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Periodic reports can be viewed and accessed online in the document section on the Europeana DSI-4 project page[1].

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[1] https://pro.europeana.eu/project/europeana-dsi-4

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Highlights

This period, we completed several outcomes that improved the aggregation workflow. We implemented a throttling mechanism for media processing which will allow us to scale up media processing in the future. We refactored, updated and simplified the eCloud data model which resulted in a more optimal data storage. Additionally, we released a notification mechanism that warns the Metis Sandbox users if any records have tier 0.

We implemented a new europeana.eu homepage design which invites people to find and use content and also aims to encourage users to create a user account and subscribe to our newsletter. We also enabled new transcriptions to be displayed and searchable on the Europeana website. We completed a functionality that enables curators to promote items on an entity page.

We completed the re-enrichment and indexing of the full Europeana database. This resulted in improved search including the indexing of geo-location information, enhanced representation of 3D content, and more links to entities (resulting in new Entity pages and millions more items linked to Organisation pages, Topic pages, and Person pages).

In our effort to increase the discoverability and use of content, we completed the Digital Storytelling Festival, capacity building activities for educators, multilingual learning scenarios, and a dashboard on Historiana for partners to gain insights into usage.

We corrected mislabelled 3D content and improved the precision of the content tier measurement of 3D content. We also implemented a first iteration of the field warnings to flag longtail data issues with titles and descriptions to enable users to take corrective action. We also improved the representation of organisation entities (adding missing organisations, cleaned up language and country information, typos). As a result, the organisation name is displayed additionally in its original language, more items are now linked to an organisation page, and more organisation pages have items.

Further, we completed case studies and recommendations that respond to challenges when addressing diversity, equity and inclusivity in our collections. DSI AGG also completed several projects using crowdsourcing and machine learning to enrich their metadata.

To support our capacity building efforts for digital transformation, we published guidelines for delivering training and development activities, updated our Events Toolkit, completed a feasibility report for the DEN Leadership programme for Europeana, published and promoted copyright management guidelines and case studies about the benefits and impact of publishing high-quality, open access heritage collections in Europeana. We also developed a pilot 'Learn with Us' section on Europeana Pro.

Besides several other training events, we organised an EAF outreach event (July 2022), and published the French Presidency Europeana conference report.

In this period, we surveyed aggregator satisfaction with Europeana (accredited aggregators) with an average satisfaction of 76.2%. We also measured the satisfaction of ENA members with the ENA with a good average satisfaction of 78% (an increased satisfaction to 2021 with a 67% satisfaction rate), and completed an accompanying impact assessment. Additionally, we completed the ENUMERATE survey 2022 via the ENUMERATE self assessment tool developed in partnership with the inDICEs project.

For academic and research audiences, we published Jupyter notebooks for data processing with Europeana newspaper data and CLARIN NLP (Natural Language Processing) tools as well as a screencast to guide possible users of the Jupyter notebooks. Further, we organised a training workshop to test the use of Jupyter notebooks for data processing of Europeana newspaper data. We also included full-text resources of the Europeana newspapers collection into the CLARIN's Virtual Language Observatory. Finally, we published the outcomes of the Research Grants Programme 202, the three awarded institutions delivered written outputs to disseminate the results of the events they organised around the theme 'Crowdsourcing and Research'.

We updated the EPF following the new Framework Management Template that includes a problem statement and an impact assessment, states core elements of the EPF together with the services and products in place for implementation, as well as processes for its management. We also published Europeana Impact Playbook Phase four dedicated to evaluating your impact assessment approach.

Finally, the Capacity Building for Digital Transformation Task Force as well as Diversity & Inclusivity Task Force published their outcomes on Europeana Pro.

Introduction

The periodic report describes work carried out under Europeana DSI-4 from 1 June 2022 (M46) until 31 August 2022 (M48) based on the implementation plan (B.1 deliverable M36).

The report is organised in four work packages (WP), one work package for each of the three priorities of the Europeana strategy 2020-2025[2]. 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 M36 are included in this periodic report. All implementation plan outcomes 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 the event of changes (e.g. 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 M36[4]
	Colour blue indicates the expected timeframe of the outcome
	Colour black indicates that an outcome was completed in the reporting period
%	Progress until end of current reporting period

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[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 efforts are added with 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
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
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. It focuses 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 and 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. This year, developments will continue to revolve around the implementation of the aggregation strategy[5]. We will speed up and enhance the reliability of the publishing process via Metis (objective 1.1.1.), support data providers in the testing of their data via the Metis Sandbox (objective 1.1.2.) and also invest in a fast-track for publishing data in Europeana (objective 1.1.3.).

Overview of outcomes: easy data publishing

Partner	Outcomes	Progress	Due date	Jun M46	Jul M47	Aug M48
Objective 1.1.1. Extend and maintain Metis						
EF, PSNC	Incremental media processing implemented	100%	Aug '22[6]	▦	▦	■
PSNC	eCloud data model reviewed and refactored	100%	Aug '22	▦	▦	■
PSNC	Data storage mechanisms in eCloud optimised	100%	Aug '22	▦	▦	■
EF, PSNC	System upgrades and performance are maintained (bugs fixing, infrastructure upgrades, refinement of existing features) - 15% of M46 - M48	Ongoing	-			
EF, PSNC	Notification available that warns Metis user if any records have tier 0	100%	Aug '22		▦	■
Objective 1.1.2. Enable Metis Sandbox						
EF, PSNC	Metis *Extended Sandbox* supports one additional data source for conversion to EDM	Done	Dec '21			

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[5] https://pro.europeana.eu/post/europeana-dsi-4-aggregation-strategy
[6] Implementation plan M36 due date is Jun '22. Adjusted due date for Aug '22 approved by EC.

EF	Tiers calculation module in Metis *Extended Sandbox* available	Done	Jan '22			
EF	Training resources (V1) for Metis Sandbox (for Aggregators) developed	Done	Feb '22			
EF	Feedback for further development of the Metis *Extended* Sandbox is collected	Done	Apr '22			
EF, PSNC	Metis *Extended Sandbox* data sources options for conversion to EDMs extended	Ongoing[7]	-			
EF	Metis Sandbox consolidated and maintained (bugs fixing, infrastructure upgrades, refinement of existing features) - 10% of M46 - M48	Ongoing	-			
Objective 1.1.3. Enable fast track publishing workflow						
EF, PSNC	Report on review and proposed amendments to the Aggregation Strategy roadmap (including progress update)	Done	Apr '22			
EF, PSNC	Validated Aggregation Strategy roadmap actions implemented	100%	Jul '22	▣	■	
EF	MS1 Report on progress on the aggregation strategy delivered (internal)	100%	Aug '22			■

Incremental media processing implemented - a longstanding issue is that some media source servers can't handle the volume of requests that they receive from the Europeana pipeline during media processing. This is also the reason why we couldn't scale up media processing (as this could exacerbate this issue), meaning that media processing remains the bottleneck in the aggregation pipeline. This work is meant to alleviate that issue by implementing a throttling mechanism. What this means is that the user can strictly limit the number of concurrent requests that can be sent for any given dataset, relieving the media servers (for which this is needed). With this mechanism in place, we can start scaling up media processing, allowing more media processing jobs to happen simultaneously, hopefully increasing the overall throughput of this step in the aggregation workflow.

eCloud data model reviewed and refactored - it was realised that the eCloud data model is designed for much more complexity than Metis needs. We have evaluated where the main points of overcomplexity lie, and selected some to work on in a bit more detail. The main achievement here is a great simplification of the Authorization and Authentication functionality in eCloud. This is not about authenticating or authorising individual Metis users (this is handled elsewhere) but rather for connecting clients (e.g. Metis would be a user in eCloud). In addition to making a real

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[7] The outcome was adjusted to "Ongoing". Adjustment was approved by EC.

difference in terms of the data model, it also resulted in a more optimal data storage (see the outcome below), which was part of the reason for giving this unit of work more precedence.

Data storage mechanisms in eCloud optimised - the Cassandra database that is behind eCloud and all its functionality has been gradually filling up, generating the need for some action to be taken. In order to mitigate this issue, we have optimised certain aspects of this data storage. We have been working on preventing big partitions (which helps with a more balanced server load), and we upgraded to the next version of Cassandra, which in itself reduces the required disk space noticeably. Another achievement in this area is the simplification of the Authorization and Authentication functionality mentioned above (under the eCloud data model outcome), which is estimated to save at least 150G of disk space per Cassandra machine.

Notification available that warns Metis user if any records have tier 0 - This notification now appears after processing a dataset in the Metis Sandbox, in case there were any records found with a tier value of 0. There are two notifications, one for the content tier and one for the metadata tier, each of which can fire individually. When this warning is displayed, the user can click on it to open it, and see a list of sample record IDs for which this tier value was found to be 0. These record IDs are clickable, taking the user to the detailed tier calculation report for that record. The objective is to make users aware that (some of) their records are of too low a quality to be published in Europeana, and that they may be in a position to take corrective steps.

System upgrades and performance are maintained (bugs fixing, infrastructure upgrades, refinement of existing features) (bi-annual update) - there were two Metis releases during this reporting period: versions 6 and 7. Besides the functionality reported on in previous periodic reports, the releases also contained code (quality) improvements, with a particular focus on increasing the coverage of our automated tests. There have also been the customary bug fixes and library updates. We have also worked on a minor functionality that will make it a bit easier to examine individual records, for instance if they give an error. Another small modification is that it is now possible to see which user started or ended a workflow, hopefully improving the coordination among the users.

Metis Extended Sandbox data sources options for conversion to EDMs extended (bi-annual update) - the feature is available and can be used by any provider. The feature is a generic one, meaning that any provider with an XML-based format could use it to convert from their format to EDM external using XSLT, a very mainstream technique. We have not been asked to add any additional data sources (that don't fit this paradigm).

Metis Sandbox consolidated and maintained (bugs fixing, infrastructure upgrades, refinement of existing features) (bi-annual update) - there were two releases during this reporting period: versions 2 and 3. Besides the functionality reported on in previous periodic reports, they also contained code (quality) improvements, the customary bug fixes and library updates. There have also been user experience improvements, some of which were prompted by actual user feedback. One specific improvement is that the Sandbox is now able to provide all sorts of

metrics about performance and throughput, which will not only allow us to better diagnose issues but also be instrumental in our performance tests.

Validated Aggregation Strategy roadmap actions implemented - the Aggregation Strategy roadmap update reported on a series of new actions that were added to the roadmap throughout DSI-4 Y4 (updates were largely motivated by user feedback). The following as been implemented:
- *User interface to submit datasets within the Metis Sandbox improved* - we have completely redone the dataset creation form, giving users a better one-screen overview rather than splitting it in various components.
- *General improvements of the Metis Sandbox user interface to make it more user friendly* - we have provided better copy functionality in the record reports so that users can more easily copy the record IDs they wish to look up. We have adjusted the wording of numerous labels and texts to create a more understandable and relatable user experience.
- *Improved user feedback in the Metis Sandbox* - the usage of the Metis Sandbox is increasing, we see it important to provide a way for users to provide feedback. We have implemented a 'helpdesk' option for users. Through a link in the application users are able to navigate to a Jira Helpdesk, set up to receive user-created tickets for bugs, feature suggestions and general remarks/requests for assistance. In addition to allowing the team to respond to the users in a structured and visible manner, this gives us an even better feeling for directions we can take in the area of continued application development.
- *Improved reporting about tier 0 in the Metis Sandbox* - reported above.

MS1 Report on progress on the aggregation strategy delivered (internal) - this document reports on the implementation of the Aggregation Strategy as set in 2020. In light of the technical developments of the past two years and the evolution of the strategic drivers which supported the strategy, it proposes new directions which should lead in the future to a reviewed version of the Strategy. These new directions inform the process and revision cycle which should accompany the further development of the Strategy and the technical directions which should be prioritised as part of a reviewed roadmap.

Risk assessment: easy data publishing

ID	Risk	Probability	Impact	Rate	Mitigation strategy	Change
~~R1.1~~	~~The work planned for DSI-4 Y4 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.~~	~~-~~[8]

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[8] The risk is no longer valid since all outcomes were completed.

| R1.2 | Too many data providers don't handle their OAI datestamps properly (i.e. according to the intentions behind the OAI standard), thus preventing us from gaining the expected performance benefits of incremental processing. | Medium (3) | Low (2) | 6 | 1) Raising awareness on the OAI specifications with aggregators; 2) An additional feature can be implemented that can detect changed records in a different way. This method would be prone to false positives (i.e. change detected where no change exists), but may perform better. | - |
| R1.3 | The storage space on our Casasandra servers runs out before we manage to put a sustainable deletion cycle in place. | Low (2) | Low (2) | 4 | A combination of emergency cleanups of old data and more (temporary) storage capacity. | - |

Task 1.2. Europeana website experience

Partners: EF and 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 extend 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 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 M46	Jul M47	Aug M48
EF	Europeana website usability and performance maintained (bugs fixing, security & software updates) - 20% of M46 - M48	Ongoing	-			
Objective 1.2.1. Extend user engagement features						
EF	About us page redesigned (implementation)	Done	Nov '21			
EF	Organisation pages available on Collections hub page	Done	Dec '21			
EF	Delete functionality for user account available	Done	Jan '22			

Party	Milestone/Deliverable	Status	Date			
EF	Classic portal decommissioned	Done	Mar '22			
EF	Homepage redesigned (implementation)	100%	Aug '22[9]	■	■	■
Objective 1.2.2. Deliver better search experience						
EF	Recommendations service (API and front end) is extended to support entity powered collections and user specific recommendations[10]	Done	Dec '21			
EF	New design for search filters implemented	Done	Feb '22			
EF	Update on Search Strategy roadmap	Done	Feb '22			
EF	New design for entity filters implemented	Done	Mar '22			
EF	Search by location/georeference criteria (indexing implementation) (M-F20)	Done	Apr '22			
EF	Tuning the weight of different fields in ranking (M-F8) (first experiments)	100%	Jun '22	■		
EF, AIT Vienna	New transcriptions are displayed and searchable live	100%	Aug '22	■	■	■
EF	Search widget for editorial content implemented similar to how the related entity collections appear in search	100%	Aug '22 (May '22)			
EF	MS2 Report on progress on the search strategy delivered (internal)	Not started	Aug '22			■
EF	Search relevance and performance maintained	Ongoing	-			
Objective 1.2.3. Extend multilingual reach						
EF	Multilingual search for the Spanish destination implemented and deployed	Done	Dec '21			
EF	First implementation and evaluation of the metrics and KPIs[11], focusing on entities	Done	Feb '22			
EF	Update on Multilingual Strategy roadmap	Done	Feb '22			
EF	Multilingual search for the Spanish destination further evaluated for technical quality and further improved and assessed strategically and technically for transposition to other languages	Done	Apr '22			

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[9] Implementation plan M36 due date is Jun '22. Adjusted due date for 15 Jul '22 approved by EC, and further extended after additional EC requests.
[10] The recommendation engine itself is developed by Europeana XX Generic Services project.
[11] KPIs here stand for targets for data quality or multilinguality we will start measuring and not KPIs we will report on.

EF	Prioritise normalisation of not-yet normalised tags (in original and dereferenced data)	100%	Jun '22	██		
EF	MS3 Report on progress on the multilingual strategy delivered (internal)	100%	Aug '22			██
EF	Maintain user interface translations in supported languages	Ongoing	-			

Europeana website usability and performance maintained (bugs fixing, security & software updates) (bi-annual update) - in this period we extensively tested the usability, visual styling and editorial copy of the homepage design. We continuously review the website looking for accessibility issues and bugs that need to be fixed. In every sprint we make sure to fix the most urgent issues we find.

Homepage redesigned (implementation)[12] - we implemented the new homepage design which communicates our unique value proposition inviting people to find and use Europe's digital cultural heritage. The new homepage also helps us achieve our strategic goals which are to increase the number of account holders and newsletter subscribers.

Tuning the weight of different fields in ranking (first experiments) - we have deployed on a test environment a feature that allows us to assign different weights to each metadata field used by the search index. This allows to rank higher the objects that match queries based on the most relevant metadata fields - for example when an object's title matches the query term. The setting up of these first experiments has provided us the opportunity to devise a technical solution to extend our Search API to do such tuning. Next to this, we have started exploring various configurations of weights.[13]

New transcriptions are displayed and searchable live - we have built a pipeline that allows for transcriptions that are contributed via the Annotations API (primarily coming from the Transcribathon platform[14]) to be integrated into the fulltext infrastructure which has also been redesigned and rebuilt to better deal with the dynamics of the data. By establishing this pipeline and integration with the fulltext infrastructure, it will allow the Europeana website to display transcriptions within the IIIF viewer, harmonising and improving the experience to the end-user. It will also allow the user to search and find items that relate to the transcriptions available on the platform. Besides the benefits to the end-user, the pipeline will facilitate operational administration and make us more flexible to accommodate new needs such as the provision of OCR.

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[12] https://www.europeana.eu/
[13] This is an example of an interesting weighting. Here we assign more weight to keywords appearing in the title of the item. {!edismax qf="title^5 proxy_dc_creator^1 proxy_dc_description^1 subject^1 text" pf="title^1 proxy_dc_creator^1 proxy_dc_description^1 subject^4 text" ps=2 tie=0.1}
[14] https://europeana.transcribathon.eu/

MS2 Report on progress on the search strategy delivered (internal) - in August 2022, we completed a document that reports on progress of actions of the Search Improvement Strategy[15].

Search relevance and performance maintained (bi-annual update) - in the past six months we have made progress on various streams of work that (1) brought new search functionality to users of Europeana.eu (Search widget for editorial content); (2) developed new search functionality on the Search API, which could be later deployed on Europeana.eu or other services (related to the outcomes indexing implementation of Search by location/georeference criteria; and first experiments on Tuning the weight of different fields in ranking); and (3) improved the existing search functionality by significantly enhancing the data or metadata it is based on (related to the outcomes Normalisation of dates in the metadata; New transcriptions are displayed and searchable live; Entity collection is maintained, improved and expanded; Enrichment with new entities for new/updated items available; and Solr and Mongo reindexed) - reported on in other parts of this report or in earlier periodic reports.

Prioritise normalisation of not-yet normalised tags (in original and dereferenced data) - we have examined the tags that indicate the language of the metadata that Europeana gathers from its partners or third-party sources. Running our current normalisation process has shown that it is possible to extend the earlier normalisation to fix some more cases where tags appear in a non-standard way or using different standards (for example "fre" vs. "fr"). The most significant of these possible gains, however, concern datasets that have been ingested prior to the deployment of Metis in our infrastructure, therefore they have never been normalised. Fixing these datasets in our production environment would require efforts that were not compatible with the commitments of the current implementation plan. Instead, we have embarked on applying the extended normalisation for the gathering of training metadata for the Europeana Translate project. This re-scoped effort proves technically easier to do than in Europeana's production database, it will provide us a clearer picture on the impact of this work and will ensure that our project partners (and ultimately the eTranslation service) can already benefit from it. We will reassess the needs after this alternative activity has been completed.

MS3 Report on progress on the multilingual strategy delivered (internal) - in August 2022, we completed a document that reports on progress of actions of the Multilingual Strategy[16].

Maintain user interface translations in supported languages (bi-annual update) - the website is fully available in the official 24 EU languages. We translate all features before they are released using automated translation services and validate some translations with native speakers placing particular attention on Greek and Polish translations as we see most errors in those automated translations.

