



EUROPEAN COMMISSION
DIRECTORATE-GENERAL
REGIONAL AND URBAN POLICY

**PILOT ACTION ON INTERREGIONAL INNOVATION
CALL FOR EXPRESSION OF INTEREST FOR
COVID-19 RESPONSE AND RECOVERY PARTNERSHIPS**

Annex 1: Application Form

Call for Expression of Interest for COVID-19 Response and Recovery Interregional Innovation Partnerships

Please complete this form electronically and send it to:

REGIO-SMART-GROWTH@ec.europa.eu

1. Information about the Applicant			
1.1.	Name of the lead body	Time Machine Organization	
1.2	Contact Person for this application	Name, Last Name	Sander Münster
		Job title	Secretary / Head of Business Development of the Time Machine Organisation; J.Professor for Digital Humanities
		Phone (e.g. +32-00000000)	+49 3641944770
		Email	Sander.muenster@timemachine.eu
1.3	Thematic area of cooperation	Tourism	
1.4	Leading Region, partner Regions and number of total EU countries represented	Leading Region: Thuringia/Germany, Partner Regions: Lower Austria, Cyprus, Paris/France, Amsterdam City/The Netherlands, Galicia/Spain, Total Number of EU Countries: 6	
1.5	Representatives of the quadruple helix within the partnership (name, country)	<p>The proposed partnership is coordinated by European Time Machine Organisation and driven by 7 regions as first phase pilots:</p> <p>Thuringia/Germany Academia/research centres: Friedrich Schiller University Jena Industry sector: Tourismusnetzwerk Thüringen Governments/public institutions: Digital Agency Thuringia (S3 Authority) End-users' representatives from different countries: Thüringische Universitäts- und Landesbibliothek</p> <p>Lower Austria/Austria Academia/research centres: ICARUS- International Centre for Archival Research; Computer Vision Lab of the Technical University Vienna; READ/Transkribus Industry sector: ARCANUM ltd. Governments/public institutions: Amt der NÖ Landesregierung (Abteilung Kunst und Kultur; Landessammlungen Niederösterreich) End-users' representatives from different countries: Lower Austrian Provincial Archives and Library</p> <p>Greater Amsterdam/The Netherlands Academia/research centres:</p>	

University of Amsterdam; Humanities Cluster
Royal Netherlands Academy of Arts and
Sciences; Centrum Wiskunde en Informatica;
VU University Amsterdam
Industry sector:
Brill Publishers; Picturae; Studio Louter;
Grobbeel & Dreis; Islands of Meaning;
Webmapper
Governments/public institutions:
City of Amsterdam; Amsterdam City Archives;
AdamNet; Amsterdam Museum; Rijksmuseum;
Netherlands Institute for Sound and Vision; Eye
Film Institute
End-users' representatives from different countries:
Amsterdam Tourist Office

Galicia/Spain - North Portugal

Academia/research centres:
Conference of Rectors of the Universities of the European South West
(RedCRUSOE; <https://redcrusoe.com>)
Galician Supercomputing Center (www.cesga.es)
Industry sector:
Xercode Media Software S.L. (a galician SME, www.xercode.es);
Governments/public institutions:
Santiago de Compostela City Council (www.santiagodecompostela.org);
End-users' representatives from different countries: Galician ICT Cluster
(www.clusterticalicia.com)

Cyprus

Academia/research centres: Cyprus University of Technology/Digital Heritage
Research Lab
Industry sector: CY Chamber of Commerce and Industry <https://ccci.org.cy/>
Governments/public institutions: CY Deputy Ministry of Tourism:
http://www.tourism.gov.cy/tourism/tourism.nsf/home_en/home_en?openform
End-users' representatives: The Kyperounda Village – Council
<https://www.agrotourism.com.cy/discover-kyperounda,103,en>

