

CD-ETA – Collaborative Digitization of Natural and Cultural Heritage



Action Plan for the Tuscany Region

Foundation for Research and Innovation

March 2019

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Introduction

The present document represents the main and key output of CD-ETA project phase 1, i.e., the Action Plan, specifically described in its genesis and partial implementation, from the very early stage up to the start of phase 2 and beyond. The document explains the pathway leading to the Tuscany Action Plan definition, its contents and follow ups, starting with an overview of the current practices of digitization in the field of natural and cultural heritage in Italy and, in particular, in Tuscany. The very next step is the linking with the experiences gained during the Thematic Seminars and Stakeholder Meetings held within the project CD-ETA and how such a link triggered the realization of the action plan itself.

Some of the following paragraphs will also illustrate the actions designed and the indicators set to exploit the results of the project CD-ETA, aimed at improving digitization practices in the Tuscany Region.

All the information reported will follow a top-down approach, designing a trajectory that, starting from the national level, will describe the regional situation and the actions planned at the local level.

The action plan has been also built with a system approach, i.e., involving not only the Tuscany Region as the addressed policy instrument “owner”, but engaging all the actors capable of supporting the definition, strategization and implementation of the different actions, by means of planning tools too. This last remark is fundamental to catch both the complexity of the Action Plan implementation in Tuscany and the necessity of interconnect the policy instrument with other strategic plans/activities in order for the former to be affected in the future. The natural and cultural heritage digitization policies in Tuscany, in fact, are related to all existing government layer, i.e., National, Regional, Province, Metropolitan City and Municipality. It can then be easily inferred how, especially after having read the four provided actions, the plan required an interoperating multilevel framework to maximize the potential impact on the territory.

National policies

Italian Digitization Policy for Cultural Heritage – The Italian Ministry of Cultural Heritage and Activities and Tourism and the Central Institute for Cataloguing and Documentation

Article 9 of the Italian Constitution establishes that “The Republic shall promote the development of culture and scientific and technical research. It shall safeguard natural landscape and the historical and artistic heritage of the Nation”.

The former Ministry of Cultural Heritage and Activities and Tourism, from 2018 Ministry of Cultural Heritage and Activities, also known by the acronym MIBACT (Ministero dei beni e delle attività culturali e del turismo) / MIBAC (Ministero dei beni e delle attività culturali), is the department of the Italian government in charge of the protection of the Italian culture and performing arts, of the conservation of the artistic and cultural heritage and landscapes and related tourism policies.

Among other things, the MIBAC is responsible for defining national cataloguing methodologies relevant for the Italian Cultural Heritage. Article 17 of the Italian Legislative Decree 42 /2004 - Code of the Cultural and Landscape Heritage - states the importance of cataloguing as the primary factor for the cultural heritage preservation. Cataloguing is considered as an indispensable knowledge for the right management and conservation of cultural heritage as well as a tool to transfer cultural values in an inter/intra-generational way.

Although a high number of assets have already been catalogued (almost eight hundreds thousands), the work to do is still long and complex. The cataloguing process is carried out by the “Central Institute for Cataloguing and Documentation” (www.iccd.beniculturali.it), which serves as “*the coordinating agency for the definition of instruments and procedures for the cataloguing and documentation of the national archaeological, architectural, historical, artistic and ethno-anthropological heritage*”.

The existence of the catalogue is important for multiple stakeholders, active in different supply-chains and exploiting the potential laying inside the cultural heritage (tourism, research, territorial management).

ICCD also fosters the development of standards with the clear intent of unifying and streamlining processes related with the cataloguing activities, thus ensuring quality and interoperability at a national level.

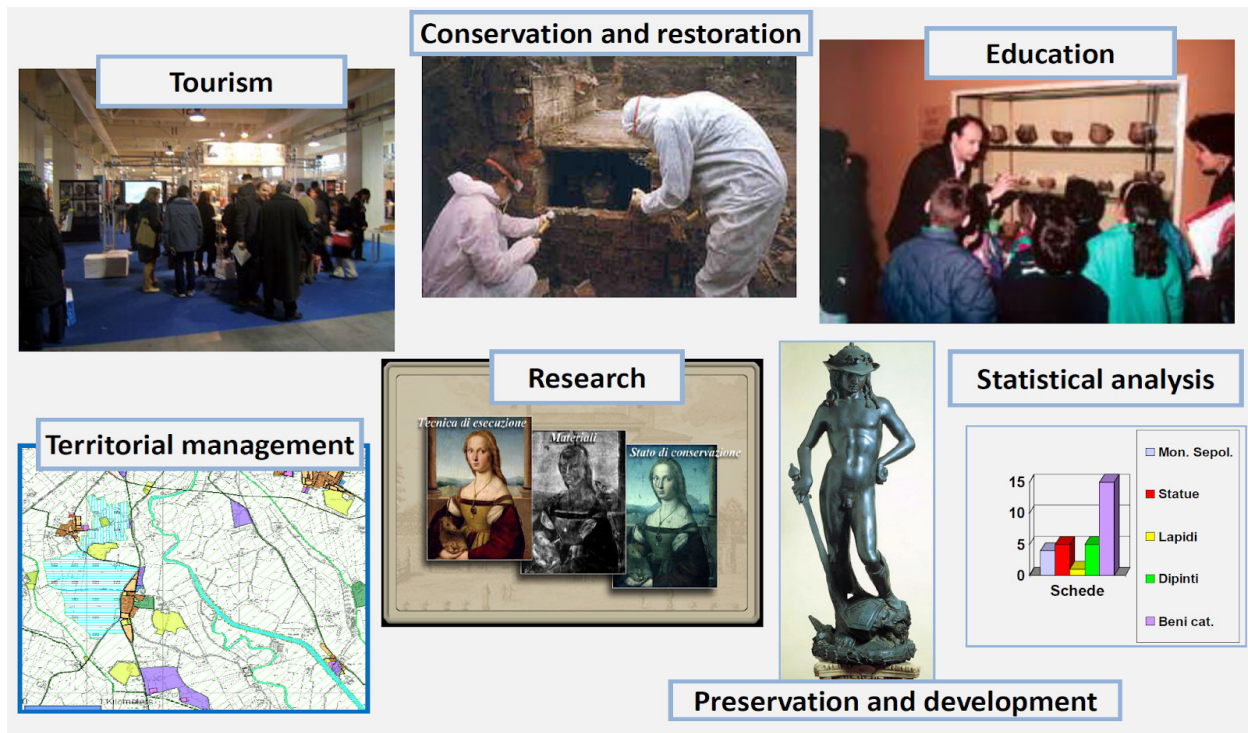


Fig.1 Different uses of ICCD Catalogue (source: ICCD)

As a matter of fact, in order to govern the technical complexity that the cataloguing process generates at the national level, the ICCD developed a system of standards, rules and instruments so to achieve uniform national criteria for effective knowledge sharing and computerized management based on:

- Norms: *forms for gathering data*;
- Terminological instruments: *formalized language, thesauruses*;
- Methodologies: *operational procedures, specific means of application*.

