



**CNECT/LUX/2021/OP/0070**  
**Deployment of a common European data space for  
cultural heritage**

**DS. Data supply and reuse report M17**

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# 1. Introduction

This deliverable reports on data supply and data demand (reuse) activities while proposing a revised format. In previous iterations<sup>1</sup>, this deliverable reported on data supply and reuse activities and metrics mostly duplicating reporting also provided via the PM. Periodic reports and PM. Annual report. The past report also reported on user research and recommendations for product and service development for data supply and data demand (reuse). All progress in this area will be reported back with two dedicated outcomes under task 3.2 of the implementation plan: 'Report on areas of potential reuse, research and results achieved towards new and established audiences (incl. recommendations for product and service developments)' (Aug 2024) and 'Report on user needs and requirements of cultural heritage professionals to inform product and service development completed' (Jun 2024).

Hence in the following section we propose a new approach to structure, monitor and report on data supply and reuse activities. Our objective is to create a new management cycle that will allow a more holistic and impactful approach towards data acquisition, data demand and reuse.

*Disclaimer: the activities described in this deliverable are organised around the Europeana APIs and Europeana.eu services as the place where data is published and then accessed. We acknowledge that the scope of the data supply and demand (reuse) activities will grow as the data space is being deployed. We are however confident that the approach developed in this deliverable will allow us to scale and adapt to any data space requirements.*

## 2. Proposed approach

For several years, the Europeana Foundation and its partners have aggregated digitised content without other requirements than the data requirements of the Europeana Publishing Framework. Efforts have been made to identify the needs of the audiences of the Europeana APIs and Europeana.eu in terms of data and consequently acquire the digital content fulfilling those needs. The impact of the data demand (reuse) activities towards data supply and vice versa has however been limited.

We propose a new approach to better articulate data supply (WP2) and data demand (reuse) (WP3 and WP4) activities and demonstrate how this articulation can increase impact towards audiences and value for the CHIs contributing the data.

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<sup>1</sup> For example DS. Data supply and reuse report M08 (see [document section here](#)).

We expect this new approach will allow us to create a virtuous cycle benefitting the audiences served by the Europeana services and the CHIs contributing data to the data space. As we test, validate and progressively implement this approach, we will develop mechanisms that will 1) contribute to more effective planning and resource allocation, 2) provide success and impact measures.

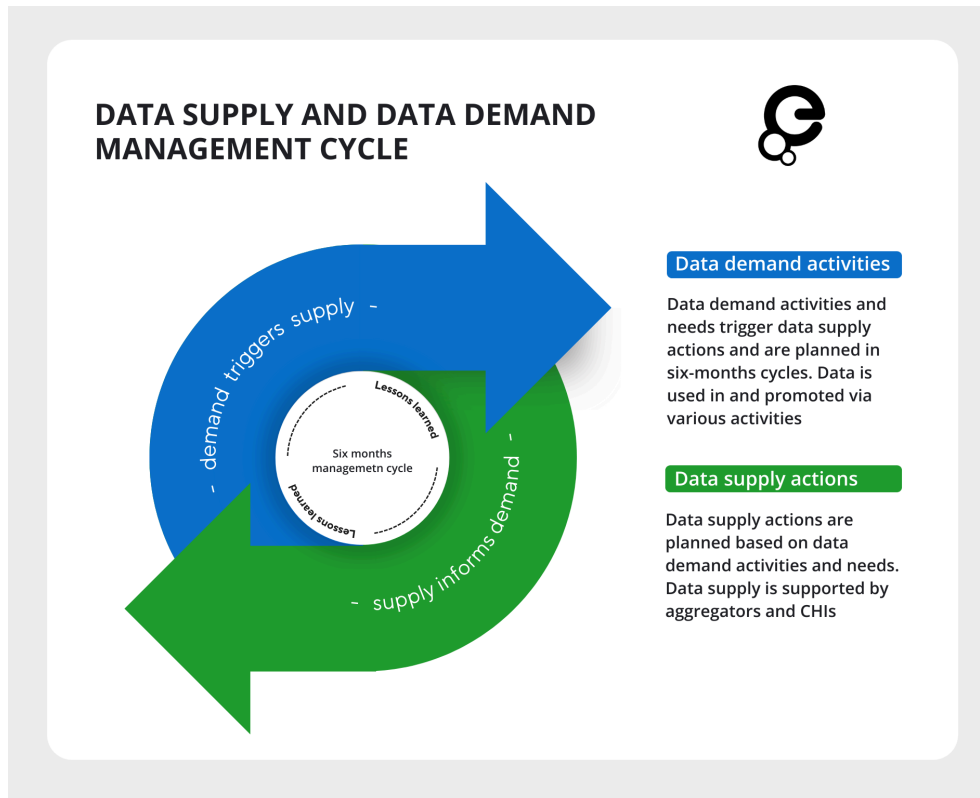
## 2.1 Management cycle

The developed approach is based on a virtuous management cycle that drives the development of data supply and data demand (reuse) activities (Fig. 1). This management cycle is based on two main drivers: demand or reuse activities trigger actions for data supply and in turn data supply informs the demand. When considering the implementation of this cycle we foresee four different phases:

1. Data demand activities are planned for a period of six months (which also reflects the period of implementation)
2. The planned data demand activities trigger or require actions in terms of data supply (and possibly supporting capacity building activities)
3. Data supply actions are planned and implemented and data demand and reuse are taking place
4. A new series of data demand activities is planned for the next six months taking into account the feedback collected during the execution of the phase 3. This feedback is acknowledged and included in the new planning.

