DESTINATION: INNOVATIVE RESEARCH ON EUROPEAN CULTURAL HERITAGE AND CULTURAL AND CREATIVE INDUSTRIES - BUILDING OUR FUTURE FROM THE PAST

Europe's rich cultural heritage and strong creative tradition not only reflect our past, but also shape our future. It is by building on this foundation and developing our strengths that we can face the great challenges of our time with confidence, and shape a future based on European values and the respect of human rights. Europe's cultural heritage is well alive because it is the result of the interaction between people and their environment, and above all of the collective effort of EU citizens, who all have the same entitlement to enjoy their human and in particular cultural rights.[37]

Convinced that cultural heritage and the cultural and creative industries are an important part of the "social" dimension of democracy and sustainability, the Horizon Europe calls under this destination invite suggestions for policies and practices to address, at all levels of action, current challenges and provide innovative responses. Europe's wealth of monuments and sites and its creative diversity of traditions, crafts, arts, architecture, literature, languages, theatre, films, games and music is a unique asset. It enriches our lives, fosters social and cultural cohesion and contributes to a sense of belonging. It also underpins an economy generating more employment than the automotive industry and a similar trade balance as food, drinks and tobacco combined. Many of Europe's multinationals build their international success on the European heritage and creativity. At the same time, the sector is nurturing large numbers of dynamic small and micro enterprises, creating employment not the least for young people and women, while deploying their creativity not only to generate income but also to contribute to social and cultural sustainability, well-being and projecting European values at home and abroad.

This destination adopts a people-centred perspective and places cultural heritage and the cultural and creative industries at the very heart of the European economy and its sustainable development. European R&I activities under this destination will support and strengthen European cultural heritage and cultural and creative industries essentially under three areas:

Green: Europe's cultural heritage and its cultural and creative industries need to share their responsibilities for adapting to the consequences of climate change, and mobilise their resources to support European citizens and societies for an inclusive, socially and culturally sustainable climate transition. A participatory approach to European cultural heritage and digital transformations in the preservation of tangible and intangible heritage will guide new endeavours.

R&I actions will focus on, for example, supporting the cultural and creative industries to turn the challenges of the climate transition into opportunities, and become drivers of an inclusive societal transition. R&I actions will foment the development of new environmentally friendly

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[37]   CETS 199 - Council of Europe Framework Convention on the Value of Cultural Heritage for Society (coe.int)

technologies and methods to manage, restore and preserve cultural heritage, with a view to making Europe a world leader in sustainable management of cultural heritage. R&I will also strengthen our capacity to manage anthropogenic threats. Support to the New European Bauhaus initiative is part of this area, integrating the core New European Bauhaus values of sustainability, inclusion and aesthetics.

Digital: The digital transition promises enormous opportunities for Europe's cultural heritage and cultural and creative industries, but also serious challenges. It is important to ensure that, through the digitisation, EU citizens benefit from cultural heritage and be enabled to contribute to its enrichment. Digitisation should also provide new training opportunities on creative industries for young citizens in less populated areas.

R&I actions will focus on, for example, innovative approaches to empower the cultural and creative industries, including its many micro enterprises, to reap the benefits of using digital technologies, creating more appealing and valuable products, services and experiences for its users. R&I actions will deepen our knowledge on what, how and why digitised and digital cultural heritage may be exploited, reaping the benefits while avoiding the many pitfalls, and creating societal value. Collaborative platforms for cultural heritage and cultural and creative industries will be supported. A dedicated call, namely HORIZON-CL2-2023-HERITAGE-ECCCH-01, will support the establishment of a digital European cultural heritage collaborative space, including a cloud platform for European cultural heritage institutions. Such platforms will strengthen the collaboration and co-creation among cultural heritage institutions and with other stakeholders in the cultural heritage domain, widen access for citizens and strengthen research. Please consider below some key characteristics and specific conditions of the call. Also, cooperation between different actors within the cultural and creative industries and between the CCIs and other economic sectors and industries will be strengthened, creating new market opportunities for CCI stakeholders.

Innovative: To an ever greater degree, creative and cultural aspects drive socio-ecological innovation, participatory democratic processes and economic growth. Successful new digital and physical products and services need to be appealing and attractive, adapted to cultural particularities. Similarly, societal transformations such as the green and digital transitions depend on behavioural changes, which are largely based on changes in lifestyle, culture and perceptions. In such processes, the human is at the centre, and cultural heritage, the arts and the cultural and creative industries are key.

R&I actions will cover a variety of subjects, such as strengthening the innovation capacity of the cultural and creative industries, and their capability to act as innovation engines. Actions will focus both on cultural heritage and cultural and creative industries holistically, as an innovation ecosystem, and on specific CCI sectors such as music, filmmaking and video games. Actions will also foment innovation in cultural tourism, as well as explore innovative connections between cultural expressions and democracy and politics. Actions will also support the development of new innovative technologies and methods to restore, preserve and manage cultural heritage, as well as re-inforce the role of Europe's cultural heritage in promoting European values among EU citizens and abroad.

The innovation ecosystems created and nurtured by the Knowledge and Innovation Communities (KICs) of the European Institute of Innovation and Technology (EIT), in particular the KIC "EIT Culture and Creativity", may contribute to innovation actions under this destination, and should as appropriate be considered.

In line with the Commission priorities, R&I actions under this Destination will help promote the European way of life, contribute to achieving the Green Deal goals and support an economy that works for people. They will contribute to the New European Bauhaus[38] initiative, to reaching the UN Sustainable Development Goals and to building a stronger, more participatory and crisis-resilient society and economy. They will support the realisation of the full potential of cultural heritage, arts and cultural and creative industries as drivers of sustainable innovation and a European sense of belonging.

The topics under the call HORIZON-CL2-2023-HERITAGE-ECCCH-01 aim at supporting the establishment of a digital European cultural heritage collaborative space, including a cloud platform, and contribute to the vision and objectives of the Commission[39]. For the purpose of this call, the collaborative space will be referred to as the "European Collaborative Cloud for Cultural Heritage" (ECCCH).

An ex-ante impact assessment for the ECCCH was carried out between December 2021 and March 2022 by eight renowned independent experts contracted by the Commission[40]. This ex-ante impact assessment examined and described the needs of a digital European cultural heritage collaborative space from the perspective of the foreseen users (cultural heritage institutions, researchers, cultural and creative industries, etc.) and of European societies, thoroughly reviewed existing initiatives that might satisfy parts of these needs, and outlined the most important aspects to consider in implementing such a collaborative space.

The conclusion of the ex-ante impact assessment is that the ECCCH is highly important to Europe's cultural heritage institutions and to European societies. In order to address the urgent evolving needs of Europe's cultural heritage sector in the digital age for specifically adapted collaborative spaces, the European Union will ramp up its investments through the ECCCH, and also the common European Data Space for Cultural Heritage (the Data Space)[41] funded under the Digital Europe programme. The topics under this call are based on the conclusions and recommendations of the experts' ex-ante impact assessment.

Some key characteristics of the vision for the ECCCH include:

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[38] The New European Bauhaus initiative was launched by European Commission President von der Leyen in her State of the European Union speech autumn 2020. More information here: https://europa.eu/new-european-bauhaus/index_en

[39] Recommendation (EU) 2021/1970 of 10 Nov 2021 on a common European Data Space for Cultural Heritage.

[40] European Commission, Directorate-General for Research and Innovation, Brunet, P., De Luca, L., Hyvönen, E., et al., Report on a European collaborative cloud for cultural heritage : ex – ante impact assessment, 2022, https://data.europa.eu/doi/10.2777/64014

[41] See further https://digital-strategy.ec.europa.eu/en/library/staff-working-document-data-spaces

- The ECCCH will be addressed to professionals[42]. It will enable an unprecedented level of lasting collaboration, synergy and co-creation between public and private players that will generate new realms of research, knowledge and creation of societal value.

- The basic ECCCH platform will provide easy to use tools for the most important needs.

- Active user communities that contribute to training and support, as well as common data models, guidelines and libraries for developing tools (including support for Graphical User interfaces (GUI) and visualisation), will ensure that also less well-equipped institutions will draw the full benefit of the ECCCH.

- To enhance collaboration and co-creation, IPR rights of the digital objects stored in the ECCCH and produced by ECCCH-based collaboration will be fully recorded and traceable. Guidelines for the use of IPR rights, such as rights statements provided by RightsStatements.org should be used where appropriate. This will enable new business models in the intersection between cultural heritage and cultural and creative industries.

- The long-term sustainability of data and data formats is one of the underlying principles of the ECCCH. The ECCCH will tackle these challenges through its architecture and basic functionalities. The design and architecture of the ECCCH is based on three principles:

  o digital twins of heritage objects,

  o digital continuum, tracing all interactions with heritage objects and related data objects,

  o digital ecosystem, open to all stakeholders, professions and activities to interact with each other and with the digital heritage objects, ultimately leading towards a new generation of multidimensional, interconnected and knowledge-enhanced heritage data forming digital commons, where the ECCCH will play a key role.

- The architecture of the ECCCH will ensure an evolutionary design, which will allow the adaption and incorporation of new technologies and tools and to fulfil new user requirements, while discontinuing less used tools.

- An open Application Programming Interface will allow new functionality to be developed and incorporated in the ECCCH by different initiatives, and encourage interoperability.

- The ECCCH will be open and inclusive, both in terms of the users of the platform and the connections to other related initiatives/platforms such as the Data Space.

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[42]   In the context of this call, 'professionals' should be understood as the wide and interdisciplinary group of people working with cultural heritage in a professional or semi-professional way, researchers as well as people working with related activities such as within the cultural and creative industries.

- The ECCCH should build on the wealth of existing knowledge, technologies and work processes in Europe. It should draw on previous experience and best practice. The ECCCH and the Data Space should complement each other towards the common vision.

- The ECCCH should ensure, through its Governance body, the engagement of a wide range of appropriate representatives from Member States and Associated Countries, as well as from related EU initiatives.

The ECCCH will thus be a genuine collaboration platform, which brings together a wide array of professions, researchers and technologies for museums and other cultural heritage institutions. It will include and develop interactive tools for research, curation, restoration, preservation and for reaching out to citizens and cultural and creative industries, properly protect and manage IPR and allow commercial as well as non-commercial collaboration with a wide range of players.