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[15] https://pro.europeana.eu/post/europeana-search-strategy
[16] https://pro.europeana.eu/post/europeana-dsi-4-multilingual-strategy

Reporting metrics: Europeana website experience

No.	Description	Measured by	Frequency	Target	Jun 2022	Jul 2022	Aug 2021	Aug 2022
KPI 1.1	Traffic to Europeana website	Number of visits per month	Monthly	**500,000**	346,100	315,600	398,029	364,300
KPI 1.2	Returning visitors to Europeana website	Percentage of returning visitors	Monthly	**15%**	7.19%	6.90%	12.58%	6.73%
KPI 1.3	Satisfaction rate for Europeana website	Average satisfaction on a 5-point Likert scale[17]	Bi-annual	**75%**	-	78%	-	-
KPI 1.4	Downloads on the Europeana website	Total number of downloads (cumulative)	Monthly	**240,000**	154,707	166,075	120,891	179,661
RM 1.1	New visitors to the Europeana website	Total number of new visitors per month	Monthly	-	321,208	293,924	301,710	339,766
RM 1.2	Visit duration on the Europeana website	Average time spent per visit	Monthly	-	02:08	02:07	01:21	02:07
RM 1.3	Page views on Europeana website	Average amount of pages viewed per visit	Monthly	-	2.47	2.34	2.64	2.27
RM 1.4	Click-throughs to partner websites	Total number of click-throughs (cumulative)	Bi-monthly	-	-	164,040	181,182	175,989
RM 1.5	User feedback for the Europeana website	Total number of user feedback received via feedback button (cumulative)	Bi-monthly	-	-	632	959	661

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[17] 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%).

We continue to see a lower user return rate (compared to the previous year) as a result of reduced tracking capabilities. More information is available in the C.2/C.3 Users and usage reports[18]. The user satisfaction survey for the Europeana website, completed in July 2022 measured a good average satisfaction of 78%.

Risk assessment: Europeana website experience

ID	Risk	Probability	Impact	Rate	Mitigation strategy	Change
R1.4	Traffic on Europeana website (KPI 1.1) is below target	Low (2)	Medium (3)	3	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; and improving the multilingual experience on the website	-
R1.5	Returning visitors on Europeana website (KPI 1.2) is below target: product/content not good enough to encourage people to return	Very low (1)	Very low (1)	1	Optimising the browsing and viewing experiences; optimising the searching experiences; optimising multilingual experience; extending user engagement features; expanding editorials with seasons, exhibitions; promotions and activities engaging users	-
R1.6	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	-
R1.7	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.	-

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[18] Available on the Europeana DSI-4 project page in the document section.
https://pro.europeana.eu/project/europeana-dsi-4

Task 1.3. Reliable platforms

Partners: EF and 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).

Overview of outcomes: reliable platforms

Partner	Outcomes	Progress	Due date	Jun M46	Jul M47	Aug M48
Objective 1.3.1. APIs and infrastructure are high-performing						
EF, AIT Vienna	Full disaster recovery test completed[19]	Done	Mar '22			
EF	Recommendation service is fine-tuned and production ready	100%	Aug '22[20]	███	███	███
EF	Alternative hosting platforms investigated	100%	Jun '22	███		
EF	Solr and Mongo reindexed[21]	Ongoing	-			
EF, AIT Vienna	Core APIs are maintained (incidents, bugs, technical debt improvements, software updates, releases) - 25% of M46 - M48	Ongoing	-			
EF	Infrastructure is maintained (bugs, attacks, clean-ups, upgrades, back-ups) - 50% of M46 - M48	Ongoing	-			
EF	Products and services are IDPR compliant	Ongoing	-			

Recommendation service is fine-tuned and production ready - since September 2021, we have been working on a set-up that would allow us to guarantee production level requirements of the recommendations service such as redundancy and scalability, at the same time, as we would make updates to the recommendation engine. Due to several set-backs with a second service (delivered by a project partner in Europeana XX[22]) used to compute the embeddings vectors which are the "fuel" for the recommendation engine, we have reduced the scope to be able to make a single update to the engine and perform this task manually as opposed to a fully automated solution. Even reducing the scope, the lack of stability and poor performance prevented us from running the update. A new version of the API was delivered in the last week of August which allowed us to lift all the mentioned blockers and we were able to run a manual

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[19] This outcome fed into C.4 Stress and disaster recovery test reports (March 2022).
[20] Implementation plan M36 due date is Jun '22. Adjusted due date for Aug '22 approved by EC.
[21] Outcomes in other tasks require a reindexing activity. The planning will be aligned with those outcomes.
[22] https://pro.europeana.eu/project/europeana-xx

update. The update of the recommendations is currently being run on the 60 millions Europeana records using three deployments instances of the API. After the update the Europeana website will have up-to-date recommendations, meaning recommendations based on the current published data instead of recommendations based on the data in 2020.

Alternative hosting platforms investigated - the Europeana Website and the Europeana APIs have now been migrated to a new Kubernetes cluster in order to improve the performance of the services and mitigate the stability issues encountered with the previous Cloud Foundry environment. In addition, in June 2022 our infrastructure provider IBM made public the news of the deprecation of Cloud Foundry[23]. We will move the remaining infrastructure to Kubernetes in the coming months.

Solr and Mongo reindexed (bi-annual update) - early July 2022, we have completed the re-enrichment and indexing of the full Europeana database. This resulted in the following benefits:
- Mislabelled 3D records have been re-labeled and tiers for 3D recalculated.
- Records with location information can now support enhanced geospatial querying
- The Entity Collection has been fully updated, bringing the following:
  - >6 million more items are linked to an Organisation page
  - 997 more Organisation pages have items
  - ~13 million more items are now linked to a Topic page (when they weren't before)
  - >19 million more links to new Topic pages[24]
  - >1 million more links to new Person pages

Core APIs are maintained (incidents, bugs, technical debt improvements, software updates, releases) (bi-annual update) - besides the improvements and fixes for the fulltext infrastructure, entity related APIs and recommendation service which are reported in other sections, we have also dedicated effort to the Search & Record API, User Sets API, Annotations API, and Auth Service. For the Search & Record API, we have improved the support for translations addressing a number of edge cases and make it able to configure other translation services in preparation for the work happening in Europeana Translate; we have also improved the sorting in search to give more precedence to content with higher EPF tiers; we made it possible to configure and test field boostings using the API; and finally, we prepared it to be deployed in Kubernetes. For the User Sets API, we have improved the methods that were supporting the listing of galleries in the portal and made a first implementation of the publication workflow for galleries. For the Annotations API, we have implemented the call to action workflow for Transcribathon and made several improvements to the workflow to support the submission of subtitles and transcriptions and its integration with the fulltext infrastructure, including the ability to extract statistics and monitor the content being made available in the service. Finally, for the Auth Service, we have upgraded the software and investigated and resolved performance issues resulting from the upgrade, and prepared it for deployment in the Kubernetes infrastructure.

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[23] https://cloud.ibm.com/docs/cloud-foundry-public?topic=cloud-foundry-public-deprecation
[24] For example: https://www.europeana.eu/en/collections/topic/1843-basilica

Infrastructure is maintained (bugs, attacks, clean-ups, upgrades, back-ups) (bi-annual update) - we investigated and resolved an issue with our centralised logging service (ELK). A plan has been established to prevent, as much as possible, future issues from happening and to reduce their impact. The C.4 Part 1 Stress test report was updated with the results of the stress tests run for the Search and Records APIs in the new Kubernetes cluster. These tests allowed us to find the ideal memory and cpu allocation configuration for the production Kubernetes cluster. In addition, we designed and built the set up for running performance tests on the Metis Sandbox. We also performed a series of scans to assess the security vulnerability of our services and network. The scans focused on ports and web servers. While no major issues were identified, we obtained information that will help us reinforcing security for some applications in the future. SSL certificates requiring updates identified during the scans were updated. The C.4 Part 2 Disaster recovery and transfer procedure report was updated to reflect the latest status of our infrastructure in terms of hosting environments.

Products and services are IDPR compliant (bi-annual update) - we have made progress in ensuring that our products and services are IDPR compliant and that they respect the standards set by the European Commission. In particular, we have put in place various new privacy statements using the templates provided by the European Commission (for events, surveys, contact points and newsletters), we have reconsidered the use of certain third-party tools, analysed their compliance, and effectively switched to other providers. Finally, we have set up a personal data protection cross-team that will effectively and consistently coordinate decision-making and implementation of IDPR compliance requirements across our activities.

Reporting metrics: reliable platforms

No.	Description	Measured by	Frequency	Jun 2022	Jul 2022	Aug 2021	Aug 2022
RM 1.6	Response time of Europeana website	Average time (seconds) for single record per month	Monthly	0.95	1.7	1.1	1.8
RM 1.7	Uptime of Europeana website	Average in % for single records per month	Monthly	99.97	99.91	99.86	99.84
RM 1.8	Response time of APIs (all)	Average response time (seconds) per month	Monthly	0.17	0.15	0.17	0.17
RM 1.9	Uptime of APIs (all)	Average in % per month	Monthly	100	99.98	99.98	99.91
RM 1.10	Response time of Europeana Pro	Average response time (seconds) per month	Monthly	1.07	1.17	0.88	1.08

| RM 1.11 | Uptime of Europeana Pro | Average in % per month | Monthly | 100 | 99.93 | 100 | 99.92 |
| RM 1.12 | Uptime of Metis | Average in % per month | Monthly | 100 | 100 | 100 | 100 |

Risk assessment: reliable platforms

ID	Risk	Probability	Impact	Rate	Mitigation strategy	Change
R1.8	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, 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 collections and stories (objective 1.4.1.). Through communication and promotion, EF will bring this material to the attention of our audiences, drive traffic to the Europeana website, and engage with digital culture (objective 1.4.2.). Activities with educational communities will cultivate 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 M46	Jul M47	Aug M48
Objective 1.4.1. Deliver high-quality editorial features						
EF	Europeana Sport season content[25] published and promoted	Done	Sep '21			
EF	Black History Month (autumn season)	Done	Oct '21			
EF	Women's History Month	Done	Mar '22			
EF, DSI AGG	Editorial content (exhibitions, blogs and galleries)[26] published and promoted	Ongoing	-			

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[25] Editorials from the Europeana Sport Generic Services project contributed to this outcome
https://pro.europeana.eu/project/europeana-sport
[26] Editorials from (Europeana) Generic Services projects contribute to this outcome.

EF, DSI AGG	Stories page[27] and new feature pages[28] published and promoted	Ongoing	-			
EF	New European Bauhaus[29] content published	Ongoing	-			
EF	European Year of Youth content published	Ongoing from Jan 2022	-			
EF	Exhibition: 'The Jean Monnet House: Creating a home for Europe' (European Parliament Archives)	100%	Jun '22	■		
EF	Exhibition: 'The images that shaped Europe' (Visual Contagions project)	100%	Jun '22	■		
EF	Exhibition: 'When Walls Talk!' (House of European History)	100%	Jul '22	🟦	■	
EF	Exhibition: 'Mass media and propaganda in 20th century Europe' (Subtitled GS project)	100%	Aug '22	🟦	🟦	■
Objective 1.4.2. Communication and dissemination to European citizens						
EF	GIF IT UP organised	Done	Oct '21			
EF	Black History Month promoted	Done	Oct '21			
EF	Women's History Month promoted	Done	Mar '22			
EF	Digital Storytelling Festival promoted	Done	May '22			
EF	Newsletter and social media posts (Facebook, Twitter, Instagram, Pinterest) published[30]	Ongoing	-			
Objective 1.4.3. Engage with educational communities						
EuroClio	Historiana learning resources support different media types (including audio and audiovisual sources)	Done	Dec '21			
EF	Annual Open Education Week: contribution added	Done	Mar '22			
EF	All Digital Week campaign: contribution added	Done	Mar '22			
EUN	4 runs and language versions of the Digital Education with Cultural Heritage MOOC launched	Done	Mar '22			
EuroClio	Training session on partner pages organised	Done	Apr '22			

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[27] https://www.europeana.eu/stories
[28] For example: https://www.europeana.eu/pandemics
[29] https://www.europeana.eu/new-european-bauhaus
[30] Editorial outcomes of GS projects are promoted.

EUN	Europeana Education competition finalised	Done	May '22			
EuroClio	Webinar series for Historiana users (4 webinars organised)	Done	May '22			
EuroClio	Train-the-trainers sessions organised	100%	Jul '22	■	■	
EuroClio	15 multilingual Historiana eLearning activities produced	100%	Aug '22	■	■	■
EUN	55 new multilingual learning scenarios produced and curated to publish in the Teaching with Europeana blog	100%	Aug '22	■	■	■
EuroClio	Dashboard on Historiana for partners to gain insights into usage available	100%	Aug '22	■	■	■
EF	Blogs and social media posts (LinkedIn, Facebook, Twitter) published	Ongoing	-			
EF	Europeana Education community[31] supported	Ongoing	-			
EF	Open GLAM and education survey[32]	100%	Jul '22	■	■	
EF	Built with Bits Brussels Kick-off	100%	Jun '22	■		
Objective 1.4.4. Attract API users and grow data usage						
EF	API outreach strategy updated (internal)	Done	Jan '22			
EF	API libraries, FAQs, and tutorials maintained and updated	100%	Aug '22	■	■	■
EF	Europeana API services presented at relevant CH events	Ongoing	-			
EF	1:1 support and changes/improvements of Europeana API services communicated to users	Ongoing	-			

Editorial content (exhibitions, blogs and galleries) published and promoted (bi-annual update) -
In this period almost 100 new editorial pieces were published and promoted, including 7 online exhibitions on topics including Napoleon, mass media and propaganda in Europe, Jean Monnet, and historical Olympic and Paralympic athletes. Curating partners included the European Parliament Archives, House of European History and the University of Geneva. The exhibitions achieved a high average audience satisfaction rate of 85%.

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[31] https://pro.europeana.eu/page/europeana-education
[32] https://oeg.centrumcyfrowe.pl/index.php/336775?lang=en

Stories page and new feature pages published and promoted (bi-annual update) - in this period, we created and promoted the following new feature pages: Making Culture[33], Disability Heritage[34], Middle Ages[35], and Broadcasting Europe[36].

New European Bauhaus content published (bi-annual update) - no new editorial content was published on the website in this period.

European Year of Youth content published (bi-annual update) - no new editorial content was published on the website in this period.

Exhibition: 'The Jean Monnet House: Creating a home for Europe'[37] (European Parliament Archives, all 24 official EU languages) - this exhibition was organised jointly by the Archives Unit and the Directorate for the Library and Knowledge Services of the European Parliament, and published in partnership with EF. It chronicles the life of a founding father of the European Union, Jean Monnet (1888-1979), who dedicated his life to bringing Europeans together and establishing unity and peace in Europe and across the world.

Exhibition: 'The images that shaped Europe'[38] (Visual Contagions project[39], English only) - created by the Visual Contagions project together with the students of the academic course "La mondialisation culturelle au prisme du numérique" held in 2021/22 at the University of Geneva, this exhibition presents this bigger picture: a study of European globalisation through images. It explores some of the most-used images and visual production techniques seen in Europe between the 1890s and 1990s, a period that witnessed the emergence of a new visual economy.

Exhibition: 'When Walls Talk!'[40] (House of European History, English only) - this online exhibition is a digital version of the "When Walls Talk!" exhibition presented at the House of European History in Brussels (April - November 2022). It examines how posters have voiced both political and personal expression, from propaganda to protest, and from culture to commentary, for over 150 years.

Exhibition: 'Mass media and propaganda in 20th century Europe'[41] (Subtitled GS project, English only) - this exhibition was created as part of the project Europeana Subtitled, which aims to increase the use of audiovisual media heritage by both professional and non-professional audiences through closed captioning and subtitling high-quality audiovisual materials. The exhibition highlights

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[33] https://www.europeana.eu/making-culture
[34] https://www.europeana.eu/disability-heritage
[35] https://www.europeana.eu/middle-ages
[36] https://www.europeana.eu/broadcasting-europe
[37] https://www.europeana.eu/exhibitions/the-jean-monnet-house
[38] https://www.europeana.eu/exhibitions/the-images-that-shaped-europe
[39] https://www.unige.ch/visualcontagions/
[40] https://www.europeana.eu/exhibitions/when-walls-talk
[41] https://www.europeana.eu/exhibitions/mass-media-and-propaganda-in-20th-century-europe

important examples of political propaganda and disinformation from the 20th century that help us reflect on the world today.

Digital Storytelling Festival (intermediate update) - Digital Storytelling Festival is an international creative contest that brings people and cultural heritage together, organised in partnership with The Heritage Lab, India. The Festival's 2022 edition ended at its Closing Event, held online on 4 August, when this year's winning entries[42] were presented and discussed with entrants, jurors, and the audience. Storytelling tips and useful resources were also highlighted during the webinar, Europeana's Stories page was promoted to participants, and a wrap-up email sent to the 900+ people who registered for this year's Festival.

Newsletter and social media posts (Facebook, Twitter, Instagram, Pinterest) published (bi-annual update) - The newsletter currently reaches over XXX subscribers[43]. A detailed overview of content and usage on social media was provided as part of the C.2/C.3 Users and usage report M45 (May 2022).

Train-the-trainers sessions organised[44] - EuroClio's certified Historiana trainers have hosted several national trainings during DSI-4 Y4:
- Training courses in Czechia: two intensive courses on "Historiana, a playground for Teachers" in Czechia (November 2021 and April 2022): the trainings were co-organised with the Institute for the Study of Totalitarian Regimes[45] and saw 20 teachers in the first iteration and 13 in the second iteration completing the full course; and one training course at the summer school organised by the same institute (August 2022).
- a one-day in person training in Tbilisi, Georgia (June 2022): the training was organised in cooperation with the Georgian Association of History Educators[46] and an IB school in the city. 27 teachers joined the in-person training, including a teacher who has expressed the wish to become a certified Historiana trainer herself.
- training courses in Slovakia : an online training was co-hosted by the Centre for Education and Innovations[47] (June 2022) and a training course at the summer school organised by the same institute (August 2022).

15 multilingual Historiana eLearning activities produced - As a result of the national trainings and the training sessions on partner pages run over the year, there are now 53 new multilingual e-learning activities on Historiana. Multilinguality is provided either by translating existing eLearning activities or creating new ones. The Victor-E[48] project created 16 eLearning activities in

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[42] https://medium.com/digital-storytelling-festival/meet-the-winners-of-the-2022-digital-storytelling-festival-914d7623e471

[43] For example: https://mailchi.mp/europeana/animating-culture-gif-it-up-is-back-520572?e=[UNIQID]

[44] https://pro.europeana.eu/post/euroclio-s-new-training-programme-brings-historiana-to-educators-across-europe

[45] https://www.ustrcr.cz/en/

[46] https://www.facebook.com/Georgian-Association-of-History-Educators-290228457853388/?ref=page_internal

[47] https://www.facebook.com/cedin.sk/

[48] https://www.victor-e.eu/home

English[49]. From those, the total of 16 have been translated in Spanish, five in Bulgarian and five in German. The Institute for the Study of Totalitarian Regimes created seven new eLearning activities in Czech and one in English. The Georgian Association of History Educators translated two pre-existing eLearning activities into Georgian and the Centre for Education and Innovations in Slovakia, translated one pre-existing eLearning activity into Slovak.

55 new multilingual learning scenarios produced and curated to publish in the Teaching with Europeana blog - Since September 2021, a total of 94 new learning scenarios have been created in several languages.
- 50 of them have been produced by participants of the Digital Education with Cultural Heritage MOOC (15 in Croatian, 10 in Greek, 10 in Italian, and 15 in English).
- 34 more in English have been produced by Ambassadors and User group teachers, and
- 10 from museum educators.

More than 25 from this pool have been published already and the others will be added to the blog over the coming months for audience engagement. In addition, 25 Stories of Implementation were produced over the academic year[50] .

