

Programme

CIDOC
2014

Annual
Conference



Access and Understanding –
Networking in the Digital Era



CIDOC
COMITÉ INTERNATIONAL
POUR LA DOCUMENTATION

Dresden, Germany
6th – 11th September 2014
www.cidoc2014.de

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Conference Venues

Conference Registration Desk

Kulturzentrum Dreikönigskirche, First floor
Hauptstraße 23, 01097 Dresden

Registration will be open
from Sunday 7th September to Wednesday 10th September from 8.00 to 17.30.

Main Conference Venues

Kulturzentrum Dreikönigskirche
Hauptstraße 23, 01097 Dresden

Kulturrathaus Dresden
Königstraße 15 , 01097 Dresden

Other Venues

Stadtmuseum Dresden (in the “Landhaus”)
Wilsdruffer Straße 2, 01067 Dresden

Militärhistorisches Museum der Bundeswehr
Olbrichtplatz 2, 01099 Dresden

Staatliche Kunstsammlungen Dresden, Residenzschloss/Royal Palace
Taschenberg 2, 01067 Dresden

Japanisches Palais/Japanese Palais
Palaisplatz 11, 01097 Dresden

Hans Körnig Museum (former Museum Körnigreich)
Wallgäßchen 2, 01097 Dresden

Map



■ Conference Venues

(Design: Christian Platz, HTW Dresden)

Conference Events

Sunday 7th September 2014 – Get together

On the evening of Sunday 7th September from 19.00 to 21.30, the Organisers will offer Welcome Drink and Canapé Reception at the Museum of Military History for all attendees of the CIDOC 2014 Conference. The special exhibition about the First World War, »14 – Menschen – Krieg«, is open this evening. Please join us!

Militärhistorisches Museum der Bundeswehr
Olbrichtplatz 2, 01099 Dresden
19.00–21.30 Uhr

The Militärhistorische Museum is situated in the north of the city. You can reach it with tram 7 or 8 (tram stop Stauffenbergallee). It is marked in the site map at the end of this programme (Surrounding Area, Map 1). Please make sure that you bring either the name badge of the conference or the confirmation document for the conference registration.

Advance registration requested.

Monday 8th September 2014 – Evening Reception

On the evening of Monday 8th September from 19.00 to 21.30, the City of Dresden will offer a Drink Reception at the Stadtmuseum Dresden for all attendees of the CIDOC 2014 Conference. Dr. Ralf Lunau, Major of the City of Dresden, will welcome the attendees.

Stadtmuseum Dresden
Wilsdruffer Straße 2, 01067 Dresden
19.00–21.30

The Stadtmuseum Dresden is situated in the center of the city of Dresden. Coming from the conference venues it can be reached on foot (20 minutes walk) or with tram 4 or 7 (tram stop Pirnaischer Platz). It is marked in the Conference Venue Map and in the site map at the end of this programme (Surrounding Area, Map 2). Please make sure that you bring either the name badge of the conference or the confirmation document for the conference registration.

Advance registration requested.

Tuesday 9th September 2014 – Evening Reception

On the evening of Tuesday 9th September from 19.00 to 22.00, the Staatliche Kunstsammlungen Dresden will offer a Drink Reception at the Royal Palace Dresden for all attendees of the CIDOC 2014 Conference. The Director general, Prof. Dr. Hartwig Fischer, will welcome the CIDOC attendees. Ulf Heinemann, the CEO of 'Robotron', gives a brief introduction in the data-management-system "Daphne".

Staatliche Kunstsammlungen Dresden, Residenzschloss/Royal Palace
Location: Palace Chapel (*Access into the building via Schloßstraße*)
01067 Dresden

The Residenzschloss/Royal Palace is situated in the center of the city of Dresden. Coming from the conference venues it can be reached on foot (10 minutes walk) or with tram 4 or 9 (tram stop Theaterplatz). It is marked in the Conference Venue Map and in the site map at the end of this programme (Surrounding Area, Map 2).

Please make sure that you bring either the name badge of the conference or the confirmation document for the conference registration.

Advance registration requested.

Wednesday 10th September 2014 – Farewell Party

The Farewell Party is a traditional ceremony at CIDOC Conferences. We would like to spend it with you! It will take place in the evening of Wednesday 10th September in the baroque Japanische Palais/Japanese Palais. Good food and music is guaranteed!

Japanisches Palais/Japanese Palais
Palaisplatz 11, 01097 Dresden
19.00–23.00

The Japanische Palais/Japanese Palais is situated in walking distance from the main conference venues in Dresden-Neustadt. Coming from the main conference venues it can be reached on foot in 5 minutes. Coming from the city center, it could be reached with tram 4 or 9 (tram stop Palaisplatz). It is marked in the Conference Venue Map and in the site map at the end of this programme (Surrounding Area, Map 2 and 3).

Please make sure that you bring either the name badge of the conference or the confirmation document for the conference registration.

Pre-registration necessary!

Saturday 6th September 2014

■ Working Groups

Time	Working Group Sessions						
9.30–10.30	CIDOC Board Meeting						
10.00–12.30		Data Harvesting and Interchange					
12.30–14.00	Lunch (self-supply)						
14.00–17.30	CIDOC Training Programme Teacher Training	Data Harvesting and Interchange					
17.30–19.00							
19.00–22.00							

Sunday 7th September 2014

■ Workshop Day

Time	Workshop Sessions						
9.30–12.30	CIDOC Training Programme Teacher Training		CRM – Special Interest Group				Semantic Research Environments
12.30–14.00	Lunch (self-supply)					CIDOC Board Meeting	
14.00–17.30	Archaeological Sites	Co-reference	CRM – Special Interest Group	Data Harvesting and Interchange	Documentation Standards	Museum Process Implementation	
17.30–19.00							
19.00–22.00	Get together Militärhistorisches Museum der Bundeswehr, Dresden						

Monday 8th September 2014

■ Conference Day

Time	Plenaries and Sessions									
9.00–10.00	Opening									
10.00–10.45	Keynote Murtha Baca (Getty Research Institute, Los Angeles)									
10.45–11.30	<i>Coffee Break</i>									
11.30–12.30	Introduction Conference Theme and Working Groups									
12.30–14.00	<i>Lunch</i>									
14.00–15.30	B/1 Processes in Museum Documentation		E/1 Metadata		H/1 Intangible Cultural Heritage		L/1 3D-Documentation in Cultural Heritage		Special Session SPECTRUM	
15.30–16.00	<i>Coffee Break</i>									
16.00–17.30	Working Group Sessions:									
	Archaeological Sites	Co-reference	CRM – Special Interest Group	Data Harvesting and Interchange	Digital Preservation	Documentation Standards	Information Centres	Museum Process Implementation	Semantic Research Environments	
17.30–19.00	CIDOC Board Meeting									
19.00–22.00	Welcoming Reception Stadtmuseum Dresden (in the “Landhaus”)									

Tuesday 9th September 2014

■ Conference Day

Time	Plenaries and Sessions							
9.00–9.50	E/2 Metadata	F/1 Terminology	J/1 Digital Documentation in Archaeology					
10.00–10.30	Keynote Günther Schauerte (Stiftung Preußischer Kulturbesitz, Berlin)							
10.30–11.00	<i>Coffee Break</i>							
11.00–12.30	B/2 Processes in Museum Documentation	F/2 Terminology	G/1 Digital Long Term Preservation	H/2 Intangible Cultural Heritage	I/1 GIS-Applications in Cultural Heritage			
12.30–14.00	<i>Lunch</i>							
14.00–15.30		A/1 Strategies and Policies in Documentation	C/1 Museum Documentation as Profession	H/3 Intangible Cultural Heritage	Special Session Getty Vocabularies and Linked Open Data			
15.30–16.00	<i>Coffee Break</i>							
16.00–17.30	Working Group Sessions:							
	Archaeological Sites	Co-reference	CRM – Special Interest Group	Data Harvesting and Interchange	Digital Preservation	Documentation Standards	Information Centres	Museum Process Implementation
17.30–19.00	CIDOC Board Meeting							
19.00–22.00	Reception Staatliche Kunstsammlungen Dresden, Residenzschloss/Royal Palace							

Wednesday 10th September 2014

■ Conference Day

Time	Plenaries and Sessions				
9.00–9.50	E/3 Metadata	F/3 Terminology	J/2 Digital Documentation in Archaeology		
10.00–10.30	<p>Keynote Tanya Szrajber (British Museum, London)</p>				
10.30–11.00	Coffee Break				
11.00–12.30	A/2 Strategies and Policies in Documentation	D/1 Networking	E/4 Metadata	K/1 Access to Cultural Heritage	Special Session Archaeology
12.30–14.00	Lunch				
14.00–15.30	A/3 Strategies and Policies in Documentation	B/3 Processes in Museum Documentation	F/4 Terminology	K/2 Access to Cultural Heritage	Special Session Archaeology
15.30–16.00	Coffee Break				
16.00–17.30	<p>CIDOC Annual General Meeting Closing of the Conference</p>				
17.30–19.00					
19.00–22.00	<p>Farewell Party Japanisches Palais/Japanese Palais</p>				

Conference Sessions Locations

Saturday 6th September 2014

CIDOC Training Programme Teacher Training	Kulturrathaus, Room 16
Working Group Session: Data Harvesting and Interchange	Japanese Palais, Conference Room

Sunday 7th September 2014 – Workshop Day

CIDOC Training Programme Teacher Training	Kulturrathaus, Room 16
Workshop: Archaeological Sites	Dreikönigskirche, Room 9
Workshop: Co-reference	Dreikönigskirche, Room 5
Workshop: CRM – Special Interest Group	Dreikönigskirche, Room 6
Workshop: Data Harvesting and Interchange	Kulturrathaus, Room 16
Workshop: Documentation Standards	Dreikönigskirche, Room 12
Workshop: Museum Process Implementation	Dreikönigskirche, Room 15
Workshop: Semantic Research Environments	Dreikönigskirche, Room 9

Monday 8th / Tuesday 9th September 2014 – Working Groups

Working Group Session: Archaeological Sites	Dreikönigskirche, Room 9
Working Group Session: Co-reference	Dreikönigskirche, Room 5
Working Group Session: CRM – Special Interest Group	Kulturrathaus, Room 16
Working Group Session: Data Harvesting and Interchange	Dreikönigskirche, Room 6
Working Group Session: Digital Preservation	Dreikönigskirche, Room 12
Working Group Session: Documentation Standards	8.9.: Stadtmuseum, Room 21 9.9.: Dreikönigskirche, Room 11
Working Group Session: Information Centres	8.9.: Hans Körnig Museum 9.9.: Dreikönigskirche, Room 15
Working Group Session: Museum Process Implementation	8.9.: Stadtmuseum, Room 20 9.9.: Kulturrathaus, Room 17
Working Group Session: Semantic Research Environment	Dreikönigskirche, Room 14

Monday 8th / Tuesday 9th / Wednesday 10th September 2014 – Special Sessions

Special Session SPECTRUM	Stadtmuseum, Raum 21
Special Session Getty Vocabularies and Linked Open Data	Dreikönigskirche, Room 11
Special Session Archaeology	Dreikönigskirche, Room 15

Monday 8th / Tuesday 9th / Wednesday 10th September 2014 – Conference Sessions A–L

DKK (Dreikönigskirche); **KR** (Kulturthaus Dresden); **JP** (Japanese Palais);
STM (Stadtmuseum Dresden); **HKM** (Hans Körnig Museum)

A Strategies and Policies in Documentation	A/1 KR, Room 17	A/2 DKK, Room 11	A/3 DKK, Room 11	
B Processes in Museum Documentation	B/1 KR, Room 17	B/2 DKK, Room 11	B/3 KR, Room 17	
C Museum Documentation as Profession	C/1 DKK, Room 5			
D Networking	D/1 DKK, Room 6			
E Metadata	E/1 DKK, Room 11	E/2 KR, Room 17	E/3 KR, Room 17	E/4 DKK, Room 9
F Terminology	F/1 DKK, Room 11	F/2 KR, Room 17	F/3 DKK, Room 11	F/4 DKK, Room 6
G Digital Long Term Preservation	G/1 DKK, Room 15			
H Intangible Cultural Heritage	H/1 DKK, Room 15	H/2 KR, Room 16	H/3 DKK, Room 16	Workgroup ICH HKM
I GIS-Applications in Cultural Heritage	I/1 DKK, Room 9			
J Digital Documentation in Archaeology	J/1 DKK, Room 15	J/2 DKK, Room 15		
K Access to Cultural Heritage	K/1 KR, Room 17	K/2 DKK, Room 12		
L 3D-Documentation in Cultural Heritage	L/1 DKK, Room 6			

Dreikönigskirche, Room 11 (Festsaal/Festival room):

- **Opening and Introduction**
- **all Keynotes**
- **CIDOC Annual General Meeting (AGM)**

Working Groups

CIDOC has a number of Working Groups, each of which is devoted to a specific topic. Generally, the annual CIDOC conference is the time for the Working Groups to come together, have discussions about their topics and relate to the other groups.

The Working Groups are open to all CIDOC members, and we encourage your participation. Some of the Working Groups will also hold workshops and tutorials on Sunday 7th 2014.

The following **Working Groups** announced their meetings in Dresden:

■ Archaeological Sites

Date: Monday 8th/Tuesday 9th September 2014, 16.00–17.30. More information:
<http://network.icom.museum/cidoc/working-groups/archaeological-sites/>

■ CIDOC CRM Special Interest Group

Date: Monday 8th/Tuesday 9th September 2014, 16.00–17.30. More information:
<http://network.icom.museum/cidoc/working-groups/crm-special-interest-group/>

■ Co-reference

Date: Monday 8th/Tuesday 9th September 2014, 16.00–17.30. More information:
<http://network.icom.museum/cidoc/working-groups/co-reference/>

■ Data Harvesting and Interchange

Date: Saturday 6th September 2014, 10.30–17.30;
Monday 8th/Tuesday 9th September 2014, 16.00–17.30. More information:
<http://network.icom.museum/cidoc/working-groups/data-harvesting-and-interchange/>

■ Digital Preservation

Date: Monday 8th/Tuesday 9th September 2014, 16.00–17.30. More information:
<http://network.icom.museum/cidoc/working-groups/digital-preservation/>

■ Documentation Standards

Date: Monday 8th/Tuesday 9th September 2014, 16.00–17.30. More information:
<http://network.icom.museum/cidoc/working-groups/documentation-standards/>

■ Information Centres

Date: Monday 8th/Tuesday 9th September 2014, 16.00–17.30. More information:
<http://network.icom.museum/cidoc/working-groups/information-centres/>

■ Museum Process Implementation

Date: Monday 8th/Tuesday 9th September 2014, 16.00–17.30. More information:
<http://network.icom.museum/cidoc/working-groups/museum-process-implementation/>

■ Semantic Research Environments

Date: Monday 8th/Tuesday 9th September 2014, 16.00–17.30. More information:
<http://network.icom.museum/cidoc/working-groups/semantic-research-environments/>

Workshops and Tutorials

During the conference, there will be full day workshops and half day workshops on topical subjects in the Kulturzentrum Dreikönigskirche and in the Kulturrathaus Dresden.

We encourage participation in the workshops. They are open to all interested conference participants. Find details on the workshops and contact information in the [Workshop](#) Presentation below.

■ CIDOC Training Programme

Teacher Training

Date: Saturday 6th September 2014, 14.00–17.30 and Sunday 7th September 2014, 9.30–12.30

Presenter: [Nicholas Crofts](#) (Olympic Committee, Lausanne, Switzerland), CIDOC Chair

Contact: nicholas@crofts.ch

The course is intended primarily for prospective trainers who will be authoring or delivering modules for the CIDOC Training Programme. Normally, they will have several years of professional experience in the field they will be teaching. Previous teaching experience is preferred. In addition, attendees are expected to attend one or more training sessions as observers. Part 1 deals with the CIDOC training material, its format and use, Part 2 deals with practical issues of training methodology.

Pre-registration necessary. Maximum size of the group is 10 people.

NOTE! Participants need to bring their own laptop or tablet with Microsoft Powerpoint (or compatible program) in order to prepare and deliver a presentation as part of the training.

Register by an e-mail to: cidoc.info@gmail.com by September 1st 2014. Include your name, organization, country, mobile phone number – if you will have one in Dresden – and confirmation that you have a laptop/tablet available with a Powerpoint. The participants will be informed by September 2nd 2014 if they got in or not. Priority is given to those who will teach in summer schools organized in 2015.

■ Workshop: Archaeological Sites

Core Data Standard Version 2: Review and Implementation

Presentations and Demonstration

Date: Sunday 7th September 2014, 14.00–17.30

Presenters: [Stephen Stead](#) (Paveprime Ltd, Purley/Surrey, United Kingdom); [Phil Carlisle](#) (English Heritage, United Kingdom)

Contact: steads@paveprime.com

Growing out of documentation practices in a number of countries, international standards have been developed for the inventory of archaeological and architectural cultural heritage. These standards identify “core,” or essential, items of information that should be part of any cultural heritage inventory. These standards were also created to facilitate data sharing across political boundaries and to serve as a reference for heritage organizations, which, as they create inventories, often grapple with identifying the optimal set of inventory data to meet the practical requirements of heritage stewardship. One standard for inventory of architectural heritage, the Core Data Index to Historic Buildings and Monuments of the Architectural Heritage, was adopted by the Council of Europe in 1992. A second standard for inventory of archaeological heritage, the Core Data Standard for Archaeological Sites and Monuments, was adopted by the International Committee for Documentation (CIDOC) of the International

Council of Museums in 1995. Both standards as well as background on their preparation are available online at: <http://archives.icom.museum/object-id/heritage/contents.html>.

CIDOC is now finalizing a combined standard for the inventory of both archaeological and architectural heritage known as the International Core Data Standard for Archaeological and Architectural Heritage. It is being prepared based on both the 1992 and 1995 standards. This workshop will review the new version and demonstrate an implementation.

■ Workshop: Co-reference

Rethinking documentation: From data administration to knowledge construction.

Presentations and round table discussion about signs, their referents and significances

Date: Sunday 7th September 2014, 14.00–17.30

Presenters: [Mika Nyman](#) (Synapse Computing Oy, Helsinki, Finland); [Øyvind Eide](#) (Universität Passau, Germany)

Contact: mika.nyman@synapse-computing.com

Themes for the Workshop are:

- 1) Co-reference Networks in Enrichment of Data and Knowledge Construction
- 2) Modelling Referentiality with Special Reference to Semiotics
- 3) Infrastructures and Services Supporting Co-reference Resolution
- 4) Co-reference in Corpus Linguistics

■ Workshop: CIDOC Conceptual Reference Model (CRM) Special Interest Group

The CIDOC Conceptual Reference Model (CIDOC CRM)

Tutorials and Discussion

Date: Sunday 7th September 2014, 9.30–17.30

Presenters: [Chrysoula Bekiari](#) (Institute of Computer Sciences, FORTH, Heraklion, Greece);
[Christian-Emil Smith Ore](#) (University of Oslo, Norway); [Dominic Oldman](#) (British Museum, London, United Kingdom)

Contact: bekiari@ics.forth.gr

This workshop will consist of three presentations and following discussions:

1) CIDOC CRM Tutorial (presenter Christian-Emil Ore)

The CIDOC Conceptual Reference Model (CIDOC CRM) and ISO21127, is a semantically rich ontology that delivers data harmonisation based on empirically analysed contextual relationships rather than relying on a traditional fixed field/value approach, overly generalised relationships or an artificial set of core metadata. It recognises that cultural data is a living growing resource and cannot be commoditised or squeezed into artificial pre-conceived boxes. Rather, it is diverse and variable containing perspectives that incorporate different institutional histories, disciplines and objectives. The CIDOC CRM retains these perspectives yet provides the opportunity for computational reasoning across large numbers of heterogeneous sources from different organisations, and creates an environment for engaging and exploration through its network of relationships. The core ontology supports the whole cultural heritage community including museums, libraries and archives and provides a growing set of specialist extensions. This tutorial will present requirements for the model, its form and selected concepts, including new concepts in version 6.0. It will further present a practical exercise how to transform data to a CRM-compatible form. See also: www.cidoc-crm.org

2) CRMSci Scientific Observation Model and CRMarcheo (presenter Chrysoula Bekiari)

The CRMSci is a formal ontology intended to be used as a global schema for integrating metadata about scientific observation, measurements and processed data in descriptive and empirical sciences such as biodiversity, geology, geography, archaeology, cultural heritage conservation and others in research IT environments and research data libraries. It uses and extends the CIDOC CRM (ISO21127) as a general ontology of human activity, things and events happening in spacetime. The Scientific Observation Model has been developed bottom up from specific

metadata examples from biodiversity, geology, archeology, cultural heritage conservation and clinical studies, such as water sampling in aquifer systems, earthquake shock recordings, landslides, excavation processes, species occurrence and detection of new species, tissue sampling in cancer research, 3D digitization, based on communication with the domain experts and the implementation and validation in concrete applications. It takes into account relevant standards, such as INSPIRE, OBOE, national archeological standards for excavation, Digital Provenance models and others.

CRMarchaeo is an extension of CIDOC CRM with the aim to encode metadata about the archaeological excavation process. It is being developed in the framework of the ARIADNE European Research Infrastructure for Archaeology. The goal of this model is to provide the means to document excavations in such a way that the following functionality is supported: Maximize interpretation capability after excavation or to continue excavation; reason of excavation (research goals); possibility of knowledge revision after excavation; comparing previous excavations on same site (space) and all kinds of comprehensive statistical studies (“collective behavior”).

The presentation will give an introduction to both ontologies including real-life examples of use. Both ontologies have been proposed to CIDOC CRM SIG for revision and approval as CIDOC compatible extensions.

3) The Synergy Reference Model of Data Provision and Aggregation (presenter Dominic Oldman)

The increased use of aggregation services and the growing use of the CIDOC CRM has necessitated a new initiative to develop a data provisioning reference model targeted at solving fundamental infrastructure problems ignored by data integration initiatives to date. These problems include data quality issues (the lack of adequate semantic and contextual meaning), the use of fixed field/value models that remove local perspectives, the lack of integration with data providers and their expertise and knowledge, and the lack of tangible benefits for providers and users alike. Instead the proposed model is designed to be distributed and collaborative and not divorced from providers as in more centralized systems. In reality it is the information providers that curate and understand the source resources and that update these resources at regular intervals. The provider is the one who can verify or falsify statements about the evidence in their hands. The role of the aggregator includes the responsibility for the homogeneous access and the synopsis of consistency, whereas any inconsistencies should be made known to, and can only be resolved by, the original providers. However, the process of data transformation to the aggregator’s target system requires a level of quality control that is often beyond the means of prospective providers. All current transformation tools fail to support integration of data from a large number of providers that inevitably undergoes continuous data, format and semantic changes at both the provider and aggregator side. The proposed reference models specifies particular business processes, S/W components and Open S/W interfaces for a comprehensive solution to this problem. The presentation will present the complete rationale and give an overview over the workflow and components.

■ Workshop: Data Harvesting and Interchange

LIDO – Lightweight Information Describing Objects: An introductory tutorial

Date: Sunday 7th September 2014, 14.00–17.30

Presenters: [Regine Stein](#) (Deutsches Dokumentationszentrum für Kunstgeschichte – Bildarchiv Foto Marburg, Philipps-Universität Marburg, Germany); [Erin Coburn](#) (Independent Consultant, Digital Strategy for Museums & the Cultural Heritage Sector, Chicago, USA)

Contact: r.stein@fotomarburg.de

Organizations need to provide information on their objects to many online services including those that are thematic, cross domain, regional, national and international. The LIDO XML harvesting schema has been developed to enable organizations to participate in such initiatives in a standard way.

Being an application of the CIDOC Conceptual Reference Model (CRM) it provides an explicit format to deliver museum’s object information, for use in a variety of online services, from an organization’s online collections database to portals of aggregated resources, as well as exposing, sharing and connecting data on the web. Its strength lies with its ability to represent the full range of descriptive information about museum objects. It can be used for all kinds of object, e.g. art, cultural, technology and natural science, and it supports multilingual portal environments.

This workshop offers a thorough introduction to the LIDO format and presents practical mapping exercises to the LIDO format. Participants are invited to bring their own data examples for discussion. If possible these examples may be submitted in advance to r.stein@fotomarburg.de.

For further information about LIDO contact the CIDOC Working Group “Data Harvesting and Interchange” and visit the webpages at www.lido-schema.org.

■ Workshop: Documentation Standards

An Introduction to Museum Documentation – what is it and why bother?

Date: Sunday 7th September 2014, 14.00–17.30

Presenter: [Jonathan Whitson Cloud](#) (British Museum, London, United Kingdom)

Contact: jwhitsoncloud@gmail.com

The workshop will invite participants, having attempted a definition of what the verb ‘to document’ might mean in a Cultural Heritage environment, to document a range of items, activities and concepts and to reflect on the issues arising. Pointers will be given to past and current support that CIDOC gives to such activity.

■ Workshop: Museum Process Implementation

How to identify and formalize processes in the museum domain

Introductory Level, Hands on Tutorial

Date: Sunday 7th September 2014, 14.00–17.30

Presenter: [Walter Koch](#) (Steinbeis Innovation Transfer Centre for Information Management and Culture Heritage Informatics, Graz, Austria)

Contact: walter.koch@stw.de

The workshop provides an introduction to process management, the related definitions, concepts and tools to be used. The difference between procedures and processes will be outlined and exemplified using practical examples.

Based on an in depth analysis of an existing standard for procedures in the museum domain (SPECTRUM) and a connected data model (SPECTRUM-XML) it will be demonstrated how a process can be derived and implemented. Finally the development of a process driven collection management system will be outlined.

■ Workshop: Semantic Research Environments

Semantic Research Environments and Web Resources

Date: Sunday 7th September 2014, 9.30–12.30

Presenters: [Günther Görz](#) (Digital Humanitie Lab at the University of Erlangen-Nuremberg, Germany);
[Mark Fichtner](#) (Germanisches Nationalmuseum, Nuremberg, Germany)

Contact: guenther.goerz@fau.de; m.fichtner@gnm.de

In recent years semantic technologies have become increasingly popular to represent, manage and publish data. Virtual research environments with semantic backends are used to build complex networks, data from memory institutions is exposed as triples using ontologies, and important vocabularies and thesauri are available as linked data. Ontologies like the CIDOC Conceptual Reference Model (CRM) are the backbone of this approach.

In this workshop the CIDOC CRM is brought into practical application. As an example the infrastructure which was developed by the members of the working group is used. The Erlangen CRM is an implementation of the CIDOC CRM for the integration in the semantic web, while WissKI is a virtual research environment focusing on the field of digital humanities. After an introduction to these two key technologies, two projects present their current work with the semantic infrastructure ECRM and WissKI in use.

Presentations:

09:30–09:40 Introduction ([Krause/Fichtner](#))

09:40–10:20 WissKI Overview & WissKI² Roadmap ([Fichtner/Scholz](#))

10:20–10:40 ECRM Roadmap ([Fichtner/Scholz](#))

10:40–11:00 How to plan an exhibition with WissKI. A practical experience report ([Eser](#))

11:00–11:20 Virtual Reconstruction of Architecture using WissKI ([Kuroczyński](#))

11:20–11:40 *Coffee Break*

11:40–12:00 WissKI How To by Example Application ([Scholz](#))

- 12:00–12:10 Centre of Excellence for Semantic Technologies (CEST) ([Fichtner/Scholz](#))
12:10–12:20 IGSD e. V. ([Görz](#))
12:20–12:30 Farewell ([Krause/Fichtner](#))

This workshop is organized by the ICOM CIDOC Working Group “Semantic Research Environments” and is supported by the Germanisches Nationalmuseum Nuremberg, the Deutsches Museum Munich and the Digital Humanities Lab at the Friedrich-Alexander-University Erlangen-Nuremberg. Contributing partner is the Interessengemeinschaft für semantische Datenverarbeitung (IGSD e.V.) Nuremberg.

Please check the website of the working group for additional information:

<http://network.icom.museum/cidoc/working-groups/semantic-research-environments/>

Keynotes

Each conference day will be opened by a keynote address. The keynotes will be translated simultaneously English– German.

■ Murtha Baca, Getty Research Institute/Los Angeles

Keynote: Digitization Does Not Equal Access: Linguistic, Technical, and Social Challenges in Disseminating Cultural Information in the Age of the Internet

Date: Monday 8th September 2014, 10.00–10.45

Murtha Baca holds a PhD in Art History and Italian Language & Literature from the University of California, Los Angeles (UCLA). She heads the Digital Art History Program at the Getty Research Institute (GRI) in Los Angeles, California, and is an adjunct professor in the Department of Information Studies at the UCLA. She has published extensively on descriptive metadata and multilingual controlled vocabularies for art, architecture, and material culture. Murtha chairs the International Terminology Working Group (ITWG), and is currently leading an interdisciplinary team that is developing the Getty Scholars' Workspace™, a collaborative online environment for conducting and publishing humanities research.