All topics under this call are subject to the following conditions:

- All software developed should be open source, licensed under a CC0 public domain dedication or under an open source license as recommended by the Free Software Foundation[43] and the Open Source Initiative[44].

- If the use of fully open source software would require disproportional efforts or significantly diminish the quality or performance of the software, and if suitable non open source function libraries exists, such libraries may be used provided that a full user license free of charge for an unlimited period of time is granted to the consortium responsible for the ECCCH as well as to all users of the ECCCH.

- All software and other related deliverables should be compliant with the data model and the software development guidelines elaborated by the project funded under topic 'HORIZON-CL2-2023-HERITAGE-ECCCH-01-01'.

All projects funded should participate in concertation activities with the project funded under topic 'HORIZON-CL2-2023-HERITAGE-ECCCH-01-01'

Expected impacts:

Proposals for topics under this Destination should set out a credible pathway to contributing to the following expected impact of the Horizon Europe Strategic Plan:

- The full potential of cultural heritage, arts and cultural and creative sectors as a driver of sustainable innovation and a European sense of belonging is realised through a continuous engagement with society, citizens and economic sectors as well as through better protection, restoration and promotion of cultural heritage.

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[43] https://www.gnu.org/licenses/license-list#SoftwareLicenses
[44] https://opensource.org/licenses

Legal entities established in China are not eligible to participate in Innovation Actions in any capacity. Please refer to the Annex B of the General Annexes of this Work Programme for further details.

The following call(s) in this work programme contribute to this destination:

Call	Budgets (EUR million)		Deadline(s)
	2023	2024	
HORIZON-CL2-2023-HERITAGE-01	78.00		14 Mar 2023
HORIZON-CL2-2023-HERITAGE-ECCCH-01	35.00		21 Sep 2023
HORIZON-CL2-2024-HERITAGE-01		65.00	07 Feb 2024
Overall indicative budget	113.00	65.00	

Call - Research and innovation on cultural heritage and CCIs - 2023

HORIZON-CL2-2023-HERITAGE-01

Conditions for the Call

Indicative budget(s)[45]

Topics	Type of Action	Budgets (EUR million) 2023	Expected EU contribution per project (EUR million)[46]	Indicative number of projects expected to be funded
Opening: 14 Dec 2022 Deadline(s): 14 Mar 2023				
HORIZON-CL2-2023-HERITAGE-01-01	RIA	12.00	3.00 to 4.00	3
HORIZON-CL2-2023-HERITAGE-01-02	RIA	12.00	3.00 to 4.00	3
HORIZON-CL2-2023-HERITAGE-01-03	RIA	12.00	3.00 to 4.00	3
HORIZON-CL2-2023-HERITAGE-01-04	RIA	9.00	2.00 to 3.00	3
HORIZON-CL2-2023-HERITAGE-01-05	RIA	9.00	2.00 to 3.00	3
HORIZON-CL2-2023-HERITAGE-01-06	RIA	12.00	3.00 to 4.00	3
HORIZON-CL2-2023-HERITAGE-01-07	RIA	9.00	2.00 to 3.00	3
HORIZON-CL2-2023-HERITAGE-01-08	CSA	3.00	2.00 to 3.00	1
Overall indicative budget		78.00		

General conditions relating to this call

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[45] The Director-General responsible for the call may decide to open the call up to one month prior to or after the envisaged date(s) of opening.
The Director-General responsible may delay the deadline(s) by up to two months.
All deadlines are at 17.00.00 Brussels local time.
The budget amounts are subject to the availability of the appropriations provided for in the general budget of the Union for years 2023 and 2024.

[46] Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

Admissibility conditions	The conditions are described in General Annex A.
Eligibility conditions	The conditions are described in General Annex B.
Financial and operational capacity and exclusion	The criteria are described in General Annex C.
Award criteria	The criteria are described in General Annex D.
Documents	The documents are described in General Annex E.
Procedure	The procedure is described in General Annex F.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G.

GREEN

Proposals are invited against the following topic(s):

HORIZON-CL2-2023-HERITAGE-01-01: **Advanced technologies for remote monitoring of heritage monuments and artefacts**

Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 3.00 and 4.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).

<u>Expected Outcome</u>: Projects should contribute to all of the following expected outcomes:

- New and innovative remote methods to monitor the state of degradation of original materials of cultural heritage monuments, buildings and artefacts.

- Innovative on-site monitoring methods of pollutants and the status of previous interventions in cultural heritage buildings, monuments and artefacts in order to select the optimal green and effective conservation strategies and material.

Scope: Cultural heritage monuments, sites and artefacts are threatened by a variety of natural anthropogenic and environmental factors such as earthquakes, floods or sea level rise, fires, atmospheric pollution, urbanisation and man-made threats. Innovative advanced and cost-effective remote technologies for systematic and representative monitoring of built cultural heritage monuments' and artefacts state of preservation are needed, addressing limitations of location size and transportability.

Remote technologies with emphasis on non-destructive techniques should focus on obtaining analytical chemical information regarding pollutants and/or degradation products from previous interventions in monuments, buildings or large size cultural objects, which are not easily accessible or in remote places for representative sampling. Remote chemical mapping should be included too.

For onsite studies of the chemical or structural state of cultural heritage items (monuments, buildings, artefacts), a toolbox of chemical probes (e.g. fibre optics sensors…), assays and technologies should be adapted. These may include:

- Novel transportable equipment for rapid in situ chemical analysis and/or mapping of pollutants and/or degradation products including, when necessary, data from previous interventions. This is crucial not only for monuments or buildings but also for assessing the state of valuable artworks and artefacts in museums, which are difficult or of enhanced danger if removed.

- Sensors (including embedded sensors), interferometric or photoacoustic technologies for systematic monitoring of the structural integrity of monuments, buildings and artefacts are also important for their early protection or for determining proactively interventions in response to natural disasters (earthquakes, extreme climate or anthropogenic effects, etc.).

A variety of other innovative techniques and/or technologies as well as combinations among them might be explored depending on the targeted intervention. The approach(es) developed should integrate modern practice and concepts in conservation and preservation of cultural assets in cooperation with concerned stakeholders in this field.

HORIZON-CL2-2023-HERITAGE-01-02: Cultural and creative industries for a sustainable climate transition

Specific conditions	
Expected EU	The Commission estimates that an EU contribution of between EUR

contribution per project	3.00 and 4.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Research and Innovation Actions

Expected Outcome: Projects should contribute to all of the following expected outcomes:

- Enhanced and updated understanding of the challenges and opportunities for the cultural and creative industries (CCIs)[47] in relation to a sustainable climate transition.

- Research and knowledge-based approach(es) on how innovative business models, including use of new technology, can make Europe's CCIs true drivers of a sustainable climate transition.

- Significant contributions to help European CCIs become better prepared to adapt to and contribute to the climate transition in line with the 2030 goals spelled out under a European Green Deal[48].

Scope: The cultural and creative industries (CCIs) are an important source of growth and job creation in the European economy. Moreover, the CCIs play a key role in shaping culture, values and perceptions across the European Union and beyond. Thus, the role of the CCIs in achieving the European Union's climate transition objectives is crucial.

At the same time, the CCIs are characterised by a large and diverse number of chiefly small and micro enterprises, as well as by hefty differences across geographical and sectorial divides. Large parts of the CCIs, thus, lack the capacity to take the necessary measures to adapt to and thrive under the climate transition, not to speak of driving this transition.

Specific approaches are therefore needed to enable Europe's CCIs to develop their full potential to support a sustainable climate transition.

Proposals should provide for developing and validating an economically sustainable model, or a portfolio of approaches, that address this challenge. A suitable set of CCI sector(s) or/and cross-sectoral issues should be selected to focus on, which allow significant impacts to be achieved.

The approach(es) developed should address the adoption of new sustainable business models, including the use of new technologies and possibly the development or adaption of new technological solutions, as well as gaps in skills and capacities. The proposed models should

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[47]   CCIs as defined in the European Parliament Resolution 'A coherent EU policy for cultural and creative industries':
         https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016IP0486&from=EN
[48]   https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

be valid across different Member States/Associated Countries (where appropriate including regions), and address the needs of small, micro as well as larger companies. Different Member States/Associated Countries should therefore be involved, as well as a wide set of stakeholders including concerned policymakers, in order to ensure that solutions developed are effective and realistic.

Solutions may involve the use of platforms or networks to facilitate sharing investments, facilities or competencies among several companies or across sectors. In such cases, established platforms, networks or clusters for CCIs should be taken into account, to avoid duplication of efforts.

Proposals should build on existing knowledge, activities and networks, notably the ones funded by the European Union. Furthermore, links should be established and synergies sought with closely related actions, such as relevant R&I actions funded by Horizon Europe or Horizon 2020. In particular, when appropriate cooperation with projects funded under the topic 'Cultural and creative industries for a sustainable climate transition' of the Horizon Europe Cluster 2 2024 calls should be sought.

DIGITAL

HORIZON-CL2-2023-HERITAGE-01-03: Re-visiting the digitisation of cultural heritage: What, how and why?

Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 3.00 and 4.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Research and Innovation Actions

Expected Outcome: Projects should contribute to all of the following expected outcomes:

- Increased critical understanding of the potential, opportunities, barriers and risks of digitising cultural heritage.

- Research and knowledge-based recommendations and/or method(s) on how the European cultural heritage sector can better manage digitisation of their collections, including setting priorities, ensuring the correct context is reflected on the digital objects created, and guaranteeing their long term durability.

- Validated framework(s) that support the cultural heritage sector to make best use of their digital assets, in order to reap the full benefits of the digital transition and avoid the pitfalls.

- Significant contributions to help European cultural heritage institutions become more digitally adept, capable of capitalising fully on the opportunities of digital cultural heritage.

Scope: The cultural heritage sector, as the rest of society, finds itself in the midst of a dramatic digital transition. This transition deeply affects its activities, its organisation, and at times the purpose or existence of its institutions and subsectors.

A key component of European and national cultural heritage policy has been, and is, the digitisation and subsequent broad access to cultural heritage[49]. Large sums have been invested by the European Union and Member States to digitise collections, monuments and buildings, and more are likely to follow.

Digitisation of cultural heritage can bring many benefits. In terms of research, preservation, accessibility and of supporting cultural and creative innovation, digitised cultural heritage can be an enormous asset. One of the reasons why these large investments are made is that such digitised objects facilitate a wider, more creative use of Europe's world-renowned cultural heritage, and the creation of more societal value in Europe and beyond.

