

COST Action TD1406
(Action 06/05/2015 – Action 05/05/2019)

Innovation in Intelligent Management of Heritage Buildings (i2MHB)

PROGRESS REPORT AT MONTH 24

This report is submitted by the MC Chair on behalf of the Management Committee.

Confidentiality: This report, other than section II.D, is non-confidential. Section II.D is confidential to the Management Committee and the COST Association (including the Committee of Senior Officials, Scientific Committee and Administration).

Executive summary of the Progress Report:

TD1406 is about creating a Pan-European network aggregating different fields in the Heritage Building (HB) domain, integrating multidisciplinary expertise, technology and know-how. TD1406 is a huge Action involving 26 countries, 14 of which belonging to COST Inclusiveness Target Countries (ITC), with 187 participants (from which 87 are MC members and substitutes and 36 are WG participants). Currently the Action has around 90 active members collaborating towards the achievement of its main objective. All Action's instruments have been used trying to establish a path towards this goal.

The second MC/WG meeting in Porto (October 2015) held several panels discussing the framework for interoperability (European research on cultural heritage; interoperability roadmap for HB sustainability; industry and HB), with 62 participants including external stakeholders. The WG3/WG4 meeting and Think Tank in Riga (April 2016) joined 36 participants (including local and European authorities) debating HS's integration in surroundings and social engagement. The third MC/WG meeting in Lemessos (October 2016) was held in conjunction with EUROMED2016 conference (International Conference on Digital Heritage), enabling fruitful discussions between TD1406 members, conference participants and experts, and European/local stakeholders (26 participants all together).

The two training schools (TS) also bridged knowledge fields in the HB domain, joining 52 trainees and 18 trainers. The first TS (Aguilar del Campoo, January 2016) was globally about management, documentation and sustainability. It gathered expert trainers in cataloguing and documentation (3D and hand-drawing), monitoring (automatic systems), natural disasters and conservation biological issues. The second TS (Porec, September 2016) mostly considered rehabilitation and conservation issues. Selected trainers covered fields from rehabilitation to innovative conservation methodologies going through digital documentation. Several field lectures were considered to better address the subjects.

A distinct set of scientific publications were presented in distinct types of conferences in order to enhance synergies with different audiences. Also several project proposals came out of the established synergies inside the Action.

The accomplished 20 Short Time Scientific Missions (STSM) also bridged different fields of knowledge, such as hand-drawing and computer science, archaeology and technology / digital



software tools. ECIs were encouraged to embrace STSM and ITCs were also considered (17 of the 20 STSM came from COST Inclusiveness Target Countries).

The Action has allocated a huge effort in bridging the different fields in the HB domain and gathering multidisciplinary knowledge, paving the way for an open discussion on Europe regarding innovative HB management.



I. Progress Report

I.A. COST Action Profile

Objective/ Aim

The main objective of the Action is to create a pan-European open network to achieve a unified common understanding and operation in the Heritage Buildings' domain, through a novel and independent global framework.

Details

MoU:	115/14	Start of Action:	06/05/2015
CSO approval date:	13/11/2014	End of Action:	05/05/2019

COST Member Countries and Cooperating State having accepted the MoU

Belgium, Cyprus, Greece, Latvia, Poland, Slovakia, United Kingdom, Bosnia and Herzegovina, Estonia, Ireland, Lithuania, Portugal, Slovenia, FYR Macedonia, Bulgaria, France, Israel, Malta, Romania, Spain, Croatia, Germany, Italy, Norway, Serbia, Switzerland

Intentions to Accept the MoU

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Other participants:

Institution Name	Country
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Contacts

Chair/ Vice Chair

Position	Name	Contact details	Country	Date of PhD:	Gender
Chair:	Joao MARTINS	NOVA.ID.FCT - ASSOCIACAO PARA A INOVACAO E DESENVOLVIMENTO DA FCT; CAMPUS DA CAPARICA, FACULDADE DE CIENCIAS E TECNOLOGIA DA UNIVERSIDADE NOVA DE LISBOA: 2829-516 CAPARICA Caparica Portugal	Portugal	2003	Male
Vice Chair:	Styliani SYLAIU	Aristotle University of Thessaloniki, Laboratory of Photogrammetry and Remote Sensing, School of Rural & Surveying Engineering, Aristotle University of Thessaloniki 541 24 Thessaloniki Greece	Greece	2008	Female

Working Group Leaders

WG#	WG Title	WG Leader	Country	Date of PhD:	Gender	Number of participants
1	Common framework	Gumersindo Bueno	Spain		Male	15
2	Interoperability roadmap for Heritage Buildings' sustainability	Piero Tiano	Italy		Male	15
3	Integration of Heritage Buildings into their surroundings	Christian Degrigny	France	1990	Male	25
4	Social dimension of Heritage Buildings	Galina Merkurjeva	Latvia	1993	Female	20
5	Policy Coordination and deployment	Anna Sadowska	Poland	2005	Female	15

Other positions if applicable (STSM Coordinator, WG Vice Leader, Task Force Leader...)

