COMPETITIVENESS AND INNOVATION FRAMEWORK PROGRAMME

Grant agreement for: CIP-Best Practice Network

Annex I - "Description of Work"

Project acronym: Linked Heritage

Project full title: " Linked Heritage - Coordination of Standards and Technologies for the enrichment of Europeana "

Grant agreement no: 270905

Date of preparation of Annex I (latest version): 2010-12-09

Date of last change: 2010-12-07

Table of Contents

Part A

Workplan Tables

A1:
Project summary

Project Number [1]	270905	Project Acronym [2]	Linked Heritage

One form per project

General information	
Project title [3]	Linked Heritage - Coordination of Standards and Technologies for the enrichment of Europeana
Starting date [4]	01/04/2011
Duration in months [5]	30
Call (part) identifier [6]	CIP-ICT-PSP-2010-4
Objective most relevant to your topic [7]	:		
Free keywords [8]		linked data, persistent identifiers, metadata standards, multilingual terminologies, training, dissemination, awareness, public-private-partnership

Abstract [9]

Linked Heritage has 3 main objectives: I) to contribute large quantities of new content to Europeana, from both the public and private sectors; II) to demonstrate enhancement of quality of content, in terms of metadata richness, re-use potential and uniqueness; III) to demonstrate enable improved search, retrieval and use of Europeana content.

Linked Heritage will facilitate and deliver large-scale, long-term enhancement of Europeana and its services. The project will address the problems associated with:
- Non-standard descriptive terminologies
- The lack of private sector and 20th Century content
- The preservation of complex metadata models within the Europeana metadata schema.

The consortium includes representatives of all the key stakeholder groups from 20 EU countries, together with Israel and Russia. These include ministries and responsible government agencies, content providers and aggregators, leading research centres, publishers and SMEs. The Europeana Foundation will be involved as subcontractor.

Several partners participate in related Europeana ecosystem projects; this guarantees alignment with Europeana's evolution. In addition, organisations which have not in the past been involved will contribute for the first time to Europeana. 3 million new items will be delivered to Europeana, covering a wide spectrum of types of cultural content.

A2:
List of Beneficiaries

Project Number [1]	270905	Project Acronym [2]	Linked Heritage

List of Beneficiaries					
No	Name	Short name	Country	Project entry month[10]	Project exit month
1	Istituto Centrale per il Catalogo Unico delle biblioteche italiane e per le informazioni bibliografiche	ICCU	Italy	1	30
2	UNIVERSITA DEGLI STUDI DI PADOVA	UNIPD	Italy	1	30
3	CONSIGLIO NAZIONALE DELLE RICERCHE	CNR	Italy	1	30
4	MINISTERE DE LA CULTURE ET DE LA COMMUNICATION	MCC	France	1	30
5	Eesti Vabariigi Kultuuriministeerium	EVK	Estonia	1	30
6	HELLENIC MINISTRY OF CULTURE	HMC	Greece	1	30
7	NATIONAL TECHNICAL UNIVERSITY OF ATHENS	NTUA	Greece	1	30
8	UNIVERSITY OF PATRAS	UP	Greece	1	30
9	COLLECTIONS TRUST LBG	CT	United Kingdom	1	30
10	AN CHOMHAIRLE LEABHARLANNA	CL	Ireland	1	30
11	PINTAIL LTD	PL	Ireland	1	30
12	FUNDACIO PRIVADA I2CAT, INTERNET I INNOVACIO DIGITAL A CATALUNYA	I2CAT	Spain	1	30
13	PHILIPPS UNIVERSITAET MARBURG	PUM	Germany	1	30
14	STIFTUNG PREUSSISCHER KULTURBESITZ	SPK	Germany	1	30
15	CENTRAL LIBRARY OF THE BULGARIAN ACADEMY OF SCIENCES	CL-BAS	Bulgaria	1	30
16	JAVNI ZAVOD REPUBLIKE SLOVENIJE ZA VARSTVO KULTURNE DEDISCINE	IPCHS	Slovenia	1	30
17	THE CYPRUS RESEARCH AND EDUCATIONAL FOUNDATION	CREF CYI	Cyprus	1	30
18	STOWARZYSZENIE MIEDZYNARODOWE CENTRUM ZARZADZANIA INFORMACJA	ICIMSS	Poland	1	30
19	RIKSARKIVET	RA	Sweden	1	30
20	MEDRA S.R.L.	MEDRA	Italy	1	30

No	Name	Short name	Country	Project entry month[10]	Project exit month
21	GOTTFRIED WILHELM LEIBNIZ UNIVERSITAET HANNOVER	LUH	Germany	1	30
22	Editeur Limited	EDITEUR	United Kingdom	1	30
23	MVB MARKETING UND VERLAGSSERVICE DES BUCHHANDELS GMBH	MVB	Germany	1	30
24	ORSZAGOS SZECHENYI KONYVTAR	NSL	Hungary	1	30
25	KONINKLIJKE MUSEA VOOR KUNST EN GESCHIEDENIS	KMKG	Belgium	1	30
26	INSTITUTU UMENI - DIVADELNIHO USTAVU	IDU	Czech Republic	1	30
27	INSTITUTO SUPERIOR TECNICO	IST	Portugal	1	30
28	VALSTS AGENTURA KULTURAS INFORMACIJAS SISTEMAS	KIS	Latvia	1	30
29	PACKED - PLATFORM VOOR DE ARCHIVERING EN CONSERVERING VAN AUDIOVISUELE KUNSTEN	PACKED	Belgium	1	30
30	CORDIA AS	CORDIA	Slovakia	1	30
31	UNIVERSITA DEGLI STUDI DI ROMA LA SAPIENZA	UNIROMA1	Italy	1	30
32	C.T.F.R. SRL	CTFR	Italy	1	30
33	Departament de Cultura i Mitjans de Comunicació	DCyMC_DGPC	Spain	1	30
34	Promoter di Masi Pietro & C S.N.C.	PROMOTER	Italy	1	30
35	UNIVERSITE DE SAVOIE	UNIV-SAVOIE	France	1	30
36	ASSOCIATION DEDALE	DEDALE	France	1	30
37	UMA Information Technology GmbH	UMA	Austria	1	30
38	DIGITAL HERITAGE LBG	DH	United Kingdom	-5	30

A3:
Budget breakdown

Project Number [1]		270905	Project Acronym [2]		Linked Heritage

Participant number in this project	Participant short name	Personnel costs	Sub contracting	Other direct costs	Total costs	Max EU Contribution	Requested EU contribution
1	ICCU	495,600.00	120,000.00	45,000.00	660,600.00	528,480.00	528,480.00
2	UNIPD	82,605.00	0.00	20,500.00	103,105.00	82,484.00	82,484.00
3	CNR	39,500.00	0.00	16,000.00	55,500.00	44,400.00	44,400.00
4	MCC	54,000.00	0.00	15,000.00	69,000.00	55,200.00	55,200.00
5	EVK	36,000.00	0.00	16,000.00	52,000.00	41,600.00	41,600.00
6	HMC	34,240.00	0.00	8,000.00	42,240.00	33,792.00	33,792.00
7	NTUA	275,000.00	0.00	26,000.00	301,000.00	240,800.00	240,800.00
8	UP	28,000.00	0.00	10,000.00	38,000.00	30,400.00	30,400.00
9	CT	142,047.00	0.00	20,000.00	162,047.00	129,637.00	129,637.00
10	CL	39,753.00	0.00	19,000.00	58,753.00	47,002.00	47,002.00
11	PL	96,030.00	0.00	20,000.00	116,030.00	92,824.00	92,824.00
12	I2CAT	80,000.00	0.00	17,500.00	97,500.00	78,000.00	78,000.00
13	PUM	96,180.00	0.00	15,000.00	111,180.00	88,944.00	88,944.00
14	SPK	99,200.00	40,000.00	36,000.00	175,200.00	140,160.00	140,160.00
15	CL-BAS	25,520.00	0.00	10,000.00	35,520.00	28,416.00	28,416.00
16	IPCHS	24,000.00	10,000.00	8,000.00	42,000.00	33,600.00	33,600.00
17	CREF CYI	63,000.00	0.00	9,000.00	72,000.00	57,600.00	57,600.00
18	ICIMSS	29,280.00	0.00	9,000.00	38,280.00	30,624.00	30,624.00
19	RA	122,000.00	0.00	18,000.00	140,000.00	112,000.00	112,000.00
20	MEDRA	55,000.00	0.00	15,000.00	70,000.00	56,000.00	56,000.00
21	LUH	43,337.00	0.00	7,000.00	50,337.00	40,269.00	40,269.00
22	EDITEUR	175,000.00	0.00	22,500.00	197,500.00	158,000.00	158,000.00

A3:
Budget breakdown

Participant number in this project	Participant short name	Personnel costs	Sub contracting	Other direct costs	Total costs	Max EU Contribution	Requested EU contribution
23	MVB	60,000.00	0.00	18,000.00	78,000.00	62,400.00	62,400.00
24	NSL	33,480.00	0.00	25,000.00	58,480.00	46,784.00	46,784.00
25	KMKG	96,000.00	0.00	19,000.00	115,000.00	92,000.00	92,000.00
26	IDU	21,120.00	8,000.00	6,000.00	35,120.00	28,096.00	28,096.00
27	IST	54,558.00	0.00	11,000.00	65,558.00	52,446.00	52,446.00
28	KIS	24,000.00	0.00	18,000.00	42,000.00	33,600.00	33,600.00
29	PACKED	28,182.00	0.00	11,000.00	39,182.00	31,345.00	31,345.00
30	CORDIA	26,400.00	0.00	10,000.00	36,400.00	29,120.00	29,120.00
31	UNIROMA1	50,000.00	0.00	9,250.00	59,250.00	47,400.00	47,400.00
32	CTFR	24,600.00	0.00	5,000.00	29,600.00	23,680.00	23,680.00
33	DCyMC_DGPC	24,000.00	0.00	10,000.00	34,000.00	27,200.00	27,200.00
34	PROMOTER	221,980.00	0.00	25,000.00	246,980.00	197,584.00	197,584.00
35	UNIV-SAVOIE	86,850.00	0.00	12,000.00	98,850.00	79,080.00	79,080.00
36	DEDALE	110,000.00	16,000.00	15,000.00	141,000.00	112,800.00	112,800.00
37	UMA	44,800.00	0.00	9,000.00	53,800.00	43,040.00	43,040.00
38	DH	27,000.00	0.00	10,000.00	37,000.00	29,600.00	29,600.00
TOTAL		3,068,262.00	194,000.00	595,750.00	3,858,012.00	3,086,407.00	3,086,407.00

1. Project number

The project number has been assigned by the Commission as the unique identifier for your project, and it cannot be changed. The project number **should appear on each page of the grant agreement preparation documents** to prevent errors during its handling.

2. Project acronym

Use the project acronym as indicated in the submitted proposal. It cannot be changed, unless agreed during the negotiations. The same acronym **should appear on each page of the grant agreement preparation documents** to prevent errors during its handling.

3. Project title

Use the title (preferably no longer than 200 characters) as indicated in the submitted proposal. Minor corrections are possible if agreed during the preparation of the grant agreement.

4. Starting date

Unless a specific (fixed) starting date is duly justified and agreed upon during the preparation of the Grant Agreement, the project will start on the first day of the month following the entry info force of the Grant Agreement (NB : entry into force = signature by the Commission). Please note that if a fixed starting date is used, you will be required to provide a detailed justification on a separate note.

5. Duration

Insert the duration of the project in full months.

6. Call (part) identifier

The Call (part) identifier is the reference number given in the call or part of the call you were addressing, as indicated in the publication of the call in the Official Journal of the European Union. You have to use the identifier given by the Commission in the letter inviting to prepare the grant agreement.

7. Activity code

Select the activity code from the drop-down menu.

8. Free keywords

Use the free keywords from your original proposal; changes and additions are possible.

9. Abstract

10. The month at which the participant joined the consortium, month 1 marking the start date of the project, and all other start dates being relative to this start date.

11. The number allocated by the Consortium to the participant for this project.

Workplan Tables

Project number

270905

Project title

Linked Heritage—Linked Heritage - Coordination of Standards and Technologies for the enrichment of Europeana

Call (part) identifier

CIP-ICT-PSP-2010-4

Funding scheme

CIP-Best Practice Network

Project Number [1]	270905	Project Acronym [2]	Linked Heritage

LIST OF WORK PACKAGES (WP)

WP Number [53]	WP Title	Lead beneficiary number [55]	Person-months [56]	Start month [57]	End month [58]
WP 1	Project management and Coordination	1	114.00	1	30
WP 2	Linking Cultural Heritage Information	9	53.00	1	24
WP 3	Terminology	25	73.00	1	24
WP 4	Public Private Partnership	22	57.00	1	24
WP 5	Technical Integration	7	38.00	1	30
WP 6	Coordination of Content	17	238.00	6	30
WP 7	Dissemination & Training	2	116.00	1	30
	Total		689.00		

WT2:
List of Deliverables

Project Number [1]	270905	Project Acronym [2]	Linked Heritage

List of Deliverables - to be submitted for review to EC

Delive-rable Number [61]	Deliverable Title	WP number [53]	Lead benefi-ciary number	Estimated indicative person-months	Nature [62]	Dissemi-nation level [63]	Delivery date [64]
D1.1.1	Working Groups terms of Reference	1	1	6.00	R	PU	6
D1.1.2	Future Planning Report	1	1	8.00	R	PU	30
D1.2.1	First Periodic Report	1	1	50.00	R	RE	15
D1.2.2	Second Periodic Report	1	1	50.00	R	RE	30
D2.1	Best practice report on cultural heritage linked data and metadata standards	2	9	9.00	R	PU	6
D2.2	State of the art report on persistent identifier standards and management tools	2	9	8.00	R	PU	9
D2.3	Specification of the technologies for large-scale implementation of cultural heritage linked data	2	9	24.00	D	PP	18
D2.4	Specification of a management infrastructure for persistent identifiers	2	9	12.00	R	PP	24
D3.1	Best practice report - Terminology	3	25	11.00	R	PU	12
D3.2	Functional and Technical specification of the terminology management system chosen	3	25	24.00	R	PP	18

Delive-rable Number [61]	Deliverable Title	WP number [53]	Lead benefi-ciary number	Estimated indicative person-months	Nature [62]	Dissemi-nation level [63]	Delivery date [64]
D3.3	Terminology management & Terminology Registry	3	25	38.00	D	PP	24
D4.1	Best practice report – Public Private Partnership	4	22	12.00	R	PU	12
D4.2	Specification of the technologies chosen	4	22	31.00	R	PU	18
D4.3	Specification of legal/licensing environment	4	22	14.00	R	PU	24
D5.1	Linked Heritage Technology Platform	5	7	22.00	P	PU	12
D5.2	Documented APIs	5	7	6.00	R	PU	18
D5.3	Metadata gateway	5	7	10.00	P	PU	12
D6.1	Validation Report	6	17	82.00	R	RE	12
D6.2	Report on contributions to Europeana	6	1	156.00	R	RE	12
D7.1	Project public website	7	1	12.00	P	PU	2
D7.2	Dissemination materials	7	1	10.00	R	PU	6
D7.3	Training materials	7	2	56.00	R	PU	24
D7.4	Virtual Learning Environment	7	2	20.00	P	PU	24
D7.5	Dissemination Plan	7	1	12.00	R	PU	12
D7.6	Final Dissemination Plan/Use of project results	7	1	6.00	R	PU	30
			Total	689.00			

Project Number [1]	270905	Project Acronym [2]	Linked Heritage

Work package number [53]	WP1
Work package title	Project management and Coordination
Start month	1
End month	30
Lead beneficiary number [55]	1

Objectives

Objectives related to the establishiment of the working groups:
• To establish the collaborative network of experts and stakeholders who will work together to identify best practice approaches to the Linked Heritage topics
• To agree terms of reference, roles and responsibilities of the working groups
• To put in place mechanisms for future planning and sustainability, for network growth and for interaction/integration/interoperability with other projects
• To provide the technical infrastructure for international collaboration through discussion forums, document sharing facilities, email lists, etc.

Objectives related to the project management and coordination
• To coordinate the activities of the project through an effective management structure
• To ensure timely and high quality deliverables
• To coordinate the quality assurance process
• To stimulate and encourage all work-packages
• To monitor and facilitate progress
• To identify and overcome obstacles and issues before they delay or disrupt the project
• To evaluate progress and track it against agreed success indicators (including those in section B.3.4, below)
• To liaise as necessary with the Commission
• To manage the consortium, particularly in terms of
o Internal communication, roles and responsibilities
o Decision making and consensus
o Knowledge sharing and synergy across domain boundaries
o Integration of new content providers

Description of work and role of partners

This work package includes both the tasks related to the establishment of the working groups and the tasks related to the actual project management and coordination.

1.1 Tasks related to the establishment of the working groups

Approach
This part of the work-package will put in place the network of relationships and collaborations across national, institutional and sector boundaries, so that expertise, experience and knowledge can be applied to the identification of best practice. The project consortium has access to a wealth of expertise, embodied in the personnel of the partners, as well as their own portfolios of contacts and collaborators.

Role of Participants
Each participant is invited to take part to the activities of the working groups, but only some partners have an active role in the establishment, monitoring and animation of the working groups, as described in the allocation of resources. The overall orchestration of the working groups is the role of ICCU.

Task 1.1.1: Establishing the Working Groups

The work-package will begin by establishing national working groups in each partner country. These national working groups will consider the Linked Heritage topics and how they are addressed in a national context. Initial national deliberations will be shared with the broader network; these will be first input to international thematic working groups.

Task 1.1.2: Terms of Reference and Operating Model
Each national and thematic WG will operate under similar terms of reference, so that the outputs of the WGs are well aligned with the requirements of the Linked Heritage project. While WGs may choose to meet more or less frequently, or to vary the agenda of their meetings to suit themselves, the nature and form of the outputs from each WG will be similar, so that they can be integrated into the broader project outputs.
Only Linked Heritage consortium members can be members of the thematic WGs, except where a partner nominates an external individual to represent them.

Task 1.1.3: Working Groups Outputs
Each national WG will publish the results of its discussions in a pre-defined report format suitable for interpretation and integration by other WGs and by the wider project consortium. These results will be important inputs to the eventual Linked Heritage project deliverables.

Task 1.1.4: Technology Supports
The following technology supports will be put in place by the coordinator in order to facilitate the activities of the WGs:
- Emailing lists
- Document sharing facilities for each WG.
These supports will be integrated with the project website (www.linkedheritage.eu), which is described in more detail under the dissemination work-package.

Task 1.1.5: Future Planning
A dedicated task, led by the coordinator, will put in place the agreements and arrangements for the future of the network, after the end of the Linked Heritage project itself. The future planning task will
- define the relationship between network members after the Linked Heritage project ends,
- outline the opportunities for carrying on the network activities (e.g. virtual meetings, website and mailing list, meetings at conferences or other events, etc.)
- characterise the opportunities for large-scale collaboration in the future (e.g. new projects, further developments in Europeana and its ecosystem, greater public-private focus, etc.)
A special attention will be played to the enlargement of the network and to formalise the participation of new members through the creation of specific Cooperation Agreements.

1.2 Tasks related to the project management and coordination

Task 1.2.1 Kick-off meeting
The kickoff meeting will review the project technical annex and give every WP leader the opportunity to outline his/her plans, as well as to describe what is expected, and when, from every partner in every work-package.
A shared awareness of what is expected from each partner is an important aim for this meeting and a key ingredient of a successful project.
The kick-off meeting will also review the working group concept and ensure that all partners are clear as to the role, the value and the terms of reference of what a working group is and does.

Task 1.2.2 Plenary meetings
Plenary meetings will take place every six months (minimum); where feasible, other project events will be combined ('piggy backed') with plenary meetings.

Task 1.2.3 Progress Monitoring
Progress monitoring will use the technical annex as the baseline against which progress will be measured, supplemented by the performance indicators outlined in this proposal. A proactive approach will be taken by the project management team to ensure that all activities remain on track.

Task 1.2.4 EU Liaison
The coordinator will liaise as necessary with the EU. The degree of day to day communication is very much a choice of the project officer. However, the coordinator will be available at all times.

Task 1.2.5 Reviews

Interim and final reviews are anticipated. Preparation and delivery of these reviews falls within the remit of the project management work-package.

Task 1.2.6 Quality Assurance
Quality assurance of deliverables will be coordinated within this work-package. Every output will be reviewed by partners not directly involved in its creation, for both content and presentation. Time will be set aside for the purpose of quality assurance in the technical annex. Deliverables will be submitted for QA at least two weeks before their formal submission date. At the kick-off meeting the list of internal peer reviews will be agreed among the partners.

Person-Months per Participant

Participant number [10]	Participant short name [11]	Person-months per participant
1	ICCU	60.00
2	UNIPD	2.00
4	MCC	2.00
7	NTUA	2.00
9	CT	2.00
11	PL	10.00
17	CREF CYI	2.00
22	EDITEUR	2.00
25	KMKG	2.00
34	PROMOTER	30.00
	Total	114.00

List of deliverables

Delive-rable Number [61]	Deliverable Title	Lead benefi-ciary number	Estimated indicative person-months	Nature [62]	Dissemi-nation level [63]	Delivery date [64]
D1.1.1	Working Groups terms of Reference	1	6.00	R	PU	6
D1.1.2	Future Planning Report	1	8.00	R	PU	30
D1.2.1	First Periodic Report	1	50.00	R	RE	15
D1.2.2	Second Periodic Report	1	50.00	R	RE	30
	Total		114.00			

Description of deliverables

D1.1.1) Working Groups terms of Reference: This deliverable describes roles and functions of the working groups and their relationship with the project's WPs [month 6]

D1.1.2) Future Planning Report: This deliverable describes the plan for the sustainability of the framework of cooperation put in place with the Linked Heritage working groups. [month 30]

D1.2.1) First Periodic Report: This deliverable describes the achievements of the project during the first 15 months of activity [month 15]

D1.2.2) Second Periodic Report: This deliverable describes the achievements of the project during the second 15 months of activity [month 30]

Schedule of relevant Milestones				
Milestone number [59]	Milestone name	Lead benefi-ciary number	Delivery date from Annex I [60]	Comments
MS1	First Interim Review	1	15	this is the review called by EC
MS2	Final Review	1	30	this is the review called by EC

Project Number [1]	270905	Project Acronym [2]	Linked Heritage

Work package number [53]	WP2
Work package title	Linking Cultural Heritage Information
Start month	1
End month	24
Lead beneficiary number [55]	9

Objectives

• To explore the state of the art in linked data and its applications and potential;
• To identify the most appropriate models, processes and technologies for the deployment of cultural heritage information repositories as linked data;
• To consider how linked data practices can be applied to cultural heritage information repositories, to enrich them and to allow them to align with other linked data stores and applications;
• To explore the state of the art in persistent identifiers (both standards and management tools);
• To identify the most appropriate approach to persistent identification, e.g. a unique standard or a set of different standards;
• To design a feasibility model and to realised a demonstrator of a flexible, scalable, secure and reliable infrastructure for a network of 'linked data enabled' cultural heritage information repositories;
• To explore the state of the art in cultural metadata models, and in particular their interoperability across libraries, museums, archives, publishers, content industries, and the Europeana models (ESE and EDM);
• To outline the potential benefits that richer cultural heritage metadata could bring to Europeana, and to the other services which will use it.

Description of work and role of partners

Approach
This work package will identify and apply a set of best practices for publishing and deploying instance and class data using the RDF data model, naming the data objects using uniform resource identifiers (URIs). This will expose the data for access via the HTTP protocol, while emphasizing data interconnections, interrelationships and context useful to both humans and machine agents.
It will follow emerging linked data patterns and W3C recommendations and, align with relevant specifications and implementations in the Europeana family of projects (specifically, Europeana Connect, Assets, Europeana v1.0 / v2.0).
The partners involved here will work closely with others in the relevant thematic working group in order to increase the intellectual input to the tasks, and to increase its impact in the wider community.

Task 2.1 – Exploring cultural heritage information best practice
This task will identify and report on projects, toolkits, approaches, solutions and applications which produce and/or consume linked data. Of particular interest are emerging, de facto and established standards which have attracted populations of users. Such standards will underlie interoperability and mutual enrichment between Europeana and other services.
RDF modelling for cultural heritage data will be addressed. Additional aspects of modelling for data surfacing (e.g. multilingualism and provenance), aimed at facilitating EDM, and its interoperability with cultural heritage thematic data models will be examined.
This task will also address the deployment of cultural heritage linked data repositories (RDF data stores) with respect to available solutions and best practices. They will analyse and use Europeana specifications, for RDF modelling and storage, ensuring interoperability with the Europeana infrastructure. Particular attention will be paid to issues regarding scalability and flexibility with respect to indexing and retrieval in cultural digital libraries. The thematic working group will investigate approaches for parsing and serialising RDF syntaxes and, querying and analyzing RDF data. It will review frameworks ranging from triplestore implementations to next generation databases. The latter include NoSQL approaches (key-value stores, column stores, document stores) that

evolve towards serving mass data volumes under extreme query workload. They also allow for schema evolution and graph databases which are more suitable for RDF but have yet to perform with respect to massive scalability.

Further, this task will identify and report on metadata models, demonstration projects, technology toolkits, and systems which are in use in the content and creative industries and in the public sector. While the dominant metadata models in the various cultural sectors (museums, libraries, etc.) are well known, a particular emphasis will be placed on "interchange standards" and harvesting formats that can map effectively to several domain standards with little loss of information. The LIDO harvesting schema, developed by the ATHENA project, is a candidate but there are several others.

UNIMAR will also assess the various metadata standards options identified above and select a model (or models) and technologies which offer the best potential for Europeana. Selection criteria will include:
- The established user base;
- Adherence to standards and/or standards status in its own right;
- Demonstrated interoperability with other metadata models, including ESE;
- Demonstrated and/or potential ease of integration with the technologies selected for linked data, persistent identification, and public private partnerships);
- Maturity and quality of available technical implementation, documentation and support.
This task will form the basis of the best practice report (D2.1) authored by CT (with input from other partners).

Task 2.2 – Resource identification
This task will evaluate and address issues concerning persistent and unique identifiers (PIDs) in cultural heritage information repositories with respect to standards, management best practices and software/hardware architectures for PID assignment and management.
As regards the latter point, there will be an emphasis on scalability, security and reliability. The task will also take closely into account the work of other Europeana Group projects in order to enable interoperability and future integration.
The results of this task, authored by CT, will appear in a state of the art report (D2.2) and a management infrastructure specification (D2.5). The latter will be used to inform WP6 on the future directions to be taken by the software platform.

Task 2.3 – Technical specifications
This task will specify in detail how cultural heritage information can be enriched by, and can enrich, the wider 'linked data cloud'. The various offerings will be identified and the models, processes and technologies which offer the best potential for Europeana will be selected. Selection criteria will include:
- Established user base in the cultural heritage and humanities sectors
- Adherence to standards;
- Demonstrable interoperability with other linked data stores (including 'major actors' such as DBpedia and GeoNames);
- Demonstrated or potential ease of integration with the technologies selected in other thematic work packages (i.e. public private partnerships and terminologies);
- Maturity and quality of technical implementation, documentation and support.
Linked Heritage partner IST is already involved in a gazetteer for Europeana which will include GeoNames. Their expertise will be built upon.
The task will build upon the results concerning the Europeana Semantic Layer and specifically the vocabulary and metadata schema alignment procedures of Europeana Connect.

Task 2.4 – Enabling linked cultural heritage data
This task will demonstrate how to extend existing ingestion procedures to enable content providers to deploy their content as linked data (LD), in parallel with their contributing it to Europeana (subject to IPR constraints). Individual content providers generate content for Europeana through the contribution of annotations and links between entities.
Services will be demonstrated that:
- Enable content providers to contribute content to the LD repository and to maintain their existing LD information;
- Enhance ingestion processes with tools for:
o Browsing the LD repository and its connections to external sources;
o Creating and editing links between entities;
o Extending retrieval to include preferred sources for links and textual information.

WT3:
Work package description

Person-Months per Participant

Participant number [10]	Participant short name [11]	Person-months per participant
1	ICCU	6.00
7	NTUA	6.00
8	UP	2.00
9	CT	15.00
11	PL	1.00
12	I2CAT	3.00
13	PUM	2.00
14	SPK	2.00
19	RA	3.00
24	NSL	2.00
25	KMKG	2.00
27	IST	5.00
34	PROMOTER	2.00
36	DEDALE	2.00
	Total	53.00

List of deliverables

Deliverable Number [61]	Deliverable Title	Lead beneficiary number	Estimated indicative person-months	Nature [62]	Dissemination level [63]	Delivery date [64]
D2.1	Best practice report on cultural heritage linked data and metadata standards	9	9.00	R	PU	6
D2.2	State of the art report on persistent identifier standards and management tools	9	8.00	R	PU	9
D2.3	Specification of the technologies for large-scale implementation of cultural heritage linked data	9	24.00	D	PP	18
D2.4	Specification of a management infrastructure for persistent identifiers	9	12.00	R	PP	24
		Total	53.00			

Description of deliverables

D2.1) Best practice report on cultural heritage linked data and metadata standards: projects, toolkits, approaches, solutions and applications which produce and/or consume linked data + metadata models, demonstration projects, technology toolkits, and systems which are in use in the content and creative industries and in the public sector [month 6]

D2.2) State of the art report on persistent identifier standards and management tools: This deliverable describes the use of persistent and unique identifiers (PIDs) in cultural heritage information repositories. [month 9]

D2.3) Specification of the technologies for large-scale implementation of cultural heritage linked data: Technical Specifications and demonstrator. The demonstrator will show an example of application of the solution proposed by Linked Heritage, applies to a range of content used for the investigation on enrichment processes. [month 18]

D2.4) Specification of a management infrastructure for persistent identifiers: Technical and Organisational Specifications [month 24]

Schedule of relevant Milestones

Milestone number [59]	Milestone name	Lead benefi-ciary number	Delivery date from Annex I [60]	Comments
MS3	Linked Data Specifications and Demonstrator	9	18	Specifications and Demonstrator are available for the Linked Data solution proposed by Linked Heritage
MS4	Persistent identifiers Specifications and Demonstrator	9	24	Specifications and Demonstrator are available for the Persistent Idenitifers solution proposed by Linked Heritage

Project Number [1]	270905	Project Acronym [2]	Linked Heritage

One form per Work Package

Work package number [53]	WP3
Work package title	Terminology
Start month	1
End month	24
Lead beneficiary number [55]	25

Objectives

General objectives:
• On the side of Europeana (front office): In a short term the Europeana portal will require semantically enriched content to make the Semantic Search Engine (as prototyped in ThougtLab) of the portal more effective in its search results. For this they are in need of content descriptions that are expressed in a compliant manner and use specific terminologies designed according to the principles of the Semantic Web. The creation and completion of such terminologies on a common platform, that will facilitate this semantic exploitation of the contents' descriptions, will directly and indirectly lead to the improvement of the Europenana Semantic Search Engine and the end user experience. WP3 aims to enhance the Europeana search experience through more precise search and more relevant results. Namely it will help in front office in Europeana efforts to provide such a powerful search engine to the end user by offering means to yield semantically enriched terminologies and content to provide as input for the Europeana Digital Library.

• On the side of content providers (back office): To this day there is a rather large gap between the actual situation of terminology management in cultural institutions, and the skills and means necessary to have an effective ingestion of this data into Europeana. This is particularly true if we consider that, in a short term, content providers are expected to provide semantically enriched content. WP3 is one possible answer to reduce such a gap. The implementation of a technical platform for terminology management shall help content providers in back office to input, organize and map their in-house terminologies with a Europeana-compliant multilingual thesaurus that will be made exploitable by Europeana. Consequently it will help content providers enrich their metadata records so that they offer the maximum value to Europeana.
Specific objectives:
• To get precisely the technical needs of Europeana regarding the exploitation of semantically enriched contents by their Semantic Search Engine.
• To define precisely the generic functional needs of terminology management (organization, mapping, alignment of multilingual terms, etc.) for any kind of content provider (libraries, museums, archives, publishers and content industries)
• To explore the state of the art in terminology management (tools and methods) according to this set of needs, and to identify the benefits and lacks of these tools
• To identify the optimized combination of technologies and to specify in detail the technological solution for creating, maintaining and mapping terminologies across language and domain boundaries
• To propose in relationship with WP6 and WP7 a software prototype for testing, training, and refining of the system, keeping in mind that the platform will also make the mappings easily explored as linked data
• To outline, verify and promote together with WP7 the potential value for Europeana of the use of such an environment dedicated to content providers who want to make their descriptions better exploitable by Europeana
• To outline, verify and promote together with WP7 the potential value for content providers of the use of such an integrated software environment for terminology management in the perspective of access and retrieval of all their collections and objects on Europeana
As free outputs, WP3 will provide an in-progress new reference terminology for multiple cultural domains and an environment to create and evolve that terminology in permanent compliancy with Europeana (in at least three different languages). The Linked Heritage (set of) thesaurus will be a key output from the best practice work in this work-package. Several possible approaches are possible, including the construction of a terminology "from scratch", the use and/or adaptation of an existing (free) terminology, or simply the choice of one terminology for each specific subject matter.

The input of the DigiCult team, who are involved as sub-contractors to SPK in this work-package and who have many years of experience in this precise domain will be valuable here. Platforms like their xTree, the Europeana Metadata Registry, and DEBii (dictionary editor and browser, http://deb.fi.muni.cz/) are promising technological references in this context.

The issue of language will also be addressed in this WP - consensus is required regarding the use of a reference language/s, or simply to map similar concepts to one another, regardless of language. On the technical aspect, particular attention will be paid to lexical databases and specifically WordNet and the non-english ontologies that re-use it towards multilingualism (e.g. Russian WordNet, Italian MultiWordNet etc).

WP3 will focus mainly on controlled vocabularies concerning People, Locations and Concepts. These 3 specific themes are suitable for the cross-domain approach of the project because they are used by all and are compliant to the Europeana strategy on semantic interoperability and their creation of a network of interlinked thesauri about people, locations, and concepts as visible in the Europeana data cloud (http://semanticweb.cs.vu.nl/europeana/www/datacloud.html).

Reference thesauri such as Getty's AAT, ULAN and TGN, Rameau, and others will be looked at in detail to be able to perform vocabulary alignment of the Linked heritage thesauri (which will be open source by partner contribution) to the Europeana reference thesauri through (semi-)automated mapping. Controlled vocabularies collected for the Athena project that are free of rights and relevant terminologies listed in the framework of the EuropeanaConnect WP2 (http://europeanalabs.eu/wiki/WP2LanguageResources) would also be used in the framework of this WP.

Besides the 3 main fields, vocabularies for 2 additional fields, namely Events and Time/Periods, will be investigated to exploit what possibilities they could offer. However, the work for these additional fields will remain at the exploration phase.

Description of work and role of partners

This work-package will develop a Terminology Registry for the management and publication of metadata related to terminologies, so that they can be easily integrated into Europeana. This work-package will also develop a technical platform for terminology management.

T3.1 Terminology Registry
The Terminology Registry will follow the work done in the context of the Europeana Metadata Registry (EuMDR), which already follows the recommendations of the ISO/IEC JTC1 SC32 WG2, which develops standards for metadata and related technology , namely the ISO/IEC 11179, which is the standard that defines the concepts behind a Metadata Registry (MDR). It applies to the formulation of data representations, concepts, meanings, and relationships between them to be shared among people and machines, independently of the organization that produces the data. The Terminology Registry will also be aligned with the specifications and recommendations done in the context of the ISO/TC 37 which aims at standardizing basic principles, requirements and methods concerning the management of terminology as well as language resources and other content resources. In this context, the inputs from the IST team, who is involved in the development of the EuMDR in the context of the EuropeanaConnect project, will be valuable here.
Along with the management and publication of controlled vocabularies, the Terminology Registry will allow for terminologies encoded in different formats to be imported, namely coded in SKOS and OWL. The Terminology Registry will be designed in a simple manner so to allow for non-specialist users to define the semantic relations between different multilingual and multicultural/multicontextual terminologies.
The working group will work closely with the relevant thematic group. Several partners involved in this work-package will also be directly involved in the thematic working group. The Thematic WG shall check the relevance of what will be designed and implemented along the whole iterative process. It will eventually validate the technical solution. We will also follow W3C recommendations on SKOS and, align with relevant specifications and implementations in the multiple Europeana projects (specifically, Europeana Connect, Europeana v1.0 and v2.0)

T3.2: Identification of terminologies as used by cultural institutions and private partners
The first task of the work package will focus on identifying terminologies used by different types of cultural institutions, but also by the publishers and cultural content industries. For this we will look at already existing studies focusing on the subject of controlled vocabularies. The work already done in Athena WP4 (Integration of existing data structure into the EDL), will form a good basis for this task. Here a specific survey has been

done in order to identify all the terminologies used by European museums. The inventory has been published in the Deliverable D4.1, and offers an overview of the whole situation of terminology use, and a first set of recommendations addressed toward the European museums who intend to input their digital objects and descriptions into Europeana (to prefer the use of thesauri, to describe specialized domains, to make the terminology multilingual, to SKOSify them).

In fact this task will provide an update of good work previously done in other projects, and will synthesize the results from these different sources (e.g. Minerva and Athena surveys). Because of the fast evolution on the field and the cross-domain approach of the Linked Heritage project, a complementary survey will have to be made to get a larger overview of the terminologies used in all kinds of cultural domains (libraries, museums, archives, publishers and cultural industries).

T3.3: Identification of needs in terminology management
Needs identification from Europeana point of view
This task will anticipate on the current developments of the Europeana semantic search engine (as designed in ThoughtLab) and the day that it will be fully operative. This prospect means that in the near future Europeana will be in need of high quality semantically enriched multilingual vocabularies, and will wish and expect their partners to deliver these terminologies to them. In order to offer the content providers a relevant platform for terminology management, we need to know the precise technical needs of Europeana regarding the exploitation of semantically enriched contents by such a semantic search engine (e.g. if a specific Web ontology is expected, or if "events" have to be supported, etc.).

This task has to be executed in strong relationship with the Europeana Office and developers of ThoughtLab. The identification of these technical requirements will then enable us to better transfer these standardized controlled vocabularies to Europeana. The platform design will partly depend on these technical features, especially in the choice of the basic ontology of the system.

Needs identification from content providers point of view
This task will deal with, or better, the lack of possibilities of ingesting content provider terminologies into Europeana. When an institution intends to ingest their digital collections and object descriptions into Europeana, there is no possibility for them to contribute the terminologies that are in use for better structuring and linking these digital collections they are providing. Indeed, even if Europeana requirements are not so constraining, there is a set of criteria to respect in order to be able to deliver such information (SKOS format, multilingualism). This task of terminology management internally requires an expertise and tools that are not available in the institutions most of time. For instance, in Athena WP4, D4.1 study (Identification of terminology resources in European museums) has confirmed that a lot of European museums use an in-house non-standard terminology to describe their collections and objects. The cost implied by a reference terminology or specific needs (language, domain…) are the main reasons for this choice. This means that these museums have a strong effort to make for expressing their descriptions with a reference terminology fitting within Europeana requirements.
Peculiar skills in Knowledge Management and/or Information Engineering are necessary to have internally. Tools have to be identified, possibly acquired, and tested together to make sure that they are interoperable. Such an effort is very costly and time consuming for the museums.