Digitization Does Not Equal Access: Thoughts on the Technical, Cultural, and Linguistic Challenges of Making Cultural Materials Available on the Web

The myths that the Web provides “universal access to all knowledge,” and that English is now a sort of worldwide lingua franca, are pervasive, but not persuasive. Simply digitizing library, archival, and museum collections and related resources does not provide easy access to, or understanding of, those materials. There are significant technical, cultural, and especially linguistic barriers that need to be overcome. This presentation will present some of the challenges and propose some potential solutions to providing broad and meaningful access to the resources of memory institutions in the Age of the Internet. New approaches, including collaborative electronic workspaces, digital museum catalogues, and Linked Open Data (LOD) will be addressed

■ Günther Schauerte, Stiftung Preußischer Kulturbesitz/Berlin

Keynote: Digital Antiquity/Antike digital

Date: Tuesday 9th September 2014, 10.00–10.30

Prof. Dr. Günther Schauerte studied classical archaeology, ancient history, ancient Greek, and pre- and early history at the Westfälische Wilhelms-Universität in Münster and at the Freie Universität Berlin; 1983: PhD; 1985: research assignment from the Göttinger Akademie der Wissenschaften. 1986–98: Advisor to the General Director of the Staatliche Museen zu Berlin (National Museums in Berlin); 1998–2001: Scientific Director and 2002–11: Vice General Director at the Staatliche Museen zu Berlin; since 2011: Vice President of the Stiftung Preussischer Kulturbesitz. He was Co-curator of several exhibitions focussing on Ancient Near Eastern Archaeology, headed archaeological excavations in Germany and Jordan and was one of the leading directors of the EU Twinning Project with the National Museum of Georgia. He is a member of several advisory councils and committees of cultural heritage and scientific institutions.

Various branches of archeology have a history up to 200 years as a field of scholarly studies. Hence no wonder that subject areas, research focuses, points of view, both working and research methods have been changing, reorganizing and redefining over the period. Knowledge was gained from surveys and excavations, museums' and exhibitions' activities, and university research in that time. All these actions had been shaped by classical archeological, historical, architectural-historical, and art historical questions. This has changed in a long development process

within cultural and social history, anthropology, and questions of human-environment interactions. The debate over the fields of research has been affected more and more by interdisciplinary approach and international networking. Additionally, the replacement of the employed cultural tools through deploying digital technologies and media in all fields is of crucial importance. Little functions without them nowadays.

The use of Geo information systems (GIS), geophysical survey and remote sensing methods like Terrestrial and Airborne Laserscanning already deepen our knowledge about landscapes, way systems and antique sites. The digitization of documented data gives impact to the visualization of objects and sites by the use of 3D-Modelling. Challenges are the preservation, management and exchange of 3D spatial data deriving from coring, geophysics or excavation. Crucial questions are the long-term preservation, the dissemination and the aggregation digital data in a proper data storage, management and exchange system. The specialists are facing the challenges of digital archaeology and develop different tools and systems to find the answer for the archiving and exchange of archaeological data in long term preservation and open access.

■ Tanya Szrajber, British Museum/London

Keynote: The Collection database as the core of a modern Museum's purpose and activities

Date: Wednesday 10th September 2014, 10.00–10.30

Tanya Szrajber studied Philosophy and Psychology (BA) at Somerville College (Oxford University) and Medieval Art History (MPhil) at the Courtauld Institute (London University). Head of Documentation at the British Museum, where she has worked in documentation since 1988. Contributed on the British Museum's behalf to Collection Trust's SPECTRUM, and organised publication, with MDA (now Collections Trust), of two British Museum thesauri. Published papers on the British Museum digitisation.

Over the last twenty years, there has been a very significant evolution in the significance and function of Museum collection databases, both within an institution and externally. Starting primarily as inventories of collections, with little or no relation to other aspects of a Museum's work, they have evolved into essential resources underpinning almost all of its activities. This is in great part due to the overall rapid technological developments of the digital age. However, there are also other, sometimes local, factors which determine the successful use of a collection database, which are examined in this paper. These include:

- setting good standards to achieve high record standards
- the balance between quality and quantity, especially with large collections
- collaboration between documentation and other Museum professionals
- dealing with increasing demands on a Museum professional's time
- the symbiosis between collection documentation and collections management
- the benefits and challenges of public access to the database.

These issues are discussed with examples drawn from the experience of the British Museum.

Special Sessions

Parallel to the conference session several special sessions will take place in Dresden. Every conference attendee is welcome to participate and benefit from the lectures and discussions.

Special Session SPECTRUM-I: Taking SPECTRUM Forward Internationally

Date: Monday 8th September 2014, 14.00–15.30

Chair: Gordon McKenna (Collections Trust, London, United Kingdom)

Biographies see:

<http://www.cidoc2014.de/index.php/en/home/program-information/special-sessions-en>

Presentations:

■ **The SPECTRUM Community, SPECTRUM International and the SPECTRUM-I Roadmap**

Nick Poole (Collections Trust, London, United Kingdom)

SPECTRUM is an open, and freely-available standard which defines and promotes best practice in the management and use of collections in cultural organisations such as museums, archives, and galleries.

Now in its 4th edition, SPECTRUM is used by more than 23,000 licensed users in 40 countries worldwide to improve the management, sustainability and use of their collections.

The SPECTRUM Community is an international community of organisations and individuals involved in the development, localisation and promotion of the standard. At the Community's annual meeting in June this year, the challenges and opportunities presented by international projects involved in the translation and promotion of SPECTRUM were discussed. As a result, the community agreed to create 'SPECTRUM International' or 'SPECTRUM-I'; an expression of a 'core' international SPECTRUM standard, which will provide a 'lingua franca' for the non-commercial use and development of SPECTRUM by the Community.

■ **SPECTRUM: A desirable Network for Portuguese Spoken Museums**

Alexandre Matos (Sistemas do Futuro, Lda., Porto, Portugal)

SPECTRUM is a fantastic standard used in many countries and museums that we've translated to Portuguese with our Brazilian partners to create a tool even more simple for the Portuguese and Brazilian museums. Our next, and ambitious, step is the creation of a network in both countries (with other Portuguese speaking countries, like Angola and Mozambique, for example) that could help the international SPECTRUM community with the standard development and help itself (SPECTRUM PT) to provide our museums better collections management.

■ **Adopting the SPECTRUM Standard in Norway**

Bård Bie-Larsen (Arts Council Norway, Oslo, Norway)

The Arts Council Norway has recently become a SPECTRUM National Partner, and is beginning its own project to translate the SPECTRUM standard. This presentation will outline a recent project in Norway to assess and evaluate the use of SPECTRUM in Norway, and give further details about the translation project, and plans to support the SPECTRUM Community.

■ **Towards SPECTRUM International**

Richard Light (Cultural Heritage Information Systems Consultant, United Kingdom)

This presentation will outline the practical steps that are being taken in support of the decision by the SPECTRUM Community meeting to work towards creating "SPECTRUM International". the SPECTRUM Community.

Special Session Getty Vocabularies and Linked Open Data (LOD)

Date: Tuesday 9th September 2014, 14.00–15.30

Chair: Monika Hagedorn-Saupe (Institut für Museumsforschung, Staatliche Museen zu Berlin, Stiftung Preußischer Kulturbesitz, Berlin, Germany)

Presenters: Patricia Harpring (Getty Research Institute, J. Paul Getty Trust, Los Angeles, USA); Joan Cobb (Information Technology Services, J. Paul Getty Trust, USA); Gregg Garcia (Information Technology Services, J. Paul Getty Trust, Los Angeles, USA); Vladimir Alexiev (Data and Ontology Management Group, Ontotext Corp., Sofia, Bulgaria)

Biographies see:

<http://www.cidoc2014.de/index.php/en/home/program-information/special-sessions-en>

■ Issues and Solution

This session discusses the issues that are involved in preparing the Getty vocabularies for publication in the Linked Open Data (LOD) cloud. The Getty vocabularies expressed as LOD will allow holders of cultural heritage information to refer to Getty concepts using stable URLs, therefore enabling better discovery and retrieval in the LOD cloud. It also publishes the synonyms, terms in various languages, revision histories, and thesaural relationships in a machine-readable way. The Art & Architecture Thesaurus® (AAT) was published as LOD in February 2014. The Getty Thesaurus of Geographic Names® (TGN) will be published as LOD a few weeks prior to CIDOC 2014. The Union List of Artist Names® (ULAN) and the Cultural Objects Name Authority® (CONA) will be published as LOD in 2015.

Publishing existing data as LOD is neither simple nor easy. Our thesauri were developed over decades according to rigorous technical and intellectual standards. The Getty Vocabulary Program had to analyze, map, and otherwise prepare this controlled vocabulary data for release as LOD, resolving numerous issues in the process. To express the richness of the data, the Getty technical team and consultants engaged in intense analysis and long hours of work.

Some of the editorial and technical issues we will be addressing in this session include the following: determining which existing ontologies and open data license best suited the characteristics of the data and priorities of the institution; representation of various kinds of hierarchical and associative relations; historic applicability; multi-lingual terms; sources and contributors; revisions; redirection of obsolete concepts. The ontologies that we used include SKOS, SKOS-XL, ISO 25964; DC, DCT, BIBO, FOAF and PROV. We contributed to the newest ISO ontology for thesaurus description (ISO 25964), developed an additional “GVP” ontology, and addressed semantic resolution. We will begin with a brief description of the scope of each vocabulary including examples from our International Terminology Working Group partners who are currently working to translate the AAT into Chinese, Dutch, German, and Spanish. The main part of the sessions will be dedicated to the issues and solutions relating to the LOD publication process. We will describe the semantic model, the ontologies we used and some of the additional features we offer such as full-text search, comprehensive semantic description of the dataset and SPARQL endpoint, extensive sample SPARQL queries, and downloads of RDF files per entity or as whole sets.

Special Session Archaeology

Date: Wednesday 10th September 2014, 11.00–15.30

Chair: Ronald Heynowski (Landesamt für Archäologie Sachsen/Archaeological Heritage Office of Saxony, Germany)

■ In the Special Session Archaeology the Archaeological Heritage Office of Saxony would like to introduce itself as the host and co-organizer of the CIDOC 2014 conference in Dresden.

The main topics of this session will be the 3D documentation of archaeological finds as well as that of excavated structures. The development of a nationwide standard terminology for archaeological objects to be used in databases will also be a major topic.

Since several years the Archaeological Heritage Office of Saxony engages in research on these topics, of which during this session specific archaeological aspects will be presented. The archaeological focus points are derived from the routine duties of an institution that needs to handle millions of stored archaeological objects as well as the results of over 100 excavations per year.

To cover many aspects of the topic, members of the Archaeological Heritage Office of Saxony as well as colleagues of other institutions will present, discuss and extend the archaeological aspects and developmental perspectives of the above introduced topics.

Presentations 11.00–12.30:

■ **3D Object Documentation: A standard application for daily scientific work at the Archaeological Heritage Office of Saxony**

Thomas Reuter (Landesamt für Archäologie Sachsen/Archaeological Heritage Office of Saxony, Germany)

Since 2005, 3D object documentation is an important area of activity in the Archaeological Heritage Office of Saxony. More than 9000 objects are scanned until now. Traditionally only selected finds of scientific value are documented by taking photos and technical sketches. The two-dimensional documentation is the basis of scientific publications and studies. But its quality is strongly influenced by factors like skill and experience of the draughtsman, particularly if the object is elaborately decorated. The results are always inaccurate to some extent. It was necessary to improve the accuracy and the visual quality of the illustrations. The Archaeological Heritage Office of Saxony started with the use of a 3D-Laserscanner Konica Minolta VI-910 and the development of software-aided methods to produce technical sketches. Eight years ago the computer applications *TroveSketch* and *Vessel Reconstructor* are developed in cooperation between the Archaeological Heritage Office of Saxony and the Technical University Chemnitz. The software renders standardized images, takes profiles and makes automatic measurements and alignments of 3D models in a very short time.

With the excavation of the Neolithic well of Altscherbitz a new area of activity was started. A method was developed to scan large mass of wooden finds in a fast but gently way.

In 2012 two additional 3D scanners completed the equipment. We now got the opportunity to digitize large and very small finds under difficult but controlled conditions in the 3D labor as well as on field excavations. Nowadays 3D object scanning is established as standard application for scientific documentation in the Archaeological Heritage Office of Saxony. The presentation will provide insight into everyday work and will show methods to handle large mass of fragile organic finds and show examples of scientific analysis based on 3D models.

■ **The 3rd dimension of Gönnersdorf or: Palaeolithic art from different angles**

Alexandra GÜth (RGZM Archaeological Research Institute, MONREPOS Archaeological Research Centre and Museum for Human Behavioural Evolution, Neuwied, Germany)

The Late Upper Palaeolithic archaeological site of Gönnersdorf (Rhineland/Germany) is famous for its very rich assemblage of engraved slate plaquettes. These engravings represent the characteristic female figures of Gönnersdorf type as well as many engravings of animals depicted in a very detailed, almost zoological manner. In the years 1974 and 1980, Gerhard Bosinski and Gisela Fischer (Bosinski/Fischer 1974, 1980) analysed and documented the plaquettes of Gönnersdorf. In 2008 Bosinski published a volume about supplemental findings concerning the depictions of mammoth, horse and other animal representations.

The reinvestigation of selected engravings on slate plaquettes from this Late Upper Palaeolithic site was undertaken for the first time by the application of 3D scanning methods.

In scope of this pilot study the subjective assessment and interpretation of engravings applied so far will be supplemented by a metric and objective approach.

In addition new options of PTM photography are tested as a further visual support of investigation and documentation.

The aim of this reinvestigation is to obtain further information about stylistic aspects of the depictions, as well as to identify inner chronologies and the interrelationship of the engraved lines.

The main aspect is a consideration of line similarities, their correlation, the resemblance of representations in regard to their features and, finally, how these results may help in understanding and interpreting a representation.

The testing of the 3D scanning method on the Gönnersdorf engravings proves to be a new method which provides new insights into the interpretation of Upper Palaeolithic Art. The use of 3D scanning allows a more objective evaluation, assessment and interpretation and, subsequently, a better comparison of the engravings, their characteristic details and features.

In the course of the pilot study it was possible to decipher further components of representations, to classify and to illuminate features, as well as to provide new insights into relationships between different representations. The perspective is to discern different artists as well as to obtain a better understanding of the art of former hunter-gatherer societies.

■ **CultLab3D – Automation of 3D Cultural Heritage Digitization**

Pedro Santos (Fraunhofer Institute for Computer Graphics Research IGD, Darmstadt, Germany)

Museum depots contain millions of artefacts, new entries per year keep on arriving and the need to better document, access and manage our cultural heritage treasures is constantly growing. In the past attempts have been made to digitize books, photos and other works of art. Automated digitization have been developed and put in place for such “2D” artefacts, yet 3D digitization of busts, sculptures, archaeological findings, natural history artefacts has been a painful, slow and highly manual process, which is only performed on selected objects, but not on a large scale. Fraunhofer IGD Competence Center for Cultural Heritage Digitization is now addressing this challenge by developing what could become a game changer in the field and make 3D digitization fast and economically viable.

CultLab3D (www.cultlab3d.de) is the world’s first automatic and modular 3D digitization pipeline. It combines state-of-the-art scanning and lighting technologies to capture geometry, texture, and – in addition – optical material properties of artefacts such as their reflection and absorption characteristics to allow for a photo-realistic representation. By automating the 3D digitization process, CultLab3D greatly reduces the time needed for a single object digitization from hours to minutes. CultLab3D was recognized with an award at the 2013 Digital Heritage conference in Marseille, France. First trials with real artefacts have been carried out at Liebieghaus in Frankfurt in July 2014.

■ **Bestimmungsbuch Archäologie – A Pocket Guide to Archaeological Objects**

Ronald Heynowski (Landesamt für Archäologie Sachsen/Archaeological Heritage Office of Saxony, Germany)

For an effective communication about archaeological objects a controlled vocabulary is essential. Common terms are necessary for the registration as well as for use in data bases or for exchange information between museums or other interested parties. On side of archaeological objects a common vocabulary does not exist. It is difficult for people, who are not engaged in research, to describe an object with the suitable name or to connect a special term with the concrete object form.

In 2008 various archaeologists from all over the German speaking area founded a working group to create a controlled vocabulary of archaeological objects.

As a first step a publication series was started, called “Bestimmungsbuch Archäologie” (pocket guide archaeology). Each book handles about a special group of tools. The single types are arranged in a hierarchical order, which helps to describe an object in a self-selected grade of details. The hierarchical structure, a list of terms and an overview of images makes it easy to specify the objects.

A second step, a digital vocabulary and the facility of matching between different vocabularies, is projected

Presentations 14.00–15.30:

■ **ARCHES – A Standard and Guide to Best Practice for Archaeological Archiving in Europe**

Bettina Stoll-Tucker (Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt – Landesmuseum für Vorgeschichte/State Office for Heritage Management and Archaeology Saxony-Anhalt – State Museum for Prehistory)

To emphasise the importance of archaeological records – both analogue and digital – as primary evidence and only surviving testimony of a specific site and their respective preservation, an international group of colleagues has produced a handbook for Archaeological Archiving which should set a standard for the handling, organisation, storage and long-term preservation of the various materials. This comprises material objects as well as paper, photo, film, and digital records and also provides a checklist of archaeological archiving tasks. The finished product of this EU project shall be introduced and elucidated.

- **Low-cost and rapid 3D documentation of archaeological sites with UAV-captured video streams**
Marco Block-Berlitz (University of Applied Sciences Dresden, Germany); Benjamin Ducke (Deutsches Archäologisches Institut/German Archaeological Institute, Berlin, Germany)

The effective protection and curation of the world's archaeological heritage requires innovative new technologies with a focus on accuracy, efficiency and intuitive design. The project "Archaeocopter" (www.archaeocopter.de) is committed to the design and development of unmanned aerial vehicles (UAV) for airborne image data acquisition in archaeology and heritage curation. In order to optimise the hardware and software design for real-world applications, the project's research and development work is continuously supported and guided by the state heritage management authorities of Saxony, as well as by academic partners at the University of Applied Sciences Dresden, the Freie Universität Berlin and the German Archaeological Institute.

Among the many innovations that the Computer Age has brought to archaeological field practice, 3D digital data acquisition must be considered one of the most important and spectacular. However, the fact that full 3D site recording and reconstruction are still not a standard part of the "archaeological toolbox" indicates that the impact of new technologies is limited by a range of factors. These include the cost and efficiency of 3D-capable hardware and software, as well as their intrusiveness to established workflows, regarding both data acquisition and management. Significant faultlines remain between 2D field traditions and 3D technologies.

Our research focuses on seamless, efficient and low-cost approaches to the 3D documentation of archaeological sites. We use consumer grade, remotely controlled UAV to capture HD video streams of sites and built heritage from above. The video material produced by UAV-borne cameras constitutes ideal input for the image-based reconstruction of buildings and terrain. We present international case studies and provide insights into technological and logistical challenges and solutions of UAV-based 3D recording.

Further information and impressions of our work can be obtained at www.archaeocopter.de.

- **Multicopter-based documentation of archaeological sites – some examples from everyday work**
Christof Schubert (Landesamt für Archäologie Sachsen/Archaeological Heritage Office of Saxony, Germany)

During the past two to three years, a new kind of UAV (unmanned aerial vehicle) has been "discovered" by archaeologists as camera platform for LAAP (low altitude aerial photography). The so called multicopters, driven by three or more horizontal rotors have just become quite comfortable to operate thanks to newly developed, sophisticated flight control units. They allow to cover even larger excavation sites systematically, and their ability to hover and move in every direction just like helicopters makes it possible to take specific single shots and video footage even of otherwise inaccessible areas.

Using SfM (Structure from Motion) software, these vast amounts of image data can then be processed to 3D models and georeferenced orthophotos.

Since 2013, the Saxony's Archaeological Heritage Service owns a consumer grade quadrocopter, equipped with a small and light weight camera to take overviews and generate 3D models and orthophotos of archaeological sites. In cooperation with the "Archaeocopter" project, data acquisition strategies and workflows have been developed, that lead to suitable results even with low cost hardware. Within less than a year, the quadrocopter has become a tool that provides additional documentation for chosen excavations. Presenting the results of some of the projects completed so far, the range of possible applications of the new technology will be shown.

- **The Talking Pano® System – A good place for a good story**
Alexander Mühle (*zebragrün*, Brandenburg, Germany)

zebragrün is a small and innovative company in Brandenburg/Germany. It has developed a way to both to document the visual situation at an archaeological excavation as well as to show it to the public on screen. By working with editorial panorama photos it is now possible to document the situation of the excavation. The user finds interactive links in the panorama. These are the finds which are positioned exactly where they were found. The Talking Pano® is a consumer-oriented but still accurate way to tell the story of an excavation.

Theme A Strategies and Policies in Documentation

Time	Monday 8 th September	Tuesday 9 th September	Wednesday 10 th September
9.00–9.50			
11.00–12.30			A/2
14.00–15.30		A/1	A/3
16.00–17.30			

Session A/1

Date: Tuesday 9th September 2014 | 14.00–15.30

Chair: Dominik Remondino

■ **Archaeological Digital Data: Authenticity and Functionality** (*short paper*)

David Bibby (Landesamt für Denkmalpflege, Baden-Württemberg im Regierungspräsidium Stuttgart, Germany); Reiner Göldner (Landesamt für Archäologie Sachsen/Archaeological Heritage Office of Saxony, Germany)

There is no way around it, archaeological information has to be archived in digital format. Excavation reports, context descriptions, photo documentation, excavation drawings, maps of find spots and monuments, 3D scans ... Data are created digitally with increased regularity. They are stored less and less often as analogue copies on paper or film in filing cabinets, boxes and sleeves – indeed, for some data it is impossible, difficult or even makes no sense to create analogue copies. Digital data provide many more possibilities and more functionality than analogue data. But how far can we trust in digital data, Are they “true”? Are they authentic after years and years?

Using the classical concept of “authenticity” in the digital domain, there are some problematic aspects: A digital object can be cloned – so which one is the original? What about changed system environments and changed presentation software? What about data migration to newer versions of data formats? What about integrated functionality?

So it is clear, that an unspecified, absolute authenticity cannot be achieved while archiving digital data. But what can be achieved? The paper discusses some thoughts and concepts on digital authenticity and illustrates some aspects that may help to preserve digital authenticity over years.

■ **Towards “Linked History”** (*full length paper*)

Richard Light (Cultural Heritage Information Systems Consultant, United Kingdom)

Traditionally, museum documentation has tried to meet two competing agendas. On the one hand, it aims to support the care and management of museum objects; on the other, it tries to record the social, technical and historical significance of those objects. In this paper I argue that the collections management agenda, supported by standards frameworks such as SPECTRUM, has dominated proceedings to the point where a radical re-think is required, if museums are to make a meaningful contribution to our collective historical understanding.

Much of a typical museum record consists of management information. Information which relates to the object’s historical context will typically only include Production information (who made or created the object, where, and when) and possibly some ownership history. Associative links between an object and historical figures may sometimes be recorded.

Most modern museum databases support the recording of people, places and dates as separate data items. These will often be authority-controlled. The significance of objects will typically only be recorded as a free text description (if it is recorded at all).

In order to share more widely the historical information which museums record, it needs to be expressed in a neutral format. The Linked Data approach currently offers the most practical way of achieving this. The CIDOC CRM is coming into its own as a way of expressing historical information as a set of events. Two more developments are

Duration of contributions:

brief presentation △ 5 minutes; short paper △ 10 minutes; full length paper △ 20 minutes.

required: shared frameworks of URLs for common information (like people and places) need to be deployed, and museum data needs to be expressed in terms of those shared frameworks. I will describe progress on the development of relevant frameworks (e.g. the Getty vocabularies) and practical techniques for URL-ifying museum data. It is not clear that existing collections management systems offer a suitable environment for the publication of historical information. Dedicated Linked Data stores, such as the ResearchSpace database, may be a more effective means of pooling historical information from a wide variety of sources.

- **Mind the Gap! Documentation as “missing link” in the ICOM definition of museum** (*short paper*)
Werner Schweibenz (Bibliotheksservice-Zentrum Baden-Württemberg/BSZ, Germany);
Jens M. Lill (Bibliotheksservice-Zentrum Baden-Württemberg/BSZ, Germany)

The ICOM Statutes of 2007 define the museum as an institution that acquires, conserves, researches, communicates, and exhibits the tangible and intangible heritage of humanity. What is missing in this catalogue of tasks – and consequently in the definition – is documentation. This is important to notice as documentation is what can be called the “missing link” between the museum’s five central assignments. This can be visualized by the following illustration:

Acquisition	Conservation	Research	Exhibition	Communication
Documentation				

The diagram shows that documentation is the fundamental task that serves as a foundation for all other assignments to the museum. This fact is quite well-known to the staff responsible for the collection management system. However, it is obviously not in the focus of attention of the other museum departments. Especially when planning personnel and budget for both projects and routine activities, the important role of documentation is often neglected. Consequently, it is essential to reconsider its function and significance for the daily museum work as a cross-sectional task.

A clearly structured collection documentation can be used for many purposes inside and outside the museum. How would museum work look without documentation? The answer is obvious. Gaps in knowledge where ever you look and objects without contextualizing information. As CIDOC rightfully states:

“Documentation is essential to all aspects of a museum’s activities. Collections without adequate documentation are not true “museum” collections.”

- **Preserving Brazilian History – Digitization of the Imperial Museum Collections – The DAMI Project** (*short paper*)
Maurício Vicente Ferreira Jr. (Imperial Museum/Brazilian Museums Institute/Ministry of Culture, Brazil)

The rapid evolution of digital technologies, from the last decades of the twentieth century, has consolidated effective demand for modernization of the availability of historical collections in cultural, public and private institutions around the world. In this context, digitization of collections became an imperative task as the importance of virtual media to disseminate access to information and knowledge is worldwide recognized.

Moreover, the adoption of these new technologies enables the implementation of an effective policy to preserve and protect the historical and artistic collections, especially in regard to items which are more fragile and subject to deterioration due to their constant handling.

In order to do so, the DAMI Project (Digitization of the Imperial Museum Collections) was designed to include the entire Imperial Museum’s collections on the Internet, through the development of a database that enables the user/researcher access to both digital images and detailed information of each item.

Nevertheless, this task is only in the beginning, as we prospect a period of ten years to achieve the digitization of 250,000 manuscripts and iconographical documents, 70,000 books and periodicals and other 8,000 objects of art and history that make up the rich and diverse collections representative of the Brazilian Monarchical period. Currently, we already inserted data for corresponding 15% of the collections, with a total of 150,000 images available on our website:

www.museuimperial.gov.br

Our goal is to preserve and disseminate information and knowledge concerning Brazilian history.

■ **The Museum documentation in Uzbekistan: Prospects of development** (*short paper*)
Djalaliddin Mirzaev (Termez archaeological Museum, Uzbekistan)

In the modern world, Museum as a social institution is not only the center of the storage and transmission of cultural heritage, but also an active element of social life. Paradigm shift in public buildings museums occurred in the post-Soviet space the end of the 20th century. It is connected, the first, with the development of information technologies and with the global trends of globalization problems in modern civilization and secondly, to the development challenges of the post-Soviet States. A new era had produced a variety of new functions and activities that are difficult to correlate with classical notions about the Museum and traditional design approaches in their activities.

The availability of rich in funds, the existing structure of work has helped many museums in this new period not focus on creating collections of the young state, and in the lessons, but in new forms and directions. It feels need to be revised and the emergence of innovative ideas and approaches in all spheres of work of museums.

Important directions for museums of Uzbekistan is the application of information technology in the Museum sphere, defining common for all museums of unified principles, brief descriptions of Museum objects, the complex of norms, rules, requirements to the object of standardization.

For passport system and registration of Museum objects with the purpose of further formation of the Unified national catalogue of the Museum Fund of Uzbekistan has developed the automated system "SKM-MUZEY". It consists of 3 computer programs, two of which are established in the Museum:

- first and maintains a database of each Museum that hosts information about each Museum object, such as a picture of the scientific and technical description, the insurance cost, and other information of interest in the subject;
- the second program of "SKM MUZEY BAZA" will be installed in the Ministry on Affairs of culture and sports, as authorized body on coordination of activity of museums of Uzbekistan. Computer program "SKM MUZEY BAZA" is installed only on a specially protected server of the Ministry and is used for maintaining the unified electronic database on subjects of the Museum Fund;
- through the third program of "SKM MUZEY GID", visitors of the Museum have the opportunity of acquainting with collections and objects of Museum Fund, registered in the database of the Museum. The program filters out private information stored in the database and displays only publicly available information.

The creation of uniform standards of Museum documentation, and software systems, it is impossible, if the first does not create the conditions for close cooperation between experts and teams, in its decision, and secondly if you will not use the experience gained abroad.

