



**Deployment and Maintenance of
Europeana DSI core services -
SMART 2017/1136**

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Periodic reports can be viewed and accessed online in the document section on the Europeana DSI-4 project page¹.

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¹ <https://pro.europeana.eu/project/europeana-dsi-4>

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Highlights

In the reporting period, we improved the aggregation infrastructure by establishing a process that allows incremental updates. We also released a new version of the enrichment/dereferencing services and completed another iteration of the Metis Sandbox which presents an updated user interface and a back-end aligned with Metis.

In order to improve the website experience on the Europeana website, we completed a recommendations feature for galleries, established a process of automated updates to home and collections hub pages, and introduced organisation pages to give contributing CHIs more visibility on the website which also offers new ways to our users to engage with content. We reported on multilingual experiments in a dedicated report, we made progress towards multilingual search, and we released multilingual item pages.

In the period, we engaged users via the Europeana Sport season and via a Digital Storytelling Festival (organised for the first time at Europeana). We trained educators on how to create and share e-Learning activities and how to train others to do the same. We shared a best case example booklet with learning scenarios and stories of implementation for educators. A task force identified both opportunities and challenges faced by educators and audiovisual collection holders when trying to place AV content in an educational context and provided recommendations. Finally, we published new partner pages on Historiana that provide CHIs a free and open virtual space to share content and engage with educators and students.

We evaluated feedback on the current API outreach strategy and learned that, overall, people using the Europeana APIs are happy with its functionality.

In our efforts to facilitate the increase of high quality content on Europeana we completed a plan for growing fulltext newspaper content and completed an update of the Statistics Dashboard (V2). We also reported on efforts done to support a third implementation of the Europeana Publishing Framework (EPF). This third version proposes a new direction for the EPF framework as a whole including a review of the framework based on the result of CHI case studies, updated guidance materials, several improvements on the EPF, and an implementation plan for the resolution of the long-tail data issues. The Interoperability of annotations and user sets Task Force as well as the AI in relation to GLAMs Task Force completed its final reports.

To support improved browsing capabilities on the website, we completed a new entity framework for data ingestion, established organisation entities, and extended the current framework to support high quality people relationships. Several DSI AGG reported back on crowdsourcing activities that see data quality enriched before it is ingested by Europeana. We also shared AI and cultural heritage news with our network and evaluated lessons learnt from image classification experiments.

Besides organising many capacity building events (e.g. Europeana Digital Spring programme, Europeana Aggregators' Fair) in the period, we also published an events Management toolkit to share a set of useful and usable guidelines for digital events. We also completed a first cohort of the Pilot Europeana Managers Academy and reported on lessons learned.

In our efforts to further foster capacity-building in the sector, we completed a strategy for building and implementing a capacity building framework and presented preliminary reporting indicators and an approach for measuring impact of capacity building. We also completed V1 of the Capacity-Building Framework/Playbook.

In the period, we completed several activities that benefit the Europeana Research community. This includes Task Force recommendations on researchers' needs, outputs of the Research Grants (2019) (e.g. sustainable webinars), and a new service for downloading datasets.

To facilitate the adoption of accurate rights information, we completed a Task Force on rights labelling and organised Copyright Office Hours supporting the sector with copyright challenges.

Finally, we completed several impact related activities (e.g. impact report for Europeana 2020) that acknowledged capacity building for digital transformation. We also published Phase 3 of the Europeana Impact Playbook and reported on impact research and development throughout DSI-4 Y3. We also completed a report on the Portuguese presidency event and a dedicated impact assessment of the event.

Introduction

The periodic report describes work carried out under Europeana DSI-4 from 1 June 2021 (M34) until 31 August 2021 (M36) based on the implementation plan (B.1 deliverable M24). The report is organised in four work packages (WP), one work package for each of the three priorities of the Europeana strategy 2020-2025². The three strategic priorities are: Priority #1: Strengthen the infrastructure; Priority #2: Improve data quality; and Priority #3: Build capacity. The fourth work package reports on programme management efforts and the balance of efforts as well as the integration of other project outcomes (including Generic Services (GS) projects) into Europeana DSI.

All outcomes to be completed as stated in B.1 Implementation plan M24 are included in this periodic report. The periodic report might also include additional outcomes not mentioned in the implementation plan. Throughout the year, the consortium may start to work on new outcomes. Also included might be activities/outcomes that deserve to be highlighted along the way even though those feed into an outcome of the implementation plan. All outcomes the consortium worked on in the reporting period are stated in the overview of outcomes tables with completion rate and expected due date. In case an outcome ends in the reporting period a description is added that highlights the objective and result of the outcome and its value for Europeana DSI. Key Performance Indicators (KPIs) as well as other reporting metrics are also presented, and discussed in case of notable occurrences.

For each task associated risks are stated and assessed based on probability of occurrence and severity of impact.³ The risk assessment is reviewed and updated bi-monthly, in case changes occurred for a risk (updates or new risks) an explanation is added to the risk assessment.

Explanatory notes for tables reporting - colour codes

	Outcomes as stated in the implementation plan ⁴
	Colour blue indicates the expected timeframe of the outcome
	Colour black indicates that an outcome ended in the reporting period
%	Progress until end of current reporting period

² <https://pro.europeana.eu/page/strategy-2020-2025-summary>

³ Probability and impact are rated with 5 levels (very high (5), high (4), medium (3), low (2), or very low (1)). The risk rating is probability multiplied by impact. If probability is medium (3) and impact is high (4), then the rating would be 12 (3 x 4). The rating gives an understanding of the risk and its effects on the operations of the Europeana services. A risk rating above 15 can be seen as high risk while a rating of 25 is devastating.

⁴ Outcomes as stated in the implementation plan are marked with light blue background to be able to refer back to the initial implementation plan. Additional outcomes keep a transparent background.

Abbreviations

Consortium participants

EF	Europeana Foundation (Coordinator), The Netherlands
AIT-Graz	AIT Angewandte Informationstechnik Forschungsgesellschaft mbH, Austria
AIT-Vienna	AIT Austrian Institute of Technology GmbH, Austria
APEF	Archives Portal Europe Foundation, The Netherlands
BL	The British Library Board, United Kingdom
CARARE	Connecting Archaeology and Architecture in Europe, Ireland
CLARIN	CLARIN ERIC, The Netherlands
DEN	Stichting Digitaal Erfgoed Nederland, The Netherlands
DFF	Deutsches Filminstitut & Filmmuseum e.V., Germany
DNB	Deutsche Nationalbibliothek, Germany
EFHA	European Fashion Heritage Association, Italy
EUN	EUN Partnership AISBL, Belgium
EuroClio	EuroClio European Association of History Educators, The Netherlands
F&F	Facts & Files Historisches Forschungsinstitut Berlin Drauschke Schreiber Partnerschaftsgesellschaft Archiv-, Geschichts- und Literaturwissenschaftler, Germany
INESC-ID	INESC-ID, Instituto de Engenharia de Sistemas e Computadores - Investigação e Desenvolvimento em Lisboa, Portugal
MCA	Michael Culture AISBL, Belgium
NISV	Stichting Nederlands Instituut voor Beeld en Geluid, The Netherlands
NTUA	National Technical University of Athens, Greece
Photocons	International Consortium for Photographic Heritage Photoconsortium, Italy
PSNC	Instytut Chemii Bioorganicznej Polskiej Akademii Nauk - Poznańskie Centrum Superkomputerowo-Sieciowe, Poland
SPK	Stiftung Preussischer Kulturbesitz, Germany

Other

CHIs	Cultural Heritage Institutions
DCHE	Digital Cultural Heritage and Europeana
DPS	Data Partner Services
DSI AGG	DSI aggregators
EAF	Europeana Aggregators' Forum
EDM	Europeana Data Model
ELF	Europeana Licensing Framework
ENA	Europeana Network Association
EPF	Europeana Publishing Framework
IIIF	International Image Interoperability Framework
R&D	Research & Development
SEO	Search Engine Optimisation
UI	User Experience

Formal definitions of terms used frequently can be found in [Annex: Glossary of terms](#).

Work package 1: Strengthen the infrastructure

WP1 maintains and continuously improves Europeana DSI's main services and functionality. WP1 is focused on an easy and rewarding data publishing process (task 1.1.), a satisfying website experience for our users (task 1.2.), and a reliable and high performing platform infrastructure (task 1.3.). The work package also provides engagement activities for users to discover Europeana's digital cultural content (task 1.4.).

Task 1.1. Easy data publishing

Partners: EF, PSNC

Europeana DSI-4 offers a fully functional data and aggregation infrastructure through Metis (<https://metis.europeana.eu/>), which allows EF to import, transform, validate and enrich metadata for aggregators. The focus for the year revolves around implementing part one of the aggregation strategy by speeding up and enhancing the reliability of the publishing process (objective 1.1.1.) and releasing the Metis Sandbox (objective 1.1.2.) which creates new ways of publishing through Europeana.

Overview of outcomes: easy data publishing

Partner	Outcomes	Progress	Due date	Jun M34	Jul M35	Aug M36	Sep M37	Oct M38
Objective 1.1.1. Extend and maintain Metis								
EF, PSNC	System upgrades and performance are maintained (bugs fixing, infrastructure upgrades, refinement of existing features) - 30% of effort in M34 - M36	Ongoing	-					
EF	Existing enrichment service upgraded	Done	-					
EF	Provenance of machine-generated metadata is maintained ⁵	Done	-					
EF, PSNC	Incremental update process established	100%	M37					
EF	Intermediate release of Metis	100%						
Objective 1.1.2. Enable Metis Sandbox								
EF	Public release of Metis Sandbox	100%	M37					
EF	MS1 Metis Sandbox report on its contribution to the aggregation strategy delivered	Done	-					

⁵ In collaboration with Europeana XX Generic Services project.

EF, PSNC	Metis Sandbox data sources extended	Not started	_ ⁶					
EF, PSNC	Fast track publishing workflow enabled	Not started	_ ⁷					

Incremental update process established - So far when updating a dataset in Metis, the user had to reprocess the full dataset. A user in Metis can now specify whether the workflow to be applied will be full or incremental. When selecting incremental, only the updated or added records will be processed. Metis and eCloud (most specifically the harvesting and indexing components) were updated for this purpose. The current implementation focuses on OAI import but is generic enough to be applied in the future to Http import. The Metis user interface was also adapted to support this new functionality.

Intermediate release of Metis - We have released a new version of the enrichment/dereferencing services in production to allow the dereferencing of Wikidata TimeSpans and Places needed for the publication of the Europeana XX data. The Wikidata links presented in the data sent to Europeana are dereferenced and the fetched data (Preferred Labels with their translations, external links) are indexed contributing to the increase of multilingual coverage in Europeana.

Public release of Metis Sandbox - The Metis Sandbox is now accessible to the user via a user interface which makes its use much easier⁸. The back-end has been updated to be fully aligned with Metis.⁹

Risk assessment: easy data publishing

ID	Risk	Probability	Impact	Rate	Mitigation strategy	Change
R1.1	The work planned for year 3 of DSI-4 may require more preparation of requirements analysis and design than envisaged which may delay implementation.	High (4)	Low (2)	8	The work needs to be planned in smaller iterations which means that the products (such as Metis or the Sandbox) may not have all the expected functionalities implemented at once.	-

⁶ Outcome that cannot be delivered. The development of the Sandbox took more resources than expected, which delayed this piece of work. The Sandbox works only with EDM but the use case for further development has been found in the form of a collaboration with BnF.

⁷ Outcome that cannot be delivered. Two components were needed to speed up the publishing workflow: Sandbox and incremental processing in Metis. The hypothesis was that connecting the two into a 'fast track' feature would potentially further speed up the processes. We see the need for this hypothesis to be evaluated properly first before we start the implementation. With the Sandbox and a first version of the incremental processing in Metis in place we will be able to start assessing the impact of these developments on the speed of data publishing and propose a way forward.

⁸ <https://sandbox-ui-production.eanadev.org/>

⁹ <https://metis-sandbox.eanadev.org/memis-sandbox-rest-production/swagger-ui.html>

R1.2	The Generic services are bringing extra requirements for data ingestion that require modifications in Metis.	Medium (3)	Low (2)	6	The roadmap needs careful management and amendment if needed. Further discussion will take place with projects to better understand their requirements, and any conflicts with the DSI will be discussed with EC.	-
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Task 1.2. Europeana website experience

Partners: EF, AIT Vienna

The Europeana website (www.europeana.eu) is the single multilingual access point to digital resources of European heritage. This year we aim to see the website maintain 500,000 visits a month (KPI 1.1) with a 15% user return rate (KPI 1.2). To achieve this, the consortium maintains and continuously improves the website with a focus on a satisfying experience for users. We will add more user engagement features to attract more return visitors (objective 1.2.1.). Improvements to search are a key aspect of website experience that we will continue to invest in (objective 1.2.2.). The extension of features to support the new multilingual strategy are also critically important for reaching and retaining new audiences (objective 1.2.3.).

Overview of outcomes: Europeana website experience

Partner	Outcomes	Progress	Due date	Jun M34	Jul M35	Aug M36	Sep M37	Oct M38
EF	Europeana website usability and performance maintained (bugs fixing, security & software updates) - 20% of efforts in M34-M36	Ongoing	-					
Objective 1.2.1. Extend user engagement features								
EF, AIT Vienna	Public release of user-created collections (with recommendations) ¹⁰	100%	M36	■	■	■		
EF	Process of automated updates to Collections section in place (topics, centuries)	100%	M36	■	■	■		
EF	Browse by organisations is supported (new entity type)	100%	M38	■	■	■	■	■
EF	Visitor feedback mechanism upgraded	100%	M34	■				
EF	Publication of schema.org for item pages	100%	M36	■	■	■		
Objective 1.2.2. Deliver better search experience								

¹⁰ Project results from Europeana XX contribute to this outcome.

EF	Search relevance and performance maintained	Ongoing	-					
EF	Public release of search within newspaper pages	Done	-					
EF	Methodology for evaluating search effectiveness designed	Done	-					
EF	Search performance evaluation completed	Done	-					
EF	MS2 Search strategy delivered (including community feedback)	Done	-					
Objective 1.2.3. Extend multilingual reach								
EF	Metrics to measure improvements to the multilingual experience confirmed	Done	-					
EF	Language detection of metadata is validated (experiment)	100%	- ¹¹					
EF	Multilingual search designs prove to be usable and understood by users (user research)	100%	M36					
EF	Multilingual item page designs prove to be usable and understood by users (user research)	100%	M36					
EF	Real-time translation of item page metadata from English validated (experiment)	100%	M36					
EF	Users can view item pages in language of choice (implementation)	100%	M38					
EF	Candidate machine translation services for metadata selected	Done	-					
EF	Report on the percentage of exhibition and feature translations	100%	M36					
EF	MS3 Outcomes of multilingual experiments, and their contribution to the multilingual strategy	100%	M36					

¹¹ Alternative outcome delivered. We deferred this work to accelerate progress on multilingual search. We prioritised effort on the 'Real-time translation of search queries' from year two of the multilingual strategy. By the end of DSI-4 Y3 we have a working prototype of a Spanish destination where we aim to show how multilingual search across English/Spanish can work. Validating search across one extra language is a necessary step before scaling across many. This is a different tactic to the original proposal for this implementation plan, however we believe it is important to progress challenges with multilingual search queries. The alternative outcome 'Real-time translation of search queries' prototype will be complete by August 2021.

EF	UI translations are validated by crowdsource community	Done	-					
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*Public release of user-created collections (with recommendations)*¹² - In November 2020, we already released the use created galleries feature¹³. The past months we developed and completed the recommendations feature for galleries that recommends similar items to users when curating their own galleries (Note: only account holders can see recommendations).

Process of automated updates to Collections section in place (topics, centuries) - We developed a module that editors can add to the home and collections hub page, which displays four topic and century entity collections and automatically updates them daily. Additionally, we developed a similar module for displaying one item from each newly ingested dataset. We hope that both these dynamic modules will encourage people to return to the website more often. You can see these modules used on the home and collections hub page.

Browse by organisations is supported (new entity type) - We developed the organisation pages to give each CHI that we work with more visibility on the website, strengthening our promise to provide them with more recognition and create awareness of their institution. Also, our users can now explore our collection by CHI, giving them another way into our collection and potentially improving the findability of items. For this outcome, an English name was added to almost all Organisations in Zoho and propagated to the Entity AP to power the new Organisation pages. The Metis enrichment service was updated to support the enrichment of data with data.europeana.eu/organizations URIs as well as the Europeana Search and Record APIs to serve those data. The hub page¹⁴ and the organisation pages (for example: German Digital Library¹⁵) can be seen on the Europeana website.

Visitor feedback mechanism upgraded - We developed a feedback widget using the Jira service desk API to capture user feedback on the website. It offers people the option to submit feedback anonymously and with their email. All people who submit feedback can follow the status of their feedback request. We aim to reply within three days. The current process is more transparent for the user and more streamlined across the organisation allowing us to easily forward and track requests. We chose to develop our own instead of using an out-of-the-box solution because it's lightweight and does not negatively impact the website's performance. You can see the feedback widget in the bottom right corner of the website.

Publication of schema.org for item pages - In June 2021, we released schema.org for the item pages belonging to the Mauritshuis collection to check whether this will result in more visits to these pages from search engines. If this is the case, we planned to roll out schema.org to all other item pages in our collection. However, looking at the usage numbers for the Mauritshuis collection at

¹² Project results from Europeana XX contribute to this outcome.

¹³ <https://www.europeana.eu/en/account>

¹⁴ <https://www.europeana.eu/en/collections/organisations>

¹⁵ <https://www.europeana.eu/en/collections/organisation/148225000004671090-german-digital-library>

the end of August 2021, we were not able to observe a positive impact of schema.org on pageviews on those items. One reason could be that Google itself hasn't noticed the change for these pages and has reindexed them yet. For this reason, we would like to observe the behaviour of these pages for a bit longer and hold off for the foreseeable future with the rollout of schema.org for all other item pages.