However, along with the benefits of digitising cultural heritage come pitfalls. One risk may be that digitised cultural heritage is used, or misused, out of its context.

Libraries, museums and archives, as well as other collections, often have long histories. Both the collections they house and the language they use(d) to describe these collections are products of that historical legacy. Taken out of its context, such items may be used to convey messages contrary to the intended, possibly in conflict with European values or the policy of the institutions housing the collections.

Other risks may emerge from the (perceived) loss of control over the uses of the digital objects, possibly prompting cultural heritage institutions to limit the access to and the use of their digital assets, thus hampering the realisation of the wider societal value digitisation is expected to bring.

The uses of digitised cultural heritage, and the strategies that might be pursued in order to reap the full benefits while avoiding the pitfalls, have not been thoroughly researched. Proposals should address these gaps in knowledge, and elaborate evidence-based recommendations on how digitisation of cultural heritage can best be managed, as well as on how digitised cultural heritage can best be used.

The European cultural heritage sector is wide and diverse, comprised of many different actors, from large public institutions to independent artists and artisans. Moreover, the context, the cultural heritage itself and the policy landscape often vary strongly between different countries and regions. This diversity should be taken into account when elaborating recommendations, so that these can realistically be applied across Europe.

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[49] See for instance https://digital-strategy.ec.europa.eu/en/policies/cultural-heritage

To the extent possible, proposals should build on existing knowledge, activities and networks, notably the ones funded by the European Union. Furthermore, where appropriate links should be established and synergies sought with related actions, such as relevant R&I actions funded by Horizon Europe or Horizon 2020. In particular, funded proposals should liaise with the projects funded under the "European Collaborative Cloud for Cultural Heritage" calls in the frame of Horizon Europe Cluster 2, as well as, to the extent appropriate, with projects funded under the Digital Europe programme to establish a European data space for cultural heritage.

INNOVATIVE

HORIZON-CL2-2023-HERITAGE-01-04: Cultural heritage in transformation – facing change with confidence

Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 2.00 and 3.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 9.00 million.
Type of Action	Research and Innovation Actions

Expected Outcome: Projects should contribute to all of the following expected outcomes:

- Deeper and broader understanding of the constantly changing nature of cultural heritage, and of how this understanding can be effectively shared with citizens.

- Evidence based method(s), tested in small scale, that deploy a deeper understanding of the transformative nature of cultural heritage to help citizens face current and future societal transformations, change and disruption with greater confidence.

Scope: Cultural heritage has enormous potential in terms of its contribution to improving the quality of life for people, understanding the past and assisting territorial cohesion[50]. Cultural heritage gives us a sense of identity and belonging, and shape our future. Current policy discourses focus essentially on the need to protect and preserve cultural heritage for the benefit of future generations[51].

However, just as culture and society, cultural heritage is in reality subject to constant change. Cultural heritage, ranging from the tangible to the intangible, from narratives and practices to monuments, landscapes and objects, is created, developed, destroyed, re-interpreted and re-valued relentlessly. Moreover, how we interpret, value (or not) and manage our cultural heritage is, necessarily, a function of our currently dominating beliefs, values and other cultural and socio-economic circumstances. In effect, the now dominating discourse

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[50]   See for example Cultural Heritage in a Changing World (Borowiecki, Forbes, Fresa 2016)
[51]   See for instance the preamble to the World Heritage Convention (UNESCO 1972)

emphasising the need to protect and preserve a cultural heritage which is perceived as precious and fragile is a relatively recent phenomenon.

European citizens and societies are facing an ever-faster pace of cultural, social and technological change, where old habits and beliefs are forcefully replaced by new ones. Every age in the course of history has experienced change to a greater or lesser extent, but it hardly seems an exaggeration to suggest that the world in the 21st century faces epochal changes, which affect every part of society. Subjected to such a dramatically changing environment, it is natural that citizens feel uncomfortable, perhaps lost, and long for the perceived stability of the past.

Making the constantly changing nature of our cultural heritage, the ongoing creation, destruction and re-interpretation, a more prominent and visible feature in the interaction with users, can potentially help make sense of today's and tomorrow's societal transformations. A greater understanding and broader awareness of the transformative nature of our cultural heritage can help put societal changes in perspective, diminish the stress perceived by people affected, and help approaching change with more confidence and less fear. Yet, the transformative nature of cultural heritage and the potential societal benefits it can bring has not been thoroughly researched.

The challenge is to deepen knowledge in this area, and devise ways to broaden and deepen the understanding of the transformative nature of cultural heritage, with the aim to help citizens face current and future societal transformations with greater confidence. The approach(es) chosen should be evidence based, effective and economically, culturally, politically and environmentally sustainable.

In order to verify and refine the effectiveness and sustainability of the proposed method(s) across Europe, at least three small scale pilot trials should be carried out in different settings.

Proposals may choose to focus broadly on a wide spectrum of cultural heritage or only on a highly relevant and potentially high-impact subset. However, the recommended methods should be effective across the cultural, geographic, political and socio-economic diversity of Europe.

To the extent possible, proposals should build on existing knowledge, activities and networks, notably the ones funded by the European Union. Furthermore, funded proposals may establish links and seek synergies with related actions, such as relevant R&I actions funded by Horizon Europe or Horizon 2020.

HORIZON-CL2-2023-HERITAGE-01-05: Fostering socio-economic development and job creation in rural and remote areas through cultural tourism

Specific conditions	
Expected EU contribution per	The Commission estimates that an EU contribution of between EUR 2.00 and 3.00 million would allow these outcomes to be addressed

project	appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 9.00 million.
Type of Action	Research and Innovation Actions

Expected Outcome: Projects should contribute to all of the following expected outcomes:

- Increase the macro-regional cultural tourism cooperation to help the socioeconomic development of rural and remote areas[52].

- Develop cultural tourism[53] and creative tourism[54] business models for rural and remote areas to increase sustainable job opportunities and investments.

- Promote an inclusive and sustainable cultural and creative tourism that fosters social inclusion and engagement, respects the needs of local communities, the heritage and the capacity of the rural and remote areas.

Scope: A large part of European cultural landscapes outside urban territories is rural. Cultural and creative tourism, as a driver of sustainable development, could give visibility to those rural cultural landscapes and have a significant positive impact on the revitalisation of rural and remote areas. It could bring benefits to local communities, foster sustainable development, job creation and social inclusion, by promoting the indigenous cultural history and culture (with its traditions, arts and crafts) as well as the local gastronomy and farming.

However, increasing cultural and creative tourism in rural and remote areas might not be an easy task, as it requires specific and different policy solutions to address the challenges and specificities of the diversified rural and remote areas. Neighbourhood countries encounter similar challenges and specific problems, which the current one-size-fits-all cultural tourism business models cannot address. In addition, the geographical and cultural similarities within each macro-region provide the basis for cooperation and joint strategies, which could help to profile each region as a cultural tourism destination for key markets, but their full innovation potential is not yet fully exploited.

Therefore, research and innovative solutions for sustainable cultural and creative tourism development in rural and remote areas (including outermost areas) that will aim at job creation and socio-economic regeneration, taking into consideration the specificities of each

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[52] Typology of the rural and remote territories is given on LTVRA: https://ec.europa.eu/info/sites/default/files/strategy/strategy_documents/documents/ltvra-c2021-345-documents-part1_en.pdf

[53] According to the definition adopted by the UNWTO General Assembly, at its 22nd session (2017), Cultural Tourism implies "A type of tourism activity in which the visitor's essential motivation is to learn, discover, experience and consume the tangible and intangible cultural attractions/products in a tourism destination.

[54] UNESCO (2006) also identifies creative tourism as "travel directed toward an engaged and authentic experience, with participative learning in the arts, heritage, or special character of a place, and it provides a connection with those who reside in this place and create this living culture" (UNESCO, 2006:3).

region and the diversity of economies should be explored by the research proposals under this topic.

Research should first explore and analyse how cultural tourism can benefit rural and remote areas as well as should address the challenges and needs of cultural tourism in these areas. Considering that cross-border cooperation might help rural and remote areas to promote the region as an attractive destination, the research should identify existing cross-border and macro-regional strategies for cultural tourism and analyse the level of cooperation of the EU neighbourhood countries and the countries of the same region. The researchers should examine whether the implementation of the existing practices contribute to or burden the balanced development of cultural tourism in rural and remote regions, as well as identify the barriers in their implementation. The proposals are expected to provide recommendations with methodologies, and good practices for improvements and develop cross-border/macro-regional sustainable cultural tourism policy scenarios for rural and remote areas that will aim to connect the more touristic with less touristic and remote destinations and to foster a balanced level of socioeconomic development. Solutions that would include the use of digital technologies to promote less touristic and remote destinations are welcome. The proposals should guarantee an equilibrium between the increase of cultural tourism and the capacity of the sites and the rural areas.

Cultural and creative tourism business models that will act as catalysts for the cooperation between the rural/remote areas of each region should be developed. Such models should aim at creating new job opportunities, fostering participation of local citizens in cultural tourism and increasing social inclusion, while promoting not only the natural and historical heritage but also the local identity, arts and crafts by engaging tourists with the creative process. The cultural and creative tourism business models and the processes of settlement development that the models might include should consider the protection of nature and built heritage of the rural and remote areas.

The proposals should also analyse how these business models can be applied to the cultural tourism for rural and remote areas to fully utilise their potential. The proposals may also consider promoting silver economy and silver tourism, through the proposed cultural and creative business models, while they should consider building on relevant H2020 projects. Finally, the topic should contribute to the EU long-term Rural Vision.

HORIZON-CL2-2023-HERITAGE-01-06: A world leading European video game innovation system

Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 3.00 and 4.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Research and Innovation Actions

Expected Outcome: Projects should contribute to all of the following expected outcomes:

- Well founded and prioritised recommendations for European policy, including R&I policy, to support sustained innovation and growth in the European video game industry.

- Methodology(ies), supported by evidence, to increment the use of video game know-how and technology to drive innovation in other economic sectors.

- Significant contributions towards a thriving European video game industry that contributes decisively to economic growth, job creation, physical and mental well-being as well as to social and cultural cohesion.

