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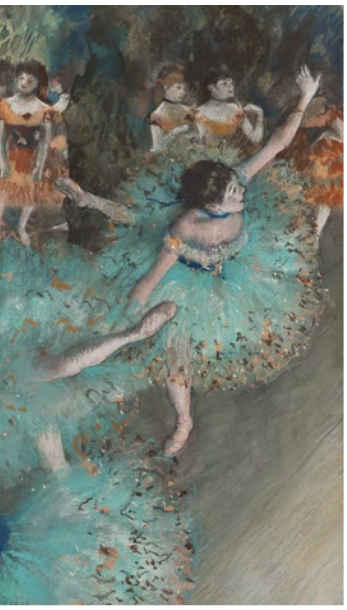

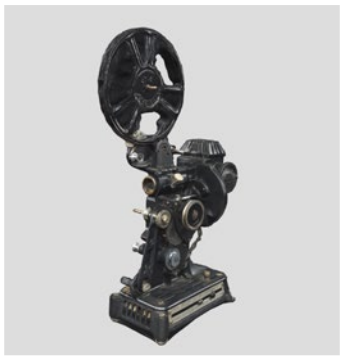

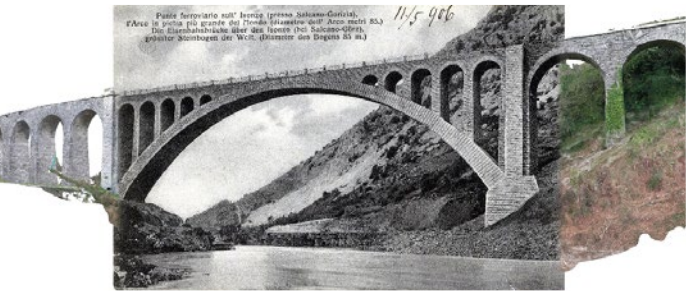

THE FUTURE OF EUROPE'S PAST – WHY MEMBER STATES MUST DO MORE TO ADVANCE DIGITISATION OF OUR CULTURAL HERITAGE

Implementation of the 2021 Commission Recommendation on a common European Data Space for Cultural Heritage

Progress Report 2021-2023

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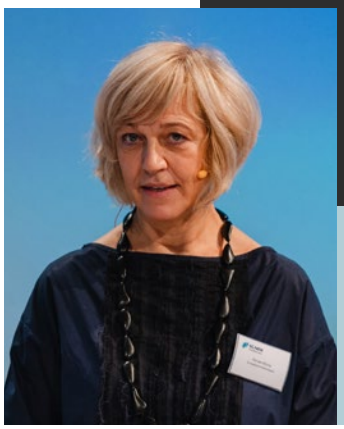
Foreword



Cultural heritage is at the heart of Europe's shared history, identity, and values, yet much of it faces increasing threats. The devastating floods in Valencia and the destructive fires at Notre Dame in Paris and the Stock Exchange in Copenhagen serve as stark reminders of how climate change and disasters jeopardize these irreplaceable treasures. At the same time, armed conflicts, such as the war in Ukraine, have shown the vulnerability of cultural assets in conflict zones, where priceless artifacts and monuments can be lost forever. Protecting and preserving Europe' cultural heritage is not just a cultural responsibility – it is essential to ensuring that future generations can access and benefit from this invaluable legacy.

Digitisation is key to this effort, offering the tools necessary to preserve cultural assets and ensure their resilience in the face of crises. The recent reopening of Notre Dame, aided by the use of digital scans and advanced reconstruction techniques, stands as a powerful example of how technology can support the recovery of heritage sites devastated by disaster. Digitisation is not just a technical solution — it is a strategic investment in Europe's ability to preserve its cultural and historical landmarks for future generations, even under the most challenging circumstances.

Beyond preservation, digitisation offers immense potential for accessibility and innovation. By making cultural heritage more accessible, digitisation breaks down physical and geographic barriers, fostering inclusion and equal access to Europe's shared treasures. Digitising cultural heritage assets also presents a wide range of opportunity for uses in other sectors. For example, digital assets are being used in schools in Portugal to enrich education, bringing history to life for students. In Malta, digitised cultural heritage is being used for gamification, opening new avenues for engaging younger audiences. Moreover, the tourism sector stands to benefit significantly, as digitisation can enrich visitor experiences and foster new opportunities for cultural and economic growth. Digitisation is therefore not only a cultural endeavour but also a critical driver of innovation, economic development, and Europe's soft power on the global stage.

In this context, the digitisation targets set out in the Recommendation on a common European data space for cultural heritage are essential to Europe's future. Achieving these targets will not only safeguard our cultural heritage against threats but also unlock its full potential and economic growth and innovation in a wide range of sectors. At a time when Europe is navigating geopolitical tensions, economic recovery, and the climate crisis, ensuring the preservation and accessibility of cultural heritage sends a powerful message: Europe is committed to protecting its past to build a stronger, more united, and resilient future.

Renate NIKOLAY

Deputy Director-General

Directorate-General for Communications Networks, Content and Technology

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Executive summary

The Commission Recommendation on a common European data space for cultural heritage (2021/1970) (Recommendation) is the policy instrument at European Union level driving the digitisation of cultural heritage assets and facilitating wider online access and reuse[1].

The Recommendation invites Member States to step up their efforts, pool their resources and involve the private sector in digitising cultural heritage material to increase online access to European cultural heritage. It aims to **accelerate the digitisation** of all cultural heritage, including tangible cultural heritage (monuments and sites, objects and artefacts, books and audiovisual material), intangible cultural heritage, natural heritage (landscapes and natural sites) and born digital heritage, for future generations, **to protect and preserve those at risk**, and **boost the reuse** of digital assets in a variety of domains such as education, sustainable tourism and cultural creative sectors. Furthermore, digitised material should be accessible through the data space for cultural heritage (the data space) and Europeana, the European cultural platform providing access to a wide array of digital content from Europe's libraries, archives and museums.

This report takes stock of Member States' progress in the implementation of the Recommendation and the actions taken during the first two years following its adoption, **between November 2021 and November 2023**.

While the Commission acknowledges the progress made by Member States in implementing the Recommendation, the targets set for 2025 and 2030 remain significantly out of reach. Achieving these ambitious targets will require Member States to intensify their efforts, particularly by accelerating the 3D digitisation of cultural heritage assets and embracing advanced technologies more extensively.

Moreover, the Commission strongly encourages Member States to make public funding for digitisation projects of cultural heritage assets conditional upon ensuring that digitised content is made available on Europeana and in the data space. This conditionality would help maximize the accessibility and utility of these assets across Europe.

(1) The Recommendation builds on the outcomes of the previous recommendation on online accessibility of cultural material and digital preservation of 2011

To fully capitalise on the digitised cultural heritage assets, Member States must prioritize uses cases across a broad range of sectors and purposes to leverage the investments made and to showcase the positive spillovers of digital transformation.

Furthermore, small and medium-sized enterprises and startups present untapped opportunities to support and innovate within the cultural heritage sector, offering expertise and advanced tools to facilitate the digitisation process.

The good practices presented in this report should serve as both inspiration and call to action. Member States are urged to increase their support, funding and resources to accelerate the cultural heritage sector's digital transformation and reach the digitisation and digital preservation targets.

This report is structured into six chapters around the Articles of the Recommendation. It is based on the input received from 26 Member States through a survey focusing on actions taken to implement the Recommendation in this two-year period. The respondents of the Member States are listed in Annex 1.

Chapter 1, Member States' digital strategies for cultural heritage, takes stock of actions taken in relation to Articles 4, 5 and 7 of the Recommendation. The chapter describes Member States' digital strategies, the support to digital transformation as an objective of the strategy, the involvement of concerned stakeholders, resources and support provided for the implementation of the strategy, its measures to support cultural heritage institutions in taking up advanced technologies, and how Member States have strengthened the role of aggregators and plan on further strengthening it in the next three years.

15 Member States have a **digital strategy dedicated to cultural heritage** at national or regional level in place, four of which have updated them since their first publication, while four Member States reported that they were working on updating their strategies. Seven Member States with no digital strategy have reported that they are developing one. In four of the five Member States with no specific strategy for digitisation of the cultural heritage sector, the topic is covered under other, general national strategies.

Member States have provided **resources and support for the implementation** of national/regional strategies through funding, outreach activities, technological infrastructure, equipment and tools, human resources, research, training, expertise and advice.

Most Member States collaborate with relevant **stakeholders** in the development and update of the national/regional strategies.

19 Member States' strategies includes **measures to support cultural heritage institutions in taking up advanced technologies**. These measures include funding, pilot programmes and projects, tools and digital services, infrastructure, competence centres, expertise, guidelines, instructions and technical specifications, and the most addressed advanced digital technologies are AI and 3D, while a few Member States cover augmented and virtual reality.

Member States have also taken a wide range of measures to strengthen the role of aggregators as intermediaries between Europeana and cultural heritage institutions and encouraged their active contribution of digitised cultural heritage assets.

Chapter 2, on the digitisation targets set in the Recommendation, provides an overview of the implementation of Articles 6, 16 and 18-20 of the Recommendation. It addresses the extent to which Member States' digital strategies cover the three categories of cultural heritage, their definitions, the targets set and number of assets digitised per category and made available on the data space and Europeana. The report also shows the commitment of Member States to Europeana and the data space: to what extent they have encouraged cultural heritage institutions to make their digitised assets available on the data space and Europeana; whether all public funding for future digitisation projects of cultural heritage assets is made conditional upon making digitised content available on the data space and Europeana and support and awareness measures. The report also highlights how Member States ensure that data resulting from publicly funded digitisation projects become and stay findable, accessible, interoperable and reusable and whether Member States have a strategy or policy covering the connection of data at its source.

The digital strategies of 12 Member States cover cultural heritage **at risk**. The targets and definitions that individual digital strategies set differ across Member States. Nine Member States' digital strategies cover the category of the **most physically visited cultural and heritage monuments, buildings and sites**, and six Member States collect data and document the total number of visits in order to determine the most visited sites. Seven Member States' strategies cover the third category, **under-digitised cultural heritage assets**, ranging from large format documents, such as ancient maps in state archives, coins and medals, to ancient manuscripts, etc. Seven Member States' strategies include the category 'others', ranging from 2D cultural objects, listed to printed materials, photos, films and artefacts.

21 Member States' **cultural heritage institutions made their digitised assets available through Europeana** during the period between 2021 and 2023 and at least 15 Member States have a strategy regarding **long-term digital preservation** in place for digitised assets. Such strategies and policies differ from Member State to Member State, and mainly include the implementation of storage systems, data servers, the cloud, physical copies, periodical migrations and maintenance.

Most Member States ensure that **data resulting from publicly funded projects comply with the FAIR principles**. 11 Member States have strategies in place in terms of **connection of data at its source**, in line with the levels of interoperability on the 5-star deployment scheme for Linked Open Data achieved by cultural heritage institutions.

Four Member States make all public funding for future digitisation projects of cultural heritage assets **conditional upon making digitised content available in Europeana** and the data space. The limitations that prevent other Member States in doing so are varied and range from monetary constraints to technical and legal limitations, while in some Member States the priorities lie elsewhere.

Most MS **support awareness raising for Europeana and the data space** through seminars, webinars and conferences where Europeana and the data space is presented, as well as through publications, social media, or training courses.

Chapter 3, on partnerships, covers Articles 8-10 and 13 of the Recommendation. It describes the measures taken to support partnerships between the cultural heritage sector and other sectors, how Member States have facilitated the involvement of small and medium sized enterprises (SMEs) to support the digital transformation of the cultural heritage sector, partnerships between cultural heritage institutions, organisations, public authorities and the private sector, and the encouragement of cross-border collaboration and partnerships with cultural heritage institutions at international level.

Across nearly all Member States, a multitude of initiatives have been implemented to support and foster **collaboration between cultural heritage institutions and a diverse range of sectors.** In terms of **facilitating the involvement of SMEs** to support the digital transformation of the cultural heritage sector, 16 Member States have taken actions on different aspects of cultural heritage's life cycle, ranging from digitisation, to cataloguing, process management, asset management and publication. **Partnerships with the private sector** have been implemented in 16 Member States, and 20 of them encourage **cross-border collaboration** and partnerships with cultural heritage institutions at international level.

Chapter 4, on digital skills, covers Article 11 of the Recommendation. It addresses the quantification of the digital skills gap in the cultural heritage sector in Member States and the objectives to be achieved by 2030 to upskill and reskill cultural heritage professionals. It also examines measures taken by Member States to assess the digital skills gap in the sector so that cultural heritage institutions are able to fully exploit the opportunities offered by advanced digital technologies as well as setting objectives to be achieved by 2030 to upskill and reskill professionals.

Digital skills are a problem in many Member States. However, only four Member States have **quantified the skills gap** at national level. Despite the lack of this quantification of the skills gap, 11 Member States reported having **set formal objectives** to be achieved by 2030.

Chapter 5, on copyright**,** covers Article 12 of the Recommendation. It explores the copyright-related barriers faced by cultural heritage institutions and measures to overcome them, particularly with regards to the digitisation, sharing and reuse of digitised cultural heritage assets.

The main **barriers** for many Member States include uncertainty and insufficient knowledge about the legal frameworks regarding copyright in digital environments, rights of use, licensing, metadata license, etc. A gap between large and small cultural institutions has been reported as well when it comes to the level of knowledge about these frameworks. Some Member States also highlighted the issue of when the provenance of a collection or ownership of copyright within a collection may be unclear.

Another barrier highlighted by some Member States lies in collections and assets which may not include the transfer of copyright, or that some cultural heritage institutions use Creative Common licenses on the content they make public while others do not use open licenses. Other barriers are linked to the costs and funding, and limited or no funding to acquire copyright licenses, as well as limited resources in general, including the time necessary to determine the correct copyright license; concerns about the exposure of personal information and data protection in general, and administrative burden.

Member States have taken measures to **overcome these barriers.** Since the end of the reporting period, all Member States have transposed the Digital Single Market Directive and rules are now in place to facilitate the digitisation of out of commerce works, which should help alleviate some of the issues faced.

Chapter 6, on the use of funding possibilities at European level, covers Article 14 of the Recommendation. It addresses the use of funding possibilities that Member States have made to accelerate their digitisation and preservation efforts.

Most Member States make use of all funding possibilities at European and national level to accelerate their digitisation and preservation efforts. The funding mechanisms most reported as being used are the **Recovery and Resilience Facility** (12) and the **Cohesion Policy Funds** (10). Six are making use of funds from the **Horizon Europe Programme**, five receive funding from the **Digital Europe Programme** and two have used of **REACT-EU**.

1. Member States' digital strategies for cultural heritage

The following chapter provides an overview of the progress made on national digital strategies for the cultural heritage sector in Member States. It also gives insight into the support given to cultural heritage institutions' uptake of advanced digital technologies and the measures taken by Member States to strengthen the role of aggregators as intermediaries between Europeana and cultural heritage institutions.

1.1. State of play of national/regional digital strategies for cultural heritage

To accelerate the digital transformation of the cultural heritage sector, the Recommendation on a common European data space for cultural heritage (Article 4) advises Member States to provide a comprehensive and forward-looking digital strategy for cultural heritage at the relevant national or regional level.

Fifteen Member States (BE (Federal Government), CZ, EE, EL, FR, HR, IT, LV, LT, LU, HU, NL, AT, FI, SE) reported having a digital strategy for cultural heritage in place at either national or regional level. Four of these (EL, LV, LU and NL) have reported updating them since their first publication, while four Member States (FR, HR, LT, SE) are preparing for the renewal of their strategies. Seven Member States (BE (Flanders), ES, CY, MT, PL, BG, SK) report being in the stages of preparing a national digital strategy for cultural heritage. Five Member States (DK, DE, IE, PT, SI) reported not having a dedicated digital strategy for cultural heritage, while seven are currently working on their development (BE (Flanders), BG, ES, CY, MT, PL, SK). Of the five Member States that do not have a specific strategy targeting the cultural heritage sector, four of them (DE, IE, PT, SI) cover digitisation of cultural heritage under other, general national strategies.

In **Germany** there is no specific digital strategy for cultural heritage, but general digital strategies are in place at both Federal and *Länder* level and cover cultural heritage in some cases. The 'Datenraum Kultur' project is setting up a supra-regional IT infrastructure that enables decentralised, secure and self-determined data exchange in the cultural sector. By facilitating the availability and networking of cultural data, digitally based services and business models will emerge. The German Digital Library, the national internet platform for the presentation of cultural heritage and knowledge, will be further developed as a user-attractive place for networking digital offerings from German cultural and knowledge institutions in all sectors (archives, libraries, museums, media libraries).

The promotion and digital transformation of the cultural heritage sector is included as part of the overall national development plan for **Ireland**.

Greece's 'Digital Transformation Bible' was compiled in 2020 and published in 2021, covering a five-year period, and it is updated annually, depending on specific circumstances and technological developments.

The national framework for digitising cultural heritage in **Lithuania** includes several key strategic documents. Action Plans for the implementation of these documents have been developed and executed, with the latest being the Action Plan 2018-2022. An updated and integrated strategic document, the Guidelines for the Digitisation and Use of Cultural Content (Kultūros turinio skaitmeninimo ir jo panaudojimo gairės) was in preparation at the time of reporting, to be approved by the Minister of Culture in 2024. This consolidates and expands on previous efforts and introduces significant novelties by addressing not only the digitization and use of cultural heritage but also cultural content as a broader concept, encompassing potential future heritage and important data.

Luxembourg has updated its national strategy twice, first in 2020 and then in 2023, with a focus on the period 2023-2024. Updates focus on the foundations and achievements of the previous period, whilst considering the complexities of emerging technologies and how these affect the sector.

Portret van Jacob van Maerlant, Paul Wante, 1973, Jenever Museum Hasselt, Belgium – source: Europeana

Digital transformation for cultural heritage is being promoted in libraries, archives, museums, and monuments with European funding from the Recovery and Resilience Fund in **Portugal**, with quantitative targets set until 2025.

	Digital strategy for CH	Publication year	Update since first publication
Belgium	Yes (Federal Government)	2018	-
	In preparation (Flanders)	-	-
Bulgaria	In preparation	-	-
Czechia	Yes	2013	No
Denmark	No	-	-
Germany	No but covered in other digital strategy	-	-
Estonia	Yes	2021	No
Ireland	No but covered in other digital strategy	-	-
Greece	Yes	2021	Yearly
Spain	In preparation	-	-
France	Yes	2021	In preparation
Croatia	Yes	2020	In preparation
Italy	Yes	2022	No
Cyprus	In preparation	-	-
Latvia	Yes	2015	Yes
Lithuania	Yes	2009	In preparation
Luxembourg	Yes	2018	Yes
Hungary	Yes	2017	No
Malta	In preparation	-	-
Netherlands	Yes	2015	Yes
Austria	Yes	2023	No
Poland	In preparation	-	-
Portugal	No but covered in other digital strategy	-	-
Romania			
Slovenia	No, but covered in other digital strategy	2022	No
Slovakia	In preparation	-	-
Finland	Yes	2023	No
Sweden	Yes	2011	In preparation

All Member States except for two (CZ, DK) report that the promotion of digital transformation is a key objective of their national or regional strategies and stress the importance and implications of digitisation for the cultural heritage sector.

For example, the **Austrian** Federal Ministry of Arts, Culture, the Civil Service and Sport supports cultural heritage institutions in the implementation of measures for digital transformation through their Digital Cultural Heritage funding programme. As part of the Austrian National Recovery and Resilience Plan, EUR 15 million will be used to support the creation of digital copies of cultural heritage objects, their cataloguing, publication and dissemination, and their connection to the national online platform for cultural heritage Kulturpool.

In **Slovenia**, the digital transformation of cultural heritage gained momentum with the COVID-19 crisis and the Slovenia National Recovery and Resilience Plan. The core national objectives of the digital transformation of cultural heritage are to provide one-stop access to cultural heritage information, optimise heritage management processes, accelerate the digitisation of heritage cultural content and its online accessibility and long-term preservation.

Almost all Member States have provided resources and support for the implementation of their digital strategies for cultural heritage, notably through funding opportunities, outreach activities, technological infrastructure, equipment and tools, human resources, research, training, expertise and advice.

In the **German** *Land* Schleswig-Holstein, a Centre for Digitisation and Culture at the State Library was established in 2019 to provide further education about digitisation to cultural institutions, support the digital transformation of cultural institutions, build networks of experts, develop funding programmes, offer room for experiments and experience and is a place for public discussion, debate and agreement. The German Digital Library received funding to help cultural heritage institutions digitise at the national level as well as form some *Länder*. The German Research Council also funds digitisation projects in research infrastructure institutions such as libraries and archives. Some *Länder* have digitisation funds such as the 'Stiftung Kulturgut Baden-Württemberg'.

Greece is providing funding and support via national and EU resources, depending on the nature and budget of projects. The National Documentation Centre has been organising webinars aiming at upskilling and reskilling cultural heritage professionals covering a number of topics such as Europeana's frameworks, basic interoperability guidelines, rights clearance and licensing for more than 5 500 participants.

In **Malta**, each agency contributes its resources to the digitisation of the cultural heritage under its care. In 2019, Heritage Malta, the national agency for cultural heritage, established a digitisation unit with funding from the Norway grants. The agency also made substantial investments to equip the unit with cutting-edge digitisation tools, multimedia resources, and the necessary human expertise to digitise the national collection. A collections management system was implemented to catalogue the national collection comprehensively. Participation in various EU projects, bilateral agreements, and Memoranda of Understanding with local and international universities ensures ongoing staff training. This involvement extends to participation in diverse research projects, enabling the staff to stay current and contribute to the latest developments in cultural heritage digitisation.

In **Poland**, the digitisation of all types of cultural heritage resources in GLAM sector institutions is possible by virtue of financing provided under the Digital Culture Programme of the Minister for Culture and Protection of National Heritage and European funds. In 2021-2023, 214 projects were co-financed for a total amount of PLN 19 million (EUR 4.2 million). An important role in creating standards and developing competences of the cultural sector is played by Competence Centres for digitisation, which carry out tasks in the area of implementing technological changes for digitisation and storage of data, including archiving and technical verification of digital materials, or educating personnel of entities conducting digitisation.

1.2. Stakeholder involvement in strategy development and update

According to the Recommendation (Article 4), Member States should collaborate with or make arrangements for the collaboration of all the concerned stakeholders/parties, such as cultural heritage institutions and competent authorities, to prepare the digital strategy and should provide resources/support for its implementation.