The different phases are organised according to a logical order but we consider that the steps can inform each other at any point of the cycle.

The cycle is for now based on a planning set for 6 months, which makes the overall cycle last one year. There are several questions we need to investigate to refine the overall timeline of the management cycle. For instance, based on a data demand request, how much time would it take for a CHI to source and digitise new content, how much time would it take for a CHI to update already digitised material to fulfil a particular use case? We will test and validate this cycle throughout this second year of the data space with specific attention to the time required for executing the different phases and the types of activities and actions each phases consist of.



**Fig. 1.** Data supply and data demand management cycle.

## 2.2 A use case: Twin it!

The main use case which inspired this new cycle is the Twin it! campaign and its requirements. The Twin it! campaign started with a call for new data, 3D models driven by the EC Recommendations 2021. Metadata documentation is created for all 3D assets according to the Europeana Frameworks with the objective to foster reuse amongst diverse audiences. Data demand and reuse activities showcasing the Twin it! contributions will be planned by June 2024, aligned with the closing of the campaign. In order to enrich the collection of 3D items, a call for new 2D and 3D content was sent to aggregators to trigger additional data supply activities.

The success of the Twin it! campaign relies on the involvement of all the key stakeholders: Member States, Aggregators and CHIs which can be supported by the development of advocacy and capacity building activities as done via the two Swedish and Spanish Presidencies in 2023.

The development of the Twin it! campaign offers an example on how other data supply and data demand (reuse) activities can be organised. We are presenting additional examples in the following sections.

## 3. Reporting back

We consider this deliverable as the starting point of our first implementation of our new approach. This section reports on progress and activities that have contributed to the data supply and data demand management cycle in the past months. We are also taking account of the lessons learned in the past years to demonstrate how they are influencing the activities planned in section 4 and 5.

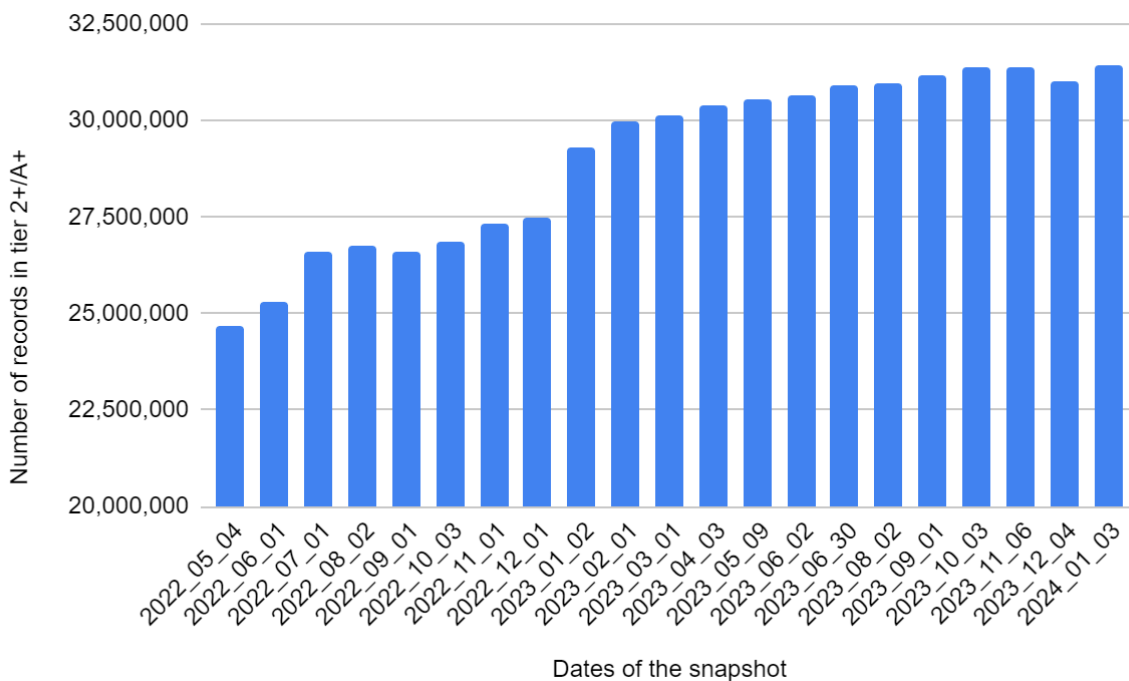
### 3.1 What has happened in terms of data demand and data supply activities

#### 3.1.1 Data supply activities

Between September and December 2023 the data supply activities continued in the same way as in Y1 of the data space contract.

- We processed a total of 2,294,550 records in 94 datasets, out of which 740,650 were new records in 42 datasets.
- Out of the 2.3 million processed records, 2,147,620 records in 85 datasets are classified as high quality (tier 2+/A+).
- Out of the 0.7 million new records, 676,675 records in 38 datasets are classified as high quality (tier 2+/A+).