Dashboard on Historiana for partners to gain insights into usage available - The dashboard gives the partner an overview of the number of items that it has. You can see in one glance how many narratives, collections, sources, tags, shares, and team members a partner has. The numbers are updated directly. Having this information ready, helps partners with measuring impact, reporting and communication. Partners, who are logged in, can access the dashboard by going to MyHistoriana, and then clicking on Dashboard. Or by directly going to historiana.eu/my/dashboard[51].

Open GLAM and education survey[52] - in July 2022, we supported the data-gathering for research on the theme "Open GLAM & education. Teacher's and educator's perspective on digital culture resources"[53] . Some highlights of the survey results are listed below:
- Images (95%) and videos (89%) are most frequently used for educational purposes.
- 71% teachers and educators admit that they use the digital resources and online collections provided by GLAM institutions at least several times a month.
- Europeana platform is used by 38%, but above Google Arts and Culture (33%).
- Teachers and educators are in agreement (80%+) that digital materials and resources are helpful.
- Among the disadvantages of using GLAM materials, users claim that they are sometimes hard to find (40%), require registration process (34%) or they are spread in many different

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[49] https://www.victor-e.eu/page/learning-activities
[50]
https://pro.europeana.eu/post/digital-cultural-heritage-in-education-a-bridge-to-connect-formal-and-non-formal-education
[51] https://historiana.eu/my/dashboard
[52] Survey results available on request.
[53] https://centrumcyfrowe.pl/en/projekty/openglamandeducation/

places (32%). There are some concerns about the quality of materials: covering only part of the material (33%) or not meeting students' needs (26%).

EF also attended a brainstorming meeting organised by the Centrum Cyfrowe, Poland with experts from their organisation, EuroClio and Creative Commons to shape together valuable recommendations for policymakers and all stakeholders relevant to Open Culture and Open Education. These recommendations will be made public in the Centrum Cyfrowe Open Education Conference in September 2022.

Built with Bits Brussels, Kick-off[54] - The event took place on Saturday 11 June as part of the Festival of the New European Bauhaus. It was organised as a citizen lab at the House of European History in Brussels. More than 40 people of all ages, backgrounds and experiences gather together for two hours to bring ideas to approach problems in their own towns and cities based on the principles of inclusivity, diversity and aesthetics. The best ideas will form part of a mentoring programme for students of LUCA School of Arts and KU Leuven, in which students will be supported to further develop the ideas and produce a virtual version of a real space. The mentoring program will start next school period.

Blogs and social media posts (LinkedIn, Facebook, Twitter) published (bi-annual update) - in the reporting period, the Europeana Education group on Facebook saw 270+ posts, 60+ comments and circa 1,900 reactions. The most popular post reached more than 6,300 people and was shared 14 times. It summarises the Europeana Educators annual workshop[55]. The Education LinkedIn group saw a total of 21 posts with 8,750+ views. One of the most popular posts promoted the reuse of Europeana materials[56].

Europeana Education community supported (bi-annual update) - the most important community effort that kept the group engaged during the reporting period is the Built with Bits programme and its follow up with the new Built with Bits 2 (Brussels). Many articles have been published on Pro explaining and promoting the initiative[57].

API libraries, FAQs, and tutorials maintained and updated - in this reporting period the API documentation was maintained with minor amendments to the Harvesting and Downloads documentation page[58]. We prepared documentation relating to the PyEuropeana Python Library for Europeana's APIs, for which documentation and tutorials were created in anticipation of promoting it through Europeana Pro.[59]

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[54] https://pro.europeana.eu/post/built-with-bits-brussels-kicks-off-at-festival-of-the-new-european-bauhaus
[55] https://www.facebook.com/groups/EuropeanaEducation/permalink/1659640887750878/
[56] https://www.linkedin.com/feed/update/urn:li:activity:6920374687088680960?utm_source=linkedin_share&utm_medium=member_desktop_web
[57] https://pro.europeana.eu/search?q=built+with+bits
[58] https://pro.europeana.eu/page/harvesting-and-downloads
[59] https://rd-europeana-python-api.readthedocs.io/en/stable/#

Europeana API services presented at relevant CH events (bi-annual update) - a major impact of presenting Europeana's API services has come through presenting the API during university courses to teach students how to develop use cases with API use in mind, and to give workshops on how to start using APIs for cultural heritage research. For example, Europeana's APIs were presented to the Leiden University Museum Studies students, which resulted in multiple research projects using Europeana's APIs as a source for research and re-use of heritage.

1:1 support and changes/improvements of Europeana API services communicated to users (bi-annual update) - Data providers and aggregator partners were kept up-to-date with the changes in our entity collection and updates to the query-based thematic collections, which changed substantially due to the reindex in July 2022. Researchers and students were informed of updates to normalisation of tags and entities, which opened up new research possibilities using Linked Open Data terms.

Communication and dissemination activities

Partner	Name of event	Activity	Location	Date
EF	Educators Ambassadors workshop[60]	Face-to-face workshop with 35 Europeana educators, including the 14 Europeana Ambassadors and the 21 winners of the Europeana Education Competition 2022	Brussels	10-11/06/2022
EF	Built with Bits Brussels Kick-off	Citizen Lab to bring ideas to improve local issues related with the NEB principles	Brussels	11/06/2022
eTwinning	New European Bauhaus and STEM[61]	The Annual Theme Group New European Bauhaus and the STEM eTwinning Featured Groups partner to deliver a webinar on collaborative virtual spaces.	Online	17/06/2022
Centrum Cyfrowe	Brainstorming meeting for the 'Open GLAM & education' research recommendations	Two hours meeting to present the results of the survey run over a month in June 2022 and prepare policy recommendations	Online	20/07/2022
National Library of Moldavia	National Digital Library MOLDAVICA	The training Centre for the Librarians within the National Library of Moldavia organised a training on the National Digital Library MOLDAVICA, promoting Europeana resources in educational activities of the library to more than 100 librarians.[62]	Online	17/08/2022

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[60] https://teachwitheuropeana.eun.org/updates/europeana-workshop-2022/
[61] https://www.youtube.com/watch?v=eWKcvKRFqIk
[62] https://www.facebook.com/media/set?vanity=cfpc.bnrm&set=a.3153549964908701

EF	Digital Storytelling Festival 2022 - Closing Event	Concluding event to mark the end of this year's Digital Storytelling Festival	Online	04/08/ 2022

Reporting metrics: discoverability of digital cultural content

No.	Description	Measured by	Frequency	Target	Jun 2022	Jul 2022	Aug 2021	Aug 2022
KPI 1.5	Satisfaction rate for exhibitions	Average satisfaction on a 5-point Likert scale (cumulative)[63]	Monthly	**75%**	87%	84%	89%	87%
KPI 1.6	Reach on social media	Total number of impressions on social media (Facebook, Pinterest, GIPHY, Instagram, Twitter) (cumulative)	Monthly	**450 million**	393.1 million	420.3 million	592.2 million	450.3 million
KPI 1.7	Learning resources for education[64]	Total number of resources using Europeana data (cumulative)	Monthly	**50**	155	155	181	155
KPI 1.8	External learning environments for education	Total number of integrations of Europeana educational offers (cumulative)	Monthly	**5**	4	4	4	4
KPI 1.9	Satisfaction rate of educational communities	Average satisfaction on a 5-point Likert scale (cumulative)	Monthly	**75%**	91%	91%	87%	91%
RM 1.13	Editorial outcomes: exhibitions	Number of exhibitions created (cumulative)	Bi-Monthly	-	-	13	9	14

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[63] 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%).
[64] Metric excludes multilingual resource variations.

RM 1.14	Editorial outcomes: blogs	Number of blogs created (cumulative)	Bi-Monthly	-	-	-	115	149	122
RM 1.15	Newsletter subscribers	Total number of subscribers	Bi-Monthly	-	-	-	49,526	50,155	49,340
RM 1.16	Social media engagement	Total number of likes, shares, comments per month (Facebook, Twitter, Pinterest, Instagram)	Monthly	-	173,555	160,046	258,422	185,302	
RM 1.17	Social media followers/fans	Total number on social media (Facebook, Twitter, Pinterest, GIPHY, Instagram)	Monthly	-	234,322	235,081	227,983	237,125	
RM 1.18	Educators actively involved in creating learning resources (EUN)	Total number of educators (cumulative)	Once a year	-	-	-	1,197	1,599	
RM 1.19	Countries coverage of contributing educators (EUN)	Total number of countries (cumulative)	Once a year	-	-	-	28	43	
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	-	-	10,096	8,545	10,225	

RM 1.22	API usage (REST API)	Number of API users that exceeded the average of 5 calls a day per month	Monthly	-	53	49	49	62
RM 1.23	API usage (REST API)	Number of API users that were active for more than 5 days in each month	Monthly	-	47	36	47	58
RM 1.24	API usage (REST API)	Total number of requests per month (external traffic)	Monthly	-	9.7 million	14.4 million	15.7 million	17.0 million
RM 1.25	API users (REST API)	Total number of API users per month	Monthly	-	144	138	153	152
RM 1.26	API sign-ups (REST API)	Number of API sign-ups per month	Monthly	-	44	46	44	49

Between Jun-Aug 2022 we published 17 new blogs[65] and four new exhibitions[66].

Compared to 2021 we see decreased numbers for social media engagement in 2022. This is due to the newly introduced privacy regulations on the platforms that had an impact on our activities and reporting. More information is available in the C.2/C.3 Users and usage reports[67].

In August 2022, we counted 1,599 educators from 43 countries that were actively involved in creating learning resources in DSI-4 Y4. The number of countries engaged is significantly higher than in Y3 (with 28 countries). We assume that the MOOC organised in 4 languages opened the opportunity to get more countries engaged (in Y3 the MOOC was only organised in English).

In DSI-4 Y4 besides the one integration reported earlier (EUscreen[68]) we saw four new or updated integrations of educational offerings in external learning environments. Three of them, on MI.MOMO Faro platform[69], the European Schools intranet, and the ANIDA online magazine[70] of

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[65] https://www.europeana.eu/en/blog
[66] https://www.europeana.eu/en/exhibitions/a-century-of-technology
[67] Available on the Europeana DSI-4 project page in the document section. https://pro.europeana.eu/project/europeana-dsi-4
[68] https://blog.euscreen.eu/euscreen_education/
[69] https://mimomofaro.pt/
[70] https://redplanea.org/recursos/revistas/anida-2/

the PLANEA network[71] are new and one was a significant update on Unsplash with the addition of two new major collections.

Platform	Type of integration	Status
MI.MOMO Faro	Adoption of the learning scenario methodology[72] and integration of 18 learning scenarios using Europeana resources and content in Portuguese[73]	New
European Schools intranet and online curricula	Adoption of the learning scenario methodology progressively in the coming academic years for all the European Schools and translated in three languages[74]	New
PLANEA	Integration of the 'Built with Bits' methodology in the annual academic online magazine ANIDA and centre of educational resources for the network PLANEA[75]	New
Unsplash	Two new thematic collections on Unsplash: Black History month[76] and Art by Queer artist[77]	Update

Risk assessment: discoverability of digital cultural content

ID	Risk	Probability	Impact	Rate	Mitigation strategy	Change
R1.9	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.	-
R1.10	Reach of Europeana data on social media: changes to the algorithms and pricing on social media platforms may impact our reach; stronger privacy measures across the EU make targeting on social media challenging, this might lead to a decrease in reach	High (4)	High (4)	16	Adaptation and diversification of channels, tools and platforms used (especially the channels providing direct contact with users such as email are helping to increase independency from platforms)	-

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[71] https://redplanea.org/que-es-planea/
[72] https://mimomofaro.pt/wp-content/uploads/2021/02/CA_MiMoMoFaro_Faro_2027_Pereira_2021.pdf
[73] https://mimomofaro.pt/cenarios-de-aprendizagem/
[74] https://bit.ly/3O4TEvr
[75] https://archive.org/details/anida-02-destripando-la-tecnologia-para-crear/page/n47/mode/2up
[76] https://unsplash.com/collections/EmktK16UBm0/black-history-month
[77] https://unsplash.com/collections/m02oS7-hKO8/art-by-queer-artists

R1.12	Complete new strategy involving CHIs professionals in the education initiative. Some activities may have lower impact than expected.	Medium (3)	Low (2)	6	Continuation of the strategy in DSI-4 Y4	-
R1.13	Contact info of API key holders is outdated or API key holders are not interested in 1:1 communication and support, leading to loss of contact with API user group	Low (1)	Medium (3)	3	follow up with current API key holders to update information, ensure engaging 1:1 outreach campaigns	-
R1.14	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.	-

Due to issues with the ELK infrastructure we were not able to record the complete metric for the total number of API requests per month (external traffic) (RM 1.24) for Jun/Jul 2022 resulting in lower numbers shown for that period. The issue was resolved and the August figures are again showing the actual numbers.

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, EF and DSI AGG will continue to work with data providers to raise the quality of content and metadata (objective 2.1.1.). We will also maintain and further develop our data and publishing frameworks and standards (objective 2.1.2.) while influencing global interoperability and technological innovation through our networks (objective 2.1.3.).

Overview of outcomes: quality assured data

Partner	Outcomes	Progress	Due date	Jun M46	Jul M47	Aug M48
Objective 2.1.1. Raise the quality of content and metadata						
EF	Publishing guide is updated with additional guidance on 3D requirements for content[78]	Done (Nov '21)	Jan '22			
EF	Report on actions taken to re-engage with inactive partners (internal)	Done	Feb '22 Aug '22			■
EF, DSI AGG	MS4 DSI AGG annual work plan review (internal)	Done	Feb '22 Aug '22			■
EF	Normalisation of dates in the metadata implemented	100%	Jul '22[79]	▨	■	
EF	Mislabelled 3D content corrected in the Europeana database	100%	Jun '22[80]	■		
EF	Precision of the content tier measurement of 3D content in Europeana is improved	100%	Jun '22[81]	■		
EF, DSI AGG	Recommendations for identifying and managing diversity in cultural heritage data (internal)	100%	Aug '22	▨	▨	■
SPK, EF	Report on OCR full-text processing and quality improvement and its impact on display and search[82] delivered (internal)	100%	Aug '22	▨	▨	■
DSI AGG	Data quality improvements and new content delivered [83]	Ongoing	-			
EF	Data partners supported with data quality improvements and data publication (DSI, Generic services[84], and others)	Ongoing	-			
EF	Regular link resolution process is maintained	Ongoing	-			
Objective 2.1.2. Maintain data and publishing frameworks, standards and documentation						
EF	Training resources (V1) for Statistics Dashboard developed	Done	Mar '22			

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[78] https://europeana.atlassian.net/wiki/spaces/EF/pages/2059763713/EPF+-+Publishing+guidelines
[79] Implementation plan M36 due date is Jun '22. Adjusted due date for Jul '22 approved by EC.
[80] Implementation plan M36 due date is Aug '22. Adjusted due date for Jun '22 approved by EC.
[81] Implementation plan M36 due date is Aug '22. Adjusted due date for Jun '22 approved by EC.
[82] Contributes to FT-F3 in the Search Improvement Strategy.
[83] Detailed information on DSI AGG work as well as progress achieved will be provided in the annual review of work plans.
[84] For more information on data quality improvements and data ingestion from the Generic Services projects, please see Annex 5: GS outcomes integration overview.

EF	First implementation of the field warnings concept to flag longtail data issues with titles and descriptions	100%	Jun '22	██		
EF,DSI AGG	MS5 New recommendations and updated requirements for services and products focusing on content in the EPF developed (including a report of the status of EPF) (internal)	100%	Jul '22		██	
EF	Statistics Dashboard maintained	Ongoing	-			
EF	EDM updated and documented	Ongoing	-			
Objective 2.1.3. Influence global interoperability and technological innovation						
EF, NISV	EuropeanaTech community[85] is supported	Ongoing	-			
EF	Data Quality Committee[86] is supported	Ongoing	-			
EF	IIIF Discovery Technical Specification Group[87] is supported	Ongoing	-			
EF	Data mapping and conversions with stakeholders is supported	Ongoing	-			

Report on actions taken to re-engage with inactive partners (internal)[88] - the purpose of this report is to review the strategy for reviving records from inactive data partners, review the approach for reconnecting with data providers that are not active contributors to Europeana and give an update on the progress against the actions proposed in December 2020. About 18 million records out of the total of 62 million records were identified in autumn 2020 as coming from data partners that are not active at the moment. In August 2022, the number of records that have not been updated since 1 January 2017 has decreased to 11.3 million records. This strand of work not only helped to re-engage with inactive data partners but to improve the overall quality of the data published on the Europeana website.

MS4 DSI AGG annual work plan review (internal) - 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 annual work 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 2022.

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[85] https://pro.europeana.eu/page/europeanatech
[86] https://pro.europeana.eu/project/data-quality-committee
[87] https://iiif.io/community/groups/discovery/
[88] Available on request.

Normalisation of dates in the metadata implemented - in the records as we get them, dates are represented by free text as they may have all kinds of formats, and allow for more complex date indications such as date ranges and approximate dates. Research was done on the variety of date formats we may be expecting from our data, which ones we should support and how we can best parse the dates and represent them in a single definitive format in our enriched records. The algorithm that resulted from this has been incorporated in the Metis suite and is now part of the aggregation workflow. As a result, we will increase the data quality for data re-users of the Europeana dataset and be able to improve the user experience of the Europeana website when it comes to dates and make records searchable and comparable on temporal criteria.

Mislabelled 3D content corrected in the Europeana database - In May 2021, we identified 15,615 records representing images that were wrongly labelled as 3D. For most of the records we were able to reprocess the datasets in collaboration with the aggregator to correct the type (from 3D to Image). For some records we had to depublish them as not only the items were mislabelled but also links were broken and could not be fixed. For certain records in some legacy datasets we were not able to get new data but changed the record type from 3D to Image on our side. We then made sure to redo the tier calculation for these records (according to the new tier measurement of 3D content – see below). As of 31 August 2022, we have 10,523 3D items published on the Europeana website. We count 4,714 3D items in content tier 2+, 8,595 3D items in metadata tier A+ (including content tier 0), and 4,069 items in Tier 2+ and in Tier A+.

Precision of the content tier measurement of 3D content in Europeana is improved - we improved the precision of the content tier measurement of 3D content in Europeana for records with content files of an inappropriate file type. This ensures a more realistic picture of the current quality of 3D content in Europeana (for example ensuring that 3D pdfs cannot reach the higher tiers) and represents a starting point towards a more accurate assessment of the quality of 3D objects in the future. This calculation has been retroactively applied to all records in the Europeana dataset.

Recommendations for identifying and managing diversity in cultural heritage data (internal) - the ongoing public debate about the colonial past and the call to decolonize archives and museums demonstrates that CHIs are under close scrutiny from civil society movements, marginalised communities and engaged audiences. Embedded in space, time and history, the collection building, cataloguing and exhibition practices of CHIs reflect and reproduce worldviews that we are considering nowadays often discriminatory, alienating and inappropriate, not only with regard to colonial content. The displayed object or the descriptive metadata might harm audiences, in particular those communities that are represented in a stereotyped or derogatory way. A DSI AGG working group supported by the EF D&I cross team analysed the challenges ahead when addressing diversity, equity and inclusivity in the collections of Europeana data partners and developed case studies and recommendations. In this context, another report on this topic was produced by CARARE, to share the results of a review of diversity and inclusion in archaeology from representation in the profession to the way archaeologists make sense of the

evidence, how countries decide which heritage to preserve and how the discipline is becoming more inclusive.[89]

Report on OCR full-text processing and quality improvement and its impact on display and search delivered (internal) - together with SPK, we have investigated the quality of the OCR produced 10 years ago in the Europeana Newspapers Project[90] and which is the basis of the full-text available in the Newspapers collection. For this, we have re-run OCR on a subset of the Collection, using from OCR-D and Pero-OCR projects, and compared the character and word error rates against the existing OCR (that was produced with ABBYY) using a manually corrected version (Ground Truth). The results of this work have been included in a revised version of the Europeana Newspapers recommendations and will allow us to understand the benefits of reOCRing the corpus, choose the best solution and understand the technical implication if we ought to apply it to the whole collection.