Position	Name	Country	Date of PhD:	Gender
STSM and ECI Think Tank coordinator	Dalik Sojref	Germany	1983	Male
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Action website:	http://td1406.eu
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I.B. Progress with MoU objectives and deliverables and additional outputs

MoU objectives

MoU objective	Achieved Yes/ Partially/ No	Evidence of (partial) achievement including hyperlink to enable assessment of the achievement ¹ . Justification if full achievement is not foreseen
To promote synergies between Heritage Science's specialists, industrial stakeholders and research/education players	Partially	<p>Since the beginning of the Action, TD1406 has tried to promote synergies between different stakeholders involved in the HB field. Both MC/WG meetings privileged discussions with external stakeholders. In Porto (October 2015) there was a session on "Industry and Heritage Buildings" with industry-related colleagues from Poland, Belgium, Portugal and Spain participating in the panel. In Lemessos (October 2016) a specific meeting was held joining the Action participants and local stakeholders (president of Cyprus ICOMOS, representative of the Board of Cyprus chamber of Engineers...) in order to exchange ideas about the aggregation of different fields in the HB domain.</p> <p>In both training schools ECI's tried to build a platform for multidisciplinary view by ECI's on issues of HB and herewith promoting synergies. In Aguilar del Campoo (January 2016) [http://td1406.csites.fct.unl.pt/wordpress/press-release/] under the theme "Heritage Sustainability: Relation with the surroundings, the environment and the economy" and in Porec (September 2016) [http://td1406.csites.fct.unl.pt/wordpress/wp-content/uploads/2016/06/Porec-COST-program.pdf] under the theme "Gender balance, young researchers' role, trans-disciplinary issues". COST members are active in CIPA TG on Earth Observation in CH documentation [http://cipa.icomos.org/portfolio-item/task_group_earth_observation/] promoting thus synergies to other stakeholder bodies.</p>
Integrating multidisciplinary expertise, technology and know-how	Partially	<p>All Action's WGs integrate multidisciplinary expertise, technology and know-how. In all the meetings this multidisciplinary integration is highlighted. This was the case for the meeting in Porto (October 2015) and particularly for the meeting in Lemessos (October 2016), since it was in conjunction with the International Conference on Digital Heritage [http://www.euromed2016.eu]. Also in Lemessos MC/WG meeting it was important the participation of the Action Chair in a restricted meeting in order to exchange ideas for the future ("Shared meeting with 18 EU projects: the future of digital heritage in Europe – A brainstorming & roundtable discussion") [http://www.euromed2016.eu/application/files/9414/7788/4745/Euromed2016_E-BOOKLET_V8-P1.pdf]. In the WG meeting in Riga (April 2016) and in the GC/WG meeting in Nancy (March 2017)</p>

¹ The links to the outputs and deliverables will be used by the Action Rapporteur in assessing the progress.

		<p>Think tanks were held integrating extra invited high ranking specialists.</p> <p>Both TS joined ECIs and specialist in several fields (architecture, material science, history, art, ICT...).</p>
<p>To provide an inflection point in the HBs' field, enabling global common practices usage and triggering global scale innovation and seamless operation, independently of culture, place, technology and field of knowledge</p>	Partially	<p>WG1 is concluding the establishment of a good practices Data Base that will help to provide this inflection point in the HBs' field.</p> <p>Several Action's steps had help to achieve this common understanding on good practices (meetings with external stakeholders, training schools' field lectures on good practices, running EU integrating projects where Action members play a key role, use cases promoted by WG3 [http://td1406.csites.fct.unl.pt/wordpress/case-studies/]...).</p> <p>Particularly interesting was the Riga Cathedral site visit held on the WG meeting in Riga (April 2016).</p>
<p>Transferring know how and competences into municipalities and HBs administrators and also by joint applications for funding to Framework Programmes, Intergovernmental Programs or National Programs or Agencies</p>	Partially	<p>Although the Action is only reaching half of its financed timeline, several efforts have been made in order to engage authorities. As mentioned, authorities actively participated in Action's meetings (Chief of HB authority in Cyprus meeting; Deputy Head for State Inspection for Heritage Protection, Board Chairman of Latvian National Committee ICOMOS Latvia and Secretary General for Latvian National Commission for UNESCO in Latvia meeting...). In Cyprus there was also the opportunity to discuss the Action with the Greek Orthodox Patriarch of Jerusalem.</p> <p>Several projects, where Action members play a key role, started while the Action was already running and are now active. It is important to mention that INTERREG "SHCity" project has a huge involvement of Avila municipality [http://www.shcity.eu/index.asp]. Several projects were also proposed, coming from the members of the Action, where local authorities are also engaged.</p> <p>There are also Action members participating in HB related projects. In all these projects Action members try to learned more about the HBs needs and concurrently tried to pave the way for the application of the Action's results and findings. The Action Chair was interviewed on Portuguese national television about INTERREG "SHCity" project (January 2017) and participated in COST event "Inspiring researchers, strengthening Europe – Portugal in the spotlight" (February 2017) in Portugal with the presence of COST officers and European Commissioner for Research, Science and Innovation.</p>