Real-time translation of search queries (alternative outcome to Language detection of metadata is validated (experiment)) - In the Spanish pilot, we successfully implemented the automatic translation of the queries in any language to English using Google Translate. We conducted an evaluation for a sample of 300 queries, analyzing the translations and impact on the search results returned to measure its effectiveness and to compare it with the eTranslation service¹⁶. This evaluation indicates that Google achieved better results, with 73% of queries correctly translated compared to only 53% in the case of eTranslation. More information on the experiment is available in MS3 Outcomes of multilingual experiments, and their contribution to the multilingual strategy¹⁷.

Multilingual search designs prove to be usable and understood by users (user research) - We performed a heuristic review of the multilingual search in the Spanish pilot environment and concluded that we did not need to make any major user interface or user interaction changes on the search page. The current search interface is fit for purpose for a multilingual search experience. We also explored how we could adapt the search interface to make it easier for people to understand the results surfaced in another language. The proposed design is currently only available as a mock-up. More information is available in MS3 Outcomes of multilingual experiments, and their contribution to the multilingual strategy.

Multilingual item page designs prove to be usable and understood by users (user research) - We explored a couple of different interactions for the multilingual item page but we decided to go with the one that is the most effective and intuitive for the users. The proposed solution is to offer the user one interaction button at the top of the item page that offers the user to translate the item metadata into the language of their UI. We went for this approach because it builds on the users' prior choices which limits the barrier to entry and offers a more elegant experience. Additionally, we offer the user the option to translate it to another language in the case that they wish to do so.

Real-time translation of item page metadata from English validated (experiment) - As part of the Spanish pilot, we have experimented with real-time translation of the metadata for cultural objects, so that metadata can be shown to the users in their language of choice. This function is implemented in the Europeana API, calling the Google Translate service in the background. Releasing the feature in production is pending further analysis, especially regarding performance (speed of getting translations for the portal).

¹⁶ The Spanish pilot used the Google Translate service.

¹⁷ Available on request.

Users can view item pages in language of choice (implementation) - we released the functionality that allows people to translate the items's metadata into their language of choice. Additionally, we introduced icons on the metadata fields that signal to people which fields are automatically translated. This functionality is currently powered by the Google translate API. An example for the multilingual item page can be seen here.¹⁸

Report on the percentage of exhibition and feature translations - In the period from June 2020 to August 2021, the percentage of exhibitions published in more than one language increased from 50% to 64%. Notably, three exhibitions from the European Parliament Archives were published in all 24 of the European Union's official languages.

A major effort was also made to boost multilingual coverage of static text on the Europeana website: the 300+ text elements (such as section headers) previously published only in English have been translated and are now visible in 24 languages. Further incremental translation of static text will continue as new text elements are added.

MS3 Outcomes of multilingual experiments, and their contribution to the multilingual strategy¹⁹ - in August 2021, we completed a report detailing progress towards the multilingual strategy²⁰.

Reporting metrics: Europeana website experience

No.	Description	Measured by	Frequency	Target	Jun 2021	Jul 2021	Aug 2021
KPI 1.1	Traffic to Europeana website	Number of visits per month	Monthly	500,000	350,619	344,569	398,029
KPI 1.2	Returning visitors to Europeana website	Percentage of visitors returning	Monthly	15%	14.77%	13.84%	12.58%
KPI 1.3	Satisfaction rate for Europeana website	Average satisfaction on a 5-point Likert scale ²¹	Three times a year	75%	-	72%	-
KPI 1.4	Downloads on the Europeana website	Total number of downloads (cumulative)	Monthly	240,000	107,226	113,888	120,891

¹⁸ https://www.europeana.eu/en/item/90402/SK_A_188

¹⁹ Report is available on request.

²⁰ <https://pro.europeana.eu/post/europeana-dsi-4-multilingual-strategy>

²¹ The average satisfaction on a 5-point Likert scale is translated into % (e.g. an average of 3.6 stars equals to a satisfaction rate of 72%).

RM 1.1	New visitors to the Europeana website	Total number of new visitors per month	Monthly	-	253,237	256,102	301,710
RM 1.2	Visit duration on the Europeana website	Average time spent per visit	Monthly	-	01:34	01:29	01:21
RM 1.3	Page views on Europeana website	Average amount of pages viewed per visit	Monthly	-	2.94	2.9	2.64
RM 1.4	Click-throughs to partner websites	Total number of click- throughs (cumulative)	Bi-monthly	-	-	170,971	181,182
RM 1.5	User feedback for the Europeana website	Total number of user feedback received via feedback button (cumulative)	Bi-monthly	-	-	873	959

In the period between Jun - Aug, we saw lower traffic to the Europeana website. This is a yearly recurring trend for the summer period with less users visiting our website (possibly due to the holidays season). We also measured the satisfaction rate on the Europeana website with 1,207 respondents who rated the website a good average satisfaction of 72%.

Risk assessment: Europeana website experience

ID	Risk	Probability	Impact	Rate	Mitigation strategy	Change
R1.3	Traffic on Europeana website (KPI 1.1) is below target	High (4)	Medium (3)	12	Continuing our experiments on making record pages more discoverable to Google; expanding editorials with seasons, exhibitions; promotions and activities engaging users; better promotion of APIs to engage with developer and institutional reuse	-
R1.4	Returning visitors on Europeana website (KPI 1.2) is below target: product/content not good enough to	High (4)	Medium (3)	12	Optimising the browsing and viewing experiences; optimising the searching experiences; optimising multilingual experience; extending user engagement features; expanding editorials	-

	encourage people to return				with seasons, exhibitions; promotions and activities engaging users	
R1.5	Satisfaction rate for the Europeana website is low	Medium (3)	High (4)	12	Review europeana.eu user feedback and behaviour and take appropriate actions; monitor website performance; constant improvement of the Europeana website	-
R1.6	Expectations regarding multilingual strategy are higher than what available language technology enables us to implement	High (4)	Low (2)	8	Regularly evaluate and communicate the results of evaluation to stakeholders. Adapt plans to the performance level of technology.	-

Task 1.3. Reliable platforms

Partners: EF, AIT Vienna

High availability and performance (objective 1.3.1.) is an important priority for the Europeana services. With a high-availability architecture design, we aim for our main products to be available 24/7 with an uptime of 99.5% (excluding scheduled outages). We will monitor the quality of our services (uptime and response time) and report on them regularly.

Overview of outcomes: reliable platforms

Partner	Outcomes	Progress	Due date	Jun M34	Jul M35	Aug M36	Sep M37	Oct M38
Objective 1.3.1. APIs and infrastructure are high-performing								
EF	Infrastructure is maintained (bugs, attacks, clean-ups, upgrades, back-ups) - 50% of effort in M34-M36	Ongoing	-					
EF, AIT Vienna	Core APIs are maintained (incidents, bugs, technical debt improvements, software updates, releases) - 30% of effort in M34-M36	Ongoing	-					
EF	Solr and MongoDB reindexed	Done	-					
EF	Full failover environment established	100%	M36					

EF, AIT Vienna	Full disaster recovery test completed ²²	Done	-					
EF	Production hosting environment reconfirmed [IBM]	100%	M36					

Full failover environment established - a failover environment was established with a deployment of the Europeana website and the Record API. The further testing and usage of this environment was limited due to the instability of the cluster. Our investigations concluded that the hosting service chosen for the environment is not the right one and that we should look for a replacement. We will reevaluate our needs including a reevaluation of costs and redeploy the failover. The work done on the outcome has been summarised in a document available on request.

Production hosting environment reconfirmed [IBM] - The contract with IBM was reconducted for another year covering the same services previously used. In DSI-4 Y4 we will prepare a new infrastructure forecast taking into account the services delivered in Y3 such as the recommendations service.

Reporting metrics: reliable platforms

No.	Description	Measured by	Frequency	Jun 2021	Jul 2021	Aug 2021
RM 1.6	Response time of Europeana website	Average time (seconds) for single record per month	Monthly	1.4	1.2	1.1
RM 1.7	Uptime of Europeana website	Average in % for single records per month	Monthly	99.36	99.87	99.86
RM 1.8	Response time of APIs (all)	Average response time (seconds) per month	Monthly	0.24	0.17	0.17
RM 1.9	Uptime of APIs (all)	Average in % per month	Monthly	99.5	99.99	99.98
RM 1.10	Response time of Europeana Pro	Average response time (seconds) per month	Monthly	0.9	0.9	0.88
RM 1.11	Uptime of Europeana Pro	Average in % per month	Monthly	100	100	100
RM 1.12	Uptime of Metis	Average in % per month	Monthly	100	100	100

²² This outcome fed into C.4 Stress and disaster recovery test reports (March 2021).

In June, we saw slightly lower uptime for the Europeana website and APIs which was caused by instability issues in IBM.

Risk assessment: reliable platforms

ID	Risk	Probability	Impact	Rate	Mitigation strategy	Change
R1.7	High traffic in form of attacks can cause interruptions in the service	Low (2)	High (4)	8	Anti-flooding mechanism to limit the traffic to real users;	-

Task 1.4. Discoverability of digital cultural content

Partners: EF, DSI AGG (EFHA, NISV, DFF, CARARE, MCA), EUN, and EuroClio

Our efforts to publish digital cultural content can only be valued when material is found and consumed. Therefore, the ability for European citizens, educational audiences and API consumers to discover content is critical to the success of the Europeana Initiative. The foundation of our discoverability efforts are Europeana’s high-quality editorial features that will highlight captivating materials and stories (objective 1.4.1.). Through communication and promotion, EF will bring this material to the attention of our audiences to drive traffic to the Europeana website and engagement with digital culture (objective 1.4.2.). Activities with educational communities will foster partnerships for teaching and learning (objective 1.4.3.). Efforts to support third-party developers' use of the Europeana APIs will help to diversify the usage of digital cultural content (objective 1.4.4.).

Overview of outcomes: discoverability of digital cultural content

Partner	Outcomes	Progress	Due date	Jun M34	Jul M35	Aug M36	Sep M37	Oct M38
Objective 1.4.1. Deliver high-quality editorial features								
EF, DSI AGG, GS ²³	Editorial activities published (exhibitions, blogs and galleries)	Ongoing	-					
EF, GS ²⁴	Discovering Europe season completed	Done	-					
EF	Exhibition: The Danube: Connecting Europe (CENL) published	Done	-					
EF	Exhibition: The Beaver’s Journey (Aust-Agder museum og arkiv) published	Done	-					

²³ Europeana XX, Pagode - Europeana China, Europeana Sport and The Art of Reading in the Middle Ages- ARMA contribute to this outcome.

²⁴ Editorials from Europeana Common Culture, Europeana Archaeology, Europeana XX, Europeana Media contributed to this outcome.

EF	Women's History Month organised	Done	-					
EF	Exhibition: 200th anniversary of the death of Napoleon (Fédération Européenne des Cités Napoléoniennes) published	Not started	_ ²⁵					
EF	Sport season initiated	100%	M34	■				
EF	Autumn season (TBC) initiated	Not started	_ ²⁶					
EF	Exhibition: A Century of Technology (Europeana XX)	100%	M36	■	■	■		
EF	New European Bauhaus ²⁷	Ongoing	-					
Objective 1.4.2. Communication and dissemination to European citizens								
EF	Newsletter and social media posts (Facebook, Twitter, Instagram, Pinterest) published ²⁸	Ongoing	-					
EF	GIF IT UP organised	Done	-					
EF	Women's History Month organised	Done	-					
EF	MuseumWeek on Twitter organised	Not started	_ ²⁹					
EF	Digital Storytelling Festival	100%	M35	■	■			
Objective 1.4.3. Engage with educational communities								
EF	Blogs and social media posts (LinkedIn, Facebook, Twitter) published	Ongoing	-					
EuroClio	Online course for beginners at an eTwinning eLearning event (Europeana training for educators) organised	100%	M36 ³⁰	■	■	■		

²⁵ Alternative outcome delivered. Fédération Européenne des Cités Napoléoniennes was unfortunately unable to provide the promised online exhibition for the 200th anniversary of the death of Napoleon in May 2021. In Europeana DSI-4 Y3 we published three exhibitions not part of the initial implementation plan which we propose to be acknowledged as alternative outcomes. [1] [The Sakharov Prize, the European Parliament and human rights worldwide](#); [2] [The Charter of Fundamental Rights of the European Union turns 20!](#); [3] [It was 30 years ago](#).

²⁶ This outcome was mistakenly added to the Y3 implementation plan with a due date for September 2021. The autumn season will be done in October 2021 during DSI-4 Y4.

²⁷ <https://www.europeana.eu/new-european-bauhaus> and <https://pro.europeana.eu/page/new-european-bauhaus>

²⁸ Editorial outcomes of GS projects are promoted.

²⁹ Alternative outcome delivered. Museum Week 2021 was delayed at very short notice from May to June. The planned first edition of our Digital Storytelling Festival then conflicted with the new dates (the Digital Storytelling Festival is not part of the Y3 implementation plan). With little time to pivot, we focused on the Storytelling Festival instead of Museum Week. We propose to acknowledge the Storytelling Festival as an alternative outcome.

³⁰ This event was cancelled by eTwinning for April 2021. Euroclio prepared the course and provided a link with all the materials uploaded on the eTwinning platform to start a self paced training. The course will remain as a sustainable resource on the eTwinning platform for the whole academic year 2021-2022.

EuroClio	PR package targeting the cultural heritage sector available	Done	-					
EUN	MOOC for educators (English) launched	Done	-					
EuroClio	Train-the-trainers session during the EuroClio annual conference (Europeana training for educators) organised	100%	M36					
EF	Annual Open Education Week: contribution added	Done	-					
EF	All Digital Week campaign: contribution added	Done	-					
NISV	Task Force recommendations on making AV more available in education available	100%	M38					
EUN	Best case examples for reuse completed (learning scenarios and stories of implementation) 2020	Done	-					
EUN	Best case example booklet (learning scenarios and stories of implementation) for primary (and secondary) schools in six different languages published	100%	M38					
EuroClio	Advanced webinar series (Europeana training for educators) organised	100%	M34					
EuroClio	Five new partner pages on Historiana with one Exemplary Source Collection and five eLearning activities per partner available	100%	M36					
EUN	Europeana Education Competition 2021	100%	M35					
EuroClio	Five new Historiana tutorials	100%	M35					
EuroClio	Five Historiana promotional videos	100%	M36					
Objective 1.4.4. Attract API users and grow data usage								
EF	API developer community mailing list re-established	Done	-					
EF	Feedback on API strategy from developer community	100%	M34					
EF	Current libraries, documentation, and tools reviewed and updated	Done	-					
EF	New libraries, FAQs, and tutorials created	100%	M34					

EF	Reuse package for CHIs created	Not started	_ ³¹					
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*Sport season initiated*³² - To celebrate the return of sport to our summers, with the Olympic Games, the European Football Championships and many more events taking place, we launched a Sport season (June 2021) to share the story of Europe through sporting heritage in the past and the present. Almost 70 editorials were published, over 200 stories and 1,100 objects were shared, online interactive quizzes were held, and events took place in Romania, Ireland and Hungary (with more to come).

*Exhibition: A Century of Technology (Europeana XX)*³³ - the exhibition explores different aspects of the 20th century technological revolution, highlighting inventions and events that shaped the world we live in today. Next to striking innovations such as travelling to space, computing and industrial automation, the exhibition shows how technology has infiltrated our homes and daily lives.

*Digital Storytelling Festival*³⁴ - for the first time EF and partners invited curators, students, social media professionals and museum educators to create and share engaging digital stories using open access cultural heritage. New online resources including storytelling tips, inspiring open access collections and guidance on using digital tools were created for the Festival. Dozens of varied submissions, including creative writing, history pieces, animations and videos were received from around the world. The Festival closed with an online awards ceremony that announced the prize winners and runners up, and showcased the most interesting festival entries.

*Online course for beginners at an eTwinning eLearning event (Europeana training for educators) organised*³⁵ - In this online course teachers and museum educators learn how to create and share e-Learning activities on Historiana. The aims are 1) to assist educators to create e-Learning Activities that promote quality history or citizenship education on Historiana and to do so independently by the end of the course and 2) foster the use of Europeana content. The course saw 103 registered participants, from the following countries: Albania, Azerbaijan, Belgium, Bulgaria, Croatia, France, Georgia, Greece, Italy, Jordan, Lebanon, Netherlands, Portugal, Romania, Slovakia, Slovenia, Spain, Tunisia, Turkey, Ukraine. The countries most represented among registrants were Romania, Turkey and Greece. Of these, 49 joined the first live session, 26 delivered the first assignment, 17 delivered the second assignment, 16 delivered the third assignment, and 15 delivered the final assignment. In total, 14 participants completed the course

³¹ Alternative outcome delivered. Our focus on outreach efforts among API developers in DSI-4 Y3 revealed that the API user base found a reuse package unconvincing, convincing us of the need to change direction here. As an alternative outcome we evaluated and identified the most valuable support and resources for API users at CHIs.

³² <https://pro.europeana.eu/post/ready-set-go-europeana-s-sport-season-kicks-off>

³³ <https://www.europeana.eu/exhibitions/a-century-of-technology>

³⁴ <https://medium.com/digital-storytelling-festival>

³⁵ <https://learninglab.etwinning.net/175343/home>

successfully delivering all assignments, from the following countries: Croatia, Greece, Italy, Romania, Spain, and Turkey.

*Train-the-trainers session during the EuroClio annual conference (Europeana training for educators) organised*³⁶ - In June 2021, EuroClio trained and recruited 10 new trainers from 10 different countries in a train-the-trainer session. With an increased number of trainers, the EuroClio team will be able to reach a broader audience by organising local workshops and reaching more educators that will be able to translate, or add new resources in Historiana in other languages. Overall, this will increase the internationality of the platform and the amount of multilingual resources.

*Task Force recommendations on making AV more available in education available*³⁷ - The aim of the TF report is to inform about the work performed in the Audiovisual Material in Europeana Classroom Task Force. Recommendations are formulated based on previous work, an online survey towards educators and a hands-on, co-creative work on six case studies selected and conducted by the TF members. The ambition of the TF was to identify both opportunities and challenges faced by educators and audiovisual collection holders when trying to place AV content in an educational context. These were coined into recommendations built around five key areas: Media Literacy, Co-creation and Dialogue, Multilingual access, Resources allowing deeper and creative interaction (My Profile and Galleries, Crowdsourcing, Unified Media Player) and Copyright.