This is why the third task of this work package is dedicated to the precise identification of needs in terminology management in the cultural and publishing sector. In particular, we shall study the interest of ontology for the project. As a matter of fact, alignment of multilingual terminologies as well as semantic information retrieval requires an extra linguistic representation of the term meaning, i.e. an ontology. Ontologies will be used in back office for terminology management (alignment, SKOSification, etc.) and in front office for information retrieval and knowledge mapping and browsing.

This task will design and prototype services that reinforce the user's participation in the terminology platform maintenance and expansion. Together with the thematic working group, a user-friendly system will be suggested that will enhance the collaborative process between platform management and content providers.
The possible ingestion procedures steps for the content provider might be:
1. Registration of a terminology in the platform repository
2. SKOSification of a terminology
3. Search and navigation into a network of vocabularies
4. Mapping of the terminology with a thesaurus
5. Enrichment of a thesaurus
6. Collaborative moderation of updates/modifications of the thesaurus
We will also work on a transversal step focused on ontology for terminology management (alignment, updating), information retrieval and navigation. The underlying model which is anticipated is to allow content providers to collaborate together in the creation of a collaborative thesaurus – a collection of term lists, mapped to one

another by sectoral experts and expanded over time. This thesaurus may be built on a "backbone" of an existing set (or sets) of terms, or may be built 'from scratch'.

T3.4: State of the art & gap analysis

The fourth task of the work-package will be to identify projects, toolkits, approaches, solutions and applications which allow us to create the best possible complete terminology management platform. Again the work done in the WP4 of the Athena project could form the basic example for this task. Here a benchmark is being consolidated. This shows an overview of the existing methods and tools that could already solve certain parts of the chain of terminology management. However some of these components are not freeware and do not support standards (XML, RDF or SKOS) and no complete integrated solution exists with a unique user interface and an interoperability of the possible tools to combine. Linked Heritage will build on the work done in the Athena WP4 and go more in depth but it also requires a more exhaustive best practice process to define precisely technical specifications that will precede any implementation. Tools like xTree will be specifically considered as a candidate tool for the software, and others like ThManager, VMF, AnnoCultor or Visual Thesaurus as source of inspiration about design and methods.

Thus this task will continue the work done in the WP4 of Athena, but from a more generic point of view. In respect with the technical requirements listed in the task 3.2, and with a grid of needs established in the task 3.3, this task 3.4 provides an overview of the possibilities and needs that already existing tools can cover. This task will also follow the work done in the context of the ISO/TC 37 which aims at standardizing basic principles, requirements and methods concerning the management of terminology as well as language resources and other content resources.

T3.5: Specification of the software environment

The fifth task of this work-package will specify the technical components which are concerned with terminology management. That specification will take into account the technical requirements listed in the task 3.2, and the results of the state of the art (task 3.4). It will specify both components and the environment itself, in regards with the user point of view expressed in task 3.3.

The Thematic WG will collect user feedbacks (through the working group) and proposals for improving the provided solution. It means that this task will coincide with task 3.6 "Implementation and testing of the software environment", and that a final version of the technical specifications will be delivered after the whole iterative process.

T3.6: Implementation and testing of the software environment

The sixth and final task consists of the implementation of the platform as a software integrated environment for terminology management. Thanks to the API provided by the WP6, the terminology platform will work as a sub-part of the whole Linked Heritage system. The development will respect the specifications provided by the task 3.5. It is anticipated that an open-source terminology management system will form the basis for the terminology component(s) within Linked Heritage.

As said in the task 3.5, a validation will be carried out, so the implementation process will be iterative to the specification of the software environment. It means that the platform will be regularly refined according to the refinement of the specifications. The Thematic WG will check if the collected feedbacks and proposals for improving the solution will have been respected. The final version of the platform will be the result of the whole iterative process.

Person-Months per Participant

Participant number [10]	Participant short name [11]	Person-months per participant
1	ICCU	6.00
4	MCC	4.00
8	UP	2.00
9	CT	4.00
11	PL	1.00
12	I2CAT	2.00
14	SPK	4.00

WT3:
Work package description

Person-Months per Participant

Participant number [10]	Participant short name [11]	Person-months per participant
19	RA	2.00
24	NSL	2.00
25	KMKG	9.00
27	IST	5.00
28	KIS	2.00
34	PROMOTER	2.00
35	UNIV-SAVOIE	14.00
36	DEDALE	14.00
	Total	73.00

List of deliverables

Deliverable Number [61]	Deliverable Title	Lead beneficiary number	Estimated indicative person-months	Nature [62]	Dissemination level [63]	Delivery date [64]
D3.1	Best practice report - Terminology	25	11.00	R	PU	12
D3.2	Functional and Technical specification of the terminology management system chosen	25	24.00	R	PP	18
D3.3	Terminology management & Terminology Registry	25	38.00	D	PP	24
		Total	73.00			

Description of deliverables

D3.1) Best practice report - Terminology: This deliverable describes the result of the analysis about best practices in multilingual terminologies for cultural applications [month 12]

D3.2) Functional and Technical specification of the terminology management system chosen: This deliverable consists in the functional and technical specifications of the system for tha management of multilingual terminologies [month 18]

D3.3) Terminology management & Terminology Registry: Demonstrator + Terminology Registry. The Demonstrator will show a practical case of Terminology Registry and how the Registry can be used and maintained. The Deliverable includes the cross-domain, cross-language thesaurus of Linked Heritage which will focus mainly on controlled vocabularies concerning People, Location and Concepts. [month 24]

Schedule of relevant Milestones

Milestone number [59]	Milestone name	Lead beneficiary number	Delivery date from Annex I [60]	Comments
MS5	Terminology Management and Registry	25	24	functional and technical specifications of

Schedule of relevant Milestones				
Milestone number [59]	Milestone name	Lead benefi-ciary number	Delivery date from Annex I [60]	Comments
				the System for the terminology managemen are released; the demonstrator is ready to be used; the first edition of the terminology registry is completed

Project Number [1]	270905	Project Acronym [2]	Linked Heritage

Work package number [53]	WP4
Work package title	Public Private Partnership
Start month	1
End month	24
Lead beneficiary number [55]	22

Objectives

• To explore the state of the art in the management of metadata in the private sector, particularly in terms of
o Metadata models and sharing/unification of metadata stores, for books, photos, audio/video, tc.
o Rights frameworks and sharing/publishing of metadata, thumbnails, samples, etc.
o Recent and/or important rights agreements
o Persistent identifiers, with the scope of harmonising the solutions in the private and public sectors
o Controlled vocabularies
• To outline the benefit to Europeana of interoperability (technical, legal, semantic) with the private sector, and to outline new services and facilities that could be enabled by the integration of private sector content.
• To identify the most appropriate and useful technologies and facilities to allow the contribution of private sector metadata to Europeana. This may include, for example, gateways for the transformation of metadata standards, harmonised rights agreements based on adjustments to the existing Europeana content provider and aggregator agreements, etc.
• To outline the process whereby these technologies and facilities can be established and used to enable the contribution of private sector material into Europeana.
• To specify in detail the technology required to validate this model and process

Description of work and role of partners

This work-package will work closely with the relevant thematic WG. Several partners involved in this work-package will also be directly involved in the working group.

T4.1 Private Sector Business Exploration: The first task of the work-package will be to identify metadata models, rights models, aggregation and integration agreements, standards and specifications which are in use in the private sector. Initially, "the private sector" will refer to (book and audiobook) publishers, photographic archives and audio/visual archives. This exploration will of course include the private sector partners as well as leading library, museum and archive partners, to establish a common understanding of these standards and specifications. Of particular interest will be projects and agreements that involve both the public and private sectors.

T4.2 Contribution Specification: The second task will be to specify in detail how Europeana content can be contributed by the private sector. This task will focus not on technology but on the legal agreements needed to make this a reality.

T4.3 Metadata model selection: The third task will be to assess the various knowledge resources identified above (T4.1) and to select the metadata model which offers the best potential for sizeable contributions to Europeana by the private sector. Selection criteria will include
- Established user base
- Adherence to standards and/or standards status in its own right
- Demonstrated interoperability with other metadata models, including those familiar to the public sector
- Demonstrated and/or potential ease of integration with the technologies selected in other thematic work-packages (i.e. Linked Data, PID, selected metadata models)
- Maturity and quality of available technical implementation, documentation and support.

T4.4 Technical Specification: The fourth task of this work-package will be to specify the technical components of the large scale implementation (validation) platform (see WP5) which are concerned with ingestion of private sector content into Europeana, including
- The metadata models used
- Mapping these metadata models to ESE/EDM (possibly using an interim metadata model such as LIDO)
- Investigation of potential for new services which combine public and private priorities

It may be noted that the differences between the underlying missions of the public sector (to enhance the quality of life of the citizen) and the private sector (to make a profit) mean that new services which address the objectives of both sectors are relatively few at this stage. However, innovative and imaginative services are emerging, and this is an area where the Linked Heritage project can add extra value to the Europeana ecosystem.

Person-Months per Participant

Participant number [10]	Participant short name [11]	Person-months per participant
1	ICCU	12.00
11	PL	1.00
20	MEDRA	8.00
21	LUH	2.00
22	EDITEUR	24.00
23	MVB	6.00
24	NSL	2.00
34	PROMOTER	2.00
	Total	57.00

List of deliverables

Delive-rable Number [61]	Deliverable Title	Lead benefi-ciary number	Estimated indicative person-months	Nature [62]	Dissemi-nation level [63]	Delivery date [64]
D4.1	Best practice report – Public Private Partnership	22	12.00	R	PU	12
D4.2	Specification of the technologies chosen	22	31.00	R	PU	18
D4.3	Specification of legal/licensing environment	22	14.00	R	PU	24
		Total	57.00			

Description of deliverables

D4.1) Best practice report – Public Private Partnership: This deliverable describes the examples of best practice identified in the area of the partnership between private and public sector in the cultural domain [month 12]

D4.2) Specification of the technologies chosen: This deliverable describes the Public Private Partnership and metadata models which facilitate private sector interaction with Europeana [month 18]

D4.3) Specification of legal/licensing environment: This deliverable provides the specification of legal/licensing environment by which Europeana metadata can be contributed by the private sector (publishers) [month 24]

	Schedule of relevant Milestones			
Milestone number [59]	Milestone name	Lead benefi-ciary number	Delivery date from Annex I [60]	Comments
MS6	Specifications for the contribution of the private publishing sector to Europeana	22	24	this milestone covers metadata models and legal/licensing environment

WT3:
Work package description

Project Number [1]	270905	Project Acronym [2]	Linked Heritage

Work package number [53]	WP5	
Work package title	Technical Integration	
Start month		1
End month		30
Lead beneficiary number [55]		7

Objectives

• To integrate the technical components necessary for the ingestion of content into Europeana (ESE/EDM compliant)
• To publish interfaces for the integration of the technical results of WP3 within the same user environment (validation)
• To make this platform available online for validation and for the large-scale contribution of content to Europeana (in WP6) and for dissemination & training (WP7).
• To involve user representatives from within the consortium in the design and delivery of the system, to ensure that it meets their needs and is user-friendly, reliable and scalable.
• To verify that the technology platform can be integrated with minimum effort into the Europeana core codebase and/or used by Europeana as a suite of external web services

Description of work and role of partners

The specifications of WP3 will be implemented in WP3 itself and subsequently integrated to the platform developed by WP5.
The specifications of WP4 will be compliant with those of WP5, except the mapping rules.
The technology team (led by NTUA, which has as great deal of experience in the application of web and semantic web technologies to achieve cultural heritage objectives) will integrate all the necessary components into a common technology platform, starting from the basis of the ATHENA ingester.
The spefications produced by WP2 (demonstrated in WP2) will be taken into account for the evolution of the software platform.
A service-oriented model will be utilised, so that each component works relatively autonomously, and is accessed via a well defined interface. This "API with a user interface" model is deliberately similar to that of Europeana, so that future integration of Linked Heritage technologies into Europeana is as simple as possible. Wherever feasible, other components of the Europeana technology environment will also be used in preference to other technical approaches.
An iterative development methodology is planned, whereby the Content Coordination work-package (WP6) collects user feedback and this is fed back into this work-package, driving refinements and improvements in terms of functionality, services and user interface. A core objective of Linked Heritage is to facilitate and support tier-one countries and any organisation which has experienced difficulty contributing to Europeana; this co-design feedback "loop" is essential for this purpose.

Task 5.1 Validation environment: the user interface for validation will be provided via the project website. The validation environment will enable the user to
- Provide metadata records in a range of "source" formats
- Convert metadata to the Linked Heritage metadata format
- Map local terminologies to the Europeana reference terminology (from WP3)
- Submit the records to Europeana via the Linked Heritage gateway
The validation environment will provide a user interface, designed for simple localisation, and made available in English, German, French, Italian and Greek.

Task 5.2 Terminology management system: the system for uploading and mapping local terminologies to the Linked Heritage reference terminology, developed by WP3 and integrated into the platform developed by WP5, will be available online.

Task 5.3 Gateway: the technology platform will include a gateway for the submission of content for ingestion to Europeana. This gateway will be integrated within this task and be based on the proven technology developed by the ATHENA project.

Person-Months per Participant

Participant number [10]	Participant short name [11]	Person-months per participant
7	NTUA	30.00
22	EDITEUR	2.00
23	MVB	2.00
27	IST	2.00
35	UNIV-SAVOIE	2.00
	Total	38.00

List of deliverables

Delive-rable Number [61]	Deliverable Title	Lead benefi-ciary number	Estimated indicative person-months	Nature [62]	Dissemi-nation level [63]	Delivery date [64]
D5.1	Linked Heritage Technology Platform	7	22.00	P	PU	12
D5.2	Documented APIs	7	6.00	R	PU	18
D5.3	Metadata gateway	7	10.00	P	PU	12
	Total		38.00			

Description of deliverables

D5.1) Linked Heritage Technology Platform: This is the platform for the ingestion of content into Europeana [month 12]

D5.2) Documented APIs: APIs for the integration of the Linked heritage software results with the Europeana system [month 18]

D5.3) Metadata gateway: This is the user interface to be used by content providers for the ingestion [month 12]

Schedule of relevant Milestones

Milestone number [59]	Milestone name	Lead benefi-ciary number	Delivery date from Annex I [60]	Comments
MS7	Ingester ready for delivery of content to Europeana	7	12	this is the starting point for the beginning of mapping and delivery of metadara records to Europeana

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WT3:
Work package description

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Project Number [1]	270905	Project Acronym [2]	Linked Heritage

Work package number [53]	WP6	
Work package title	Coordination of Content	
Start month	6	
End month	30	
Lead beneficiary number [55]	17	

Objectives

• To gather feedback for the refinement and improvement of the environment and the system as a whole, in order to support tier-one countries and others who have not yet contributed large amounts of content to Europeana
• To provide support to the content providers for the mapping of their metadata formats to the Linked Heritage format
• To contribute large amounts of enhanced content to Europeana, including private sector content

Description of work and role of partners

Task 6.1: Content delivery to Europeana
The content providers and aggregators in the Linked Heritage consortium will use the validation environment delivered by WP5 to process large amounts of metadata content. This content is outlined in more detail in section B.2.1.b of the DoW. The content will then be contributed for ingestion into Europeana via the Linked Heritage-Europeana gateway. The following services will be available for validation:
- Transformation of source metadata to the Linked Heritage intermediate model and then into ESE (and EDM, as and when it emerges)
- Translation of ONIX (and other private sector metadata information) to the Linked Heritage intermediate model and thus into ESE/EDM

Task 6.2 Feedback
Feedback will be collected from the users in order to gain input into refinements to the system. Particular care will be taken to gather detailed feedback from those who have difficulty using the service, and/or contributing content to Europeana, and from contributors from tier-one countries. The task will start with the publication of the shared methodology to be used by each content provider/user to provide their feedback.

Two WP Leaders are associated to this WP (Cyprus Institute and ICCU) in order to enhance the coordination of the work of the wide number of content providers.

Person-Months per Participant

Participant number [10]	Participant short name [11]	Person-months per participant
1	ICCU	22.00
2	UNIPD	6.00
3	CNR	10.00
4	MCC	5.00
5	EVK	8.00
6	HMC	6.00
7	NTUA	11.00

	Person-Months per Participant	
Participant number [10]	Participant short name [11]	Person-months per participant
8	UP	8.00
10	CL	6.00
11	PL	1.00
12	I2CAT	9.00
13	PUM	10.00
14	SPK	8.00
15	CL-BAS	6.00
16	IPCHS	4.00
17	CREF CYI	12.00
18	ICIMSS	8.00
19	RA	12.00
21	LUH	3.00
22	EDITEUR	5.00
23	MVB	2.00
24	NSL	12.00
25	KMKG	6.00
26	IDU	4.00
28	KIS	12.00
29	PACKED	6.00
31	UNIROMA1	8.00
32	CTFR	6.00
33	DCyMC_DGPC	4.00
34	PROMOTER	2.00
35	UNIV-SAVOIE	2.00
36	DEDALE	2.00
37	UMA	6.00
38	DH	6.00
	Total	238.00

	List of deliverables					
Delive-rable Number [61]	Deliverable Title	Lead benefi-ciary number	Estimated indicative person-months	Nature [62]	Dissemi-nation level [63]	Delivery date [64]
D6.1	Validation Report	17	82.00	R	RE	12

WT3:
Work package description

List of deliverables

Delive-rable Number [61]	Deliverable Title	Lead benefi-ciary number	Estimated indicative person-months	Nature [62]	Dissemi-nation level [63]	Delivery date [64]
D6.2	Report on contributions to Europeana	1	156.00	R	RE	12
	Total		238.00			

Description of deliverables

D6.1) Validation Report: This deliverable concerns the results of the ingestion process (bugs, difficulties, problems faced by the content providers); it will be issues starting from month 12, and periodically updated every 3 months. A total of 6 updates of the report are foreseen. [month 12]

D6.2) Report on contributions to Europeana: This deliverable concerns the progress of the ingestion of new content into Europeana; it will be issues starting from month 12, and periodically updates every 3 months. This report will summarize all the work done by all the content providers and by the people workng on the coordination to ingest 3 million new content into Europeana. A total of 6 updates of the report are foreseen. [month 12]

Schedule of relevant Milestones

Milestone number [59]	Milestone name	Lead benefi-ciary number	Delivery date from Annex I [60]	Comments
MS8	First lot of 500,000 content successfully delivered to Europeana	1	18	the achivement of this milestone is very important for the success of the project
MS9	3 million content delivered to Europeana	1	30	

WT3:
Work package description

Project Number [1]	270905	Project Acronym [2]	Linked Heritage

Work package number [53]	WP7	
Work package title	Dissemination & Training	
Start month	1	
End month	30	
Lead beneficiary number [55]	2	

Objectives

• To stimulate the contribution of content to Europeana by raising awareness of the tools, facilities and best practice provided by Linked Heritage
• To increase the size of the best practice network by attracting new members
• To build stronger links between the public and private sectors
• To raise awareness across the Europeana ecosystem of the Linked Heritage work, and to encourage Europeana itself, content provider and aggregators to take full advantage of the work of the project.
• To build technical capacity in the cultural heritage sector, especially in terms of Europeana and Linked Heritage technologies
• To create, deliver and publish training materials; the training material will focus on facilitating the preparation of content for ingestion into Europeana.

Description of work and role of partners

Task 7.1 Dissemination
The dissemination target audiences, communications channels, events and strategies are described in some detail in section B.3.6 "Dissemination/Use of results" of the DoW. In summary:
- Linked Heritage will specifically target Europeana, EuropeanaLabs, the Council of Content Providers and Aggregators, through established links, co-membership of the Content Council and the Linked Heritage consortium and presentations and promotions at events where Europeana will be present and active.
- Linked Heritage will address sister projects and other content providers through concertation, seminars, publications, guidelines and handbooks, etc. The issues addressed by Linked Heritage are of real interest to this audience, because of their importance in the future development of online cultural content.
- Policy groups and government agencies continue to have enormous influence through their ownership or funding of many memory institutions, and their coordinating role at national and regional levels. Several such bodies are members of the Linked Heritage consortium, and will target their peers.
- The private sector will be targeted using Linked Heritage partners as "reference sites" which demonstrate the new services and opportunities and the added value which engagement with Europeana, with Linked Heritage and with the public sector can bring.
- Linked Heritage will specifically target those elements of the cultural sector which are "non-heritage" (not libraries, museums or archives), such as arts centres, cultural tourism locations, etc. Partner Dedale has a strong network of contacts in this area, which will be exploited in order to identify and encourage the involvement of this important sub-sector into Europeana. Partner Promoter will be responsible for the coordination of the production of "Uncommon Culture" Journal.
In summary, the following activities will be carried out:
- Website creation and maintenance
- Seminars and presentations
- 3 international conferences
- Academic publications and conferences
- Meetings with Europeana and EuropeanaLabs
- Encounters with the private sector

Task 7.2 Training

Linked Heritage will offer a comprehensive training syllabus to content providers and aggregators, both those who are using Linked Heritage technologies and those who are having difficulties with contributing content to Europeana. As can be seen from the large number of "tier one" countries, considerable difficulty is being experienced in many countries, where content contribution is concerned. The Linked Heritage intermediate metadata model will certainly simplify the mapping of complex source metadata models to ESE/EDM, but familiarisation and support will also be very valuable and will facilitate the contribution of content to Europeana. While the syllabus has not been defined in any detail, it will include the following :
- Overview of Europeana (the content for this training will be prepared by ICCU)
- Roles and activities of Europeana, Europeana Labs, aggregators and content providers, sister projects and Linked Heritage (the content for this training will be prepared by ICCU)
- ESE and EDM
- Strategy and procedures for preparation of metadata for submission to Europeana, with field mappings, etc.
- Intermediate metadata models – what, why and how? (the content for this training will be prepared by UNIMAR)
- Persistent IDs – what, why and how? (the content for this training will be prepared by CT)
- Linked open data – what, why and how? (the content for this training will be prepared by CT)
- Terminologies – mapping your own terminology to the Linked Heritage specification (the content for this training will be prepared by KMKG, in cooperation with the other WP3 partners)
- Familiarisation with validation environment, tools and services (the content for this training will be prepared by NTUA).
Training will be available as a series of autonomous modules, so that individuals can attend (or download) only those topics which are of particular interest. All training materials will be available for free download from the project website. Video recordings of training events will also be available for download.
All the realized learning objects will be hosted in, and accessed through University of Padua PHAIDRA (Permanent Hosting and Archiving of Digital Assets and Resources) platform which is Europeana compliant.
In addition users will be able to perform training sessions also through a Virtual Learning Environment developed ad hoc for this project by means of open source tools (i.e. Moodle, Sakai).
The production of learning material will take advantage of the latest technology (i.e. Flash for video recording) in order to smooth the process of learning. Another development which will be considered by the project team is subsequent interoperation via the Basic Learning Tools Interoperability (Basic LTI) framework.
For those who prefer face-to-face training, one training workshop will be offered at M24 of the project. This will be aimed particularly at content providers and aggregators who require support with Europeana and/or with the Linked Heritage technologies and validation environment. The workshop will follow a practical approach, related to the main objectives of the project (i.e. the ingestion of content into Europeana) and will not have a pure theoretical nor investigative scope.

Person-Months per Participant

Participant number [10]	Participant short name [11]	Person-months per participant
1	ICCU	12.00
2	UNIPD	10.00
4	MCC	1.00
5	EVK	4.00
6	HMC	2.00
7	NTUA	6.00
8	UP	2.00
9	CT	6.00
10	CL	3.00
11	PL	4.00
12	I2CAT	6.00
13	PUM	2.00

Person-Months per Participant

Participant number [10]	Participant short name [11]	Person-months per participant
14	SPK	2.00
15	CL-BAS	2.00
16	IPCHS	2.00
17	CREF CYI	1.00
19	RA	3.00
20	MEDRA	2.00
21	LUH	2.00
22	EDITEUR	2.00
23	MVB	2.00
24	NSL	6.00
25	KMKG	1.00
26	IDU	2.00
28	KIS	10.00
30	CORDIA	6.00
31	UNIROMA1	2.00
33	DCyMC_DGPC	2.00
34	PROMOTER	6.00
36	DEDALE	4.00
37	UMA	1.00
	Total	116.00

List of deliverables

Deliverable Number [61]	Deliverable Title	Lead beneficiary number	Estimated indicative person-months	Nature [62]	Dissemination level [63]	Delivery date [64]
D7.1	Project public website	1	12.00	P	PU	2
D7.2	Dissemination materials	1	10.00	R	PU	6
D7.3	Training materials	2	56.00	R	PU	24
D7.4	Virtual Learning Environment	2	20.00	P	PU	24
D7.5	Dissemination Plan	1	12.00	R	PU	12
D7.6	Final Dissemination Plan/Use of project results	1	6.00	R	PU	30
		Total	116.00			

Description of deliverables

D7.1) Project public website: The project website will be online starting from month 2 and then continuously updated along the whole project period. [month 2]

D7.2) Dissemination materials: The first set of dissemination material will be delivered at month 6 and then, along the project, new additional material will be produced and dissemination as long as new results are achieved. Dissemination material includes the two publications. [month 6]

D7.3) Training materials: The training material will be gathered and systematised by the WP leader, starting from the contribution to be produced by the other partners. [month 24]

D7.4) Virtual Learning Environment: The Virtual Learning Environment will be realised by the WP leader using an online open source CMS [month 24]

D7.5) Dissemination Plan: The first edition of the Dissemination Plan at month 12 will be targeted to the dissemination activities to be carried out along the project. [month 12]

D7.6) Final Dissemination Plan/Use of project results: The final edition of the Dissemination Plan at month 24 will present the results of the dissemination done in the project and will present the plan for the use of the project results beyond the funding period. This deliverable includes also the report of the activities carried out by the 'associate partners' along the project. [month 30]

Schedule of relevant Milestones

Milestone number [59]	Milestone name	Lead benefi-ciary number	Delivery date from Annex I [60]	Comments
MS10	Basic Dissemination Plan	1	12	after some initial dissemination material, more in depth information will be produced during the second year of the project
MS11	Training available	2	24	Both training material and virtual learning environment
MS12	Final Dissemination Plan	1	30	

Project Number [1]	270905	Project Acronym [2]	Linked Heritage

List and Schedule of Milestones					
Milestone number [59]	Milestone name	WP number [53]	Lead benefi-ciary number	Delivery date from Annex I [60]	Comments
MS1	First Interim Review	WP1	1	15	this is the review called by EC
MS2	Final Review	WP1	1	30	this is the review called by EC
MS3	Linked Data Specifications and Demonstrator	WP2	9	18	Specifications and Demonstrator are available for the Linked Data solution proposed by Linked Heritage
MS4	Persistent identifiers Specifications and Demonstrator	WP2	9	24	Specifications and Demonstrator are available for the Persistent Idenitifers solution proposed by Linked Heritage
MS5	Terminology Management and Registry	WP3	25	24	functional and technical specifications of the System for the terminology managemen are released; the demonstrator is ready to be used; the first edition of the terminology registry is completed
MS6	Specifications for the contribution of the private publishing sector to Europeana	WP4	22	24	this milestone covers metadata models and legal/licensing environment
MS7	Ingester ready for delivery of content to Europeana	WP5	7	12	this is the starting point for the beginning of mapping and delivery of metadara records to Europeana
MS8	First lot of 500,000 content successfully delivered to Europeana	WP6	1	18	the achivement of this milestone is very important for the success of the project
MS9	3 million content delivered to Europeana	WP6	1	30	
MS10	Basic Dissemination Plan	WP7	1	12	after some initial dissemination material, more in depth information will be produced during the second year of the project

Milestone number [59]	Milestone name	WP number [53]	Lead beneficiary number	Delivery date from Annex I [60]	Comments
MS11	Training available	WP7	2	24	Both training material and virtual learning environment
MS12	Final Dissemination Plan	WP7	1	30	

WT5:
Tentative schedule of Project Reviews

Project Number [1]	270905	Project Acronym [2]	Linked Heritage

Tentative schedule of Project Reviews			
Review number [65]	Tentative timing	Planned venue of review	Comments, if any
RV 1	15	Rome	at the end of the first year two major steps should have been achived: the ingester is ready for validation; the dissemination campaing has started; the first lot of new content should have been delivered to Europeana.
RV 2	30	Rome	this is the final review of the project.

WT6:
Project Effort by Beneficiary and Work Package

Project Number [1]	270905	Project Acronym [2]	Linked Heritage

Indicative efforts (man-months) per Beneficiary per Work Package

Beneficiary number and short-name	WP 1	WP 2	WP 3	WP 4	WP 5	WP 6	WP 7	Total per Beneficiary
1 - ICCU	60.00	6.00	6.00	12.00	0.00	22.00	12.00	118.00
2 - UNIPD	2.00	0.00	0.00	0.00	0.00	6.00	10.00	18.00
3 - CNR	0.00	0.00	0.00	0.00	0.00	10.00	0.00	10.00
4 - MCC	2.00	0.00	4.00	0.00	0.00	5.00	1.00	12.00
5 - EVK	0.00	0.00	0.00	0.00	0.00	8.00	4.00	12.00
6 - HMC	0.00	0.00	0.00	0.00	0.00	6.00	2.00	8.00
7 - NTUA	2.00	6.00	0.00	0.00	30.00	11.00	6.00	55.00
8 - UP	0.00	2.00	2.00	0.00	0.00	8.00	2.00	14.00
9 - CT	2.00	15.00	4.00	0.00	0.00	0.00	6.00	27.00
10 - CL	0.00	0.00	0.00	0.00	0.00	6.00	3.00	9.00
11 - PL	10.00	1.00	1.00	1.00	0.00	1.00	4.00	18.00
12 - I2CAT	0.00	3.00	2.00	0.00	0.00	9.00	6.00	20.00
13 - PUM	0.00	2.00	0.00	0.00	0.00	10.00	2.00	14.00
14 - SPK	0.00	2.00	4.00	0.00	0.00	8.00	2.00	16.00
15 - CL-BAS	0.00	0.00	0.00	0.00	0.00	6.00	2.00	8.00
16 - IPCHS	0.00	0.00	0.00	0.00	0.00	4.00	2.00	6.00
17 - CREF CYI	2.00	0.00	0.00	0.00	0.00	12.00	1.00	15.00
18 - ICIMSS	0.00	0.00	0.00	0.00	0.00	8.00	0.00	8.00
19 - RA	0.00	3.00	2.00	0.00	0.00	12.00	3.00	20.00
20 - MEDRA	0.00	0.00	0.00	8.00	0.00	0.00	2.00	10.00
21 - LUH	0.00	0.00	0.00	2.00	0.00	3.00	2.00	7.00
22 - EDITEUR	2.00	0.00	0.00	24.00	2.00	5.00	2.00	35.00

WT6:
Project Effort by Beneficiary and Work Package

Beneficiary number and short-name	WP 1	WP 2	WP 3	WP 4	WP 5	WP 6	WP 7	Total per Beneficiary
23 - MVB	0.00	0.00	0.00	6.00	2.00	2.00	2.00	12.00
24 - NSL	0.00	2.00	2.00	2.00	0.00	12.00	6.00	24.00
25 - KMKG	2.00	2.00	9.00	0.00	0.00	6.00	1.00	20.00
26 - IDU	0.00	0.00	0.00	0.00	0.00	4.00	2.00	6.00
27 - IST	0.00	5.00	5.00	0.00	2.00	0.00	0.00	12.00
28 - KIS	0.00	0.00	2.00	0.00	0.00	12.00	10.00	24.00
29 - PACKED	0.00	0.00	0.00	0.00	0.00	6.00	0.00	6.00
30 - CORDIA	0.00	0.00	0.00	0.00	0.00	0.00	6.00	6.00
31 - UNIROMA1	0.00	0.00	0.00	0.00	0.00	8.00	2.00	10.00
32 - CTFR	0.00	0.00	0.00	0.00	0.00	6.00	0.00	6.00
33 - DCyMC_DGPC	0.00	0.00	0.00	0.00	0.00	4.00	2.00	6.00
34 - PROMOTER	30.00	2.00	2.00	2.00	0.00	2.00	6.00	44.00
35 - UNIV-SAVOIE	0.00	0.00	14.00	0.00	2.00	2.00	0.00	18.00
36 - DEDALE	0.00	2.00	14.00	0.00	0.00	2.00	4.00	22.00
37 - UMA	0.00	0.00	0.00	0.00	0.00	6.00	1.00	7.00
38 - DH	0.00	0.00	0.00	0.00	0.00	6.00	0.00	6.00
Total	114.00	53.00	73.00	57.00	38.00	238.00	116.00	689.00

1. Project number

The project number has been assigned by the Commission as the unique identifier for your project. It cannot be changed. The project number **should appear on each page of the grant agreement preparation documents (part A and part B)** to prevent errors during its handling.

2. Project acronym

Use the project acronym as given in the submitted proposal. It cannot be changed unless agreed so during the negotiations. The same acronym **should appear on each page of the grant agreement preparation documents (part A and part B)** to prevent errors during its handling.

53. Work Package number

Work package number: WP1, WP2, WP3, ..., WPn

55. Lead beneficiary number

Number of the beneficiary leading the work in this work package.

56. Person-months per work package

The total number of person-months allocated to each work package.

57. Start month

Relative start date for the work in the specific work packages, month 1 marking the start date of the project, and all other start dates being relative to this start date.

58. End month

Relative end date, month 1 marking the start date of the project, and all end dates being relative to this start date.

59. Milestone number

Milestone number:MS1, MS2, …, MSn

60. Delivery date for Milestone

Month in which the milestone will be achieved. Month 1 marking the start date of the project, and all delivery dates being relative to this start date.

61. Deliverable number

Deliverable numbers in order of delivery dates: D1 – Dn

62. Nature

Please indicate the nature of the deliverable using one of the following codes

R = Report, **P** = Prototype, **D** = Demonstrator, **O** = Other

63. Dissemination level

Please indicate the dissemination level using one of the following codes:

• **PU =** Public

• **PP =** Restricted to other programme participants (including the Commission Services)

• **RE =** Restricted to a group specified by the consortium (including the Commission Services)

• **CO =** Confidential, only for members of the consortium (including the Commission Services)

• **Restreint UE =** Classified with the classification level "Restreint UE" according to Commission Decision 2001/844 and amendments

• **Confidentiel UE =** Classified with the mention of the classification level "Confidentiel UE" according to Commission Decision 2001/844 and amendments

• **Secret UE =** Classified with the mention of the classification level "Secret UE" according to Commission Decision 2001/844 and amendments

64. Delivery date for Deliverable

Month in which the deliverables will be available. Month 1 marking the start date of the project, and all delivery dates being relative to this start date

65. Review number

Review number: RV1, RV2, ..., RVn

66. Tentative timing of reviews

Month after which the review will take place. Month 1 marking the start date of the project, and all delivery dates being relative to this start date.

67. Person-months per Deliverable

The total number of person-month allocated to each deliverable.

Proposal acronym: Linked Heritage

Proposal full title:

Metadata, Standards, Persistent Identification and Linked Data System for digital cultural heritage in Europe

PART B

Table of Contents of part B

Project Profile

Information on the Best Practice Network

Objectives

The main objective of Linked Heritage is to contribute large quantity of new content to Europeana, from both the public and private sectors

Complementary to this priority objective, Linked heritage will work on a demonstrator that will show how:

- To enhance the quality of Europeana content, in terms of its metadata richness, its re-use potential and its uniqueness
- To enable improved search, retrieval and use of Europeana content.

By directly addressing key issues for Europeana and its ecosystem of projects, content providers and aggregators, Linked Heritage will facilitate and deliver 3 million new items to Europeana.

Activities and Outcomes

Activities:
- Working groups dedicated to specific problem domains (persistent unique identifiers, linked data, terminologies and thesauri, private sector content).
- Broad international consensus building, involving ministries and policy makers, memory institutions, research centres & expert (academic and SME), Europeana content providers and aggregators.
- Large-scale implementation for validation of the best practice results; this implementation will also lead to 3 millions of new items being contributed to Europeana.
- Dissemination and training, to build awareness, skills and capacity, bridging technology and humanities.
- Collaboration with Europeana and other ecosystem projects, from day one, in order to avoid overlap, to identify synergies and to maximise the impact of the ICT PSP programme.

Outcomes
- 3 Millions of new and enhanced items listed in Europeana.
- A better informed and upskilled cultural heritage community
- Documented, agreed and published guidelines and handbooks addressing key issues and obstacles for Europeana ecosystem members
- Valuable new software tools, all released as open source.

Consortium

The consortium includes representatives of all the key stakeholder groups in the Europeana ecosystem (the Europeana foundation will be involved as subcontractors). This includes several ministries and responsible government agencies, many content providers and aggregators, several partners in related ecosystem projects (e.g. Europeana Connect, ATHENA, Arrow, etc.) and a number of leading research institutes. Because a key objective of the BPN is to use consensus to identify best practice which serves the needs of all the entities involved in the Europeana ecosystem, the consortium includes all these actors. In addition, it also includes organisations which have not in the past contributed to Europeana, but who are doing so for the first time through Linked Heritage.

Twenty EU countries are represented, together with Israel and Russia as external contributors.

Impact

The principal impact is on the provision of a large quantity of new content to Europeana.

Complementary to this, the project directly addresses the problems associated with

- Broken links and duplicate metadata records
- Semantic linking of resources
- Non-standard descriptive terminologies
- The lack of private sector and 20th Century content in Europeana
- The preservation of complex metadata models within the Europeana metadata schema.

In the process, it aims to

- Establish (through broad consensus) best practice in several key areas
- Disseminate the results of the project through existing networks of contacts and trust across Europe
- Develop knowledge, guidelines, handbooks, toolkits and other software assets to facilitate the contribution of new content to Europeana
- Enhance interoperability between the content management systems of content providers and those of Europeana

B1. Project Description and Objectives

B1.1. Project objectives

Linked Heritage is a Best Practice Network (BPN), with the following complementary points of focus:

- To contribute large quantities of new content to Europeana, from both the public and private sectors (this is the most important focus of the project)
- To prepare for the enhancement of the quality of both new and existing Europeana content, in terms of its metadata richness, its re-use potential and its uniqueness
- To demonstrate improved search, retrieval and use of Europeana content, both within the Europeana portal and by third parties via the Europeana API.

This will be achieved through

- Assembly of representative stakeholder groups (content providers, aggregators, ministries and policy bodies, technologists, private sector companies, associations, etc.)
- Consultation, consensus, networking, sharing of perspectives and priorities
- Identification and promotion of best practice - the most appropriate and useful standards, specifications and recommendations for the contribution, ingestion and enhancement of Europeana content
- Large scale implementation (including the necessary technology integration in compliance with the Europeana standards) and validations of the identified best practice standards and specifications. These will serve to provide to Europeana 3 millions new objects
- The preparation of a demonstrator how the improved specifications are to be applied and how to implement the enrichment of Europeana content.
- Training and dissemination to build capacity and awareness in the cultural heritage sector, particularly in the use of Linked Heritage technical outputs, but also in Europeana technologies.

With regard to the training, this activity is only foreseen to facilitate the preparation of content for ingestion into Europeana and not as theoretical tasks or investigative workshops.

In addition to the provision of the new content to Europeana, that is the most important focus of the project, Linked Heritage addresses the following issues complementarily:

1. The use of linked data to support more expressive semantic processing within Europeana, as well as making Europeana information available to third parties[1].
2. Persistent identifiers and their use for preventing duplicate records and broken links

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[1] Potential re-use of Europeana information, as linked data and otherwise, will be subject to the agreements between the content contributors (content providers and aggregators) and Europeana.