Scope: The video game industry has shown exceptional growth and a fast paced evolution since its inception in the 1970's. In 2019, the size of the European Union video game market was over EUR 20 billion[55], a growth of 55% compared to 2014. 51% of the Union's population played video games in 2019. Most forecasts predict continued rapid growth both in usage, turnover and added value for the foreseeable future.

The video game industry is in many ways a pioneer when it comes to harnessing the digital transition to create attractive products and rewarding experiences for its users. Also, the video game industry drives the development of new methods and technologies which have proven valuable in other industries, such as the automotive and pharmaceutical industries, as well as in the public sector.

Thus, the video game industry is not only a key channel of increasing importance for the expression of culture and creativity in Europe, but also a major economic sector in itself, and a vital driver of innovation in other economic sectors. Yet, the potential contributions to European economic growth, well-being, sustainability and social cohesion, and how to mobilise this potential, has not been thoroughly researched.

Research should address these gaps in knowledge, and develop recommendations for how to support sustained innovation, growth and competitiveness in the European video games sector, as well as for how to encourage the uptake of know-how and new technologies in other economic sectors.

The European cultural heritage and arts are diverse and uniquely renowned, and the European creative tradition strong. Such factors can constitute an important source of competitiveness for the sector.

Parts of Europe are often considered examples of success in the video game industry, such as Sweden, France or Finland, where some leading companies are headquartered and where the sector produce sizeable contributions to gross domestic product (GDP) and export revenues.

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[55]   "Key Facts" (2020), by ISFE

Other parts of Europe, however, punch below their weight. Proposals should therefore involve different Member States/Associated Countries, in order to develop recommendations that are valid on a European scale.

The value chain – or ecosystem – of the video game industry is complex, diverse and rapidly evolving, as is generally the case in creative industries. Key roles are played by established companies with well-known brands, small independent development companies and freelancers, as well as by distribution platforms of various kinds.

Proposals do not have to cover the entire ecosystem in all its complexity, but may chose a more limited focus to allow a stronger impact. Research should, however, properly take into account all parts of the ecosystem which are key in accordance with the chosen focus and scope. Proposals should therefore provide for engagement with a wide set of stakeholders, including relevant policymakers, to ensure that solutions/methodologies developed are effective and economically, culturally and politically feasible at a European level.

Proposals should build on existing knowledge, activities and networks, notably the ones funded by the European Union. Furthermore, funded proposals should establish links and seek synergies with closely related actions, such as relevant R&I actions funded by Horizon Europe or Horizon 2020.

HORIZON-CL2-2023-HERITAGE-01-07: Promoting cultural literacy through arts education to foster social inclusion

Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 2.00 and 3.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 9.00 million.
Type of Action	Research and Innovation Actions

Expected Outcome: Projects should contribute to all of the following expected outcomes:

- Increase understanding of the value of cultural literacy on social cohesion and the increase of tolerance on cultural diversity.

- Provide innovative policy solutions that will increase cultural literacy in Europe through formal and non-formal education, as well as ways to integrate them into the education policies.

- Foster cultural literacy around European cultures.

Scope: Cultural literacy may help individuals encounter cultural differences and to elaborate one's own identity in a respectful social interaction with other people. Cultural literacy is

necessary in the current European landscape, which has been intensified due to the various socioeconomic challenges, including misinformation, demographic change and migration, increasing the plurality of cultures and identities. Existing research has examined the importance of cultural literacy, its value in formal and non-formal education, while has examined ways to improve cultural literacy in Europe. However, the challenge is to better understand the value of cultural literacy on social cohesion and inclusion, how we could exploit its benefits through arts in education and what are the best practices/ policies to further integrate it in school and out of school activities. Education and education policies are a key to increasing resilience and cohesion in Europe, however, cultural literacy in education differs among the European countries, while the current policies in Europe commonly have a narrow and normative notion on how to implement this in practice.

Research proposals should first analyse the role of arts in the different stages of education (primary, secondary and/or higher education), including in non-formal education (especially in cases when non-formal education methods are integrated in formal education curricula) as well as how arts education can enhance/promote cultural literacy, aiming to develop prosperous, inclusive, and sustainable societies.

The research under this topic should examine the value/impact of cultural literacy on social cohesion and cultural diversity, and analyse how it can assist on the inclusion of disadvantaged groups and minorities into the cultural and social life. This analysis should include an indicative/representative examination of educational systems where cultural literacy education is well integrated as well as systems where it is less integrated or even absent (vis a vis indicators on multicultural competence).

The research proposals should examine the implementation/development of cultural literacy in Europe in the different stages of education including in non-formal education (taking also into consideration digital experiences) and identify the main barriers and needs for the integration of cultural literacy in education policies. Using the results of previous funded projects under H2020, the proposals should also analyse existing proposed solutions for the inclusion of cultural literacy in formal and informal forms of education and provide recommendations for effective actions for increased access of children and young people on cultural literacy. Proposals should take into consideration digital solutions, such as the interactive digital arts and ludic literacy. Proposals should include a lifelong learning perspective (early childhood education and care, school, vocational education and training and higher education, non-formal learning), and include national, regional and local support for partnerships (for example between schools and arts and cultural heritage organisations), while may consider the role of CCIs.

Europe needs policies and practices that seek to advance social cohesion and inclusion in a way that reflects the increasingly diverse reality of today's Europe, supports respect for diversity and difference, and enables the growth of young people's identities. Therefore, the proposals under this topic should develop innovative policy solutions/recommendations to increase cultural literacy to positively affect society and provide ways that those solutions could be integrated into the education policies in Europe. The proposals should also propose

methods that will help countries better assessing the impacts of cultural literacy on the inclusion of all children and young people.

The participation of countries with diverse educational policies is encouraged.

HORIZON-CL2-2023-HERITAGE-01-08: Cultural and creative approaches for gender-responsive STEAM education

Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 2.00 and 3.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 3.00 million.
Type of Action	Coordination and Support Actions
Procedure	The procedure is described in General Annex F. The following exceptions apply: The granting authority can fund a maximum of one project.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [56].

Expected Outcome: Projects should contribute to all of the following expected outcomes:

- A coordination network between organisations from the cultural and creative industries (CCIs), civil society, technological enterprises, secondary and higher education institutions and digital citizen platforms to foster the uptake of artistic, cultural and social science approaches in STEM education, research and innovation.

- Increased understanding about the benefits of integrating artistic, cultural and social science approaches in STEM education, research and innovation and its impact on competitiveness, gender equality and career perspectives.

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[56]   This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

- Pilot for the first European Union "STE(A)M week for future women innovators" together with science and technology museums, technological enterprises, secondary and higher education institutions, CCIs and relevant civil society organisations, engaging at least 4000 students in STEM educational activities through cultural and creative approaches.

- STEAM skills development and increased interest in new technologies, including those applied to cultural value chains and cultural heritage, to bridge the gender gap.

Scope: Women have long played an important, but often unacknowledged role in science, technology, engineering, and mathematics (STEM), and while the demand for STEM-skills in the labour market is growing to meet the green and digital transitions, women risk losing out on these opportunities due to their underrepresentation in these fields[57]. Similarly, whilst women are overall well represented in many cultural professions, certain cultural and creative sectors which demand more digital and technological skills, such as the gaming and filming industry, still see a stark underrepresentation of women in these fields, as well as persisting gender stereotypes in the content that is produced.

In order to improve girls' participation and interest in these fields from an early age, a STEAM approach, featuring creative thinking, and a scientific evidence-based approach, applied arts (the "A" in STEAM), and the teaching of science in political, environmental, socio-cultural contexts, can prove particularly useful. By highlighting the social impact and market relevance of research and innovation, the interdisciplinary STEAM approach can strengthen the appeal of scientific and technological careers, and make new products, including from the CCIs, more gender sensitive.

The action should establish a coordination network between the CCIs, technological enterprises, SMEs, secondary and higher education institutions, and other relevant organisations, including digital citizen platforms to develop a better understanding of the potential benefits of cultural and artistic approaches in traditional STEM education, research and innovation. This includes examining the effects of such approaches on competitiveness, gender equality, and talent recruitment and retention in STEM-driven innovation, including in CCIs, where women are underrepresented. The network should provide mutual learning opportunities and develop evidence-based recommendations for policymakers and relevant organisations, wishing to adopt a STEAM approach. It should also offer decision-makers and persons in leadership positions training on the aspects that hinder the presence and promotion of women in STE(A)M, including stereotypes and double standards, gender-based violence (including sexual harassment), as well as successful strategies in preventing and overcoming these occurrences.

In addition, in line with the European Strategy for Universities and the Digital Education Action Plan 2021-2027, the coordination network should engage female students in learner-

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[57] According to She Figures 2021, women are still underrepresented as doctoral graduates in STEM fields, including physical sciences (38%), ICT (20.8%), engineering (27%), and mathematics (32.5%).

driven experiences in cultural and creative sectors, such as the gaming, filming and music industry, to strengthen their digital skills and broaden their interest in STEM-related skills.

The network should develop a pilot for an "EU STEAM week for future women innovators", together with science and technology museums, secondary and higher education institutions, relevant organisations from civil society, digital citizen platforms and the cultural and creative industries. Activities during this week should focus on exploring and learning about science history, STEAM-related skills, and new technologies, like artificial intelligence and virtual reality, through interdisciplinary and creative approaches. The week should engage at least 4000 students aged 11-18 across EU Member States and Associated Countries. Activities should be open to all genders and the participation of girls from minority, socially disadvantaged and rural backgrounds is particularly encouraged.

Proposals should develop strategies for reproducibility and sustainability of the activities towards new skills' learning pathways, including through the creation of networks for the participants and follow-up training courses (e.g. summer schools, mentoring, and intersectoral exchange programs).

Activities may build on outcomes of relevant projects, funded under earlier Framework Programmes (e.g. Equals-EU, shemakes.eu, HYPATIA and Scientix 4) [58], results funded under the call HORIZON-CL2-2021-HERITAGE-01-03 and HORIZON-CL2-2022-HERITAGE-01-09, as well as relevant results from Erasmus+ projects and Creative Europe.

