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D1.8 Final Aggregation Report

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Abstract: This document outlines the aggregation activities of the Europeana Sounds project, which comprise Work Package 1 (WP1). The final aggregation report discusses the targets planned in the project and the challenges encountered in meeting them. The report details the final numbers of digital objects published by data providers.

Dissemination level	
Public	X
Confidential, only for the members of the Consortium and Commission Services	

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Application area

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Statement of originality

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Project summary

Europeana Sounds is Europeana's 'missing' fifth domain aggregator, joining APEX (Archives), EUscreen (television), the Europeana film Gateway (film) and TEL (libraries). It will increase the opportunities for access to and creative re-use of Europeana's audio and audio-related content and will build a sustainable best practice network of stakeholders in the content value chain to aggregate, enrich and share a critical mass of audio that meets the needs of public audiences, the creative industries (notably publishers) and researchers. The consortium of 24 partners will:

- Double the number of audio items accessible through Europeana to over 1 million and improve geographical and thematic coverage by aggregating items with widespread popular appeal such as contemporary and classical music, traditional and folk music, the natural world, oral memory and languages and dialects.
- Add meaningful contextual knowledge and medium-specific metadata to 2 million items in Europeana's audio and audio-related collections, developing techniques for cross-media and cross-collection linking.
- Develop and validate audience specific sound channels and a distributed crowd-sourcing infrastructure for end-users that will improve Europeana's search facility, navigation and user experience. These can then be used for other communities and other media.
- Engage music publishers and rights holders in efforts to make more material accessible online through Europeana by resolving domain constraints and lack of access to commercially unviable (i.e. out-of-commerce) content.

These outcomes will be achieved through a network of leading sound archives working with specialists in audiovisual technology, rights issues, and software development. The network will expand to include other data-providers and mainstream distribution platforms (Historypin, Spotify, SoundCloud) to ensure the widest possible availability of their content.

For more information, visit http://pro.europeana.eu/web/europeana-sounds and http://www.europeanasounds.eu

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Executive summary: D1.8 Final Aggregation Report

The main aims of the Europeana Sounds project were to make accessible on Europeana the metadata for 500,000 sounds and 225,000 sound-related digital objects. These were ambitious targets, but overall they were exceeded. The project's data providers used the software tool MINT to convert their metadata to XML files according to the Europeana Data Model (EDM). MINT was run by the consortium partner, the National Technical University of Athens (NTUA) and NTUA supported the data providers throughout the 36 month project.

A substantial part of the metadata aggregated also featured in Europeana Music Collections, which was developed as part of WP4 and which highlighted directly linked content with a musical theme.

There were technical and legal setbacks that were encountered by several data providers; these did not impact on the Key Performance Indicators.

1 Introduction

This final aggregation report discusses the different tasks that were completed by the project's WP1 team. It discusses the targets as outlined in the original Description of Work and the Key Performance Indicators which needed to be met.

This document highlights the several different ways in which the metadata records are displayed on Europeana and the reasons for doing so. The difficulties and challenges faced by the data providers and the steps taken to mitigate these issues are also discussed. Finally, the document outlines the actual contributions from each data provider against their target and draws conclusions about aggregation in the Europeana Sounds project.

1.1 Aggregation in the Description of Work (DOW)

1.1.1 List of tasks for Work Package 1

Although this document outlines the final aggregation activities of Europeana Sounds, it is important to see this activity amidst the other tasks that needed to be carried out, either before aggregation could take place or concurrently.

The following lists of tasks, therefore, are taken from the project's Description of Work. Each of these tasks has been completed and details outlined in the work package's deliverables and milestones (see references in section 7).

T1.1: Content Selection Policy

This task entailed the development of a content selection policy that combined quantity with quality, enabling the project to achieve critical mass. The primary aim was to reach the figure of 500,000 additional sound recordings and 220,000 associated objects on Europeana, bringing the full number of audio items on the portal to well over a million. However it was be essential to ensure diversity of

subject matter, genre (i.e. types of sound recording), language and geographical spread, so that the sounds and languages of Member States are represented as comprehensively as possible (see D1.1 *Content selection policy*).

T1.2: Ontologies

This task ensured that multi-lingual ontologies were identified and implemented which ensured consistency of description for audio subjects and genres, particularly for music (see MS3 *Initial ontologies selected* and D1.3 *Ontologies for Sound*).

T1.3: EDM profile

This task provided recommendations for the adaptation of the EDM profile for audio and audio-related objects to ensure richer digital records and enhanced discovery. The work referenced that already done for other audiovisual projects for Europeana, particularly EUscreen and the European Film Gateway (see D1.4 *EDM Profile for Sound*).

T1.4: Aggregation management

This task involved managing the community of data providers. It was realised by the implementation of standards, agreed effective workflows and identification of problems and taking remedial actions. It included alliance with The European Library (TEL) which already operated as an aggregator for content from national libraries.

Data providers provided metadata for audio and audio-related content to Europeana and the dedicated channel; they were supported by technical partners that provided the technologies and technical expertise for the aggregation infrastructure and the accessibility of the metadata. The British Library (BL) managed the process of aggregation by ensuring that all WP1 deliverables were produced and all milestones achieved on time; that guidelines and standards were disseminated, understood and implemented; and that all project partners worked effectively towards a common goal. Progress was documented in three aggregation reports at the end of each project year (see D1.5 and D1.7 in section 7). The third aggregation report includes an assessment of the impact of WP3 on aggregation (D1.8).

T1.5: Training and support in content selection policy and aggregation workflow

This task ensured that training and on-going support in the selection of content and contributions to the aggregation workflow was made available to all data partners for the lifetime of the project.

Three training sessions developed by the National Technical University of Athens were delivered in M10, M18, M30 in the use of the MINT platform and the implementation of metadata standards and the new EDM profile, with WP6 co-ordinating regional promoters.

The training sessions were augmented by one-to-one support when necessary and a set of guidelines were regularly reviewed and updated in the light of user feedback. Mid-project and end-of-project reports on training operations were issued (D1.6, D 1.9).

1.1.2 Aggregation targets

The targets for each data provider are outlined in table 1 below, with the amount aggregated by the end of Year 2 (see D1.7) and the outstanding amount for each partner. The remaining amounts were what needed to be met or exceeded in the course of Year 3.

Table 1: Aggregation at end of Year 2 with outstanding amounts

Data Provider	Total audio required	No. of audio objects on Europeana	Remainder of audio required	Total text, image and video content required	No. of text, image or video objects on Europeana	Remainder of text, image and video content
01 BL	79,000	38,710	40,290	36,000	564	35,436
02 NISV	86,170	44,500	41,670	14,050	100	13,950
06 BNF	10,000	3,731	6,269	10,000	3,731	6,269
10 CNRS	37,600	9,674	27,926			
11 DIZI	10,000	10,234				
12 DNB	511	526				
13 FMS	2,500	1,233	1,267	6,630	3,570	
14 ICCU	80,000	44,581	35,419			
15 ITMA	1,200	1,582		3,600	1,878	1,722
16 TLA	13,563	6,328	7,235			
17 NLL	2,000	1,684	316	2,000	1,684	316
18 OEM	12,000	2,945	9,055			
19 RBB	105,000	84,064	20,936			
20 TAD	38,000	25,270	12,730			
21 SB	11,900	1,989	9,911			
22 ONB				150,000	152,977	
23 FCSH	39,000	89	38,911	2,700		2,700
24 CCE	15,800	13,427	2,373			

1.2 Key Performance Indicators

The Key Performance Indicators for WP1, outlined in the table below, were specified in the project's Description of Work at the start of the project.