3. Metadata and standards to improve the richness of content and the alignment with the Europeana data models (particularly from non-library sources)
4. Multilingual and cross-domain combination of terminologies to improve semantic-wb-based-access and retrieval of cultural objects within Europeana.
5. Engagement with the private sector (especially publishers) and remediation of their metadata via Europeana.

For each issue, a **working group** of international experts will lead a broad awareness, consensus and networking campaign to identify **best practice** and appropriate technology solutions.
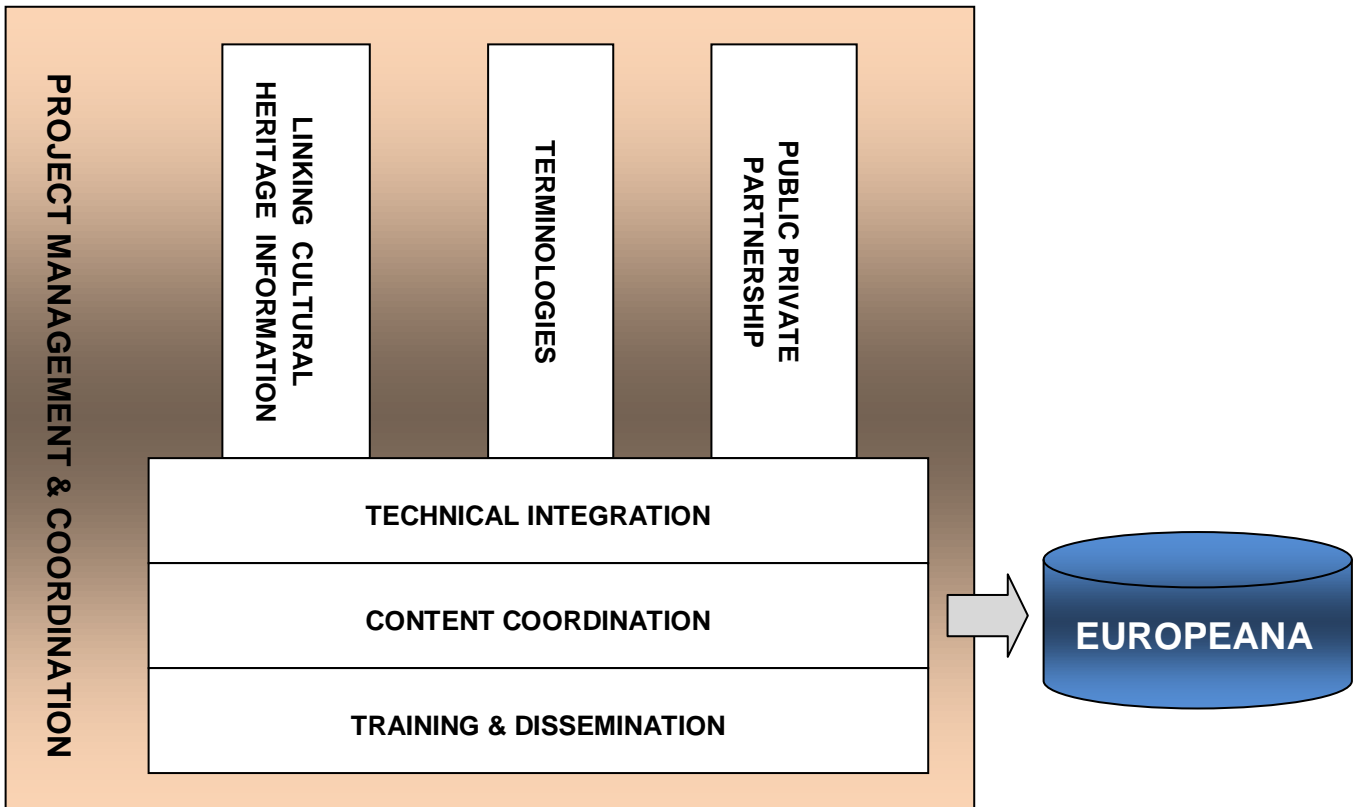
Figure 1 – Project Structure

The Linked Heritage project addresses these specific issues within the context of the broader Europeana "ecosystem" and provides a demonstrator of the enrichment features. The impact and value of the project is expected to be felt across the Europeana initiative, in both current and future releases of its technical infrastructure and in the broader community of aggregators, content providers and collaborative ('sister') projects.

Linked Heritage is not the only project which is, or will be, addressing these questions – this reflects how important these issues are for Europeana. However, Linked Heritage is focusing on those areas where no clear and agreed solution has been identified. By developing broad consensus, and by building on the work of other projects within the ecosystem, Linked Heritage will identify and validate solutions that will enjoy maximum endorsement and "take-up" across the ecosystem and across the European cultural heritage community.

B1.2 Contribution to the European Digital Library Initiative

The Linked Heritage project will make an important contribution to Europeana on two directions:

I.   by delivering 3 million new content to Europeana
II. by addressing five key areas, each of which represents an opportunity for enhancement of Europeana or else a solution to an existing problem or impediment and by developing a set of demonstrators:
1. linked data
2. persistent identifiers
3. enriched metadata standards
4. multilingual thesaurus
5. ONIX mapping

The first contribution (i.e. the delivery of 3 million new content) will use the results of ATHENA, i.e. the LIDO metadata format and the ATHENA ingester as the basis for the mapping and ingestion process. The Linked Heritage metadata format and the Linked Heritage Ingester are aimed to adapt the ATHENA results in order to take into account the cross-domain dimension of the project and the evolution of ESE into EDM.

The second contribution (i.e. the study for the 5 key areas of enrichment) will use a relevant quantity of content already delivered to Europeana (namely 3 million content of CT and 750,000 content of PUM) to demonstrate the feasibility of the enrichment process proposed by Linked Heritage.

Europeana is now in the situation of trying to get/create awareness of its presence on the Internet. For that it is needed a critical mass of information, and the quantitative aspects like the number of digitised items/images are for that reason in focus. However, in the next stage quality aspects will be more important. Otherwise the number of users will not increase in a way that is both desirable from a cultural heritage research point of view and necessary for Europeana being THE cultural heritage portal. But improving quality takes time and need to start right now. Linked heritage is handling that challenge.

B2 Impact

B2.1a. Target outcomes and expected impact

The following table summarises the contribution to the expected target **outcome** and **characteristics** listed in the Work Programme.

From the Work Programme	Linked Heritage Action
Aggregating cultural heritage content and making it available through Europeana	The Linked Heritage project will directly contribute 3 million new items to Europeana. The project will also demonstrate the enrichment of over 3.5 million existing Europeana items. Finally, through the mapping with ONIX metadata standard, the project will facilitate the contribution of millions more from content providers across Europe, coming from the publishers sector. For details see section B.2.1b
Enhancing the searchability of cultural content already available through Europeana	Linked Heritage will - Deliver cross-domain multilingual **terminologies** for cultural heritage materials, enabling more precise searching and more relevant search results. To this regard, in particular, the project will focus mainly on controlled vocabularies concerning **People, Locations and Concepts.** - Disseminate best practice for persistent **identifier**s, thus addressing the issue of **broken links** and improving the search experience - identify and validate best practice approaches to encoding and retrieving **richer metadata** sets, thereby enabling **more powerful searches**. - Demonstrate the creation of **linked data** triples and connect them to the linked data 'cloud', where they can be accessed and add value to third party applications - Demonstrate the use of other **linked data** stores and endpoints to enhance the search results experienced by Europeana users - Demonstrate how to possibly enable the detection of **duplicate records**, thus improving search results
Digital content should be held by cultural	Linked Heritage content comes from many

institutions from different European countries. Collaboration between these institutions should be put in place contributing to the aggregation of content from one or more domains into Europeana	content providers and aggregators across twenty member states, plus some other member states who have expressed their interest in participation if the project goes ahead, plus some third countries. Linked Heritage will **improve the quality and quantity of the digital content which these actors contribute**. In particular, Linked Heritage will provide best practice tools and techniques to facilitate the contribution, enhancement and aggregation of content from under-represented states.
The content should be accessible and retrievable by the target users through Europeana at item level. Projects dealing only with catalogues of content will not be funded.	All Linked Heritage content will be contributed, searchable and retrievable **at item level**.
The proposal should demonstrate the European added value of bringing the selected content to Europeana.	The consensus-based methodology of Linked Heritage means that **common solutions to Europe-wide issues** will be identified and validated. The ability to combine content from all the member states demonstrates immediate European added value. The project is closely aligned with the key policy statements of the EU, including the 2009 "Digital Europe" speech (09/336) by Viviane Reding, the i2010 Digital Libraries, policy papers such as 2007's "Scientific Information in the Digital Age", the reports of the High Level Group on Digital Libraries and the Member States Experts Group, etc.
The quality and quantity of the underlying digital content (and related metadata), must be clearly identified i.e. the content to be effectively contributed to the project by each content provider, as well as the criteria for its selection.	This proposal includes appropriate tables (See Appendix A) showing the amount, type and source of the material, as well as the criteria for its selection.

The consortium and its members must ensure the necessary availability of the content to be contributed to the project. In particular, the input content should not depend on proprietary third-party rights or any other constraints, which would limit its use for the execution of the project.	All content to be contributed has been cleared in terms of copyright. Of particular additional value in this context is the metadata content being provided by the private sector; this is the first example of large amounts of private sector content being contributed to Europeana.
The consortium and its members must agree on the necessary licensing or clearing arrangements for any Intellectual Property Rights (IPR) arising from the project to ensure wider use and dissemination of the project output.	The relevant license agreements (for aggregators and for content providers), as composed and circulated by Europeana, will be applied in Linked Heritage. Software modules developed by the project will follow open source licensing schemes, and contributed to the Europeana Thought Labs team. Most project deliverables will be public.
The consortium must include content providers and can also include national or domain specific aggregators.	The consortium includes a large population of both content providers and (national and domain) aggregators, as well as government agencies, policy agencies, technical experts, private sector organisations and other key stakeholders.
Specific and realistic quantified indicators should be provided to measure the envisaged improvements in availability, access and use of the underlying cultural and scientific heritage content – at different stages in the project lifetime.	The project management section of this proposal describes the key performance indicators to be used and the process that will be applied for monitoring progress throughout the project lifetime.

B2.1a - Impact 1 – A higher quantity of content in Europeana

Linked Heritage will lead to a substantial growth in the amount of content in Europeana. This will be achieved through a combination of actions:

- Direct contribution of content by aggregators and content providers in the Linked Heritage consortium
- Facilitation of mapping by memory institutions of their "source" metadata to ESE, through the use of best practice metadata mapping tools
- Introduction of private-sector metadata through the involvement of publishers and the provision of tools to map publisher metadata to Europeana specifications.

Consortium-contributed content: as described in the next section (B.2.1b), the consortium members themselves will contribute 3 million metadata records to Europeana and demonstrate the enrichment of over 6.5 million metadata records to Europeana, via Linked Heritage. These include

- 3 million which have not yet been committed to Europeana – these are a mix of new materials from existing aggregators and content providers, and also materials from new content providers who have been recruited into the Europeana community by Linked Heritage activities;
- Over 3.5 million which are already committed to Europeana through some other project (e.g. EuropeanaLocal, ATHENA…), but which will be enhanced and enriched by their being "processed" by Linked Heritage.

While this represents a large amount of new content to be contributed to Europeana, the true value of the Linked Heritage project is in how it enables third parties to contribute their content.

Facilitation of Third Parties: as has been noted above, the majority of member states have not yet contributed very significant amounts of content to Europeana, and are classed as "tier one" by the Europeana project team. This means that they require support and stimulation to encourage the preparation and contribution of their metadata to Europeana. Discussion and consensus in the ATHENA project and within the present consortium has highlighted the issue of information loss: potential contributors are concerned that the process of mapping their data to the Europeana specifications (ESE[2]) loses much of the richness of their metadata. This issue has been addressed within the ATHENA project by the introduction of an intermediate and complementary metadata model, LIDO, which supports very rich metadata records such as those held in museums' collection management systems. Technology to map LIDO to ESE is also provided by ATHENA. The impact and value of this work is that content providers with rich metadata sets, who have experience difficulty in creating a meaningful mapping between their native or "source" metadata and the Europeana specifications have found it much easier to map their metadata to LIDO. Having done so, the creation of ESE records is automatic.

Linked Heritage will work with a large pool of representatives of all domains, including the publishing industry, to identify best practice in terms of metadata and standards. The LIDO model will be used as the initial platform to be adapted to a cross-domain environment. Having finalised a rich metadata model, Linked Heritage's large scale implementation work will work with aggregators and content providers to map their content to this metadata model, and to provide automated mapping to ESE. This validation will lead to adjustments and refinements to the underlying technologies, which will subsequently be released in the public domain and to Europeana, and promoted to the content provider, aggregator and memory institution populations of Europe (see the dissemination work plan for details). It is confidently anticipated that these new tools (and the accompanying support, documentation, etc.) will enable the provision of metadata by organisations which have had difficulty mapping their rich/complex metadata models to the relatively simple ESE specification.

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[2] For discussion of EDM, see page 14

> **Why introduce another mapping layer for metadata?**
>
> ESE is a simple metadata model with a very limited number of (Dublin Core + Europeana-specific) elements. Mapping a rich and complex metadata model such as SPECTRUM or EAD to ESE is difficult and involves many subjective decisions with regard to the mapping of many fields to one field, or the selection of which fields to map to which other ones[3]. By using a richer intermediate mapping layer (such as ATHENA's LIDO), the mapping of the "source" metadata is greatly facilitated and many significant metadata fields are not lost. An automated mapping from the intermediate layer to ESE can then be applied for all successfully-mapped records. Note that the approach will be shifted towards the EDM paradigm as well, where the richer reference models (e.g. LIDO) will be aligned (refinement) with the broader EDM ontology.

Private-sector content: The private sector (publishers, film makers, broadcasters, etc.) represents very large reservoirs of modern cultural materials[4]. These materials include a high proportion of the "20th Century Black Hole" – cultural materials from the last century which are covered by copyright and so are not accessible online (except to purchase). Europeana has relatively few records which describe 20th century items, as a result.

However, publishers generate very large amounts of metadata, which they use to provide information to other parts of the commercial value chain – most notably online retailers such as amazon.com, but also to bookshop management systems, wholesalers, etc. The most widely used metadata model is ONIX[5], which includes many familiar record fields such as title, author, subject, but also commercially-specific information such as prizes awarded, supplier and trade data, etc.

The Linked Heritage consortium includes members of the publishing industry (MVB, mEDRA, LUH) and the body responsible for the ONIX family of publishing metadata standards, EDItEUR. The consensus-building and best practice activities of the project will involve and respect the priorities of the private sector in just the same way as those of the libraries, museums, archives and other public sector stakeholders. A best practice solution which is acceptable to the private sector will have much wider application and can enable enormous amounts of new content to be contributed to Europeana.

As part of this process, Linked Heritage will identify and validate appropriate technology to map ONIX to the Linked Heritage best practice metadata specification, and thus onwards to ESE and to whatever new (EDM) data model that emerges in forthcoming releases of Europeana. The project team has taken note of the ongoing work on ONIX at OCLC, where ONIX records are being imported, enriched with WorldCat data and then exported again, in an exciting cross-sector project with great relevance to Linked Heritage's own objectives[6].

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[3] The design of such "crosswalks" for metadata mapping is an open research topic. See for example http://www.getty.edu/research/conducting_research/standards/intrometadata/crosswalks.html

[4] The European publishers federation estimates that almost 500,000 new items are published each year.

[5] Online Information eXchange – see www.editeur.org, a good overview is at http://libraries.mit.edu/guides/subjects/metadata/standards/onix.html. EDItEUR is a Linked Heritage partner.

[6] See http://publishers.oclc.org/en/213918usb_services_for_publishers.pdf

B2.1.a - Impact 2 – Enhanced Content

Enhancements: a large amount of cultural heritage content already contributed to Europeana will demonstrate the benefits derived from several important enhancements, as explored above

- Content will be tagged with a **persistent unique identifier**, allocated using a scalable and effective management model, to ensure that identifiers are truly unique, and that a one-to-one mapping between items and identifiers is assured. PIDs will address the problem of broken portal links, as well as the issue of duplicate records.
- Content records will contain and maintain a **rich metadata set**, through the use of an intermediate mapping specification which captures the rich metadata before transforming it to the Europeana specification (present and/or future) in a manner which minimises information loss.
- The Linked Heritage content used for the demonstration of the enrichment process will be converted to **Linked Data** RDF triples and published as a LD store, for contribution to the LD "cloud"[7]. This will enable new value to be extracted from the Linked Heritage content. The Linked Heritage LD store may be used as a demonstrator or model by the wider Europeana initiative, and may be built upon to enable the entire Europeana dataset to be published as LD.
- Linked Heritage will define a cross-domain, cross-language thesaurus (focus mainly on controlled vocabularies concerning **People, Locations and Concepts**), which can be extended, refined and maintained by members of the Europeana community, in order to precisely map their own (internal, proprietary or national) terminologies to one another (and to a reference terminology, if this is identified as the best practice approach). The thesaurus will underpin more precise user searches, as well as more relevant and targeted search results.

- The Linked Heritage content used for the demonstration of the enrichment processes, will be described using an evolving, cross-domain and multilingual (set of) thesaurus which will guarantee the data exploitation by a Semantic Search Engine. Thanks to these semantically enriched contents, any user request will produce answers in other languages than the one used for the request, about contents in other countries than the one where the user is located.

These enhancements apply only to the material which is used to demonstrate the enrichment processes of Linked Heritage (see the following section for details and break-downs). However it should be noted that this enhanced material remains entirely compatible with Europeana's ESE specification as of May 2010, and support for the EDM specifications (under development at present) is also anticipated. Further, the Linked Heritage team (which includes many active Europeana contributors) will take every opportunity to work with the Europeana community (including Europeana Labs) to enable the wider use of Linked Heritage results across the Europeana ecosystem

B2.1.a - Impact 3 - Broad Geographical Spread

As described in the next section, Linked Heritage brings or demonstrate the enrichment of over 6.5 million items to Europeana, across two categories ([a] already committed to Europeana, but

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[7] See for example http://esw.w3.org/SweoIG/TaskForces/CommunityProjects/LinkingOpenData.

enhanced by Linked Heritage, [b] new to Europeana). The Linked Heritage items come from across Europe, as summarised below

Italy	France	Estonia	Greece
UK	Spain	Germany	Bulgaria
Slovenia	Cyprus	Poland	Sweden
Belgium	Czech Republic	Slovakia	Hungary
Latvia	Portugal	Austria	Ireland
Israel (external contributor)	Russia (external contributor)		

Table 1 - Partner Countries

In addition to the full partners, the project also benefits from the support of the Russian university of Kazan, the MAKASH Agency of Israel and the University of Coventry. These organisations are willing to contribute to the project, as external entities, without receiving any EC funding.

B.2.1b. Underlying content

i) Content

	Quantity and Quality of the Content			

No.	Full legal Name	Short Name	# New items	# Enriched items
1	Istituto Centrale per il Catalogo Unico – Italian Ministry of Culture	ICCU	100000	
2	University of Padua	UNIPD	94154	
3	Consiglio Nazionale delle Ricerche	CNR	68346	
4	France Ministry of Culture	MCC	300000	
5	Estonian Ministry of Culture	EVK	130000	
6	Hellenic Ministry of Culture	HMC	40000	
7	Institute of Computer and Communication Systems - National Technical University of Athens	NTUA		
8	University of Patras	UP	107025	
9	Collections Trust	CT		3000000
10	The Library Council / An Chomhairle Leabharlanna	CL	95000	

11	Pintail Ltd	PT		
12	Fundació i2CAT, Internet i Innovació Digital a Catalunya	I2CAT		
13	Philipps-Universität Marburg	PUM		750000
14	Prussian Cultural Heritage Foundation	SPK	110000	
15	Bulgarian Academy of Science - Central Library	CL-BAS	36300	
16	Institute for the protection of Cultural Heritage of Slovenia	ZVKDS IPCH	3000	
17	The Cyprus Institute	CREF CYI	1000	
18	International Center for Information Management Systems and Services	ICIMSS	10000	
19	Swedish National Archive	RA	90000	
20	mEDRA	MEDRA		
21	Technical University Hannover	LUH	9600	
22	EDItEUR	EDItEUR		
23	Marketing und Verlagsservice des Buchhandels	MVB		
24	National Szechenyi Library	NSL	32670	
25	Royal Museum of Arts and History	KMKG	22100	7600
26	Arts and Theater Institute	IDU	34000	
27	Instituto Superior Técnico	IST		
28	State Agency for Cultural Information Systems	CIS	10000	
29	Packed	PACKED	6200	
30	Cordia	CORDIA		
31	DigiLab Universita' degli Studi di Roma La Sapienza	UDSDRLS	148000	
32	Archivio Fo Rame	CTFR	500200	
33	Generalitat de Catalunya	GENCAT	35390	
34	Promoter	PROMOTER		
35	University of Savoy	UNIV-SAVOIE		
36	Dedale Association	DEDALE		
37	Uma (Austria)	Uma	88097	
38	Digital Heritage	DH	1067682	
	University of Kazan (external contributor)		900	100
	Totals		3,039,600	3,757,600

Quantity and Quality of the Content (detailed information)						
Provider	**Quantity and type**	**Subject matter (topic or theme that content is about)**	**Language**	**Format**	**Existing metadata**	**IPR**
ICCU (CulturaItalia/Internet Culturale collection)	about 100,000 records that link to over 4M digital objects. Type: text, images	Library and music academy content	IT	Images: B/W and colour JPEG (320X240). Texts in XML.	CulturaItalia application profile (qualified DC compliant)	Digital objects both from public and private domains ICCU owns the rights to publish metadata on Europeana.
UNIPD	2.853 files Type: images	Portraits of Italian and foreign botanists.	IT	JPEG	MAG	University of Padua; Creative Commons license
UNIPD	1.331 files Type: text	Dedications to Emilio Bodrero (Italian philosopher)	IT	JPG	UNIMARC	Creative Commons license
UNIPD	870 files Type: images	Ancient anatomical plates	IT	JPEG	MAG	Creative Commons license
UNIPD	1.200 files Type: text	University inaugural lectures (centuries XVII, XVIII)	IT	JPEG	DC, MAG	Creative Commons license
UNIPD: Regione del Veneto	7.500 files Type: text	Catalogues of manuscripts (Biblioteca del Museo Correr; Biblioteca Antoniana)	IT	JPEG	Proprietary	Public domain
UNIPD: Regione del	400 files. Type: images	Ancient maps	IT	JPEG	MAG or METS	Regione del Veneto;

Veneto-Fondazione G. E. Ghirardi						Creative Commons license
UNIPD: Regione del Veneto	80.000 files Type: Text, images	Music manuscripts	IT	JPG	MARC	Regione del Veneto; Creative Commons license
CNR	66846 records (papers,reports ,abstracts, posters, etc.)	Scientific and technical publication	IT/engl (Multilang uage)	PDF; Doc; HTML; XML; PPT; Postscript, etc.	Dublin Core; MARC 21; UNIMARC	Creative Commons; Copyright; Diritto d'autore
CNR	1500 reports, Articles, papers; etc	Scientific and technical publications	IT/engl (Multilang uage)	PDF; Doc; HTML; XML; PPT; Postscript, etc.	Dublin Core; MARC 21; UNIMARC	Creative Commons; Copyright; Diritto d'autore
France Ministère de la Culture et de la Communication	New content indexed by the national aggregator Culture.fr/Coll ections (several 100.000s of documents) Mainly Text and Images	Cross-domain content from museums, archives, libraries, archaeology, monuments	French (some parts of the thesaurus translated)	Picture: jpg	Yes (several types, according from the domain) + thesaurus	License Free access for general public on www.culture.fr
EVK: Estonian National	130 000 videos;	Video archive of Estonian Broadcasting	Estonian	MXF, others	Database	Public domain /licenced

Broadcasting	Video/sound					(varies)
HMC	~40.000 digital items (text, image, sound, video)	Cross-domain aggregated content from Greek cultural institutions	Greek, English	PDF, WORD/ JPEG/ MPEG1, MPEG2	Dublin Core, Cidoc-CRM, MARC, SPECTRUM, MPEG-7	Public and Licensed
UP: The Committee for Pontian Studies	31,800 Photos, Books, newspapers Magazines, other material	Greeks of Ancient Pontos (folklore, history, customs, etc)	GREEK	JPG, TIFF	Proprietary. Thematic and place thesaurus	Owned by the Committee for Pontian Studies
UP: Centre for Asia Minor Studies	20.000 pages of manuscripts of the 19th century, photos of day to day life.	Greeks of Minor Asia (folklore, history, customs, etc)	GREEK	JPG, TIFF	Thematic and place thesaurus.	Owned by the Centre for Asia Minor Studies
UP: Museum of Science and Technology	1000 pages and 1000 digital images	Scientific content	GREEK	JPG, TIFF	Custom Schema.	Owned by the Press Museum
UP: ATHENA organisation (Rights Collective Society for Artists)	500 movie clips (about 2-3 minutes each)	Old Greek Cinema	GREEK	mpeg, wmv	Custom Schema.	Owned by the ATHENA ORGANIZATI ON
UP: Municipal Theater of Komotini	3000 photos of Theatricals, 60 Posters of Theatricals, 1809 pages of	Theatricals, actors, roles, programs, publication.	GREEK	JPG, TIFF	Custom Schema.	Owned by the Municipal Theater of Komotini

	programs, 2500 of newspapers					
UP: Union of Pontian Organizations of South Greece - OPSNE	526 photos 140 videos (duration 6 hours)	Greeks of Pontos (folklore, history, customs, etc)	GREEK	JPG, TIFF, mpeg, wmv	Custom Schema.	Owned by OSPNE
UP: Evonymos Ecologic Library	750 magazines (jpg) 62.000 Articles (only metadata)	Ecology	Greek	Jpg (magazine s' covers)	Custom Schema	Owned by Evonymos Ecologic Library
CL	60,000 images approx	Place-names and descriptions of locations and antiquities from 1830s	English	Flash	Simplified Internal scheme	Library Council
CL	35,000 images approx	Land Valuation registers from mid 1800s – key genealogical source for 19th century Ireland	English	Flash	Simplified Internal scheme	National Library/Eneclann/OMS
CL	100 web pages approx	Historic and antique books relating to Ireland 1700s – 1930s	English	web/xml	Dublin Core based	Library Council
EM-SMB-SPK **(SPK, Germany)**	Ca. 10.000, including IMAGES	Ethnological Museum The Ethnological Museum at the Dahlem Museums - with its 500,000 ethnographical, archaeological and cultural-historical objects from Africa, Asia, America, Australia and the South Seas - belongs to be most comprehensive of its	Mainly German	museumdat	Partial SWD	In general about 60 % free use for non commercial activities, for about 40% IPR has to be confirmed in all cases the name of the institution and photographer has

		kind.				to be given
MEK-SMB-SPK	Ca. 10.000, including IMAGES	[Museum of European Cultures](#) The Museum of European Cultures at Dahlem Museums is one of the hugest collections of European ethnographica and Cultural History world-wide.	Mainly German	museumdat	Partial SWD	See above
ÄMP-SMB-SPK	Ca. 10.000, including IMAGES	[Egyptian Museum and Papyrus Collection](#) The most famous pieces of the world's most significant collections of Ancient Egyptian Art are e.g. the bust of Queen Nefertiti, the portrait of Queen Tiy and the famous 'Berlin Green Head'.	Mainly German	museumdat	Partial SWD	See above
ANT-SMB-SPK	Ca. 10.000, including IMAGES	[Collection of Classical Antiquities](#) The Collection of Classical Antiquities presents pieces of art from the Greek and Roman antiquity	Mainly German	museumdat	Partial SWD	See above
GG-SMB-SPK	Ca. 10.000, including IMAGES	[Old Master Paintings](#) The Old Master Paintings possesses one of the world's finest collections of European art from the 13th to 18th century. It includes masterpieces by artists such as van Eyck, Bruegel, Dürer, Raphael, Tizian, Caravaggio, Rubens, Rembrandt and Vermeer.	Mainly German	museumdat	Partial SWD	See above

ISL-SMB-SPK	Ca. 10.000, including IMAGES	Museum of Islamic Art The Museum of Islamic Art, residing in the Pergamon Museum, contains art of Islamic peoples from 8th to 19th century.	Mainly German	museumdat	Partial SWD	See above
KB-SMB-SPK	Ca. 10.000, including IMAGES	Art Library The Art Library is one of Germany's leading institutions specialized in literature concerning the history of art, containing roughly 400,000 volumes.	Mainly German	museumdat	Partial SWD	See above
KGM-SMB-SPK	Ca. 10.000, including IMAGES	Museum of Decorative Arts The Museum of Decorative Arts at the Kulturforum Potsdamer Platz shows one of the biggest collections of works of European craftsmanship which range from the Middle Ages to the present.	Manly German	museumdat	Partial SWD	See above
KK-SMB-SPK	Ca. 10.000, including IMAGES	Museum of Prints and Drawings The Museum of Prints and Drawings is the largest Museum of graphic art in Germany and one of the four most relevant world-wide.	Manly German	museumdat	Partial SWD	See above
NG-SMB-SPK	Ca. 10.000, including IMAGES	National Gallery The collection of the National Gallery is divided betweeen the Old National Gallery, the New National Gallery, the	Manly German	museumdat	Partial SWD	See above

		Hamburger Bahnhof - Museum für Gegenwart - Berlin, the Museum Berggruen, the Collection Scharf-Gerstenberg and the Friedrichswerder Church. Old National Gallery In the Old National Gallery, the National Gallery displays one of Germany's most important collections of 18th-century art. New National Gallery The National Gallery in the New National Gallery presents it's collection of 20th century European painting and sculpture, ranging from early modern art to art of the 1960s. During temporary exhibitions, the permanent collection is not on view. etc..				
SBM-SMB-SPK	Ca. 10.000, including IMAGES	Sculpture Collection and Museum of Byzantine Art The Sculpture Collection and Museum of Byzantine Art in the Bode-Museum is one of Germany's largest collections of sculptures dating from the Middle Ages and later and owns a first-class collection of art works and utility	Mainly German	museumda t	Partial SWD	See above

		objects from late Antiquity and the Byzantine period.				
CL-BAS, Inst for Art	26,000	WebFolk Bulgaria	Bulgarian/ English	Xml, Tiff, Mp3	Dublin Core	IA BAS
CL-BA: Museum of Sofia	1,200	Images of Old Sofia by Vladimir Manski and Joseph Oberbauer	Bulgarian/ English	Tiff, Xml	Dublin Core	Museum of Sofia
CL-BAS	2,500	The Russian emigrants in Bulgaria	Bulgarian/ Russian	Tiff, Xml	Dublin Core	CL-BAS
CL-BAS: Archives	1,200	Felix Kanitz	Bulgarian/ English	Tiff, Xml	Not yet a standard; under transformatio n into Dublin Core	Archives of BAS
CL-BAS: University of Pisa	500	Luigi Salvini's Archive (its Bulgarian part)	Bulgarian/ Italian	Tiff, Xml	Not yet a standard; under transformatio n into Dublin Core	CL-BAS
CL-BAS: National Arch. Museum	2,400	Archaeological Collections	Bulgarian/ English	Tiff, Xml	Not yet a standard; under transformatio n into Dublin Core	National Archaeological Museum
CL-BAS	2,500	Bulgarian National Revival books and periodicals	Bulgarian	Tiff, Xml	Dublin Core	CL-BAS
ZVKDS IPCH, NMS (National Museum of Slovenia), CML	1250 images	Archeological site archives / field evaluation data collection	Slovene	JPG	Data core index / Spectrum	low resolution free

(City Museum of Ljubljana)					compatible	
ZVKDS IPCH, NMS, CML	1250 images	Inventories of (movable and immovable) heritage complexes	Slovene	jpg	Data core index / Spectrum compatible	low resolution free
ZVKDS IPCH, NMS, CML	500 images	Intangible heritage collection	Slovene	jpg	Data core index / Spectrum compatible	low resolution free
CREF CYI	Digital photos x1000+	Private collection of historic photos from Cyprus	english	jpeg	CIDOC-CRM	creative commons
ICIMSS	10,000 pictures with text description	Monuments and archaeology	Polish	Jpg, RAW	2.000 Dublin Core	access rights to the project with a specific IPR agreement
RA	70 000 digital archive objects (23 million digital images).	Swedish National Registration (Church records).	Swedish	DjVu	EAD /ESE	Paid content
RA	20,000 digital archive objects (7 million digital images).	Mixed content	Swedish	DjVu	EAD / ESE	Paid content
LUH	2,300	Scientific datasets from earth science	English	html	proprietary metadata	cc-license
LUH	300	Geo-scientific maps	English	html/pdf	proprietary	cc-license

						metadata	
LUH	7,000	3D architectural models	German	html/wrl	proprietary metadata	cc-license
NSL, Hungarian Digital Image Library	16.000 document, images	Digitized image documents (e.g. maps, photos, exlibris, manuscripts, posters, postcards	90% Hungarian 10% others	JPG	XML, HUNMARC	copyright NSL
NSL, Digital Archive of Pictures	12.000 document, images	Online digital images concerned to Hungary	90% Hungarian 10% others	JPG	XML	partly copyrighted, but NSL has the permissions to publish
NSL, Hungarian Electronic Library	4.500 document, digital books	Online and digitized digital books	90% Hungarian 10% others	HTML, DOC, PDF, DjVu, LIT	XML, Dublin Core, USMARC, HUNMARC	Partly under Creative Commons licence
NSL, Hungarian Electronic Library	170 document, audio books	Audio books	Hungarian	MP3	XML, Dublin Core, USMARC, HUNMARC	partly copyrighted, but NSL has the permissions to publish
KMKG Federal aggregator = Collection of Jubelpark Museum Brussels	9000 object records: metadata + digital image	Collection of Pre-Columbian Art (Inuits, Mississipian cultures, Olmec, Theotihuacan, Maya, Aztec, North Chico, Valdivia, Canaris, Cuenca, Chavin, Chibchas, Moche and Inca	Bilingual data in FR and NL	XML by FTP or OAI-PMH	Spectrum Export standard = LIDO	Public domain

KMKG Federal aggregator = Collection of Jubelpark Museum Brussels	4000 object records: metadata + digital image	Collection Oceania Masterpieces of Miconesia, Polynesia, Australasia, and Melanasia..	Bilingual data in FR and NL	XML by FTP or OAI-PMH	Spectrum Export standard = LIDO	Public domain
KMKG Federal aggregator = Collection of Jubelpark Museum Brussels	2000 object records: metadata + digital image	Collection Carriages	Bilingual data in FR and NL	XML by FTP or OAI-PMH	Spectrum Export standard = LIDO	Public domain
KMKG Federal aggregator = Collection of Jubelpark Museum Brussels	3300 object records: metadata + digital image	Collection Merovingian Art .	Bilingual data in FR and NL	XML by FTP or OAI-PMH	Spectrum Export standard = LIDO	Public domain
KMKG Federal aggregator = Collection of Jubelpark Museum Brussels	3800 object records: metadata + digital image	Collection Preciosa	Bilingual data in FR and NL	XML by FTP or OAI-PMH	Spectrum Export standard = LIDO	Public domain
IDU	4 000/pages	IDU Library – Magazine	CS	TIFF	Dublin Core	free
IDU	2 000/pictures	IDU collection - Stage design	CS	JPG	yes*	IDU
IDU	20 000/picture	IDU collection - Theatre Photography	CS	JPG	yes*	IDU
IDU	4 000/mins	IDU Audio Library	CS	wma/waw	Dublin Core	IDU

IDU	4 000/pages	IDU – PQ Archive - Cataloges	CS/EN/FR	jpg/PDF	Dublin Core	IDU
CIS: State Authority on Museums of Latvia (Data from 110 accredited museums of Latvia)	10 000 item descriptions Text, image	History of Latvia	Latvian (translations in English, German, French, Russian)	JPG, PDF	Dublin Core, SRU for data exchange	Public Domain
PACKED: Kasteel van Gaasbeek	500 records & images	paintings, tapestries, sculptures, furniture, ...	Dutch	(no spec.)	(Adlib software) thus Spectrum-compliant	public domain
PACKED	5000 images, 700 records	Artist archive of flemish artist Hugo Debaere: almost everthing what is left by the artist afther his sudden dead in 1994: artworks, parts of unfinished works from the artist studio, paintings, pictures (photographs), diaries, drawings. Most of these "works" have never been shown in public	Dutch	jpeg + high resolution images	Existing metadata: records in filemaker 9	Not yet clear but probably mostly public
Content from Israel national portal, processed by Digital Heritage (DH)						For all the content: access rights to the project with a specific IPR agreement

DH: Eretz Israel	133,941 Museum objects	Archaeology (102,285); Judaica (10,196); History (21,460);	English and Hebrew	XML	YES (proprietary	Museum
DH: Bloomfield	1,054 Museum objects	Plastic Arts (27); History (408); Natural History(440); Science and Technology (126); Ethnography (53)	English and Hebrew	XML	YES (proprietary	Museum
DH: National Museum of Science	5,151 Museum objects	Plastic Arts (314); Natural History (197); Science and Technology (4,640)	English and Hebrew	XML	YES (proprietary	Museum
DH: Haifa	112,958 Museum objects	Plastic Arts(18,072); Archaeology (85,762); Judaica(6,600); History (2,132); Ethnography(392)	English and Hebrew	XML	YES (proprietary	Museum
DH: Tel Aviv of Arts	34,117 Museum objects	Plastic Arts (34,117);	English and Hebrew	XML	YES (proprietary	Museum
DH: Islamic Art	5,284 Museum objects	Plastic Arts (5,284)	English and Hebrew	XML	YES (proprietary	Museum
DH: Bible Lands	6,301 Museum objects	Plastic Arts (22); Archaeology (6,273);	English and Hebrew	XML	YES (proprietary	Museum
DH: Science Garden	93 Museum objects	Science and Technology (93)	English and Hebrew	XML	YES (proprietary	Museum
DH: Hecht	5,227 Museum objects	Plastic Arts (172); Archaeology (5,0550	English and Hebrew	XML	YES (proprietary	Museum
DH: Herzlyia	1,250 Museum objects	Plastic Arts (1,250)	English and Hebrew	XML	YES (proprietary	Museum
DH: Ghetto	311,177	Plastic Arts (4,280); History	*	XML	YES	Museum

DH: Fighters House	Archival material and Museum Objects	of the Shoah (306,897)	_+Yiddish		(proprietary	
DH: David Tower	290 Museum objects	Archaeology (275); History (275)	English and Hebrew	XML	YES (proprietary	Museum
DH: Mishkan LeOmanut (Ein Harod)	17,180 Museum objects	Plastic Arts(16,773);Judaica (407);	English and Hebrew	XML	YES (proprietary	Museum
Rishon LeZion	4,291 Museum objects	Plastic Arts (560); History of Settlement (3,730)	English and Hebrew	XML	YES (proprietary	Museum
DH: Arts of Petach Tikva	2,896 Museum objects	Plastic Arts (2,896)	English and Hebrew	XML	YES (proprietary	Museum
DH: Arts Ramat Gan	2,093 Museum objects	Plastic Arts (2,093)	English and Hebrew	XML	YES (proprietary	Museum
DH: Aharonson House	2,457 Museum objects	History of Settlement (2,453); Natural History (4)	English and Hebrew	XML	YES (proprietary	Museum
DH: Ussishkin House	46,433 Museum objects	Archaeology (309); Natural History (46,124)	English and Hebrew	XML	YES (proprietary	Museum
DH: HaMeiri House	4,142 Museum objects	History (4,142)	English and Hebrew	XML	YES (proprietary	Museum
DH: Miriam House	2,844 Museum objects	Archaeology (2,824)	English and Hebrew	XML	YES (proprietary	Museum
DH: Reuven House	163 Museum	Plastic Arts (163)	English and	XML	YES (proprietary	Museum

