Europeana Common Culture
Sustainability Plan | January 2021

Kleines Blumenstück (Alpenblumen)
Josef Lauer, ~1860 | Österreichische Galerie Belvedere, CC BY-SA

Information on the Action	
Grant Agreement N°	INEA/CEF/ICT/A2018/1633581
Action Title (Art. 1 of G.A.)	Europeana Common Culture
Action N° (Art. 1 of G.A.)	2018-EU-IA-0015

Milestone contributors	
Author(s)	Henning Scholz, EF
Contributor(s)	Milena Popova, EF; Tomasz Porkola, PSNC; Fred Truyen, KU Leuven; Cosmina Berta, DNB; Nicole Emmenegger, NISV; Rob Davies, CUT; Kathryn Cassidy, TCD
Reviewer(s)	ECC consortium partners, e.g. Georgia Angelaki, EIE; Lore Felmayer, UMA; Maria Carlsson, RAA; Maria Virtanen, UH (FINNA)

Table of Contents

Introduction

The Europeana Common Culture (ECC) project ran from January 2019 till December 2020 and was implemented by 24 partners from 21 European countries.

The ECC project aimed to develop a harmonised and coordinated environment for national aggregators to collaborate, share resources and technical means and agree on common recommendations and standards. Furthermore, it planned the improvement of up to 4 million records to at least Tier 2 and the delivery of 1,7 million new records in Tier 3+. Finally, the project intended to develop a rich programme of events, training seminars, online presence, and publications in order to increase awareness of Europeana and capacity building in the cultural sector.

This sustainability plan highlights the project results and describes how these will be maintained for at least three years after the end of the Action and will be translated into sustainable developments for the cultural heritage sector.

Project results

The key outcomes of the ECC project can be summarized in the following groups, each of which is well aligned with the main priorities of the Europeana strategy 2020 - 2025.

Harmonised aggregation landscape

In the last two years, ECC has supported aggregators at different levels of maturity to develop their operations and services through a dedicated workshop programme, peer-to-peer support groups and improved access to resources on Europeana Pro. Furthermore, the project helped establish the aggregation infrastructure of five emerging aggregators (Ireland, Serbia, Latvia, Estonia and Croatia). This led to an increase in the number of accredited aggregators to 38.

All ECC aggregating partners will keep investing to remain an accredited aggregator. Their active engagement in the Europeana Aggregators Forum (EAF) and a close and proactive collaboration with the other accredited aggregators of the Europeana Initiative are essential to ensure the necessary outreach and impact to EAF actions.

In the next few years EF will actively support the work of the EAF within the planned DSI community and capacity building efforts.

ECC also developed three functional applications to support novel approaches to aggregation, improve timing and quality of the ingestion process and contribute to higher data and metadata quality.

[The Linked Open Data Aggregator (LODA) pipeline](#) developed by the Netherlands Institute for Sound and Vision (NISV) and Dutch Digital Heritage Network (NDE) provides tools for harvesting LOD and converting it from one vocabulary into another.

The [Metis Sandbox](#) application developed by DNB and EF enhances the overall data aggregation workflow from data providers to Europeana. It reduces the time required for quality checks when submitting data by allowing the processing of sample datasets according to the Metis workflow.

The third application delivered by TCD is a lightweight 3D viewer which allows the URL of a 3D resource to be easily integrated in the EDM record and shown on the Europeana website.

The functional applications will be maintained and further developed by the respective partners and within the planned Europeana DSI infrastructure efforts.

Improved data quality

ECC has improved 4,440,533 records to tier 2+ and provided 2,008,486 new records to tier 3+. In addition, it also improved metadata quality with 85% of all sets provided in metadata Tier A or above. The achievement of these data improvements wasn't without challenges but it was substantially attributed to the continuous effort of all ECC aggregating partners as set forth in their specific data quality plans.[1]

ECC has contributed to the Europeana collections with 541,349 new items in tier 3+ from 162 new institutions from 18 countries. This also shows the investment in data quality improvements and the success in reaching to new institutions with high quality collections. Thanks to these collections, 76 editorials were created for the project duration: 41 blogs, 34 galleries and one exhibition. ECC aggregating partners will keep

---

[1] For details, see
https://pro.europeana.eu/files/Europeana_Professional/Projectpartner/EuropeanaCommonCultureProjectFiles/MS5%20Report%20on%20data%20quality%20improvement.pdf

investing in editorials and curated content for such editorials, to highlight the collections and to create visibility for the CHIs they support.