Table 2: Key Performance Indicators for WP1 over entire project

Indicator no	Relating to objective / result	Indicator name	Expected progress		
			Year 1	Year 2	Year 3
1	Aggregation (WP1)	Number of audio items aggregated	50,000	250,000	500,000
2	Aggregation (WP1)	Number of other items aggregated	30,000	90,000	225,000
3	Aggregation (WP1)	Number of items freely available for re-use	10,000	40,000	90,000
4	Aggregation (WP1)	Number of Data Providers using new EDM profile	50%	100%	100%
5	Aggregation (WP1)	Number of consortium partners to have made use of training sessions	33%	66%	100%

2 Platforms used

The platforms used in this project were for the transformation of metadata, the publishing of metadata and, finally, for the purpose of communication.

2.1 Aggregation: MINT

All data providers used the **M**etadata **IN**gestion **T**ool (MINT), which was maintained and run by the National Technical University of Athens. In the lifecycle of the project, three training workshops were held by NTUA: two in Athens in April 2014 and June 2015; and one hosted by CCE at Clasac, Dublin in April 2016. These workshops are discussed in detail in D1.6 (*Training Report 1*) and D1.9 (*Training Report 2*).

When tasks are achieved easily and without obstacles, it can be easy to overlook them. This section of the report discusses an area of the project which took place smoothly and without any major delays.

All staff from the 18 data providers learnt how to operate MINT so that they could successfully transform their metadata into metadata with a European Data Model (EDM) Sounds profile. Once transformed and published on MINT, this metadata would be harvested by and published on Europeana. Data providers' staff would not necessarily come from an IT background, but often from a

curatorial/cataloguing background. They often worked in isolation; as the only staff in their institutions carrying out this work, and their institutions might be the one in their country working on the Europeana Sounds project.

This work - uploading, mapping and transforming metadata - had to be done accurately or it would not be published on Europeana. The staff at NTUA supported the WP1 package lead and the data providers in carrying out this work. They did so with great patience and showed great commitment in diagnosing and, either solving these problems themselves, or helping data providers to address them.

This kind of collaboration between technical staff and curatorial staff does not always proceed so smoothly in other projects. It is a great credit to all involved that this partnership resulted in 431,756 metadata records - representing over 800,000 digital objects - being published on Europeana.

2.2 Europeana ingestion tools

During the course of the project, Europeana revised its own ingestion tools, cutting down on processing time, so that it became possible for data providers to see their datasets on Europeana soon after publishing them on MINT. As with the NTUA team, the data officers based at Europeana provided useful feedback to data providers; pointing out errors preventing publication taking place, or suggesting better ways to map data. Europeana data officers also had a strong presence on Basecamp, dealing with queries and diagnosing problems.

2.3 Communication: Basecamp

Throughout the project, the platform Basecamp was used by all Europeana Sounds work packages. It was an essential part of the aggregation process, allowing the WP1 package lead to communicate directly with the data providers as a group, booking events in the calendar and sharing documents.

The WP1 section of Basecamp very soon became a MINT users' forum where data providers could ask questions to which NTUA, the WP1 lead and Europeana staff would then respond. However, as data providers became more confident at using MINT, they became able to answer each other's questions. Therefore, rather than just a list of questions and answers from "client to service provider", Basecamp became more of a "peer to peer" discussion thread, in which NTUA and the WP1 lead would also participate.

As new users (such as staff working in Associate Partner institutions) come to use MINT it is hoped they will be able to use previous discussion groups as a means of solving problems.

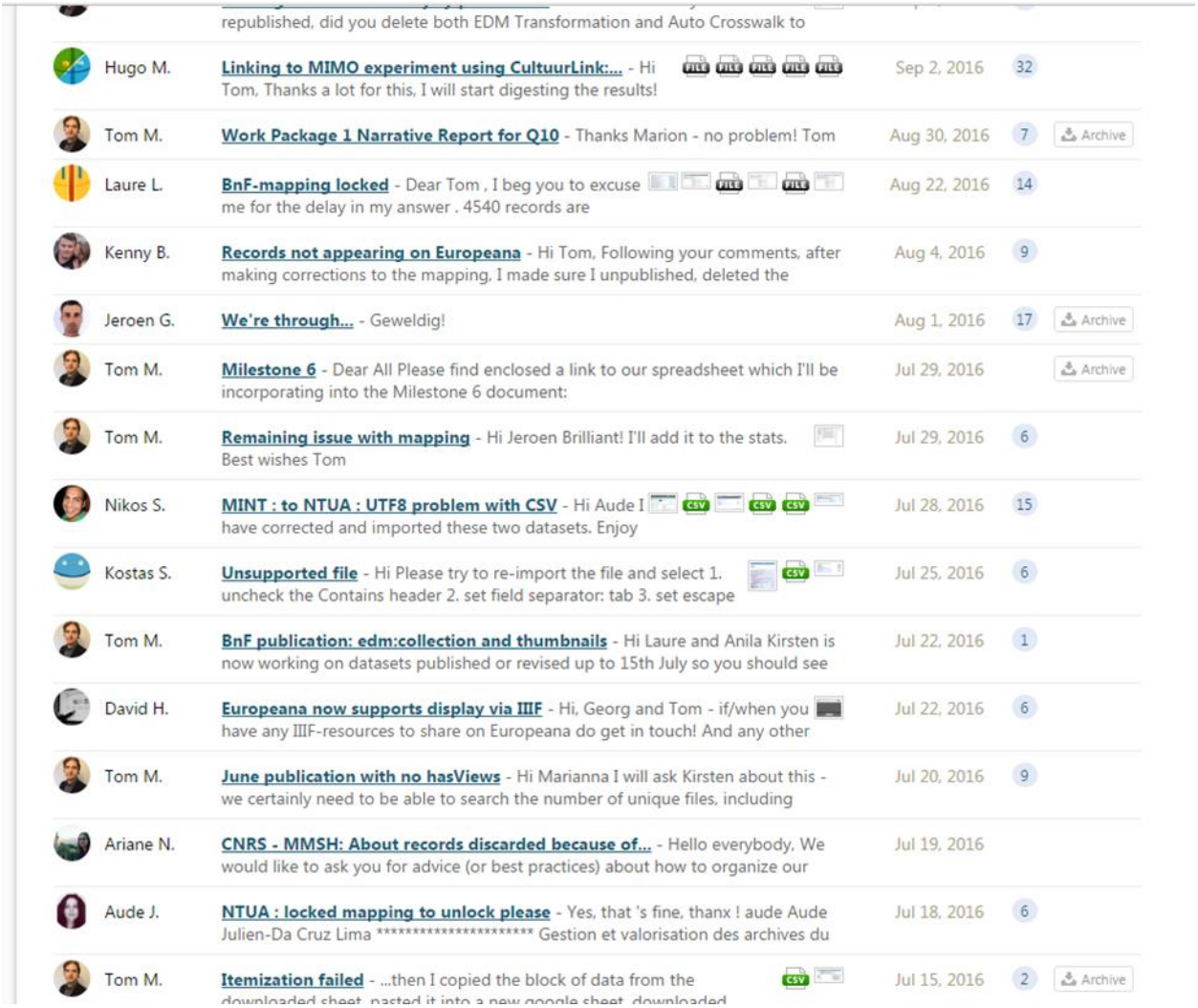

Figure 1: An example of WP1 Basecamp discussion threads

Aude Julien Da Cruz Lima
Dear Nikos,

Thanx so much for your help. The file can now be uploaded in MINT !