			Hebrew			Museum
DH: Sturman House	15,113 Museum objects	Archaeology (1,804); History (5,030);History of Settlement (176); Natural History (6,683); Science and Technology (950); Ethnography (469)	English and Hebrew	XML	YES (proprietary	Museum
DH: Bar David	5,514 Museum objects	Plastic Arts (3,503); Archaeology (700); Judaica (1,079);History (232)	English and Hebrew	XML	YES (proprietary	Museum
DH: Jo Allon	2,062 Museum objects	Plastic Arts (52); Archaeology (177); Judaica (2,373);	English and Hebrew	XML	YES (proprietary	Museum
DH: Gutman	8,188 Museum objects	Plastic Arts (8,136); History of Settlement (52)	English and Hebrew	XML	YES (proprietary	Museum
DH: arly Man	120,000 Museum objects	Archaeology (119,500); Ethnography (500)	English and Hebrew	XML	YES (proprietary	Museum
DH: Man and the Living World	451 Museum objects	Plastic Arts (70);Archaeology (14);Natural History (338); Science and Technology(29)	English and Hebrew	XML	YES (proprietary	Museum
DH: Man and the Environment	285 Museum objects	Natural History (18); Science and Technology (267)	English and Hebrew	XML	YES (proprietary	Museum
DH: Hadera Khan	9,685 Museum objects	Plastic Arts (679); Archaeology (14); Judaica (67);History of Settlement (8,724); Science and Technology (200)	English and Hebrew	XML	YES (proprietary	Museum
DH: Solomon's Temple	5,750	Not classified. Include Judaica, Archaeology, Plastic Arts, Audio and Video	English and Hebrew	XML	YES (proprietary	Museum

DH: Mizgaga (Glass bottles factory)	3,920 Museum objects	Archaeology (3,780); History of Settlement (140)	English and Hebrew	XML	YES (proprietary	Museum
DH: HaNegev	846 Museum objects	Plastic Arts (738); Ethnography (108)	English and Hebrew	XML	YES (proprietary	Museum
DH: Wilfrid	2,510 Museum objects	Plastic Arts (1,944); Archaeology (566);	English and Hebrew	XML	YES (proprietary	Museum
DH: Old Yishuv Court	7,361 Museum objects	Plastic Arts (2,323); Archaeology (35); Judaica (1,100); History (1,276); Ethnography (2,627)	English and Hebrew	XML	YES (proprietary	Museum
DH: Tel Chai Court	706 Museum objects	Plastic Arts (51); History of Settlement (604);	English and Hebrew	XML	YES (proprietary	Museum
DH: Yigal Alon	859 Museum objects	Plastic Arts (127); Archaeology (13); History (127); History of Settlement (589)	English and Hebrew	XML	YES (proprietary	Museum
DH: Yad Mordechai	462 Museum objects	History of Shoah (462)	English, Hebrew and Yiddish	XML	YES (proprietary	Museum
DH: Italy Jewry	2,142 Museum objects	Plastic Arts (271); Archaeology (3); Judaica (1,168); History (700);	English, Hebrew and Italian	XML	YES (proprietary	Museum
DH: Janco Dada	492 Museum objects	Plastic Arts (492)	English and Hebrew	XML	YES (proprietary	Museum
DH: Yifat	4,600 Museum objects	Plastic Arts (70); History of Settlement (4,230); Natural History (300)	English and Hebrew	XML	YES (proprietary	Museum

DH: Kfar Sabah	591 Museum objects	Plastic Arts (1); Archaeology (482); History of Settlement (20); Science and Technology (15); Ethnography (15)	English and Hebrew	XML	YES (proprietary	Museum
DH: Mane Katz	1,280 Museum objects	Plastic Arts (635); Judaica (645);	English and Hebrew	XML	YES (proprietary	Museum
DH: Mazkeret Batyia	6,889 Museum objects	Plastic Arts (250); Judaica (1,400); History (5,179); History of Settlement (60	English and Hebrew	XML	YES (proprietary	Museum
DH: Ein Dor	1,363 Museum objects	Archaeology (1,323); Ethnography (40)	English and Hebrew	XML	YES (proprietary	Museum
DH: Ein Shemer	1,949 Museum objects	Archaeology (129); Judaica (30); History of Settlement (1,593); Natural History (80); Science and Technology (117)	English and Hebrew	XML	YES (proprietary	Museum
DH: Ikvot BaEmek	4,303 Museum objects	Plastic Arts and Archaeology (3,003); History of Settlement (1,300)	English and Hebrew	XML	YES (proprietary	Museum
DH: Golan Antiquities	2,164 Museum objects	Archaeology (2,164);	English and Hebrew	XML	YES (proprietary	Museum
DH: Shaar HaGolan	554 Museum objects	Archaeology (554)	English and Hebrew	XML	YES (proprietary	Museum
DH: Diaspora House	946 Museum objects	History (946)	English and Hebrew	XML	YES (proprietary	Museum
DH: Omer	46 Museum objects	Archaeology (14); Science and Technology (32)	English and Hebrew	XML	YES (proprietary	Museum

DH: Tefen	155,951 Museum objects	Plastic Arts (2,400); Archaeology (150,000); History (3,500); Science and Technology (35)	English and Hebrew	XML	YES (proprietary	Museum
UDSDRLS	30,000 items	Greek and Latin Epigraphy	Latin	Txt .mdb	Dublin core	Texts and images publishing rights limited to the Internet as negotiated with MIBAC for the project EAGLE/EDR (Electronic Achive of Greek and Latin Epigraphy / Epigraphic Database Rome)
UDSDRLS Museum System Museo di chimica	About 4,000 Images	scientific instruments, teaching tools, chemical substances, collections and documents	Italian	.jpg,.gif	Title, content description, date of recording, location of recording	Licensed to be accessed on the internet
UDSDRLS	About 2,000	rocks, marbles, stones	Italian	.jpg,.gif	Title, content	Licensed to be

Museum System Museo di Geologia	images				description, date of recording, location of recording	accessed on the internet
UDSDRLS Museum System Museo di Mineralogia	About 2,000 images	marbles, gems crystals, meteorites	italian	.jpg,.gif	Title, content description, date of recording, location of recording	Licensed to be accessed on the internet
UDSDRLS Museum System Musei archeologici	About 5,000 images	Etruscan, Oriental and Egyptian antiquities, funerary objects, Greek sculptures in chalk	Italian	.jpg,.gif	Title, content description, date of recording, location of recording	Licensed to be accessed on the internet
UDSDRLS Museum System Museo di Medicina	About 3,000 images	Medical objects	Italian/En glish	.jpg,.gif	Title, content description, date of recording, location of recording	Licensed to be accessed on the internet
UDSDRLS Museum Syst Orto Botanico em	About 2,000 images	Plants, monumental trees	Italian	.jpg,.gif	Title, content description, date of	Licensed to be accessed on the internet

					recording, location of recording	
UDSDRLS Museum System Museo di Anatomia Comparata	About 800 Images	Obiects and scientific collection of comparative anatomy	Italian/ English	.jpg,.gif	Title,content description, date of recording, location of recording	Licensed to be accessed on the internet
UDSDRLS Archivio di Lionello Venturi	About 100,000 Files (images and papers)	Files about History of arts. (Letters, Manuscripts, Pamphlets, Photos).	Italian/Fre nch/ English /Deutsch.	.ipg,.gif	Dublin Core	Licensed to be accessed on the internet
DDUIE	5000 records	Architectural	Catalan	RDF	CIDOC-RDM	All rights
DDUIE: Patmapa	3000 records	Archaeology	Catalan	RDF	CIDOC-RDM	All rights
DDUIE: Patmapa	10000 images	Architectural	Catalan	jpeg	CIDOC-RDM	All rights
DDUIE: Patmapa	5000 images	Archaeology	Catalan	jpeg	CIDOC-RDM	All rights
DDUIE: Patrimoni.genca t	90 rutes	Cultural heritage	Catalan	Vignette, Google maps, etc	Proprietary metadata	All rights
DDUIE:	50 videos	Cultural heritage	Catalan	mpeg	Dublin Core	All rights

Patrimoni.gencat					Mets, OAI-PH	
DDUIE: Calaix	4000 reports text : 328.506 pages; images: 38.060; plans: 3.442	Archaeology	Catalan	pdf	Dublin Core, Mets, OAI-PH	Creative Commons
DDUIE: Calaix	2000 plants	Architectural	Catalan	jpeg	Dublin Core, Mets, OAI-PH	All rights
DDUIE: Calaix	1000 plans	Archaeology	Catalan	jpeg	Dublin Core, Mets, OAI-PH	All rights
DDUIE: Calaix	300 reports text: 9850 pages; images: 1970 images; plans: 500	Archaeology	Catalan	pdf	Dublin Core, Mets, OAI-PH	All rights
DDUIE: Calaix	5518 images 5000 photos 2D 68 gigaphotos 450 panoramic	Architecture	Catalan	Jpeg /panoramic	Dublin Core, Mets, OAI-PH	All rights

CTFR	About 500,000 images	Images related to more than 50 years of activity of the Dario Fo and Franca Rame theatre company,	Italian	Jpeg-Tiff-PDF-bmp of images and texts	Dublin Core	Licensed by the Authors
CTFR	200 DVDs (Total approx. timing: 200 hours)	Videos related to more than 50 years of activity of the Dario Fo and Franca Rame theatre company.	Italian	DVD-V	Dublin Core	Licensed by the Authors
uma uma is the organisation appointed to manage the Austrian national portal Albertina	32,536 images	Photographic Collection, Graphic Art, Architectural Collection	German	images	* = various (Title, Contributor, Kind of object, Material, Description, etc.)	** = Basically public domain, consultation required
uma Imareal, Institut für Realienkunde	16,029 images	Middle Ages and early modern period	German	images	*	**
uma Kunsthistorisches Museum Wien	8,853 images	Egyptian Collection, Greek and Roman Antiquities, Picture Gallery, Collection of sculpture and decorative arts, ecclesiastical treasury, secular treasury	German	images	*	**
uma Museum of Ethnology	2,027 images	Photographic Collection	German	images	*	**

Provider	Quantity and type	Subject matter (topic or theme that content is about)	Language	Format	Existing metadata	IPR
uma Austrian Theatre Museum	18,854 images	Photographic Collection	German	images	*	**
uma Austrian Mediathek	1,324 audios, 535 videos, 206 images	Akustische Chronik, Howdy-Günter Schifter Collection, Mozart Collection, www.staatsvertrag.at, 100 years Technical Museum Vienna	German	audios, videos and images	*	**
uma Natural History Museum	7,732 images	Hebrarium Collections	German	images	*	**
Kazan University: Museum of History	100 items with low resolution images. Each record contains about 15 field.	Objects related to the history of Kazan University: objects owned by famous scientists/researchers, book covers, awards, equipment of scientific laboratories. XIX - XX century	Russian	XML	Native Schema, CIDOC CRM	IPR cleared
Kazan University: Ethnograpic Museum	800 items with low resolution images. Each record contains about 6 field.	Ethnographic collections of European, Asia and especially Volga region peoples (photos, objects)	Russian	XML	Native Schema,	IPR cleared

Content to be Enriched by Linked Heritage

Provider	Quantity and type	Subject matter (topic or theme that content is about)	Language	Format	Existing metadata	IPR

KMKG Federal aggregator = Collection of Musical Instruments Museum)	7600 object records: metadata	Collection of Musical Instruments	Bilingual data in FR and NL	XML by FTP or OAI-PMH	Spectrum Export standard = LIDO	Public domain
CT	1 million now. 3 million by April 2011.	200 collections – all subjects covered	English	Metadata, thumbnails, links to A/V	People's Network Dublin Core Application Profile (OAI harvestable as ESE).	Creative Commons licence.
PUM	750,000 images with metadata	Photographic collection on European Art and Architecture	German	JPEG thumbnails	Meseumdat/LIDO	Copyright protected

ii) IPR issues

IPR issues of the underlying content that is to be made available (input)

Intellectual property issues are already an area of particular emphasis in Europeana. Current work within Europeana includes the finalising of the legal documentation and agreements which bind Europeana and (a) content providers and (b) aggregators[8]. Given that Linked Heritage is committed to the contribution of new content to Europeana, the same IPR model will govern Linked Heritage material as is agreed and finalised for content which has already been contributed to Europeana.

The work of Linked Heritage (e.g. in the publication of metadata records as Linked data) goes beyond the current technical scope of Europeana, but can be considered to fit within the concept of "re-use of Europeana content by third parties", which is covered by the legal agreements mentioned above.

Status of the Contributed Content: the new content to be contributed to Europeana by Linked Heritage has one of three classes of IPR status:

- the **public sector** material, contributed by libraries, museums, archives, etc. is either
    - in the public domain or
    - covered by a license (e.g. creative commons) which allows its re-use (with or without attribution, derivate works, etc.)
- the **private sector** material, contributed by publishers and their representatives, is protected by copyright. Part of the work of the Public Private Partnership work-package will focus on identifying and agreeing the most appropriate IPR model for this content. However, it is anticipated that the outcome of this work will be a model which allows the private-sector metadata to be displayed by Europeana using a similar (ideally an identical) model as that currently being agreed with public-sector content providers and aggregators.

IPR issues related to the project outcome including IPR clearing methods for content and tools (output)

The output of the Linked Heritage project can be considered in four categories:

1. Metadata records contributed to Europeana
2. Linked data triples, made available to the LD "cloud" online
3. Evolving, cross-domain and multilingual terminology (set of thesaurus) and management tools
4. Tools and technologies developed during the large scale implementation and validation of the best practice work of the project, primarily for enhancing and/or transforming metadata

The **metadata** contributed to Europeana will be contributed subject to the "standard" Europeana agreements with aggregators and content providers, as mentioned above.

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[8] "Final" drafts of these agreements have been circulated by Europeana in April 2010, as this (Linked Heritage) project was being created.

The **linked data triples** are expected to be made available to the broader LD community on a similar basis to which Europeana content is made available to third parties (as outlined in the appropriate aggregator/content provider agreements, the underlying model is non-commercial, non-exclusive, attribution required, royalty-free, time-limited but renewable). The use case scenario for such LD triples is not yet fully defined (the possible applications are many, and there are more which have not yet been invented); an important part of the Linked Data work-package in Linked Heritage will be to explore the most appropriate IPR model, while maintaining compatibility with Europeana.

A community of content providers shall collaboratively produce, along and after the project, the Linked Heritage terminology. The **thesaurus** will be built on open, free term lists and on the internal terminologies of the project partners (which together represent an important proportion of the national and sectoral terminologies of several member states). The Linked Heritage thesaurus will be published online. The terminology will be available for any content provider in its last validated version **without any fee**. This will require a specific IPR model managing a large set of existing sources. We will look at the **Creative Commons licence set** as a possible basis of that model.

The tools and technologies developed as part of the best practice validation work will be made available as **open-source** code, including documentation, example applications and training materials where appropriate. The "target audience" for this open source material will of course include Europeana Labs; to facilitate the re-use of Linked Heritage output within new releases of Europeana, the software integration team will take full cognisance of the technical preferences of Europeana Labs.

In order to minimise the software development work of Linked Heritage (which is a best practice network, rather than a software development project), the project will make as much use as possible of existing open source code bases, as well as available outputs from Europeana and the significant relevant technical (human and code) resources of the National Technical University of Athens, which is involved in several important related projects. Care will of course be taken to ensure that the license terms under which any third party software is available is fully compatible with Linked Heritage's (and Europeana's) software IPR models.

iii) Multilingual and/or multicultural aspects

Linked Heritage will enable multilingual and cross-lingual search and retrieval by analysing, implementing and validating best practice in multilingual terminologies. Controlled vocabularies and terminologies are important enablers for focused search and relevant information retrieval. The Terminologies work-package (WP3) will establish consensus on the most useful terminologies currently available across all Linked Heritage domains, and will explore how best to add support for multilingual terms. With regard to sustainability, a particular focus will be placed on enabling the terminology *user* (content providers) to contribute to the development and enhancement of the terminology by suggesting mappings and equalities across sectoral and linguistic barriers. Thus

the project will deliver an evolving and collaborative terminology that content providers will further develop over time by using a collaborative platform. In more detail

- Cultural actors will find on an integrated platform tools and methods for the "skos-ificiation" of their terminologies
- Terminology management tools will be delivered which simplify alignment of terminologies, multilingual enabling of existing terminologies (e.g. through the use of WordNet[9] services) and mapping of terminologies across sector and language boundaries.

The **benefit for Europeana** will be that the content provided to the portal will be described with a terminology specifically designed for exploitation by a Semantic Search Tool (like the prototype developed in ThoughtLab). Indeed the retrievability of the content on the Europeana portal will be enriched, by using for their description a network-terminology structured on a pair-wise basis and managing multilingualism through mapping of terms according to their context. The logics of Semantic Web will facilitate the contextualization of terms of description that a Semantic Search Tool will perfectly exploit.

The project team intends working on this topic in consultation with the Europeana team focusing on the Search Engine evolution. The terminology management system WP3 is going to implement shall provide to Europeana a terminology compliant with the input formats. Then the Search Engine will benefit from the mapping of terms across different languages, which will enable it to provide better-quality answers to queries in different languages and different contexts. The user of the portal will receive a set of possible ways to access to a large set of contents and to navigate, even to wander, from one to another.

B2.2. Long term viability

The long term viability of the Linked Heritage project depends on the anticipated outgoings and income of the project following its completion. The anticipated costs in the future for the project can be categorised as
- Maintaining the network of best practice itself
- technical support and training for users of Linked Heritage technologies
- provision of access to technologies online
- maintenance of persistent ID management system

Each of these is addressed here.

The best practice network established by the project will include experts and stakeholders from a broad population including government agencies and ministries, memory institutions, private sector organisations and universities and technical partners. There is significant value for stakeholders in maintaining the existence of the network into the future, both to develop the Linked Heritage concept further and to investigate and pursue new opportunities. There is almost zero cost to maintaining the network – members will meet virtually or at European cultural heritage events which they are attending for their own reasons (e.g. the EVA conference, other project meetings, etc.). There is a minimal management cost, to enable new members to join the

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[9] http://wordnet.princeton.edu

network and to maintain the network website and mailing lists – the Linked Heritage coordinator is prepared to commit to the small ongoing costs for this purpose.[10]

Technical support: the end users of the Linked Heritage technologies are content providers and aggregators who use services developed by Linked Heritage (persistent IDs, richer and/or private-sector metadata mappings, linked data creation, terminologies). While Linked Heritage will of course seek to make the use of these technologies as user-friendly as possible (as described below), there may be a requirement for technical support from the Linked Heritage technical partners. The provision of such support represents a cost to the partners in the future. Linked Heritage will make all its technology available both to Europeana and to the broader open source community. Those elements of Linked Heritage technology which are adopted into new versions of Europeana will be supported by the Europeana tech support team, in that they will be part of Europeana. The provision of support for other elements will be made available on a commercial basis by the Linked Heritage technical partners (led by NTUA). Thus, technical support represents both a cost base and a potential revenue stream into the future.

Access to technologies online: the tools and technologies developed by Linked Heritage will be made available as a collection of online facilities, accessible both via a human user interface and an application programming interface/web services interface. This dual approach simplifies the integration of Linked Heritage technologies into Europeana (and potentially other services) and also reflects the view of "Europeana as an API" which is the technical viewpoint of Europeana within the Europeana Labs team[11].

Again, those elements of Linked Heritage which are absorbed into Europeana will be made available via Europeana's own technology platform, but a requirement may exist to maintain online access to specific Linked Heritage tools based on the best practice findings of the network. The Linked Heritage consortium is committed to providing online access to all running online tools from the end of the project for a period of five years, with the option to renew this commitment if demand for the technologies persists. The "home" server for these technologies will be hosted by the National Technical University of Athens; other "mirrors" may be hosted by other partners as appropriate. There will be no charge to users for access to these technologies; the (minimal) ongoing cost of hosting them will be borne by the project partners as part of their routine activities.

Maintenance of Persistent ID Management Systems: the maintenance of the (anticipated) PID system or systems represents a small but ongoing cost for the Linked Heritage consortium. In the event that the PID concept and system(s) is accepted for inclusion into Europeana, then the responsibility and cost will be transferred to Europeana. The Linked Heritage consortium believes that this is the best solution for all concerned, and represents important added value for Europeana. During the transition period from the end of the project until the inclusion into Europeana is implemented, the national aggregators within the Linked Heritage consortium are

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[10] Several Linked Heritage consortium members are long-term participants in the MINERVA network, which operates through virtual meetings, "piggyback" meetings at other events, and day to day professional contacts. MINERVA continues to add value to the cultural heritage sector in Europe, and to act as a vehicle for forming new project concepts and teams, including ATHENA and Linked Heritage. See www.minervaeurope.org.

[11] See, for example, Concordia et al's IFLA presentation at http://www.ifla.org/files/hq/papers/ifla75/193-concordia-en.pdf

committed to maintaining local PID systems for a period of five years (with the option to extend it if necessary). In addition, a "backup" PID server will be maintained by the NTUA, which will generate and allocate nationality-neutral PIDs, to deal with the (unlikely) event that national PID server(s) become unavailable.

No revenue is anticipated from the PID system. However, the cost of providing the system, once it has been established using Linked Heritage funding, is minimal, and fits well with the parallel requirements to offer aggregation and related services to Europeana into the future.

Summary & Notes

As can be noted from the above, the technology-related ongoing costs associated with Linked Heritage are minimal. In addition, the value which the Linked Heritage work brings to Europeana is expected to lead to the inclusion of Linked Heritage results in future versions of Europeana. It is expected that a transition period could be necessary during which the planning of the actual integration of the Linked Heritage results into Europeana will be carried out. During this transition period, Linked Heritage partners have committed to supporting the technology for up to five years post-project, if needed.

The value of the network itself to the partners and to the wider cultural heritage community is best illustrated by the similar nature of the MINERVA network; the framework for cooperation across national and sector boundaries will be maintained over time because of the benefit it brings to the participants. The minor costs of website and associated costs has been committed to by the coordinator.

B2.3. Wider deployment and use

Involvement with a large user base, across Europe, is central to the Linked Heritage concept. As a best practice network, there are two essential tasks which require involvement and endorsement by a critical mass of the cultural heritage community

- the identification of best practice in the topics on which Linked Heritage focuses
- the dissemination and promotion of identified best practice, in order to make a difference "on the ground" in as wide a dissemination population as possible.

The first of these (large-scale involvement in best practice identification) is essential if the best practice which is identified is in fact to be the optimum solution for the wider community. The strategy of Linked Heritage is to engage with stakeholders from as many countries as possible, across all the relevant sectors (including the private sector), and to take their requirements and priorities into account.

The second of these (**dissemination**) is essential if the network is to achieve its full impact potential. The work of Linked Heritage can have a real and important benefit for Europeana, including a great deal of new material, important new enhancements which enable new services

and improved content quality, and of course the involvement of new contributor populations from the private sector. But this benefit does depend on the uptake and adoption of Linked Heritage technologies by the Europeana team and (more importantly) by the aggregators and content providers who supply their data to Europeana.

Target user description	Needs	Involvement & Role	Country coverage
Europeana Foundation	To prepare for the adoption of the results of Linked Heritage from the political point of view	The Europeana Foundation will participate in the project as subcontractor	European Union
Europeana Labs	To prepare for the adoption of the results of Linked Heritage from the technical point of view	Partners of Linked Heritage participate to Europeana Labs	European Union
Europeana Content Council	To prepare for the adoption of the results of Linked Heritage from the content point of view	Partners of Linked Heritage participate to the Europeana Content Council	
Sister projects	To avoid duplications and to re-use sharable solutions	Engagement in cluster meetings and in cluster groups	European Union
Aggregators	To achieve interoperability in order to cooperate with them in the provision of content to Europeana	Organisation of focused and thematic meetings. Participation to sectoral conferences	European Union
Policy groups, agencies and governments	To obtain ongoing support at national government level	Linked Heritage partners are representatives of the target and they will help to establish communication links (e.g. participation to governmental bodies, conertation tables, etc.)	European Union
Private sector	To communicate its progress, the benefit it brings, and the	Using its commercial partners as "references"	European Union

	potential value which it makes available, to the private sector		
Content Providers	To be informed about Linked Heritage in order to use the recommendations and tools developed by Linked Heritage	Engage directly with the content-contributing population through project concertation, through seminars, briefings, training and conferences, through the publication of handbooks and guidelines, through the sectoral literature	European Union and international dimension

Target Audiences: Europeana, sister projects, aggregators and content providers

The "wider deployment and use" of Linked Heritage results will take place in the context of the Europeana project (current and future releases). Linked Heritage will deliver best practice and supporting technologies, new material and enhanced content to Europeana and the surrounding ecosystem of sister projects, aggregators and content providers. The large-scale, long-term impact of Linked Heritage relies on the endorsement and adoption of our results by Europeana and its ecosystem.

The nature of the outputs from Linked Heritage are expected to be (a) identified **best practice**, (b) technology **tools** for the implementation and validation of best practice and (c) **knowledge** resources which support the application of these tools to provide more and better content to Europeana.

Europeana: The single most important target audience for Linked Heritage is **the Europeana project itself**. If the best practice results and the technologies from Linked Heritage are adopted by Europeana and are integrated into future releases of the Europeana system, then (a) the Europeana release will be significantly improved and (b) the impact of Linked Heritage will be guaranteed, because the entire Europeana ecosystem will utilise the results of the Linked Heritage project. In order to achieve this, the Linked Heritage project team will pursue (or has already pursued) the following approaches:

1. The Europeana Foundation will be invited to participate in the project as subcontractor.
2. The Linked Heritage team is already aware of the preferred technical approaches of the EuropeanaLabs team, particularly for external projects which aim to contribute to, or interoperate with, Europeana. The key elements here are Java 6+, Hibernate, the Spring Framework, Maven,

Freemarker, Apache Solr search and Postgresql[12]. The project team has also noted that an alternative interoperability strategy, based on the use of web services, is also supported.

3. The recently-constituted "Council of Content Providers and Aggregators" (Content Council) is a loose federation within Europeana which represents the content providers and aggregators who provide content into Europeana. It provides a channel for communication between these external bodies and the Board and Executive Committee of the Europeana Foundation.
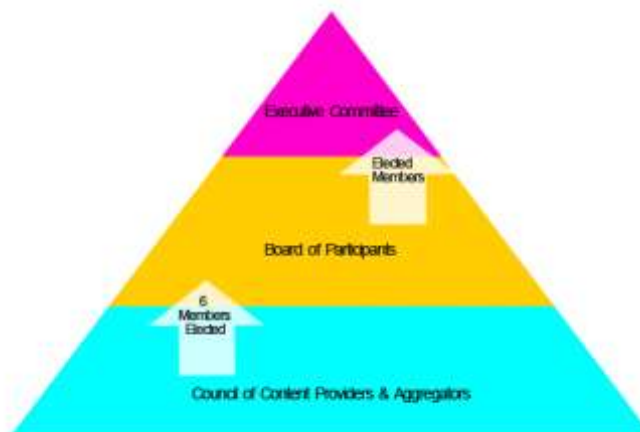
Content Council (source: version1.europeana.eu)

The Linked Heritage consortium is well represented on the "Content Council" and has already discussed the Linked Heritage concepts in detail with some of the 6 members of the Board who are elected by the Council.

Risk of overlap: the Europeana ecosystem is a very active one, with new projects and new results appearing periodically. This leads to a risk that some of the work of Linked Heritage may be duplicated by other projects funded under the same call, or by new developments in existing projects. Linked Heritage will actively monitor (through its network of shared partnerships and other collaborative links) the activities of other projects in the Europeana ecosystem. Where a risk of duplication or overlap is identified, the Linked Heritage team will consult with the other projects, and the most appropriate plan will be agreed. This may lead to a proposed division of work between the two projects (to be approved, of course, by the Commission), and the agreement on suitable interfaces to facilitate interoperability and collaboration, or some other measure being taken. Linked Heritage will be an integral part of the Europeana ecosystem community – it will work with other projects, rather than competing unnecessarily with them.

Relationship with Europeana

The Europeana Foundation and Europeana Labs are not members of the Linked Heritage consortium, despite the excellent long-term collaborative links between much of the consortium

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[12] For full details, the project team has had discussions with team lead Bram van der Werf, and taken into account documentation such as the "Guidelines for the use of EuropeanaLabs" at http://version1.europeana.eu/c/document_library/get_file?uuid=9f7ed5a7-fdaf-404a-b1a1-6a55b97b9b6a&groupId=10602

and the Europeana team. However, the Linked Heritage consortium recognises the value that working directly with Europeana will add, and is setting aside a subcontracting budget of 40,000 euro to enable such work to take place, when this can be supported by Europeana and Europeana Labs.

Sister projects, aggregators and content providers: Important dissemination work will be carried out by engaging at cluster meetings and in cluster groups with those entities which contribute content to Europeana. The sister projects (often sectoral aggregators, like ATHENA, ARROW and APEnet), aggregators and content providers represent the most important sources of Europeana content. If these projects adopt Linked Heritage technologies (e.g. "tag" their content records with persistent identifiers, to use Linked Heritage terminologies, or to use the richer metadata model which Linked Heritage will promote), then these enhancements will appear within Europeana without any requirement for active participation by the Europeana project team itself.

The Linked Heritage project consortium, particularly the dissemination work-package team, will engage directly with the content-contributing population through project concertation, through seminars, briefings, training and conferences, through the publication of handbooks and guidelines, through the sectoral literature, etc. Many members of the Linked Heritage consortium are government ministries and agencies which have excellent contacts and influence across their home cultural sectors. Others are national libraries and memory institutions, who again play a leadership role. Thus, even if the Europeana project does not immediately engage directly with the team, excellent communications channels exist.

Reaching out to the content-contribution population of projects, aggregators and content providers applies a "bottom-up" momentum to the adoption of Linked Heritage best practice and technologies.

Direct Links to Sister Projects

The partners in Linked Heritage include organisations which are also active in several of the other sister projects within the Europeana ecosystem. This reflects the central role which these organisations play in the cultural heritage sector in Europe. A few examples include

- ATHENA – **KMKG**, Belgium; **ICCU**, Italy, **Makash**, Israel; **MCC**, France; **SPK**, Germany, **Kazan State University**, Russia, **CIS**, Latvia, **CREF CYI**, Cyprus, **HMC**, Greece, **UP**, Greece, **EVK**, Estonia, **Dedale**, France, **NTUA**, Greece, **NBA**, Finland

- APEnet – **Ministry of Culture**, France; **RA**, Sweden,

- EuropeanaConnect – **NTUA**, Greece**, University of Padua**, Italy;

- EuropeanaLocal – **CL**, Ireland, **Collections Trust**, UK, **CREF CYI**, Cyprus, **RA**, Sweden

- Assets – **CNR**, Italy.

- Arrow – **EDItEUR,** UK (as very active subcontractor)

- Judaica Europeana – **ICCU**, Italy

- 3DCOFORM – **CREF CYI**, Cyprus

- CARARE - **CREF CYI,** Cyprus**, NTUA, Greece, HMC**, Greece, **EVK**, Estonia

- MIMO – **KMKG**, Belgium

- EUScreen – **NTUA**, Greece

- ECLAP (under negotiation) – **UDSDRLS**, Italy, **NTUA**, Greece

Each of these sister projects will be made aware at cluster meetings of the activities of Linked Heritage on an ongoing basis. Opportunities for collaboration and synergy will be actively pursued, leading to better best practice results, more efficient technology (e.g. through the re-use of the results of other projects), and broader impact (e.g. through dissemination to sectoral project audiences)

Aggregators: Linked Heritage involves in its partnership some of the major national and regional aggregators, among which are : CulturaItalia (Italian national aggregator), CultureFrance (French national aggregator), KulturPool (Austrian national aggregator), DigiCultur (the German national aggregator) and the Flemish national aggregator.

Policy groups, agencies and governments: as is always the case in the cultural heritage domain, it will be very important for Linked Heritage to gain the endorsement and support of the relevant government ministries and agencies which control the funding of memory institutions of all sorts. When government-level support for the best practice and technology work of Linked Heritage has been established, this can give excellent momentum to the uptake and use of Linked Heritage results by libraries, museums, archives and other memory institutions. On a pan-European scale, additional policy organisations have important influence – not least the Member States Expert Group and the new Reflection Group on Digitisation.

The Linked Heritage consortium includes several key ministries and agencies (e.g. MiBAC/ICCU from Italy, MCC from France, SPK from Germany, CT from UK, EVK from Estonia, HMC from Greece, GENCAT from Catalonia, CIS from Latvia, CL from Ireland). Their peers will be specifically targeted by the dissemination work-package, for seminars and briefings. The core message here will the benefits that Linked Heritage and Europeana bring to the cultural sector on a national level, both for cultural and for other (e.g. educational, commercial) purposes.

Ongoing support at national government level is strategically very important for Linked Heritage and will help the achievement of uptake and use of the best practice and technology results of the project.

The private sector: the private (especially publishing) sector is an important new addition to the Europeana ecosystem, introduced by the Linked Heritage project. For the publishers, Linked Heritage represents a new departure; it will be important for the project to communicate its progress, the benefit it brings, and the potential value which it makes available, to the private

sector. Pilot projects (e.g. in Spain) have shown that direct commercial benefit can be generated by collaboration with the public sector; more examples of added value are required if the private sector is to make large amounts of its unique and valuable content available to Europeana.

Linked Heritage will engage with the private sector by using its commercial partners as "references" who are prepared to present the project to their peers, highlighting the benefits that such a public-private partnership can bring. This "friend of a friend" approach builds on existing commercial trust relationships and helps to ensure that dissemination events and materials are suitable for the intended commercial audience. Clearly, the tactical and strategic objectives of the private sector differ from those of the memory institutions who are otherwise most prevalent in Europeana – specific dissemination and promotion actions for the private sector are essential.

B3. Implementation

B3.1. Consortium and key personnel

ICCU - Coordinator
Istituto Centrale per il Catalogo Unico delle biblioteche italiane e per le informazioni bibliografiche – Ministero per i Beni e le Attività Culturali, Italy

The Central Institute for the Union Catalogue of Italian Libraries and Bibliographic Information was created in 1951 with the task of producing the entire national bibliographic record. ICCU is an Institute of the Ministry of Cultural Heritage and Activities.

ICCU manages the National Library Service and union catalogue of over 3500 libraries, and is responsible for providing the standard rules and regulations for cataloguing all types of materials ranging from manuscripts to multimedia documents. In 2009 ICCU became the ISIL Registration Agency for Italy; this implies the responsibility of giving to the Italian libraries an official code structures according to ISO15511 and recognised at international level.

ICCU is in charge, together with thee national libraries of Rome and Florence and CNR, for the implementation of NBN – National Bibliographic Number, the standard for the persistent identification of the digital resources of the Italian libraries.

ICCU has a deep expertise in digitisation standards and guidelines, collaboration for integrated access to CH resources; in fact, on behalf of the Ministry of Cultural Heritage and Activities, it coordinates major digital cultural heritage projects on the national level, for example, Internet Culturale (launched in 2001), which developed an integrated access portal to the digital resources of Italian libraries, archives and other cultural institutes, CulturaItalia, the national cultural portal already contributing to Europeana via ATHENA, and on the European level, such as MINERVA, MICHAEL, ATHENA and DC-net:

- Digital Cultural Heritage Network (DC-net): 2009-2011, ERA-NET, involves ministries and national institutes from Italy, Belgium, Estonia, France, Greece, Hungary, Slovenia and Sweden in the coordination of digital CH research programmes; DC-net will be extended to Mediterranean partner countries in the INDICATE project;
- ATHENA – Access to Cultural Heritage Networks across Europe: 2008-2010, eContent+; enables the delivery of content from museums across Europe to Europeana;
- MICHAEL and MICHAELplus: 2004-2008, eTen programme; developed the MICHAEL portal that provides multilingual access to major European cultural collections;
- MINERVA – Ministerial Network for Valorizing Activities in Digitization projects: 2002-2008, FP5, FP6 and eContent+; coordination of European digitization and online access strategies.

Role in the project

ICCU is the coordinating partner and in this role is the WP1 Leader. Further, it share the leadership of WP6, together with CREF CYI, where it also participate actively as content provider. It is task leader for the dissemination in WP7 and participates, as project coordinator to all the WPs, except WP5 Technical Integration.

Rossella Caffo: Director of ICCU. From 2001 the Italian representative to the European National Representatives Group on Digitisation, and from 2007 to the Member States' Expert Group on Digitisation & Digital Preservation set up by the European Commission; currently she manages the above national and international projects.

Cristina Magliano: Deputy director of ICCU. Head of the Department of standards, cataloguing rules and training of ICCU. She is a member of Permanent Unimarc Committee of IFLA since 1997, of IFLA cataloguing section since 2002 and she is involved in several EU projects, as TEL, Athena and DC-NET dealing with metadata standards, digitisation and online accessibility of cultural heritage.

Marzia Piccininno: Director 2002-2008 of the Archaeological Museum of Valmontone (Rome); from 2002 to 2008 she participated in the national and European activities of the 3 MINERVA projects (MINERVA, MINERVAplus, and MINERVA eC), then she elaborated and organised the MEDCULT project funded by UNESCO to spread the MINERVA results across the Mediterranean basin, and, most recently, she coordinated the 'Digital Heritage' work package of STACHEM and was responsible of the content coordination for the ATHENA project. Expertise in organisation, networking and workflow facilitation of CH collaborative projects.

Maria Teresa Natale: Consultant, since 1985 she works in services for cultural institutions; from 2002 to 2008 she participated in the national and European activities of the 3 MINERVA projects (MINERVA, MINERVAplus, and MINERVA eC), being content manager of the relevant website, and responsible for the project Museo & Web, born in the framework of Minerva; she cooperated with the MEDCULT project funded by UNESCO, and coordinated the 'Digital Heritage' work package of STACHEM. Since the beginning (December 2009) she was technical coordinator of the ATHENA

project. She takes part in Europeana Working Group on users. She coordinates marketing activities in the Italian portal of Culture Cultura Italia.

Andrea Tempera: graduate in Political Science and International and European Relationship; consultant, Financial and administrative manager of EU project (MINERVA, MINERVA+, MINERVAeC, MICHAEL, MICHAEL+, MEDCULT, STACHEM, ATHENA); Technical assistance for servers and websites of the EU project (MINERVA, MINERVA+, MINERVAeC, MICHAEL, MICHAEL+,MEDCULT, STACHEM, ATHENA).

Marta Cardillo: specialized doctor in contemporary art history; from 2008 she contributes to the European project ATHENA by developing support activities to coordinate digital contents implementation, and contributing to dissemination activities. She took also part in the European project STACHEM by developing scientific researches about competence centres in the eastern Mediterranean area, creating investigation tools (online forms) for data acquisition, managing contacts, creating a networking infrastructure, processing data in Excel format, organizing workshop and presenting results.

Alessandra Stella: Since April 2004, she works as consultant for supporting the European projects coordinated by the Italian Ministry for cultural heritage and activities within the digital cultural heritage. In particular, she was responsible for monitoring and reporting activities of the accounting and financial management of ATHENA, Minerva, MinervaEC, Euromuse, Michael ,MichaelPlus. She worked at the Director's Secretariat and was in charge of organising national and international events within the projects coordinated by the Ministry.