Data quality improvements and new content delivered (bi-annual update) - in Europeana DSI-4 Y4, we updated in total 581 datasets and over 16.5 million records[91], including 161 newly ingested datasets (equal to approximately 1.6 million new records ingested). The updates as well as the depublication of low quality records led to an improvement of data quality available on the Europeana website (2.5% increase for Tier 2+; 4.6% increase for Tier 3+; and 5.8% increase for Tier A+). To inspire and encourage data partners to deliver high quality data, EF and DSI AGG collected examples of what aggregators consider their best records and why. EF published those examples together with XML versions where possible as best practice, next to the other EPF example records that indicate the minimum requirements to reach a specific tier of the EPF.[92]

Data partners supported with data quality improvements and data publication (DSI, Generic services, and others) (bi-annual update) - The ongoing support for data partners includes feedback about their data with concrete advice on how to improve data quality and solve data modelling problems. What helps a lot with providing feedback and supporting data partners is the Metis Sandbox and the Data Statistics Dashboard. Using these two products helps to improve data quality. Data partners can analyse their data in a more granular way using the Dashboard, and can test mappings and quality improvements using the Sandbox. The same is true for EF and as EF and data partners look at the same interface when discussing results, it makes it easier to speak the same language when fixing issues.

Regular link resolution process is maintained (bi-annual update) - we have quarterly cycles in place of creating consolidated link reports to identify datasets that have broken links. Data partners are then asked to work on the identified datasets before we resolve the issues at the end of the quarter and before we start a new quarterly cycle. The number of broken links identified within a

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[89] https://pro.carare.eu/documents/100/CARARE_-_Diversity_review_2022.pdf
[90] https://pro.europeana.eu/project/europeana-newspapers
[91] Many datasets were processed multiple times over the year to achieve the best data quality and to add new records when it was available at source. A total of 491 unique datasets and over 14.3 million records were updated in the past year.
[92] https://europeana.atlassian.net/wiki/spaces/EF/pages/2238447617/Examples+of+high+quality+data

quarter can vary a lot since datasets with broken links can occur at any time. For example, in Feb 2022 we recorded about 283,300 broken links and in June 2022 there were 1.8 million broken links. More information on broken links is available in the report "Report on actions taken to re-engage with inactive partners (internal)" (August 2022).

First implementation of the field warnings concept to flag longtail data issues with titles and descriptions - the Metis Sandbox now contains a mechanism that checks for the eight data issue types that were deemed the most urgent to detect. The detected issue types are the following:

1. Multiple records are found within the dataset that have the same title value (ignoring case).
2. A record has a title value that is equal to one of its description values (ignoring case).
3. A record has a title value that is too similar to one of its dc:description values.
4. A record has a title value that is not human-readable (i.e. contains too many characters that are not either alphanumeric or simple spaces, or contains its own identifier).
5. A record has a title value that is not meaningful (in particular because it is too short).
6. A record has a title value that is too long.
7. A record does not have any description values, or all its descriptions are empty.
8. A record has a description value that is too short.

These issues have differing urgency/severity indicators, guiding the users in addressing the issues. The implementation is generic, so that further issue types may be included with relative ease at a later date. Users of the Metis Sandbox can now get an overview for all the detected issue types in their dataset (after the dataset has been processed), complete with sample records where these issue types were detected. The user can also request to analyse individual records (or click on one of these sample records) to see all data issues that occur in that particular record.

MS5 New recommendations and updated requirements for services and products focusing on content in the EPF developed (including a report of the status of EPF) (internal) - 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 services and products of the EPF. Products that were developed or improved in DSI-4 Y4 include the Europeana Knowledge Base as the new home for guidelines, documentation and training material (see below in WP3), the Metis Sandbox with features to report on problem patterns (field warnings) and the Metis Media Service that is now able to respond to the needs of our data partners (see other parts of this report for more details). We also improved the representation of 3D content in the EPF and improved the accuracy of rights statements, incorporating recommendations and requirements developed in DSI-4 Y3. We developed a general framework design as part of work under WP3 and the EPF is the first Europeana framework using the new framework management template (see below under WP3), including the progress update on new recommendations and updated requirements for services and products focusing on content in the EPF.

Statistics Dashboard maintained (bi-annual update) - the Metis Statistics Dashboard was maintained in the second half of the year. The main improvements are a feedback/helpdesk functionality that will allow users to initiate contact in case they have questions or suggestions. Another improvement is the licence filter option. It used to work (like the other filters) on the literal value that is set in the record. The improved functionality instead looks at the human-readable licence category (regardless of language or version), which allows for easy searching and grouping. In addition to these, there have been the usual bug fixes and user experience improvements, some of which were prompted by actual user feedback.

EDM updated and documented (bi-annual update) - we have updated our internal documentation for the EDM profile for organisations to match the requirements and implementation work needed for the release of organisation pages. We have also worked on a minor update of the EDM IIIF Profile to ease the publication of IIIF images on europeana.eu. The EDM IIIF documentation has been included in the Europeana Knowledge Base[93].

EuropeanaTech community, Data Quality Committee, IIIF Discovery Technical Specification Group is supported (bi-annual update) - following its open call for contributions, the EuropeanaTech community has begun discussions to start three new task forces. It has also prepared a specific EuropeanaTech stream for the coming Europeana conference. IIIF, EuropeanaTech and the Europeana Aggregators' Forum also organised and ran an intro to a IIIF workshop for EAF members (May 2022). Europeana continues to participate in the IIIF Executive Board meetings, co-chair the IIIF Discovery Technical Specification Group and is represented in the IIIF Technical Review Committee. The EuropeanaTech Data Quality Committee has continued to support work on data quality improvement reported in other parts of the periodic reports, especially on updates to the Europeana Publishing Framework and related data reporting (i.e. problem patterns, tier criteria for 3D) and the normalisation of dates and language tags.

Data mapping and conversions with stakeholders is supported (bi-annual update) - we have continued to work on integrating data for contextual entities from semantic and multilingual vocabularies used by our partners. We extended an earlier data mapping from the Virtual International Authority File, and included the Library of Congress Name Authority File.

Reporting metrics: quality assured data

No.	Description	Measured by	Frequency	Target	Jun 2022	Jul 2022	Aug 2021	Aug 2022
KPI 2.1	High quality content	Percentage of Tier 2 + material (excluding content Tier 0)	Monthly	**>70%**	70.56%	70.81%	68.19%	70.69%

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[93] https://europeana.atlassian.net/wiki/spaces/EF/pages/2189262856/EDM+IIIF+profile

KPI 2.2	High quality and reusable content	Percentage of Tier 3+ material (excluding content Tier 0)	Monthly	**>50%**	50.94%	51.06%	46.25%	50.82%
KPI 2.3	High quality metadata (search, browse and explore)	Percentage of Tier A+ material (excluding content Tier 0)	Monthly	**>70%**	70.61%	70.82%	64.97%	70.75%
KPI 2.4	Europeana Research and Development contributions	Total number of reference papers or presentations (cumulative)	Monthly	**10**	8	8	13	8
RM 2.1	Broken links in the repository	Number of broken links (out of total)	Quarterly	-	1.8 million	-	-	-
RM 2.2	Non-EPF compliant content (Tier 0)	Percentage of Tier 0 content	Monthly	-	13.85%	13.80%	15.81%	12.34%
RM 2.3	Updates to datasets	Total number of newly created and updated datasets per month (out of total)	Monthly	-	107	30	9	51
RM 2.4	Updates to records	Total number of newly created and updated records per month (out of total)	Monthly	-	3,140,519	740,745	369,951	586,037
RM 2.5	New CHIs published on Europeana website	Total number of new CHIs (cumulative)	Once a year	-	-	-	141	121
RM 2.6	New content on the Europeana website	Total number of new datasets published (cumulative)	Bi-monthly	-	-	144	NEW	161

RM 2.7	Records in the data repository	Total number of records (excluding content tier 0)	Monthly	-	53.98 million	53.93 million	52.3 million	53.77 million
RM 2.8	Records in the data repository by accredited aggregators	Total number of records (excluding content tier 0)	Bi-monthly	-	38.7 million	39.4 million	34.96 Million	39.2 million
RM 2.9	Reach to EuropeanaTech community	Number of people reached per month (Mailing list, Twitter)	Bi-monthly		-	6,527	6,384	6,545

Between Jun-Aug 2022, we updated 188 datasets and over 4.5 million records. As a result, we reached the target of >70% for KPI 2.3 for high quality metadata (70.75%, August 2022). In August 2022, we recorded 121 new CHIs that were published on the Europeana website in DSI-4 Y4. In DSI-4 Y4, we also published 161 new datasets representing 1,572,689 new records.

In June 2022, as part of our quarterly link checking cycle we detected 1.8 million broken links. This is quite high this time, as we have a huge set where links changed on the provider side.

We saw one new research and development reference publications between Jun - Aug 2022:

Partner	Name of activity	Activity	Location	Date
EF	23rd Annual Conference of the European Association for Machine Translation (EAMT)	Project poster "Europeana Translate: Providing multilingual access to digital cultural heritage"	Ghent, Belgium	1-3/06/ 2022

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	-

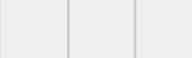|					focus more on publishing with a purpose.	

Task 2.2. Enriched data

Partners: EF, AIT Vienna, F&F, and DSI AGG (AIT Graz, APEF, 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 will help categorise items more usefully for website visitors (objective 2.2.1.). The use of crowdsourcing will see data quality enriched before it is ingested by Europeana while Artificial Intelligence (AI) technologies will support multilinguality, search and data quality (objective 2.2.2.).

Overview of outcomes: enriched data

Partner	Outcomes	Progress	Due date	Jun M46	Jul M47	Aug M48
Objective 2.2.1. Extend entities to support better browsing						
EF	Enrichment with new entities for new/updated items available	Done	Mar '22			
EF, AIT Vienna	Curation pilot within entity pages completed	100%	Aug '22	▮	▮	■
EF	Representation of organisation entities is improved	100%	Aug '22	▮	▮	■
EF, AIT Vienna	Entity collection is maintained, improved and expanded	Ongoing	-			
EF	Data enrichments reviewed, assessed and integrated (DSI, Generic Services, and others)	Ongoing	-			
Objective 2.2.2. Use of crowdsourcing and AI to enrich metadata						
EF	Agreement on further AI/ML experiments and assessments	Done	Jan '22			
EF	Report on two selected areas for experimentation and assessment of AI (including assessment of relevant work in GS projects) (internal)	100%	Jul '22	▮	■	
AIT Graz	Curated metadata enrichment and curated content clustering through expert crowdsourcing	100%	Aug '22	▮	▮	■
APEF	Tool for automated topic detection updated to beta version	100%	Aug '22	▮	▮	■

APEF	2 projects on enriching metadata via crowdsourcing completed	100%	Aug '22				
Photocon s	2 crowdsourcing campaigns to enrich data completed	100%	Aug '22				
F&F, EF	Transcribathon runs/events organised and transcriptions transferred to Europeana	Ongoing	-				
F&F	Transcribathon.eu maintained	Ongoing	-				

Curation pilot within entity pages completed - we have a functionality that enables people with a curator role to promote certain items to the top of an entity page and curate the first 24 items on an entity collection page. We plan to work together with the aggregators to help us curate the entity collection pages starting with the organisation entity collection pages. Additionally, we also worked on a feature that enables people with a curator role to edit the descriptions of the entity collections. Also, this feature we will test with aggregators.

Representation of organisation entities is improved - in DSI-4 Y3, we developed the organisation pages to give each CHI and data partner that we work with more visibility on the website, strengthening our promise to provide them with more recognition and create awareness of their institution. These pages bring all items published by an organisation together, based on their name as provided as part of the metadata and the information about this organisation in our CRM system. During the first iteration of this work, about 13 million records were not assigned to an organisation entity. In addition, we used only English organisation names during this first iteration for display on the Europeana website.

For the 2nd iteration of the organisation pages (DSI-4 Y4), we added missing organisations to our CRM system and also cleaned up a lot of organisation related information in our CRM system (e.g. language and country information, alternative names for the organisations and typos). This was the prerequisite to ensure a correct enrichment of organisation information in our ingested metadata against the entity collection for organisations powered by the data in our CRM system. It was also necessary to allow the organisation name in its original language to be displayed on the organisation pages. As a result of this work, >6 million more items are now linked to an organisation page and 997 more organisation pages have items (see report under WP1). Looking at the gap in coverage, we have only 471,363 records that are not enriched for edm:dataProvider and 84,169 records that are not enriched for edm:provider.

Entity collection is maintained, improved and expanded (bi-annual update) - the entity collection currently consists of more than 347,500 entities (persons, topics, places, centuries and organisation entities). With the recently developed Entity Management service and the production switch happening as part of the reindex activity, we were able to start adding more entities to our collections (after 5 years of dormancy) and see items being linked to them. To guarantee a good level of coverage and maintain coherence within the entities added and

existing, we are going to use the Thematic Collections to drive and focus our effort alongside our interest to migrate away from the Thematic Collections into a fully entity-powered solution. We've chosen Archaeology, Manuscripts, Sports, Fashion and XX resulting in 9,018 new persons and 1,764 new topics added. The curation effort involved a combination of insights from previous projects, initiatives and relevant vocabularies together with cross-analysis against our data to select the most relevant entities to add. DSI AGG contributed to the selection of topics relevant for their theme (CARARE for Archaeology, EFHA for Fashion). Given that this exercise is time consuming, we will aim to progress with 1-2 Thematic Collections at each quarter until all are covered. At each iteration, we aim to make an assessment of the results to see impact but also identify problems and design solutions to improve enrichment.

Data enrichments reviewed, assessed and integrated (DSI, Generic Services, and others) (bi-annual update) - since January 2022, we have finalised the assessment of the enrichments and translations that were provided by the Europeana XX GS project. Based on our findings and experience with assessing and measuring the results of enrichments performed by different projects, we have elaborated a proposal for revision of the EPF to better measure the quality and impact of enrichments to be discussed and reviewed with stakeholders. The review of the EPF is the first step towards the development of a set of policy principles that will guide decisions in the area of enrichments, and that relevant stakeholders will be invited to help shape and give feedback on.

Report on two selected areas for experimentation and assessment of AI (including assessment of relevant work in GS projects) (internal) - the first experiment on image resolution enhancement gave rather positive results. Technical work has started for further (pre-implementation) design and tests, which would allow a decision on prioritising implementation of the technology in Europeana. The second experiment on image-based tagging had much more mixed results, with quality of results varying greatly. In particular, the open (non-commercial) tagging model was very low-quality. More work is needed on exploring the approach, for example on how to select and/or combine results forming from different tagging systems.

Curated metadata enrichment and curated content clustering through expert crowdsourcing - AIT Graz has published two content clusters/user sets/galleries and tested the standard workflow for (expert) content collections from LinBi to Europeana. This activity used expert knowledge in the curation of botanical collections, that provided context for a user and featured items in a meaningful way. When curating the clusters, experts provided additional metadata for each cluster. The cluster/set level metadata are not yet visible in the Europeana website as further developments of the gallery functionalities are still ongoing. One set was created by library experts from the Royal Botanic Garden Madrid, Spain.[94] The set shows a selection of valuable old herbaria from the holdings of the Royal Botanic Garden of Madrid and relates them to the herbaria of other Europeana partners. The set of drawings from Democratic Republic of the Congo was created by botanical experts from the Meise Botanical Garden, Belgium.[95] The

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[94] https://www.europeana.eu/en/set/2729
[95] https://www.europeana.eu/en/set/2730

botanical collection from Meise is the world reference for Central Africa. In addition, Meise Botanical Garden has important collections from the nineteenth century. The set shows a selection of old hand-drawn botanical black and white drawings by various historical scholars.

Tool for automated topic detection updated to beta version[96] - APEF continued to work on the tool for automated topic detection. Using machine learning approaches for automatic topic detection and retrieval in a multilingual environment, the tool aims to tag documents that have no topic associated with one of the predefined topics, and given a user query, retrieve documents relevant for it. Based on findings of a use case, APEF further developed the tool and implemented an option for data providers to identify entities mentioned in their descriptions as a precursor to tagging these with URIs to LOD vocabularies. This currently works with a simple text input, across four languages and is based on Wikidata.

Two projects on enriching metadata via crowdsourcing completed - APEF worked with two new CHIs to bring their collections into Europeana, supported by crowdsourcing activities. The two new CHIs are the National Archives of Malta (NAM) and the British Institute at Ankara (BIAA). NAM worked on a collection of a little over 1,000 plans and sketches (metadata improvements, rights clearance for digital objects, etc.).[97] BIAA has prepared one of their photography collections for submission showing everyday life in the Tille Höyük region before its flooding by the Atatürk Reservoir in 1990 (metadata creation and improvements, rights clearance for digital objects, etc.). The first data from BIAA are currently being reviewed in preview.[98] Both projects took two different approaches to crowdsourcing with NAM working with experts related to the objects in their collection of plans and sketches to confirm and enrich the descriptions, while BIAA worked with volunteers from the local community in the Tille Höyük region in the process of creating the appropriate metadata for their photographic collection.

Two crowdsourcing campaigns to enrich data completed - Photoconsortium carried out two crowdsourcing campaigns in the last two DSI years to enrich existing datasets. The first crowdsourcing event took place in May 2021 (DSI-4 Y3) but the work on the data continued in DSI-4 Y4. The 2nd event took place in October 2021. The goal of the activity was to improve photo collections of two Photoconsortium partners by enriching the metadata involving university students, followed by a validation done by Photoconsortium members. The activity resulted in a small amount of 538 enriched records. The enrichment has led to more subject terms being created. This is illustrated by one example that had no subject terms before the campaign[99] and ended up with 10 subject terms coming from the crowdsourcing campaign[100]. Challenges have been reported by Photoconsortium to scale these crowdsourcing campaigns to reach more users to work on more records. For more details about this aspect and the crowdsourcing campaigns

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[96] https://test.archivesportaleurope.net/topicdetection/detect.html
[97] https://www.europeana.eu/en/search?query=edm_datasetName%3A818_%2A
[98] https://metis-preview-portal.eanadev.org/en/search?query=edm_datasetName%3A834_%2A
[99] https://www.europeana.eu/en/item/149/https___withculture_eu_item_5d920b224c7479529a57fa4b
[100] https://crowdheritage.eu/en/hungarian-history/5dbbf76d4c74792fee807c24

more generally, see the DSI-4 Y4 Photoconsortium work plan review and the full description on the Photoconsortium educational portal.[101]

Transcribathon runs/events organised and transcriptions transferred to Europeana (bi-annual update) - the series of online Stories of the Month[102] runs were continued throughout the months of February (Essential workers pt. 1), March (Essential workers pt. 2), April (Poetry), May (Keeping records), June (Expeditions), July (Looking back at 1 Year SotM) and August (Photography).
In cooperation with the EuropeanaEnrich+ project[103] the Dublin Transcription week[104] was held (March/April 2022, after a preparatory introduction week in March), and the Wroclaw Transcription week[105] was held (May/June 2022, after a preparatory introduction week in May). In June 2022, the Public History Bremen SUMMER SCHOOL 2022 – TRANSCRIBATHON[106] was held in collaboration with Bremen University and the Leo Baeck Institute.

Transcribathon.eu maintained (bi-annual update) - maintenance of Transcribathon.eu has been ongoing. After an assessment of the UX development (in March 2022), implementation of new and revised elements is currently taking place in the context of the EnrichEuropeana+ project[107].

