



Grant agreement for: Combination of CP & CSA*

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|----------------------------------------|
| Annex I - "Description of Work" |
|----------------------------------------|

Project acronym: PREFORMA

Project full title: " PREservation FORMAts for culture information/e-archives "

Grant agreement no: 619568

Version date: 2013-10-21

Table of Contents

Part A

| | |
|----------------------------------------------------|---|
| A.1 Project summary | 3 |
| A.2 List of beneficiaries | 4 |
| A.3 Overall budget breakdown for the project | 5 |

Workplan Tables

| | |
|------------------------------------------------------------|----|
| WT1 List of work packages | 1 |
| WT2 List of deliverables | 2 |
| WT3 Work package descriptions | 4 |
| Work package 1..... | 4 |
| Work package 2..... | 7 |
| Work package 3..... | 11 |
| Work package 4..... | 15 |
| Work package 5..... | 19 |
| Work package 6..... | 21 |
| Work package 7..... | 23 |
| Work package 8..... | 25 |
| WT4 List of milestones | 29 |
| WT5 Tentative schedule of project reviews | 31 |
| WT6 Project effort by beneficiaries and work package | 32 |
| WT7 Project effort by activity type per beneficiary | 33 |
| WT8 Project efforts and costs | 35 |
| WT9 Summary of financial commitment | 36 |

A1: Project summary

| | | | |
|-----------------------------|--------|------------------------------|----------|
| Project Number ¹ | 619568 | Project Acronym ² | PREFORMA |
|-----------------------------|--------|------------------------------|----------|

One form per project

General information

| | | | |
|-----------------------------------------------------------|---------------------------------------------------------|--|--|
| Project title ³ | PREservation FORMAts for culture information/e-archives | | |
| Starting date ⁴ | 01/01/2014 | | |
| Duration in months ⁵ | 48 | | |
| Call (part) identifier ⁶ | FP7-ICT-2013-11 | | |
| Activity code(s) most relevant to your topic ⁷ | : | | |
| Free keywords ⁸ | DIGITAL PRESERVATION ARCHIVES STANDARDS | | |

Abstract ⁹

Memory institutions are facing increasing transfers of electronic documents and other media content for long term preservation. Preservation models are often inspired by ISO 14721:2003, known as “the OAIS model”, where transfers and preservation are built on information packages containing both data and metadata. Data are normally stored in specific file formats for documents, images, sound, video etc. that are produced by software from different vendors. Even if the transferred files are in standard formats, the implementation of standards cannot be guaranteed. The software implementing standards for the production of the electronic files is not in control neither by the institutions that produces them nor by the memory institutions. Conformance tests of transfers are done, but are not totally reliable. This poses problems in long-term preservation. Data objects meant for preservation, passing through an uncontrolled generative process, can jeopardise the whole preservation exercise.

The overall intention of PREFORMA project is to research critical factors in the quality of standard implementation in order to establish a long-term sustainable ecosystem around developed tools with a variety of stakeholder groups. The tools should be innovative and provide a reference implementation of the most common file format standards for the assessment of the collections to be archived and for the correction of the collections. PREFORMA will target a wide digital preservation community, by providing specifications and feedback to developers, standard bodies and memory institutions.

The pre-commercial-procurement (PCP), following the rules for tenders in public sector, will match the memory institutions professional knowledge and the supplier’s skills in development and promotion of products and create a win-win situation. Joint procurement will enable PREFORMA to build a sustainable network of common interest, where the public procurers can remain in contact and cooperate beyond the EC funding period. Results will be broadly disseminated during the projects life time and summed up at a final conference.

A2: List of Beneficiaries

| | | | |
|-----------------------------|--------|------------------------------|----------|
| Project Number ¹ | 619568 | Project Acronym ² | PREFORMA |
|-----------------------------|--------|------------------------------|----------|

List of Beneficiaries

| No | Name | Short name | Country | Project entry month ¹⁰ | Project exit month |
|----|-------------------------------------------------------------------------------------------|------------------------------------------|-------------|-----------------------------------|--------------------|
| 1 | RIKSARKIVET | RA | Sweden | 1 | 48 |
| 2 | PACKED EXPERTISECENTRUM DIGITAAL ERFGOED VZW | PACKED | Belgium | 1 | 48 |
| 3 | PROMOTER SRL | PROMOTER | Italy | 1 | 48 |
| 4 | FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V | Fraunhofer | Germany | 1 | 48 |
| 5 | HOGSKOLAN I SKOVDE | HS | Sweden | 1 | 48 |
| 6 | UNIVERSITA DEGLI STUDI DI PADOVA | UNIPD | Italy | 1 | 48 |
| 7 | STICHTING NEDERLANDS INSTITUUT VOOR BEELD EN GELUID | BEELD EN GELUID | Netherlands | 1 | 48 |
| 8 | Koninklijk Instituut voor het Kunstpatrimonium | KIK-IRPA | Belgium | 1 | 48 |
| 9 | GREEK FILM CENTRE AE | GFC | Greece | 1 | 48 |
| 10 | LOCAL GOVERNMENT MANAGEMENT AGENCY-AN GHNIOMHAIREACHT BAINISTIOCHTA RIALTAIS AITIUIL LGMA | LGMA | Ireland | 1 | 48 |
| 11 | STIFTUNG PREUSSISCHER KULTURBESITZ | SPK | Germany | 1 | 48 |
| 12 | AYUNTAMIENTO DE GIRONA | AJGI | Spain | 1 | 48 |
| 13 | Eesti Vabariigi Kultuuriministeerium | Eesti Vabariigi Kultuuriministeerium | Estonia | 1 | 48 |
| 14 | KUNGLIGA BIBLIOTEKET | KUNGLIGA BIBLIOTEKET (NATIONAL LIBRARY O | Sweden | 1 | 48 |

A3: Budget Breakdown

| | | | |
|-----------------------------|--------|------------------------------|----------|
| Project Number ¹ | 619568 | Project Acronym ² | PREFORMA |
|-----------------------------|--------|------------------------------|----------|

One Form per Project

| Participant number in this project ¹¹ | Participant short name | Fund. % ¹² | Ind. costs ¹³ | Estimated eligible costs (whole duration of the project) | | | | | | Requested EU contribution |
|--------------------------------------------------|------------------------------------------|-----------------------|--------------------------|----------------------------------------------------------|---------------------|-------------|-------------------|-------------|---------------------|---------------------------|
| | | | | RTD (A) | Coordination (B) | Support (C) | Management (D) | Other (E) | Total A+B+C+D+E | |
| 1 | RA | 75.0 | T | 2,805,000.00 | 294,240.00 | 0.00 | 161,120.00 | 0.00 | 3,260,360.00 | 2,414,897.00 |
| 2 | PACKED | 50.0 | F | 0.00 | 72,000.00 | 0.00 | 11,400.00 | 0.00 | 83,400.00 | 74,365.00 |
| 3 | PROMOTER | 75.0 | T | 0.00 | 199,520.00 | 0.00 | 39,040.00 | 0.00 | 238,560.00 | 162,187.00 |
| 4 | Fraunhofer | 75.0 | A | 0.00 | 104,782.00 | 0.00 | 20,931.00 | 0.00 | 125,713.00 | 64,360.00 |
| 5 | HS | 75.0 | T | 0.00 | 84,032.00 | 0.00 | 19,072.00 | 0.00 | 103,104.00 | 68,950.00 |
| 6 | UNIPD | 75.0 | T | 0.00 | 96,000.00 | 0.00 | 28,000.00 | 0.00 | 124,000.00 | 82,925.00 |
| 7 | BEELD EN GELUID | 50.0 | F | 0.00 | 114,528.00 | 0.00 | 12,744.00 | 0.00 | 127,272.00 | 113,483.00 |
| 8 | KIK-IRPA | 75.0 | T | 0.00 | 142,400.00 | 0.00 | 14,400.00 | 0.00 | 156,800.00 | 104,860.00 |
| 9 | GFC | 50.0 | F | 0.00 | 57,390.00 | 0.00 | 6,420.00 | 0.00 | 63,810.00 | 56,896.00 |
| 10 | LGMA | 75.0 | F | 0.00 | 57,840.00 | 0.00 | 8,880.00 | 0.00 | 66,720.00 | 59,492.00 |
| 11 | SPK | 75.0 | T | 0.00 | 145,280.00 | 0.00 | 14,720.00 | 0.00 | 160,000.00 | 107,000.00 |
| 12 | AJGI | 75.0 | A | 0.00 | 64,025.00 | 0.00 | 8,450.00 | 0.00 | 72,475.00 | 59,652.00 |
| 13 | Eesti Vabariigi Kultuuriministeerium | 75.0 | F | 0.00 | 45,600.00 | 0.00 | 7,200.00 | 0.00 | 52,800.00 | 47,080.00 |
| 14 | KUNGLIGA BIBLIOTEKET (NATIONAL LIBRARY O | 75.0 | F | 0.00 | 111,600.00 | 0.00 | 11,400.00 | 0.00 | 123,000.00 | 109,675.00 |
| Total | | | | 2,805,000.00 | 1,589,237.00 | 0.00 | 363,777.00 | 0.00 | 4,758,014.00 | 3,525,822.00 |

Note that the budget mentioned in this table is the total budget requested by the Beneficiary and associated Third Parties.

*** The following funding schemes are distinguished**

Collaborative Project (if a distinction is made in the call please state which type of Collaborative project is referred to: (i) Small of medium-scale focused research project, (ii) Large-scale integrating project, (iii) Project targeted to special groups such as SMEs and other smaller actors), Network of Excellence, Coordination Action, Support Action.

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 into 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.

12. Include the funding % for RTD/Innovation – either 50% or 75%

13. Indirect cost model

A: Actual Costs

S: Actual Costs Simplified Method

T: Transitional Flat rate

F :Flat Rate

Workplan Tables

Project number

619568

Project title

PREFORMA—PREservation FORMAts for culture information/e-archives

Call (part) identifier

FP7-ICT-2013-11

Funding scheme

Combination of CP & CSA

WT1

List of work packages

| | | | |
|-----------------------------|--------|------------------------------|----------|
| Project Number ¹ | 619568 | Project Acronym ² | PREFORMA |
|-----------------------------|--------|------------------------------|----------|

LIST OF WORK PACKAGES (WP)

| WP Number ⁵³ | WP Title | Type of activity ⁵⁴ | Lead beneficiary number ⁵⁵ | Person-months ⁵⁶ | Start month ⁵⁷ | End month ⁵⁸ |
|-------------------------|-------------------------------------------------------|--------------------------------|---------------------------------------|-----------------------------|---------------------------|-------------------------|
| WP 1 | Project Management | MGT | 1 | 27.00 | 1 | 48 |
| WP 2 | Requirements & Assessment | COORD | 2 | 42.00 | 1 | 10 |
| WP 3 | Sustainable network and use | COORD | 1 | 41.00 | 3 | 48 |
| WP 4 | Dissemination and Communication | COORD | 3 | 44.00 | 1 | 48 |
| WP 5 | Co-Design | RTD | 4 | 2.00 | 11 | 26 |
| WP 6 | Prototyping | RTD | 5 | 2.00 | 15 | 36 |
| WP 7 | Validation and testing | RTD | 6 | 17.00 | 37 | 42 |
| WP 8 | Competitive Evaluation and Monitoring of the RTD work | COORD | 6 | 48.00 | 11 | 42 |
| Total | | | | 223.00 | | |

WT2: List of Deliverables

| | | | |
|-----------------------------|--------|------------------------------|----------|
| Project Number ¹ | 619568 | Project Acronym ² | PREFORMA |
|-----------------------------|--------|------------------------------|----------|