The main tools used are the so-called “catalogue sheets”, forms for the gathering of information in an organized way in order to ease the research of any specific sheet through the use of a research algorithm. The sheet obeys to a norm providing a “knowledge path” that guides the cataloguer according to precise criteria:

- Descriptive and technical information, *indicating the cultural value of the property*
- Geographic information, *relating the property to the territory*
- Documentary information, *describing the documentation that completes the knowledge of the property*
- Administrative data: *certifying the contents of the catalogue records.*

The catalogue sheets are organized in three macro-categories: movable properties, immovable properties and intangible heritage.



Fig.2 The three macro-categories of the catalogue sheets (source: ICCD)

The catalogue sheets may be considered as the main ICCD standards adopted in Italy for the description of the national cultural assets. All the other instruments serve in the support of the catalogue sheets themselves, as ready-to-use information (usually attached to the catalogue sheet) to be stored, along with the sheet, into the computerized data management system: this solution allows a full integration and utilization of all knowledge components.

A final important remark regarding the development of a sheet aiming at cataloguing, not only the cultural assets, but also the “container” where the asset is located: the container can be both physical and juridical, as shown by the following figure.

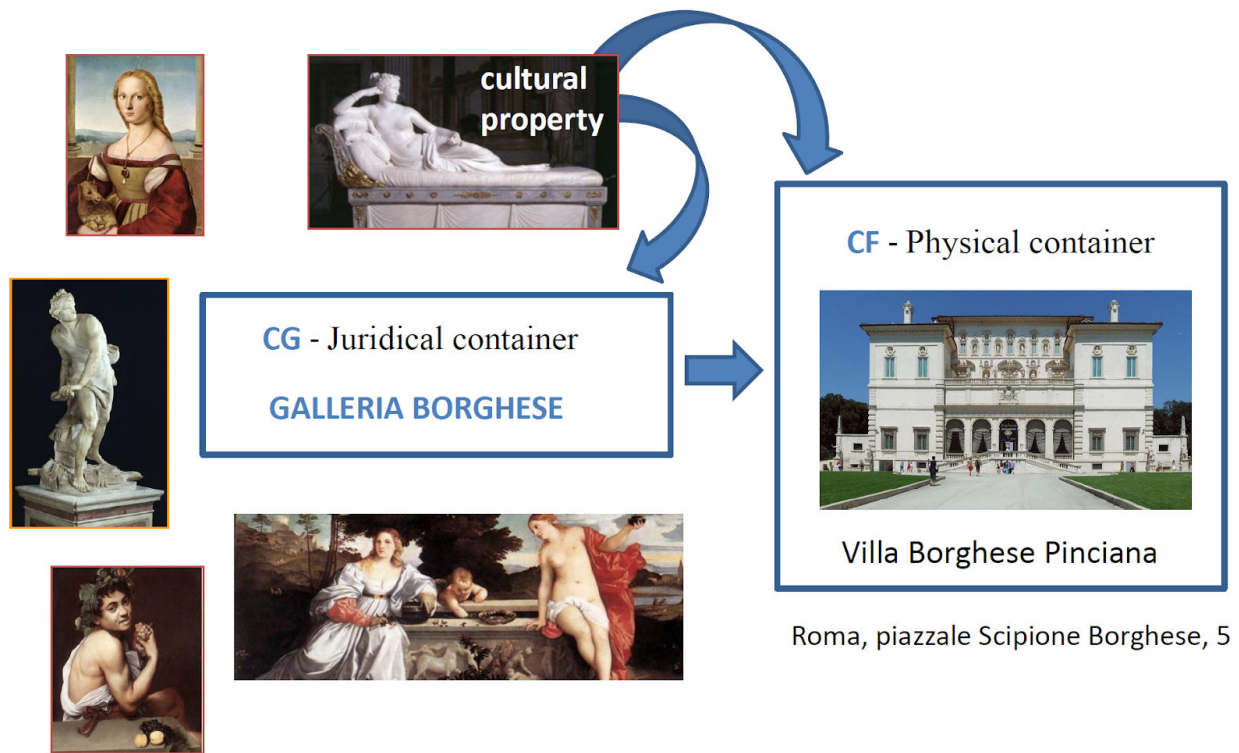


Fig.3 The scheme followed by ICCD to catalogue the container where a cultural property is stored (source: ICCD)

The overall objective laying inside such activity is the development of a management system aimed not only at controlling the status of a single cultural asset, but also to monitor the place/container where the asset is stored, in order to plan due measures, thus ensuring the right management of the property in any situation (i.e. preservation, movement, rapid intervention in case of disasters, etc.).

The data collected into the Italian national catalogue are available as open data at: <http://www.catalogo.beniculturali.it/opendata>

The digitization guidelines valid for the Italian cultural heritage entities, published by the Central Institute for Cataloguing and Documentation, are available at <http://pnd.beniculturali.it/il-piano/>, where the “National plan for digitization of cultural heritage” containing the guidelines can be found.

Although the ICCD is one of the main cataloguer, this institute is not the only entity aiming at cataloguing the National Cultural Heritage; in such a sense the list is wider and encompasses:

- Within the Ministry of Cultural Heritage, Museum institutions as well as the local “*Soprintendenze*” (government departments responsible for the environment and historical buildings and/or monuments and other treasures);
- Amongst the Local administrations, the Italian Administrative Regions and Municipalities;
- Religious institutions such as the Italian Episcopal Conference, the Waldensian Evangelical Representation and the Union of Italian Jewish Communities;
- Universities and research institutes;
- Other public and private agencies

Tuscany - ERDF ROP 2014-2020

Covering almost 8,900 square miles and over 3000 years of history, art and tradition, Tuscany, considered by many the cradle of Renaissance, is famous all over the world for its huge artistic and cultural heritage, rewarded by the UNESCO that added to the list of the world heritage properties 7 Tuscan sites: not only the historic center of art cities like Florence, Pisa and Siena, but also fascinating hamlets like Pienza and San Gimignano, the amazing Val d'Orcia and last but not least, twelve Medici Villas and two pleasure Gardens.

Being also a crossroads of peoples and knowledge, Tuscany has been proposing art, genius, science, dialogue and invention to the world for millennia. Not just the art of Michelangelo, the genius of Leonardo, the politics of Machiavelli, the science of Galileo, but a unique, sparkling mix of artists, scientists and thinkers.

A prestigious fabric of universities, academies and research centers that, together with libraries, museums and cultural centers are the most important heritage of the modern Tuscan age. A system of knowledge strongly rooted in the past but with a definite orientation towards the future. The Tuscan research and innovation system, in which universities, public and private research centers, enterprises and public institutions take part, stands out thanks to its clear vision of the future scenario and shared goals. The awareness that research has important consequences has prompted the institutions and the research institutes to strive towards a shared, long-term action program.