May you explain to me what are "HEX invisible characters" ?

Nevertheless, by looking at the mapped items and preview, I can see there are french characters missing (mostly the "é", "ù", "ç") which are UTF8 compatible.

See for example in the following properties :
http://mint-projects.image.ntua.gr/data/sounds/http://archives.crem-cnrs.fr...
<dc:subject xml:lang="fr">Flte</dc:subject> should be Flûte
<dc:subject xml:lang="fr">Voix chante : choeur de femmes</dc:subject> should be chantée
<dc:subject xml:lang="fr">Tambour frapp</dc:subject> should be frappé
<dcterms:spatial xml:lang="fr">Guine franaise</dcterms:spatial> should be Guinée française
whereas the "é" is in good shape in other properties :
<dcterms:provenance xml:lang="fr">Archives sonores du CNRS-Musée de l'Homme (France)</dcterms:provenance>
<dc:rights xml:lang="fr">Usage réservé dans le respect du patrimoine culturel des communautés d'origine</dc:rights>

These characters are in all the previous datasets imported in CVS files in MINT by CNRS-CREM.

We keep in touch on this issue. I cc my colleagues from BnF in case they were facing similar difficulties.

Thanx,

aude

Aude Julien-Da Cruz Lima
****
Gestion et valorisation des archives du CREM
Centre de Recherche en Ethnomusicologie
LESC UMR 7186 CNRS UPOND
Adresse physique :
Université Paris Ouest Nanterre La Défense
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MAE - 21, allée de l'Université
92023 Nanterre cedex - France
Tel. : + 33 (0)1.46.69.26.68
www.crem-cnrs.fr
archives.crem-cnrs.fr
Posted on May 10, 2016

Figure 2: An example of a Basecamp discussion

3 Content and metadata

3.1 Metadata

3.1.1 Standards

Metadata standards were developed as part of tasks T1.1-3 at the start of the project. Mandatory fields, including sound genres were set (see D1.3 *Ontologies for Sound*). This meant that metadata would not be accepted by MINT unless it met the required standards.

3.1.2 Hierarchical structures

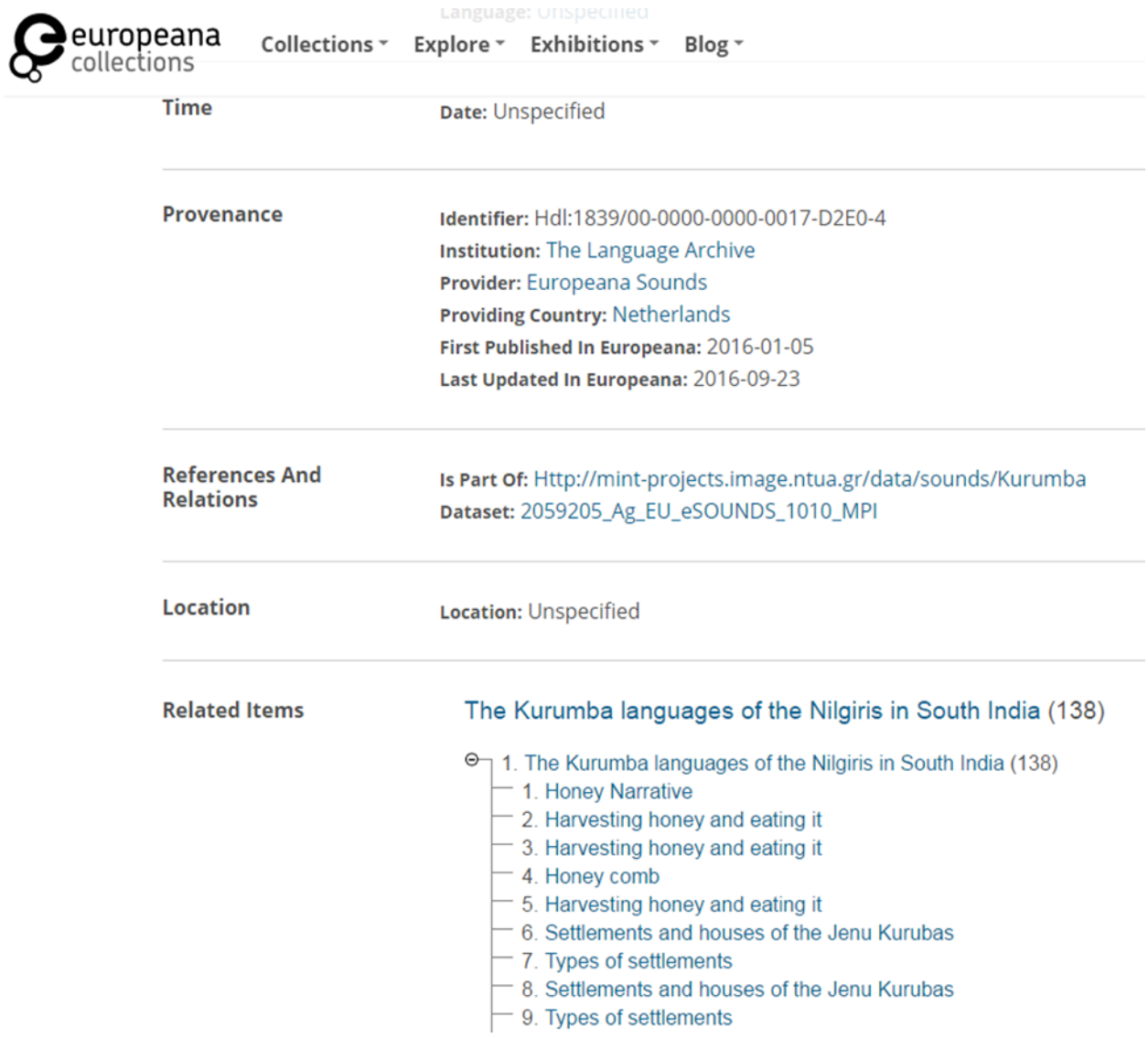

Figure 3: a hierarchical structure, listing individual recordings within a collection
http://www.europeana.eu/portal/en/record/2059205/data_sounds_hdl_1839_00_0000_0000_0017_D339_5.html?q=%2A%3A%2A

Many of the datasets aggregated to Europeana comprised smaller subgroups of related recordings. For example, a collection of interviews of famous writers could have 1,000 separate recordings, where 100 writers each had 10 separate interviews.