List of Deliverables - to be submitted for review to EC

| Deliverable Number ⁶¹ | Deliverable Title | WP number ⁵³ | Lead beneficiary number | Estimated indicative person-months | Nature ⁶² | Dissemination level ⁶³ | Delivery date ⁶⁴ |
|----------------------------------|---------------------------------------------------------|-------------------------|-------------------------|------------------------------------|----------------------|-----------------------------------|-----------------------------|
| D2.1 | Overall Roadmap | 2 | 1 | 12.00 | R | PU | 3 |
| D2.2 | Tender Specifications | 2 | 2 | 30.00 | R | PU | 5 |
| D3.1 | Terms of Reference for the Network of Common Interest | 3 | 3 | 3.00 | R | PU | 3 |
| D3.2 | Networking Report Year 1 | 3 | 7 | 4.00 | R | RE | 12 |
| D3.3 | Networking Report Year 2 | 3 | 7 | 4.00 | R | RE | 24 |
| D3.4 | Open Source Workshop | 3 | 5 | 8.00 | R | PU | 24 |
| D3.5 | Experience Workshop | 3 | 11 | 8.00 | O | PU | 30 |
| D3.6 | Networking Report Year 3 | 3 | 7 | 4.00 | R | RE | 36 |
| D3.7.1 | Initial version of Sustainability and Exploitation Plan | 3 | 3 | 3.00 | R | PU | 36 |
| D3.7.2 | Final Sustainability and Exploitation Plan | 3 | 3 | 3.00 | R | PU | 48 |
| D3.8 | Networking Report Year 4 | 3 | 7 | 4.00 | R | RE | 48 |
| D4.1 | Public Website | 4 | 3 | 6.00 | O | PU | 3 |
| D4.2 | Promotional Material | 4 | 3 | 2.00 | O | PU | 6 |
| D4.3 | Functions of the Open Source Portal | 4 | 5 | 16.00 | O | RE | 12 |
| D4.4 | Dissemination Report Year 1 | 4 | 3 | 2.00 | R | PP | 12 |
| D4.5 | Dissemination Report Year 2 | 4 | 3 | 2.00 | R | PP | 24 |

WT2: List of Deliverables

| Deliverable Number ⁶¹ | Deliverable Title | WP number ⁵³ | Lead beneficiary number | Estimated indicative person-months | Nature ⁶² | Dissemination level ⁶³ | Delivery date ⁶⁴ |
|----------------------------------|---------------------------------|-------------------------|-------------------------|------------------------------------|----------------------|-----------------------------------|-----------------------------|
| D4.6 | Dissemination Report Year 3 | 4 | 3 | 2.00 | R | PP | 36 |
| D4.7 | International Conference | 4 | 1 | 12.00 | O | PU | 48 |
| D4.8 | Dissemination Report Year 4 | 4 | 3 | 2.00 | R | PP | 48 |
| D8.1 | Competitive evaluation strategy | 8 | 6 | 6.00 | R | PU | 12 |
| D8.2 | Design - First report | 8 | 4 | 4.00 | R | PU | 15 |
| D8.3 | First prototype report | 8 | 5 | 6.00 | R | PU | 24 |
| D8.4 | Design - Final report | 8 | 4 | 2.00 | R | PU | 27 |
| D8.5 | Final prototype report | 8 | 5 | 8.00 | R | PU | 36 |
| D8.6 | Testing report | 8 | 6 | 10.00 | R | PU | 42 |
| D8.7 | Final assessment of the tender | 8 | 1 | 12.00 | R | PU | 42 |
| Total | | | | 175.00 | | | |

WT3: Work package description

| | | | |
|-----------------------------|--------|------------------------------|----------|
| Project Number ¹ | 619568 | Project Acronym ² | PREFORMA |
|-----------------------------|--------|------------------------------|----------|

One form per Work Package

| | | | |
|---------------------------------------|--------------------|--------------------------------|-----|
| Work package number ⁵³ | WP1 | Type of activity ⁵⁴ | MGT |
| Work package title | Project Management | | |
| Start month | 1 | | |
| End month | 48 | | |
| Lead beneficiary number ⁵⁵ | 1 | | |

Objectives

The work package will:

- Coordinate the consortium with respect to project deadlines, costs and objectives.
- Maintain a good working relationship with the commission.
- Promptly manage the financial aspects of the project, according to the rules of the consortium agreement.
- Manage creation, accession and change of contracts with the Commission, Partners and Suppliers.

Description of work and role of partners

This work package is composed of 4 tasks:

Task 1.1 Coordination (for a full description, see section 2.1)

Task leader: RA

- Maintaining a coherent view of the project work and results
- Facilitate a project intranet for collecting work material and results
- Facilitate communication between partners, through face-to-face and electronic meetings
- Initiate overall project start-up activities
- Follow-up on proper start and execution of work packages and tasks
- Risk Management

Task 1.2 Reporting

Task leader: RA

- Transmission of deliverables to the commission
- Annual reports on progress
- Preparation of commission reviews
- Final report

Task 1.3 Financial Management

Task leader: RA

- Accounting of allocation of Community funds to participants
- Administer the Community contribution to participants
- Obtaining audit certificates from partners, when required.

Task 1.4 Change Management

Task leader: RA

- Maintaining the project vision
- Managing requests from partners and reviewers for changes to the Description of Work
- Overall legal and contractual management, including maintenance of the consortium agreement, and agreements with suppliers

At the beginning of the project, the project Intranet will be set up for: file storage, project calendar, news and other collaboration tools will be included.

The e-meeting system will be established by the Coordinator.

WT3: Work package description

Also, the Coordinator will prepare and distribute to the partners the Project Handbook, including: project tables, contacts and procedures all in one handy place. This internal deliverable specifies procedures and tools for ensuring good deliverable quality, and the use of effective work methods. It includes templates, routine administrative procedures and any other useful administrative information.
The coordination of the activities of the Advisory Board are part of WP1.

Person-Months per Participant

| Participant number ¹⁰ | Participant short name ¹¹ | Person-months per participant |
|----------------------------------|------------------------------------------|-------------------------------|
| 1 | RA | 12.00 |
| 2 | PACKED | 1.00 |
| 3 | PROMOTER | 2.00 |
| 4 | Fraunhofer | 1.00 |
| 5 | HS | 1.00 |
| 6 | UNIPD | 2.00 |
| 7 | BEELD EN GELUID | 1.00 |
| 8 | KIK-IRPA | 1.00 |
| 9 | GFC | 1.00 |
| 10 | LGMA | 1.00 |
| 11 | SPK | 1.00 |
| 12 | AJGI | 1.00 |
| 13 | Eesti Vabariigi Kultuuriministerium | 1.00 |
| 14 | KUNGLIGA BIBLIOTEKET (NATIONAL LIBRARY O | 1.00 |
| Total | | 27.00 |

List of deliverables

| Deliverable Number ⁶¹ | Deliverable Title | Lead beneficiary number | Estimated indicative person-months | Nature ⁶² | Dissemination level ⁶³ | Delivery date ⁶⁴ |
|----------------------------------|-------------------|-------------------------|------------------------------------|----------------------|-----------------------------------|-----------------------------|
| Total | | | 0.00 | | | |

Description of deliverables

| |
|--|
| |
|--|

Schedule of relevant Milestones

| Milestone number ⁵⁹ | Milestone name | Lead beneficiary number | Delivery date from Annex I ⁶⁰ | Comments |
|--------------------------------|-----------------|-------------------------|------------------------------------------|---------------------------------------------------------------|
| MS1 | Tools & Network | 1 | 3 | Project Handbook delivered, Intranet in use, web site online, |

WT3: Work package description

Schedule of relevant Milestones

| Milestone number ⁵⁹ | Milestone name | Lead beneficiary number | Delivery date from Annex I ⁶⁰ | Comments |
|--------------------------------|----------------|-------------------------|------------------------------------------|-------------------------------------------------------------|
| | | | | Terms of Reference of the Network of common interest agreed |

WT3: Work package description

| | | | |
|-----------------------------|--------|------------------------------|----------|
| Project Number ¹ | 619568 | Project Acronym ² | PREFORMA |
|-----------------------------|--------|------------------------------|----------|

One form per Work Package

| | | | |
|---------------------------------------|---------------------------|--------------------------------|-------|
| Work package number ⁵³ | WP2 | Type of activity ⁵⁴ | COORD |
| Work package title | Requirements & Assessment | | |
| Start month | 1 | | |
| End month | 10 | | |
| Lead beneficiary number ⁵⁵ | 2 | | |

Objectives

- Preparation and coordination of the tender and selection procedure.
- Defining the functional requirements for the individual implementations of the reference implementation tools (called "Abstract Conformance Checker", "Scorer" , "Reporter", and "Abstract Fixes Suggester/Corrector") in the memory institutions
- Defining the common technical requirements for the above mentioned reference implementation tools.
- Defining the required reference implementations for the preservation file formats requested by the memory institutions.
- Defining the framework contract between the PREFORMA consortium and the selected technology suppliers, clarifying the engagements in the R&D process and the IPR framework for the tools developed.

Description of work and role of partners

WP2 coordinates the preparation of the request for tender and the selection of the technology suppliers that will be invited to the R&D phase. This work package is composed of 4 tasks:

T2.1 Tender Preparation, pre-announcement, publication, closing and contracting

Task Leader: RA

This task involves the formal preparation of the tender, defining the operational, financial and legal terms under which technology suppliers can participate in the R&D phase.

This task involves:

- detailed planning and coordination of the tender procedure.
- clarifying the terms and procedures regarding the financial and legal commitments of the memory institutions and the selected technology suppliers in the R&D phase.
- preparing the framework contract between PREFORMA and the selected enterprises concerning the R&D activities, defining the expected engagement of memory institutions and technology in the agile design methodology and defining the IPR framework for the core components, modules and implementations to be developed .
- formal preparation of the request for tender, based on the functional (T2.2) and technical (T2.3) requirements
- pre-announcement and publication of the tender
- negotiation with the suppliers selected by T2.4 and contracting.

The projects PCP call for tender will be carried out in a competitive and transparent way in line with formal rules so it will lead to a price according to market conditions, and does not involve any indication of manipulation.

To ensure EU wide publication, the call for tender will be published in at least English and through the Official Journal of the European Union (OJEU) using the TED (Tenders Electronic Daily) web. In order to establish the correct market price (where State aid can in principle be excluded according to Art. 107 of the Treaty on the functioning of the EU), this task has to specifically ensure that legal information like information about the distribution of rights and obligations between public purchasers and companies participating in the PCP, including the allocation of IPRs, is clearly stated in the PCP call for tender documents.

The call will be pre-announced at month 3, the call will be published at month 5, the call will remain open 2 months; contracts with the winning subcontractors selected in Task T2.4 will be signed at month 10.

It is planned for legal expert assistance to support the work in this task.

Promotional activities aiming to awareness raising among potential tenderers will be carried out in the frame of task T4.1.

WT3: Work package description

T2.2 Functional Requirements

Task Leader: Packed

This task involves the specification of the functional requirements of “Abstract Conformance Checker”, “Scorer”, “Reporter”, and “Abstract Fixes Suggester/Correcter” to be implemented in the participating memory institutions.

This task involves:

- an assessment of the ingest workflow in the memory institutions, with particular attention to the identification and validation procedures. T2.2 will identify the gaps in the identification and validation process and define the subsequent needs of each of the memory institutions.
- development of usage scenario’s for improving identification and validation in the individual ingest workflows in collaboration with the memory institutions.
- defining the required reference implementations for the preservation of selected file formats requested by the memory institutions.
- defining the functional requirements for the individual implementations of the “Abstract Conformance Checker”, “Scorer”, “Reporter”, and “Abstract Fixes Suggester/Correcter”
- analysis of existing solutions

T2.3 Technical Specifications

Task Leader: HS

This task involves the development of the overall technical specifications and performance criteria for the “Abstract Conformance Checker”, “Scorer”, “Reporter”, and “Abstract Fixes Suggester/Correcter”, based on the individual functional requirements of the memory institutions.

This task involves:

- building a model of the users and deriving individual user profiles, obtaining a reliable elicitation of common user requirements and needs by considering individual knowledge, characteristics, etc.
- gathering existing and emerging standardization results (standards, normative references) important for the technical specification for the tender and test environment.

T2.4 Supplier Selection

Task Leader: RA

This task involves the selection of the technology suppliers that are invited to participate in the R&D phase. The selection will be done by the PCP-tender evaluation committee composed by representatives of the partners, external experts and chaired by the Coordinator.