Sara Moretto: consultant for supporting the European projects coordinated by the Italian Ministry for cultural heritage and activities within the digital cultural heritage. In particular, she was in charge of monitoring and reporting activities of the accounting and financial management of Minerva MinervaEC, Minerva Plus, Michael, Michael Plus, Bricks, Athena. She was responsible for the administrative management of the national cultural portal CulturaItalia. She worked at the Director's Secretariat and at the Secretariat of the Osservatorio tecnologico per i beni e le attività culturali. She was in charge of organising national and international events within the projects coordinated by the Ministry. Since January 2002 to May 2005 she was responsible for the Secretariat of the Conferences organized by the Italian Library Association.

UNIPD

The **University of Padua, Italy** (1222) is one of the most ancient in Europe and the second oldest University in Italy. All disciplines are covered (13 faculties and 65 departments). The Library System (SBA) is composed of 43 libraries and 69 service points coordinated by the University Centre for Libraries (CAB). UNIPD participates in LINKED HERITAGE through CAB.

SBA serves 67.000 students and over 2.300 academic staff. Holdings include about 2.500.000 documents and 9.000 print journals (current subscriptions). About 196 members of staff

contribute to the libraries and central services. On average, the 43 libraries are open 37,2 hours per week for a total of 1.600 hours per week and offer 2.813 seats. The amount of ILL requests fulfilled are more than 184.000 (2009).

The System is supported by the University networking infrastructure, which is directly connected to the Italian Research Backbone, GARR. The University WAN connects 70 buildings, with 800 workplaces dedicated to management activities (about 300 for librarians) and some thousands for didactic and scientific use. 594 workstation are available to users in the Libraries.

Important features are: a single library management system and catalogue (OPAC) connected to the national catalogue (SBN), an outstanding electronic bibliographic service with locally hosted and remote databases (224) providing services to other universities, a strong focus on electronic resources (about 14.000 e-journals) available through the WAN and several digital library projects. For reference see: http://www.cab.unipd.it/informazioni/progetti

Most recently CAB lead the activities for the following two projects: a) feasibility study, plan and implementation of a Web Portal for the Veneto region libraries (more than 600) supporting new services (i.e. metadata sharing, deduplication, annotation) among different regional union catalogues harvested via OAI-PMH (Agreement with Regione del Veneto, 2007-2011); b) feasibility study, plan and implementation of a national Virtual Library for Readers with Print Disabilities aimed at the implementation of a federated search service for the access to books, journals etc. for visually impaired and other disabilities (Agreement with the Italian Ministry of Culture MiBAC, 2007-).

In 2010 CAB signed a 5-years agreement including acquisition, sharing and collaboration in software development of "Phaidra" (Permanent Hosting and Archiving of Digital Assets and Resources), a Digital Asset Management System developed by the University of Wien; Phaidra, interoperable with Europeana, is used as a long-term preservation system through the assignment of persistent identifiers (permanent links) to manage and store any kind of multimedia digital object (digital born and analogue).

In addition to ILS, federated search, and digital libraries experience, the Library System could contribute to Linked Heritage project by bringing in the expertise of: training activities for both University of Padua Library staff (196 librarians) and third parties Institutions (more than 100 librarians from public, private and ecclesiastical libraries) on cataloguing, metadata and protocols standards, digital library architectures, IPR and OA issues; training on the metadata set for collections description for the 77 Universities involved in the digital collections' census of the EU project MICHAEL.

Role in the project

UNIPD is the WP7 Leader, where it actively participate with the implementation of the virtual learning environment and the organisation of the training workshop. It also participates as content

provider to WP6. Being a WP Leader, it participated to WP1 Project management and coordination.

Laura Tallandini

Professor of General Physiology at the University of Padua - Faculty of Sciences, Vice-Rector for the   University of Padua Library System, Member of SBN National Committee, Member of the CRUI (Conference of Italian University Rectors) Library Commission, Coordinator of the National Working Group for the Guidelines of the Academic Library System, President of CIPE (Inter-institutional Consortium for Electronic Projects on Library, Information and Documentation founded by 11 Italian Universities).

Scientific Coordinator of the DAFNE (Digital Architecture for Networked Editions) Project (1998-2006), Scientific Coordinator of the EC-funded MICHAEL Project for the census of Libraries and Museums' Digital Collections of Italian Universities (2006-2008).

Promoter of: the Padua University On Line Catalogue, the Integrated Union Catalogue and the Virtual Library among the library Institutions of the town of Padua, the Open Access facilities and Institutional Repository at Padua University, the project of the   Portal of the Veneto Region (funded by the Veneto Region), the National Project (funded by the MiBAC) for a Searchable On line Library for Readers with Print Disabilities, the development of the Digital Library aimed at storing, preserving and making it available to users the Padua University Cultural Heritage.

CNR
CNR - Information Systems Office, Italy

The National Research Council (CNR) is a public organization; its duty is to carry out, promote, spread, transfer and improve research activities in the main sectors of knowledge growth and of its applications for the scientific, technological, economic and social development of the Country. To this end, the activities of the organization are divided into macro areas of interdisciplinary scientific and technological research, concerning several sectors: biotechnology, medicine, materials, environment and land, information and communications, advanced systems of production, judicial and socio-economic sciences, classical studies and arts.
CNR is distributed all over Italy through a network of institutes aiming at promoting a wide diffusion of its competences throughout the national territory and at facilitating contacts and cooperation with local firms and organizations.
From the financial point of view, the main resources come from the State, but also from the market: even 30% of its balance sheet, an extraordinary result, is the result of revenues coming from external job orders for studies and activities of technical advice as well as from agreements with firms, contracts with the European Union and with the other international organizations.

The Office for Information Systems unit participate as partner to Linked Heritage. The Office coordinates CNR's Information System design and development, with respect to applications and infrastructural components. It is also responsible for the connection of CNR's central

administration with the information systems of all the institutes and sites, which make up CNR's distributed scientific network.

It coordinates methodological and technological standard definition and attends to the selection, monitoring and control of platforms for information systems.

In particular, the Office is responsible for the development of CNR's ERP system (financial accounting, human resources, research activity planning, monitoring and accounting), Data Warehouse system, document repositories and web portals. It is also responsible for CNR's Local Registration Authority and participates to the development and management of CNR's Central User Authentication and Authorization Service.

The design and development activity is mainly based on open source technologies and open standards and is carried out via internal personnel.

During the last ten years the Office has consolidated a significant expertise in document management, information retrieval, workflow management, semantic web and persistent identifier assignment and management. It has participated and currently participates to national and international projects in the field of ICT (Grid Technologies, Semantic Web, Persistent Identifiers, etc.).

The Office currently employs 33 personnel units, 29 of which directly involved in design and development activities. 20 personnel units have university, master or doctoral degree.

Role in the project

CNR participates as content provider to WP6.

Maurizio Lancia is currently Head of CNR's "Information Systems Office". He is also Vice President and member of the Board of Directors within the GARR consortium (the Italian scientific high-speed network connected to Géant). He represents CNR within the Board of directors of "Roma Ricerche Consortium" (a no-profit organization aimed at establishing a link between university and industry). He is representative of CNR at SISTAN (Italian National Statistics System). He holds a degree in Electronic engineering from University of Rome "La Sapienza".

Within the field of digital libraries, he coordinates the development of CNR's Institutional Archive and of several document management systems. Within the field of Persistent Identifiers, he is member of the Steering Committee of the Italian NBN initiative.

Roberto Puccinelli is currently head of Section I of CNR's "Information Systems Office". He has previously worked in the private sector as system and network engineer. As contract professor, he held courses for the First University of Rome "La Sapienza" ("Operating Systems II") and for the Third University of Rome ("Programming and Computation Laboratory"). He graduated in Electronic Engineering at the University of Rome "La Sapienza" and holds a master cum laude in Enterprise Engineering from the University of Rome "Tor Vergata".

In the field of persistent identifiers, he works in the Italian NBN initiative as leader of the technical working group and as member of the policy and metadata working groups. He takes part to the PersID project (funded by SURF Foundation and Knowledge Exchange Consortium) aimed at developing an NBN European Global Resolver (manager of Work Package 4 "Implementation" and Chairman of the Project Management Board). He's finally involved in the IETF working group, which is updating NBN's specification (RFC 3188) and participated to the development of jNBN, a Java open source software for the management of a national NBN infrastructure.

MCC
Ministry of Culture and Communications, France

The department for research and high education (Département de la Recherche, de l'Enseignement supérieu - DREST) is a horizontal department in the French Ministry of Culture and Communication. It is responsible for the co-ordination of the activities of scientific and technical research of the departments, services and institutions of the ministry of Culture, as well as the national digitisation plan for cultural heritage. In these fields, it ensures the management of the interdepartmental programs at national level and represents the ministry of culture in national authorities and at European level. It distributes the results of its activity to the attention of the principal stakeholders and participants of the culture and research domains.

To carry out the national digitisation plan, the DREST relies on a national steering committee with scientific representatives from each department of the ministry of culture, ensuring the link with the regional directorates for cultural affairs (DRAC), local authorities and public cultural institutions (National Library of France, National institute for Audio-visual, Museums and Archives...). This committee meets periodically to produce common guidelines and to promote technical standards, to define national thematic priorities and to launch the annual calls for projects of digitisation. Its co-ordination guarantees the coherence of the national strategies, the quality of digitisation, the availability for the public of digitised resources and the follow-up of the programmes for their valorisation. The DREST is in charge of the steering of the national inventory of digitised collections ("Patrimoine numérique"), available on line as the national instance of the MICHAEL portal. The MRT has also developed a co-operation with the ministry of Higher Education and Research for the adaptation of "Patrimoine numérique" to the digitised collections depending from Universities or Research institutions (project NUMES, implemented by the ministry of Higher Education and Research).

The main aim of the digitisation in the Ministry of Culture and Communication works is to foster the democratisation of Culture through the development of digital access to cultural resources for all audiences. For this, the ministry develops or supports new services for the different kind of public (pupils, students, general etc), such as the portal "Collections" on Culture.fr, that proposes a unique gateway to more than 2 million digitised item. The implementation of the French instance of MICHAEL (national inventory of digitised collections "Patrimoine numérique") is also part of this strategy.

Role in the project

MCC is WP3 Leader. It also participate as content provider to WP6 and contributes to the dissemination activities in WP7. Being a WP Leader, it participated to WP1 Project management and coordination.

Christophe Dessaux is a civil engineer. He works at the Directorate for Development and International Affairs (Secretariat General) in the Ministry of Culture and Communication, France, where he is responsible for the Department for Research and Technology. This department is in charge of the co-ordination of Research in the Ministry, of the implementation of national digitisation plan of cultural heritage, and of the European development of these activities (Minerva, Michael, Europeana). Christophe Dessaux is the French representative in the Commission's Member State's Expert group on Digitisation. Since 2007, he is also president of the association Michael Culture, which is in charge of the sustainability of the MICHAEL project, and member of the Executive Committee of the EDL Foundation.

EVK
Eesti Vabariigi Kultuuriministeerium (EVK) – Ministry of Culture, Republic of Estonia

Within the Estonian Government, the Ministry of Culture is responsible for organizing and coordinating state cultural policy. The task of the Ministry of Culture is to make sure that necessary and favourable conditions, both legislative and financial, are created for the functioning of culture, heritage and sports from the culture professionals' as well as the general public's point of view.

The mission of the Ministry of Culture is to support the maintaining of the Estonian national identity by valuing, preserving, developing, acknowledging and spreading Estonian fine arts, cultural heritage and sport in Estonia and abroad supporting both the professional and amateur activities in creativity and sport.

Ministry of Culture has participated in MichaelPLUS, MinervaEC and MICHAEL Plus projects and currently is participating in ATHENA, DC-NET and CARARE projects.

Role in the project

EVK participates as content provider to WP6. It is also responsible for the printing of one Hanbook published by the project and in this light participates to WP7.

Indrek Eensaar,

- Tallinn Technical University, public administration (MPA)
- 1999 – 2003 Harju County Government, Senior Specialist.
- Since 2003 Ministry of Culture, Republic of Estonia, Head of Information Technology Division.
- Fields of responsibility: coordinating the development of information technology in the administrative area of the ministry. Managing the development-plans of state priority IT-systems (the IT systems of the museums and libraries) and coordinating the IT-related fields of activities (digitalization).

Anton Pärn,

- University of Tartu, MA in archaeology
- 1986– 2001 National Heritage Board, area of responsibility – archaeology.
- 1993-2001 Deputy Director General of the National Heritage Board.
- Since 2002 Deputy Secretary General of the Ministry of Culture.
- Fields of responsibility: cultural heritage.

HMC

Hellenic Ministry of Culture, Greece

The Hellenic Ministry of Culture & Tourism (formerly Hellenic Ministry of Culture (HMC)) is responsible for monitoring and funding cultural developments in Greece. In the framework of the National Information Society Programme during the last ten years, HMC has funded numerous projects of cultural institutions, focusing on digitisation of cultural content, providing access to the digitised content and promoting digital culture worldwide. In the same framework, a large scale digitisation programme of significant content from the Ministry's archaeological museums has been completed.

Specific targets of HMC include facilitating access to this large amount of digitised cultural content, and supporting cultural institutions to promote their content through European and international networks. The Directorate of Informatics and Telecommunications participated in the eTen MICHAEL Plus project, currently operating and enriching the national MICHAEL instance, participates in the eContentPlus ATHENA project to coordinate and support cultural institutions for providing content to EUROPEANA, and is working towards a national aggregator for unified access to the Hellenic cultural content. It is also a partner in the ERA-NET DC-NET project.

The Directorate of Informatics and Telecommunications has established communication and cooperation with a large network of Greek cultural institutions, across domains, and has been working with them through ATHENA, MICHAEL Plus, and the National Information Society Programme, to support and promote the results of their digitisation and online accessibility activities. It has also cooperated with the Directorate of the National Archive of Monuments of the Ministry, responsible for the digitised archaeological content of the Ministry. This successful cooperation network can be continued through the Linked Heritage project.

Role in the project

HMC participates as content provider to WP6. It also contribute to the dissemination activities and in this light participated to WP7.

Constantinos Chatzichristos is Head of the Directorate of Informatics & Telecommunications at the Hellenic Ministry of Culture & Tourism. He has long experience with ICT applications and services for the Ministry. He is also in charge of the HMC participation in the EU projects ATHENA and DC-NET and is actively involved in projects in the area of digital cultural heritage. He holds a degree in Economics from the Athens University of Economics & Business.

Katerina Moutogianni works for the Directorate of Informatics & Telecommunications at the Hellenic Ministry of Culture & Tourism. She is responsible for projects concerning online access to digital cultural heritage, including the EU projects ATHENA and MICHAEL Plus. She has previously worked at the Hellenic Culture Organisation in a number of e-culture projects for museums and archaeological sites throughout Greece, and also as a research assistant in the area of information retrieval at the Department of Computer Science, Queen Mary University of London. She holds a degree in Computer Science from University of Athens, Greece and an MSc in Human Computer Interaction from University of London, UK.

NTUA
Institute of Computer and Communication Systems - National Technical University of Athens, Greece

The Image, Video and Intelligent Multimedia Systems Lab (IVML, www.image.ntua.gr) was established in 1988, as one of the Laboratories of the School of Computer and Electrical Engineering and of the Institute of Computer and Communication Systems (ICCS) of the National Technical University of Athens (NTUA) in Greece. The members of the Lab (which are about 35, including research scientists, researchers, PhD students, programmers, and supporting staff) are active members of the research community having published more than 100 journal articles and 200 international conference contributions.

The most important areas of R&D activities performed or supported by IVML include:

- Knowledge based multimedia analysis
- E-learning Applications
- Semantic Web technologies and knowledge representation
- Uncertainty modelling, artificial neural networks, fuzzy and neurofuzzy technologies
- Content-based semantic multimedia content search and retrieval
- Interoperability and access to cultural content
- MPEG-7 , MPEG-21 standards
- Intelligent Human Computer Interaction and Intelligent agents
- Metadata standards and interoperability

IVML has been involved in over ninety R&D projects and activities funded by the European Commission or Greek organisations. In particular:

IVML participates in the design and implementation of intelligent semantic analysis and retrieval of multimedia content, following the MPEG (4,7,21) and Semantic Web standards (being a member of W3C). The leader of the Lab, Prof. Stefanos Kollias has been one of the experts that the EC has used for defining the framework of 'Semantic Content Analysis' and its perspective for 2012. He has been a member of the EC 'Interoperability Group' on Digital Libraries in 2006-2007. He is National Representative of the Hellenic Ministry of Culture since 2004, participating in the NRG up to 2006 and to the EC Expert Group on DL since then, the EDLnet, the Minerva-ec and the Michael plus projects. He has co-organised the Workshop on "Semantic Interoperability in the European Digital Library" in the European Semantic Web Conference, Tenerife, June 2008.

IVML has participated in the 6th framework IP ACEMEDIA on semantic-based adaptive multimedia analysis systems (2004-2007), in the NoE MUSCLE on intelligent adaptive multimedia analysis (2004-2007), in the NoE Knowledge-Web on semantic Web technologies (2004-2007), in the IP AskIT on knowledge-based assistance for mobility-impaired people (2004-2007), in the IST NoE K-Space on multimedia and knowledge technologies (2006-2009), in the IST IP Mesh on knowledge technologies for news (2006-2009), in the IP X-Media, on knowledge technologies and business environments (2006-2009), in the STREP project Boemie on ontology evolution (2006-2009), in the We-Know-It IP project on collective intelligence and Web2 technologies (2008-2011), in the ICT E-Culture Imagination project, on knowledge-based access to historical content (2006-2009), in the E-Content-Plus Videoactive project being technical leader for unified access to audiovisual archives (2006-2009), in the E-Ten Michael Plus project being technical leader for a common platform for access to European cultural content and interoperability (2006-2008), in the E-content Plus Minerva-ec (2006-2008), collaborating with European libraries, museums, archives, being technical co-leader of the interoperability part of the project, in the ICT E-Inclusion Agent-Dysl project (2006-2009). Prof. S. Kollias and Dr. G. Stamou have co-edited a book on "Multimedia and Semantic Web", published by Wiley in June 2005. IVML is a member of the W3C, participating in the Working Group on Rule Interchange Format, in the Uncertainty Incubator Group, in the OWL 1.1 working group, in the 'Multimedia Annotation and the Semantic Web' Task Force. IVML has organised ICANN-2006 in Athens in September 2006. They also organised SAMT-2006, on semantic multimedia analysis in Athens in December 2006, the WIAMIS-2007 in Santorini, June 2007 and will organise the CBMI-2009 Conference on content based multimedia indexing in Athens, June 2009.

IVML is currently active in several Europeana related initiatives, participating in the Europeana v.1.0 and EuropeanaConnect projects. IVML is a technical partner for the Athena, EUScreen, CARARE and E-CLAP BPNs of the eContentplus programme. The metadata ingestion platform that has been developed and is being extended to facilitate the aforementioned thematic aggregations also serves for the Europeana Data Model (EDM) development and prototyping.

Role in the project

NTUA is WP5 Leader and participates actively to the WP for the software development of the Linked Heritage ingester. It participates also to WP6 to provide support to the ingestion process and to WP7 to provide expertise for the training activities. Being a WP Leader, it participated to WP1 Project management and coordination.

Prof. Stefanos Kollias was born in Athens in 1956. He obtained his Diploma from NTUA in 1979, his M.Sc. in Communication Engineering in 1980 from UMIST in England and his Ph.D in Signal Processing from the Computer Science Division of NTUA. He is with the Electrical and Computer Engineering School of NTUA since 1986 and since 1997 he serves as a Professor. Since 1993 he is Director of the Image, Video and Multimedia Systems Laboratory of NTUA. His research interests include   image and video processing and analysis, multimedia content based retrieval, and management, intelligent and knowledge-based systems, neural networks, human computer

interaction, cultural content and digital libraries, semantic web and multimedia semantics. He has published more than 200 papers in the above fields, about half of which in international journals. Since 2004 he is national representative of the Ministry of Culture in new technologies and a member of the (cultural) National Representative Group and the subsequent Expert group of the EC.

Dr. Athanasios (Nasos) Drosopoulos received the degree in Computer Science from the University of Ioannina, Greece in 1998, and the Ph.D. in the field of computer vision from the Comp. Eng. Dept. of the NTUA in 2005. He has worked as a senior researcher and software engineer for more than 15 Greek and EC projects in the fields of neural networks & machine learning, emotion analysis & human-computer interaction, knowledge technologies and digital archives. He is currently involved in research activities and projects concerning access to digital cultural heritage content (Europeana projects cluster) and linked open data.

UP

University of Patras – Department of Computer Engineering and Informatics, Greece

The Department was founded in 1980, and was the first in an engineering (polytechnic) school in Greece to offer a 5 year engineering Diploma curriculum in the field of Computer Engineering & Informatics. Since then, it has become one of the leading university departments in Greece, attracting some of the strongest students in the country. The Department's members actively participate in teaching and research in most areas of Computer Engineering and Computer Science. The quality of the research activities is borne out by the Research Laboratories housed in the Department. The Laboratories which will participate in the project are:

The Graphics, Multimedia and GIS Laboratory of the Computer Engineering & Informatics Department of the University of Patras was established in 1994. The educational and research work of the laboratory is being executed within the framework of the Department's Computer Software Section. The laboratory is housed in the Department's new buildings and uses modern computational equipment.

The primary activities of the laboratory include the development of Graphics, Multimedia, Digital Content GIS, Medical Informatics and Telematics applications and tools within the frameworks of national and EU research projects.

The High Performance Information Systems Laboratory: The "HPCLab" is the original name given to the laboratory in 1990, since it developed the first in Greece activities and R&D projects in parallel systems field. The laboratory, as part of its research activities and the projects it has worked on, has cooperated with many organizations in Greece and abroad in the field of Culture and ICT.

The aforementioned laboratories have been participated in numerous IST and eContent EU funded projects, such as MINERVA, MINERVAPLUS, MINERVA EC, ATHENA, MUVII.

Role in the project

UP participates as content provider to WP6. It also participate to the dissemination and training activities of WP7.

Professor Athanasios Tsakalidis

Prof A. Tsakalidis was born in in Katerini, Greece and received his Diploma of Mathematics in 1973 from the Aristotle University of Thessaloniki. In 1981 he received his, Diploma of Informatics from the University of Saarland, Saarbuecken, Germany and his Master's Thesis and in 1983 he received his Ph.D in Computer Science (Advisor: Prof. K. Mehlhorn). He speaks English and German. Since 1988 he is a professor of the Department of Computer Engineering and Informatics (CEID) of the University of Patras. Since 2009 he is the President of CEID. Since 1994 he is the director of the Graphics, Multimedia and GIS Laboratory of CEID. He has authored numerous publications in several areas of Computer Science.

Theodore S. Papatheodorou

Prof. Papatheodorou received his B.Sc. in Mathematics from the University of Athens in 1968, M.Sc. in Mathematics from Purdue University in 1971, Ph.D. in Numerical Analysis from Purdue University in 1973, and M.Sc. in Civil Engineering from Purdue University in 1975. He has held several academic and consulting positions in Greece and the United States (most recent position in the U.S.: visiting professor, department of Computer Sciences, Purdue University, 1995). Since 1984, he has been a Professor at the Department of Computer Engineering and Informatics of the University of Patras, Greece. He developed the HPC Lab of the University of Patras. Currently he is the Director of this laboratory and serves as the Technology Consultant to the Minister of Culture. He has authored numerous publications in several areas of computer Engineering and Computer Science.

CT

The **Collections Trust, UK** is the UK's independent organisation for collections. We campaign for the public right to access and engage with collections by promoting best practice, encouraging innovation and representing the interests of the sector. CT is an independent registered charity, partly funded by national partners including the Museums, Libraries and Archives Council and Museums Galleries Scotland. With over 30 years of experience, CT leads on cultural collections management and the cultural digital agenda in the UK. We work in partnership with a wide range of organisations both nationally and internationally, including museums, libraries, archives, community archives, higher education institutions, and government agencies and departments. We have links with a large number of cultural heritage organisations including UKOLN, ICOM-CIDOC, Getty, CHIN, the Collections Australia Network, and the DEN Foundation.

In addition to CT's flagship programmes, the Culture Grid and Collections Link, CT is actively involved in many programmes in the field of cultural management, digital heritage, and digital libraries. Currently these include two Europeana group projects, EuropeanaLocal and ATHENA, as well membership of the working groups for Europeana v1.0. Other current projects include collaborating with culture-sector organisations to set out Principles for Linked Data in the Culture

Sector, and working with memory organisations to aggregate Cultural Olympiad content through the Culture Grid.

Role in the project

CT is WP2 Leader. It also participates to WP3 terminologies and to the dissemination and training activities of WP7. Being a WP Leader, it participated to WP1 Project management and coordination.

Nick Poole, Chief Executive Officer, has a wide experience of professional standards, new technologies, legal issues and innovative business models for service delivery in the culture sector. He acts as adviser in the fields of digitisation, standards, rights management and sustainability, and is an expert assessor for a number of national funding agencies. Nick has as lectured and published widely in the field of digital culture. He is also the cross-domain representative on the Europeana Council of Content Providers and Aggregators.

Gordon McKenna, International Development Manager, has experience of standardisation in the culture sector. He has been responsible for a range of CT's work programmes and has authored publications in the cultural standards area. He is skilled technologist, with a background in computer sciences and archaeology, and has advised a wide range of cultural organisations on standards and technical issues relating to cultural heritage management.

Phill Purdy, Grid Manager, is an experienced project manager, and has managed the development of the Culture Grid, and is currently working on a project to support the sustainability of digital content in the heritage sector.

The Collections Trust Networks Team is a team of 4 CT members of staff who are responsible for the dissemination of cultural heritage knowledge and experience through the Collections Link community.

CL

An Chomhairle Leabharlanna, Ireland– The Library Council was established under the Public Libraries Act, 1947. The functions of the organisation are to provide advice and assistance to local authorities in relation to the improvement of the public library service; to advise the Minister for the Environment, Heritage and Local Government in relation to the public library service and to promote and facilitate library co-operation within Ireland and internationally.

An Chomhairle Leabharlanna provides the chair and secretariat for the Cultural Heritage Panel, set up in 2001 to develop national policy for the digitisation of public library holdings and the organisation manages the national digitisation initiatives arising. Initiatives to date include the national digitisation programme for public libraries, the national online resource for local studies material, digitisation of the archive of the national paper of record and online access provision to the most important Irish genealogical records for the nineteenth century. In addition to managing national digitisation programmes, An Chomhairle Leabharlanna provides support, advice and training workshops on digitisation for public library staff. The organisation has participated in a

number of EU digitisation projects including Activate, Cultivate, Minerva, MinervaPlus, MinervaEC and is currently the national participant in the EuropeanaLocal project for the provision of access to local digital content material for Europeana.

Role in the project

CL participates as content provider to WP6. It also participates to the dissemination activities in WP7.

Annette Kelly

Annette has managed the national digitisation programme for public libraries in Ireland and manages the national resource for digitised local studies material and the Changing Libraries Programme for the provision of electronic services in public libraries in Ireland. Annette is one of the Irish representatives on the Member States Experts Group on Digitisation and Digital Preservation. She is also a member of the policy steering group on public libraries, the Euro Focus on the Cultural Heritage Committee in Ireland and is the Chair of the public libraries' Cultural Heritage Panel for the digitisation of public library material.

Joan Ward

Joan has co-ordinated the national digitisation programme for public libraries in Ireland and co-ordinates the national online resource for digitised local studies material and the Changing Libraries Programme for the provision of electronic services in public libraries in Ireland. She is currently managing the creation of an historic digital book collection online and is co-ordinating the Irish input into the EuropeanaLocal project. Joan has managed the Irish input to a number of EU projects including Activate, Minerva, MinervaPLUS and MinervaEU.

Anne Marie O'Dwyer

Anne Marie is a co-ordinator on the digitisation programme in The Library Council. She is an expert advisor and researcher in a number of different media, particularly in literature and the environment. Anne Marie has experience in web development, editing and management and currently oversees the content development for the Irish public libraries' online local studies resource.

PL

Pintail Ltd, Ireland is an SME based in Dublin. The main company activities are consultancy in e-Culture, libs, inet technologies and distributed systems, software development, academic/industry collaboration, and project management, with an emphasis on the management of EU projects.

Pintail is particularly active in the digital cultural heritage domain and has contributed to projects such as MINERVA, MICHAEL, EuropaGate, ATHENA, eTen Orpheus and eTen Euridice. Pintail has worked in the past with ICCU, UNIPD and CL, and is current involved (in collaboration with CL) in the aggregation of Irish libraries content to Europeana through EuropeanaLocal.

EU Expertise: Pintail has been involved in EU projects since the early 1990s, in programmes as diverse as Esprit, ACTS, eContent+, eTen, FP6 and FP7. Pintail has acted as a 'problem manager' for projects which have received 'red flag' reviews, as a specialist subcontractor and as a full project partner.

Role in the project

PL supports the technical writing in the project (including the two large-scale publications) and the peer review of the deliverables. In this light it participates primarily to WP1 Project management and coordination and WP7 Dissemination, but also, mostly as observer to WP2, WP3, WP4 and WP6.

Ciaran Clissmann is a director of Pintail Ltd. He has been involved in EU projects since 1991, writing proposals, managing work-packages and taking part in reviews. During 1999 and 2000 he worked as an expert in the Commission services in Brussels. He has acted as an evaluator and rapporteur for the eContentPlus and EuroStars programmes of the EU, most recently in 2008, 2009 and 2010.

I2CAT

The i2CAT Foundation, Spain Internet and Digital Innovation in Catalonia, is a research organization located in Barcelona (Spain), whose mission is to promote research and innovation in advanced Internet technology at a regional, national and international level. The i2CAT model is based in the user-driven research and collaboration between the public, the private sectors and the academic world.

As far as the international dimension is concerned, i2CAT participates in European programmes through research networks such as GÉANT2 and technological platforms such as NEM (Networked and Electronic Media). During last years i2CAT has participated in many European projects: COLLABS (ICT-PSP), HDVIPER (CELTIC-EUREKA), DRMSolution NG (CELTIC-EUREKA), PHOSPHORUS (FP6-IST), FEDERICA (FP7-ICT), VEP (eParticipation), GEYSER (FP7-IST), HELP4MOOD (FP7- ICT), RAISME (FP7- SME) and MANTICORE (FP7-INFRASTRUCTURES).

In Spain, i2CAT is a leading institution in the area of media applications and services to the cultural sector, with projects like "Opera Oberta" with "Gran Teatre del Liceu de Barcelona", and the "Anella Cultural" (Cultural Ring), an advanced Internet infrastructure for cultural institutions. Since 2000 i2CAT is partner in this area with Internet2, Cinegrid, KAIST (Korea), RedIris and RNP in Brasil.

The i2CAT Foundation is organized into five sector clusters: Network Technologies cluster, Media cluster, Health cluster, Education cluster, Industry cluster. The aim of these clusters is to carry out innovation projects and to deploy, evaluate and approve technologies, applications and innovative IP services.

Each cluster heads its own projects, using a common infrastructure of development called Technological Platform, consisting of the following two areas: NetCAT (an experimental network

with a 10 Gbps backbone) and MediaCAT (a multimedia laboratory with advanced audiovisual equipments).

Role in the project

I2CAT participates to WP6 providing technical support to DDUIE of the Generalitat of Catalunia. It also participates to WP2 and WP3 to provide technical expertise. Finally, it participates to the dissemination and training activities in WP7.

Artur Serra is Adjunct Director of the i2CAT Foundation since its creation in Sept. 2003. He received in 1992 the Ph.D. degree in Cultural Anthropology for the University of Barcelona with a doctoral dissertation on Design Culture from Carnegie Mellon University. In 1999, he leaded the i2CAT project at the UPC, now the i2CAT Foundation. It was the first Spanish research project in Next Generation Internet, in coordination with UCAID in the US, CANARIE in Canada and other countries. More info: http://personals.ac.upc.edu/artur/. Member of ISOC since 1991, he has been founding member of the ISOC EU Coordinating Council.

Flaminio Minerva was born on 26th May 1980. He received his cum laude degree in Telecommunications Engineering from University of Pisa, Italy, in July 2005. From February 2005 to July 2005 he was a visiting student to the Department of Telematic Engineering of the Technical University of Catalonia (Barcelona), where he prepared his master's degree thesis. In November 2005 he joined the i2CAT Foundation, where he coordinates the Audiovisual Cluster since July 2008. He currently manages within i2CAT about 12 audiovisual R&D projects funded by national (CIDEM, Avanza I+D) and international (CELTIC, eParticipation) programmes. His research interests are signal processing, teletraffic engineering and transmission of high definition audiovisual contents over the Internet.

Sergi Fernandez was born in Vilanova i la Geltrú (Barcelona) on 30th August 1982. He is Engineer in Computer Science and Master in Artificial Intelligence by the Technical University of Catalonia since July 2007. He developed his final degree thesis over automatic ontology construction and worked in the Natural Language Processing Group until his incorporation into i2CAT in May 2008. Since then, he has given support to the coordination of i2CAT audiovisual cluster as project engineer.

PUM
Philipps-Universität Marburg, – Germany

Being a central unit of the Philipps-Universität in Marburg, the German Documentation Center for Art History "Deutsches Dokumentationszentrum für Kunstgeschichte - Bildarchiv Foto Marburg (Foto Marburg)" is a national and international research and service institute.

Its mission is to collect, index and make available photographs related to European art and architecture, as well as to conduct research on the history, practice and theory of how visual cultural assets are passed on. With its roughly 1.7 million photographs, Foto Marburg is one of the largest image archives on European art and architecture.

Since Foto Marburg publishes the pictorial material and the indexing data of more than 80 partner institutes, it has many years of experience with managing cooperative structures, implementing documentation standards, and publishing heterogeneous data in portals. Its partners are as well museums, offices for the protection of historic monuments, libraries and research institutes.

Foto Marburg is actively involved in standardization work for the museum community on German and international level, together with the German Museum Association, ICOM-CIDOC, and other stakeholders like the Getty. Within the ATHENA project Foto Marburg provided its expertise in WP3 - Identifying standards and developing recommendations in particular.

Role in the project

PUM participates mainly in WP6 to provide support to the mapping activities in the frame of the ingestion process. It participates also to the training activities of WP7. Finally, it participates to WP2 to provide technical expertise on the metadata models and to contribute to the evolution of LIDO.

Regine Stein is Head of Information Technology at Foto Marburg and especially responsible for the high-quality integration of data delivered by more than 80 partner institutes into the Foto Marburg database. Graduated in mathematics, she has been developing software tools for museums of various kinds and is specialised in data mapping and merging from all kinds of source databases, as well as implementing RDF/XML-based export facilities as they are used for the Linked Open Data approach. Regine provides leadership for the development and implementation of LIDO, the CIDOC-CRM based metadata standard for contributing cultural heritage information to portals, from its beginnings in 2006 through the ATHENA project to its centralization within CIDOC.

SPK

Stiftung Preußischer Kulturbesitz – Prussian Cultural Heritage Foundation, Germany

The Foundation is one of the world's major cultural organisations. The Staatliche Museen zu Berlin (National Museums in Berlin), the Staatsbibliothek zu Berlin (State Library), the Geheimes Staatsarchiv (Secret State Archives), the Ibero-Amerikanisches-Institut (Ibero-American Institute) and the Staatliche Institut für Musikforschung (State Institute for Music Research), all with their origins in the collections and archives of the State of Prussia, are linked to form a close network for cultural transmission.

From the beginning it was scholars and artists rather than princes and kings who gave the collections their distinctive profile. Although individual treasures such as the world-famous Pergamon Altar or the bust of Nefertiti draw the attention, the encyclopaedic range and ordered structure of the collections as a whole reflect an all-embracing interest in education.

The preservation and care of the collections, their structure and development, and the continuation of academic and scientific research form the basis for a mediation of cultures with a mission to encourage learning and understanding between different peoples.

The Foundation embodies the shared governmental responsibility for culture in Germany. The Federal Government and the sixteen individual states share the legal and financial responsibility, a living manifestation of constitutional reality.

The Institute for Museum Research is one of two Research Institutes attached to the State Museums Berlin. The major tasks of the Institute are research and documentation for and on all museums in Germany. The "Institut für Museumsforschung (IfM)" (= Institute for Museum Research) is the only institute who has to work for all German museums. It is involved in standards dvelopment, eg. the harvesting formar "lido" for museum data as well as coordinating a working group on terminologies in German museums (www.museumsvokabular.de).

Role in the project

SPK participates as content provider to WP6. It also participates to the dissemination activities in WP7. Further it contributes with technical expertise to WP2 and WP3.

Monika Hagedorn-Saupe

Prof. Monika Hagedorn-Saupe studied mathematics, sociology, psychology, and education at the Ruhr-Universität Bochum, at Kings College London, and at the Freie Universität Berlin, with a focus on adult education. Since 1985, she has been staff member of the Institut für Museumsforschung (Staatliche Museen zu Berlin, Stiftung Preußischer Kulturbesitz), overseeing the annual visitor statistics of all German museums. Since 1994, she has been Head of the department "Visitor-related museum research and museum statistics", is responsible for several European projects and acts as the Deputy Director of the Institute.

Since 2007 she is a member of the Board of the German Museum Association, since 1997 she chairs the Special Interest Group on Documentation (Fachgruppe Dokumentation) in the German Museum Association (Deutscher Museumsbund e.V.) and is Secretary of CIDOC, the documentation committee in ICOM. In 2001, she was nominated from the German Federal government to participate in the European NRG (National Representatives Group on Digitisation in Culture) and is now a member in the MSEG. She is Professor in museology at the University of Applied Sciences HTW in Berlin/Germany, and teaches terminology in museums in Krems/Austria.

Stefan Rohde-Enslin

Dr. Stefan Rohde-Enslin studied ethnology and political science. He is a member of staff of the Institute for Museum Reseaech, State Museums in Berlin responsible to support museums in questions of digitisation and long term pr4eservation of digital data. For many years Dr. Rohde-Enslin worked in the historical photo archives of the Rautenstrauch-Joest Museum of Ethnology, Cologne.

Dr. Rohde-Enslin was involved in a project entitled, "Digitisation of Photographic Collections in German Museums". The URL for this project is: www.sepiadigital.de. Another professional interest of Dr. Rohde-Enslin is the gathering of information pertaining to historical collections of

photographs housed in German cultural organisations. The project URL is: www.fotoerbe.de. The focus of his work actually is the project, www.kulturerbe-digital.de which he directs.

The Central Library of the Bulgarina Academy of Science, Bulgaria(http://www.cl.bas.bg):

▫ Provides information services for the researchers of BAS and the country and participates in information, computer and other networks and systems of national and international agreements and projects,

▫ Gathers processes and provides information about science in Bulgaria for national and international institutions, editions, computer networks and systems;

▫ Carries out research, publishing and implementation activities in the field of library science, special bibliography, and library sociology, library and information technologies;

▫ Collaborates with scientific institutes and organizations in the country and abroad;

▫ Provides a basis for practice of students in library and information sciences;

▫ Participates in the activities of national and international organizations;

▫ Maintains the book stock of the Central Library with the 48 branch libraries - 2,000,000 volumes.