It was therefore important to reflect this structure on Europeana, so that it was apparent to the user that one interview was, for example, the fourth of ten such interviews. Data providers therefore used MINT to create hierarchical structures to reflect this, as in figure 3 above.

3.2 Content

3.2.1 Audio

Audio can be played either from Europeana directly, or from the website of the data provider. For the most part, each metadata record represents one digital audio file. However, some metadata records represent more than one audio file as in the following example (Figure 4) from the Internet Archive, aggregated by NISV. As a result, Europeana Sounds has aggregated far more sounds than the number of metadata records would suggest. For example, the Internet Archive (aggregated by NISV) has around 10,000 records on Europeana Sounds but nearly 170,000 sounds are linked by these records.

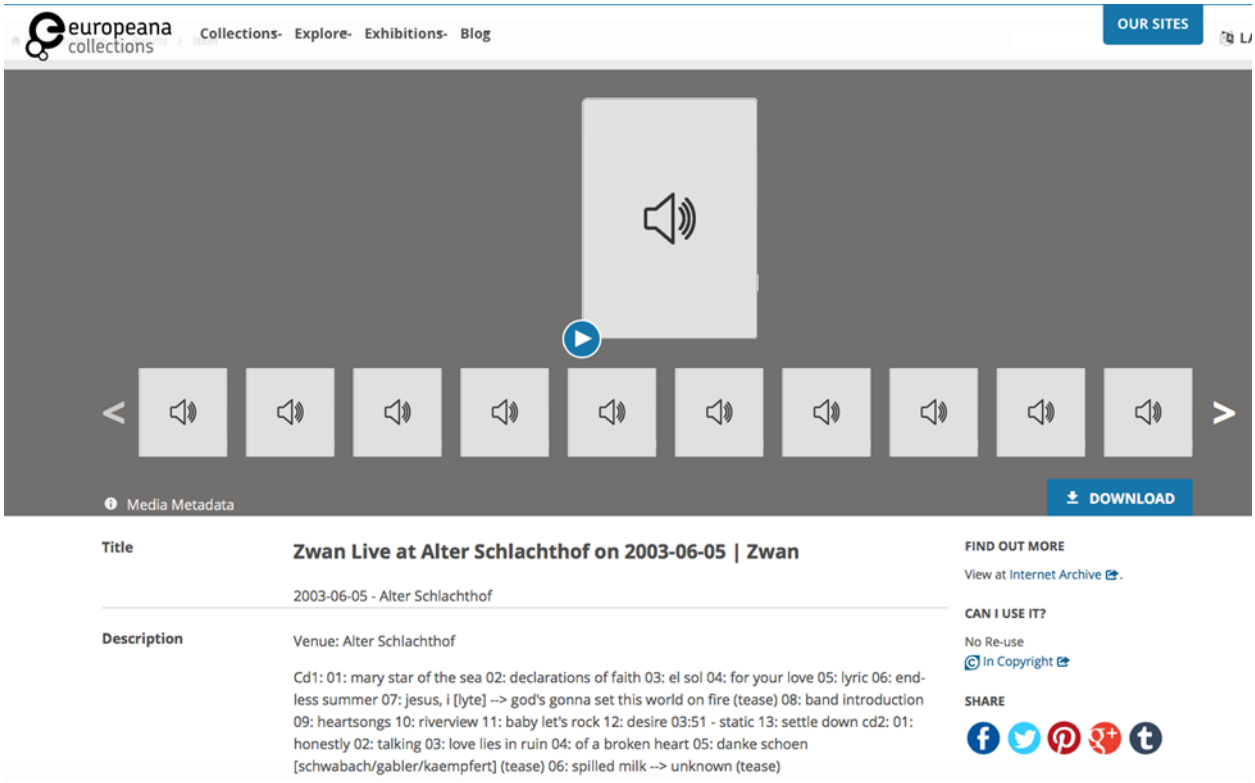

Figure 4: An example of a Europeana metadata record linking to multiple audio files
http://www.europeana.eu/portal/en/record/2059210/data_sounds_zwan2003_06_05_flac16.html?q=%2A%3A%2A

3.2.2 Images and text

Similarly, audio-related content such as photographs of musicians, sheet music, manuscript music and catalogues can also be accessed from Europeana. In the following example from ONB, multiple pages from an orchestral score can be accessed from one Europeana record.

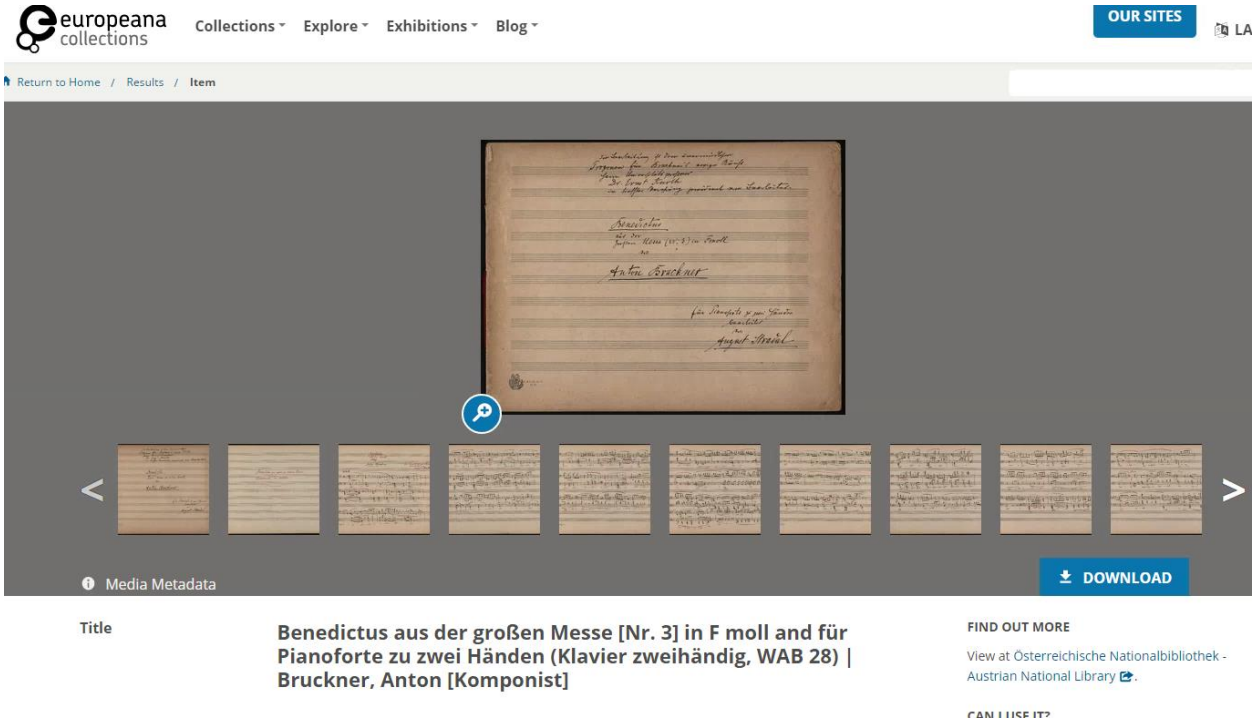

Figure 5: An example of a Europeana metadata linking to multiple image files
http://www.europeana.eu/portal/en/record/2059216/data_item_onb_sounds_AL00484322.html?q=%2A%3A%2A

3.2.3 Video

Video plays a smaller part in the project than text, images, and sounds, as film and video are aggregated elsewhere. However, there are nearly 2,000 videos which are audio-related: these included performance, historical footage, and demonstrations of dance, as in the following example.