Tuscany offers a well-structured research system able to promote actions enhancing innovation potentiality and creativity as well as the social function of Cultural Heritage. Besides the scientific research focusing on Conservation of Cultural Heritage - the Tuscany Region was proposed for the role of coordinator of the European research infrastructure in the field of HORIZON 2020 - the Tuscan Research System is also the harbinger of a social involvement in Heritage fruition. In this way, the cultural asset – both tangible and intangible – becomes the key element for a new world language

which can also be devoted to migrant and emerging communities, towards the setting up of a new identity pathway which will stimulate an ever greater social cohesion.

But above all, it is worth mentioning that Tuscany is a great pole of attraction for European funds destined to innovation investments. The intense regional activity in setting up operational plans in order to support innovation, the presence of public and private research agencies of excellence, and the partnerships between actors of diverse nature operating in the same sector, created the conditions to take advantage of resources made available by the European Union in a much more substantial way compared to other Italian regions. The Tuscany Region has opted to put research, innovation and sustainable development at the core of its regional development strategy and structural funds are a fundamental tool for the planning of socio-economic policies. Indeed, they help determine planning strategies by making possible additional investments that have a strong impact at regional level.

The use of structural funds translates into – just to provide a few examples – aid to enterprises, fighting against youth unemployment, infrastructure modernization, protecting the environment also to promote and preserve natural and cultural heritage.

To preserve and promote natural and cultural heritage: this is one of the funding priorities of the Tuscany's ERDF ROP 2014-2020, the Regional Operational Program which is the reference document for the programming framework in the Community Programming period 2014-2020 for Tuscany.

The Tuscany ERDF ROP contributes to achieving the Europe 2020 targets for smart, sustainable and inclusive growth by concentrating resources in the following 6 priority axes aiming to:

- Enhance and promote research, technological development and innovation (€253.1 million - 31.9% of total resources)
- Sustain energy efficiency and the use of renewable energies as well as the efficient use of resources (€196.6 million - 24.8%)
- Promote competitiveness and improve access to credit (€152.4 million - 19.2%)

- Improve and extend access to ICT, including the improvement of ICT services (€79.5 million - 10%)
- Urban development (€49.2 million - 6.2%)
- Preserve and promote natural and cultural heritage (€29.7 million - 3.7%) with particular attention paid to the enhancement of a network of great cultural attractors

ROP – ERDF 2014-2020 (measure 6.7.1)

REFERENCE ACTION	MAIN TECHNICAL FEATURES OF THE ACTION	RESULT INDICATORS	OBJECTIVE / EXPECTED IMPACT	EXPECTED IMPACT AT REGIONAL LEVEL	OUTPUT INDICATORS
6.7.1 Action aimed to the protection, enhancement and networking of cultural heritage - tangible and intangible - so as to consolidate and promote development processes	Types of interventions: Support for operations of preserving and enhancing the cultural heritage and museums Beneficiaries Local authorities, associations, foundations, park authorities, religious and moral authorities	Number of visitors in public and non-public institutions (in thousands) per institute (Source: Istat, Mibact)	Improvement of the conditions of standard supply and use of cultural heritage in the main areas of tourist attraction	Increase the attractiveness of cultural heritage (museums and major cultural attractors) improving conditions for supply and use of reference areas	1) Growth of the expected number of visits to natural and cultural heritage sites and places of attraction receiving support 2) Number of activated services (design and implementation of services)

ROP – ERDF 2014-2020 (measure 6.7.2)

REFERENCE ACTION	MAIN TECHNICAL FEATURES OF THE ACTION	RESULT INDICATORS	OBJECTIVE / EXPECTED IMPACT	EXPECTED IMPACT AT REGIONAL LEVEL	OUTPUT INDICATORS
6.7.2 Action aimed to support the dissemination of knowledge and to facilitate the access to cultural heritage - tangible and intangible - by setting up services and/or innovative systems and by means of advanced technologies	Types of interventions Establishment of an on line information system relevant museum attractors and related thematic networks Beneficiaries Tuscany Region	Number of visitors in public and non-public institutions (in thousands) per institute (Source: Istat, Mibact)	Improvement of the conditions of standard supply and use of cultural heritage in the main areas of tourist attraction	Increase the attractiveness of cultural heritage (museums and major cultural attractors) improving conditions for supply and use of reference areas	1) Growth of the expected number of visits to natural and cultural heritage sites and places of attraction receiving support 2) Number of activated services (design and implementation of services)

The just described framework represents the basis for the inception of the CD-ETA Tuscany Action Plan, as per the initial project proposal, thanks to a clear inclination of the policy instruments toward the CD-ETA topics. Starting from the instrument, a constant side-by-side work with the Tuscany Region has been performed along the project phase¹, in order to lay the ground for a true exploitation of the CD-ETA outcomes by the reference territory.

The Action Plan for the Tuscany Region

The Tuscany partner of the CD-ETA project consortium, the Foundation for Research and Innovation (FRI), supported by the Department for Culture and Research of the Tuscany Region, set up an Action Plan made of four main actions, aimed at enhancing digitization of natural and cultural heritage in Tuscany.

Such actions are strongly aimed at exploiting not only the Tuscan best practices that were presented to the CD-ETA partners during the international thematic seminars, but also and mostly all the other international practices learned during such events, held in the first three years of the project, as well as the many experiences gathered during the project phase 1.

The following paragraph will describe the actions in details, developed according to the template supplied by the Interreg Joint Secretariat and available at: <https://www.interregeurope.eu/library/>.

Before describing the actions in details, hereinafter a quick overview.

The first action is related to the creation of a database/repository of best practices on the Tuscany Region's platform, specifically within the section developed by the Department for Culture and Research. The final aim is to make available for those cultural entities having a demand for technological innovation, an ensemble of ready-to-use solutions, which represents a potential technological offer at the regional level. Overall, this action aims at reducing the digitization technology gap in the cultural sector, at the regional level, through a matching process.

The second action is related to the support offered by FRI to the updating process of the Regional Smart Specialization Strategy, specifically concerning Culture and Research. By means of this action FRI transferred the lessons learnt in the first three years of activities of the project, from an international to a regional scale, linking the CD-ETA's outputs and objectives to the regional roadmap of the Smart Specialization Strategy in the field of cultural heritage.

The third action aimed at integrating CD-ETA digitization of cultural heritage experiences and practices within the Strategic Plan of the Metropolitan City of Florence. Even if the action is clearly conceived at the provincial scale, as explained in the introduction, it can nonetheless trigger very relevant innovation/dissemination processes throughout the whole region as well, being the Metropolitan City of Florence the main hub where the cultural stakeholders act and work in the Tuscany Region.

The fourth and final action refers to the Italian Technology Cluster "[SmartCommunitiesTech](#)" activities, cluster where both FRI and the Tuscany Region are involved respectively as managing members and reference public stakeholder. The final action objective consists in the integration of dedicated measures related to digitization of cultural heritage within the three-year Action Plan of the Italian Technology Cluster.