Session A/2

Date: Wednesday 10th September 2014 | 11.00–12.30

Chair: Jonathan Whitson Cloud

■ **Daphne, Onlinecollection, Homepage – collecting, sharing and communicating knowledge and experience. The digital Strategy of the Dresden State Art Collections** (*short paper*)
Igor Jenzen (Staatliche Kunstsammlungen Dresden, Museum für Sächsische Volkskunst / Museum of Saxon Folk Art)

The association of Dresden State Art Collections (Staatliche Kunstsammlungen Dresden, SKD) includes 14 very different museums. Since 2006 they operate the common database "Daphne". By now c. 750.000 artworks from an estimated number of 1.200.000 have been digitalized, scientifically analyzed and networked. The project is funded by the Saxon state government with 15 million Euros spread over 10 years. Since 2011 part of the data is being mirrored in the so-called Online Collection to become world wide accessible (presently c. 35.000 data records). The impact on scholarly perception is appreciable, e.g. concerning inquiries or loan requests.

Currently Dresden State Art Collections are developing a dedicated section on their homepage for research and publication. Here the museum scholars will be presented with their research foci, projects and publications. This requires an optimal coordination between the institution's profile and the technical networking of already existing publication platforms.

The lecture briefly and concisely presents the projects, the strategies of data collection, networking and publishing, and reports on experience gained and the implications for the future.

■ **Documentation of Variable Media Art in Museums:**

Challenges, Progress, and Opportunities (*full length paper*)

Hyojung Cho (Museum of Texas Tech University, USA); Kelly Chandrapal (Museum of Texas Tech University, USA)

Contemporary artists demonstrate their creativity beyond the realm of traditional fine arts and often use unconventional mediums for their artworks, including perishable materials or digital forms. This modern art form is classified as variable media art, which is defined by the use of either digital, biological, performative, or other unexpected medium. Such ephemeral, interactive and technical nature of the artworks are often highly unstable and vulnerable for conservation and has introduced new challenges for art museums in conserving, exhibiting, and managing them. To address the difficulties, a new form of art conservation, a new approach to media art preservation has started, and the Guggenheim Museum of Art and Berkeley Art Museum have shown leadership in researching and developing these preservation strategies. However, the issues largely have remained difficult for art museums and continue to demand development of new standards and techniques that can be integrated into new media art.

Documentation that considers the unique characteristics of variable media art can greatly improve the current confusing situation. Therefore, this research will review the debates surrounding the use of new media art as a museum collection. Migration, emulation and reinterpretation of new media art can involve sensitive legal and ethical issues. Therefore, this research will study how the current U.S. copyright law protects both artists and museums and how it applies to this specific type of collection. In addition, sets of Codes of Ethics as well as best practices for documenting new media art will be studied. After identifying the legal and ethical challenges, individual and collective efforts to address the issues will be discussed in order to evaluate the efforts for improving the existing documentation system for the new media art. The evaluation of policy development on variable media art at the governmental and institutional levels can point towards suitable recommendations for museums on their internal policy development. The purpose of this research is not only to raise the awareness of the issues that exist in the museum community, but also to stress the importance of having documentation process that thoughtfully understands the nature of the collections and addresses the challenges museums face as socially responsible cultural institutions.

■ **Brief introduction about painting collection of cultural institute of Bonyad museums:**

Ways and Methods of documentation in Digital Era (*brief presentation*)

Golnaz Tayebeh Golsabahi (Cultural Institute of Bonyad museums/CIBM, Iran)

CIBM painting collection which contains over than 3000 objects, and started to work since 18 years ago, is one of the most important collections among other treasuries of Cultural institute of Bonyad museums.

In this treasury, not just paintings, but different kind of artistic works such as historical maps, photographs, printed art works of famous painters, Iranian traditional calligraphies, painted old doors and roofs, and old masterpieces both Iranian and non-Iranians ,decorated books and manuscripts, are preserved.

Since twelve years ago, CIBM storage department and painting collection started to plan a program in order to document, preserve and conserve these historical objects and art works base on documentation orders and methods. This program has been contained of organizing objects physically, identifying, classifying, photographing, preparing object IDs and etc ...

Since 3 years ago it has been started to digitalize any information about all objects. In this brief introduction i am going to present this process and identifying our weakness and limitations as well.

■ **Documenting exhibitions – a case study from The Olympic Museum, Lausanne** (*full length paper*)

Stéphanie Knecht (The Olympic Museum, Lausanne, Switzerland); Nicholas Crofts (Olympic Committee, Lausanne, Switzerland)

The Olympic Museum recently reopened its doors to the public following a radical two-year overhaul. The building has been transformed and the museum's exhibition spaces have been completely redesigned, using the latest multimedia technology, to meet the expectations of today's museum visitors. To maximize the long-term benefits of this massive investment, the museum is documenting the new exhibitions: seeking to capture not just the end results, but also the thinking the design choices that went into their conception. This work raises some interesting problems since existing software and documentation standards are not focused on this area, and provide only limited support. This paper examines the problem of documenting an exhibition and proposes a conceptual model for doing so in a comprehensive and structured manner.

- **Collections Policy Checklist for Museums – Helping the Memory Institutions to Remember** (*short paper*) Maija Ekosaari (Tampere University of Technology, Information Management and Logistics and Museum Centre Vapriikki, Tampere, Finland); Leena Paaskoski (Lusto – The Finnish Forest Museum, Punkaharju, Finland)

The Collections Policy as we understand it is a strategic document that offers a solid foundation for the museum processes defined in ICOM's definition of museum: acquisition, conservation, research, communication and use of collections. Our Collections Policy is a map to the history and significance of the collections. It reveals and explains the changing emphasis in the acquisition policy. It describes how the collections are taken care of and documented throughout their museum life, as well as how they can and cannot be used. It helps the museum to communicate its purpose and goals.

This paper describes how small, heterogeneous organizations can improve the quality of their strategic planning and decision making, as well as their processes by advocating communication, transparency and trust – and thinking big.

All started from the need of one museum whose stakeholders required a refreshed Collections Policy. The same museum was facing increasing demands of openness, community outreach, efficiency and need to cooperate – just like many others. Rather than treating the challenges as isolated problems of one museum, these questions were voiced out. The museum reached out over organizational limits and created a horizontal professional community for peer support.

Initially the authors were shy to share the unfinished work, but increasing demand and support from colleagues encouraged us to go out to public. Presenting the draft in a national museum convention expanded the network of collaborating organizations into more than twenty. The results are shared in collaboration, too. The National Board of Antiquities of Finland published the "Checklist". Finnish Museums' Association planned and implemented a training for the lonely writers in museums who aren't lonely anymore.

Session A/3

Date: Wednesday 10th September 2014 | 14.00–15.30

Chair: Richard Light

- **The Blossom Process. The process of transforming a storage collection into a documentation center. The case of the Costa Rican Art Museum** (*short paper*) Gloriana Amador Agüero (Costa Rican Art Museum, Costa Rica)

In the period of January 2013 to January 2014, I carried out an external consultancy to the Costa Rican Art Museum that included inventory, registration, cataloging and classification of approximately 7000 pieces, both pictorial and sculptural. The collection was not cataloged as a whole. From that experience I realized that it was necessary to make a complete change in the way the collection was handled.

The conditions in which I found the collection were linked to old strategies of collection management, that in the past were successful but, unfortunately, nowadays they had lost validity. The collection was deeply rooted in an old vision. I realized that a process of reorganization was important but a real purification was extremely urgent. The Blossom Process is a collection management proposal that shows the process of transforming an art collection storage into a documentation center. This concept attempts to express the need to socialize art. Like the flowers that spread through a process of budding, we seek to spread art through the interaction of people with the collection.

Today, thanks to the strong technological growth, the way people relate to information is much more direct and dynamic. The new generations are used to acquire information through networks. The concept of the Documentation Centre is based on the principle of accessibility via multiple links as a networking platform.

Art should flourish, spread. The action of collecting allows us to gather meanings that interact with different artistic discourses. This process is organic and requires a new approach that does not rely solely on the fundamentals of collections management: inventory, register, and catalog. It is necessary to reformulate this condition to conceive a new stage of collections management that finally provides access to art collections. A collection of art is an organic entity that feeds on the multiple relations of meanings, discourses and themes that the artists sought to capture. The magnitude of relationships observed in collections of art is not possible to understand then from a static and locked state; instead it should be organic, fluid and open to the outside.

- ***Tarde venientibus ossa? Museums' data today and digitization strategies*** (*full length paper*)
Tomasz Zaucha (The National Museum in Kraków, Poland)

Museum are institutions of a long run. Digital technology is racing forward. Therefore the digitization of museum assets is always loaded with inevitable tension, and museum professionals are constantly standing before a dilemma: should we try to keep the pace with newest developments, or should we calm down? The answer is not easy: at the National Museum we experienced both approaches, that resulted with some pros and cons on each side. What's certain is that any decision will have a very practical impact on many aspects of museum activity. Technology and possibilities it offers are not the only factors that must be taken into consideration. Our experience (three systems and two migrations, two online catalogues – one aggregating collections of seven museums in our region) proves that the more important is the great load of data, often created by generations of curators, and still more to be yet retrieved from museum objects. These data must be converted into digital: not only simply retyped, but rather restructured. Hence other factors involved: research and publication perspectives, personal training and management, data standardization (with more future migrations in mind), external resources (eg. controlled vocabularies and other services), legal issues, and a few more. Time is also a factor since there is a great demand for museum data both from ordinary users as well as from authorities, who tend to see digitization only as a process of creating digital images. And all this must be done in prudent balance between current technology, that can change even within months, and years long perspective of metadata maintenance and usability. Some institutions – mainly greater museums – have to some extent managed to create their digital development strategies. Yet the statistical data instruct us that still a great number of objects has not yet gone digital, usually in smaller museums. The good news for them is that Sturm und Drang of early museum informatics is rather coming to an end, and there is now certainly less risk of making decisions that would lead us to a dead end. Stepping in late can be successful, too.

- ***Documentation for whom?*** (*full length paper*)
Bengt Wittgren (Västernorrland County Museum/Länsmuseet Västernorrland, Sweden)

To respond to the question: Are the ways we document collections in museums today still very much the same as our predecessors did fifty or a hundred years ago?

The Swedish context of documentation of collections is: 'We do as we always have been told. We do not want to change the way of describing.' And the explanation from registrars is that if we change the praxis, we have to update everything, from the beginning. That is described as not possible. From another angle, you can follow the changes over time and see the pattern of related aspects. I have in my research recognised strong links between (1) what is collected, (2) what metadata is collected and written down and (3) the structure of the catalogues. This is not surprising, but it is never explained, and the three aspects are nodes in a network of contemporary causes. The reasons for acquisition are mainly two: For research and for exhibition. But what the research and the exhibitions address depend on impacts from the society: what is possible to exhibit and what is possible in a scientific context to undertake at a certain time or period.

My paper will discuss triggers and influences from scientific paradigms in the cataloguing. I will also discuss the lack of metadata about the systems and the history of cataloguing. I think it is most informative to understand under what circumstances the collections is collected.

- ***The Relevance of Aggregators: Proposal for a new Data Provision Reference Model*** (*full length paper*)
Dominic Oldman (British Museum, United Kingdom); Chrysoula Bekiari (Foundation for Research and Technology – Hellas/FORTH, Heraklion, Greece); Martin Doerr (Foundation for Research and Technology – Hellas/FORTH, Heraklion, Greece); Gerald de Jong (Italian Ministry of Cultural Heritage, Italy); Barry Norton (British Museum, United Kingdom); Thomas Wikman (National Archives of Sweden/Riksarkivet, Sweden)

The relevance and role of museums in society has been a growing subject of debate for the last 40 years. There has been increasing tension between the museum as knowledge and memory institution, and that of simple visitor attraction. This tension has been fuelled by the decline in public funding since the 1970s and the debate now extends to the digital stage and the Internet. The Internet provides museums with an opportunity to establish a new role as part of an emerging data network concerned, not just with a type of publication model, but also with the opportunity to create new and interesting discovery services that utilise semantic relationships. Cultural

heritage data aggregators have become a distinctive part of this emerging digital network. By bringing together and combining the data of many individual museums they can help facilitate this new 'relevance' using data harmonisation techniques and, for the first time, support the ability to reason across museum data to support new forms of research, education and engagement.

Such aggregators however, face two major problems. First, how do they combine heterogeneous data sources while retaining the valuable individuality and perspectives that different museums record in their information systems? The second, how do they create sustainable mechanisms for museums, large and small, to contribute their data and maintain their relationships with one or more aggregators, regardless of system, model and data changes, ensuring a constant update of new information? Only robust, rich and regularly updated data repositories are likely to support a new 'digital renaissance' in the cultural heritage sector.

While the CIDOC CRM Special Interest Group (SIG) has developed a knowledge representation model that addresses the first problem, it has more recently turned its attention also to the issues of sustainability and the processes necessary to establish efficient and effective data relationships between museums and aggregators. This new focus has resulted in an initiative to fully define the processes, and to collaborate with implementers for building systems, that properly support rich semantic data aggregation.

These processes differ from those used in previous attempts to build provider-to-aggregator systems. They are based on an acknowledgement that the aggregator must pay more attention to museum curators, documentation experts and data managers and understand, at least at a representational level, practices involved in the generation and recording of museum data. It is crucial that the underlying reference model for provision and mapping of data must support the ability to share practice and transform the activity into a largely non-technical exercise. This means designing and incorporating a knowledge base or contextual 'mapping memory' into the system. Tools must manage all the different processes, from visualising the source and target models and data, mapping to a target schema, data transformation and ongoing management of consistency and integrity. They must respond to changes in schema and systems on either side of the relationship. Systems must be easy to install, use and manage with little or no additional provider development costs. Unless all these features are supported then data relationships are unlikely to be sustainable.

This paper describes a new reference model for data provision designed to support a solution (some elements of which are already being developed) that would manage all the processes needed to create, maintain and manage mapping relationships over the long term, with high levels of quality control. To make such a venture itself sustainable a modular architecture with Open Interfaces of interoperable components is proposed so that the components that make up such a system can be independently developed and optimized. The reference model will also foresee different levels of conformance. To this end the CRM-SIG seeks approval for this activity and invites a dialogue with the community, which would use such a system, for their feedback and help. My paper will discuss triggers and influences from scientific paradigms in the cataloguing. I will also discuss the lack of metadata about the systems and the history of cataloguing. I think it is most informative to understand under what circumstances the collections is collected.

Theme B _____ Processes in Museum Documentation

Time	Monday 8 th September	Tuesday 9 th September	Wednesday 10 th September
9.00–9.50			
11.00–12.30		B/2	
14.00–15.30	B/1		B/3
16.00–17.30			

Session B/1

Date: Monday 8th September 2014 | 14.00–15.30

Chair: Maija Ekosaari

■ Out with the old, in with the new?

New strategies and policies in documenting Flemish art (*full length paper*)

Lieneke Nijkamp (Rubenianum, Belgium); Bert Watteeuw (Rubenianum, Belgium)

As early as one hundred years ago the need for a documentation centre on Flemish art emerged from preliminary discussions, resulting in the foundation of the Rubenianum in Antwerp some fifty years later. Unlike a museum, the scope of the Rubenianum is not defined by an art collection. The institution serves an encompassing purpose: its mission statement is to keep track of information on every piece of Flemish art, whether located in Belgium or in another part of the world, in public or in private collections.

Half a decade ago, running a documentation centre implied scrutinizing printed publications, mounting analogue photographs and relying on an international network to send photographs and share information. Moreover, the curator's job was to select and edit the information before including it in the documentation files. Visiting researchers were supplied with neatly ordered artwork files, including detailed bibliographies and thematically arranged photographs annotated with remarks on subject and attribution.

Already seemingly an impossible job to maintain, the task of keeping the artwork files up-to-date became even more daunting with the rise of the internet. The wider availability of data has changed research standards and obliges the researcher to consult more sources than ever before. It has forced the Rubenianum to narrow its focus and at the same time decide on how far it should go in editing and selecting.

The digital era also implied another major shift in how to document art: institutions are pressed to make their information available online. Although the development of collection management systems and metadata standards may no longer be in its infancy, the transition from analogue to digital documenting also requires new thinking. With the older generation of art historians still attaching much value to printed information and the younger generation expecting to find everything online, the Rubenianum finds itself at a crossroads.

The project Digitizing the Corpus Rubenianum, launched last year, aims to bridge exactly this gap between both generations, combining the ongoing printed publication of Rubens's oeuvre with enriched online entries adding to and gradually replacing the paper documentation files.

With this paper we will briefly outline the afore mentioned changes in documenting art over the past fifty years at the Rubenianum and introduce the current procedure by which digital and analogue methods are combined for a sustainable future.

■ On the way to harmonized data. Over 20 year history of building a data base in the National Museum in Warsaw (*short paper*)

Karolina Tabak (National Museum in Warsaw, Poland)

The aim of this speech is to show the practices concerning organizing and standardization of data which emerged from the 90s. A few years after launching the Digital National Museum in Warsaw we are still looking back and analyzing the beginning of digitizing our knowledge. In the following speech I'm going to present both the stage of the establishment of the museum data base and its functionality as well as the assorted challenges facing the

Duration of contributions:

brief presentation \triangle 5 minutes; short paper \triangle 10 minutes; full length paper \triangle 20 minutes.

museum staff. During the last few years digitization of museum collection has accelerated rapidly. Our aim is to publish all the collections on line in the way that allows easy access and searching for the content. There were no rules how to describe work of art, how to use general terms which do not match the vocabulary of art and the searching routine of web users. The policies and legislation provide only the list of basic elements needed in museums evidence. In Poland there is no complete, standardized cataloguing instruction. So we made our own in accordance to CDWA. We have prepared collection of directives for a suitable description and we hope that these guidelines will lead us to fully accessible digital resource. This presentation will show also the simple tools needed to reconcile old information with new standards and the changing approach in understanding the key role of harmonized data in everyday use.

■ **Use your head to save your feet. Strategies and guidelines for documentation applied by MusIS – The South-Western German Museum Network** (*short paper*)

Werner Schweibenz (Bibliotheksservice-Zentrum Baden-Württemberg/BSZ, Germany);

Jens M. Lill (Bibliotheksservice-Zentrum Baden-Württemberg/BSZ, Germany)

Since the mid 1990s, MusIS (Museum Information System), a service of the Library Service Centre Baden-Wuerttemberg (Bibliotheksservice-Zentrum Baden Württemberg BSZ) runs a documentation network for museums. Among the members are the State Museums of the federal state of Baden-Wuerttemberg and several larger and smaller institutions from other branches. MusIS hosts a wide range of services for museum documentation and management. An important goal of the network is to create high quality documentation in a consistent form that can be used for multiple purposes inside and outside the participating museums. In order to achieve this goal, MusIS established a set of strategies and guidelines for quality control in museum documentation:

- Quality measures during data migration
- Consulting in documentation
- Application of controlled vocabulary
- Rules for entering data from index cards or inventory catalogues
- Data revision

These measures, techniques, and strategies lead to a certain degree of consistency and quality of data and documentation.

■ **Workflow and data exchange between museums: documenting of exhibitions in the Estonian Museum Information System** (*short paper*)

Kaie Jeesser (Tartu City Museum/The consultant of the Estonian Museum Information System (MusIS), The Ministry of Culture, Estonia); Kurmo Kõnsa (Tartu University, Estonia)

This presentation gives an overview of a museum as an institution and documentation as one of the main fields of activity of museums. The aim of this is to position the documentation of museum objects in relation to other fields of activity of museums.

The practice of documentation in museums based on historical development of documentation systems. The understanding of this development is inevitable for the construction of workflows in electronic environment. The mapping of workflows for the museum information system must be based on historical development of documentation systems and on real practice in museums.

The presentation highlights the importance of data exchange between museums. We study the movement of documents between museums in Estonian museum information system (MuIS) environment and the relationships between the workflows of document exchange and objects description. Data exchange between museums is important administrative functionality. The another essential aspect of data exchange is connected with the description of objects. Interoperability of documentation is the base for the contextualisation of objects descriptions and improving them. The second part of presentation concerns the real practical example of workflows between museums and the problems of combining them. As a practical example we treat the workflow of borrowing objects between the Estonian museums.

- **The Process of Documentation as Part of the System named Museum** (*brief presentation*)
Lucy Vega Martínez (Equinoccial Technological University. Quito, Ecuador)

One of the results obtained within the research project: *Cultural administration & management. Management models based on the ISO quality system and process approach*, developed by the School of Restoration and Museology at the Equinoccial Technological University, is the identification of the documentation as a process within the system known as a “museum”.

Based on systems theory proposed by Ludwig von Bertalanffy (Arnold & Osorio, 1998), the “museum” system should work according to a structure composed of elements or processes¹. Therefore, museological functions² developed a selection of public and private museums in Quito (Ecuador) were identified and plotted on a process map. Further processes were analyzed using the study methodology indicated by ISO 9000 (ISO 9004 specifically) as the EFQM excellence model.

The process maps the different selected public and private museums in Quito (Ecuador) allowed us to visualize the different processes of the system in interaction with each other and with the environment. Fundamentally allowed to identify the process or documentation as a key process or operating process that develops in several administrative functional units and not only in the Documentation Unit.

With these partial results, the project has now evolved into a program that seeks to identify the processes, establish requirements to be developed and validated to conform to a model of museum management (Arnold & Osorio, 1998).

¹ A set of activities that transform inputs into outputs, so that the final result has a higher added value on the entry (Bureau Veritas Business School, 2007).

² According to the ICOM Code of Ethics.

Session B/2

Date: Tuesday 9th September 2014 | 11.00–12.30

Chair: Georg Hohmann

- **Values and Collections/Collections and Values: Towards an online tool for collection value assessment** (*full length paper*)
Hilke Arijs (Royal Institute for Cultural Heritage/KIK-IRPA, Belgium)

Although value and significance assessment is gradually becoming a common concept in the museum field, its application proves to be a labour intensive and organisationally exhausting activity for many collection managers and institutions. As a result, it is often perceived as unfeasible and postponed indefinitely. Nevertheless such assessment is vital to ensure a proper collection management today and in the future.

In the case of image and audio-visual collections, an assessment is often even more complex due to the vastness of the collections and their complex nature. Consequently, such analysis is even more important for these collections. Based on a study of the most commonly used value criteria in the built heritage, archival and museum field, a conceptual framework for collection value assessment was created. This methodology has been translated into an online tool (<http://scoremodel.kikirpa.be/>) which offers collection managers the opportunity to map and assess the value of their collections. The result is a report that brings out the importance of the selected value criteria for the repository and the relative collection value of the assessed collections and/or objects. Additionally collection profiles in terms of conservation, digitization, collection risks, access, ... are generated. The main goal of the tool is to provide institutions with an instrument to support their collection management and to discuss values, priorities and risks. Furthermore, this methodology is the first step in mapping the ‘why’ of a collection management in a structured way and to visualise the shifts in value of museum collections.

- **The current situation and problems of archival documentation in the Matenadaran** (*short paper*)
Syuzanna Khojamiryan (Matenadaran Scientific-Research Institute of Ancient Manuscripts, Armenia)

The Scientific-Research Institute of Ancient Manuscripts “Matenadaran” holds one of the world’s richest depositories of medieval manuscripts, books and archival documents. In 2012 the Matenadaran became the basic organization in the field of safeguarding of written heritage for CIS countries.

The problems of preservation, scientific research and outreach of archival documents and manuscripts have the same urgency and priority in the Matenadaran today. The archival documents have a great value not only for Armenia, as they elucidate the historical, literal, political, medical and social spheres of neighboring and other countries. Furthermore, having a new scientific building (laboratories, repositories, etc.), the problem arises about modernization of preservation, scientific research and popularization of archival documents. Accordingly, there are the following problems:

1. The current condition of registration lists (handwritten and typewritten journals, searching difficulties, approximate records, etc.).
2. The new approaches of scientific and technical research and the process of insertion of high technologies.
3. The use of electronic database in the restoration field (the project of the State Committee of Science of the RA) and making a strategy of conservation and restoration process.
4. Creation of digital searching system: Perspectives.

■ **Documentation as a tool for Conservation: project notes** (*short paper*)

Ana Martins Panisset (Universidade Federal de Minas Gerais/Superintendência de Museus e Artes Visuais de Minas Gerais, Brazil); Yacy-Ara Froner (Universidade Federal de Minas Gerais Brazil)

A review of my experiences with digital photographic documentation of artefacts from 1996 to the present, focusing on the current seven year project at the Bata Shoe Museum, will discuss how, over the last two decades, our reliance on the increasingly high quality of digital photographs has impacted the way we use artefact collections and the way museum professionals, approach their work. More and more we are able to work with the images rather than with the objects themselves, reducing damage from handling. We are also using images to share with colleagues around the world. The benefits of this new way of working are many; the list goes on.

At the Bata Shoe Museum we are photographing the entire 13,000 piece collection, each object in several views. These 'documentation shots' are used for inventory, insurance, research, publication and image sales purposes. We have currently 27,000 unique images in 2 TB of storage space. The process employed has been refined over the seven years it has run, and now at 83% complete, our procedure is streamlined. I will discuss the details of the procedure and the importance of each step: artefact handling, equipment, photographic set up, exposure techniques, processing, resizing, metadata collection, copyright stamping, database linking, file storage, backups, staffing, job descriptions as well as the development of our *Policy Manual for Digital Image Assets*.

■ **Documentation Photography: An Integrated Process** (*short paper*)

Suzanne Petersen McLean (Bata Shoe Museum, Canada)

A review of my experiences with digital photographic documentation of artefacts from 1996 to the present, focusing on the current seven year project at the Bata Shoe Museum, will discuss how, over the last two decades, our reliance on the increasingly high quality of digital photographs has impacted the way we use artefact collections and the way museum professionals, approach their work. More and more we are able to work with the images rather than with the objects themselves, reducing damage from handling. We are also using images to share with colleagues around the world. The benefits of this new way of working are many; the list goes on.

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■ **What Is the Object Name? The Conflict between Vernacular and Official Languages in the Documentation of Collections** (*short paper*)

Keletso Gaone Setlhabi (University of Botswana, Botswana)

A museum object record contains multiple name fields such as object name, place made, place collected or ethnic group. The standard museum practice is to record the names used by object owners, that is, communities in the vernacular name field. The formal object accession entails procedures such as translation of vernacular names to official languages such as English in the case of Botswana by documentation officers. The latter process is significant for standardization and information exchange purposes. This paper interrogates this often overlooked procedure of translation of object name in the documentation of objects and asks if perhaps an object's primary name should be in the community's language. Several objects will be sampled to demonstrate the challenges encountered during object name translation and standardization processes. It further recommends for the adoption of an additional procedure of documenting the cataloguer who becomes the information authority. The hypothesis being that even with available documentation standards, documentation of objects remains subjective and can be influenced by the cataloguer's background as often portrayed by the object name.

■ **Integration of Digital Asset Management with the documentation strategy of Staatliche Kunstsammlungen Dresden** (*short paper*)

Doreen Scherfke (Staatliche Kunstsammlungen Dresden), Günther Gromke (CDS Gromke e. K.)

Challenge

Staatliche Kunstsammlungen Dresden (SKD) combines 14 museums of different kind with more than one million objects under one roof. Among them are e.E. the world famous Art Collections Grünes Gewölbe (Green Arches), Alte Meister (Old Masters), Neue Meister (New Masters). There are Graphic Arts, Applied Art, Ethnological and Natural Science Collections, almost everything one may expect in a museum. Accordingly the demands and expectations in a centralised management of image and media data are very complex and differentiated.

Since December 2011 a project for the integration of a centralised Digital Asset Management System (DAMS) is under way. Initial ignition for the project was the exorbitantly increasing storage volume needed for digital assets caused to a large extent by duplicates. Therefore the main challenge of the project is the deceleration of the increase in the need of storage space due to duplicates and the most possible elimination of duplicates in the existing inventory. The goal is to be achieved by a single sourcing concept strictly to be adhered to.

A further high ambitious requirement is the configuration of a very complex system of rights of access satisfying the demands of the various individual institutions and the compound structure as a whole as well.

The collection objects of SKD are managed with the collection database „Daphne“ made by Robotron. In this database thumbnail images are assigned to the object records. Enabling users to access high resolution images and utilise the output functionality of a DAMS in SKD the DAMS needs to be integrated with Daphne. On the other hand some object metadata from the collection database should be available in the DAMS mainly used directly by the Public Relations Department.

Furthermore one should keep in mind that the DAMS comprises a large number of digital assets not related to the collection like images of exhibition openings or other events, presentations, reports, videos, graphic layouts and others. In this regard the provision of author and copy rights to every asset is of extreme importance.

Solution

The project is being realised by CDS Gromke e.K., Leipzig, Germany, in close cooperation with the Technical Department of SKD, Robotron Datenbank Software GmbH, the manufacturer of Daphne and the project managing company ibuplan Dresden GmbH & Co.KG. The DAMS Cumulus of Canto GmbH, Berlin, Germany, has proved to be the most suitable DAMS for the purpose. At present already more the 10 of the 14 museums of SKD are included in the system, comprising already an ever increasing inventory of more than 650.000 high res records. The integration of the collection database Daphne with the DAMS Cumulus is already intensively in use and in the process of further development.