Most Member States reported using stakeholder involvement in the preparation of their strategy or are planning to do so where it is under development at the time of reporting (BG, ES, CY, LT, MT, PL, SK).

Czechia involved the organisations of the Ministry of Culture to prepare relevant material for the decision making.

Estonia organised workshops with cultural heritage institutions, the National Heritage Board, the Estonian Public Broadcasting to determine the objectives of digital culture in the strategy. The Action Plan for the Digitisation of Cultural Heritage 2018-2023 was initiated by the Digital Heritage Council, comprising of the Ministry of Culture, Ministry of Education and Research, Ministry of Economic Affairs and Communications, National Archives, National Library, National Heritage Board, Estonian Public Broadcasting and visionaries from the cultural field, who determined the project's priority heritage fields. The Action Plan for Digital Cultural Heritage 2024-2029 is being prepared in a similar manner. The Digital Heritage Council determined the priority heritage fields to be digitised, which analysis and development projects should be implemented to improve the accessibility of cultural heritage, increase the usability of heritage, and improve the conditions for long-term preservation.

Although **Ireland** does not have a national digital strategy for the cultural heritage sector at the time of reporting, the individual CHIs and organisations which have progressed individual strategies have included consultation processes with their own stakeholders.

Greece annually updates the goals and objectives, as well as a continuously growing number of projects (approximately 500 at the time of reporting) included in the Digital Transformation Bible, with contributions by government and public organisations and private sector bodies. Dynamic consultation and contributions by all stakeholders and the general public on a

Град Пловдив, Офицерски клуб, Дом на народната армия, 1915, National Academic Library and Information System Foundation, Bulgaria – source: Europeana

permanent basis are also encouraged through the Digital Strategy web portal. Particularly for the Cultural Sector, consultations for the joined development of a specific, domain-oriented Digital Strategy Paper were underway at the time of reporting, with the participation of stakeholders from the Ministry of Culture, the National Documentation Centre, universities, and academic research institutions.

A commission has been established within the Ministry of Culture and Sports of **Spain**, involving all departments with responsibilities in heritage, as well as the technology department. This commission determines the strategic guidelines, and consultations are conducted with the collaborative bodies of the GLAM sector before drafting them. Once the strategy is formulated, each unit has autonomy to develop its own projects that contribute to the achievement of the objectives.

In the case of **France**, the publication of the first version of the digital strategy was the result of the Department of digital for cultural policies who coordinated bilateral meetings and working groups with the main directions of the ministry and with some major institutions, while the updated strategy, completed with a roadmap, adopted in 2024, followed public consultation and the outcome of broader working groups. Altogether, 30 working groups gathering professionals from the ministry and cultural heritage institutions are being led to defines projects and actions that can support the implementation of the digital strategy. A public consultation addressing the general audience and cultural professionals was open for a limited time to six topics/themes: metaverse, artistic creation in a digital environment, ecological impact, French language, digital archiving, Data and Artificial Intelligence.

In **Croatia**, the Council of the Cultural Heritage Digitisation Project oversaw the drafting the national Plan. The Council consists of directors of key national institutions in the field of digitisation and representatives of the Ministry of Culture and Media. The Ministry of Culture and Media established five working groups in charge of developing the strategy. The working groups consisted of experts from cultural heritage institutions actively involved in cultural heritage digitisation. In addition, amendments to the Act regulating archival, museum and library activities are being drafted at the time of reporting, which include the adoption of the drafting and implementation of a digitalisation plan for heritage institutions. By amending the Law on Archives, the Croatian State Archives, as the central and master archive, shall adopt a digitisation plan in the state archives and undertake of its implementation, similarly for Libraries and Museums.

Cyprus involved the Deputy Ministry of Culture, Deputy Ministry of Research, Innovation and Digital Strategy, the Cyprus University of Technology, the University of Cyprus, the Press and Information Office, Department of Antiquities, the State Archive, the Cyprus Broadcasting Corporation in the development of its strategy.

Since 2015, **Latvia's** Digital Cultural Heritage Council has been operating under the Ministry of Culture of Latvia, comprising representatives from various institutions including the National Library of Latvia, the National Archives of Latvia, the Cultural Information System Centre, the National Heritage Board, representative from museum sector, the National Electronic Mass Media Council of Latvia, the National Culture Centre of Latvia (intangible heritage), the National Film Centre of Latvia and representatives from the Ministry of Culture of Latvia. Experts and leaders from these institutions have formed a working group to develop a new strategy. Additionally, the working group has contributed to the Action Plan for 2027 outlining specific activities, outcomes, and outputs necessary for the successful implementation of the Digital Culture Heritage Strategy.

In 2023, the **Lithuanian** Ministry of Culture invited experts from a variety of state institutions – not only from memory institutions but also from the cultural and arts sectors – to participate in an open-ended working group to prepare an integrated strategic document, Guidelines for the Digitization and Use of Cultural Content, as the national digital strategy for cultural content including cultural heritage. These included the Lithuanian Audiosensory Library, the Wroblewski Library of The Lithuanian Academy of Sciences, the Contemporary Art Centre, the Lithuanian National Radio and Television, the Martynas Mažvydas National Library of Lithuania, the Office of the Chief Archivist of Lithuania, the Baltic Audiovisual Archival Council, the Lithuanian Film Centre, the Lithuanian National Opera and Ballet Theatre, the Lithuanian Museums Centre for Information, Digitisation and LIMIS Centre, and the Lithuanian Nacional Philharmonic Society.

In **Luxembourg**, the service developing the updated digital strategy is in permanent dialogue with the sector in order to gauge their needs, and although the stakeholders were not directly involved in its drafting, the strategy has been written in consultation with them through more informal daily exchanges.

The **Hungarian** national strategy was developed centrally by the Ministry of Human Resources, involving the relevant cultural heritage institutions, including the National Széchényi Library, the Hungarian National Museum, the Hungarian National Archives, the Media Services and

Kamenný most s kostelem sv. Markéty, Karek Šimůnek, Museum of Central Otava Region of Strakonice, Czech Republic – source: Europeana

Support Trust Fund, the Hungarian National Film Archive, and the Forum Hungaricum Non-profit Ltd., and other professional organisations, such as the Association of Hungarian Archivists, the Association of Hungarian Librarians, and the Association of Hungarian Rural Museums.

In the **Netherlands**, both the preparation and the execution of the strategy take place in collaboration with the Dutch Digital Heritage Network, which brings together more than 100 organisations in the museums, archives, libraries, media/AV, design and digital culture, and digital humanities sectors.

Austria started to develop its Digital Cultural Heritage Strategy in April 2022 with an online consultation carried out in cooperation with the University for Continuing Education Krems. The survey was aimed at museums, archives and institutions and focused on cultural heritage and related fields, surveying the current activities and challenges as well as the potential of the digital transformation, and served as a basis for the strategy. The development of content priorities was carried out by an expert panel. Based on the survey results, two working sessions of the expert, a stakeholder workshop and a stakeholder forum were held.

Poland consulted with representatives of various environments and sectors on the draft Social Capital Development Strategy, including cultural institutions, non-governmental organisations operating in the field of culture and creative sectors, associations of artists, educational institutions, local government units, and central government offices.

Slovenia's national strategic documents, including for the digital transformation of the cultural heritage sector (the National Program for Culture 2022-2029, the National Recovery and Resilience Plan, the Action Plan for the Digital Public Services Strategy 2030, the Cultural Heritage Strategy 2020-2023, the National program to promote the development and use of AI in the Republic of Slovenia by 2025 and the forthcoming National Strategy for Museums and Galleries 2024-2028 have extensively incorporated all relevant stakeholders in the drafting process. These stakeholders, which include museums, libraries, archives, the Institute for the Protection of Cultural Heritage of Slovenia, and The Coordinator for the Safeguarding of Intangible Cultural Heritage of Slovenia, have enhanced and enriched the documents with diverse user perspectives. Furthermore, all documents have been reviewed and supplemented, where necessary, by other bodies of state administration (in addition to the Ministry of Culture).

Slovakia involved all organisations of the Ministry of Culture in the preparation of the Strategy of digitisation, namely the Slovak National Gallery, the Monuments Board of the Slovak Republic, the State Scientific Library in Prešov, the National Outreach Centre, the Slovak Film Institute, the Slovak National Library, the University Library in Bratislava, and the Slovak People's Arts Collective. In addition, a working group was established at the Ministry of the Culture, whose members were representatives of substantive sections, economics, project management, informatics, and the Institute of Cultural Policy.

In **Finland**, the Ministry of Education and Culture appointed a steering group to draw up the proposal for the Strategy, with representatives from the Ministries of Agriculture and Forestry, Education and Culture, Economic Affairs and Employment, Environment, and Business Finland, the University of Eastern Finland, the National Audiovisual Institute, the National Archives of Finland, the Finnish National Gallery, the National Library of Finland, the Finnish Museum of

Natural History, the Rural Women's Advisory Organisation, the Finnish Heritage Agency, the Finnish National Agency for Education, the Sámi Parliament, the Finnish Innovation Fund (Sitra), the Finnish Local Heritage Federation, the Association of Cultural Heritage Education of Finland, the Association of Finnish Municipalities, the Finnish Museums Association, the Governing Body of Suomenlinna, the Society of Swedish Literature in Finland, the University of Turku, and the Finnish Transport Infrastructure Agency. The proposal received 176 comments.

The national strategy development of **Sweden** was based upon the work within the earlier digital strategy coordination by the secretariat DIGISAM (2011-2015), and has invited the Swedish National Library, the Swedish National Archives, and the national Swedish museums. In the preparation, also regional, private, and local actors in the GLAM sector have had the possibility to read and give feedback about the National strategy draft.

3D model of Havfrue, Anne Marie Carl-Nielsen, 1920 – source: Europeana

1.3. Support of cultural heritage institutions' uptake of advanced digital technologies

To ensure a more efficient process of digitisation and digital preservation and a higher quality content for a wider access, use and reuse, the Recommendation (Article 5) encourages Member States' national digital strategies for cultural heritage to include measures to support the cultural heritage institutions in taking up advanced technologies, such as 3D, AI, extended reality, cloud computing, data technologies and blockchain.

Nineteen of the national strategies (BE, DK, DE, EE, IE, EL, ES, FR, HR, IT, CY, LV, HU, NL, AT, PL, SL, SK, FI, SE) contain measures to support cultural heritage institutions in taking up advanced digital technologies. The measures include funding, pilot programmes and projects, tools and digital services, infrastructure, competence centres, expertise, guidelines, instructions, and technical specifications. The most addressed advanced digital technologies are AI and 3D, while a few Member States cover Augmented and Virtual Reality.

In Baden-Württemberg, a **German** *Land*, institutional support is provided by the Medien- und Filmgesellschaft Baden-Württemberg, which acts as a competence centre and offers programmes for cultural heritage institutions on 3D and Virtual Reality.

The **Estonian** national digital strategy for cultural heritage emphasises the skilful and systematic application of AI and other modern technologies in the processes of creating, producing, digitising, mediating, participating, using, researching, and preserving culture in all areas.

Greece addresses the implementation of the national digital strategy and individual domain policy planning, calls for EU co-funded digitisation and digital transformation projects to cultural heritage institutions. These encourage and promote 3D digitisation and extended reality applications, and generally require cloud-based storage and application infrastructures and services. Blockchain technologies are about to be applied on a pilot basis for the physical and digital management of antiquities by the Ministry of Culture. Several national and regional calls (an estimated 100 million running at the time of reporting) are aimed at funding the uptake of advanced digital technologies by cultural institutions such as for the 3D digitisation, use of Augmented Reality, Virtual Reality, Mixed Reality and AI tools.

In **Croatia,** guidelines for the digitalisation of cultural heritage have been published and include a chapter on 'Instructions for the preparation of 3D content creation: archaeological, immovable and movable cultural heritage'. Additionally, instructions for creating 3D models were made, with technical specifications such as recommended formats, shaders, position and scale, limitations, and procedures for model verification. The digitised objects were also used for the creation of a virtual exhibition using QR codes.

Italy is using Recovery and Resilience funds to provide high-value digital services to numerous IT systems of national and regional cultural institutions. These systems range from advanced AI-based engines (aimed at elaborating, enriching, and organising the data), to single domain and cross-domain knowledge graphs (collaborative and collective catalogues of digital information).

In **Latvia**, national research programmes fund the conception of the Reference Data Model of Latvian Cultural Heritage Institutions and research on methods and development of digital solutions for Humanities.

In **Lithuania**, during 2021 and 2022, the Ministry of Culture, in collaboration with the Research Council of Lithuania and the Baltic Institute of Advanced Technology, commissioned a 'Feasibility Study on the Application of Artificial Intelligence and Hardware for 3D Scanning of Cultural Heritage Objects' (focused on movable cultural heritage objects). This study examined the potential of artificial intelligence and specialised hardware to optimize 3D scanning processes, with the aim of enhancing the quality of digital representations of cultural heritage objects and increasing process efficiency.

Hungary have implemented interinstitutional pilot programmes, such as the Hungarian National Archives used AI to build a database of Hungarian prisoners of war. Hungary inaugurated the largest and most modern digitisation centre for public collections in a public collection in Central Europe in 2022 at the National Széchényi Library.

Austria has established a national competence centre which advises cultural heritage institutions on issues of data standards, processes, making data accessible (semantic web, data linking) and technological developments (AI, data science, knowledge engineering). The specific focus is on the most homogeneous fusion of human (3D) perception with digital content and information spaces as well as augmented or virtual reality techniques.

In **Poland,** a lot of activities around digitisation are carried out under grants programmes, as part of the development and educational activities of the five national digitisation competence centres.

The **Slovenian** 'National Programme to promote the development and use of artificial intelligence in the Republic of Slovenia until 2025' sets out guidelines for the development of AI in the field of cultural heritage and archiving: AI supports the facilitation of documentation and making cultural heritage more accessible and interesting by creating ways of interpreting it. The benefits of using AI are well known in the creation of metadata, machine indexing or motif recognition and (old) script recognition. Using geospatial AI brings new possibilities for the analysis of the state of cultural heritage, archaeological sites, and other heritage in space. For long-term preservation and archiving, AI tools can also be used for machine evaluation and retrieval of archival material, as well as for more efficient search and contextualisation of the material. Some national and European funding mechanisms are therefore also used to accelerate the development of AI.

Through its National Recovery and Resilience Plan, **Finland** provides structural support in the form of grants for the cultural and creative sectors for the development of innovative services and production and operating models, including 3D digitisation.

In **Sweden**, the support and competence development offered by KBLab, maintained by the Swedish National Library, enables researchers to engage in large-scale analysis of the libraries collections, develop language models and work with AI.

1.4. Role of aggregators

According to the Recommendation (Article 7), the national digital strategies for cultural heritage should provide for a clear and well-defined mandate for national or regional aggregators to collaborate with the cultural heritage institutions to make digitised cultural heritage assets available through Europeana and the data space.

Member States have taken a wide range of measures to strengthen the role of aggregators as intermediaries between Europeana and cultural heritage institutions and encouraged their active contribution of digitised cultural heritage assets.

Strengthening the role of the **Bulgarian** national aggregator Public Library Varna, which operates on a voluntarily basis, is planned by establishing a new advisory group using funding from the Bulgarian National Recovery and Resilience Plan.

The **German** national aggregator, Deutsche Digitale Bibliothek, is the largest national aggregator in Europeana. Launched in 2014, it gained permanent status in 2018 and is financed by both the Federal Government and all the 16 *Länder*. The aggregator works closely with the cultural heritage institutions wishing to participate.

Alexandra Freifrau von und zu Bodman, geb. Offensandt von Berckholtz, Alexandra von Berckholtz, 1860 - City Museums Freiburg, Germany – source: Europeana

In **Ireland**, the role of the national aggregator and its positioning within the overall structure will be evaluated as part of a coordinated approach to increasing capacity of digitisation of cultural assets, in line with the targets set out in the 2021 Recommendation and ensuring a more strategic high-level aggregator with statutory responsibility for collections of the State. The formalisation of a national digital strategy will include an assessment of the current aggregator infrastructure and steps required to increase engagement and promotion of the Recommendation to ensure Ireland achieves its goals.

In **Spain**, professional resources and training conferences are provided for the national aggregator's website. An improvement and modernisation of the aggregator software is foreseen to facilitate content aggregation and the participation of more cultural heritage institutions.

In **France**, a national strategy for aggregation of cultural content was endorsed by the Ministry of Culture in 2022, defining the objectives and missions of the aggregators. It officially establishes the three national aggregators and their respective scopes. It foresees the governance and cooperation between aggregators. The generic national aggregator is aligning its functional requirements to those of the technical infrastructure of the Ministry of Culture to automate as much as possible the data sharing from cultural heritage institutions to the national regulatory databases. Several events were organised such as 'Carrefour de l'agrégation', which gathered cultural heritage institutions, national aggregators, and intermediary aggregators to present and build capacity around data aggregation and data sharing to Europeana. Following the publication of a national strategy for aggregation of cultural content, the Ministry of Culture has set a network of intermediary aggregators with a regional or thematic scope. In 2024, an official mandate will be established to support the aggregator activity of the related entities. The aim is to automate as much as possible data flowing thanks to the technical infrastructure of the Ministry.

The **Croatian** system for data aggregation was upgraded with the eKultura project, which was launched for production in April 2022 and made available to the public in September 2023. So far, focus has been on testing the aggregation process.

During the reporting period, the **Italian** national aggregator CulturaItalia has built connections with the most relevant thematic aggregators of the GLAM sector, under the responsibility of the Italian Ministry of Culture. Specific workflows for sending content to CulturaItalia and to Europeana have been defined for each of them. Dedicated meetings and workshops, both online and offline, are held to share best practices, common problems, discuss common topics and collaboratively set the agenda for the coming years.

In **Cyprus**, cultural heritage institutions are encouraged to contribute their assets by sharing their collections on Europeana. This is also beneficial for their web traffic, which significantly increases. The national aggregator team is currently preparing a user's manual with all necessary instructions for cultural heritage institutions to actively contribute high quality content. The provision of more tools and services, particularly in metadata ingestion and mapping processes, is also foreseen.

Since 2019, the National Library of **Latvia** has served as the national aggregator. It conducts training courses on cultural heritage object digitisation for regional libraries and other cultural heritage institutions. The trainings notably focus on digitisation quality (Europeana

quality tiers) and copyright basics, and cultural heritage institutions are encouraged to adhere to Europeana recommendations. Furthermore, all objects uploaded to the Digital Cultural Heritage Platform must have a clearly stated copyright license. Digitisation Guidelines are available, including additional formats such as museum objects, digital art, and 3D digitisation of cultural monuments. In addition, the Regulation on the Digital Cultural Heritage Platform stipulates that any State, local government institution, or private entity must submit cultural heritage digital assets and data to the Platform for preservation, management, and distribution. The purpose of the Platform's operation, which is funded under the Latvian National Recovery and Resilience Plan, is to ensure a unified management, preservation, and distribution of digital assets, as well as the circulation of data between core information systems and the Platform's shared information systems. The Platform integrates a system for unified management and preservation of digital objects, a system for management and accessibility to a shared cultural heritage reference data pool, a copyright management system, and a unified distribution system the Digital Library of Latvia.

The Ministry of Culture of **Lithuania** Manages a cultural heritage digitisation monitoring system to track indicators such as the number of digitised cultural heritage assets available on Europeana. The Ministry also promotes the national aggregator and other cultural institutions to ensure targeted cross-border promotion of cultural heritage and compliance of the content and metadata of the digitised objects with the quality requirements of at least the under-digitised categories of cultural heritage assets. Further strengthening of the national aggregator's role will be considered in the upcoming national digital strategy for cultural heritage.

In **Hungary**, digitisation projects coordinated by the two accredited aggregators will result in the exports of cultural heritage objects to Europeana. The goal for the next three years is to meet the data records and quality targets of the 2021 Recommendation.

In the past three years, the **Maltese** national aggregator has streamlined operations to facilitate linking the national collection to Europeana. However, more efforts are needed to unite stakeholders for a substantial push in cultural heritage digitisation. A national policy is envisioned to better coordinate stakeholders and align efforts with the national aggregator, ensuring a comprehensive and collaborative approach. Clear policy guidelines will cover the compilation and creation of inventories, storage, and digitisation, particularly for small museums, independent collectors, and repositories. The goal is to make cultural assets within the private domain accessible for enjoyment and study, promoting citizen awareness, appreciation, and accountability.

In the **Netherlands**, the aggregator has mostly continued its existing efforts of providing a help desk and support for organisations and intermediaries for the digital collections that are already available on Europeana, for example by implementing updates after the signalling of issues by Europeana. In addition, several digital collections of new organisations have been connected at the organisations' request. An increase in efforts is expected in 2024.

Austria's national aggregator was modernised and technically updated during the reporting period. Federal funding will determine the number of objects provided on Europeana. Furthermore, Austria has set up a competence centre as described in section 1.3..

Dekoratsioonikavand filmile Pöördel, Peeter Linzbach, Tartu Art Museum, Estonia – source: Europeana

During the reporting period, the **Polish** aggregator implemented a project, co-financed with European funds, to increase the availability of resources of GLAM institutions on the platform of the national aggregator by expanding the Digital Libraries Federation website to search for digital objects based on text and musical content. Users of the new platform gained new opportunities to access information and increase the efficiency of their resource searching activities. This led to an increase in the attractiveness of the national platform and Europeana from the point of view of GLAM institutions. Additionally, Poland maintained the Digital Libraries Federation accreditation in the context of cooperation with Europeana and work on increasing the quality of transferred data is actively ongoing. The key activities for the coming years will be the participation of the aggregator, together with the Europeana Foundation, in the development and construction of the common European data space for cultural heritage and the European Collaborative Cloud on Cultural Heritage. The Ministry of Culture and National Heritage will support the Digital Libraries Federation's activities in this area by promoting both initiatives among cultural institutions. The developed strategy for digitisation and development of digital culture in Poland will highlight the importance of aggregators (national and international) in the context of diagnosing the current structure of the projected digital cultural heritage ecosystem.

Portugal's national aggregator is aggregating new partners and new content. During the reporting period, it added four new partners. Portugal has also been promoting diffusion and capacity building activities in seminars, workshops, etc. One of the main goals for the national aggregator in the near future is to implement the standards of the International Image Interoperability Framework, which will allow to strengthen the aggregator's role, both for the ingestion of content and for the quality of Portuguese content on Europeana.