*Best case example booklet (learning scenarios and stories of implementation) for primary (and secondary) schools in six different languages published*³⁸ - The English version of the handbook *Digital Learning in the Pandemic* was published on Europeana Pro with an interactive format. This is a compilation of the 24 best learning resources produced by educators involved in the Ambassadors and User Group network, the Europeana Education competition and the Europeana MOOC. This handbook made by and for educators from formal and non-formal education offers ready-to-use resources to implement online, offline or in blended formats. The aim is to help them to overcome future challenges in European classrooms during the next school period. To the initial six language versions (Spanish, Italian, Portuguese, Polish, French and Greek), two additional languages (German and Turkish) were included³⁹. These versions were added progressively on Europeana Pro, completing all of them by October 2021.

*Advanced webinar series (Europeana training for educators) organised*⁴⁰ - From December 2020 to June EuroClio organized 4 webinars to support more experienced users of Historiana to

³⁶ <https://pro.europeana.eu/post/euroclio-s-new-training-programme-brings-historiana-to-educators-across-europe>

³⁷ <https://pro.europeana.eu/project/audiovisual-material-in-europeana-classroom>

³⁸ <https://pro.europeana.eu/post/digital-learning-in-the-pandemic-cultural-heritage-resources-by-and-for-educators>

³⁹ Due to the cancellation of the Brussels workshop planned in June 2021, budget was available for two additional translations.

⁴⁰

https://www.euroclio.eu/event/webinar-for-advanced-users-of-historiana-3/?fbclid=IwAR3_TUMj7FBxqdRpdalsi9bJV29PT5HjQLiHxqVFJ3vgwOUd5AcXTyDoxmM

experiment with the eActivity builder and get some tips on how to create quality eLearning activities. Each webinar explains the reasoning behind the creation of certain activities and is focused on a particular topic, using exemplar content from the Europeana.eu, and a critical thinking skill. The webinars were recorded⁴¹ and they are available for future users and one article for each webinar was published⁴².

*Five new partner pages on Historiana with one Exemplary Source Collection and five eLearning activities per partner available*⁴³ - We can find now on Historiana several new partner's pages. Each page (e.g. Photoconsortium⁴⁴) includes at least one exemplary collection covering a historical or citizenship relevant topic and five related activities. The partner pages are the result of several conversations with representatives of these organisations (all contributors to Europeana), setting the foundation for a longstanding collaboration to co-create more learning material in the future on Historiana. The benefit is to directly involve CHIs in the development of educational content, create multilingual material (each partner can decide if to use their national language) and to offer them a free and open virtual space to engage with educators and students.

Europeana Education Competition 2021 - In April and in the framework of the 2021 STEM Discovery Campaign, EUN organized the Europeana Education Competition 2021⁴⁵ inviting primary and secondary school teachers of all subjects, museum educators and any other CHI professional to find innovative ways of using Europeana content in their educational activities and create a learning scenario or share their story of implementation. 89 participants submitted their entries from 18 countries and the European Schools. There were 58 eligible applications (42 were learning scenarios and 11 stories of implementation) from which we selected 24 winners⁴⁶. The winners' materials will be published in the Teaching with Europeana blog over the coming months.

*Five new Historiana tutorials*⁴⁷ - Over the year EuroClio has produced five tutorials, that jointly with a webinar organised in DSI-4 Y2, are available in a playlist to help new users to get started with the platform.

*Five Historiana promotional videos*⁴⁸ - Communication students of the University of Amsterdam volunteered to create a series of short animated promotional videos that will be used over the next academic year in the EuroClio's and Europeana Education channels for the promotion of the platform.

⁴¹ <https://www.youtube.com/watch?v=s3ThUq1hTDs&list=PLBO8poGFF8Abpf77oaHqBU3O-zF5Og9lX>

⁴²

<https://www.euroclio.eu/2021/01/14/sources-as-a-window-to-the-past-revisit-helen-snelsons-webinar-on-using-sources-as-evidence-in-the-digital-classroom/>

⁴³ <https://historiana.eu/partners>

⁴⁴ <https://historiana.eu/partners/photoconsortium>

⁴⁵ <https://teachwitheuropeana.eun.org/europeana-education-competition-2021/>

⁴⁶ <https://teachwitheuropeana.eun.org/updates/europeana-education-competition-2021-winners/>

⁴⁷ <https://www.youtube.com/watch?v=fayqc-LGrp0&list=PLBO8poGFF8AaANBYruTHbsVZqj-I5pSTD>

⁴⁸ <https://www.youtube.com/playlist?list=PLBO8poGFF8AbLtPEknrv4FW3sFWRkckal>

Feedback on API strategy⁴⁹ from developer community - In DSI-4 Y2 we developed a strategy to increase communication with the community of developers that use Europeana APIs. This strategy was implemented in DSI-4 Y3, and at the end of Y3 a round of feedback was organised to generate lessons from the API outreach work over the past year. Focused qualitative feedback was asked from three users of the Europeana API in June and July 2021. Additionally, a survey was sent out to the users subscribed to the Europeana API newsletter (180 subscribers) in June 2021, of which there were 57 respondents. This round of feedback was aimed at better understanding the needs of people using Europeana's APIs, seeing if Europeana's services answered those needs, and learning where we could improve our offering to this user group. From this survey we learned that, overall, people using the Europeana APIs are happy with its functionality. We can improve our services by focusing on a better onboarding experience and more direct communication with users, and highlighting use cases.

New libraries, FAQs, and tutorials created - The objective of this task was to update the Europeana API documentation, add new API documentation pages where needed, and experiment with how we could improve our offering with FAQs or tutorials. The documentation pages on Pro⁵⁰ were updated, e.g. with an updated API Key retrieval form⁵¹, updated terms of use page⁵², and a new 'Harvesting and Downloads' section⁵³. This task resulted in up-to-date documentation pages that serve developers better in their information retrieval needs to work with the Europeana API suite, has made API Key management easier and more streamlined, and has resulted in more knowledge about the issues and benefits of hosting API documentation on Pro.

Most valuable support and resources for API users at CHIs identified (alternative outcome to Reuse package for CHIs created) - This task aimed at processing the feedback gathered in the 'feedback on API strategy form developer community' task into recommendations for further API outreach work in the coming years. From the focused interviews and API user survey it became clear that the biggest opportunities in supporting API users lie in improving the onboarding experience for new API users, more one-on-one communication and support from Europeana staff for external API users, and the maintenance of existing documentation to accurately reflect changes in the European API suite. These conclusions were taken into account in creating the DSI-4 Y4 implementation plan for API outreach, and is reflected in the tasks *API libraries, FAQs, and tutorials maintained and updated*, and *Changes/improvements of Europeana API services communicated to users*.

Communication and dissemination activities

Partner	Name of event	Activity	Location	Date
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⁴⁹ Available on request.

⁵⁰ <https://pro.europeana.eu/resources/apis/>

⁵¹ <https://pro.europeana.eu/pages/get-api>

⁵² <https://www.europeana.eu/en/rights/terms-of-use>

⁵³ <https://pro.europeana.eu/page/harvesting-and-downloads>

ICOM -CECA	Learning and engaging digitally working group meeting	Monthly event to drive the involvement of museum educators in the Europeana Initiative	Online	25/06/2021
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Reporting metrics: discoverability of digital cultural content

No.	Description	Measured by	Frequency	Target	Jun 2021	Jul 2021	Aug 2021
KPI 1.5	Satisfaction rate for exhibitions	Average satisfaction on a 5-point Likert scale ⁵⁴	Monthly	75%	83%	86%	89%
KPI 1.6	Reach on social media	Total number of impressions on social media (cumulative)	Monthly	250 million	501.5 million	548.0 million	592.2 million
KPI 1.7	Learning resources for education	Total number of resources using Europeana data ⁵⁵ (cumulative)	Monthly	50	96	150	181
KPI 1.8	External learning environments for education	Total number of integrations of Europeana educational offers ⁵⁶ (cumulative)	Monthly	5	4	4	4
KPI 1.9	Satisfaction rate of educational communities	Average satisfaction on a 5-point Likert scale	Monthly	75%	87%	87%	87%
RM 1.13	Editorial outcomes: exhibitions	Number of exhibitions created (cumulative)	Bi-monthly	-	-	8	9
RM 1.14	Editorial outcomes: blogs	Number of blogs created (cumulative)	Bi-monthly	-	-	-	149
RM 1.15	Newsletter subscribers	Total number of subscribers	Bi-monthly	-	-	50,409	50,155

⁵⁴ The average satisfaction on a 5-point Likert scale is translated into % (e.g. an average of 3.6 stars equals a satisfaction rate of 72%).

⁵⁵ Metric excludes multilingual resource variations.

⁵⁶ Integrations into third party platforms are highly dependent on other parties. Therefore expected due dates can not be given accurately. We aim for 5 new integrations by August 2021 and will add progress once an integration is completed.

RM 1.16	Social media engagement	Total number of likes, shares, comments per month	Monthly	-	237,025	239,383	258,422
RM 1.17	Social media followers/fans	Total number on social media	Monthly	-	227,895	227,399	227,983
RM 1.18	Educators actively involved in creating learning resources (EUN)	Total number of educators (cumulative)	Once a year	-	-	-	1,197
RM 1.19	Countries coverage of contributing educators (EUN)	Total number of countries (cumulative)	Once a year	-	-	-	28
RM 1.20	Participants completing the MOOC	Total number of participants (cumulative)	Upon occasion	-	-	-	-
RM 1.21	Reach to Europeana Education community	Number of people reached per month (mailing list, LinkedIn, Facebook)	Bi-monthly	-	-	-	8,545
RM 1.22	API usage (REST API)	Number of API users that exceeded the average of 5 calls a day per month	Monthly	-	49	54	49
RM 1.23	API usage (REST API)	Number of API users that were active for more than 5 days in each month	Monthly	-	47	54	47
RM 1.24	API usage (REST API)	Total number of requests per month ⁵⁷	Monthly	-	16.7 million	19.2 million	15.7 million

⁵⁷ This number states only requests done by external parties (other than Europeana platform related requests done for example via the Europeana website).

RM 1.25	API users (REST API)	Total number of API users per month	Monthly	-	190	183	153
RM 1.26	API sign-ups (REST API)	Number of API sign-ups per month	Monthly	-	79	61	44

Between Jun - Aug 2021 we published 42 new blogs⁵⁸ and one exhibition⁵⁹. In total all exhibitions published in DSI-4 Y3 received a very good average satisfaction score of 89%.

In the reporting period, 139 new learning resources were produced: four Historiana webinars⁶⁰, five video tutorials⁶¹ and five promotional videos⁶² about how to use Historiana, five Source Collections and 15 eLearning activities (from the five new partner pages⁶³) on Historiana, 66 learning scenarios and 28 stories of implementation to be published progressively on the Teaching with Europeana blog⁶⁴, and one promotional video about EUN and EF's work done in DSI-4 Y3.

EUN also evaluated the number of educators actively involved in creating learning resources in DSI-4 Y3. A total of 1,197 educators from 28 countries actively contributed (1,092 MOOC participants that started the course, 91 User Group teachers and 14 ambassadors).

Europeana API metrics show lower usage in the period (e.g sign-ups) possibly due to the summer holidays season.

Risk assessment: discoverability of digital cultural content

ID	Risk	Probability	Impact	Rate	Mitigation strategy	Change
R1.8	Editorials which depend on third party contributions might not progress as planned	Medium (3)	Medium (3)	9	Frequent communication with third party contributors; provide support and advice as required.	-
R1.9	Reach of Europeana data on social media: changes to the algorithms and pricing on social media platforms	Medium (3)	Medium (3)	9	Adaptation and diversification of channels, tools and platforms used	-

⁵⁸ <https://www.europeana.eu/en/blog>

⁵⁹ <https://www.europeana.eu/en/exhibitions/a-century-of-technology>

⁶⁰ <https://www.youtube.com/playlist?list=PLBO8poGFF8Abpf77oaHqBU3O-zF5Qg9IX>

⁶¹ <https://www.youtube.com/watch?v=fayqc-LGrpo&list=PLBO8poGFF8AaANBYruTHbsVZqj-I5pSTD>

⁶² <https://www.youtube.com/playlist?list=PLBO8poGFF8AbLtPEknrv4FW3sFWRkckal>

⁶³ <https://historiana.eu/partners>

⁶⁴ <https://teachwitheuropeana.eun.org/>

R1.10	School lockdowns for COVID	High (4)	Medium (3)	12	Most of the activities with teachers are planned for the digital environment but some necessary implementations with students might be hampered.	-
R1.11	Complete new strategy involving CHIs professionals in the education initiative (e.g new partner pages on Historiana). There is a risk of not reaching all the expected outcomes in 12 months (strategy initially planned for two years)	Medium (3)	Low (2)	6	Continuation of the tasks during Europeana DSI-4 (Y4)	-
R1.12	Outdated contact info of API key holders can mean loss of contact with valuable members of the API community, decreasing Europeana's impact on this important user group.	Medium (3)	Medium (3)	9	Update API key signup form, follow up with current API key holders to update information.	-
R1.13	Outreach to new developers does not generate interest and might prevent growing Europeana API community	Medium (3)	Medium (3)	9	Review documentation, improve API user experience.	-

Work package 2: Improve data quality

WP2 will increase high-quality content and metadata (task 2.1) to improve access and reusability of digital content. This will include new technological approaches of enriching data, such as crowdsourcing and machine-learning (task 2.2). These efforts will contribute to a more satisfying user experience on the Europeana website.

Task 2.1. Quality assured data

Partners: EF, SPK, and DSI AGG (APEF, BL, CARARE, MCA, EFHA, DFF, NISV, AIT-Graz, Photocons, NTUA)

The data issues that have developed over the past decade can only be resolved through a multi-year effort. In the next year, we will continue to work with aggregators and data providers to raise the quality of content and metadata (objective 2.1.1). As part of this effort, we will further develop our data and publishing frameworks, standards and documentation for partners (objective 2.1.2) and influence global interoperability through our networks (objective 2.1.3).

Overview of outcomes: quality assured data

Partner	Outcomes	Progress	Due date	Jun M34	Jul M35	Aug M36	Sep M37	Oct M38
Objective 2.1.1. Raise the quality of content and metadata								
EF	Data partners supported with data quality improvements and data publication (DSI, Generic services ⁶⁵ , and others)	Ongoing	-					
DSI AGG	Data quality improvements and new content delivered	Ongoing	-					
EF	Aggregators under development reviewed for accreditation	Ongoing	-					
EF, DSI AGG	Working Groups (Data Quality Committee ⁶⁶ ; IIF & Europeana ⁶⁷)	Ongoing	-					
EF	Strategy for reviving records from inactive data partners delivered	Done	-					
EF, DSI AGG	MS4 Review of individual data quality plans with respective DSI partners	100%	10 Sep '21					
EF	Outreach campaign to inactive data partners initiated	Done	-					
EF	Regular link resolution process implemented	Done	-					
EF, DSI AGG	Individual data quality plans for the following DSI year created	100%	10 Sep '21					
EF, SPK	Plan for growing fulltext newspaper content is developed	100%	M36					
Objective 2.1.2. Maintain data and publishing frameworks, standards and documentation								
EF	EDM updated and documented	Ongoing	-					

⁶⁵ Judaica Europeana 2.0, Europeana XX, Pagode - Europeana China, Europeana Sport and The Art of Reading in the Middle Ages- ARMA.

⁶⁶ <https://pro.europeana.eu/project/data-quality-committee>

⁶⁷ <https://pro.europeana.eu/project/iif-europeana-working-group>

EF	Update of the Statistics Dashboard V2	100%	M37	■	■	■	■	■
EF	Recommendations for how to improve the usefulness of guidance materials	Done	-	■	■	■	■	■
EF, DSI AGG	Case studies that document impact of publishing digital collections online	100%	M36	■	■	■	■	■
EF	EPF amendment to integrate problem patterns from long-tail data issues	100%	M36	■	■	■	■	■
EF, DSI AGG	MS5 EPF 3.0 delivered with case studies and integrated problem patterns	100%	M36	■	■	■	■	■
Objective 2.1.3. Influence global interoperability and technological innovation								
EF	EuropeanaTech community ⁶⁸ , Data Quality Committee ⁶⁹ , IIF Discovery Technical Specification Group ⁷⁰ , IIF & Europeana Working Group ⁷¹ supported	Ongoing	-	■	■	■	■	■
EF	Data mapping and conversions with stakeholders is supported	Ongoing	-	■	■	■	■	■
EF	Interoperability of annotations and user sets Task Force is supported	100%	M38	■	■	■	■	■
EF, NISV	AI in relation to GLAMs ⁷² Task Force is supported	100%	M36	■	■	■	■	■

MS4 Review of individual data quality plans with respective DSI partners - EF works together with DSI AGG to raise data quality and ensure the quality of collections on the Europeana website meets our standards. The key mechanism for driving this is the aggregator's data quality plans. The plans specify the activities and targets as well the means of verification to validate the achievements. In addition to the activities to raise data quality, the plans also specify capacity building activities of the DSI AGG. The plans are reviewed every six months to evaluate the achievements and to discuss deviations and adjustments to the plan where necessary. This bi-annual review was completed in February and August 2021.

Individual data quality plans for the following DSI year created - Keeping the progress until August 2021 in mind but also incorporating new activities the individual data quality plans for DSI-4 Y4 per DSI AGG were created.

⁶⁸ <https://pro.europeana.eu/page/europeanatech>

⁶⁹ <https://pro.europeana.eu/project/data-quality-committee>

⁷⁰ <https://iif.io/community/groups/discovery/>

⁷¹ <https://pro.europeana.eu/project/iif-europeana-working-group>

⁷² <https://pro.europeana.eu/project/ai-in-relation-to-glams>

*Plan for growing fulltext newspaper content is developed*⁷³ - This document informs about the current status of the Europeana newspapers thematic collection, the status of newspaper digitisation in Europe, and to identify recommendations for improving user satisfaction, data quality and capacity for dealing with newspaper full text resources in Europeana.