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)	-

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[101] https://www.photoconsortium.net/educationalportal/2022/08/05/students-help-improving-metadata-of-cultural-collections-in-europeana/
[102] https://europeana.transcribathon.eu/stories-of-the-month/
[103] http://enrichproject.eu/
[104] https://europeana.transcribathon.eu/runs/dublin-transcription-week/
[105] https://europeana.transcribathon.eu/runs/wroclaw-2022/
[106] https://europeana.transcribathon.eu/runs/bremen-run/
[107] https://pro.europeana.eu/project/enricheuropeana

Work package 3: Build capacity

WP3 will support professionals and partners to build capacity for digital transformation in three principal areas. We will engage with professionals and partner organisations by organising and supporting events and by providing training and professional development resources (task 3.1.). Secondly, we will nurture our networks, in particular by supporting the governance and operations of the Europeana Network Association (ENA) and Europeana Aggregators' Forum (EAF). This will also 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 within the cultural sector. We will continue to develop a programme of high quality events and raise the standards of practices and knowledge building activities (objective 3.1.1.). As part of our capacity building activities we will continue to deliver a variety of events for professionals (objective 3.1.2.). To be able to increase the knowledge in the sector we will also organise and support training activities and provide professional development resources (objective 3.1.3.).

Overview of outcomes: build capacity of aggregators and professionals

| Partner	Outcomes	Progress	Due date	Jun M46	Jul M47	Aug M48
Objective 3.1.1. Develop event programming and training practices						
EF	Method for assessing satisfaction of training resources implemented	Done	Jan '22			
EF	Impact assessment of Europeana 2021 conference delivered (internal)	Done	Apr '22			
EF	Guidelines for delivering training and development activities developed (public)	100%	Jun '22	■		
EF	Events Toolkit updated (public)	100%	Jul '22	■	■	
EF	Report on the evaluation of CHI satisfaction with capacity building services and tools delivered (internal)	100%	Jul '22	■	■	

EF	Events programme supported and improved (events calendar, formats, tools)	100%	Aug '22
EF	Activities of the international Events Manager Group coordinated[108]	Ongoing	-

Objective 3.1.2. Deliver events for professionals and partners

EF	Europeana Annual Conference 2021 organised	100%	Nov '21
EF	Europeana Aggregators' Forum Fall meeting organised	100%	Nov '21
EF	Europeana Aggregators' Forum & annual outreach event organised	100%	Jul '22
EF	Themed programme of events supported and delivered (ENA and communities, EAF, DSI AGG and others)	Ongoing	-

Objective 3.1.3. Deliver training and professional development resources

EF	Version 1 of Europeana Knowledge Base for aggregators released (public)	Done	Jan '22
EF	Report on the assessment of training needs for Europeana technical tools and services completed (internal)	Done	Jan '22
DEN	DEN Leadership programme 2nd Cohort completed	Done (Feb '22)	Jun '22
EF, DEN	Feasibility report for DEN Leadership programme for Europeana completed (internal)	100%	Jul '22
CARARE, Photocons	Case studies about the benefits and impact of publishing high-quality, open access heritage collections in Europeana	100%	Aug '22
EF	Pilot 'Learn with Us' section on Europeana Pro developed	100%	Aug '22
EF	Knowledge sharing activities, training and resources delivered and published	Ongoing	-
EF	Crowd-sourced open inventory of training opportunities maintained	Ongoing	-
DSI AGG, F&F	Training workshops, webinars and/or one-to-one support provided	Ongoing	-

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[108] The Events Managers Group includes several partner organisations including: Liber, Creative Commons, RightsConn, NEMO, Museum Computer Network, GIJN, Accessnow, IFLA, EuropaNostra and Wikimedia Foundation.

Guidelines for delivering training and development activities developed (public)[109] - the guidelines for delivering training and development activities describe the requirements of future training resources and the process of developing these resources. The guide supports standardisation of the training opportunities that are developed within the Europeana Initiative, ensuring a basic level of quality and increasing the user experience of trainees. The guide has been developed in a similar process as it describes, e.g. internal and external testing and review of its components took place before publication. The guide furthermore stimulates the inclusion of training development alongside the development of tools and services, ensuring that training resources are available whenever new versions of tools and services are made publicly available.

Events Toolkit updated (public) - The Events Toolkit[110] on Europeana Pro has been updated with our latest lessons learned and experiences with regards to the organisation of hybrid events.

Report on the evaluation of CHI satisfaction with capacity building services and tools delivered (internal)[111] - in this report we document the channels used to disseminate capacity building resources, tools and services to CHIs, and identify where, what and how data is gathered relevant to establishing satisfaction of CHIs. Further, we identify where and how refinements and improvements to the process could be acted upon, to provide input into the further development of a more holistic approach to gathering data from CHIs.

Events programme supported and improved (events calendar, formats, tools) - we investigated an events calendar to improve the findability of past and new events. We researched options online, discussed the experiences of colleagues at LIBER who had previously implemented something similar and asked our developers to investigate some options for us. Our investigations suggested that to provide a high-quality bespoke calendar that met our needs and was accessible for all of our users would require high levels of resource for small returns. Instead we worked on improving our processes for adding events to Europeana Pro and building promotion into these processes. We now have a well-established workflow for adding events to Pro, promoting them and ensuring relevant content and information is added after the event has finished. We also updated the Events Toolkit with our hybrid events experiences. Finally, we started using integrated post-event surveys to collect immediate feedback at the close of each event to measure the satisfaction and to collect valuable feedback.

Activities of the international Events Manager Group coordinated (bi-annual update) - The Events Managers Group has grown to be a very valuable group who shares experiences and support each other in the challenges when organising (hybrid) events. It is of great value learning from other organisations what formats, style or tools they use, sharing good practices, as well as coordinating the timing of major conferences. It started as a small group of 4-5 people in 2020 and counts about 18-20 today.

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[109] https://pro.europeana.eu/page/guidelines-for-delivering-training-and-development
[110] https://pro.europeana.eu/page/events-toolkit#hybrid-events
[111] Available on request.

Europeana Aggregators' Forum & annual outreach event organised - in the last periodic report we gave an update on the spring 2022 EAF meeting organised on 4/5 April in Hilversum. In addition, we organised an outreach event on 11 July 2022 that was held online. The purpose of the outreach event was to present and discuss the main outcomes of the Europeana Initiative in the current context and consider the challenges and opportunities ahead regarding aggregation in the context of the dataspace. With this event the EAF went back to the basics of aggregation in terms of technical processes and organisation. It was the first one in a series of events introducing the main phases that are essential for content and data aggregation. The agenda and more information are available on Europeana Pro.[112] This first introductory event was open to all stakeholders involved in the current Europeana Initiative and the upcoming European Common Data Space for Cultural Heritage. We had 129 unique participants from 34 countries (including 23 EU Member States) across all the stakeholders and concluded with a satisfaction rate of 84% with the event.

Themed programme of events supported and delivered (ENA and communities, EAF, DSI AGG and others) (bi-annual update) - In Europeana DSI-4 Y4 we delivered in total 30 events for professionals reaching about 2,750 people in total. The events saw a high average satisfaction of 85%. The EAF delivered 25 events reaching about 1,050 people. The events revolved around themes such as the importance of democratic access to digital public spaces, the social role of digital technologies, sustainable digital transformation, Education, Digital Storytelling, Copyright, Machine Translation, Research, Carbon Footprinting, IIIF, Impact, AI in Archives, and Fostering Diversity and Inclusion.

Feasibility report for DEN Leadership programme for Europeana completed (internal)[113] - DEN has delivered a feasibility report in which the need and possibilities of a sustainable continuation of the Leadership programme is discussed. The report is based on the experience of the two pilot programmes that ran in 2021 and 2022.

Case studies about the benefits and impact of publishing high-quality, open access heritage collections in Europeana - in the framework of capacity building efforts to support digital transformation of the cultural heritage sector, CARARE[114] and Photocons[115] developed two case studies about the benefits and impact that Cultural Heritage Institutions can gain from publishing high-quality, open access heritage collections in Europeana. In both cases, having digitised collections in high quality and making them available in Europeana has made it easier to create e-learning activities including these collections. In addition, and in a more general sense, the collections gained more visibility and supported the institutions with their mission in times when Covid-19 restrictions made physical access to collections impossible.

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[112] https://pro.europeana.eu/event/eaf-outreach-event
[113] Available on request.
[114] https://pro.carare.eu/documents/99/Case_Study_Hunt_Museum_v1.pdf
[115] https://www.photoconsortium.net/educationalportal/2022/05/31/crdi-collections-in-europeana/

Pilot 'Learn with Us" section on Europeana Pro developed[116] - To facilitate building awareness and encouraging use of capacity building resources by professionals, we developed a pilot 'Learn with Us' section for European Pro. This section applies the taxonomy of the Capacity Building Framework and breaks down specific resources that are available. The pilot will be tested with stakeholders and will be iteratively developed in future periods, building on user feedback.

Knowledge sharing activities, training and resources delivered and published (bi-annual update) - user guides and self paced training resources have been published for the Europeana Data Statistics Dashboard[117] and Metis Sandbox[118]. Self paced training material was published for Copyright when sharing data with Europeana[119]. Self paced training was published for using IIIF to share media with Europeana[120]. The Europeana Events Toolkit was updated with information on running hybrid events[121]. The Guidelines for delivering training and development was published.[122]

Crowd-sourced open inventory of training opportunities maintained (bi-annual update) - the inventory of training opportunities was open for contributions in this period. No new opportunities, where Europeana was not already involved in, have been contributed in this period.

Training workshops, webinars and/or one-to-one support provided (bi-annual update) - in the period, a IIIF training[123] during an aggregators' event and a Capacity Building Playbook workshop for the copyright community was delivered. An internal training session of the Data Statistics Dashboard took place and individual support was given to EF colleagues. An internal training on the use of Open Broadcaster Software took place to improve the delivery and support of hybrid events. Additionally, individual training development support was given to partners of GS projects (WEAVE, Subtitled, CRAFTED).

In Europeana DSI-4 Y4, DSI AGG supported in total 192 CHIs from 35 countries with individual consultation, including 37 new CHIs collaborating with DSI AGG.

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[116] https://pro.europeana.eu/page/learn-with-us
[117] https://pro.europeana.eu/page/europeana-data-statistics-dashboard-training
[118] https://europeana.atlassian.net/wiki/spaces/EF/pages/2227765249/METIS+Sandbox+Training
[119] https://pro.europeana.eu/share-your-data/copyright
[120] https://training.iiif.io/europeana/
[121] https://pro.europeana.eu/page/events-toolkit#hybrid-events
[122] https://pro.europeana.eu/page/guidelines-for-delivering-training-and-development
[123] https://training.iiif.io/europeana/

Reporting metrics: build capacity of aggregators and professionals

No.	Description	Measured by	Frequency	Target	Jun 2022	Jul 2022	Aug 2021	Aug 2022
KPI 3.1	Aggregator satisfaction with Europeana (accredited aggregators)	Average satisfaction on a 5-point Likert scale[124]	Once a year	**75%**	-	-	82.2%	76.2%[125]
KPI 3.2	CHI satisfaction with aggregator (partner in Europeana DSI-4)	Average satisfaction on a 5-point Likert scale	Once a year	**75%**	-	-	not measured because of low response rate	No data available
RM 3.1	Events organised for professionals	Number of events (cumulative)	Bi-monthly	-	-	-	55	30
RM 3.2	Participants attending events for professionals	Number of participants (cumulative)	Bi-monthly	-	-	-	3,393	2,751
RM 3.3	Satisfaction rate for events for professionals[126]	Average satisfaction on a 5-point Likert scale (cumulative)	Bi-monthly	-	-	-	NEW	85%
RM 3.4	Satisfaction rate for annual conference (Europeana 2021)	Average satisfaction on a 5-point Likert scale	Once a year	-	-	-	-	-
RM 3.5	CHIs supported by DSI aggregators	Total number of CHIs supported by individual consultation (cumulative)	Bi-annual	-	-	-	206	192

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[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] Compared to the previous survey, we adjusted the questionnaire in order to get specific feedback from aggregators about Europeana's services and products as present at this moment. Feedback on the recent states of products/services was important, even if this led to results of two years not being fully comparable. The slight decrease in satisfaction from 82.2% to 76.2% between 2021 and 2022 may be caused by the difference in questions we asked in 2021 and 2022.

[126] We measure the satisfaction at a selected number of events and acknowledge the survey as valid once it reaches a minimum number of respondents.

RM 3.6	Coverage of CHIs supported by DSI aggregators	Total number of countries that received support by individual consultation (cumulative)	Bi-annual	-	-	-	29	35
RM 3.7	Outreach to CHIs	Total number of new CHIs collaborating with DSI aggregators (cumulative)	Bi-annual	-	-	-	46	37
RM 3.8	Events delivered through the EAF training programme	Number of events delivered by DSI AGG and EF (cumulative)	Bi-monthly		-	-	59	25[127]
RM 3.9	Participants attending EAF training programme	Number of participants in events delivered by DSI AGG and EF (cumulative)	Bi-monthly		-	-	NEW	1,056

In this period, we surveyed aggregator satisfaction with Europeana (accredited aggregators). Out of the 40 accredited aggregators, 30 responded to the survey with an average satisfaction of 76.2%. With the questions we covered questions about the satisfaction of aggregators with the work of the EF DPS team prior, during and after the ingestion process, to find out if the level of support and feedback we provide is satisfying for the aggregators. A key part of the questions is addressing the satisfaction with the various steps of the ingestion process. Media processing is seen as a bottleneck, which justifies the improvements we have implemented recently to mitigate the issues. For the first time this year we also asked about the Metis Sandbox and the Data Statistics Dashboard. Having in mind both are new products that have not been fully explored by all aggregators, the satisfaction rate is very promising and supports the development work we have done on both products. An important aspect of the survey is the option to provide open responses and give feedback in a narrative way, which is helpful to identify priorities for next steps to improve our services and products.

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[127] In 2021 also presentations, in general, were counted in the number, now only events that have a clear training focus are counted.

We also surveyed CHI satisfaction with aggregators (partners in Europeana DSI-4) via a set of questions in the ENUMERATE self assessment tool. We chose to incorporate the questions from the annual Cultural Heritage Institution satisfaction survey (previously delivered via a survey created directly by the Europeana Foundation) into the ENUMERATE Self-Assessment Tool (SAT) and promoted via the ENUMERATE campaign fielded in June 2022. However, the data is not available to us as this was one of the questions in the ENUMERATE self assessment tool for which data was lost.

Incorporating the two surveys offered several benefits: 1) reduce survey fatigue (both surveys have an overlapping target audience and were set to take place at the same time), 2) reduce effort on the part of the aggregators (who were previously the sole distributors of the survey), and 3) reach a broader audience of our target CHIs, as previous years' surveys had few respondents. As mentioned, unfortunately, the CHI satisfaction ratings were affected by the technical bug which caused a section of the potential data to be lost in the first campaign. We expect to gather data on this topic in subsequent campaigns of the ENUMERATE Self-Assessment Tool (for more information see the D.2 deliverable).

Between Jun - Aug 2022, EF held 9 events for professionals[128] with 296 participants attending in total. Events organised in Europeana DSI-4 Y4 so far received a high average satisfaction of 85%. DSI AGG (co)organised 7 training events with 218 people attending in the period (such as workshops, webinars or presentations at an outreach event).

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

Partner	Name of event	Activity	Location	Date
Events organised for professionals				
EF	Europeana Research Community Cafe - Legacies of Catalogue Descriptions, Data Quality and Ethics[129]	Meeting	online	25-05-2022[130]
EF	Introducing the copyright management guidelines[131]	Meeting	online	08-06-2022
EF	ENUMERATE Self Assessment Tool Lunch Café[132]	Meeting	online	09-06-2022
EF	ENUMERATE Self Assessment Tool Lunch Café[133]	Meeting	online	15-06-2022
EF	ENUMERATE Self Assessment Tool	Meeting	online	23-06-2022

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[128] https://pro.europeana.eu/page/webinars
[129] https://pro.europeana.eu/event/europeana-research-community-cafe-legacies-of-catalogue-descriptions-data-quality-and-ethics
[130] This event was missed to add in the past reporting period.
[131] https://pro.europeana.eu/event/introducing-the-copyright-management-guidelines
[132] https://pro.europeana.eu/event/enumerate-self-assessment-tool-lunch-cafe
[133] https://pro.europeana.eu/event/enumerate-self-assessment-tool-q-a-lunch-cafe

	Lunch Café[134]			
EF	Copyright office hours: licensing for AR & VR[135]	Meeting	online	28-06-2022
EF/EAF	EAF Outreach event[136]	Meeting	online	11-07-2022
EF	Copyright office hours: archival material[137]	Meeting	online	19-07-2022
EF	Digital Storytelling Festival - Closing online event[138]	Meeting	online	04-08-2022
Events organised by EAF				
DFF (EFG)	Out-of-commerce works provision: benefits for the film heritage and AV sector (Part 1)	Training Presentation	online	08-02-2022
DFF (EFG)	Out-of-commerce works provision: benefits for the film heritage and AV sector (Part 2)	Training Presentation	online	07-04-2022
PHOTO	Educational reuse of digital collection (1st session)[139]	Training workshop	online	20-05-2022
PHOTO	Educational reuse of digital collection (2nd session)	Training workshop	online	27-05-2022
MCA	DSI - Webinar Wikidata[140]	Training workshop	online	7/10-06-2022
MCA	How to map your data using an excel file[141]	Training workshop	online	13-07-2022
BL	Using MINT to share content on Europeana[142]	Training workshop	online	19-07-2022

Risk assessment: build capacity of aggregators and professionals

ID	Risk	Probability	Impact	Rate	Mitigation strategy	Change
R3.1	Professionals/ Aggregator training and development activities	Low (2)	High (4)	8	We work with the ENA and EAF to develop a training and development approach	-

[134] https://pro.europeana.eu/event/enumerate-self-assessment-tool-q-a-lunch-cafe-1
[135] https://pro.europeana.eu/event/copyright-office-hours-risk-management-approaches-to-rights-clearance
[136] https://pro.europeana.eu/post/join-the-europeana-aggregators-forum-outreach-event
[137] https://pro.europeana.eu/event/copyright-office-hours-risk-management-approaches-to-rights-clearance
[138] https://pro.europeana.eu/event/digital-storytelling-festival-closing-online-event
[139] https://www.photoconsortium.net/educationalportal/2022/05/06/photoconsortium-euroclio-ws/
[140] http://www.museuhub.eu/en/30/training-video#st1655141007678
[141] http://www.museuhub.eu/en/30/training-video#st1660139044944
[142]
https://www.eventbrite.co.uk/e/using-mint-to-share-your-online-collections-on-europeana-tickets-382895309177?utm_campaign=social&utm_content=attendeeshare&utm_medium=discovery&utm_term=listing&utm_source=cp&aff=escb

	do not meet the needs of the partners, and we do not grow the audience for these				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 and NISV

Under this task we will maintain and develop effective governance as well as the operational activities of the Europeana Network Association (ENA)[143] and Europeana Aggregators' Forum (EAF) [144] (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.). We will continue to improve our offers by undertaking user and market research (objective 3.2.4.) and we will communicate and promote the value of the Europeana Initiative to our networks and beyond (objective 3.2.5.).