Part I – General information

Project: CD-ETA
Partner organisation: Foundation for Research and Innovation
Other partner organisations involved (if relevant): No other partner organizations involved
Country: Italy
NUTS2 region: ITE1
Contact person: Alessandro Monti
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Part II – Policy context

The Action Plan aims to impact:

- Investment for Growth and Jobs programme
- European Territorial Cooperation programme
- **Other regional development policy instrument**

Name of the policy instrument(s) addressed:

Toscana Regional Operational Program ERDF 2014-2020

Further details on the policy context and the way the action plan should contribute to improve the policy instrument:

The policy context where the actions and the activities have been/are/will be developed is quite peculiar being a period of transition between the in force policy instrument (the Toscana Regional Operational Program ERDF 2014-2020) and the new one that will be enforced starting on 2021. Thus, actions were planned in order to trigger positive effects both on the current and the forthcoming policy instrument. One further relevant piece of information to be kept in mind is the future Tuscany regional election taking place in Spring 2020, which will in some way have to be dealt with in respect to the Action Plan implementation.

Overall the action plan could improve the policy instrument both directly and indirectly. The direct influence could contribute at the designing and support of specific interventions aimed at exploiting CD-ETA outcomes for the benefit of the territory. The indirect one could allow for an interaction between the policy instrument and other policy and strategic instruments so to preliminary test possible solution and implementation activities before making them the object of the regional policy instrument.

Name of the action 1

Creation of a database of best practices concerning digitization procedures of cultural and natural heritage onto the Tuscany Region platform

1. *Relevance to the project:*

The inspiration for the design of the present action springs from several experiences related to the interregional training workshops and the thematic seminars organized by the project members during the first three years of the project lifespan. During these events a huge number of best practices have been presented and a lot of good lessons have been learnt in terms of digitization tools, methodologies and strategies. The main experiences which have strongly inspired the design of the present action were the presentation made by Dan Matei (National Heritage Institute of Bucharest) during the first interregional training workshop held in Miercurea Ciuc on September 2016 and the Italian and Estonian best practices presented during the second thematic seminar held in Florence on May 2017. During the first interregional training workshop, starting from a reflection on standards and digitization practices, the presentation of Dr. Matei outlined the key importance of setting up a database of best practices (as per the experience of the platform “Europeana”) to disseminate and implement best practices focused on digitization among the stakeholders of the cultural sector. The database becomes the starting point of a process of knowledge diffusion, matching between supply and demand and finally implementation/adoption of the practices/experiences, potentially supported right by the policy instrument. During the 3rd project semester, on May 2017, Foundation for Research and Innovation (FRI), the Italian partner of the CD-ETA consortium, organized the 2nd thematic seminar, as foreseen by the project, focusing on methods and technologies for digitization, in the framework of Museums and Art Galleries, in particular:

- Digitization procedures (techniques, instruments, standards)
- Digital content fruition (instruments, applications, technologies)
- Data storage (formats, acquisition methodologies)

One of the results achieved during the meeting was to make surface the high interest shown by regional museums and galleries toward the implementation of innovative solutions to foster digitization practices within their premises. Such interest was clearly manifested in respect to any possible solution, also the ones coming from other European territories, which, even if customized for different issues could be re-customized-invented so to become exploitable in different conditions. Besides, FRI was able to present more than 3 best practices (although the threshold set in the project proposal consisted in the presentation of at least 3), also thanks to the organization of the meeting along with the Italian Geographic Society and the involvement of the main regional stakeholders of the sector. Overall the seminar allowed for 8 best practices to be shown (alongside the 8 presentations made by the partners of the CD-ETA consortium), sketching the state of the art in the 8 EU regions/7 EU countries involved in the project and thus creating a quite first valuable set of best practices, undoubtedly of interest for the many European regional museums and galleries. Among the presented practices, some had already a readiness level such as to be immediately spent for digitization purposes, in particular the Italian and the Estonian ones. Thus, the concomitant presence of a well defined need and a ready to be implemented solutions to such need, coming from the CD-ETA project, triggered the idea of creating a database of best practices to be linked to the policy instrument of interest.

So thanks to the lesson learnt during the first interregional workshop and the second thematic seminar, the process was designed, carried out (selection of CD-ETA practices, population of the database etc.) and implemented.

Key to the entire project and the action at matter was the constant interaction with the reference policy maker, Tuscany Region, in the person of dr. Roberto Ferrari (Direttore della Direzione Cultura e Ricerca della Regione Toscana/ Director of the Culture and Research Department of the Tuscany Region). Following his Tuscany Region predecessor, dr. Gian Bruno Ravenni, endorsement to project CD-ETA at the time of the application, right from the approval and start of the project itself, Roberto Ferrari has been constantly involved in CD-ETA activities and development. Dr. Ferrari attended the very first project meeting in Hargita and the following in Florence, Tallinn and Pleven, with the aim to collect the many outcomes and support Fondazione per la Ricerca e l'Innovazione in the project implementation. Roberto Ferrari was among the ones amazed by the digitization practices potential arising from CD-ETA and together with him the practices data base idea has taken shape and then has become a reality. Roberto Ferrari has

always acknowledged the importance of providing to the reference territory new tools, methodologies and practices in the digitization field, specifically with the subsequent aim of supporting their exploitation by means of the policy instruments available.

2. Nature of the action:

The Department for Culture and Research of the Tuscany Region, following its constant presence within the CD-ETA project events and activities and after being made aware of the shared experiences existing within it, asked for FRI's cooperation to identify the most valuable and ready to use players/solutions/practices coming from CD-ETA, so to trigger the matching between supply and demand for innovation in the field of digitization of natural and cultural heritage in order to realize what stated in the policy instrument "ROP Toscana ERDF 2014-2020". The action, born in synergy between the Tuscany Region and FRI, has been aimed at creating a database of best practices in order to simplify the access to innovative solutions to the cultural players located within the regional boundaries. This database can then be exploited and put to a good use by pairing it with the several calls for funding issued by the Tuscany Region and financed through the ROP, with the aim to endorse digitization practices among regional cultural players by matching the supply and demand for innovation in such a field, with a particular focus on digitization of museums and galleries.

The genesis of the action has seen first the involvement of the Tuscany Region in the many project events to stimulate the interest both about the general topic and the specific practices. The next step has consisted in the selection of the more mature practices and side by side with the Tuscany Region, their reshaping to be then uploaded onto the Tuscany Region platform. The next to be completed steps will be the support to the ROP's call potential beneficiaries so that they'll be able to exploit at the best the database and its practices, which has been partially already started.