Update of the Statistics Dashboard V2 - The Statistics Dashboard⁷⁴ was completely reviewed and updated including new designs and a new back-end infrastructure. It allows users to select statistics for a series of dimensions and filters (per metadata and content tiers, country, rights statement etc.) and to filter them. The dashboard will give value to aggregators and CHIs by providing information on data quality for content available on Europeana and hence on areas for data quality improvements.

Case studies that document impact of publishing digital collections online - When we reviewed the experiences with the implementation of a metadata quality framework in August 2020, we concluded that we don't know enough about the effectiveness of what the EPF is proposing. Therefore, we proposed an iterative approach of interviewing CHIs to develop case studies that can help to incentivise data quality improvements. Together with Archives Portal Europe Foundation (APEF) we conducted an online survey among 100 respondents, followed by four interviews with CHIs about online dissemination of digital collections. The main findings are presented in the paper *Dissemination of archival collections through Europeana: Motivation, outcomes and quality-related challenges among CHIs with archival holdings* and a summary of findings is also presented in *MS5 EPF 3.0 delivered with case studies and integrated problem patterns*.⁷⁵

EPF amendment to integrate problem patterns from long-tail data issues - When we prepared the audit and designed a resolution plan for the long-tail of ongoing data issues, we focussed on the list of problem patterns identified by the Data Quality Committee⁷⁶. In order to address these data issues in a structured way, we reviewed the list of problem patterns and categorised them based on the impact they have on the EPF (i.e. to what extent the data issues have an affect on the tier calculation) as well as the type of action that we can take or have taken already to address those issues. This has led to a four-staged approach to address problem patterns from the long-tail data issues over the next few years. In DSI-4 Y3 we completed stage 1: Work on mechanisms that will flag data issues that have no impact on the current EPF (no effect on the tier calculation). In this way we aim to address data issues such as the systematic use of the same title or non-meaningful titles by exposing field warnings as part of the quality report produced during the data processing in Metis. This is of highest importance as these types of data issues do not affect the metadata tier calculation. Detecting such data issues and reporting them back to data partners is expected to help with the improvements of the data.

⁷³ Available on request.

⁷⁴ <https://statistics-dashboard-production.eanadev.org/>

⁷⁵ Both documents are available on request.

⁷⁶ <https://pro.europeana.eu/project/data-quality-committee#problem-patterns>

*MS5 EPF 3.0 delivered with case studies and integrated problem patterns*⁷⁷ - Implementing and amending the Europeana Publishing Framework (EPF) is an iterative process. Based on the experiences and lessons learned with previous iterations, we worked on improving various aspects of the EPF. After the 2nd iteration of the EPF in summer 2019 that added the metadata component to the framework we identified next steps for the 3rd iteration of the EPF. For this updated version of the EPF we include proposals from the report on implementing a metadata quality framework⁷⁸ as well as learnings from the analysis of long-tail data issues⁷⁹. Working on the next iteration of the EPF (EPF 3.0) has shown that the approach we used for the first iterations of the EPF does not fit anymore. With the concept of field warnings we add a service that does not fit in the two-dimensional space defined by the content and metadata tiers. Therefore, it was decided to not publish an updated brochure but to rethink the conceptual approach to the EPF. All achievements in DSI-4 Y3 as well as an outlook to how this new conceptual approach will be taken forward is outlined in the MS5 report (EPF 3.0 delivered with case studies and integrated problem patterns).

*Interoperability of annotations and user sets Task Force is supported*⁸⁰ - the Task Force aimed to foster interoperability in the Europeana ecosystem across the applications and projects that include annotations. The Task Force has inventorized use cases from its participants. In a later phase, the data requirements raised from the use cases were analyzed, and related to the relevant part of the EDM Annotation profile, which was in parallel specified by Europeana Foundation and (partly) implemented in the Annotations API. The Task Force report is available on request.

AI in relation to GLAMs Task Force is supported - in July 2021 the Task Force completed its final report, which surveys the current state of adoption of AI in the cultural heritage sector, analyses the outcomes and makes some recommendations, which can help further adoption of deployment of AI in the Europeana community. The report can be viewed on Europeana Pro.⁸¹

Reporting metrics: quality assured data

No.	Description	Measured by	Frequency	Target	Jun 2021	Jul 2021	Aug 2021
KPI 2.1	High quality content	Percentage of Tier 2 + material (excluding content Tier 0)	Monthly	>65%	67.96%	68.19%	68.19%
KPI 2.2	High quality and reusable content	Percentage of Tier 3+ material (excluding content Tier 0)	Monthly	>40%	45.54%	46.01%	46.25%

⁷⁷ Available on request.

⁷⁸ Available on request.

⁷⁹ Available on request.

⁸⁰ <https://pro.europeana.eu/project/interoperability-of-annotations-and-user-sets>

⁸¹ <https://pro.europeana.eu/project/ai-in-relation-to-glams>

KPI 2.3	High quality metadata (search, browse and explore)	Percentage of Tier A+ material (excluding content Tier 0)	Monthly	>60%	63.14%	64.65%	64.97%
KPI 2.4	Europeana Research and Development contributions	Total number of reference papers or presentations (cumulative)	Monthly	10	13	13	13
RM 2.1	Broken links in the repository	Number of broken links (out of total)	Quarterly	-	753,069	-	-
RM 2.2	Non-EPF compliant content (Tier 0)	Percentage of Tier 0 content	Monthly	-	15.95%	15.81%	15.81%
RM 2.3	Updates to datasets	Total number of newly created and updated datasets per month (out of total)	Monthly	-	22	22	9
RM 2.4	Updates to records	Total number of newly created and updated records per month (out of total)	Monthly	-	652,164	1,339,805	369,951
RM 2.5	New CHIs published on Europeana website	Total number of new CHIs (cumulative)	Once a year	-	-	-	141
RM 2.6	Records in the data repository	Total number of records (excluding content tier 0)	Monthly	-	52.6 million	52.5 million	52.3 million
RM 2.7	Records in the data repository by accredited aggregators	Total number of records (excluding content tier 0)	Quarterly	-	-	-	35.0 million
RM 2.8	Reach to Europeana Tech community	Number of people reached per month (Mailing list, Twitter)	Bi-monthly	-	-	-	6,384

Between Jun - Aug 2021, we updated 53 datasets and almost 2.4 million records which led to an increase of high quality content and metadata. Notably, throughout DSI-4 Y3 we published 141 new CHIs on the Europeana website.

We saw one new research and development reference publications between Jun - Aug 2021:⁸²

Partner	Name of activity	Activity	Location	Date
INESC-ID	International Journal of Metadata, Semantics and Ontologies	Research paper "Data aggregation lab: an experimental framework for data aggregation in cultural heritage"	Online ⁸³	2021-05-25
EF	EuropeanaTech x AI Webinar "eScriptorium"	Webinar	Online ⁸⁴	2021-07-02

Data quality improvements per aggregator based on the EPF^{85 86}

Metric	End Aug 2020 (M24)	End May 2021 (M33)	End Aug 2021 (M36)
APEF			
Percentage of Tier 2+ material	12.81%	14.02%	14.02%
Percentage of Tier 3+ material	8.65%	9.39%	9.39%
Percentage of Tier A+ material	1.45%	1.61%	1.61%
Number of records updated (M26/M27)			-
Number of datasets updated (M26/M27)			-
Number of contributing data providers (M26/M27)			-
Number of new datasets (M26/M27)			-
Type of new datasets	-		
BL (Europeana Sounds)			
Percentage of Tier 2+ material	40.46%	40.47%	40.47%
Percentage of Tier 3+ material	9.27%	9.27%	9.27%
Percentage of Tier A+ material	70.62%	70.63%	70.63%

⁸² We missed counting one publication in May and added it to this report retrospectively.

⁸³ <https://dx.doi.org/10.1504/IJMSO.2020.115442>

⁸⁴ <https://pro.europeana.eu/event/europeanatech-x-ai-escriptorium>

⁸⁵ The table states ingestion activities to Europeana per aggregator in the current reporting period. Data quality improvements are prepared by aggregators and CHIs based on data quality improvement plans while ingestion is the last step of the workflow. This is an ongoing process and progress per aggregator will become visible with the publication on the Europeana website. Progress per aggregator also reflects data ingestion activities done as part of other projects (e.g. Generic Services projects). Those activities affect the tier statistics of the aggregator as a whole and are therefore included in the table. If aggregator contributions were done fully or partly as part of another project this is indicated with a footnote.

⁸⁶ All numbers stated here are excluding content Tier 0. Currently, all our reporting is based on EPF compliant content (excluding Tier 0). Tier 0 content per partner is available on request.

Number of records updated (M26/M27)		39,115	
Number of datasets updated (M26/M27)		1	
Number of contributing data providers (M26/M27)		1	
Number of new datasets (M26/M27)		-	
Type of new datasets	-		
CARARE / AthenaRC			
Percentage of Tier 2+ material	75.59%	72.60%	72.75%
Percentage of Tier 3+ material	60.51%	58.67%	58.91%
Percentage of Tier A+ material	99.45%	99.54%	99.58%
Number of records updated (M26/M27)		93,085	
Number of datasets updated (M26/M27)		4	
Number of contributing data providers (M26/M27)		21	
Number of new datasets (M26/M27)		-	
Type of new datasets	-		
MCA			
Percentage of Tier 2+ material	44.83%	44.94%	45.23%
Percentage of Tier 3+ material	7.16%	6.71%	3.50%
Percentage of Tier A+ material	75.02%	76.59%	79.02%
Number of records updated (M26/M27)		-	
Number of datasets updated (M26/M27)		-	
Number of contributing data providers (M26/M27)		-	
Number of new datasets (M26/M27)		-	
Type of new datasets	-		
eFashion			
Percentage of Tier 2+ material	89.51%	89.47%	89.47%
Percentage of Tier 3+ material	2.70%	2.70%	2.70%
Percentage of Tier A+ material	100%	100%	100%

Number of records updated (M26/M27)		-	
Number of datasets updated (M26/M27)		-	
Number of contributing data providers (M26/M27)		-	
Number of new datasets (M26/M27)		-	
Type of new datasets	-		
DFF (EFG - The European Film Gateway)⁸⁷			
Percentage of Tier 2+ material	22.60%	25.20%	25.54%
Percentage of Tier 3+ material	0.20%	0.23%	0.23%
Percentage of Tier A+ material	43.73%	99.90%	99.90%
Number of records updated (M26/M27)		2,539	
Number of datasets updated (M26/M27)		4	
Number of contributing data providers (M26/M27)		4	
Number of new datasets (M26/M27)		-	
Type of new datasets	-		
NISV (EUscreen)⁸⁸			
Percentage of Tier 2+ material	22.44%	20.89%	20.95%
Percentage of Tier 3+ material	0.25%	0.27%	0.33%
Percentage of Tier A+ material	26.09%	24.36%	24.37%
Number of records updated (M26/M27)		1,808	
Number of datasets updated (M26/M27)		1	
Number of contributing data providers (M26/M27)		1	
Number of new datasets (M26/M27)		-	
Type of new datasets	-		
AIT-Graz (OpenUp!)			
Percentage of Tier 2+ material	98.26%	98.28%	98.29%
Percentage of Tier 3+ material	87.61%	87.37%	87.46%

⁸⁷ Updates in this period were partly done as part of the Europeana XX Generic Services project.

⁸⁸ Updates in this period were partly done as part of the Europeana Sport Generic Services project.

Percentage of Tier A+ material	42.90%	48.89%	50.34%
Number of records updated (M26/M27)			212,293
Number of datasets updated (M26/M27)			2
Number of contributing data providers (M26/M27)			2
Number of new datasets (M26/M27)			-
Type of new datasets	-		
PhotoCons			
Percentage of Tier 2+ material	66.76%	66.60%	66.86%
Percentage of Tier 3+ material	23.74%	27.49%	28.06%
Percentage of Tier A+ material	99.64%	99.64%	99.64%
Number of records updated (M26/M27)			4,927
Number of datasets updated (M26/M27)			2
Number of contributing data providers (M26/M27)			2
Number of new datasets (M26/M27)			-
Type of new datasets	-		

Risk assessment: quality assured data

ID	Risk	Probability	Impact	Rate	Mitigation strategy	Change
R2.1	Data partners don't control content quality and have difficulties to incentivise the improvement of content quality.	High (4)	Medium (3)	12	The new Europeana website is much better featuring high quality content related to specific themes, subjects, and people. This can help to have a motivation for CHIs to invest in content quality. In parallel, training on the real message 'the more you give the more you get' of the EPF can help to focus more on publishing with a purpose.	-

Task 2.2. Enriched data

Partners: EF, AIT Vienna, F&F, DSI AGG (APEF, AIT Graz, BL, CARARE, EFHA, NISV, Photocons)

The focus on enriched data is vitally important to the future of the Europeana Initiative. As the scale of data publishing grows, new technological approaches are needed to improve the accessibility and use of cultural heritage data. The extension of entities to support better browsing (objective 2.2.1) will help categorise items more usefully for website visitors, while the use of crowdsourcing and machine-learning tools by partners (objective 2.2.2) will see data quality enriched before it is ingested by Europeana. Importantly, this year EF will also begin researching and experimenting with machine-learning platforms (Objective 2.2.3) in an effort to determine where to invest.

Overview of outcomes: enriched data

Partner	Outcomes	Progress	Due date	Jun M34	Jul M35	Aug M36	Sep M37	Oct M38
Objective 2.2.1. Extend entities to support better browsing								
EF, AIT Vienna	Entity framework for data ingestion and updating is redeveloped	100%	M36	█	█	█		
EF, AIT Vienna	Entities can be manually added and removed	100%	M36	█	█	█		
EF, AIT Vienna	Entities to support browsing by organisation are available	100%	M36	█	█	█		
EF, AIT Vienna	Entities are extended to support high quality people relationships	100%	M38	█	█	█	█	█
Objective 2.2.2. Use crowdsourcing and machine learning to enrich metadata								
EFHA	Validation of automatic enrichments for the Fashion Heritage collection is completed through crowdsourcing campaigns	100%	M36 ⁸⁹	█	█	█		
AIT Graz	Curated metadata enrichment and curated content clustering through expert crowdsourcing	100%	M36	█	█	█		
NISV	Crowdsourcing toolkit on subtitling videos, translating and correcting is published on Europeana Classroom	100%	M38	█	█	█	█	█
APEF	Contextual classes are tagged through the use of metadata evaluation and crowdsourcing	100%	M36	█	█	█		

⁸⁹ Adjusted outcome. EFHA indicated to validate automatic enrichments completed through crowdsourcing campaigns. This outcome was completed under the Europeana XX project. In DSI-4 Y3 EFHA provided the actual enrichment or integration of missing/incomplete metadata information instead.

APEF	Automatic topic detection proof-of-concept developed	100%	M36					
BL	Conversion of placenames and wikidata links using OpenRefine	100%	M36					
CARARE	Enrichment services on MORE are extended	100%	M36 ⁹⁰					
Photoco ns	3 crowdsourcing campaigns to enrich data completed	100%	M36 ⁹¹					
F&F	Enrichments from Transcribathon.eu transferred to Europeana	100%	M36					
Objective 2.2.3. Establish machine-learning platforms								
EF	Machine learning discussion paper delivered to AI in relation to GLAMs Task Force	Done	-					
EF	Jupyter notebook proof-of-concept is shared with Network	100%	M35					
EF	Training data is shared on pilot platforms (max six platforms)	Done	-					
EF	Learnings from SGoaB project ⁹² incorporated into 2021/22 plans	100%	M36					

Entity framework for data ingestion and updating is redeveloped - we redeveloped the framework to be able to update the metadata behind entities in a more flexible and automated way so that Entity powered Collections could be always displayed up-to-date. Before this redevelopment, making an update was very resource consuming which resulted in the last update only being done in September 2017.

Entities can be manually added and removed - As part of the redevelopment of the entity framework, we expanded the functionality to add or remove entities which can be done at any moment in time by EF staff. From this point onwards, we can expand the number of Entity powered Collections as we see fit.

⁹⁰ CARARE is no longer using MORE. CARARE advertised a tender for aggregation services at the start of DSI-4 Y3, the tender was awarded to Talent SA and CARARE is now using their Repox service for aggregation (approved by the Commission). Instead of extending the enrichment services on MORE, CARARE worked with Talent SA to improve their services.

⁹¹ Completing 3 crowdsourcing campaigns is a mistake in the implementation plan that was not corrected after the work plan for Photoconsortium was finalised. Photoconsortium is planning 3 crowdsourcing campaigns for Y3 and Y4 of DSI-4, of which one was completed for DSI-4 Y3.

⁹² <https://pro.europeana.eu/project/saint-george-on-a-bike>

Entities to support browsing by organisation are available - To support the outcome browsing by organisations (see task 1.2) , we have developed a new type of entity for organisations and updated our repository with information on the organisation profile which is collected via Zoho.

Entities are extended to support high quality people relationships - We have improved our mappings from data sources in order to collect more and better relationships between entities, in particular relationships between people. With the new entity framework we are able to apply the new mappings to the full list of people. For the first time Europeana has proper relationships between people in the data.

Validation of automatic enrichments for the Fashion Heritage collection is completed through crowdsourcing campaigns - Following the experience EFHA had in previous projects (CrowdHeritage and Europeana XX), where aggregators should validate the automatic metadata enrichments of more than 2.5 millions Europeana records, EFHA decided to test the use of crowdsourcing/nichesourcing campaigns in DSI-4 Y3. Two different scenarios were validated: a) for the validation of automatically generated metadata enrichments and b) for the actual enrichment or integration of missing/incomplete metadata information.

EFHA organised one crowdsourcing (or better niche-sourcing) campaign, organised with the Fondazione Fashion Research Italy in November 2020, which involved more than 25 fashion archivists for the classification of the object type in about 4,000 Europeana records that were missing this information (scenario b). In this scenario, the decision to move towards a niche-sourcing campaign, involving a targeted set of professionals, rather than opening the contribution to an undefined “crowd”, has been taken because the type of information and contribution needed was rather specific, and a trustable outcome was more likely to be reached by engaging people with a specific background (in this case, fashion archivists). For this campaign EFHA used the CrowdHeritage platform.