This task involves:

- defining the evaluation criteria for the received tenders, based on the overall functional and technical requirements, and the “weighting” of the individual criteria in preparing the ranking.
- evaluation of the received tenders as to the technical, economic and organisational feasibility of each company’s proposal.
- prepare a ranking of the tenders based on how their proposals meet the overall functional and technical requirements.

Person-Months per Participant

| Participant number ¹⁰ | Participant short name ¹¹ | Person-months per participant |
|----------------------------------|--------------------------------------|-------------------------------|
| 1 | RA | 6.00 |
| 2 | PACKED | 5.00 |
| 3 | PROMOTER | 4.00 |
| 4 | Fraunhofer | 1.00 |
| 5 | HS | 1.00 |
| 6 | UNIPD | 1.00 |
| 7 | BEELD EN GELUID | 2.00 |
| 8 | KIK-IRPA | 3.00 |
| 9 | GFC | 4.00 |

WT3: Work package description

Person-Months per Participant

| Participant number ¹⁰ | Participant short name ¹¹ | Person-months per participant |
|----------------------------------|------------------------------------------|-------------------------------|
| 10 | LGMA | 2.00 |
| 11 | SPK | 3.00 |
| 12 | AJGI | 2.00 |
| 13 | Eesti Vabariigi Kultuuriministerium | 4.00 |
| 14 | KUNGLIGA BIBLIOTEKET (NATIONAL LIBRARY O | 4.00 |
| Total | | 42.00 |

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 | Overall Roadmap | 1 | 12.00 | R | PU | 3 |
| D2.2 | Tender Specifications | 2 | 30.00 | R | PU | 5 |
| Total | | | 42.00 | | | |

Description of deliverables

D2.1) Overall Roadmap: This deliverable will provide a roadmap for operational and legal procedures, functional and technical specifications, and submission guidelines for the tender procedure. [month 3]

D2.2) Tender Specifications: This deliverable will describe the functional requirements and the technical specifications: It will be part of the technical documentation provided in annex to the call for tender. [month 5]

Schedule of relevant Milestones

| Milestone number ⁵⁹ | Milestone name | Lead beneficiary number | Delivery date from Annex I ⁶⁰ | Comments |
|--------------------------------|-------------------------------------|-------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| MS10 | Pre-announcement of the tender | 1 | 3 | The pre-announcement of the call for tender is published on the PREFORMA website |
| MS11 | Tender published | 1 | 5 | The call for tender is published on the Official Journal |
| MS12 | Tender closed | 1 | 7 | After the tender closes, statistics about the participation to the tender are published on the PREFORMA website |
| MS13 | Contracts with the suppliers signed | 1 | 10 | Six suppliers selected, Negotiation with the |

WT3: Work package description

Schedule of relevant Milestones

| Milestone number ⁵⁹ | Milestone name | Lead beneficiary number | Delivery date from Annex I ⁶⁰ | Comments |
|--------------------------------|----------------|-------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| | | | | selected suppliers is completed and the contracts to start the work are signed by the Coordinator on behalf of the whole Consortium |

WT3: Work package description

| | | | |
|-----------------------------|--------|------------------------------|----------|
| Project Number ¹ | 619568 | Project Acronym ² | PREFORMA |
|-----------------------------|--------|------------------------------|----------|

One form per Work Package

| | | | |
|---------------------------------------|-----------------------------|--------------------------------|-------|
| Work package number ⁵³ | WP3 | Type of activity ⁵⁴ | COORD |
| Work package title | Sustainable network and use | | |
| Start month | 3 | | |
| End month | 48 | | |
| Lead beneficiary number ⁵⁵ | 1 | | |

Objectives

- To coordinate the set-up of a network of common interest. During the project's lifetime, this network will involve users and developers outside the PREFORMA consortium to contribute to the development. In the end of the project the network will be transformed into a sustainable open user community surrounding the applications provided by the PREFORMA project. The main task of this community will be to encourage both future use and future development. The community will also aim at contributing to the standardisation process.
- To liaise with WP 4 in issues concerning dissemination and exploitation.
- As the basis for a network of common interest, establish and coordinate national working groups in all the partners' home countries. These working groups have an important role also in coordinating and executing the individual partner's dissemination and exploitation plans.

The activities of WP3 will be implemented in liaison with WP4.

Description of work and role of partners

This work package is composed by 3 tasks:

Task 3.1 Facilitation

Task leader: SPK

This task will ensure the establishment of a process of Open dialogue between the memory institutions and the suppliers who are developing the software in order to guarantee the agile development through collaboration between memory institutions and technology providers.

This includes the publication of a questionnaire about the tender, which will be made available on the project website, and the organisation of a public Information Event at month 4 (possibly in Brussels).

It will draw up the terms of reference for the network of common interest and for its national working groups in order to clarify their roles and responsibilities.

This task also handles training activities needed during the development of the PREFORMA tools and services. These activities could be in the form of organised meetings (face-to-face and electronic) or on line using social networking. The training will target Open Source Companies and Memory Institutions.

A training event for Open Source companies will take place in Sweden at around month 24, in connection with the first Prototype Demonstration and in liaison with the activities carried out by task T4.2.

An Experience Workshop will take place in Berlin, at around month 30, where the PREFORMA partners will share with memory institutions their experiences of working with suppliers under R&D services agreements (PCP). The members of the network of common interest will be invited to the workshop and its proceedings will be made accessible online on the PREFORMA website.

Task 3.2 Extension

Task leader: BEELD EN GELUID

This task is about enlargement of the network in three directions, i.e. new memory institutions, the research and the open source community. It will define methods and procedures for how to involve new stakeholders in the PREFORMA work and how they shall interact with the project. Memory institutions and other users that expressed their interest to join the PREFORMA network of interest will be further contacted in order to establish

WT3: Work package description

their concrete participation to the project activities. Experts from these institutions can also be included in the national working groups established by Task 3.1 and participate to their activities.

To foster the extension of the network of interest and give broadest possible information about the results of the project, the suppliers will be requested as part of the tender to provide three prototype demonstrations to take place during the duration of the project.

The results of this task will be described in yearly deliverables.

Task 3.3 Future Plans and exploitation

Task leader: PROMOTER

This task is about the future use of the results of the procurement. It is, therefore, designed to develop a sustainability and exploitation plan for the future use of PREFORMA tools and applications.

The task will also include an impact assessment conducted through interviews and questionnaires to the memory institutions participating to the project, both as partners and as associate partners within the network of common interest.

The following communities will be considered in relation to their expected engagement in exploiting the PREFORMA applications:

- the community of developers interested in contributing to the code
- the community of enterprises interested in PREFORMA tools and developing services.
- memory institutions willing to integrate the PREFORMA software in their infrastructure
- the open-source community including academic researchers and enterprises

While planning further exploitation, particular attention will be paid in order to create the basis for European cultural institutions to profit from PREFORMA (clear and fair licensing policy for the support to new standards, CRM services, open source approach to the results of the project, scalable and modular products, etc.).

Person-Months per Participant

| Participant number ¹⁰ | Participant short name ¹¹ | Person-months per participant |
|----------------------------------|------------------------------------------|-------------------------------|
| 1 | RA | 10.00 |
| 2 | PACKED | 2.00 |
| 3 | PROMOTER | 3.00 |
| 4 | Fraunhofer | 1.00 |
| 5 | HS | 1.00 |
| 6 | UNIPD | 1.00 |
| 7 | BEELD EN GELUID | 6.00 |
| 8 | KIK-IRPA | 3.00 |
| 9 | GFC | 5.00 |
| 10 | LGMA | 1.00 |
| 11 | SPK | 3.00 |
| 12 | AJGI | 2.00 |
| 13 | Eesti Vabariigi Kultuuriministeerium | 2.00 |
| 14 | KUNGLIGA BIBLIOTEKET (NATIONAL LIBRARY O | 1.00 |
| Total | | 41.00 |

WT3: Work package description

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 | Terms of Reference for the Network of Common Interest | 3 | 3.00 | R | PU | 3 |
| D3.2 | Networking Report Year 1 | 7 | 4.00 | R | RE | 12 |
| D3.3 | Networking Report Year 2 | 7 | 4.00 | R | RE | 24 |
| D3.4 | Open Source Workshop | 5 | 8.00 | R | PU | 24 |
| D3.5 | Experience Workshop | 11 | 8.00 | O | PU | 30 |
| D3.6 | Networking Report Year 3 | 7 | 4.00 | R | RE | 36 |
| D3.7.1 | Initial version of Sustainability and Exploitation Plan | 3 | 3.00 | R | PU | 36 |
| D3.7.2 | Final Sustainability and Exploitation Plan | 3 | 3.00 | R | PU | 48 |
| D3.8 | Networking Report Year 4 | 7 | 4.00 | R | RE | 48 |
| Total | | | 41.00 | | | |

Description of deliverables

D3.1) Terms of Reference for the Network of Common Interest: This is an internal guide for the network of interest and for working groups in the project, outlining their role, the manner in which they are expected to work, their relationship to the work-packages, and the value they are supposed to bring to the project. An annex will be published online on the Website presenting the members of the national working groups and also an inventory of activities and services that are relevant for the research in the digital cultural heritage sector. [month 3]

D3.2) Networking Report Year 1: The enlargement is a priority action and, therefore, yearly deliverables are planned for reporting on mechanisms, procedures and results, including a plan for the following year. [month 12]

D3.3) Networking Report Year 2: The enlargement is a priority action and, therefore, yearly deliverables are planned for reporting on mechanisms, procedures and results, including a plan for the following year. [month 24]

D3.4) Open Source Workshop: This deliverable will provide a report about the Open Source Workshop that will be based on the availability of the first prototype on the Open Source Portal and the results of the first demonstration organised by the suppliers. [month 24]

D3.5) Experience Workshop: In order to follow up on lessons learned during the project, a work shop will be organised for memory institutions and other participants in the network of common interest. [month 30]

D3.6) Networking Report Year 3: The enlargement is a priorities action and, therefore, yearly deliverables are planned for reporting on mechanisms, procedures and results, including a plan for the following year. [month 36]

D3.7.1) Initial version of Sustainability and Exploitation Plan: This deliverable will describe the initial version of the sustainability and exploitation plan of PREFORMA, including a preliminary impact assessment. [month 36]

D3.7.2) Final Sustainability and Exploitation Plan: The initial version of sustainability and exploitation plan will be refined, including a further elaboration of the impact and an analysis of the lessons learnt during the project and their impact on the exploitation plan for the project [month 48]

D3.8) Networking Report Year 4: The enlargement is a priority action and, therefore, yearly deliverables are planned for reporting on mechanisms, procedures and results. [month 48]

WT3: Work package description

Schedule of relevant Milestones

| Milestone number ⁵⁹ | Milestone name | Lead beneficiary number | Delivery date from Annex I ⁶⁰ | Comments |
|--------------------------------|----------------------|-------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| MS3 | Open Source Workshop | 5 | 24 | |
| MS5 | Experience Workshop | 11 | 30 | |
| MS6 | Expanded Network | 7 | 48 | Involvement of external stakeholders in the network of common interest by the signature of Cooperation Agreements |

WT3: Work package description

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|-----------------------------|--------|------------------------------|----------|
| Project Number ¹ | 619568 | Project Acronym ² | PREFORMA |
|-----------------------------|--------|------------------------------|----------|

One form per Work Package

| | | | |
|---------------------------------------|---------------------------------|--------------------------------|-------|
| Work package number ⁵³ | WP4 | Type of activity ⁵⁴ | COORD |
| Work package title | Dissemination and Communication | | |
| Start month | 1 | | |
| End month | 48 | | |
| Lead beneficiary number ⁵⁵ | 3 | | |

Objectives

- To make the information gathered by the project available to the widest possible audience
- To support these objectives by creating and delivering dissemination supports such as project website, brochures, posters, recommendations and guidelines
- To organise one international conference to present the project results to the public
- To coordinate the participation of the partners in third parties events to promote the PREFORMA project
- To liaise with WP3 and contribute through the dissemination and communication actions to the common objective of creating a network of common interest
- To liaise with WP3 and to promote the tender
- To implement the open source portal and to coordinate the set-up of the suppliers community

The following groups will be targeted by the activities implemented in WP4:

- memory institutions,
- developers,
- research organisations
- standardisation bodies
- funding agencies
- best practice networks
- other projects

The activities of WP4 will be implemented in liaison with WP2 and WP3.