From 2020 to 2022, the national aggregator in **Slovenia** led a project with partners from seven Member States that digitised 60 000 cultural heritage assets in thematic collections and an online exhibition on Europeana (well above the target of 20 000 assets), giving it increased visibility. Additionally, video recordings and educational curricula were prepared for the implementation of the results at various stages of the process. During the reporting period, the national aggregator also conducted several lectures with the aim of raising awareness among stakeholders about the importance of digitisation and the strategic collaboration of organisations in a common infrastructure for sharing cultural heritage assets on Europeana. In the coming year, the national aggregator will develop software for the purpose of national aggregation and international collaborations, which will facilitate partners' preparation of data for Europeana. The aggregator will strengthen its role by participating in various projects, including the common European data space for cultural heritage and the European Collaborative Cloud on Cultural Heritage, and contributing to conferences, such as Europeana Tech, within the aggregator network.

In **Slovakia**, the Ministry of Culture will provide more support for the national aggregator, strengthening its role will be one of the aims of the upcoming Strategy for the Development of the Museum Sector 2030.

Finland's Ministry of Education and Culture provides funding for the national aggregator's digital platform Finna. During the reporting period, the aggregator has promoted the interoperability of the country's cultural heritage sector with Europeana, for example by establishing access rights marking under the Europeana Licensing Framework, in cooperation with museums. A pilot has tested a new tool with which cultural heritage institutions can easily monitor the usage figures of their data on Europeana. Looking ahead, the aggregator and Ministry could jointly define a few Finnish indicators related to Europeana, which would be monitored annually. These could be used as a basis to discuss desirable developments and measures, while also taking into account the wide range of tasks of the Finnish digital platform. If the enterprise architecture of the library, archive and museum sector is updated, identifying issues related to Europeana and the common European data space for cultural heritage in this context could support the role and work of the aggregator.

Sweden's national aggregator is currently undergoing substantial development to secure the future of the service.

The situation is slightly different in some other Member States.

In **Belgium (Flanders)**, some important changes were made in 2018 to the cultural competences of policy levels. This decision led to the transfer of the aggregator, as well as other collection registration systems to the Flemish policy level that decided to revise the existing systems and start building an integrated one. The aggregation function towards Europeana will be part of this new system that is expected in 2025.

In **Denmark**, strengthening the role of aggregator has not been a national priority during the reporting period.

In **Estonia**, the strengthening and support of the aggregator has been put on hold while the Estonian Libraries Network Consortium has been developing its E-Varamu portal.

Luxembourg reported that they do not have a national aggregator yet.

3D model of North Cross Ahenny, Co. Tipperary, 8th century – source: Europeana

2. Targets

The following chapter reports on the following points: how Member States' preparation of digital strategies and their update involve stakeholders, the extent to which the strategies cover the three categories of cultural heritage set out in the Recommendation, the definitions and targets they set for each, the number of assets digitised for each category, how many of those have been made available on Europeana and the data space and how Member States have encouraged cultural heritage institutions to make their digitised assets available on Europeana and the data space. The report also explains measures taken for long term digital preservation of the digitised assets, how Member States ensure that data resulting from publicly funded digitisation projects become and stay findable, accessible, interoperable and reusable, whether Member States have a strategy or policy covering the connection of data at its source. The report also highlights whether all public funding for future digitisation projects of cultural heritage assets is made conditional upon making digitised content available in Europeana and the data space, and the measures taken to support and raise awareness of Europeana and the data space.

2.1. Categories of cultural heritage in national/regional strategies and their definitions

According to the Recommendation (Article 6), Member States' digital strategies should set clear digitisation and digital preservation goals, which should be based on objective and clear criteria, including cultural heritage at risk, the most physically visited cultural and heritage monuments, buildings and sites, and the low level of digitisation for specific categories of cultural heritage assets.

2.1.1. Cultural heritage at risk

Twelve Member States (CZ, EE, IE, EL, ES, HR, IT, CY, LU, MT, SK, FI) reported that their national strategies cover cultural heritage 'at risk' and eleven that they do not (DK, DE, FR, LT, HU, NL, AT, PL, PT, SI, SE). Member States and cultural heritage institutions have different interpretations of cultural heritage 'at risk' and provide a range of reasons such as natural or human causes. In addition, what or how many assets fall under this category change to reflect altered as well as environmental or geological factors, technological developments, etc.

In **Belgium**, the Flemish policy focuses on cultural heritage of exceptional importance that must be preserved because of its special archaeological, historical, cultural-historical, artistic, or scientific significance. In this sense, some elements apply for all the categories. With the 'Topstukkendecreet' (2003 Decree on the protection of movable cultural heritage of exceptional importance), the Flemish government wants to protect and safeguard this rare and indispensable heritage, applying special measures to these unique and indispensable objects and collections. Digitisation of certain carriers considered fragile include newspapers, audiovisual content, and photographic carriers. At the **Federal Government** level, the definition and risk assessment of an object at risk is made by each individual federal scientific institution. The carriers applicable

for this category include paper documents, photography on paper and on other supports, 2D and 3D objects from natural sciences collections, 2D and 3D objects from cultural heritage collections, audio and video on media, analogue movies.

Estonia defines, in the perspective of built heritage, risk in two ways: real and theoretical. The first is heritage that is threatened by natural disasters or human activity. Human activity includes both development pressure and problems caused by failure to fulfil maintenance obligations (neglect, decay, or inappropriate development). The second group is heritage at risk because of armed conflict, which under normal circumstances can be well maintained and is not threatened by development pressure. Estonia distinguishes between these two groups because the first group is a real threat, while the second group is a perceived one, hoping it will remain a theoretical threat.

Ireland used the EU Council of Ministers Conclusions on Risk Management in the Area of Cultural Heritage as guidance and a framework for defining risk in the development of the Heritage Ireland 2030 national plan for built heritage and associated assets. The Heritage Ireland 2030 national plan includes an action plan setting out a programme for Government commitments in relation to built and archaeological heritage. These include the development of a national management plan for national cultural heritage datasets; increased and improved universal access to heritage; integration of heritage considerations into urban and rural planning and regeneration; enactment of updated legislation to underpin protection of heritage; direct resources to safeguard buildings at risk to include a dedicated fund for local authorities to enable emergency stabilisation work to be undertaken; improve interpretation and visitor management at national heritage sites and monuments.

Greece considers previously uncatalogued antiquities held in storage facilities of the Ministry of Culture are de facto at risk of being lost or stolen. The digitisation, digital documentation and monitoring of sites and monuments threatened by environmental and related dangers intensified by the effects of climate change is included in the National Strategy for the protection of cultural heritage against the threats of climate change currently under development. Pilot actions have already commenced in this area.

Spain has only identified documentary and bibliographic heritage at the time of reporting. Documents are at risk when suffering documentary pathologies, such as fungi, cracks, damages caused by water, fire or other elements. Additionally, documents are also at risk when too many non-specialised users consult them, when their materials are fragile or when preservation is not accurate. State Archives Preservation departments periodically analyse documents, looking for possible preservation problems.

In **France**, the national strategy does not cover the notion of heritage at risk as such, but it is mentioned in the context of 3D digitisation, especially in relation to the impact of the climate change. The definition of heritage at risk is part of the national code of heritage that states their specific features and characteristics. It also lists several duties and responsibilities when it comes to maintaining and safeguarding heritage at risk. In 2021, a specific mission 'Patrimoine en peril' was launched to select in a participatory way monuments and sites that are considered at risk and foster fund raising for fixing and restoring this heritage. At the Bibliothèque Nationale de France, a cultural asset is considered at risk when it is exposed to specific and proven imminent threats of loss of integrity, loss of authenticity, loss of cultural, historical, aesthetic

significance or to potential risks (negative effects on its value, its access and its availability for future generations).

Croatia has set their digitisation target for cultural heritage at risk at 200 assets threatened by floods and/or earthquakes. The medium-term strategic planning act encompassing the entire culture and media sector, the National Culture and Media Development Plan for the period from 2023 to 2027, covers different aspects assessment, monitoring and awareness raising in the context of cultural heritage at risk.

The **Italian** Ministry of Culture is equipped with a dedicated information system 'Map of Risk' (Carta del Rischio) aimed at assessing, monitoring, and managing cultural heritage deemed at risk. According to the CDR framework, risk expresses the probability that an unwanted event will damage a cultural asset and is considered as a function of different quantities. Most of the Italian cultural heritage is, in fact at risk: seismic, hydrogeological, climatic, or anthropic.

In **Latvia**, cultural heritage institutions have their own interpretation of what constitutes 'at risk' assets. The Cultural Heritage Board performs risk accounting of cultural monuments in the context of its technical condition. Meanwhile, the National Archives of Latvia compiles an

Boats at Seine, Spyros Papaloukas, 1921, Ίδρυμα Εικαστικών Τεχνών & Μουσικής Βασίλη και Μαρίνας Θεοχαράκη, Greece – source: Europeana

inventory of materials vulnerable to information loss and records the characteristics of their physical condition in the Unified State Archive Information System. Roughly 30% of digitised cultural heritage assets are classified as 'at risk' objects.

In **Lithuania,** the upcoming Guidelines for the Digitisation and Use of Cultural Content is expected to address heritage at risk.

No formal definition of 'at risk' has been adopted in **Luxembourg**, nevertheless, it is generally understood as cultural heritage items that face obsolescence, technical or natural based on their material, but also items that have been stored in poor conditions and will only be able to be access once digitised because of how fragile they are.

In **Malta,** in the absence of a digital strategy for cultural heritage in the reporting period, a triage method categorises assets as 'at risk' based on attributes such as aesthetic, historical, social, and scientific significance, with physical condition factored in. The asset's value is extrapolated, considering its importance, rarity, and national/international significance. The asset's condition determines its 'at risk' status. The risk assessments are to be undertaken at organisational level as well as at a site/object level, followed by the corresponding risk management plan. Partnerships are evolving to research coastal and underwater heritage sites. Remote sensing tools and geological/archaeological investigations lead to 3D modelling, categorising sites as 'low, medium, or high' risk based on scientific parameters related to preservation and degradation risk. Heritage Malta aims to digitise the entire national collection, systematically focusing on sites and creating digital twins, then advancing the digital twins through integration into Heritage Building Information Modelling.

In the case of the **Netherlands,** the national digital heritage strategy does not distinguish between different categories of digital heritage, because it is not geared towards increasing the number of digitised assets available. After several large digitisation incentives in the first two decades of the century, the focus of the national policy has turned towards connecting the data that result from these digitisation efforts. In the meantime, the decision whether to digitise further assets is with the organisations caring for collections or other heritage assets, in line with their preservation or access policies.

Austria bases risk analysis on human and natural factors as well as on short term and long-term effects. The Federal Monument Authority is responsible for immediate risk analysis of individual objects, using tools assess risks including the CLIP media service, Google Alert, and civil society information.

In the strategy under development, **Poland** will include 'at risk' category in the diagnosis of the state of digitisation and will be a reference point for setting goals. Specialised institutions point out the threats specific to different types of heritage. For monuments, threats are related to construction investments and modernisations of existing buildings, protected areas, carried out without the participation of professional conservation supervision, as well as climate changes. For museums, endangered heritage primarily means objects in the worst state of preservation, requiring significant amounts of work/finance, as well as poorly documented objects contextual value of which is at greatest risk due to information gaps in the documentation. In archives, libraries where paper materials dominate, unfavourable changes in the structure of paper, including acidification and changes of microbiological origin, pose a major threat.

Slovenia defines tangible cultural heritage 'at risk' as heritage that, due to various factors, ranging from the actions of owners or custodians to social and environmental factors, is subject to a deterioration of its preservation status or even destruction. However, intangible cultural heritage is at risk when its historically documented presence begins to diminish. The mechanism for protecting cultural heritage at risk is particularly utilised in calls for financing the conservation of immovable and intangible cultural heritage.

Slovakia reported that the list of national cultural monuments to be marked with the Blue Shield symbol in the first level of basic protection (proposed number of 250), and in the second level of increased protection (proposed number of 50), based on the performance of tasks within the Ministry's Crisis Staff culture of the Slovak Republic which was sent to the Minister of Defence of the Slovak Republic for incorporation into digital military maps. Slovakia defines 'at risk' status based on national methodological instructions issued by the Ministry of Culture.

3D model of Bote de Subh, Pyxis of Subh, 964 AD, Durri as-Saghir, Museo Arqueológico Nacional, Spain – source: Europeana

In **Finland**, there is no comprehensive list of risks in the national cultural heritage strategy. However, the risks and vulnerabilities of climate change to cultural heritage and the cultural environment in Finland will be discussed in a review to be published as background for the national Climate change Adaptation Plan 2030.

In **Sweden**, the national strategy in development does not cover numbers or categories. Instead, these judgments are carried out by the institutions managing the items themselves. From several points of view, all the cultural heritage is considered 'at risk'. Cultural heritage institutions are expected to prioritise and make selections in their collections regarding what is to be digitised. This is done from the responsible institution's point of view and professional judgement. In the reporting period, though, the SNHB has conducted a pilot study about 3D-digitisation where institutions managing buildings, monuments and historical sites were encouraged to make a selection considering heritage 'at risk' and 'most visited' (report in Swedish). For example, the Church of Sweden manages the church buildings, where extensive work with risk definitions in relation to 3D-digitisation has been carried out in 2022. Also, the Film Heritage (Filmarvet) digitalisation project initiated by the Swedish National Library and the Swedish Film Institute works to mitigate the risk of deteriorating physical media.

2.1.2. The most physically visited cultural and heritage monuments, buildings and sites

Nine Member States' digital strategies (CZ, EE, IE, EL, HR, IT, CY, SK, FI) cover the most physically visited cultural and heritage monuments, buildings and sites. In response to how Member States determine which cultural heritage monuments, buildings and sites are the most physically visited, six (EL, HR, IT, MT, SI, SK and FI) state that they have been collecting data and documenting the total number of visits in order to determine the most visited sites.

Croatia's Museum Documentation Centre, the central national documentation institution, monitors museum visitation and publishes annual reports, which serve as information which monuments, buildings and sites are the visited most.

Ireland monitors visitor numbers to sites with an associated visitor centre or interpretative space and the figures are reported to the ministry with overall responsibility. Monuments located on private land are protected by national legislation, but no regular reporting mechanism is in place. Their location on private or inaccessible sites generally results in lower visitor numbers. Buildings of architectural or historical significance held in private ownership are protected by legislation.

In **Greece**, visitation and ticket data provided by the Hellenic Organisation of Cultural Resources Development and the Hellenic Statistical Authority are used for this purpose. Monuments and sites inscribed in UNESCO World Heritage List are also included.

In **Italy,** the official national source regarding these data is SISTAN, the National Statistical System that works together with the Statistical Office of the Ministry of Culture. Every year, they analyse and publish aggregated data tables on their official website. The criteria employed to collect this type of data is based on the number of tickets issued for sites with entrance

fees, while, for free admission museums, they are recorded by an attendance register or by a personal counter device.

In **Malta,** statistics are submitted to the Superintendence of Cultural Heritage and published in the State of the Heritage Report. Each governmental and non-governmental agency accounts for their visitors using their own means of data capture. The resulting data highlights the most physically visited sites or assets.

In **Slovakia**, each museum keeps accurate attendance statistics based on tickets purchased to museum exhibitions.

Finland's National Board of Antiquities has been collecting data related to museum operations since 1975. As of 1989, these annual statistics surveys, which mainly collect data on museum personnel and finances, have been conducted primarily due to the implementation of the state funding system and the resulting information needs. The Association of Finnish World Heritage sites has collected visitor information on World Heritage sites between 2017 and 2019, then 2022 and 2023. For some sites such as old Rauma, the exact number of visits to the site is not recorded, but the annual number of visits is a calculated estimate based on the number of visits to museums, tourism advice and hotel stays.

> **Sixteen Member States (BE, DK, DE, EE, ES, FR, LV, LT, LU, HU, NL, AT, PL, PT, SI, SE) reported that their national strategies do not address this category, or that there is currently no national compilation of visitor statistics at all cultural and heritage monuments, buildings and sites.**

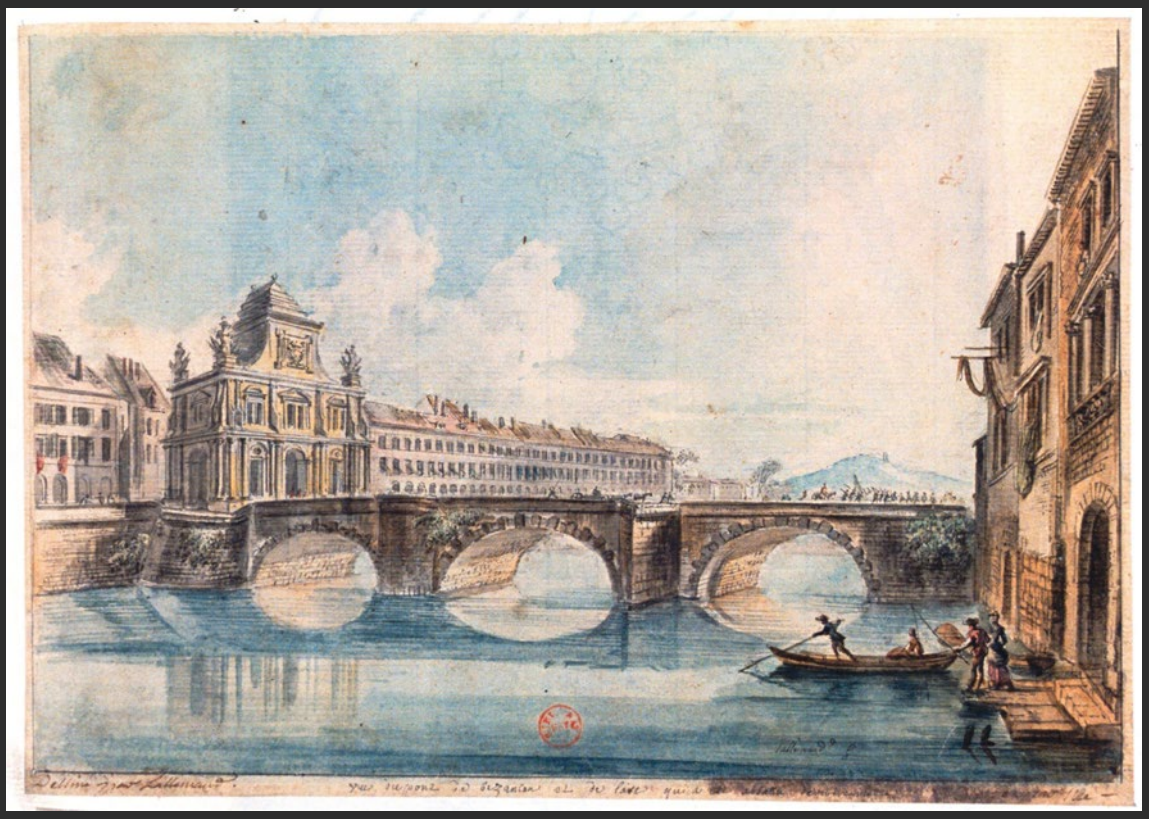
In the case of **Belgium**, the Flanders Heritage Agency does not capture the quantification of visits to cultural/heritage (archaeological) sites, monuments, and landscapes. The reason for this is that determining which monuments, sites and landscapes are the most visited is difficult, as many locations are freely accessible. Hence, there is no strategy to monitor which monuments, buildings and sites are most visited. In the case of the **Federal Government**, digital cultural heritage policy is only applicable to the collections in the Federal Scientific Institutions.

Germany has annual statistics available on museum visitors and visitors of monuments and castles.

Although **Estonia**'s national strategy covers this category, the visitation of built heritage and the resulting threats to monuments or heritage sites is not monitored.

In the case of **France**, the national digital strategy includes an action dedicated to better knowledge of users and a better use of audience data to adapt the digital cultural offer. However, there is no specific measure of the most visited monuments and sites. There is no correlation between the most visited sites and their digitisation. The visitors' attendance of public institutions is public open data that should be made available through the national open data platform, but only some institutions publish these data.

Similarly, **Austria** does not actively survey the number of visitors to monuments, but it can be assumed that there is a direct proportional relationship between tourism advertising and visitor numbers.



Vue du pont de bezancon et de l'arc qui a été abbattu dernièrement, Jean-Baptiste Lallemand, Bibliothèque Nationale de France, France – source: Europeana

In **Poland**, data sources usable for this purpose include research on museum attendance carried out by the Central Statistical Office as part of public statistics, and annual reports of the Polish Tourist Organisation related to attendance at tourist attractions, including cultural heritage attractions. However, most monuments (including UNESCO sites) do not monitor visitor attendance as few of the attractions require a fee, therefore it is difficult to create complete statistical visitation databases.

Slovenia usually actively promotes the most physically visited cultural heritage sites as part of the tourism services of a specific city or region. The definition of the most physically visited cultural heritage site can be based on the number of visits, if such data is kept.

Sweden's national strategy does not cover the definition of physical visits, and there was no national compilation of visitor figures at all cultural and heritage monuments, buildings, and sites in the reporting period. These numbers are generally compiled by different national and regional agencies.

2.1.3. Under-digitised, and other categories of cultural heritage assets

The national digital strategies of seven Member States (CZ, EE, EL, HR, IT, CY, FI) indicate covering the category of under-digitised cultural heritage assets. Types of under-digitised cultural heritage assets include documents such as maps, plans, drawings, books, manuscripts, monuments, sites, archaeological items, museum objects in museum deposits, coins and medals, old photographs, etc.

For under-digitised assets, **Estonia** focused on documents.

Greece has been undertaking digitisation and documentation of recent and contemporary culture collections as well as intangible heritage assets in this category.

Croatia marks in this category assets with high risk of earthquake or floods.

Italy's under-digitised assets include objects in museum deposits, ancient maps in state archives, coins and medals, ancient manuscripts, old photographs from the archives of the Italian Supervising Offices (Sovrintendenze).

Cyprus includes monuments, sites, and archaeological items in this category.

In **Malta,** prioritising the digitisation of intangible cultural heritage and neglected cultural heritage landscapes is crucial, remarking that numerous collections remain untouched, demanding substantial resources for comprehensive digitisation.

Slovakia reported that every art and cultural object collection institution (museums and galleries) in Slovakia founded by the state or local government is obligated by law to keep records of collection items in digital form, and therefore their digitisation is ongoing.

Seven Member States (EE, IE, ES, LU, HU, PT, FI) cover 'other' categories of cultural heritage in their digital strategies.

Ireland reports that the significance of museum and archival collections and other supporting material has been recognised as part of the various plans and programmes.