Additionally, in the framework of the Europeana XX project⁹³, EFHA tested scenario a), where the automatic metadata enrichments added to our datasets have been checked and validated by a set of domain professionals (mainly fashion curators and museum professionals). In this case, we selected fashion domain professionals from our network and we asked them to review and validate at least 5% of the enriched records for each of our enriched datasets. We assigned the datasets to review based on the language spoken by the professional and we were able to validate all the EFHA automatic semantically enriched datasets in Italian, Greek, Dutch and German using the SAGE validation tool developed by NTUA. A similar approach has been taken to validate and evaluate the automatic translation of titles and descriptions for EFHA datasets in the above-mentioned languages, using the LabelStudio platform.

Curated metadata enrichment and curated content clustering through expert crowdsourcing - The LinBi enrichment platform supports data enrichment by providing tools for linking, enriching and

⁹³ <https://pro.europeana.eu/project/europeana-xx>

creating new objects following Europeana Data Model guidelines. The tool was developed under the Europeana Generic Services project LinBi⁹⁴ and was continuously used during the DSI-4 Y3 activities. In addition, AIT Graz facilitated the continuation of crowdsourcing activities that were started during the LinBi project. During DSI-4 Y3, data curated by the former LinBi project partners via expert crowdsourcing and the LinBi enrichment platform was forwarded to Europeana. New user sets created via the LinBi enrichment platform were published⁹⁵.

*Crowdsourcing toolkit on subtitling videos, translating and correcting is published on Europeana Classroom*⁹⁶ - An illustrated toolkit was developed in DSI-4 Y3, which was published on Europeana Pro and linked to the Europeana Classroom. The article is aimed at engaging teachers and educators with the concept of the subtitle-a-thons and encouraging them to host events themselves. The toolkit provides a step by step overview of the logistics of setting up an event and marketing it, with a set of illustrated instructions.

Contextual classes are tagged through the use of metadata evaluation and crowdsourcing - APEF has worked on various approaches to enrich metadata manually by adding contextual classes. The first project worked with crowdsourced expert input in order to enhance the existing metadata by including subject headings and URIs from LOD vocabularies (e.g. LCSH, TGN); the second project looked into the inclusion of contextual classes at the time of metadata creation. A third project used a topic-based research in Archives Portal Europe as its starting point to identify archival material connected with high-quality content and worked through the metadata of the selected collections in a second step by including various contextual classes from agents to subjects.

Automatic topic detection proof-of-concept developed - The automated topic detection tool developed by APEF was made available as a web-based application (alpha version).⁹⁷ It currently offers two types of searches - for entities and for concepts. For entities, a connection is made to Wikidata and to the Virtual International Authority File (VIAF), from which the tool draws name variations in all languages available to check against the data. For concepts, the tool uses Fast-Text word embeddings that represent each document's 'meaning' in a processable way and enable the identification of semantic connections across multiple languages.

Conversion of placenames and wikidata links using OpenRefine - For the BL wildlife collections, Openrefine has been used successfully to semi-automatically create wikidata urls for wildlife species; these have been converted from the Latin species names and then manually checked. Over 3,000 recordings have been given individual wikidata entries; these records are published on MINT and ready for the next ingestion into Europeana.

⁹⁴ <https://pro.europeana.eu/project/linbi>

⁹⁵ For example: <https://www.europeana.eu/en/set/2729>; <https://www.europeana.eu/en/set/2730>

⁹⁶ <https://pro.europeana.eu/post/engaging-students-with-audiovisual-heritage-through-subtitle-a-thons>

⁹⁷ <http://topicdetection.archivesportaleurope.net/>

Enrichment services on MORE are extended - CARARE is no longer using MORE. CARARE has subcontracted its aggregation services to Talent SA, which has implemented metadata enrichment services on CARARE's new repository, Repox Flow. During DSI-4 Y3 work has commenced to integrate the vocabulary mapping and enrichment tool developed by the Europeana Archaeology generic services project into Repox Flow.

3 crowdsourcing campaigns to enrich data completed - Three crowdsourcing campaigns to enrich data are planned for DSI-4 Y3 and Y4, one of the campaigns was successfully completed in DSI-4 Y3. A crowdsourcing platform was used to manually enrich metadata, including experts' moderation by Photoconsortium and content providers. The crowdsourcing annotation activity for improvement of the collections of the Photoconsortium partner NALIS took place during a citizen science workshop with students in May 2021. The workshop was organised by Bulgarian Photoconsortium partners NALIS and University of Sofia. The result of the crowdsourcing action of NALIS collection is 5,462 annotations, that are currently in the process of validation and that will be sent to Europeana for publication. Two more crowdsourcing campaigns will be organised in DSI-4 Y4.

Enrichments from Transcribathon.eu transferred to Europeana - EF received all new enrichments (about 3,000 page transcriptions) from Transcribathon.eu. The automatic transfer with the Data Exchange Infrastructure worked as expected.

Jupyter notebook proof-of-concept is shared with Network - Within our AI and cultural heritage news theme on Europeana Pro, we published two posts on image classification experiments⁹⁸, referring to a Jupyter Notebook⁹⁹ that shows how the trained model can be applied to images from Europeana, producing new annotations that could be used to enrich the metadata for the corresponding cultural objects.

Learnings from SGoaB project¹⁰⁰ incorporated into 2021/22 plans - Lessons learnt from SGoaB as well as other image classification experiments carried out in the past year have been considered during the making of 2021/22 plans. In summary, more experiments and finer problem definition are going to be needed. Image analysis using machine learning in order to recognise pre-identified concepts is a promising area, but it requires a lot of annotated data to work well, especially in cultural heritage, where out-of-the-box solutions need to be adapted. Our experiments show that the existing metadata may be used, but often it proves not fit enough, either not complete enough or too noisy. SGoaB had to gather thousands of manual annotations of images, in order to train object detection for just below 100 concepts with a very narrow iconographic scope, and the process has not even been evaluated yet. The dataset for our image classification pilot contains 2,748 images with annotations to train a model for 20 general types of object, which performed quite poorly. To extend such experiments to a production level (e.g.

⁹⁸ <https://pro.europeana.eu/post/introducing-our-image-classification-pilot>,
<https://pro.europeana.eu/post/training-our-image-classification-model>

⁹⁹ https://colab.research.google.com/drive/1B3S_DYQ6UtCYGaScygcF_BZa0lfml4SR

¹⁰⁰ <https://pro.europeana.eu/project/saint-george-on-a-bike>

trying to automatically annotate images with a more sizable subset of the Entity Collection) would require more manual work. And still, probably it would allow to target only a rather small subset of all possible concepts that Europeana could be interested in. As a result, we need to identify with all relevant stakeholders a precise problem where the technology can be applied (and manual effort be put), so that the investment will be justified. In the meantime, we will wait for more evaluation results to come from SGoaB, and we will continue to investigate machine learning technology. Depending on other priorities, we will try to complement the first image analysis experiments by applying machine learning on other data (such as Europeana's metadata) or applying it to solve slightly different problems (for example, as direct support for our search processes).

Risk assessment: enriched data

ID	Risk	Probability	Impact	Rate	Mitigation strategy	Change
R2.2	Some entity relations are currently of low quality.	High (4)	Low (2)	8	Work to improve the quality of the entity relationships is underway in the API team. This includes offering explicit relations coming directly from the entities.	-
R2.3	The existence of plans with regards to employing AI in Europeana raise wrong expectations on the capacity of the technology to fix all of Europeana's data problems	Medium (3)	Low (2)	6	Clearly position Europeana's current effort as being experimental. Regularly report on evaluation and observed limitations of the available technology (especially with respect to scarcity of data to correctly train AI systems)	-

Work package 3: Build capacity

WP3 will support professionals and partners in three principal areas to build capacity for digital transformation. We will engage professionals and partner organisations (both large and small) in capacity-building activities by running events, training and workshops (task 3.1.). Secondly, we will nurture our networks, in particular by supporting operations of the Europeana Network Association (ENA) and Europeana Aggregators' Forum (EAF). This will include communication and promotion of activities and resources to our networks (task 3.2.). Finally, we will strengthen national infrastructures by supporting the adoption of Europeana standards and frameworks and by reinforcing the value delivered by the Europeana Initiative towards digital transformation of the cultural heritage sector (task 3.3.).

Task 3.1. Build capacity of aggregators and professionals

Partners: EF, F&F, DEN, and DSI AGG (APEF, BL, CARARE, MCA, EFHA, DFF, NISV, AIT-Graz, Photocons, NTUA)

Under this task we will build capacity to support the digital transformation of the cultural sector. This will be done by developing and delivering events, workshops and training formats addressing the needs of professionals (objective 3.1.1) as well as aggregators and CHIs (objective 3.1.2). We will establish professional education for management in the cultural sector by sharing good practices, knowledge and training across our networks (objective 3.1.3). We will also develop a capacity-building framework to facilitate the structural adoption of our capacity-building initiative (objective 3.1.4).

Overview of outcomes: build capacity of aggregators and professionals

Partner	Outcomes	Progress	Due date	Jun M34	Jul M35	Aug M36	Sep M37	Oct M38
Objective 3.1.1. Deliver rewarding events for professionals								
EF	Programme of events for professionals, published on Europeana Pro ¹⁰¹	Done	-					
EF	Method of events evaluation implemented	Done	-					
EF	Annual Conference: Europeana 2020	Done	-					
EF	Value and impact of events evaluated	100%	M36					
EF	Events Management toolkit	100%	M36					
EF	Europeana Digital Spring programme	100%	M36					
EF	Impact report Europeana 2020 published	100%	M36					
Objective 3.1.2. Deliver scalable training for aggregators and CHIs								
EF	Enriched training resources for aggregators on Pro	Ongoing	-					
EF, F&F	Transcribathon strategy and plan	100%	M35					
EF, DSI AGG	EAF Training Programme 2020-2021	100%	M36					
EF, DSI AGG	Train the Trainer events (two events)	Done	-					

¹⁰¹ This metric counts events organised by EF. Events can be seen at <https://pro.europeana.eu/page/webinars>

EF, F&F, DSI AGG	Training workshops, webinars and one-to-one support for CHIs to share knowledge and develop skills (six events)	100%	M36					
EF	Europeana Aggregators' Fair	100%	M34					
Objective 3.1.3. Develop Europeana Managers Academy								
DEN	Deliver Pilot Managers Academy	100%	M34					
DEN	MS6 Preliminary results and feasibility study	100%	M36					
Objective 3.1.4. Develop a capacity-building framework								
EF	Strategy for building and implementing a capacity building framework published	100%	M36					
EF	Preliminary reporting indicators for capacity building developed	100%	M36					
EF/DEN	Report on inventorisation of existing training courses created	100%	M36					
EF	Approach for measuring impact of capacity building developed	100%	M36					
EF	MS7 Capacity-Building Framework V1 developed	100%	M36					

Value and impact of events evaluated - we evaluated our digital events over DSI-4 Y3. This included a sample of over 50% of events (all of which were digital) across the year (drawn from 3,579 event registrations collected on Eventbrite, out of a total of 6,672 registrations across the whole DSI year). Additionally, we completed more in-depth evaluations on the Impact and Research event¹⁰² (May 2021), the Portuguese Presidency event (June 2021) and the Europeana 2020 annual conference (November 2020). From those who registered in the events sample we learned that the widened digital offer of Europeana's events has resulted in our work having a much bigger ripple effect across the world and not just Europe. Our audiences are now much more likely to contain those from outside the ENA and we see the opportunity to reach and invite non-Members to join the Network. We also acknowledge limitations to our approach and ways to improve. A key limitation is the challenge of collecting and accurately reporting on data collected before and after the digital event.¹⁰³

*Events Management toolkit*¹⁰⁴ - EF developed this events toolkit to make sure that the programme of events delivered is consistent and coherent and that individual events are well-managed. Building on experiences and lessons learned, the toolkit shares a set of useful and usable

¹⁰² <https://pro.europeana.eu/event/research-and-digital-cultural-heritage-new-impact-horizons>

¹⁰³ More information is available in MS8 Report on impact research and development published (available on request).

¹⁰⁴ <https://pro.europeana.eu/page/events-toolkit>

guidelines for digital events to benefit the communities and the sector at large. The latest version was published in August 2021.

*Europeana Digital Spring programme*¹⁰⁵ - The webinars and workshops covered in this season-long programme were proposed for the Europeana 2020 conference initially but didn't get selected, however EF decided to give them a platform in the Spring programme instead. 15 workshop/webinar sessions covered topics such as copyright, data science and 3D and were contributed by our global network of partners. All sessions are available in our recorded webinars¹⁰⁶ section on Europeana Pro.

*Impact report Europeana 2020 published*¹⁰⁷ - In July 2021, we published a complete impact assessment report for the Europeana 2020 annual conference. The event took place in the context of a second wave of wide-spread European Member State lock-downs. It was planned as a digital event from the outset, as the concrete planning of the event started just as the pandemic forced the first lock-downs. Despite the context, the event was able to reach almost 1,650 people who registered to attend the conference, with an estimated 60% (998 participants) attending at least some part of the 11 hours and 20 minutes of formal conference programming. In terms of supporting the capacity-building of the sector through the acquisition of knowledge that can be used in practice, providing the inspiration to create a positive professional change or innovation, and strengthening a sense of a community, the first all-digital Europeana 2020 was a success. While network development opportunities and outcomes were significantly lower, there were increases in other key outcomes including, for example, gaining knowledge or skills that can be applied in practice. The conference reached a much wider audience in terms of numbers and geography but potentially also in terms of the audience's familiarity with and literacy in digital heritage and digital transformation. Europeana 2020 created significant savings for the annual conference's estimated carbon footprint. Combined with the demonstrable increase in outcomes for participants, future event formats should weigh up the inevitable environmental impact caused by travel and whether the depth and quality of the experience and outcomes desired for the participant can be delivered in a digital or hybrid format.

*Transcribathon strategy and plan*¹⁰⁸ - the plan delivered an overview of the current status of the Europeana Transcribe platform¹⁰⁹ and makes an inventory of the necessary and possible actions for 2021/2022 to offer it as a full and sustainable service to the Europeana network and beyond, including the planned work and activities to be carried out as part of the EE+ project¹¹⁰. It provides a vision and strategy that ensures the availability of resources and infrastructure that serve as a foundation for the continuation of Europeana Transcribe as a service and tool for the

¹⁰⁵ [Europeana Digital Spring Programme](#)

¹⁰⁶ <https://pro.europeana.eu/page/webinars>

¹⁰⁷

https://pro.europeana.eu/files/Europeana_Professional/Publications/Impact%20assessment%20reports/Impact%20Assessment%20Report_%20Europeana%202020.pdf

¹⁰⁸ Available on request.

¹⁰⁹ <https://europeana.transcribathon.eu/>

¹¹⁰ <https://pro.europeana.eu/project/enricheuropeana>

larger Europeana Ecosystem to work with independently. In particular it provides a clear action scheme plan and timeline to continue to develop, run and sustain the infrastructure, resources, finances of the Europeana Transcribe platform until September 2022.

EAF Training Programme 2020-2021 - throughout DSI-4 Y3 DSI AGG, with support of EF, delivered 62 workshops, webinars and other outreach activities (i.e. Lightning talks and presentations at events). One highlight this year was the Aggregators Fair where many DSI AGG contributed with online sessions.

Training workshops, webinars¹¹¹ and one-to-one support for CHIs to share knowledge and develop skills (six events) - throughout DSI-4 Y3, DSI AGG supported in total 206 CHIs from 29 countries in their digital transformation by providing help desk activities and one-to-one support. DSI AGG forwarded organisational and expert knowledge needed to prepare and ingest high-quality datasets for inclusion in the Europeana website. DSI AGG also provided support for mappings, promoted the uptake of multilingual vocabularies and of Europeana frameworks and guidelines. Efforts in DSI-4 Y3 to increase the amount of contributing data providers resulted in 46 new CHIs collaborating with DSI AGG.

Europeana Aggregators' Fair¹¹² - At this online web conference, which took place on 16 - 17 June 2021, the Europeana Aggregators' Forum opened their virtual doors to 90 cultural heritage professionals and others with an interest in high quality, open cultural heritage content. The programme¹¹³ offered an opportunity to listen to inspiring speakers, join panel discussions, take part in training webinars and ask questions to people working in aggregation during 17 sessions. They covered how high quality cultural heritage content is being made accessible to new audiences through Europeana, and how you can get involved. The event received a very high satisfaction rate of 84.8%.

Deliver Pilot Managers Academy - The Pilot Managers Academy has been developed to support managers to work on digital transformation in their organisation on a strategic level. The programme offered guidance and methodologies to drive digital transformation, determine digital maturity, develop digital leadership and incorporate impact thinking. Facilitating conversation and sharing approaches between participants is also an important part of this programme. The first cohort of the managers academy pilot took place from March to June 2021. 16 participants from 12 Member States participated in the programme. All the participants are active in the Europeana Aggregator Forum. This group was specifically chosen because aggregators possibly play a role in future offerings of learning opportunities on a national level. The participants have indicated that the programme exceeded expectations and were able to

¹¹¹ Events targeting larger audiences are reported back under outcome *EAF Training Programme 2020-2021*.

¹¹² <https://pro.europeana.eu/post/register-for-the-first-ever-europeana-aggregators-fair>

¹¹³ https://pro.europeana.eu/files/Europeana_Professional/Event_documentation/Events/Aggregator_Forum/EAgg-Fair-2021-Programme-Public.pdf

apply learnings in their daily practices. Participants rated the programme with an 8.6 on a 1-10 scale.

*MS6 Preliminary results and feasibility study*¹¹⁴ - EF and DEN completed a report with first results and a feasibility evaluation based on the findings of the first cohort of the Pilot Managers Academy (see outcome above). The report details and evaluates the approach of the pilot. The topics that have been looked at are the business case, international challenges, impact measurement and building long term relationships, for example with an alumni programme. Several recommendations have been made. These will be implemented and/or tested in the second cohort of the pilot (expected in DSI-4 Y4).

