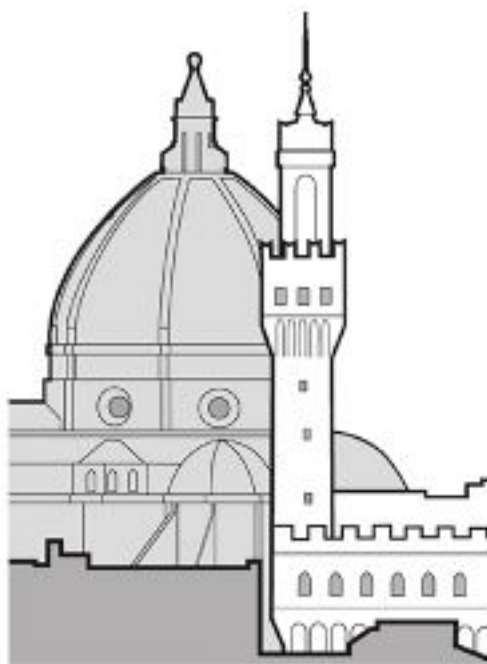


Electronic Imaging & the Visual Arts

EVA 2017 Florence

PROCEEDINGS

Editor: Vito Cappellini



Proceedings e report

113

Electronic Imaging & the Visual Arts

EVA 2017 Florence

10-11 May 2017

edited by
Vito Cappellini

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PROGRAM

Electronic Imaging & the Visual Arts

‘The Foremost European Electronic Imaging Events in the Visual Arts’

Forum for Users, Suppliers & Researchers

The key aim of this Event is to provide a forum for the user, supplier and scientific research communities to meet and exchange experiences, ideas and plans in the wide area of Culture & Technology. Participants receive up to date news on new EC and international arts computing & telecommunications initiatives as well as on Projects in the visual arts field, in archaeology and history. Working Groups and new Projects are promoted. Scientific and technical demonstrations are presented.

Main Topics

- ❖ 2D – 3D Digital Image Acquisition
- ❖ Leading Edge Applications: Galleries, Libraries, Archaeological Sites, Museums & Historical Tours
- ❖ Mediterranean Initiatives in Technology for Cultural Heritage:
Synergy with European & International Programmes
- ❖ Integrated Digital Archives for Cultural Heritage and Contemporary Art
- ❖ Management of Museums by using ICT Technology: Documentation, Access, Guides & Other Services
- ❖ The Impact of New Mobile Communications on Cultural Heritage and Modern Arts Area
- ❖ Cloud Networks
- ❖ Semantic Webs
- ❖ Ontology Systems
- ❖ Human - Computer Interaction for Cultural Heritage Applications
- ❖ Copyright Protection (Watermarking & Electronic Commerce)
- ❖ Culture and *e-government*
- ❖ Activities and Programmes for *e-learning*
- ❖ Digital TV and films
- ❖ 3D Developments and Applications in the Cultural Heritage Area
- ❖ Virtual Galleries and Exhibitions
- ❖ Digital Music
- ❖ Digital Theater
- ❖ Cultural Tourism & Travel Applications
- ❖ Impact of Culture in the Smart City
- ❖ Art and Medicine

WHO SHOULD ATTEND

THE CULTURAL SECTOR: The Visual Arts Community including Museums, Libraries, Archaeological Sites, Educational Institutions, Commercial Galleries and Dealers, Auction Houses, Artists & Collectors

THE HI-TECH INDUSTRY SECTOR: Multimedia Systems, Image Acquisition & Analysis, Databases, Display & Printing, ICT Industry, Telematics & Systems Manufacturing, On-line Information Services

MEDIA & RELATED SECTORS: Publishing, Press, Film, Television, Photography, Printing, Advertising, Graphics Design, Consumer Media

IMAGING SYSTEMS RESEARCHERS: Imaging Systems, 3-D Acquisition, Reconstruction & Representation Systems, Information Sciences