To encourage cooperation and co-ordination towards achieving a multidisciplinary common framework	Partially	<p>Cooperation has been highly achieved inside the Action in order to reach the multidisciplinary common framework. All WGs are working towards this global objective (WG1 providing the data base of good practices, WG2 the ontology, WG3 the necessary use cases, integrated into the surroundings, and WG4 the social interaction related issues).</p> <p>Beside the ones that integrate Action members, the Action has also strong collaboration with other related projects (such as COST Action TD1201 [http://www.cosch.info/web/guest/home], H2020 CSA ViMM [http://www.vi-mm.eu], H2020 INCEPTION [http://www.inception-project.eu]...).</p> <p>STSMs are also encouraged to promote multidisciplinary interactions. As an example Ms Jelena Behaim (Croatia), who is an art history expert, went to France working with ICT platform experts.</p>
Wider embracing of a common framework to suit the needs of conservators and scientists in Heritage Buildings	Partially	<p>This objective is not fully achieved yet but HB's conservators and scientists are deeply engaged in all Action's direct and indirect activities. Either in Action's meetings, Think Thanks or STSMs (for example) either with their participation in related projects where Action's members are deeply engaged (as mentioned in objective 4).</p>
Standardisation of methodologies resulting in simplification and enhanced information exchange	Partially	<p>WG1 Data Base and WG2 ontology will definitely contribute to achieve this objective. WG2 is now developing an ontology (taking into consideration existing ones) with contributions from different Action's experts in different fields (Historical value and restoration, natural sciences, social sciences, economical sciences, management, risk analysis...).</p>
Dissemination efforts, which will result in enhanced communication between the several Heritage Buildings communities, adopting the common framework	Partially	<p>As mentioned huge dissemination efforts have been made. The Action is now reaching half of its financed timeline and the dissemination efforts comprise scientific dissemination, stakeholders' engagement and web diffusion. The scientific dissemination and stakeholders' engagement has progress as foreseen (already described in the previous objectives), while the webpage needs some improvements. An innovative e-book is being prepared in order to reach a wider non-technical audience.</p>

MoU deliverables

MoU deliverable	Level of progress ¹	Evidence of (partial) delivery achievement including hyperlink to enable assessment of the delivery ¹ . Justification if full achievement is not foreseen
WG report and Action report (month 24)	100	Accomplished
Report on the social engagement questionnaires (month 30)	50	Following the WG4 Riga meeting (April 2016) [http://td1406.csites.fct.unl.pt/wordpress/activities-of-the-wg-4/], position papers on country specific perspectives (UK, CY, IT, RO, TU) and cross-country analysis as a basis for the brochure development, were established [http://td1406.csites.fct.unl.pt/wordpress/wp-content/uploads/2015/12/WG4-Action-3rd-MC-meeting_01_11_2016.pdf]. This work lead to the development of the first draft of the Questionnaire on Social Engagement.
Public Report on Integration of Heritage Buildings into their surroundings (Draft version) (month 30)	25	A preliminary table of contents was established in the WG3 meeting in Mellecey (February 2017) [http://td1406.csites.fct.unl.pt/wordpress/wp-content/uploads/2017/02/I2MHB_Germolles2017_minutes_final.pdf] and presented during the WG3 meeting in CG/WG meeting in Nancy (March 2017). A more thorough discussion is planned for the next WG meeting in Rome (June 2017).
WG report and Action report (Periodic internal report) (month 30)	0	Full achievement is foreseen.
White book for interoperability (month 36)	30	The objectives, description, problematic and requirements are established. Currently the ontology [https://docs.google.com/spreadsheets/d/1-IhGDJ3kvzKORgU72epxu29Ixm7Suyn6FdInTj3hrS8/edit#gid=289904300] is being developed in order to cope with the interoperability topic.
Common Framework (Draft version) (month 42)	40	The database schema for capturing information about good practices on Intelligent Heritage Building Management is prepared (WG1), establishing a self evaluation process to be completed by the info providers. Currently WG1 and WG2 are collaborating in the knowledge distilling through the data base information.
Proposal for specific standards /	20	The undergoing work on the ontology (WG2) will be basis to propose an interoperability view of the HB integrated management. Expected contributions from the other WGs will allow to propose principles and