International PROJECTS:

▫ ICIMSS (International Centre for Information Management Systems and Services). 1993-;

▫ 20th Century Foreign Bulgarian Studies. UNESCO. 1998-;

▫ Cultivate. 5FP. 2000,

▫ TEMPUS – Em/NET

▫ Bilateral Contract with British Library – "Digital and Analytical Processing of Medieval Slavic Manuscripts"

▫ Bilateral Contract with Russian Academy of Sciences Library in St.Peterburg – "Digital and Analytical Processing of Medieval Slavic Manuscripts"

Publications

▫ Proceedings of Special Libraries. Subject collection. 1975 –

▫ Bulgarica. Information bulletin. 2000 –

▫ Special bibliographies

▫ Biobibliographies of Bulgarian Scientists

▫ Reference, bibliographical editions and encyclopaedias

Role in the project

CL-BAS participates as content provider to WP6. It also contributes to the dissemination activities in WP7.

Dincho Krastev, Director of CL of BAS.

Ms and PhD (Mos. St. Univ.); Training - 1992, 1995-96 - Germany (Stuttgart); 1997 – USA. Educational experience: Sofia University "St. Kliment Ohridski", 1970-73; 1977-1986, Calculus, Mathematical Analysis, Differential Equations; ICIMSS (International Centre for Management Systems&Services), Torun, Poland, from 1996, Lecturing (including "distant learning" education) in Information Science and related subjects,

Recently a new five years project of Dincho Krastev has been approved by the America_for_Bulgaria Fund. The main target of it is the integration of the Bulgarian academic library information systems (on a metadata level). A new fund was organized (NALIS) for the realization of this project. D.Krastev is its Executive Director.

International projects: Tempus, 1990/91 JEP-0955 – national coordinator; EmNet, 1992-95 – national coordinator; EUROMATH, 1989-1995 – national coordinator; UNESCO – "Bulgarian Studies around the world", 1997-1999; The 5-th FW Progamme, CULTIVATE-CEE (Proposal No. IST-1999-1113), from April 2001, for a period of 24 months – national coordinator; 2003 – Bilateral Contract with British Library – "Digital and Analytical Processing of Medieval Slavic Manuscripts". Many publications in library information science (local and international journals)

Sabina Aneva, Deputy Director of CL of BAS, Chief System librarian

18-th of September 1959, 1969 Primary School, 1973 Secondary School, 1978 – 1977 High School, 1978 – 1984 Sofia University "St. Klement Ohridsky" – Bulgarian Philology, second subject - History, 1984 – 1985 National Library "St. Kiril and Methody" – postgraduate student, 1995 International summer school "Libraries in the World of Electronic Media", 1999 – 2002 Postgraduate Professional Development Program in the International Center for Information Management, Systems and Services, (ICIMSS), Torun, Poland. Publications in library information science.

Ekaterina Pantcheva, born in 1975; PhD in Old Bulgarian Language (University of Sofia, 2007), MA in Medieval Studies (CEU Budapest, 2001), MA in Bulgarian Philology and Russian Philology (University of Sofia, 1999); Postgraduate Certificate in Translation Studies (University of Warwick, 2002); Guest scholar at the University of Vienna (2005); Librarian at the Central Library of the Bulgarian Academy of Sciences (since March 2007); Part-time teacher in English Language (at the University of Architecture, 2005-2007) and in Diachronic Linguistics (at the University of Sofia 2003-2004), freelance translator, interpreter and editor (since 2005); Proficient in English and Russian, having very good command of German and Serbian/Croatian/Bosnian.

ZVKDS IPCH

Javni Zavod Republike Slovenije Za Varstvo Kulturne Dediščine / Institute for the Protection of Cultural Heritage of Slovenia

Institute for the Protection of Cultural Heritage of Slovenia (IPCHS) is a national public institution, established by the State for performing the public service pursuant to Heritage Protection Act. It is responsible for the implementation of administrative and technical tasks relating to the

protection of cultural heritage. IPCHS comprises two main units: Cultural Heritage Service (with 7 regional units covering the territory of Slovenia) and Conservation Centre (with 2 departments: Restoration Centre and Preventive Archaeology Centre).

Among other tasks, defined in the Heritage Protection Act, IPCHS:

- identifies, documents, studies and evaluates immovable heritage, as well as movable and intangible heritage in the context of immovable heritage,
- implements conservation measures and takes care for the prevention of damage,
- interprets heritage for the general public to develop awareness of its value,
- carries out research projects in the field of protection.

Role in the project

ZVKDS IPCH participates as content provider to WP6. It also contribute to the dissemination activities in WP7.

Franc J. Zakrajsek

Senior researcher, mathematician and independent consultant on the areas of geographic information systems, GIS portals, GIS web services, digital cultural content, registering movable and immovable cultural heritage and building the national and cross-national interoperability frameworks. At the time being he is acting as member of Member"s states expert group on digitalization and digital preservation established by the European Commission. He coordinated the preparation of the strategy and action plan for e-culture and digitalization of digital cultural content concerns libraries, museums, archives, audiovisual and other cultural institutions in Slovenia. He is one of the founders of the Register of the Cultural Heritage in Slovenia. He is also a project leader and main developer of several Web2 projects concerning digital cultural content. He has been the coordinator of the presidential conference on Culture On Line, held in Brdo in June 2007 during the Slovenian Presidency of the EU.

Jelka PIRKOVIČ, Phd

She has held different positions in the Slovenian heritage conservation authorities, the Ministry of Culture and at the Ljubljana University (Faculty of Arts – conservation of cultural / archaeological heritage). From 2004 to 2008, she held the position of State Secretary at the Ministry of Culture of Slovenia. In 2009 she was appointed Director General of the Institute of the Protection of Cultural Heritage of Slovenia. From 1993 on, she is the Head of the Slovenian delegation to the Cultural Heritage Committee of the Council of Europe (now Steering Committee for Cultural Heritage, Landscape) and she served as Chair of the Committee in 2004 – 2006, and as a member of group of experts for drafting the Faro Framework Convention on the value of cultural heritage for society. In her professional career, she has been active as a researcher of urban history, urban morphology, architecture of the nineteenth and twentieth century, and theory and history conservation. She is the co-author of *Art Nouveau Architecture in Slovenia*, 1997, one of the leading authors of the *Medieval Towns, 1999*, and the author *of Integrated Conservation of Historic Urban and Rural Areas*, 2005, and the main author of Heritage Protection Act (2008).

Cyprus Research and Educational Foundation, Cyprus

The Cyprus Institute (www.cyi.ac.cy) is a novel research and educational institution with a scientific and technological orientation. It is being developed under the stewardship of the Cyprus Research and Educational Foundation, the Board of which comprises of prominent international academic, political and entrepreneurial personalities. The Cyprus Institute is strongly supported by the Government of Cyprus, viewing its establishment and advancement as important to its overall policy of transforming Cyprus into a regional centre for research and education and in implementing the EU-Lisbon strategy. Research is carried in cross-disciplinary Centers that address problems of great scholarly relevance, global significance and regional focus. Each Center defines its internal priorities and initiates individual projects, consistent with the overall strategy of the Institute. Shared infrastructures incorporating state of the art technology support the research activities of all Centers. The research center to be involved in the project is the **Science and Technology in Archaeology Research Center (STARC)**. It is devoted to the development, introduction and use of advanced science and technologies in Archaeology and Cultural Heritage. Its research activities have a strong multi-disciplinary approach, through collaboration agreements and joint activities with leading institutions in the region and synergies with other Centers of the Cyprus Institute, towards the enhancement of knowledge regarding the Cultural Heritage of the region through new ways of reasoning with information technologies, natural and material sciences. Research topics derive from a use-inspired basic research approach. They include:

- Natural and Material Sciences applied to Archaeology and Cultural Heritage
- Digital Heritage, Information and Communication Technologies (ICT), Digital documentation and semantics, scientific visualization and virtual reality methods;
- Diagnostics for CH conservation, such as chemical and physical analyses for the preservation of heritage items;
- Underwater and maritime archaeology technology.

STARC is currently participating in several EU-funded initiatives:

- 3DCOFORM (www.3dcoform.eu)
- ATHENA (www.athenaeurope.org)
- CARARE (www.carare.eu)
- EUROPEANA LOCAL (www.europeanalocal.eu)
- STACHEM (starc.cyi.ac.cy/stachem/stachem)

Role in the project

CREF CYI is WP6 Leader where it also participates actively as content provider. It also participates to the dissemination activities in WP7. Being a WP Leader, it participated to WP1 Project management and coordination.

Franco Niccolucci - Chairman of the Interim Governing Board of STARC -received a degree in Mathematics from the University of Florence in 1970. After being Assistant Professor at the

University of Pisa, he became Professor at the Faculty of Architecture of the University of Florence in 1974, where he taught until 2007. In 2000 Professor Niccolucci founded VAST-Lab, a research lab at PIN, a research institution in Prato, Italy. With this Lab he participated in several EU-funded projects, e.g. CHIRON and COINS where he was scientific coordinator, and EPOCH, an 8 million EU-funded FP6 project where he was the Executive Director. He joined the Cyprus Institute in October 2007 as Professor, and later was nominated as Chairman of the Interim Governing Board of STARC. Professor Niccolucci was an evaluator for cultural heritage projects for the European Commission and the governments of Greece, Israel and Luxembourg. He is the author of several books and over 100 papers on digital heritage, and has chaired a number of international conferences on the subject. Research Interests include archeological sciences, semantics, digital libraries, and 3D visualization.

Sorin Hermon – Scientific coordinator at STARC - Sorin received his PhD in Archaeology from Ben-Gurion University of the Negev in Beer-Sheva, Israel (BGU), and his MA in Prehistory from the Hebrew University, Jerusalem. Sorin was previously a Senior Researcher at VAST-Lab, University of Florence and Lecturer at BGU. He coordinated activities in work-packages in EU-funded initiatives, and coordinated EU and international funded projects. He organized several summer schools, training activities and international workshops and conferences. He is member of CAA, EAA, IIPP, VAST, IPP, VSMM, and member of the scientific committee of VSMM, VAST. His research interests include visualization tools for the research and communication of Cultural Heritage, ontologies, definition of semantic structures for Cultural Heritage, data representation and IT oriented methodologies for archaeological research, knowledge representation and transfer and development of academic curricula.

ICIMSS
International Centre for Information Management Systems and Services, Poland

Stowarzyszenie Miedzynarodowe Centrum Zarzadzania Informacja - The International Centre for Information Management System, Services (ICIMSS), Torun, Poland www.icimss.edu.pl is a scientific association established by 62 members from over 20 countries. Its activities are oriented into information, education, and culture.

Information services are delivered to the users through the 8 dedicated discussion lists that include about 3,000 addresses served. For the educational purpose a number of short courses have been organized. In addition, from 1997 to 2003 five experimental courses on a level of the postgraduate school were delivered to the students from 16 countries. Courses were devoted to modern management of the memory institutions and to modern technology. ICIMSS goals also include promotion of intercultural communication and research. ICIMSS participates in a wide selection of projects, including the EC funded projects by such programmes as TEMPUS, IST, eTEN, Leonardo da Vinci,eContent, Central Europe.

The EC projects include: **TEMPUS**: training for local administration in ICT; **EXPLOIT** – support for specialists from memory institutions; **DEDICATE** – distance learning courses in information

awareness; **CULTIVATE** - cooperation between cultural heritage institutions such as archives, libraries and museums, **DELOS** – digital library issues; **MINERVA** – coordinating digitisation in Europe; **EURIDICE** – pictures bank creation for distance learning courses; **Training for the Stage** – professional profiles in administration, management, and promotion of performed arts; **EMapps.com** – alternative reality educational games creation; **MICHAEL** – national registers of digital collections, **CUSTODES** – intends to increase the socio-economic value of cultural sites in the participating regions, **ATHENA** - a project which contributes to content provision to Europeana.

Role in the project

ICIMSS participates as content provider to WP6.

Maria Sliwinska, ICIMSS director with expertise in library and information science, teaching, editing experience. Holds a PhD in bibliology. Participation in a dozen of EC projects. She was a member of the Library Council serving the Ministry of Culture, and in 2005 represented the Minister of Culture at the MINERVA project Board. In 1999 - 2001 she served as the ICT Stories Project jury member. In 1993-1999 she was the Deputy Director of the Nicholas Copernicus University Library in Torun responsible for its computerisation and modernisation. At present she is an adjunct professor at the Faculty of Politics and International Studies where she teaches at journalism studies, and cultural studies at the other department. She is a member of Europeana Dissemination Group.

Sebastian Michalek, mathematics and ICT background. Plays role of system and server administrator. ICT specialist and educator; distance learning platform administrator (Moodle). Skills in: Hardware assemble, good knowledge of operating systems (Windows family, UNIX, SUN OS), computer networks, mobile technology; all kinds of office software, server management (Windows and Linux/UNIX), SQL/MySQL, C/C++, JAVA, PASCAL, BASIC, PHP, HTML/DHTML. Basic knowledge about CAD/CAM applications (AutoCAD, ArtCam, SurfCam, EdgeCam). Included into the EC project as the application developer (Polish instances of platforms for EURIDICE, MICHAEL Plus and Emapps.com projects).

RA
The National Archives (Riksarkivet), Sweden

The National Archives (Riksarkivet) is one of the oldest public agencies in Sweden, with a history leading back to the Middle Ages. Today, the National Archives is charged with the supervision of all public records, generated by central as well as regional and local state authorities. Its commission by law is to preserve, organise and care for the records in order to uphold the legal right of access to public records in the pursuit of justice, continuity of public administration, and facilitating of research. Since the 1990s the National Archives has a National Archival Database for Sweden. The production of digital images of records is very high, but due to legal reason only a part of it is publicly accessible on the web.

The National Archives is, and has, been a partner in several EU framework projects, like EUAN, Minerva, MinervaPlus, MinervaEC, QVIZ, LEAF, APEnet and PROTAGE and is also taking part in European coordination efforts concerning digitisation and digital preservation (Member States´ Expert Group on Digitisation and Digital Preservation).

Role in the project

RA participates as content provider to WP6. It also participates to the best practice activities in WP2 and WP3. Finally, it contributes to the dissemination activities in WP7.

Börje Justrell is director and head of the Information and Communication Technology (ICT) Department at the Swedish National Archives. He worked previously as a records manager, but has since 1989 been responsible for technical matters at the National Archives. Justrell has since 1990 been a member of international committees and since 2003 worked in EU projects like Minerva, MinervaPlus, MinervaEC, DC-NET and PROTAGE, in the last one as coordinator. He is representing Sweden in expert groups on digitisation within the European Commission. He has published articles and books on archival science and technical issues in Sweden and internationally.

Martin Bjersby is senior archivist and head of the Unit for Archival Information Systems (ICT department) at the Swedish National Archives. He has worked as an archivist since 1985 and been one of the key persons in building up a Swedish National Archival Database on the Internet. Bjersby is a national expert on issues related to the coordination of information in Swedish archives, libraries and museums, and he is also a member of the Swedish National Library's national reference group.

MEDRA

mEDRA, Italy is the multilingual European Registration Agency of DOI, the standard persistent identifier for any form of intellectual property on a digital network. Stemmed from an eContent project, mEDRA was launched in 2004 as joint venture by AIE, the Italian Publishers Association, and Cineca, the Interuniversity Computing Centre, as technological partner. In addition to DOI registration service provided to publishers in EU market, mEDRA provides DOI registration technology to Opoce (the EU Publications Office DOI Registration Agency). Through mEDRA technology, OPOCE assigns DOIs on official publications by over 60 EU bodies (institutions, offices, agencies and other bodies); mEDRA provides also other DOI-based service, both directly and through partnership agreements such as MVB in the German linguistic area. Within this framework of cooperation with MVB, mEDRA also coordinated the project called "Actionable ISBN", face syntactic and functional integration between DOI and ISBN. The "Actionable ISBN" has now been adopted by the Italian ISBN Agency and the bibliographic database and online platform Libreka. Recently mEDRA signed an agreement with DOI RA Cross-Ref to provide to its customers the cross-linking and cited by service, that exploit DOI features to manage citations in articles and publications, so enhancing the technological infrastructure to guarantee interoperability between the two Registration Agencies. In addition to DOI services, mEDRA offers its customers training and metadata consultancy to keep the pace with innovation in content management strategies and with the increasing complexity of the content value chain. mEDRA is actively involved in national and international projects of research and development for technological innovation in

the publishing world. mEDRA participates in the international project "ONIX for licencing terms", with a view to defining a methodology to standardize licensing terms of transfer of rights. In 2007 mEDRA initiated project IDEAM (identification and description of digital content in cross-platform Applications) in collaboration with three universities in Lombardy (State University of Milan, University of Pavia, Bocconi University) for a collaborative research on issues of methodologies for the identification, description, search and access of cultural content, with the objective to define architecture models for developing applications for their management, enhancement and enjoyment in the digital environment.

Role in the project

MEDRA participates to the PPP WP4 with particular regard to the harmonization of Persistent Identifier solutions in the private sector publishers with those of the public cultural heritage sector studies in WP2; MEDAR also contributes to the dissemination towards the private sector publishers in WP7.

Piero Attanasio: he is the mEDRA General Manager and was the Director of the EU project that launched the Agency. He is particularly experienced in IT applications to publishing industry and is recognised as international expert for publishing standards. He is Chairman of the ISBN international and of the innovation and standards Committee of the International Publishers Association, and member of the International DOI Foundation Board, Editeur Board of Directors; and of the ISO working groups of the DOI in ISO standards. In his publishing career, he was Marketing Director of two small academic publishing house, and worked for the Italian Publishers Association since 1995, directing training activities and EU projects. He is currently also the Secretary General of AIDRO, the Italian Reproduction Rights Organisation. He is author of many articles on publishing economics and of the book "the new economy of the book" (new book economy), 1997, and is a lecturer of media Economics at the master course for publishers of the University of Milan

Paola Mazzucchi got a degree in Philosophy at the University of Milan and a post degree in Economics and Management in Culture at the SDA Bocconi Management School. Since 2000 she has been working in the publishing and content industry, with a particular focus on the role played by technology and innovation in the digital value chain, from production workflows to copyright, from marketing to distribution. Since 2004 she has been involved in all mEDRA DOI-related activities and projects, focussing in particular on the issue of metadata interoperability in the DOI community. She also coordinates the technical activities related to metadata-based services for the Italian ISBN Agency. She actively takes in the network of experts on standard metadata and identifiers within EDItEUR and Italian ONIX user group.

She collaborated in several European projects by the Italian Publishers Association and currently she is in charge of the coordination of the technical workpackages within the ARROW project. Within Arrow project she is managing the technical working groups dealing with finding practical solutions and crosswalks to enable interoperability among metadata formats used in different

domains (as for example MARC 21, UNIMARC, Dublin Core and ONIX based formats). She is external lecturer at the University of Milano and holds the course "Multimedia and Human studies".

German National Library of Science and Technology of the University Library of Hannover, Germany

The German National Library of Science and Technology (TIB) is part of the University Library of Hannover (LUH).

TIB is the German National Library for all areas of engineering as well as architecture, chemistry, information technology, mathematics and physics.
TIB's task is to comprehensively acquire and archive literature from around the world pertaining to engineering and the natural sciences. TIB holds a superb and comprehensive stock of technical literature pertaining to engineering and the natural sciences. The comprehensive holdings are available through TIB's full text solution. TIB actively participates in a large number of Projects dealing with the development of corresponding specialist technologies, with a key focus on developing a Digital Library. As part of the future-oriented development of the Digital Library, TIB is continuously expanding its range of electronic publications. Journal articles, research reports and dissertations are all available in this format, along with other technical and scientific documents.

GetInfo – a portal for science and technology is an offering of the German National Library of Science and Technology and the Specialist Information Centres FIZ Technik Frankfurt, FIZ Karlsruhe and FIZ CHEMIE Berlin.

GetInfo brings the competencies and know-how of the individual partners together to form a unique offering and enables a central access point to leading databases, publishing houses and library catalogues in the areas of technology and science. The concentration on high quality, specialist subject information, assessed by experts, and 100% data security for the user sets GetInfo apart from conventional internet search engines

The services provided by TIB cater towards the ever more sophisticated information requirements of industry, the business community, and the research and scientific communities. TIB successfully processed more than 3800,000 orders in 2009. The TIB was founded in 1959 and is financed by the German Government and all Länder. TIB is a member of the Leibniz Association. Members of the Leibniz Association have nationwide tasks. All Leibniz institutes are evaluated every seven years by an independent commission.

Since 2005 TIB is acting as a DOI (Digital Object Identifier) registration agency for Scientific content. In cooperation with several World Data centers over 600,000 scientific data sets have been rewarded with a DOI name and are therefore citable as independent scientific objects therefore allowing a direct linking between data sets and scientific journal articles using this data

sets. Since 2010 TIB is coordinating the DOI registration under the name DataCite in cooperation with 11 other scientific libraries and information institutions from all over the world. Members of DataCite include the British Library, the California Digital Library, the Library of ETH Zürich and the Austarlian National Data Service.

From the administrative point of view TIB belongs to LUH and participates to the project through LUH.

Role in the project

LUH participates as content provider in WP6. It also participates to the PPP WP4 and contributes to the dissemination towards the private sector publishers in WP7.

Jan Brase has a degree in Mathematics and a doctoral degree in Computer Science.
His research background is metadata, ontologies and digital libraries. Since 2005 he is coordinating the DOI registration agency at TIB. Since January 2010 he is the manager of DataCite which widens the DOI registration agency of TIB to a global consortium of libraries and information institutes. He is furthermore chair of the International DOI Foundation (IDF)

He will contribute to the project with his experience and knowledge in metadata, persistent identifier technologies, Resource Description Framework (RDF) and scientific data registration.

Irina Sens, Ph.D. is currently the Deputy Director of the German National Library of Science and Technology in Hannover and has served in this capacity since 1999. She is Project Coordinator of several Digital Library projects financed by the German Research Society and the Federal Ministry of Education and Research. Among these projects are: GetInfo, a subject information portal for science and technology where content and service converge to make resources readily accessible, openly available, useful and usable; Virtual Library of Chemistry, a two part project that involved the development of an integrated information infrastructure for resources and services in chemistry by TIB, FIZ CHEMIE and the German Chemical Society as well as the development of personalized information services for chemical research and industry. From 1995 to 1999 Dr. Sens was the subject specialist for Natural Sciences, Physics and Astronomy at Goettingen, State and University Library and was also responsible for interlibrary loan and document delivery the head office of the Common Library Network (GBV).Dr. Sens studied chemistry and mathematics at the University of Marburg, Germany from 1984 – 1990 where she also received her Ph.D. in chemistry in 1993. After completion of her doctoral studies she served a librarian trainee at the State and University Library from 1993 – 1995.

EDItEUR
EDItEUR, UK is the international group coordinating development of the standards infrastructure for electronic commerce in the book and serials sectors. EDItEUR provides its membership with research, standards and guidance in such diverse areas as:

- -EDI and other e-commerce standards for book and serial transactions
- -Bibliographic and product information

- -The standards infrastructure for digital publishing
- -Rights management and trading
- -Radio frequency identification tags

Established in 1991, EDItEUR is a truly international organisation with 90 members from 17 countries, including Australia, Canada, Japan, South Africa, United States and most of the European countries.

A leader in global standards for the exchange of bibliographic information and of e-commerce messages in the book and journal supply chains, EDItEUR is now engaged in shaping key national and international projects aimed at developing rights and permissions expressions.

Role in the project

EDITEUR is WP4 Leader where it actively participates to implement the ONIX mapping. It also contributes to WP5 to check that the software platform correctly implements the ONIX mapping. It contributes to WP6 to support the ingestion of the private sector publishers who are expected to use the ONIX mapping. Finally, it contributes to the training and dissemination activities in WP7. Being a WP Leader, it participated to WP1 Project management and coordination.

Brian Green

Executive Director, International ISBN Agency

Until the beginning of 2009 Brian was also Executive Director of EDItEUR. Brian managed BIC, the UK book trade standards body, from 1991 until 2006 and, prior to that was Director of Technology and Publishing Management at the UK Publishers Association after working in the publishing industry for many years. Brian was Chair of ISO TC46 SC9, the ISO committee responsible for identifiers in the information community, from 2003 until 2008.

MVB

MVB Marketing- und Verlagsservice des Buchhandels GmbH, Germany is the leading service company for the German book industry. The company is a wholly-owned subsidiary of the Börsenverein des Deutschen Buchhandels – The German Publishers & Booksellers Association. MVB provides a wide range of electronic, publishing and marketing services for publishers and booksellers. Core products are the online platform libreka! and the VLB, a complete directory of all German-language books in print. Apart from a wide range of publishing products the company offers a portfolio of additional services ranging from sales promotion to the ISBN and DOI agency for the German-language market.

Role in the project

MVB participates to WP4 contributing to the implementation the ONIX mapping. It also contributes to WP5 to check that the software platform correctly implements the ONIX mapping. It contributes to WP6 to support the ingestion of the private sector publishers who are expected to use the ONIX mapping. Finally, it contributes to the dissemination activities in WP7.

Ronald Schild joined MVB, a wholly-owned subsidiary of Börsenverein, the German Publishers and Booksellers Association in 2006. One of the key projects during his tenure as Managing Director was the successful launch of libreka!, the e-book platform of the German book trade. Before joining MVB Ronald Schild held various management positions in international media and IT companies. He holds degrees from University of Saarbrücken (Germany), Institut Commercial de Nancy (France) and University of Strathclyde (UK).

Michael Vogelbacher

After his studies of the Jurisprudence in Mannheim Michael Vogelbacher (39) was employed in several publishing houses in different positions. In 2001 he became Managing Director at "LEGIOS" GmbH in Frankfurt. From 2007 on, he was Project Leader for Strategic IT-Major Projects at "empolis" GmbH in Kaiserslautern.

Since February 2008 he is Member of the Management board and leads Information Services at MVB- Marketing-und Verlagsservice des Buchhandels GmbH.

He has an Attorney Registration at several District Courts in Germany.

NSL

The **National Széchényi Library, Hungary** is the Hungarian national library since 1802. It's collections consist of paper documents published in Hungary: more than 2 million books, periodicals, manuscripts, documents, images, etc. The Hungarian Library Institut is part of the National Library, there are countrywide coordination tasks among its goals. The NSL gives home to the Hungarian National Shared Catalogue as well. The library's first major digitization project was Mathias King codices, the Corvinas have been digitized and made available on the Internet (www.corvina.oszk.hu). Since 1999 the library collects online documents when it integrated the Hungarian Electronic Library (mek.oszk.hu) which makes available more than 8,000 digital books and over 170 audio books. In addition to books there is a digital periodical collection of the Hungarian born digital or digitized journals too (epa.oszk.hu). The Hungarian Digital Image Directory (www.kepkonyvtar.hu) is a national database of digitized images of documents digitized in the National Library and a number of other Hungarian libraries. The Hungarian online images are collected by the Digital Archive of Images (keptar.oszk.hu). The NSL was one of the first partners (together with French and Portuguese libraries) participated in the former version of Europeana developed by the French National Library. The national library joined The European Library project, the library catalog and digital records added to the TEL Database. From this database approx. 4000 records have been migrated to the Europeana catalogue which came from the collection of the Hungarian Electronic Library.

Role in the project

NSL participates to WP6 as content provider. It also contributes to the best practice activities in WP2, WP3 and WP4. Finally, it contributes to the dissemination activities in WP7.

Lajos Vonderviszt received MS degree in Electrical Engineering in 1985, Specialist of Electrical Engineering in 1988, doctoral degree in 1989 at the Technical University, Budapest, Hungary, MBA degree in 2005 at the Corvinus University, Budapest, Hungary.

He took part in the establishment of courses of electrical engineering anf information technology at the University of Veszprém, Hungary, and he worked there as lecturer up to 1997. He was the leader of the Center of Information Technology at the Eötvös Loránd University, Budapest, Hungary from 1997 to 2005.

From 2005 to 2009 he was the director of IT at the National Communication Authority, Hungary, where he was responsible for the IT operation, services and development.

Since 2010 he works as IT consultant in the National Széchényi Library, Budapest, main task is supporting the IT development processes at the library.

István Moldován

Education : Undergraduate: 1966-1974; High school: 1974-1978; Secondary school in Győr, in an economics school between 1974-1978.; University: Budapest, Karl Marx Economic University 1979-1983; Eötvös Loránd University, 1991-1993 (library-informatics)

Jobs : 1999 - present : National Széchényi Library - librarian - as a leader of Department of the Digital Collection, 1986-1999 : Central Library of the Budapest University of Economics – as librarian. 1983-1986: Industrial Research Institute – as economist.

Works **:** Coordinate and manage the work with digital collections, e.g. Hungarian Electronic Library, Electronic Periodical Archive and other online content services; collecting and archiving digitized documents in the library.

KMKG

Koninklijke Musea voor Kunst en Geschiedenis, Belgium

The KMKG foundation is a scientific research institute that functions under the Federal Belgian Science Policy. It has the governmental responsibility over a number of museums with the task to define their overall philosophy and fundamental mission, namely: the preservation and management of the collections by further developing the central collection database, the improvement of the digital object descriptions by using standards, the service to public and researchers by providing digital information on the collections, a close cooperation between several scientific institutions on a national and international level by exchanging digital data.

It is in this function that the **KMKG coordinates the Federal museum aggregator service** in which it supervises the overall digitisation process, aligns the use of standards, encourages the improvement of the digital data by the use and the constant enhancement of multilingual cross-domain thesauri, to harvest and disseminate these digital collections for recreational, educational and scientific purposes.

Recently a collaboration between the **KMKG** and the **Department of Information Science of the Free University of Brussels (ULB)** was set up to develop an RDF repository and a tool for the SKOSification of the different bilingual thesauri in use, to semantically enrich the aggregated content. The intention of the project is to prepare them for cross-domain long-distance scientific research on the semantic web.

Museums that fall under the responsibilities of the KMKG aggregator and that frequently deliver their new content are:

- The **Cinquantenaire museums of Brussels** (Jubelpark museums) forms a cultural centre of several independent museums brought together in one building:
- The **museum of national archaeology** - from prehistory to the Merovingian period
- The **museum of antiquity** (Near East, Egypt, Greece, Rome)
- The museum of **non-European civilisations** (Asia, America, Oceania, Islamic world)
- The **museum European decorative arts** from the Middle Ages to the 20th century
- The **Musical Instruments Museum** brings together in its collections more than 7000 pieces from all regions and all periods.
- The **Museums of the Far East in Laeken** are three museums located nearby the Royal palace of Laeken: The **Chinese Pavilion**, the **Japanese Tower** and the **museum for Japanese Art.**
- The **museum of the Hallepoort** focuses on the medieval history of the city of Brussels. The collection is, among other things, rich of medieval armoury that often used to belong to great names like Emperor Charles the V.

Role in the project

KMKG is WP3 Leader. It also contributes to the best practice activity in WP2 and to the dissemination activities in WP7. Being a WP Leader, it participated to WP1 Project management and coordination.

Roxanne Wyns studied History of Art and Archaeology at the Free University of Brussels (VUB) with a focus on post-medieval archaeology, museology and collection database management.

Since 2005, she has been employed by the Royal Museums of Art and History (KMKG), a scientific research institute that functions under the Federal Belgian Science Policy.

Since 2009 she worked on ATHENA and MIMO plus several internal projects concerning data publishing. Now she is responsible for the further development of the online museums catalogues, implementation of metadata standards such as SPECTRUM and the export standard LIDO. Furthermore she is part of several working groups on semantic web-technologies and the development of multilingual SKOSified thesauri. In close corporation with the department of information science of the Free University of Brussels (ULB), she is also working on a research project to use semantically enriched digital descriptions for cross-domain, long-distance scientific research on musical instruments collections.

Chris De Loof
Current Position
- Head of the IT and digital collection department of the Royal Museums for Art and History
- Project manager for digital collections, aggregation, harvesting and web projects
- Co work package leader" interoperability and standards" for the European project Athena
- Consultant for the European projects Musical Instruments on line (MIMO) and DC-NET

- Board member for the CEST project, InfoCol, DC-BEL, Public Private Partnership for digitization,

Studies
- Master degree Commercial and Information Science

IDU

The Arts and Theatre Institute, Czech Republic founded in 1959, is providing information, scientific, advisory, educational and production services for the field of theatre and partly for the other fields of arts. IDU owns one of the biggest theatre libraries in Europe, video library, photo archive, documentation and bibliographical collections and on-line information databases. IDU deals with collection activity in the field of stage and costume designs.

IDU is experienced in leading and/or participation on international projects supported by EU grants same as in digitalization of culture heritage and creating databases and its content. Examples of projects: *Conservation and Preservation of Culture heritage of Czech and World Theatre* (supported by EEA grants, 2008-2011, leader of the project), *Digitalization of Unpublished Texts of Theatre Plays deposited in IDU Library* (supported by Ministry of Culture, 2008-2011), *Heart of PQ* (supported by EU programme Culture 2000, 2003, leader of the project), *Intersection: Intimacy and Spectacle* (supported by EU programme Culture, 2009-2012, leader of the project), *Theatre Architecture in Central Europe* (supported by EU programme Culture 2000, IDU prepared the project and the final application).

IDU is the Czech national aggregator for *EUROPEANA* and is the part of the *National strategy for digitization 2010-2016*, prepared by the Ministry of Culture of the Czech Republic. As the national aggregator is responsible for the preparation of the Czech Cultural Portal *CZECHIANA*, for the communication with verticals aggregators (museums, libraries, other cultural institutions) and for harvesting metadata from them.

Role in the project

IDU participates as content provider to WP6. It also contributes to the dissemination activities in WP7.

Ondřej Svoboda

Master's degree in Theatre Science, Faculty of Arts, Palacky University Olomouc (1997). Deputy Director of IDU, Head of the Department of collections and services (library, bibliography department, information and documentation centre, archives, collections). He is responsible for information technologies in IDU (development, purchase), communication with subcontractors (web, IT), communication with foreign partners, participation in international projects and networks. He was concerned in creating of databases, consultation of web sites development, budget planning and budget supervision. He is the project manager and author of the international project Theatre Architecture in Central Europe (Culture 2000 grant, implemented under National Theatre) and digitalization project Conservation and Preservation of Culture

heritage of Czech and World Theatre. He is a member of the Czechiana (Czech national aggregator for Europeana) preparatory team.

Alena Součková

Master's degree in Information Science and Librarianship, Faculty of Arts, Charles University (1997). She works in IDU Library from 1996 as a senior expert focused on the IT library system and library interchange formats. She is responsible for the library software system, supervising cataloging process, modifying library web catalogue, coordinating digitization of selected items in IDU Library. She participates in international projects and networks. She is author and coordinator of the project Digitalization of Unpublished Texts of Theatre Plays deposited in IDU Library. She is a member of the Czechiana preparatory team.

IST

The **Instituto Superior Técnico, Portugal** is a school of the **Lisbon Technical University**. IST is the largest school of engineering in Portugal, with long tradition in teaching, and excellence in research, innovation and training activities. Its mission is to contribute for the development of the science, economy and society by promoting a higher degree of education in the areas of Science, Engineering and Technology at the undergraduate and graduate levels and by delivering highly qualified professionals in the public and private sector, strengthening the National and European R&D effort.

IST mission reflects the three activities that define the concept of a modern university: Education, Research & Development and links with the modern society. With two conveniently located campuses, (Alameda in Lisbon and Taguspark in Oeiras), IST consists of ten Departments and one Autonomous Section that are responsible for teaching Undergraduate and Postgraduate Programmes. Today IST has about 8500 undergraduate students and over 1500 graduate students in different areas of studies. The faculty of IST includes over 700 Professors with Ph.D. in different areas of specialization.

The scientific activities are developed in research institutes, some of them of excellence, in which working groups develop research in specific subjects within its scientific area.

Well-recognised expertise in the area of Digital Libraries makes IST one of the partners recommended for the tasks proposed in this project. The topic has been one of the most important research areas of the group, as proved by the examples of recent EU-funded projects developed by the researchers to be allocated to this project: TEL, DIGMAP, TELplus, EuropeanaConnect and EuDML (besides that, the same research group is providing subcontracted support to the Portuguese activities of the EuropeanaLocal project)

Furthermore, IST researchers bring solid expertise in terms of training, learning strategy, knowledge dissemination and structured R&D activities in close cooperation with the public and private sector.

Role in the project

IST contributes as technology provider to WP2, WP3 and WP5.

José Borbinha (PhD) is a Professor of the Computer Science and Engineering Department of IST and a member of the Information Systems Group at the associated laboratory INESC-ID. He has a background in Electrical Engineering and Computer Science, and has been deeply involved in national and international projects and activities related with information systems in general and Digital Libraries in particular, namely in the areas of architectures, preservation, metadata, digitisation and systems interoperability in general. He was director for Innovation and Development for the National Library of Portugal, where he conceived the National Digital Library initiative and advised the Portuguese Ministry of Culture. He is in this moment the chair of the IEEE Technical Committee on Digital Libraries. He was member of the teams that developed the first prototypes of TEL and Europeana, and has been involved in several related further initiatives.

Bruno Martins (PhD) is a Professor of the Computer Science and Engineering Department of IST and a member of the Data Management and Information Retrieval Group of INESC-ID. He received a PhD in Computer Science from the University of Lisbon, with his work on geographic text mining. His main actual research areas comprise information retrieval, information extraction, semantic and linked data.

CIS
State agency Culture Information Systems, Latvia

The Agency is a state institution, which is supervised by the Ministry of Culture and which works on the basis of the Public Agency Law, Regulations of Agency and regulations of policy planning in this sector.

The Agency objectives are to ensure the access of society to information resources and cultural values in libraries, archives and museums, and to establish an integrated computerized information network. The main functions of the Agency are to develop the information systems of libraries, archives, museums and other institutions and to organize the processing, storing and distribution of concise information of the libraries.

According to the State cultural policy guidelines the Agency developed a new strategy "Guidelines for unified information system for cultural heritage and memory institutions 2005 – 2012", to implement the Lisbon strategy, which supposes to make the EU economy the most competitive and dynamic in the world, and which aims at the development of an information society involving libraries, archives, museums and other memory institutions, which provide information services and store information resources.

Because people are the most valuable resource in Latvia, promotion of investments in human resources is Latvia's priority in national level as well as in EU level. Archives, libraries, museums and other memory institutions as important keepers of information resources and handlers of services should actively participate in this process. Mission of integrated information system for cultural heritage and memory institutions is to promote improvement of life quality, operational

activities of state and municipal institutions, development and competitiveness of knowledge-based industries, enlargement of education facilities, rising of level of knowledge and skills, providing access to information resources and cultural assets accumulated in heritage institutions through qualitative and democratic services in line with requirements of information society. Integrated information system provides all society members with the part of universal information service that refers to cultural heritage and memory institutions.

In the agency's regulations it is stated that one of its objectives is to implement state and international projects and programs. There are three very important projects financed by EU Structure Funds and the state budget: State Integrated Library Information System, National Museum Union Catalogue, State Archives Unified Information System.

Role in the project

CIS participates as content provider to WP6. It also contributes to best practice activities in WP3. CIS is responsible for the printing of one project's Handbook and in this light participates to the dissemination activities in WP7.

Laila Valdovska

Laila Valdovska studied mathematics and programming at Faculty of Physics and Mathematics at the University of Latvia, and graduated in 1982. In 2003 she got professional MA in Information and library science at the University of Latvia. From 1994 she worked at Riga Central library. Since 2003, she has been staff member of state agency Culture Information Systems. In 2006, she was nominated from the Ministry of Culture of Latvia to participate in the European NRG (National Representatives Group on Digitisation in Culture).