Spain mentioned 2D cultural objects in this category, while **Estonia** listed printed materials, photos, films, and artefacts.

Luxembourg categorises any item that fits the various criteria established by the cultural heritage institutions for digitisation within their own institution. Digitisation criteria can be based on various factors, such as need to provide items for access and research, for conservation purposes, etc.

Malta Libraries, the Superintendence of Cultural Heritage, and Heritage Malta set out to have the whole collection digitised and accessible.

2.2. Targets and digitisation of the categories of cultural heritage

The Recommendation (Article 6) foresees that by 2030, Member States should digitise in 3D all monuments and sites falling under the category of cultural heritage at risk and 50% of those falling under the category of most physically visited cultural and heritage monuments, buildings, and sites. By 2025, Member States should digitise 40% of the overall 2030 targets.

2.2.1. Cultural heritage assets digitised and availability on Europeana and the data space

In response to the question about how many cultural heritage assets have been digitised in each Member State during the reference period and how many were made available on Europeana and the data space, 16 MS (BE, BG, EE, EL, ES, HR, IT, LV, LT, HU, MT, PL, PT, SI, FI, SE) have provided information, while 10 Member States (CZ, DK, DE, FR, IE, CY, LU, NL, SK, AT) have no data available, or no central documentation, and neither targets nor results have been aggregated centrally.

In **Belgium,** meemoo in **Flanders** digitised 'fragile' assets in an estimated the number of 630 000 pages as part of the GIVE project, funded by React EU; and audiovisual content of 3 596 films, 14 883 audiovisual carriers, 4 631 XDCAM and 1 200 other video carriers. As for photographic carriers, 180 000 glass plate carriers were digitised between 2022 and 2023. A study of the largest archives in Flanders conducted by meemoo estimated the number of pages still to be digitised is 18 000 000 pages. For audiovisual content, meemoo estimates that 51 000 carriers still need to be digitised in archives involved in its digitisation initiative. A 2019-2020 survey indicated that 107 responders had 10.3 million photographic carriers in their archives. While this is probably an incomplete estimate, it indicates the challenges ahead.

While **Bulgaria** does not have information on how many cultural assets have been digitised during the reference period, approximately 80 000 assets were made available on Europeana between 2021 and 2023 via the national aggregator.

Estonia has been working on defining a target for 'at risk' and 'most physically visited' assets and set the target for under-digitised assets at 25 617 760 pages by the end of 2023, from 19 000 000 pages in 2018. In the reference period, 3 895 880 pages were digitised. The target for digitisation of assets in the 'other' category for printed materials is 10 100 000 pages by the end of 2023 from 6 600 000 in 2018, for photos 1 453 317 n 2023 from 1 286 317 in 2018, for films 1 015 hours from 230 in 2018, and for artefacts 515 874 from 463 000 in 2018. In this category, 3 500 000 pages of printed materials, 167 000 photos, 695 hours of film and 52 874 artefacts were digitised in the reference period. In total, 589 754 assets were made available on Europeana.

In **Ireland**, although the rate of digitisation of cultural heritage assets has increased significantly in the past decade, mainly due to the provision of funding and programme support, few assets have been uploaded to Europeana. There has been some engagement by small museums, local authorities, and private organisations.

Profil djevojke, Franjo Pommer, 1870, Museum of Arts and Crafts, Zagreb, Croatia – source: Europeana

Greece set the target for 'at risk' assets at approximately 250 000, noting that 3D scanning of moveable and immoveable individual monuments is carried out as part of the documentation and conservation processes in numerous archaeological sites and museums, however there is no unified repository for these yet, and the number could not be correctly estimated for the reporting period. This clarification also applies to the most physically visited category. The digitised 'at risk' assets will be published on Europeana gradually after scientific study and conservation. Approximately 60 000 records of assets in were made available through the National Documentation Centre, the Greek national aggregator, a majority of which originating from the most visited museums and sites. The target for 'under-digitised' objects is more than 50 000, most of which will become available to Europeana once their digitisation is completed. Greece reported having enriched the digital repositories of the National Archive of Monuments with new records and the homogenisation and consolidation of older records, at the time of reporting, contain approximately 750 000 records of moveable objects, 17 000 records of immoveable monuments 3 400 sites, 850 buffer zones, 220 museums and cultural buildings and 3 000 real estate properties of the Ministry of Culture. All in all, Greece estimates that up to 1 000 000 assets were digitised, of which 115 567 items from new collections were published on Europeana between 2021 and 2023.

Spain has digitised 30 490 673 objects in the reference period, including 2 873 653 'at risk' and 27 617 020 'other' category assets. 2 596 931 of them were made available on Europeana.

Croatia set a target of 200 for 'at risk' and 'under-digitised' assets with high risk of earthquake or floods, and 10 for 'most physically visited', and carried out the digitisation of 220 'at risk', and two of the most physically visited monuments/sites.

Italy's target for 'at risk' assets encompasses monuments, sites and architectures at risk in general. For the 'most physically visited' category, the target was set at 6 000 cultural heritage artifacts, artworks and monuments, to be entirely digitised with 3D and high-quality (e.g. Gigapixel) technologies. The digitisation projects were still underway at the time of reporting. The precise number of the assets digitised between 2021 and 2023 is not known, however 454 818 digital resources were sent to Europeana in this period.

Latvia, by compiling available statistical data from libraries, museums, and archives, reported that at least 685 000 cultural heritage objects have been digitised during the reporting period. The Latvian national strategy also aims to change the attitude towards digitisation in all cultural heritage institutions. By 2027, the aim is for 50% of cultural heritage institutions to be actively engaged in digitisation daily. Latvia made the 3D model of the Freedom Monument available on Europeana.

Lithuania digitised 351 285 cultural heritage objects and made available 285 447 assets were on Europeana in the reference period.

Hungary's target in the 'other' category is 50% of the collections of cultural heritage institutions for digitisation. Approximately 350 000 cultural heritage objects from Hungary were published on Europeana.

Malta reported that more than 10 000 'at risk' artifacts within the national collection has been digitised by Heritage Malta, and that 65 books (25 422 pages) of its Incunabula Collection made available on Europeana. It is planned that in 2024 the collections management system will be directly connected to Europeana.

In **Poland**, according to public statistics, nearly 2 677 000 objects were digitised in 2021 and 2022 (no data is available for 2023 at the time of reporting). Not all institutions dealing with digitisation are included in these statistics. In the same years, 1 523 523 digital objects were added or updated on Europeana.

Portugal has digitised 335 680 assets. In 2021, 234 242 assets were made available on Europeana. At the time of reporting, Portugal had 165 627 assets on Europeana. The decrease in the total number was due to the de-publication of assets from Fundação Mário Soares (HOPE aggregator) and broken links.

In **Slovenia**, 2 819 465 cultural heritage assets were digitised. The national aggregator aggregated 76 622 assets during this period.

Slovakia reported that the total number of assets digitised during the reporting period is 17 473. In this time, 6 498 digitised objects from different institutions were processed. For 2022 and 2023, 2 390 cultural objects were sent to Europeana via the national aggregator.

Finland's National Library digitised 157 000 compact disks, 620 items in other audio formats, and 86 volumes (13 700 pages) of 'Journals from the warfront 1939–1945' 'at risk' assets.

The National Library also digitised 6 800 pages (55 volumes) of clandestine manuscripts and 73 000 pages (6 300 bindings) of the Finnish immigrant newspapers (US) in the 'under-digitised' category. Digitisation of assets of the 'other' category included 568 328 natural history objects and 333 887 photographs of museums in 2021 and 2022 (899 335 in total), 5.1 million pages of newspapers, books, journals, and manuscripts by the National Library, approximately 98.4 million files by the National Archives, and 1 749 films and 23 342 photographs by the National Audiovisual Institute. The national aggregator, the National Library Finna services exported 81 478 items of new data to Europeana during the reference period, and this figure does not include any new Finnish data possibly exported to Europeana by thematic aggregators.

Sweden has digitised 6 621 books, 24 438 867 pages/documents, 375 983 museum objects, 3 406 audio tapes, 6 256 films (plus 450 000 hours of audiovisual material), 1 674 878 photographs, 4 383 works of art, and 101 3D objects.

As a comment, **France** indicated that a harmonised way of counting the number of cultural heritage assets would be helpful, especially when it comes to quantify 3D models. Generally, the way of quantifying the amount of 2D and/or 3D items digitised may also vary from one institution/type of item to the another (e.g. in the case of press, are items accounted as a press issue, a press item (one article), or a page? The same would apply to 3D). Harmonised tools and frameworks for relevant reporting are therefore very much needed.

3D model of Resting Hercules, Glykon, 3rd century AD, Museo Archeologico Nazionale di Napoli – source: Europeana

2.2.2. Records provided by Europeana

The table below summarizes the records and assets sent by Member States to Europeana and the data space, as of 6 November 2023, as well as the targets for 2025 and 2030, set in the Recommendation.

	Records on 6 November 2023	New records 2021-2023	High quality* records on 6 November 2023	New high quality* records 2021-2023
Austria	2 724 935	352 578	1 295 170	188 228
Belgium	2 689 757	190 111	2 228 490	-18 942
Bulgaria	149 967	55 520	111 521	48 874
Croatia	180 203	112 846	130 615	125 159
Cyprus	57 346	26 387	39 090	37 232
Czechia	1 360 517	479 254	621 960	252 358
Denmark	1 541 324	508 902	317 514	-345 198
Estonia	853 731	205 526	590 140	104 116
Finland	1 158 719	65 422	1 017 388	56 489
France	4 894 704	1034 472	1 948 845	169 278
Germany	6 704 023	1167 237	4 743 505	635 763
Greece	664 387	2 794	470 522	87 195
Hungary	1 121 920	389 887	839 635	268 210
Ireland	119 646	32 881	46 605	2 181
Italy	1 887 881	-262 326	597 889	-89 532
Latvia	121 892	-6 613	112 986	-355
Lithuania	605 806	381 447	570 224	387 887
Luxembourg	65 803	203	1 521	196
Malta	53 164	2 854	1 121	115
Netherlands	9 436 483	309 984	3 755 885	-3 798 118
Poland	3 862 023	821 802	1 338 138	401 142
Portugal	163 150	-39 894	87 617	-51 346
Romania	465 985	330 772	340 208	255 659
Slovakia	31 437	16 331	14 046	13 593
Slovenia	483 426	-114 884	400 159	18 078
Spain	5 005 980	2 045 384	2 210 186	981 835
Sweden	4 726 719	419 398	2 476 667	-570 763
EU27	**51 130 928**	**8 528 275**	**26 307 647**	**-840 664**

* High quality records adhere to the requirements of Tier 2 or above (Tier 2+) of the Europeana Publishing Framework for content, and to the requirements of Tier A or above for metadata. These standards are required to foster reuse for various purpose.

** Intermediate target: 40% of indicative targets by 2030.

	New high quality* records needed as of November 2023 to reach 2025 target**	New high quality* records needed as of November 2023 to reach 2030 target	3D digital assets on 6 November 2023	3D digital assets needed as of November 2023 to reach 2025 target**	3D digital assets needed as of November 2023 to reach 2030 target
Austria	1 478 344	1 002 892	0	60 174	401 157
Belgium	757 483	1 215 817	474	72 475	485 853
Bulgaria	114 708	329 454	0	19 767	131 782
Croatia	31 093	235 877	2	14 151	94 349
Cyprus	20 455	71 466	94	4 194	28 492
Czechia	615 035	889 329	576	52 784	355 156
Denmark	985 662	676 884	0	40 613	270 754
Estonia	97 995	99 825	0	5 989	39 930
Finland	295 280	548 428	93	32 813	219 278
France	4 463 813	6 381 064	450	382 414	2 551 976
Germany	4 362 988	8 924 266	0	535 456	3 569 707
Greece	447 941	642 175	70	38 460	256 800
Hungary	147 491	637 732	1 715	36 549	253 378
Ireland	382 872	856 780	511	50 896	342 201
Italy	3 600 278	5 119 900	24	307 170	2 047 936
Latvia	62 601	117 705	0	7 062	47 082
Lithuania	-261 915	209 875	10	12 583	83 940
Luxembourg	122 306	145 567	15	8 719	58 212
Malta	67 594	46 013	0	2 761	18 405
Netherlands	6 167 599	1 992 463	0	119 548	796 985
Poland	2 693 210	2 477 819	22	148 647	991 105
Portugal	406 360	727 333	0	43 640	290 933
Romania	278 961	1 209 889	0	72 593	483 956
Slovakia	137 714	341 636	0	20 498	136 654
Slovenia	264 871	166 799	254	9 754	66 466
Spain	2 291 059	3 851 622	177	230 920	1 540 472
Sweden	2 270 244	1 098 975	0	65 938	439 590
EU27	**32 302 040**	**40 017 586**	**4 487**	**2 396 568**	**16 002 547**

* High quality records adhere to the requirements of Tier 2 or above (Tier 2+) of the Europeana Publishing Framework for content, and to the requirements of Tier A or above for metadata. These standards are required to foster reuse for various purpose.

** Intermediate target: 40% of indicative targets by 2030.

2.3. Long-term preservation

The Recommendation (Article 6) encourages Member States to take the necessary measures to ensure that all digitised cultural assets in the three categories are also digitally preserved.

Member States were asked about the measures regarding long-term digital preservation of the digitised assets, such as relevant standards, formats, storage, future migrations, continuing maintenance, financial and staffing resources. The results show that strategies and focus policies differ between countries.

At least fifteen Member States (BE, EE, IE, EL, ES, HR, LV, LU, HU, MT, PL, SI, SK, FI, SE) have a strategy regarding long-term digital preservation in place. These mainly include the implementation of storage systems, data servers, the cloud, physical copies, periodical migrations, and maintenance.

In **Belgium**, **Flanders** created 'Meemoo, the Flemish institute for archives' as part of the digital strategy for long term preservation. It has created a network of over 180 partners, with more than 25 petabytes of data stored, allowing partners to make use of its digitisation and long-term preservation services. It also allows reuse of stored content and provides expertise and training to enhance the digital skills of partners. Organisations that do not store their content on Meemoo can still make use of the expertise to map out their own digital preservation strategy. Meemoo also handles secure and safe storage in three locations and is responsible for preservation activities such as migration, format changes and updates and maintenance of the

Θαλασσογραφία, Epameinondas Pantazopoulos, UNESCO Chair on Digital Cultural Heritage, Cyprus – source: Europeana

infrastructure. When investing in digitisation, the **Federal Government** considers not only the creation of digitised data, but also its retention throughout its lifecycle. Under the Federal strategy, everything that is digitised under the DIGIT programme must be stored in a sustainable and secure manner. Phase 1 of the digitisation plan showed that the institutions faced problems in archiving, storage, preservation, and management of digital content, and they could not solve these problems on their own, due to lack of infrastructure and expertise.

Under DIGIT-03-LTP ('Long Term Preservation'), a common IT infrastructure was developed for the long-term preservation of digitised archive documents, objects, and research data. The platform guarantees that digitised objects remain accessible, usable, and intact for a long time (more than ten years), well above the lifetime of any specific storage system, technology or contracting party. The entire project is coordinated by the Belgian Science Policy Office which is the owner of the entire platform, operating a long-term data preservation platform. Metadata is essential to be able to (re)use the digital material. The long-term preservation platform also provides opportunities for securing digital documents of digital origin (born digital) such as those coming from the e-depot and web archiving.

Greece makes national calls for funding conditional upon projects using the Governmental Cloud for hosting their digital outputs. Among other aspects, the National Documentation Centre's Basic Interoperability Guidelines included in the calls, cover certain aspects of long-term preservation of digitised assets, including relevant standards and formats. The digital repositories of the National Archive of Monuments administered by the Ministry of Culture are regularly maintained and upgraded and are currently in the process of being migrated from in-site infrastructures to the Governmental Cloud.

France launched an interministerial programme in 2015 to provide a sustainable solution to support the long-term preservation and archiving of cultural content. This programme, VITAM (Valeurs Immatérielles Transmises aux Archives pour Mémoire – Immaterial values sent to archives for memory), is integrated in the national digital strategy for anchoring the digital archiving in the value chain of cultural data. Since 2022, VITAM is deployed as an external service VAS (VITAM en Version Accessible en Service) and available for any public institution willing to proceed with digital archiving.

In **Ireland,** digitisation is undertaken to ensure the assets in question continue to remain accessible over a long period of time, while ensuring the preservation of the original asset. Non-proprietary file formats and supporting hardware and software is used where possible to avoid data loss and issues of access over time.

In **Latvia**, there are three solutions used to store data for cultural heritage institutions. The first is the Digital Cultural Heritage Platform of Latvia which integrates with the core systems of cultural heritage institutions and various digital collection systems, thus serving as the country's long-term preservation infrastructure. Second is the Joint Catalogue of the National Holdings of Museums, which allows access to their data for entry, correction or deletion. And third, the National Archives of Latvia have been using Preservica since 2023 to store data, incorporating proprietary information package metadata specifications.

As digitisation expands, **Malta**'s international strategy accommodates increased storage needs. Heritage Malta's Digitisation Unit has invested in multiple data servers to store the national collection's content management system, housing digitised assets and metadata. With redundant backup systems across various locations, the agency prioritises the security and safety of collected data. In 2023, plans for a major data centre upgrade were finalised, scheduled for implementation in Q1 2024. The upgrade includes obtaining ISO 27001 certification, complementing the already existing ISO 9001:2015 certification. Monitoring and internal support are augmented by collaboration with MITA, the national IT agency. This strategic approach ensures the resilience and certification of Maltese data centres as they continue preserving and digitising Malta's rich heritage.

In **Poland**, digitisation of cultural resources is carried out in accordance with the standards contained in the catalogues of good practices and digitisation standards for specific types of collections published by the Competence Centres for digitisation. In 2022, the KRONIK@ portal, the National Repository of Scientific and Cultural Objects, was created, enabling long-term storage, and sharing of public sector information in the area of science and culture. The portal introduces uniform standards for description and management. It serves as a free backup repository for public entities.

In **Slovenia**, the Archive of the Republic of Slovenia publishes a list of formats suitable for long-term storage for specific types of material on its website. These regulations are mandatory for the public sector and for providers of equipment and services to the public sector.

In **Slovakia**, the largest digital corpora for the collection of works of art are Webumenia, managed by the Slovak National Gallery and Slovakiana, managed by the National Awareness Centre. The Slovak Monuments Office of the Slovak Republic maintains a list of monuments in a central list of the monument fund. Individual objects are in the process of more detailed digitisation through the national project of digitalisation of monuments OPIS, and the Monument Information System (PAMIS), both funded by under a European regional programme.

In **Finland**, one of the objectives of the national cultural heritage strategy is that recorded and protected cultural heritage reflects a diverse society. Different operating methods will be developed in the documentation, recording, preserving and transmission of culturally diverse cultural heritage.

> **Three Member States (DK, LT, PT) reported that they do not have a national strategy defined at a central level, but that each cultural heritage institution has its own policies for ensuring the long-term preservation of digital assets. This includes planned interventions and migration of data, as well as secure systems backup and support.**

Lithuania's system for long-term preservation includes mandatory deposits of printed publications and films, managed by memory institutions. While memory institutions take on the responsibility of managing technical resources and storage capacity independently, some limitations persist. In 2021, a Long-Term Cultural Heritage Preservation and Deposit Analysis was conducted, commissioned by the Ministry of Culture. The findings from this analysis contributed to the development of the Guidelines for the Digitisation and Use of Cultural Content and the action plan for their implementation.

For three Member States (IT, CY, AT), standards are currently being developed. Italy is developing a new software infrastructure for cultural heritage which will be cloud-based, ensuring economies of scale to reduce energetic and economic inefficiencies. Most of the data standards that will be adopted by the infrastructure are international and well-tested, such as METS and MODS for data transfer, OAI-PMH for metadata sharing, etc.

In one Member State, the Netherlands, the national digital heritage strategy does not address this topic specifically, but expertise on the topic is exchanged as part of the sustainability workgroup of the Dutch Digital Heritage Network.

Lastly, at least six Member States (BE, ES, LV, HU, SI, SE) noted that their cultural heritage institutions report to be struggling with some aspects of this task.

The **Belgian Federal Government** reported that the first phase of the digitisation plan showed that the institutions faced problems in archiving, storage, preservation, and management of digital content. They could not solve these problems alone, given their lack of infrastructure and know-how.

In **Spain**, both technical and human resources are critically low. To rationalise resources, the Ministry of Culture and Sports plans to centralise the preservation of digital objects into a single system.

Ziema, Vilhelms Purvītis, 1910, Latvijas Nacionālais mākslas muzejs, Latvia – source: Europeana

For **Hungary**, the sustainability of the infrastructure needed for long-term digital preservation remains a challenge.

In **Latvia**, financing is secured through annual budget allocations to cultural heritage institutions. However, it is not proportionate to the increasing amount of digital assets, and insufficient staffing remains a persistent issue.

Continuing maintenance and staffing resources are for some **Slovenian** institutions a challenge, although the government is working to strengthen the area through various financial mechanisms (national budget, recovery plan, EU multiannual financial framework, etc.).

In Sweden, the responsibility for the long-term preservation of digital assets is handled by the managing institutions themselves, and this is a collective challenge with infrastructural dimensions not yet solved. The national strategy does not cover financial or staffing matters. The overall national responsibility for guidelines regarding preservation is handled by the Swedish National Archives, and the designated responsibility for the coordination of digitisation of cultural heritage is handled by the Swedish National Heritage Board. Demarcation between these areas of responsibility is handled in consultation between the authorities.

2.4. Encouraging cultural heritage institutions to share assets in the data space and on Europeana

In order to contribute to the data space, the Recommendation (Article 16) invites Member States to actively encourage cultural heritage institutions to make their digitised assets available through Europeana.

> **Member States were asked to describe the ways in which they have encouraged cultural heritage institutions to make their digitised assets available on Europeana. Making cultural heritage accessible online not only enhances cultural heritage institutions' publicity but also opens doors to potential collaborations and invites participation in bigger international projects. Embracing this opportunity will undoubtedly increase engagement, creating a broader community of enthusiasts and researchers who will appreciate and cherish their cultural treasures.**

In **Flanders**, many cultural institutions have been contributing content to Europeana by means of thematic or 'national' aggregators, such as Erfgoedplus. At the **Federal level**, most of the Federal Scientific Institutions and the Film Archive have been contributing content to Europeana, also by means of thematic aggregators, such as OpenUp, Carare, Photoconsortium, Museu and APEF (NTUA - Mint aggregation).