protocols (month 42)		regulations that should govern HBs preservation and rehabilitation process.
Public Report on Integration of Heritage Buildings into their surroundings (Final version) (month 42)	0	To be completed after the draft version.
European conference on Heritage Buildings social engagement printed proceedings (month 42)	0	Full achievement is foreseen.
Final i2MHB Open Conference (month 46)	0	Full achievement is foreseen.
WG report and Action final report (month 48)	0	Full achievement is foreseen.

Co-authored publications and FP7/ H2020 proposals

The co-authored publications and FP7/ H2020 proposals/ projects resulting from the Action are listed on the page following the “Additional outputs and achievements” section

Additional outputs and achievements

Please describe any other outputs and achievements that have resulted or are in progress, focusing in particular on those that contribute to the COST mission of “COST enables break-through scientific developments leading to new concepts and products and thereby contributes to strengthen Europe’s research and innovation capacities.”

Co-authored publications and FP7/ H2020 proposals

Co-authored publications

Enter in the table below only publications on the topic of the Action, co-authored by at least two Action participants from two different countries participating in the Action and for which the Action networking added value. A maximum of ten publications may be entered. If the Action has more than ten such publications the Core Group should select the ten most significant ones to include in the table below.

NO.	Bibliographic data (including: Title, Authors, Title of the periodical or the series, Issue number or volume, Publisher, Year of publication, Relevant pages)	Main author	Number of authors	Action participants listed among the authors (Name, country and role ²)	WGs involved in publication	Date of submission (must be after Action start date)	Expected date of publication (if not already published)	Persistent link to publicly available version of the paper (if available) or the abstract	Is/Will open access ³ provided to this publication?	Is/ will COST be cited/ acknowledged in the publication?	Are/ will COST funds (be) implicated in this publication	Relevance to H2020 Societal Challenges ⁴ ?	Is it peer-reviewed?	Was the added value of the Action Networking necessary for the publication	Impact Factor (if applicable)
1	Simulation in Intelligent Management of Pedestrian Flows at Heritage Sites, Bolshakov V., Merkurjeva G. . In: Proceedings of the 2nd Intern. Conf. on Systems Informatics, Modelling and Simulation (SIMS 2016), Latvia, Riga, 1-3 June, 2016. Los Alamitos: IEEE Computer Society Conference Publishing Services, 2016, pp.18-22.	Vitaly Bolshakov	2	Vitaly Bolshakov, WG4 member, Training School Trainee; Galina Merkurjeva, Latvia, MC Member	4	02/ 2016		http://ieeexplore.ieee.org/document/7811864/	no	COST is cited	no	yes	yes	yes	Cited in SCOPUS
2	Merkuryeva G., Bolshakov V., Martins J., Gonçalves, R., Bueno Benito G. Intelligent Simulation for Tourism and Cultural Heritage Management. In: Proceedings of the European Modeling and Simulation Symposium, Cyprus, Larnaca, 26-28 September, 2016. Rende: 2016, pp.328-335. ISBN 978-88-97999-76-8.	Galina Merkurjeva	5	Galina Merkurjeva, Latvia, MC Member; Vitaly Bolshakov, WG4 member, Training School Trainee; João Martins, Portugal, Action chair; Ricardo Gonçalves, Portugal, MC member; Gumerindo Bueno Benito, Spain, MC member	1, 2, 4	06/2016		https://ortus.rtu.lv/science/lv/publications/22871-Intelligent+Simulation+for+Tourism+and+ Cultural+Heritage+Management	no	COST is cited	no	yes	yes	yes	Cited in SCOPUS
3	Knowledge engineering approaches for building materials domain", Andrej Tibaut, Branko Kaučič, Daniela D. Perhavec, Hervé Panetto and Piero Tiano, Proceedings of the 1st International Conference on Construction Materials for Sustainable Future (CoMS 2017), Zadar, Croatia	Andrej Tibaut	5	Andrej Tibaut, Slovenia, MC Member / Branko Kaučič, Slovenia, MC Substitute / Daniela D. Perhavec, Slovenia, Training School Trainee / Hervé Panetto,	2	October 2016	April, 2017	http://link.springer.com/chapter/10.1007/978-3-319-48496-9_71	no		no	yes	yes	yes	

² MC Member/ MC Substitute/ MC Observer/ WG Member/ Training School Trainee/ STSM Recipient/ Other Action Participant

³ Open Access is defined as free of charge access for anyone via Internet. Please answer "yes" if the open access to the publication is already established and also if the embargo period for open access is not yet over but you intend to establish open access afterwards.