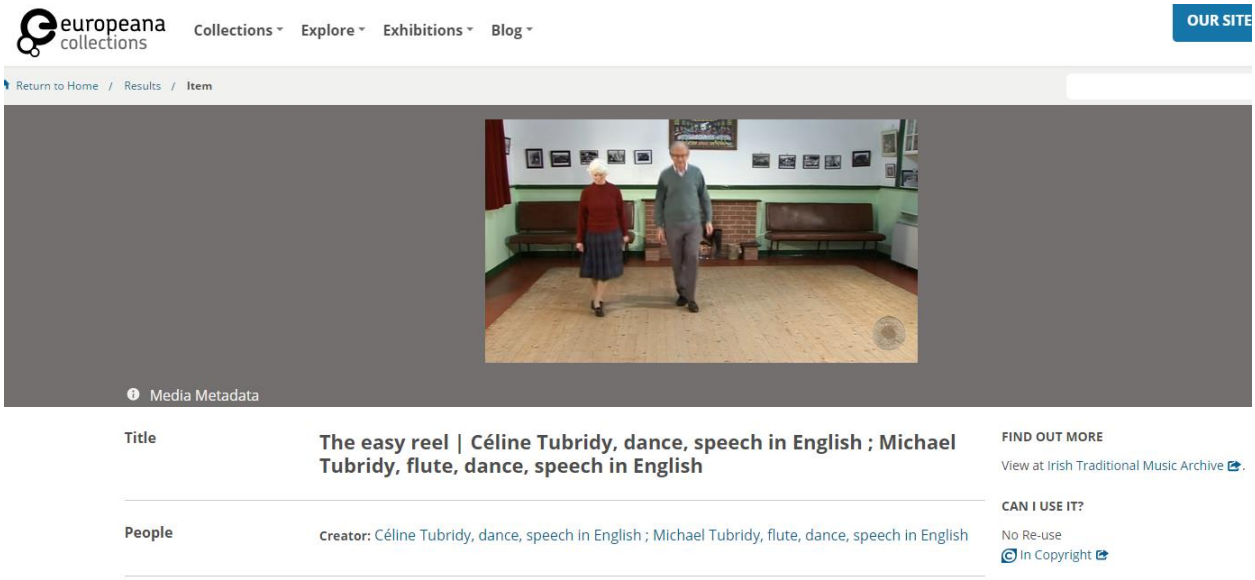

Figure 6: An example of a YouTube video embedded in a Europeana metadata record
http://www.europeana.eu/portal/en/record/2059213/data_sounds_9442.html?q=%2A%3A%2A

3.2.4 Directly linked content

The use of directly linked content - in other words, providing links to the *actual* address of a digital file, rather than the page in which it is embedded - has been encouraged throughout the Europeana Sounds project. There are several reasons for this:

- The user can listen or view content from Europeana, without having to navigate back to data provider's webpage;
- Directly linked content, where it is of a relevant subject area, will appear on Europeana's Music, Art, and Fashion themes;
- Content often (but not always) may be directly downloaded from Europeana, as long as this is done in accordance with the Creative Commons licence assigned to it;
- Content can be played on the newly developed Europeana Radio. At the time of writing, classical, popular and world and traditional music genres are available.
- Generally, providing directly linked content will produce a better overall user experience and will result in the raised profile of data providers' content.

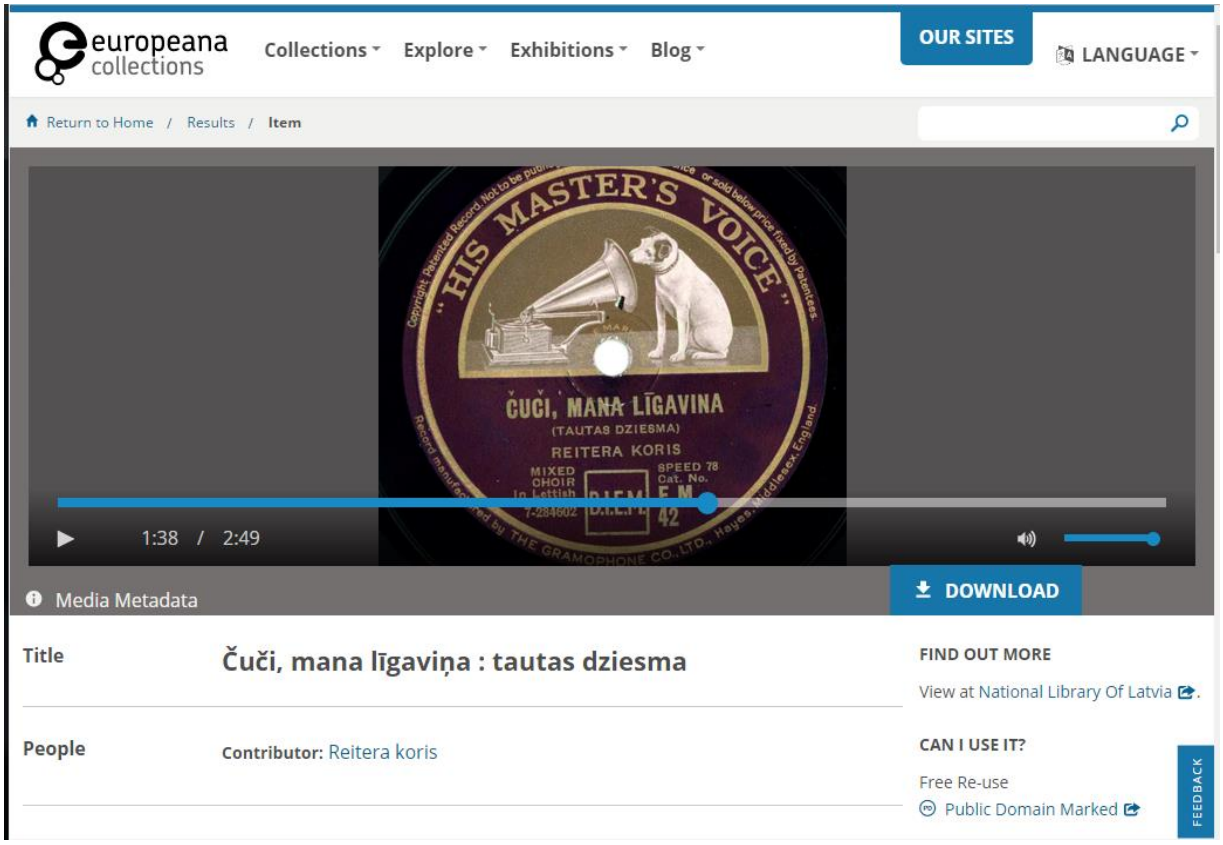

Figure 7: An example of a Europeana metadata record where the audio file can be played and downloaded directly from the Europeana web page.
http://www.europeana.eu/portal/en/record/2059201/data_sounds_85.html?q=%2A%3A%2A