In **Estonia**, within the Plan of Action for the Digitisation of Cultural Heritage 2018-2023, making digitised assets available on Europeana was a condition to get funding for digitisation projects.

Spain has provided Europeana with direct assistance in cases of technical difficulties and disseminated information through social media and Hispana PRO.

In **France**, the Ministry of Culture regularly disseminates and promotes data sharing to Europeana and the data space for cultural heritage institutions via webinars and events. The national data policy and the several orientations tend to emphasize the importance of digitisation, structured and quality metadata for a better discoverability and data flow. However, in France, Europeana still suffers from its too high-level requirements and difficult processes to publish and update content on its portal. Another difficulty as an aggregator is to state clearly to the cultural heritage institutions where Europeana ends and where the data space for cultural heritage begins. The Bibliothèque Nationale de France, as the national aggregator for libraries, encourages French libraries to digitise and share their material on Gallica, the French national digital library, which represents a network of 270 partners, having brought around two million documents to Gallica. Several solutions are proposed to encourage them, with different levels of integration.

In **Croatia**, the information system for data aggregation to Europeana was upgraded through the eKultura project and sending data to Europeana has become easier for cultural institutions.

Italy launched some initiatives devoted to increasing the Europeana collections. An example of these was the project 'Diffusione della lingua e della cultura italiana all'estero' ('Promotion of Italian culture and language abroad') focused on sending high quality content and metadata to Europeana. The digitised resources were selected to cover some Europeana thematic collections for which the Italian resources were lower, notably Cartography, Music and Manuscripts.

Cyprus promotes the increase of accessibility to cultural heritage institutions' content, as well as the ability to participate in Europeana's project. Contribution to Europeana equals exposure of their content at EU level, provides metadata enrichment and allows much wider reuse. There has been a remarkable improvement observed.

3D model of Aristavėlės dvaras, Lietuvos etnografijos muziejus, Lithuania – source: Europeana

In Lithuania cultural heritage institutions upload their digitised assets to information systems or data bases, such as the national VEPIS system which administers digitised cultural heritage objects from libraries. Museums have the integral museum system LIMIS for this purpose, where institutions upload digitised cultural heritage objects. The VEPIS administrator makes digitised Lithuanian cultural heritage available on Europeana.

Making **Hungarian** cultural content available online is a cultural priority, as there are millions of Hungarians living beyond the country's borders who can access Hungarian documents available on the web much more easily than the originals. Therefore, many cultural heritage institutions are building digital archives or providing cultural heritage items to aggregators and Europeana and the data space.

When the incunabula collection was uploaded on Europeana, **Malta** Libraries promoted the availability of the material on its media and social media channels.

Austria makes publication on Europeana part of the museum regulations at most federal cultural institutions. Publication on Europeana is a prerequisite for the current federal funding programmes in the field of cultural heritage digitisation.

In 2022, **Poland** published the guidelines 'Digital Cultural Heritage. How to prepare for digitisation and making collections available online' which presents Europeana, pointing out the advantages of making digital content available in European circulation and through data aggregators. Poland has also taken part in the Twin it! campaign, which was an opportunity to promote the availability of digital resources in Europeana.

Slovenia has incentivised cultural institutions to collaborate with the national aggregator and Europeana through targeted projects that enhance the visibility of Europeana, professional training, and through technical improvements to the conditions for aggregating cultural heritage content.

Slovakia's approach is to explain that by sharing digitised assets on Europeana/in the data space, the institutions can significantly boost their visibility and reach a global audience.

In **Finland**, funding applications related to digitalisation require that materials digitalised with grants should be published on Finna and Europeana. The impact has been positive to some extent, but it has also been challenging for organisations to proceed with the publication of data on Europeana.

In **Sweden**, the national aggregator Swedish Open Cultural Heritage mentions Europeana in all presentations directed towards cultural heritage institutions.

Lastly, five Member States (DK, IE, LV, LU, NL) reported that no specific activities to promote the use of Europeana were carried out during the reporting period or that it has not been a national priority.

For example, Ireland leaves engagement with Europeana at the discretion of the individual cultural heritage institutions, while in the Netherlands, the Ministry of Education, Culture and Science does not specifically encourage institutions other than through the work of the various aggregators.

2.5. Findability, accessibility, interoperability, and reusability of data from publicly funded digitisation projects

The Recommendation (Article 18) states that Member States should ensure that, as a result of their policies, data resulting from publicly funded digitisation projects become and stay findable, accessible, interoperable and reusable ('FAIR principles') through digital infrastructures (including the data space) to accelerate data sharing.

2.5.1. How it is ensured

The data resulting from publicly funded digitisation projects are mandated by national (contractual) measures to comply with FAIR principles to increase data sharing in most Member States (EE, ES, FR, HR, IT, LV, LT, AT, PL, PT, SI, SK, FI). At the same time, adherence to FAIR data principles in the cultural heritage sector specifically is an organic part of the implementation of some Member States' (DK, FR, IT, CY, MT, NL) broader national data strategies.

In **Belgium**, Flanders has created the OSLO data exchange standard for cultural heritage for the specific purpose to accelerate data sharing through FAIR principles. Over time, this exchange standard will become a required deliverable for digitisation projects within the cultural heritage sector and the OSLO methodology will help linking cultural heritage data to datasets created in other domains. The implementation of the OSLO data exchange standard will also guarantee the use of open digital infrastructures. At the **Federal** level, for the referring period, the FSI are responsible of the visualisation and searchability of their collections, and all Federal Scientific Institutions have their own collection site and exchange/interoperability mechanisms. A discussion has been going on related to setting up a persistent identifier framework for each digital object and collection for facilitating the FAIR principles.

Bulgaria will ensure FAIR principles use once the national cultural portal, E-platform, is officially launched. The portal will be developed with support from the EU Recovery and Resilience Plan.

In **Denmark**, it is a general policy to ensure that data managed by public organisations becomes as widely available as possible.

Projects funded by the Deutsche Forschungsgemeinschaft (the **German** Research Council) are obliged to follow the FAIR principles.

To receive digitisation funding within the Plan of Action for the Digitisation of Cultural Heritage 2018-2023 in **Estonia,** institutions must confirm that the digitised cultural heritage assets will be made publicly available and are findable, accessible, and reusable.

In **Ireland**, individual cultural heritage institutions maintain access to their own digitised assets, including provision of access through publicly available websites and portals in the reference period. Digitisation is generally undertaken following preservation standards and includes a standardised approach regarding the quality of image capture, metadata, and cataloguing data capture in line with accepted standards relevant to the sector. Data may be available through open data mechanisms or may be provided directly by cultural heritage institutions as part of their open data and customer service policies.

In **Greece**, every digital collection on SearchCulture conforms to the Basic Interoperability Guidelines issued by the national aggregator. The Guidelines are adapting Europeana's Licensing and Publishing Frameworks to the national context and are also taking the FAIR principles into account, as well as other web and cultural heritage standards (i.e. promoting the adoption of IIIF). In the context of the new funding calls, a special provision is in place for organisations to deposit a web resolution copy of their digital archives at the National Documentation Centre's safe deposit infrastructure to ensure long-term availability and access to the archives.

3D model of Pathé Lux 9.5mm film projector with reel, C2DH, University of Luxembourg, Luxembourg – source: Europeana

In **Spain**, digitisation projects subject to public funding must be carried out following specific standards, use Creative Commons licenses, and the resulting data must be made available through Hispana and Europeana. Furthermore, Spanish platforms that provide access to this heritage are maintained and enriched, always respecting intellectual property rights.

Complying with the **French** national law for a digital republic stating that any data produced by a public entity should be published as open data is a requirement for the digitisation programme supported by the Ministry of Culture. The sharing of relevant data on the regulatory national databases is also a requirement and ensure that data complies to the FAIR principles even if it is the open data that is promoted and encouraged as much as possible.

The **Croatian** Ministry of Culture publishes a public call for financing public needs in culture yearly, granting funding to programmes of digitisation of archive, library and museum material. All approved cultural heritage digitisation programmes are required to submit a programme completion report showing that the funds have been spent on digitisation of the materials and that they have been made publicly available on the eKultura portal.

In the reference period, the **Italian** national plan for the digitisation of cultural heritage has several actions aimed at ensuring the 'fairness' of data produced in the framework of publicly funded digitisation projects, namely: the use of International Interoperability frameworks, such as IIIF, for images and digital cultural assets available online; the promotion of the use of Data Management Plans by public GLAMs and cultural institutions as tools that facilitate the longevity of digitisation projects and can help consolidate the results of ongoing services; and the adoption of the national strategy for the publication of Open Data to encourage and support good practices of research through Open Science protocols, which are often a requirement for accessing EU funding grants. All these elements are applied on multiple levels of agency and responsibility, from General Directions of the Ministry to central institutes to cultural institutions.

The National Aggregator of **Cyprus** is encouraging cultural heritage institutions to provide as much documentation as possible, which results in increased findability, and accessibility is ensured by keeping all necessary standards for content backups, etc. Cyprus identified interoperability as an area that needs more focus and attention. During the reference period, Cyprus managed to apply multilingual standards to some of its content along with the use of thesaurus offering linked open data services. Reuse of content has mainly been achievable by encouraging cultural heritage institutions to provide content under as few restrictions as possible.

The Digital Cultural Heritage Platform of **Latvia** has been operational since 2023 and is based on and supports FAIR principles. The Platform provides a standardised metadata schema based on the EDM; serves as a digital repository, offering a centralised location for managing, storing, and accessing digital assets; assigns persistent identifiers (Digital Object Management System IDs) to digital objects, ensuring a centralised catalogue of digital assets; and sustains and manages a shared cultural heritage reference data pool, ensuring consistency and coherence of data. Reference data entities include attributes such as name, place, institution, etc. These entities are interconnected to facilitate user navigation and information retrieval. Data from partner institutions are linked together to prevent loss. Additionally, authoritative data and classifiers are made reusable for all users. The Platform also manages copyrights and access rights.

Gyümölcsös kert, Bakoss Tibor, Rippl-Rónai Municipal Museum with County Scope, Kaposvár, Hungary – source: Europeana

In **Lithuania**, during the implementation of the progress tool 'Investments in digitisation and accessibility of cultural resources', institutions who participate in culture heritage digitisation activities using the tool's funding are obliged to ensure that digitised data become findable, accessible, interoperable and reusable, mainly through the common open platform eKultura and Creative Commons.

Hungary relies on its Act on the reuse of public sector information (LXIII) of 2012.

Malta ensures the application of FAIR principles through the implementation of the 2021 National Open Access Policy Malta.

The national digital heritage strategy of the **Netherlands**, executed by the Dutch Digital Heritage Network, is entirely geared towards increasing data sharing using FAIR principles. The network receives funding to develop and implement a shared (national) infrastructure for this purpose, to decide on shared principles and practices, and collaborate on the implementation of this infrastructure and these principles.

Austrian federal government funding programmes have been paying attention to the quality of digitisation projects, particularly regarding open content (open access, open data, open source) to enable subsequent use.

Similarly, the requirements and criteria for selecting projects applying for funding under the largest programmes dedicated to **Poland**'s digital development contain provisions regarding the FAIR principles. Activities dedicated to the digitisation and sharing cultural heritage assets reward projects that increase the openness and level of reuse of data, standardise data exchange, support the creation of tools enabling access to Public Sector Information, including the construction of Applications Programming Interfaces for databases or registers from public data. The results of European Funds for Digital Development projects are to be made available on the KRONIK@ portal. The solutions related to the developed metadata standard, as well as the applied ontology and semantic mechanisms, allow for the shared objects to be better indexed and thus more widely available to users.

The **Portuguese** national aggregator for bibliographic materials displays all its datasets with CC0 licences at the Biblioteca Nacional de Portugal Opendata portal, both through Open Archives Initiative - Protocol for Metadata Harvesting, and through bulk downloads.

In **Slovenia**, recipients of public funding for digitisation projects are obligated to comply with the contractual provisions regarding interoperability and reuse standards, which accelerate data sharing.

Slovakia is dedicated to ensuring that data resulting from publicly funded digitisation projects adheres to the FAIR principles and remains findable, accessible, interoperable, and reusable through digital infrastructures, such as Slovakiana and Europeana. Ongoing efforts in the reference period and at the time of reporting have been focusing on collaborating with institutions to gain more assets, making them accessible through Slovakiana and Europeana. In addition, there have been continuous actions to engage with the public through articles and social media posts to enhance discoverability and accessibility of the assets themselves.

As for **Finland**, services that improve the availability and long-term preservation of information resources are maintained as a part of the entity of digital cultural heritage. In addition, the interoperability of information and information systems will be improved. The Finna service will make digital materials from archives, libraries and museums widely available, and the cultural heritage digital preservation service will ensure their preservation. Archives, libraries, and museums cooperate, for example, in promoting interoperability in the information architecture group. The vision of Finna services for the period 2025–2028 presents data utilisation as one of the priorities, and in connection, the FAIR principles will be highlighted and the implementation will be promoted in cooperation with Finna's data providers, expert groups on descriptions, the information architecture group, and other stakeholders.

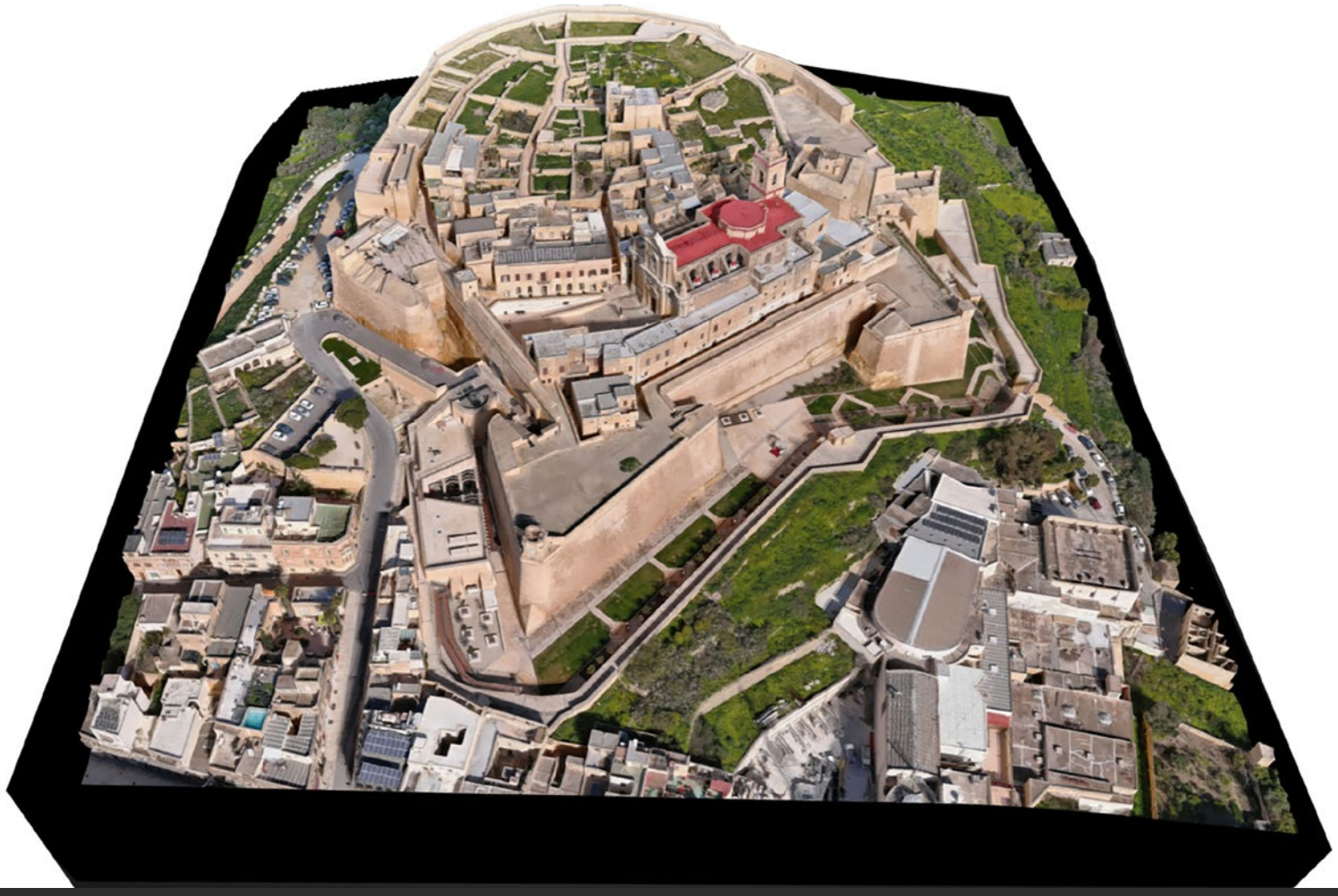
A **Swedish** Research Council Directive mandates that all research data be published, preserved and managed according to the FAIR principles. The Bank of Sweden Tercentenary Foundation has been working on new terms aligned with the FAIR principles at the time of reporting. These two actors are the largest funds for Swedish Heritage, however, they focus primarily on research funding - meaning that objects digitised with these funds are not always published online immediately (in the short term). Both the research grants and the development grants provided by the Swedish National Heritage Board set terms aligned with the FAIR principles, as does the national strategy that is under development.

2.5.2. Connection of data at its source

When asked about having a national/regional strategy or policy covering the connection of data at its source, for instance through linked-data principles, ten Member States (CZ, DK, EE, IE, ES, CY, LU, AT, PL, SK, BG) reported that they do not have this type of a strategy yet. On the other hand, eleven Member States (DE, HR, IT, LV, HU, MT, NL, PT, SI, FI, SE, FR) do and described their strategies, namely the levels of interoperability on the 5-star deployment scheme for Linked Open Data achieved by cultural heritage institutions.

In **Germany,** there are initiatives to support the use of linked-data principles. One example is the network of the 'Gemeinsame Normdatei', led by the German National Library and connected with several cultural heritage institutions at national level and at *Länder* level (and also with cultural heritage institutions in Austria and Switzerland).

In **Croatia**, the law to access information implements the provisions of the EU open data Directive. Also, for the purpose of accessing open data of public authorities, the Open Data Portal was established, which serves as a platform for collecting, categorizing and distributing open



3D model of Ċittadella, Gozo, Heritage Malta, Malta – source: Europeana

data of the public sector. Heritage institutions store and publish material through the eKultura system, during which each object is assigned a personalised URL address that corresponds to level 4 of the 5-star deployment scheme. Additionally, on the eKultura portal, there are links to the institution's portal, which gives context to the material, and corresponds to level 5. The possibility of downloading structured search results corresponds to level 2.

In **Italy**, the Central Institute for Catalogue and Documentation publishes 5 star data via the national catalogue of cultural heritage (boasting three million cultural assets) as a knowledge graph consisting of a network of ontologies and Linked Open Data, that are published in a non-proprietary format, use open standards from the World Wide Web Consortium, use dereferenceable persistent Internationalised Resource Identifiers, and are exposed through visualisation services (LODE and Lodview) as HTML pages to facilitate user reading. The ontology network uses OWL language, is released under a CC-BY license, and is accessible also through the Ministry's GitHub repository. Data is published as linked open data and is available on the web in RDF format. The achievement of the fifth level of interoperability is ensured by linking the data of the knowledge graph to external sources such as Wikidata and DBpedia.

The Linked Open Data effort in **Hungary** has made significant progress. There are many examples in higher education and among cultural heritage institutions. For example, the Hungarian Electronic Library of the National Széchényi Library publishes the bibliographic information of mainly book-like electronic documents in Linked Open Data format, and the metadata management practice of the Hungarian Internet Archive is also based on Linked Open Data. The Digital Archives Portal provides services based on the ISAD (G) standard, linking the digital records of individual archives.

In **Malta**, the policy is an internal strategy within the Superintendence of Cultural Heritage, not a national one. As one of its aims is the promotion and accessibility of culture to citizens, the Superintendence of Cultural Heritage Geographic Information System Interface (SCH GIS) was launched in order to promote, educate and disseminate cultural heritage assets that are perhaps not as easily seen or appreciated. Nevertheless, interoperability ranges drastically from one entity to another. The SCH GIS Interface Spectrum and Dublin Core standards enhance interoperability in a collections management system on the 5-star Linked Open Data scheme. They provide structured metadata (2 stars), use non-proprietary formats (3 stars), employ URIs for identification (4 stars), and support Linked Data principles, enabling a web of interconnected, accessible data (5 stars).

In the **Netherlands**, the connection of data at its source depends on the stage of the implementation of the strategy a specific institution is at. The six large, nationally funding institutions that also act as nodes in the Dutch Digital Heritage Network are expected to achieve 5-star status in due course.

Portugal reported that although there is no national policy covering the connection of data at its source, several cultural heritage institutions are moving forward in this area. The National Library of Portugal has recently implemented the IIIF at the National Digital Library, thus assuring the FAIR principles. Other institutions, like Universidade de Coimbra, have also already implemented IIIF.

For **Slovenia**, interoperability is an objective of several sectoral policies, including cultural heritage. However, interoperability standards are not uniform across heritage institutions. Some datasets on the Open Data Slovenia portal are available in different formats that ensure a high level of interoperability, such as the Register of Immovable Cultural Heritage (XLS, CSV, GPKG, GML and Shapefile). The interoperability objectives will also be pursued by the ongoing e-Heritage project, which will offer a single-entry point for digital cultural heritage presentation data.

Digital assets featured in the Digital Library of **Latvia** have been enhanced with links to the source whenever feasible. Such links are in the form of web addresses, and in XML format. they are structured as <url></url>. In RDF, they are represented using the <url> element of the MODS dictionary.

Many French institutions are at the 2- or 3-star level. Some institutions are also at 3- or 4-star level. In the deployment of its technical infrastructure, the Ministry of Culture is currently working on a specific profile of the LIDO standard so that any cultural data coming from a cultural heritage institution could be expressed in LIDO and shared alike to the data space without further transformation.

2.6. Conditionality of public funding

The Recommendation (Article 19) foresees that all public funding for future digitisation projects of cultural heritage assets should be made conditional upon making digitised content available in Europeana and the data space.

> **Only in four Member States (EL, ES, HR, AT) is public funding for digitisation projects of cultural heritage assets made conditional upon making the digitised content available in Europeana and the data space. The factors that prevent Member States from doing so are varied and range from monetary constraints to technical and legal limitations. In some Member States, the priorities lie elsewhere.**

In **Belgium (Flanders)**, the focus is on (linked) open data in general and an open digital ecosystem but not Europeana specifically.

