

# COST

Domain Committee "MPNS"

## COST Action TD1201

Start Date 07/11/2012

### *Colour and Space in Cultural Heritage (COSCH)*

## MONITORING PROGRESS REPORT

***Reporting Period:*** from 7/11/2012 to 22/7/2013

This Report is presented to the relevant Domain Committee.  
It contains three parts:

- I. Management Report prepared by the COST Office/Grant Holder***
- II. Scientific Report prepared by the Chair of the Management Committee of the Action***
- III. Previous versions of the Scientific Report; i.e., part II of past reporting periods***

The report is a "cumulative" report, i.e. it is updated annually and covers the entire period of the Action.

Confidentiality: the documents will be made available to the public via the COST Action web page except for chapter *II.D. Self evaluation*.

Based on the monitoring results, the COST Office will decide on the following year's budget allocation.

#### **Executive summary:**

COST Action TD1201-COSCH joins 25 COST countries with more than 135 researchers from various fields and started its work with the kick off meeting in November 2012. It's main objective is to promote research, development and application of optical measurement techniques - adapted to the needs of heritage documentation - based on an interdisciplinary cooperation, on a concerted European level and to offer a novel and reliable, independent and global knowledge base facilitating the use of today's and future optical measuring techniques to support the documentation of European heritage. The work started in March 2013 with the first MC and WG meeting. The Steering Committee meets monthly in conference calls to organize and structure the activities and to develop the strategy to achieve the Actions aims. Disseminations, STSMs, Training Schools and a second WG Meeting in autumn will be organized, comprising a special Think Tank dedicated to foster the contributions and activities of ESRs. Minimum 9 young researchers will attend a STSM in this year. The Action was and will be presented in several conferences. Already in the first year of its periodicity the Action makes use of all important COST instruments, why we believe that this action is on a good way to succeed and acts in the spirit of COST.

## I. Management Report

### I.A. Cost Action Fact Sheet

#### Cost Action Number and Title

MPNS TD 1201 | Colour and Space in Cultural Heritage (COSCH)

#### Domain

Trans Domain TD

#### Action Details

Mou:

CSO approval date: 07/06/2012

Start of Action: 07/11/2012

Entry into force: 16/07/2012

End of Action: 06/11/2016

#### Objectives

True, precise and complete documentation of artefacts is essential for conservation and preservation of our cultural heritage (CH). By ensuring access to the best possible documentation of artefacts we are contributing to the enhanced understanding of material CH and help its long-term preservation. We are all responsible for ensuring that this heritage is passed on to future generations.

Documentation of CH involves researchers, scientists and professionals from multiple disciplines and industries. There is a need to promote research, development and application of non-contact optical measurement techniques (spectral and spatial), adapted to the needs of heritage documentation, on a concerted European level, in order to protect, preserve, analyse understand, model, virtually reproduce, document and publish important CH in Europe and beyond.

Research in this field typically relies on nationally-funded projects with little interaction between stakeholders. This Action will provide a stimulating framework for articulating and clarifying problems, sharing solutions and skills, standardising methodologies and protocols, encouraging a common understanding, widening applications and dissemination. The Action will foster open standards for state-of-the-art documentation of CH. It will simplify the usage of high-resolution optical techniques in CH and define good practice and stimulate research.

#### Parties

Country	Date	Country	Date	Country	Date	Country	Date
Belgium	08/10/2012	Bosnia and Herzegovina	10/10/2012	Croatia	01/03/2013	Czech Republic	21/09/2012
Denmark	04/07/2012	Finland	30/07/2012	France	30/08/2012	Germany	27/07/2012
Greece	11/09/2012	Ireland	06/07/2012	Israel	21/04/2013	Italy	25/07/2012
Malta	16/10/2012	Netherlands	02/05/2013	Norway	12/10/2012	Poland	16/07/2012
Portugal	19/09/2012	Romania	26/07/2012	Serbia	10/10/2012	Slovakia	27/08/2012
Slovenia	08/11/2012	Spain	19/06/2012	Sweden	07/02/2013	Switzerland	16/07/2012
United Kingdom	12/06/2012						