Session B/3

Date: Wednesday 10th September 2014 | 14.00–15.30

Chair: Walter Koch

■ **Cataloguing instructions for Finnish museums and SPECTRUM** (*short paper*)

Leena Furu (Museum 2015/National Board of Antiquities, Finland)

Disunited metadata, hundreds of Collections Management Systems, different kinds of cataloguing instructions, no commonly used standards. Sounds familiar? This was the starting point for cataloguing development work in Finland. In order to produce unified metadata of our collections we needed to develop cataloguing instructions, get familiar with international standards and solidify cataloguing terminology.

The cataloguing instructions were developed in the biggest ever project in Finland concerning collections management and cataloguing – the Museum 2015 (http://www.nba.fi/en/development/museum_2015).

This short paper will take you on tour to Finnish cataloguing development work. The work was done by a dedicated working group of 16 museum and cataloguing professionals and a large commenting group – together approximately 110 museum professionals and other specialists. The outcome of the work was Cataloguing instructions for Finnish Museums, published in February 2014 (www.luettelointiohje.fi).

At the very beginning the decision was made that the instructions should be based on internationally used standards. Therefore the primary repository was SPECTRUM, the UK Museum Collections Management Standard. The presentation will illustrate the work done with SPECTRUM. The working groups approach to SPECTRUM was quite different. Instead of concentrating on Procedures the group applied themselves with Appendix 1 Information Requirements and translated and adapted the Information Units.

This short paper will concentrate on the process of making the instructions, working with SPECTRUM, the outcome of the implementation phase and the steps in the future cataloguing development work.

■ **From Standard Procedures to machine executable Process Models – a practical experience** (*short paper*)

Walter Koch (Steinbeis Innovation Transfer Centre for Information Management and Cultural Heritage Informatics, Austria); Charles Rignall (Media Equation, Melbourne, Australia); Rus Littleton (Media Equation, Melbourne, Australia)

This paper describes in the first part an attempt to derive workflows from procedures as described in the SPECTRUM Framework, consider them as basic elements for business processes and model them using open source software available in the field of Business Process Modelling (BPM). Since the “procedures” mentioned above, contain “steps” as basic elements, sets of steps have been used to describe repeatable activities (workflows) which can be found in museums (equivalent to Standard Operating Procedures in other environments) and have been defined as “SubProcesses”. A main result of SubProcesses is also the generation of (subsets of) data which describe museum objects, places, events, personas, etc. Data is very often controlled by vocabularies which provide data standards for different metadata elements describing a museum object. SPECTRUM (describing around 20 procedures) comes along with an XML-Schema which contains around 400 elements and defines the majority of data fields to be found in museum data bases. Essential control elements are policies and (business) rules which regulate the sequence of SubProcesses.

The second part of this paper describes how to model and execute a demo SubProcess (“Delivery of an Object to a Museum”). Different tools have been used: for high level Modelling a web based tool (Signavio) has been selected which provided the cooperative elaboration of a SubProcess using BPMN (Business Process Model and Notation). In this simplified model three “Pools” (specifying roles and actors) have been identified dedicated to: the depositor (offering an object), the museum curator (receiving an object), and the IT-System’s (web)services. The services for this demo comprise: checklist processing, backend services (for populating parts of the overall data base and implemented using a native XML-database: eXist), data validation using vocabulary Webservices, and reporting. Checklist (which include policies and business rules) are managed by an XForms server side system (Orbeon) which provides a designer for the end user and includes the dynamic part of the demo: selection and invocation of SubProcesses. For the execution of this demo SubProcess, Bonitasoft was chosen which provides not only the execution of the BPM but also the integration of services as well as the access to repositories via a standard data interface (CMIS). One aim of this experiment was to have a proof of concept for the semi-automatic and “zero code” generation of collection management systems for museums by (museum) business experts.

- **SPECTRUM PT – translation and localization of SPECTRUM in Brazil and Portugal** (*short paper*)
Alexandre Matos (São Paulo State Secretary of Culture, Brazil); Fernanda D’Agostino (Pinacoteca do Estado de São Paulo, Brazil); Gabriel Moore Forell Bevilacqua (Pinacoteca do Estado de São Paulo, Brazil); Juliana Monteiro (São Paulo State Secretary of Culture, Brazil); Juliana Rodrigues Alves (Centro Paula Souza, São Paulo, Brazil); Luciane Santesso (Museu da Imigração de São Paulo, Brazil); Marcia Aparecida Mattos (São Paulo State Secretary of Culture, Brazil); Mariana Esteves Martins (Museu da Imigração de São Paulo, Brazil); Marilúcia Bottallo (Instituto de Arte Contemporânea de São Paulo, Brazil)

This paper presents the Portuguese translation of SPECTRUM and the legal and professional adaptation of the standard managed by Collections Trust for Portugal and Brazil. A multidisciplinary team from both countries engaged voluntarily. In Brazil the group includes professionals from the State Secretariat of Culture, the Immigration Museum, the Pinacoteca do Estado and the Institute of Contemporary Art all in São Paulo and in Portugal, professionals from the Science Museum of the University of Coimbra and from Sistemas do Futuro.

The project was developed in two major tasks: the first focused to distinguish and adapt the nuances of the Portuguese language and the significance of terms and concepts in each country; and the second is related to the localization of the standard to Portuguese and Brazilian legal contexts.

The localization pointed out many differences among local contexts. They are related to procedures and laws issues, but mainly to the languages that were used to describe and explain practices and laws. Even when it concerns two Portuguese speaker countries the equivalence of terms is not obvious.

The teams’ goal was to detail the terminology used in SPECTRUM, so that the Portuguese speaking museum professionals can understand it in a common basis, consolidate the guidelines and test the possibilities of their implementation. The printed and digital publication of SPECTRUM PT (August 2014) will be an important step for the adoption of the standard as a reference tool in the management of collections in Brazil, Portugal and, later, in the other Portuguese-speaking countries.

- **Processes in Museum Documentation: Case Study of Livingstone Museum** (*short paper*)
Fred Nyambe (Livingstone Museum, Zambia)

Documentation is a vital aspect in the management and preservation of cultural and natural heritage. Objects, artefacts or specimens that are not documented cannot be referred to as true “museum” collections (CIDOC) because they have no value attached to them. Therefore, the need for documentation processes that are complete, efficient and relevant cannot be over emphasised.

Once an object enters the museum space, it must go through standard processes and procedures that are clear for the museum staff. These procedures need to be reviewed from time to time to verify their relevance and conformity to various policies such as collection policy. It must be clear who does what right from acquisition to accessioning and marking of objects. There must be properly laid down procedures for loaning and movement of objects. Furthermore, an unambiguous de-accessioning procedure must be in place for objects that are no longer going to be regarded as museum objects.

The Livingstone Museum came up with a documentation system that was developed over time based on various documentation standards such as CIDOC, MDA and AFRICOM. Different Forms and catalogue cards to cater for different sections in the museum were designed and are currently being used. Efforts to fully implement an electronic documentation system that aims at improving the efficiency of handling information needs of objects is being pursued. Various challenges exist including the diversity of the collection. An efficient system needs to take care of all the information requirements of the collection in its diversity.

This paper seeks to address the importance of following documentation processes and procedures. With advancements in technology, museums need to align their processes and procedures to ensure they harness the benefits of these developments for better management of information about their objects.

- **Az Infinitum – Azulejo Indexation and Referencing System** (*full length paper*)
Rosário Salema de Carvalho (Universidade de Lisboa, Portugal); Alexandre Pais (Museu Nacional do Azulejo, Portugal); Fernando Cabral (Sistemas do Futuro, Ltd., Portugal)

The development of **Az Infinitum** as a research project started in 2009. It consists of a partnership between the ARTIS – Instituto de História de Arte (Faculdade de Letras, Universidade de Lisboa) – and the National Museum of Azulejo (Lisbon). Later on, a new technologic partner joined the project – Sistemas do Futuro, Ltd. – enabling

its online publication in 2012. The **Az Infinitum** was born out of the requirement to study *azulejos* in a global sense, indexing applications and cataloguing them according to their composition and relationship to architecture, authorship, manufacture process or commission. This tool facilitates the organization of information, rendering it accessible to researchers as well as to general audiences, and thereby contributing not only to advanced study and research, but also to the dissemination of this kind of heritage and, as a consequence, to its preservation. The availability of these digital databases enables a greater number of people to access information, and the resulting cross-referencing of data – especially relevant, as Portuguese tile work was highly permeable to international influences – can become a vehicle of great importance for intercultural dialogue.

With **Az Infinitum** it is possible to register and confront data related to six great areas: 1) In situ (inventory); 2) Iconography; 3) Patterns; 4) Engravings; 5) Authorships; 6) Bibliography, with special attention to controlled vocabulary and to the use, as often as possible, of international lists.

The aim of this paper is to show the importance of international standards to the development of the project, particularly in terms of Data Structure (The CIDOC Information Categories and Data Standard for Archaeological Sites and Monuments), Vocabulary Control (ICONLASS classification system and AAT Thesaurus) and Communication and exchange of information (CIDOC-CRM). Yet we will also discuss the importance of using **Az Infinitum** as a reference project in the identification, study, preservation and dissemination of tile heritage not only among the scientific community but also among other heritage institutions responsible for this kind of cultural heritage, both in Portugal and in Portuguese-speaking countries.

Theme C _____ Museum Documentation as Profession

Time	Monday 8 th September	Tuesday 9 th September	Wednesday 10 th September
9.00–9.50			
11.00–12.30			
14.00–15.30		C/1	
16.00–17.30			

Session C/1

Date: Tuesday 9th September 2014 | 14.00–15.30

Chair: Susanne Nickel

■ **Challenges and Opportunities for Training of Museum Documentation Professionals in Zambia** (*short paper*)

Fidelity Phiri (Livingstone Museum, Zambia)

Documentation is increasingly becoming a buzz word in museum circles. This is because of the important place that documentation occupies in museums today. When properly conducted documentation acts as legal proof for ownership of museum artifacts to police and insurance companies in case of theft or loss, facilitates quick allocation and retrieval of objects and information by researchers and also assist in planning for overall collection management. Despite this, training of museum documentation professionals is non existence in Zambia. This article will discuss the challenges that museums in Zambia face in engaging professional information specialist to handle museum documentation. This paper will also highlight some internal factors that constrain proper implementation of documentation practices and these factors include administration, finances and levels of qualification of documentation staff in museums. The article will also discuss opportunities available for training in relation to three institutions of higher learning that are providing training of information professionals in Library and information studies and how such training can be made beneficial to the current needs of museum documentation practices. The conference will allow me to share with my colleagues from other parts of the world challenges and opportunities that museums in Zambia face in relation to museum documentation practices. This platform will afford me an opportunity to forge professional networks with other museum professionals hence promoting sharing of successes and challenges of museum operation long after the conference has ended.

■ **How to become a registrar? On education and training in Germany and UK** (*short paper*)

Dorothee Haffner (University of Applied Sciences Berlin, Germany)

The lecture presents selected educations and trainings in Germany and UK, compares requirements and contents and shows some working places in museums.

■ **Getting a Handle on Digital Curation: Education, Practice, and Identity (What Do You Call These People?)** (*full length paper*)

Joyce Ray (Johns Hopkins University Baltimore, USA)

Digital (or data) curation is increasingly recognized as a new field that cuts across all disciplines and all types of organizations. Today's museums and other cultural heritage organizations are the holders and creators of vast quantities of valuable digital assets that must be managed to ensure their preservation and availability for re-use. The range of formats and types of data that museums hold is especially challenging, ranging from digitized images, sound recordings and video to born-digital art, research data, and collection documentation. Yet there is no clear career path for the recruitment and education of new museum professionals with digital curation

Duration of contributions:

brief presentation \triangle 5 minutes; short paper \triangle 10 minutes; full length paper \triangle 20 minutes.

knowledge. Current experts have acquired their knowledge on the job, but now it is time to greatly expand the number of professionals with digital curation skills as well as disciplinary expertise to meet the growing need. This paper will provide a brief history of the development of digital curation education and practice, particularly in the US, and will discuss a new mostly online digital curation program developed by the Johns Hopkins University MA in Museum Studies program. Discussion will focus on the need for digital curation expertise in museums, the balance of theory vs. practice in education, and that small question of what we will call these new professionals.

■ **Can everyone know everything? (short paper)**

Marija Aćimović (Central Institute for Conservation in Belgrade, Serbia)

Heritage documentation in modern times is primarily digital and it could be said that its tasks and even purpose has changed along with its formats. Development of computers hardware and software and other equipment has reflected on all the aspects of heritage protection – research, display, documentation, conservation etc, changing and redefining them along the way. Everyday work of the conservator, pr manager, curator is also influenced by this development because now it includes frequent use of digital technology.

If we say that there are three principal parts of contemporary heritage documentation activity, using, creating and managing it, we have to note that they are different and they imply specific knowledge. For example creating documentation range from digitization of paper documents to 3D scanning, and managing rang from devising backup strategies to developing databases. And if we say that in one institution persons involved in documentation usually have different background educations and interests, then we have to assume that not everyone involved in the documentation process has necessary digital knowledge. This lead to several important questions – is there basic set of skill and knowledge that everyone involved in heritage protection documentation needs to have? Does this essentials digital knowledge differ according to the activities of using, creating and/or managing heritage documentation? Finally, how to educate engaged professionals so that workflow is not delayed?

In the paper these issues will be addressed trough examples and experiences in the field of conservation documentation in Central Institute for Conservation.

■ **Between theory and practice: the São Paulo CIDOC-ICOM training programme and the museum documentation profession in Brazil (short paper)**

Gabriel Moore Forell Bevilacqua (Pinacoteca do Estado de São Paulo, Brazil); Juliana Monteiro (São Paulo State Secretary of Culture, Brazil)

This paper intend to address the experience of the *CIDOC Summer School* in Brazil discussing possible results, impacts and outcomes of the training programme for Brazilian museum professionals and the museum documentation practice at Brazilian museums. Known in Brazil as the *CIDOC-ICOM Museum Documentation Training Programme* it was the first *CIDOC Summer School* organised in a developing economy. The course held in São Paulo between August 4–9, 2013 and already scheduled for a second session between August 17–22, 2014 was also probably the first complete training programme fully dedicated to museum documentation ever offered in Brazil. During the first session, organised by Museu do Café and Pinacoteca de São Paulo, more than 80 people attended the 16 modules of the course and at least 30 are expected to complete the intermediary and advance modules needed to the CIDOC certification in 2014. This is a significant step toward the professionalization of the field in Brazil and is deeply connected with recent projects focused on the dissemination of international standards in Portuguese like the translations of the *Statement of principles of museum documentation*, the *International Guidelines for Museum Object Information: The CIDOC Information Categories* and the SPECTRUM standard. With the presentation of these experiences as a new strategy for museum documentation education, we also intend to discuss some key issues regarding the museum documentation tradition in Brazil. Places and meanings of museum documentation theory and practice in museums as well as the formation and characteristics of professionals in the field are among them.

Theme D Networking

Time	Monday 8 th September	Tuesday 9 th September	Wednesday 10 th September
9.00–9.50			
11.00–12.30			D/1
14.00–15.30			
16.00–17.30			

Session D/1

Date: Wednesday 10th September 2014 | 11.00–12.30

Chair: Terry Nyambe

■ **Linking of documentation strategies for cultural institutions** (*short paper*)

Renate Behrens (German National Library / Deutsche Nationalbibliothek, Germany)

For some time now cultural institutions such as libraries, archives and museums have had to face new kinds of challenges. They are the primary preservers of cultural assets, yet in many cases they are not able to make their holdings usable to an adequate extent. Modern-day users are likely to utilise search engines, and are used to obtaining information directly and receiving aggregated responses to requests. Only then, in a subsequent step, do they ask for information on the location, accessibility and other details.

Longstanding documentation standards which have developed over time can only meet such requirements to a limited extent and need to be brought in line with the new conditions. Furthermore, for reasons of cost-efficiency it is crucial to keep the costs of describing materials within strict limits and to increase the levels of external data ingested. Cooperation between the different cultural institutions is of prime importance here.

The aim of the talk is to provide suggestions regarding the possible establishment of networks to develop documentation strategies and to illustrate this, using practical examples based on the Integrated Authority File (GND) and the new international Resource Description and Access (RDA) standard.

■ **Digital technologies for the first network of the Italian University Museums** (*short paper*)

Elena Corradini (University of Modena and Reggio Emilia, Italy); Luigi Campanella (University of Rome, Italy)

Twelve historical Italian Universities (Bari, Cagliari, Chieti-Pescara, Ferrara, Florence, Modena and Reggio Emilia, Parma, Perugia, Rome “La Sapienza”, Salento, Siena, Tuscia), with their museum centers and systems, museums and collections, through a creation of first network of Italian University Museums, are working at a project approved and financed by the Italian Ministry of the University and Research with the coordination of the University of Modena and Reggio Emilia. The first goal of the project is monitoring and cataloguing the cultural, historical and scientific heritage of the University Museums network, in order to create a national database, using the national catalogue standard released by the Central Institute for Cataloguing and Documentation of the Italian Ministry of the Cultural Heritage and Tourism within the General Informative System for Cataloguing SIGECWeb.

The final tool of the network is a bilingual web portal (in Italian and English) to rationalize the presence of the Italian University Museums on the web, for strengthening and standardizing the presentation of their quality contents on the web with four common thematic and multidisciplinary itineraries through their most relevant collections: stories, stories of scientific instruments, landscape, environment. The use of the digital technologies will contribute to the knowledge and valorisation of the cultural, historical and scientific heritage of the University Museums network.

Duration of contributions:

brief presentation \triangle 5 minutes; short paper \triangle 10 minutes; full length paper \triangle 20 minutes.

■ **Sharing Cultural Heritage Using Linked Open Data: The Museum of Contemporary Art of University of São Paulo Case Study** (*short paper*)

Flávio Soares Corrêa da Silva (Instituto de Matemática e Estatística, Brazil);

Erika Guetti Suca (Instituto de Matemática e Estatística, Brazil)

Museums around the world have built databases with metadata about millions of cultural objects. These databases are large and complex, the information is richly structured and varied from museum to museum, and it is difficult to link the data across databases. We are working on a model to support Linked Data in the Cloud for the Museum of Contemporary Art at the University of Sao Paulo (MAC-USP), based on information of exhibits and collections. We propose to create logical rules about relationships among cultural heritage items, using RDF as a schema language. Our goal is to unfold implicit relations among these items, this way creating new value by allowing cultural institutions to add and publish information about their collections and exhibits in their corresponding websites.

■ **CultureCloud Sweden** (*short paper*)

Karen Anderson (CEDIF, Mittuniversitetet, Sweden); Martin Bjersby (National Archives Database, Riksarkivet, Sweden); Sanja Halling (Digisam – National Archives of Sweden, Sweden); Börje Justrell (National Archives of Sweden/Riksarkivet, Sweden); Rolf Källman (Digisam – National Archives of Sweden, Sweden); Lillian Rathje (Murberget Läns museet Västernorrland, Sweden); Thomas Wikman (National Archives of Sweden/Riksarkivet, Sweden)

The CultureCloud initiative brings together a group of European key players in the Cultural Heritage sector and aims to create e-Infrastructures for sharing and discovering digital cultural heritage. Leveraging state-of-the-art research and the group's combined domain knowledge, the goal is to introduce an e-Infrastructure for digital cultural heritage. The Swedish part of the CultureCloud initiative, coordinated by the National Archives (Riksarkivet) in close collaboration with the "secretariat for National coordination of digitisation, digital preservation and digital access to cultural heritage" (Digisam), universities and museums and archives in 2 Swedish regions is currently

- Identifying Swedish GLAM needs and e-Infrastructure needs from a bottom-up perspective to be integrated with the national Digisam project and the European CultureCloud Initiative;
- Identifying research and innovations challenges (e.g. in Horizon 2020 and Interpares Trust);
- Developing concepts for national and european testbeds and new business models for public actors and companies working in cultural heritage;
- Establishing strong consortias for proposals in regional, national and european programs and calls (incl. lobbying).

As a consequence, Riksarkivet has already decided to test, evaluate and implement 2 core services in the emerging CultureCloud e-Infrastructure

- A national mapping node for the ALM-sector for transforming, enriching and normalizing source data into commonly used standards, based on the CIDOC CRM SIG Mapping Reference Model and an ongoing collaboration project, "CultureBrokers";
- A national distributed co-reference network based on ongoing discussion in CIDOC CRM SIG and the Co-reference Working Group introducing a curated workflow for generating unique persistent identifiers for people, places and events.

■ **The approach to indexing heterogeneous collections from the First World War for the thematic portal 'Europeana 1914–1918'** www.europeana1914-1918.eu/ (*short paper*)

Thorsten Siegmann (Staatsbibliothek zu Berlin – Preußischer Kulturbesitz, Germany)

The project Europeana Collections 1914–1918 has brought together ten large European libraries and two other partners to digitise more than 400,000 items from their First World War collections – everything from rare trench newspapers to censored letters from troops – to be ready for the centenary of the First World War in 2014. The project was coordinated by the Staatsbibliothek zu Berlin – Preußischer Kulturbesitz. The project joined forces with the Europeana Foundation and the EFG1914 project. In a joint effort the three partners have created the thematic platform Europeana 1914–1918 (www.europeana1914-1918.eu/).

More than 10.000 books, around 1.700 songbooks and music sheets, around 100.000 issues of newspapers and magazines, incl. trench magazines, more than 150.000 autographs and manuscripts like diaries and letters, around

1.000 maps and 180.000 images like posters, photographs or postcards have been digitised by the Europeana Collections 1914–1918 since 2011. The digitised objects span the full range of national library collections between 1914 and 1918.

The collections are complemented by contributions of more than 10.000 persons digitised at collection day events held all over Europe and by more than 660 hours of digitised films from European film archives. The digitised collections focus on everyday life in wartimes. The thematic portal which has become one of the largest digital libraries dedicated to the First World War aims to give insight into life between 1914–1918 at the fronts as well as at home.

The institutions participating in the projects agreed on a pragmatic approach to index their multilingual metadata based on a selection of identifiers from the Library of Congress Subject Headings and an additional set of subject headings describing media types to connect related objects with each other in order to establish searching above single languages at the thematic portal.

The presentation will give insight into the chosen approach and its development and take a look at the advantages and disadvantages.

Theme E _____ Metadata

Time	Monday 8 th September	Tuesday 9 th September	Wednesday 10 th September
9.00–9.50		E/2	E/3
11.00–12.30			E/4
14.00–15.30	E/1		
16.00–17.30			

Session E/1

Date: Monday 8th September 2014 | 14.00–15.30

Chairs: Christian-Emil Smith Ore

- **Describing Collections as Contextual Units for Objects – A Practical Approach** (*full length paper*)
Franziska Diehr (Coordination Centre for Scientific University Collections in Germany, Humboldt University of Berlin · Metadata and Data Conversion, Göttingen State and University Library, Germany); Martin Stricker (Coordination Centre for Scientific University Collections in Germany, Humboldt University of Berlin, Germany)

Cultural heritage objects usually belong to a collection and are more or less aggregated according to a systematic order. This order generates practices and expertise, facilities and documents. A collection's attributes and features represent essential contextual information about its objects. At the same time, our experience with documenting academic university collections on a national and international level has taught us that collection-level description is a valuable and rewarding venture. It helped us build and organize professional communities, narrate history and revive the recognition of material research and teaching collections as an important part of science and humanities.

Consequently, within the scope of the BMBF-funded Coordination Centre for Scientific University Collections at Humboldt University of Berlin, we have been developing the domain-specific Scientific Collection Description Model (SCDM). SCDM describes collections in their function as infrastructure for research, teaching and education. It is based on and interoperable with common standards such as CIDOC CRM, Dublin Core, and EDM.

SCDM is being implemented in the "Scientific Collections online"¹ web portal & data platform which provides and interrelates metadata on scientific collections, their objects, resources, facilities and collection-based activities in research, teaching and education. We fully support recent efforts² in the area of collection-level description, especially considering its potential for developing new ways of exploring collections and objects in portals and retrieval systems.

¹ Wissenschaftliche Sammlungen digital, <http://portal.wissenschaftliche-sammlungen.de>

² Wickett, K. M., et al (2014). Representing Cultural Collections in Digital Aggregation and Exchange Environments, D-Lib Magazine 20(5/6), <http://doi.org/10.1045/may2014-wickett>

- **dati.culturaitalia.it: a Pilot Project of CulturalItalia dedicated to Linked Open Data** (*full length paper*)
Sara Di Giorgio (Central Institute for the Union Catalogue of Italian Libraries/ICCU of the Italian Ministry of cultural heritage, activities and tourism/MiBACT, Italy); Rossella Caffo (Central Institute for the Union Catalogue of Italian Libraries/ICCU of the Italian Ministry of cultural heritage, activities and tourism/MiBACT, Italy); Maria Emilia Masci (Scuola Normale Superiore di Pisa, Italy)

The pilot project dati.culturaitalia.it started in 2012 to build up a Linked Open Data (LOD) Service that will progressively make available open datasets from the web-portal CulturalItalia [<http://www.culturaitalia.it>], the Italian national aggregator for Europeana [<http://www.europeana.eu>]. The application, on line since 2013 [<http://dati.culturaitalia.it/>], was designed to allow the resources aggregated by CulturalItalia to be involved into large semantic networks after exposing, sharing and connecting data according to LOD principles.

Duration of contributions:

brief presentation \triangle 5 minutes; short paper \triangle 10 minutes; full length paper \triangle 20 minutes.

CulturalItalia is the Portal of Italian Culture managed by ICCU, in which are involved cultural institutions – museums, archive and libraries – from national, regional and local level. Metadata aggregated by CulturalItalia encoded according to the XML schema PICO Dublin Core Application Profile (PICO AP) were mapped into two different RDF schemas: the Europeana Data Model (EDM) and the CIDOC Conceptual Reference Model (CIDOC-CRM). More in particular, the OWL implementation named Erlangen CRM was chosen for implementing the mapping. RDF triples mapped into Erlangen CRM were then enriched with links to URIs identifying instances of internationally established RDF resources for geographic names and authority files for personal and corporate names, such as GeoNames and Virtual International Authority File (VIAF).

■ **Quality for Linked Data. What is it and how can it be made?** (*full length paper*)

Jef Malliet (PCCE – Provinciaal Centrum voor Cultureel Erfgoed, Provincie Limburg, Belgium)

Everybody agrees that in order to be useful in a Linked Data environment, ‘metadata’ for cultural heritage objects must fit some quality requirements. Although quality of information is a subject of research since several decades, it is as yet unclear what it means for the semantic web. Furthermore, cultural heritage metadata is normally conceived in the first place for collection management purposes and not for sharing or publication, let alone for linking. There is much confusion about where in the workflow the required quality can or must be made and by who. This paper provides some clues about the elements of data quality for LD and how it can be made, based on experience with heritage Linked Data initiatives: the local Erfgoedplus.be and the broad Europeana

Session E/2

Date: Tuesday 9th September 2014 | 9.00–9.50

Chairs: Mika Nyman

■ **Modelling Scientific Activities: Proposal for a global schema for integrating metadata about scientific observation** (*full length paper*)

Martin Doerr (Foundation for Research and Technology – Hellas/FORTH, Greece); Chrysoula Bekiari (Foundation for Research and Technology – Hellas/FORTH, Heraklion, Greece); Athina Kritsotaki (Foundation for Research and Technology – Hellas/FORTH, Heraklion, Greece); Gerald Hiebel (University of Innsbruck, Austria); Maria Theodoridou (Foundation for Research and Technology – Hellas/FORTH, Heraklion, Greece)

The wide deployment and use of the CIDOC CRM for information exchange and integration between heterogeneous sources of cultural heritage information in recent years have highlighted that cultural information extends to other disciplines as well, such as biology, geology and others. It is proved that the cultural discourse includes information from all sorts of sciences and product of sciences, such as digital productions, biological samples, exhibits of physical object (materials, fluids etc.). Scientific activities themselves are part of the human culture. In this paper we present a model about concepts of scientific observation and how this model is related to ISO21121. This model has been being developed bottom up from specific metadata examples from biodiversity, geology, archeology, cultural heritage conservation and clinical studies. It has so far been validated in several national and international projects by implementing it in slightly different versions together with application-specific extensions and by mapping to and from related standards. This version has been produced by FORTH and collaborators and describes a consolidated version from this experience, with the aim to present it for review and further adoption to the widest possible community. The model presented here describes, together with the CIDOC CRM, a discipline neutral level of genericity, which can be used to implement effective management functions and powerful queries for related data. It aims at providing super classes and super properties for any application-specific extensions, such that any entity referred to by a compatible extension can be reached with a more general query based on this model. We propose to open the discussions in CIDOC about subjects concerning the conceptual modelling about products of human activities. We suggest to CIDOC to approve that modelling scientific activities is a valid scope for CIDOC and could be a working item for the CRM-SIG WG.