Overview of outcomes: nurture networks

Partner	Outcomes	Progress	Due date	Jun M46	Jul M47	Aug M48
Objective 3.2.1. Effective governance of Network services (ENA/EAF)						
EF	ENA General Assembly organised	Done	Nov '21			
EF	ENA Governance renewed (MC election and MB appointment)	Done	Jan '22			
EF	ENA Governance working group[145] supported	Ongoing	-			
EF	ENA and EAF periodic meetings organised (incl. ENA MB and MC, and EAF Steering Group and Forum)	Ongoing	-			

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[143] https://pro.europeana.eu/network-association/sign-up
[144] https://pro.europeana.eu/page/aggregators
[145] https://pro.europeana.eu/project/governance-working-group

Objective 3.2.2. Maintain and develop operational activities of ENA/EAF

EF	Climate Action Community launched	Done	Nov '21			
EF	ENA community work plans 2022 published	Done	Feb '22			
NISV, EF	Annual reports 2021 (ENA and EAF) published	Done	Feb '22			
NISV, EF	Annual work plans 2022 (ENA and EAF) published	Done	Feb '22			
EF	Recommendations on how to feedback task force recommendations to wider community (internal)	Done	Feb '22			
EF	Report of Diversity & Inclusivity Task Force published	100%	Aug '22 [146]	■	■	■
EF	Reporting model for network engagement extended	100%	Jul '22	■	■	
EF	New aggregators reviewed for accreditation	Ongoing	-			
EF	General management support for Task Forces, Working Groups and communities (ENA/EAF/Europeana Initiative)	Ongoing	-			
EF	Supporting the Digital Cultural Heritage of Ukraine Working Group (EF/ENA/EAF)	Ongoing	-			

Objective 3.2.3. Reach out and engage with other communities and networks

EF	Events of Research Grants Programme 2021 completed	Done	Aug '22 (Apr '22)			
EF, CLARIN	Outreach outcomes to research communities published	100%	Aug '22	■	■	■
EF	Europeana Research community[147] and Research Advisory Board[148] supported	Ongoing	-			
EF	Partnerships supporting the digital transformation of the cultural sector nurtured	Ongoing	-			
EF	Partnership with Europeans Students Association for Cultural Heritage developed	Ongoing	-			
CLARIN	Adding high-level resources to the VLO	100%	Jul '22	■	■	
CLARIN	Organise training on how to use Europeana data sets for processing with Natural Language Processing tools	100%	Jun '22	■		

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[146] Implementation plan M36 due date is Jun '22. Adjusted due date for Aug '22 approved by EC.
[147] https://pro.europeana.eu/page/europeana-research
[148] https://pro.europeana.eu/page/research-advisory-board

EF	Research Grants Programme 2021: outcomes published	100%	Aug '22	■	■	■
EF	Partnership to foster engagement with cultural heritage and academic communities (LIBER[149], GLAM LABs[150])	Ongoing	-			

Objective 3.2.4. Develop user and market research

EF	Pro user survey completed	Done	Mar '22			
EF	Report on improved offers for professional audiences in the cultural sector completed (internal)	Done	Apr '22			
EF	Marketing, communications and product development benchmarking and insight developed	Ongoing	-			

Objective 3.2.5. Communicate and promote activities to professionals and partners

EF	Dissemination strategies for key channels (Twitter, LinkedIn, Europeana Pro) delivered (internal)	Done	Feb '22			
EF	Europeana Pro maintained and improved (technical infrastructure, user journeys, accessibility)	Ongoing	-			
EF	Pro editorials published (e.g. Pro News and themes)	Ongoing	-			
EF	Promotional activities promoted (Newsletter, Twitter, LinkedIn)[151]	Ongoing	-			
EF	Europeana Communicators community[152] supported	Ongoing	-			
EF	Accessibility review on Europeana Pro	100%	Aug '22	■	■	■

ENA Governance working group supported (bi-annual update) - the secretariat has supported activities of the working group by preparing monthly agendas, meeting reports and supporting proposal development to refine the existing ENA governance, including ENA and MC membership terms and conditions.

ENA and EAF periodic meetings organised (incl. ENA MB and MC, and EAF Steering Group and Forum) - The ENA and EAF secretariat prepared, organised and carried out the EAF spring meeting (April 2022), monthly EAF Steering Group meetings, monthly MB meetings, and two MC meetings (March and July 2022).

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[149] https://libereurope.eu/working-group/digital-scholarship-and-digital-cultural-heritage-collections-working-group/. The LIBER WG had its first meeting on 15 November 2021.
[150] https://glamlabs.io/
[151] Including GS editorials published on Europeana Pro.
[152] https://pro.europeana.eu/page/europeana-communicators-group

Report of Diversity & Inclusivity Task Force published[153] - the taskforce explored a range of topics, themes and actions that can form part of an action plan for the Europeana Initiative to process with Diversity & Inclusivity. The report brings together the research and discussions undertaken, categorising them by objectives (such as encouraging the proactive sharing of good examples (of D&I); increasing representation in teams, network and data; and increasing diverse and inclusive storytelling opportunities). A roadmap is presented following these objectives, which builds on existing work undertaken across the Initiative, to embed D&I in a sustainable and manageable way across the Initiative. The report concludes with recommendations on how to continue to stimulate the development of the roadmap with a Working Group, and using it to facilitate discussion and feedback sessions with stakeholders.

Reporting model for network engagement extended - desk and stakeholders research was undertaken to identify opportunities to develop the model for network engagement so that it facilitates the gathering and reporting of data. Recognizing that the existing model for reporting does not adequately represent the multidimensional nature of network engagement and that limitations on reporting exist mostly due to the limited use of CRM capabilities. In subsequent periods, richer data will be presented to evidence network engagement such as the number of network members attending events, and the number of network members responding to "Calls to Action", such as surveys, elections, task force membership, call for proposals. Further work can be undertaken to identify requirements for extended CRM capabilities which could allow more intricate data to be gathered and extracted.

New aggregators reviewed for accreditation (bi-annual update) - No new aggregators have been reviewed for accreditation. We have a few potential new aggregators, but they are not ready yet to receive accreditation and/or have not applied yet for accreditation.

General management support for Task Forces, Working Groups and communities (ENA/EAF/Europeana Initiative) (bi-annual update) - in this period we continued supporting all the existing ENA, EAF and Europeana Initiative wide Task Forces and Working Groups and provided overall management and guidance to the seven ENA communities.

Supporting the Digital Cultural Heritage of Ukraine Working Group (EF/ENA/EAF) (bi-annual update) - the Working Group was established in April 2022 to provide a forum for professionals to collaborate, coordinate, identify and develop opportunities and actions that support the needs of the Ukrainian Cultural Heritage sector. Through an open call it has attracted 32 members, and is led by a Steering Group. Members include representatives from Ukraine, as well as ongoing initiatives such as SUCHO[154].

Outreach outcomes to research communities published - with guidance of EF, CLARIN completed and published Jupyter notebooks for data processing with Europeana newspaper data and

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[153] https://pro.europeana.eu/project/diversity-and-inclusion-task-force
[154] https://www.sucho.org/

CLARIN NLP (Natural Language Processing) tools.[155] CLARIN and EF worked together to also publish this training material to the SSH| Social Sciences & Humanities Open Marketplace, as gateway to the EOSC | European Open Science Cloud for digital cultural heritage data.[156] CLARIN also published a screencast to guide possible users of the Jupyter notebooks.[157]

Europeana Research community and Research Advisory Board supported (bi-annual update) - in February 2022, the Europeana Research Community Cafes were launched to foster interaction between the community members and encourage more people to join the community. A guest speaker introduces some themes for each Café, with a common thread around the opportunities that digitised and born digital cultural heritage brings to research and higher education. Over 90 people attended the first cafe on "Collections as Data", and over 40 people attended the second cafe on "Legacies of Catalogue Descriptions".[158] Robin Boast, professor emeritus at the University of Amsterdam, was appointed as new chair of theThe Research Advisory Board. The board discussed and made concrete proposals about how to strengthen the engagement with academic and research communities within the European Data Space for Cultural Heritage. They also planned a series of digital workshops around this theme, in which the Research Community will be involved, likely to happen in Autumn 2022.

Partnerships supporting the digital transformation of the cultural sector nurtured (bi-annual update) - EF continued to invest in partnerships that can support the Europeana Initiative in its aim to digitally transform the sector. EF participated in several meetings of the European Heritage Alliance 3.0 (coordinated by Europa Nostra[159]) and the Commission Expert Group on the common European Data Space for Cultural Heritage (CEDCHE) that strengthened the positioning of the Europeana DSI. EF also participated in several high-level meetings organised by UNESCO[160] to discuss support for digital cultural heritage of Ukraine and we presented Europeana at the Memory of the World conference[161] in Paris. Finally, both NEMO[162] and 4CH[163] (Competence Centers) have been added to the Advisory Board of the Europeana Foundation, hence strengthening interaction with these two important bodies.

Partnership with Europeans Students Association for Cultural Heritage developed (bi-annual update) - we shared and promoted the work of ESACH to our professional audiences through an interview with their Coordination Committee on Europeana Pro news[164], part of a wider series drawing attention to resources and initiatives for new professionals in the cultural heritage sector. We organised an event in partnership (as part of the ESACH Talks series) on the digital

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[155] https://www.clarin.eu/notebooks
[156] https://marketplace.sshopencloud.eu/training-material/duVlI1
[157] https://marketplace.sshopencloud.eu/training-material/y1e7dT
[158] https://pro.europeana.eu/search?q=research+community+cafe
[159] https://www.europanostra.org/
[160] https://en.unesco.org/
[161] https://en.unesco.org/programme/mow
[162] https://www.ne-mo.org/
[163] https://www.4ch-project.eu/
[164]
https://pro.europeana.eu/post/supporting-new-professionals-the-european-students-association-for-cultural-heritage

transformation of the cultural heritage sector; ENA vice chair Sofie Taes spoke at this event[165]. EF is also supporting the cross-initiative Task Force on Inclusion and Diversity to take part in a consultation (organised by Europa Nostra and ESACH) on the 'Youth for the Future of Cultural Heritage in Europe' consultation.[166]

Adding high-level resources to the VLO - Full-text resources of the Europeana Newspapers Collection have been included into the CLARIN's Virtual Language Observatory as a metadata collection with multiple levels of granularity, intended to increase the resources families on the platform.[167] This will make the collection more accessible and reusable, thanks to methods for search and filter available on the VLO.

Organise training on how to use Europeana data sets for processing with Natural Language Processing tools - EF and CLARIN organised a training workshop to test the use of Jupyter notebooks for data processing of Europeana newspaper data (June 2022).[168] The workshop was designed for university teaching staff potentially interested in using Jupyter notebooks in university classes or doctoral training activities. The number of participants was limited to 16 (plus a number of observers), but the interest in this training workshop was much higher, also from cultural heritage professionals - the registration page got over 300 views. The workshop was meant as pilot activity both for CLARIN and EF, which used this format for the first time to address academic and research audiences. It was evident that a balance between self-paced training material and training workshops should be assessed to make the offer of training more sustainable in terms of time, effort, and human resources. Nevertheless, training workshops could help infrastructures position themselves in a more widespread manner, relying on the fact that workshop participants will act as multipliers of the experience gained and promoters of the products tested. EF and CLARIN's workshop confirmed to be the best way to refine a newly delivered product. This experience encouraged CLARIN to plan more training activities, e.g. at the forthcoming CLARIN Annual Event 2022.

Research Grants Programme 2021: outcomes published - the three institutions awarded a research grant delivered written outputs to disseminate the results of the events they organised. EF published an institution page for each of these institutions and an interview with each of the project leaders on Europeana Pro. These pieces gave shape to a Europeana Pro series on the theme of the 2021 call: Crowdsourcing and Research: 1) Museum fur Naturkunde Berlin (on the

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[165] https://pro.europeana.eu/event/esach-talks-may-2022-digital-transformation-and-cultural-heritage
[166]
https://www.europanostra.org/europa-nostra-and-its-youth-partners-launch-consultation-on-youth-for-the-future-of-cultural-heritage-in-europe/
[167]
https://vlo.clarin.eu/search;jsessionid=2AA4A0000C55F0F8D17F6347B584DBE7?1&fqType=collection:or&fq=collection:Europeana+newspapers+full-text
[168] https://pro.europeana.eu/event/full-text-resource-processing-training-workshop

Anthropocene);[169] University of Warsaw (cultural heritage geodata);[170] Estonian War Museum - General Laidoner Museum (on workflows to develop crowdsourcing plans at museums)[171]. EF promoted in the same way the report commissioned to the National Museum of World Cultures in Sweden, which conducted a pilot project to 'decolonise' the Swedish database 'Carlotta', involving Brazilian indigenous communities in this process[172].

Partnership to foster engagement with cultural heritage and academic communities (LIBER, GLAM LABs) (bi-annual update) - EF continued reinforcing the collaboration with the LIBER Digital Scholarship Working Group (sub-group on the Impact of digital scholarship), and the GLAM Labs Community. Inter alia, the Jupyter Notebooks that were developed with CLARIN, will allow EF to position Europeana among the organisations offering computational access to digital collections that the GLAMS Labs Community aims to foster and promote.[173]

Marketing, communications and product development benchmarking and insight developed (bi-annual update) - we have implemented, evaluated and refined a 'content taxonomy' system which allows us to categorise and filter content shared through Pro and our social media, based on 'topic' (i.e Impact/Copyright/Tech), 'content type' (i.e tool/update/event), and 'body' (i.e Europeana body/project partner/other). The aim of this taxonomy is to help us understand the level of interest and engagement our work receives from our audiences, in order to finetune and improve our offer/product development, in a way that serves the needs of our audience. We have run and evaluated the Europeana Pro 2022 user survey to help better understand who our users are, and their motivations. Finally we researched and wrote a report on improved offers for professional audiences in the cultural sector. The report explored three areas that could help to improve understanding of professional audiences and implement methods to help develop products that meet their needs. More information is available in D.1 Communication and dissemination plan M45 (May 2022)[174].

Europeana Pro maintained and improved (technical infrastructure, user journeys, accessibility) (bi-annual update) - development work continued to focus on improving content and increasing accessibility (see below) and functionality for users. We evaluated and improved code quality on the site, and have also made a number of accessible, aesthetic improvements to the site, including: improving styling on forms; creating more flexibility for styling of banners across the site; making the 'tile' functionality clickable; making Pro embeddable on other websites;

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[169] https://pro.europeana.eu/post/new-project-at-the-museum-fuer-naturkunde-berlin-explores-crowdsourcing-for-the-anthropocene

[170] https://pro.europeana.eu/post/new-project-at-the-university-of-warsaw-explores-cultural-heritage-geodata-and-crowdsourcing

[171] https://pro.europeana.eu/post/new-project-explores-crowdsourcing-in-estonian-cultural-heritage-institutions

[172] https://pro.europeana.eu/post/new-project-at-the-the-national-museums-of-world-culture-sweden-explores-crowdsourcing-to-decolonialise-data

[173] https://glamlabs.io/computational-access-to-digital-collections/

[174] Available on request.

developing new functionalities to present links to external websites; and improving the presentation of tags on 'project' content types. Work is ongoing to update Bolt, the content management system through which we update Europeana Pro.

Accessibility review on Europeana Pro - we commissioned an external, expert-led accessibility review of Europeana Pro. We have actioned recommendations that focused on navigation, pagination, styling, images, attribution, documentation and zooming. We have supplemented this work with regular accessibility reports via Lighthouse that track 18 of the most visited pages on the site. When we started tracking these in March 2021 these pages averaged a score of 91 out of 100. In August 2022 they averaged 99 out of 100.

Pro editorials published (e.g. Pro News and themes) (bi-annual update) - we have published regular posts through Europeana Pro news this period, covering news and announcements from across the Europeana Initiative and cultural heritage sector. In this period, monthly themes have explored initiatives for new professionals in the cultural heritage sector[175] and the Europeana Research grants winners[176]; complemented the March editorial theme on Europeana.eu by exploring Women's History Month[177]; aligned with activity from Europeana Education through interviews with the winners of the Built with Bits educational challenge[178]; and highlighted Digital Storytelling to highlight and connect with the Digital Storytelling Festival[179] . Ongoing series have covered Professionals in Focus (interviews with ENA Members Councillors)[180]; quarterly highlights from the Europeana Initiative[181]; updates on development of the Europeana website[182]; and the CDSM Directive[183].

Promotional activities promoted (Newsletter, Twitter, LinkedIn) (bi-annual update) - in this period we continued to amplify our Pro editorial work and also promoted calls relevant to professional audiences via relevant channels. The most popular activity in this period in terms of traffic driven to Europeana Pro was a gif-making workshop, the ENUMERATE self assessment tool survey announcement and the Europeana 2022 call for proposals announcement. More information is available in D.1 Communication and dissemination plan M45 (May 2022)[184].

Europeana Communicators community supported (bi-annual update) - in this period, EF supported the community in their involvement in the Digital Storytelling Festival 2022, in which they ran a webinar and published a news post to inspire users to take part. We have supported cooperation between the community and other ENA communities, including collaborating on a 'Copyright Hours' event and submitting a joint proposal with the Climate Action community for Europeana

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[175] https://pro.europeana.eu/tags/new-professionals-interviews
[176] https://pro.europeana.eu/tags/research-grants-interviews
[177] https://pro.europeana.eu/tags/womens-history-month-2022
[178] https://pro.europeana.eu/tags/built-with-bits-interviews
[179] https://pro.europeana.eu/tags/digital-storytelling-2022
[180] https://pro.europeana.eu/search?q=professionals+in+focus
[181] https://pro.europeana.eu/tags/highlights
[182] https://pro.europeana.eu/search?q=What%E2%80%99s+new+on+the+Europeana+website%3F
[183] https://pro.europeana.eu/tags/cdsm-series
[184] Available on request.

2022. We also supported a newsletter for the community which has been sent six times in this period, alongside ongoing reporting and administration, including managing monthly Steering Group meetings.

Communication and dissemination activities

Partner	Name of event	Activity	Location	Date
EF	DARIAH Annual Event 2022[185]	EF staff and a representative from the EAF took part in two sessions of the event, which is annually organised by DARIAH, as the major European infrastructure for the Arts and Humanities. This year's theme was Storytelling. Ongoing and future collaborations between DARIAH and Europeana were discussed also in the plenary sessions of the event.	Athens (and online)	31/05 - 03/06 2022
EF/ CLARIN	Full-Text Resource Processing Training Workshop[186]	Training workshop to test the Jupyter Notebooks developed under DSI-4 with university teaching staff	Online	15/06/ 2022
EF	DIGITARCH. Digital Collection Curator for Archeology - Summer School[187]	EF gave the presentation: *Europeana. Between the platform and the communities, research and tools.* The project proposal for this summer school received EF's scientific support, and the second cycle is planned for 2023.	Bologna (and online)	20/06/ 2022
CLARIN	LREC 2022[188]	The Jupyter notebooks were demonstrated (with use of screencast). LREC 2022 is one of the major conferences on language resources in Europe.	Marseille, France	21-23/06/ 2022
EF	Digital Humanities Oxford Summer School [189]	EF participated in the training activities, thanks to a bursary. The summer school of Oxford University is one of the first DH summer schools established in Europe and attracts post-graduates, scholars, and cultural heritage professionals from all over the world. For the first time, it also hosted a strand on digital cultural heritage.	Oxford (and online)	11-15/07/ 2022

Reporting metrics: nurture networks

No.	Description	Measured by	Frequency	Target	Jun 2022	Jul 2022	Aug 2021	Aug 2022

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[185] https://annualevent.dariah.eu/
[186] https://pro.europeana.eu/event/full-text-resource-processing-training-workshop
[187] https://site.unibo.it/digitarch/en
[188] https://lrec2022.lrec-conf.org/en/
[189] https://digital.humanities.ox.ac.uk/digital-humanities-oxford-summer-school

ID	Metric	Description	Frequency	Target				
KPI 3.3	Growth of Europeana Network Association members	Number of members in the ENA	Monthly	**3,000**	3,698	3,723	3,160	3,759
KPI 3.4	Satisfaction of the Europeana Network Association members with the ENA	Average satisfaction on a 5-point Likert scale[190]	Once a year	**75%**	78%	-		-
KPI 3.5	Communities in the Europeana Network Association	Number of active communities	Once a year	**6**	-	-	6	7
KPI 3.6	Task forces in the Europeana Initiative	Number of active task forces per month (ENA, EAF, Initiative)	Monthly	**5**	4	4	5	4
RM 3.10	Working groups in the Europeana Initiative	Number of active working groups per month (ENA, EAF, Initiative)	Bi-monthly	-	-	7[191]	3	7
RM 3.11	Active members in the Europeana Initiative	Number of members participating in task forces and working groups per month (ENA, EAF, Initiative)	Bi-monthly	-	-	165	145	165
RM 3.12	Reach to Europeana Climate Action community	Number of people reached per month (Basecamp, mailing list)	Bi-monthly	-	-	211[192]	NEW	214

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[190] 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%).
[191] This period we added two WGs to this metric that were missed before. Those are two EAF WGs: Libraries Working Group (EAF) (established May 2022) and IIIF & Europeana Working Group (EAF/ENA) (established March 2020).
[192] The number now also includes people reached via Basecamp (previously only the mailing list was tracked).