TOURISM & TRAVEL SECTOR: Tourism Agencies & Operators, Travel Agencies

THE GOVERNMENT SECTOR: Ministries of Culture and other Institutions involved in Cultural Heritage, Ministries of Industry, Education, Research and Science, Regional Governments

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CENTRICA,
NEUMUS,
VIDITRUST,
VIRTUITALY,
INN-3D,
CONSERVATORIO DI MUSICA LUIGI CHERUBINI,
PROMO PA FONDAZIONE,
ICESP – INTERNATIONAL CENTER FOR SIGNAL AND IMAGE PROCESSING,
FONDAZIONE CASSA DI RISPARMIO DI FIRENZE,
ASSOCIAZIONE BENI ITALIANI PATRIMONIO MONDIALE UNESCO

Co-Chairmen: Vito Cappellini, Enrico del Re – Florence University
vito.cappellini@unifi.it enrico.delre@unifi.it

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Venue:

Hotel Pierre

Via De' Lamberti, 5

50123 Firenze

Tel. +39 055 216218 Fax +39 055 2396573

E-mail: pierre@remarhotel.com

www.remarhotels.com

WORKSHOP 1

ROOM A

WORKSHOP 1 INNOVATION AND ENTERPRISE – INNOVAZIONE E IMPRESA

(Italian Language)

9,00 – 13,00

Chairman: Enrico Bocci, Vice-Presidente Confindustria Firenze, Firenze

Technological requirements in the Cultural Heritage field are outlined and opportunities for Italian Enterprises and SME's working in the field, using new technologies, are presented.

Regional and national applied research Programs in Italy are described.

Activities by National Organizations and Firms working in the area of Telecommunications, Informatics, Environment and Infomobility are presented.

Funding by European Commission is considered, with particular reference to multimedia and telematics for Cultural Heritage. Special consideration is given to the new EC Plan HORIZON 2020.

Initiatives regarding the "know-how" transfer from Research Organizations to the Industrial Sector are described, in particular to create Start-Ups and new Enterprises.

Organizations and Companies present their activities and experiences.

Invited Speakers:

- *Andrea Arnone, Pro-Rettore al Trasferimento Tecnologico e Presidente di CsaVRI, Università degli Studi di Firenze*
- *Laura Castellani, Responsabile del Settore Infrastrutture e Tecnologie per lo Sviluppo della Società dell'Informazione, Regione Toscana*
- *Paola Castellacci, VAR GROUP*

Speakers include:

- *Stefano Bartoloni, TELECOM ITALIA*
- *Renzo Zampini, INFOCAMERE*
- *Riccardo Bruschi and Luca Bencini, T.T. TECNOSISTEMI, Prato*
- *Gianluca Vannuccini, Servizio Sviluppo Infrastrutture Tecnologiche, Comune di Firenze, Firenze*
- *Claudio Tasselli, Qu.In. Srl, Calenzano, Firenze*
- *Claudia Del Re, Studio Legale Del Re - Sandrucci, Firenze*
- *Franco Guidi, NEUMUS, Firenze*
- *Massimo Canalicchio, Mentor Incubatore di Firenze, Firenze*
- *Massimo Galluzzi, Fata Logistic Systems Spa, Torino*
- *Carlo Quinterio Brentano, Philip Mazzei Association, Firenze*

WORKSHOP 2

ROOM B

WORKSHOP 2 eCULTURE CLOUD IN THE SMART CITIES CONTEXT

9,00 – 13,00

Chairman: Dirk Petrat, Director General for Central Services, Ministry of Culture, Hamburg, Germany

Speakers include:

- *Cecilia Del Re, Assessore Sviluppo Economico, Comune di Firenze, Firenze, Italy*
- *Dirk Börnsen, Head of Department for Legal Affairs, Human Resources and IT, Ministry of Culture, Hamburg, Germany*
- *Peter Deussen, Fraunhofer FOKUS – Berlin, Germany*
- *Johann Bizer (CEO), Dataport, Hamburg, Germany*
- *Gianluca Vannuccini, Comune di Firenze, Firenze, Italy*
- *Carlo Francini, Comune di Firenze and UNESCO ITALY, Firenze, Italy*
- *Veronica Elena Bocci, Coordinator DITECFER, Tuscany, Italy*
- *Stefano Cinquini, TELECOM ITALIA, Italy*
- *Maurizio Del Buffa, VAR GROUP - SESA, Empoli (FI), Italy*
- *Marco Cappellini, Centrica Srl and Virtuality Srl, Firenze, Italy*

The Workshop will consider the architecture and the use of Cloud Systems to collect and distribute Cultural Data of all kind of cultural institutions. In particular the Project will examine the characteristics of a federated Cloud System for Culture on cities level and the creation of a joint database for collaboration. Special consideration is reserved to a Project of "eCulture Cloud", regarding "UNESCO WORLD HERITAGE SITES".

ROOM A

CONFERENCE

Wednesday, 10 May

Chairmen: Vito Cappellini, University of Florence
Enrico Del Re, University of Florence

14,15 *Opening:* Luigi Dei,
Rector of University of Florence
Enrico Vicario,
Director of Department of Information Engineering –
University of Florence
James Hemsley,
EVA Conferences International
Gabriele Gori,
Direttore Generale Fondazione Cassa di Risparmio di Firenze
Paolo Castellacci,
President GRUPPO SESA

15,30 Coffee Break

ROOM A

15,45 **SESSION 1 – STRATEGIC ISSUES**

Chairman: Paolo Blasi, University of Florence, Florence, Italy

- | | |
|---|--|
| “GLAMs going digital: strategies, activities, and the support by Michael Culture Association” | Rossella Caffo
President of the Michael Culture Association |
| “SmartCities4Culture
The eCulture Cloud approach” | Dirk Petrat ¹ , Dirk Börnsen ²
¹ Central Services, Ministry of Culture
² Head of Department for legal affairs, human resources and IT, Ministry of Culture, Hamburg, Germany |
| “Symbol Extraction and Restoration in Ancient Egyptian Papyri” | A. G. Constantinides, Cedric Ehrhart
Imperial College London,
London, U.K. |
| “Technologies Solution for Accessibility to Cultural Heritage” | Francesca Velani
Promo PA Fondazione,
Lucca, Italy |
| “Visual silence: art and show business on the “Silk Road”” | Jean Paul Carradori, Qing Li
Shanghai International Interior Design Festival
Europe area Direction |

“A Gesture Driven Application about Protestant Reformation in Torgau on a Large Touch-Display”

G. Görlitz, K. Konkol B.Sc., A. Vollmar M.Sc.
Beuth University of Applied Sciences,
Berlin, Germany

ROOM A

17,45

SESSION 2 – NEW SCIENCE AND CULTURE DEVELOPMENTS & APPLICATIONS

Chairman: Edoardo Calia, Istituto Superiore Mario Boella (ISMB), Torino, Italy

“The Virtual Reality Technologies for Culture and Arts”

Nikolay Borisov^{1,2}, Artem Smolin^{2,1},
Denis Stolyarov²
¹St. Petersburg State University,
²ITMO University
Saint Petersburg, Russia

“Creativity in Art and in Problem Solving Tasks: a Comparative Analysis”

Raffaella Folgieri¹, Ludovico Dei Cas²,
Claudio Lucchiari¹
¹Dipartimento di Filosofia,
Università degli Studi di Milano, Milan, Italy
² CdL Management Pubblico,
Università degli Studi di Milano
Milan, Italy

“The use of an electromagnetic real-time navigation system for distal locking of the intramedullary humeral nail”

Lawrence Camarda, Antonio D’Arienzo,
Salvatore Morello, Michele D’Arienzo,
Orthopaedic and Traumatology Department,
University of Palermo, Palermo, Italy

“Re-Converging Scientific, Cultural and Art Practices at Art & Science Institute of ITMO University”

Konstantine Karczmarski
Department of innovations,
ITMO University,
Saint Petersburg, Russia

Thursday, 11 May

ROOM A

9,00

INTERNATIONAL FORUM ON “CULTURE & TECHNOLOGY

Chairman: Vito Cappellini, University of Florence, Florence, Italy

The structure of the FORUM is presented.