Despite this high percentage of high quality data, the rate of increase of high quality records slowed down in this period: we have seen an increase of 0.3 million high quality records while in the same period one year ago we increased by 3 million high quality records (Fig. 1). This follows a pattern that we have seen developing as shown in Fig 2. This pattern will repeat itself as long as we work with more or less the same pool of data. Changing this pattern and growing the amount of high quality data more steadily requires the concerted effort of all data space participants and several activities of work to run in parallel. For instance, we need a more proactive approach to content acquisition based on market research or driven by the management cycle proposed in this report.



**Fig. 2.** Increase in high quality records since May 2022. At the beginning of every month we take a snapshot of the records in europeana.eu, to document the progress over time.

## Market research activities

Our market research activities in Y2 have included desk research into the availability of 3D content in Europe with a view to understanding if there are some providers which we can specifically target as they have a lot of content which is compliant with Europeana’s standards and technically ready to be aggregated.

We started by looking specifically at content available on Sketchfab. We examined the collections of 157 cultural organisations, if those organisations were also Europeana data providers and how much of this 3D content has already been shared with Europeana.eu.<sup>2</sup> We found that of the 157 providers 62 of these are also data providers to europeana.eu but the number of objects that these providers have available on europeana.eu is a lot smaller compared to the number available through Sketchfab. Overall the 62 providers have 3,117 objects on europeana.eu, but 8,014 objects via Sketchfab.

Curiously many of these existing providers have no 3D objects on europeana.eu at all but may have large collections of other object types. For example the [Museu de Ciències Naturals de Barcelona](#) has [10,843 objects on europeana.eu](#) - all images, but 792 3D objects on Sketchfab which are not yet on europeana.eu. Likewise the [Royal Belgian Institute of](#)

<sup>2</sup> Detailed analysis is available on request.

[Natural Sciences](#) has [7,156 image objects on europeana.eu](#) but another 507 3D objects on Sketchfab. Both institutions have aggregated (at least part of) their data via the aggregator OpenUp! so a suggested first step could be to make a list of potential 3D data providers in the domain of Natural History which this aggregator could reach out to. OpenUp! Is the aggregator who has contributed the most data to europeana.eu (more than 12 million records currently available) but has not yet provided any 3D objects so mobilising this already highly productive aggregator to branch out into 3D would likely have numerically impressive results.

The investigation also highlighted 95 cultural institutions based in the Member States of the EU who have a total of 10,573 objects on Sketchfab but who have not yet provided data to europeana.eu. Looking at countries specifically we can see that we could make major gains in the countries of Spain (1,987 objects), Romania (1,963 objects), France (1,601 objects) and Poland (2,465 objects). Therefore targeting these 4 countries could be beneficial. Some of the biggest providers among these countries are the official 3D reproductions from French collections ([RNM Grand Palais](#), 864 objects), and the collections from [Alienor](#), a non-profit association based in Nouvelle-Aquitaine (France) with 449 cultural objects on Sketchfab. Similarly the Polish Museums '[Virtual Museums of Małopolska](#)' has 1,268 objects on Sketchfab and a further 387 objects come from the [National Maritime Museum](#) in Gdansk. Two Spanish examples are the Catalanian [Giravolt](#) with 363 objects and the Museum of the [University of Valencia of Natural History](#) (MUVHN) with 380 objects on Sketchfab. Finally the Romanian Museum of Mineralogy and Petrography, UAIC has 1,472 objects on Sketchfab - including eye-catching models of precious stones and minerals. Therefore specifically targeting these six new providers could yield a large number of additional good quality 3D objects for europeana.eu in the coming period.

Looking at the overarching themes of 3D content in Sketchfab (coming from providers based in the Member States) - the vast majority of this potential market are museums, especially of archaeology, cultural sites, and natural history. The 3D natural history materials especially feature dinosaurs, which we know is the most popular draw for in person visits to natural history museums and similar institutions.<sup>3</sup> We do not yet have a huge amount of dinosaur content in Europeana (only 717 objects are returned when searching for 'dinosaur') - though we do know that some is coming via the Belgian submission for Twin it!, so it would be great to capitalise on this momentum to gain new content which is likely to be popular. Dinosaurs also have interest beyond Europe with many specimens found throughout the world.

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<sup>3</sup> Covered in many top 10 lists by press and cultural publications alike, e.g. [CNN](#) or [HISTORY HIT](#).



### 3.1.2 Data demand activities

#### **Editorial**

While developing the management cycle of data demand and data supply activities as described in this document, we have already tried out some aspects of it, to achieve a better connection between data demand and data supply activities. The Europeana Foundation Audience Engagement and Data Publishing Services teams joined forces to support the Black History Month in October 2023, one of the regular audience engagement seasons running for a few years. At the end of July 2023 we invited aggregators to contribute to the Black History Month by (1) directing us to their collections on europeana.eu related to Black heritage, (2) submitting new or updating existing collections on europeana.eu related to Black heritage, (3) writing an editorial piece related to Black heritage.