■ Cross-sectional Integration of LAM Resources on the Basis of Authority Data:

Prospects for Museums (*full length paper*)

Angela Kailus (German Documentation Center for Art History – Bildarchiv Foto Marburg, Germany)

Cross-sectional integration of information on the web is gaining in importance – not just because there is an increasing wealth of content available, but by processing it as linked open data it will experience a crucial enrichment in quality. Qualified, formalized, machine-readable content as a basis for new combinations not only among websites but among smallest information units – data – will form the future of the web.

To qualify data stocks for the emerging ‘web of data’, it is crucial to identify the entities involved – persons, corporate bodies, places, objects, classification terms and keywords – by universally acknowledged Uniform Resource Identifiers (URIs) as access points. In the field of art and architecture documentation in German-speaking countries, in museums, heritage preservation authorities, research departments, image libraries, the use of authority data has not been prevalent, and practice is markedly inconsistent. This leaves them weakly positioned to meet the challenges of the semantic web.

The *Integrated Authority File (Gemeinsame Normdatei, GND)*, developed and operated by the German National Library, offers an extensive reference system for entities relevant to documenting art and architecture. Since its LOD publication under CC0 license in 2012, the strategic importance of the GND can hardly be overrated. By incorporating GND-based Persistent Identifiers institutions documenting visual heritage can connect up to a multitude of LOD initiatives. GND identifiers are widely used in the German-language Wikipedia, consequently they are part of one of the best-connected LOD data sources, DBpedia, providing extensive structured multilingual information from Wikipedia. The GND is also part of the Virtual International Authority File (VIAF), which maps, interlinks and publishes authority files from 25 national libraries and other institutions (among them Getty’s ULAN) as a single file of cross-references. In library contexts, both of these major linked data files have successfully been used to provide multilingual access to formerly monolingual resources.

Recently the German National Library has invited non-library institutions to participate in expanding and improving the GND, to evolve the authority file into a powerful tool covering the needs of a wide range of heritage institutions. Several projects explore ways to facilitate data entry, import and maintenance with non-library partners, such as IN2N with the Deutsches Filminstitut (German Film Institute).

By using and contributing to generally acknowledged authority files, museums and other heritage institutions can benefit from the huge preliminary work of standardization and interconnecting advanced by the library sector. So linked data is also about joining forces, about re-use of valuable resources and procedures – to open up your stocks across sectional boundaries.

Session E/3

Date: Wednesday 10th September 2014 | 9.00–9.50

Chairs: Regine Stein

■ The Cranach Digital Archive: challenges and perspectives for interdisciplinary research in digital transformation (*full length paper*)

Gunnar Heydenreich (Museum Kunstpalast, Düsseldorf and Cologne Institute of Conservation Sciences, Germany)

In recent decades the systematic study of the painting materials and techniques of Lucas Cranach the Elder has generated new insights regarding attribution, authenticity, dating, display and function, as well as changes in appearance of his works. However, only a small fraction of the rich technical documentation has been published. Despite strong interest in accessing these resources, it remains difficult for scholars to consider this important body of material. In October 2009, nine museums in Europe and the United States began working together on a pilot project to establish methodologies for interdisciplinary collaborative research, sharing knowledge and providing access to art historical, technical and conservation information on paintings by Lucas Cranach the Elder and his workshop. The project Cranach Digital Archive (cda) is funded by the Andrew W. Mellon Foundation as part of a larger initiative to develop new kinds of research tools to facilitate the transmission of art historical and conservation information across institutions and international borders in order to advance scholarship and learning (www.rembrandtdatabase.org, www.researchspace.org et al.). Today, more than 125 museums and collections collaborate in the Cranach Digital Archive project and more than 1000 paintings of the Wittenberg court artist are freely accessible with high resolution images and rich documentary material. This paper discusses related challenges, experiences and perspectives.

- **Advancing the semantics of descriptive metadata in Fashion museums collections** (*full length paper*)
Marco Rendina (Fondazione Rinascimento Digitale, Italy); Alexandros Chortaras (National Technical University of Athens, Greece); Nikos Kolitsas (National Technical University of Athens, Greece); Stefanos Kollias (National Technical University of Athens, Greece); Giorgios Stamou (National Technical University of Athens, Greece)

Good and rich descriptive metadata are of key importance for providing advanced search services over heterogeneous museum collections. In order for this to be possible, the usually semi-structured metadata (containing taxonomic categorisations as well as textual descriptions) need to be linked to ontological descriptions of the relevant domain, enabling the use of sophisticated semantic query answering services. The main obstacle remains the fact that although the taxonomic metadata can be relatively easily mapped to ontologies, it is not so easy to automatically understand the semantics of human-written textual or image content, i.e. the unstructured part of descriptive metadata. This means that rich item descriptions remain rather unexploited, and involved only in keyword-based retrieval services. In order to advance the semantics of this content and thus make it accessible with state-of-the-art semantic technologies, it needs to be mapped to terminological knowledge. Since this process is difficult to be fully automatised, here we present a tool whose purpose is to help semi-automatise this process. The tool uses natural language processing (NLP) techniques in order to analyse the textual descriptions of the items that belong to a specific category (taking advantage of the existing taxonomic information), and proposes finer categories into which the items could be classified. This is done through a graphic environment, which allows the user to load an ontology, map the structural metadata to this ontology and possibly define new, refined concepts, automatically suggested by the tool through the analysis of the textual descriptions of the stored items. This tool has been tested on the Europeana Fashion¹ portal that gathers more than 700.000 fashion objects coming from 20 museums and archives of 12 different European countries. The Europeana Fashion datasets have been represented using the Europeana Data Model² – fashion profile (EDM-fp) and a fashion-specific ontology has been created to represent the terminological knowledge of the domain (represented in the Web Ontology Language – OWL). Both these structural metadata, representing several hundreds of thousands of fashion objects, and this newly defined domain ontology have been the base of the semi-automatic semantic enrichment process we present in this paper. All the resulting tools developed in the project framework have been released under open source license.

¹ <http://www.europeanafashion.eu>

² <http://pro.europeana.eu/edm-documentation>

- **Europeana Fashion – case study on digitizing, aggregating and disseminating Museum content through a network ...** (*brief presentation*)
Dejan Sandic (Museum of Applied Art Belgrad, Serbia)

The Paper will present an on-going project – **Europeana Fashion**, as an example on how digitalizing Museum content can be fun and financially motivating whilst achieving all the serene demands of a contemporary Museum work flow. The museum of Applied Art in Belgrade, Serbia, is digitalizing 5500 fashion objects from Museum's Historical and Contemporary Collections and presenting them on a specialized portal alongside 21 European institutions, partners in the project. Specialized tools, thesaurus and ingestion platform have been conceived to operate and maintain the web portal. Blogs and social networks used to disseminate the project, enhancing potential interest and building up for prolonged sustainability. **Europeana Fashion** is a best practice network co-funded under the CIP ICT-PSP program and composed of 22 partners from 12 European countries, representing some of the leading European institutions and collections in the fashion domain. The partner institutions formed a consortium aiming to aggregate and provide **Europeana** with selected and diverse material on the history of European fashion. The goal is to provide more than 700.000 fashion-related digital objects, ranging from historical to contemporary dresses, accessories, photographs, posters, drawings, sketches, videos, and fashion catalogues. The **Europeana Fashion** project started in March 2012 and will end in February 2015.

Session E/4

Date: Wednesday 10th September 2014 | 11.00–12.30

Chairs: Erin Coburn

■ **Developing a Born-Digital Semantic Knowledge Base – Modeling Challenges and Solutions** (*short paper*) Immanuel Normann (Germany)

Semantic knowledge bases for the cultural heritage (as well as for other domains) are either born-digital or they are migrated from non-semantic knowledge representations – where “semantic representation” refers to RDF representation. CIDOC-CRM has established as foundational ontology to model domain knowledge for the cultural heritage and ECRM¹ is its formal representation in RDF. One of the latest prominent migration efforts (among several others) is accomplished in the “British Museum Semantic Web Collection Online”². In projects like this masses of museum catalog records are basically mapped onto ECRM. Yet, the original records were not created with the potential of the semantic web in mind. A born-digital semantic knowledge base in contrast should be developed to take full advantage of this technology. It will usually in particular extend or refine the CIDOC-CRM to the domain specific needs and thus require knowledge engineering expertise.

This presentation reports on some generic modeling issues in the development of a born-digital semantic knowledge base and offers analysis and formalization techniques to solve them. Furthermore, it discusses some reasoning limitations of popular triple stores (limited OWL-support) and suggests workarounds. The main theme of the report is how to deal with non-physical objects as well as with unknown objects linked to known objects.

The report is backed by the author’s experience from the involvement as knowledge engineer in a four years cultural heritage project funded by the Arts & Humanities Council Research in London³.

¹ <http://erlangen-crm.org>

² <http://collection.britishmuseum.org/>

³ <http://www.weavingcommunities.org/> ; <http://weaving.dcs.bbk.ac.uk/TextileProductSearch.php>

■ **Europeana Inside – your easy way to Europeana** (*short paper*)

Monika Hagedorn-Saupe (Institut für Museumsforschung, Staatliche Museen zu Berlin, Stiftung Preußischer Kulturbesitz/Institute for Museum Research, State Museums of Berlin, Prussian Cultural Heritage Foundation, Germany); Nathalie Poot (Royal Museum of Art and History/KMKG-MRAH, Belgium)

Cultural institutions promote their collections by delivering data to digital portals, such as Europeana. However, it often proves to be a time consuming and challenging process: technical, organisational and legal barriers prevent organisations from making collections easy accessible for a wider audience. Europeana Inside aims at removing these obstacles by simplifying significantly the content delivery process.

Europeana Inside is a Best Practice Network of 26 partners representing major cultural institutions and software providers from 10 European countries. The project is co-funded by the European Union under CIP-ICT-PSP to support the Digital Agenda for Europe.

To simplify the process of contributing content to Europeana, the team of commercial software providers collaborated in the development of the Europeana Connection Kit (ECK). The ECK is designed as a set of modular components, based on functional requirements defined by the participating cultural institutions. The connection kit is set to improve each step of the workflow: from managing the digital collections in the Collection Management System (CMS) of the content partner until the actual supplying of the data and metadata to Europeana or to other portals.

The ECK is developed and released in 4 iterative phases. After the release of each iteration new functionality is given to the content partners, allowing them to test and provide feedback. By the end of the project, 960,000 records will be delivered to the portal using the ECK, including organisations that will have contributed for the first time to Europeana. This paper will focus on the evaluation process of the ECK and on its outcome.

- **Connectivity for Prints and Drawings: “Virtual Printroom” of the Herzog August-Bibliothek Wolfenbüttel and the Herzog Anton Ulrich-Museum Braunschweig extended** (*short paper*)
Christiane Pagel (Herzog Anton Ulrich-Museum Braunschweig, Verbundprojekt “Kupferstichkabinett online“, Germany)

Gegenstand des Vortrags ist die Weiterentwicklung der seit Herbst 2007 im Internet frei verfügbaren Online-Ressource „Virtuelles Kupferstichkabinett“ (www.virtuelles-kupferstichkabinett.de) des Herzog Anton Ulrich-Museums Braunschweig (HAUM) und der Herzog August Bibliothek Wolfenbüttel (HAB). Im Rahmen eines von der Deutschen Forschungsgemeinschaft (DFG) geförderten kollaborativen Erschließungsprojekts wurde zunächst Druckgraphik der Frühen Neuzeit aus den beiden sammlungsgeschichtlich miteinander verflochtenen Graphischen Sammlungen von Museum und Bibliothek für die Recherche im Internet zusammengeführt. Seit 2013 wird der Bestand der Handzeichnungen des HAUM im Projekt „Virtuelles Zeichnungskabinett“, wiederum mit Förderung der DFG, wissenschaftlich erschlossen. Die Datenbank wurde im Hinblick auf die spezifischen Anforderungen der Erschließung von Zeichnungen erweitert und modifiziert. Innerhalb des vom Land Niedersachsen geförderten Verbund-Projekts von HAUM, HAB, Georg-August-Universität Göttingen und Bildarchiv Foto Marburg „Kupferstichkabinett online“ wird seit März 2014 die italienische, niederländische und englische Druckgraphik des Museums erschlossen, während in der Bibliothek das gedruckte Bild im Buch fokussiert wird. Die Online-Veröffentlichung ist erstmals verknüpft mit universitärer Forschung zur Sammeltätigkeit der Braunschweig-Wolfenbütteler Herzöge vor dem Hintergrund des Sammelns von Druckgraphik in der Frühen Neuzeit.

Der Vortrag erläutert die Datenstruktur der in den Kernfeldbereichen aufeinander abgestimmten Komponenten für die Erfassung von Zeichnungen und Druckgraphik und beleuchtet die jeweiligen Besonderheiten und Abweichungen. Die Verwendung kontrollierten Vokabulars, die Ausweitung der Normdatenreferenzierung (AAT, VIAF, GND, ULAN, ICONCLASS) sowie die Überarbeitung einzelner Bereiche der Datenerfassung im Hinblick auf die Möglichkeit der facettierten Suche zielen auf die Optimierung der Suchfunktionalität und die Vernetzungsfähigkeit mit weiteren Online-Ressourcen, insbesondere im Hinblick auf das Desiderat eines umfassenden Graphik-Portals.

- **The exhibition loans monitor** (*short paper*)
Yuri van der Linden (Cultural Heritage Agency of the Netherlands, Netherlands)

In this short paper, the exhibition loans monitor will be presented. Metadata about exhibition (short term) loans from Dutch museums, starting from 2008, have been uploaded, and the first results will be presented. Museums from around the world are invited to send in their metadata on outgoing and incoming exhibition loans, so that they can be included in the database. The results will be part of the Cultural Heritage Monitor: the website went online in 2013, and is continuously updated.

Theme F _____ Terminology

Time	Monday 8 th September	Tuesday 9 th September	Wednesday 10 th September
9.00–9.50		F/1	F/3
11.00–12.30		F/2	
14.00–15.30			F/4
16.00–17.30			

Session F/1

Date: Tuesday 9th September 2014 | 9.00–9.50

Chair: Emmanuelle Delmas-Glass

■ **Classification of museum objects and criteria for a national repository, with the example of the Historical Museum of Serbia** (*short paper*)

Sladjana Bojković (Historical Museum of Serbia, Serbia)

The paper deals with the classification of museum objects and the criteria for their selection in a museum of national importance (national museum) such as the Historical Museum of Serbia, as well as with the role and importance of the process of documenting and classifying objects in a system of cultural heritage protection. With the example of museum documentation practiced in the Historical Museum of Serbia as a complex museum, and its competence for objects important in Serbian history which are also kept in a wide range of similar museums (city, regional, memorial) in Serbia, the necessity of the introduction of new classifications and how they contribute to the improvement of documentation in general will be shown. The proposed classification (which is a part of this paper) represents a minimum foundation for the further development of standards in terms of museum terminology and classification of objects, aimed at a more complete and precise registration of objects of cultural heritage and providing easier access and exchange of information about them.

■ **Cross-domain authority collaboration as success criterion for resource networking** (*short paper*)

Alexander Haffner (German National Library/Deutsche Nationalbibliothek, Germany);

Detlev Balzer (Consultant to Deutsches Filminstitut/DIF, Germany)

Sharing authority data between libraries and other cultural heritage domains is often considered difficult because of differing cataloguing or documentation principles and conventions. Attempts to overcome this barrier have been sparse, even though there are areas of significant overlap, e.g. in subject indexing or in identifying persons or groups that were involved in the creation of various kinds of collection items.

Over a period of several decades, libraries from the German language community have contributed to what is now known as Gemeinsame Normdatei (GND), a common authority file of ca. 10 million records identifying persons, corporate bodies, conferences, geographic entities, subject terms, and work titles. Using GND identifiers as points of reference has brought the library sector a significant step closer to the promises of the Linked Open Data paradigm.

IN2N (Institutionenübergreifende Integration von Normdaten), a project launched in 2012, aims at demonstrating how the GND user base can be extended through bi-directional exchange of authority data beyond the library sector. In the scope of IN2N, the German National Library (DNB) and the German Film Institute (DIF) are working towards establishing a joint maintenance of person authority data. The primary challenge here is to find solutions that will allow partners to retain a certain degree of autonomy while working towards the common network of trustworthy authority data.

Preliminary results from IN2N show that an alignment of authority data from institutions with different scope and background not only broadens the coverage of the GND, but can also boost data quality in the overlapping segment. It also became evident that, once suitable technical precautions are taken, such cooperation is possible without forcing one partner to fully adopt the other's conventions. It is hoped for that solutions developed within IN2N will encourage further non-library partners, particularly from the museum community with its large diversity of cultural artefacts, to consider similar cooperations in the future.

Duration of contributions:

brief presentation \triangle 5 minutes; short paper \triangle 10 minutes; full length paper \triangle 20 minutes.

- **The Terminology Management Platform: A Tool for Creating Linked Open Data** (*short paper*)
Eva Coudyzer (Royal Museum of Art and History/KMKG-MRAH, Belgium);
Marie-Véronique Leroi (AthenaPlus/Patrimoine Numérique, Catalogue des collections numérisées;
Ministère de la culture et de la communication, France)

The Terminology Management Platform (TMP) is a web service developed in the cultural-heritage project AthenaPlus. Organizations can use the tool to publish and link controlled vocabularies in a semantic web-conform format.

The TMP proposes functionalities for vocabulary management, including: editing and creating vocabularies in an online collaborative environment; importing CSV and SKOS/RDF-formats; mapping between different vocabularies and linking to external resources; exporting and publishing in SKOS/RDF.

Mapping and enriching concepts in the TMP will result in more detailed and meaningful search results on the web, irrespective of language. This will valorise collections managed in cultural institutions on the web, as well as in online catalogues such as Europeana.

This short paper gives an overview of the current status and uses of TMP. The production version of the tool is planned for January 2015.

Session F/2

Date: Tuesday 9th September 2014 | 11.00–12.30

Chair: Axel Ermert

- **Coming to terms with concepts. From index cards to conceptual thesauri or the struggle to keep up** (*full length paper*)
Erik Buelinckx (Royal Institute for Cultural Heritage/KIK-IRPA, Belgium)

When in 1989 the Royal Institute for Cultural Heritage (KIK-IRPA) started with the encoding of textual information about mainly Belgian art works and buildings, ranging from cathedrals over the fine and decorative arts to archaeological findings, based on over 1.000.000 original negatives, which are conserved in the institution and since many years in an ever changing process of digitisation, the fundamentals for this enormous task consisted however of written, dactylographic and printed sets of index cards and long lists of names and themes. From the start the department of documentation had to manage database software to create, for a general and scientific public, external and internal (the institute has an interdisciplinary team of art historians, restorers, chemists and physicists), access to a bilingual environment, without realizing what the misconception of real 100% equivalence between words or terms in different languages could result in. The introduction of conceptualised thesauri seemed thus a great solution to take the next step to real multilingualism. Being from the beginning a partner in the translation of the Getty AAT into Dutch, their recent conceptualisation has put us before a choice. Mixing terms with concepts, difficulties in explaining this with words and terms, and trying to keep up with onto-terminologies while people are still translating word-couples back home, is certainly fascinating and even necessary, but in this paper I would like to use this real world situation to figure out how, or maybe if, we could ever come to terms with concepts.

- **Orbiting the Linked Data Cloud? – Potentials and pitfalls of multilingual vocabularies and vocabulary mapping** (*full length paper*)
Jutta Lindenthal (Independent Information Consultant, Germany);
Axel Vitzthum (digiCULT-Verbund eG, Germany)

Vocabularies which provide unambiguous, specific, and easy-to-find concepts for indexing and information retrieval are becoming increasingly important in the context of the Semantic Web and Linked Open Data. Translation and mapping of structured vocabularies is best understood as an iterative process in which consideration of synonyms, language equivalents and semantic relationships, both within and beyond the vocabulary, can help to further clarify the meaning of a concept. Examples will illustrate how the semantic context of mapped vocabularies can provide critical decision support not only for vocabulary maintainers but also in cases where software agents are used for expanding or restricting queries against heterogeneous databases.

We survey essential elements which constitute the meaning of a concept, such as syntactical and logical semantic components, with respect to knowledge organisation systems. More importantly, pragmatic aspects such as the cultural shaping of meaning and the impact of space and time on the notion of a concept will be considered. Since many existing controlled vocabularies were not designed with global networking in mind, some pitfalls have to be anticipated. Omitting the important step of semantic validation can lead to the propagation of errors along relationship chains, as will be shown in some examples. It is concluded that meeting the challenges of multilingual vocabulary work for a global information space requires suitable methodologies, supported by software tools. It will be shown how extensions to an existing vocabulary management platform can supply contextual information from linked data sources which can guide mapping and translation processes, making them less prone to the kind of errors detected in earlier mapping and translation exercises.

■ **Multilingual terminology: the ontological approach** (*full length paper*)

Christophe Roche (University of Savoie, France); Luc Damas (University of Savoie, France); Julien Roche (University of Liaocheng, China)

Making collections accessible to users speaking different languages raises the multilingualism problem. Finding equivalent terms as well as mapping thesauri require a shared conceptualisation or at least “compatible” conceptualisations (if one considers that the term’s meaning is the concept denoted by the term like in thesaurus (ISO 25964-1) or in terminology (ISO 1087-1).

In that context, ontology defined as a formal definition of a domain conceptualization (in the sense of knowledge engineering) is one of the most promising perspectives for terminology. By separating the conceptual dimension from the linguistic one, such an approach allows a more comprehensive understanding of the domain, and a more precise description of collections in relation to the domain knowledge. It also allows improving search functionalities by using both the linguistic relationships between terms and the logical properties of the relationships between concepts. At last, mapping thesauri can gain benefits from works on ontology alignment.

The ontoterminology approach of thesaurus (an ontoterminology is a terminology whose conceptual system is a formal ontology) has been deployed in the framework of a first European project for multilingual document management system (ASTECH). It is now used into different European projects dedicated to cultural content management (Linked Heritage, Athena Plus), to multilingual knowledge sharing (Siera) and to multilingual terminology (Liaocheng).

The presentation will be illustrated with the TMP2 (for Thesaurus Management Platform, the “OTE for Thesaurus” environment used in the framework of the Athena Plus European project). Based on the ontoterminology approach, the TMP2 allows creation, editing, and thesaurus mapping following the ISO 25964-1 and 25964-2 standards as well as importing and exporting SKOS thesauri.

Session F/3

Date: Wednesday 10th September 2014 | 9.00–9.50

Chair: N.N.

■ **EwaGlos – On the Challenge of Developing an Illustrated Glossary for Conservation in 11 European Languages** (*short paper*)

Angela Weyer (Hornemann Institut der HAWK Hochschule für angewandte Wissenschaft und Kunst Hildesheim/Holzminde/Göttingen, Germany)

A consortium of seven academic institutions under the organizational leadership of the Hornemann Institute of the HAWK University of Applied Sciences and Arts Hildesheim/Holzminde/Göttingen – supported by associated partners and external experts – is currently developing a richly illustrated glossary of conservation/restoration of wall paintings and architectural surfaces: Concise texts and demonstrative images and sketches are intended to illustrate the concepts. At the end the glossary will be published with 11 languages (English, French, German, Italian, Spanish, Polish, Hungarian, Croatian, Turkish, Romanian and Bulgaria) as a book and on the internet. The project is specialized in wall paintings and architectural surfaces as this terminology is of great importance for a large part of our built cultural heritage.

The presentation will address the challenges of the project and the specifics of the quite young academic field of conservation of cultural heritage. The main problem will be to define the inconsistent definitions of the terms

in the different countries, such as “fresco” which is used in France today for the entire wall paintings, in other countries, however, limited to painting on fresh plaster. Already the word “wall painting” has various meanings in Europe. But there are also differences in technical execution, e.g. wall paintings in Malta are applied without plaster layer directly to the stone. Moreover, oil paint is used there which is known in Germany only in the context of the polychromy of stone sculptures.

Finally, there is the phenomenon that the conservation of wall painting and architectural surfaces in Italy has a very long tradition and many European restorers were educated there. Therefore many Italian terms have spread over Europe, but are they still used today?

■ **Development and usage of a thesaurus für the Vienna Science Museum** (*full length paper*)
Thomas Winkler (Technisches Museum Wien, Austria)

The Technisches Museum Wien (TMW) is Austria’s largest science museum. In March 2013, the digital recording was transferred from a specially developed database to the Adlib system. During the preparation for the software migration a team of museum employees has developed an own thesaurus for tagging the 190,000 objects and 250,000 archival records of the museum. The four-member team has created a polyhierarchical basic structure in a year’s work. It was provided to the employees since the system change and is continuously extended and maintained. In addition to the in-house research, the tagging of the objects is one of the basic requirements for the data quality to make the collections available online. The required faceted search, as well as the direct use of the scope notes from the thesaurus in the object detail view, requires a clean and consistent structure of terms. In weekly meetings, the thesaurus editors are constantly working on the vocabulary, which currently includes about 14,000 terms. The current term candidates are inserted and, if necessary, the structure is expanded and adapted. As far as possible the team tries to unify the methods of keyword assignment from the curators of the different collection departments in order to obtain representative search results about the whole collection. Another task for the thesaurus group is the mapping of terms to other controlled vocabularies, in particular for GND, wikipedia or geonames.org. With the launch of the online research both the object data sets, as well as the TMW – vocabulary should be available via PURLs.

Session F/4

Date: Wednesday 10th September 2014 | 14.00–15.30

Chair: Emmanuelle Delmas-Glass

■ **Challenges in Translating, Multilingual Equivalency Work, and Scholarly Research for the Spanish-language version of the Getty’s Art & Architecture Thesaurus (AAT®) and Building the Tesoro Regional Patrimonial: from the Language of the Scholar to the Language of the Non-expert** (*short paper*)

Lina Nagele Vega (Centro de Documentación de Bienes Patrimoniales, Dirección de Bibliotecas, Archivos y Museos, Chile)

Recognizing the need to standardize the terminology for documenting cultural heritage, the Centro de Documentación de Bienes Patrimoniales (CDBP) decided to produce a complete Spanish-language translation of the Art & Architecture Thesaurus (AAT). The goal of the Tesoro de Arte & Arquitectura (TAA) is to keep a one-to-one correspondence between the Spanish and English versions of the AAT, so as to have a truly bilingual tool for both documentation and retrieval.

Also the CDBP developed a thesaurus, Tesoro Regional Patrimonial (TRP) that describes objects belonging to pre-Colombian cultures and ethnographic collections in Latin America. The TRP is still in its initial phase; we are focusing on editorial revision, structuring of the hierarchies, defining grapheme alphabet from native languages, and entering new terms that will meet the needs of archaeologists specializing in pre-Columbian cultures. For the first time, scholars of the Andean area have a thesaurus to assist in researching pre-Columbian cultural heritage.

The development of both thesauri has been of great benefit, signifying an opening towards the national and international specialized community: we contribute to the standardization, improvement of the information on the cultural heritage and museum collections, and maintain the Spanish (regional) and minority cultures languages like Mapudungun und quechua.

■ **Multilingual bookbinding terms: complex conceptual issues** (*short paper*)

Athanasios Velios (Ligatus Research Centre, University of the Arts, United Kingdom); Nicholas Pickwood (Ligatus Research Centre, University of the Arts; United Kingdom); Aurelie Martin (Ligatus Research Centre, University of the Arts, United Kingdom)

The Ligatus research centre at the University of the Arts London secured a networking grant from the Arts and Humanities Research Council in the UK to develop a thesaurus of bookbinding terms in collaboration with the Foundation of Research and Technology Hellas and 35 bookbinding experts from Europe. Because books are kept in libraries, their value as objects has often been overlooked, even though they may hold at least as much historical value as their content. In this paper we address the questions raised by the traditional, and mostly quite inadequate, methodology available to libraries for their accurate description. This paper begins by explaining the requirement for a thesaurus and the methodology used for its development which included extensive expert meetings to identify common concepts and associated terms, as well as detailed review of the existing bibliography. The paper continues with a review of the technical requirements for the structure and publication of the thesaurus, including the use of the Simple Knowledge Organisation System and the adoption of some key principles of the CIDOC Conceptual Reference Model. The paper concludes with some examples of complex bookbinding terminology issues created by the use of different European languages and highlights the value of a multilingual team in the development of a thesaurus.

■ **Religious Heritage – Challenges In Equivalence** (*short paper*)

Natália Jorge (Sistemas do Futuro Ltda., Faculty of Arts of the University of Porto, Portugal); Sandra Costa Saldanha (Secretariado Nacional para os Bens Culturais da Igreja, Portugal)

Over the last 15 to 20 years, several Portuguese Dioceses have made progress in the development of projects on digitalization, documentation and dissemination of religious heritage. However, the execution of those projects at national level varies by institution, each of them having different types of implementation, methodologies, financial and human resources, and policies.

Looking for a way to support these projects and promote new initiatives, the Portuguese Catholic Church Commission for Cultural Heritage evaluated the situation, and after listening to and consulting all parties involved, formed a working group in order to create guidance and standards, with particular emphasis on procedures, controlled vocabulary and public access.