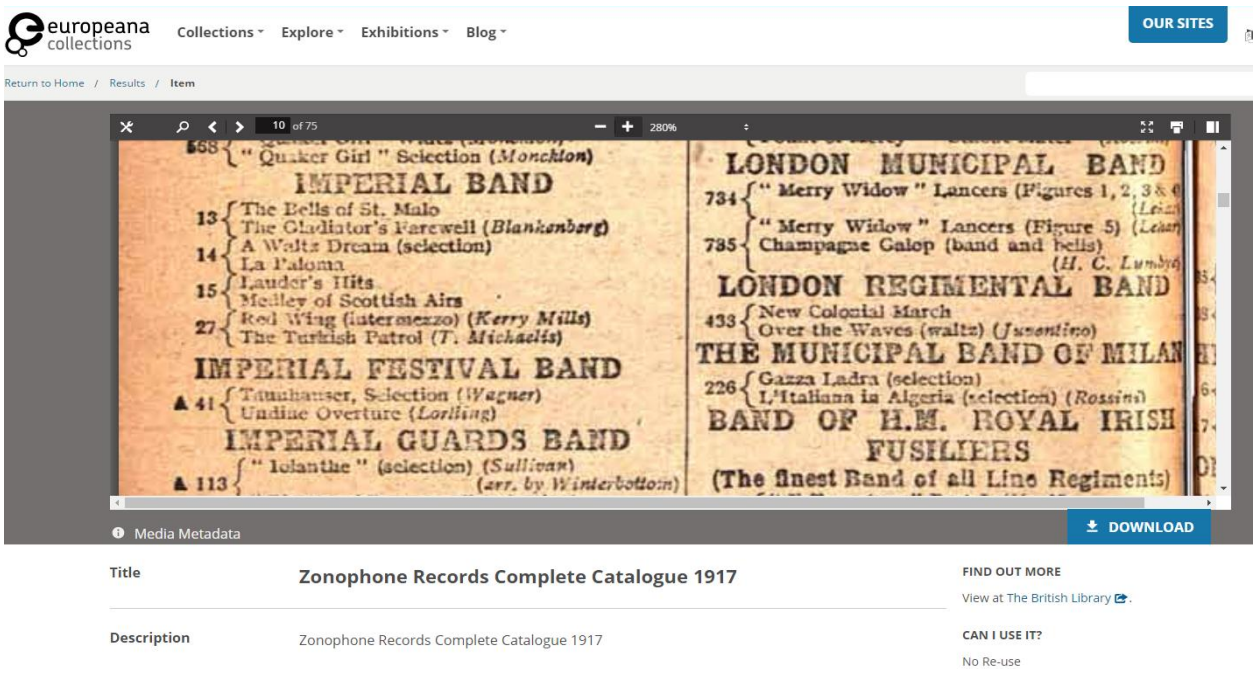

Figure 8: An example of text-based content where the PDF of a music catalogue can be viewed from the Europeana web page.
http://www.europeana.eu/portal/en/record/2059209/data_sounds_ZONXX1917XXX_0000.html?q=%2A%3A%2A

However, for legal or technical reasons some institutions can only serve audio in streaming, rather than, downloadable form. Therefore, over the last year Europeana and, in particular, the British Library have been working on streamed embeddable audio, which can then be provided as directly linked content in the edm:isShownBy field of a metadata record, rather than just a link to the webpage containing the streamed audio in the edm:isShownAt field. This would mean that, although the content could be played from Europeana, it would be clear to the user that the audio was being streamed from the British Library website. This would go towards a better user experience, with limitations. There would be benefits to the British Library, because its streamed content would be embeddable not just on Europeana but on blogs and other websites.

This presented some technical, legal and ethical issues:

Technical: Code needed to be added to the streamed audio of the British Library Sounds web pages so that it was compatible with Europeana; security checks needed to be carried out on the newly developed web pages before BL Sounds could go live with embeddable audio.

Legal/ethical: Although making streamed audio embeddable would not make it any easier to download content illegally, much of the content on the BL website is only licensed to be played from the BL webpages. Recordings of a sensitive nature - for example, some oral histories - are considered appropriate only to be accessed with the contextualisation provided at the British Library Sounds website.

Once a streamed audio recording was embeddable for Europeana, it would be embeddable everywhere. Therefore, it was decided that some BL collections would be made embeddable and others not. A selection of the BL's music collections, nature sounds and sound effects, dialects and languages and oral histories have been made embeddable.

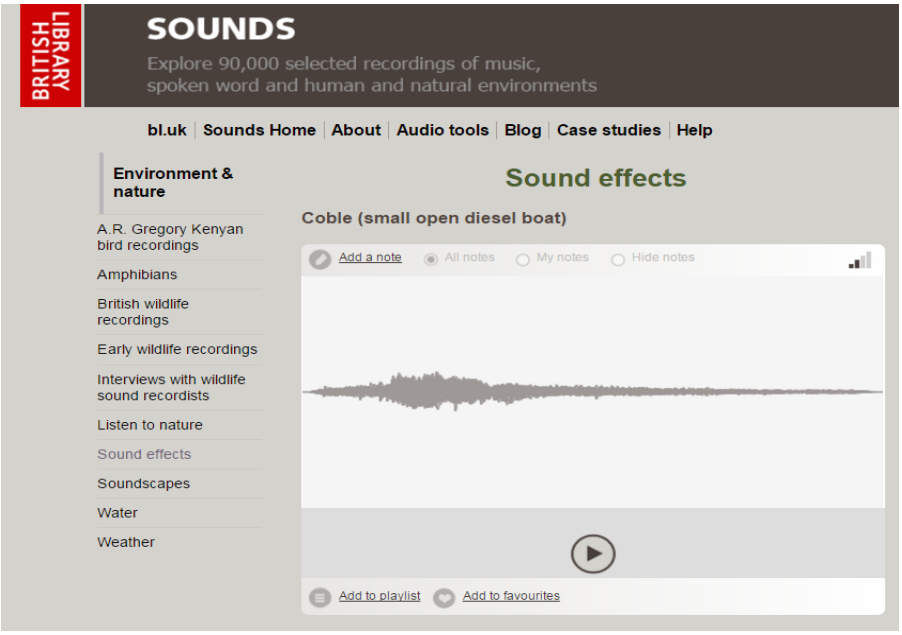

Figure 9: An example of streamed audio on the British Library Sounds website.
http://sounds.bl.uk/Environment/Sound-effects/027M-1CD0126081X2-0600V0