Actual developments and perspectives are outlined, regarding *Culture* and *Technology*.

- Cooperation Groups
- Proposed Projects
- Funding Opportunities
- European Commission Plans
(HORIZON 2020)

Speakers Include:

- *Cristina Acidini, President Accademia delle Arti del Disegno, Florence, Italy*
- *Gaetano Scognamiglio, President PROMO P.A. FONDAZIONE, Lucca, Italy*
- *Franco Moretti, General Manager FONDAZIONE FESTIVAL PUCCINIANO, Torre del Lago Puccini, Viareggio (LU), Italy*
- *Edoardo Calia, Research Director, Istituto Superiore Mario Boella, Torino, Italy*
- *Alberto Del Bimbo, Director Centro per la Comunicazione e l'Integrazione dei Media, University of Florence, Florence, Italy*
- *Monica Carfagni, Full Professor of Industrial Engineering, University of Florence, Florence, Italy*
- *Umberto Donati, Director FONDAZIONE ITALIA GIAPPONE, Rome, Italy*
- *Carlo Francini, Florence Municipality, Florence, Italy*
- *Paolo Zampini, Director of Conservatorio di Musica Luigi Cherubini, Florence, Italy*
- *Francesca Gemma, Aracne editrice int.le, Rome, Italy*
- *Giovanni Gasbarrone, CIU Confederazione Unione delle Professioni Intellettuali, Responsabile Lazio, Italy*

11,30

Coffee Break

11.45

SESSION 3 – NEW TECHNICAL DEVELOPMENTS & APPLICATIONS

Chairman: Dirk Rieke-Zapp, AICON 3D Systems GmbH, Meersburg, Germany

“Open Fiber: The Italian Strategy for
Broadband and Ultra Broadband”

Franco Guidi, Roberto Piermarini
Neumus SrL, Florence, Italy

“Framework of 360-Degree 3D Video”

Masayuki Tanimoto¹, Hirokuni Kurokawa²
¹Nagoya Industrial Science Research Institute,
Nagoya, Japan
²University of Aizu
Aizu Wakamatsu, Japan

“Face to Face with Head Vases”

Dirk Rieke-Zapp¹, Elisabeth Trinkl²
¹AICON 3D Systems GmbH
Meersburg, Germany
²Institute of Archaeology
University of Graz, Graz, Austria

“3D printing and copyright protection”

Vito Cappellini¹,
Francesca Uccheddu²
¹University of Florence, INN-3D, Florence, Italy
²INN-3D, Department of Industrial Engineering,
University of Florence, Florence, Italy

“Generative Generation Design”

Gianpiero Alfarano
Laboratory Design Model, DESIGN CAMPUS,
University of Florence,
Florence, Italy

13,25 Lunch Break

ROOM A

14,50

**SESSION 4 – MUSEUMS – VIRTUAL GALLERIES
AND RELATED INITIATIVES**

Chairman: Andreas Bienert, Staatliche Museen zu Berlin, Gemany

“Portable computer vision for new
“intelligent” audio guides”

Alberto del Bimbo, Marco Bertini,
Lorenzo Seidenari, Tiberio Uricchio,
Claudio Baecchi, Andrea Ferracani
MICC-Media Integration and Communication
Center, University of Florence,
Florence, Italy

“Uffizi Touch® for Apple TV”

Marco Cappellini, Paolo De Rocco,
Paolo Romoli
Centrica Srl, Virtuality Srl,
Florence, Italy

“Interactive Digital Museum by Using Scientific Analytical Data of Painting”

Kaori FUKUNAGA
Electromagnetic applications Laboratory,
National Institute of Information and
Communications Technology,
Japan