With respect to the use and improvement of controlled vocabulary, the working group is dedicated to the development of methodologies for terminology standardization used in digitization and cataloging of the religious heritage. In this context, it promotes the analysis of existing terminological tools, critical reflection regarding the use and development of a Portuguese terminology with equivalence in other languages, based on the terminological mapping of the faceted structure of AAT – Art & Architecture Thesaurus. This paper aims to present this work in progress and discuss applicable methodologies and execution processes.

■ **From Bosseln to Tamburello – a English-German Sports Thesaurus** (*short paper*)

Maria Scherrers (adidas AG History Management, Germany)

Sports collections are popular and their numbers are growing. Many sports associations and clubs have opened their own museums, but so far there has been little development of sports specific terminologies. Therefore, when adidas set up professional collection management for its historic objects, one of the first tasks was the development of a comprehensive English-German sports thesaurus.

There were many hurdles in the process of the thesaurus' development. The first was the definition of sports: Should chess be included? What about Pilates? Dog racing?

As no English-German sports compendium existed, information and translations had to be researched from many different sources. But none of these sources would tell us how translate regional sports like the German 'Bosseln' or the English 'Square Dance'. How should we deal with 'false friends', homonyms like 'wrestling', which have different definitions in English and in German? What about the term 'football' which is used differently in America, Australia, Ireland and Europe?

The outcome is a bilingual thesaurus with 2000 different sports from Abfahrt (downhill skiing) to Zweier ohne Steuermann (Coxless pair). Every sport has an English and a German descriptor as well as additional related terms in both languages. It has been used successfully in object documentation for the last five years.

■ **Furniture, Headdresses, Tools – Insights into Comprehensive Museological Work on Object Terminology** (*short paper*)

Gitta Böth (LWL-Freilichtmuseum Hagen – Westfälisches Landesmuseum für Handwerk und Technik, Germany); Manfred Hartmann (LWL-Museumsamt für Westfalen, Germany)

Museums are scientific institutions. Science mainly manifests itself in research results which form the basis for exhibitions, for educational programs, etc. With our work on object terminology we however do basic work. We provide assistance to the museum staff who record and scientifically document the collection.

While describing objects museum people have to deal with different steps of indexing. In our lecture we shall focus on different aspects of how terms are specified. Beside assistance for identification we need terminological control, which means linguistic concordance of the term denominating similar objects. After the identification and description of the object it is systematically classified. All this is part of responsible scientific work on the object and safeguards the task of the museum.

Against this background the file of generic terms, in German “Oberbegriffsdatei”, abbreviated OBG, was developed as a product of a kind of self-help group for users of the object documentation software HiDA. This software has been promoted by the State Office for Non-governmental Museums in Bavaria around 1990; at the same time a working party of registrars using HiDA was established, which soon members from other German states joined. As work progressed the OBG was gradually extended: The descriptor and the systematical classification were complemented by extended definitions which enlarged the OBG in the direction of support for easier identification.

Terminological control ensures communication. It supports the scientific study of museum objects and it allows similar research results. But it is not easy to bring words and objects together considering different scientific and regional origins.

Germany is a country whose language and vocabulary are influenced by many regional dialects; one term may have completely different meanings. We bring forward the clear conceptualization of museum objects by linguistic terms and describe their contents. This creates the basis for a multilingualism which a multicultural society urgently needs. It is also a tool for work on the German version of the Art & Architecture Thesaurus (AAT).

Theme G _____ Digital Long Term Preservation

Time	Monday 8 th September	Tuesday 9 th September	Wednesday 10 th September
9.00–9.50			
11.00–12.30		G/1	
14.00–15.30			
16.00–17.30			

Session G/1

Date: Tuesday 9th September 2014 | 11.00–12.30

Chair: [Stefan Rohde-Enslin](#)

■ **Ecological Knowledge Management for the Arts and Culture Industry in the Digital Era** (*short paper*)
[Benny Sand](#) (Bezalel Academy of Arts and Design Jerusalem, Israel)

Knowledge Management (KM) is a field that has attracted much attention both in academic and practitioner circles. Most KM projects appear to be primarily concerned with knowledge that can be quantified, captured, codified and stored – an approach more deserving of the label Information Management. The traditional view of organizational systems and supporting information and knowledge systems is based on the model of a well oiled machine expected to deliver optimum performance derived from pre-defined parameters and specifications. Recently a new approach in KM rises and blossoms – as a reaction to the social impact of Web2.0 – the Ecological one which claims that the development of knowledge is similar to ecological systems in the sense that it deals with development and computability to the environment, hence knowledge is an outcome of the interactions among technologies, environments, experiences and values. Cultural institutions have been implementing the traditional KM approach mainly for, internal facing purposes (e.g. archiving, documentation, inventor management. and structured education arrays). The Web 2.0 in general and the technological social platforms in particular may enforce these institutions to consider the ecological approach which relates to the social media as an emerging and most significant resource of knowledge.

In this paper, we review the current state of practice of KM in Museums and Cultural Institutions, ongoing strategies, internal and external challenges, the social technological platforms as being demonstrated in the Web 2.0 environment and its derivatives (e.g. Social media) and provide potential solutions and approaches via the Ecological KM concept: process and technological wise.

■ **Digital Cultural Heritage: Roadmap for Preservation** (*full length paper*)
[Gordon McKenna](#) (Collections Trust, United Kingdom)

Digital Cultural Heritage Roadmap for Preservation (DCH-RP) is a project (<http://www.dch-rp.eu>) supported by EC FP7 e-Infrastructures Programme. It seeks to look at best practice for preservation standards in use, and has created a ‘roadmap’ which will give a way forward for the sector.

The Roadmap is built on two basic assumptions:

- Existing e-Infrastructures for research and academia are also efficient channels for the delivery of advanced services to be used by the digital cultural heritage sector for distributed digital preservation;
- That it is possible to establish common policies, processes and protocols which will allow digital DCH organisations to access e-Infrastructures.

The aim of this paper is:

- To make CIDOC Conference participants aware contents of the *Roadmap*;
- To give participants an opportunity to give feedback about the *Roadmap*;
- To seek support for the *Roadmap*.

After the paper it will be possible to discuss in depth the roadmap in separate sessions during the Conference.

Duration of contributions:

brief presentation \triangle 5 minutes; short paper \triangle 10 minutes; full length paper \triangle 20 minutes.

- **Digisam and the road towards a coordinated long term preservation in Sweden** (*short paper*)
Rolf Källman (Digisam – National Archives of Sweden, Sweden); Sanja Halling (Digisam – National Archives of Sweden, Sweden)

In today's digital age, there is a growing amount of cultural heritage information produced and accessible in digital form to be secured for the future, and to the production and use of such information shall be increased, long-term digital preservation is crucial. Digisam, a secretariat for national coordination of digitisation, digital preservation and digital access to cultural heritage, was established by the Swedish Government as a part of the national strategy, in order to coordinate the activities taken place within the task of the strategy. Digisam is assigned the role to make a proposal on how a coordinated and cost-effective digital long-term preservation of collections and archives at the state cultural heritage institutions can become a reality. As part of this, Digisam conducted a pilot study on digital preservation between April 2013 and March 2014. The results shows also how "state of the art" on digital preservation looks like at the national and European level and what needs to be done to bridge the gap. It also includes a proposal on further work of Digisam on this issue.

Findings of the pilot study shows that there are often large amounts of digital cultural heritage information, but no efficient long-term preservation. There was a general concern among the institutions about the continually increased amount of digital material, which will consequently bring on higher costs for both storage and preservation. Descriptive metadata formats are often deriving from the traditional (analogue) way of describing collections, and international standards for metadata are not always fully implemented. Harmonisation of standards is therefore a first step to preserve the collection of information in a qualitative, structured and sustainable way.

Overall, there is need for common solutions for storage, standards and file formats, guidelines and tools, etc. In order to create interoperability and usability over time, there is also a need for a roadmap for digital preservation in order to define what the institutions should include in the preservation work, and what needs to be done to obtain a successful long-term preservation. Furthermore, common resources (services, tools, recommendations) are needed for a higher quality and interoperability of the information that is stored and preserved.

- **Using Common Specifications in the Public Sector** (*full length paper*)
Caspar Almalander (Eskilstuna Municipality, Department for archives and museums, Sweden)

A national project, lead by the Swedish National Archives, delivered several common specifications (abbreviated in Swedish as FGS) for transferring digital records between records management systems and to an digital archive. At this moment public institutions, including cultural sector (e.g. Eskilstuna Municipality), are on their way to implement the specifications.

The presentation explains the details and benefits of the common specifications, as well as their importance for Eskilstuna municipality, and how the specifications will be implemented.

- **Guidelines for the organization and preservation of the digital archive of the Football Museum** (*brief presentation*)
Gustavo Aquino dos Reis (Museu do Futebol, Brazil)

This article aims to show the parameters established for the implantation of guidelines related to the management and preservation of the digital documents of the Football Museum. Opened in 2008, the Football Museum contains records, reproductions of collections and objects of the most varied origins. In a general way, your collection have main focus in the axiom of the immateriality: all the collection of the museum is based in events and representations of the football in the most different dimensions.

It's obvious that digital documents are rooted in the reality of the museum. However, after used, they pass to be totally unseen to those who produce them and, without any concern of developing a well-structured archivist methodology who would allow its digital preservation or, in the future, the recovering of the information, they are moved to the digital repositories confirming the typical and reckless motto: "preserve and forget" So based in this reality the Football Museum, aiming to embrace the digital long-term preservation, established seven guidelines for your digital archives and digital collections:

1. Structural organization of the directories corresponding to the different areas of the museum;
2. Standardization of nomenclature of the digital documents;
3. Evaluation of digital garbage;
4. Guidelines for the assurance of the reliability and authenticity of electronic documents;
5. Preservation of electronic files in an extension who ensures the impossibility of change, both in content and in form;
6. Application of audit trails for monitoring the management of electronic documents;
7. Definition of access controls.

Theme H _____ Intangible Cultural Heritage

Time	Monday 8 th September	Tuesday 9 th September	Wednesday 10 th September
9.00–9.50			
11.00–12.30		H/2	
14.00–15.30	H/1	H/3	
16.00–17.30			

Session H/1

Date: Monday 8th September 2014 | 14.00–15.30

Chair: Nicholas Crofts

- **From happening to posterity: challenges in the documentation of performance art** (*full length paper*)
Gabriel Moore Forell Bevilacqua (University of São Paulo, Brazil)

The advent of new art forms and techniques in the 20th century brought great challenges for the documentation and conservation of museum collections. However, the dynamic, ephemeral, interdisciplinary and immaterial features of some specific forms of conceptual art such as performance art placed even more complex conundrums for the preservation of contemporary cultural heritage. The main objective of this paper is to present and discuss some of those specific challenges addressing not only technical aspects of the problem but also possible conceptual, cultural and management issues that could explain some of the difficulties faced in the implementation of documentation and conservation procedures for performance art in museums. Among the issues discussed are the object/material tradition in museum collection management and the implications of acquisition and preservation policies towards performance art collecting initiatives. Other central questions will be raised from the presentation of specific study cases involving performance art documentation and the central roles that archives and archival concepts could have in museum integrated documentation systems. As one possible conclusion, this paper intend to demonstrate how the identification and classification of intrinsic performance elements and the consequent definition of performance types and categories could contribute to more efficient documentation strategies and procedures. As a second and more general implication this presentation will argue that an adequate performance art documentation procedure demands a change from a “passive documentation” (material object oriented) to an “active documentation” (phenomenon and event oriented) perspective.

- **Documentation of Traditional Music and Dance in Museums: Perspectives on Living Human Treasures** (*full length paper*)
Hyojung Cho (Museum of Texas Tech University, USA)

The documentation of traditional culture has provided ongoing dilemma and challenges for theorists and practitioners trying to safeguard intangible cultural heritage. As the importance of the issue gained awareness, the role and responsibilities of museums in this area have been raised to address the issue. Museums have collected, documented, and presented traditional music, and even the national governments demonstrated leadership in collecting intangible cultural heritage through national museums and libraries. With the availability of advanced yet affordable technology, national museums and libraries have constructed databases and has made them available to the general public. Now, museums are expected to safeguard intangible cultural heritage beyond recording and into researching of intangible aspects of tangible heritage, and then to collaborate with the communities. Therefore, this research study will evaluate the current conservation practices of museums and to promote the collaborative relationship between museums and culture bearers in promoting meaningful documentation of intangible cultural heritage.

Two Living Human Treasures of South Korea, Dr. Jaehwa Lee and Dr. Sung Ok Yang, will be interviewed for their valuable perspectives on museums and to gather their experiences and thoughts on the sustainable conservation of intangible cultural heritage in museums. Dr. Jaehwa Lee is a Living Human Treasure and the holder of Important

Duration of contributions:

brief presentation \triangle 5 minutes; short paper \triangle 10 minutes; full length paper \triangle 20 minutes.

Intangible Property No. 16, *Geomungo Sanjo*. Dr. Sung Ok Yang, is an Assistant Living Human Treasure of Important Intangible Property No. 92, *Taepyeongmu*-Dance of Peace. The concerns and recommendation by masters of intangible cultural heritage can provide a direction for museums in safeguarding intangible cultural heritage and inspire museums to further contribute to the transmission and education of intangible cultural heritage.

■ **Documenting Intangible Cultural Heritage in Zambia: A case of Lusaka National Museum** (*short paper*)
Chilala Habeenzu (Lusaka National Museum, Zambia)

Zambia is a multi-cultural and multi-ethnic society which has a very rich heritage. It has a record of over seventy-three ethnic groups. There is also a sizeable population of Zambians of European and Asian origin. The cultures of these groups have criss-crossed since the turn of the 19th century.

The nature of Intangible Cultural Heritage in Zambia, while unique thematically and specific geographically, exhibits a range broadly consistent with the generic UNESCO typology, and may be categorised under the headings of oral traditions and expressions; performing Arts; Social practices, rituals and festive events; and traditional craftsmanship.

Museums in Zambia have been undergoing various modifications in areas of research, exhibition development and documentation of collections. In reference to documentation of Intangible Cultural Heritage, museum tools for documenting this heritage have been the *Ethnography/History Collection Form and Card: Folklore, Photographs, Fine Art, Audio-Visual* respectively. The form has been used for initial documentation of materials in the field, while the Card has been used for to record information in the Ethnography and History sections at the Museum. Both the Form and Card have limitations for documenting ICH material. In order to adapt to the changing technologies in documenting ICH, Digital Technologies, such as photography, sound and video recording have been introduced. One such successful project undertaken so far has been the contribution of Lusaka Museum to the creation of a national register on Intangible Cultural Heritage through which selected traditional festivities and ritual ceremonies have been successfully documented using digital technologies.

■ **Safeguarding and Documenting Nigeria's Intangible Heritage. The NCMM Strategy** (*full length paper*)
Louisa Onuoha (National Commission for Museums and Monuments Lagos, Nigeria)

Today with the increasing awareness about Intangible Heritage conservation, the government museums in Nigeria, under the body of the National Commission for Museums & Monuments (NCMM), spread across thirty six states of the country are faced with enormous tasks of collecting, documenting and updating heritage data as well as ensuring its continued preservation.

The NCMM, formerly called the Federal Department of Antiquities, is the parent body of about thirty eight National Museums in Nigeria. Its mission statement, amongst others, include, collecting, documenting, conserving and dissemination of Nigeria's tangible and intangible heritage.

However, over the years, while having recorded tremendous success with collecting, documenting and preserving the "tangibles, same cannot be said with the "intangibles". The Commission has witnessed challenges in this area. Knowing how important it is to safeguard and document both the tangible and the intangible living cultures of the Nigerian people, the commission, in recent times has devised several methods of safeguarding the intangibles.

This paper attempts to highlight the different methods adopted by the NCMM in the preservation and documentation of Nigeria's Intangible Heritage. The paper will be divided into four parts. Part 1 will introduce the NCMM, its aim and objectives and brief history of the Commission. Part 2 will discuss, with the use of pictures, the different methods and strategies the Commission has adopted in the safeguarding and documentation of ICH. Such methods include; ICT training and equipment, fostering community & corporate partnerships in the conservation and protection of ICH through various programmes especially in its large museums such as Lagos, Jos, Enugu and Ibadan, engaging living human memories such as Obas, Chiefs etc who give oral (and at times) written accounts which are then documented digitally and cooperations with tertiary institutions into what kind of digital method will be most suitable for its museums. Some of these methods will be discussed in details. Part 3 will highlight some of the challenges so far and proffer probable solutions. Part 4 will conclude the paper.

Session H/2

Date: Tuesday 9th September 2014 | 11.00–12.30

Chair: Nicholas Crofts

- **Paisagem-Id.pt – Digital management system to support Portuguese submission to the UNESCO List of the Intangible Cultural Heritage of Humanity** (*short paper*)
Paulo Lima (“Casa do Cante”, Portugal); Fernando Cabral (Sistemas do Futuro, Ltd., Portugal)

The Intangible Cultural Heritage is nowadays an important issue in the safeguard policies of the Portuguese Government and numerous public and private, national, regional and local institutions.

The Regional Entity of Tourism of *Alentejo* and *Ribatejo* (Portuguese Ministry of Economy) had understood, since 2012, the importance of the intangible cultural heritage not only as a heritage to safeguard, basis of a territorial identity, but also its importance as assets for the tourism industry. Thus, created the project “Tourism Promotion and Enhancement of Cultural Expressions and Identity of *Alentejo* and *Ribatejo*”, which aims the instruction of several dossiers as potential candidates for the UNESCO cultural heritage list and safeguard list, as well as to the Europa Nostra.

The various archives introduced in this digital information management platform are designed not only as items in a potential inventoried classification strategy, but in conjunction with all the assets to which they relate, as means to recover the landscape where they belong. Thus, it’s possible to have not only an inventory and catalog of intangible heritage, but also Monuments, Archeological Sites, Objects, Natural environment and Documents, which it is associated or related with the intangible heritage.

Paisagem-Id (www.paisagem-id.pt), name of this digital platform, responds to the need of an inventory of intangible cultural heritage, important item of bid dossiers, but goes beyond it by creating relationships between different assets, a reconstruction of the landscape, and also offers to tourists and to the general public the possibility to access all the information concerning to intangible cultural heritage and also enables them to purchase goods related with the Intangible Heritage in a sustainability strategy. Therefore, the digital platform is the result of a public-private partnership and implements the spirit of the Convention for the safeguarding of intangible cultural heritage (UNESCO 2003), addressing issues like Safeguarding, Identification, Dignification, Promotion, Sustainability and Transmission.

The project and its digital platform are responsible for the application of *Cante Alentejo* [polyphonic singing from *Alentejo*] in the Representative List of Intangible Cultural Heritage and the *Fabrico do Chocalho* [manufacture of cowbells] to the list of urgent safeguarding, submitted by the Portuguese government in 2013 and 2014 to UNESCO.

- **Exhibiting Intangible Cultural Heritage using MOVIO: a multilingual toolkit for creating curated digital exhibitions, made available by the AthenaPlus project** (*full length paper*)
Maria Teresa Natale (Istituto centrale per il catalogo unico delle biblioteche italiane, Italy); Sam Habibi Minelli (Gruppo Meta, Italy); Barbara Dierickx (PACKED vzw – Expertisecentrum Digitaal Erfgoed, Belgium); Marzia Piccininno (Istituto centrale per il catalogo unico delle biblioteche italiane, Italy); Alberto Raggioli (Gruppo Meta, Italy); Daniele Ugoletti (Gruppo Meta, Italy); Paolo Ongaro (Gruppo Meta, Italy), Rubino Saccoccio (Gruppo Meta, Italy)

A collection of digital items such as images, videos, audios, documents, does not constitute an exhibition: only when the items are carefully selected to illustrate a topic, and are tied together in a narrative or a logical itinerary, they constitute a digital exhibition. Digital exhibitions can be edited in such a way that they can provide alternative or denser experiences to the real event, involving the user in a process of discovery, knowledge acquisition, and learning of tangible and intangible cultural heritage. In 2011, the Italian Ministry for Cultural Heritage edited guidelines for realising digital exhibitions, a handbook successfully translated in English and even in Arabic. Afterwards, thanks to a funding by Fondazione Telecom Italia, ICCU, a central institute of the Ministry, coordinated the development of the open source tool MOVIO, which allows cultural institutions to edit digital exhibitions as well as to tell digital stories. The tool, realised by GruppoMeta, supports multilingualism in the back and front-end. The curator may edit the contents using different tools integrated in the software: media archive, ontology builder, storyteller, different types of image galleries, hotspots, maps, timeline, etc. The kit can be easily used by GLAMs to realise digital exhibitions in order to valorise intangible cultural heritage. During AthenaPlus, a European funded

project coordinated by ICCU and composed by 40 partners from 21 Member States, MOVIO is further developed in order to include tools, which will facilitate the reuse of content in the field of education and tourism. It will also include a Europeana API, which will be the base to allow digital curators to enrich content.

www.athenaplus.eu

■ Documenting the Intangible Cultural Heritage for Sustainable Economic Growth in Developing Countries (*short paper*)

Kamani Perera (Regional Centre for Strategic Studies, Sri Lanka);

Dinesh Chandra (Ministry of Defence Government of India, India)

The main purpose of documenting the intangible cultural heritage is to preserve past and providing access it in future. There should be a collaborative relationship in between cultural and educational institutions to fulfill this task. It is very important to create knowledge bases and folk creativity centers for acquisition and storage of intangible heritage in digital form. UNESCO convention has defined intangible cultural heritage as oral traditions and expressions including language, performing arts, social practices, rituals and festive events, knowledge and practices concerning nature and the universe, traditional craftsmanship etc. It generates cultural knowledge. It supports for economic well-being, community health and provides strategy for cultural tourism. The first step of documenting intangible heritage is to capture it while protecting its ownership. At this juncture, special preference is given for traditional indigenous knowledge. In this digital era, there are so many methods to capture the tacit knowledge. If not captured, one day this knowledge will be vanished without keeping a footprint for future generation. Any living human being in this earth needs to know their past, oral traditions, languages etc. Language is a vehicle of the intangible cultural heritage. Language is important for oral expressions. To make use of traditional herbal medicines, industrial know-how it is very important to preserve the language by way of recording and it will be a great asset for future inventions. Digital tools such as smart phones, digital cameras, tablets etc. can be used for this purpose. Recorded knowledge can be documented and preserved in museums, libraries, and archives for present and future access. They can work collaboratively and make documented knowledge available to wide audience via World Wide Web and can generate more income for sustainable economic growth in developing countries who are very rich in intangible heritage.

■ Documentation of Intangible Cultural Heritage of Republic of Serbia in the Ethnographic museum in Belgrade (*short paper*)

Jelena Savić (Center of Intangible Cultural Heritage, Ethnographic museum in Belgrade, Serbia);

Danijela Filipović (Center of Intangible Cultural Heritage, Ethnographic museum in Belgrade, Serbia)

UNESCO strategically focuses on the strengthening of capacities of various stakeholders for safeguarding the intangible cultural heritage at the national level and effective use of opportunities and mechanisms of international cooperation, as defined in the *Convention for the Safeguarding of the Intangible Cultural Heritage*.

The Assembly of the Republic of Serbia ratified the Convention in 2010 and in 2012 the Center for the Intangible Cultural Heritage of Serbia was inaugurated at the Ethnographic Museum in Belgrade. The management of the National Inventory and Documentation of the Intangible Cultural Heritage are the most important activities of the Center.

In a very dynamic period of social and economic changes in the world, traditional and local cultures are subjected to disappearance or transformation beyond recognition of original motifs, and it is precisely for this reason that the task of the Centre involves research, documentation and presentation of the intangible cultural heritage in Serbia.

By establishing the “new kind” of museum documentation which consist of electronic, paper, video and audio documentation of the intangible cultural heritage, which is sometimes called *living cultural heritage*, the curators of the Center for the Intangible Cultural Heritage at the Ethnographic museum in Belgrade have faced the greater challenge. Database of the Intangible Cultural Heritage of Serbia uses “old” museographical tools for documentation in new perspective in safeguarding of living cultural heritage.

Session H/3

Date: Tuesday 9th September 2014 | 14.00–15.30

Chair: [Nicholas Crofts](#)

■ **Protection of cultural tradition through celebration of St. George's Day in Turopolje: documentation, presentation and transfer of traditional patterns** (*short paper*)

[Vesna Župetić](#) (City of Velika Gorica, Croatia); [Margareta Biškupić Čurla](#) (Museum of Turopolje, Croatia)

The celebration of St. George's Day belongs to the ancient Croatian tradition whose historical and ethnographic retrospective leads back to the pre-Christian times. Accordingly, the celebration of St. George's Day is a centuries old tradition in Turopolje region with its distinctive characteristics. The Noble County of Turopolje (the oldest administrative organization in Turopolje, active until the 1947) takes the credit for cherishing the folk customs. St. George was their patron saint. The celebration of St. George's in Turopolje consists of three elements: bonfire (weeds, juniper and straw), processions (groups of boys or girls going around the village, singing processional songs), willow branches that are handed out.

The region of Turopolje borders with the largest cultural, trading and administrative center of Croatia – Zagreb. The ever-growing urbanization and the globalization processes are melting away the lines of traditional cultures, changing the ways of the community, creating new realities. Changing lifestyles leads to generation gap, which brings to the loss of the old way of passing on tradition. The intangible cultural heritage is especially sensitive. It is necessary to determine the methodology that will secure the transfer of the traditional cultural patterns and their sustainability.

Through the celebration of St. George's Day in Turopolje we would like to show the efforts of experts and the local community in preserving cultural tradition in the context of the UNESCO's 2003 Convention for the Safeguarding of the Intangible Cultural Heritage.

■ **Linking the tangible and the intangible; a documentation of socio-cultural histories** (*full length paper*)

[Njabulo Chipangura](#) (National Museums, and Monuments of Zimbabwe, Mutare Museum, Zimbabwe)

Traditionally documentation in museums and at archaeological sites has been primarily centred on object identification, accessioning, and storage. Little attention has been given to the histories of such collections in terms of their socio-cultural functions before they found their way into museum showcases and storage rooms. Using the case study of ethnographic and archaeological collections at Mutare Museum and Matendera archaeological site in Zimbabwe, this paper will attempt to show how the intangible genealogies that are associated with such collections have been documented. An institution of a value based documentation system which addresses the entire spectre of the socio-cultural processes that led to the making of the collections was conceived after the realization that contextual meanings were being not relayed once the objects found themselves in museum spaces. Thus this museum embarked on an exercise to document oral histories on the traditional uses of the various ethnographic objects that constitutes both its collections on public display and in storage rooms. Information obtained has been added onto the already existing documentation attributes which have been largely premised on basic accessioning functions focusing on object name, height, width, length and other physical dimensions. Furthermore this museum is also hosting an annual festival at one of its archaeological sites called Matendera as way of trying to link the archaeological evidence recovered from the site with cultural histories of the people in that area. The Matendera Festival brings together cultural groups which lives close to this archaeological site to perform traditional dances, songs, and poetry contextually related to this site. We have been recording these cultural activities and they now form part of the documentation archive for this archaeological site.

■ **Making tangible data from Intangible Cultural Heritage. – What about the Intangible World Heritage in Morocco!** (*full length paper*)

Ech-cherki Dahmali (Moroc Telecom Museum, Morocco)

Introduction

The term ‘cultural heritage’ has changed content considerably in recent decades, Cultural heritage does not end at monuments and collections of objects, it also includes traditions or living expressions inherited from our ancestors and passed on to our descendants. The **intangible cultural heritage** is an important factor in maintaining cultural diversity and contributes to social and make people feeling both a part of one or different communities and a part of society at large;

One more important think that we neglect, the intangible cultural heritage does not only represent inherited traditions from the past but also contemporary rural and urban practices in which diverse cultural groups take part.

The digitization is “a conversion of analogue information in any form (text, photographs, voice, etc.) to digital form with electronic devices (scanners, cameras, etc.) so that the information can be processed, stored, and transmitted through digital circuits, equipment, and networks“.

It’s an „integration of digital technologies into everyday life by the digitization of everything that can be digitized. Access to digital cultural heritage means first of all efficient tools for resource discovery. The efforts for developing metadata schemas basically serve this domain because without high quality metadata, the discovery of digital themes of the intangible heritage is impossible.

But the major problem that we face in conserving this important part of our heritage is the documentation of the intangible heritage especially in developing countries like MOROCCO.

Other important question: How we can safeguard it without freezing it by digitization?

Intangible World Heritage in Morocco (Inscribed by UNESCO):

1. The Jemaa el-Fna Square (**inscribed in 2001**) is one of the main cultural spaces in Marrakesh and has become one of the symbols of the city since its foundation in the eleventh century.
2. The Moussem of Tan-Tan (**inscribed in 2005**) in southwest Morocco is an annual gathering of nomadic peoples of the Sahara that brings together more than thirty tribes from southern Morocco.
3. The Mediterranean diet (**inscribed in 2010**) constitutes a set of skills, knowledge, practices and traditions ranging from the landscape to the table in north of Morocco.
4. Falconry (**inscribed in 2010**) is the traditional activity of keeping and training falcons and other raptors to take quarry in its natural state in central region of Morocco.
5. The Cherry Festival (**inscribed in 2012**) of the local population of Sefrou celebrates the natural and cultural beauty of the region, symbolized by the cherry fruit and that year’s newly chosen Cherry Queen, selected during a pageant that draws competitors from the region and entire country.