In **Denmark**, the choice not to make public funding conditional on making content available on Europeana is based on the costs linked to this process. As such, it is a matter of prioritising by the individual cultural heritage institutions, in line with the general principle of Danish cultural governance.

As the **Estonian** aggregator is being re-developed and there are concerns regarding the future of the aggregator, this prevents institutions from sending their assets to the aggregator portal. Unfortunately, there is currently no solution yet to aggregate assets to Europeana without this portal.

In **Ireland**, placing conditions on access to funding for digitisation in the absence of an overall national strategy for the cultural heritage sector would likely result in reduced engagement. Therefore, any conditions should be developed as part of an overall strategy.

At the time of reporting, all ongoing national-level calls in **Greece** were making funding conditional upon delivering digitized content to the national aggregator and Europeana and the data space, and actions are being pursued to do the same also for regional-level calls.

In **France**, there is a strong requirement to share metadata in open license for any asset digitised using public funding and clearly state the proper rights statement for the content. In the current context of Europeana allowing only metadata in CC-0, it is difficult and inconsistent to make the publication on Europeana an obligation in case of public funding. The sharing of data on Europeana is mainly done on a voluntary basis. For the Bibliothèque Nationale de France, the main reasons for not making digitised content available on Europeana are technical (data quality issue for the harvested partners) and copyright-related in case of copyrighted works, which is also a barrier faced in **Lithuania**.

For **Luxembourg,** the reason for the lack of obligation stems from the fact that there is no national aggregator yet.

In **Malta**, digitising cultural heritage assets does not automatically mandate their publication on Europeana. Some assets, due to their status, are not publicly accessible.

Katjesspel, Henriëtte Ronner, ca. 1860 - ca. 1878, Rijksmuseum, Netherlands – source: Europeana

For the **Netherlands**, nothing is preventing this conditionality, but it is rather a policy choice to make funding conditional upon contribution to the execution of the national strategy, which is geared towards connecting data at its source.

In **Sweden**, grants for digitisation cover a wide range of actors with different principals. A rearrangement of the terms of these would therefore entail updates to many grant regulations, which would require extensive work. The Swedish National Heritage Board does not currently have legal justification to demand this as a mandatory requirement.

However, several Member States are open to the idea or have other conditions in place.

In **Cyprus,** the conditionality of public funding has not been discussed with cultural heritage institutions. It will be further analysed in the National Strategy for Digitisation of Cultural Heritage.

In **Latvia**, the issue has not been discussed yet. Currently, the Ministry of Culture and the National Library are elaborating regulations regarding the national Digital Cultural Heritage Platform. This might grant the National Library of Latvia, as the manager of the Platform, the rights to publish cultural heritage content submitted to the Platform on Europeana to the extent permitted by copyright, without the need for separate coordination with each content holder.

While there is no law in **Lithuania** which obligates cultural heritage institutions to make all content digitised using public funding available on Europeana, the question will be reconsidered when updating their national digital strategy for cultural heritage.

Malta's national agency for cultural heritage, Heritage Malta, has initiated its accessibility programme, eMuseum, ensuring that most assets become publicly available. The plan is to link eMuseum with Europeana upon accreditation, promising broader visibility for Malta's cultural heritage internationally.

As part its subsidy programmes, the **Polish** Ministry of Culture and National Heritage uses mechanisms to encourage the publication of digitised objects in open access on the Internet, including on Europeana.

In **Slovenia**, an interoperable data platform for the management of digital material and metadata is planned and, in the interim, a cross-sectoral agreement on common minimum quality requirements for the digitisation of cultural heritage, long-term storage standards and minimum metadata sets will be needed.

While all public funding for future digitisation projects of cultural heritage assets in Finland is not made conditional on their publication on Europeana, special grants for supporting the availability and preservation of digital cultural heritage, common services for public libraries and the digitisation of intangible cultural heritage include a condition for the digitisation and publication of the intangible cultural heritage stored in museum collections. According to the condition, digitised materials must be stored in the museum's collections and published on Finna and Europeana with Creative Commons licences or Rights Statements terms of use, unless there are special legislative, contractual or ethical obstacles to this.

2.7. Support and awareness raising for Europeana and the data space

According to the Recommendation (Article 20), Member States should take all the necessary measures to support and raise awareness of Europeana among the general public and particularly in the education sector and schools, including through educational materials.

Most Member States have taken measures to support and raise awareness of Europeana among the general public, and particularly in the education sector and schools. A number of seminars, webinars and conferences have taken place where Europeana was presented and given recognition. Europeana has also been mentioned in publications, on social media, or during training courses where its content was shown.

Germany's actions for awareness raising are covered by the Deutsche Digitale Bibliothek.

Greece has promoted Europeana systematically between 2021 and 2023 through the National Documentation Centre's social media, print and web presence. This involved 36 articles, 10 blogposts and two academic papers mentioning Europeana. Ten webinars were organized and were attended by 5 500 participants, such as cultural heritage professionals, technical solution providers, policymakers, educators, and the general public, and two dedicated webinars for educators attracted more than 1 500 participants. The webinars covered topics such as Greek collections in Europeana, rights clearance and licensing, digital archives re-use in educational contexts, etc. In 2022, the National Documentation Centre organized a two-day online conference entitled 'Greek Culture in the Digital Public Space and Europeana: Challenges and Opportunities', attended by 470 participants. The CRAFTED project, dedicated to the promotion of traditional crafts with the National Documentation Centre as a partner, attracted much attention. All events and articles available on SearchCulture.

France oriented the promotion and awareness raising of Europeana and the data space mainly towards the cultural and cultural heritage professionals. As long as the scope and use cases of the data space and its requirements compared to the ones of Europeana are not made clear it is difficult to raise awareness on both.

Latvia has carried out activities for the promotion of Europeana alongside the promotion of national digital resources on the home pages and social media profiles of cultural heritage institutions, as well as during events.

In **Lithuania**, the research on the 'Strategic evaluation of the priorities in the field of culture digitisation for the EU Funds investment period 2021–2027', commissioned by the Ministry of Culture of Lithuania was completed in 2023. One of the goals of this research was to analyse unified portals' (e.g. Europeana and the European collaboration cloud for cultural heritage) technical requirements for digitised cultural products, the value they provide, cooperation costs, and to provide opportunities to have connectivity and interoperability with digitised cultural recourses systems in Lithuania.

Der Wiener Volksgarten im Herbst, Oskar Laske, 1923, Albertina, Austria – source: Europeana

For instance, in **Poland**, the publication of 'Digital Cultural Heritage. How to prepare for digitisation and sharing collections online' previously mentioned (see section 2.4.) presents Europeana in the context of the possibility of sharing the results of digitisation projects. The publication is addressed primarily to organisations with collections, especially those that are at the beginning of their process with digitisation and digital projects. However, due to its accessible language (understandable to people who are not specialists in the field), interesting graphic design, and presentation of inspiring examples of digitalisation projects, it may also be interesting for people interested in digital culture.

Portugal has been promoting public activities to raise awareness for Europeana during the reference period, such as during the Portuguese Presidency Europeana Conference in June 2021. Another example of the diffusion activities related to Europeana at the education sector and schools is the network ReaTAR, a cooperation project between the National Library of Portugal and the Network of School Libraries RBE to promote the reuse of digital assets from the National Digital Library by the school community.

In **Slovenia**, to promote digitised materials and the use of digitised resources for educational and research purposes, the National and University Library is developing various tools and collections that provide support and raise awareness on the importance of the Digital Library of Slovenia and, through it, Europeana in the broader public and in education.

Slovakia is actively encouraging collaborating institutions (and finding new ones) undertaking future digitisation projects of cultural heritage assets to make the content available on online portals, and thus sending it to Europeana. Slovakia's goal is to promote wider accessibility and collaboration in the cultural heritage sector and ensure that valuable digital assets contribute to the greater public good.

Some Member States (ES, LV, LT) have increased the promotion of Europeana and its projects on the social media profiles of cultural heritage institutions. For instance, Martynas Mažvydas National Library of **Lithuania** has raised awareness of Europeana among the general public by posting news about Europeana on its website and social media platforms.

A number of Member States (EE, IE, HR, LV, LT, HU, MT, FI) have promoted Europeana during various events, webinars and exhibitions.

In **Estonia,** information and media literacy training courses in cultural heritage institutions take place in the framework of educational programmes, using materials from various digital environments, including Europeana.

For **Croatia**, the eKultura system contains a component for the aggregation of material in Europeana and has been presented to the professional public at several national and international seminars, conferences, and workshops. During the establishment of the system, Croatia connected with the University of Zagreb, Faculty of Humanities and Social Sciences, Department of Information and Communication Sciences, where students attended the Virtual Exhibitions course on the eKultura portal. As part of this course, the idea of using content from Europeana was promoted.

In **Ireland,** several successful outreach events were held as part of the Decade of Centenaries programme to engage people in the process, including the provision of specialist advice and guidance, and the digitisation of assets held privately.

Martynas Mažvydas National Library of **Lithuania** has invited cultural institutions to participate in trainings initiated by Europeana such as Europeana awareness and training session capacity building event and the Europeana Aggregators Forum Outreach Event.

In **Malta**, in recent years, information has been actively disseminated about Europeana events, workshops, and initiatives among staff in diverse cultural heritage agencies. With the fruition of the efforts in establishing the collections management system, Malta is eager to expand its reach by integrating it with Europeana. This strategic move promises extensive exposure for Europeana at a national level. As the designated national aggregator, Heritage Malta is not only advancing the integration of its collections management system with Europeana but is also seeking a more involved role within the European landscape. Beyond organisational collaboration, Heritage Malta, represented by its Head of Digitisation, is in the process of seeking representation within the Members Council. This signifies a commitment to actively contribute and engage in the decision-making processes at a European level.

In **Finland,** a webinar was organised in 2021 in cooperation with Europeana to talk about the resources offered by Europeana in the education sector and a Finnish teacher gave a speech about Europeana.

Finally, the Swedish National Heritage Board, managing the national aggregator, does not currently have public awareness raising for Europeana in their mission. Nonetheless, information about and from Europeana is provided to the data partners of the national aggregator.

3D model of Castillo Alcalá de Xivert, Castellón, España - AD&D 4D Association for 4D Documentation and Dissemination - CC BY-NC. Castillo Alcalá de Xivert, Castellón, España | Europeana – source: Europeana

3. Partnerships

The first section of the following chapter outlines the collaborative efforts between cultural heritage organisations and other key areas, including higher education institutions, vocational education institutions, creative industries, digital humanities institutions, and sustainable cultural tourism.

The second section summarises the involvement of small and medium-sized enterprises (SMEs) to support the digital transformation of the cultural heritage sector. The results show that Member States work with various small to medium sized companies on different aspects of cultural heritage's life cycle, ranging from digitisation, to cataloguing, process management, asset management and publication. Both cultural heritage institutions and SMEs benefit from these partnerships.

The third section explores the partnerships between cultural heritage institutions and private sector. Several Member States mentioned having established partnerships within the private sector, including genealogical organisations and genealogy search portals which has brought several positive results.

The fourth section reports on the cross-border collaboration and partnerships with cultural heritage institutions at international level. Generally, Member States agree that bilateral cultural agreements with other countries strengthen cross-border cooperation. Participation in various European funding programmes is also highlighted in this section.

3.1. Partnerships with other sectors

To stimulate innovation for new services and applications, the Recommendation (Article 8) encourages Member States to support partnerships between the cultural heritage sector and other sectors, such as higher education and vocational education and training, creative industries and sustainable cultural tourism.

Across nearly all Member States, a multitude of initiatives have been implemented to promote partnerships with other sectors, highlighting a commitment to leverage collective expertise and resources in Member States.

In **Ireland**, both the cultural and tourism portfolios rest within the same ministries and it is widely recognised that a strong partnership will provide benefits to both sectors. The Creative Ireland programme promotes the creative industries and collaboration with a range of public and private stakeholders in the cultural heritage, education, and tourism sectors. This has included a range of initiatives aimed at engaging children and young people, showcasing the benefits of the cultural heritage sector to wellbeing, supporting community projects, investment in the creative and cultural heritage infrastructure and promotion of Ireland as a centre of excellence in audiovisual production.

The Ministry of Culture in **Greece** signed several agreements with academic and research institutions for cooperation in digitisation and digital cultural management projects. A new organisation, 'Acropole Across', is also under establishment to provide digital skills training, capacity building, networking, and fundraising guidance to professional of the contemporary arts and creative sectors.

In **Italy**, a fruitful partnership has been established with the Nucleo Carabinieri per la Tutela del Patrimonio culturale (law enforcement organisation whose primary role is the fight against the illegal trade of cultural heritage items) and with the Italian Notary Association, with the main purpose being to develop functional requirements for the digital identity of cultural heritage objects.

The National Library of **Latvia** supports researchers with collections as datasets. They are available via the 'datasets on demand' service. In 2022, the National Library of Latvia, the Cultural Academy and the Latvian Open Technology Association collaborated to organise a cultural data hackathon. The event aimed to foster the development of apps, prototypes, and innovative ideas that use cultural and historical data and digitised objects. A total of 36 teams, comprising 124 participants from schools across Latvia, participated in the event.

3D model of Kolegiata pw. św. Marcina Biskupa w Opatowie, National Institute of Cultural Heritage, Poland – source: Europeana

In **Lithuania**, from 2021 to 2022, the Ministry of Culture, in collaboration with the Research Council of Lithuania and the Baltic Institute of Advanced Technology, funded the project for a Feasibility Study on Artificial Intelligence and Hardware Applications for 3D Scanning of Cultural Heritage Objects, focusing on movable objects. In this study, scientists analysed and tested artificial neural network models for the 3D digitisation of cultural heritage. The research concluded that artificial neural networks can effectively reconstruct the 3D geometry of a scene from a sequence of photographs, demonstrating the potential of AI and specialized hardware to enhance the quality and efficiency of digital representations of cultural heritage objects.

Another example of a good practice in cooperation between the tourism and cultural heritage sector is the Digital Innovation for Cultural Heritage project, funded by the **Slovenian** Ministry of the Economy, Tourism and Sport. The results of the project include a handbook for tourist destinations and the Digital Innovation Cultural Heritage web portal, which presents 118 3D models of Slovenian cultural heritage, several short films, 360-degree photographs and videos and other multimedia materials.

Finland's recently published 'Roadmap for the National Development for Cultural Tourism' (2023) includes several measures which aim to stimulate the cooperation between cultural heritage and tourism sectors in order to mutually benefit both. The Roadmap pays particular attention to the Cultural Routes Programme of the Council of Europe and considers how cultural heritage data could be better utilised in developing tourism products and services. The data space for cultural heritage is also referenced in Finland's Tourism Strategy 2022-2028. Therein, a call is made to utilise the data space together with the data space for tourism to strengthen knowledge-based management, RDI efforts, and to promote data-sharing and the development of new products and services.

Four Member States (BE, CY, DK, LU) report not having taken measures to support partnerships between the cultural heritage sector and other sectors.

Børsen, sammen med Nationalbanken og Den røde Bygning set fra kajpladsen - The Royal Library: The National Library of Denmark and Copenhagen University Library, Denmark - CC BY-NC-ND. Børsen, sammen med Nationalbanken og Den røde Bygning set fra kajpladsen – source: Europeana

3.2. Involvement of small and medium-sized enterprises (SMEs) to support the cultural heritage sector's digital transformation

The Recommendation (Article 9) tasks Member States with facilitating the involvement of small and medium-sized enterprises to support the digital transformation of the cultural heritage sector, particularly towards digitisation and data-driven innovation.

16 Member States (BE, CZ, EE, IE, EL, ES, FR, IT, LU, HU, MT, NL, AT, SI, FI, SE) have made such efforts while seven Member States (DK, DE, CY, LV, LT, PL, SK) have not. Overall, several project streams benefit SMEs that are active in the field of cultural heritage, namely in the development of digitisation and data-driven innovation, both directly and indirectly. The responses have shown that Member States work with various SMEs on different aspects of cultural heritage's life cycle; ranging from digitisation, to cataloguing, process management, asset management and publication.

For instance, the promotion of **Ireland** as a centre of excellence for audiovisual production has resulted in an expanded indigenous film and television production sector, with local expertise available to contribute to national and international productions. Many of the beneficiaries are SMEs. The expansion of digitisation has created increased demand within SMEs to provide support to cultural heritage institutions in the achievement of their goals. This is particularly the case where specialist expertise has been lacking within the sector. Public procurement structures also emphasise engagement with the SME sector.

Spain has partnered with a technology-based start-up specialised in open data to redefine the proposal for use of open data at the Spanish National Library. There has also been a collaboration with a multidisciplinary team of specialists in technological development and technology and innovation applied to education. For the purpose of digitising, collaboration took place with specialised teams, stemming from the research and university environment, for the digitisation of special materials. In areas such as manuscript transcription or linked data, the National Library collaborated with research groups and technological development teams, which resulted in the generation of prototypes and the creation of technological start-ups.

In **France**, the Ministry of Culture continuously runs and funds a call for projects for 'Digital Innovative Services' which targets SMEs and companies to apply in collaboration with a cultural institution. In 2022, this call for projects supported 16 projects on topics such as Blockchain, data processing using to AI, digital mediation, and augmented reality for culture.

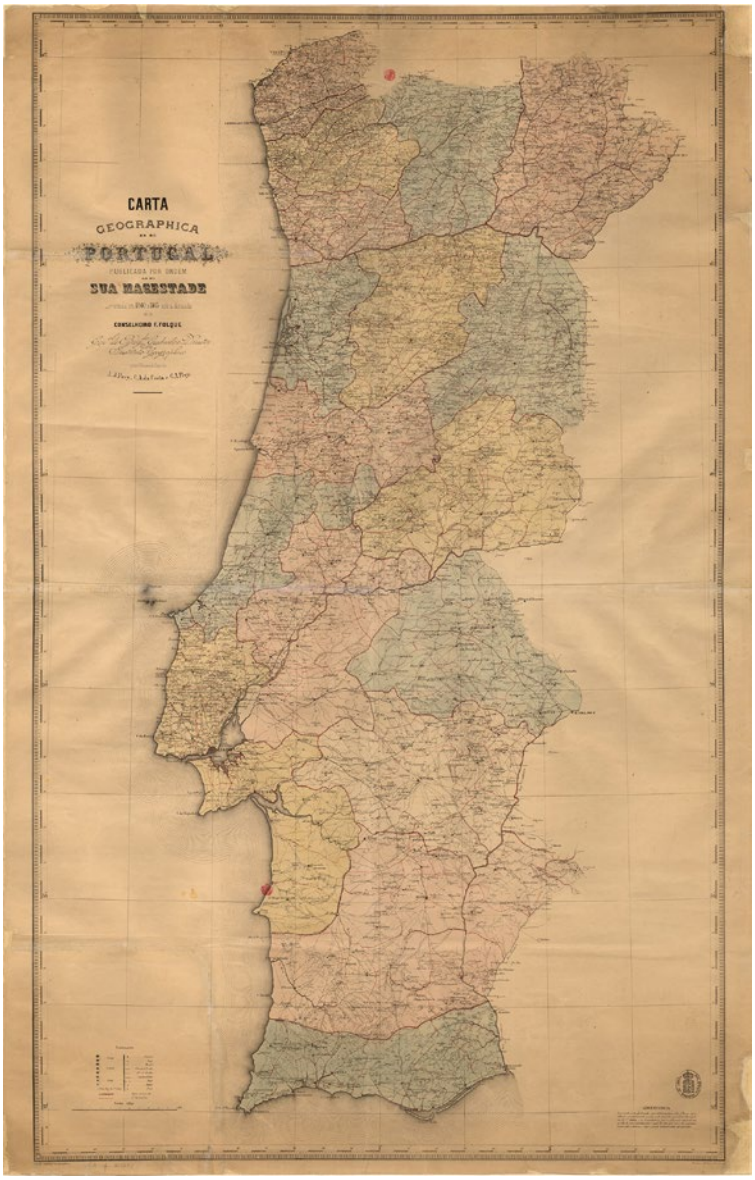
In the case of **Italy**, there is a dedicated Platform as a Service, a part of the Software Digital infrastructure, which provides services and Application Programming Interfaces for enterprises to develop high-value cultural products and services. In addition, several SMEs have formed temporary business grouping to participate in public European calls for tender to execute digitisation activities to reach EU targets and different milestones.

The **Luxembourgish** Ministry of Culture works with various SMEs on different aspects of the heritage's life cycle, from digitisation, to cataloguing, process management, asset management and publication.

In **Malta**, in the past three years, Heritage Malta has actively collaborated with SMEs and freelance service providers in AI, business intelligence, data mining, gamification, web and multimedia. The focus has been to enhance the accessibility of digitised assets to the public. Heritage Malta and the Superintendence of Cultural Heritage jointly engage in various COST, Interreg, and Horizon projects, fostering collaboration with numerous SMEs for project execution and advancement.

In **Slovenia,** SMEs are working with public institutions, particularly to optimise digital processes in cultural heritage management. Additional projects support digital innovation such as the use of advanced technologies in the presentation of the museums' digital materials (interactive and virtual exhibitions), in anonymisation, evaluation and selection of archival material, in 3D modelling, in the use of Optical Character Recognition technology and in data mining.

The **Swedish** Innovation Agency Vinnova has developed an infrastructure for facilitation in the fields of digital transformation, digitisation and data-driven innovation among others. The Agency also handles the Horizon Europe funding at national level.



Carta geográfica de Portugal, Instituto Geográfico, 1860, National Library of Portugal, Portugal – source: Europeana

3.3. Partnerships with the private sector

The Recommendation (Article 10) foresees that when cultural heritage institutions enter into partnerships with the private sector, they should ensure that clear and fair conditions for reusing the digitised assets are laid down.

In response to the question regarding whether cultural heritage institutions, organisations or public authorities in each Member State have entered into partnerships with the private sector, 16 Member States (DK, DE, EE, IE, EL, FR, CY, LT, HU, MT, NL, AT, PL, PT, FI, SE) responded positively. Seven Member States (BE, CZ, ES, HR, LU, SK, SI) have not entered into partnerships with the private sector yet. Overall, Member States consider such partnerships fruitful and beneficial in many spheres and layers, and are reported as good practices, as reflected in the following examples.