Description of work and role of partners

This work-package is composed by 4 tasks:

T4.1 Dissemination

Task Leader: PROMOTER

This task will include the design and maintenance of the project website, the planning of the project dissemination and the production of the dissemination material.

The PREFORMA project website will include the following areas:

- The aims of the project and the benefit and value that the project will bring to its targets
- The progress of the project (updated constantly for the whole duration of the project)
- The partners (including links to their websites)
- Events and news
- Links to, and short profiles of, other related projects and initiatives
- Dissemination material
- Studies and reports
- Information on how to join the network

The PREFORMA website will be made up of public pages and a restricted area.

The public web pages will contain the overall information on the project (partners, objectives, work packages, outcomes) as well as news and events in the field of long term preservation - and digital cultural heritage in general -, publications produced by the participating institutions.

WT3: Work package description

The reserved area will host the project's documents such as minutes, meeting agendas, working and management documents.

Due to the nature of PREFORMA, the project website is conceived for a public of experts in the field of DCH preservation and standards.

PROMOTER will host the website and assure its sustainability also beyond the end of the project.

The show-case of PREFORMA will be opened on the digitalmeetsculture portal with updated news and articles targeted to the so-called 'citizen-scientists'.

Channels on the social networks will be open, e.g. on Twitter, Youtube, Facebook and LinkedIn.

This task is also devoted to the dissemination plan, including the participation to third parties events to deliver presentations of the project, participation to the concertation meetings organised by the European Commission. The task will also carry out the production of a range of dissemination material: project logo, presentation material, project factsheet, leaflet, FAQs poster, self-portable banner, customized gadgets. Possible different promotional material will be foreseen during the project lifetime in accordance to the progresses of the activities. Dissemination material will be produced in English. Each partner may translate the promotional material in its native language(s).

All the material will be made available online and some of it will also be printed.

Media and scientific journals will be targeted by the academic partners.

PREFORMA will be presented to third parties events (ref. to the initial list provided in section 3.2 of Part B)

The success of the dissemination will be assessed in terms of take-up of PREFORMA by stakeholders and expected users.

A special attention will be devoted to the dissemination in the AV domain, by the special contribution of partners BEELD EN GELUID, Girona and Fraunhofer who have interest and expertise in this Sector.

The promotional activities of T4.1 during the first 10 months will also aim to raise awareness among potential tenderers. Pre-announcement and announcement of the call will also be published on the PREFORMA website.

T4.2 Open Source Portal & Supplier Community

Task Leader: HS

This task will synthesise relevant information for establishing and maintaining a supplier community related to all software developed during the PREFORMA project. Such information includes all relevant information and infrastructure provided in healthy open source projects (such as roadmaps, source code, binaries, APIs, documentation, mailing lists, forums, wikis, issue trackers, demonstration software that utilise the open source component and modules, and relevant test cases). In so doing this task establishes a portal for all interested suppliers and memory institutions which allows an overview and easy navigation to all externally hosted resources. This portal will be provided in a conceptually separated part in the web site for the PREFORMA project.

The GitHub platform (or an equivalent software platform for open source projects) will be used for all development and deployment activities during and beyond the time frame for the PREFORMA project. All software developed during the PREFORMA project will be provided under both Mozilla Public License 2.0 (MPL v2) or later and under GNU General Public licence 3.0 (GPL v3) or later, see further www.opensource.org.

T4.3 Final Conference

Task Leader: RA

PREFORMA will organise one international conference on the topic addressed by the project organised by the Coordinator in Stockholm. The conference will be devoted to present the project's outcomes; it will also include key note speech(es) on long term preservation and foresee the participation of EC representatives and digital preservation experts, from both partner and non-partner countries. A Programme Committee is set up in advance for the Conference to agree on key-note speakers, project's presentations, demonstrations and poster sessions.

WP4 will disseminate information about the Conference through websites and mailing lists and take care of the promotional material to be produced ad hoc for the event.

WT3: Work package description

Person-Months per Participant

| Participant number ¹⁰ | Participant short name ¹¹ | Person-months per participant |
|----------------------------------|------------------------------------------|-------------------------------|
| 1 | RA | 6.00 |
| 2 | PACKED | 1.00 |
| 3 | PROMOTER | 12.00 |
| 4 | Fraunhofer | 1.00 |
| 5 | HS | 1.00 |
| 6 | UNIPD | 1.00 |
| 7 | BEELD EN GELUID | 1.00 |
| 8 | KIK-IRPA | 3.50 |
| 9 | GFC | 3.50 |
| 10 | LGMA | 4.50 |
| 11 | SPK | 3.00 |
| 12 | AJGI | 2.50 |
| 13 | Eesti Vabariigi Kultuuriministerium | 2.00 |
| 14 | KUNGLIGA BIBLIOTEKET (NATIONAL LIBRARY O | 2.00 |
| Total | | 44.00 |

List of deliverables

| Deliverable Number ⁶¹ | Deliverable Title | Lead beneficiary number | Estimated indicative person-months | Nature ⁶² | Dissemination level ⁶³ | Delivery date ⁶⁴ |
|----------------------------------|-------------------------------------|-------------------------|------------------------------------|----------------------|-----------------------------------|-----------------------------|
| D4.1 | Public Website | 3 | 6.00 | O | PU | 3 |
| D4.2 | Promotional Material | 3 | 2.00 | O | PU | 6 |
| D4.3 | Functions of the Open Source Portal | 5 | 16.00 | O | RE | 12 |
| D4.4 | Dissemination Report Year 1 | 3 | 2.00 | R | PP | 12 |
| D4.5 | Dissemination Report Year 2 | 3 | 2.00 | R | PP | 24 |
| D4.6 | Dissemination Report Year 3 | 3 | 2.00 | R | PP | 36 |
| D4.7 | International Conference | 1 | 12.00 | O | PU | 48 |
| D4.8 | Dissemination Report Year 4 | 3 | 2.00 | R | PP | 48 |
| Total | | | 44.00 | | | |

Description of deliverables

D4.1) Public Website: This deliverable corresponds to the publication online of the PREFORMA project website and the implementation of the online instruments for the communication among the partners. Draft of D4.1 will be release in month 1 reporting the online publication of the project website. The website will remain online after the end of the EC funded period and its sustainability will be discussed in D3.7.1 and D3.7.2 [month 3]

WT3: Work package description

D4.2) Promotional Material: This deliverable is the collection of the dissemination material produced at the beginning of the project, together with a precise promotional plan including the description of how, when, to whom, who will distribute this material. [month 6]

D4.3) Functions of the Open Source Portal: This deliverable reports the functions of the Open Source Portal. [month 12]

D4.4) Dissemination Report Year 1: This report summarises the dissemination actions during the first year, lists the promotional materials, and provides an updated promotional plan, with detailed actions for the second year. [month 12]

D4.5) Dissemination Report Year 2: This report summarises the dissemination actions during the second year, lists the promotional materials, and provides an updated promotional plan, with detailed actions for the third year. [month 24]

D4.6) Dissemination Report Year 3: This report summarises the dissemination actions during the third year, lists the promotional materials, and provides an updated promotional plan, with detailed actions for the fourth year. [month 36]

D4.7) International Conference: This deliverable presents the results of the final conference, its proceedings and the report about the participants and the feedbacks gathered during the events, also concerning the interest in the continuation of the activities of the PREFORMA network of common interest. [month 48]

D4.8) Dissemination Report Year 4: This report summarises the dissemination actions during the entire project, with an in-depth description for the fourth year activities. It also lists the promotional materials. [month 48]

Schedule of relevant Milestones

| Milestone number ⁵⁹ | Milestone name | Lead beneficiary number | Delivery date from Annex I ⁶⁰ | Comments |
|--------------------------------|--------------------------|-------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| MS2 | Open Source Portal | 5 | 12 | Open Source Portal launched, after agreeing with the suppliers |
| MS4 | Open Source Community | 5 | 48 | Public demonstration first prototypes, Open Source Project launched; Open Source Workshop held |
| MS7 | International Conference | 1 | 48 | Partnes and stakeholders from the network of common interest participate, public demonstration final prototypes and testing results |

WT3: Work package description

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| Project Number ¹ | 619568 | Project Acronym ² | PREFORMA |
|-----------------------------|--------|------------------------------|----------|

One form per Work Package

| | | | |
|---------------------------------------|-----------|--------------------------------|-----|
| Work package number ⁵³ | WP5 | Type of activity ⁵⁴ | RTD |
| Work package title | Co-Design | | |
| Start month | 11 | | |
| End month | 26 | | |
| Lead beneficiary number ⁵⁵ | 4 | | |

Objectives

In WP5 the selected suppliers will develop the appropriate design for the expected software solution. This addresses not only technical (functional) design but also non-functional aspects like usability, learnability, operability, etc. In particular, the WP will:

- Define use cases and scenarios derived from the PREFORMA overall objectives
- Define the respective design requirements / parameters / criteria in terms of functional and non-functional design elements

WP5 is composed by two phases:

- the first Design phase is executed by all the six suppliers selected by the tender in WP2
- at the end of the phase 1, the competitive evaluation of WP8 will select the three suppliers who continue with the execution of the tender
- the second Design phase follows the delivery of the first prototype on the Open Source Portal.

Description of work and role of partners

This work package is dedicated to the design steps of the PREFORMA software development process. In general, software design is defined as the process of defining the architecture, components and other characteristics of a system or component and the result of that process [IEE90]. Moreover, it specifies the activity within the software development process, where the requirements defined in T2.4 are analysed in order to produce a description of the internal structure and organization of the system. This description will serve as the basis for its realization. For that reason, it must have a level of detail / granularity suitable for that purpose. In summary a software design describes how the system is composed / decomposed and organized into components, but also describes the interfaces between these components. That incorporates standardised aspects like usefulness and usability of those interfaces.

This work package is divided into two tasks:

T5.1 Co-Design Step 1

Task leader: Fraunhofer

This task defines criteria for the design process and implements through the suppliers the first design of the PREFORMA software. Six suppliers were selected at the end of the tender procedure to carry on in this design phase. They are firstly required to gather and analyse general requirements for the software to be developed in order to determine the scope of the development clearly. After that, the suppliers are required to prepare a functional specification. This specification describes the intended behaviour of the system to be developed (e.g., by using use cases or application scenarios). Both the requirements analysis and the functional specification will be reviewed by the task leader. The next step is building the architecture of the software system, which defines the components of the system as well as the interfaces in between. Based on approaches like the GCM and MAS as well as performed throughout the entire design step, the suppliers are required to use established notations, modelling languages (e.g., UML or ADL) and design/architectural patterns (e.g., Client-Server, Model-View-Controller, etc.) when describing their ideas, concepts, components, etc. both structurally and behaviourally. At the end of the design step, the WP leader compiles a document based on the the evaluation strategy established in T8.1 and the set of parameters that compares the different design solutions in terms of extensibility, reliability, reusability etc. and provides several rankings. These rankings will serve as basis for selecting the three suppliers that are requested to proceed to the prototyping phase.

WT3: Work package description

T5.2 Co-Design Step 2
Task leader: Fraunhofer

The suppliers of the best three designs - possibly one for each media type - (identified as result of the successfully completed task 5.1) are invited to proceed to the prototyping phase (WP6), which includes two releases and the re-design phase. Task 5.2 thus implements through the suppliers the second (re-)design step of the PREFORMA software strictly from the design viewpoint. As the three suppliers released a first prototype and got first feedback from WP6, their task now is to update (re-design) the design of their prototypes accordingly. The requirements derived from the use cases and scenarios that contributed to defining the requirements of the software to develop are taken into account when evaluating the first prototypic software in order to provide inputs to T5.2. Task 5.2 will support the suppliers in meeting those notes, comments, recommendations, etc. In order to allow reproducing the updates, the documents created in the first design phase should be taken as basis. At the end of the re-design phase, the WP leader will compile a document that points out the changes made and how satisfactorily they addressed the notes, comments, recommendations, etc. provided.