Total: 25

Chair	Vice Chair
Prof Frank BOOCHS University of Applied Sciences Mainz Lucy Hillebrand Str. 2 55128 Mainz, Germany boochs@geoinform.fh-mainz.de	Dr Anna BENTKOWSKA-KAFEL Kings College London 26-29, Drury Lane, WC2B 5RL, London United Kingdom anna.bentkowska@kcl.ac.uk
Domain Committee Rapporteurs	
Prof. Luciano MULE STAGNO DC Rapporteur of TD1201 MPNS University of Malta Tal-Qroqq, MSD2080 MSIDA, Malta luciano.mule-stagno@um.edu.mt	Dr Bratislav MARINKOVIC DC Rapporteur of TD1201 CMST The Institute of Physics, University of Belgrade, Laboratory for Atomic Collision Processes Pregrevica 118, Zemun11080, Belgrade, Serbia bratislav.marinkovic@ipb.ac.rs
Prof. Doina BANCIU DC Rapporteur of TD1201 ICT National Institute for R&D in Informatics No. 8-10 Maresal Averescu Avenue, Sector 1011455, Bucharest, Romania doina.banciu@ici.ro	
Science Officer:	Administrative Officer:
Dr Caroline WHELAN COST Office caroline.whelan@cost.eu +3225333814	Milena STOYANOVA COST Office milena.stoyanova@cost.eu +32 2 533 38 00

Action Web site
www.cosch.info

Grant Holder		
Executive	Finance Officer	Legal Representative
Prof Frank BOOCHS University of Applied Sciences Mainz	Martina ZIMMERMANN University of Applied Sciences Mainz	Prof. Dr. Gerhard MUTH University of Applied Sciences Mainz

Working Groups
<b>Working group 1: Spectral object documentation</b>

Participant	Country	Institution
Markku Hauta-Kasari	FI	University of Eastern Finland
Marcello Picollo	IT	IFAC-CNR
Elizabeth Peacock	NO	NTNU
Marie Woerle	CH	Swiss National Museum
Gheorghe Nucleescu	RO	Romanian National Museum
Alamin Mansouri	FR	University of Burgundy
Boris Sluban	SI	University of Maribor
Natasa Sladoje Matic	RS	University of Novi Sad
Jorge A. Herrera	ES	Technical University of Catalonia

Sony George	NO	Gjovik University College
Fenella G. France	US	Library of Congress
Rouven Pillay	FR	C2RMF
Stefan Röhrs	DE	Rathgen Forschungslabor, SMB
Franck Marzani	FR	University of Burgundy
Julio M. Del Hoyo-Melendez	PL	National Museum in Krakow
Selma Rizvic	BH	Faculty of El. Engeneering
Aida Sadzak	BH	Faculty of El. Engeneering
Sergio Nascimento	PT	Universidade do Minho
Andras Jung	DE	
Marvin Klein	NL	University of Minho
Aur�lie Tourni�	FR	Mus�um National d'Histoire, Paris

### Working group 2: Spatial object documentation

Participant	Country	Institution
Haida Liang	UK	Nottingham Trent University
Christian Degrygn	CH	Haute Ecole de Cons.-Rest. Arc
Patrick Semal	BE	RBINS
Marcus Schaber	DE	IWR University of Heidelberg
Susanne Kr�mker	DE	IWR University of Heidelberg
Dirk Rieke-Zapp	DE	Breuckmann GmbH
Markus Gerke	NL	University of Twente, ITC
Frank Boochs	DE	i3mainz/FH-Mainz
Anna Bentkowska	UK	King's College
Miroslav Hain	SK	Slovak Academy of Sciences
Maciej Karaszewski	PL	Warsaw University of Technology
Hartmut Jahn	DE	FH-Mainz
Roberto Padoan	NL	National Archife
Karin Kraus	DE	Institut f�r Steinkonservierung
Gunnar Siedler	DE	Fokus GmbH Leipzig
Sebastian Vetter	DE	Fokus GmbH Leipzig
Michael Zollh�fer	DE	LGDV Erlangen N�rnberg
Jaroslav Valach	CZ	ITAM Prague
Robert Shaw	IE	Discovery Programme
Eryk Bunsch	PL	Wilanow Palace Museum
Alain Tremeau	FR	Univ. jean Monnet
Desponia Tsiafaki	GR	Athena Research Center
Orla Murphy	IE	University College Cork
Christian Teutsch	DE	Fraunhofer IFF
Mona Hess	UK	UCL
Kirk Martinez	UK	University of Southampton
Hermann Bonnici	MT	Restoration Directorate
Zoran Ognjanovic	SER	Serbian Academy of Sciences and Arts
Frantisek Peterka	CZ	Masaryk University
Robert Sitnik	PL	Warsaw University of Technology