3. Stakeholders involved:

The main players involved in the development and implementation of the action are the Department for Culture and Research of Tuscany Region together with relevant regional public and private stakeholders active in the field of research and innovation concerning digitization of cultural assets. The key-role of the Regional

Department is to manage the funds related to the policy instrument “ROP Toscana ERDF 2014-2020” by means of a dedicated measure (axis 7, measure 6.7.1) aimed at supporting the operations of preserving and enhancing cultural heritage and museums by means of digitization. The Foundation for Research and Innovation, which needs to be considered a stakeholder too, along with the Regional Department, collected and specifically elaborated the regional best practices and the ones deriving by the Estonian stakeholders, with the aim of matching the supply and demand for innovation in order to foster digitization of cultural and natural heritage. The other fundamental stakeholders involved in the present action have been those who can provide and implement the technical solutions, which have been called to support the elaboration of the information to be delivered to the demand side.

Hereinafter the preliminary list of the players involved in the production of data sheets reporting the relevant innovation solutions aimed at sketching the innovation offer panorama:

- University of Florence, Media Integration and Communication Centre (MICC);
- University of Florence, Geomatics for Environment and Conservation of Cultural Heritage Laboratory (GECO Lab)
- University of Florence, Applied Geography Laboratory (Labgeo);
- Visual Computing Laboratory of the National Research Centre (CNR-ISTI), Pisa Department;
- Centrica ltd;
- Oikos Engineering ltd;
- Estonian War Museum “General Laidoner”.

Museums, cultural entities and other kind players located in the Tuscany Region are the eligible stakeholders who could apply for funding within the future aforementioned calls.

4. Timeframe:

The action’s first phase activities (e.g. selection of the players to be involved in the preparation of the data sheets, development of the data sheets et. al) started on March 2018 and ended on May 2018. The Best practice database (a specific folder within the Tuscany Region platform) was created on July 2018. The calls for funding are scheduled to be launched on 2018-2019-2020, and it will be possible to monitor the results starting with the second half of 2019.

5. Costs:

The activities so far have been developed without costs, in a pro bono approach, thanks to many factors, such as the visibility offered to the stakeholders involved in the preparation of data sheets by the Tuscany Region platform, except FRI which operated within CD-ETA. This visibility will also ease the access to innovation for many cultural players; as a matter of facts, the latter will have the possibility to contact directly the stakeholders involved in the preparation of data sheets to jointly prepare a valuable proposal for funding. It goes without saying that stakeholders such as Tuscany Region, FRI itself and many others contributed for free to the action being this in their institutional/project mission. We also stress out that the “digitization” contents originated just from CD-ETA project.

6. Funding sources:

The funding sources available for the implementation of innovation projects on digitization come from the policy instrument ROP Toscana ERDF 2014-2020.

Toscana Regional Operational Program ERDF 2014-2020 is the reference document for the programming framework in the Community Programming period 2014-2020 for Tuscany.

Tuscany has chosen to focus on supporting the business system and promote regional interventions to increase the competitiveness of the regional economy, fostering environmental and social innovation.

The ERDF program contains 6 priority axes and aims to:

- Strengthen research, technological development and innovation
- Sustain energy efficiency and the use of renewable energies
- Promote the competitiveness of SMEs
- Improve access to ICT
- Urban development
- Preserve and promote natural and cultural heritage

The funds that will support the implementation of new innovation projects will be those related to axis 6 (*Preserve and promote natural and cultural heritage*).

The funds will/should allow for both acquisition of new solutions and personnel with the skills to handle such solutions.

Name of the action 2

Support to the process of update of the Regional Smart Specialization Strategy concerning Culture and Research topics

1. Relevance to the project:

During the first Interregional Training Workshop held in Miercurea Ciuc (Romania), on September 5-7, 2016, all partners and experts involved presented the state of the art of the digitization processes related to cultural and natural environment in their regions. All the topics addressed by the CD-ETA project (the fulfillment of a higher level of digitization practice concerning the regional cultural and natural assets) during the meeting and from then on, were linked in different ways with the Regional Research and Innovation Strategies for Smart Specialization (RIS3).

The Italian Miercurea Ciuc delegation, composed by the FRI EU project manager and the Director of the Department for Culture and Research of the Tuscany Region, fully supported the importance of a strong link between the RIS3 and project CD-ETA and, as a consequence, it has been fostered the setting up of a win-win strategy able to encompassing both private and public issues related to the implementation of updated digitization practices, in order to meet both the project's objectives and the regional strategic needs on the subject matter.

The idea underlying such choice and as a consequence the present action is the well known interconnection between the policy instrument and the RIS3. Specifically Tuscany Region, as many other regions around Europe, uses the RIS3 indications to design the call issued by means of the ROP funds, so affecting/contaminating the RIS3 with CD-ETA outcomes (practices and experiences) would result in a further capacity to vehicular new digitization strategies/solution arising from CD-ETA firstly into the policy instrument and as a consequence within the reference territories.

Moreover, the importance to stress the linkages among different plans/strategies, in order to create positive synergies among them, has been one of the topics discussed also within the Strategic digitization workshop held in Estonia on November 2018 (lecturer, Dr. Tijana Tasich). The workshop was further useful to understand, amongst the others, how to learn/comprehend/exploit some new tools used in strategic planning and user centered design aimed at favoring the strategic dimension of our action plan in its whole. This lesson, learnt during one of the project seminar, was useful to strengthen the conviction that is possible to really impact the territory only if different tools in terms of policy measures are put together in working synergically, "speaking to each other". This was exactly the aim pursued through the action 2 that can be seen, in a certain way, as a corollary measure of the action 1, but maybe even more than corollary, having the RIS3 a national and international spill over too. Overall, if indeed, the RIS3

influences the ROP and the ROP is the tool that impacts on the territory, the fact of influencing positively the RIS3 by putting the digitization of the cultural heritage as one of its objectives, will favor the presence of dedicated measures in the ROP aimed at endorsing digitization process springing from CD-ETA.

It goes without saying that only thanks to CD-ETA it was possible to even think about this action, not having before the project the necessary know how or the tools/solutions to fill it in.

2. Nature of the action:

FRI cooperated and will cooperate with the Tuscany Region (Department for Culture and Research) and the appointed regional institute IRPET (Regional Institute for Economic Planning of Tuscany) to support the definition and developing of the sub-strategy related to digitization topics within the framework of the updated version of the regional RIS3 document. The action is aimed right to exploit on a territorial level the outcomes of project CD-ETA with foreseen subsequent developments on a European scale. This synergic approach will favor the issuing of calls for funding dedicated to digitization that can exploit the best practices database described into the action 1.

The action had as first step the interaction with Irpet and Tuscany Region teams working on the update of RIS 3 2018-2019 providing them with all the CD-ETA outcomes so far. Then the information was elaborated and included in the update, so to be exploited starting from 2019.