The software design developed by the suppliers will be delivered in the Open Source Portal. Reports about the progresses of the suppliers work are provided in the CSA part (WP8).

Person-Months per Participant

| Participant number ¹⁰ | Participant short name ¹¹ | Person-months per participant |
|----------------------------------|--------------------------------------|-------------------------------|
| 4 | Fraunhofer | 2.00 |
| | Total | 2.00 |

List of deliverables

| Deliverable Number ⁶¹ | Deliverable Title | Lead beneficiary number | Estimated indicative person-months | Nature ⁶² | Dissemination level ⁶³ | Delivery date ⁶⁴ |
|----------------------------------|-------------------|-------------------------|------------------------------------|----------------------|-----------------------------------|-----------------------------|
| | | Total | 0.00 | | | |

Description of deliverables

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Schedule of relevant Milestones

| Milestone number ⁵⁹ | Milestone name | Lead beneficiary number | Delivery date from Annex I ⁶⁰ | Comments |
|--------------------------------|------------------------------------|-------------------------|------------------------------------------|---------------------------------------------------------------------------------------|
| MS20 | Selection of best Design completed | 4 | 15 | The suppliers of the best Designs will continue to the prototyping and testing phases |

WT3: Work package description

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|-----------------------------|--------|------------------------------|----------|
| Project Number ¹ | 619568 | Project Acronym ² | PREFORMA |
|-----------------------------|--------|------------------------------|----------|

One form per Work Package

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|---------------------------------------|-------------|--------------------------------|-----|
| Work package number ⁵³ | WP6 | Type of activity ⁵⁴ | RTD |
| Work package title | Prototyping | | |
| Start month | 15 | | |
| End month | 36 | | |
| Lead beneficiary number ⁵⁵ | 5 | | |

Objectives

In this Work package 6, the three selected suppliers will conduct the prototyping of the PREFORMA software.

During this phase, suppliers are expected to provide software prototypes that fulfils the requirements of the PREFORMA project, to demonstrate the results and to provide explanations and documentation how the developed software can be effectively used in archiving scenarios at memory institutions.

Further, suppliers are expected to utilise best practices from open source development, which include use of:

1. an open work practice for development;
2. frequent open releases;
3. promotion activities aiming towards a sustainable community.

With regard to the first point, use of an open work practice involves adherence to established open source community norms and values in order to maximise transparency and acceptance amongst the broader community of volunteers and open source companies. It also entails publication of a roadmap and use of wikis, forums, issue trackers, software configuration management systems, in order to promote the open collaborative development process. Also, a collaborative platform for open source software development (e.g. GitHub or equivalent) will be used to support an open work practice.

With regard to the second point, early and frequent open releases will be used and the developed software will be provided from the very beginning of the development, with evolving functionality over time. Copyleft licenses will be used for all developed software and associated digital artefacts. All developed software will be provided under both Mozilla Public License (MPL) v2.0 or later and under GNU General Public licence 3.0 (GPL v3) or later, and all associated digital artefacts (e.g. instructions, manuals, documentations, test cases, etc.) developed during the project will be provided under the Creative Commons (CC) license Attribution-ShareAlike 3.0 Unported (CC BY-SA 3.0).

Concerning the third point, promotion activities include participation in community events (e.g. FOSDEM and other conferences) in order to network with other open source developers, and provision of illustrative examples (source code, binaries, test files, screenshots, etc.) in order to demonstrate how developed software can be used.

Finally, suppliers are expected to establish a process of feedbacks with the relevant standardisation organisations and other relevant stakeholder groups (e.g. legislators and other suppliers). Such feedbacks include establishment and publication of implementation notes in order to detail the precise interpretation of the specification of the standard (especially for sections of the specification of the standard which are unclear) when developing the software and associated digital artefacts. Such implementation notes will be used by the supplier in dialogue with relevant standardisation organisations, memory institutions, and other interested stakeholders. This feedback process is critical for improving interoperability and long-term preservation of files, and creates a basis for continuous improvement of developed software in the open source project.

Description of work and role of partners

WP6 is composed by two tasks:

T6.1 Prototyping Step 1

WT3: Work package description

Task leader: HS

This task is executed by the suppliers and aims to deliver and demonstrate the first three prototypes.

The prototypes include:

- the 4 modules (“Abstract Conformance Checker”, “Scorer”, “Reporter”, and “Abstract Fixes Suggester/Correcter”) for each media type (documents, images and audio-video); each suppliers develops the modules for one media type;
- the web application to demonstrate the modules
- the documentation of the open source software

T6.2 Prototyping Step 2

Task leader: HS

This task follows the Design phase 2 and aims to deliver and demonstrate the improved final version of the prototypes, that will be ready to enter the testing and validation phase (WP7)

The software developed by the suppliers will be delivered in the Open Source Portal.

Reports about the progresses of the suppliers work are provided in the CSA part.

Two demonstrations will be organised by the suppliers and reported in D8.3 and D8.4.

The location of the demonstrations will be agreed with the suppliers.

Person-Months per Participant

| Participant number ¹⁰ | Participant short name ¹¹ | Person-months per participant |
|----------------------------------|--------------------------------------|-------------------------------|
| 5 | HS | 2.00 |
| | Total | 2.00 |

List of deliverables

| Deliverable Number ⁶¹ | Deliverable Title | Lead beneficiary number | Estimated indicative person-months | Nature ⁶² | Dissemination level ⁶³ | Delivery date ⁶⁴ |
|----------------------------------|-------------------|-------------------------|------------------------------------|----------------------|-----------------------------------|-----------------------------|
| | | Total | 0.00 | | | |

Description of deliverables

| |
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Schedule of relevant Milestones

| Milestone number ⁵⁹ | Milestone name | Lead beneficiary number | Delivery date from Annex I ⁶⁰ | Comments |
|--------------------------------|-----------------------------------------------------|-------------------------|------------------------------------------|----------------------------------------------------------------------------------------|
| MS21 | First prototype delivered on the Open Source Portal | 5 | 24 | Source code published; demonstration delivered; reports of the demonstration available |
| MS23 | Final prototype delivered on the Open Source Portal | 5 | 36 | Source code published; demonstration delivered; reports of the demonstration available |

WT3: Work package description

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|-----------------------------|--------|------------------------------|----------|
| Project Number ¹ | 619568 | Project Acronym ² | PREFORMA |
|-----------------------------|--------|------------------------------|----------|

One form per Work Package

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|---------------------------------------|------------------------|--------------------------------|-----|
| Work package number ⁵³ | WP7 | Type of activity ⁵⁴ | RTD |
| Work package title | Validation and testing | | |
| Start month | 37 | | |
| End month | 42 | | |
| Lead beneficiary number ⁵⁵ | 6 | | |

Objectives

In this Work package 7, the suppliers will test and validate the software solutions developed in WP6, using proven scientific methods and systems. This addresses not only technical (functional) design but also non-functional aspects like usability, learnability, operability, etc. The testing activities and its demonstrations are assessed in WP8 that will provides the deliverables related to the results of the testing phase.

Description of work and role of partners

T7.1 Final Validation

Taskleader: UNIPD

The selected suppliers will carry out the testing and validation activities for the three software prototypes developed in WP6.

Testing and validation will be based on the use of the data sets provided by the memory institutions.

Each memory institution will prepare testing data sets extracted from their own repositories.

The data sets will include data and metada covering the different media types addressed by the three software prototypes, i.e. documents, images and audiovisual material.

One demonstration will be organised by the suppliers at the end of the testing period to present the result of the work done.

The location of the demonstration will be agreed with the suppliers.

Person-Months per Participant

| Participant number ¹⁰ | Participant short name ¹¹ | Person-months per participant |
|----------------------------------|------------------------------------------|-------------------------------|
| 1 | RA | 2.00 |
| 6 | UNIPD | 2.00 |
| 7 | BEELD EN GELUID | 1.00 |
| 8 | KIK-IRPA | 2.00 |
| 9 | GFC | 2.00 |
| 10 | LGMA | 1.00 |
| 11 | SPK | 2.00 |
| 12 | AJGI | 2.00 |
| 13 | Eesti Vabariigi Kultuuriministerium | 1.00 |
| 14 | KUNGLIGA BIBLIOTEKET (NATIONAL LIBRARY O | 2.00 |

WT3: Work package description

Person-Months per Participant

| Participant number ¹⁰ | Participant short name ¹¹ | Person-months per participant |
|----------------------------------|--------------------------------------|-------------------------------|
| | Total | 17.00 |

List of deliverables

| Deliverable Number ⁶¹ | Deliverable Title | Lead beneficiary number | Estimated indicative person-months | Nature ⁶² | Dissemination level ⁶³ | Delivery date ⁶⁴ |
|----------------------------------|-------------------|-------------------------|------------------------------------|----------------------|-----------------------------------|-----------------------------|
| | | Total | 0.00 | | | |

Description of deliverables

| |
|--|
| |
|--|

Schedule of relevant Milestones

| Milestone number ⁵⁹ | Milestone name | Lead beneficiary number | Delivery date from Annex I ⁶⁰ | Comments |
|--------------------------------|-------------------|-------------------------|------------------------------------------|--------------------------------------------------------------------------------------------------|
| MS24 | Testing completed | 6 | 42 | The testing phase is completed and final report on the implementation of the tender is delivered |

WT3: Work package description

| | | | |
|-----------------------------|--------|------------------------------|----------|
| Project Number ¹ | 619568 | Project Acronym ² | PREFORMA |
|-----------------------------|--------|------------------------------|----------|

One form per Work Package

| | | | |
|---------------------------------------|-------------------------------------------------------|--------------------------------|-------|
| Work package number ⁵³ | WP8 | Type of activity ⁵⁴ | COORD |
| Work package title | Competitive Evaluation and Monitoring of the RTD work | | |
| Start month | 11 | | |
| End month | 42 | | |
| Lead beneficiary number ⁵⁵ | 6 | | |

Objectives

WP8 has the following objectives:

- to establish the competitive evaluation strategy to be used at the end of the Design phase 1 to chose the suppliers who continue the implementation of the tender
- to support and monitor the execution of the tender, including its 3 phases (design, prototyping and testing)
- to carry out the final assessment of the results of the tender

Description of work and role of partners

This WP8 is composed by 4 tasks:

Task 8.1 Evaluation strategy

Task Leader: UNIPD

This task will define the evaluation strategy for comparing the results of the suppliers, at the end of the design phase. The evaluation framework will be defined by UNIPD, Fraunhofer and HS, while the memory institutions will add detailed evaluation criteria to it.

Task 8.2 Competitive evaluation

Task Leader: RA

The strategy established in T8.1 will be used at the end of the Design phase 1 to select the suppliers who will continue the execution of the tender.

Task 8.3 Monitoring of the development and Reporting of demonstrations

Task Leader: HS

This task uses criteria established and described in the tender specifications on how to assess functionality, how to assess feedback to standardisation organisations, and how to assess the extent to which suppliers utilise best practices from open source development for monitoring and assessment of performed prototyping in the PREFORMA project.

WP5 Leader will participate to this task to monitor the design and re-design phase of the PREFORMA software design process according to the requirements all suppliers have to appropriately meet / address in the prototyping and testing WPs. It will support the suppliers in meeting the objectives of the PREFORMA project in general, and the scenarios in particular

WP6 Leader (which is also task leader) will carry out supporting and monitoring activities aiming to:

- Monitor the prototyping phase of the PREFORMA software development process with a view to provide formative feedback on provided functionality, use of best practices from open source development, and an established process for feedback to standardisation organisations (and other relevant stakeholder groups)
- Support the suppliers in meeting the objectives of the PREFORMA project in general, and the scenarios in particular.
- Offer visibility of suppliers' software prototypes and make them comparable

WP7 Leader will participate to this task, to monitor the testing and validation phase of the PREFORMA software process according to the key requirements that all suppliers have to appropriately address.