### Working group 3: Algorithms and procedures

Participant	Country	Institution
Alain Tremeau	FR	Univ. Jean Monnet
Orla Murphy	IE	University College Cork
Robert Sitnik	PL	Warsaw University of Technology
Markus Gerke	NL	University of Twente
Ole Gron	DK	Langlands Museun
Dirk Reike-Zapp	DE	Breuckmann GmbH
Susanne Krömker	DE	IWTC Uni. Heidelberg
Marcus Schaber	DE	IWTC Uni. Heidelberg
Franck Marzani	FR	Univ. Bourgogne
Markku Hauta-Kasari	FR	Rathgen-Forschungslabor SMB
Boris Sluban	SI	University of Maribor
Natasa Sladoje Matic	SER	University of Novi Sad
Celeste Chudnyk	DE	i3mainz/FH-Mainz
Waldemar Mordwinzew	DE	i3mainz/FH-Mainz
Aurelie Tourniè	FR	Muséum National d'Histoire, Paris

### Working group 4: Analysis and restoration of CH surfaces and objects

Participant	Country	Institution
Marie Woerle	CH	Swiss National Museum
Eryk Bunsch	PL	Wilanow Palace Museum
Roberto Padoan	NL	National Archif
Haida Liang	UK	Nottingham Trent Uni
Fenella France	US	Library of Congress
Elizabeth Peacock	NO	NTNU
Stefan Röhrs	DE	Rathgen Forschungslabor SMB
Boris Sluban	SI	University of Maribor
Jean-Philippe Echard	FR	Cité de la musique National Institute of Nuclear Physics and Engineering
Bogdan Constantinescu	RO	
Christian Degrigny	CH	HECARC

### Working group 5: Visualisation of CH objects and its dissemination

Participant	Country	Institution
Selam Rizvic	BH	Faculty of EE Sarajevo
Christian Degrigny	CH	HECARC
Patrick Semal	BE	RBINS
Marvin Klein	NL	Demcon
Roberto Padoan	NL	National Archife
Marcello Picollo	IT	IFAC-CBR
Zoran Ognjanovic	SER	Serbian Academy of Sciences and Arts
Tobias Reich	DE	i3mainz/FH-Mainz
Burkhard Tietz	DE	i3mainz/FH-Mainz
Gheorghe Niculescu	RO	Romanian National Museum
Miroslav Hain	SK	Slovak Academy of Sciences
Frantisek Peterka	CH	Centre for Nanotechnology



Hartmut Jahn	DE	FH-Mainz
Karin Kraus	DE	Institut für Steinkonservierung
Fenella G. France	US	Library of Congress
Jean-Philippe Echard	FR	Cité de la musique
Sony George	NO	Gjovik University
Bogdan Constantinescu	RO	National Institute for Nuclear Physics and Engineering
Elizabeth E. Peacock	NO	Norwegian University of Science and Technology
Marie Woerle	CH	Swiss National Museum
Ruven Pillay	FR	C2RMF
Robert Shaw	IE	Discovery Programme
Kirk Martinez	UK	University of Southampton
Anna Bentkowska	UK	King's College
Eryk Bunsch	PL	Wilanow Palace Museum
Mona Hess	UK	UCL
Hermann Bonnici	MT	Ministry for Resources and Rural Affairs
Sebastian Vetter	DE	fokus GmbH Leipzig
Gunnar Siedler	DE	fokus GmbH Leipzig
Margarida Pires	PT	University of Lisboa
Julio M Del Hoyo-Melendez	PL	National Museum in Krakow
Sergio Nascimento	PT	University of Minho
Desponia Tsiafaki	GR	Athena Research Center
Aida Sadzak	BH	Faculty of EE Sarajevo