EF will support the above mentioned developments within the planned Europeana DSI data quality activities.

Capacity building

ECC developed 14 webinars covering a wide range of topics to support the capacity building for aggregators and CHIs. The themes were selected based on the needs and aspirations of CHIs and vary from FAIR data to impact assessment. The webinars were well received with 361 participants in total.

The project also conducted research in new, high-potential areas of aggregation development, such as crowdsourcing. Taking into consideration the trends of cultural heritage democratization and the increased interest of CHIs in user generated content (as indicated in the performed survey under the project), CUT has undertaken a study of the existing production and infrastructure for crowdsourced digital heritage content and metadata across Europe. The study report also makes recommendations to Europeana, aggregators and CHIs with regard to this new aggregation scenario and is complemented by a training webinar to support capacity building in this area.

The ECC capacity building work was closely aligned with the capacity building work developed under the DSI and thus linked to the activities of the EAF and the domain and thematic aggregators. ECC aggregating partners will keep investing in new webinars and training events in compliance with the Europeana capacity building framework that is currently under development.

Policy

ECC has developed recommendations for a European Member States and Commission supported digital aggregation strategy to enable and sustain aggregation at the national and regional level. ECC aggregating partners will work together in the EAF to build on these recommendations and collaborate with their national representatives in the Digital Cultural Heritage and Europeana Expert Group (DCHE) for aggregators to achieve recognition and endorsement at national and EU level. This will reinforce and lend visibility to the efforts of the Member States to preserve and promote their heritage by going digital.

The next sections will describe in more detail the future efforts by aggregators and the Europeana Core Service Platform and how these will be organised with regard to the operational and financial sustainability.
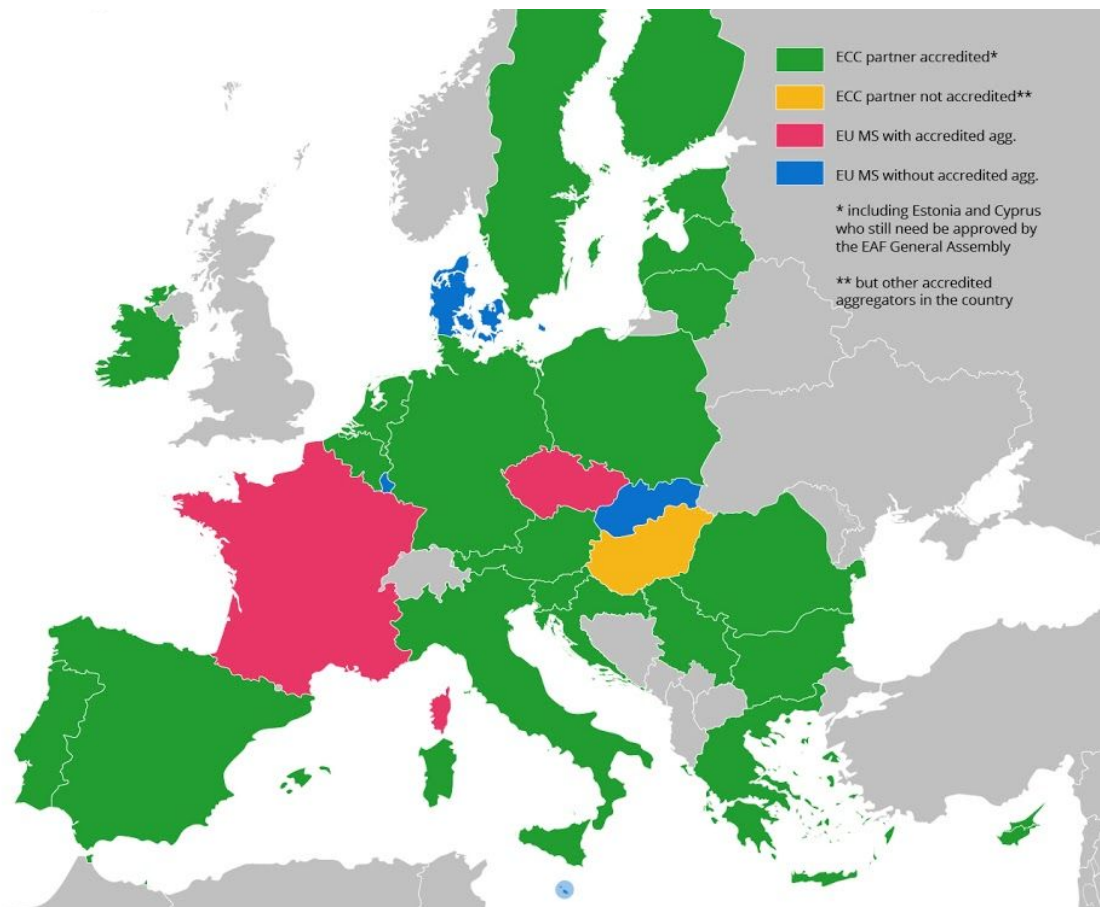
Operational sustainability