3. Stakeholders involved:

- *Tuscany Region - Department for Culture and Research*, as the public entity in charge to develop the Regional Smart Specialization Strategy and to acknowledge and support the dissemination of the CD-ETA project results.
- *Steering committee of the Regional Platform of Specialization on "Technologies-Cultural Heritage and Culture"* constituted as per DGR 815/2017 and DGR 1479/2017 and subsequent resolution "delibera_1423_2018", as the entity intended by the Tuscan Region to support the definition of the development strategies and interested in CD-ETA outcomes.
- *FRI*, as the CD-ETA partner involved in writing and developing the regional action plan as well as in cooperating with IRPET in respect to the Regional Smart Specialization Strategy update.
- *IRPET*, as the entity of the Tuscany Region appointed to update the Regional Smart Specialization Strategy, in respect to Culture and research topics.

4. Timeframe:

The action started at the beginning of 2018 and the updated RIS3 document was ratified and issued on February the 25th 2019. During the second half of 2019 it'll be possible to monitor the potential effects deriving from the action.

5. Costs:

Due to the nature of the present action, the work developed by FRI has been obviously covered by funds related to CD-ETA project. There were also no costs related to the work developed by Tuscany Region and IRPET with respect to the action, due to the institutional finality of the activities and the overall mission of all parties.

6. Funding sources:

Funding sources are all internal to the Tuscany Region, Department for Culture and Research.

Name of the action 3

Integration of dedicated measures related to digitization of cultural heritage within the Metropolitan Strategic Plan of the Metropolitan City of Florence

1. Relevance to the project:

One of the most relevant activities promoted by the CD-ETA project has been the organization of “Stakeholders Meetings”, a valuable opportunity to exchange perspectives, gather valuable insights and strengthen important relationships, by investing time and effort in their planning and execution so to ensure effective fruitful conversations.

CD-ETA Stakeholders Meetings have been connected with the valorization of natural and cultural heritage, thus favoring both the mutual exchange of experiences among local players of the sector and the development of innovative plans/policy measures by policy makers.

Among the aforementioned participants, the Metropolitan City of Florence (CMF) was one of the most interested, due to its 42 municipalities, all quite endowed with digitalizable items, digitization products and services.

During the many interactions with the CMF, it started to take shape the idea to bring inside the strategic planning of the Metropolitan City of Florence the outcomes of project CD-ETA. Such approach, similarly to what happened for action 2, was strongly confirmed and validated by the Estonian Thematic Seminar held in November 2018. The basic idea was to exploit a very relevant and known strategic planning tool to disseminate the practices and experiences coming from CD-ETA within the reference territory and in doing so, trying to influence the Regional policy instrument of interest. The latter is possible since the Tuscany Region acknowledges the Metropolitan City of Florence Strategic Plan (PSM) and as a consequence it can exploit/use it to improve their policies (see below, timeframe, the reference to the Tuscany Region resolutions/deliberations). So overall it was decided to start a possible chain reaction with the final aim to affect the Tuscany Region ROP, but not only. In fact, even if it was born as a strategic planning tool, the PSM can also be considered as a sort of policy instrument, used by the Metropolitan City of Florence to “put to a good use” the provided government funds.

The Delrio Law (Law 56/2014) attributes, in fact, to the new institute of the

Metropolitan Cities a series of fundamental functions (paragraph 44) including the promotion and coordination of economic and social development. The CMF thus becomes an organ of address and development of territorial economic policies, taking an active role in strategic planning. The Strategic Metropolitan Plan will therefore be a three-year guideline (annually updated and every three years revised) for the body (CMF) and for the exercise of the functions of the municipalities and the unions of municipalities included in the reference territory. So, what was just reported has two very important follow-ups: the first one is the chance to transfer the CD-ETA project outcomes into the territory and make it real, by means of a kind of policy instrument; the second is that, by implementing an experience or a practice, these become even more known and can be taken as an example by other policy instrument, e.g. the Tuscany Region ROP, with the benefit of having already been tested.

2. Nature of the action:

The CD-ETA FRI team has been involved, as supporter to the CMF Scientific Committee, in the development of the Strategic Plan of the Metropolitan City of Florence, which was published on April 2017 for the very first time, following the implementation of the Delrio law (LEGGE 7 aprile 2014, n. 56). The plan is an implementable strategic tool, something of a policy instrument, aimed at defining development trajectory and as a consequence, a way to potentially put to good use CD-ETA outcomes. The action is the practical inclusion of CD-ETA outcomes, in terms of best practice exploitability, not only within the plan itself, but so to favor the diffusion and usability of such results too, well beyond the plan outreaching targets. As a matter of fact, the updated version of the plan, to be issued once a year, includes and will include the results of the project CD-ETA, within the vision 2: *“spread opportunities”* - strategy 2.4 *“integrated attractiveness”*. The main aim of such a measure consists to exploit the potentiality that lays inside digitized cultural assets for tourism and cultural purposes, i.e., promotion, protection, accessibility et al.

The action clearly sprung from CD-ETA, without which there would not have been the trigger and the contents to do it.

The very first step has been the interaction with the Metropolitan City of Florence Strategic Plan team, so to bring to its attention the importance of the CD-ETA outcomes and the action it was intended to be developed along with the CMF. Then the project was included in the PSM as a future trigger for the implementation of its experiences and practices. The updated plan, with the just

mentioned reference, was developed during 2018 and approved on December the 19th 2018; it was finally published just right after. We can assume that the effects of the plan might be seen by the end of 2019, first half of 2020.

3. Stakeholders involved:

The main players involved, as members of the Scientific Committee, are the Metropolitan City of Florence (policy makers who publish the plan), the Regional Institute for Economic Planning of Tuscany (IRPET) and the Foundation for Research and Innovation, as well as several research groups of the University of Florence. The role of the above mentioned subjects has been and is to contribute to the plan contents development and, in the case of FRI, also working on the monitoring and updating processes.

4. Timeframe:

The preparatory activities for drawing up the Plan started on late 2016. On April 2017 the Plan was published for the very first time while its first revision occurred during 2018. The updated plan was approved on December the 19th 2018 and published right after.

The monitoring of effects will start during 2019 up to 2020.

To be highlighted the “Proposta di deliberazione (Proposal of deliberation) al C.R. n. 7 del 27/11/2018” by the Tuscany Region, where the Strategic Plan is acknowledged, as per the previous reference to the interconnection between different territorial instruments.

5. Costs:

Similarly to the precedent action, no costs have been sustained to develop the action and start its implementation, due to the nature of the action and the mission of the involved stakeholders, except FRI which operated within CD-ETA.

6. Funding sources:

The future possible implemented activities will be funded probably by means of Metropolitan City of Florence Funds, private ones and maybe crowdfunding.

Name of the action 4

Integration of dedicated measures related to digitization of cultural heritage within the three-year Action Plan of National Technological Clusters

1. Relevance to the project:

Among the many activities of the CD-ETA project, there have been specific moments dedicated to networking with initiatives/subjects potentially functional to capitalize the project outcomes. One of such initiatives refers to the Italian Technology Cluster “SmartCommunitiesTech”, the Italian National Technological Cluster for Smart Communities Technologies (CTN), which has also a focus on the cultural heritage and its promotion/diffusion by means of ICT tools. In light of the latter and the fact that the cluster is drawing up its three-year Action Plan as per request of the Ministry of Education, University and Research, the chance to include within the aforementioned plan CD-ETA outcomes became a reality. The above-mentioned plan is an orientation instrument and it is at disposal of Policy Makers such as MIUR (Ministry of Education, University and Research) and MISE (Ministry of Economic Development) and hopefully, it will be the road to a policy instrument action later on.