## I.B. Management Committee member list

Belgium	
Dr Patrick SEMAL <b>MC Member</b> Royal Belgian Institute of Natural Sciences, 29 rue Vautier, Anthropology and Prehistory, B-1000 Brussels, Belgium <b>patrick.semala@naturalsciences.be</b>	
Bosnia and Herzegovina	
Dr Selma RIZVIC <b>MC Member</b> Faculty of Electrical Engineering Sarajevo, Zmaja od Bosne bb71000 Sarajevo, Bosnia and Herzegovina <b>srizvic@etf.unsa.ba</b>	Ms Aida SADZAK <b>MC Member</b> Radio and Television of Bosnia and Herzegovina, Bulevar Mese Selimovica 1271000 Sarajevo, Bosnia and Herzegovina <b>asadzak@etf.unsa.ba</b>
Croatia	
Dr Sofija KLARIN ZADRAVEC <b>MC Member</b> National and University Library in Zagreb, Hrvatske bratske zajednice 410000 Zagreb, Croatia <b>sklarin@nsk.hr</b>	Ms Dunja SEITER SVERKO <b>MC Member</b> National and University Library of Zagreb, Hrvatske bratske zajednice 410 000 Zagreb, Croatia <b>dseiter-sverko@nsk.hr</b>
Czech Republic	
Dr Frantisek PETERKA <b>MC Member</b> <b>fpet@volny.cz</b>	
Denmark	
Dr Sergey KUCHERYAVSKIY <b>MC Member</b> Aalborg University, Fredrik Bajers Vej 5, Postbox 1599100 Aalborg, Denmark <b>svk@bio.aau.dk</b>	Dr Ole GRON <b>MC Member</b> Langlands Museum, Jens Winthersvej 125900 Rudkbing, Denmark <b>olegron.lmr@gmail.com</b>
Finland	
Prof. Markku HAUTA-KASARI <b>MC Member</b> University of Eastern Finland, SIB-labsFI-80101 Joensuu, Finland <b>markku.hauta-kasari@uef.fi</b>	Ms Kirsti HARVA <b>MC Member</b> (not yet registered) <b>kirsti.harva@fng.fi</b> PENDING
France	
Dr Alamin MANSOURI <b>MC Member</b> University of Bourgogne UFR Sciences et Techniques , BP 1689010 Auxerre, France <b>alamin.mansouri@u-bourgogne.fr</b>	Prof Alain TREMEAU <b>MC Member</b> University Jean Monnet, Laboratoire Hubert Curien, 18, rue Benoit Lauras42000 Saint Etienne, France <b>alain.tremeau@univ-st-etienne.fr</b>
Mr Ruven PILLAY <b>MC Substitute</b> C2RMFPalais du Louvre - Porte des Lions, 14 Quai Franois Mitterrand75001 Paris, France <b>ruven@c2rmf.cnrs.fr</b>	
Germany	
Prof Hartmut JAHN <b>MC Member</b> img - Institut für Mediengestaltung, University of Applied Sciences Mainz, Wallstr.1155122 Mainz, Germany <b>Hartmut.Jahn@img.fh-mainz.de</b>	Prof Stefan SIMON <b>MC Substitute</b> <b>s.simon@smb.spk-berlin.de</b>
Greece	
Dr Despoina TSIAFAKI <b>MC Member</b> Athena Research Center58 Tsimiski St.GR 67100 Xanthi, Greece <b>tsiafaki@ceti.gr</b>	

Ireland	
<b>Dr Orla MURPHY</b> <b>MC Member</b> University College Cork 1.57 ORahilly Building, University College Cork, College Road C1 Cork, Ireland <b>o.murphy@ucc.ie</b>	<b>Mr Robert SHAW</b> <b>MC Member</b> The Discovery Programme, 63 Merrion Square, Dublin D2 Dublin, Ireland <b>robert@discoveryprogramme.ie</b>
Israel	
<b>Dr Irina (Rina) WASSERMAN</b> <b>MC Member</b> Western Galilee Academic College, Western Galilee Academic College, Department of Conservation of Sites and Monuments 24121 Acre, Israel <b>wassermn@gmail.com</b>	
Italy	
<b>Prof. Raimondo SCHETTINI</b> <b>MC Member</b> Università degli Studi di Milano Bicocca DISCo, Viale Sarca 336 U1420126 Milano, Italy <b>Schettini@disco.unimib.it</b>	<b>Mr Marcello PICOLLO</b> <b>MC Member</b> Istituto di Fisica Applicata Nello Carrara del Consiglio Nazionale delle Ricerche (IFAC-CNR) Via Madonna del Piano 1050019 Sesto Fiorentino, Italy <b>m.picollo@ifac.cnr.it</b>
Malta	
<b>Dr Claire BALUCI</b> <b>MC Member</b> Heritage Malta - Diagnostic Science Laboratories Conservation Division, Ex-Royal Naval Hospital, Triq il-Missjoni Taljana, Bighi, KKR 9030 Kalkara, Malta <b>claire.baluci@gov.mt</b>	<b>Mr Hermann BONNICI</b> <b>MC Member</b> Ministry for Resources and Rural Affairs - Restoration Directorate, Restoration Directorate, OSPIZIO Complex 0000 Floriana, Malta <b>hermann.bonnici@um.edu.mt</b>
<b>Ms Jacqueline MICALLEF GRIMAUD</b> <b>MC Substitute</b> (not yet registered) <b>jacqueline.micallef.grimaud@mcast.edu.mt</b> PENDING	<b>Mr Raymond MAGRI</b> <b>MC Substitute</b> (not yet registered) <b>rmagri@attardco.com</b> PENDING
Netherlands	
<b>Dr Markus GERKE</b> <b>MC Member</b> University of Twente, University of Twente 7514AE Enschede, Netherlands <b>m.gerke@utwente.nl</b>	
Norway	
<b>Prof Elizabeth Ellen PEACOCK</b> <b>MC Member</b> <b>elizabeth.peacock@ntnu.no</b>	<b>Prof Jon Yngve HARDEBERG</b> <b>MC Member</b> <b>jon.hardeberg@hig.no</b>
<b>Dr Sony GEORGE</b> <b>MC Substitute</b> Gjøvik University College, The Norwegian Colour and Visual Computing Laboratory, Faculty of Computer Science and Media Technology, Gjøvik University College, Gjøvik, Oppland, Norway 191 Oppland, Norway <b>sonytgeorge@gmail.com</b>	
Poland	
<b>Prof Robert SITNIK</b> <b>MC Member</b> Warsaw University of Technology, Boboli 802-525 Warsaw, Poland <b>r.sitnik@mchtr.pw.edu.pl</b>	<b>Mr Eryk BUNSCH</b> <b>MC Member</b> Wilanow Palace Museum, St. K. Potockiego 10/1602-958 Warsaw Poland <b>jerzywart@yahoo.de</b>
<b>Dr Julio M. DEL HOYO-MELENDEZ</b> <b>MC Substitute</b> National Museum in Krakow, Al. 3 maja 130-062 Krakow, Poland <b>jdelhoyo@muzeum.krakow.pl</b>	<b>Ms Anna KUSMIDROWICZ-KROL</b> <b>MC Substitute</b> National Institute of Museology and Collections Protection, ul. Goraszewska 702 910 Warsaw, Poland <b>akusmidrowicz@nimoz.pl</b>