Community and Capacity Building

The Europeana Initiative will focus in the coming years on the digital transformation of cultural heritage institutions (CHI) across Europe. This is a big long term goal that can only be achieved by a community of like-minded and well-organised partners i.e. it can only be achieved when the Europeana Foundation (EF), the Europeana Network Association (ENA) and the Europeana Aggregators Forum (EAF) work well together.

With the Europeana Common Culture project EF with project partners have set the foundation for a harmonised and coordinated environment for national aggregators. The aggregating partners in the project were committed to work together, help each other and share knowledge in order to provide better support for the CHI they work with. This commitment needs to be sustained. It is expected that all aggregating partners in the project continue to collaborate with each other and also with other aggregators, like the domain and thematic aggregators that are partners in the Europeana DSI and other projects (e.g. Generic Services).

The instrument to carry out this collaboration is the [EAF](). The EAF is the place for accredited aggregators to coordinate all activities required for the effective functioning of a pan-European cross-domain aggregation ecosystem at operational and strategic level. At operational level, accredited aggregators will ensure the development and uptake of standards and frameworks and have an active role in shaping the aggregation process and outcomes. At a strategic level, the EAF will function as an advocacy body for pan-European aggregation.

	ECC partner accredited*
	ECC partner not accredited**
	EU MS with accredited agg.
	EU MS without accredited agg.

* including Estonia and Cyprus
who still need be approved by
the EAF General Assembly

** but other accredited
aggregators in the country

Aggregators in Europe.[2]

Out of 38 accredited aggregators of the Europeana Initiative, 25 are national or regional aggregators and 19 of them are full or associated ECC partners. The ECC aggregators from Cyprus and Estonia have fulfilled the criteria to become accredited and are expected to be approved as new aggregators by the EAF General Assembly in May 2021[3]. All accredited aggregators signed up to commit to the following responsibilities and obligations:

- Provide new data or updates to the Europeana website according to the relevant Europeana frameworks (e.g. licensing, publishing frameworks) with the aggregator name in edm:Provider.
- Provide a clear scope showing which institutions it will collect data from, and which countries, themes or domains it covers.
- Help the cultural heritage institutions who the aggregators represent to improve the quality of their data by providing information, guidelines and explaining Europeana requirements.

---

[2] Based on https://commons.wikimedia.org/wiki/File:Blank_map_of_Europe_cropped.svg, CC BY-SA
[3] The procedure is that accreditation is approved by the EAF General Assembly twice a year at the bi-annual meetings. The next meeting and thus next opportunity for approval comes at the EAF meeting end of May 2021.