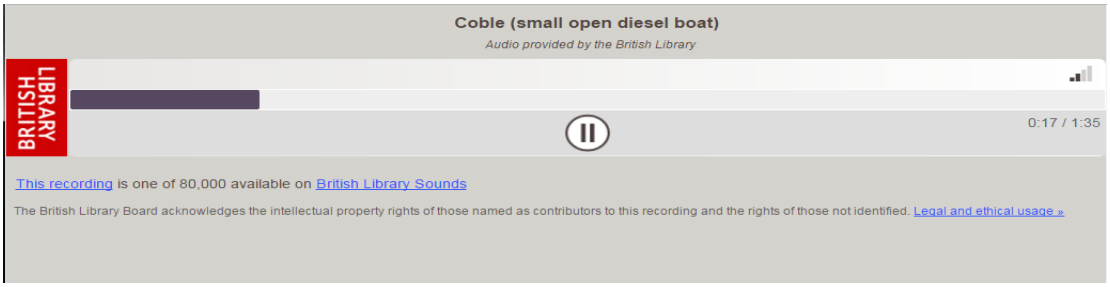

Figure 10: The same audio object (see Fig 9) that will be playable on Europeana in an embedded player
http://sounds.bl.uk/embed/Environment/Sound-effects/027M-1CD0126081X2-0600V0

This development - the ability by Europeana to handle streamed, embedded audio as directly linked content - took place quite late in the project, meaning that there was not enough time to evaluate its potential. The use of embedded audio would be a way of enhancing the Europeana user experience while ensuring the protection of streamed content from data providers.

4 Difficulties encountered and action taken

4.1 Technical

MINT is a "Dark Aggregator". In other words, MINT will transform the metadata into Europeana Data Model XML files and it is possible to preview each individual record to confirm the metadata is functioning correctly. However, the opportunity for data providers to view content as a whole, checking how all thumbnails display etc, only presents itself when the metadata is published on Europeana. Had the metadata been aggregated onto a national aggregator, for example, any errors in mapping would have been spotted, diagnosed and corrected before arriving on the Europeana portal.

There were some delays in the aggregation process; however, as Europeana developed their ingestion infrastructure, this resulted in metadata being published with less delay. As the Digital Service Infrastructure 1 (DSI-1) project came to an end in July 2016, Europeana prioritised publishing datasets from DSI-1 project partners and this also slowed the publication process for Europeana Sounds. This did not inhibit the aggregation process on MINT, but did mean there was a delay in data providers being able to review their datasets on Europeana, and end users being able to access the content.

4.2 The impact of licensing guidelines on aggregation

Data providers had to choose the appropriate Creative Commons licence for their content. This needed to be under the same licence by which their content could be used from their own websites. Wherever possible, public domain content needed to be licensed as public domain so that this content would be clearly marked as freely reusable. The edm:rights field was mandatory; a list of licences were available on MINT as a drop-down menu which could be selected by a data provider for each dataset published on MINT. When viewed on Europeana, the selected licence linked to the Creative Commons website which explained fully the meaning of that licence.

Where content was licensed as reusable, the data providers needed to ensure that the content was also downloadable from the Europeana web page – in other words, the web address of the digital object needed to be directly linked on Europeana. However, some content, even though it was in the public domain, might only be streamable from the data provider's website for various institutional reasons. If this were the case, the licence to be selected had to be free access only, as the user needed to know that this content could not technically be downloaded. Other content was in copyright or only partially reusable, but was still downloadable because, for example, the data provider wanted to make the content available on Europeana Music. Under these circumstances, the correct licence was clearly visible and the user would know that, just because the content was downloadable, it did not mean that the content was necessarily reusable.

Licensing changes also had a potential impact on aggregation. During the lifetime of the project, new license labels and categories were proposed by Europeana (using the categories defined by rightsstatements.org). This did not have an impact on aggregation, because each existing licence was automatically be moved over to a proposed new one. None of the new licences replaced the dropdown menus available on MINT in the edm:rights field.

4.3 Legal and rights related

Table 3 shows some of the different legal issues faced by a few of the data providers, with further details and mitigation steps taken given below.

Table 3: Legal and rights related issues

Name	Problem	Potential deficit	Solution
BL	Some previously selected datasets cannot be streamed worldwide	5,000	Further datasets from Endangered Archive Programme and elsewhere
NISV	Unresponsive external partner	10,000	Datasets from alternative external institution
CNRS	Rights issues with previously selected datasets	20,000	Further datasets from other CNRS institutions
FCSH	Rights issues with previously selected datasets	30,000	Further datasets from other external institutions

BL: the BL was not able to make accessible worldwide a large amount of its datasets, in spite of the efforts of British Library staff. The British Library was able to source two additional datasets which had audio content on the Audioboom portal: these were "Sounds of Our Shores", soundscape recordings around the UK Shoreline; and the "Evolving English" wordbank. In total these two datasets numbered

around 2,000 directly linked recordings. As a result the British Library has aggregated 79,222 audio recordings – just over its target number.

NISV: in the last quarter of the project the NISV still had to aggregate 4,000 text-based digital objects, due to an unresponsive potential external partner. NISV were able to approach the Petrucci Music Library (IMSLP) who agreed to make their material available to the project. NISV therefore aggregated content from IMSLP, filtering out all non-public domain content. The dataset amounted to over 65,000 digital objects - well over NISV's target.

CNRS: CNRS had been looking at various ways of making up a deficit of around 20,000 audio tracks that could not be met by CNRS/REM or CNRS/MMSH. CNRS was able to bring in two other auxiliary institutes: CRESSON and LARHRA. These institutions were able to provide nearly 12,000 tracks to Europeana Sounds. At the same time, CNRS/REM was able also to increase its contribution and brought the total to 38,112 - exceeding its original target as outlined in the DOW.

FCSH: FCSH had a large dataset to deliver to Europeana Sounds which unfortunately became impossible to make accessible worldwide. As a result, FCSH had to source alternative collections during Year 3. One such collection was from the Fado Museum, numbering 4,700 tracks, as well as other smaller collections. FCSH were hoping to work with their partners in Brazil, Moreira Salles. However, at the time of writing, the development of the Moreira Salles website is still taking place and, therefore, the 20,000 tracks that FCSH were intending to aggregate will not be available on Europeana Sounds until April 2017. FCSH remains committed to aggregating this metadata to Europeana Sounds, even though it accepts that these figures cannot be included as part of the project's overall achievements.

5 Final results

5.1 Data providers' individual targets

Table 4 below outlines the final metadata records and linked digital objects contributed by each partner, against their targets as outlined by the DOW.