The idea was born starting from the role of FRI within the management board of the aforementioned National Technological Cluster, the interaction between the latter and the CD-ETA project, the request from the MIUR (Ministry of Education, University and Research) of developing a three-year plan in respect to development trajectories about Smart Cities and Communities topics and the absence so far within the Cluster roadmap of the digitization topic in respect to Natural and Cultural Heritage. Once again, as per other previous actions, the 2016 September seminar and the 2018 November seminar were a trigger first and a confirmation later of the validity of the approach, i.e., the use of a planning tool, this time on a National level, to exploit at the best CD-ETA outcomes and on the other side getting to the project selected policy instrument indirectly.

The CTN three-year plan will have a strong impact on the Tuscany Region, but it aims also at a National reverberation, allowing in respect to CD-ETA for a broadening of the experiences and practices diffusion.

Analogously to the previous actions, none of the just mentioned activities would have been possible without CD-ETA in light of the contents generated by the project itself (experiences and practices) and the trigger sprung by the

interaction with CD-ETA partners and entities. In this sense, a moment to treasure was the presentation of the best practices related to digitization of natural heritage (first thematic seminar) and intangible heritage (third thematic seminar) which taught us the importance to interact with national entities if your interest is to impact a large portion of your regional territory. The best practices presented enlighten to us how much is important to put around the table several stakeholders to pursue the objective of digitize a huge portion of cultural heritage. This is exactly our aim in impacting the CTN three-year plan, due to the contemporary presence around the stakeholder tables of public bodies, research institutes, SMEs and local cultural associations.

2. Nature of the action:

The *CD-ETA FRI* team is involved in the drawing up of the three-year plan of the National Technological Cluster on Smart Communities Technology (CTN). The plan is already under development and will be delivered during 2019 and it'll allow to put to a further good use the CD-ETA outcomes. The action constitutes the practical inclusion of CD-ETA outcomes within the plan itself, not only in terms of best practice, but also favoring the usability of the results.

The first step was to share with all the CTN partners the CD-ETA project and its experiences and practices, then explain the value at any level of some of these practices so to start including them within the three-year plan.

The preparation of the latter started in 2018 and will be completed by the end of 2019, hopefully before August 2019. The monitoring of the effects will start at the end of 2019, beginning of 2020.

The three-year plan of the Italian National Technological Cluster for Smart Communities Technologies is of great interest for the Tuscany Region too, which is a member of its Technical Committee and signatory of the Framework program agreement in respect to the CTN activities on the reference territory. As a consequence, the next step, as soon as the three-year plan will be ready, shall be to share it with the Tuscany Region, which at that point could exploit it in relation to its policy instrument (the one addressed by CD-ETA); again a virtuous circle would be completed having disseminated the project outcomes at a National level, but also going back to a Regional scale by means of the ROP, so to concretely try implementing the experience and practices arising from CD-ETA.

This is undoubtedly the less mature action, due to the three-year CTN plan roadmap, which is still in progress, but the soon to be issued decree "D.D. n.

397/2019 per l'Associazione Cluster Tecnologico Nazionale sulle Tecnologie per le Smart Communities" is a guarantee that it'll be possible to implement the action just as expected so to monitor the potential effects during CD-ETA phase 2.

3. Stakeholders involved:

The main players involved are the Foundation for Research and Innovation, Tuscany Region and all the partners of the National Technological Cluster for smart Communities: Torino Wireless, Lazio Innova, Aster, Lepida, Cluster SCC Lombardia, Dhitech, Hub Innovazione Trentino, Siit). The role of the above mentioned subjects is to contribute to the plan contents development among which the digitization topic in relation to CD-ETA outcomes.

4. Timeframe:

The activities for drawing up the Plan started at the beginning of 2018 and should be concluded by middle 2019.

The action effects monitoring phase should start by the end of 2019.

5. Costs:

No costs were sustained by the different partners, except FRI which operated within CD-ETA, in virtue of the relation between the activities and the correspondent entities' missions.

6. Funding sources:

The funding sources to develop the implementation of the CD-ETA experiences and practice could come from private entities and ministerial funds, to be yet ascertained. With reference to the latter information it'll be necessary to wait for the issuing of the aforementioned decree "D.D n. 397/2019 per l'Associazione Cluster Tecnologico Nazionale sulle Tecnologie per le Smart Communities" to have more defined information.

Following the actions description, below some final explanatory remarks to further contextualize the overall approach in the definition and implementation of the actions.

1. The main target of every action and activity has been dual, i.e., valorize CD-ETA outcomes and impact the addressed policy instrument.
2. The overall approach has been aimed at putting into synergy different instruments, policy ones, strategic plans and address documents, so to amplify to the maximum the impact on the reference territory.

3. Most of the actions are already in an advanced stage and some allow for the start of the monitoring activities just at the end of CD-ETA phase 1.
4. All the actions clearly originated from CD-ETA project and its experiences, in fact, without the latter nor the technical contents or the methodological approach would have been developed so to become an action. It is clear that some containers exploited to vehicular the CD-ETA outcomes already existed and their development was planned, but the digitization contents and correspondent implementation methodology would have not been part of it.
5. The present action plan will be signed by the stakeholder in charge of the implementation of its actions and accompanied by an endorsement letters acknowledging the importance of the present plan for the territory. Overall it is confirmed the support of the policy responsible body (i.e. Tuscany Region, Directorate Culture and Research) for the actions addressing their policy instrument.
6. As integrations to the present action plan, it will be possible to find in the final section of the present document the Metropolitan Strategic Plan of the Metropolitan City of Florence, the updated version of the Tuscan Regional RIS3 trajectories and the triennial plan of the Italian Technology Cluster “Smart Communities Tech” (when available, probably by the end of 2019).

Indicators valid for the Tuscany Region Action Plan

According to the methodology agreed, in the following table, it is possible to find the ex-ante and ex-post indicators related to the Tuscany region action plan depending on whether the goals have been met or not.

They are set on different scales (activity level, result level and impact level) and were developed by the Tuscan partner of the CD-ETA consortium (FRI) in order to support the on-going monitoring activity of the actions during the period 2019-2020, 2020-2021.