As a result of this call to action two consortium members directed us to their collections on europeana.eu related to Black heritage. The British Library shared with us the [Barbados Mercury newspaper](#) and the [Barbadian newspaper](#). EUScreen (NISV) directed us to videos related to the Dutch Antilles. Two additional consortium partners contributed to the Black History Month by writing and/or translating editorials. The European Fashion Heritage Association wrote a blog about [Josephine Baker](#) and also translated it in Italian and French. They curated four galleries on europeana.eu: [Azzedine Alaïa and the Tunisian heritage of Couture gallery](#), [Iman gallery](#), [Grace Jones gallery](#), [Noami Campbell gallery](#). They also translated last year's blog about [Patrick Kelly](#) in Italian and French. Photoconsortium wrote a blog about [Alexandre Dumas](#) in English and Italian and curated a [gallery about him](#). Another contribution to this season came from the Swedish National Museum of World Culture. They wrote an article on europeana Pro: [Uncovering Afro-Swede history with the Swedish National Museums of World Culture](#).

This is a nice result of the call to action to aggregators. Listening to their feedback it is clear that the call to action was well suited to trigger the work on the editorials and there was lead time to get all content ready in time for the Black History Month.

We built on the successful call to action for Black History Month to develop the pilot for Women's History Month 2024. We followed the steps outlined below:

We created a reliable and sustainable workflow. To maximise our chance of success for our pilot, we needed to gather information externally, and internally decide on a reusable format for our data wishlist. We polled aggregators during the Europeana DS consortium meeting early in November 2023 to understand how best to present an actionable wishlist of data, and the challenges they may face when supplying this data:

- How to refer to the data (precise keywords i.e. Marie Curie, specific themes i.e. women scientists, or broader themes i.e. Women's history). Most of the respondents (7 out of 9) opted for specific themes;
- Comfortable timeframes between asking for items available in the data providers collection and publishing items on the Europeana website. Most of the respondents (10 out of 11) opted for the time frame 1-6 months which supports testing a management cycle of six-months.
- Additional considerations raised by aggregators included copyright and permissions for usage, as they are not data holders themselves, and sourcing items outside their collections could prove more challenging.

Listening to this feedback, we realised that we need to accompany any call to action for aggregators with as much specific information as possible. For every editorial season this includes the specific themes and in the case of Women's History Month also the names of women that are on our wishlist. This helps to focus content sourcing and content acquisition. For Women's History Month we [developed a list of themes and names of women](#) to share with aggregators. That list, which will serve us as a template for future seasons, has been populated with links to Wikidata, and our own Europeana entities, where available. These Wikidata links are supplied so that aggregators can use them to enrich their metadata – adding these links will make the content easier to find for us as well as europeana.eu users, and will increase the data's chances of being used and reused in editorial or via website search.

2) In parallel we started planning our editorial activities around Twin it!, discussing how best to present to visitors of the Europeana website each 3D submission from Member States, along with 2D items supplied by aggregators to create a “world” around each 3D object. A call to aggregators was made to supply all items related to each Member State's submission. An offline exhibition and online editorial coverage are being developed concurrently.

## Education

Activities in education that promote the reuse of data included the creation and offer of learning scenarios and stories of implementation using digital cultural heritage for students in primary and secondary education, and the innovative use of data via participatory events (i.e. Built with Buits). For example, in the period between Sep - Dec 2023, we created 77 new learning resources for education published on the [Digital Cultural Heritage Story map](#).

## Academia and Research

We investigated further how to maximise the accessibility and reusability of Europeana data through other platforms, particularly the EOSC (European Open Science Cloud) on the occasion of the EOSC Symposium 2023, where we focussed on dataset-level access and

data curation. The provision of data in terms of datasets was discussed regarding the new developments that recently occurred in the [EOSC portal](#), as a hub of research data, tools and services for innovation and education, [Zenodo](#), as an open dissemination research data repository, and [OpenAIRE](#), as a catalogue of services to support Open Science.

The development of training materials about the Europeana APIs for Higher Education and Research led to increased awareness of the tight connection between the use of the EDM by content providers and the reusability of data, meaning that the efforts beyond data sharing could be better directed by efforts to foresee how the data appears on europeana.eu, can be accessed via the APIs and/ or can be harvested/ downloaded via the FTP server; and to go a bit further, what possibilities linked open data and the use of SPARQL can open up in academia and research. Our reflections on dataset-level access are also addressing granularity and descriptions. Concerning proper documentation for datasets, it is also worth mentioning the publication of the scientific article by the ENA working group on datasheets for digital cultural heritage: [Datasheets for Digital Cultural Heritage Datasets](#), in the 'Journal of Open Humanities Data'.

We fostered the reuse of data and digital skills in university classes, also thanks to DARIAH's initiatives. For example, students were tasked to create a digital collection using Omeka as a content management system at the [University of Alicante](#), Spain. For such tasks, users - in this case, students - look at different catalogues/ repositories. When executing the tasks, students had issues identifying the licence they had to use, and selecting metadata from the sources to adapt into the Omeka metadata format (Dublin core).

