions change / user skips the track after few seconds. She would like to easily contact the author if the piece would need to be purchased for commercial use.

Needs:

- ability to find and access to high quality musical pieces,

- license change tracking,

- author-buyer contact facilitation.

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3.5. Procedural Audio Content Generation Algorithm

A large game studio is looking for a large database of sounds for the audio algorithm of its open-world game.

Profile:

This user is currently developing an open-world role playing game. Its innovative design will be based on procedural content generation: from maps, to characters and audio / music. The uniqueness of the game will allow the generation of endless variations, making the game infinitely replayable and player-adapted. The audio software will compose content without any human input – each time the tool is run, a new musical piece will be created or mixed in real time, based on number of interactive factors (both from inside and outside of the game). The game studio is currently looking for a database of sounds that can be integrated with the audio algorithm, considering the CC-licensed content. Among the studio's biggest concerns are licensing permissions; for instance, it is not sure how an algorithm-based (unique) composition could work with attribution and licensing permissions.

Needs:

- looks for a platform able to handle machine-to-machine transactions,
- would like to know how computer-based composition works with Creative Commons licensing,
- would like the algorithm to negotiate and pay for some content that's not available for commercial use.

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4 Rights Management Procedures in the ACE - Recommendations.

Considering the problems highlighted in the user survey and observing the current practices on platforms such as Jamendo, we identify several key-elements related to licensing that need to be taken into consideration when designing ACE.

4.1. Licensing facilitation

It has been widely recognized that both content creators and users face difficulties understanding licensing and permissions of CC-licensed content. We believe that ACE needs to provide:

- very clear communication of re-use permissions in a standardized way. Currently audio repositories communicate licensing in different ways, which are unclear and cause confusion. The usage of simple symbols, accompanied by textual descriptions might facilitate understanding. A good example of license communication might be Jamendo's system - where appropriate symbols are accompanied with a short explanation and linked to the licensing page (for instance: https://creativecommons.org/licenses/by-nc-sa/3.0/).
- the possibility of informing the user of re-use permissions of a group of samples (license calculator). If, for instance, a user downloads a package of 15 audio pieces, it would be recommended to inform the author of the permissions concerning the whole package. In a similar way to freesound, the user's account might also register downloaded samples and give the possibility of choosing some of them and displaying permission. For instance, the author combines several pieces and would like to quickly find out if the song created from those pieces might be used commercially.
- facilitated attribution mechanisms, both machine- and human-readable. If, for instance, a user ingests a new remix of sounds from the ACE, it would be highly desired if the attribution was automatized and the authors could be informed of re-usage and be given the possibility of accepting / changing license permissions after a request.

4.2. Enabling machine-based licensing & negotiation

The design of licensing intends to not only support the exchange of sounds but also to push the boundaries of the way audio content is licensed and how this process is handled. Our intention is to develop new licensing practices in order to facilitate complex reuse scenarios of audio content, such as

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procedural content generation, machine-to-machine transactions, and queries in game engines and algorithmic exchange of permission data from procedurally generated content. This means that the design of the ACE needs to acknowledge this development.

We are currently exploring the possibility of implementing the Open Digital Rights Language (ODRL), a proposed language from the W3C for the standardisation of communicating rights information concerning content with Open Permissions Platform.

4.3 Plug-in design

Part of Objective 3 of the AudioCommons project is building tools that can consume the content and be embedded in existing creative workflows. The first embeddable tools for the ACE will be developed by the industry partners of the consortium, and they will include two audio plugins (developed by Waves and AudioGaming), add-ons for a well-known open source Digital Audio Workstation (also developed by Waves) and a web interface for accessing music pieces of the Audio Commons Ecosystem (developed by Jamendo). This signifies that developed plug-ins or add-ons for existing software will also need to include licensing.

Some of the features that they might need to address include:

- metadata-based search using license type,
- license chooser for a new sound piece ingested into the ACE,
- license “calculator” displaying license options for a new publication (considering permissions given by samples used in the DAW but also excluding / or verifying if any of them are not muted).

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5 Conclusion

In this deliverable we presented the rights management requirements for the Audio Commons Ecosystem. We provided an introduction to copyright management practices and produced documentation with different use cases that exemplify all possible rights and IP situations and offer solutions.

This document provided an introduction to rights management procedures in the audio industry, specifying the role and functionality of Creative Commons. We provided an outline of Creative Commons license types and explained user actions. We have also provided five initial use cases, pointing at specific license-related functionalities which need to be taken into account when developing the ACE. Their range provides insights into new directions, such as enabling the ACE to conduct machine-to-machine transactions connected to licensing or integrating it with procedural content generation software.

Among the recommendations provided in this deliverable, we point to (1) the issues connected to licensing facilitation, especially making licensing understandable to users and facilitating human- and machine-readable attribution, (2) the directions of machine-based licensing and negotiation, (3) licensing features of plug-ins and add-ons developed within the project.

This deliverable is part of the WP3 work package. Other deliverables that will be created under this work package will define procedures that explain to content creators, content providers, tool developers and content users how to interact with the ACE (e.g., how to publish their content, how to consume it, how to license, i.e., how to become "Audio Commons Ready") and facilitate research on emerging business models and long-term sustainability models for the ACE. This document also provides additional information with regards to licensing for WP2, concentrating on building the Audio Commons ontology and Audio Commons API.

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