- Assure sufficient capacity, e.g. staff with metadata expertise, active contact information, web presence.
- Provide an exit or transition plan for data providers and their metadata in case of termination of services or inability to deliver regular metadata updates.
- Assign a delegate to attend the EAF and actively participate in its activities.
- Collaborate with the Europeana Foundation and other aggregators in finding the most efficient way for cultural heritage institutions to contribute to Europeana.

A formal membership does not guarantee that the EAF will operate like a community whose members are supporting each other to achieve a common goal. Therefore, the EAF is committed to investing into empowering collaboration for aggregators of the Europeana Initiative. This includes the set up of Task Forces and Working Groups to address specific problems or work on long-standing tasks together. To give an example, eight of the ECC project partners will engage in a Library Working Group under the EAF to support national libraries collaborating with the Europeana Initiative. Involving relevant specialists will also help to build capacity and to develop and operate the national aggregator (see recommendations in [MS3 Landscape of national aggregation in Europe Report](#)). These specialists can also come from within the aggregator network, e.g. from domain and thematic aggregators but also from other national aggregators. Such a peer-to-peer model for collaboration and support was tested within the ECC project to pair up more experienced aggregators or aggregators with a certain expertise with others to benefit from their experience or knowledge. This way it is also possible to address specific questions or problems in small groups to work towards a solution.

Alongside the development of the EAF as a community EF will also develop a capacity building framework that will help to define the scope of training activities organised and run by the Europeana Initiative. This framework will provide a more solid structure for the training activities.

The train-the-trainer concept was developed in 2018 with the goal to train aggregators in a way that they can train CHI. Three train-the-trainer days have been organised alongside the EAF meetings held in the lifetime of the ECC project. Since 2017 EF has also run a series of national workshops involving aggregators that are partners in the ECC project. For these types of events, a [playbook](#) was developed to support best practice in training workshop delivery.

The webinars delivered in the context of the ECC projects have been developed out of training needs or training offers raised by the EAF. Thus the training programme has been developed in a collaborative way to improve the knowledge sharing potential of the EAF.

With aggregators being empowered to collaborate and with a capacity building framework being developed, it will become easier to manage the above responsibilities of accredited aggregators and measure the compliance of aggregators with the criteria set forth in the accreditation scheme.

The following measures are in place to monitor community development and capacity building in the aggregation ecosystem:

- EAF meetings attended (per aggregator)
- Task Force / Working Group participation (per aggregator)
- Minimum 1 training event (train-the-trainer-day, webinar for CHIs, etc) organised per year (per aggregator)

Data Aggregation and Data Quality Assurance

ECC aggregating partners have made a huge effort to deliver new high quality data to Europeana and improve the quality of data published in the Europeana website in previous years. While this is a big achievement, all data needs regular updates to comply with our quality standards and meet the growing needs of our users. Continuity in data aggregation and more investment in data quality assurance will remain of high importance in the years that follow the ECC project.

Over the last years the data quality plans introduced by EF have provided a mechanism to plan data quality improvements and monitor progress to achieve agreed targets. The work on the Europeana Publishing Framework (EPF) helped to standardise the data quality KPIs and agree common goals for the Europeana Initiative to raise the quality of collections published in the Europeana website. After testing and applying this approach with the domain and thematic aggregators that are partners in the Europeana DSI, EF also established data quality plans for all aggregating partners in ECC. The challenge aggregators face, however, is the planning of data submissions and quality improvements as well as projecting future quality targets. For much of the planned work, aggregators are highly dependent on what CHI can do.

Another risk with working towards agreed targets is that the original motivation to raise the quality of data fades over time. For the development of the EPF the strong connection between user experience and data quality is very important: 'the more you give (data quality) - the more you get (audience reach)'. For reaching the targets, aggregators and CHI may focus only on the first part of that design principle ('the more

you give'). However, a successful implementation of the EPF and a consistent improvement of data quality can only be achieved once the design principle is fully embraced so EF can improve the user experience in the Europeana website and create an impact for the cultural heritage institutions publishing their collections online and in the Europeana website.