RM 3.13	Research events and tutorials	Total number delivered (cumulative)	Bi-monthly	-	-	5	3	5
RM 3.14	People reached with research events and tutorials[193]	Total number of people participating (cumulative)	Bi-monthly	-	-	130	280	130
RM 3.15	Research Grants outcomes	Total number of outcomes delivered (cumulative)	Bi-monthly	-	-	-	4	4
RM 3.16	Reach to Europeana Research community	Number of people reached per month (Discussion list, Twitter)	Bi-monthly	-	-	6,886	6,181	6,922
RM 3.17	Traffic to Europeana Pro	Number of visits per month	Monthly	-	24,040	19,372	21,646	22,319
RM 3.18	Returning visitors to Europeana Pro	Percentage of visitors returning	Monthly	-	14.20%	13.7%	30.1%	13.3%
RM 3.19	New visitors to Europeana Pro	Total number of new visitors per month	Monthly	-	20,617	16,709	15,120	19,356
RM 3.20	Satisfaction rate for Europeana Pro	Average satisfaction on a 5-point Likert scale[194]	Once a year	-	-	-	-	82%
RM 3.21	Reach to Europeana Communicators community	Number of people reached per month (Newsletter, LinkedIn, mailing list)	Bi-monthly	-		2,982	2,524	2,909

[193] The number only includes people reached with specific events.
[194] 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%).

This period, we measured the satisfaction of ENA members with the ENA (KPI 3.4) with a good average satisfaction of 78%. The respondents' satisfaction with the network increased from 2021 (67% satisfaction rate). This was the third year in a row that we conducted a satisfaction and impact survey of ENA members. This helps us to track expectations over time and to assess the extent to which ENA is meeting members' needs, as well as to receive suggestions for improvements and for relevant content and programming. We had a response rate of approximately 5%, which is lower than in past years (where we had a response rate of about 10%). The data suggests that those responding represent an active segment of the network (42% identify as quite active; 6% identify as very active; a different metric shows that 12% identify as already being very involved in TFs, WGs, communities). The findings reinforce our understanding of the network as a multidisciplinary and interdisciplinary group where those with more sector experience and longer membership seem to dominate. The respondents state that the network has value for their daily work (64%). In terms of the ENA offer, respondents want to see training and skills sharing (69%), webinars (55%), online workshops (49%) and networking events (48%). Recommendations to improve the network offer have been shared with the ENA Members' Council. A published impact assessment report will be made available on Europeana Pro before December 2022.

We also measured the satisfaction rate for Europeana Pro with a very good average satisfaction of 82%.

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[195] 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. | - |
| R3.7 | Research grants: format of the events to be adapted on the basis of the pandemic's course | High (4) | Low (2) | 8 | The COVID-19 pandemic may oblige us to change the format (from in-person to digital) for the in person events planned for the first half of 2022. In this case, the amount of the grant will be reduced (per contract). If the grant recipients ask to cancel their events, the contract will be withdrawn. | - |

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 manage and further develop Europeana frameworks and standards (objective 3.3.1.) and we will develop policies and standards that enable open access to digital cultural heritage (objective 3.3.2.). We will also continue to develop the Europeana Impact and Capacity Building Frameworks to enable activity and evidence of digital transformation in the sector (objective 3.3.3.). Finally, we will engage with EU Member States to raise awareness of the Europeana Initiative (objective 3.3.4.).

Overview of outcomes: strengthen national infrastructures

Partner	Outcomes	Progress	Due date	Jun M46	Jul M47	Aug M48
Objective 3.3.1. Manage and develop Europeana frameworks and standards						
EF	Europeana general framework design developed (V1)	Done	Feb '22			
EF	Europeana Glossary updated to harmonise framework design and management components (internal)	Done	Feb '22			
EF	Europeana frameworks compliance with framework design evaluated	Done	Mar '22			

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[195] Http s://www.go-fair.org/fair-principles/

EF	EPF updated following the Europeana general framework design (public)	100%	Jul '22			
EF	Europeana Glossary updated and maintained	Ongoing	-			

Objective 3.3.2. Develop and maintain an interoperable licensing framework

EF	Strategy to encourage the accurate assignment of rights information to Europeana material created (internal)	Done	Dec '21			
EF	Data protection guidance for the Europeana Initiative developed (internal)	Done	Feb '22			
EF	Training resources (V1) to support the choice of accurate rights statements developed (public)	Done	Feb '22			
EF	CB Playbook tested with Europeana Copyright community	100%	Jun '22			
EF	EUIPO datathon on out of commerce works supported	100%	Jun '22			
EF	Copyright management guidelines published and promoted	100%	May '22			
EF	Europeana Copyright community[196] supported	Ongoing	-			
EF	Page with multilingual and multi-jurisdictional copyright tools maintained and developed	Ongoing	-			
EF	RightsStatements.org consortium supported	Ongoing	-			

Objective 3.3.3. Develop processes and enable evidence of digital transformation

EF	Europeana Capacity Building Framework (V2) developed (internal)	Done	Apr '22			
EF	Enumerate survey completed	100%	Jun '22			
EF	Capacity Building for Digital Transformation Task Force: outcomes published	100%	Jun '22			
EF	Europeana Impact Playbook Phase four published	100%	Jun '22			
EF	Metrics framework to evidence digital transformation developed and implemented	Ongoing	-			
EF	Supportive tools and resources for capacity building developed and made available	Ongoing	-			

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[196] https://pro.europeana.eu/page/europeana-copyright

EF	Europeana Impact community[197] supported	Ongoing	-			
Objective 3.3.4. Engage with Member States						
EF	Slovenian Presidency event organised	Done	Dec '21			
EF	Slovenian Presidency Europeana conference report published	Done	Mar '22			
EF	French Presidency event organised	Done	Mar '22			
EF	French Presidency Europeana conference report published	100%	Aug '22			
EF	Country reports[198] updated	Ongoing	-			

EPF updated following the Europeana general framework design (public) - in developing the Europeana general framework design earlier this year, we completed a document to standardise the management of Europeana frameworks so all frameworks follow the same approach in their creation, development, refinement and implementation. The first Europeana framework that we updated following this Framework Management Template was the EPF. It outlines the problem statement and provides the outcomes of an impact assessment. It describes the core elements of the EPF together with the services and products in place to implement the EPF. It describes processes important for the management of the EPF. It concludes with a full update on the progress made on new recommendations and updated requirements for services and products focusing on content in the EPF (MS5 - see above under WP2). While the document is not public, being a document that supports the management of the EPF, the EPF and its services and products remain public, as e.g. shown with the public release of the Metis Sandbox and its features that will support the implementation of the EPF.

Europeana Glossary updated and maintained (bi-annual update)[199] - we continue to maintain the Europeana Glossary, adding new terms where relevant and using it as a reference point to consistently apply terminology across our frameworks' development and descriptions.

CB Playbook tested with Europeana Copyright community - the Capacity Building playbook offers a structured approach to determine which capacity building activities are best to invest in. It can be used by organisations, communities and professionals. The Europeana Copyright community has tested the playbook to determine their future capacity building efforts. This was supported by two instructor-led workshops, one in October 2021 and one in June 2022. The outcome of this test was very positive, participants indicated that it offered an easy to follow approach, improved their shared vocabulary with regards to capacity building and improved their determination of planning their future capacity building activities. This test, and other tests, has resulted in

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[197] https://pro.europeana.eu/page/europeana-impact-community
[198] https://pro.europeana.eu/page/member-states
[199] https://pro.europeana.eu/page/glossary

collecting possible improvements for future editions of the playbook. Apart from this test an internal test has taken place and a test with WEAVE project partners.

EUIPO datathon on out of commerce works supported[200] - EF supported the organisation of a datathon on out of commerce works whose goal was to increase the visibility of the EUIPO portal, build capacity for cultural heritage professionals to use it, promote the Out-of-commerce works system and where possible increase the data available in the portal. The datathon run from April to June 2022, structured around three capacity building online sessions and a closing event. The event attracted a high number of participants (118 in the first session, for example) and of registrations (217 for the second session, for example) and led to some additional data being ingested, and next steps and areas for collaboration being identified.

Copyright management guidelines published and promoted - We completed the development of the Copyright Management Guidelines[201] and a webinar for their promotion[202] (May 2022). With the ultimate goal of supporting cultural heritage institutions harmonise all approaches to copyright across the organisation, they describe the workflow, who to involve and inform, what and how to document, and how to start the discussion for every step along the way, including risk management, acquisition, digitisation, reuse, or even building copyright capacity within the organisation.

Europeana Copyright community supported (bi-annual update) - we continue to support the copyright community by facilitating its management. We organise and participate in monthly meetings and in preparatory meetings with the chair. We support the set up, promotion and development of the office hours held once a month, and the development of the Copyright Management Guidelines[203] and a webinar for their promotion[204] (May 2022). We have also set up a working group on the topic of out of commerce works[205] (April 2022) that seeks to encourage the use of these provisions. We maintain the twitter account and mailing list to share relevant updates in the area of copyright and cultural heritage.

Page with multilingual and multi-jurisdictional copyright tools maintained and developed (bi-annual update)[206] - the page giving access to copyright tools continues to be maintained and enriched where pertinent with the resources identified by the copyright community.

RightsStatements.org[207] consortium supported (bi-annual update) - we support the RightsStatements.org consortium by maintaining its infrastructure and governance through chairing and coordination. We have continued to support their translation by accompanying

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[200] https://euipo.europa.eu/ohimportal/en/web/observatory/datathon-2022
[201] https://pro.europeana.eu/post/copyright-management-guidelines-for-cultural-heritage-institutions
[202] https://pro.europeana.eu/event/introducing-the-copyright-management-guidelines
[203] https://pro.europeana.eu/post/copyright-management-guidelines-for-cultural-heritage-institutions
[204] https://pro.europeana.eu/event/introducing-the-copyright-management-guidelines
[205] https://pro.europeana.eu/project/out-of-commerce-works-working-group
[206] https://pro.europeana.eu/page/copyright-tools-and-resources
[207] https://rightsstatements.org/de/

translation partners through the process and deploying the text online, namely for Croatian and Catalan.

Enumerate survey completed - the ENUMERATE survey 2022 was completed at the end of June, via the ENUMERATE self assessment tool developed in partnership with the inDICEs project[208]. There were 219 responses from EU27 countries, from a mix of domains (libraries were represented most strongly). The results revealed that most institutions currently have digital strategies prioritising social media and marketing as well as traditional areas in the cataloguing of collections and items digitised (these are also the areas in which staff members have expertise) with an interest to branch into other areas such as Artificial Intelligence, multilingual strategy and capacity building. 28% of respondents do not yet have a digital collection despite having physical collections, indicating that some of our audience can benefit from sectoral advice relating to digitisation and digital collections management. In addition, more than half of total respondents report that less than 2% of their annual budget is devoted to digital collections work. The biggest target audience and sector (after the general public) for most participating institutions is research and education and half of the institutions also reported collaborations in this area. The full report D.2 Study on impact and reuse and impact of digitisation M47[209], including indicators for digital transformation was submitted in July 2022.

Capacity Building for Digital Transformation Task Force: outcomes published[210] - the Digital Transformation Task Force has published the outcomes of their work in a report and a guide. The report covers the Task Force's activities between appointment in October 2021 and the publication of the report in May 2022. The guide offers recommendations that frame an approach to digital transformation for the whole cultural heritage sector.

Europeana Impact Playbook Phase four published - guided by a small external advisory group and members of the Impact Lite Training and Community Building Task Force[211], Phase four was developed, tested, and finally published in June 2022. It is now available on the Impact page on Europeana Pro.[212] Phase four is dedicated to evaluating your impact assessment approach. We have now completed the four-phased Europeana Impact Playbook (Phase one was published in 2017). Marketing and communications relating to Phase four (and the Playbook as a whole) will be focussed on reaching heritage professionals.

Metrics framework to evidence digital transformation developed and implemented (bi-annual update) - aligning with the launch and delivery of the ENUMERATE self-assessment tool and report, our ongoing research into improving the indicators to evidence digital transformation are being

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[208] https://pro.europeana.eu/project/indices
[209] Available on request.
[210] https://pro.europeana.eu/project/digital-transformation-task-force
[211] https://pro.europeana.eu/project/impact-lite-training-community-building-taskforce
[212]
https://pro.europeana.eu/files/Europeana_Professional/Impact/europeana_impact_playbook_phase_four_evaluation_V.1.pdf

reported in D.2 Study on impact of digitisation and reuse of cultural heritage[213], alongside a proposal for a cross-sector approach to measuring digital transformation on a collaborative, transparent, sustainable and long-term basis.

Supportive tools and resources for capacity building developed and made available (bi-annual update) - guidelines for training development and delivery were published on Pro.[214] These guidelines are a step by step approach to develop and deliver training. The guidelines were developed internally and tested alongside the development of training resources by EF, such as the Data statistics dashboard and Sandbox training resources. The Digital Transformation Taskforce has published a guide for digital transformation[215]. This guide can be used by professionals in the cultural heritage sector to determine their capacity building needs.

Europeana Impact community supported (bi-annual update) - our focus on engaging and informing the Europeana Impact community centred on Pro publications in the first quarters of 2022. The Impact Playbook and Europeana's impact approach were also featured in an Italian cultural sector magazine dedicated to impact (July 2022).[216] More events and possibly training are planned in the second half of 2022, including a presentation at Europeana 2022 and a workshop at the NEMO museum conference in October 2022. We also contributed to the development of a module on impact assessment in the forthcoming inDICEs MOOC. The core of our Community work, however, has been co-leading the Impact Lite Training and Community Building Task Force, which is going at full speed.

French Presidency Europeana conference report published - the French Presidency Europeana Conference 'Building the Common European Data Space for cultural heritage together'[217] (March 2022) - held in collaboration with the Ministry of Culture of France and the Mobilier National - involved 330 participants from 43 countries. It aimed to stimulate reflection and dialogue around the creation of the common European data space for cultural heritage - the needs, the key challenges and the aspirations for achieving it. Some of the most important elements for the development of the data space were considered to be: a robust technical and technological infrastructure, interoperability, connection to other data spaces, multilingualism, 3D, long-term digital preservation, data quantity and quality, bridging gaps in capacity and funding, aggregation and aggregator communities. The most important outcome of this conference was the call for unity and action. Only if all actors and stakeholders work together collaboratively, can we ensure the success of the common European data space for cultural heritage. The report[218] from the conference encapsulates the basic findings that all stakeholders can use to refine their thinking as the work on designing and building the data space progresses.

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[213] Available on request.
[214] https://pro.europeana.eu/page/guidelines-for-delivering-training-and-development
[215] https://pro.europeana.eu/page/building-digital-capacity#digital-transformation-task-force
[216] https://meltingpro.org/conectando-audiencias-italia-rivista/
[217] https://pro.europeana.eu/event/building-the-common-european-data-space-for-cultural-heritage-together
[218] https://pro.europeana.eu/post/report-from-the-french-presidency-europeana-conference

Country reports updated (bi-annual update) - the reports provide information about the Europeana conferences under the presidencies of the Council of EU; Europeana highlights relevant to the Member States, information on the country's fund contribution to Europeana projects over years, country's participants in Europeana Network Association; country's culture and cultural content showcased in Europeana.eu; and information on the country's open data in Europeana. The reports are available on the Member States page[219] on Europeana Pro.

Communication and dissemination activities

Partner	Name of event	Activity	Location	Date
EF	XVII Congress on art in Society[220]	Presentation on digital cultural heritage and copyright, understanding the objectives pursued by policy and law at the EU level and how they translate into practice. The audience was mostly composed of scholars.	Zaragoza, Spain (online presentati on)	05/07/ 2022
EF	EUIPO Datathon Closing Event[221]	Organisation and moderation of a roundtable with representatives of the cultural heritage sector from across the EU and a rightsholder organisation to discuss next steps and needs of the cultural heritage sector. The audience was mostly composed of representatives from Member States (on-site) and cultural heritage professionals (online).	Alicante, Spain (EUIPO HQ)	28/06/ 2022

Reporting metrics: strengthen national infrastructures

No.	Description	Measured by	Frequency	Target	Jun 2022	Jul 2022	Aug 2021	Aug 2022
KPI 3.7	Take up of rs.org	Percentage of active aggregators that integrated rs.org in their infrastructure	Once a year	**35%**	-	-	72.5%	72.5%
RM 3.22	Use of rs.org by accredited aggregators	Percentage of accredited aggregators that share data on Europeana using a rights statements from the rs.org	Once a year	-	-	-	82.5%	82.5%

[219] https://pro.europeana.eu/page/member-states
[220] https://cgscholar.com/cg_event/events/Aes22/about
[221] https://euipo.europa.eu/ohimportal/en/web/observatory/datathon-2022

RM 3.23	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-annual	-	-	-	18.26 million	17.95 million
RM 3.24	Reach to Europeana Copyright community	Number of people reached per month (Mailing list, Twitter)	Bi-Monthly	-	-	4,159	3,796	4,186
RM 3.25	Reach to Europeana Impact community	Number of people reached per month (Newsletter, LinkedIn)	Bi-Monthly	-	-	2,498	1,904	2,523
RM 3.26	Satisfaction with the Europeana EU presidency events	Average satisfaction on a 5-point Likert scale[222]	Upon occasion	-	-	-	-	79%

In August 2022, we measured metrics related to rs.org. The numbers remain almost the same as in 2021 since we haven't added a new aggregator and no existing aggregator has changed data towards rs.org.

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.	-

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[222] 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%).

| 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 online and hybrid environments, co-creation sessions and workshops as part of the presidency conferences are challenging. | Medium (3) | Medium (3) | 9 | Explore and use methods and tools that allow for ideation and collaborative co-creation resulting in shared understanding and actionable insights 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 coordinates Europeana DSI-4 as described in the tender and B.1 Implementation plan M36.