Call - A European Collaborative Cloud for Cultural Heritage - 2023

HORIZON-CL2-2023-HERITAGE-ECCCH-01

Conditions for the Call

Indicative budget(s)[59]

Topics	Type of Action	Budgets (EUR million) 2023	Expected EU contribution per project	Indicative number of projects

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[58]   https://equals-eu.org/;
https://cordis.europa.eu/project/id/101000063;
https://cordis.europa.eu/project/id/665566 ;
https://cordis.europa.eu/project/id/101000063

[59]   The Director-General responsible for the call may decide to open the call up to one month prior to or after the envisaged date(s) of opening.
The Director-General responsible may delay the deadline(s) by up to two months.
All deadlines are at 17.00.00 Brussels local time.
The budget amounts are subject to the availability of the appropriations provided for in the general budget of the Union for years 2023 and 2024.

			(EUR million)[60]	expected to be funded
Opening: 10 Jan 2023				
Deadline(s): 21 Sep 2023				
HORIZON-CL2-2023-HERITAGE-ECCCH-01-01	IA	25.00	20.00 to 25.00	1
HORIZON-CL2-2023-HERITAGE-ECCCH-01-02	RIA	10.00	4.00 to 5.00	2
Overall indicative budget		35.00		

General conditions relating to this call	
Admissibility conditions	The conditions are described in General Annex A.
Eligibility conditions	The conditions are described in General Annex B.
Financial and operational capacity and exclusion	The criteria are described in General Annex C.
Award criteria	The criteria are described in General Annex D.
Documents	The documents are described in General Annex E.
Procedure	The procedure is described in General Annex F.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G.

Proposals are invited against the following topic(s):

HORIZON-CL2-2023-HERITAGE-ECCCH-01-01: A European Collaborative Cloud for Cultural Heritage

Specific conditions	

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[60]   Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 20.00 and 25.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 25.00 million.
Type of Action	Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used). The following additional eligibility criteria apply: Proposals must include an outline of previously funded projects in areas relevant to the European Collaborative Cloud for Cultural Heritage (ECCCH), at both European and national levels, as well as of other pertinent existing digital resources, and they must identify the outputs or resources that could be incorporated in, connected to, or facilitate interoperability with, the ECCCH. Proposals must outline a business plan for the sustainable operation of the structure and activities of the ECCCH after the end of the project.
Procedure	The procedure is described in General Annex F. The following exceptions apply: The granting authority can fund a maximum of one project.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [61]. The use of significant parts of the project budget to purchase or lease hardware equipment or commercial software is strongly discouraged.

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[61]   This decision is available on the Funding Wand Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

	Beneficiaries may provide financial support to third parties to cultural heritage institutions, in take-up of tools, technologies and for populating and validating the relevant use cases through experiments. A maximum of 10% of the budget should be dedicated to financial support to third parties. The maximum amount to be granted to each third party is EUR 60 000.
	Beneficiaries will be subject to these additional requirements on outputs:
	All software developed should be open source, licensed under a CC0 public domain dedication or under an open source licence as recommended by the Free Software Foundation[62] and the Open Source Initiative[63]. If the use of open source software components would require disproportional efforts or significantly diminish the quality or performance of the software, proprietary components may be used provided that: an open functional replacement is available; they do not introduce proprietary data formats or Application Programming Interfaces; a full user license free of charge for an unlimited period of time is granted to the consortium responsible for the ECCCH and all its users.

Expected Outcome: Projects should contribute to all of the following expected outcomes:

- The ECCCH is established as a legal entity, which serves as a Single Entry Point[64] (SEP) and managing body, and is supported by an external independent advisory board that assesses and advises on the technical robustness, effectiveness and usability of the ECCCH platform, its tools and services.

- The European Collaborative Cloud for Cultural Heritage (ECCCH) enhances the ability of cultural heritage actors to interact across disciplinary, institutional, sectorial and political boundaries and cooperate effectively in advancing research on cultural heritage and in developing innovative solutions for the discovery, recovery, conservation, digitalisation and valorisation of digital, digitised and digitisable cultural heritage objects[65]. This might also facilitate the prevention of illicit trafficking of cultural heritage objects[66].

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[62] https://www.gnu.org/licenses/license-list#SoftwareLicenses
[63] https://opensource.org/licenses
[64] See   further: https://ec.europa.eu/research/participants/data/ref/h2020/other/guides_for_applicants/h2020-im-ac-innotestbeds-18-20_en.pdf and https://www.lawinsider.com/dictionary/single-entry-point
[65] In the context of this topic, cultural heritage objects or artefacts should be understood as any form of cultural heritage that can be represented in a digital format: tangible, intangible, born digital, etc.
[66] In line with the European Commission action plan against trafficking in cultural goods: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13352-Trafficking-in-cultural-goods-EU-action-plan_en.

- Cultural heritage institutions, curators, conservators, researchers, art managers, educators, other cultural heritage professionals and potential users in Europe are aware of, have access to and use the ECCCH platform, its tools and services for the study, digitisation, conservation, valorisation and access to cultural heritage artefacts and related data, in particular for the sharing and preservation of such data, and are involved in its validation and assessment, in view of continuously improving the ECCCH's performance and use.

- Cultural heritage institutions, curators, conservators, researchers, art managers, educators and other cultural heritage professionals apply new working approaches to collaborate across geographic, cultural, and political borders within Europe (and beyond), develop new business models to manage and valorise intellectual property related to cultural heritage artefacts and their digital twins, and unleash the full potential of a digitally enabled cultural heritage ecosystem connecting cultural heritage actors, activities and objects.

- The governance and management of the ECCCH is widely accepted, trusted and supported by stakeholders at European, national, regional and local level, in particular by Member States, and its sustainability at legal, technical, financial, human resources and scientific level is ensured.

- Participants of past and ongoing EU-funded initiatives, activities and networks are invited to cooperate with the ECCCH-related actions and to contribute with data to the ECCCH and testing of ECCCH tools.

Scope: This topic aims at designing and establishing a European Collaborative Cloud for Cultural Heritage (ECCCH) and demonstrating its basic capacities.

The cultural heritage sector is in the middle of a digital transition: digital technologies are revolutionising existing workflows, procedures and practices. To support this transition and further enhance research and innovation collaboration and activities in the field, the action should extend and improve the availability of sophisticated digital instruments and provide a platform for data exchange and collaboration to the cultural heritage sector. It should fulfil the requirements of the practitioners in the field by being inclusive, collaborative, interactive, safe, fidelity- and equality-based, and providing open access.

The overall goal is to define, extend and accelerate the development of a platform for multidisciplinary and multi-sectoral collaboration on cultural heritage, focusing on users' requirements and ease of use, as well as underpinning an open digital ecosystem that provides the tools and services needed to enable and scale-up future research and innovation in the field.

The initial focus is on the design and implementation of the basic architecture and governance of the ECCCH. The design and implementation of the ECCCH should be driven by the needs of its users: The professionals with various disciplinary background working on cultural heritage and in related sectors. The governance body of the effort therefore should include a

wide representation from the European cultural heritage sector, research organisations, other related initiatives and from Member States and Associated Countries (see further below).

The project should:

- Provide services to both large and small museums and other cultural heritage institutions, thereby bridging the gap between national, regional and local cultural heritage institutions, both public and private.

- Establish a pan-European network of key stakeholders from cultural heritage institutions, including a robust scientific and professional community and be open to the cooperative efforts of a wide community of users.

- Supervise and steer the overall development strategy for the ECCCH. This includes the collaborative production, enrichment, structuring and dissemination of shared data to support community needs, while at the same time establish clear rules for access and participation and set up a framework for connecting existing communities and initiatives related to research and digital innovation in cultural heritage and cultural and creative industries.

- Provide a unified framework for long-term access and preservation of digital(ised) data, both public and private, based on a user-driven and scalable design as well as a general strategy for stimulating the use of innovative tools and services for the ECCCH.

- Propose a convincing consortium structure and outline a business plan ensuring viability during and after the implementation of the grant.

- Ensure continued maintenance of the ECCCH platform and the required storage, beyond the lifetime of the project and position the digital ecosystem as a key to connecting cultural heritage actors, activities and objects in synergy with the other related initiatives in the field.

- Enable semantic representation of multiple data types (various incarnations of 2D and 3D media, video, text), stored in federated repositories according to FAIR principles [67] and encoding data provenance. Previous and current ongoing related European initiatives should be properly taken into account. If appropriate, collaboration with the common European Data Space for Cultural Heritage (the Data Space) should be established.

- Allow for efficient web-based visualisation and analysis, and the creation of annotations over visual data.

Controlled use of data is an important goal. Thus, the ECCCH should support authentication (single user/groups of users), identification of ownership, data rights and traceability of modifications (creation of derived data), data quality/fidelity information, and data security

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[67] Findable, Accessible, Interoperable and Reusable

facilities. Technologies enabling access and use from geographic areas with low-performance network connections should be provided. The system should allow national communities/institutions to link and potentially configure their own local clouds in case this is necessary.

The project should build an inventory of previously funded EU and national initiatives and existing digital resources in areas relevant to the ECCCH, such as for instance EOSC, the Data Space, Europeana or Gaia-X, establish a comprehensive gap analysis and identify the outputs or resources that could be incorporated in, connected to or facilitate interoperability with the ECCCH, with a view to build on previous investments and already available initiatives.

The proposed open source platform should:

- Build on and expand existing standards and consolidated practices for managing the relevant data, including resources such as ontologies, vocabularies and terminologies. Where appropriate, this work should be conducted in collaboration with the Data Space;

- Be based on a modular, extensible and evolutionary model, that enables the incorporation of other instruments/tools developed by other subsequent consortia (thus providing libraries and Application Programming Interface (API) for designing tools, including HTML5- and WebGL-compliant Graphical User Interface (GUI) and data visualisation libraries);

- Provide instruments for assessing the quality of the data on the platform (and related attributes in the data model), and for monitoring the effectiveness/usage of the tools integrated into the ECCCH;

- Along with basic data management layers, the ECCCH should provide the necessary instruments for developing applications working on and integrating with the cloud. These instruments and related libraries should be properly documented by means of software development guidelines, allowing other consortia to design additional tools to extend the ECCCH.

Demonstrating successfully a selection of essential tools enabling collaborative research and innovation activities of users within the ECCCH that can also serve as good-practice examples for the development of additional professional tools needed for the sustainable functioning of the platform, e.g.:

- Integrating and accessing data, providing interactive and batch functionalities for data and metadata stored on the (federated) semantic repository, as well as sophisticated search and retrieval features, with web-based browsers specific for each data type, with compatible GUI;

- Data management, to structure, encode, store and analyse all knowledge needed to support curation activities (organisation of catalogues, bibliographies, conservation

history of specific artworks, loan and travel history, monitor fraudulent use of museum's digital assets, etc.).