⁴ H2020 Societal Challenges are "Health, demographic change and wellbeing"; "Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy"; "Secure, clean and efficient energy"; "Smart, green and integrated transport"; "Climate action, environment, resource efficiency and raw materials"; "Europe in a changing world - inclusive, innovative and reflective societies"; "Secure societies - protecting freedom and security of Europe and its citizens"

				France, MC Member / Piero Tiano, Italy, MC Member											
4	BORGARINO M.P. (2016), Giancarlo De Carlo's Urbino University Colleges: A conservation management plan for long-term maintenance and sustainable use of the complex, in Van Balen K. & Verstryng E. (eds.), Structural Analysis of Historical Constructions – Anamnesis, diagnosis, therapy, controls, , Taylor & Francis Group, London, pp. 158 – 155.	Borgarino M.P.	1	Borgarino M.P. Italy	1	December 2015		Google book	Yes	yes	ECI conference grant by COST Action TD1406	yes	Yes	yes	
5	Lobovikov-Katz, A., Bueno G., Marcos, V., Martins, J., Sojref, D. Training schools for conservation of cultural heritage: between expertise, management and education, in: Ioannides, M., Fink,E., Moropoulou,A.,Hagedorn-Saupe, M., Fresa, A.,Rajcic, V., Grussenmeyer, P. (Eds.), Digital Heritage. Progress in Cultural Heritage: Documentation, Preservation, and Protection Volume 10058 of the series Lecture Notes in Computer Science pp 880-890, Springer 2016	Anna Lobovikov-Katz	5	Lobovikov-Katz, A. (WG3 vice-leader), Bueno G. (WG1 leader), Martins, J. (Action chair), Sojref, D. (STSM chair)	2	July 2016	October 2016	http://link.springer.com/chapter/10.1007/978-3-319-48496-9_71	no	yes	no	yes	yes	yes	Springer book
6	J. Martins, R Gonçalves, G. Bueno, A. Granic, C. Degrigny, A. Lobovikov-Katz; “i2MHB – a COST Action aiming multidisciplinary interoperability”. Proceedings of the 5th International Conference on Heritage and Sustainable Development, pp. 297-304, 12-15 July 2016, Lisbon, Portugal	João Martins	6	J. Martins (Action Chair), R Gonçalves (WG2 vice leader), G. Bueno (WG1 leader), A. Granic (WG1 vice leader), C. Degrigny (WG3 leader), A. Lobovikov-Katz (WG3 vice leader)	3	March 2016	July 2016	(Book of abstracts) http://heritage.greenlines-institute.org/download/OXp0RVM4WTZVVmFHMFIU1NtakcxdEVENUNmeXZJdHVtR00rSW43ejVWSU5tZDZX2NKKzJlORVVmM3UyLzE2REVqQkVmQ1BZdnErOTJvaVdJVNBOUVhYaWREUJ6cldUYVNHwjVTTkMvUUpsOVFKTmhuR1JtUWtCRmJYMVU2RTk=	no	yes	no	yes	yes	yes	

FP7/ H2020 Proposals and projects

This table contains FP7/ H2020 proposals/ projects spinning off from Action activities and including in the proposing consortium at least three Action participants from at least three different countries participating in the Action.

N O.	Title	Name and country of main proposer	Number of proposers	Action participants listed among the proposers (Name, country, role ³ in the Action)	Funding agency submitted to	Date submitted	Date results expected	Result	Call identifier	Relevance to H2020 Societal Challenges ⁴ ?	Was the added value of the Action Networking necessary for the proposal / project?
Projects											
1	Smart Heritage City (SHCITY)	Gumersindo Bueno Benito, Spain	7 (plus 11 associated partners)	Martín Lerones, P.; Spain; MC Substitute Gumersindo Bueno Benito, Spain, WG leader and MC member João Martins, Portugal, Action Chair Pauloa Amaral, Portugal, WG vice-leader and MC member	SUDOE- Interreg IV B	April 2016		Approved	Ref. SOE/P1/E0332	yes	Yes
2	Heritage Care	Portugal	9 (plus 11 associated partners)	Gumersindo Bueno Benito, Spain, WG leader and MC member Luis Almeida, participant	SUDOE- Interreg	April 2016		Approved	Ref. SOE1/P5/P0258	yes	yes