Task 8.4 Final evaluation of the tender

WT3: Work package description

Task Leader: RA

This task will carry out the final evaluation of the tender, including the lessons learnt during the procurement process, the results achieved by the suppliers, the gaps to be covered by future actions, including the report about the results of the Experience Workshop.

Person-Months per Participant

| Participant number ¹⁰ | Participant short name ¹¹ | Person-months per participant |
|----------------------------------|------------------------------------------|-------------------------------|
| 1 | RA | 5.00 |
| 2 | PACKED | 2.00 |
| 3 | PROMOTER | 2.00 |
| 4 | Fraunhofer | 4.00 |
| 5 | HS | 1.00 |
| 6 | UNIPD | 6.00 |
| 7 | BEELD EN GELUID | 2.00 |
| 8 | KIK-IRPA | 3.00 |
| 9 | GFC | 5.00 |
| 10 | LGMA | 2.00 |
| 11 | SPK | 3.00 |
| 12 | AJGI | 5.00 |
| 13 | Eesti Vabariigi Kultuuriministeerium | 3.00 |
| 14 | KUNGLIGA BIBLIOTEKET (NATIONAL LIBRARY O | 5.00 |
| Total | | 48.00 |

List of deliverables

| Deliverable Number ⁶¹ | Deliverable Title | Lead beneficiary number | Estimated indicative person-months | Nature ⁶² | Dissemination level ⁶³ | Delivery date ⁶⁴ |
|----------------------------------|---------------------------------|-------------------------|------------------------------------|----------------------|-----------------------------------|-----------------------------|
| D8.1 | Competitive evaluation strategy | 6 | 6.00 | R | PU | 12 |
| D8.2 | Design - First report | 4 | 4.00 | R | PU | 15 |
| D8.3 | First prototype report | 5 | 6.00 | R | PU | 24 |
| D8.4 | Design - Final report | 4 | 2.00 | R | PU | 27 |
| D8.5 | Final prototype report | 5 | 8.00 | R | PU | 36 |
| D8.6 | Testing report | 6 | 10.00 | R | PU | 42 |
| D8.7 | Final assessment of the tender | 1 | 12.00 | R | PU | 42 |
| Total | | | 48.00 | | | |

Description of deliverables

WT3: Work package description

D8.1) Competitive evaluation strategy: This deliverable will present the competitive evaluation strategy which is applied for the assessment of the results of the subcontractors at the end of the design phase, to choose those who will continue with the prototyping and testing phases [month 12]

D8.2) Design - First report: This deliverable includes a report and a comparison of design solutions provided by the six different suppliers in terms of extensibility, reliability, reusability etc. Moreover, it also provides several rankings that serve as basis for selecting the three suppliers that are requested to proceed to the prototyping phase. [month 15]

D8.3) First prototype report: This deliverable provides the report on the first prototype. It will provide information on how suppliers have provided required functionality; established a process for feedback to standardisation organisations; and adhered to utilising best practices from open source development. Based on development efforts for each supplier, the report will provide feedback on their use of: an open work practice for development; frequent open releases; and promotion activities aiming towards a sustainable community. The report serves as a basis for second design phase. [month 24]

D8.4) Design - Final report: This deliverable points out the design changes made by the suppliers according to the feedback provided by WP6 about their first PREFORMA prototype. Moreover, it also shows how satisfactorily they addressed this feedback. [month 27]

D8.5) Final prototype report: This deliverable provides the report on the second prototype. It will provide information on how suppliers have provided required functionality; established a process for feedback to standardisation organisations; and adhered to utilising best practices from open source development. Based on development efforts for each supplier, the report will provide feedback on their use of: an open work practice for development; frequent open releases; and promotion activities aiming towards a sustainable community. The report serves as a basis for start of the final testing and validation phase. [month 36]

D8.6) Testing report: This deliverable reports the outcomes of the final testing and validation performed by the subcontractors on their respective prototypes developed in WP6. Testing will be done using the data set provided by the memory institutions participating to the project. [month 42]

D8.7) Final assessment of the tender: This deliverable will present the results of the final assessment of the results of the whole tender, including Prototyping and Testing and Validation Phase. These are the results which are ready for the exploitation and implementation at the end of the PCP project. The deliverable will include also a summative evaluation and ranking of the final three software solutions. It will also contain the analysis of remaining gaps in state-of-the-art that the new solutions did not succeed in covering, as basis for future pre-commercial procurement of R&D services by the PREFORMA partners and other memory institutions in the PREFORMA network of common interest, after the end of the PREFORMA EC funding period. [month 42]

Schedule of relevant Milestones

| Milestone number ⁵⁹ | Milestone name | Lead beneficiary number | Delivery date from Annex I ⁶⁰ | Comments |
|--------------------------------|-----------------------------------------------------|-------------------------|------------------------------------------|----------------------------------------------------------------------------------------|
| MS20 | Selection of best Design completed | 4 | 15 | The suppliers of the best Designs will continue to the prototyping and testing phases |
| MS21 | First prototype delivered on the Open Source Portal | 5 | 24 | Source code published; demonstration delivered; reports of the demonstration available |
| MS23 | Final prototype delivered on the Open Source Portal | 5 | 36 | Source code published; demonstration delivered; reports of the demonstration available |

WT3: Work package description

Schedule of relevant Milestones

| Milestone number ⁵⁹ | Milestone name | Lead beneficiary number | Delivery date from Annex I ⁶⁰ | Comments |
|--------------------------------|-------------------|-------------------------|------------------------------------------|--------------------------------------------------------------------------------------------------|
| MS24 | Testing completed | 6 | 42 | The testing phase is completed and final report on the implementation of the tender is delivered |

WT4: List of Milestones

| | | | |
|-----------------------------|--------|------------------------------|----------|
| Project Number ¹ | 619568 | Project Acronym ² | PREFORMA |
|-----------------------------|--------|------------------------------|----------|

List and Schedule of Milestones

| Milestone number ⁵⁹ | Milestone name | WP number ⁵³ | Lead beneficiary number | Delivery date from Annex I ⁶⁰ | Comments |
|--------------------------------|-------------------------------------|-------------------------|-------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| MS1 | Tools & Network | WP1 | 1 | 3 | Project Handbook delivered, Intranet in use, web site online, Terms of Reference of the Network of common interest agreed |
| MS2 | Open Source Portal | WP4 | 5 | 12 | Open Source Portal launched, after agreeing with the suppliers |
| MS3 | Open Source Workshop | WP3 | 5 | 24 | |
| MS4 | Open Source Community | WP4 | 5 | 48 | Public demonstration first prototypes, Open Source Project launched; Open Source Workshop held |
| MS5 | Experience Workshop | WP3 | 11 | 30 | |
| MS6 | Expanded Network | WP3 | 7 | 48 | Involvement of external stakeholders in the network of common interest by the signature of Cooperation Agreements |
| MS7 | International Conference | WP4 | 1 | 48 | Partnes and stakeholders from the network of common interest participate, public demonstration final prototypes and testing results |
| MS10 | Pre-announcement of the tender | WP2 | 1 | 3 | The pre-announcement of the call for tender is publishe on the PREFORMA website |
| MS11 | Tender published | WP2 | 1 | 5 | The call for tender is published on the Official Journal |
| MS12 | Tender closed | WP2 | 1 | 7 | After the tender closes, statistics about the participation to the tender are published on the PREFORMA website |
| MS13 | Contracts with the suppliers signed | WP2 | 1 | 10 | Six suppliers selected, Negotiation with the selected suppliers is completed and the contracts to start the |

WT4: List of Milestones

| Milestone number ⁵⁹ | Milestone name | WP number ⁵³ | Lead beneficiary number | Delivery date from Annex I ⁶⁰ | Comments |
|--------------------------------|-----------------------------------------------------|-------------------------|-------------------------|------------------------------------------|--------------------------------------------------------------------------------------------------|
| | | | | | work are signed by the Coordinator on behalf of the whole Consortium |
| MS20 | Selection of best Design completed | WP5, WP8 | 4 | 15 | The suppliers of the best Designs will continue to the prototyping and testing phases |
| MS21 | First prototype delivered on the Open Source Portal | WP6, WP8 | 5 | 24 | Source code published; demonstration delivered; reports of the demonstration available |
| MS23 | Final prototype delivered on the Open Source Portal | WP6, WP8 | 5 | 36 | Source code published; demonstration delivered; reports of the demonstration available |
| MS24 | Testing completed | WP7, WP8 | 6 | 42 | The testing phase is completed and final report on the implementation of the tender is delivered |

WT5:

Tentative schedule of Project Reviews

| | | | |
|-----------------------------|--------|------------------------------|----------|
| Project Number ¹ | 619568 | Project Acronym ² | PREFORMA |
|-----------------------------|--------|------------------------------|----------|

Tentative schedule of Project Reviews

| Review number ⁶⁵ | Tentative timing | Planned venue of review | Comments, if any |
|-----------------------------|------------------|-------------------------|----------------------------------------------------------------------|
| RV 1 | 14 | to be defined | |
| RV 2 | 26 | to be defined | |
| RV 3 | 38 | to be defined | |
| RV 4 | 50 | to be defined | |
| RV 5 | 5 | Paper review | Paper review of D2.1 and D2.2 (before the publication of the tender) |

Project Effort by Beneficiary and Work Package

| | | | |
|-----------------------------|--------|------------------------------|----------|
| Project Number ¹ | 619568 | Project Acronym ² | PREFORMA |
|-----------------------------|--------|------------------------------|----------|

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 | WP 8 | Total per Beneficiary |
|-----------------------------------------------|--------------|--------------|--------------|--------------|-------------|-------------|--------------|--------------|-----------------------|
| 1 - RA | 12.00 | 6.00 | 10.00 | 6.00 | 0.00 | 0.00 | 2.00 | 5.00 | 41.00 |
| 2 - PACKED | 1.00 | 5.00 | 2.00 | 1.00 | 0.00 | 0.00 | 0.00 | 2.00 | 11.00 |
| 3 - PROMOTER | 2.00 | 4.00 | 3.00 | 12.00 | 0.00 | 0.00 | 0.00 | 2.00 | 23.00 |
| 4 - Fraunhofer | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 0.00 | 0.00 | 4.00 | 10.00 |
| 5 - HS | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 2.00 | 0.00 | 1.00 | 7.00 |
| 6 - UNIPD | 2.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 2.00 | 6.00 | 13.00 |
| 7 - BEELD EN GELUID | 1.00 | 2.00 | 6.00 | 1.00 | 0.00 | 0.00 | 1.00 | 2.00 | 13.00 |
| 8 - KIK-IRPA | 1.00 | 3.00 | 3.00 | 3.50 | 0.00 | 0.00 | 2.00 | 3.00 | 15.50 |
| 9 - GFC | 1.00 | 4.00 | 5.00 | 3.50 | 0.00 | 0.00 | 2.00 | 5.00 | 20.50 |
| 10 - LGMA | 1.00 | 2.00 | 1.00 | 4.50 | 0.00 | 0.00 | 1.00 | 2.00 | 11.50 |
| 11 - SPK | 1.00 | 3.00 | 3.00 | 3.00 | 0.00 | 0.00 | 2.00 | 3.00 | 15.00 |
| 12 - AJGI | 1.00 | 2.00 | 2.00 | 2.50 | 0.00 | 0.00 | 2.00 | 5.00 | 14.50 |
| 13 - Eesti Vabariigi Kultuuriministeerium | 1.00 | 4.00 | 2.00 | 2.00 | 0.00 | 0.00 | 1.00 | 3.00 | 13.00 |
| 14 - KUNGLIGA BIBLIOTEKET (NATIONAL LIBRARY O | 1.00 | 4.00 | 1.00 | 2.00 | 0.00 | 0.00 | 2.00 | 5.00 | 15.00 |
| Total | 27.00 | 42.00 | 41.00 | 44.00 | 2.00 | 2.00 | 17.00 | 48.00 | 223.00 |

Project Effort by Activity type per Beneficiary

| | | | |
|-----------------------------|--------|------------------------------|----------|
| Project Number ¹ | 619568 | Project Acronym ² | PREFORMA |
|-----------------------------|--------|------------------------------|----------|