But:

- What kind of model we should follow to start digitization of those 5 Moroccan models?
Can we consider the digitization as the magic wand bringing new life to intangible cultural heritage?
- How museums can contribute to the protection of intangible cultural heritage since our museographical tools for documentation are quite limited?
- How we can revitalize, safeguard and transmit the Moroccan intangible heritage after an important operation of identification and documentation?
- How we can manage digitization and online accessibility?

What about local communities?

- The Role of Indigenous peoples and local communities in digitizing and making available their cultural expressions while preventing their illegitimate exploitation and misuse;
- Access and intellectual property rights.
- Group or individual, must be considered in respect to copyright law and potential commercial use

After digitization, what next? – The question of funding and sustainability.

■ **Digitizing the Intangible** (*short paper*)

Orjona Shëgaj (Institute of Cultural Anthropology and Art Studies, Center for Albanian Studies/
C. A. S, Albania)

Albania has undertaken many initiatives in protecting, preserving, promoting the country's intangible cultural heritage. Active actors in this sector are the State, civil structures, community and other cultural heritage experts. Cultural heritage institutions in Albania have already embarked on, for instance, digitization of their collections. These institutions are therefore not only users of cultural works created and maintained by tradition bearers but they also produce works, such as catalogues, databases, photographs, scientific research works and other educational materials.

The aim of this paper is to briefly discuss some aspects concerning the digitalization of the folk prose and poetry archive of the Institute of Cultural Anthropology and Art Studies under the authority of the Center for Albanian Studies.

This archive contains about 1.700.000 verses, 10.000 proverbs, 9.000 pages of prose (tales, narrations, legends) as well as considerable number of volumes of scholars which have collected oral folklore. The Institute of Cultural Anthropology and Art Studies, in Tirana has compiled a platform for the digitalization of its archives and meanwhile the department of folklore has undertaken some steps considering the criteria for the creation of the data base.

In this paper it will be highlighted the importance of the criteria of classification and especially the creation of integrated classification schemes.

Theme I _____ GIS-Applications in Cultural Heritage

Time	Monday 8 th September	Tuesday 9 th September	Wednesday 10 th September
9.00–9.50			
11.00–12.30		I/1	
14.00–15.30			
16.00–17.30			

Session I/1

Date: Tuesday 9th September 2014 | 11.00–12.30

Chair: Ronald Heynowski

■ **The Arches Heritage Inventory and Management System: a standards-based approach to the management of cultural heritage information** (*full length paper*)

Phil K. Carlisle (English Heritage, The Engine House, Swindon, United Kingdom); Yiannis Avramides (World Monuments Fund, Empire State Building, USA); Alison Dalgity (Getty Conservation Institute, USA); David Myers (Getty Conservation Institute, USA)

The Arches Heritage Inventory and Management System was developed by the Getty Conservation Institute and World Monuments Fund as an open source web-based geographic information system (GIS) to help inventory and manage immovable cultural heritage. The system incorporates two CIDOC standards, the CIDOC-CRM (Conceptual Reference Model [ISO 21127: 2006]), and the draft of the CIDOC International Core Data Standard for Archaeological and Architectural Heritage.

The project represents the first mapping of the CDS to the CRM, which has helped to further develop the CDS itself. This paper will document and share the experiences of that process and the potential benefits of incorporating the two CIDOC standards into the design of Arches.

Arches was created in response to the persistent need for a system that fits the needs of the heritage field without requiring onerous investment of time and resources. Arches represents a unique initiative undertaken for the benefit of the cultural heritage field at large, with the long-term goal of improving heritage management worldwide. It combines state-of-the-art software development with the insights of many heritage professionals from around the world.

■ **Monuments and More – Archaeological Geodata in Saxony** (*short paper*)

Reiner Göldner (Landesamt für Archäologie Sachsen/Archaeological Heritage Office of Saxony, Germany)

The information system of the Archaeological Heritage Office of Saxony was developed with the aim of recording, storing and presenting archaeological data from Saxony. Because of their geographic reference these information are managed with a geographic information system (GIS) in cooperation with a powerful database. The current structure of archaeological spatial data is the result of more than 20 years' experience. It contains archaeological survey areas, archaeological sites and monument areas. Geographic base maps mostly come from the surveying department of Saxony, often as geo-data service via internet.

Based on this combination of spatial and textural data many different kinds of queries are possible. You can easily create thematic maps, e.g. with find spots of special epochs or with activity sites of a given year. Of course the issues of heritage protection are of central interest. But besides this geo-data may support expansion of knowledge, so grave mounds, walls and hollow-ways could often be found easier and better using digital elevation models at the computer than going into the open country.

As combination of modern GIS and database technologies the archaeological information system became an essential companion for archaeological heritage protection and research.

Duration of contributions:

brief presentation \triangle 5 minutes; short paper \triangle 10 minutes; full length paper \triangle 20 minutes.

■ **World Heritage Foundation Mines of Rammelsberg, Historic Town of Goslar and Upper Harz Water Management System: Two examples of object evaluation and condition measurement using a Webapp in accordance with EU standard 16096** (*short paper*)

Gerhard Lenz (World Heritage Foundation Mines of Rammelsberg, Historic Town of Goslar and Upper Harz Water Management System, Germany); Kornelius Götz (Büro für Restaurierungsberatung, Germany)

The Upper Harz Water Management System became an integral part of the UNESCO World Heritage Site Town of Goslar, Ore Mine Rammelsberg and Upper Harz Water Management System in 2010. With the award of this of this declaration UNESCO imposes certain terms, in general two fundamental conditions: conservation of the historical structures and knowledge transfer to future generations.

The goal of this project was to plan and execute a sustainable conservation strategy as a basis for future museal utilization of the Upper Harz Water Management System. To achieve this it was necessary to develop a digital documentation system allowing detailed condition surveys to each object. The Consulting Office for Conservation was assigned to develop this documentation system, put it into practice in an exemplary way and to implement it on the foundation's server.

The project was realized in five subsequent steps:

1. Collecting information in digital form various sources. A web application program was modified and extended for the demands of this project.
2. Creating an exemplary digital system for documentation of architecture and non-architecture objects, which can be used for any object and any location
3. Detailed acquisition of information on two locations to demonstrate the functionality of the system: each location was divided in separate schedules, including a condition survey according to EU standard EN 16096 "Conservation of cultural property – Condition survey and report of built cultural heritage".
4. From the data mentioned above an evaluation of conservation urgency was derived as well as a recommendation of prioritization of required conservation measures.
5. The staff of the foundation was instructed to use the developed system independently and the system was installed on the server of the foundation.

■ **Geographical mapping of cultural heritage for general public** (*short paper*)

Franc Zakrajsek (Urbanistični Inštitut Republike Slovenije/Urban Planning Institute of the Republic of Slovenia, Slovenia); Vlasta Vodeb (Urbanistični Inštitut Republike Slovenije/Urban Planning Institute of the Republic of Slovenia, Slovenia)

The geographic location is one of the most important aspect of information which pertains to every cultural heritage item and significantly enhance the power of searching and the visualization of the content for research, education, creative re-use, cultural tourism and overall promotion of culture.

Paper deals with the question how to assign the geographical coordinates of current location, provenience and other geographical location of related events to cultural heritage objects with special attention to museum objects. Some practical cases using geocoding and geoparsing methods and tools together with the efficiencies testing are given.

Second part of the paper describes the eCultureMap, an example of simple interactive geographical knowledge map ready for use by general public and professionals. The concept of the eCultureMap is to relate geographic context of cultural object in national context (with national portals) and in international context (as Europeana). The map displays more than 2 millions digital cultural heritage object from European museums, libraries, archives and multi-media (<http://eculturemap.culturelab.eu/>). The user interface of the eCultureMap consists of mapping, enables route planning, searching collections, and using on mobile devices with locational services. The content of eCultureMap could be also re-used via webservice in other cultural, travelling and education portals.

Theme J _____ Digital Documentation in Archaeology

Time	Monday 8 th September	Tuesday 9 th September	Wednesday 10 th September
9.00–9.50		J/1	J/2
11.00–12.30			
14.00–15.30			
16.00–17.30			

Session J/1

Date: Tuesday 9th September 2014 | 9.00–9.50

Chair: Stephen Stead

■ **Application of a graph database and graphical user interface for the CIDOC CRM** (*short paper*)

Jonas Brusckke (University of Applied Sciences Dresden/HTW Dresden, Germany);

Markus Wacker (University of Applied Sciences Dresden/HTW Dresden, Germany)

In archaeology, like in many research fields, collected data reach enormous dimensions and cause more and more efforts to review and to interpret this amount of data and its relations. In this context, digital knowledge databases such as ontologies provide a good basis for the representation and organisation of this data and the related knowledge. In the field of cultural heritage and museum applications CIDOC offers a flexible, standardised, generally accepted, and expandable basis for such a representation. One of the challenges are the different types of the (not only) digital archived material. So far, the input and maintenance of the data, the navigation therein and a suitable data visualisation is exhausting and still concentrating on textual descriptions. For an understandable representation of CIDOC we recommend a graph database equipped with a graphical user interface. The graph database and its way of storing the data are just made for digital representation of an ontology consisting of entities and their relations to each other. Enormous benefits are novel query types, the connection of data and a high query performance. Especially when handling the data (input, maintenance, navigation, visualisation) the role/rights of the user has to be exactly analysed to ensure an interface to the data-base which is as easy as possible, adapted to the workflow and supporting the user. Especially for archaeological 3d reconstructions we recommend a graphical user interface supporting the work with diverse sources.

■ **Data Structures in Archaeology – Information for the Future** (*short paper*)

Reiner Göldner (Landesamt für Archäologie Sachsen/Archaeological Heritage Office of Saxony, Germany)

The daily work of an archaeological heritage department requires much information: on sites and monuments, on surveys and excavations, on find objects and samples and on much else. Usually this information is spread all over the office or in digital form it is “somewhere at the server”. If you have a tradition of “naturally grown” archives over tens of years this is quite normal. With the help of experienced colleagues you will find almost all needed information for your project. But what happens, if these experienced colleagues change to retirement?

Good availability of information is a precondition of efficient work. But for that it’s necessary to clear up the mess and reorganise data and information from time to time. Last year the Archaeological Heritage Office of Saxony started to consolidate its enterprise data structure with a study that shall help to enhance access to archaeological information.

Availability is not only an interesting aspect just now, but also in future, may be in far future. So we have to guarantee readability and usability of information over many years. Archiving of digital data presents a complete new challenge to information technologies regarding periods of hundred years and more. Decreasing life cycles have to be counteracted by preservation strategies as given by the international standard OAIS (Open Archival Information System).

This presentation illuminates aspects of structural organisation and long term preservation of archaeological data by taking the example of the Archaeological Heritage Office of Saxony.

Duration of contributions:

brief presentation \triangle 5 minutes; short paper \triangle 10 minutes; full length paper \triangle 20 minutes.

■ **Managing archive documents regarding an archaeological site. An on-going project for the Imperial Fora in Rome** (*short paper*)

Francesca Pajno (Management and Development of Cultural Heritage IMT Alti Studi Lucca, Italy)

The present paper wants to show an on-going project at its very early stage, proposed within a Ph.D research project in the Management and Development of Cultural Heritage. The paper aims to set a general framework for the organization and management of the archive documentation (texts, images, drawings, plans, cartography, videos) regarding the history of the area of the Imperial Fora in Rome. Here, the medieval city has been built on top of the classical city, and the current shape of the Imperial Fora is the result of a series of excavations carried out between the XIX century and the present era. The huge amount of archive documents produced during this long period, and today stored in many different archives in Rome, is important for the reconstruction of the various levels of the history of the area, and for the understanding of the change in its topography, from the end of the classical period, until the first decades of the XX Century. The project wants to create a system for the collection and interpolation of these documents, and for their connection to the physical space to which they refer, thus making this material available for scholars and for a non-professional audience.

Taking into account the presence of the “Museum of the Imperial Fora” inside the archaeological complex, the research wants also to question the conditions under which the documentation from archives can be transformed into one or more “stories” conveying knowledge to the visitors of the museum.

Session J/2

Date: Wednesday 10th September 2014 | 9.00–9.50

Chair: Stephen Stead

■ **EDEN – An Epigraphic Web Database of Ancient Inscriptions** (*short paper*)

Martin Scholz (University of Erlangen-Nuremberg, Germany); Marvin Holdenried (University of Erlangen-Nuremberg, Germany); Boris Dreyer (University of Erlangen-Nuremberg, Germany); Günther Görz (University of Erlangen-Nuremberg, Germany)

The Epigraphische Datenbank Erlangen-Nürnberg/Epigraphic Database Erlangen-Nürnberg (EDEN) (wisski.cs.fau.de/eden) is an evolving online database of ancient Greek inscriptions from cities of today's western Turkey: Metropolis (in Ionia), Magnesia ad Maeandrum and Apollonia ad Rhyndacum.

This project aims at providing a powerful tool for interdisciplinary and international research in the fields of ancient history, archaeology, and computer sciences, and addresses researchers as well as students and the wider public. Its focus is not on large numbers of inscriptions (yet), but on detailed data: along with the edited versions of the inscriptions, it features rich metadata in tabular and textual form, including academic commentaries, translations into modern languages, such as English and German, and images of the inscriptions and their carriers with high resolution, therefore, providing relevant information for both historians and archeologists. Additionally, data for recurring topics of inscriptions like places, gods, rulers and institutions is also being compiled. The database uses the open source research environment WissKI (wiss-ki.eu) as its technical basis. Hence, it is purely web-centered and relies entirely on Semantic Web technologies for data modeling and storage. Interoperability and long term preservation of the data is guaranteed using the CIDOC CRM ontology. The data sets are highly interlinked and geo-referenced, where possible. Since recently, 3D models of the excavation sites have been integrated into the database and will eventually form an interactive virtual research space. The database is built in close cooperation between (ancient) historians and computer scientists at the University of Erlangen-Nürnberg. The focus of this paper is the database's overall layout with an emphasis on the applied technologies and future plans of the project.

■ **Networking Eagle with CIDOC & TEI** (*short paper*)

Valentina Vassallo (The Cyprus Institute, Cyprus); Eydel Rivero Ruiz (University of Alcalà de Henares, Spain); Pietro Liuzzo (University of Heidelberg, Germany)

The Europeana network of Ancient Greek and Latin Epigraphy (EAGLE) brings together most repositories of ancient epigraphical documents and aims to provide scholars not just with a “useful” research tool, but with a curated online edition which has high quality contents as well as high quality data. In this paper, the choices of the EAGLE BPN will be presented as a case of decisions about data driven by the community need for multiple

approaches and the will to enlarge the existing network. The mutual benefits and the common points of the theoretical challenges involved with digital epigraphy and LOD will be explored; the concepts of usefulness and quality of a digital resource will also be confronted. EAGLE chose multiplicity of editions, interactivity, engagement and multilingualism in order to offer a complete and critically structured endpoint to the user. To represent inscriptions, EAGLE developed a metadata format that assessed the provider's metadata structures and considered two sets of standards/ontologies: TEI – EpiDoc and CIDOC CRM. EpiDoc allows a full description of the text of inscriptions; CIDOC CRM enables a further full description which is instead oriented to consider inscriptions as objects. The EAGLE BPN choice of the two standards is to grant full meaning and all possibilities to connect and link other data with external annotation or by alignment. Beside usefulness, the choice of complexity will be rewarding as a choice of semantic quality.

■ **Mashups and the Archaeological Web: Popular data mashups on the web today and how they can influence how we structure and approach archaeological data** (*short paper*)

Matthew L. Vincent (Universidad de Murcia, Spain); Victor Manuel López-Menchero Bendicho (Sociedad Española de Arqueología Virtual, Spain); Mariano Flores Gutierrez (Universidad de Murcia, Spain)

There has been a strong push to standardize archaeological data. Proposed formats have come out of several international conferences, with the result being that some of these standards have been adopted by some, and other standards by others. Yet, there is still a universal disconnect and it is still a challenge to connect archaeological data. The web has seen the growth of “mashups” since the advent of Web 2.0. These mashups, connecting multiple datasets into a single user interface prove that data standards are not necessarily the problem, rather adopting data access standards may be the way forward.

This paper seeks to explore ways in which archaeological data specifically, and cultural heritage data in general, can be linked together now, even without an agreed upon data standard. The mashup trend in recent years has shown that it matters more how we connect our data than conforming our data to the same standard. This is not to say that data standards won't help, but we are already faced with countless legacy data that are in no particular format, data that won't necessarily be conformed to standards as they are adopted. Following the trend of mashups, we can implement web standards for publishing our data that allows us to link them together without the need to first conform them to the same standard.

Theme K Access to Cultural Heritage

Time	Monday 8 th September	Tuesday 9 th September	Wednesday 10 th September
9.00–9.50			
11.00–12.30			K/1
14.00–15.30			K/2
16.00–17.30			

Session K/1

Date: Wednesday 10th September 2014 | 11.00–12.30

Chair: Monika Hagedorn-Saupe

- **Using crowdsourcing to enhance collections data and the online user experience** (*short paper*)
Alex Bromley (Museum of London, United Kingdom)

The Museum of London has been piloting different methods of crowdsourcing information about its collections from a variety of users. This has been funded as part of the museum’s Opening Up to Digital Environments programme funded by Arts Council England. Using three different models, the Museum has created online applications to present and gather collections information:

- Model 1 – a closed system for specialists,
- Model 2 – an open system for all users,
- Model 3 – a closed system for school children.

This paper explores the reasons behind the Museum’s decision to experiment with crowdsourcing, how they identified the participants, the platforms and techniques used for building the data gathering applications, as well as some lessons learned about the exercise and how the data might be used.

- **The meSch project – Material EncounterS with digital Cultural Heritage: Reusing existing digital resources in the creation of novel forms of visitor’s experiences** (*full length paper*)
Monika Lechner (DEN Foundation, Netherlands); Daniela Petrelli (Sheffield Hallam University, United Kingdom)

A wealth of digital cultural heritage content is currently available in online repositories, portals or on museum servers. It is however accessed only in a limited way and utilised through rather static modes of delivery, completely missing the connection and interaction with the real objects and physical artefacts in the museum or heritage site. What is more, digital artefacts lack materiality, authenticity and “aura”, which is crucial to the appreciation of cultural heritage.

The meSch project – Material EncounterS with digital Cultural Heritage – has the goal of bridging the gap between the cultural heritage experience on-site and online. meSch will enable cultural heritage professionals to create tangible smart exhibits, enriched by digital content, without the need for specialised technical knowledge. To achieve this goal a set of physical hardware and software components is being developed: the meSch platform. It consists of an authoring tool for the composition of physical/digital narratives that can be mapped to the interactive artefacts, and an embedded multi-sensor digital system platform for the construction of ad-hoc physical smart exhibits. The meSch approach is grounded on principles of co-design and on a Do-It-Yourself philosophy of making and experimentation. Co-design involves broad participation of designers, developers and cultural heritage stakeholders in the development and design process. Hands-on design and maker workshops are held throughout the project to shape the development of the meSch tools. The ultimate goal of the project is to support the creation of an open community of cultural heritage professionals driving and sharing a new generation of interactive physical/digital smart exhibits for the museum environment and heritage sites.

meSch receives funding from the European Community’s Seventh Framework Programme ‘ICT for access to cultural resources’ and is currently in its second year. <http://www.mesch-project.eu>

Duration of contributions:

brief presentation \triangle 5 minutes; short paper \triangle 10 minutes; full length paper \triangle 20 minutes.

■ **Taking Content to the User: The EEXCESS Project** (*short paper*)

Gordon McKenna (Collections Trust, United Kingdom)

Europe holds vast resources of cultural, scientific and educational content—scientific research, historical sound recordings, images of sculptures, films, sheet music and much more. This highly specialised content, carefully curated and maintained by a large number of libraries, archives, museums, digital repositories and other professional organisations, is still largely untapped and invisible to the general public. In the Internet context it is therefore often referred to as the long-tail (i.e. a huge body of specialised knowledge existing in the World Wide Web, but hidden from most users).

EEXCESS (<http://eexcess.eu>) is a research project funded by the EU's Seventh Framework Programme and is in second year of its 42 months. Its vision is to unfold the treasure of cultural, educational and scientific long-tail content for the benefit of all users.

This paper is a report on the progress so far on the topics of:

- **Enrichment of content:** Developing new technologies to enrich existing content dissemination channels;
- **Personalised recommendation:** The need for a dynamic, contextualised delivery of results based on the qualifications and preferences;
- **Privacy preservation:** Aiming at the maintenance of full user privacy and control of the data they provide.

There will be a demonstration of a browser 'plug-in' which shows the functionality of the system.

■ **Memories of a Historical Collection** (*short paper*)

Maria Helena Versiani (Museu da República/Museum of the Republic, Brazil)

This proposed presentation discusses the process of formation of a set of documents that are deposited in the Museum of the Republic, a Brazilian museum institution, with the name of the Constituent Memory Collection. This is a collection that gathers documents produced during and because of the democratic process of reconstitutionalization lived in Brazil in the second half of 1980s. The formation of this collection, in our view, should be perceived as a strategic political action repudiation to the authoritarian regime that prevailed in Brazil between 1964 and 1985, and improving democracy.

The development of the presentation will be based on the following questions: How did this set of documents become a historical collection? Seeking to meet what goals? Where is it deposited? Our hypothesis is that pursuing such issues we can find good 'clues' about the choices of those agents responsible for the accumulation and organization of the collection. Choices that supported its establishment as a documentary heritage, illuminating certain historical memory about Brazil: a memory of a democratic Brazil.

■ **Deutsche Digitale Bibliothek – The Aggregation Network for Germany's Cultural Heritage** (*full length paper*)

Astrid B. Müller (Deutsche Digitale Bibliothek, Germany); Frank Frischmuth (Deutsche Digitale Bibliothek, Germany)

The Deutsche Digitale Bibliothek is dedicated to establishing free online access to Germany's cultural and scientific heritage and ensuring that the general public can view, free of charge, the digital inventories of German cultural and scientific institutions. Millions of books, archived items, images, sculptures, pieces of music, sound documents, films and scores, are being brought together and cross-referenced for unrestricted viewing on a central online portal. More than 2000 registered memory institutions covering all domains of culture have already shown an active interest in this idea.

The Deutsche Digitale Bibliothek is a network of expertise: 13 cultural and academic institutions of all categories, sponsored by the Federal German government, the German States governments and local authorities, form the 'Kompetenznetzwerk' and have been working together since 2010 to develop and expand the Deutsche Digitale Bibliothek. A beta version was launched in 2012 and the first full version was unveiled in Berlin in 2014.

More than 100 institutions are currently offering unrestricted access via the Deutsche Digitale Bibliothek to nearly 8 million data sets. The volume of content is steadily increasing.

The Service Center and domain-specific service desks function as points of contact and advice for institutions interested in taking part (one of them is the Museum service desk in the Institut für Museumsforschung in Berlin). New functions are being added to the portal continuously. In 2013 the Deutsche Digitale Bibliothek introduced its API, going one step further towards providing online access to digitized cultural and scientific content.

The Deutsche Digitale Bibliothek also acts as a national aggregator for “Europeana”, the European digital platform, which has been networking digitized culture from all EU member states since 2008 and is in the process of creating a digital European cultural memory.

The talk provides an overview of the current state of the project and the challenges facing it and offers a glimpse of future developments.

What functionalities have already been developed and which are in the pipeline? How is the matter of rights and licenses being dealt with? And what do we – and not least the small institutions – stand to gain from the Deutsche Digitale Bibliothek?

Session K/2

Date: Wednesday 10th September 2014 | 14.00–15.30

Chair: Martina Krug

■ **Cultural archives in the digital age: From storage to dynamic public spaces** (*brief presentation*) Sylvia Bernhardt (Bauhaus Universität Weimar/Museum der Moderne, Germany)

In the digital age, we believe, archives are no longer simply storage facilities for future generations, but can be dynamic public spaces.

I will talk about new models of cultural communication, publishing projects, documenting key moments in the history of networked culture.

As a PhD candidate at Bauhaus University Weimar in the department of interface design I’m analysing the existing archive interfaces of museums and cultural institutions in order to develop a new innovative extension/plugin. Visualising data online, I understand as primary mode of knowledge production. The new, so called „plugin“ can be integrated into existing webpages and will allow experts, in a wider range, working together and mining cultural data. I’m experienced with a private art collection and its digital archive. I will show, how to make the collection and its metadata accessible:

Which tools you need to access the data?

Why hash procedures are necessary?

How to develop the interface and data model for the archive by expanding and customizing existing platforms?

How the tools will allow engagement with a wider audience?

How the audience of experts can then identify, classify, describe and analyze the objects in the collection, as well as reconstruct the stories of objects that have either disappeared or been destroyed?

■ **Controlled Vocabularies and Semantics for a Bilingual Digital Art Library** (*full length paper*) Shu-Jiun (Sophy) Chen (Institute of Taiwan History, Academia Sinica, Taiwan/Academia Sinica Digital Center, Taiwan)

The study reports an agent-based Digital Art Library, “Starting out from 23.5°N: Chen Cheng-po” (http://chenchengpo.asdc.sinica.edu.tw/main_en), which demonstrates the application of semantic tools. The initiative was launched after Academia Sinica digitized the archival collection of renowned modern Taiwanese painter Chen Cheng-po (1895–1947). The digital collection includes paintings, correspondences, postcards, newspaper articles, manuscripts and photos. Many items in Chen’s archives and his painting style, reveal a strong influence of both Japanese and Post-Impressionist art with cross-cultural encounter.

In this digital library, we have created various kinds of Chinese-English bilingual metadata records and authority files for the objects, people, places, events, and timelines. We also have used controlled vocabularies in the metadata records of paintings, for instance, in the “subject” element. Most of the terms were assigned using the subject analysis method based on Panofsky’s iconology methodology, and used the terms labels available in the Art & Architecture Thesaurus (AAT) Chinese version to increase access to the digital artworks. In addition, GIS-applications with historical maps have been integrated into the projects. We also visualized Chen’s social networks by creating the artist authority files.

In the near future, we will experiment with using Linked Open Data (LOD) principles to establish semantic relationships. We hope to build a stronger connection and contextualization between a figure-based digital data and its related data. This approach will enable users and scholars to discover more information which they did not see in the past, and develop new research methods or findings.

■ **Studying the use and impact of Glasgow University's collections** (*short paper*)

Maria Economou (Hunterian Museum, University of Glasgow, United Kingdom);

Malcolm Chapman (Hunterian Museum, University of Glasgow, United Kingdom)

The Hunterian is Scotland's oldest public museum and holds diverse collections which have been recognized as being of National Significance. They were built on the founding bequest of Dr. William Hunter's (1718–1783), a pioneering obstetrician and teacher with a passion for collecting, and reflect his Enlightenment interests. The collections number today about 1.3 million items. The collections' data have just been migrated to the KE-Emu system, which allows grouping and linking of objects, recording interpretative information and creating digital narratives.

The Hunterian is currently undergoing an interesting period of change. It has just embarked on an ambitious project to reunite the collections and employ new technologies to increase access to them. In partnership with Glasgow City's museums and the National Library of Scotland, it will collocate its collections, currently dispersed in various locations, at the Kelvin Hall, one of Glasgow's historic buildings. A Hunterian Collections Study and Research Centre will be built offering new opportunities for object-based teaching, research and engagement with diverse communities.

The paper will focus on a project studying the use and impact of the online collections of the University of Glasgow for teaching, research and public engagement. In common with most cultural organisations, Glasgow University is spending vast resources on digitisation and putting the collections up online but we all know very little about who uses these and what they do with the data.

The paper will investigate how these developments affect the way different user groups (students, researchers, wider educational audiences and community groups) engage with the online collections and the potential for new types of interactions. It will also discuss the wider issues arising from this case study about how online digital resources are reshaping our understanding of rich and diverse cultural material.

■ **Semantic Aggregation: Towards an Unparalleled Digital Museum Experience Based on Structured and Unstructured Data** (*full length paper*)

Chantal Eschenfelder (Städel Museum, Germany); Karsten Gresch (Software AG, Germany)

As society gets increasingly digitized, museum concepts can be extended beyond the physical walls. The Städel Museum wants to provide digital visitors with associative realms of experience, comparable to strolling through collection rooms. Particularly, „digital strolling“ is implemented through the development of a cloud based exhibit platform¹. Herein, the museum database's structured data is semantically refined with unstructured data from other sources. Users are provided with results being as well as obvious as completely unexpected. This shall lead to convincing results in an associative way going far beyond concrete search results based on the mind-numbing matching of question and answer, rather enabling inspiring „finding“ experiences.

Platform users explore the collection and every artwork's information in a self-conducted process of learning, enjoying the rich and complex world of human nature seen through art. They discover infinite numbers of strolling paths, which can be shared and discussed with others. This leads to high-quality consumer curation, without competing with traditional art-historical curation. In form of returned user data current changes in society is being considered, revitalizing the platform itself. The dialogue between the museum and its digital visitors as well as among users themselves helps overcoming socio-cultural barriers.