Table 4: Final aggregation figures reached by data providers

#	Data Provider	Records published on Europeana	Digital objects on Europeana	Target (from DOW)	Type of file	Comments
1	BL	79,222	79,222	79,000	Audio	
		1,657	40,680	36,000	Images	Includes sheet music, photographs and interview transcriptions
2	NISV	13,327	169,980	86,170	Audio	Aggregated from the Internet Archive
		100	100	50	Video	
		375	10,000	10,000	Images	

		61,582	61,582	4,000	Text	Aggregated from The Petrucci Music Library (IMSLP)
6	BNF	5,495	10,990	10,000	Audio	Metadata records link to two or more audio recordings
			10,990	10,000	Images	Accompanying images (disc labels, photographs, etc.)
10	CNRS/			37,600	Audio	
	CREM	21,582	21,582		Audio	
	MMSH	6,072	6,072		Audio	
	CRESSON	753	753		Audio	
	LAHRHA	10,046	10,046		Audio	
11	DIZI	10,234	10,234	10,000	Audio	
12	DNB	526	526	500	Audio	
13	FMS	5,210	3,296	2,500	Audio	Metadata records include recordings, images and sheet music
			3,300	3,300	Images	
			500	500	Video	
			2,830	2,830	Sheet Music	
14	ICCU	83,122	83,122	80,000	Audio	
			23,270	0	(images)	Metadata records link to images of wax cylinders, etc.
15	ITMA	1,576	1,576	1,200	Audio	
		2,144	2,144	1,200	Text	
		210	210	1,200	Video	ITMA exceeded combined audio-related targets
		1,154	1,154	1,200	Images	
16	TLA	15,820	15,820	13,563	Audio	
		1,104	1,104	0	(images)	
		1,468	1,468	0	(Video)	
17	NLL	2,071	2,071	2,000	Audio	
			2,071	2,000	Images	Includes corresponding images of disc labels
18	OEM	19,786	19,786	12,000	Audio	
19	RBB	111,127	111,127	105,000	Audio	
20	TAD	39,116	39,116	38,000	Audio	
21	SB	12,050	12,268	11,900	Audio	
22	ONB	1,691	152,977	150,000	Images	Metadata records link to multiple digital objects (music pages)

23	FCSH	4,845	4,845	39,000	Audio	Aggregated from Fado Museum and Phonambient
				2,700	Text	
		204	204		(Video)	
24	CCE	14,456	14,456	15,800	Audio and Video	Submitted 17991 records at end of project; 3000+ could not be published on Europeana due to duplicate identifiers
		Total audio	**616,888**	**528,433**		
		Total non-audio	**311,050**	**224,980**		

5.2 Overall key performance indicators

The table below outlines the progress of aggregation activity over the three years of the project. The 'actual result' numbers are the numbers of audio items aggregated onto MINT. The last publication from MINT to Europeana for the project was at the end of January 2017.

No	Relating to objective / result	Indicator name	Target YR3	Actual result YR3
1	Aggregation (WP1)	Number of audio items aggregated	**500,000**	**597,931**
2	Aggregation (WP1)	Number of other items aggregated	**225,000**	**247,525**
3	Aggregation (WP1)	Number of items freely available for re-use	**90,000**	**177,248**
4	Aggregation (WP1)	Number of data providers using new EDM profile	**100%**	**100%**
5	Aggregation (WP1, WP5)	Number of Consortium partners to have made use of training resources	**100%**	**100%**

6 Conclusions

1. The Europeana Sounds project surpassed its Key Performance Indicators for aggregation.

2. Data providers worked towards improving data quality on Europeana throughout the project, enhancing the overall Europeana user experience.

3. Directly linked content proved to be beneficial, giving rise to a large amount of material on Europeana Music, Europeana Radio, etc.

4. Europeana Sounds is an aggregator that could certainly add more audio and audio-related content to Europeana in the future. Associate Partners have joined the project and material from them and from other potential partners could be made available.

5. In addition to directly linked content, much content aggregated by Europeana Sounds is of huge educational value, but for copyright reasons can only be made available via links to the web pages of the data provider, rather than the actual address of the digital object itself. However, there is further scope for including more embedded, streamable audio that can be played from the Europeana website.

6. Basecamp discussions about operating MINT could be used in Europeana Pro or elsewhere so that other MINT users could learn from earlier issues.

7 References

Ref 1	MS3 Initial ontologies selected
Ref 2	MS4 Preparation of training courses and materials complete http://pro.europeana.eu/files/Europeana_Professional/Projects/Project_list/Europeana_Sounds/Milestones/EuropeanaSounds-MS4-Preparation-of-training-courses-and-materials-complete.pdf
Ref 3	MS5 First tranche of content and metadata ready for ingestion
Ref 4	MS6 Final tranche of content and metadata ready for ingestion http://pro.europeana.eu/files/Europeana_Professional/Projects/Project_list/Europeana_Sounds/Milestones/europeanasounds-ms6-final-tranche-metadata-v1.0.pdf
Ref 5	D1.1 Content selection policy http://pro.europeana.eu/files/Europeana_Professional/Projects/Project_list/Europeana_Sounds/Deliverables/EuropeanaSounds-D1.1-Content-Selection-Policy.pdf
Ref 6	D1.2 Rights labelling guidelines http://pro.europeana.eu/files/Europeana_Professional/Projects/Project_list/Europeana_Sounds/Deliverables/EuropeanaSounds-D1.2%20D3.1-Rights-labelling-guidelines_Guidelines-for-contributing-audio-content-into-Europeana-v1.1.pdf
Ref 7	D1.3 Ontologies for sound http://pro.europeana.eu/files/Europeana_Professional/Projects/Project_list/Europeana_Sounds/Deliverables/EuropeanaSounds-D1.3-Ontologies-for-sound-v1.2.pdf
Ref 8	D1.4 EDM profile for sound http://pro.europeana.eu/files/Europeana_Professional/Projects/Project_list/Europeana_Sounds/Deliverables/EuropeanaSounds-D1.4-EDM-profile-for-sound.pdf
Ref 9	D1.5 Aggregation report 1 http://pro.europeana.eu/files/Europeana_Professional/Projects/Project_list/Europeana_Sounds/Deliverables/EuropeanaSounds-D1.5-AggregationReport1-v1.2.pdf
Ref 10	D1.6 Training report 1 http://pro.europeana.eu/files/Europeana_Professional/Projects/Project_list/Europeana_Sounds/Deliverables/europeanasounds-d1-6-training-report-1-v1-0.pdf

Ref 11	D1.7 Aggregation report 2 http://pro.europeana.eu/files/Europeana_Professional/Projects/Project_list/Europeana_Sounds/Deliverables/europeanasounds-d1.7-aggregation-report-2-v1.3.pdf
Ref 12	D1.9 Training report 2 http://pro.europeana.eu/files/Europeana_Professional/Projects/Project_list/Europeana_Sounds/Deliverables/europeanasounds-d1.9-training-report-2-v1.0.pdf

Appendix A: Terminology

A project glossary is provided at: http://pro.europeana.eu/web/guest/glossary.

Additional terms are defined below:

Term	Definition
AB	Advisory Board
APEX	Archives Portal Europe network of excellence
EC-GA	Grant Agreement (including Annex I, the Description of Work) signed with the European Commission
GA	General Assembly
PC	Project Coordinator
PI	Performance Indicator
PMB	Project Management Board
TEL	The European Library
UAP	User Advisory Panel
WP	Work Package