Proposals											
1	RECUHE	Santa Maria La Real Historical Heritage Foundation, Spain	13	Gumersindo Bueno Benito, Spain, WG leader and MC member Galina Merkuryeva, WG leader, Latvia João Martins, Portugal, Action Chair	European Comission	August 2015		Rejected	H2020-DRS-2015	yes	yes
2	ShRegion	Spain	6	Gumersindo Bueno Benito, Spain, WG leader and MC member João Martins, Portugal, Action Chair	Interreg Atlantic	December 2016		Rejected	Call 2016 - Stage 1	yes	yes
3	Herit-Data	Spain	11	Gumersindo Bueno Benito, Spain, WG leader and MC member João Martins, Portugal, Action Chair	Interreg Mediterranean	March 2017	July 2017		Call 2017 - Stage 1	yes	yes
4	PLACe	Petros Patias, Greece	11	AUTH-Aristotle University Thessaloniki, Greece DHRLab-Cyprus University of Technology, Cyprus UNINOVA- Universidade Nova de Lisboa, Portugal	H2020	February 2017		Rejected	H2020-SC6-CULT-COOP-2016-2017 Topic: CULT-COOP-07-2017	yes	yes
5	TOuCH	Petros Patias, Greece	11	AUTH-Aristotle University Thessaloniki, Greece DHRLab-Cyprus University of Technology, Cyprus UNINOVA- Universidade Nova de Lisboa, Portugal	H2020	February 2017	July 2017		H2020-SC6-CULT-COOP-2016-2017 Topic: CULT-COOP-09-2017		yes

I.C. Networking

<p>Added value of the Networking</p> <p>COST Action TD1406 is acting proactively as a community which is open to the integration of new partners, stakeholders, ideas and prospects. COST Action TD1406 is enabling its members to develop a clearer and more realistic idea of the intelligent management of HBs throughout EU.</p> <p>Under the scope of TD1406 several external networking collaborations have been established, such as:</p> <ul style="list-style-type: none"> • Collaboration with the International Scientific Committee on Archaeological Heritage Management (ICAHM) in the project “Review and finalize best practices (standards and guidelines) for archaeological heritage management at World Heritage Sites. • COST members are actively collaborating in CIPA TG on Earth Observation in Cultural Heritage. • Meeting with Douglas C. Comer (President of ICAHM and Expert Member, ICOMOS International Scientific Committee on Archaeological Heritage, Vice-Chairman, ICOMOS United States National Committee) during the International Conference “Review and finalize best practices (standards and guidelines) for archaeological heritage management at World Heritage Sites”, in Florence (November 2015), due to the similarity of the topics between the ICAHM and COST Action TD1406. • Participation of the Action Chair in a restricted meeting, in Cyprus (November 2016), in order to exchange ideas for the future (“Shared meeting with 18 EU projects: the future of digital heritage in Europe – A brainstorming & roundtable discussion”), with the participation of one DG Connect Research Programme Officer. <p>Several project proposals (seven in total, being two already approved and one rejected) were established following the member’s participation in the Action.</p> <p>The amount of accomplished STSM, involving ECIs from 14 different countries, will surely increase the networking value of the Action.</p>
<p>Extent of the networking</p> <p>COST Action TD1406 has accomplished a good equal and fair integration of all its members. The Action involves 26 countries, 14 of which belonging to COST Inclusiveness Target Countries, with 187 participants (from which 43% belong to ITC countries and 52% are female). In the meetings the Action has a 52% participation of female members, and 65% female participation in the STSM. ECIs have also an equal participation in the several WGs and a major participation in the STSM (where 85% are coming from ITCs).</p>

I.D. Impacts

The impacts that have resulted, or might result from the Action are described in the following table.

Description of the impact	Type of impact ⁵	Timing of impact ⁶
Collection of EU HBs case studies with corresponding issues (level of authenticity vs integrity, level of integration in their surroundings, access to visitors, risks to which they are exposed, conservation and reconstruction strategies, pros and cons of current use or re-use, communication strategy). These case studies will be used all through the I2MHB action to illustrate management policies.	All	Within 2 years
Database schema for capturing information about good practices on Intelligent Heritage Building Management, to establish a self evaluation process.	All	Within 2 years
Questionnaires on social engagement to understand the social role played by HBs in leveraging the socio-cultural dimension in different European countries	Economic, Societal	Within 1 year
Deployment of a common Framework, with a multidisciplinary approach, methodology and user orientation, to improve heritage management's efficiency.	All	Foreseen 2-5 years
Establishment of a Pan-European and multidisciplinary communication platform to support the realization of opportunities in the field of HBs, maintaining a sustainable European network of researchers, solution providers, end-users, authorities and industrial partners in the field of HBs	All	Foreseen 2-5 years

I.E Dissemination and exploitation of Action results

Describe the Action's dissemination and exploitation approach as well as all activities undertaken to ensure dissemination and exploitation of Action results and the effectiveness of these activities.