It is anticipated that part of the above challenges will be addressed as part of the training activities EF will set up for the sector. In addition, EF will develop a series of case studies by summer 2021 that document the motivation of publishing digital collections online. This work will only succeed if it is actively supported by the accredited aggregators. This support can be for example to establish a connection between EF and a CHI where publishing digital collections online has made a significant impact that can be shown in a case study.

By investing in quality improvements, aggregators will keep supporting the editorial activities of Europeana by delivering content for seasons or campaigns as well as working on the curation of this content for various editorial formats. The number of editorial activities where national aggregators contribute after the project can be seen as evidence to fulfill this commitment.

As the data quality plans per aggregator have proven to work well in the Europeana DSI, EF and ECC aggregators will continue to work with them, keeping in mind that a precise projection of quality targets and future submissions is not possible. But it still gives an indication of work that is planned and can help to test the commitment of an aggregator, meeting the requirements set forth with the accreditation scheme. To work with a pragmatic approach for objectives in the data quality plans, ECC aggregators will focus in the next three years on CHIs that have published content in tiers 0 and 1 and have not updated their data since 2018. This will ensure that aggregators still have an active collaboration with all the CHIs they have worked with and can support the digital transformation of the sector. Assuming editorial activities are planned well in advance, the contribution of aggregators to these activities can also be reflected in the data quality plans, so it is clear which collections will be published in what quality to support which editorial activity to succeed.

An additional element to reflect in the data quality plans for national aggregators is their contribution to the DSI work on re-engaging with inactive data partners. For more than 3 million records in the Europeana database EF has no connection to the data partners. EF would like to have the continuous support of the ECC aggregators to make sure it can at least maintain but better raise the quality of data from CHIs not connected to Europeana via an accredited aggregator. This support can include activities such

establishing contact with CHIs, communicating with such CHIs and/or help with rerouting CHIs to an accredited aggregator.

To conclude, it is expected that all aggregating partners in the ECC project will submit a data quality plan at the start of every DSI year (first time September 2021) to the Europeana Foundation. In this annual plan an aggregator will specify the work that is planned in the coming year to improve data to content tier 2+, with a particular focus on CHIs that have not been active for more than 3 years. These data quality plans will be reviewed by EF and the aggregators twice a year and outcomes will be reported as part of the bi-monthly reporting for Europeana DSI. Progress made by aggregators to raise the quality of data should also be reflected in the number of editorial contributions. Therefore, three reporting metrics are proposed for this objective:
- Reporting metric: Annual data quality plan per aggregator
- Reporting metric: Number of inactive CHIs reached out to e.g. resolve broken links and/or reroute data to accredited aggregator
- Reporting metric: Number of editorial contributions (per aggregator)

Infrastructure development

The three functional applications delivered during the ECC project support novel approaches to aggregation and will be further developed for sustainable improvement of the aggregation processes. FIndings from the crowdsourcing study under Activity 6 might also inform future DSI infrastructure development.

Linked Open Data (LOD) functional application

The main objective of the LOD functional application was to evaluate the interest and capacity of data providers to provide their metadata via an linked data approach, and effectively apply technology for LOD aggregation in cultural heritage.

The participation of data providers in this task was voluntary. Many have shown interest in participating but not all of them were fully aware of the technical challenges that this novel approach would bring. Half of the data providers were already undertaking the publication of linked data and those were successful in delivering a LOD dataset valid for aggregation by Europeana.

The toolset developed in this task is designed for deployment by aggregators of the Europeana network. Although the toolset includes functionality that is tailored for EDM, aggregators using other data models may add their own conversions and validations using the standards implemented by the toolset.

Two areas for future work have been identified. First, the validation tools implemented in the toolset can also be used in the creation of services for data providers, allowing them to check the validity of their data at earlier stages of linked data publication. The 2020 Europeana Aggregation Strategy includes linked data among possible 'new data sources' to extend metadata aggregation in its proposed conceptual solution and considering the interest shown by the pilot participants, the project partners expect that it will support the design and future developments of the Metis Sandbox. An initial step in this direction was conducted by testing the aggregated linked data using the Europeana Metis Sandbox.

A second line of work starting in 2021 will focus on components for interoperability and integration of the toolset into aggregators' systems. This work will be coordinated by The Netherlands Institute for Sound and Vision in the Dutch national project Digitale Collectie.