Paris/France

Academia/research centres: USR 3255, MSH – Maison de l'archéologie et de
l'ethnologie (MAE, Maison René Ginouvès); UMR7041 Archéologies et
Sciences de l'Antiquité Programme Archeo Fab – bassin Parisien; UMR 8589
LAMOP; LARHRA UMR 5180 (Université de Lyon/ENS Lyon/ Université de
Lyon2/Université Lyon 3); Laboratoire ACP (Analyse Comparée des
Pouvoirs), EA 3350, Université Paris-Est Marne la Vallée, Labex Futurs
Urbains, I-Site FUTURE; Plateforme géomatique de l'EHESS; Centre
d'Analyse et de Mathématique Sociales (CAMS – UMR
8557) de l'EHESS; École Nationale des Chartes; EA 1571 Centre de
recherches historiques : Histoire des Pouvoirs, Savoirs et Sociétés, Paris VIII
LATTICE; UMR 8094 (CNRS / ENS-PSL / U. Sorbonne
nouvelle / USPC), LaSTIG laboratory (IGN, University Gustave Eiffel,
Engineering school for the city of Paris)
Governments/public institutions: Bibliothèque de l'Hôtel de Ville; Atelier
Parisien d'Urbanisme (APUR); Département d'Histoire de l'Architecture et de
l'Archéologie de Paris (DHAAP); Inria-ALMAnaCH
End-users' representatives from different countries: Archives Départementales

		<p>de Paris, National Office Tourism, Musée d'archéologie nationale</p> <p>Saxony / Germany Academia/research centres: TU Dresden, HTW Dresden, FH Dresden, IFAIT Leipzig Industry sector: East Saxon Chamber of Commerce, Silicon Saxony Governments/public institutions: Saxon Ministry for Research (SMWK) End-users' representatives from different countries: Saxon State Archive, City Museum Dresden</p> <p>The activities will be extended to the network of another 18 extant Regional / Local Time Machines in a second phase starting after 12 months.</p> <ul style="list-style-type: none"> • Antwerp • Barcelona • Broumov • Budapest • Cologne • Dubrovnik • Ghent/Bruges • Innsbruck • Jerusalem • Limburg • Luxembourg • Naples • Nuremberg • Regensburg • Utrecht • Valais-Wallis • Venice • Vienna
1.6	Is the partnership already a beneficiary of support from any of the three existing Thematic Smart Specialisation Platforms (if yes, please indicate the name of the partnership and the Thematic Area).	No
1.7	Is the partnership already a beneficiary of support from the European Union budget (if yes, please indicate the programme/instrument)?	<p>There is no direct financing of the networks by the European Commission.</p> <p>The Time Machine network & roadmap development was funded as CSA Project by the European Commission Horizon 2020 FET Flagship Programme, Duration of Project (1 March 2019-29 February 2020)</p>

2. Rational and linkage with regional Smart specialisation strategies

Please provide a clear and justified explanation why support to your research and business collaboration activities at interregional level can add value to Smart specialisation strategies in the chosen Thematic Area. Explain how the commercialisation and scaling up of the partnership's activities will contribute to the creation or reshaping of a EU value chain?

Sustainable and Digital Tourism is at the cross-roads of locally embedded cultural heritage and tourism with cutting-edge ICT driven technologies. Catalysing the latest technological achievements with urban, local and natural cultural assets and tourism patterns needs adaptive and sensitive business models for regions. Sustainable and digital tourism policies for European and regional innovation also need to face the impact of COVID-19 on tourism. The regions whose key S3 priorities and socio-economic activities linked to tourism industry are in need of responsive strategies to better align innovation activities and value chains..

This consortium focuses on the topic of **Virtual and Smart Cultural Tourism** and aims to reach expert support to implement effective solutions for bringing innovations to the market and better cope with bottleneck encountered by regions on digital and sustainable tourism. The proposed inter-regional innovation partnership partners with the Time Machine Organization (TMO) and builds on existing Local Time Machines (LTM). This set up is highly beneficial for the regions and promises timely and sustainable implementation of solutions.

Via TMO the regions can draw on the knowledge and expertise of:

- *A network of 23 local / regional hubs which are highly independent subsidiaries with individual specialisations*
- *A network of 650+ players as well as central support mechanisms and services for commercialisation, communication support, funding support*
- *competences in interregional cooperation & alignment support – provided by the LTM management hub (financed by the TMO)*

This collaboration brings together regions and their LTMs (quadruple helix model) which passed through maturity phases to exploit good ideas in the market and enable strong regional and EU value chains for sustainable and digital tourism. This partnership aims to leverage the gains of learn and connect phases of the regions and face main bottlenecks against sustainable value chains and successful market uptakes. A “smart cluster” model will be adopted for coordination among key actors. To this end, the funding will be used to have expert support in identifying and addressing the major financial, structural, legal and organizational obstacles and accelerating innovation investments in regions through interregional cooperation, best practice transfer and learning. Interregional activities will enable the following outcomes:

- identify joint solutions to **COVID-19**, the **commercialization**, **legal** and **finance** related bottlenecks of regions;
- develop specific **technological innovations** and **tools** for the creation of platforms that offer virtual, sustainable and smart experiences of local cultural heritage;
- create **synergy models** for core re-users, enablers and infomediaries which offer products and services that boost touristic demand based on cultural heritage;
- benefit **tourism industry** and **their end-users** through introduction of creative products and novel services;
- enable supportive **framework conditions** entailing access to finance, new business models, licensing frameworks, commercialization support for a stronger market entry
- create a vivid cross-border **virtual and smart cultural tourism ecosystem** sustained by strong and productive inter-regional linkages to cross-fertilize innovation and commercialization;
- Establish a **platform business model** for researchers, innovators, SMEs, industrial players, financial intermediaries, public bodies and citizens;
- enhance **economic sustainability** of regions and destinations through the virtual and smart cultural tourism model.

3. Partnership maturity

Please explain the existing mechanisms for partnership coordination and the track-record of the partnership. Please explain the extent to which learning, connecting and demonstration activities have already been carried out as well as their main outcomes.

This partnership is composed of 7 Regions and 8 LTMs located in each of them. The proposed actions will be coordinated by the TMO and will benefit from the achievements of its network of LTMs. Around 200 of 650 current TMO members are companies from various sectors as Creative and Cultural Industries (CCI), Tourism, Education, Planning, ICT. The proposed partnership will have direct access to this network. LTMs will be the key drivers of the partnerships actions given their accumulated research, innovation and deployable results in the partnering regions.

Starting in 2012, this network constantly accelerated from 2016 onwards. Currently this open LTM network is composed of 23 local/regional hub initiatives on digital cultural heritage (<https://www.timemachine.eu/timemachines/>) plus several LTMs under formation. Each LTM is anchored in the space of a city or region. They pass through different maturity phases, with each maturity phase enabling specific exploitation strategies. LTMs are operating projects targeting exploitation areas such as virtual cultural tourism, digital education and cultural / creative industries. Each LTM is acting as an independent (regional) multi-stakeholder activity with self-steered financing and management. It is centrally supported by the TMO with tools, services (e.g. communication, funding support, dissemination, commercialisation & transfer) and coordination & networking activities.

Learning and connecting phase of LTMs occurred through inter-regional cooperation and yield in establishment of Time Machine (TM) as a large-scale research initiative aiming to create the ‘big data of the past’: a distributed digital information system mapping the European social, cultural and geographical evolution across times. the European Commission supported TM by granting a CSA funding under H2020 FET Flagship (March 2019- February 2020). As a result of the project, TM developed a R&I and work plan was prepared which entails a full scale of exploitation avenues for creative output fostered by LTMs in the field of virtual and smart cultural tourism. These joint efforts of regional actors and LTMs resulted in the foundation of TMO in 2019 as an association under Austrian Law as the governance structure of TM.

This entire process led to a concrete R&I and business plan, a governance structure highly embedded to regional ecosystems and strong regional interconnectedness at European scale. As regional vectors of TMO, LTMs developed into structures which provide a fertile ground for agile take-up of innovations and exploitation of research results for virtual and smart cultural tourism industry. This process led to a level of maturity to fortify regional mechanisms to capitalize on the Pilot LTMs TRL 5 and 6 technology applications. TMO successfully initialized commercial and transfer related structures as the dma European Cooperative (dma-sce) network of 10 SME companies in order to support transfer and private-public partnership projects (www.dma-sce.de). TMO also operates the Project Scouting Service to support LTMs and involved regional stakeholders and projects in finding appropriate funding schemes on regional and European levels to build synergies in financing the project pipeline. It will help coordinate the preparation of high-quality funding applications for the LTMs and the proposed interregional cooperation within the partnership.

4. Identification of bottlenecks

Please explain which bottlenecks to commercialisation and scale-up have been identified and the possible solutions already identified by the partnership, where appropriate.

A set of challenges and mechanisms have been identified in the course of previous collaboration. These would act as reference point to have expert support to propose concrete actions by 2021:

Bottleneck 1 Creation – elaboration of ideas, contents and products: limited availability and usability of data for creative ideas, open and interoperable infrastructures for exploration of content

Solution 1: LTM driven “smart cluster” model will be used to define a set of priorities regarding users` needs and the regions most attractive points, targeted tourist profile to reshape virtual and smart cultural tourism. TMO and LTM output such as large quantities of multimodal data made available and used to support the exploration and retrieval of yet undiscovered patterns, connections and observations. For example, LTMs and digital heritage were/are proposed as key areas in the cultural capital 2025 applications of Dresden and Nuremberg. The participative digital historical city guide of Jena is proposed as platform to attract cultural tourists and Cyprus has successfully established cultural heritage as main research and tourism marketing area.