Una Balode

University degree at the University of Latvia, Faculty of History and Philosophy (historian, lector in history and basics of society). Since September 2005 she is Senior Desk Officer at the State Authority on Museums of Latvia. From March 1991until August 2005 she has acted as Main Specialist in the Department of Ethnography, Chief of IT Department and Deputy Director in Research at the History Museum of Latvia. From 1989 until 1991she has been Research assistant in the Department of Ethnography at the Latvia Academy of Sciences, Institute of Latvia History.

Since 2000, she is the project manager of the "Joint Catalogue of the National Holdings of Museums" lead by State Authority of Museums of Latvia; in this framework, she has been appointed as head of the working group for the project exhibition "Latvija. Vēsture, māksla, tradīcijas" in Paris (2000-2001).

PACKED

PACKED vzw, Belgium

PACKED vzw was founded in 2005 by argos – centre for art and media (Brussels), the Museum of Contemporary Art Antwerp, the Municipal Museum of Contemporary Art - Ghent and the Museum

Dhondt-Dhaenens (Deurle). In 2009 eDAVID, centre of research and knowledge on digital archiving, joined as a partner.

PACKED vzw acts as a platform for the development and dissemination of knowledge on the cataloguing, preservation and distribution of audiovisual art and audiovisual documents on art. The organization does not only collaborate on this with its Flemish partners but also with international partners such as Independent Media Arts Preservation (USA) and Netherlands Institute for Media Arts (NL). PACKED vzw provides this knowledge on digital preservation to the art world and to the broader field of cultural heritage.

Since 2008 PACKED vzw has gradually expanded its provision of services and sharing of knowledge to the broader field of cultural heritage as a whole. PACKED vzw currently represents Belgium in the project ATHENA - *Access to cultural heritage networks across Europe*. PACKED vzw coordinates the supply of content from Flemish and federal institutions in Belgium. Together with the University of Patras (Greece) PACKED vzw is also responsible for a work package on Intellectual Property Rights.

On request of the Flemish Ministry of Culture, PACKED vzw currently works in collaboration with eDAVID on a online publication of an overview of standards for the digitization of cultural heritage (project CEST).

Role in the project

PACKED participates as content provider to WP6.

Rony Vissers

Professional experience:

- coordinator of an international research project on the preservation of playback and display
- equipment for audiovisual art for PACKED vzw, Brussels (2009 - ongoing);
- coordinator at PACKED vzw, Brussels (2009 – ongoing);
- collection manager at argos – centre for art and media, Brussels (2006-2008);
- creator, producer and distributor of various media art projects (1997-2006);
- curator film, video and music at STUC, Leuven (1992-1997).

Education:

- master's degree in information and library science (University of Antwerp, 2006);
- master's degree in library and documentation science (University of Antwerp, 2005);
- master's degree in communication sciences (Catholic University of Leuven, 1990);
- bachelor's degree in photography (Technicum Antwerp, 1986).

Henk Vanstappen

Professional experience:

- researcher project CEST at PACKED vzw, Brussels (from February 2010 – ongoing);

- project coordinator Netherlands Architecture Institute (NAi), Rotterdam (2009 – 2010);
- project leader Netherlands Architecture Institute (NAi), Rotterdam (2008 – 2009);
- project coordinator Museums City of Antwerp – Collection Policy / Conservation & Management (2005 – 2008);
- staff member Rubenshuis / Rubenianum, Antwerp (2002 – 2008);
- project collaborator argos – centre for art and media, Brussels (2006);
- librarian at Orde van Advocaten – Bar Association, Antwerp (1999 – 2002).

Education:
- master's degree in library and documentation science (University of Antwerp, 2001);
- bachelor's degree library and documentation science (Stedelijk Instituut
- Hogere Leergangen, Antwerp) (1998);
- master's degree in history (Vrije Universiteit Brussel, 1992)

DH
Digital Heritage, UK

Digital Heritage, a UK-based, non for profit company which believes that the key for preserving the past for the future lies in the creation, preservation and dissemination of digital, cultural heritage. The company focuses on the development of online services and platforms such as: websites, portals, social networks, and persistent worlds.

Digital Heritage believes that quality of digital content from museums, libraries, video and broadcasting authorities and other cultural institutions across the creative industries should be made accessible through these environments in order to act to support, sustain, and augment culture institutions and their audiences. Supporting education and training in Information and Communication Technologies (ICT) in the preservation of and re-use of these resources, ensures that rich culture heritage is made available and accessible to all. Through specific actions, Digital Heritage endeavours to stimulate cultural diversity in Europe so that quality content may have an immediate influence on people's lives and a positive impact on their cultural identity where ever they may live. Through the realisation of cultural identity through technological, educational, cultural, economic actions, we aim to strengthen the relationships between individuals, cultural institutions and member states across the European Union. The founders of Digital Heritage both share a deep commitment to these goals resulting from many years of experience in developing and delivering specific actions in education and cultural heritage.

The skill set that the Digital Heritage, UK group bring to the table include a close understanding of the language, format, and current state of digitisation of the cultural institutions in Israel and across Europe.

Role in the project
DH participates to WP6 supporting the delivery of content from the Israeli culture portal.

Susan Hazan

Dr. Susan Hazan, Director of Digital Heritage, earned her Masters and PhD at Goldsmiths College, University of London in Media and Communications focused on electronic architectures in the contemporary museum. Hazan has been recognized for her numerous publications on new media in education, art, museums and cultural heritage, and is currently investigating her social networks and digital libraries in the context of cultural heritage. In 2002-2003 Hazan was visiting lecturer at the Computing Department at Goldsmiths, University of London; teaching Web Design and Critical E-Museology, with an emphasis on the correlation between cultural theory and contemporary practice, and is an annual guest lecture in the Museology Department at Haifa University, Israel (2005-2009).

In addition to Digital Heritage, UK her professional affiliations Hazan sits on the Museums and the Web - Program Committee 2001-2010, and for the Virtual Systems and MultiMedia Conferences to Europe (VSMM2005/2009), and on the Curatoral Panel for Netartsorg - Machida City Museum of Graphic Arts, Japan 2004-2009 (http://www.netarts.org). Hazan works both with ATHENA (http://www.athenaeurope.org) and Europeana, the European digital library museum and archive, Europeana v1.0 work package 1, work group 1.1: Users, (http://www.europeana.eu/portal) as a specialist in Web 2.0 and social networks in the cultural sector. Hazan acts a Reviewer to Discovery Projects, Australian Research Council (ARC), in an editorial capacity in a number of journals, and sat this year (2010) on the New Media Consortium 2010 Horizon Report: Museum Edition Advisory Board.

http://www.musesphere.com/about/Susan.Hazan.html

Cordia

Cordia a.s., Slovakia was founded in 2007 as a professional interest group of project managers and consultants who are active in the field of culture, education, ICT, regional development, social policies and others. Cordia a.s. experts are especially active in the area of culture and ICT. They support participation of Slovak cultural organizations in EC funded projects and help them to get involved in European networks of key players active in cultural heritage preservation initiatives. Cordia a.s. experts have close links to the Slovak Ministry of Culture and Slovak memory institutions and helps them to get involved in particular European events and activities. Cordia closely co-operates especially with the Slovak National Gallery. The co-operation is in the area of controlled vocabularies, terminology and persistent identifiers. Cordia a.s. also assists with Structural Funds implementation in the Slovak Republic. Currently Cordia a.s. is involved in setting up long term national strategies in the area of digitization, accessing, sharing and long term preservation of cultural heritage. It is involved in development of Slovak Digital Library and its harmonization with i2010 principles. Cordia a.s. is a partner of ATHENA project funded by eContentPlus programme.

Role in the project

CORDIA participates to the dissemination activities of WP7 with the specific objectives to get involved content providers from Slovakia.

Michal Čudrnák graduated from the Comenius University in Bratislava, Slovakia, Faculty of Philosophy in 2006 and has a Master degree in Library and Information Science. Currently he works in Slovak National Gallery on projects related to digitisation, digital archiving and visual resources cataloguing, devising information systems for cataloguing and public presentation of artworks held in Slovak art museums. Since 2008 he co-operates with Cordia a.s. on implementation of Europeana projects results in Slovakia. On behalf of Cordia a.s. he is actively involved in ATHENA project, helping to promote the idea of Europeana amongst Slovak museums.

UDSDRLS

La Sapienza, University of Rome, Italy

With 148000 students and 4500 teachers, the University of Rome "La Sapienza" is one of the 100 most important universities in the world, the largest in Italy and one of the largest in Europe. La Sapienza participates in the present project proposal through three different centres: **DGLab**, Department of **Archaeology**, **Museum System** of the University of Rome. **DGLab**, the newly formed **Centre for Research on Digital Arts and Humanities**, pulls together the know-how and resources of nine departments from the Faculty of Arts & Humanities and from the Faculty of Engineering (Computer Science). It provides a unique environment for exploring fundamental research and practical applications stemming from the rich interplay between ICT and Arts, Humanities & Social Sciences. Research at DGLab embraces intertwined developments from an unusual range of disciplines, such as arts, archaeology, anthropology, music, new media, 2D-3D design, interactive cinema and television, digital libraries, digital preservation and new approaches to research and teaching. The **Department of Archaeology** promotes archaeology as a discipline concerned with the entirety of human history. Its scholars and students conduct research on topics ranging in time from the Palaeolithic to the modern day. The recently-established **Museum System of the University of Rome** is responsible for coordinating the activities of 21 university museums, which span a variety subjects: arts, archaeology, palaeontology, anthropology, biology, botany, zoology, geology, mineralogy, hydraulics, chemistry, physics, mathematics, medicine, prehistoric art, classical art. The **Department of History of Art** is a world-renowned centre for the study of art history from the middle ages to the twentieth century in Europe and beyond. Its proximity to the museums and the churches of the city of Rome gives faculty and graduate students the chance to instruct in front of extraordinary paintings, sculptures, and other artifacts. The Department is the setting a distinctive masters degree and possibilities for advanced postgraduate research degrees.

Role in the project

UDSDRLS participates to WP6 as content provider. It also contributes to the training and dissemination activities in WP7.

Giovanni Ragone, Full Professor of Cultural Strategies and Communication at the University of Rome "La Sapienza", teaches in several institutions and courses. His research interests span four

main areas: the new possibilities of research offered by digital audiovisual tools, social and media studies, theory and practice of e-learning, marketing and communication strategies.

Massimo Mecella. Ph.D. in Computer Science and Engineering is an assistant professor at the Department of Systems and Computer Science and Engineering where he is conducting research in the fields of Software Architectures, Information Systems, Distributed Middleware and Service Oriented Computing, Mobile and Pervasive Computing, Process Management, with applications in the domains of eGovernment and eBusiness, Demotics and eHealth. He is the author of about 60 papers.

Vincenza Ferrara has taught "Laboratory instrumentation electronics and information technology" and "Foundations of Mathematics and Computer Science". Over the years she has dealt with image processing, database design, design of information systems, multimedia development applications and with software for the study, conservation, education and fruition of cultural heritage.

Angela Di Iorio, Information System Analyst and Metadata Expert. Her research interests span two main areas: digital libraries management and preservation. She collaborates with several institutions and she is involved in research and documentation as expert of metadata standard for libraries and preservation in digital environments. She has taught in many training courses for professional specialization in ICT in libraries management and she he is authors of several papers. Angela is a member of PREMIS Editorial Committee which is a preservation metadata standard maintained by the Library of Congress. She is graduated in Informatics for cultural heritage at the Università Ca' Foscari di Venezia.

Silvia Orlandi is Assistant Professor in Latin Epigraphy at the University of Rome "La Sapienza" - since 2006; she has studied for about twenty years the inscriptions of the Roman world, in collaboration with the Soprintendenza Archeologica di Roma and other institutions.

Stefano Valeri, Assistant Professor at the Dipartiment of History of Art of Unirversity of Rome La Sapienza. Teaching fellow in Museum Studies and Art and Restoration Criticism. He is the curator of the "Archivio di Lionello Venturi", member of the editorial staff for the journal "Storia dell'Arte" and a member of the Fondazione Burri of Città di Castello.

Dario Fo and Franca Rame Archive, Italy

Besides being Italy's foremost living playwright, Dario Fo is also director, painter, set and costume designer, and, on occasion, even composing the music for his plays. Franca Rame, his leading actress, has assisted in and contributed to the writing of many of the plays they have produced in their 50+ years of theatre together. She has also assumed the administrative and organizational responsibility for the Fo-Rame Company. The Dario Fo and Franca Rame Archive, managed personally by Franca Rame with the help of some collaborators, comprehensively represents these 50 years of theatre together, and CTFR has full audio and video recordings of most of Nobel laureate Dario Fo's shows, unique images and texts related to more than 50 years of activity of the

Dario Fo and Franca Rame theatre company, featuring recordings, photos, notes, drawings, paintings, sketches, posters, copies of contracts, of invoices, books, articles. It comprises more or less 2 millions of items and it also contains invaluable documents collected by the Rame family of hundreds of years of theatre practice.

Dario Fo received the Nobel Prize for Literature in 1997, and in 2007 he was ranked Joint Seventh with Stephen Hawking in The Telegraph's list of 100 greatest living geniuses.

Franca Rame was born in Parabiago, Lombardy, into a family with a long theatre tradition. She made her theatrical debut in 1951. In 1958, she co-founded the Dario Fo–Franca Rame Theatre Company (CTFR) in Milan, with Fo as the director and writer, and Rame the leading actress and administrator.

Role in the project

CTFR participates as content provider to WP6.

MariaTeresa Pizza

PhD in Digital technologies applied to the performing arts; Artistic-Scentific-Responsible Director of "Dario Fo & FrancaRame Archive "(CTFR srl).
She collaborates with DigiLab, Centre for Research on Digital Arts & Humanities at the University of Rome La Sapienza.
Lecturership at University "Sapienza" of Rome and at University "Unical" of Calabria in Digital technologies for the research work about performance.
She is Principal Co-Investigator in the EUfundedprojects ECLAP, European Collected Library of Artistic Performance on behalf of CTFR.
Past Experiences: 2007-Researcher by contract (Rome University); 2003-Post-Doc (Rome University); 2002-Master "New Media" (Rome University);
2001 European Film College (DK); 1998 PhD (Rome University); Graduated (Naples University)
Technical skills and competences: Audio and Video Editing Artistic skills and competences: Cinema, Theatre and other Performing Arts Essayist and Wordbook Author.

Raffaella Santucci

PhD in Digital Technologies Applied to the Digital Arts & Humanities at the University of Rome "La Sapienza. In the last few years her work was focused on the exploration of the potential of new media technologies for the enhancement of education and research in the arts and humanities.
She is in charge for coordinating national and international research projects on behalf of Dario Fo and Franca Rame Archive.
She collaborates with DigiLab, Centre for Research on Digital Arts & Humanities at the University of Rome La Sapienza. She is Project Bamboo representive for Italy with Luca Giberti on behalf of University of California Berkeley. She is Principal Co-Investigator in the EU-funded projects ECLAP, European Collected Library of Artistic Performance.

Directorate General of Cultural Heritage of the Autonomous Government of Catalonia takes the responsibility of the protection, preservation (maintenance) and diffusion of Catalan cultural heritage.

That includes archives, archaeology, historic architecture and museums.

Institutions such as Catalan History Museum, which also manages 17 important Catalan monuments and the Science and Technical National Museum of Catalonia directly depends on it.

Our activity is centered in leading and promoting programmes and projects for the improvement and dissemination of cultural heritage. Creativity and innovation are the core of our strategy. The fields we work on are the semantic web, ontologies and mobile Internet.

Role in the project

DDUIE participates as content provider to WP6. It also contributes to the dissemination activities in WP7.

Anna Busom Arruebo, Bachelor's degree in Library Science, Master's degree in Library Science, Audiovisual Communication and in Art History. Head of the *Biblioteca del Patrimoni Cultural*.

Currently she's working on different projects involving information provision, documentation and access of cultural heritage, such as *Calaix*, institutional repository of the *Departament de Cultura i Mitjans de Comunicació*, *www.patmapa.gencat.cat* and others.

Since 1987 she works at the Directorate General of Cultural Heritage, cooperating with the *Inventari del Patrimoni Arquitectònic de Catalunya*. She has participated in the Gaudí works and Patum of Berga entries in UNESCO's World Heritage List.

She has taken part in several cooperative projects such as the IFLA's Art Libraries Directory or as a member and coordinator of the internet work group of the Spanish Association of the Librarians and Architecture Libraries.

Promoter snc, Italy is an SME based in Pisa. It was founded in 1996 integrating competencies and experiences in the area of technological innovation, business promotion and project management.

Promoter operates in the area of the multimedia production, electronic, online and traditional publishing; consultancy for the participation to EC programmes, local, national and international partnerships; study, design, co-ordination and direction of Research and Development projects in the area of the Information and Communication Technologies, telematic systems, data collection, information processing, information systems and databases management; business planning, market studies, business communication, online advertising, with particular attention to the demands coming from the emerging Information Society.

Promoter has contributed to several projects in the domain of the digital cultural heritage, such as, recently, MINERVA, MICHAEL, ATHENA; it has participated as partner to PALIO INFO2000 project and Fine Arts Virtual Gallery; it has provided the scientific coordination of MediaArtTech

international Exhibition in Florence (1996); it has been subcontractor of MAGNET and MAG-PIE support actions (1996-1998).

Role in the project

PROMOTER participates to WP1 Project Management and coordination providing the Technical Coordinator of the project. Because of this role, it also participates, mostly as observer and facilitator to almost all the WPs, except WP Technical integration. Finally, it participates to the dissemination activities contributing to the communication strategy and design of dissemination material.

Antonella Fresa Director at Promoter snc. ICT expert, working on European cooperation projects since more than 15 years. Since September 2002, advisor of the Italian Ministry of Cultural Heritage and Activities for the technical coordination of European projects in the area of the digital cultural heritage. Technical advisor of: Head Office of the State Archives of Poland, NDAP (2005-2007), Electronic Commerce Competence Centre in Vienna, EC3 (2004-2006), ITC-IRST Research Centre in Trento (2002-2003), ESA (2002). Project Officer at the European Commission in Brussels, DG INFSO (1999-2002).

UNIV-SAVOIE
University of Savoie, France

The University of Savoie is a multidisciplinary, medium-sized university (12,000 students) offering more than 200 degree programmes, ranging from 2-years to 8-years post-secondary school study, in all areas of study.

The Condillac Research Group of the Listic laboratory is a software engineering team which works in knowledge engineering in the context of the e-Society. Its main domains of interest are ontology and terminology which appear as promising solutions to tackle the communication and knowledge sharing problems raised by the e-Society.

The Condillac Research Group has a strong experience in ontology and terminology based applications (e.g. with Electricity of France (EDF)). We achieved several software systems for ontology and terminology building, knowledge mapping, multilingual information retrieval systems, knowledge sharing, and e-learning.

The Condillac research group took part in different European project (Eureka PVS98, InterReg II and InterReg III). Our last participation in the ASTECH European project in collaboration with GRETh (leader of the project) was about a multilingual information retrieval system based on an ontology-oriented alignment of multilingual terminology.

Role in the project

UNIV-SAVOIE participates to WP3 with specific technical expertise in the area of multilingualism and terminology management. It also participates to WP5 and WP6 for the validation of the solutions developed by WP3 when integrated into the general Linked Heritage platform. Finally, it contributes to the training activities in WP7 providing content for the training on the management of multilingual terminologies.

Professor Christophe Roche

After his Ph.D in Artificial Intelligence (Expert System and Knowledge Representation) at the University of Grenoble (National Polytechnic Institute of Grenoble (INPG), France) in 1984, Christophe Roche worked in private research institutes in artificial intelligence from 1982 to 1988 in Grenoble and Paris. He was Professor at the University of Neuchâtel (Switzerland) in charge of the post-graduate Artificial Intelligence course for the Universities of Neuchâtel, Lausanne and Fribourg. Since 1988, full Professor in Artificial Intelligence at the University of Savoie, France. His main domains of interest are knowledge engineering, ontology, terminology and their applications: semantic information retrieval, knowledge mapping, ontology- and terminology-oriented software systems. He is also currently working on specialized digital libraries based on terminology and ontology and he is an expert to AFNOR for the ISO 704 and ISO 1087-1 Standards.

Associate Professor Dr. Luc Damas

Trained as a computer scientist, Luc Damas gained his Ph.D at the University of Lyon (France) in Cognitive Science in 2003. He is currently Associate Professor at the University of Savoie. He works in the Condillac research group since 2005. His main domains of interest are about knowledge engineering, ontology and terminology. He achieved several software systems dedicated to terminology and semantic information retrieval. In the framework of this last project, he carried out a multilingual terminology system based on ontology. He is currently involved in a multilingual terminological environment and multilingual information retrieval system with the GRETh organization.

Dedale

Dedale, France is a research and production agency dedicated to culture, innovation, and technologies in Europe. It develops an expertise especially in the field of Cultural policies, ICT and cultural heritage, European digital libraries, Innovative and creative learning, Tourism 2.0, New uses, Mobile technologies and Smart cities, etc. Its key activities are assistance and consulting for cultural public authorities, cultural institutions and European networks, a European Media Observatory, a media lab for the production of innovating cultural projects, seminars and workshops, and International Cultural Events (Emergences Festival, SmartCity, Minimob and more). Dedale is also frequently involved in European programmes such as Culture, eLearning, PCRD, eTen, Eranet, etc.

Since 2004, Dedale has been mandated by the French Ministry of Culture to coordinate the French participation in European projects in the field of digitization and valorisation of cultural heritage. Moreover, It is a Board member of Michael Culture and participates in the MINERVA network (MInisterial NEtwoRk for Valorising Activities in digitisation) and actively participates in the construction of the European digital library through European cooperation projects such as Michael, Michael plus and Athena.

Role in the project

DEDALE participates to WP3 providing the technical coordinator of the sub-project on multilingual terminologies. In this light, it contributes also the WP2 and WP6 for the validation of the solution developed by WP3. DEDALE participates to the dissemination activities in WP7 managing the sub-contracting with the MICHAEL Association.

Stephane Cagnot , Director of Dedale.
He worked for the French Ministry of Culture from 1995 to 2002, where he implemented the cultural policy for new technologies and information society in the Ile de France region. He is also the director of the international digital art festival "Emergences" in Paris and of the SmartCity event (artistic creation and ICT in urban space). He participates in various programmes and actions led by the European Commission, among others E-learning (DG Education and Culture), E-Content Plus and E-TEN (DG Information Society); in 2004 he coordinated a large European study on the use of new technologies for mediation in European cultural institutions.

UMA

uma information technology GmbH, Austria develops individual and innovative system solutions for a variety of business areas – from public authorities to museums and cultural organizations. uma has in depth knowledge in the area of cultural heritage as author of studies like "scientific and cultural heritage in Austria" and "cultural heritage and economy" as well as strategic partner for implementation and development of the Austrian search and service platform for digital cultural heritage and project partner and national cross-domain content aggregator for Europeana www.kulturpool.at
uma combines practical and technological innovations with economical software and best practice solutions, which have a reliable future and benefit for its clients. uma achieved ground breaking work in interface design and information mediation on a variety of platforms – ranging from web-based applications to interactive multimedia environments . This is shown for example in award winning products like the semantic information retrieval technology MELVIL© or VICO© - the virtual interactive collaboration tool.

Role in the project

UMA participates as content provider to WP6. It also contributes to the dissemination activities in WP7.

Mag. Marko Göls is project manager of the national digital heritage resource search- and service-portal www.kulturpool.at. He works for uma information technology GmbH, which is responsible for the operation, implementation and strategic development of the Kulturpool on behalf of the Austrian federal ministry of education, arts and culture as well as the federal ministry of science and research. Marko is also responsible for the communication with the national cultural institutions to ingest their data into the Kulturpool and therefore enrich the metadata basis of the portal. As project partner of the Europeana the Kulturpool is in close connection with the activities and the network. Marko studied business informatics at the University of Vienna and works at

uma in the area of project development. His emphasis lies on search- and web 2.0-technologies as well as interactive multimedia environments.

External cooperation

The following organization will contribute to Linked Heritage with particular regard to the dissemination activities foreseen in WP7 in their respective countries and the participation to the working groups.

It should be noted that this contribution is provided on a voluntary basis, without any formal responsibility towards the contractual obligations with EC, through an external cooperation with the project. This means that they will not accede as beneficiary - which they are not - to the Grant Agreement.

MAKASH – External cooperation

MAKASH Advancing CMC Applications in Education, Culture and Science, Israel

MAKASH was established in 1989 as an outgrowth of the Applied Research Unit of the P. Sapir Academic College. It resulted from an increasing awareness of the opportunities opened by the technologies of computer communications for accessing knowledge, social integration, advancing education, and applied research and as a generalized problem solving tool. It developed an extensive program of educational ICT projects and network of schools. MAKASH works closely with the Ministry of Education, the Directorate for Science and Technology and serves as the NCP for European related projects. It promoted the integration of Israel in the EUN, European Schoolnet since 1998.

MAKASH is engaged the development in a digital library of educational resources, the EUN LRE – Learning Resources Exchange. It took part in the projects ETB, Celebrate, Melt and Aspect as either a partner or associate and introduced the concept and practice of Learning Objects in the country (CELEBRATE). MAKASH participate actively in the dissemination of the use of ICT for cultural creative purposes and coordinated in Israel Netdays

Europe, the eSchola eLearning Awards competition and in the last years the very successful Israel participation in the Europrix Multimedia Awards competition.

MAKASH coordinated the WP1 (Content selection, aggregation and access) of the FP6 project: MOSAICA Semantically Enhanced Multifaceted Collaborative Access to Cultural Heritage.

MAKASH coordinates Israel participation in ATHENA (Access to Cultural Heritage Networks across Europe), one of the Europeana projects. It brought to the project, as content partners, the Israel Museum Jerusalem, the Israel State Archive and the National Library of Israel. A substantial group of experts from Israel are participating in the various Athena WGs. MAKASH is also an associated partner in Judaica Europeana.

Role in the project

MAKASH will contribute to the dissemination activities in WP7 spreading knowledge of the linked Heritage initiative by the cultural institutions in Israel.

Dov Winer. Psychologist (formed in the Hebrew University). He specialized later in Online Education and Training at the Institute of Education, University of London. He established the Applied Research Unit at the P. Sapir Negev College; founded the Israel Internet Society and has been its W3C Advisory Committee representative.

He has been a consultant for the Ministry of Communication; Ministry of Industry and Trade (introducing the Internet to Israel industry); Ministry of Science (Super-Highway of Information); NCP for the Eumedis initiative.

With the Ministry Culture he promoted the participation of Israel since 2003 in the MINERVA framework (Ministerial Network for Valorising Activities in Digitisation) and established the MINERVA forum in Israel that includes all the institutions with statutory responsibilities in this area. Since 2004 he is the co-chair of the EVA/MINERVA Jerusalem International Conference on the Digitisation of Culture. He promoted the establishment of the Israel MICHAEL node. He has participated in several European projects related to advanced technologies for culture – MINERVA, MOSAICA, ATHENA and Judaica Europeana and is a member of WP3 of Europeana V1.0.

KSU-CLL- External cooperation
Computational Linguistics Laboratory of the Kazan State University, Russia

Kazan State University (KSU) is the biggest university in Volga administrative region of the Russian Federation. The university has 8 museums with large collections of historical, ethnographic, biological and archaeological content. Computational Linguistics Laboratory (CLL) is a research group in N.G. Chebotarev Research Institute of Mathematics and Mechanics at KSU. CLL is a research and development center in the area of standardization and integration of cultural heritage data (in Russia). Since 2009 CLL has been involved in a number of projects on both national and international levels: ATHENA, OKD project, projects funded by the Russian Foundation for Basic Research. During the ATHENA project a part of Museum of KSU history database will be transferred to Europeana. The main goal of the OKD project was to represent collections of MAE RAS (Kunstkamera, the oldest museum in Russia) as a LinkedData dataset (which is available at kunst.openmuseumdata.org/cidoc/). The database schema was mapped to the CIDOC CRM and museum descriptions were linked to the major relevant LOD datasets such as DBPedia and Geonames. In order to follow best practices of the Semantic Web museum vocabularies were represented in a SKOS-form.

Research and development activity in national level projects has led to the following results:

- Russian version of the CIDOC CRM (both comments and labels were translated).
- Russian version of Getty's AAT (about 15.000 terms were translated).
- Mapping tools and framework allow to extract museum descriptions from flat tables (e.g. from RDBMS or XML files), automatically transform and annotate them with a thesaurus and generate an OWL-representation compatible with the CIDOC CRm

Role in the project

KSU-CLL participates as content provider to WP6. It also participates to the working groups of Linked Heritage and contributes to the dissemination activities in WP7.

Valery Solovyev

Professor Valery Solovyev is a Head of Computational Linguistics Laboratory and author of 3 monographs and more than 200 scientific publications. His research interests are in the areas of computer science, computational linguistics and applications of information technologies in cultural heritage domain.

Vladimir Ivanov

In 2005 Vladimir Ivanov graduated with honors from the Department of Computer Science of Kazan State University (KSU). In 2009 he earned his PhD at KSU (thesis title: "Ontology-based methods for integrating of structured textual descriptions"). He has research interests in the following areas: computational linguistics, natural language processing, thesauri, ontologies, IT in cultural heritage domain, information integration. Now he is a research assistant in Computational Linguistics Laboratory.

Nadezhda V. Brakker

Senior Expert Nadezhda V. Brakker was graduated from the State Moscow University, the department of structural and applied linguistics and post-graduate of the All-union Institute of Science and Technical Information. Nadezhda works in the area of information technologies in culture for 30 years. She was the Head of the Programme Committee of EVA1998 - 2009 Moscow, the Head of the Programme Committee of the international conference ECHOLOT2001-2004. Nadezhda was active in EC projects MENHIR, EVAN, MUVII, Cultivate-Russia, E-Culture Net, MINERVA PLUS, ATHENA. She supports research and practical contacts with experts in ICT in culture in Russian regions and internationally. Nadezhda is a board member of the Russian Museum Association on Documentation and Technologies (ADIT – www.adit.ru), an expert of the Russian Committee of the UNESCO "Information for all" Programme.

CU – External cooperation

Coventry University, UK has a proud tradition as a provider of high quality education and multidisciplinary research. With an established regional, national and international presence, and over 13,000 Students and 1,800 staff, the University has two academic Schools, including the 150-year-old School of Art and Design, and three Faculties In the past three years it has also launched three highly-innovative new Institutes - entities which combine cutting-edge research with an outward-facing address to specialist enterprise. These are: the Institute for Creative Enterprise (ICE); the Serious Games Institute (SGI) and the Health Design Technology Institute (HDTI).

Coventry University has widely recognised previous experience in the delivery of EU-supported activity. Its Framework experience dates from FP2, with further European collaborative management experience from lead and partner roles on Leonardo, INTAS, Socrates, INFO 2000, MLIS, Promise and EuropeAid projects.

The Siobhan Davies digital archive (Siobhan Davies Replay) is the first digital dance archive in the UK and was developed over a 30 month period. Its purpose was to bring together a diverse range of materials associated with this artist to preserve, conserve and increase access to valuable, often fragile resources; providing full public access via an attractive web interface. Content is mostly moving image and includes many hours of performance as well as film and gallery-based projects, site specific work, public conversations with leading experts in other arts and non-arts disciplines and education projects. There are also materials that have never been in the public domain before (for example, rehearsal scratch tapes, draft designs, artist notes and reflections). Some basic interactive elements enable users to create their own collections of archive content. The archive currently contains more than 5000 core assets which generate more than 77,000 individual digital objects. Beyond moving-image, the archive holds still image, text-based materials (marketing materials, journal articles, notations, scholarly writings), ranging from personal recollections, sketches and drafts, through to records of the performances. Within 4 months there were more than 26,000 site visits ; 5,600 unique visitors from 71 countries.

The University's engagement with the Linked Heritage project brings together different discipline experts under the leadership of Professor Sarah Whatley, from the School of Art and Design to the Serious Games Institute. Our expertise ranges from serious games development to digital archiving, digital library development, automated image analysis, public policy and the creative industries, to pedagogy in immersive environments and e-learning. The University has state-of-the-art digital equipment, including the largest motion-capture studio in Europe.

Role in the project

CU participates to the working groups of Linked Heritage with its experience of content provider, but it is not expected to contribute content to Linked Heritage in the frame of the project. It also contributes to the dissemination activities in WP7.

Sarah Whatley

PhD University of Surrey Roehampton (Dance Analysis)
Professor of Dance / Project Coordinator
With an early career as a performer and choreographer, she is now Director of Research of ICELAB, conducting research in dance analysis, the interface between dance and digital technologies, screendance, dance and health and dance pedagogy. She was project leader of the AHRC-funded Siobhan Davies Replay; the UK's first digital dance archive. She is collaborating with international research teams exploring the role and impact of digital choreographic objects; and is working in partnership with Surrey University, UK to create a web portal for digital dance resources and to develop novel forms of interaction with digital content including cross-media searching using visual similarity and tools for online collaboration and social networking.

Museovirasto – The National Board of Antiquities, Finland

The National Board of Antiquities preserves Finland's material cultural heritage: collects, studies and distributes knowledge of it. The Board is a cultural and research institution, but it is also a government authority charged with the protection of archaeological sites, built heritage, cultural-historically valuable environments and cultural property, in collaboration with other officials and museums.

The Board offers a wide and diversified range of services, a professional staff of specialists, the exhibitions and collections of its several museums, extensive archives, and a specialized scientific library, all of which are at the disposal of the general public. It also houses the Knowledge Management Centre responsible for developing the digital preservation of museum collections and information concerning the cultural environment as well as co-ordinating joint information technology projects and promoting availability of the cultural heritage via the Internet.

The National Board of Antiquities of Finland is attached to the Ministry of Education.

Role in the project

NBA participates to the working groups of Linked Heritage with its experience of content provider, but it is not expected to contribute content to Linked Heritage in the frame of the project. It also contributes to the dissemination activities in WP7.

Sirkka Valanto

Sirkka Valanto works as Senior Adviser in the Knowledge Management Centre of the National Board of Antiquities since 1997. Her studies include the degree of Master of Arts in the University of Helsinki with the History of Art as the main subject as well as the degree of Information Specialist at Helsinki University of Technology.

She is responsible for development of museums documentation systems in Finland and she also works in the field of accessibility and interoperability between museums and other memory organisations participating in such projects as Michael +, Athena and the National Digital Library of Finland.

B3.2a. Chosen approach

The **overall project methodology** for Linked Heritage is based on three main components:

1. The technical, organisational and content related work concerning the **provision of 3 million** new metadata records to Europeana
2. The work related to the identification of **best practice** in the key areas which have been chosen for the enrichment experiments:
    o Linked Data
    o Persistent Unique identifiers
    o Metadata and standards
    o Public Private Partnership
    o Terminologies and Vocabularies
3. The establishment and the animation of the Linked Heritage network, through **working groups, dissemination** and **training** activities.

Explanation of the Working Group (WG) Concept

The formation of working groups, which supplement the work-packages of the Linked Heritage project, is an approach which has been found to be very successful in other projects where many organisations work together to achieve consensus and best practice. The WG structure is flexible and supports open discussion and exploration, beyond the more rigid contractual nature of a work-package. It tends to encourage longer-duration, deeper discussion, often involving those relatively few individuals with a deep interest and expertise in a detailed topic. As result, only those who need to be involved in a particular discussion actually take part, ensuring both a high level of shared expertise and an efficient deployment of resources for all partners.

The initial national working groups allow a broad population of experts to be involved, and to have open and wide-ranging discussions. The members of national working groups will often know one another personally and have worked together in the past; this is a significant help to successful cooperation. In addition, national working groups can deliberate in their own language, which enables rapid and clear communication. Only those experts who are specifically interested in the Linked Heritage topics will become involved in thematic international WGs; this ensures that the most appropriate, interested and expert individuals contribute to the thematic WGs.[13]
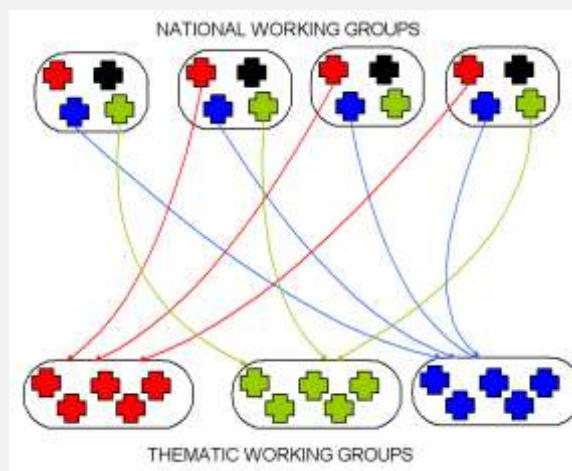
B3.2b. Work plan

This section is composed by three parts:
- a GANTT chart to show timing of Work Packages and their components

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[13] In other projects, similar approaches have been explored. For example, in the MinervaEC project, a single large international WG was established; it was found that this "supergroup" tended naturally to break into smaller thematic teams in order to make progress. In DC-NET, on the other hand, thematically-focused national working groups (smaller than the pan-theme WGs planned for Linked Heritage) found that conversations tended to cross themes, and keeping focus on just one theme was too narrow for a national group. The Linked Heritage approach is a "middle" way between these.

-   a Performance Monitoring Table to show success indicators and how performance is measured
-   the Workplan Tables.

Workplan Tables are generated online using NEF, are appended to part B and form an integral part of Annex I to the Grant agreement.
The following tables are foreseen:
-   WTI: Work package list
-   WT2: Deliverables list
-   WT3: Work Package Descriptions
-   WT4: List of Milestones
-   WT5: List of tentative reviews
-   WT6: Summary effort table

Timing of Work Packages and their components

Month 1 is the month that starts at the start date of the Linked Heritage Grant Agreement
The GANTT chart follows.