“Knowledge Promotion, Divulgation:
Experiments on the Virtual Reconstructions
of the Genoese Atheneum’s Palaces”

Valentina Fiore, Lauro Magnani,
Gioia Quicquaro, Sara Rulli
D.I.R.A.A.S. Dept, University of Genoa
Genoa, Italy

“Truth and Method: the Art of Knowing how to
Comprehend and Management of Complexity”

Sara Penco
SMARTICON Project,
Rome, Italy

16,30 Coffee Break

16.45

“The Lumen Prize at EVA Florence 2017”

Charlotte Lee
The Lumen Prize
London, U.K.

“The Codex Dietrichstein – An Example of an
Illuminated Manuscript made in the Twentieth –
First Century, mix of Art, History, Adventure
and Encryption with the Support of New
Technologies”

Bruno Cerboni
Digital Visual Arts Lab
Sacrofano (RM), Italy

“From 2D to video: The new Alinari
Multimedia Museum in Trieste”

Andrea de Polo Saibanti
Fratelli Alinari IDEA SpA,
Florence, Italy

“On-Line Interactive Virtual Environment in
Blend4web. The Integration of Pre-Existing 3D
Models in Muvi-Virtual Museum of Daily Life
Project”

Beatrice Chiavarini, Maria Chiara Liguori,
Luigi Verri, Silvano Imboden,
Daniele De Luca, Antonella Guidazzoli
VisitLab Cineca,
Italy

“A Cultural Tradition in Italian Towns:
The Banners for Yearly Historical
Reenactments”

Paola Imposimato
Studio Creazioni di Design e Arti Grafiche e Pittoriche,
Florence, Italy

“Copying as an Integral Part of Fine Arts
and Architecture Education”

Tatiana Laska, Sergei Golubkov
Saint-Petersburg State University
Saint-Petersburg, Russia

ROOM C

14,50 **SESSION 5 – ART AND HUMANITIES ECOSYSTEM & APPLICATIONS**
Chairman: Emiliano Degl’Innocenti, Consiglio Nazionale delle Ricerche, Italy

“E-RIHS “European Infrastructure of Heritage
Science: a new opportunity
for research and innovation in the field of
cultural heritage””

Salvatore Siano, Luca Pezzati
Consiglio Nazionale delle Ricerche,
Italy

“Fostering sustainability and re-use in the
Digital Research Ecosystem of Humanities
Research”

Elisa Brunoni¹, Emiliano Degl’Innocenti²
¹DARIAH-IT Funding Opportunities Hub,
Consiglio Nazionale delle Ricerche
²DARIAH-IT National Coordinator,
Consiglio Nazionale delle Ricerche
Italy

“Digital Research Infrastructures for the
Arts and Humanities: DARIAH-IT”

Emiliano Degl’Innocenti¹, Elisa Brunoni²,
Maurizio Sanesi³
¹DARIAH-IT National Coordinator,
Consiglio Nazionale delle Ricerche
²DARIAH-IT Funding Opportunities Hub,
Consiglio Nazionale delle Ricerche
³Società Internazionale per lo Studio del
Medioevo Latino (SISMEL),
Italy

“Comparison Between Virtual Reality
Implementations for Cultural Heritage”

Riccardo Toppan, Mario Chiesa, Alberto Buzio
Istituto Superiore Mario Boella,
Turin, Italy

“Experimental Hypothesis for Art Teaching
with ICT: some Developments for e-Learning”

Alessandra Scappini
SINCRESES Cultural Association,
Empoli (Florence), Italy

16,30

Coffee Break

ROOM C

16,45 **SESSION 6 – ACCESS TO THE CULTURE INFORMATION**

Chairman: James Hemsley, EVA Conferences International, U.K .

“EU Data Protection Reform n. 679/2016
and Big Data: new rules?”