In which way relevant art-historical data can be prepared for semantic indexing? How shall the indexing process be realized?

We're going answering these and other questions.

¹ Funded by the LOEWE initiative/Germany/Hesse (HA 321/12-11), a consortium project with the cooperating partners University of Applied Sciences Darmstadt, University of Technology, Darmstadt, University and State Library Darmstadt, Städel Museum, Software AG, media transfer AG, nterra GmbH and the House of IT.

■ **The Digital catalogue of Cultural Monuments of Serbia. Usability in High School Education** (*brief presentation*)

Marija Šegan (The Mathematical Institute of SASA, Serbia); Milica Lajbenšperger (National Employment Service, Serbia); Sanja Rajić (School for Mechanical and Electrical Engineering “Goša” in Smederevska Palanka, Serbia)

The digital catalogue of cultural monuments in Serbia, (<http://spomenikulture.mi.sanu.ac.rs/>), presents a digital repository, which contains the digital documentation on immovable cultural heritage of Serbia. It was developed in 2004 by a specially organized consortium of several official institutions in Serbia. In 2011, within the project of implementation of cultural heritage digitization in high school curricula, the catalogue was presented to the teachers and students. It turned out that the catalogue created by the experts did not meet their expectations, which led to the process of user experience evaluation. The paper focuses on one of the phase of the user experience evaluation: 1) the results of the focus groups of high school teachers and students, 2) the analysis of the results and 3) the general key points for the improvement of the catalogue. The results showed that usability of the digital catalogue depends on content and its purpose, as well as visibility, trustworthiness, technical performances, interface design, accessibility, availability, etc. On these issues, teachers and students offered some concrete ideas and solutions, which would be partly presented in the paper. The paper emphasizes the need of the interaction between the experts and ‘common’ users in the development of any digital cultural heritage repository and encourages thinking ‘outside the box’.

■ **African museums at the test of digitalization – the Case of Blackitude museum and some Cameroonian Museums** (*short paper*)

Christian Tschuisseu Nana (Blackitude Museum and Art Gallery of God, Cameroon)

Today we speak more of the digital revolution through the observed prowess made in the areas of ICT ‘s (Information and communication Technology) , upheavals which cannot leave the Cultural Heritage sector in General and Museums in particular indifferent. Thus there is an urgent need to bring the Museums and the Museum professionals to this current trend and help evolves nowadays the museum profession which has for long remain closed and sealed. Efforts have already been engage in other continents like, Europe, America and Asia and till today, only Africa is still lagging behind. It is because of this that efforts and initiatives in the field are felt in a disproportionate manner on the African Continent. There is therefore the need to pool efforts to allow the whole corporation and professionals in the African Museum to better sell , disseminate and communicate around the world the many rich African collections whether material and immaterial still held by tribes and peoples unknown to the general public both nationally and internationally, to move from the oral manner where she has always been classified to the digital world where training and recycling professionals these new techniques and the emergence of other professions related to the museum profession in order to revolutionize the industry. The Blackitude museum in Cameroon and other Cameroonian museums as well as in the Central African region have launch into this digitalization test and offers many programs and options to their audience and visitors to this effect.

Theme L _____ 3D-Documentation of Cultural Heritage

Time	Monday 8 th September	Tuesday 9 th September	Wednesday 10 th September
9.00–9.50			
11.00–12.30			
14.00–15.30	L/1		
16.00–17.30			

Session L/1

Date: Monday 8th September 2014 | 14.00–15.30

Chair: Rengert Elburg

■ The Seville Principles and 3D documentation of Digital Heritage (*short paper*)

Marinos Ioannides (Cyprus University of Technology, Cyprus); Victor Manuel Lopez-Menchero Bendicho (DigitalMed. University of Murcia, Spain); D. Alfredo Grande Leon (DigitalMed. University of Murcia, Spain); Mariano Flores Gutiérrez (DigitalMed. University of Murcia, Spain); Martin Doerr (Foundation for Research and Technology – Hellas/FORTH, Heraklion, Greece)

The past two decades have seen a remarkable growth of projects focusing on investigation, preservation, interpretation, and the presentation of various elements of archaeological heritage using computer-based visualisation. The use of laser scanners and 3D photogrammetry has become relatively common in many countries and projects, while virtual reconstructions fill museums and interpretation centres throughout the world.

These projects have demonstrated not only the extraordinary potential of computer-based visualisation, but also its many weaknesses and inconsistencies, especially in the field of 3D documentation. Certainly, after much practice, it is time for reflection. The London Charter and the Seville Principles are the starting points of a discourse that should serve to evaluate our way of working. If we are to achieve a truly scientific methodology, taking advantage of all the possibilities offered by new technologies, we must consider how to comply with the basic principles of interdisciplinarity, purpose, complementarity, authenticity, historical rigor, efficiency, scientific transparency, training and evaluation.

In this context, this paper explores the relationship between the Seville Principles and the 3D documentation of digital heritage, specifically in the field of 3D metadata.

■ Digital Reconstruction and Virtual Research Environments – A matter of documentation standards (*full length paper*)

Piotr Kuroczyński (Herder Institute for Historical Research on East Central Europe – Institute of the Leibniz Association, Germany)

Against the background of technological developments and increasing employment of digital 3D documentation of cultural heritage, as a result of progressing digitalization of existing artifacts and computer-based 3D reconstruction of lost architectural landmarks and artworks, the implementation of applicable documentation standards is of ever growing importance.

The presentation aims to cast light on the potentials and problems of digital reconstruction as a research and documentation tool. Introductory thoughts will be devoted to explaining technological advancements and the hazards of the *digital cemetery*. Additionally, the upcoming transition to the Web 3.0 will be the subject of a brief description. Here, first concepts are revealed of semantic data-modeling in the field of cultural heritage, which make apparent future prospects of e-documentation, long-term availability, and interoperability of data sets. With selected directives (e.g. *London Charter*) and projects (e.g. *CARARE*, *3D-ICONS*), the state of research in access and understanding of 3D data sets is discussed.

Duration of contributions:

brief presentation \triangle 5 minutes; short paper \triangle 10 minutes; full length paper \triangle 20 minutes.

Finally, the current joint project Virtual Reconstructions in Transnational Research Environments – *the Web Portal: Palaces and Parks in Former East Prussia* offers the opportunity to present a prototype of the *virtual museum*. By example of the project, its interdisciplinary working methodology, semantic indexing of sources and 3D object description, and visualization on the basis of interactive 3D models is derived and put up for discussion.

■ **Point cloud models, semantic interoperability and semiotic classification to increase effectiveness of cultural heritage. A conceptual approach** (*full length paper*)

Massimiliano Condotta (Università Iuav di Venezia, Italy), Vincenzo Giannotti (Università Iuav di Venezia, Italy)

Cultural assets represented by heritage objects (e.g. museum collections) and by natural or artificial environments (like historic cities and monuments) share the common characteristics of being endowed with a spatial position (present or past) and with a cultural message (like as a work of art).

Creating connection between museum objects and their geographical origins, or cross-linking between different cultural resources that are spatially located in different places (for example different pieces of a same collection spread in different museums or different churches that are architecturally connected) or enhancing their interpretation as work of arts, will increase their understanding and interest of the public; therefore will increase their effectiveness.

Some strategies can be used in this direction. The 3d digitalization of cultural assets via laserscanner generates virtual objects that can be stored in different digital repositories spread around the net and shared and connected via web. The use of topological properties, semiotic correlations and new visualization systems, allow stakeholders to recompose cultural assets by re-connecting different parts and, at the same time, enrich this new entity with many information. Using in this process standard metadata and on purpose developed semiotic taxonomies, generates semantic interoperability, understanding and new interpretation of the cultural heritage.

In some on-going researches we are testing these conceptual approaches by studying classification systems of “3d points clouds models” to make them implementable in GIS based knowledge management systems and experimenting “octree” techniques for transfer of 3D data via web. The overall goal is to combine point cloud models, semantic interoperability and semiotic classification to increase effectiveness of cultural heritage.

■ **The DURAARK project – long-term preservation of architectural 3D-data** (*full length paper*)

Michelle Lindlar (Technische Informationsbibliothek und Universitätsbibliothek Hannover/TIB/UB, Germany); Hedda Saemann (Technische Informationsbibliothek und Universitätsbibliothek Hannover/TIB/UB, Germany)

The preservation of scientific and cultural heritage is increasingly linked to the maintenance of long-term availability of digital information, for which no general strategy has been developed yet. In the cultural heritage domain, a digital representation may exist as a documentary representation of an existing analogue object – however, in some cases, it may also be the only remaining documentation of an analogue object which has been destroyed or lost.

In the documentation of architecture, a diversified mixture of analogue materials, like notes and sketches, as well as of “born digitals”, like CAD drawings and 3D-laserscans, is being generated. With the shift from analogue 2D plans to digital 3D representations in architecture, these materials create a growing data pool ideally documenting an object’s life cycle. Such complex time studies can be irreplaceable cultural heritage objects, as they document architectural structures over changes due to remodeling, planned demolition or unplanned destruction.

In February 2013, the EU-funded project *DURAARK* – Durable Architectural Knowledge was launched under participation of the Leibniz University Hanover (L3S/TIB). The three-year project aims at the development of methods for the long-term preservation of architectural 3D data. From the ingest, storage and retrieval of 3D objects to measurements for the preservation of long-term availability *DURAARK* covers a wide range of processes and methods. The paper presents first findings of the project and covers identified requirements for the preservation of 3D data from the data storage, the file format choice as well as the semantic perspective.

Poster Presentation

Monday 8th to Wednesday 10th September 2014

Kulturzentrum Dreikönigskirche, Ground Floor

- **Initial Training Network for Digital Cultural Heritage: Projecting our Past to the Future**
Marinos Ioannides (Cyprus University of Technology, Cyprus); Victor Manuel Lopez-Menchero Bendicho (DigitalMed. University of Murcia, Spain); D. Alfredo Grande Leon (DigitalMed. University of Murcia, Spain); Mariano Flores Gutiérrez (DigitalMed. University of Murcia, Spain); Martin Doerr (Foundation for Research and Technology – Hellas/FORTH, Heraklion, Greece)

The “Initial Training Network for Digital Cultural Heritage: Projecting our Past to the Future” (ITN-DCH, see: www.itn-dch.eu), is the first, and one of the largest, Marie Curie fellowship projects in the area of the e-documentation, e-preservation, and Cultural Heritage (CH) protection funded by the European Union under the FP7 PEOPLE research framework (<http://ec.europa.eu/research/mariecurieactions/>). The Project started on the 1st of October 2013 and is formed of a consortium of 14 full partners and 9 associate members covering the entire spectrum of European CH actors, ranging from academia, research institutions, industry, museums, archives and libraries. The ITN-DCH aims, for the first time worldwide, to analyze, design, research, develop and validate an innovative multidisciplinary and inter-sectorial research training framework that covers the entire lifecycle of digital CH research for a cost-effective preservation, documentation, protection and presentation of cultural heritage. The ITN-DCH targets all aspects of CH ranging from tangible (e.g., books, newspapers, images, drawings, manuscripts, uniforms, maps, artefacts, archaeological sites, monuments) to intangible content (e.g., music, performing arts, folklore, theatrical performances) and their inter-relationships. The project aims to boost the added value of CH assets by re-using them in real application environments (protection of CH, education, tourism industry, advertising, fashion, films, music, publishing, video games and TV) through research on (i) new personalized, interactive, mixed and augmented reality enabled e-services, (ii) new recommendations in data acquisition, (iii) new forms of representations (3D/4D) of both tangible/intangible assets and (iv) interoperable metadata forms that allow easy data exchange and archiving.

- **Brief introduction about painting collection of cultural institute of Bonyad museums: Ways and Methods of documentation in Digital Era**
Golnaz Tayebbeh Golsabahi (Cultural Institute of Bonyad museums/CIBM, Iran)

CIBM painting collection which contains over than 3000 objects, and started to work since 18 years ago, is one of the most important collections among other treasuries of Cultural institute of Bonyad museums.

In this treasury, not just paintings, but different kind of artistic works such as historical maps, photographs, printed art works of famous painters, Iranian traditional calligraphies, painted old doors and roofs, and old masterpieces both Iranian and non-Iranians ,decorated books and manuscripts, are preserved.

Since twelve years ago, CIBM storage department and painting collection started to plan a program in order to document, preserve and conserve these historical objects and art works base on documentation orders and methods. This program has been contained of organizing objects physically, identifying, classifying, photographing, preparing object IDs and etc ...

Since 3 years ago it has been started to digitalize any information about all objects. In this brief introduction i am going to present this process and identifying our weakness and limitations as well.

■ City Museum Leipzig – 30,000 Autographs. Retrodigitisation and content description

Karin Kühling (Stadtgeschichtliches Museum Leipzig, Germany); Julia Hamelmann (Stadtgeschichtliches Museum Leipzig, Germany); Heidrun Lorenz (Stadtgeschichtliches Museum Leipzig, Germany)

Within the context of a project of which several separate steps had been consecutively approved by the German Research Foundation (DFG), the Stadtgeschichtliches Museum Leipzig (Historical Museum of the city of Leipzig) is undertaking to completely describe and digitise over 30 000 autographs until early 2016.

Up to now autographs holdings on the following subjects have already been or are presently being processed:

- “The Wars of Liberation” (1812/13). They do provide specific information about the Battle of Nations (18.–20. October 1813) (among this a letter of the German future Emperor Wilhelm I with an impression of the battle-field from the days after the battle),
- on the subject “Music” – especially letters of the composer Felix Mendelssohn Bartholdy
- and on the subject “Art” – private letters of the Leipzig painter Max Klinger or of the graphic designer Erich Gruner (who created in 1917 the emblem of the “Leipzig Fair”) provide insight into the art scene in Leipzig at the beginning of the 20th century.

Within the context of the current project, autographs on the subject “politics” will be digitised and made available online. These do not only include letters of several Lord Mayors of the city of Leipzig (for instance Carl Bruno Tröndlin or Rudolf Dittrich) or the Russian town commander Nikolai Trufanow (1945). A collection of picture post-cards which members of the city administration (among them city building officer Hugo Licht) exchanged among each other from their vacancies or stays at health spas is a good illustration of travelling habits before World War I. Equally, the private and business correspondence of publishers such as Ernst Keil or the families Brockhaus and Breitkopf and letters of scholars and philosophers like Gottfried Wilhelm Leibniz, will be digitised and made available online on the net.

The digitised autographs are published via the homepage of the “Stadtgeschichtliches Museum Leipzig”.

The next step will be to store digital references to the autographs in the data network “Kalliope” of the State Library in Berlin (SBB/PK) and so integrate them into the existing informational structures of science.

So, after completion of the project by the beginning of 2016, the complete autograph holdings of the Stadtgeschichtliches Museum Leipzig will be scientifically described, digitised and made available online for academic research. This is also an important contribution for Leipzig’s 1000th anniversary in 2015.

■ Let’s Build a Museum Together!

Kadri Nigulas (Tallinn City Museum, Estonia); Kristiina Hiiesalu (Tallinn City Museum, Estonia)

1–14 February 2014 the Tallinn City Museum opened a pop-up museum in Telliskivi Loomelinnak (Telliskivi Creative City). The temporary exhibition introduced the historical and cultural heritage of Telliskivi street in Tallinn. Some of the items, photos, memories etc. exhibited came from the City Museum’s collections, whereas others were (as a result to our call to the public a few months earlier) borrowed by the people living or working in the area. One of the main purposes of the Telliskivi pop-up museum was to involve the locals and encourage them to participate in different activities typical to a museum. The other was to encourage the collection of local cultural heritage, which was mostly done in the form of documenting and collecting the intangible – memories, thoughts, opinions, habits.

In addition to exhibition, we organised several events and activities, such as:

- panel discussions on various topics related to the history and the present day of Telliskivi street,
- individual interviews (panel discussions and interviews were recorded for the museum),
- collecting people’s journeys (which led through Telliskivi street), thoughts and memories connected to these journeys,
- inviting people to share their memories and emotions connected to places in the area,
- activities for children and families on weekends.

Home page and blog describing our activities is to be found at: www.telliskivimuuseum.weebly.com.

The project is a part of our bigger four-year project, to document different districts in the city, to increase citizens’ awareness and participation in museum’s activities.

■ **Europeana Fashion. Putting Europe's fashion heritage online**

Marco Rentina (Fondazione Rinascimento Digitale, Italy); Dieter Suls (ModeMuseum, Antwerpen, Belgium)

Fashion is an important part of our shared European Cultural Heritage, which is increasingly recognised for its important research value to other academic disciplines, including arts, culture, sociology and communication. Since the beginning of the XX century some of the most important public and private cultural institutions and museums of applied arts in Europe have begun collecting and preserving garments, accessories, catalogues, fashion magazines and other documents and materials related to fashion. This has resulted in a growing number of impressive and unique collections that Europeana Fashion will bring together online through Europeana¹ and also through a dedicated multi-lingual fashion portal².

The Europeana Fashion project gathers together 22 partners from 12 European countries, which represent the leading European institutions and collections in the fashion domain. The consortium will aggregate and provide to the public outstanding and rich material about the history of European fashion, including more than 700.000 fashion-related digital objects, ranging from historical dresses to accessories, photographs, posters, drawings, sketches, videos, and fashion catalogues.

In particular the Europeana Fashion objectives aim to:

- aggregate quality fashion content by gathering the most relevant Fashion institutions in Europe, ranging from museums and libraries, like Victoria & Albert Museum, MoMu, Musée de la Mode et du Textile, Museo del Traje and Lipperheideische Kostumbibliothek, but also private content holders like Archivio Missoni, Archivio Pucci, Catwalk Pictures and Pitti Immagine.
- develop interoperability in the fashion community of content holders, creating and promoting a common metadata schema for Fashion content, based on the Europeana Data Model. Interoperability on a semantic level will be also granted through the definition of a common multilingual Fashion Thesaurus, based on the wide adopted AAT thesaurus, enriched with fashion related specific terms, that will be used to semantically enrich and align the provided content, allowing on it a multilingual cross-cultural search and retrieval.
- create a specialised access point for Fashion content online, setting up a Europeana Fashion portal that will offer an integrated access to a rich variety of Fashion collections, made accessible for the first time, targeting different user groups (research/education, creative industry, cultural heritage sector and the general public), offering them value added services.
- develop case studies for the exploitation of fashion content online stimulating and developing synergies and collaborations between fashion content holders and the creative community for the reuse and exploitation of fashion content in different scenarios. A specific collaboration with Wikipedia will be activated, inviting consortium members to contribute sample content to Wikimedia Commons and subsequently hosting a number of so-called GLAM-WIKI events that are a catalyst to gather contextual information to objects from the contributing organizations, and raising interest in the Europeana Fashion content.
- build consensus and raise awareness in the fashion community at large around best practices on digitisation of cultural heritage, IPR issues and semantic interoperability, with the aim also to attract new content providers in the network.

¹ <http://www.europeana.eu>

² <http://www.europeanafashion.eu>

■ **Low cost and efficient UAV-based 3d-documentation**

Christof Schubert (Landesamt für Archäologie Sachsen/Archaeological Heritage Office of Saxony, Germany); Marco Block-Berlitz (University of Applied Sciences Dresden/HTW Dresden, Germany); Benjamin Ducke, Toni Schiemank (University of Applied Sciences Dresden/HTW Dresden, Germany); Benjamin Gehmlich (University of Applied Sciences Dresden/HTW Dresden, Germany); Raül Rojas (Freie Universität Berlin, Germany)

During the past two to three years, a new kind of UAV (unmanned aerial vehicle) has been “discovered” by archaeologists as camera platform for LAAP (low altitude aerial photography). The so called multicopters, driven by three or more horizontal rotors have just become quite comfortable to operate thanks to newly developed, sophisticated flight control units. They allow to cover even larger excavation sites systematically, and their ability to hover and move in every direction just like helicopters makes it possible to take specific single shots and video footage even of otherwise inaccessible areas.

Using SfM (Structure from Motion) software, these vast amounts of image data can then be processed to 3D models and georeferenced orthophotos.

Since 2013, the Saxony's Archaeological Heritage Service owns a consumer grade quadrocopter, equipped with a small and light weight camera to take overviews and generate 3D models and orthophotos of archaeological sites. In cooperation with the "Archaeocopter" project, data acquisition strategies and workflows have been developed, that lead to suitable results even with low cost hardware. Within less than a year, the quadrocopter has become a tool that provides additional documentation for chosen excavations. Presenting the results of some of the projects completed so far, the range of possible applications of the new technology will be shown.

■ **New aspects in medieval mining archaeology in Saxony**

Christiane Hemker/Ivonne Burghardt/Rengert Elburg (all Landesamt für Archäologie Sachsen/ Archaeological Heritage Office of Saxony, Germany)

With the fortuitous discovery of two large medieval silver mines at Dippoldiswalde and Niederpöbel it has become clear mining, especially for silver, has been much more widespread in medieval Saxony and Bohemia than previously documented. In March 2012 starts the binational project 'ArchaeoMontan', bringing together seven institutions from Saxony and Bohemia and funded by the European Regional Development Fund (ERDF). Lead Partner of the project is the Landesamt für Archäologie (Archaeological Heritage Office of Saxony). In a cross-border cooperation archaeologists, historians, geologists, site technicians, surveyors and museologists work closely together to explore, document and investigate archeological mining relicts in the Czech and the Saxon Ore Mountains. For the first time investigation into the medieval mining landscape is being carried out in a regional scale.

■ **The Presto4U project: Supporting the Adoption of AV Preservation Research Results**

Marco Rendina (Istituto Luce – Cinecittà, Italy)

The long-term preservation of digital audiovisual media presents a range of complex technological, organisational, economic and rights-related issues, which have been the subject of intensive research over the past fifteen years at national, European and international levels. Although good solutions are emerging, and there is a large body of expertise at a few specialist centres, it is very difficult for the great majority of media owners to gain access to advanced audiovisual preservation technologies. Presto4U will focus research efforts onto useful technological solutions, raise awareness and improve the adoption of audiovisual preservation research results, both by service providers and media owners, and with a particular emphasis on meeting the needs of smaller collections, private sector media owners and new stakeholders.

The project aims to:

- create a series of Communities of Practice in the principal sub-sectors of audiovisual media preservation, which will develop a body of knowledge on the status of digital preservation, practice, outstanding problems and needs for access to research results;
- identify useful results of research into digital audiovisual preservation;
- promote the take-up of promising research results by users, technology vendors and service providers, based on results of hands-on technology assessment, promotion of standards, analysis of economic and licensing models, and provision of brokering services;
- raise awareness of the need for audiovisual media preservation and disseminate information about project results;
- evaluate the impact of the project and develop plans for long-term sustainability.

The resulting knowledge, tools and services produced by the project will be maintained by PrestoCentre, the European Competence Centre for audiovisual preservation.

<https://www.prestocentre.org/4u>

■ **Athena Plus – Supporting museums**

Frank von Hage! (Institut für Museumsforschung, Staatliche Museen zu Berlin, Stiftung Preußischer Kulturbesitz/Institute for Museum Research, State Museums of Berlin, Prussian Cultural Heritage Foundation, Germany)

AthenaPlus is a EU-CIP best practice network started in March 2013 and ending in August 2015. The consortium is composed by 40 partners from 21 Member States countries.

The principal objectives of the AthenaPlus project are to:

- **contribute** more than 3.6 million metadata records to Europeana, from both the public and private sectors, focusing mainly on museums content, with key cultural stakeholders (ministries and responsible government agencies, libraries, archives, leading research centres, SMEs).
- **improve** search, retrieval and re-use of Europeana's content, bettering multilingual terminology management, the SKOS export and the publication tool/API for Content Providers;
- **experiment** with enriched metadata and their re-use adapted for users with different needs (tourists, schools, scholars) by means of tools that support the development of virtual exhibitions, tourist and didactic applications, to be integrated into Europeana repositories and the repositories of national aggregators or individual Content Providers.

■ **The Art & Architecture Thesaurus in German – Work in progress**

Monika Hagedorn-Saupe (Institut für Museumsforschung, Staatliche Museen zu Berlin, Stiftung Preußischer Kulturbesitz/Institute for Museum Research, State Museums of Berlin, Prussian Cultural Heritage Foundation, Germany); Winfried Bergmeyer (Institut für Museumsforschung, Staatliche Museen zu Berlin, Stiftung Preußischer Kulturbesitz/Institute for Museum Research, State Museums of Berlin, Prussian Cultural Heritage Foundation, Germany)

Developed and maintained by the Getty Research Institute in Los Angeles, the “Art & Architecture Thesaurus (AAT®)” is the largest and very appropriate tool for the use of vocabulary to describe objects, with a very wide subject, temporal and spatial coverage. The project “Build a German version of the AAT” in its first phase runs from 2012 until the end of 2014, under the financial support of special research funds of the BKM and the State of Berlin, assigned to the Prussian Heritage Foundation. This project, as a first step, deals with the “Objects” facet (containing the denominations of physical objects) as 1 out of the 8 facets of AAT® altogether.

Thursday 11th September 2014

Excursion Day

■ Excursion 1

Leipzig – A City for Nearly 1000 Years: Trade Fair, University, Museums
<http://www.cidoc2014.de/index.php/en/home/excursion-1-leipzig>

■ Excursion 2

Görlitz – The Beauty in Upper Lusatia
<http://www.cidoc2014.de/index.php/en/home/excursion-2-goerlitz>

■ Excursion 3 *(cancelled)*

■ Excursion 4

Chemnitz – Modernity and Museums
<http://www.cidoc2014.de/index.php/en/home/excursion-4-chemnitz>

Conference Team / Contact

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Stadtgeschichtliches Museum Leipzig:
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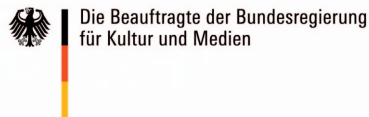
Semantic Research Environments

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Surrounding Area

■ Map 1



Main Access to Dresden

(Design: Christian Platz, HTW Dresden)

Surrounding Area

Map 2



Surrounding Area

Map 3



(Design: Christian Platz, HTW Dresden/Petra List, LfA Sachsen)



Variety of restaurants and cafés in the vicinity of the main conference venues:

- | | | |
|------------------------------------------------|-----------------------------------------------------|-----------------------------------------------|
| 1 Cuchi Restaurant
Wallgäßchen 5 | 7 Ristorante Via Re
Königstraße 6 | 13 Red Rooster
Rähnitzgasse 10 |
| 2 Wir Raum Café
Wallgäßchen 4 | 8 El Español
An der Dreikönigskirche 7 | 14 Watzke am Goldenen Reiter
Hauptstraße 1 |
| 3 Mama Africa
Wallgäßchen 2 | 9 Winzerstube „Zum Rebstock“
Hauptstraße 17 | 15 Eiscafé Venezia
Hauptstraße 2a |
| 4 Ristorante Pizzeria Ausonia
Königstraße 9 | 10 Die Pastamanufaktur
An der Dreikönigskirche 3 | 16 Nordsee
Hauptstraße 14 |
| 5 Restaurant Acheron
Königstraße 5a | 11 L' Art de Vie
An der Dreikönigskirche 1a | 17 Salatbar grünzeugs
Hauptstraße 16/18 |
| 6 Wenzel Prager Bierstuben
Königstraße 1 | 12 Restaurant St. Petersburg
Hauptstraße 11 | 18 Schwarzmarkt-Café
Hauptstraße 36 |

■ Notes

■ Notes

Where to go?

■ Venues and Rooms

■ Dreikönigskirche

Hauptstraße 23, 01097 Dresden

- **Ground Floor:**
 - Room 1
 - Room 2
 - Room 3
 - Poster presentation
- **First Floor:**
 - Room 5
 - Room 6
 - Dining Room / Coffee
 - Registration
 - Book and Trade fair
 - Wardrobe
- **Second Floor:**
 - Room 9
 - Room 10
 - Room 11 (Festsaal / Festival room)
 - Room 12
 - Coffee
- **Third Floor:**
 - Room 14
 - Room 15

■ Kulturrathaus Dresden

Königstraße 15, 01097 Dresden

- **Ground Floor:**
 - Room 16
- **First Floor:**
 - Room 17 (Clara-Schumann-Saal)
 - Room 18 (Fritz-Löffler-Saal)
 - Coffee
 - Wardrobe

■ Stadtmuseum Dresden

Wilsdruffer Straße 2, 01067 Dresden

- **Ground Floor:**
 - Room 20
 - Wardrobe
- **Third Floor:**
 - Room 21 (Festsaal / Festival room)
 - Coffee
 - Wardrobe

■ Hans Körnig Museum

Wallgäßchen 2, 01097 Dresden

- **Exhibition Room:**
 - Room 23

■ Japanisches Palais/Japanese Palais

Palaisplatz 11, 01097 Dresden

- **First Floor:**
 - Room 24
 - Room 25
 - Room 26
 - Coffee