*Strategy for building and implementing a capacity building framework published*¹¹⁵ - The Strategy describes the environment we are operating in, the services we offer and breaks down the actions being undertaken to deliver capacity building. Based on a preliminary impact model the actions are detailed according to the type of impact they intend to achieve. The areas of impact identified in this strategy are empowering and motivating professionals to make sustainable changes that facilitate them to embrace and drive digital transformation. For example, we describe the need to develop mechanisms to facilitate good practices in running and delivering online workshops, which resulted in the development of the events toolkit. Another example is the development of a playbook to support the process of identifying, prioritising, designing and measuring the impact of capacity building activities.¹¹⁶

Preliminary reporting indicators for capacity building developed - We worked with an external expert to develop a Theory of Change (ToC) for capacity building for digital transformation. Alongside the ToC, we have created a 'menu' of available or desired indicators, arranged at an individual, institutional and network (sector) level. This menu should be further developed. Drawing from this, a preliminary indicator approach suggests 11 indicators (e.g. pre- and post-activity changes in confidence levels; percentage of digitised heritage content at an EU level) that could give the desired holistic perspective on change in capacity building for digital transformation. Some suggested indicators rely on data from sources outside of Europeana, but most are drawn from data sources already available to us (e.g. ENUMERATE and the evaluation of our events and activities).¹¹⁷

Report on inventorisation of existing training courses created - We have done desk research and launched an ongoing survey¹¹⁸ to collect existing training courses that support cultural heritage experts and managers to work on the digital transformation of their organisation. The training courses can be offered by institutions including cultural heritage institutions, universities, non-profit and commercial organisations and be on different levels, from strategic to practical.

¹¹⁴ Available on request.

¹¹⁵ <https://pro.europeana.eu/page/building-digital-capacity>

¹¹⁶ More details available in MS7 Capacity-Building Framework V1 developed (available on request).

¹¹⁷ Detailed information is available in MS8 Report on impact research and development published (available on request).

¹¹⁸ <https://pro.europeana.eu/page/building-digital-capacity#step-3-training-courses-inventorisation>

The possibility to develop a searchable index of the outcomes of this inventorisation will be explored. The survey results and desk research have been gathered in a report.¹¹⁹

Approach for measuring impact of capacity building developed - We commissioned a consultant to guide Europeana Initiative stakeholders through the development of a Theory of Change (ToC).¹²⁰ A ToC shares many of the same components as the Change Pathway in Phase one of the Impact Playbook, though the development and conceptualisation process is somewhat different. The ToC isolates three core outcomes, related indicators and an impact statement. Measuring the indicators described above forms part of the impact assessment approach. The ToC will be used to further improve the Capacity Building Playbook (see next paragraph) and to ensure that impact is at the centre as we further mature our work on capacity building.¹²¹

MS7 Capacity-Building Framework/Playbook V1 developed - An alpha version of a Capacity Building Playbook has been developed, based on learnings of events and workshops.¹²² The Capacity Building Playbook offers a structured approach to build capacity and can be used by institutions, communities and others. The Capacity Building Playbook will be tested and validated and further developed in the upcoming months. A reference design for Europeana Frameworks was also developed to support the development of the Capacity Building Framework.¹²³ This reference design supports the alignment of existing Europeana Frameworks on a strategic and practical level.

Reporting metrics: build capacity of aggregators and professionals

No.	Description	Measured by	Frequency	Target	Jun 2021	Jul 2021	Aug 2021
KPI 3.1	Aggregator satisfaction with Europeana (accredited aggregators)	Average satisfaction on a 5-point Likert scale ¹²⁴	Once a year	75%	-	-	82.2%
KPI 3.2	CHI satisfaction with aggregator (partner in Europeana DSI-4)	Average satisfaction on a 5-point Likert scale	Once a year	75%	-	-	N/A
RM 3.1	Events organised for professionals ¹²⁵	Number of events (cumulative)	Bi-monthly	-	47	-	55

¹¹⁹ Available on request

¹²⁰ Available on request.

¹²¹ Detailed information is available in MS8 Report on impact research and development published (available on request).

¹²² Available on request

¹²³ Available on request

¹²⁴ The average satisfaction on a 5-point Likert scale is translated into % (e.g. an average of 3.6 stars equals a satisfaction rate of 72%).

¹²⁵ This metric counts events organised by EF. Events can be seen at <https://pro.europeana.eu/page/webinars>.

RM 3.2	Participants attending events for professionals	Number of participants (cumulative)	Bi-monthly	-	3,109	-	3,393
RM 3.3	Satisfaction rate for annual conference (Europeana 2020)	Average satisfaction on a 5-point Likert scale	Once a year	-	-	-	-
RM 3.4	CHIs supported by DSI aggregators	Total number of individual CHIs (cumulative)	Bi-monthly	-	-	-	206
RM 3.5	Coverage of CHIs supported by DSI aggregators	Total number of countries that received support (cumulative)	Bi-monthly	-	-	-	29
RM 3.6	Outreach to CHIs	Total number of new CHIs collaborating with DSI aggregators (cumulative)	Bi-monthly	-	-	-	46
RM 3.7	Events delivered through the EAF training programme	Number of events delivered by DSI aggregators and EF (cumulative)	Bi-monthly	-	48	-	59

In August 2021, we completed a survey asking for aggregators' satisfaction with Europeana (21 of the 40 accredited aggregators filled the survey). The survey showed a high overall average satisfaction of 82.2%. Satisfaction is highest for aspects related to personal support and workflow management by the EF team (90%) and lowest for the performance of the Metis media service as part of the publication workflow (76%).

DSI AGG also shared a satisfaction survey with their networks of data partners, to understand how satisfied these data partners are with their aggregators. Unfortunately, we received only 20 responses, which is too low to allow for it to be representative. Therefore we did not acknowledge the satisfaction rate in the Europeana metrics tracking.

Between Jun - Aug 2021, EF held 14 events for professionals¹²⁶ with 629 participants attending in total. DSI AGG organised 14 events, these included workshops, webinars or presentations at an

¹²⁶ <https://pro.europeana.eu/page/webinars>

outreach event in the period (10 of those webinars were organised as part of the Aggregators' Fair with support of EF).

Overview of communication and dissemination efforts: build capacity of aggregators and professionals

Partner	Name of event	Activity	Location	Date
Events organised for professionals				
EF, MCA	Europeana Sport Copyright workshop ¹²⁷	In the framework of the Europeana Sport project, Michael Culture and Europeana are co-organising two online workshops about copyright and sports related data.	Online	1&7/04/2021
EF	EF Conference under the Portuguese Presidency ¹²⁸	The conference provided an opportunity to build on the momentum catalysed by the COVID-19 pandemic to help shape a necessary shared understanding of digital transformation and the base for a common approach to capacity building for the recovery, resilience and sustainability of the cultural sector.	Online	3&4/06/2021
EF	Launch of the EUIPO Out of Commerce Works Portal	The EUIPO presents the newly launched portal for out of commerce works, and explains how CHIs, CMOs and rights holders can engage with it.	Online	9/6/2021
EF/ENA	Storytelling Task Force webinar ¹²⁹	In this webinar, we heard from members of a Europeana Communicators Task Force that has been collecting and analysing examples of online digital storytelling from the cultural heritage sector.	Online	9/6/2021
EF	NEB Europeana Cafe #2 ¹³⁰	What is the role of the Cultural Heritage sector in the New European Bauhaus?	Online	10/6/2021
EF	NEB Europeana Cafe #3 ¹³¹	How does the cultural heritage sector promote collaboration and innovation to support the goals of the New European Bauhaus?	Online	23/06/2021
EF	ESP - Representing Disability. Exploring the	This presentation explores a post-doctoral project which aims to analyse a set of museums objects representing disability in Portuguese museums.	Online	29/06/2021

¹²⁷ <https://pro.europeana.eu/event/europeana-sport-workshops>

¹²⁸ <https://pro.europeana.eu/event/towards-recovery-digital-capacity-building-in-the-cultural-heritage-sector>

¹²⁹ <https://pro.europeana.eu/event/storytelling-with-digital-culture>

¹³⁰ <https://pro.europeana.eu/event/new-european-bauhaus-europeana-cafe>

¹³¹ <https://pro.europeana.eu/event/new-european-bauhaus-europeana-cafe>

	DGPC museum's collections ¹³²			
EF	ESP - The Digital Atlas of European Costume and Dress ¹³³	This presentation provides an overview of the Digital Atlas of European Textiles and Dress, a database developed under the COST Dissemination fan.	Online	29/06/2021
EF	ESP - The potential contribution of the European Association of Professors Emeriti to Education ¹³⁴	This presentation explores mentoring and how to encourage young people into higher education.	Online	29/06/2021
EF/ENA	Copyright Office hours ¹³⁵	The Europeana Copyright Community invites you to share your copyright challenges, inspiration and questions in an informal discussion forum.	Online	1/7/2021
EF/ENA	EuropeanaTech on AI ¹³⁶	This webinar presented the eScriptorium project, which aims to provide a user-friendly and open platform for the automatic, semi-automatic and manual transcription of texts from digitised images.	Online	2/7/2021
EF	ESP - Tainacan project: a WordPress solution for digital collections ¹³⁷	This talk presents Tainacan, an open-source, powerful and flexible digital repository platform which can be used for the creation of a digital collection, a digital library or a digital repository for your institutional or personal collection.	Online	8/7/2021
EF	ESP - Ignite talks ¹³⁸	Four expert speakers present four ten minute ignite talks covering topics linked to innovation, experimentation and social change in digital cultural heritage.	Online	8/7/2021
EF/ENA	Digital Storytelling	The first edition of the Digital Storytelling Festival encouraged people to create digital	Online	21/7/2021

¹³² <https://pro.europeana.eu/event/representing-disability-exploring-the-dgpc-museum-s-collections>

¹³³ <https://pro.europeana.eu/event/the-digital-atlas-of-european-costume-and-dress>

¹³⁴

<https://pro.europeana.eu/event/the-potential-contribution-of-the-european-association-of-professors-emeriti-to-education>

¹³⁵ <https://pro.europeana.eu/event/copyright-office-hours-supporting-each-other-with-copyright-challenges-3>

¹³⁶ <https://pro.europeana.eu/event/europeanatech-x-ai-escriptorium>

¹³⁷ <https://pro.europeana.eu/event/tainacan-project-a-wordpress-solution-for-digital-collections>

¹³⁸ <https://pro.europeana.eu/event/europeana-digital-spring-programme-ignite-talks-1>

	Festival - Closing Online Event ¹³⁹	stories from openly licensed cultural heritage collections.		
Events delivered through the EAF training programme				
EFHA	EFHA feedback session - QANDR with UniFi		Online	04/06/2021
	Europeana Aggregators Fair		Online	16&17/06/2021
CARARE		Archaeology and Architecture in Europeana		
MUSEU		A bridge for museums who want to join Europeana		
CARARE / APEF		Using Vocabularies and Linked Data #Connecting Archaeology		
APEF		Archives Portal Europe: towards a Google of Archives		
EUScreen		Screen Teachings: A/V archives in the Classroom		
BL		MINT for Aggregators		
EFG		EFG for beginners		
APEF		From Archives Portal Europe to Europeana		
EUScreen / EFG		Starting to Talk about Diversity, Inclusivity and Equity in our Collections		
PHOTOCONS	Behind the scenes of PAGODE: building an aggregation value chain			
CARARE	CAA 2021	Contributor to panel session of 'Paradata to the people'	Online	17/06/2021
CARARE	Using AI to monitor historic towns and landscapes: #ConnectingArchaeology webinar	Organiser and facilitator for the webinar.	Online	23/06/2021
CARARE	Connecting Archaeology and Architecture in Europe	Organiser of one day conference, presentation on 'Archaeology in Europeana' and facilitator of conversation on the new European Bauhaus.	Online	24/06/2021

¹³⁹ <https://pro.europeana.eu/event/digital-storytelling-festival-closing-online-event>

Risk assessment: build capacity of aggregators and professionals

ID	Risk	Probability	Impact	Rate	Mitigation strategy	Change
R3.1	Professionals/ Aggregator training and development activities do not meet the needs of the partners, and we do not grow the audience for these	Low (2)	High (4)	8	We work with the ENA and EAF to develop a training and development approach that can be implemented and measured under the capacity building framework. We will regularly review feedback from participants, and implement a holistic approach to promoting these activities to reach a wide audience.	-
R3.2	Capacity Building Framework does not meet partner expectations or needs	Low (2)	High (4)	8	Ensure the framework is developed and implemented collaboratively with stakeholders, and an effective feedback cycle is established.	-

Task 3.2. Nurture networks

Partners: EF, CLARIN, DSI AGG

Under this task we will maintain and develop effective governance as well as the operational activities of the Europeana Network Association (ENA)¹⁴⁰ and Europeana Aggregators’ Forum (EAF)¹⁴¹ (objective 3.2.1. and objective 3.2.2.). We will facilitate digital change by developing connections with professionals, partners and other networks such as research communities (objective 3.2.3). Our work will be enabled through communicating and promoting the value of the Europeana Initiative (objective 3.2.4.), and by developing the Europeana Pro website (objective 3.2.5.).

Overview of outcomes: nurture networks

Partner	Outcomes	Progress	Due date	Jun M34	Jul M35	Aug M36	Sep M37	Oct M38
Objective 3.2.1. Maintain and develop the effective governance of ENA/EAF								

¹⁴⁰ <https://pro.europeana.eu/network-association/sign-up>

¹⁴¹ <https://pro.europeana.eu/page/aggregators>

EF	Periodic meetings organised (incl. Management Board and Members Council)	Ongoing	-					
EF	Governance working group ¹⁴² (eight members)	Ongoing	-					
EF	Periodic meetings of the Steering Group and Forum members organised	Ongoing	-					
EF	Membership campaign 2020 concluded	Done	-					
EF	Governance renewed (Members Council election, Management Board appointment)	Done	-					
EF	MC meeting organised	100%	M34					
Objective 3.2.2. Maintain and develop the operational activities of ENA/EAF								
EF	General management support for Task Forces, Working Groups and communities	Ongoing	-					
EF	General management for Task Forces, Working Groups and members	Ongoing	-					
NISV	Annual reports 2020 (ENA and EAF) published	Done	-					
NISV	Annual work plans 2021 (ENA and EAF) developed	Done	-					
EF	Thematic agenda for Europeana Initiative published	100%	M36					
EF	Strategy and plan to support diversity and growth of ENA and EAF created	100%	M36					
EF	New professionals task force completed	100%	M36					
Objective 3.2.3. Engage with research communities								
EF, Athena RC	Digital Panel on 1940s webinar organised	Done	-					
EF	Research Grants (2020) launched	Done	-					
EF	Research Community: Research Community blog series on Europeana Pro launched	Done	-					
EF	Research Community: Research Requirements TF's recommendations on researchers' needs ¹⁴³ available	100%	M36					

¹⁴² <https://pro.europeana.eu/project/governance-working-group>

¹⁴³ <https://pro.europeana.eu/project/research-requirements>

EF	Europeana Research: new strategic plan developed	100%	M36					
EF	Research Grants (2019) ¹⁴⁴ : Events and outputs completed	100%	M36					
EF, CLARIN	Ingestions into VLO completed	Done	-					
EF	OCLC integration	100%	M35					
EF	Contribution to the programme committee of the Digital Humanities Benelux Conference 2021 (2-4 June 2021)	100%	M34					
EF	New service of downloading datasets available on Europeana Pro	100%	M34					
EF	Survey on reuse of Europeana images (in collaboration with Humboldt University)	100%	M35					
Objective 3.2.4. Communicating and promoting to professionals and partners								
EF, GS ¹⁴⁵	Editorial reviewed and all static content updated (Europeana Pro)	Ongoing	-					
EF	Pro themes published	Ongoing	-					
EF, GS ¹⁴⁶	(Periodic) activities promoted (newsletters: ENA, Communities & EAF; social media: Twitter, LinkedIn)	Ongoing	-					
EF	Public consultation on opportunities offered by digital technologies for the culture heritage sector promoted	Done	-					
EF	Europeana as a 'powerful platform for storytelling' Task Force recommendations available	100%	M35					
Objective 3.2.5. Maintain and develop the Europeana Pro website								
EF	Europeana Pro developed and maintained (bugs, user journeys, software updates)	Ongoing	-					
EF	More flexible solution for event display on Pro implemented	Done	-					

¹⁴⁴ Research Grants 2019 events and outputs were postponed due to COVID-19 pandemic and were delivered throughout 2020/2021.

¹⁴⁵ Including editorials from all GS projects, and other EU funded projects.

¹⁴⁶ Including GS editorials published on Europeana Pro.

EF	FAQ Europeana Pro available	Done	-					
EF	oEmbed for images available	Done	-					
EF	Code quality and accessibility improvements implemented	Done	-					

MC meeting organised - a Members Council meeting took place on 30 June - 1 July 2021 with around 40 participants. The meeting agenda revolved around progress of the ENA Strategy, ENA activities related to Diversity & Inclusion, and ENA supporting capacity building and digital transformation and developing thinking around culture and its relation to a European Digital Public Space. There were updates on ENA governance and membership related activities, and the Council together with representatives of EF agreed on creating a formal ENA climate action Group/Community and on signing a common climate action manifesto. Councillors were presented with final outcomes of two ending Task Forces, and in breakout groups discussed ongoing collaborative efforts of the six ENA communities.

*Thematic agenda for Europeana Initiative published*¹⁴⁷ - The Thematic Agenda for the Europeana Initiative is a first attempt to provide an overview of the planned work within the (greater) Europeana Initiative according to themes and topics, in order to be able to establish a joint horizon and to identify synergies and complimentary work. The Thematic Agenda consists of an overview (spreadsheet), listing governance elements (organisations and projects) related to the Europeana Initiative, grouping their activities and outcomes (realised or expected), and an accompanying document providing context and recommendations.

*Strategy and plan to support diversity and growth of ENA and EAF created*¹⁴⁸ - the strategy and plan identifies the challenges and opportunities to support the diversity and growth of the ENA, and where possible also the EAF. It establishes preliminary goals to achieve, and the objectives and actions that will be undertaken. This report reflects an increase in the need to support the growth of the ENA and EAF by addressing new and emerging areas of interest, such as addressing diversity topics such as representation of diversity in data, and climate action.