Indicative efforts per Activity Type per Beneficiary

| Activity type | Part. 1 RA | Part. 2 PACKED | Part. 3 PROMOTE | Part. 4 Fraunho | Part. 5 HS | Part. 6 UNIPD | Part. 7 BEELD E | Part. 8 KIK-IRP | Part. 9 GFC | Part. 10 LGMA | Part. 11 SPK | Part. 12 AJGI | Part. 13 Eesti V | Part. 14 KUNGLIG | Total |
|---------------|---------------|-------------------|--------------------|--------------------|---------------|------------------|-----------------------|--------------------|----------------|------------------|-----------------|------------------|---------------------|---------------------|-------|
|---------------|---------------|-------------------|--------------------|--------------------|---------------|------------------|-----------------------|--------------------|----------------|------------------|-----------------|------------------|---------------------|---------------------|-------|

| 1. RTD/Innovation activities | | | | | | | | | | | | | | | |
|------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| WP 5 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 |
| WP 6 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 |
| WP 7 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 1.00 | 2.00 | 2.00 | 1.00 | 2.00 | 2.00 | 1.00 | 2.00 | 17.00 |
| Total Research | 2.00 | 0.00 | 0.00 | 2.00 | 2.00 | 2.00 | 1.00 | 2.00 | 2.00 | 1.00 | 2.00 | 2.00 | 1.00 | 2.00 | 21.00 |

| 2. Demonstration activities | | | | | | | | | | | | | | | |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Total Demo | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| 3. Consortium Management activities | | | | | | | | | | | | | | | |
|-------------------------------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| WP 1 | 12.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 27.00 |
| Total Management | 12.00 | 1.00 | 2.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 27.00 |

| Work Packages for Coordination activities | | | | | | | | | | | | | | | |
|-------------------------------------------|--------------|--------------|--------------|-------------|-------------|-------------|--------------|--------------|--------------|-------------|--------------|--------------|--------------|--------------|---------------|
| WP 2 | 6.00 | 5.00 | 4.00 | 1.00 | 1.00 | 1.00 | 2.00 | 3.00 | 4.00 | 2.00 | 3.00 | 2.00 | 4.00 | 4.00 | 42.00 |
| WP 3 | 10.00 | 2.00 | 3.00 | 1.00 | 1.00 | 1.00 | 6.00 | 3.00 | 5.00 | 1.00 | 3.00 | 2.00 | 2.00 | 1.00 | 41.00 |
| WP 4 | 6.00 | 1.00 | 12.00 | 1.00 | 1.00 | 1.00 | 1.00 | 3.50 | 3.50 | 4.50 | 3.00 | 2.50 | 2.00 | 2.00 | 44.00 |
| WP 8 | 5.00 | 2.00 | 2.00 | 4.00 | 1.00 | 6.00 | 2.00 | 3.00 | 5.00 | 2.00 | 3.00 | 5.00 | 3.00 | 5.00 | 48.00 |
| Total Coordination | 27.00 | 10.00 | 21.00 | 7.00 | 4.00 | 9.00 | 11.00 | 12.50 | 17.50 | 9.50 | 12.00 | 11.50 | 11.00 | 12.00 | 175.00 |

Project Effort by Activity type per Beneficiary

| | | | | | | | | | | | | | | | |
|--------------------------------------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 4. Other activities | | | | | | | | | | | | | | | |
| Total other | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Work Packages for Support activities | | | | | | | | | | | | | | | |
| Total Support | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Total | 41.00 | 11.00 | 23.00 | 10.00 | 7.00 | 13.00 | 13.00 | 15.50 | 20.50 | 11.50 | 15.00 | 14.50 | 13.00 | 15.00 | 223.00 |

WT8: Project Effort and costs

| | | | |
|-----------------------------|--------|------------------------------|----------|
| Project Number ¹ | 619568 | Project Acronym ² | PREFORMA |
|-----------------------------|--------|------------------------------|----------|

Project efforts and costs

| Beneficiary number | Beneficiary short name | Estimated eligible costs (whole duration of the project) | | | | | | Requested EU contribution (€) |
|--------------------|------------------------|----------------------------------------------------------|---------------------|--------------------|------------------------|------------------------------------------------------------|--------------|-------------------------------|
| | | Effort (PM) | Personnel costs (€) | Subcontracting (€) | Other Direct costs (€) | Indirect costs OR lump sum, flat-rate or scale-of-unit (€) | Total costs | |
| 1 | RA | 41.00 | 250,100.00 | 2,825,000.00 | 22,000.00 | 163,260.00 | 3,260,360.00 | 2,414,897.00 |
| 2 | PACKED | 11.00 | 60,500.00 | 0.00 | 9,000.00 | 13,900.00 | 83,400.00 | 74,365.00 |
| 3 | PROMOTER | 23.00 | 131,100.00 | 8,000.00 | 13,000.00 | 86,460.00 | 238,560.00 | 162,187.00 |
| 4 | Fraunhofer | 10.00 | 50,150.00 | 0.00 | 10,000.00 | 65,563.00 | 125,713.00 | 64,360.00 |
| 5 | HS | 7.00 | 55,440.00 | 0.00 | 9,000.00 | 38,664.00 | 103,104.00 | 68,950.00 |
| 6 | UNIPD | 13.00 | 65,000.00 | 0.00 | 12,500.00 | 46,500.00 | 124,000.00 | 82,925.00 |
| 7 | BEELD EN G | 13.00 | 99,060.00 | 0.00 | 7,000.00 | 21,212.00 | 127,272.00 | 113,483.00 |
| 8 | KIK-IRPA | 15.50 | 93,000.00 | 0.00 | 5,000.00 | 58,800.00 | 156,800.00 | 104,860.00 |
| 9 | GFC | 20.50 | 48,175.00 | 0.00 | 5,000.00 | 10,635.00 | 63,810.00 | 56,896.00 |
| 10 | LGMA | 11.50 | 50,600.00 | 0.00 | 5,000.00 | 11,120.00 | 66,720.00 | 59,492.00 |
| 11 | SPK | 15.00 | 93,000.00 | 0.00 | 7,000.00 | 60,000.00 | 160,000.00 | 107,000.00 |
| 12 | AJGI | 14.50 | 50,750.00 | 0.00 | 5,000.00 | 16,725.00 | 72,475.00 | 59,652.00 |
| 13 | Eesti Vaba | 13.00 | 39,000.00 | 0.00 | 5,000.00 | 8,800.00 | 52,800.00 | 47,080.00 |
| 14 | KUNGLIGA B | 15.00 | 97,500.00 | 0.00 | 5,000.00 | 20,500.00 | 123,000.00 | 109,675.00 |
| Total | | 223.00 | 1,183,375.00 | 2,833,000.00 | 119,500.00 | 622,139.00 | 4,758,014.00 | 3,525,822.00 |

If this table is meant to reflect the estimated budget as will be annexed to the grant agreement, we would suggest clarifying that the estimated subcontracting costs may only be foreseen for the beneficiary that is or will be designated as the one in charge of the PCP procedure on behalf of the others.

Financial commitment for the joint PCP (common pot) per beneficiary

| | | | |
|-----------------------------|--------|------------------------------|----------|
| Project Number ¹ | 619568 | Project Acronym ² | PREFORMA |
|-----------------------------|--------|------------------------------|----------|

Summary of Financial commitment for the joint PCP (common pot) per beneficiary

| Participant | | Financial commitment for the joint PCP (common pot) per beneficiary |
|-------------|------------------------------------------|---------------------------------------------------------------------|
| 1 | RA | 177,917.00 |
| 2 | PACKED | 0.00 |
| 3 | PROMOTER | 0.00 |
| 4 | Fraunhofer | 0.00 |
| 5 | HS | 0.00 |
| 6 | UNIPD | 0.00 |
| 7 | BEELD EN GELUID | 105,833.00 |
| 8 | KIK-IRPA | 97,917.00 |
| 9 | GFC | 50,833.00 |
| 10 | LGMA | 52,917.00 |
| 11 | SPK | 97,917.00 |
| 12 | AJGI | 52,917.00 |
| 13 | Eesti Vabariigi Kultuuriministeerium | 40,417.00 |
| 14 | KUNGLIGA BIBLIOTEKET (NATIONAL LIBRARY O | 102,917.00 |
| Total | | 779,585.00 |

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

54. Type of activity

For all FP7 projects each work package must relate to one (and only one) of the following possible types of activity (only if applicable for the chosen funding scheme – must correspond to the GPF Form Ax.v):

- **RTD/INNO** = Research and technological development including scientific coordination - applicable for Collaborative Projects and Networks of Excellence
- **DEM** = Demonstration - applicable for collaborative projects and Research for the Benefit of Specific Groups
- **MGT** = Management of the consortium - applicable for all funding schemes
- **OTHER** = Other specific activities, applicable for all funding schemes
- **COORD** = Coordination activities – applicable only for CAs
- **SUPP** = Support activities – applicable only for SAs

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.

Combination of Collaborative Projects and Coordination and Support Actions (CP-CSA) for Pre-Commercial Procurement (PCP)

ICT Call 11
FP7-ICT-2013-11

PREservation FORMAts for culture information/e-archives

PREFORMA

Work programme topic addressed: ICT 2013.11.2: More efficient and affordable solutions for digital preservation developed and validated against public sector needs through joint Pre-Commercial Procurement

Coordinating person: Börje Justrell <borje.justrell@riksarkivet.se>, fax: +46 10-476 71 20

Table of contents

| | |
|-----------------------------------------------------------------------------------------------|-----------|
| Section 1: Scientific and Technical quality | 4 |
| 1.1 Concept and Objectives | 4 |
| 1.1.1 Concept | 4 |
| 1.1.2 Objectives..... | 5 |
| 1.1.3 Reference architecture and work flow | 8 |
| 1.1.4 Open Source software repository..... | 10 |
| 1.2 Progress beyond the State-of-the-Art (relevant to CP part only)..... | 12 |
| 1.2.1 State of the art in digital preservation | 12 |
| 1.2.2 Standardised formats in digital preservation..... | 16 |
| 1.2.3 Challenges for suppliers..... | 19 |
| 1.3 Co-ordination of High Quality Research | 20 |
| 1.3.1 Triple-Helix Collaboration | 20 |
| 1.3.2 Open-Source Approach | 20 |
| 1.3.3 Standardisation..... | 21 |
| 1.3.4 Building Critical Mass | 21 |
| 1.4 Time schedule for the procurement process and planning of the phases..... | 22 |
| 1.5 Coordination Activities and Work Plan (CSA part)..... | 23 |
| 1.5.1 CSA Workplan Strategy | 23 |
| 1.5.2 CSA Risks and Contingency Plans..... | 25 |
| 1.6 Collaborative Activities and Work Plan (CP part) | 29 |
| 1.6.1 CP Workplan Strategy | 29 |
| 1.6.2 CP Risks and Contingency Plans..... | 31 |
| 1.7 GANTT Chart | 33 |
| 2 Section 2: Implementation..... | 35 |
| 2.1 Management structure and procedures..... | 35 |
| 2.1.1 Project Management Challenges..... | 35 |
| 2.1.2 Project Management Objectives | 35 |
| 2.1.3 Organisational Structure | 36 |
| 2.1.4 Scope, Time and Cost Management | 39 |
| 2.1.5 Quality Management | 40 |
| 2.1.6 Communications Management | 40 |
| 2.1.7 Risk Management | 40 |
| 2.2 Individual participants | 41 |
| 2.2.1 RA - National Archives Sweden | 41 |
| 2.2.2 PACKED - Centre of Expertise in Digital Heritage | 42 |
| 2.2.3 PROMOTER - Promoter Srl | 43 |
| 2.2.4 Fraunhofer – Fraunhofer Gesellschaft zur Foerderung der angewandten Forschung e.V. | 44 |
| 2.2.5 HS – University of Skövde | 45 |
| 2.2.6 UNIPD - University of Padua..... | 46 |