Portugal	
<b>Prof Sergio NASCIMENTO</b> <b>MC Member</b> Universidade do Minho, Departamento de Física, Campus de Gualtar 4710-057 Braga Braga, Portugal <b>smcn@fisica.uminho.pt</b>	<b>Dr Margarida PIRES</b> <b>MC Member</b> Faculty of Sciences, University of Lisboa, Campo Grande Ed. C81749-016 LISBOA, Portugal <b>margarida.pires@fc.ul.pt</b>
Romania	
<b>Dr Bogdan CONSTANTINESCU</b> <b>MC Member</b> National Institute of Nuclear Physics and Engineering 407 Atomistilor Street 077125 BUCHAREST, Romania <b>bconst@nipne.ro</b>	<b>Dr Gheorghe NICULESCU</b> <b>MC Member</b> National Museum of Romanian History 12 Calea Victoriei 030026 Bucharest, Romania <b>niculescu.geo@gmail.com</b>
Serbia	
<b>Dr Zoran OGNJANOVIC</b> <b>MC Member</b> Mathematical Institute of the Serbian Academy of Sciences and Arts, Kneza Mihaila 36 11001 Belgrade, Serbia <b>zorano@mi.sanu.ac.rs</b>	<b>Prof Natasa SLADOJE MATIC</b> <b>MC Member</b> Faculty of Technical Sciences, University of Novi Sad, Trg Dositeja Obradovica 621 000 Novi Sad, Serbia <b>sladoje@uns.ac.rs</b>
<b>Dr Tibor LUKIC</b> <b>MC Substitute</b> Faculty of Technical Sciences, University of Novi Sad, Trg D. Obradovica 621000 Novi Sad, Serbia <b>tibor@uns.ac.rs</b>	<b>Prof Zarko MIJAJLOVIC</b> <b>MC Substitute</b> <b>zarkom@matf.bg.ac.rs</b>
Slovakia	
<b>Dr Miroslav HAIN</b> <b>MC Member</b> Institute of Measurement Science, Slovak Academy of Sciences, Dubravská cesta 984104 Bratislava, Slovakia <b>Miroslav.Hain@savba.sk</b>	<b>Dr Matej RUTTKAY</b> <b>MC Member</b> Institute of Archaeology, Slovak Academy of Sciences, Akademická 294921 Nitra, Slovakia <b>matej.rutt kay@savba.sk</b>
Slovenia	
<b>Dr Boris SLUBAN</b> <b>MC Member</b> <b>boris.sluban@uni-mb.si</b>	
Spain	
<b>Dr Meritxell VILASECA</b> <b>MC Member</b> <b>mvilasec@oo.upc.edu</b>	<b>Ms Nuria RODRIGUEZ-ORTEGA</b> <b>MC Member</b> University of Mlaga, Facultad de Filosofa y Letras, Campus de Teatinos, s/n29071 Mlaga, Spain <b>nro@uma.es</b>
<b>Dr Santiago ROYO</b> <b>MC Substitute</b> <b>santiago.royo@upc.edu</b>	<b>Prof Francisco Miguel MARTINEZ VERDU</b> <b>MC Substitute</b> University of Alicante, Carretera de San Vicente del Raspeig s/n03690 Alicante, Spain <b>verdu@ua.es</b>
Sweden	
<b>Dr Anders BRUN</b> <b>MC Member</b> Department of Information Technology, Centre for Image Analysis SE-751 05 Uppsala, Sweden <b>anders.brun@cb.uu.se</b>	<b>Dr Ewert BENGTTSSON</b> <b>MC Member</b> (not yet registered) <b>ewert@cb.uu.se</b> PENDING
Switzerland	
<b>Dr Marie WOERLE</b> <b>MC Member</b> swiss national museum, Lindenmoosstr 1,8910 Affoltern am Albis, Switzerland <b>marie.woerle@snm.admin.ch</b>	<b>Dr Christian DEGRIGNY</b> <b>MC Member</b> Haute Ecole de Conservation-restauration ArcEspace de l'Europe 112000 Neuchtel, Switzerland <b>christian.degrigny@he-arc.ch</b>
<b>Dr Edith JOSEPH</b> <b>MC Substitute</b> Haute Ecole ARCHaute Ecole ARC, Espace de l'Europe 112000 Neuchtel, Switzerland <b>edith.joseph@he-arc.ch</b>	