Bottleneck 2 Production/Publishing – the making of original, non-reproducible or reproducible work: lack of easily accesible resources, legal mechanisms, tailored business models

Solution 2: Production processes will be supported by easily searchable, high-quality resources, while smart metadata models will support the ability to integrate digital objects in different variations to tell different stories. Storytelling will be enhanced by using ground-breaking applications and new kinds of techniques. The reuse of data will be supported by clear copyright acquisition, licensing mechanisms, and new business models. These novelties will be applied to regions willing to remodel their tourism industry and creation of new narratives.

Bottleneck 3 Dissemination/Trade – dissemination of cultural products to make them available to consumers and distributors: barriers to enter the market and disseminate creative outputs

Solution 3: Supported by new business models, licensing frameworks, access to finance and high-quality resources, smart tourism industry players will have more bargaining power to enter the market. The TMO Project Scouting Service and the LTM management hub aim to facilitate interregional coordination and transfer of best practices. TMO and its subsidiaries provide and propose online platforms as Europeana, Wikipedia, Internet Archive to increase visibility of the regional activities and attract investment. Pilot technology-driven products and services will be launched in line with the S3 priorities and the smart cluster`s working pipelines. The pilot cases will be tested on targeted tourist profiles through the technology-driven products designed by the CCI.

Bottleneck 4 Transmission/exhibition/reception – provisioning access to creative products for consumption: lack of collective licensing frameworks and other security mechanisms

Solution 4: Most of the tourism industry today is moving through two main channels: large-scale tourist agencies mainly responsible for guided tours and aggregating platforms. These infomediaries must be involved to launch the technology-driven smart tourism products based on regional narratives. Collective licensing frameworks and other security mechanisms (e.g. smart contracts) will support smaller actors in the sector and provide sustainable revenue streams. Customer satisfaction will be measured for infomediaries, core re-users (creative industries), and tourists.

5. Potential synergies with other EU initiatives and projects

Please explain how other EU programmes and initiatives such as Horizon, INTERREG, EIT KICs, Joint Undertakings, European Innovation Partnerships and macro-regional strategies can be beneficial to your activities and how your potential involvement in these could be further exploited e.g. which projects you have already identified to establish synergies or what kind of results/deliverables can be helpful for your partnership?

The activities foreseen under this partnership will be aligned with and provide contribution to regional national, and European research and Innovation agendas and are expected to lead to multiple projects and networks in different European countries and cities.

The activities relate to the Horizon Europe (HE) Cluster 2 Culture, Creativity and Inclusive Society and Cluster 4 Digital, Industry and Space (HE Pillar II). LTMs will develop multimodal historical and geographic datasets that will give a new impetus for big data research, methods and application fields with a focus on technologies and business models for virtual and smart cultural tourism. Partnership will also contribute to the objective of Cluster 2 to support sustainable cultural tourism and cutting-edge technologies. The EIC will provide unique opportunities for take-up of innovations resulting from the partnership.

TMO already maintains to the infrastructures as Europeana, CLARIN.EU, DARIAH.EU, E-RIHS as well as ERIC initiatives as under formation. Cooperation with NGOs such as Wikimedia, Internet Archive or Family Search is well established. This partnership aims to collaborate with EIT Digital and build linkages planned Cultural and Creative Industries-KIC. It offers an opportunity to further enhance our commercial innovation and entrepreneurship efforts.

This partnership aims to collaborate with the below listed EU-funded projects to build on technological achievements for new application avenues in partnering regions and access tools and applications in support of virtual and smart tourism, cultural and creative industries.

- Scan4Reco: Multimodal Scanning of Cultural Heritage Assets for their multilayered digitization and preventive conservation via spatiotemporal 4D Reconstruction and 3D Printing
- ViMM: Virtual Multimodal Museum
- ARCHES: Accessible Resources for Cultural Heritage EcoSystems
- ITN-DCH: Initial Training Networks for Digital Cultural Heritage: Projecting our Past to the Future
- PLUGGY: Pluggable Social Platform for Heritage Awareness and Participation
- IPERION CH: Integrated Platform for the European Research Infrastructure ON Cultural Heritage
- CrossCult: Empowering reuse of digital cultural heritage in context-aware crosscuts of European history
- GIFT: Meaningful Personalization of Hybrid Virtual Museum Experiences Through Gifting and Appropriation
- EMOTIVE: Emotive Virtual cultural Experiences through personalized storytelling
- ITN-CHANGE: Cultural Heritage Analysis for New Generations