## **API users**

Activities that promote the reuse of data among API consumers included the organisation of events or presentations at universities that support the creation of products and services with digital cultural data, accompanied and supported by API training resources. In the period between Sep - Dec 2023, the Europeana REST API received on average about 12.6 million external API requests per month and had on average 152 (external) API users per month, and the REST API had in total 284 new sign ups.

## **Other activities**

GIF IT UP: our annual GIF IT UP contest – where we teach and encourage creative remixing of open access digital cultural heritage – was run in October 2023 by Europeana and the following partners: Japan Search, Art Institute of Chicago, DAG Museums, DPLA, Digital NZ, Bibliothèque et Archives nationales du Québec (BAnQ), Centro de Fotografía de Montevideo, and Trove.

Goethe-Institut joined as a partner and a patron of this year's special category: Underrepresented Communities, focussing on people and communities that historically have not been in the spotlight. Goethe-Institut also hosted a series of GIF-making

workshops at their locations in London and Amsterdam. Involvement in GIF IT UP is part of Goethe-Institut's ongoing campaign #Heritage\_digitised. There were 98 eligible entries that remixed more than 130 cultural heritage items that came from 53 different cultural institutions, based in 22 different countries. In October, Europeana held a GIF-making workshop independently (attended by 114 people). In November, prizes will be awarded for the best entries, as judged by the public and a jury of creative experts.

## 3.2 Lessons learned and recommendations for the next period

Our past experiences have shown that a better alignment between data supply and user demand is needed. Without changing our process, we risk on the data supply side not getting enough data in the quality we need to meet the targets set in the EC recommendations and on the data demand side, we risk not meeting our audience's needs in various segments.

A better connection can be achieved by surveying the market, as well as our own identified or established audiences. On the one side we can find out what content is available for reuse. On the other side we can find out more about the requirements of the audiences for content that is available in the data space.

### 3.2.1 Data supply

Learning from market research, we know that 62 of our current data providers have 3,117 3D objects on europeana.eu, but 8,014 objects via Sketchfab. It should be explored if we can aggregate the 4,897 more objects using existing relationships and routes to europeana.eu. In addition, a few more (and new) data providers can be contacted for which we should have the possibility to use existing routes to europeana.eu. With these results in mind, extending market research to identify more potential contributors to the Europeana Initiative and the data space is highly recommended.

### 3.2.2 Data demand

#### **Editorial**

To proceed with the implementation of the management cycle of data demand and data supply activities, we now need to focus on how to facilitate the submission of new collections or updates to existing collections on europeana.eu for future seasons and other audience engagement activities. This should eventually lead to an increase of data supply activities driven by user demands to get more high quality data into the data space for use in dedicated audience engagement activities.

For Black History Month 2023, we made a call out to aggregators which included them pointing to Black history content on europeana.eu. Two aggregators shared links to content

that we were unable to use at the time. Black history content is already quite limited on europeana.eu, so these results were expected.

For Women's History Month, we created a list of data demands, the list we developed was based on responses from subscribers of our Women's History Month email course in 2020. We asked them to nominate pioneering women whose stories we should tell in our editorials. This proved useful, and we want to incorporate such Call to Action (CTAs) more in future to learn from users directly about figures and specific themes our audiences want to hear about. It might be especially useful for gaining knowledge about local figures/themes that do not have many sources in English, which will further support our wish to reach more audiences through our multilingualism efforts.

We will also provide clearer messaging for aggregators on what kind of content is useful for seasons (e.g. links to whole collections and not just a handful of items, or where individual items are provided, to include contextual information about why they were selected, and also to provide links to new content not published on europeana.eu). In future, we can also make it clear what content (especially content from europeana.eu) we are already aware of to avoid duplication.

## Education

Since 2018 we have been running extensive surveys (pre and post) in our Europeana Education MOOC. From those surveys, we know that educators consistently increased their interest in AV materials to use in their classrooms and that they look for content usually by subject (Fig. 3).



**Fig. 3.** Results from the Romanian version of the MOOC in 2023 with more than 300 participants.

There is an opportunity here to work with aggregators on the 2025 Education MOOC, by requesting AV items around specific themes, in specific languages.

Additional activities in education that promote the reuse of data also include the creation and offer of learning scenarios and stories of implementation using digital cultural heritage for students in primary and secondary education, as well as innovative use of data via participatory events (i.e. Built with Bits).

In the case of Built with Bits, which is a programme that aims to foster the use of 3D materials, the limited amount of items in Europeana.eu, which are mostly in copyright, is the main challenge educators face to successfully develop their projects.

There is an opportunity here to look at connecting these activities with our data supply and data demand workflow, for example by checking if the feedback from our MOOC participants also extends to other educational activities (favouring AV format, and searching for themes on the Europeana.eu website).

## **Academia and Research**

The Y1 outcome, a [workflow to publish Collections as Data](#) (v.1), describes all the main steps for cultural heritage institutions to publish data within far-reaching initiatives, such as data spaces. More specifically, for the reuse and publication of data at the dataset level some steps are more crucial than others, such as step 3 - *Include documentation about the dataset*; and step 6 - *Think about a structure for the dataset for a better understanding of how to reuse the content*, as well as step 1 - *Provide a clear licence and terms of use allowing reuse of the dataset without restrictions*.