United Kingdom	
<b>Dr Anna BENTKOWSKA-KAFEL</b> <b>MC Member</b> Kings College London 26-29 Drury Lane WC2B 5RL London, United Kingdom <b>anna.bentkowska@kcl.ac.uk</b>	<b>Dr Kirk MARTINEZ</b> <b>MC Member</b> University of Southampton ECS dept.S017 1BJ Southampton, United Kingdom <b>km@ecs.soton.ac.uk</b>
<b>Prof Stuart ROBSON</b> <b>MC Substitute</b> (not yet registered) <b>s.robson@ucl.ac.uk</b> PENDING	

### *I.C. Overview activities and expenditure*

#### **2012 Meetings**

Meeting Type	Date	Place	Participants	Status	Cost	<b>Total</b>
Kick-off Meeting	06/11/2012	Brussels (BE)	31	scanned	19.016,65	<b>19.016,65</b>

## 2013 Budget

**Total Action Budget:**

**Remaining Action Commitment:**

**170.000 €**

### Meetings

Meeting Type	Date	Place	Participants	Status	Cost	Total
MC / WG Meeting	26-27/03/2013	Mainz (DE)	47	done	21.572,93	
WG Meeting	27/03/2013	Mainz (DE)	26	done	10.808,43	
XXIV Int. CIPA Symp.	2-6/9/2013	Strasbourg (FR)	Vice Chair	planned	800,00	
MC Meeting, WG Meeting	23- 24/09/2013	London (UK)	80	planned	66.400,00	
Think Tank Kick off Meeting	25/09/2013	London (UK)	20	planned	3.200,00	
WG Session 'Denkmaeler 3D'	16-18/10/2013	Dortmund (DE)		planned	4.150,00	
						<b>108.691,36</b>

### STSM

Beneficiary	Start Date	End Date	Place	Status	Cost	Total
Mr Ferdinand Deger	2013-06-16	2013-06-30	Sion, CH	approved	1.500,00	
Ms Mona Hess	2013-08-26	2013-09-06	Brussels, BE	approved	1.200,00	
Dr Kinjiro Amano	2013-09-01	2013-12-01	Braga, PT	approved	2.300,00	
Mr Jakub Krzeslowski	2013-09-01	2013-09-30	Mainz, DE	approved	2.300,00	
Ms ZINA RUZDIC	2013-09-08	2013-09-22	Mainz, DE	approved	1.575,00	
Dr Francesco Carlo Nex	2013-09-15	2013-12-15	Enschede, NL	approved	2.500,00	
Mr Francisco Javier Burgos Fernández	2013-09-20	2013-12-19	Joensuu, FI	approved	2.500,00	
Dr Julio M. del Hoyo-Melendez	2013-11-04	2013-11-09	Berlin, DE	approved	810,00	
Ms Francesca Piqué	2013-12-08	2013-12-14	Germolles, FR	approved	895,00	<b>17.580,00</b>
NN				planned	2.420,00	
						<b>20.000,00</b>