All basic infrastructure components should be provided as open-source, with proper documentation and training material to enable other consortia to cooperatively contribute data and tools to the cloud platform, according to the principle of an extensible and evolutionary design of the cloud. The good practice proposed for software documentation should become a reference for other project consortia under topics promoted in future ECCCH calls.

The ECCCH governance should follow basic requirements. In concrete terms, it should be structured and defined around the following needs: data security, scalability, technical robustness, technical and economic sustainability, independent usability evaluation and long-term assessments, networking, training and community building. [68] To this end, the governance should include a legal entity with a Single Entry Point (SEP), as well as an independent external advisory board. The governance should be properly documented.

The governance body should include representative stakeholders of existing communities and cultural heritage institutions, potentially involving coordinators of other actions funded under the ECCCH calls and, where appropriate, relevant actions funded under the Digital Europe Programme, such as the Data Space. Furthermore, the governance body should ensure the engagement of appropriate representatives of a wide range of Member States and Associated Countries, as well as of related EU initiatives.

The governance body should:

- drive continuous evaluation processes (integration and interoperability aspects, verification of user interface consistency and usability, and evaluation of effectiveness). These evaluations need to be conducted independently of the funded consortium;

- connect technical consortia with the cultural heritage community at large, as well as with an inclusive community of professionals and researchers, through networking and training programs;

- capture community expectations and oversee user-based assessments of ECCCH resources;

- contribute to the future development agenda of the ECCCH and ensure economic, organisational and technical long-term sustainability.

- ensure sustainability after the implementation of the grant.

The proposal should set out active links and coordination with projects funded under the call HORIZON-CL2-2023-HERITAGE-ECCCH-01, and if appropriate also with relevant projects funded under the Digital Europe programme, to take part in common technical coordination

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[68] See European Commission, Directorate-General for Research and Innovation, Brunet, P., De Luca, L., Hyvönen, E., et al., Report on a European collaborative cloud for cultural heritage : ex – ante impact assessment, 2022, Executive summary, p. 5, https://data.europa.eu/doi/10.2777/64014

activities, and with a view to ensure synergies with current and previous activities in the field. It is expected to provide clear guidelines and technical support on how the deliverables developed by subsequent projects should be designed and implemented, with the goal of ensuring a proper integration in the ECCCH platform. Therefore, the proposal is expected to include a budget for the attendance to regular joint meetings and may consider to cover the costs of any other joint activities without the prerequisite to detail concrete joint activities at this stage. The Commission may take on the role of facilitator for networking and exchanges, including with additional relevant stakeholders, if appropriate.

The proposal should also set up and manage a common ECCCH website, where all projects funded under the ECCCH calls should be granted space. It is critical that any interested party from the EU or Associated Countries can access the ECCCH at fair conditions and pricing and with transparent and mutual obligations with regards to, for instance, security, safety and intellectual property rights. This should include the promotion of examples of collaborative work in representative application areas that relate to a large part of the cultural heritage sector.

Beneficiaries may provide financial support to third parties, in particular cultural heritage institutions with regional or local scope or mandate, in view of promoting the take-up of tools and methodologies as well as for demonstrating and validating the relevant use cases through experiments. The financial support to third parties can only be provided in the form of grants. A maximum of 10% of the budget is expected to be dedicated to financial support to third parties.

The Commission estimates that a project duration of approximately 5 years is appropriate for the project funded under this topic, in order to ensure that results from future ECCCH actions can be properly incorporated.

Please also refer to the Destination introduction text to consider some key characteristics of the vision for the ECCCH.

HORIZON-CL2-2023-HERITAGE-ECCCH-01-02: A European Collaborative Cloud for Cultural Heritage – Innovative tools for digitising cultural heritage objects

Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 4.00 and 5.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 10.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply:

	If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply:
	Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [69].
	Beneficiaries will be subject to these additional requirements on outputs:
	All software developed should be open source, licensed under a CC0 public domain dedication or under an open source licence as recommended by the Free Software Foundation[70] and the Open Source Initiative[71]. If the use of open source software components would require disproportional efforts or significantly diminish the quality or performance of the software, proprietary components may be used provided that: an open functional replacement is available; they do not introduce proprietary data formats or Application Programming Interfaces; a full user license free of charge for an unlimited period of time is granted to the consortium responsible for the ECCCH and all its users.

Expected Outcome: Projects should contribute to all of the following expected outcomes:

- Cultural heritage professionals in Europe, including curators, conservators and researchers of cultural heritage, use a common set of new innovative tools and methods for the digitisation and visualisation of cultural heritage objects (3D and enhanced 2D) with regard to their visible and non-visible properties and characteristics, which are accessible through and connected to the European Collaborative Cloud for Cultural Heritage (ECCCH).

- The European Collaborative Cloud for Cultural Heritage (ECCCH) provides cultural heritage institutions and professionals with enhanced technological and methodological

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[69] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf
[70] https://www.gnu.org/licenses/license-list#SoftwareLicenses
[71] https://opensource.org/licenses

capabilities to study cultural heritage objects, to share related data of their visible and non-visible properties and characteristics, and to develop new forms of collaboration.

Scope: This topic aims at designing and implementing innovative tools and methods for digitisation of (a) visible characteristics and (b) non-visible characteristics of cultural heritage objects, to be incorporated into the European Collaborative Cloud for Cultural Heritage (ECCCH).

As regards digitisation of visible characteristics of cultural heritage objects, technologies are now satisfying the needs for a considerable part of uses and objects. For instance, in the field of digital documentation of cultural heritage, three-dimensional acquisition and reconstruction methods have been developed in the past twenty years, using photogrammetry and laser scanning techniques to capture the characteristics of physical cultural heritage objects. Such methods already provide robust solutions for the digital reconstruction of the geometry and visual appearance of object surfaces. In addition to these methods, in the field of cultural heritage conservation various non-destructive testing (NDT) techniques have become important technical and scientific means of examination. Such techniques allow understanding the phenomena of deterioration and defining the restoration, conservation and documentation needs of cultural heritage objects.

Nevertheless, there are still major needs in cultural heritage that require further research and innovation on more advanced digitisation tools and methods:

- New AI-powered tools and methods that improve the digitisation process of tangible cultural heritage objects. The robustness and efficiency of the 3D digitisation process should be improved, especially in the case of massive digitisation (for example collections of objects). The accuracy and completeness of surface appearance acquisition should also be improved, as well as the mapping of complex reflectance data on digital surfaces. Furthermore, such solutions should yield new improved methods for post-processing and cleaning of the 3D models produced.

- Improved methods for acquiring and processing enhanced 2D representations (e.g. reflectance transformation imaging, multispectral, panoramic), and for better integrating 2D representations with 3D representations.

- Future 3D models need to encode other key attributes in addition to the usual geometric and reflectance data, such as local uncertainty information. New tools and methods are therefore needed to calculate and encode local accuracy limits with high precision in reconstructed 3D models. These tools should be capable of producing measurement-based limits of the similarity between the digital model and the physical object at any surface point, as well as algorithmically estimated accuracy boundaries.

- To model a complex assembly is a costly effort, and today often requires dismounting the assembly - which is often not possible. Specific digitisation solutions should be developed that are capable of mixing various digitisation approaches (e.g. scanning and

computer tomography scans) in order to capture dynamic or hidden characteristics of complex assemblies without dismounting them.[72]

As regards the study of non-visible characteristics of complex objects, nowadays different techniques are used, e.g. multispectral imaging, X-rays, infrared reflectance, terahertz imaging, etc. Proposals should focus on innovations at the data acquisition level, with a view to improve the quality and usability of the data generated. An important aspect is the robustness, reliability as well as the ease of use of any tool and method for analysing the visible characteristics and non-visible materials properties of cultural heritage objects under real world conditions. In addition, several recent experimental approaches have shown that multimodal analysis techniques should include a temporal dimension, observing the evolution of features and phenomena over time.

These challenges highlight the need for flexible, transferable, and simple solutions for documenting multimodal analyses. These solutions should include the integration of data acquisitions from different technologies into complex data structures that provide new analysis opportunities for conservation scientists, conservators and curators. This requires the introduction of new visualisation tools that act as virtual environments for scientific exploration, allowing scientists and curators to explore the full material complexity of cultural heritage objects beyond what is visible.

Large datasets are often generated (e.g., many dozens of images in the case of hyperspectral imaging). To address this, new AI solutions should be developed to generate categorised or pre-analysed data, enabling the selection and/or identification of specific elements, images or regions of interest that exhibit important differences for subsequent analysis and validation by the human expert.

The tools and methods introduced should focus on geometric and projective consistency of heterogeneous data from different technologies, with respect to different scales of observation and analysis, over a wide spectral range, to produce an integrated digital representation. Spatially localised characterisation of individual material layers is one of the goals, including coupling multi- or hyperspectral analyses with physicochemical characterisation of materials. New methods for access, exploration, and temporal monitoring of acquired data should be developed, including their interactive visualisation and classification.

The proposed software tools and methods to be developed should go beyond the lab prototype status, should be practical and possible to deploy easily in un-controlled environments (e.g. digitise in a museum room), and should ensure low cost and flexibility of use. The component for data integration into the ECCCH may extend the features of the basic tool developed by the project funded under topic HORIZON-CL2-2023-HERITAGE-ECCCH-01-01, with the goal of streamlining the upload of metadata/paradata and of raw sampled data.

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[72] Concerning digitisation tools and methods mentioned, see European Commission, Directorate-General for Research and Innovation, Brunet, P., De Luca, L., Hyvönen, E., et al., Report on a European collaborative cloud for cultural heritage : ex – ante impact assessment, 2022, pp. 38-42 and 61-62, https://data.europa.eu/doi/10.2777/64014

The proposals should demonstrate the potential of the developed tools and methods through representative case studies, conducted in collaboration with relevant stakeholders. These case studies should cover a significant share of the range of cultural heritage objects, materials and conservation/restoration issues. The results of these case studies should produce emblematic data that can serve as models for promoting the re-use of the tool(s) and methods in other contexts and by other users within the ECCCH.