Both **Ireland** and **Lithuania** mentioned having established partnerships with private genealogical organisations and genealogy search portals which has brought several positive results. In the case of Ireland, this was done to increase digitisation capacity in the archival sector. This has resulted in benefits to the public in increased access to information online. In addition, there have been other secondary benefits, including the growth of genealogical tourism within the Irish diaspora. In Lithuania, State archives have partnered with genealogy search portals (FamilySearch, Ancestry). These archives receive payments for digital documents copies and, in addition, give permission for portals to grant public access to digital document copies for portal visitors.

Greece several Units of the Ministry of Culture have entered into partnerships with academic/research institutions and SMEs in the context of NSRF 2014-2020 Single Action 'Research-Create-Innovate' intended to link research and innovation with entrepreneurship and improve competitiveness, productivity and outward orientation of Greek SMEs through cooperation with academic and research institutions. Many of the projects involved the development of conservation data and research repositories, 3D digitization of monuments and sites, VR reconstructions, AR site tours etc. Pilot 3D digitization projects, such as the 3D4Delphi project which produced the models of the Delphi archaeological site contributed by Greece to the Twin it! campaign, have produced very useful results regarding the adoption of standards, methods, and techniques for larger-scale 3D digitization of heritage assets by the Ministry of Culture.

The National Digital Archive in **Poland**, which stores valuable resources, including photographs from press agencies, cooperates with the Polish Press Agency in providing digital copies of archival materials as a contribution to current services. Partner organisations such as publishing houses or Internet portals receive the help of qualified archivists in finding and completing the order of materials on a specific topic. Based on contracts, they provide information about the source, i.e. the place where the documentation is stored. Media monitoring conducted by archives shows that the individual pieces of information reach up to several hundred thousand recipients at a time, expanding their knowledge about archives and the cultural heritage collections they store.

Portugal provided an example of the National Archives which have partnerships with several international organisations, including Family Search, MyHeritage and Comunidade Israelista do Porto. This has enabled the systematic digitisation of a significant number of documents and the contribution to document preservation and online availability of some the most requested

document collections by users. It has also allowed for a participation of employees of the dependent services in conferences, trade and technology fairs, workshops and symposiums on digitisation, quality control, cataloguing and indexing of digitised archives, etc. These partnerships have also allowed for participations in various conversation panels and networking spaces to connect with researchers, users and professionals from various continents. Ultimately, this showcases that this type of cooperation results in positive outcomes in many different dimensions.

In Sweden, according to a 2021-2023 survey, 34% (18 out of 53) cultural heritage institutions had an ongoing partnership with private actors. Most partnerships involve the digitisation of cultural heritage objects, and the digital systems to manage information about the digitised objects. The reuse conditions in most cases seem to benefit the institutions. For example, it was stated that the current development with 3D-digitisation is almost entirely based upon partnership with the private sector and seems to be beneficial for both the institutions and their partners.

3.4. Cross-border Collaboration

To find shared responses to common challenges to advanced digitisation and preservation and to exchange best practices, to showcase and promote European culture, values and success stories, the Recommendation (Article 13) invites Member States to encourage cross-border collaboration and partnerships with cultural heritage institutions at international level.

Almost all Member States have encouraged cross-border collaboration and partnerships with cultural heritage institutions at international level. Generally, there is a consensus that bilateral cultural agreements with other countries strengthen cross-border cooperation. It was also highlighted that this type of collaboration often demands an active approach and a degree of networking skills. However, six Member States (CZ, DK, IE, IT, CY, LU) have not reported encouraging this type of cross-border collaboration.

The National Library of **Estonia** has been a partner in several international projects. A collaborative project called 'Open Digital Lab' (Austria, the Netherlands, Estonia) was completed in 2023, it's aim was reusing digital content in innovative ways. Project EODOPEN is in the process of expanding the availability of digital content, obtaining copyrights and designing solutions that support different work processes at the time of reporting. The National Library is an active partner in the CENL AI working group, as well as a partner in the IIIF network.

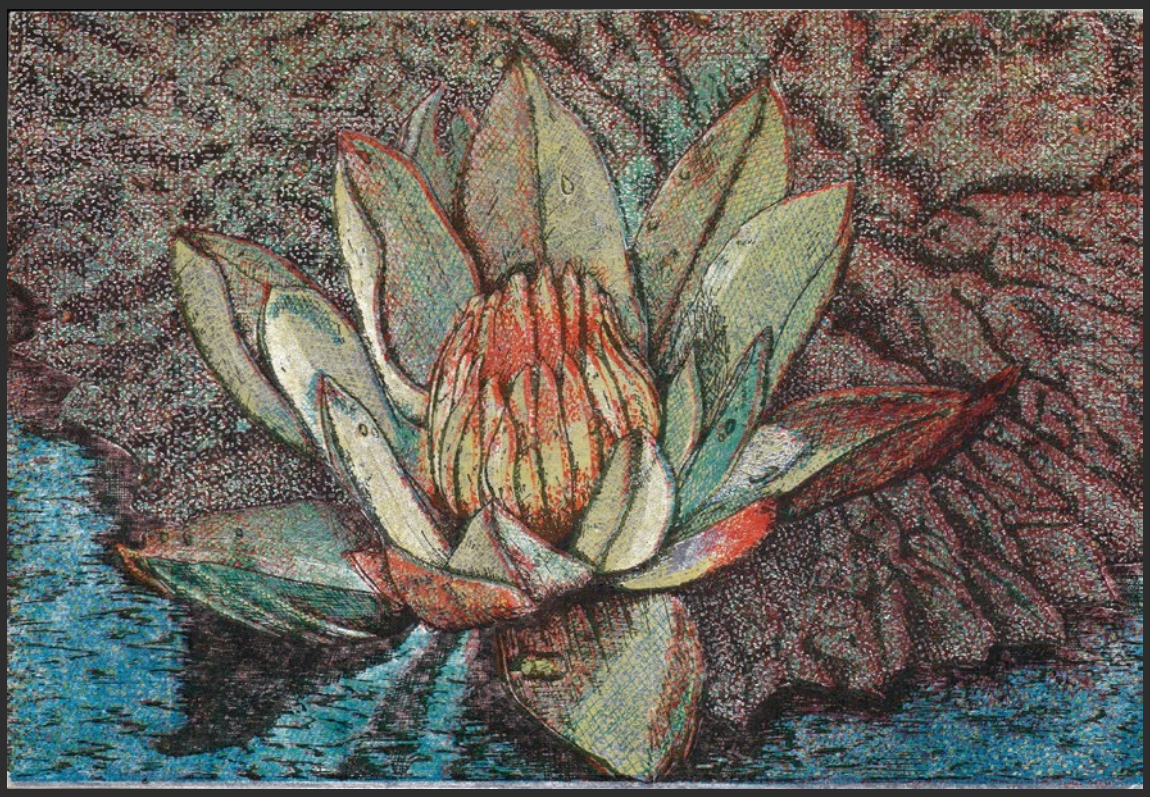
Latvia provided an example of collaboration which involves the National Library of Latvia and the National Library of Israel working together to digitise newspapers from the collections of the National Library of Latvia. The project is funded by the Rothschild Foundation, and all digitised files are accessible to both libraries.

Lithuania's National Museum of Art collaborated with museums from Ukraine where the Lithuania National Museum of Art digitised cultural heritage objects transported from Ukraine. Digitised objects were provided to the Ukraine museums and used in digital exhibitions of the Lithuanian National Museum of Art. Also, between 2021 and 2023, the Office of the Chief Archivist of Lithuania have signed agreements with institutions in other countries, for example the Presidency of the Republic of Turkey's State Archives Directorate and the Ministry of Culture and

Sports of the Kingdom of Spain. Both agreements encompass a wide range of activities, including the exchange of digital copies of relevant documents. With the Turkish State Archives, copies of documents were exchanged. The Spanish archives assisted in organising an exhibition at the Seimas of the Republic of Lithuania in September 2022 by providing digital copies of documents.

Hungary, at the time of reporting, had no cross-border, strategically planned digitisation programme, but several cultural heritage institutions have such activities. The National Széchényi Library strives to support the digitisation of the cultural assets of the Hungarian population of the Carpathian Basin. In addition, the Museum of Ethnography has developed a model digitisation project with five museums in Szeklerland, Romania (the Szekler Museum of Ciuc, the Haáz Rezső Museum, the Székely National Museum, the Tarisznyás Márton Museum, and the Mures County Museum). It has also built a mobile studio with the museums using its own equipment, thus providing a solution for the digitisation process locally. In addition to the equipment, Hungarian colleagues from Transylvania are being prepared for the digitisation work through professional training and practical workshops. The Hungarian National Museum had been involved and plans to be involved in several pan-European projects related to digitisation. In this reference period, the EDT Creative Europe project concluded as well as Europeana Sport.

The Dutch Digital Heritage Network of the **Netherlands** is advising governments and heritage institutions abroad on how to draft a similar digital cultural heritage strategy, set up a similar network, or set up a national heritage 'data space' similar to the Dutch one.



Nymphaea lotus (rezervație naturală), Băile Felix Oradea, National Heritage Institute, Bucharest, Romania – source: Europeana

Portugal encourages collaboration and partnerships with cultural heritage institutions at international level, resulting in the presence of digital assets from the National Library at international platforms, such as Biblioteca Digital del Patrimonio Iberoamericano and Répertoire International des Sources Musicales, for example.

Finland has reported that collaboration and the transformation of museum professionalism are outlined as points of development in the Museum Policy Programme 2030. Museums' operations are increasingly based on networks within the sector, across sector lines and on an international scale. This collaboration demands an active approach, networking competence and interactive skills. One of the measures outlined in the Museum Policy Programme is that museums will support their staff's participation in international competence exchange and assist the work of international experts in Finland. Overall, cultural heritage institutions in Finland are networked and autonomous. As a measure outlined in the national Cultural Heritage Strategy, the international measures and cooperation in fostering cultural heritage will be strengthened in relation to climate change and sustainable development.

International collaboration is well established within the mission for **Swedish** cultural heritage institutions. For example, the Swedish Digital Competence programme for museums (the DOM-programme) is working closely with the Dutch Digital Heritage Network.

> **Many Member States, promote cross-border cooperation through participation in European funding programmes and initiatives. This enables the pooling of resources and expertise from multiple countries, leading to more comprehensive cultural heritage projects. Additionally, European funding programmes provide substantial financial support that individual countries might struggle to secure independently, thus enabling the realisation of large-scale, ambitious projects. Cross-border initiatives also foster a sense of shared European identity and cultural cohesion, reinforcing the importance of cultural heritage as a unifying element within the European Union. By working together, Member States can address common challenges more effectively, such as the preservation of transnational heritage sites, the promotion of cultural tourism, and the integration of digital technologies.**

Several units of the **Greek** Ministry of Culture have participated in cross-border cooperation in the context of Interreg Europe and Horizon Europe funded digitization projects.

France reported that although Digital Europe projects are good opportunities for fostering cross-border collaboration, the co-funding rate on these calls is too high for cultural heritage institutions and the challenges of complying to rules and frameworks of European projects. Except for the context of European projects funded by the European Commission, it was noted that there are few other opportunities for this kind of collaboration.

In **Croatia**, the Ministry of Culture and Media supports cross-border cooperation, providing financial support to all national institutions participating in European projects. In addition, the Ministry also launches annual public calls for financing public needs in culture, with priority given to international cooperation programs.

In **Malta**, partnerships have been cultivated with various international forums, including European Heritage Heads Forum, ICOM, European Archaeological Council, NEMO, and numerous heritage entities from countries such as Italy, Sweden, Greece, Bulgaria, Cyprus, and beyond. Signing

multiple Memoranda of Understanding with international partners reflects Malta's commitment to foster collaborations on a global scale. Active participation in EU-funded programmes like COST, Interreg, and Horizon Europe reinforces cross-border collaboration and forges partnerships with cultural heritage institutions internationally. Malta's involvement in the Europeana Network Association and the Commission Expert Group on the common European Data Space for Cultural Heritage further enhances their network, creating avenues for knowledge exchange and joint initiatives at the international level.

Poland encourages cross-border cooperation through several EU and regional funding programmes, such as the Fund for Bilateral Cooperation (FWD) which aims to strengthen bilateral relations between Donor States and Beneficiary States. In the years 2021-2023, study visits were carried under the FWD, with 27 beneficiaries taking part in at least one study visit. Furthermore, during 2023, 10 projects were being implemented under the Small Initiatives program, which enables the implementation of research in international partnership, the creation of a strategy or other foundations for further artistic or creative activities.

The **Slovenian** Ministry of Culture mainly funds national programmes for the digital transformation of cultural heritage, but also encourages stakeholders to network internationally and to work together on EU-funded cross-border projects such as the National Museum's project Danube's Archaeological eLandscapes, funded by the Interreg Programme.

In Slovakia, the Ministry of Culture has a longtime cross-border collaboration with Europeana to take full advantage of the data space. Deploying this data space means working with new and different partners and designing innovative methods of collaboration. In April 2021, the Monuments Office of the Slovak Republic became a member of the international project ARIADNEplus, the aim of which is to protect archaeological cultural heritage data, provide access to data, support the building of data infrastructures, and thereby ensure support for research in the domain of cultural heritage. In May 2021, The Ministry of Culture of the Slovak Republic also became a member of the Saving European Archaeology from the Digital Dark Age.

3D model of Jurklošter samostan, Digital Innovation of Cultural Heritage, Slovenia – source: Europeana

4. Digital Skills

The Recommendation (Article 11) encourages Member States to take measures to assess the digital skills gap in the cultural heritage sector so that cultural heritage institutions are able to fully exploit the opportunities offered by advanced digital technologies and set ambitious objectives to be achieved by 2030 to upskill and reskill cultural heritage professionals.

The following chapter covers how Member States address the digital skills gap in the cultural heritage sector, first by looking at the quantification of the gap and then at measures and targets set for 2030.

The lack of digital skills in the cultural heritage sector is problematic in most Member States. However, only four Member States (IE, IT, PL, SE) have quantified their digital skills gap.

In **Ireland**, different areas within the cultural heritage sector have assessed the skills gap. Increased funding has been made available to expand digital capacity and to help develop and promote digital skills within cultural heritage institutions. Continuing professional development is promoted within the cultural heritage institutions and the wider civil and public service. However, in the absence of a national strategy on digitisation, there has not been a joined-up approach despite cross-over in many areas.

In **Poland**, a survey conducted by the Ministry of Culture in 2021 of more than 120 institutions shows that representatives of the cultural sector are interested not only in specialised training in preparing digital reproductions, copyright, reuse, etc. but also in digital literacy workshops.

The results from a 2021 **Swedish** pilot study show that the needs for competence development in museums touch several areas within the digitisation process (managing, ordering, producing, and preserving). Furthermore, there is a need for competence development for different levels of responsibility within the organisations (decision-makers, managers, and employees). In addition to this, different levels of knowledge are added (basic competence and advanced competence). Sweden is aware of the digital skills gap, and it is directly addressed by several major ongoing projects.

While **Belgium** has not quantified the digital skills gap, the Flemish Institution for Cultural Heritage (FARO) is a partner in CHARTER, the European Cultural Heritage Skills Alliance, which is co-funded by the Erasmus+ Programme. It strives to make apparent the value of cultural heritage and creating a resilient and responsive sector. The consortium works towards creating a lasting, comprehensive strategy that will guarantee that Europe has the necessary cultural heritage skills to support sustainable societies and economies. Within the framework of CHARTER, a broad survey was conducted, but it was neither systematic nor quantifying. However, the Flemish Institution for Cultural Heritage did conduct several interviews with core stakeholders in which the digital skills gap was discussed. Within CHARTER, recommendations for eight emerging fields were developed, including digital. Additionally, the Flemish Institution for Cultural Heritage analysed the competences required by the vacancies they publish on their website.

Robotníčka v tehliarni by Dohnány, Miloš, Slovak national gallery, Slovakia – source: Europeana

In **Slovakia**, the digital skills gap in the cultural heritage sector specifically has not been quantified. However, projects on skills in professions directly related to the digitalisation process itself have been implemented in the past years where employees who already have experience and would be able to apply themselves on the international market were trained and brought up. These are specific workers focused on their field of activity. However, there is still a gap in education in this area and ordinary users, customers, visitors, citizens, and other workers in cultural institutions do not have sufficient digital skills.

Despite the lack of quantification of the digital skills gap in Member States' cultural heritage sector, eleven Member States (BE, EL, IT, LV, HU, MT, PL, SI, SK, FI, SE) report having set formal objectives to be achieved by 2030 to upskill and reskill cultural heritage professionals.

For example, as a first step, **Belgium (Flanders)** has initiated a course on digital leadership in the cultural sector. It focuses on how to introduce, embed, and sustain a digital mindset in the mission, vision and skills of cultural organisations. It is the first step towards a diversified learning offer that meets the needs of both small and large, or digital mature or less advanced cultural organisations.

In **Italy**, a specific sub-investment of the Italian National Recovery and Resilience Plan intends to strengthen and upgrade digital competences, enabling cultural actors to deal professionally with advanced digital technologies and digital transformation processes. This project aims to

provide 30 000 digital course certificates by the end of 2025. An ongoing project promoted by the Ministry of Culture aims to introduce a digital maturity assessment, capable of evaluating the digital skills level of the institutions active in the cultural heritage sector, with the ultimate goal of taking action in order to fill the gaps in skills and knowledge.

The **Latvian** digital strategy for cultural heritage aims to enhance the competence and capacity of community members so that by 2027, 15% of cultural heritage staff are involved in digitisation and preservation of digital cultural heritage. The National Library of Latvia offers training sessions for public libraries on digitisation, preservation, and dissemination of digital cultural heritage. Similarly, both the National Library of Latvia and the Cultural Information System Centre provide methodological support for work in the Digital Couture Heritage Platform systems. This support includes guidance on preparing metadata for digital objects, ensuring the quality of digital assets, etc.

Regular training of cultural heritage professionals is provided through legally accredited training courses in **Hungary**, for which the central budget provides annual funding. Among the accredited training courses, there are currently several programmes specifically or partially addressing digital competences. For example, Hungarian GLAM employees can learn about web archiving or library digitisation and e-services through the Hungarian Library Institute of the National Széchényi Library.

Building on successful partnerships with education providers in **Malta**, there are plans to expand collaborations. Introducing new courses, programmes and potentially degrees will aid various agencies in training new staff for the substantial task of digitising cultural heritage. Internal capacity-building and training programmes within cultural heritage agencies must be prioritised, accompanied by increased resource allocation for digitisation efforts. This multifaceted approach ensures a well-equipped workforce and sustained progress in preserving and digitising cultural heritage.

Additionally, Malta stressed that while the upskilling of the workforce in the cultural heritage sector and the creation of funds for the purveying of necessary digital tools is a salient aspect of the future of the digital transformation, the general public needs to be upskilled as well. Generationally, most people will not be able to keep abreast of the technological advancements proposed, and this may in turn lead to detachment of the individual from the repository/site/asset. Training, awareness, and upskilling should be made available throughout all levels of society, for both professionals and non-professionals. Finally, the inclusion of citizens could encourage the mobilisation of citizen scientists who would be key players in the monitoring, preservation, and protection of remote cultural heritage assets. Through modern technology, these citizens may assist in the upkeep and preservation of cultural heritage assets, particularly those which are at risk.

In **Poland**, the Competence Centres for digitisation continued their activities in improving the digital competences of cultural sector employees by organising training and conferences, giving consulting support for beneficiaries of the Digital Culture programme, preparing publications and short films on digitisation. The Ministry of Digitisation has created a government programme, which will run until 2030, to assess the state of digital competences in Poland and which contains planned activities addressed to specific groups, including the cultural sector. As part of

this programme, an action on the 'Development of digital competences of cultural workers' is planned for implementation by 2029. It will develop and conduct educational events dedicated to employees of the cultural sector (including digitisation, ICT infrastructure management, creation of digital strategies of institutions, legal aspects of digitisation processes).In **Slovenia**, training and upskilling is part of every digital cultural heritage project.

Slovakia's upskilling and reskilling objectives are set in the recent Strategy for Culture and Creative Industries Development, a project of the Ministry of the Culture. The Ministry of Labour, Social Affairs and Family has developed a strategy for the development of resources in the cultural and creative industry. Both map the current state of vocational education and training in Slovakia and propose measures to improve the current state in the field of formal art education and training of future professionals.

One of the objectives of **Finland**'s Cultural Heritage Strategy is to ensure that the skills of professionals in the cultural heritage sector correspond to the changing needs of the sector and society in a versatile way. As part of the objective, the skills needed in the cultural heritage sector will be determined, improving anticipation and allowing for the tailoring of education.

One of several efforts promoted by different authorities in **Sweden** is the Digital Competence Training Programme for Museums, which is a three-year competence development project that aims to increase the digital competences of museum staff to support museums in their digital transformation, co-financed by the European Social Fund. The project aims to reach 1 500 employees and will make the online education open and available to anyone.

Among the remaining Member States that have not reported setting formal objectives to be achieved by 2030, Spain is studying the possibility of including this in their digital strategy which is currently under preparation and Luxembourg has reported not currently having any measures in place, but that upskilling and reskilling cultural heritage professionals are a focus point in the context of the National Digital Decade Roadmap.

The town of Ostroh at the turn of the 16th / 17th century - 3D digital reconstruction – Grodzka Gate - NN Theatre – CC BY – source: Europeana

5. Copyright

In order to facilitate the digital transformation of cultural heritage institutions and to help widen access to and promote cultural heritage, the Recommendation (Article 12) advises Member States to take full advantage of the opportunities offered by the current copyright framework.

The following chapter outlines the responses to Article 12 on copyright-related barriers that cultural heritage institutions in all Member States face, particularly with regards to the digitisation, sharing and reuse of cultural heritage assets. The second section of the chapter explores the measures that Member States have taken to overcome these barriers.

5.1. Barriers

One of the main barriers for many Member States (EE, EL, HR, IT, LV, LT, LU, NL, AT, PL, SK, FI, SE) is uncertainty and lack of knowledge about the legal frameworks regarding copyright in digital environments, rights of use, licensing, metadata license, etc. A gap between large and small cultural institutions with regards to this lack of knowledge has been reported as well. Three Member States (BE, IE, SK) also highlighted the issue of when the provenance of a collection or ownership of copyright within a collection may be unclear.

Finland reported that their main concern is that the copyright system is often seen by cultural heritage institutions as a barrier to make cultural heritage available online.

Sweden recounted the uncertainty regarding how the legal framework works in relation to digital cultural heritage objects and their publication online. Many Swedish institutions also report problems with understanding Creative Commons licensing.

In a similar vein, **Croatia** stated that there is insufficient information and education of cultural workers about the use of licenses.