### Schools

Title	Date	Place	Participants	Status	Cost	Total
Training School	10-11/10/2013	Warsaw (PL)	24	planned	10.800,00	0
						<b>10.800,00</b>

### Dissemination

Title	Date	Place	Status	Cost	Total
Action - Website	31/12/2013		In progress	4.000,00	
Publications	31/12/2013		In progress	4.000,00	
					<b>8.000,00</b>

### Others

Type	Date	Status	Cost	Total
Bank Charges	31/12/2013	planned	334,73	<b>334,73</b>

**Total: 147.826,09**

### FSAC

Beneficiary	Date	Status	Cost	Total
FH Mainz University of Applied Sciences	31/12/2013	planned	22.173,91	<b>22.173,91</b>

**Action Total: 170.000,00**

## II. Scientific Report

### II.A. Innovative networking

- *Innovative knowledge resulting from COST networking through the Action. (Specific examples of Results vs. Objectives)*
  - Example 1: Objective 2a: To deepen knowledge of the potential, output, constraints, preconditions and practical aspects of precise spectral and spatial instruments- Result 1: To fully investigate a spatial surface and its appearance three domains of data have to be measured in parallel: 3D geometry, spectral reflectance and bidirectional reflectance distribution function (BRDF; in the best case spectral BRDF);
  - Example 2 Objective 3: Analysis of mutual benefits from spectral or spatial sensing techniques and the added value of combined usages. Result 1: A combined usage of spatial and spectral sensing techniques gives the base to generate virtual models being close to the real object
  - Example 3 Objective 2b To research and publish case-studies in the application of the newest spectral and spatial technologies Result 3: During the first WG5 meeting two case studies were identified and a third discussed: a) the White Bastion fortress in Sarajevo, b) measuring of small objects using various measuring methods and tools and c) 3D visualization of sites and monuments through different techniques (possible examples: i. Virtual Touring in urban areas of cultural importance - The case of the old town of Xanthi, ii. 3D Reconstruction of Byzantine Churches in Mani - The cases of Kelefa and Episkopi, iii. Multi-Image 3D Reconstruction Data Evaluation - The case of Kioutouklou Baba Bekdashic Tekke)
- *Significant scientific breakthroughs as part of the COST Action. (Specific examples)*
  - Example 1 Based on a PhD conducted in cooperation of participants from France and Germany it could be shown, that optical tracking of different sensor systems gives a good base for the flexible acquisition of precise registration of multisensory data and opens the door to simultaneous capture of spatial and spectral data and their combined use for precise documentation purposes
- *Tangible medium term socio-economic impacts achieved or expected. (Specific examples)*
- *Spin off of new EC RTD Framework Programme proposals/projects. (List)*
- *Spin off of new National Programme proposals/projects. (List)*
  - A proposal (The use of innovative imaging and analytical techniques to re-investigate conserved but poorly documented wall paintings for their long term preservation: application to the wall paintings of the Ducal Palace of Germolles) has been submitted in April 2013 under the Joint Programming Initiative “Cultural heritage and global Change: a new challenge for Europe”, 292 848€, principal investigator C. Degriigny.
  - A proposal (HiPonMy3D) has been submitted to the German federal Ministry of Research within the BalticSea network call. Proposer: F. Boochs, Partner: R. Sitnik, M. Hauta-Kasari, A. Jung
  - Project: “Development of 3DBRDF measurement head” proposal has been submitted (by Warsaw University of Technology and Wilanów Palace Museum) to Polish Ministry of Culture; this project aims to develop integrated measurement head that can be mounted on robot arm to support of automation of 3D measurements.

## II.B. Inter-disciplinary networking

- *Additional knowledge obtained from working with other disciplines within the COST framework. (Specific examples)*
  - Better knowledge for different tools and methods used in remote sensing for cultural heritage depending on the types of cultural heritage visualized and on the demands and the available resources. This was achieved through the discussions and the presentations during the Mainz meeting.
- *Evaluation of whether the level of inter-disciplinarity is sufficient to potentially provide scientific impacts. (Specific examples)*
  - Example 1: Better understanding for cultural heritage documentation professional requirements has been achieved and transferred to technical community. This was achieved through presentations and discussions during Mainz meeting.
  - Example 2: The first scientific meeting of COSCH in Mainz was the occasion to test the inter-disciplinarity between the members. Sessions were organised in parallel to enable any participant to contribute to other WGs. Therefore the level of inter-disciplinarity is already pretty high but should be strengthened in the near future.
- *Evaluation of whether the level of inter-disciplinarity is sufficient to potentially provide socio-economic impacts. (Specific examples)*
  - Several partners started joint initiative to build integrated measurement device to document spatially and spectrally three-dimensional surface which in result can create new generation of 3D scanning devices.