Partnership's activities are highly compatible with Smart Specialization Thematic Platform on Digitalisation and Safety for Tourism and the supporting network: NECSTouR, the network of European Regions for Sustainable and Competitive Tourism. The proposed activities will be coordinated with NECSTouR towards shared aims of building resilient innovation value chains, capturing value of SMEs' outputs for economic impact and catalysing cross-regional and inter-regional nodes for digitization and tourism innovation. Similarly, activities will be aligned with the currently forming S3 Partnership on Cultural and Creative Regional Ecosystems (CCRE-S3).

6. Please use this space to provide any other relevant comments/ clarifications, if necessary

Highlights of RIS3 and LTMs of Regions:

Thuringia

- **RIS3:** emphasis on emerging role of creative industries together with ICT and service sector.¹
- The **Jena Time Machine** is driven by FSU Jena² and focus on XR applications to support cultural tourism, involved in projects worth 1,5 Mio EUR.

Galicia

- **RIS3:** Modernization, sustainability and ICT for cultural tourism are high priority topics.³

¹ [Regional Research and Innovation Strategy for Smart Specialization for Thuringia](#), 2014

² Further participants: Jena city council, Room AG (SME), ThULB

³ [Smart Specialization Strategy in Galicia](#), 2014

- **The Santiago de Compostela Time Machine is under formation** and led by the Santiago City Council⁴, focus on the use of ICT technologies and their impact on heritage, citizens, tourism.

Lower Austria

- **RIS3:** Targeted tourism marketing is one of the key intervention areas.⁵
- The **Lower Austria Time Machine** is driven by the Lower Austrian provincial government and strives to build a sustainable infrastructure for cultural heritage data.

Amsterdam

- **RIS3:** ICT and Creative Industry are two of the top sectors identified. Smart solutions for sustainable tourism are a key part of the region's research agenda.⁶
- **The Amsterdam Time Machine** is coordinated by the University of Amsterdam, powered by a consortium of over 100 people from 30 institutions in academia, cultural heritage, industry, linked to infrastructures, including [CLARIAH](#)⁷ and Adamnet.⁸

Paris

- RIS3 strategy of the region focus on ICT and services for heritage tourism and aims to enhance cooperation between science and industry⁹
- The **Paris Time Machine** is funded annually by the Huma-Num Consortium, a research infrastructure (TGIR) supported by the Ministry of Research and Innovation.¹⁰ It focus on digitisation of cultural heritage and enhance tourism related topics as e.g. the restauration of Notre-Dame de Paris.

Cyprus

- RIS3 strategy pays attention to sustainable tourism, targeted forms of tourism, social dimensions and digitalisation¹¹
- The **Cyprus Time Machine** is an evolving initiative driven by the Deputy Ministry of Tourism and several institutions and companies.¹² Tourism related activities operated over 20 years on 3D and 4D technologies for cultural heritage and creative industries.

Saxony

- RIS 3 strategy focus on ICT and particularly e-commerce and e-business¹³
- **The Dresden Time Machine** founded in 2018 and has 15 partners working on cultural tourism, ICT for cultural heritage projects worth ~2,2 Mio EUR. The **Leipzig Time Machine** is under development since 2020 and strives for the virtual reconstruction of the historic city and public access to sources.

⁴ Prominent participation of different public agencies linked to ICT such as CESGA, the ICT cluster of Galicia and local SME.

⁵ [Economic Strategy, Lower Austria 2020](#), 2014

⁶ <https://openresearch.amsterdam/en/>, e.g. the Tides of Tourism project: <https://openresearch.amsterdam/en/page/55431/tides-of-tourism>

⁷ CLARIAH is the Dutch contribution to the European CLARIN and DARIAH Research Infrastructures.

⁸ AdamNet is the network organization in which 34 Amsterdam Libraries and Cultural Heritage Institutions collaborate.

⁹ [Regional Smart Specialization Strategy for Center Region, 2014](#)

¹⁰ The current network in Paris includes more than 15 Research Institutions plus several further industries.

¹¹ [Smart Specialization Strategy for Cyprus, 2015](#)

¹² E.g. Cyprus University of Technology, the Cypriot Chamber of Commerce.

¹³ [Innovationsstrategie des Freistaates Sachsen, 2013](#)