Overview of outcomes

Partner	Outcomes	Progress	Jun M46	Jul M47	Aug M48
EF	Programme management	Ongoing			
EF	B.2/B.3 Periodic reports M46	100%	■		
EF	D.2 Study on impact of digitisation and reuse of cultural heritage M47	100%	■	■	

EF	B.2/B.3 Periodic reports M48	100%		
EF	B.4 Annual report M48	100%		
EF	B.5 Final report M48	100%		

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 Aug 2022
WP 1: Strengthen the infrastructure	**49.50%**	**49.32%**
Task 1.1. Easy data publishing	11.60%	12.98%
Task 1.2. Europeana website experience	14.90%	13.61%
Task 1.3. Reliable platforms	8.40%	7.97%
Task 1.4. Discoverability of digital cultural content	14.60%	14.76%
Work package 2: Improve data quality	**17.50%**	**18.96%**
Task 2.1. Quality assured data	12.50%	13.63%
Task 2.2. Enriched data	5.00%	5.33%
Work package 3: Build capacity	**26.50%**	**24.46%**
Task 3.1. Build capacity of aggregators and professionals	10.80%	9.94%
Task 3.2. Nurture networks	9.60%	8.93%
Task 3.3. Strengthen national infrastructures	6.10%	5.59%
Work package 4: Programme management	**6.50%**	**7.27%**
Task 4.1. Programme management of Europeana DSI-4	6.00%	5.97%
Task 4.2. Relations with Europeana DSI Generic Services projects	0.20%	1.01%
Task 4.3. Governance (DCHE)	0.10%	0.20%
Task 4.4. Phasing-in and phasing-out periods	0.20%	0.09%
TOTAL	**100%**	**100%**

Major changes in staff, if applicable
No changes for M46 - 48.

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 projects[223]

Partners: EF

EF maintains regular contact with the funded Europeana and other 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). The table below shows the progress against Annex 5 of the implementation plan of all Generic Services project outcomes that are related to Europeana DSI-4 Year 4.

Europeana Sport[224] concluded 30 April 2022 and it had its validation meeting on 30 June 2022. The project highlighted the rich heritage of sport across Europe by bringing and upgrading more than 39,000 high quality (Tier 2+) digital objects to Europeana. It organised 14 engagement events both onsite and online in 8 European countries, where it gathered 340 user-generated stories currently available at Europeana. The project also built the capacity of other cultural heritage institutions by giving online workshops on licensing and copyright and collection and event management as well as related guidelines and training materials. Finally, it published more than 60 editorials on Europeana, including 35 blogs, one exhibition and eight galleries.

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[223] This section also highlights other projects the DSI platform is involved with.
[224] https://pro.europeana.eu/project/europeana-sport

ARMA[225] formally ended on 31 August 2022. The project aimed to show how medieval reading culture evolved and became a fundamental aspect of European culture. For this, the project delivered more than 65,000 high-quality records (Tier 2+) to Europeana, of which 58 are in 3D. The project also engaged with Europeana audiences by creating 40 editorials on medieval reading culture, including an exhibition and a feature page. Finally, the action developed recommendations on knowledge exchange between curators and postsecondary educators and recommendations on the implementation of IIIF.

Overview of progress: Generic Services projects against Annex 5 (project start - end of the current reporting period)

Note that this table only reports on actions/outcomes/milestones planned and completed during DSI4-Y4 according to the project agreements (as outlined in Annex 5 of the implementation plan).

Objective 4.2.2. Supporting Europeana Generic Services (CEF-TC-2019-1) call
Partner	Outcomes	DSI-4 contribution	Due Date	Progress	Status	Comments
Europeana XX: Century of Change
GS/DSI	100,000 new high quality objects	Task 2.1 Quality assured data	Nov 21	100%	Done	409,492 records delivered, of which 390,255 records (or 95%) are in Tier 2+.
GS/DSI	15,000 upgraded records	Task 2.1 Quality assured data	Nov 21	100%	Done	16,742 items upgraded to Tier 4.
GS/DSI	2.5 million enrichments	Task 2.2 Enriched data	Nov 21	100%	Done	2,593,012 enriched records delivered.
GS	Extension of the recommendation engine to support entity powered collections	Task 1.2. Europeana website experience	Nov 21	100%	Done	Available on the Europeana.eu
GS	Improvement in Europeana Media Player to support the display of subtitles in multiple languages for a single video.	Task 1.2. Europeana website experience	Sep 21	100%	Done	Available on the Europeana.eu
GS/DSI	Publication of subtitles	Task 2.2	Nov 21	100%	Done	

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[225] https://pro.europeana.eu/project/the-art-of-reading-in-the-middle-ages-arma

	on Europeana.eu	Enriched data				
GS	35 editorials in Europeana.eu	Task 1.4 Discoverability of digital cultural content	Nov 21	100%	Done	55 editorials in Europeana.eu
GS	16 editorials related pieces in Europeana Pro	Task 3.2. Nurture networks	Nov 21	100%	Done	Available on Europeana Pro.

Europeana Sport[226]

GS/DSI	30,770 new and updated records (24,900 new digital objects and 5,870 improved digital objects)[227]	Task 2.1 Quality assured data	March 22	100%	Done	45,506 new and updated records, from which 39,714 (or 87%) records are in Tier 2+.
GS/DSI	250 user-generated content (stories and associated objects)	Task 2.1 Quality assured data	Sept 21 [228]	100%	Done	350 user-generated stories in Europeana.eu.
GS	40 editorials in Europeana.eu	Task 1.4 Discoverability of digital cultural content	Dec 21	100%	Done	62 editorials published on Europeana.eu.
GS/DSI	8 editorials in Europeana Pro.	Task 3.2. Nurture networks and Task 4.2. Relations with Europeana Generic Services projects	April 22	100%	Done	9 editorials on Europeana Pro.
GS	10 collections days events held	Task 3.1. Build capacity of aggregators and professionals	Sep 21	100%	Done	14 collection days events, both onsite and online.

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[226] https://pro.europeana.eu/project/europeana-sport.
[227] New targets according to the amended grant agreement extending the project by 3 months.
[228] There is no clear project deadline for aggregation of user-generated content, so we have decided to assign the same deadline as the one for content aggregation.

GS	2 workshops held	Task 3.1. Build capacity of aggregators and professionals	Dec 21	100%	Done	Workshop recording available in Europeana Pro.

ARMA - The Art of Reading in The Middle Ages[229]

GS/DSI	21,300 new records	Task 2.1 Quality assured data	July 22	100%	Done	66,327 newly and updated records, of which 65,885 (or 99%) are in Tier 2+, incl. 58 3D.
GS	20 editorials in Europeana.eu	Task 1.4 Discoverability of digital cultural content	Feb 22	100%	Done	40 editorials available on Europeana.eu (icl.exhibition)
GS	1 online exhibition available in English + additional five languages[230]	Task 1.4 Discoverability of digital cultural content	Oct 21	100%	Done	Available on Europeana.eu
GS	25 curatorial activities in Europeana.eu	Task 1.4 Discoverability of digital cultural content	May 22 [231]	100%	Done	38 curatorial activities available on project website[232] , 10 learning scenarios from the curatorial activities are also available on Teaching with Europeana blog[233].
GS	Recommendation on the implementation of IIIF	Task 2.1 Quality assured data	July 22[234]	100%	Done	Recommendations published on Europeana Pro[235]

Objective 4.2.3. Supporting Europeana Generic Services (CEF-TC-2020-1) call[236]

Jewish History Tour[237]

GS/DSI	35,000 new and	Task 2.1	April 22	30%	Delayed	7,540 records have

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[229] https://pro.europeana.eu/project/pagode-europeana-china
[230] Dutch, German, Czech, Slovenian and French
[231] Activity extended until 31 May 2022
[232] http://medieval-reads.eu
[233] https://teachwitheuropeana.eun.org/
[234] Extended to 31 July 2022
[235] https://pro.europeana.eu/project/the-art-of-reading-in-the-middle-ages-arma
[236] All projects funded under (CEF-TC-2020-1) call end after the end of the reporting period DSI-4 Y4.
[237] https://pro.europeana.eu/project/jewish-history-tours

	upgraded records without enrichments[238] (incl. 5,000 newly digitased records).	Quality assured data				been published and 42,237 are in preview.[239]
GS	Validation methodology for enrichments is ready	Task 1.2. Europeana website experience	Jun 22	15%	Delayed [240]	Validation of enrichments has been worked on meetings between EF and partners.
GS/DSI	Enhancement of Europeana API with geospatial querying	Task 2.2 Enriched data	Jul 22	90%	Delayed	First implementation has been done but it will undergo one last change before release.
GS/DSI	Editorials on Pro	Task 3.2. Nurture networks and Task 4.2. Relations with Europeana Generic Services projects	Aug 22	50%	On track [241]	
GS	1 webinar with a series of 3 sessions	Task 3.1. Build capacity of aggregators and professionals	Sep 21	100%	Done	
WEAVE - Widen European Access to Cultural Communities Via Europeana						
GS/DSI	5,265 new records (165 3D objects, 100 videos and 5000 photographs)	Task 2.1 Quality assured data	Aug 22	100%	Done	7,954 records are published[242].

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[238] The original internal plan was to submit first to Europeana the records without enrichments, to be able to analyse the impact of the enrichments in the metadata Tier. Due to some delays on the preparation of data this option was changed, the data that has been delivered by August 2022 have enrichments included in their metadata. This does not impact any MS of the project.

[239] This task is not completed and is marked as delayed, although the project has delivered the number of records according to the project Grant Agreement,they have not yet delivered the 5,000 newly digitised records in Tier 4. records to Europeana.

[240] As mentioned in footnote 241 the original plan was to assess the impact of the enrichments and do a validation of them after the submission of records with enrichments. Due to the delays of the content delivery, this task is also delayed.

[241] This outcome will continue after the DSI-4 Y4 contract as more editorials are expected after August 2022 and until the end of the project.

[242] Tier assesment will be shared after the end of the project.

GS/DSI	Integration of the WEAVE experience into Europeana CSP	Task 1.4 Discoverability of digital cultural content	Aug 22	20%	On track [243]	90% of EF side is completed. EF is expecting to receive at the beginning of Sep 22 the links from the partners to make the connections. The remaining 10% work will be done after (evaluation, integration and publication).
GS	6 editorials on Europeana Pro[244]	Task 3.2. Nurture networks and Task 4.2. Relations with Europeana Generic Services projects	Aug 22	100%	On track [245]	6 editorial available on Europeana Pro[246]. 4 more editorials are expected after the end reporting period DSI-4 Y4.
GS	10 editorials on Europeana.eu	Task 1.4 Discoverability of digital cultural content	Aug 22	60%	On track [247]	6 editorials available on Europeana.eu. Remaining 4 editorials are expected after the end reporting period DSI-4 Y4.
GS	5 Europeana WEAVE online events	Task 3.1. Build capacity of aggregators and professionals	Mar 22	100%	Done	Events have been held [248]. A facilitators guide for the workshop is available in Pro[249]. Recordings available as webinars on Europeana Pro.
GS	Best practices in	Task 3.1. Build	June 22	100%	Done	Catalogue of best

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[243] This outcome will continue after the DSI-4 Y4 contract until the end of the project, the MS deadline is due to 30 September 2022.
[244] To date, five editorial pieces have been published (one project page, one project news post, two curated event pages (on an D&I event series and a Europeana LabDay) and an event workbook)
[245] This outcome will continue after the DSI-4 Y4 contract until the end of the project, the MS deadline is due to 30 September 2022.
[246] https://pro.europeana.eu/post/weave-events-explore-3d-for-intangible-heritage-and-regeneration
[247] This outcome will continue after the DSI-4 Y4 contract until the end of the project, the MS deadline is due to 30 September 2022.
[248] https://pro.europeana.eu/event/europeana-labday, https://pro.europeana.eu/event/europeana-weave-event-series-on-diversity-and-inclusion
[249] https://weave-culture.eu/capacity-building/europeana-events/

	intangible heritage content and recommendations for metadata enrichment of community (and minority) collections	capacity of aggregators and professionals				practices and guidelines completed[250]
Europeana Enrich+[251][252]						
GS/DSI	100,000 new records	Task 2.1 Quality assured data	Nov 21 [253]	35%	On track [254]	35,000 new records have been published so far.
GS/DSI	10 editorials pieces on Pro and/or editorials on Europeana.eu	Task 3.2. Nurture networks and Task 1.4 Discoverability of digital cultural content	Aug 22 [255]	40%	On track	4 editorials are published 2 on Europeana.eu and 2 on Europeana Pro.
Europeana Subtitled[256]						
GS/DSI	6,000 AV records	Task 2.1 Quality assured data	May 22	80%	Delayed	4,791 out of 6,000 new records published. The remaining records are expected to be published by the end of the project, 30 Noc 22.
GS/DSI	Enrichments (subtitles & captions)	Task 2.2 Enriched data	Aug 22	90%	Delayed	Pending switch to the new fulltext infrastructure.[257]
GS/DSI	Integration of the AI pipeline with the Europeana CSP via de	Task 2.2 Enriched data	Mar 22	80%	Delayed	Final adjustments were made for the migration of Fulltext to the next

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[250]https://experience.weave-culture.eu/public/javascripts/pdfjs/generic/web/viewer.html?file=https://experience.weave-culture.eu/data/WEAVE/5688a760-7900-4c49-b9a1-4cf5b543db92.pdf_transcoded.pdf

[251] https://pro.europeana.eu/project/enricheuropeana

[252] The project officially requested an extension for 6 months on 30 March 22. The extension has not officially granted.

[253] During November 2021-August 2022 the project delivered (7% or 6,974 records) of the expected 100,000 records. According to the project partners, *MS3 Content aggregation* - first ingestion into Europeana was achieved (due date 30 Nov 21). The partners will ingest the remaining records during the project scope. The progress column will show the updates related to the % of records that have been published in Europeana.

[254] According to the project partners, the respective MS was completed. EF will show in the progress column the & related to the records that have been published in Europeana.

[255] A request for an amendment of the GA and DOA has been submitted by the project manager. After approval this will result in an extension of the project activities until March 2023.

[256] https://pro.europeana.eu/project/europeana-subtitled

[257] See comment of outcome 'Integration of the AI pipeline with the Europeana CSP via de Europeana APIs; adaptations to the Annotation API and Full-text API for subtitles and transcriptions to meet project requirements; support for multilingual subtitles display on the Europeana Media Player'

	Europeana APIs; adaptations to the Annotation API and Full-text API for subtitles and transcriptions to meet project requirements; support for multilingual subtitles display on the Europeana Media Player.					version. The release of the new version is expected after DSI-4 Y4 reporting period. Once switched, the subtitles will immediately start being available for display on the Europeana.eu
GS	2 editorials on Europeana Pro.	Task 3.2. Nurture networks and Task 4.2. Relations with Europeana Generic Services projects	Aug 22	100%	On track [258]	3 editorials available on Europeana Pro.
GS	24 editorials on Europeana.eu	Task 1.4 Discoverability of digital cultural content	Aug 22	79%	On track [259]	19 editorials available on Europeana.eu
CRAFTED - Enrich and promote traditional and contemporary crafts[260]						
GS	Editorials on Pro	Task 3.2. Nurture networks and Task 4.2. Relations with Europeana Generic Services projects	Aug 22	100%	On track [261]	3 editorials available on Europeana Pro.
GS	Editorial on Europeana.eu	Task 1.4 Discoverability of digital cultural content	Aug 22	100%	On track [262]	19 editorials available on Europeana.eu (icl exhibition)

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[258] This outcome will continue after the DSI-4 Y4 contract until the end of the project.
[259] This outcome will continue after the DSI-4 Y4 contract until the end of the project, the MS deadline is due to 30 September 2022.
[260] https://pro.europeana.eu/project/crafted
[261] This outcome will continue after the DSI-4 Y4 contract until the end of the project.
[262] This outcome will continue after the DSI-4 Y4 contract until the end of the project.

Other GS projects with outcomes to be integrated in DSI						
Europeana Translate[263]						
GS	Editorials on Pro	Task 3.2. Nurture networks and Task 4.2. Relations with Europeana Generic Services projects	Aug 22	50%	On track [264]	1 editorial available on Pro.
J-Ark European Jewish Community Archive[265]						
GS	Editorials on Pro	Task 3.2. Nurture networks and Task 4.2. Relations with Europeana Generic Services projects	Aug 22	30%	On track [266]	1 editorial available on Europeana Pro.

Risk assessment: relations with Europeana Generic Services projects

ID	Risk	Probability	Impact	Rate	Mitigation strategy	Change
R4.3	Several Generic Services projects are extended or requested an extension to fulfil the ingestion work. Therefore, DSI work might be delayed to accommodate the updated ingestion load.	Medium (3)	High (4)	12	Monthly internal GS team meeting for better coordination and risk mitigation.

Continuous collaboration with project partners to flag and mitigate possible risks. | - |

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[263] https://pro.europeana.eu/project/europeana-translate
[264] This outcome will continue after the DSI-4 Y4 contract until the end of the project.
[265] https://pro.europeana.eu/project/j-ark-european-jewish-community-archive
[266] This outcome will continue after the DSI-4 Y4 contract until the end of the project.

Task 4.3. Governance (CEDCHE)

Partners: EF

Under this task EF reports to the European Commission and the Commission expert Group on the common European Data Space for Cultural Heritage (CEDCHE)[267] 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 in M46 - 48.

Task 4.4. Phasing-in and phasing-out periods

Partners: EF

The task provides 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 in M46 - 48.

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[267] https://ec.europa.eu/transparency/expert-groups-register/screen/expert-groups/consult?lang=en&groupID=3800

Annex: Updates towards milestones

The table states milestones to be delivered in Europeana DSI-4 Y4 (1 September 2021 - 31 August 2022) .

MS No.	WP	Description	Verification	Due date	Status
MS1	WP1	MS1 Report on progress on the aggregation strategy delivered (internal)	Milestone document sent to EC	M48 (Aug 2022)	Done
MS2	WP1	MS2 Report on progress on the search strategy delivered (internal)	Milestone document sent to EC	M48 (Aug 2022)	Done
MS3	WP1	MS3 Report on progress on the multilingual strategy delivered (internal)	Milestone document sent to EC	M48 (Aug 2022)	Done
MS4	WP2	MS4 DSI AGG annual work plan review (internal)	Milestone document sent to EC	M42 (Feb 2022) M48 (Aug 2022)	Done
MS5	WP2	MS5 New recommendations and updated requirements for services and products focusing on content in the EPF developed (including a report of the status of EPF) (internal)	Milestone document sent to EC	M47 (Jul 2022)	Done

Annex: Progress on deliverables (M37-M48)

This table states progress on deliverables and what deliverables were submitted to EC (1 September 2021 - 31 August 2022).[268]

ID	Description	Due month	Due	Done
A.1	Platform reports	Every 10 months, starting M10	-	M40 (Dec 2021)
B.1	Implementation Plan	M01 and every 12 months thereafter	-	-
B.2/B.3	Periodic reports	Every 2 months, starting M2	-	M38 (Oct 2021) - M48 (Aug 2022)
B.4	Annual report	Every 12 months, starting M12	-	M48 (Aug 2022)
B.5	Final report	M48 (Aug 2022) in case of renewals	-	M48 (Aug 2022)
C.1	Technical documentation	Every 12 months, starting M32	-	M44 (Apr 2022)
C.2/C.3	Users and usage report	Every 5 months, starting M5	-	M40 (Dec 2021) M45 (May 2022)
C.4	Stress and disaster recovery test reports	Every 12 months, starting M31	-	M43 (Mar 2022)
D.1	Communication and dissemination plan	Every 9 months, starting M9	-	M45 (May 2022)
D.2	Study on impact of digitisation and reuse of cultural heritage	October every second year, starting Y2[269]	-	M47 (Jul 2022)
E.1	Transfer of assets and liabilities report	4 months before the contract ends: M44 (April 2022) in case of renewals	-	M44 (April 2022)
E.2	Transfer process report			
E.3	Employed staff report			

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[268] Note: the schedule of deliverables was updated in January 2020, August 2020 and February 2022. Changes to the schedule have been confirmed by EC.
[269] EF proposed to postpone the deliverable. The change was confirmed by EC.

Annex: Glossary of terms

Formal definitions of terms used frequently are detailed in the glossary of terms[270] 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.
MINT	Mapping tool to define semantic mappings between source and target

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[270] https://pro.europeana.eu/resources/standardization-tools/glossary

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.