## II.C. New networking

- *Additional new members joining the Action during its life.*
  - New Partners from Slovenia, Sweden, Croatia, Israel, The Netherlands join the Action.
- *Total number of individual participants involved in the Action work. (Number of participants. Give % of female and of Early Stage Researcher participants)*
  - Total involved researchers: 137, within 41 Female (30%) and 25 ESR (19%)
- *Involvement of Early Stage Researchers in the Action, in particular with respect to STSMs, networking activities, and Training Schools. In addition, justification should be provided if less than 4 STSMs were carried out during the year.*

- STSMs

Name	Host
Francesca PIQUE	Germolles Place, France
Francesco Carlo NEX	University Twente, The Netherlands
Mona HESS	Royal Belgian Institute of Natural Sciences, Brussels Belgium
Jakub Krzeslowski	i3mainz, Mainz, Germany
Kinjiro AMANO	University of Minho, Braga, Portugal
Julio Delhoyo MELENDEZ	National Museums in Berlin/Rathgen Research Laboratory, Berlin, Germany
Francisco Javier Burgos FERNÁNDEZ	School of Computing, SIB Labs, University of Eastern Finland, Joensuu, Finland
Ferdinand DEGER	The Norwegian Colour and Visual Computing Laboratory, Gjøvik University College
	Teknologivn. 22, 2815 Gjøvik, [NO]
Zina RUZDIC	i3mainz, Mainz, Germany

- Think Tank for ESR Kick-off Meeting in London 25/9/2013

- Training Schools: 'Automated 3D documentation with robotized structured light system', Organizer: Warsaw University of Technology and Wilanów Palace Museum, Date: 21-23 October 2013
- *Involvement of researchers from outside of COST Countries. (Number of participants from non-COST Countries approved by the CSO. Give % of such participants from countries with reciprocal agreements. Specify their contribution)*
  - One participant from USA since first WG Meeting, scientists from Russia and Morocco show interest in the Action.
- *Advancement and promotion of scientific knowledge through publications and other outreach activities. (Number of publications and other outreach activities that resulted from COST networking through the Action. Complete list should be given in an annex)*
  - A logo was developed to graphically represent the Action (see Annex)
  - Action web site [www.cosch.info](http://www.cosch.info) was created and published
  - password protected area for Action members was created
  - WG presentations open to public <http://www.cosch.info/web/guest/wg1> (2/3/4/5)
  - Action flyer was created and distributed
  - Tweet COSCH for social media communication was created
  - a Ph.D. originating from inside the partner network was defended during the first workshop in Mainz (see annex)
  - 2 scientific publications resulting from collaborative research activities within COST networking (see annex)
  - Action was presented on the Euromed Symposium in Limassol, 2012
  - Action will be presented on the CIPA Symposium in Strasbourg, Sep. 2013
  - Action co-organises the Denmäler 3D symposium, Dortmund, Okt. 2013, and holds an own session
  - An entry for JISCMail, the UK's biggest educational & research email discussion list community has been created
  - An own bulletin for publishing Action news has been created „COSCH e-Bulletin“ and is under registration for a International Standard Serial Number
- *Activities and projects with COST network colleagues.*
  - Doesn't apply in this early stage of the Action
- *The capacity of the Action members to raise research funds.*
  - Doesn't apply in this early stage of the Action

*Joint publications*

F. Boochs: COSCH – Colour and Space in Cultural Heritage, A New COST Action starts, in Ioannides, M.; Fritsch, D.; Leissner, J.; Davies, R.; Remondino, F.; Caffo, R. (Eds.), *Progress in Cultural Heritage Preservation, Lecture Notes in Computer Science*, Vol. 7616

F. Boochs, A. Bentkowska-Kafel, C. Degringy, M. Hautta-Kasari, S. Rizvic, R. Sitnik, A. Tremeau: Towards an Optimal Spectral and Spatial Documentation of Cultural Heritage. COSCH – an Interdisciplinary Action in the COST Framework, XXIV International CIPA Symposium, Strasbourg

*PhD from inside the Action Network*

Camille Simon Chane: Intégration de systèmes d'acquisition de données spatiales et spectrales haute résolution, dans le cadre de la génération d'informations appliqués à la conservation du patrimoine, University of Burgundy, March, 2013

*Logo:*



COLOUR & SPACE IN  
CULTURAL HERITAGE