More user-friendly datasets also require a certain degree of granularity and special attention to the size. Better structured datasets and coherence in their content are more suitable for download, and therefore for experiments in classes. The effort in this area is directed not only towards fostering reuse but also towards sustaining digital literacy. Documentation is particularly important in the case of 3D items, especially when the ultimate goal is reuse.

## **API users**

Through our participation at an Immersive Tech Week Hackathon in November 2023, we were able to observe students' interactions with our APIs, and can make the following recommendations:

- API users expect a higher amount of high-quality and well-known 3D objects in the data space. It reaffirms the need for sustained efforts in 3D digitisation by CHIs and acquisition of those 3D objects by the Europeana Foundation and its partners. This priority is already part of current business plans.
- API users expect different 3D file formats to be available for download, the most common among these formats being OBJ, FBX, and STL. CHIs should provide

multiple file formats of their 3D objects to europeana.eu, if possible, and to make these different file formats available for download and reuse to the end-user.

- API users and other creatives have questions about the specific types of reuse that are allowed with certain copyright licences.

Developers and other creatives that used Europeana's APIs in the context of the activities mentioned above often needed significant coaching and knowledge transfer before they could interact with Europeana's database in a self-sufficient way. Once this knowledge transfer had happened, these users showed great creativity and skill in generating valued reuse cases and projects. Some of these outputs will be gathered in a blog post on Europeana Pro (expected Mar 2024).

The main formats and themes that users focused on were those that could be used with immersive tech, more specifically 3D digitised objects for reuse in immersive applications and 2D objects that could be used as a basis to forge 3D objects. Ideal file formats for reuse in immersive apps using Blender or Maya for scene creation were FBX and OBJ. Another important criterion for reuse of 3D models in immersive apps is having models that have different file sizes and polygon counts, so they're easy to scale down or up. When users found valuable 3D objects in the Europeana database, these objects were often licensed in such a way that they could not be reused. More often than not, users found no available 3D objects for their query. In both instances, users relied on taking Europeana objects as inspiration or as a blueprint to design and create their own 3D models for reuse. These 3D models were often highly qualitative and useful to other creative reusers. Sadly, these newly created 3D models have no way of being ingested or represented in Europeana currently because there is no functionality that allows individual users that aren't connected to a Cultural Heritage Institution to ingest objects into Europeana.

### **Other activities**

GIF IT UP: selected datasets sometimes get depublished, and high-quality content gets replaced, so there is a need for visually attractive content. Content search to update and grow the GIF IT UP page with interesting, high-quality, openly licensed datasets can be difficult and time-consuming. Identifying a sample of visually interesting content that has been used for GIF IT UP, could support aggregators in their efforts to understand and identify what is visually appealing content for creatives which would contribute to a creative landscape and increase the chance of reuse.

## 4. Data demand opportunities and activities

The activities listed below were planned as part of the Y2 implementation plan before we developed our new cycle approach. These activities were therefore not scoped in connection to our data supply and data demand cycle. We will work further on these activities with the cycle in mind and feedback lessons learned as much as possible to make that connection. Activities listed below are the period January to August 2024.

The ability to submit data wishlists to aggregators will open up possibilities to reach audiences with a variety of topics and formats most useful to them (i.e. 3D, to better meet the requirements of specialised / professional audiences), as well as preparing data in a way (i.e. metadata) that allows for increased reuse.

In Y2 we are continuing to engage the following audiences (re)using data available on the Europeana website: cultural enthusiasts interacting with our editorial offer, education, academia and researchers, and API users. Our investigations into new audiences remain ongoing.

### 4.1 Editorial

Editorial is an activity that's a natural fit for our data demand and data supply cycle. With an improved data supply cycle, we will be able to expand our editorial planning. In the past, it was challenging to write about a topic when our collections contained only a limited number of items and/or items of low quality. As a result, we sometimes had to not feature an interesting topic in favour of a story that linked to more/better quality items in europeana.eu.

The data supply - data demand cycle will help us gain more control over the topics we choose to write about. We hope to provide rich and nuanced stories to drive traffic to blogs and exhibitions, all year round, as well as engage visitors to stay on the website for longer. We will work to identify popular data, for example by checking internal site search terms, so we can request more data or improve/update data in a way that resonates with our audiences.

Our planned activities for Y2 starting from January 2024 include:

- 2 seasons (month-long activities driven by one editorial theme, in collaboration with partners): Women's History Month (March 2024), Pride Month (June 2024)
- Shorter editorial campaigns consisting of blogs/exhibitions/galleries: Public Domain Day, Interviews on Creative Reuse (which could give us insights into what data creatives are looking for on europeana.eu), World Art Nouveau Day



- Digital Storytelling Festival (May 2024)
- Twin it!: we are still finalising our plans for our online coverage to not only showcase the 3D models supplied by each Member State, but also include 2D data supplied by aggregators, to contextualise the 3D submissions. We will also create a connection between the Twin It! final event and the Digital Storytelling Festival, by including themes around travel.