EX-ANTE

ACTIONS				
	INDICATORS			
	Action 1 (Creation of a database of best practices concerning digitization procedures of cultural heritage on the Tuscany Region website)	Action 2 (Support to the process of update of the Regional Smart Specialization Strategy concerning cultural heritage)	Action 3 (Integration, within the Metropolitan Strategic Plan of the Metropolitan City of Florence, of dedicated measures related to digitization of cultural heritage)	Action 4 (Integration, within the Three Year Action Plan of National Technological Clusters, of dedicated measures related to digitization of cultural heritage)
Activity level	Creation of a dedicated webpage, on the Tuscany Region platform, containing the selected best practices (BP) related to digitization processes of cultural heritage	Creation of a partnership between FRI, Tuscany Region and IRPET	Presence of FRI staff within the scientific committee	Presence of FRI staff (number of personnel involved) within the technical committee appointed to develop the plan
Result level	Number of best practices uploaded	Presence of digitization issues within the new regional roadmap	Presence of a clear link between the CD-ETA	Presence of a clear link between the CD-ETA

			methodology/outputs and the Florentine Metropolitan strategic plan	methodology/outputs and the action plan of the Italian Technological Cluster on Smart Communities Tech
Impact level	Creation of data analytics tools aimed at counting the number of visualizations of the webpage containing the best practices	Capacity to address CD-ETA objectives (i.e. fostering digitization processes) through the updated road-map of the regional Smart Specialization strategy concerning Cultural Heritage	Capacity to address CD-ETA objectives (i.e. fostering digitization processes) through the Florentine Metropolitan Strategic Plan.	Capacity to address CD-ETA objectives (i.e. fostering digitization processes) through the action plan of the Italian Technological Cluster on Smart Communities Tech

EX-POST

ACTIONS INDICATORS	Action 1 (Creation of a database of best practices concerning digitization procedures of cultural heritage on the Tuscany Region website)	Action 2 (Support to the process of update of the Regional Smart Specialization Strategy concerning cultural heritage)	Action 3 (Integration, within the Metropolitan Strategic Plan of the Metropolitan City of Florence, of dedicated measures related to digitization of cultural heritage)	Action 4 (Integration, within the Three Year Action Plan of National Technological Clusters, of dedicated measures related to digitization of cultural heritage)
Activity level	Uploading of the selected best practices (BP) related to digitization processes of cultural heritage on the Tuscany Region platform,	Number of meetings and call conferences held among FRI, TR and IRPET	Number of FRI staff involved both in both CD-ETA project and in the scientific committee of the strategic plan	Number of FRI staff involved both in CD-ETA project and in the technical committee of the action plan
Result level	Number of best practices downloaded	Number of digitization issues present within the regional roadmap	Number of meetings attended by FRI staff at the scientific committee	Number of digitization issues present within the three-year action plan
Impact level	Number of best practices Implemented	Introduction of topics related to digitization of cultural heritage within the regional agenda	Digital constraints and problems issued by the plan through and thanks to the CD-ETA contribution	Introduction of topics related to digitization of cultural heritage within the national plan of the smart communities clusters

Additional information about other plans addressed by the present action plan

According to the contents of the above listed actions, hereinafter are provided some information concerning the main strategic/planning documents addressed by the action plan and synergic to the targeted policy instrument.

The strategic/planning instruments are:

- Metropolitan Strategic Plan of the Metropolitan City of Florence;
- Tuscany Region Smart Specialization Strategy (RIS 3) roadmap;
- Triennial strategic plan of the Italian Technology Cluster for Smart Communities.

The first two documents have already been published, below the correspondent links are provided, while the third one (Triennial strategic plan of the Italian Technology Cluster for Smart Communities) is still in the drafting stage and it will be finalized and published by the end of 2019.

Further information concerning the Metropolitan Strategic plan of the Metropolitan City of Florence at the following link:

http://pianostrategico.cittametropolitana.fi.it/doc/PSM_DOCUMENTO%20APPROVATO.pdf

The references to the project CD-ETA are present in the pages 99 and 144 of the plan.

Roadmap concerning the Tuscany Region Smart Specialization strategy by surfing at:

http://open.toscana.it/documents/646522/0/REPORT_INTERMEDIO_Roadmap+cultura_def.pdf/b97823f6-7085-4d7c-a29c-b0d0d6728a05

The reference to the digitization and its impact on the cultural sector are reported into the pages 50-51-52.

An update of the present document is foreseen, so to provide the missing information and link related to the triennial strategic plan of the Italian Technology Cluster for Smart Communities.

The policy responsible body: Tuscany Region

Name of signatory: Roberto Ferrari

Position of Signatory:

Date: 14/6/2019

Signature and Institution stamp (if exists)

DIREZIONE CULTURA E RICERCA
IL DIRETTORE
Roberto Ferrari

[Handwritten signature]



Letter of support to the action plan from the relevant organisation responsible for policy

Project acronym	CD-ETA
Project title	<i>Collaborative digitization of natural and cultural heritage</i>
Name of the organisation (original) including department (if relevant)	<i>Regione Toscana - Direzione Generale Competitività del sistema regionale e sviluppo delle competenze</i>
Name of the organisation (English) including department (if relevant)	<i>Tuscany Region - DG Competitiveness of the regional system and skills development, Department of Culture and Research</i>
Name of the policy instrument addressed (original)	<i>PROGRAMMA OPERATIVO REGIONALE "CRESCITA E OCCUPAZIONE FESR TOSCANA 2014-2020"</i> <i>(POR CREO FESR TOSCANA 2.0)</i>
Name of the policy instrument addressed (English)	<i>Regional Operative Program "Employment and Growth" 2014-2020 (Por CreO ERDF Toscana 2.0)</i>
Name of partner(s) concerned in the application form (English)	<i>Foundation for Research and Innovation</i>

DG Competitiveness of the regional system and skills development, Department of Culture and Research, as the Managing Authority of the Regional Operational Program for Tuscany Region, has expressed and provided a fundamental support to the Foundation for Research and Innovation since the very beginning of the European project "CD-ETA" (Collaborative digitization of natural and cultural heritage), during all project phase 1 and confirms the support for the on going phase 2.

As a member of the local Group of Stakeholders, the Department of Culture and Research of the Tuscany Region had the opportunity to participate in several Stakeholder Meetings and in four Interregional Thematic Seminars, in particular:

- 6-8 September 2016, Miercurea Ciuc (Romania)
- 8-10 May 2017, Florence (Italy)
- 13-15 November 2018, Tallinn and Viimsi (Estonia)



- 12-14 March 2019, Pleven (Bulgaria)

Within such a context, it was possible to follow and participate in the development of the activities, be aware of the results of the project and provide advices and indications for the action plan definition, design and implementation.

The Action Plan embodies the contributions of many interested stakeholders of the reference territory and constitutes indeed an operational tool of great utility for the development of the region as a whole.

In the above context and for the aforementioned reasons, the Tuscany Region's Department of Culture and Research endorses the Action Plan submitted by the Foundation for Research and Innovation in the framework of the Interreg European Project "CD ETA - Collaborative digitization of natural and cultural heritage".

Name of signatory

Roberto Ferrari

Position of signatory

Date

16/6/2019

Signature and institution stamp (if exists)

DIREZIONE CULTURA E RICERCA

IL DIRETTORE

Roberto Ferrari

Rf. / ~