New professional task force completed - being formally part of the Impact Community, the New Professionals Task Force sought to identify the key challenges facing new professionals in the ENA, its communities, and the wider sector. The TF concluded its work and recommended to: Cultivate ENA intergenerational exchange; Support inclusivity for new professionals within the ENA; Create spaces for new professional visibility, autonomy and collaboration; Foster an open and inclusive ENA, enabling new professionals to thrive; Build sustainable, community-centered partnerships; and Support proposal for the ENA Membership Working Group. The report is available on Europeana Pro.¹⁴⁹

¹⁴⁷ <https://pro.europeana.eu/page/building-digital-capacity>

¹⁴⁸ Available on request.

¹⁴⁹ <https://pro.europeana.eu/project/new-professionals>

Research Community: Research Requirements TF's recommendations on researchers' needs available - The Research Community hosted this TF in the period between 2019-2020 and aimed to support its members in understanding researchers' needs. The initial scope of the TF was reduced in agreement with the ENA MB. EF completed a report including results of a survey conducted by the TF in 2019. The report offers relevant insights into researchers' behaviours in accessing, processing and publishing cultural heritage assets, the problems they encounter, and their needs in terms of skills and training. The report is available on Europeana Pro.¹⁵⁰

*Europeana Research: new strategic plan developed*¹⁵¹ - The plan defines a framework for the activities addressed to cultural heritage professionals interested in the reuse of digital cultural heritage in research; professionals in Higher Education and Research in the sectors of Humanities and Social Sciences; and university students interested in Digital Humanities. The plan also explains how Europeana Research informs the technical development of Europeana.eu.

*Research Grants (2019): Events and outputs completed*¹⁵² - The theme of the 2019 call was Digital Cultural Heritage for Open Science. Due to the COVID-19 pandemic, the four institutions awarded a grant benefitted from an extension of a year to organise their events. Only one of them took place as a physical event. The other events were held as webinars (video recordings are available on Europeana Pro¹⁵³), to share reflections on metadata enrichment in research, digital cultural assets as FAIR data, and masterclasses as a format for the cultural heritage sector.

OCLC integration - All openly licensed content from Europeana was integrated into the OCLC's WorldCat platform¹⁵⁴ via the Europeana API. OCLC is a global library cooperative that supports thousands of libraries in making information accessible around the world, and works to enhance the visibility and accessibility of open content. Europeana and OCLC teamed up to make more content discoverable for researchers and students (see example on the OCLC platform¹⁵⁵).

*Contribution to the programme committee of the Digital Humanities Benelux Conference 2021 (2-4 June 2021)*¹⁵⁶ - For the first time, Europeana Research was represented at this European conference both among the speakers and as a member of the programme committee. EF participated in the selection of the proposals based on peer-review and also worked on a poster to present at the conference.

*New service of downloading datasets available on Europeana Pro*¹⁵⁷ - experienced users can get access to Europeana resources through the range of APIs that implement open standard

¹⁵⁰ <https://pro.europeana.eu/project/research-requirements>

¹⁵¹ Available on request.

¹⁵² <https://pro.europeana.eu/page/grants-programme>

¹⁵³ <https://pro.europeana.eu/page/research#webinars>

¹⁵⁴ <https://www.worldcat.org/>

¹⁵⁵ https://www.worldcat.org/title/tobit-and-anna-with-the-kid/oclc/9079400994&referer=brief_results

¹⁵⁶ <https://2021.dhbenelux.org/>

¹⁵⁷ <https://pro.europeana.eu/page/harvesting-and-downloads>

protocols. Besides the Europeana APIs, Europeana recently added to its offer a new service that aims to meet the needs of researchers who are more interested in data processing and are confident in their own computational competences. The new service offers all the Europeana metadata resources in XML (and Turtle), including links to the content, for bulk download as compressed zip files.

*Survey on reuse of Europeana images (in collaboration with Humboldt University)*¹⁵⁸ - Europeana Research collaborates with well-established universities or research institutions that conduct international research projects. For example, the Centre for Anthropological Research on Museums and Heritage at Humboldt University in Berlin focused on the reuse of Europeana images within the project: *Curating Digital Images. Ethnographic Perspectives on the Affordances of Digital Images in Heritage and Museum Contexts*. EF provided scientific support to the project and contributed to designing and disseminating a survey which received over 40 responses. Survey results will inform EF activities.

Europeana as a 'powerful platform for storytelling' Task Force recommendations available - The TF final report highlights the importance of digital storytelling for the cultural heritage sector. It also suggests that Europeana is well-placed to support institutions to develop their capacity for developing and using digital storytelling practices, whether their final publication is on Europeana or elsewhere. One outcome of this TF is the resource 'Seven tips for digital storytelling for the cultural heritage sector'¹⁵⁹. The seven tips are presented on Europeana Pro as a tool in a variety of formats - an infographic, a recorded presentation and slidedeck, an article on Medium and a multilingual video. The tips can be used across the Initiative, indeed the sector, to foster greater public engagement with cultural heritage, thereby enhancing the role, relevance and reputation of digital cultural heritage and its institutions. The full report is available on Europeana Pro.¹⁶⁰

Communication and dissemination activities

Partner	Name of event	Activity	Location	Date
EF	DHBenelux 2021 ¹⁶¹	Poster to launch the new service offering datasets for bulk download	Online	2-4/06/2021
EF	AHRC Cultural Heritage 360 - 4th workshop: Cultural Assets and Digital Presentation ¹⁶²	Contribution to the 4th workshop organised within this research project funded by AHRC.	Online	24-25/06/2021

Reporting metrics: nurture networks

No.	Description	Measured by	Frequency	Target	Jun 2021	Jul 2021	Aug 2021

¹⁵⁸ <https://www.carmah.berlin/curating-digital-images/>

¹⁵⁹ <https://pro.europeana.eu/post/seven-tips-for-digital-storytelling-with-cultural-heritage>

¹⁶⁰ <https://pro.europeana.eu/project/europeana-as-a-powerful-platform-for-storytelling>

¹⁶¹ <https://2021.dhbenelux.org/>

¹⁶² <https://culturalheritage360.wordpress.com/workshop-4-cultural-assets-and-digital-presentation/>

KPI 3.3	Growth of Europeana Network Association members	Number of members in the ENA	Bi-monthly	2,250	-	-	3,160
KPI 3.4	Satisfaction of the Europeana Network Association members with the ENA	Average satisfaction on a 5-point Likert scale ¹⁶³	Once a year	75%	67%	-	-
KPI 3.5	Communities in the Europeana Network Association	Number of active communities	Once a year	4	-	-	6
KPI 3.6	Task forces in the Europeana Network Association	Number of active task forces per month	Monthly	5	8	6	5
RM 3.8	Retention rate of Europeana Network Association Members	% of members who renewed their membership in 2020	Upon occasion	-	-	-	-
RM 3.9	Working groups in the Europeana Network Association	Number of active working groups per month	Bi-monthly	-	-	-	3
RM 3.10	Active members in the Europeana Network Association	Number of members participating in task forces and working groups per month	Bi-monthly	-	-	-	145
RM 3.11	Research Grants events	Total number of events organised (cumulative) ¹⁶⁴	Bi-monthly	-	-	-	3

¹⁶³ The average satisfaction on a 5-point Likert scale is translated into % (e.g. an average of 3.6 stars equals a satisfaction rate of 72%).

¹⁶⁴ Note: due to the COVID pandemic some events of the Research Grants programme 2019 were still due to be completed in DSI-4 Y3.

RM 3.12	People reached with research Grants events	Total number of people participating in events (cumulative)	Bi-monthly	-	-	-	280
RM 3.13	Research Grants outcomes	Total number of outcomes delivered (cumulative)	Bi-monthly	-	-	-	4
RM 3.14	Reach to Europeana Research community	Number of people reached per month (Mailing list, Twitter)	Bi-monthly	-	-	-	6,181
RM 3.15	Traffic to Europeana Pro	Number of visits per month	Monthly	-	25,435	22,672	21,646
RM 3.16	Returning visitors to Europeana Pro	Percentage of visitors returning	Monthly	-	36.60%	33.50%	30.10%
RM 3.17	New visitors to Europeana Pro	Total number of new visitors per month	Monthly	-	16,114	15,703	15,120
RM 3.18	Satisfaction rate for Europeana Pro	Average satisfaction on a 5-point Likert scale	Once a year	-	-	88%	-
RM 3.19	Reach to Europeana Communicators community	Number of people reached per month (Newsletter, LinkedIn, mailing list)	Bi-monthly	-	-	-	2,524

In June, we completed a satisfaction survey with ENA members (10% participation rate) which resulted in a good average satisfaction rate of 67%. Between Jun - Aug three Task Forces (TF) finalised and provided reports/recommendations: Europeana as a 'powerful platform for storytelling' TF¹⁶⁵, Rights labelling TF¹⁶⁶, AI in relation to GLAMs TF¹⁶⁷.

¹⁶⁵ <https://pro.europeana.eu/project/europeana-as-a-powerful-platform-for-storytelling>

¹⁶⁶ <https://pro.europeana.eu/project/how-to-guide-for-labelling-cultural-heritage>

¹⁶⁷ <https://pro.europeana.eu/project/ai-in-relation-to-glams>

Due to the COVID pandemic some events of the Research Grants programme 2019 were still due to be completed in DSI-4 Y3. This year, we completed three events which saw 280 participants organised by two grants winners. The programme had in total 4 grants winners while we started organising events already in 2019. Two institutions organised their events by August 2020 (DSI-4 Y2), two benefitted from the extension till August 2021. The programme saw in total four outputs (webinars and workshops).¹⁶⁸

In July 2021, we ran a satisfaction survey on Europeana Pro. Respondents were asked to rank their satisfaction with Europeana Pro from 1 (not satisfied at all) to 5 (completely satisfied). 87.5% of respondents scored their satisfaction as either 'very' or 'completely' satisfied and the average score given was 88%. This shows a high satisfaction with Europeana Pro.

Risk assessment: nurture networks

ID	Risk	Probability	Impact	Rate	Mitigation strategy	Change
R3.3	Task forces do not finish recommendations on time	Medium (3)	Low (2)	6	Manage expectations and be aware of potential impact for Europeana DSI; accommodate extension of task force work	-
R3.4	Community members show little activity and engagement	Medium (3)	Low (2)	6	Provide calls to action, meeting and webinars, useful tools and material, active information flow	-
R3.5	CHIs are not aware of research development contributions	Medium (3)	Low (2)	6	All research developments should benefit CHIs, benefits should be communicated to CHIs, initiatives (conferences/workshops) to improve digital skills and literacy of CHI professionals	-
R3.6	Digital collections do not comply with the FAIR principles ¹⁶⁹ and are not considered to meet the quality criteria to be used in academic research	High (4)	Low (2)	8	Create awareness of the importance of the FAIR principles in the GLAM sector.	-

¹⁶⁸ <https://pro.europeana.eu/page/research#webinars>

¹⁶⁹ <https://www.go-fair.org/fair-principles/>

R3.7	Research grants: events and outputs postponed	High (4)	Low (2)	8	The COVID-19 pandemic has obliged us to postpone all the in person events planned for March - June 2020 to autumn 2020 or summer 2021. This will cause a delay in delivering the related outputs, originally due by December 2020 at the latest.	-
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Task 3.3. Strengthen national infrastructures

Partners: EF

Under this task we will maintain and develop activities that demonstrate the value of the Europeana Initiative to national infrastructures. We will facilitate the adoption of our Licensing Framework and reinforce the value in a common legal framework (objective 3.3.1.). We will develop and maintain the Europeana Impact Framework and an evidence base to establish a measure of change and progress across the sector (objective 3.3.2.). We will also engage with EU Member States to raise awareness of the Europeana Initiative and engage in relevant policy areas (objective 3.3.3).

Overview of outcomes: strengthen national infrastructures

Partner	Outcomes	Progress	Due date	Jun M34	Jul M35	Aug M36	Sep M37	Oct M38
Objective 3.3.1. Develop and maintain interoperable licensing framework								
EF	Guidelines on good practice for institutions to manage copyright developed and promoted	Ongoing	-					
EF	Copyright Community Task Force: rights labelling Task Force completed	100%	M35					
EF	RightsStatements.org strategy and plan 2021 developed	100%	M35					
EF	RightsStatements.org Task Force: Supporting the implementation of statements completed	Done	-					
EF	RightsStatements.org: Implementing recommendations of membership model	100%	M36					

EF	Copyright Office Hours: Supporting Each Other with Copyright Challenges ¹⁷⁰	100%	M36	
Objective 3.3.2. Developing the evidence of digital transformation				
EF	Longitudinal research into impact of EF services supported	Ongoing	-	
EF	Impact lite Task Force completed	100%	M37	
EF	Impact question bank published on Europeana Pro	Done	-	
EF	Phase 3 Europeana Impact Playbook published	100%	M36	
EF	MS8 Report on impact research and development published	100%	M36	
Objective 3.3.3 Engage with Member States				
EF	German presidency Europeana conference	Done	-	
EF	German Presidency Europeana conference report published	Done	-	
EF	Portuguese presidency event/report	100%	M36	
EF	Impact assessment of the Portuguese presidency event	100%	M36	

Copyright community Task Force: rights labelling Task Force completed - At the European 2019 annual event, two members of the Europeana Network presented a tool developed for the National Library of Lithuania that helps cultural heritage professionals assign an accurate rights statement to an item of digital cultural heritage. This Task Force was set up after the conference to facilitate the replication of a tool (after it has proven so useful in Lithuania) that can also serve other jurisdictions and languages, and contribute, as a result, to more copyright education and accurate rights information. The Task Force has produced a report with a guide and recommendations¹⁷¹ on how to replicate the tool, and is based on the rights statements of the Europeana Licensing Framework, thus making it a valuable resource for Europeana data partners.

RightsStatements.org strategy and plan 2021 developed - The Rights Statements Consortium Steering Committee agreed to and published its 2021 work plan¹⁷². It foresees three objectives at the operational level: to develop a sustainable business model, to support a sustainable adoption

¹⁷⁰ <https://pro.europeana.eu/post/copyright-office-hours-supporting-each-other-with-copyright-challenges>

¹⁷¹ https://pro.europeana.eu/files/Europeana_Professional/Europeana_Network/Europeana_Network_Task_Forces/Final_reports/RightsLabellingofDigitalCulturalHeritage.pdf

¹⁷² <https://rightsstatements.org/files/rights-statements-2021-work-plan.pdf>

of the rights statements, and to prioritise the translation of member (and potential member) languages. At the strategic development level, the Consortium will work to explore approaches to express indigenous cultural and intellectual property rights through the rights statements, and to develop a version 2 of the statements.

RightsStatements.org: Implementing recommendations of membership model - The RightsStatements Consortium intended to fully implement the recommendation of the membership model. Due to instability experienced in the global operating environment of members caused by the Covid-19 pandemic, the Steering committee agreed to delay implementation to focus on continuity of the service for the benefit of all members and the DSI. As part of the decision making process it was also acknowledged that the membership model may need to be revisited as there is a general expectation that the cultural heritage landscape will have different needs post-pandemic.

*Copyright Office Hours: Supporting Each Other with Copyright Challenges*¹⁷³ - The copyright office hours are a set of calls organised by the copyright community steering group that aim at supporting practitioners in the cultural heritage sector in their copyright, open access and policy challenges. Participants share their questions in advance, and steering group members answer them during the call and generate conversation among all participants around shared challenges. After four sessions, an evaluation shows that the copyright office hours helped most participants find answers to their questions (69% of the participants either agree or completely agree with this statement), that they would participate in future copyright office hours sessions (76% of the participants either agree or completely agree with this statement) and that they would recommend the copyright office hours to a friend or colleague (76% of the participants either agree or completely agree with this statement).

*Impact lite Task Force completed*¹⁷⁴ - The Europeana Impact Lite TF was created to develop a crash course structure and investigate a train the trainers' approach that would support the use and implementation of the Europeana Impact Playbook. The main resources used to develop the course was the Impact Playbook and its related resources so that the course design could also be influenced by the idea of designing for impact. The TF resulted in a number of outputs and insights while ideating what an impact lite crash course could look like. These outputs and insights are reported in the TF report (available on the TF page). The TF recommends that a Impact Lite Task Force #2 builds on what has been learned (e.g. that a train the trainers model is unsustainable and that a Phase zero needs to be considered to set out the context and need for impact assessment) and instead that it works to develop an Impact Lite Playbook as an agile learn-by-doing methodology and a toolkit.

Phase 3 Europeana Impact Playbook published - Phase three is the third of four stages in the Impact Playbook. Building on the first two phases (impact design and assessment respectively) it takes you deeper into the process of how to build a story out of your data (providing, for example, a narrative building template), offers tools, tricks and examples on data visualisation

¹⁷³ <https://pro.europeana.eu/post/copyright-office-hours-supporting-each-other-with-copyright-challenges>

¹⁷⁴ <https://pro.europeana.eu/project/impact-lite>

and presentation, and offers ways to think about who to share your findings with and what you should expect them to do with them. Importantly, it also considers the ways in which you can use your findings (e.g. learning and improving internally, advocacy, etc). Phase three (and related resources) is available to download on Europeana Pro.¹⁷⁵

*MS8 Report on impact research and development published*¹⁷⁶ - MS8 reports on updates to the Impact Playbook (the publication of Phase three) and accompanying resources (the Standardised Impact Playbook). It considers engagement activities and trends in growth in the Impact community and reports on the Impact Lite Task Force recommendations. The report also summarises findings from various impact assessments and data collection exercises, including on Europeana's digital programming events, while noting limitations, challenges and opportunities to our approach. It sets out the process and thinking behind the newly developed Theory of Change for Capacity Building for Digital Transformation as well as the impact assessment approach and reporting indicators for capacity building that stem from this. A summary is available here¹⁷⁷.