Claudia Del Re
Ph.D. Intellectual Property Law
Privacy Officer according to the ISO/IEC 17024:2012,
Florence, Italy

“Hamburg – A Cloud for the City’s Cultural
Heritage”

Johann Bizer
Strategische Unternehmenssteuerung,
Dataport,
Niederlassung Hamburg, Germany

“Please Touch this Harpsichord!”

Michael Petermann
Hamburg Konservatorium,
Hamburg, Germany

“Communication Strategies for the Cultural
offer at Museo Galileo”

Marco Berni, Elena Fani, Alessandra Lenzi
Museo Galileo - Institute and Museum of the
History of Science,
Florence, Italy

“A Systematic Approach To Crowdsourcing And
Crowdfunding In Cultural Heritage Initiatives:
the Heribits Project Factory”

Spadoni F. Rossi R., Tariffi F.
Rigel Engineering Srl, Space Spa,
Italy

SPECIAL EVENT

Wednesday, 10 May 19,30 – 22,00

*Visit to Opera Medicea Laurenziana
Piazza San Lorenzo, 9, Florence*

*In cooperation with Antica Compagnia del Paiolo
(President Anna Bini, President Sezione Artisti Riccardo Saldarelli)
with “Light Dinner”*

EXHIBITION

Thursday, 11 May: 10,00 – 18,00

ROOM B

***EXHIBITION OF ARTISTS OF THE “ANTICA COMPAGNIA DEL PAIOLO”
(President Sezione Artisti Riccardo Saldarelli)***

EXHIBITION OF DIGITAL ART BY “THE LUMEN PRIZE”

For information on the Exhibition:

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Events Organization: INN-3D Srl, Empoli (FI)

Official Television TVL Spa Pistoia

PROCEEDINGS

GENERATIVE GENERATION DESIGN

Gianpiero Alfarano

Director of the Laboratory Design Model
DESIGN CAMPUS, University of Florence
<gianpiero.alfarano@unifi.it>

ABSTRACT

Today it is increasingly essential to fully understand the potential of the software, now able to let us hire more awareness in the control of the project, but especially in the potential of new forms of development.

Evolved codes and programming languages are already available and, as well as giving many ideational possibilities, place their flexibility as a selection criterion for new challenges. The personalization of the machining processes and their acceleration of the calculation allow new exploration frontiers and new responsibilities for action.

In reference to these new operating horizons the "Laboratory Models for Design" at the University of Florence, pertaining to the department Dida, is introducing, between experimentation for 3D digital modeling, the generative modeling as exploration's field between the cognitive shape and form processed by the calculation.

If we look at modeling such an object represented in space, to fully understand and design it, we must always consider the object's logical articulation and deal with geometrical and mathematical problems. This technique needs application capable of simulating the geometry and control their properties to create algorithmic projects. To work with complex objects, the design process starts from a first level to which are added new layers to create more detailed and specific hierarchies. From some years the Models for Design Laboratory of Design Campus of Calenzano is dedicated to these new frontiers of digital plasticity. It is a scientific and educational laboratory that provides the opportunity to acquire the skills necessary to create three-dimensional models to verify the real volumes and proportions of objects, studying their inclusion in real space, giving substance to the presentation of the project, assisting students, teachers and researchers in their activities.

It's a very important place for the students in which they can test materials, proportions and practicality of the project which are designing, but at the same time it is a place to meet and exchange ideas for the students and teachers so they can broaden their knowledge and have the satisfaction of seeing the true made product they have designed.

The laboratory makes use of equipment such as 3D printers FDM to PLA and ABS - Gimax3D, 3D printers SLA Stereolithography - FormLabs, CO2 laser cutting, electrical tunnel for polystyrene, specialized work equipment of manual modeling and numerical control.

The Models Design Laboratory it's affecting to new materials that are placed on the market for these printers, which are becoming increasingly sophisticated, such as those that simulate the architecture materials such as marble, concrete, brick etc.

The fortune of these machines, as is well known, is to give the possibility to create very complex shapes thanks to the additive method, or proceeding to the sum of thin layers of material.

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