WP7 Dissemination and Training	D7.1	D7.2		D7.5			D7.3 D7.4 D7.6
WP6 Content Coordination				D6.1 D6.2			
WP5 Technical Integration				D5.1 D5.3	D5.2		
WP4 Public Private Partnership				D4.1	D4.2		D4.3
WP3 Terminology				D3.1	D3.2		D3.3
WP2 Linking Cultural Heritage Information		D2.1	D2.2		D2.3		D2.4
WP1 Project Management and Coordination		D1.1.1		D1.2.1 MS1 MS8 MS11	MS4 MS9	D1.2. MS2 MS5 MS6 MS7 MS12	D1.1.2 D1.2.3 MS3 MS10 MS13

1 **2** 3 4 5 **6** 7 8 **9** 10 11 **12** 13 14 15 16 17 **18** 19 20 21 22 23 **24** 25 26 27 28 29 **30**

Performance monitoring table

Indicator No.	Relating to which project objective / expected result?	Indicator	Method of measurement	Expected Progress (cumulative)		
				Year 1	Year 2	Year 3
Effective project management						
1		Number of WG meetings	Meeting held	3	6	8
2		Number of plenary project meetings	Meeting held	3	6	8
3		Number of deliverables submitted	Deliverables submitted	See GANTT Chart		
4		Number of successful reviews	Review completed	0	1	2
Best practice						
5		Number of best practice recommendations – PIDs	Report	0	1	1
6		Number of best practice recommendations – linked data	Report	0	1	1
7		Number of best practice recommendations – metadata standards	Report	0	1	1
8		Number of best practice recommendations – PPP	Report	0	1	1
Content						
9		Number of new items contributed to Europeana by partners	Partner records	0	500000	3 M
10		Number of Europeana items from publishing sector	LUH records	0	0	9600

Enrichment demonstration						
11		Number of linked data 'triples' produced	Internal report	0	100	200
12		Number of linked data triples published in linked data store	Review of linked data stored	0	100	200
13		Number of third party uses of linked data store -	Usage tracking of store	0	5	10
14		Number of external linked data stores used to enrich search results	Search statistics	0	5	10
Terminologies						
15		Number of proprietary terminologies mapped to Linked Heritage terminology	Technical records	0	4	6
16		Number of terminology entries mapped to Linked Heritage terminology	Technical records	0	500	1500
17		Number of multilingual search results delivered using Linked Heritage terminology	Technical records	0	5000	20000
Dissemination						
18		Number of dissemination events	Events held/Participation to third parties events	0	10	30[14]
19		Number of Linked Heritage conferences	Conferences held	0	1	2
20		Number of academic journal or conference	Partner submissions, details on	4	8	10

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[14] See the Dissemination Events table for an indicative list. The high level of activity, and the large size of the consortium, means that Europe-wide dissemination of Linked Heritage will be a regular event.

		publications	website			
21		Number of meetings with sister projects in the Europeana ecosystem	Meetings held	4	8	10
Training						
22		Number of training events held	Events held	0	1	1
23		Number of trainees	Attendance records	0	50	50
24		Number of handbook/guideline publications	Website review, deliverables submitted	0	0	2

User testing and feed-backs

In addition to the quantitative indicators that are listed in the above table, a program of users testing and feedback will be performed along the whole ingestion process, in the frame of the implementation of WP6 Content Coordination. In this context, the users of Linked Heritage are the content providers.

The satisfaction of the content providers will be measured through questionnaires and interviews that will be reported in the six updates of D6.1 Validation report. This will provide an additional indicator about the success in the use of the instruments that are made available by the project (technical ingester and training) to facilitate the delivery of their content to Europeana.

B3.3. Project management

Terminology: Project Coordinator and Project Manager
The Project Coordinator is the organization that holds the role of coordinator in the consortium, i.e. ICCU
The Project Manager is the person appointed by the Project Coordinator to manage the project. The Project Manager is the Director of ICCU.

Management structure and procedures

To achieve its objectives, the project must involve a significant number of organisations ('stakeholders'), both to receive their input and to validate the best practice solutions. These stakeholders come from multiple domains (private sector, memory institutions, libraries, government ministries and agencies, etc.), each with its own priorities and objectives.

As a result, the emphasis of the project management is on consensus building and facilitation, balanced with progress. The management must help to ensure that the voices of all partners are heard, while continually driving the project forward to meet its objectives.

Executive team

The overall management of the project is the responsibility of the Project manager, Rosella Caffo. Her role is primarily to manage the project as a whole, to provide strategic and political steering to the project, harmonising requirements and priorities from the consortium stakeholders. In her management task, she will be assisted by the Technical Coordinator, Antonella Fresa, who has worked in this role within all the MICHAEL and MINERVA projects, DC-NET ERA-NET, among others. The role of the technical coordinator will be to support the project manager to orchestrate and facilitate the work of the project, to liaise closely and regularly with every partner. These two individuals are involved day-to-day in the project and are responsible for routine management, progress monitoring, partner liaison and technology and content oversight.

Project Manager and Technical Coordinator generally work with e-mail, telephone conferences, through the website. They can meet in the case of specific needs, under the call of the Project Manager.

Project Board

The project board includes a representative of every partner, including all the work-package leaders. Its role is to receive reports on progress on a meeting-by-meeting basis and to set and agree short term goals and actions. To a large degree, this is already established in the project Description of Work and the Project Board acts as a communications mechanism whereby all work-packages are aware of the activity of all other work-packages, particularly in terms of how one work-package leads into another. The project board meets in the occasion of the project plenary meetings, to be organised on average 3 times per year, in the different locations of partners.
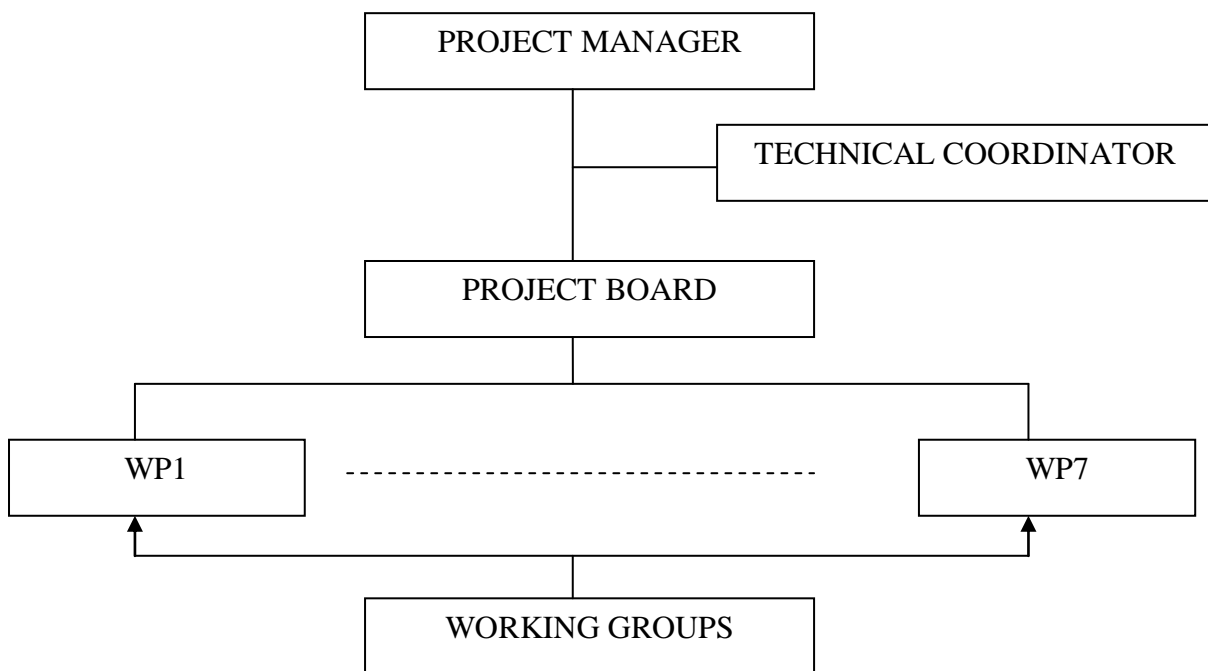
The board is chaired by the Project Manager.

Working Groups

The working groups (see section 3.2a) are teams of partners (and external experts where appropriate) who focus on particular issues to be coordinated by the Linked Heritage project.

Working groups and their Terms of Reference are established within WP1 and will be active throughout the project. The remit of the working groups is to explore, analyse, discuss and share expertise in areas of particular interest. These areas of interest overlap with the most important work-packages of the project; the outputs of the working groups are intended to inform and add value to the results of the work-packages. Working groups deliver internal reports to the relevant work-package leaders, every three months on average. These are not formal project deliverables – instead their contents are used to inform and enrich the contractual deliverables. Working group leaders are often the same individuals as work-package leaders. However, the work-package leaders can decide to nominate a Working Group leader, in the event that a particular expertise is necessary for the coordination of the working group. While the work-package leader is responsible for deliverables associated with his work-package, the working group's role is to explore, to liaise and to seek consensus, without the strict reporting focus of the work-package management role.

Working groups will also include individuals who represent ministries, agencies, memory institutions and centres of expertise which are not partners within the Linked Heritage consortium. This is a key element of the project's approach to giving a voice to all stakeholders, while maintaining project momentum and focus.

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        ┌─────────────────────┐
        │   PROJECT MANAGER    │
        └──────────┬──────────┘
                   │        ┌──────────────────────────┐
                   │────────│  TECHNICAL COORDINATOR   │
                   │        └──────────────────────────┘
        ┌──────────┴──────────┐
        │    PROJECT BOARD     │
        └──────────┬──────────┘
       ┌───────────┴───────────┐
  ┌────┴─────┐            ┌─────┴────┐
  │   WP1    │ - - - - -  │   WP7    │
  └────┬─────┘            └─────┬────┘
       │                        │
       └──────────┬─────────────┘
        ┌─────────┴───────────┐
        │   WORKING GROUPS    │
        └─────────────────────┘
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Work-package Leadership

Work-packages have a nominated work-package leader. Certain work-packages have two co-leaders; this approach has been proven to add significant value and momentum to work-packages in other projects in which the consortium have worked together. The work-package leaders are personally responsible to the coordinator for the timely delivery of the deliverables associated with the work-package. The deliverables are delivered to the coordinator, who then releases them for quality assurance.

Within each work-package, the partners involved report to the work-package leaders. The work-package leaders will present a brief *work-package plan* at the start of the work-package, where they makes explicit their expectations of each partner and what they must deliver as their contribution to the work-package. The schedule for such contributions is also included, so that all partners know what they are meant to be doing, in each work-package in which they are involved, at any time in the project life.

Routine formal work-package meetings are *not* envisaged; informal and additional work-package meetings may precede or follow the scheduled project meetings. However, if the work-package leaders consider it essential, they can call a meeting with some or all of the partners to progress the work-package.

Decision-making mechanisms

Tactical decisions are taken by the project coordinator. She reports to the project board at each meeting, and may also involve the board via email, conference call or extraordinary meeting, if critical decisions need to be taken at short notice.

Day to day decisions such as sign-off on deliverables and reports are taken by the coordinator and the project administrator, working together. Where appropriate, the project technical leader will be involved too.

Longer-term decisions such as changes to the direction, objectives or focus of the project are taken by the project board. Experience has shown that the board can be expected to reach consensus; in the unlikely event that this does not occur, a simple one-vote-per-partner, with majority voting, can be used for decision making. In a tied situation, the coordinator has the casting vote.

For conflict resolution, see the point below.

Communications

Communication is vitally important to a best practice network.

Day to day work-package communications shall rely on the project website and on e-mail/e-mail lists. The project website will of course include document sharing and discussion (forum) functionality.

However, internal communications such as seminars and working group meetings, as well as telephone meetings and personal visits across partners will also play an essential role in driving the project towards consensus on its broad range of topics.

Quality Assurance

The project shall use quality assurance procedures based on the ISO9000 series of standards. For the project this means that

- deliverables will be reviewed by partners not involved in their creation
- versioning and configuration management will be used for all software, documents and other outputs (e.g. training materials)
- time and resources will be planned, from the start, into the project budgets for document and other reviews

The Description of Work (technical annex) shall nominate the partners who must review each of the project deliverables. The Description of Work will state when the deliverables are to be delivered to the QA team for review, the time allowed for review and the time allowed for changes to the deliverables in response to review comments, inputs and suggestions. Review will focus on the content, rather than the form, of the deliverables.

Templates and standards for deliverables will be published on the private area on the project website. These will specify headers and footers, font styles, front pages, use of document histories and versioning, etc. All deliverables will be created using these templates, and will not be accepted for review otherwise. Scope notes for deliverables will also be generated if appropriate. However, all partners have extensive EU project experience and so have a good knowledge of what is expected in a deliverable.

Software development protocols and procedures will be set by the technical leader (NTUA) and will cover test processes, version control, integration management, API definitions, etc. The software deliverables will of course take into account the integration/interoperability requirements of the Europeana system.

The **QA cycle** shall be as follows

1. Work-package leader delivers deliverable to the project administrator.
2. Project administrator forwards deliverable to the partners responsible for QA review.
3. Review carried out, reviewed copy of deliverable returned to author, with copy to project administrator.
4. Work-package leaders change the deliverable in response to the review. Final version delivered to administrator and placed on project website.
5. Project administrator and coordinator carry out final 'superficial' review, to ensure all templates, etc. are complied with. Any minor adjustments are carried out by management team.
6. Coordinator forwards deliverable to European Commission Services.
7. Submitted version of deliverable retained on website until end of project.

The following should be noted:

- The content of the deliverables is the most important material to review. Internal reviewers shall be experienced in the general topic of the deliverable and be able to assess its quality. They shall also be familiar with the overall project, and so able to judge the contribution that the deliverable makes to the project.
- The project administrator will carry out occasional spot-checks, to ensure that QA procedures are being adhered to. While the review of a third party deliverable is not usually the most exciting aspect of a project, its importance for the overall value of the project cannot be overestimated.
- The project administrator will monitor the progress of the QA cycle. In order to allow time for review and for enhancements, the preceding stages must be completed on time. The administrator shall be alert for late deliverables and late reviews. However, if a delay is detected and cannot be avoided, the coordinator will seek the permission of the project officer to submit a late, but high-quality deliverable, rather than submitting a weak deliverable on time.

Conflict Resolution

The project board will nominate four members who shall have special responsibility for conflict resolution. The consortium believes that a fully-planned project, where the roles and responsibilities of each partner are made explicit from the start, should have no major conflicts. However, a plan for conflict resolution is none the less put in place. The conflict resolution path is as follows:

1. consult the contract and the Description of Work
2. consult the Coordinator. Her decision shall be taken in consultation with other partners, as she deems necessary.

3. if the disputants are not content with the decision of the Coordinator, raise the issue with the board, who may pass it to the conflict resolution sub-committee.
4. if the sub-committee cannot reach agreement, or if their decision is rejected, they shall nominate an independent arbitrator. His decision shall be binding.
5. if all else fails, the law of Belgium shall apply.

Given the long history of fruitful collaboration across the consortium, no conflict is anticipated.

B3.4. Security, privacy, inclusiveness, interoperability, standards and open source

Interoperability between content providers, aggregators and Europeana

Linked Heritage has a central objective the interoperation of content management systems, most importantly the systems of content providers and aggregators on the one hand, and Europeana on the other. The Linked Heritage intermediate metadata schema, built on LIDO, will act as an "interoperability bridge" between systems which have a rich, complex metadata model, and the simpler, "flat" ESE model[15]. Examples include MARC for libraries, CDWA, museumdat, SPECTRUM and CIDOC specifications and standards for museums, ISAD and EAD for archives, and ONIX for publishers.

Interoperability between the Linked Heritage metadata schema is already assured, because it will be built on the LIDO schema developed by the ATHENA project. A LIDO-ESE gateway already exists and is active in the contribution of ATHENA member content to Europeana.

Interoperability between Linked Heritage and Europeana

The best practice activities of Linked Heritage will be validated in a large scale implementation which will include the development of several key technology assets. These include technologies for persistent identifiers, for linked data and for metadata interoperability support. In order to derive longer-term value from the Linked Heritage project, these technologies must interoperate with future planned releases of Europeana. The technical partners in Europeana are already involved in other 'sister' projects which have similar objectives, and the consortium has an excellent level of awareness of what is required. Where feasible, Linked Heritage technologies will be developed using the same technology platforms as the Europeana core (Java Springs, Postgresql, etc.), and will implement the APIs specified by Europeana Labs. In all other cases, Linked Heritage will deliver its functionality as web services, exposing APIs using the protocols specified by Europeana Labs. Validation interfaces will interact directly with the same APIs that will communicate with Europeana; as discussed earlier in this proposal, Linked Heritage takes a similar "services with an API" approach as does Europeana.

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[15] For more discussion of metadata standards, ESE and the Europeana Data Model and how it relates to Linked Heritage, please see page 12

Security and Privacy

Security is implemented only at the level of the project website, creating a reserved area where the documents that are not yet ready for publications are uploaded for the internal use of the consortium. However, since this level of security is implemented only to prevent the public to use documents that not yet completed, no secure URL (e.g. https) is implemented.

With regard to privacy, a special care will be used by the consortium while publishing names and contacts of people on the website. In particular, before the publication of any name, the authorization will be requested to the concerned people.

There are no other specific security or privacy issues associated with Linked Heritage. While it may be noted that the creation and publication of a linked data store facilitates access to, and re-use of, cultural heritage content, this is intended and does not represent a security risk.

Inclusiveness and Accessibility

It is envisaged that Linked Heritage technologies will be absorbed into Europeana (either as core components or as interoperable services). Thus, there will be no requirement for a user interface to Linked Heritage over the longer term, and no issues with accessibility or inclusiveness arise.

During the validation process, however, there will of course be a user interface which enables access to the new best practice services developed by Linked Heritage and which enables the contribution and/or enrichment of Europeana content. This user interface will be entirely web-based; the website will be fully compliant with WCAG guidelines.

In terms of the broader strategic perspective, Linked Heritage supports Europeana in the provision of universal **inclusive** access to European cultural heritage. In addition, Linked Heritage explicitly facilitates the re-use and sharing of Europeana content by third party systems and applications. This makes the cultural assets of Europeana available to systems which may have explicit accessibility and/or inclusion missions.

Multilinguality

Linked Heritage explicitly focuses on increasing the level of support by Europeana for multiple languages. Workpackage 3 is dedicated to multilingual search and retrieval, and for the creation and maintenance of multilingual metadata in the form of linked term lists, or thesauri.

Standards

The use of standards is central to the success of Linked Heritage and to the success of the broader Europeana initiative. Linked Heritage anticipates that formal and informal (de facto) standards will emerge as identified best practice across all its areas of activity. In particular

- In the persistent identifier area, several standards are expected to be explored, analysed and assessed (e.g. DOI, PURL, URI, ARK…); it is likely that more than one such standard will be identified as best practice. It is not anticipated that a proprietary approach will be taken.
- In the linked data area, the web standards will of course be applied, in order to enable interoperability. These include the use of RDF and HTTP URIs, of established vocabularies (SKOS, FOAF, DC), etc.

- In the metadata standards area, Linked Heritage has identified the need for an intermediate schema between rich and complex schemata such as SPECTRUM, museumdat and EAD, and the simpler ESE specification. While this requirement may change with the emergence and use of the new EDM model, the delay until EDM becomes fully specified, used and supported remains unknown. Linked Heritage anticipates using a metadata schema built on the LIDO specification from the ATHENA project, as outlined above. While this is itself a proprietary (though open source) solution, its impact is to enable meaningful interoperation between formal standards and the Europeana specifications.
- In the PPP domain, Linked Heritage specifically seeks to enable interoperation between the ONIX (ONline Information eXchange) standards and ESE, again via LIDO. It may be noted that EDItEUR, the body which is responsible for the creation and maintenance of ONIX (and other standards in the publishing and books sectors) is a partner in Linked Heritage.

It may be noted that as a best practice network, an important task of Linked Heritage is to examine the many standards, specifications and technical options which are available to it stakeholders, and to identify best practice. Until the exploration and discussion is completed, it is not possible to nominate the best practice solutions. While some strong candidates can of course be identified from the experience of the consortium, the large numbers of partners and their breadth of experience may lead to best practice nominations which are not envisaged at the time of proposal creation.

B3.5. Resources to be committed

The key resources needed to deliver the project are as follows

- Personnel with the expertise and experience to work together in the identification of best practice, in the actual mapping of metadata models into Linked Heritage and with the influence to dissemination the project results and encourage their uptake in a sustainable manner. Having the right stakeholders committing significant amounts of time to the project is critical to the success of Linked Heritage.
- Software development resources – developers, ICT infrastructure, software toolkits, etc. These resources must include expertise in the technologies most relevant to the Europeana core (Java Springs, web services, Maven, Freemarker, Apache Solr search and Postgresql), as well as those which underpin less-integrated interoperation, namely web services (REST, SOAP, etc.).
- Facilities and support for best practice events and meetings, for seminars and discussions and of course for dissemination and promotional activities.

Personnel represent the greatest assets of the project, and also the large majority of the project's cost base. A total of 689 person-months of effort is estimated for the delivery of Linked Heritage.

The allocation of effort across partners and work-packages reflects the best estimates of the consortium at the time of project start. Work-package leaders and working group leaders typically require more time than those partners who are just contributing, rather than leading. The

coordination effort reflects the intensive management which a network of this size will require. Software development and testing is rather time-consuming – this is reflected in the relative effort allocations to the technical partners, particularly the WP6 leader NTUA.

Software development resources, other than personnel, have relatively low financial cost. The technology partners are already well equipped and established leaders in their respective fields; there is no requirement for new equipment. Software toolkits and source code is available freely. A small allocation for consumables is appropriate, however.

The outward-facing nature of the project means that events which bring people together are a very important part of the project's activities. Seminars, meetings, workshops, conferences and other events are planned, as outlined in the workplan. Resources for hosting such events, and for travel to events hosted by third parties, are an important element of the project budget. To keep such costs under control, project meetings will be combined with other events as much as possible.

Finally, dissemination materials and publications will be an important long-term impact driver for the project. As has been experienced in the MINERVA and ATHENA projects, the assembly and publication of high-quality publications addressing common issues such as quality, intellectual property, project management, content selection, metadata and standards, etc. should be central to the dissemination strategy of a best practice network. These publications will continue to be downloaded and utilised long after the project ends. The Linked Heritage project anticipates producing and publishing two major publications, printed and published during the project lifetime, addressing issues of common interest across the Europeana ecosystem. An allocation for the creation and printing of dissemination materials is thus included in the project budget.

Apart from the costs associated with personnel time, the most important cost categories are as follows:

- Travel and subsistence, which are an important cost in a project where networking and discussion is central to the work of the project. An allowance of 1,500 euro per trip is made on average, with an average subsistence cost per day, per person of 200 euro.
- Two large-scale publications, as mentioned above. These will be carried out by EVK and KIS, in order to deliver them at the lowest cost. An allowance of 8,000 euro per publication is made under the Other Costs of the two partners, respectively.
- The distribution of these published books to a wide audience across Europe will require postage, shipping, etc. costs. This work will be carried out by ICCU; an allowance is made of 5,000 euro under the Other Costs.
- An allowance of 10,000 euro for design and printing of dissemination material + 5,000 euro for the organisation of the final event is made on the budget of the coordinator under the Other Costs;
- The running of the international Linked Heritage conferences will be made as economical as possible, by (in two cases) taking advantage of national events associated with the holding of

the EU presidency (Ireland-CL and Hungary-NSL). An allocation of 10,000 euro per conference is made for logistics, etc. under the Other Costs of the two partners, respectively

- Some technical services to be acquired via sub-contracting, as described in the following section.

Personnel Costs per partner

The following table provides the value of the monthly rates per partner.

No.	Full legal Name	Short Name	Monthly rate €/month
1	Istituto Centrale per il Catalogo Unico – Italian Ministry of Culture	ICCU	4200
2	University of Padua	UNIPD	4589
3	Consiglio Nazionale delle Ricerche	CNR	3950
4	France Ministry of Culture	MCC	4500
5	Estonian Ministry of Culture	EVK	3000
6	Hellenic Ministry of Culture	HMC	4280
7	Institute of Computer and Communication Systems - National Technical University of Athens	NTUA	5000
8	University of Patras	UP	2000
9	Collections Trust	CT	5261
10	The Library Council / An Chomhairle Leabharlanna	CL	4417
11	Pintail Ltd	PT	5335
12	Fundació i2CAT, Internet i Innovació Digital a Catalunya	I2CAT	4000
13	Philipps-Universität Marburg	PUM	6870
14	Prussian Cultural Heritage Foundation	SPK	6200
15	Bulgarian Academy of Science - Central Library	CL-BAS	3190
16	Institute for the protection of Cultural Heritage of Slovenia	ZVKDS IPCH	4000
17	The Cyprus Institute	CREF CYI	4200
18	International Center for Information Management Systems and Services	ICIMSS	3660
19	Swedish National Archive	RA	6100
20	mEDRA	MEDRA	5500
21	Technical University Hannover	LUH	6191
22	EDItEUR	EDItEUR	5000

23	Marketing und Verlagsservice des Buchhandels	MVB	5000
24	National Szechenyi Library	NSL	1395
25	Royal Museum of Arts and History	KMKG	4800
26	Arts and Theater Institute	IDU	3520
27	Instituto Superior Técnico	IST	4547
28	State Agency for Cultural Information Systems	CIS	1000
29	Packed	PACKED	4697
30	Cordia	CORDIA	4400
31	DigiLab Universita' degli Studi di Roma La Sapienza	UDSDRLS	5000
32	Archivio Fo Rame	CTFR	4100
33	Generalitat de Catalunya	GENCAT	4000
34	Promoter	PROMOTER	5045
35	University of Savoy	UNIV-SAVOIE	4825
36	Dedale	DEDALE	5000
37	Uma (Austria)	Uma	6400
38	Digital Heritage	DH	4500

Subcontracting

Seven main subcontracts are envisaged. While these may change as the project progresses, the following are the expectations of the consortium at the time of the starting of the project:

- Europeana Foundation 40,000 euro, to enable them to engage directly with the project and to maximise the impact potential of Linked Heritage; this subcontract will be done by the coordinator;

- Support for costs statements management and technical secretariat for the (very large) consortium, with an allowance of 400 euro per partner, per reporting period, approximately (30,000 euro); this subcontract will be assigned on the basis of a public tender published by the coordinator;

- Technical services for mapping and metadata management will be sub-contracted by the coordinator on the basis of a public tender; the expected amount is in the range of 50,000 euro, corresponding to an average of 3 persons, half-time, along the whole 30 months of the project;

- 16,000 euro to Dedale as payment to MICHAEL AISBL, the international body which maintains and develops the multilingual cultural portal technology of the same name. The work of the MICHAEL organisation focuses on dissemination to the broader cultural sector;

- 40,000 euro to SPK to enable the involvement of DigiCult, in particular their expertise in multilingual thesauri and mappings across terminologies, as typified by their xTree toolkit;

- 8,000 euro to IDU for an IT expert on cataloguing of performing arts content; the subcontract will be assigned on the basis of a public tender published by IDU;

- 10,000 euro to ZVKDS IPCH for an IT expert on geo-coding of cultural data; the subcontract will be assigned on the basis of a public tender published by ZVKDS IPCH.

Other costs indicative breakdown

The following table shows the indicative breakdown of the components of the 'Other Costs' budget, per partner.

No.	Full legal Name	Short Name	Other Costs €	Explanation
1	Istituto Centrale per il Catalogo Unico – Italian Ministry of Culture	ICCU	45.000	25.000 = travel costs 10.000 = dissemination material 5.000 = dispatching 5.000 euro final conference
2	University of Padua	UNIPD	20.500	Travel costs
3	Consiglio Nazionale delle Ricerche	CNR	16.000	Travel costs
4	France Ministry of Culture	MCC	15.000	Travel costs
5	Estonian Ministry of Culture	EVK	16.000	8.000 = publications costs 8.000 = travel costs
6	Hellenic Ministry of Culture	HMC	8.000	Travel costs
7	Institute of Computer and Communication Systems - National Technical University of Athens	NTUA	26.000	Travel costs
8	University of Patras	UP	10.000	Travel costs
9	Collections Trust	CT	20.000	Travel costs
10	The Library Council / An Chomhairle Leabharlanna	CL	19.000	10.000 = conference 9.000 = travel costs
11	Pintail Ltd	PT	20.000	Travel costs
12	Fundació i2CAT, Internet i Innovació Digital a Catalunya	I2CAT	17.500	Travel costs
13	Philipps-Universität Marburg	PUM	15.000	Travel costs
14	Prussian Cultural Heritage Foundation	SPK	36.000	Travel costs
15	Bulgarian Academy of Science - Central Library	CL-BAS	10.000	Travel costs
16	Institute for the protection of Cultural Heritage of Slovenia	ZVKDS IPCH	8.000	Travel costs
17	The Cyprus Institute	CREF CYI	9.000	Travel costs
18	International Center for Information Management Systems and Services	ICIMSS	9.000	Travel costs
19	Swedish National Archive	RA	18.000	Travel costs
20	mEDRA	MEDRA	15.000	Travel costs
21	Technical University Hannover	LUH	7.000	Travel costs

22	EDItEUR	EDItEUR	22.500	Travel costs
23	Marketing und Verlagsservice des Buchhandels	MVB	18.000	Travel costs
24	National Szechenyi Library	NSL	25.000	10.000 = conference 15.000 = travel costs
25	Royal Museum of Arts and History	KMKG	19.000	Travel costs
26	Arts and Theater Institute	IDU	6.000	Travel costs
27	Instituto Superior Técnico	IST	11.000	Travel costs
28	State Agency for Cultural Information Systems	CIS	18.000	8.000 = publications costs 10.000 = travel costs
29	Packed	PACKED	11.000	Travel costs
30	Cordia	CORDIA	10.000	Travel costs
31	DigiLab Universita' degli Studi di Roma La Sapienza	UDSDRLS	9.250	Travel costs
32	Archivio Fo Rame	CTFR	5.000	Travel costs
33	Generalitat de Catalunya	GENCAT	10.000	Travel costs
34	Promoter	PROMOTER	25.000	Travel costs
35	University of Savoy	UNIV-SAVOIE	12.000	Travel costs
36	Dedale	DEDALE	15.000	Travel costs
37	Uma (Austria)	Uma	9.000	Travel costs
38	Digital Heritage	DH	10.000	Travel costs

The estimation of the budget for the travel and subsistence costs is based on the following rules:
- 25.000 euro are allocated to ICCU and Promoter that hold respectively the roles of Project Manager and Technical Coordinator, corresponding to an average of 1 trip every 2 months along the project period (1.500 euro average cost/trip * (30 months project duration / 2) = 22.500 euro) + some national missions to meet with the project team in Rome;
- 20.000 euro are allocated to PL that will act as support partner to the coordination activities and is expected to participate to project meetings and WP meetings to monitor and refer progressed in the periodic reporting (1.500 euro average cost/trip * 12 trips) + some national missions to contribute to the organization of the international conference under Irish Presidency;
- The WP Leaders of WP2 and WP3 (CT and KMKG) have an allocation of 9 trips at 1.500 euro average cost/trip for the coordination of their respective WPs, that require harmonisation and alignment among themselves, being the two WP dealing with the enrichment processes;
- The WP4 Leader (EDItEUR) has an allocation of 15 trips at 1.500 euro average cost/trip; in addition to the normal project activities, this will cover in particular the management of the WP4 among the publishers participating to the project;
- The WP Leaders of WP6 and WP7 (NTUA and UNIPD) have an allocation of 9 trips at 1.500 euro average cost/trip for the coordination of their respective WPs that have an horizontal scope in the project; both the technical integration and the dissemination and training WPs in fact are requested to be carried out in strict liaison with all the partners, in order to guarantee the best satisfaction of the partners' needs in terms of technical and training support;
- All the rest of travel&subsistence costs are allocated on the basis of the individual needs of each partners, with particular regard to the fact that most of them are expected to work in

liaison with other content providers in their respective countries and/or with the rest of the consortium (this is the case in particular of CREF CYI as WP6 Leader);

- All the partners have budgeted the participation to the plenary project meetings, as described in the management sections of this document (on average: 1 plenary meeting every 6 months, possibly in conjunction with other project events).

B3.6. Dissemination / Use of Results

Dissemination Events

The following events represent good examples of the types of third-party occasions where the project will seek to make a presentation and to gain access to important target audiences. It may be noted that consortium members are frequently involved in the organisation and/or funding of these events, and so access for the project can be assured in some cases, and is likely in others. The following table is indicative, rather than exhaustive.

Event	Date, Location	Target Audience	Objective	Europeana impact
EVA	Florence, London, Jerusalem, Moscow	Content contributors, researchers, policy makers	Raise awareness of project. Stimulate interest in project technologies.	Higher quality of data from contributors using Linked Heritage technologies
DC-NET Conferences	Belgium, Oct. 2010, Hungary, June 2011	Content contributors, sister projects	Encourage adoption and use of Linked Heritage technologies	Higher quality of data from contributors
FEP General Assembly	Roma, June 2010	Publishers	Demonstrate value of PPP	New private sector content
ATHENA Seminar	London, June 2009	Content Council	Encourage technology take-up	Enhanced data from existing sources
ICOM meetings[16]	various	Museums, content providers,	Validation by museums and other sectoral	More and higher quality content from these

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[16] Project partners SPK and PUM are ICOM members

		aggregators	actors	sectors
Europeana Plenary	TBA	Content council, Europeana, EuropeanaLabs	Technical integration agreements, technology takeup	Enhanced functionality in future Europeana. Better quality data.
EUScreen Conference on content selection plicy	Rome, Oct 2010	Content contributors	Raise profile of project, outline technology and benefits	More and better content from new and existing sources.
IFLA meetings[17]	various	Libraries	Encourage use of richer metadata sets, validation of technologies	Greater preservation of more complex bibliographic metadata
CENL meetings	various	National libraries	Encourage use of richer metadata sets, demonstrate added value to libraries	More libraries content (from both national and local libraries) due to simpler and more powerful metadata mapping
ICA meetings[18]	Various	Archive	Encourage exploitation and use of richer metadata sets and improved information retention	Increased contribution of archives information. Better retention of more complex metadata sets.
Emergences Culturales	Paris, annual	Cultural operators	To disseminate Linked Heritage results among	To reach a new target (non-institutional

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[17] Project coordinator ICCU is an IFLA member
[18] Project partner RA (Swedish national archives) is a member of the International Council on Archives (ICA)

			the representatives of non-institutional cultural sector (artists, art schools, art centres, etc.)	cultural sector) and to raise awareness about Europeana
Exchange of presentation and material with related projects beyond the EU	Mediterranean countries and China via INDICATE project (ICCU)	Mediterranean and Chinese cultural sectors	Disseminate best practice and project results	Potential future collaboration
Exchange of presentation and material with related projects beyond the EU	South America, via red.clara project (I2CAT)	South American libraries, archives, museums and publishers	Disseminate best practice and project results	Potential future collaboration
Conferences as listed in "bullet points" above	Various	Content contributors, cultural heritage sector, interested private sector actors	Disseminate best practice and project results	Stimulation of content contribution and enhancement.
ICOMOS, EHHF and EAC meetings [19]	various	Architectural and archaeological heritage sites managers, public services, content providers, aggregators	Validation by heritage managers, public services and other sectoral actors	More and higher quality content from these sectors

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[19] ICOMOS: International Council of Monuments and Sites;
EHHF: Forum européen des directeurs du patrimoine /European Heritage Heads Forum;
EAC: Europae Archaeologicae Consilium. Project partner IPCHS is an ICOMOS, EHHF and EAC member.

Dissemination Mechanisms and Channels

The target audiences for Linked Heritage are unusually narrow and specific. There is little requirement to address the general public, or a wide research community; instead the main targets are Europeana, the content-contributing community, government and policy bodies, and the private (publishing) sector. As a result, the most appropriate dissemination channels tend to be quite specific and targeted. The Linked Heritage team anticipates that the most appropriate mechanisms and channels for dissemination will be as follows:

1. The project **website** will be essential. It will clearly outline the rationale for the project, the aims of the project and the approach which the project is taking. It will communicate the benefits to the public, to the content providers and aggregators, to Europeana, to government and policy bodies, and to the private sector. The project vision and mission will be described in the following major languages: English, German, French, Italian and Greek. Auto-translated versions of every page will be available in every EU language[20].

2. **Seminars and presentations** will enable the project dissemination working group to gain access to the professional audiences they require. Such events will be organised to coincide with planned meetings of the target audiences; for example, presentations to the Europeana content-contributing community will immediately precede or follow scheduled meetings of the Content Council and/or Europeana plenary meetings. Other events will take advantage of assemblies of experts and stakeholders such as the EVA conference.

3. The project will host three Linked Heritage international **Conferences**, one under the **Hungarian Presidency** of the EU hosted by the National Sechzeny Library, one under the **Irish Presidency** of the EU organised by the Library Council and the **closing conference** in Rome that will deliver an opportunity to present and discuss the project's results, the opportunities for further development and the path of integration into Europeana. In addition, at the start of the project a public kick-off in Rome will provide a platform for the project to outline its ideas and approach to a wide professional audience and to receive input and feedback from them. It will also act as an opportunity to recruit additional advisory/observer experts and organisations.

4. The project will of course seek to present its work using **academic publications and conferences**, in order to raise awareness of its work, to attract users for validation and feedback, and to raise the profile of the project as a whole. The following venues will be targeted:
   o Journals
      - Linked Heritage will continue the production of the journal, currently published by the ATHENA project. This focuses specifically on European Cultural Heritage and the Europeana ecosystem.
      - The International Journal of Digital Cultural Heritage and E-Tourism (IJDCE)
      - The ACM Journal on Computing and Cultural Heritage (JOCCH)
   o Conferences
      - eChallenges, where they have a session dedicated to the digital cultural heritage
      - the ICT Conferences organised by the European Commission (this year ICT2010 Digitally driven will possibly host a networking session about interoperability of digital cultural repositories)

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[20] Using Google translate.

- the Conferences organised by the Presidencies in turn on digitisation, preservation and access to digital cultural heritage
- DL.Org (ex DELOS) summer school on Digital Libraries and Digital Repositories
- DC-NET, Digital Cultural Heritage e-Infrastructures ERA-NET Conference
- ECDL, the European Conference on Digital Libraries
- IRCDL, Italian Research Conference on Digital Libraries

5. Meetings will be held with **Europeana** and **EuropeanaLabs**[21] representatives as and when this is feasible and useful for both projects. Even though the Europeana Foundation is not a member of the Linked Heritage consortium, working together will be important and valuable for both projects.

The two-large scale publications that are foreseen in the workplan will be presented in all the public events where the partners of the Linked Heritage project will participate. The publications will be available online for download on the project website. The printed copies of the publications will be used in particular for face-to-face meetings, during the face-to-face training and provided to the participants of the closing conference in Rome.

Dissemination to the public sector publishers

Briefings will be delivered to the **private sector**, at events where significant numbers of appropriate stakeholders will be present. The AIE (the association of Italian publishers that supports the Linked Heritage project) will host and/or secure presentation time at appropriate events aimed at (a) national publishers and (b) European publishing associations and groups such as the Federation of European Publishers (FEP)[22] and the European Publishers Council (EPC).
In particular, the main Book Fairs in Europe will be considered, such as: Frankfurt (in October), London (in March/April), Turin (May).
The national events will be targeted too (such as "PiùLibri più Liberi" in Rome (December)), taking into consideration that the public of these events is generic and therefore, the participation to the national events (, naturally, not only the Italian one) will be organised on two levels: the dissemination of Linked Heritage as part of the family of Europeana towards the generic public and the direct contact with the exhibitors (i.e. publishers) for a more professional message.
The events of FEP will be targeted both at the level of its Executive Committee and general annual meetings, distributing dissemination material and news about the Linked Heritage progresses and achievements. These appointments are particularly important because they can enable a multiplying factor, since both representatives of associations and individual publishers participate to these meetings.
With regard to the publishers standards, the meetings of ONIX International Steering Committee, IDF and ISBN International will be targeted.
Further, the newsletters of Medra, AIE, FEP, Editeur are interesting media to disseminate news about the project and they arrive to a wide number of publishers.
Finally, the Giornale della Libreria, the monthly magazine managed by AIE will be considered to get a space for project's articles to present the Linked Heritage initiative.

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[21] While Europeana Labs is of course part of Europeana, they are mentioned separately because of the specific technological focus of Europeana Labs, which makes dedicated technology meetings appropriate.
[22] It may be noted that FEP is already involved in the Europeana 'sister' project ARROW, which shares some partners with Linked Heritage. FEP has two General Assemblies per year – ideal dissemination events for Linked Heritage.

The Plan for the dissemination and use of Project results is included in the list of deliverables. A basic version of this plan will be prepared by the end of the first reporting period.

No potential risks (real or perceived) for society/citizens associated with the project is anticipated.