The proposed tool(s) to be developed should be implemented adopting the low-level libraries established by the project funded under topic HORIZON-CL2-2023-HERITAGE-ECCCH-01-01. The tool(s) developed should be compliant with the design of the ECCCH, and should be integrated with the ECCCH before the end of the project, together with proper documentation. All software and other related deliverables should be compliant with the data model and the software development guidelines elaborated by the project funded under topic 'HORIZON-CL2-2023-HERITAGE-ECCCH-01-01'. If appropriate these tools should be developed with a view to a wider deployment, including in the Data Space.

The proposals should furthermore make provisions to actively participate in the common activities of ECCCH initiative. In particular, the proposals should coordinate technical work with other selected projects and contribute to the activities of the project funded under the topic HORIZON-CL2-2023-HERITAGE-ECCCH-01-01.

The proposals should set up its project website under the common ECCCH website, managed by the project funded under topic HORIZON-CL2-2023-HERITAGE-ECCCH-01-01. The proposal is further expected to include a budget for the attendance to regular joint coordination meetings and may consider covering the costs of any other joint activities without the prerequisite to detail concrete joint activities at this stage.

Please also refer to the Destination introduction text to consider some key characteristics of the vision for the ECCCH.

Call - Research and innovation on cultural heritage and CCIs - 2024

HORIZON-CL2-2024-HERITAGE-01

Conditions for the Call

Indicative budget(s)[73]

Topics	Type of	Budgets (EUR	Expected EU contribution per	Indicative number

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[73] The Director-General responsible for the call may decide to open the call up to one month prior to or after the envisaged date(s) of opening.
The Director-General responsible may delay the deadline(s) by up to two months.
All deadlines are at 17.00.00 Brussels local time.
The budget amounts are subject to the availability of the appropriations provided for in the general budget of the Union for years 2023 and 2024.

	Action	million) 2024	project (EUR million)[74]	of projects expected to be funded
Opening: 04 Oct 2023 Deadline(s): 07 Feb 2024				
HORIZON-CL2-2024-HERITAGE-01-01	IA	16.00	3.00 to 5.00	3
HORIZON-CL2-2024-HERITAGE-01-02	IA	13.00	3.00 to 4.00	3
HORIZON-CL2-2024-HERITAGE-01-03	IA	13.00	3.00 to 4.00	3
HORIZON-CL2-2024-HERITAGE-01-04	IA	13.00	3.00 to 4.00	3
HORIZON-CL2-2024-HERITAGE-01-05	RIA	10.00	2.00 to 3.00	3
Overall indicative budget		65.00		

General conditions relating to this call	
Admissibility conditions	The conditions are described in General Annex A.
Eligibility conditions	The conditions are described in General Annex B.
Financial and operational capacity and exclusion	The criteria are described in General Annex C.
Award criteria	The criteria are described in General Annex D.
Documents	The documents are described in General Annex E.
Procedure	The procedure is described in General Annex F.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G.

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[74] Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

GREEN

Proposals are invited against the following topic(s):

HORIZON-CL2-2024-HERITAGE-01-01: New European Bauhaus – Innovative solutions for greener and fairer ways of life through arts and culture, architecture and design for all

Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 3.00 and 5.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 16.00 million.
Type of Action	Innovation Actions
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply:
	Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [75].

Expected Outcome: Projects should contribute to all of the following expected outcomes:

- Innovative solutions, validated in pilot trials, demonstrating how strategic investments in the spirit of the New European Bauhaus initiative[76] in cultural heritage (which may include cultural landscapes) and the CCIs can be successfully realised.

- Increase the understanding and visibility of the role that cultural-led innovation integrating the New European Bauhaus approach can play.

- Wider involvement and social inclusion of citizens in the preservation and enhancement of cultural heritage through engagement with local ecosystems.

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[75]   This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

[76]   For further information on the initiative, please refer to the Commission Communication on the New European Bauhaus (COM(2021) 573 final) as well as its official website (https://europa.eu/new-european-bauhaus/index_en).

Scope: The New European Bauhaus, as closely connected to cultural heritage and culture, brings a cultural and creative dimension to the European Green Deal. The September 2021 Communication on the New European Bauhaus[77], recognises that artists and cultural and creative professionals are essential actors when it comes to reflecting and conveying values, to transmitting new and symbolic meanings, and to ensuring sustainability and enabling societal transformation.

Proposals should test, demonstrate and refine innovative solutions to achieve strategic investments in cultural heritage and the CCIs in the spirit of the New European Bauhaus initiative and search for links with the ESFRI Research Infrastructures in the Social and Cultural Innovation.[78]. They are expected to bring together researchers, practitioners, managers and entrepreneurs from different cultural and creative industries (e.g. design, fashion, crafts, arts and heritage professionals at large) as well as to engage with the on-the-ground communities. At least 5 small scale-trials under real world conditions should be carried out in a minimum of 3 different Member States/Associated Countries.

Proposals should tackle at least one of the thematic axes of the New European Bauhaus. They should include an ambitious and credible executive plan that:

- Identifies and analyses the challenges and resources of the targeted spaces in terms of the three core values of the New European Bauhaus.

- Proposes a set of strategies and methodologies to address the challenges identified, considering the wide variety of actors involved.

- Foresees the development and implementation of an ambitious, quality co-design process, based on citizens' and stakeholders' participation, inter-disciplinary, and multi-level collaboration.

They should highlight the social value of cultural heritage and cultural diversity. The proposed solutions should consider:

- Use of renewable materials (e.g. nature-based materials produced sustainably) with a circular economy mind-set

- Role of arts, design and quality architecture, in line with quality principles[79] to leverage the full potential of cultural heritage and cultural landscapes

- Synergies between crafts and new industrial techniques that can also help revitalising traditional skills

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[77] COM/2021/573 final "New European Bauhaus Beautiful, Sustainable, Together" https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52021DC0573&from=EN

[78] COM (2020)628 final "A new ERA for Research and Innovation" https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0628&from=EN.

[79] As framed in the ICOMOS revised publication on "Quality principles for EU funded interventions having a potential impact on cultural heritage" See also OMC report Towards a shared culture of architecture - Publications Office of the EU (europa.eu) and Council conclusions on culture, high-quality architecture and built environment as key elements of the New European Bauhaus initiative.

- Regeneration, life extension (i.e. smart monitoring, conservation and restoration), re-use and transformation of cultural heritage buildings and landscapes[80], while ensuring attentive cultural interpretation of the original buildings and respecting their cultural contents and contexts.

The proposed solutions should be replicable[81] under different cultural, political and societal conditions across Europe. Results should be appropriately documented to serve as guidance for actors in other territories and contexts. Proposals should build on existing knowledge, activities, networks and platforms, notably the ones so far funded by the European Union or under the New European Bauhaus initiative.

Proposals are expected to contribute to the New European Bauhaus initiative by interacting with the New European Bauhaus Community, NEBLab and other relevant actions of the initiative[82] through sharing information, best practice, and, where relevant, results.

To ensure a balanced portfolio covering demonstration activities in diverse geographical areas of the European Union and Associated Countries, grants will be awarded first to the highest ranked application according to the standard procedure described in Horizon Europe General Annexes D and F, followed by other applications that are the highest ranked among those that ensure the most complementary geographical coverage, provided that the applications attain all thresholds. When assessing geographical coverage, the evaluation will take into account the location of the application's demonstration activities, not the location of the application's participants/beneficiaries.

In the context of this topic, geographical areas of the European Union and Associated Countries are NUTS level 1 regions of European Union Member States and of Associated Countries for which they are defined. In the case of Associated Countries without NUTS classification, the country as a whole is to be considered as one geographical area:

• List of Associated Countries not defined by NUTS level 1: Armenia; Bosnia and Herzegovina; Faroe Islands; Georgia; Kosovo*; Israel; Moldova; Tunisia; Ukraine.

• List of countries not defined by NUTS level 1 with which association negotiations are being processed or where association is imminent: Morocco.

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[80] For further info, see the UNESCO Recommendation on the Historic Urban Landscape.

[81] Results generated during the project implementation (for example, know-how, innovative solutions, new business models, policy recommendations, guidelines, prototypes, demonstrators, databases and datasets, new infrastructures, networks) should be directly usable for implementation after the project ends. Results should be appropriately documented to serve as guidance for actors in other territories outside the project interested in applying or adapting the solutions to their specific context.

[82] See NEB website at https://europa.eu/new-european-bauhaus/index_en
* This designation is without prejudice to positions on status, and is in line with UNSC 1244 and the ICJ Opinion on the Kosovo declaration of independence.

HORIZON-CL2-2024-HERITAGE-01-02: Cultural and creative industries for a sustainable climate transition

Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 3.00 and 4.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 13.00 million.
Type of Action	Innovation Actions
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [83].

Expected Outcome: Projects should contribute to all of the following expected outcomes:

- Refined and validated approach(es) for Europe's cultural and creative industries (CCIs)[84] to become true drivers of a sustainable climate transition.

- Significant contributions to help European CCIs become better prepared to adapt to and contribute to the climate transition in line with the 2030 goals spelled out under a European Green Deal[85].

Scope: The cultural and creative industries (CCIs) are an important source of growth and job creation in the European economy. Moreover, the CCIs play a key role in shaping culture, values and perceptions across the European Union and beyond. Thus, the role of the CCIs in achieving the European Union's climate transition objectives is crucial.

At the same time, the CCIs are characterised by a large and diverse number of chiefly small and micro enterprises, as well as by hefty differences across geographical and sectorial

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[83] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

[84] CCIs as defined in the European Parliament Resolution 'A coherent EU policy for cultural and creative industries': https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016IP0486&from=EN

[85] https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

divides. Large parts of the CCIs, thus, lack the capacity to take the necessary measures to adapt to and thrive under the climate transition, not to speak of driving this transition.

Specific approaches are therefore needed to enable Europe's CCIs to develop their full potential to support a sustainable climate transition.

Such approaches need to address the adoption of new sustainable business models, including the use of new technologies, production methods and possibly the development or adaption of new technological solutions, as well as gaps in skills and capacities. They should be valid across different Member States/Associated Countries, and address the needs of small, micro as well as larger companies. Such approaches may involve the use of platforms or networks to facilitate sharing investments, facilities or competencies among several companies or across sectors.

Proposals should provide for testing and refining such model(s) through small scale pilot trials under real world conditions. These pilot trials should verify the economic, social and environmental sustainability of the action(s), as well as the efficacy.