We may have to adapt our data demand template shared for Women's History Month (Mar 2024) for the next season (Pride Month, June 2024), based on aggregator feedback. If aggregators are agile and quick with supplying data, we could also give them wish lists / templates for shorter campaigns (like World Art Nouveau Day in June 2024, tbc).

We are also working on storytelling courses that will become available in May 2024 via our Learning Management platform. These courses aim to help viewers develop their storytelling skills using digital cultural heritage as inspiration and source material for practical exercises. The courses will help viewers become more confident in searching and accessing collections on europeana.eu, introduce them to Europeana.eu's target audiences and the editorial formats available to connect with them, and understand what to consider when creating their own blogs, such as story, structure, tone of voice and our editorial guidelines. Within the courses, participants are asked to think through and share ideas for developing their own galleries and blogs. This could give us useful indications regarding popular topics, items or collections, which we can feed back into our data demand / data supply workflow.

## 4.2 Education

Activities in Y2 of the data space include:

- [Built with Bits 3](#)
- [Historiana learning content on partner pages](#)
- [CreateELAs](#) (e-learning activities) online course
- 500 micro-stories of implementation (work in progress) shared in the [Digital Cultural Heritage Map](#)
- Europeana Education MOOC in Dutch and Latvian

EF is part of the Erasmus+ project, [Watch videos like an historian](#), where we developed a [guide for content holders](#) to give advice on how to offer their materials for education. We expect that promotional and dissemination efforts around this guide will improve the supply of AV content for education.

At the end of the Built with Bits 3, we will run a survey among participants to collect user requirements for 3D to understand better how to supply this type of content in the educational domain.

## 4.3 Academia and research

Activities in Y2 that promote the (re)use of data include:

- Training workshops around the [Workflow to publish Collections as Data](#), also with the goal to publish its v.2
- Workshops to test the training materials about the Europeana APIs for Higher Education and Research, which will constitute the first modules of a curriculum about digital cultural heritage for DARIAH Campus.
- Presentations at conferences and universities to investigate the reuse of data at a dataset level, also thanks to the creation of galleries on europeana.eu.
- Series of interviews with university teaching staff and support staff members within the research on digital cultural heritage as an emerging university subject.
- Activities designed for new and future professionals, including university students and doctoral students, raising awareness of the potential of digital cultural heritage, within the two internships for new professionals under contract.
- Further activities are being explored as part of the activities run by DARIAH infrastructure members, e.g. data camps.

We have developed an internal process so that feedback and input from stakeholders are shared to inform product development and, eventually, to inform data aggregation and supply. This also happens through meetings with the technical area. A milestone in Y2 will be the upcoming event co-organised with the Royal Library of Belgium: [Collections as Data: Collaborating across data spaces for cultural heritage and open science](#). The event aims to bring together representatives from European national libraries to explore their role as content providers in the data space for cultural heritage, the European Open Science Cloud, and beyond, and it has received support from the Europeana Research Community. In the workshop sessions, we will mainly focus on data supply. The results will be published and disseminated afterwards.

## 4.4 API consumers

Activities in Y2 include:

- Low code Fest 2023
- Immersive Tech Week Hackathon (see section 3.2 for lessons learned)
- Low Code Fest 2024
- API Intro training

It is crucial in Y2 to take every opportunity possible to gather feedback from users at the activities mentioned above. At any events in Y2 EF staff will listen actively to participants to gather input on what data types and datasets users are looking for, so gaps can be identified to inform data supply activities. After the end of events like the ones mentioned

above, we will also survey participants to ask what kind of data supply would meet their use cases.

## 4.5 Europeana's market research activities

The next step for Europeana's market research is to investigate other platforms which host 3D content (in addition to the Sketchfab investigation detailed in this document) and in collaboration with the work being undertaken by the 3D working group - who are also working on the more technical aspects of 3D ingestion to Europeana. This investigation should yield more potential data providers that we can target in upcoming campaigns and potentially uncover more themed objects which could be ingested and then become the subject of interesting editorial.

Our market research in Y1 produced some surprising results - we had many responses to surveys from representatives at cultural institutions who do not yet have any digital collections and have not yet started on this aspect of their digital transformation journey, nevermind tackling 3D digitisation. Our recommendation is then to work on two different fronts - 1) capacity building in digitisation (especially in 3D) while at the same time 2) targeting those providers who already digitise in 3D and whose online digital collections adhere to the main standards we require for ingestion into Europeana (e.g. those who already have data on Sketchfab).

Focusing on 3D will help us to help Member States reach their targets vis a vis 'the Commission recommendation of 10.11.2021 on a common European data space for cultural heritage'. More data about the status of digitisation in the European cultural sector, especially 3D digitisation, would be extremely helpful in order to better understand the challenges we and the Member States are facing and we will also investigate the possibilities for gathering more data on how many cultural institutions have begun digitising in 3D via ENUMERATE in the coming years. All of this will be elaborated on further in our upcoming deliverable due end March 2024: 'Report on 3D (including usage scenarios and best practices)'.