Feedback Loop functional application

This functional application - renamed to a Metis sandbox - allows CHIs and aggregators to process their data according to the Europeana process workflow and preview the results before delivery to the Europeana Data Management Team. The application operates on EDM records provided by CHIs and is completely aligned with Metis in terms of data processing services. It does not include the direct connection with Metis. The pilot has an objective to reduce the time it takes to publish data in the Europeana website by reducing the amount of back and forth communication between an aggregator and Europeana during the preparation of the data. It ensures that the data delivered to the Europeana Data Team is ready according to Europeana standards preventing any detection of errors down in the workflow. This application focused on the quality of the data being delivered and not on the data processing time and speed itself. The application was tested by aggregators within the ECC project. After the testing, a survey was performed, and according to the results of the survey, 83% of the participants would use the Metis sandbox in the future for the data deliveries to Europeana, and made suggestions for the improvement of some features and for including new ones.

The further development of the sandbox is foreseen in the next Europeana DSI project. The Metis Sandbox is, next to Metis, one of the pillars of Europeana's Aggregation Strategy published in October 2020. Building on the pilot developed during the project, Europeana Foundation will further extend it to provide, together with Metis, a solution which provides ways of speeding up the publication process in Europeana, to support

the digital transformation of aggregators and cultural heritage institutions and improve data quality. The public release of Metis Sandbox will be available in spring 2021.

3D functional application

The objectives of the 3D functional application were 1) to determine appropriate technical standards for data of these content types and then 2) to enhance the data model established by the NA in Ireland (in T2.2) to support these.

To achieve the first objective the functional application team worked with the 3D Content in Europeana Task Force which ran from January 2019 to February 2020, contributing to the recommendations for 3D content on Europeana published in the Task Force final report. The Task Force recommended the use of embeddable 3D viewers for a proposed Tier 2 or higher quality definition for 3D content.

After publication of the Task Force report, work began on the second objective, to add support for 3D content to the Irish National Aggregator by developing a reference implementation that adheres to best practice as recommended by the Task Force. This functional application has been developed in the first instance as part of the repository application of the Irish National Aggregator, the Digital Repository of Ireland (DRI), the code for which is available on [GitHub](#). It consists of a JavaScript 3D viewer, Ruby on Rails code to generate an oEmbed-compliant JSON representation of the 3D object in the viewer, as well as code to integrate the embeddable url into the EDM record. This code also provides functionality for the long-term preservation of 3D content.

The JavaScript 3D viewer application has also been extracted from the DRI code and made available in a [dedicated repository](#)on GitHub. All code is released under an open source Apache License, Version 2.0, and can be reused directly, or used as an example for other aggregators interested in aggregating high quality 3D content to Europeana. A [blog post](#) for the Europeana Pro website describes the application and reports on the work of the pilot.

Progress of the 3D functional application has been reported on a [project page](#) and it has also been published via an article in [Europeana Tech Insight Issue 14](#) and a [blog post on the Data Preservation Coalition's website](#). Trinity College Dublin and the Digital Repository of Ireland are committed to continued maintenance and enhancement of this codebase beyond the end of the Common Culture project to add features such as download and view in VR options. There has not yet been any opportunity for other aggregators to test the viewer or other aspects of the functional application. The DRI are interested in working with other aggregators to facilitate this in Q2-Q3 2021.

Crowdsourced content

During the later stages of the ECC project, a study has been undertaken of the existing production and infrastructure for crowdsourced digital heritage content and metadata across Europe. The findings in the [final report](#) indicate that a substantial quantity of content, annotations and metadata, potentially relevant to Europeana emerges from such initiatives, a significant proportion of which are generated or facilitated by CHI. Only a small proportion proceeds along the pipeline to national, thematic or domain aggregators and very little at all reaches the Europeana website. There are indications that Europeana could have a key role to play in 1) strengthening the aggregation of crowdsourced content/metadata within the Europeana ecosystem and its ingestion by Europeana, 2) helping standardise methods, standards and infrastructure in this widely heterogeneous field so as to promote sustainability and interoperability 3) extending cooperation with important 'neighbouring' crowdsourcing movements such as Wikimedia and Citizen Science. A further positive effect could be to grow community engagement and audience participation, complementing Europeana's own periodic crowdsourcing campaigns. Depending on the final findings of the study, future actions will be considered within the Europeana DSI planning and EAF will be invited to participate.