Proposals should choose a suitable set of CCI sector(s), or/and cross-sectoral issues, to focus on, which allow significant impacts to be achieved. Results should be valid at a European level, therefore the pilot trials need to involve at least five Member States/Associated Countries, as well as CCI companies of different size and origin, according to the focus chosen by the proposal.

A wide set of stakeholders should be involved, in order to ensure that pilots are developed in an effective and realistic way, so that conclusions can readily be taken up and solutions scaled up effectively.

Proposals should build on existing knowledge, activities, networks and platforms, notably the ones funded by the European Union. Furthermore, links should be established and synergies sought with closely related actions, such as relevant R&I actions funded by Horizon Europe or Horizon 2020. In particular, proposals should establish links to, and where appropriate build on findings from, projects funded under the topic 'Cultural and creative industries for a sustainable climate transition' of the Horizon Europe Cluster 2 2023 calls.

DIGITAL

HORIZON-CL2-2024-HERITAGE-01-03: Leverage the digital transition for competitive European cultural and creative industries

Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 3.00 and 4.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

Indicative budget	The total indicative budget for the topic is EUR 13.00 million.
Type of Action	Innovation Actions
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [86].

Expected Outcome: Projects should contribute to all of the following expected outcomes:

- Validated and refined measures to increase the use of innovative digital technologies by Europe's cultural and creative industries (CCIs) [87], with a view to increased competitiveness and sustainability[88].

- Significant contributions to strengthen the ability of European CCIs to contribute to a human-centred digital transition.

Scope: The cultural and creative industries (CCIs) are an important source of growth and job creation in the European economy. Moreover, the CCIs play a key role in shaping culture, values and perceptions across the European Union and beyond.

At the same time, the CCIs are characterised by a large and diverse number of chiefly small and micro enterprises, as well as by hefty differences across geographical and sectorial divides.

The ongoing digital transition brings great opportunities for the CCIs, but also serious threats. The measures taken during the Covid-19 pandemic to reduce contagion forced much human interaction into the digital realm, to a degree illustrating possible consequences of the digital transition. Large parts of the European CCIs were devastated[89].

To take full advantage of the many opportunities offered by the digital transition, and avoid the pitfalls, require capacities and competencies that many of Europe's CCIs currently lack.

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[86] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

[87] CCIs as defined in the European Parliament Resolution 'A coherent EU policy for cultural and creative industries': https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016IP0486&from=EN

[88] 'Sustainability' should in the context of this topic be interpreted as comprising several dimensions: Economic, environmental, cultural and social.

[89] See for example the report 'Rebuilding Europe – The cultural and creative economy before and after the COVID-19 crisis', published in January 2021 by GESAC and EY

Proposals should provide for devising effective and cost-efficient measures to support CCIs to embrace and make full use of digital technologies for competitiveness and sustainability.

Proposals should choose a suitable set of CCI sector(s), or/and cross-sectoral issues, to focus on, which allow significant impacts to be achieved. A wide array of digital technologies should be considered, which are deemed crucial to the CCI sector(s) or/and issues chosen. Analytical technologies such as "big data" or "artificial intelligence" could be used for instance to better understand users' behaviours, to better plan activities or/and to engage deeper with customers. Visualisation and multi-sensorial technologies such as "virtual reality", "augmented reality" or "extended reality" could be employed to create more attractive products and services.

The proposed support measures should be effective and efficient across different Member States/Associated Countries, and address the needs of small, micro as well as larger companies. Such measures may involve the use of platforms or networks to facilitate sharing investments, facilities or competencies among several companies or across sectors.

Funded proposals should set up at least four small scale pilot trials under real world conditions to test and refine the proposed support measures. To ensure validity of the results across different national contexts and company sizes, the pilot trials need to involve at least four different Member States/Associated Countries, as well as CCI companies of different size. A wide set of stakeholders should be involved, in accordance with the focus chosen, with a view to ensure that pilot trials are developed in an effective and realistic manner and that results can readily be taken up by relevant policymakers or/and other decision-makers.

Proposals should build on existing knowledge, activities, networks and platforms, notably the ones funded by the European Union. Furthermore, links should be established and synergies sought with closely related actions, such as relevant R&I actions funded by Horizon Europe or Horizon 2020. In particular, proposals should, if appropriate, seek collaboration with projects funded under the "European Cloud for Cultural Heritage" call in the frame of Horizon Europe Cluster 2.

INNOVATIVE

HORIZON-CL2-2024-HERITAGE-01-04: Europe's cultural heritage and arts – promoting our values at home and abroad

Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 3.00 and 4.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 13.00 million.

Type of Action	Innovation Actions
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). [90].

Expected Outcome: Projects should contribute to all of the following expected outcomes:

- Further increase the visibility of and access to European arts and culture internationally.

- Develop and test pilot solutions based on a model that will allow cooperation between local, national and European level and establish strategic alliances between art and cultural sectors and with other sectors.

- Assess the effectiveness of good practices, programmes and policies that promote the EU priorities, culture and fundamental values abroad.

- Strengthen the CCIs presence worldwide by promoting the European arts internationally.

Scope: The European Union should endeavour to use its cultural and creative assets to better assert its influence around the world. The arts can play an important role on building the contemporary image of the EU by increasing the visibility of the European identity, cultural heritage and the promotion of its values. In addition to the cultural benefits, the increased visibility of European arts and culture abroad can foster a sustainable and inclusive local, regional and national development and growth, including the growth of the cultural and creative industries (CCIs), while influence countries outside the EU on important societal issues, such as the protection of the environment, peace and security, migration, gender equality, justice, or freedom of expression.

However, when it comes to the presentation of the European traditional arts and culture abroad there is still lack of cooperation between national and European level. Even though there is a lot of funded research on the benefits of the European arts and culture and the ways to increase their visibility, the EU does not yet have an aligned vision and approach on how to promote the European values and identities through arts and meet common goals on behalf of the EU.

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[90] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

The objective of this innovation proposal is to test existing practices and policies that enable arts and culture to promote European values and identities outside Europe, allowing people to experience European arts, culture and traditions both in their original environments and settings and by visiting the rich European cultural landscapes. It also aims to identify potential existing barriers and propose a mixed model for cooperation that will take into account participation at the local, national and regional level and the coordination of different sectors and stakeholders. In this analysis, the presence of the cultural and creative industries (CCIs) should be considered.

Building on existing evidence, including from projects funded under topic HORIZON-CL2-2022-HERITAGE-01-02, proposals should identify creative practices, policies and programmes that aim to increase the attractiveness of the European arts (including digital arts) and culture abroad. They should collect good innovative practices developed at the EU and national level and develop small-scale pilots that will test their efficiency. Proposals should identify and analyse the barriers, shortcomings and needs of the existing policies and practicities and propose policy recommendations for improvements.

In this context, the proposals should also analyse the extent to which the existing practices and policies encourage coordination among countries as well as coordination among bodies at regional and local levels as well as the role and support of the EU on the cooperation and harmonisation of the Member States' actions, as regards the of European arts' promotion abroad.

The proposals may also look after the potential impacts of new regulations on the arts sector, including the copyright Directive that was adopted in March of 2019, and evaluate their effectiveness as regards their international access to European works of arts and performing arts.

The proposals should propose pilot policy solutions based on a mixed model that will allow cooperation at local, national and European level, better cooperation of the art sectors and the CCIs, while establish strategic alliances with other sectors.

The proposed mixed model should be developed and tested in wide and diversified partnerships of stakeholders. The proposals should develop policy recommendations for integrating this innovative mixed model into the arts policies.

HORIZON-CL2-2024-HERITAGE-01-05: Strategies to strengthen the European linguistic capital in a globalised world

Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 2.00 and 3.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

Indicative budget	The total indicative budget for the topic is EUR 10.00 million.
Type of Action	Research and Innovation Actions

Expected Outcome: Projects should contribute to all of the following expected outcomes:

- Strategies for protection of the European linguistic capital at the era of the digital shift in economy, education and communication, which will include socially sustainable and economically affordable implementation measures and processes in the short and medium term.

- A deeper understanding of the impact of digitalisation/language related technologies on the European linguistic capital, especially on the endangered languages and identity preservation of EU citizens.

- Enhanced cooperation at the European level between experts on the subject and other relevant stakeholders including educational institutions.

- Recommendations to inform multilingual policies on further measures to promote the learning and daily use of more than one language, while encouraging European youth to value and possibly undertake humanistic studies in particular in their native languages.

Scope: European languages are vehicles of our identity, behaviour and cultural perception. Communicating in their native languages, EU citizens connect with their cultural heritage, build their collective and individual identity and better understand the contribution of their national or regional culture to the European culture as a whole. However, in the globalisation era, some languages are dominating, leading gradually to a 'language oligopoly'.

More than ever, so-called 'international languages' threaten less-spoken languages. The European language capital is at risk of impoverishment. The domination of digital technologies leads to changes in the way people exchange i.e. by disregarding languages' rules (syntax, semantics and orthography) and underestimating humanistic education. Protecting Europe's linguistic capital is essential to avoid cultural dilution, to strengthen European identity, culture and creativity and to promote mutual understanding and social inclusion, which serve social, economic and political stability in Europe.

Therefore, research should address tensions between globalisation and the preservation of European identities as expressed by languages, paying attention to policies and practices regarding the use of national and 'international' languages and their place in each country's cultural, scientific, academic, social, political and economic life. It should develop evidence-based strategies and policy recommendations to help policymakers and stakeholders protect endangered European languages in the context of the massive socio-cultural and economic changes of the present era. Proposals should inform EU multilingualism policy and provide national education (and other) policies with guidance to better link EU citizens with each other as well as with their own language and literature tradition, which are the main repository of the European culture and history. In times when democracy faces cumulative threats, it is

particularly important that proposals advise on ways where all languages spoken in Europe can harmoniously coexist and benefit from equal treatment, including the use of language digital technologies. Links can also be made to the projects developed under the topic HORIZON-CL2-2024-DEMOCRACY-01-10: Political participation in multilingual spaces.

Proposals should develop recommendations that empower citizens to utilise their own language at national, regional and EU level. These recommendations should aim at combating marginalisation of disadvantaged linguistic communities. In pursuing these recommendations, proposals could identify weaknesses of the multilingual policies in the EU (explicit and implicit) and share best practices from other multilingual countries across the globe. In their design, proposals are encouraged to involve young people from the very beginning with a view to grasping their views and perceptions as regards to multilingualism in the EU as well as the most suitable ways to protect their native languages.