Add description here			
Item/ activity	Target audience	Result	Hyperlink
Special Session at the 28th European Modeling & Simulation Symposium (Simulation in Industry) EMSS 2016,	Scientific community	3 papers presented and published	http://www.msc-les.org/conf/emss2016/index_file/MCSVH.htm

⁵ Scientific/ technological, Economic, Societal

⁶ Achieved/ Foreseen within 2 years/ Foreseen 2-5 years/ Foreseen 5-10 years/ Foreseen 10+ years

<p>Cyprus, September 26 – 28, 2016 (organized by Galina Merkuryeva, MC Member; Ricardo Gonçalves, MC member)</p>			
<p>Proposed workshop on Advances on Digital Cultural Heritage, on 23rd ICE/IEEE ITMC conference (27-29 June 2017) (organized by Marinos Ioannides and Žarnić Roko, MC Members; João Martins, Action Chair)</p>	<p>Scientific community</p>	<p>In progress</p>	<p>http://www.ice-conference.org/My-Files/Workshop_W1-4.aspx</p>
<p>WG3 meeting at Germolles, France (February 2017)</p>	<p>WG meeting with general public acknowledgeme nt</p>	<p>Local wider publicity of COST Actions</p>	<p>http://www.lejssl.com/edition-de-chalon/2017/02/25/un-groupe-de-travail-europeen-au-chateau-de-germolles</p>
<p>Press conference on the project SHCity at Lisbon, Portugal (February 2017)</p>	<p>HB's experts, journalists and general public</p>	<p>National level divulcation</p>	<p>http://www.fct.unl.pt/noticias/2017/02/interreg-shcity-uma-aplicacao-para-gestao-do-patrimonio</p> <p>https://www.publico.pt/2017/02/06/local/noticia/e-se-uma-aplicacao-lhe-permitisse-fugir-aos-turistas-1761076</p> <p>http://sicnoticias.sapo.pt/programas/edicaodamanha/2017-02-07-Smart-Heritage-City-cria-app-para-turistas</p>

(SHCity results from partnership between COST TD1406 members)			http://www.tsf.pt/sociedade/interior/uma-app-para-gerir-melhor-o-fluxo-de-turistas-5651547.html http://www.smart-cities.pt/pt/noticia/shcity-patrimonio97-smart1/ http://www.shcity.eu/?language=pt
COST event “Inspiring researchers, strengthening Europe – Portugal in the spotlight” (February 2017)	COST community	National COST community level divulgation	http://www.cost.eu/events/PortugalresearchersMoedas

I.F. Action success(es)

COST regularly communicates the successes of Actions. At this point in time what aspect(s) (outcomes and/ or impacts, rather than activities) of this Action is/ are the most suitable for communication?

Description of the success story	Dimension of the success <ul style="list-style-type: none"> Breakthrough: scientific, technological or socioeconomic Policy implementation (specify which policy) Capacity building
<p>COST TD1406 has contributed for the GEO (Group on Earth Observations) Work Programme for 2016 [http://earthobservations.org/documents/geo_xii/GEO-XII_15_2016%20Work%20Programme.pdf], particularly in CA-24 (Earth Observation in Cultural Heritage documentation). COST has further made particular contributions involving its partners in the relevant activities, as well as by dissemination the activities through the WG3 publications, through its special task group 3.C2 (Documentation and monitoring of HBs & sites / surroundings) [http://perslab.topo.auth.gr/blog/2015/11/18/geo-earth-observation-in-cultural-heritage/].</p>	All

II. Management Report

II.A. Overview of expenditure

Insert below in the yellow cells the summary of figures from the Yearly Financial Reports (YFRs) of completed Grant Periods and an IFR of any incomplete Grant Period – the Totals (non-yellow cells) will automatically sum.

	Grant Period 1	Grant Period 2	Grant Period 3	TOTAL
GP start and end dates	(01/06/2015-30/04/2016)	(01/05/2016-30/04/2017)	(01/05/2017-30/04/2018)	
Grant Holder institution	NOVA.id.FCT (PT)	NOVA.id.FCT (PT)	NOVA.id.FCT (PT)	
Meetings	EUR 68 429,05	EUR 44 169,04	EUR -	EUR 112 598,09
Training Schools	EUR 27 079,58	EUR 26 372,12	EUR -	EUR 53 451,70
STSMs	EUR 6 000,00	EUR 35 040,00	EUR -	EUR 41 040,00
Dissemination	EUR 6 449,90	EUR 5 190,00	EUR -	EUR 11 639,90
OERSA ¹	EUR -	EUR -	EUR -	EUR -
Total Scientific Expenditure	EUR 107 958,53	EUR 110 771,16	EUR -	EUR 218 729,69
FSAC ²	EUR 16 193,78	EUR 16 615,67	EUR -	EUR 32 809,45
TOTAL	EUR 124 152,31	EUR 127 386,83	EUR -	EUR 251 539,14