Financial sustainability

Securing long term funding for digitisation and activities that support the digital transformation of cultural heritage institutions is essential to sustain the outcomes of the Europeana Common Culture project. While national aggregators as key players for the digital transformation of the sector need continuous funding they also play a key role implementing policy recommendations that will help to secure long term funding.

With the [policy recommendations](#)[4] delivered by the ECC and the EAF and the [recommendations](#) for a common strategic approach to support digital transformation developed during the Romanian Presidency in 2019, the Europeana Initiative makes the case for national (digital) strategies and legal mandates for national aggregators. While national strategies exist in some countries and also 13 ECC aggregators have the full support from their governments, national strategies are not yet established in all EU countries to ensure continuity of support for the sector. All ECC project partners need to keep investing in this area to close these gaps in the coming years. The following activities will help to achieve financial sustainability.

---

[4] The development of the recommendations was initiated by the ECC project and then developed as part of an EAF aggregation policy task force in summer/autumn 2020.

All aggregating partners in the project will continue to work within their capacity to support CHIs in their country and regularly submit data to Europeana. In this way the aggregators will maintain their accreditation status as trusted partners of the Europeana Initiative and as members of the EAF. This will also allow aggregators to get continuous peer-to-peer support and benefit from the knowledge exchange and training offered by the EAF.

Accreditation and thus recognition from the Europeana Initiative is important but will not work without recognition from the Member State in the long term to sustain funding. Therefore, it is important for the ECC aggregating partners to keep the momentum set with the publication of the ECC policy recommendations. The recommendations were presented at the 8th meeting of Digital Cultural Heritage and Europeana Expert Group (DCHE) in October 2020. Now it is the time for the aggregators to follow this up in their countries. ECC developed a [template letter](#) based on the policy recommendations to kickstart the process. This template letter will be made available to all ECC aggregating partners so they can translate, adjust and amend to find the tone for their national representatives (via DCHE) and ministries. The focus of this letter will be on the opportunities that are available, one of them being the EU recovery funds that may be used to invest in technical infrastructures for aggregation.

In addition to writing the letter, EF encourages aggregators from less well funded countries to join forces and explore as part of EAF activities how more funding can be mobilised. Similarly, aggregators from countries without a national strategy will learn from countries that have a national strategy in order to develop one. This is also an activity that can be organised within the EAF. These activities should also be explored in close collaboration with the DCHE representatives from the countries. As a few aggregator representatives in the EAF are also DCHE representatives, they can help with finding the best approach to raise common issues or concerns at DCHE level and follow them through.

The following reporting metrics are proposed to measure progress with the activities proposed above that should lead to financial sustainability:
- Reporting metric: Number of accredited national aggregators (reported once per year)
- Reporting metric: Representation of content in the Europeana website by accredited national aggregator (number of items, number of items in content tier 2+ / metadata tier A+

Conclusion

This sustainability plan aims to renew and maintain the key commitment of all ECC aggregating partners of investing in a harmonised and coordinated environment for national aggregators to empower the cultural heritage sector in each Member State in its digital transformation. It is a commitment to carry out the work and deliver the service according to the Europeana strategy 2020-2025.

Most of the project results will be maintained in the context of the Europeana DSI with follow up work being specified in the implementation plans. This is true for the organisation and coordination of EAF meetings and training events as well as the development of aggregator specific data quality plans. Content and editorials from national aggregators will be online and accessible on the Europeana website. Some of the functional applications will be part of the aggregation systems, in particular the feedback loop functional application that is an integral part of the Europeana aggregation strategy.

Long-term sustainability is an ecosystem effort, with the key role of the EAF on the operational part and of Member States and European Commission on the financial part.