## 5. Data supply opportunities and activities

The EC recommendations are the main driver for data supply activities, to publish as much high quality data as possible from the Member States. As the EC recommendations put a high emphasis on 3D content, it also shapes our data supply activities. In Y2 of the contract we are supporting the Twin it! campaign as much as possible to underpin this emphasis on 3D content. This includes the support of CHIs and aggregators in preparing their items in the best possible way, including having meaningful metadata and relevant keywords to put the 3D models in context. This contextualisation should also help to connect the 3D models with corresponding 2D items. That means for example, if the 3D model is a building, then objects stored in this building and digitised in 2D can be used to enrich the experience of the 3D model. If the 3D model is a dinosaur, adding 2D objects alongside can help to recreate the environment the dinosaur lived in, or the context in which the dinosaur was found, or add scientific studies and 2D photographs that provide more information about the actual object.

Connected to the Twin it! campaign but supporting the work on 3D more generally is the work on our products and services. One activity is the improvement and extension of our documentation that will sit alongside the Europeana Publishing Guide. In addition we work on product improvements in Y2 of the contract that will conclude in two outcomes: Support for the provision of 3D media resources is added (Mar 2024) and Strategy for content embedding is designed and implemented as a MVP (Jul 2024). We are also developing recommendations to guide the licencing of 3D materials to enable reuse using the Twin it! Submissions as the first use cases.

With the 3D related activities proposed above we not only respond to the EC recommendations but also to our users requirements. The usage of suitable licences for reuse of 3D materials will provide activities like Built with Bits more materials for reuse. API users, for example, as specified in section 3 will find a higher amount of 3D content and have the most suitable file formats available for download.

In addition to the Twin it! campaign we aim to support the two remaining editorial seasons in Y2, i.e. Women's History Month (March) and Pride Month (June). The template created for Women's History Month will guide us through the collaboration with aggregators, and the experience made with the entire process will help to refine the approach for the Pride Month. Given the time it takes to source and mobilise new collections and make them ready for ingestion, it is more likely that we will receive pointers to existing content and suggestions for or contributions to editorial activities (mainly blogs), but with a longer lead time in the future this should change and we hope to also get more dedicated data submissions to support upcoming seasons in the future.

With a long lead time in mind, we should look into the opportunity to work with aggregators on the 2025 Education MOOC. Audiovisual content around specific themes and in specific languages will be of interest and we will discuss these aspects with our domain specific aggregators, i.e. EUscreen (NISV) and EFG (DFF).

Looking at data quality improvements with an impact on audience engagement we will focus on the maintenance of the media link quality, following two different approaches. One is the quarterly cycle to inventorise and address broken media links. This may lead to the depublishing of datasets and less content available for audience engagement activities, but at least the content that is there is fully accessible. The second approach is to implement a solution for the long-term persistence of metadata records. This will help to manage the occurrence of broken item links for users, in cases where we depublished items. Users may still not get access to the object anymore, but at least there will be an explanation why that is the case and there will be a trace to make it easier finding the object elsewhere.

In any case and for sure for the time being, data supply activities will keep data demand activities in mind when working on quality improvements. That can mean that we try to prioritise certain improvements with an upcoming editorial season in mind. It can also mean that we will be more careful depublishing items or datasets when we are aware it negatively affects a data demand activity.

## 6. External factors impacting the management cycle

The success of this new management cycle in the context of data supply and demand (reuse) relies on several external factors for which additional actions have to be taken. In this section, we acknowledge additional efforts that are required to make the cycle work.

The EC Recommendations from 2021 are currently the driver for new data to be digitised across Europe by all the Member States. The relationship between Member States, CHIs and aggregators is therefore key to keep new content coming in the data space. Advocacy campaigns such as Twin it! are needed to support Member States in their digitisation efforts. Current activities around inactive data partners and more specifically the focus on National Libraries aim at explaining and promoting the opportunities the data space offers. The Country Groups activities follow a similar approach to enable connections across several strands of work and work more closely with Member States. Connecting members of the Europeana Network Association and the Europeana Aggregators' Forum in a Member State and facilitating their collaboration to explain and promote the opportunities of the data space for CHIs is expected to increase the engagement of CHIs.

To keep aggregators and CHIs motivated in delivering more and new data, we need to continue to demonstrate the impact and rewards of data publication activities as part of the audience engagement activities. The recently launched Welcome Pack has the objective to engage more CHIs in the life cycle of their data after it has been published in europeana.eu (i.e. with the CHI specific usage statistics dashboard). A better understanding of how data is being reused, what data is most visited compared to others can in the medium term influence how data is prepared and improved for audiences. The outcome 'Mapping of products and services offered to CHIs and their professionals (V1) completed' (June 2024) will allow a better understanding of the value brought by each product and service to CHIs.

Capacity building activities are both needed for data supply and data demand (reuse). In the context of data supply, a continuous effort is being done to support CHIs in developing their understanding and skills around the data publication workflow. The Europeana Aggregators' Forum is the main lever here, as a support to the dissemination of Europeana Frameworks to a large number of CHIs.

Engaging audiences with our products also requires the deployment of training and guidance materials. For instance in our API outreach efforts in DS Y2 we're focusing on creating a high-level introduction to our API suite for capacity building with different audience groups, through our Learning Management System. We've also organised all of the frequently asked questions about our whole API suite in one clear [Europeana API FAQ](#) connected to the rest of our documentation.