¹ OERSA = Other Expenses Related to Scientific Expenditure (e.g. bank charges)

² FSAC = Amount received by Grant Holder for Financial Scientific and Administrative Coordination

II.B. Budget and Participation management

II.B.1 Budget spent in relation to individuals/ institutions outside participating COST countries					
<i>STSMs from or to institutions from countries other than Participating COST countries</i>					
The table below describes the added value STSMs to approved institutions in IPC or NNC or Specific Organisations and any STSMs from an approved institution in an NNC to a participating COST country.					
Grantee		Host		Date	Topic and value added to the Action
Institution	Country	Institution	Country		
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<i>Invited Speakers</i>					
The table below highlights the added value of Invited Speakers from COST countries that have not accepted the MoU and/ or non-participating NNC, IPC or Specific Organisations whose participation at a meeting or Training School was reimbursed by the Action.					

Participant name	Institution	Countr y	Event date	Topic and added value to the Action	
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<i>Dissemination meetings</i>					
The table below highlights the added value of Dissemination Meetings financed from Action funds.					
Participant name	Role	Countr y	Date	Locatio n	Topic and added value to the Action
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II.C. Participants

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II.D. Specific matters

This section is confidential to the Management Committee, and the COST Association (Administration, Scientific Committee and Committee of Senior Officials); and is not included in the version of the report that is made publicly available.

The Action encountered the following particular difficulties in the implementation of the Action (e.g. imbalances of participation across the Working Groups, inactive country representatives).

COST Action TD1406 was initially approved (in the first MC meeting) as a two two-year grant period. However, this setting had to be changed in the end of the first year, and the Action was converted into a four one-year grant period. The budget and the programing had to be rearranged accordingly.

The MC did not accept the pending intentions to accept the MoU shown in Section I.A for the following reason.

Annex 1

Definitions:

COST Action Challenge (main aim)	"The research question addressed by the COST Action targeting scientific, technological, and / or socioeconomic problems"
COST Action Innovation	"The creation and / or development of new or improved concepts, products, processes, services, and / or technologies that are made available to markets, governments and society"
COST Action objectives	"COST Action objectives are the results that an Action needs to achieve in order to respond to meet its challenge. These are SMART (Specific, Measurable, Achievable, Relevant, Timely) and twofold: research coordination objectives and capacity building objectives."
COST Action research coordination objectives	"Achieving these objectives turns COST Actions from initially scattered teams into one transnational team and leverages the existing funded research. These objectives entail the distribution of tasks, sharing of knowledge and know-how, and the creation of synergies among Action participants to achieve specific outputs."
COST Action capacity building objectives	"Achieving these objectives entail building critical mass to drive scientific progress, thereby strengthening the European Research Area. They can be achieved by the delivery of specific outputs and / or through network features or types and levels of participation."
COST Action networking activities	"any activities organised by the COST Action (whether or not directly funded by COST) in order to achieve research coordination and capacity building objectives."
COST Action networking tools	"instruments through which eligible activities can be funded"
COST Action outputs	"direct results from the COST Action activities. These can be codified knowledge, tacit knowledge, technology, and societal applications."
COST Action impact	"the short- to long-term scientific, technological, and / or socioeconomic changes produced by a COST Action, directly or indirectly, intended or unintended."
COST Action deliverable	"a distinct, expected and tangible output of the Action, meaningful in terms of the Action's overall objectives such as a report, a document, a technical diagram, a software etc. Action deliverables are used to measure its progress and success."
COST Action milestones	"Control points in the Action that help to chart progress. They are also needed at intermediary points so that, if problems have arisen, corrective measures can be taken. A milestone may be a critical decision point in the Action where, for example, the MC must decide which of several technologies to adopt for further development (e.g. core group and MC meetings, mid-term reviews)"
Inclusiveness Target Country (ITC):	Current COST Member Countries targeted by the COST inclusiveness Policy ("Inclusiveness Target Countries" (ITC)): EU 13 (Bulgaria, Cyprus, Czech Republic, Estonia, Croatia, Hungary, Lithuania, Latvia, Malta, Poland, Romania, Slovenia, Slovakia), EU candidate countries (the former Yugoslav Republic of Macedonia, Montenegro, Republic of Serbia, Turkey) and potential EU candidate countries (Bosnia and Herzegovina). In addition, to comply with the EC criteria for 'Spreading Excellence and Widening Participation', Portugal and Luxemburg are included.