Portuguese presidency event/report - The Portuguese Presidency Europeana conference '*Towards recovery: digital capacity building in the cultural heritage sector*' was held online on 3/4 June, in collaboration with the Ministry of Culture and the National Library of Portugal. It involved 89 cultural heritage professionals from 42 countries across the sector. The conference was part of a series of ongoing efforts at Europeana to get a shared understanding of digital transformation and investigate digital capacity building across the sector. The diverse perspectives offered by the speakers and participants contributed to our shared understanding of capacity building as a process with no universal approach that fits all. The participants were invited to explore how these findings affect the understanding of, or implementation of their capacity building and digital transformation plans and to repeat this sense-making work in their own organisations or contexts. We found a range of considerations are critical to support digital capacity building: integration of cultural heritage goals into national strategies, clear policy direction, advocacy for the sector, allocation of sufficient funds to the cultural sector and its digital transition, the European Commission's support and leadership, training, multilingualism, collaboration within the sector and cross-sectoral collaboration at local, national and European level. The proceedings, findings and outcomes from the Portuguese Presidency Europeana Conference are collected and presented in a dedicated report¹⁷⁸. A solid synthesis of the outcomes of the conference will inform the Europeana Capacity Building Framework for digital transformation currently under development.

Impact assessment of the Portuguese presidency event - The event brought new voices into the room: just under half of the registered attendees were Network members. More than half (51%)

¹⁷⁵

https://pro.europeana.eu/files/Europeana_Professional/Impact/Impact%20playbook/Phase%20three%20-%20Europeana%20Impact%20Playbook%20version%201.0.pdf

¹⁷⁶ Available on request.

¹⁷⁷ <https://pro.europeana.eu/post/highlights-from-a-year-of-working-on-impact-for-cultural-heritage>

¹⁷⁸ Available on request.

of the registered invited audience and 84% of the registered public audience had never been to a Europeana Presidency event before. Turnout for the event participation was lower than the registration rate - 70% of the invited and 34% of the registered public audience participated. It involved 89 cultural heritage professionals from 42 countries across the sector. The event appears to have delivered against its key short-term objectives of creating (for the invited audience) an increase in understanding of the concepts of digital transformation and capacity-building and an increase in knowledge about the Recovery and Resilience Fund¹⁷⁹. Despite the lower than expected attendance, the event achieved a very good average satisfaction of 83%.

Reporting metrics: strengthen national infrastructures

No.	Description	Measured by	Frequency	Target	Jun 2021	Jul 2021	Aug 2021
KPI 3.7	Take up of rs.org	Percentage of active aggregators that integrated rs.org in their infrastructure	Once a year	35%	-	-	72.50%
RM 3.20	Use of rs.org by accredited aggregators	Percentage of accredited aggregators that share data using a rights statements from the rs.org	Once a year	-	-	-	82.50%
RM 3.21	Use of rs.org rights statements	Number of objects published on the Europeana website with a rs.org rights statement (excluding content Tier 0)	Bi-monthly	-	-	-	18.3 million
RM 3.22	Reach to Europeana Copyright community	Number of people reached per month (Mailing list, Twitter, newsletter)		-	-	-	3,796
RM 3.23	Reach to Europeana Impact community	Number of people reached per month (Newsletter, LinkedIn)	Bi-monthly	-	-	-	1,904

¹⁷⁹ https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility_en

RM 3.24	Satisfaction with the Europeana EU presidency events	Average satisfaction on a 5-point Likert scale ¹⁸⁰	Upon occasion	-	-	-	70%
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In August 2021, we recorded the percentage of active aggregators (accredited aggregators) that integrated rs.org in their infrastructure. 72.50% have integrated rs.org in their infrastructure (1.5% increase over DSI-4 Y3). We also recorded that currently 82.50% of accredited aggregators share data on Europeana using a rights statement from rs.org. Currently about 18.3 million objects (~ 35% of the whole repository) are published with a rs.org rights statement on the Europeana website.

The Portuguese presidency event achieved a very good average satisfaction of 70%.

Risk assessment: strengthen national infrastructures

ID	Risk	Probability	Impact	Rate	Mitigation strategy	Change
R3.8	Rightsstatement.org: Challenge to build a sustainable consortium 2021 - especially more challenging post-covid	Low (2)	Medium (3)	6	The new membership model is operational in 2020, and a revision of services offered by the consortium will together be used to attract new members. Post-covid we are taking steps to specifically re-review the model and simplify in light of the perceived impact.	-
R3.9	Ongoing Impact research cannot be completed or updated in a timely manner due to external factors during the process (e.g. insufficient data collection)	Medium (3)	Medium (3)	9	Involve internal stakeholders and members of the network to provide motivation and opportunity to support this work to ensure a timely completion. Set out work to date and a framework and plan (including surveys, etc) in which impact assessment might be completed at a later date, for those impact	-

¹⁸⁰ The average satisfaction on a 5-point Likert scale is translated into % (e.g. an average of 3.6 stars equals a satisfaction rate of 72%).

					assessments where it is felt that communication with the sector is affected.	
R3.10	Impact toolkit is not being used	Low (2)	Medium (3)	6	Work with the community to help people learn how to use it and to make it more accessible for them to use. We are scheduling webinars to guide professionals through the toolkit and to introduce the resources available. We are also developing a question bank to make the process of using the toolkit even more accessible.	-
R3.11	In an online environment co-creation sessions and workshops as part of the presidency conferences are challenging. There is a risk that the shared understanding is not achieved and the recommendations are not sufficiently implemented.	Medium (3)	Medium (3)	9	Explore and use methods and tools that allow for ideation and collaborative co-creation resulting in shared understanding amongst the participants.	-

Work package 4: Programme management

EF will provide high-quality programme management for Europeana DSI-4 (task 4.1.). We will manage good relations with Europeana DSI Generic services (GS) projects and the integration of GS project outcomes (task 4.2.). We will work closely with the European Commission, the Expert Group on Digital Cultural Heritage and Europeana (DCHE) and its subgroups to review activities and developments of the Europeana Initiative (task 4.3.). Full documentation of Europeana DSI will also be provided to facilitate the transfer processes to a successor supplier (task 4.4.).

Task 4.1. Programme management of Europeana DSI-4

Partners: EF

EF will coordinate Europeana DSI-4 as described in the tender and B.1 Implementation plan M24.

Overview of outcomes

Partner	Outcomes	Progress	Jun M34	Jul M35	Aug M36	Sep M37
EF	Programme management	Ongoing				
EF	B.2/B.3 Periodic reports M34	100%	█			
EF	C.2/C.3 Users and usage report M35	100%	█	█		
EF	B.1 Implementation Plan M36	100%	█	█	█	
EF	D.1 Communication and dissemination plan M36	100%	█	█	█	
EF	B.2/B.3 Periodic reports M36	10 Sep '21	█	█	█	█
EF	B.4 Annual report M36	10 Sep '21	█	█	█	█

In the reporting period, we submitted several deliverables to EC.

Balance of efforts

The balance of efforts table states the foreseen and actual percentages of resources allocated to each of the four work packages and its related tasks.

Balance of efforts per Work Package

Work package	Foreseen	Actual August 2021
WP 1: Strengthen the infrastructure	49.50%	50.00%
Task 1.1. Easy data publishing	11.60%	12.46%
Task 1.2. Europeana website experience	14.90%	13.73%
Task 1.3. Reliable platforms	8.40%	9.21%
Task 1.4. Discoverability of digital cultural content	14.60%	14.60%
Work package 2: Improve data quality	17.50%	17.79%
Task 2.1. Quality assured data	12.50%	12.11%
Task 2.2. Enriched data	5.00%	5.68%
Work package 3: Build capacity	26.50%	25.05%
Task 3.1. Build capacity of aggregators and professionals	10.80%	11.34%
Task 3.2. Nurture networks	9.60%	8.37%
Task 3.3. Strengthen national infrastructures	6.10%	5.34%

Work package 4: Programme management	6.50%	7.15%
Task 4.1. Programme management of Europeana DSI-4	6.00%	6.31%
Task 4.2. Relations with Europeana DSI Generic Services projects	0.20%	0.66%
Task 4.3. Governance (DCHE)	0.10%	0.10%
Task 4.4. Phasing-in and phasing-out periods	0.20%	0.08%
TOTAL	100%	100%

Major changes in staff, if applicable

No changes between M34 - M36.

Risk assessment: Programme management of Europeana DSI-4

ID	Risk	Probability	Impact	Rate	Mitigation strategy	Change
R4.1	Individual outcomes require more work than anticipated which might affect other outcomes committed to	Low (2)	Medium (3)	6	Careful planning of efforts and resources needed for individual work, communication and awareness building of challenges, agreeing on priorities	-
R4.2	Additional work or extended scope of work is done which might affect other outcomes committed to	Medium (3)	Medium (3)	9	Management of expectations towards individual outcomes, communication and awareness building of challenges, agreeing on priorities	-

Task 4.2. Relations with Europeana Generic Services projects¹⁸¹

Partners: EF

EF maintains regular contact with the funded Europeana DSI Generic Services (GS) projects (e.g. via Basecamp groups) and supports them with ingestion of content and metadata (if applicable), consultation on the Europeana frameworks, policy and development guidelines, tool integration into Europeana CSP and dissemination of the project results. Specific work undertaken in the reporting period is described in the respective subject areas of this report (e.g. technical developments, editorial contributions).

¹⁸¹ This section also highlights other projects the DSI platform is involved with.

Overview of progress: Europeana Generic Services projects

Partner	Outcomes	Progress	Jun M34	Jul M35	Aug M36
EF	Programme coordination	Ongoing			
Objective 4.2.1. Supporting Europeana Generic Services (CEF-TC-2018-1) call					
Call commitments concluded.					
Objective 4.2.2. Supporting Europeana Generic Services (CEF-TC-2019-1) call					
EF	Europeana XX ¹⁸²	80%			
EF	Europeana Pagode ¹⁸³	90%			
EF	Europeana Sport ¹⁸⁴	60%			
EF	ARMA - the art of reading in the middle ages ¹⁸⁵	50%			
Objective 4.2.3. Supporting Europeana Generic Services (CEF-TC-2020-1) call					
EF	Jewish History Tour ¹⁸⁶	30%			
EF	Weave ¹⁸⁷	30%			
EF	Europeana Enrich+ ¹⁸⁸	30%			
EF	Europeana Subtitled ¹⁸⁹	10%			
Other projects (Horizon 2020, CEF - Public open data and CEF - eArchiving)					
EF	SGoaB - Saint George on a Bike ¹⁹⁰	60%			
EF	InDICES ¹⁹¹	50%			
EF	Europeana Translate ¹⁹²	20%			

Risk assessment: relations with Europeana Generic Services projects

ID	Risk	Probability	Impact	Rate	Mitigation strategy	Change
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¹⁸² Project officially requested an extension of three months (tbc by HaDEA)

¹⁸³ <https://pro.europeana.eu/project/europeana-xx>

¹⁸⁴ <https://pro.europeana.eu/project/pagode-europeana-china>

¹⁸⁵ <https://pro.europeana.eu/project/europeana-sport>

¹⁸⁶ <https://pro.europeana.eu/project/the-art-of-reading-in-the-middle-ages-arma>

¹⁸⁷ <https://pro.europeana.eu/project/jewish-history-tours>

¹⁸⁸ <https://pro.europeana.eu/project/weave-widen-european-access-to-cultural-communities-via-europeana>

¹⁸⁹ <https://pro.europeana.eu/project/enricheuropeana>

¹⁹⁰ <https://pro.europeana.eu/project/europeana-subtitled>

¹⁹¹ <https://pro.europeana.eu/project/saint-george-on-a-bike>

¹⁹² <https://pro.europeana.eu/project/indices>

¹⁹³ <https://pro.europeana.eu/project/europeana-translate>

R4.3	Generic Services projects bring extra requirements (for data ingestion and reingestion, technical updates, editorials, comms). As the GS requirements can be time-sensitive and time consuming, DSI work might be delayed to accommodate and fulfill these requests.	Medium (3)	High (4)	12	<p>Implementation of a new process for better coordination of the respective ingestions of the projects.</p> <p>Raising awareness of the partners early in the project of the importance of ingestion timelines and of the need to comply with the agreed time of submission.</p> <p>Monthly internal GS team meeting for better coordination and risk mitigation.</p> <p>Continuous collaboration with project partners to flag and mitigate possible risks.</p>	-
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Task 4.3. Governance (DCHE)

Partners: EF

Under WP7 EF reports to the European Commission, the Expert Group on Digital Cultural Heritage and Europeana (DCHE)¹⁹³ and its sub-groups the status of the Europeana DSI platform, activities and developments as well as re-prioritise developments of the platform based on received feedback and validation with users.

No activities between M34 - M36.

Task 4.4. Phasing-in and phasing-out periods

Partners: EF

The task provides correct and up-to-date information to the European Commission on assets and liabilities related to the Europeana platform and tests phasing-out and transfer processes to a successor supplier.

No activities between M34 - M36.

¹⁹³ <https://ec.europa.eu/digital-single-market/en/expert-group-digital-cultural-heritage-and-europeana-dche>

Annex: Updates towards milestones

The table states the status of milestones to be delivered in year 3 of Europeana DSI-4 (1 September 2020 - 31 August 2021).

MS No.	WP	Description	Verification	Due date	Status
MS1	WP1	Metis Sandbox report on its contribution to the aggregation strategy delivered	Milestone document sent to EC	M33 (May 2021)	Done
MS2	WP1	Search strategy delivered (including community feedback)	Milestone document sent to EC	M32 (Apr 2021)	Done
MS3	WP1	Outcomes of multilingual experiments, and their contribution to the multilingual strategy	Milestone document sent to EC	M36 (Aug 2021)	Done
MS4	WP2	Review of individual data quality plans with respective DSI partners	Milestone document sent to EC	M30 (Feb 2021) M36 (Aug 2021)	Done Done
MS5	WP2	EPF 3.0 delivered with case studies and integrated problem patterns	Framework sent to EC	M36 (Aug 2021)	Done
MS6	WP3	Preliminary results and feasibility study	Milestone document sent to EC	M36 (Aug 2021)	Done
MS7	WP3	Capacity-Building Framework V1 developed	Framework sent to EC	M36 (Aug 2021)	Done
MS8	WP3	Report on impact research and development published	Milestone document sent to EC	M36 (Aug 2021)	Done

Annex: Progress on deliverables (M25-M36)

This table states progress on deliverables and what deliverables were submitted to EC.¹⁹⁴

ID	Description	Due month	Done	Due
A.1	Platform reports	Every 10 months, starting M10	M30 (Feb 2021)	-
B.1	Implementation Plan	M01 and every 12 months thereafter	M36 (Aug 2021)	-
B.2/ B.3	Periodic reports	Every 2 months, starting M2	M26 (Oct 2020) - M36 (Aug 2021)	-
B.4	Annual report	Every 12 months, starting M12	M36 (Aug 2021)	-
B.5	Final report	Last month of the contract M36 (Aug 2021) or M48 (Aug 2022) in case of renewals		
C.1	Technical documentation	Every 12 months, starting M32	M32 (Apr 2021)	-
C.2/ C.3	Users and usage report	Every 5 months, starting M5	M25 (Sep 2020), M30 (Feb 2021), M35 (Jul 2021)	-
C.4	Stress and disaster recovery test reports	Every 12 months, starting M31	M31 (Mar 2021)	-
D.1	Communication and dissemination plan	Every 9 months, starting M9	M27 (Nov 2020), M36 (Aug 2021)	-
D.2	Study on impact of digitisation and reuse of cultural heritage	October every second year, starting Y2	-	-
E.1	Transfer of assets and liabilities report	M1, M10 (for E.1 and E.2) and M1, M6, M12 (for E.3) and then for all: 4 months before the contract ends (M20, April 2020) or M32 (April 2021)/44 (April 2022) in case of renewals	-	4 months before the contract ends: M32 (April 2021) or M44 (April 2022) in case of renewals
E.2	Transfer process report		-	
E.3	Employed staff report		-	

¹⁹⁴ Note: the schedule of deliverables was updated in January 2020.

Annex: Glossary of terms

Formal definitions of terms used frequently are detailed in the glossary of terms¹⁹⁵ on Europeana Pro. Additional terms are listed below.

DC	Dublin Core (DC) is a small set of vocabulary terms that can be used to describe digital resources (video, images, web pages, etc.), as well as physical resources such as books or CDs, and objects like artworks.
eCloud	eCloud is a cloud-based infrastructure that allows to efficiently store, share and provide access to digital cultural heritage. The data storage part of eCloud relies on the Cassandra database.
eCloud component: IIIF image server	The IIIF image server allows to efficiently store, share and provide access to IIIF images as one component of eCloud.
ELK	'ELK' is the acronym for three open source projects: Elasticsearch, Logstash, and Kibana. ELK enables the collection, storage, search and visualisation of log data.
Entities	Entities (such as persons, topics and places) are part of the Europeana Entity Collection, a collection of entities in the context of Europeana harvested from and linked to controlled vocabularies, such as Geonames, Dbpedia and Wikidata.
Entity pages	Entity pages showcase related entities towards persons, topics and places. For example: https://www.europeana.eu/portal/en/explore/people/61016-alphonse-mucha.html
Entity API	The Entities API allows to search on or retrieve information from named entities.
MARC21	Format for Bibliographic Data
Metis	Data and aggregation infrastructure through which allows to import, transform, validate and enrich metadata. https://metis.europeana.eu/home
Metis component: Link Checking service	This service allows the checking of links in the EDM data during the aggregation process (when the data is imported the first time but also after it has been published).
Metis component: Media service	This service is responsible for technical metadata extraction and thumbnail generation.

¹⁹⁵ <https://pro.europeana.eu/resources/standardization-tools/glossary>

MINT	Mapping tool to define semantic mappings between source and target schemas.
Mongo database	MongoDB is a document database that stores the Europeana data in JSON-like documents. The Europeana APIs relies on Solr to search for records while the metadata associated to those data comes from Mongo.
Newspaper full-text service	This service allows to search for a term in the full-text of newspapers .
Schema.org	Webmasters use this shared vocabulary to structure metadata on their websites and to help search engines understand the published content, a technique known as search engine optimization. https://en.wikipedia.org/wiki/Schema.org
Solr index	It is the search engine powering the Europeana Collections portal. Apache Solr is an open-source platform used at Europeana for full-text (e.g. metadata) index and search.
UIM infrastructure	The United Ingestion Manager is the suite of tools used to run the data aggregation activities prior to Metis.