In relation to this, **Slovakia** mentioned the problematic aspects of assets, such as old manuscripts, artworks, and photographs, that may still be under copyright protection, which typically lasts for several decades after the creator's death, hindering digitisation and publication.

Similarly, **Ireland** expressed challenges with digitising assets where the provenance or ownership of copyright may be unclear.

Poland reported potential problems and related risks resulting from determining the possibility of digitising materials, such as errors in verifying copyright status, ineffective licenses, inability to obtain rights in the case of objects of unclear authorship and the inability to reach rights holders.

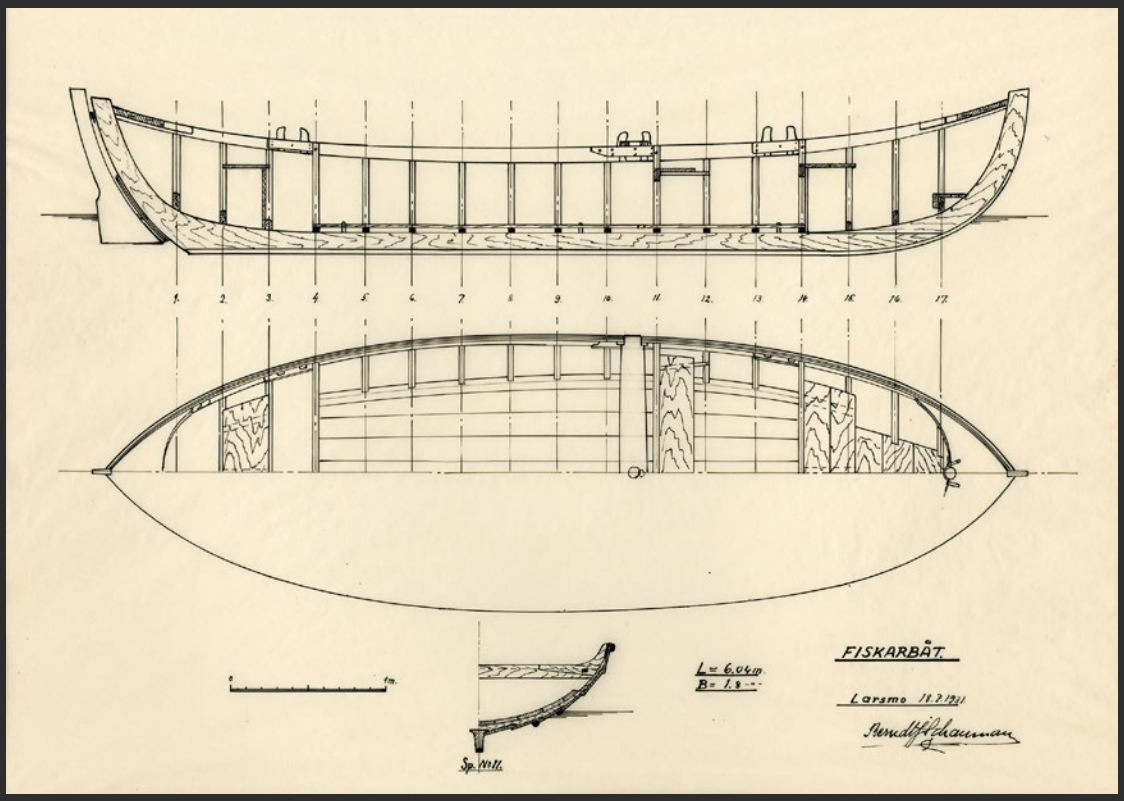
Greece identified barriers in two areas: on the one hand, unspecified/uncleared copyrights of images and videos included in institutional archives to be digitised and reused, and on the

other, restrictions and regulations in force by current legislation regarding commercial (re)use with intent to profit of images, videos and scans of protected monuments and sites controlled by the State. For these, special individual licensing and fees are required.

Moreover, another barrier that was highlighted by three Member States (IE, LT, PT) concerns the availability of collections and assets which may not include the transfer of copyright, or that some cultural heritage institutions use Creative Common licenses on the contents they make public while others do not use open licenses.

In **Ireland,** the reuse of collections or objects originating from private deposits or from purchase of assets is a barrier, as it may not always include the transfer of copyright.

Lithuania noted that challenges related to copyright arise for many culture heritage institutions seeking to open as much relevant content as possible to consumers. The main issue with the opening and reuse of cultural heritage is the reluctance of copyright (and related rights) holders to enter into agreements for the transfer or granting of rights to use their works or other related rights objects. In addition, there seems to be a problem with attribution of copyright, as it is difficult to determine the culture heritage object copyright owners.



Uppmätning av fiskarbåt, Berndt J. Schauman, Society of Swedish Literature in Finland, Finland – source: Europeana

Portugal remarked that copyrighted material - when digitised - is only available on the local network of cultural heritage institutions, so these objects are not exported to Europeana. Thus, some of those documents are out-of-commerce works that eventually could be made available under Directive 2109/790. It was reported that licensing out-of-commerce works was not yet regulated at the national level, making it unclear whether it would be feasible to overcome copyright barriers for mass digitisation. However, the main measure transposing the Digital Single Market Directive which regulates this issue was transposed into Portuguese national law and entered into force in July 2023.

Additionally, **Spain** has reported the lack of a common criterion for the cultural sector on reuse, since some institutions use Creative Commons licenses while others do not use open licenses on the content they disseminate and make available to their users.

Finally, **Slovenia** reported that obstacles can possibly arise due to the copyright of photographers and filmmakers of digitised images (as the originals were created using traditional techniques) who, for various reasons, lack the appropriate clauses in their contracts for making the images publicly available. Copyright from regular employment is also a challenge due to the specific nature of the Slovenian law. Challenges have also been observed in controlling the general use of digitised assets of cultural heritage.

Another barrier that was mentioned relates to the costs and funding (ES, FI, SE), and limited or no funding to acquire copyright licenses, as well as limited resources in general, including the time necessary to determine the correct copyright license (LV).

En av Gustav III:s s.k. revolutionsringar, 1772, Statens Historiska Museer, Sweden – source: Europeana

Spain reported a lack of equal opportunities in funding and self-financing measures for certain agents in the cultural sector, which generates structural inequalities, and the application of different policies for similar technical processes, such as digitisation, or making information available for reuse.

In **Finland**, one of the biggest barriers is access to funding for institutions beyond their regular activity for major digitisation efforts.

Similarly, **Sweden** reported that high costs for collective licensing with an extended effect ('avtalslicenser') are problematic. As a result, most institutions have large amounts of digitised material that they do not publish online, and thus, do not publish on Europeana.

An issue which was highlighted by three Member States (CY, SK, SE) revolves around the exposure of personal information and GDPR in general.

Some cultural heritage institutions in **Cyprus** are concerned about the level of exposure of the metadata they provide, particularly in cases where a digitalised item contains personal data such as references of funding projects, working groups, etc.

Slovakia reported that it could be problematic when digital assets include personal information about identifiable individuals or if there are any assets that include personal information which signifies a person's involvement and support for a particular political party/regime.

In **Sweden**, 85% of the cultural heritage institutions state that they have issues with some legal aspects, including GDPR for the archives and museums with modern collections.

Several other barriers that were mentioned by Member States include the administrative burden of decisions, not only related to copyright, but to other spheres as well.

As **Lithuania** pointed out, this administrative responsibility could result in some relevant digitised cultural heritage assets being publicly inaccessible to consumers. It should be added that the challenge is not related to the concept of copyright itself or its legal regulation but rather to the administrative implementation by cultural institutions that aim to open content to the public.

Malta also mentioned the case of certain assets, particularly those of illicit or sensitive nature linked to ongoing court cases or potential looting concerns, will undergo digitisation but remain restricted from public access. Despite inclusion in Maltese systems, these assets will not be made available due to legal and sensitivity reasons. In addition, 3D digitised assets create challenges for controlling reuse. While terms of use can be outlined, enforcement is complex, especially with easily downloadable and manipulable digital files. This raises concerns about potential abuse, leading to misuse or illegal commercialisation of assets. Institutions may face income loss by putting 3D digitised assets online, necessitating careful consideration and strategies to safeguard against misuse.

Slovenia emphasised that in addition to the copyright of authors, artists, and photographers, when sharing digitised assets, it is necessary to consider the rights of experts or professional workers who researched and interpreted the heritage.

5.2. Measures to overcome the barriers

Almost all Member States have considered taking further measures to overcome barriers outlined in the previous sub-section. The national strategies of several Member States (IE, CY, AT, SI, FI, SE) mainly encourage open licensing for better and wider reuse of content. Five Member States (CZ, IT, MT, NL, PT) have not yet taken such measures. One Member State (HU) reported that while the discourse on the issue is ongoing, no concrete proposal has emerged yet.

Two Member States (SK, FI) reported having done amendments to the Copyright Act to overcome barriers related to copyright. However, since the end of the reporting period, all Member States have transposed the Digital Single Market Directive and rules are now in place to facilitate the digitisation of out of commerce works.

In **Slovakia**, the recent amendment of the Slovak Copyright Act, which has been in force since March 2022, has improved licensing practices. A specific example is the so-called 'terminal exception' for libraries, archives, or museums. This exception allows, without the consent of the author, for the reproduction of work stored in the cultural heritage institutions. However, such work or its copy can only be used for communication to the public through dedicated terminals located on the premises of the libraries, archives, or museums. Therefore, the electronic form of work is allowed, but the users must be physically present. Full online access is allowed only when a cultural heritage institution has concluded the license agreement with respective collective management organisation.

Finland reported that there have been recent amendments to the Copyright Act to contain provisions on making available out-of-commerce works that cultural heritage institutions have in their collections. The Ministry of Education and Culture has started to organise stakeholder dialogues between relevant parties to ensure an effective implementation and application of the new out-of-commerce framework. In this work, Finland plans to incorporate the data-related work with the copyright infrastructure work, taking into consideration the role of Europeana's standardised frameworks for sharing digital content and metadata online.

Moreover, **Austria** referred to the knowledge gap and reported that it is being addressed by the competence centre.

In **Poland**, the project 'Development of digital competences of cultural workers' envisions a series of training sessions dedicated to copyright in digitisation. Its goal will be to improve the competences of GLAM sector employees in this area, especially from centres that do not have access to people with specialist knowledge in this area. The government programme 'Digital Culture' allows for financing the purchase of licenses/copyrights for digitising and sharing collections online. The Ministry of Culture is also currently conducting analytical work on copyright aspects of digitisation, sharing and storing digital cultural resources.

In **Croatia**, to better understand which license to choose, several workshops were held on the topic of copyright and license use, and last year, rightsstatement.org licenses were translated into Croatian.

To overcome the barrier of access to funding for institutions in Finland, access to EU funding could improve the situation.

6. Use of funding possibilities at European level

To accelerate the digitisation and preservation efforts, the Recommendation (Article 14) encourages Member States to make full use of all funding possibilities at European level.

This chapter provides an overview of the funding possibilities used by Member States. As it was not specified to cover both European and national funding, this chapter only focuses on European funding.

Many Member States (BE, BG, DE, EE, ES, HR, IT, LV, LT, MT, AT, PL, PT, SI, SK, FI, SE) have reported making use of funding possibilities at European level to accelerate their digitisation and preservation efforts.

Seiser Alm (Südtirol) by Max Kahrer - 1914 - Austrian Gallery Belvedere, Austria - CC BY-SA. Seiser Alm (Südtirol) – source: Europeana

	Cohesion Policy Funds	Recovery and Resilience Facility	Digital Europe Programme	Horizon Europe	REACT-EU	Other EU funding
Belgium		x			x	x
Bulgaria		x				x
Czechia						
Denmark						
Germany						x
Estonia	x					x
Ireland						
Greece	x	x	x	x	x	
Spain		x				x
France			x			x
Croatia	x	x				
Italy	x	x				
Cyprus						
Latvia	x	x				x
Lithuania		x				
Luxembourg						
Hungary						
Malta				x		x
Netherlands						
Austria		x				
Poland	x		x	x		x
Portugal		x				
Romania						
Slovenia	x	x		x		
Slovakia	x					x
Finland	x	x	x	x		x
Sweden	x		x	x		x

6.1. Cohesion Policy Funds

Ten Member States (EE, EL, HR, IT, LV, PL, SI, SK, FI and SE) reported making use of Cohesion Policy Funds to accelerate their digitisation and preservation efforts.

Estonia has made use of the European Regional Development Fund to digitise cultural heritage, making it available on the Estonian Museum Information System, the National Library of Estonia's digital archive DIGAR and in the databases of the National Archives of Estonia. Also, the National Library of Estonia developed an e-lending platform for all of Estonia. The Estonian Public Broadcasting and National Archives mirrored their tape drives for better long-term digital preservation.

In **Greece,** Cohesion Policy Funds have been used in calls addressed to public and private institutions and organisations for the preservation, digitisation, digital management, promotion, and accessibility of cultural heritage assets, ranging from moveable and immovable monuments and sites to intangible heritage.

The **Croatian** project eKultura previously mentioned is cofounded by the European Union with the use of the European Fund for Regional Development.

Latvia has used Cohesion Policy Funds to perform a mass digitisation of cultural heritage assets, to acquire digitisation infrastructure and to develop preservation dissemination infrastructure and services.

The **Polish** Operations Programme, which is dedicated to the digital development of the country, is co-financed by the European Regional Development Fund. During the reporting period, close to 20 projects were implemented by the largest national cultural institutions, archives, libraries, and a television broadcaster, including projects related to the digitisation and digital sharing of cultural resources and cultural heritage, improving the availability and quality of public e-services and creating services and applications. For example, a project by the Museum of King Jan III's Palace in Wilanów and four partner museums launched a search engine for dispersed museum collections.

6.2. Recovery and Resilience Facility

Twelve Member States (BE, BG, EL, ES, HR, IT, LV, LT, AT, PT, SI and FI) reported including measures to accelerate their digitisation and preservation efforts in their National Recovery and Resilience Plans.

The **Federal Government** of **Belgium** is using the Recovery and Resilience Facility to fund the operationalisation of the Federal Open Science Cloud, which will be used for storing and exchanging digital cultural and natural collections and metadata as well as training data stewards. **Flanders** used the Recovery and Resilience Facility to create a datamesh-infrastructure in order to stimulate data-driven cultural practices and policy making.

Bulgaria is planning to establish a new advisory group to strengthen the role of its aggregator using funding from the Recovery and Resilience Facility (see section 1.3.).

In addition to using funds from the Recovery and Resilience Facility to fund the calls mentioned above (see section 6.1.), **Greece** also makes use of it to support digital capacity building of cultural and creative professionals.

Also previously mentioned, **Italy** is making use of the Recovery and Resilience Facility to provide digital services to IT systems of national and regional cultural institutions (see section 1.3.), as well as to strengthen and upgrade digital competences (see chapter 4).

Latvia is using Recovery and Resilience funds to digitise valuable historical content from regional television and develop new distribution services for audiovisual content on the Digital Cultural Heritage Platform of Latvia.

In Lithuania, the 'New Generation Lithuania' plan, funded by the Recovery and Resilience Facility and the Lithuanian state budget, allocates EUR 30 million for 'Investments in Digitisation and Accessibility of Cultural Resources'. The Ministry of Culture, in collaboration with stakeholders, initiated the eCulture Projects' Programme in 2021/2022, with implementation scheduled from October 2023 to April 2026. Key projects under eCulture include:

- **eCulture platform**: A unified portal for digitised and digital cultural content, electronic services, and dissemination, led by the Lithuanian National Martynas Mažvydas Library and involving 19 partners from memory, cultural heritage, and arts institutions. This project integrates 3D scanning, AI solutions, and modernized information systems, resulting in around 80-100 new e-products and services.
- **Long-term preservation and transfer system**: Creation of an information system for registry records and state archives to ensure unified user access.
- **Cultural heritage data modernisation**: Updates to the Cultural Property Register and its related services.
- **ELVIS – Adapted Media Platform**: Expanding access to inclusive cultural content and providing training for publishers and content creators to support users with special needs.

As previously mentioned (see section 1.1.), **Austria** is dedicating EUR 15 million of its National Recovery and Resilience Plan to launch the funding programme Kulturerbe digital. As a result, at least 600 000 cultural objects will be digitalised by mid-2026 (including 15 000 3D objects). The National Plan also includes the relaunch of Kulturpool, which functions as the central search and service platform that merges the digitalised cultural objects.

Portugal is dedicating EUR 34 million in its National Recovery and Resilience Plan to digitise 20 million images from the National Library, 20 million images from its national archives, 59 500 assets from museums, 65 virtual visits to museums and 1 000 Portuguese films from the National Film archive and cinematheques by 2025.

In **Finland**, Structural support for the renewal of the cultural and creative sectors is a measure funded under the Finnish National Recovery and Resilience Plan that promotes the renewal and digitalisation of services, production and operating models in the cultural and creative sectors. In this context, structural support in the form of grants for the cultural and creative sectors is intended for the development of innovative services and production and operating models (including 3D digitisation).

6.3. Digital Europe Programme

Five Member States (EL, FR, PL, FI, SE) reported making use of the Digital Europe Programme to accelerate their digitisation and preservation efforts. However, it has been confirmed that an additional nine MS (BE, DE, IE, ES, IT, CY, AT, NL, SI) have taken part in a Digital Europe funded project during the reporting period.

France highlighted that Digital Europe projects are a good opportunity for fostering cross-border collaboration. However, the co-funding rate on these calls is too high for cultural heritage institutions and the challenges of complying to rules and frameworks of European projects.

Another example is that **Polish** entities are part of international consortia, including the Poznań Supercomputing and Networking Centre, which is a member of the consortium that works on the implementation of the common European data space for cultural heritage, and the Academic Computer Centre of the AGH University of Science and Technology in Krakow, which is a partner in the Eureka3D project.

6.4. Horizon Europe Programme

Six Member States (EL, MT, SI, PL, FI, SE) reported making use of the Horizon Europe Programme to accelerate their digitisation and preservation efforts.

Greece applied to research and innovation projects carried out in cooperation between Units of the Ministry of Culture and academic and research institutions.

The Jagiellonian University in **Poland** coordinates the project IMmersive digitisation: uPcycling cULtural heritage towards new reviving StratEgies (IMPULSE), which will develop solutions and methods for digitisation processes and accessibility of digital cultural heritage collections that will enable their innovative (re)use, solve challenges related to the interoperability of platforms and facilitate the availability of existing digitised cultural heritage content in novel contexts like Virtual Worlds while creating innovative standardisation procedures and adapting legal frameworks to contemporary transformations and creative processes in and for education, arts, and cultural and creative sector industries.

6.5. REACT-EU

Two Member States (BE (Flanders), EL) reported making use of REACT-EU to accelerate its digitisation and preservation efforts.

Belgium used it for the GIVE project on collective digitisation, for a study that will shape the Flemish digital strategy for cultural heritage and for setting up a grant system for digitisation by individual cultural heritage institutions.

In the case of **Greece**, REACT-EU funding was used to support the recovery of cultural institutions, professionals and SMEs in the arts and creative sectors during the COVID-19 pandemic.

In 2021, the European Commission approved the REACT-EU initiative as an investment instrument for **Lithuania**, allocating EUR 15.5 million to support cultural and creative industries. Between 2021 and 2023, these funds were directed towards incentives for the Lithuanian design industry, essential infrastructure projects, and service development. This instrument also contributed to strengthening the sector and enhancing the relevance of culture and cultural heritage in digital form.

6.6. Other EU funding

Twelve Member States (BE, BG, DE, EE, ES, FR, LV MT, PL, SK, FI, SE) reported making use of other funds to accelerate their digitisation and preservation efforts.

The cultural heritage support centre FARO is a **Belgian (Flanders)** partner in the Cultural Heritage Actions to Refine Training, Education and Roles (CHARTER) project. This project is funded under the Erasmus+ Programme and strives towards making apparent the value of cultural heritage and creating a resilient and responsive sector. The consortium works towards creating a lasting, comprehensive strategy that will guarantee Europe has the necessary cultural heritage skills to support sustainable societies and economies.

Estonia has used funding under the Creative Europe Programme for the National Library's EODOPEN project, which aims to directly engage with communities in the selection, digitisation and dissemination processes while at the same time reinforcing the capacity of library staff with regards to dealing adequately with rights clearance questions. In addition, the project will broaden the scope to alternative delivery formats in order to reach an even larger audience, especially for users of mobile devices as well as blind or visually impaired users.

In **France**, the Bibliothèque National de France has used the Connecting Europe Facility to digitise 30 000 pages of medieval manuscripts in 2021-2022 with the ARMA project. The 60 medieval manuscripts are now available on the Europeana website, in Tier 4 quality.

Latvia makes use of the financial instrument of the European Economic Area and Norway for 3D scanning and new technologies for preservation of cultural monuments.

One of the measures outlined in the **Finnish** Cultural Heritage Strategy is that cultural heritage sector actors will be encouraged to actively take advantage of European funding programmes and structural funds as well as national funding.

Sweden noted that there is a need for more support for their institutions when it comes to making use of European funding possibilities.

Self-portrait by Sofonisba Anguissola (Künstler/in) - Fine Arts Museum Vienna, Austria - CC BY-NC-SA. Selbstbildnis – source: Europeana

Annex I

Organisations that replied to the questionnaire in each Member State

Belgium	Flemish Government - Departure for Youth, Culture and Media Administration générale de la Culture - Service général du Patrimoine Federal Government - Belgian Science Policy Office
Bulgaria	Ministry of Culture
Czechia	Ministry of Culture
Denmark	Royal Danish Library
Germany	Stiftung Preußischer Kulturbesitz and Landesarchiv Baden-Württemberg
Estonia	Ministry of Culture
Ireland	National Archives
Greece	Hellenic Ministry of Culture
Spain	Ministry of Culture and Sports
France	Ministère de la Culture
Croatia	Ministry of Culture and Media
Italy	Ministry of Culture
Cyprus	Deputy Ministry of Culture
Latvia	The National Library of Latvia
Lithuania	Ministry of Culture
Luxembourg	Ministry of Culture
Hungary	National Széchényi Library (Hungarian Library Institute)
Malta	Heritage Malta
Netherlands	Ministry of Education, Culture and Science
Austria	Federal Ministry for Arts, Culture, the Civil Service and Sport
Poland	Ministry of Culture and National Heritage
Portugal	National Library of Portugal
Romania	
Slovenia	Ministry of Culture
Slovakia	Ministry of Culture
Finland	Ministry of Education and Culture
Sweden	Swedish National Heritage Board

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