| | | |
|----------|--------------------------------------------------------------------------|-----------|
| 2.2.7 | BEELD EN GELUID - The Netherlands Institute for Sound and Vision | 48 |
| 2.2.8 | KIK-IRPA - Royal Institute for Cultural Heritage..... | 49 |
| 2.2.9 | GFC - Greek Film Center | 50 |
| 2.2.10 | LGMA - Local Government Management Agency | 51 |
| 2.2.11 | SPK - Prussian Cultural Heritage Foundation | 52 |
| 2.2.12 | AJGI – Girona City Council | 53 |
| 2.2.13 | EVKM - Ministry of Culture Estonia | 54 |
| 2.2.14 | KB - National Library of Sweden | 55 |
| 2.2.15 | Partners’ roles in the project..... | 55 |
| 2.2.16 | Consortium as a whole..... | 57 |
| 2.2.17 | Other Countries | 58 |
| 2.2.18 | Additional Partners | 58 |
| 2.3 | Resources to be committed | 59 |
| 2.4 | Indicators | 61 |
| 3 | Section 3: Impact | 63 |
| 3.1 | Expected impacts listed in the work programme..... | 63 |
| 3.1.1 | Reduced preservation costs and improved preservation capacity | 63 |
| 3.1.2 | Strengthened position of European service and technology providers | 65 |
| 3.2 | Dissemination and exploitation of project results..... | 67 |
| 3.2.1 | Target groups & communication means..... | 67 |
| 3.2.2 | Exploitation | 71 |
| 3.2.3 | Dissemination..... | 73 |
| 3.2.4 | Network of common interest..... | 74 |
| 3.2.5 | Network for Procurement..... | 75 |
| 3.2.6 | Individual Partner Dissemination and Exploitation | 75 |
| 3.2.7 | Intellectual Property Rights..... | 82 |
| 4 | Section 4: Ethical Issues..... | 84 |
| 4.1 | Ethical issues identified..... | 84 |
| 4.2 | Legal Issues | 84 |
| 4.3 | Gender Issues..... | 85 |

Section 1: Scientific and Technical quality

1.1 Concept and Objectives

1.1.1 Concept

Memory institutions, in Europe and elsewhere, are facing a situation when transfers of electronic documents or other electronic media content for long term preservation are continuously increasing. This is one effect of the rapidly growing amount of digital information world wide. All these institutions have, as a consequence, to approach a number of challenges when assessing the quality of the electronic documents or media content to figure out if it is good enough to ensure long-term accessibility and usability. Although there are many software tools on offer intending to contribute to the progress of preservation tasks, their support status, quality, and reliability, etc are often too uncertain and unproven to be fully trusted and implemented in digital preservation workflows.

The metadata is normally stored in XML and specified in different schemas. XML is a stable and easily accessible standard, and the schema specifications, like METS, PREMIS, EAD, are controlled by the community of professional curators in digital preservation through different international boards and committees¹. The data content, on the other hand, is normally stored in specific file formats for documents, images, sound, video, etc, depending on the originating system. These files also contain a certain degree of metadata and are usually produced by software from different vendors. But, even if the transferred files with data content are in standard formats, the implementation of these standards cannot be guaranteed. The main reason is that software used for implementation of standards for producing electronic files is controlled neither by the institution that produces them, nor by the memory institution that holds the archive. As a result, the memory institutions have to make conformance tests before accepting transfers of electronic collections, but the software used to perform these tests are, in turn, not controlled by the institution. If the conformance tests do not provide positive results, the collection files have to be returned to the producer for corrections, and the transfer process starts all over again.

A situation like the one today, when conformance to standards is not guaranteed, will easily let costs rise out of control. But more serious is that data meant for preservation, passing through an uncontrolled generative process, can jeopardise the whole preservation exercise. Migration of data files can for example be more or less impossible to carry out with the authenticity and integrity of the files still in place. The problem addressed by PREFORMA is, therefore, how to guarantee that

¹ METS Board, PREMIS Editorial Committee, Society of American Archivists Technical subcommittee on EAD; see also the following web sites PREMIS: <http://www.loc.gov/standards/premis/>
PREMIS EC: <http://www.loc.gov/standards/premis/ma.html>
EAD: <http://www.loc.gov/ead/> TS EAD: http://saa.archivists.org/Scripts/4Disapi.dll/4DCGI/committees/SAACS-TSEAD.html?Action=Show_Comm_Detail&CommCode=SAA**CS-TSEAD
EAC-CPF: <http://eac.staatsbibliothek-berlin.de/>
TS EAC: http://saa.archivists.org/Scripts/4Disapi.dll/4DCGI/committees/SAACS-TSEACCP.html?Action=Show_Comm_Detail&CommCode=SAA**CS-TSEACCP
METS: <http://www.loc.gov/standards/mets/>
METS Board: <http://www.loc.gov/standards/mets/mets-board.html>
For standardisation groups that have their homepage hosted by the Library of Congress, see <http://www.loc.gov/standards/>

what is produced according to a standard, tested for conformity, and (if needed) re-processed for corrections, happens within a process that is under full control of the memory institutions or others with the intention to preserve in the long term electronic documents or other electronic media content.

Digitisation programmes performed by cultural heritage institutions are also leading to large volumes of “-in-house produced” digital content that needs to be safely stored, preserved and curated over time to allow for efficient resource discovery and reuse². The challenges in assessing quality of data are more or less the same as with transferred data files

The overall intention of PREFORMA project is to research critical factors in the quality of standard implementation in order to establish a long-term sustainable ecosystem around developed tools with a variety of stakeholder groups organised in a network of common interest. The tools should be innovative and provide a reference implementation of the most common file format standards for the assessment of the collections to be archived and for the correction of the collections.

1.1.2 Objectives

PREFORMA addresses the challenge of implementing good quality standardised file formats for preserving data content in the long term.

The main objective of the PERFORMA project is to give memory institutions full control of the process of the conformity tests of files to be ingested into archives.

The process of conformity tests guarantees that the content is produced according to standards and (if needed) the content is requested to be re-processed for corrections. PREFORMA aims to deliver a set of tools which enable this process to happen within an iteration that is under full control of the institutions.

This is in fact a basic requirement for memory institutions to be trustworthy in performing their preservation programmes.

For the PREFORMA consortium this challenge is very concrete, urgently needed to be solved, and jointly identified. Research and development in the field of standards implementation and its effects is just in its first phase and not many results are publicly disseminated outside the sphere of technology specialists and academics. However, in one way or another it is part of innovation plans of all memory institutions participating in the project.

Due to the need for sustainable long-term solutions, the overall objective of the PREFORMA project is not “artefact centric” but it aims instead to establish a long-term sustainable ecosystem around the developed tools to test conformity with standards. This ecosystem has to involve interested stakeholders from a variety of stakeholder groups, involving researchers, developers and memory institutions.

The specific objectives of the PREFORMA projects are to

- (1) Develop a set of tools that support a *reference implementation*

² The importance of long term preservation and its complementarities to digitisation efforts was highlighted in a report of the Comité des Sages (Reflection group on bringing Europe’s cultural heritage online; The New Renaissance, 2011, p. 6):

- (2) Set up a sustainable *network of common interest*
- (3) Improve the quality of *standards implementation*
- (4) Carry through *dissemination activities*

The project addresses preservation of digital information only. It does not address digitisation of content.

Below each of the four specific objectives is further described, and the specific work packages addressing them are indicated.

Objective 1 - Reference implementation

In the technical field, PREFORMA will develop and deploy an open source software licensed reference implementation for file format standards aimed for any memory institution (or other organisation with a preservation task) wishing to check conformance with a specific standard. This reference implementation will consist of a set of tools that we call (for planning purposes): “Abstract Conformance Checker”, “Scorer”, “Reporter”, “Abstract Fixes Suggester”. They will all be modular and validated against specific implementations of specifications of standards relevant to the PREFORMA project and used by the European memory institutions for preserving their different kind of data objects like documents, books, images and audiovisual records. In order to demonstrate effectiveness (and refine), these tools they will be developed in an iterative process with multiple releases and with a number of experiments with 'real' data sets (files) from memory institutions during each iteration.

The media types covered by the tender are: documents, images and audio-visual records.

The standards for each domain are: PDF/A for the documents, TIFF and/or JPEG 2000 for the images, M-JPEG 2000 and/or FFV1 and MXF for the audio-visual records. More standards can be further taken into account on the basis of the evolution of technologies and emergence of new standards.

Areas which will be covered by the tools developed by PREFORMA are (1) Preservation-relevant metadata (for documents, books, images and audiovisual records), (2) Particularly challenging types of digital objects (notably audiovisual records), and (3) Integration of digital preservation requirements in existing systems in order to increase their resilience against technological changes (workflow in memory institutions like libraries, archives and audiovisual institutions).

The reference implementation will be based on a reference architecture and work flow described below and refined by Work Package 2 for the tender. It will be implemented in work packages 5 -7 by the selected suppliers.

Objective 2 - Network of common interest

In order to achieve the main objective, a network of common interest will be set up with representatives from memory institutions, researchers and developers to take part in the assessment of results produced by suppliers in the CP part of the project. This network will be the base for a sustainable network of common interest existing beyond the EU funded period and aiming at encouraging future use and development of PREFORMA tools and services, possibly also via new future joint procurements.

The process followed by the project in community building and establishment of the network of common interest must be documented and made available for replication elsewhere. It will include:

- Conferences and conference proceedings and availability of regularly updated online information and documentation;
- Seminars and webinars, with podcasts of the proceedings;
- Meetings and presentations with representatives of the cultural heritage, ICT research, software developers, e-Infrastructures communities in member states beyond the consortium;
- Training materials created and training events delivered to non-consortium member states;
- Handbooks, recommendations and best practice guides, crystallising the results of the project and making them accessible and relevant to the widest possible audience.

Finally, through a careful and successful implementation of the coordination action, the standardisation aspects related to the PREFORMA project will be carried out, also in connection with standardisation bodies (e.g. ISO) and preservation initiatives (e.g. PRESTO Centre). The natural liaisons between standardisation processes and safe preservation plans will be enhanced contributing also to a wider knowledge of the standards issues among the cultural institutions and to a harmonious evolution of the standards themselves (see below).

The network of common interest will be handled by Work Package 3.

Objective 3 - Standards implementation

Fundamental concepts for achieving the overall objective are open file formats, open source software, and an open approach utilising these in combination.

Open Source software (OSS) is software that is licensed under a recognised Open Source license (Open Source Initiative, www.opensource.org). An inherent characteristic of OSS is that anyone that has adopted such software has the right to freely read, use, improve, and redistribute the source code for such software. In this project all developed software will be developed and released as OSS using established Open Source development practices with early and frequent releases of developed software and associated artefacts. The associated artefacts will also be released under appropriate open licenses (e.g. Creative Common licenses).

Open file formats are file formats which are provided under license conditions that allow for implementation in all existing Open Source licenses (recognised by the Open Source Initiative). This allows that each file format used in the project can be implemented and deployed as OSS components to be used in software systems at memory institutions.

The novel open approach to be developed during this project provides a necessary basis for long-term sustainable workflows through integration of an OSS component to be deployed in software systems at memory institutions. The OSS component implements open file formats and is supported and maintained by associated ecosystems (communities). The design of the OSS component allows for integration and deployment in new software systems that may be used as a pre-system at the memory institution, but also may be integrated in already existing (legacy) systems that are already used at memory institutions (assuming that an API is available in the legacy system that allows for integration of external OSS components). The project will establish an ecosystem related to the OSS component and the open approach which comprise a diversity of different types of contributors

and users from different stakeholder groups. Since the ecosystem will be established around the OSS component, the development in the project is also more broadly applicable even outside the archiving domain. Thereby, by allowing for participation from a broader contributor base, this is beneficial for strengthening the ecosystem in the archiving domain.

Ultimately, the open source licensed tools will be provided to all interested organisations as an Open Source web portal hosting (see below) the developed code. Supplement to this, there will be opportunities for commercial activities for interested companies to provide commercial offerings related to the Open Source software, but as the developed code for the file format tools will be provided under licensing conditions (both GPLv3 and MPLv2) which are appropriate for very long life-cycles it will minimise the risk for not being future proof and therefore support public sector organisations with a transparent and effective tool for validation of conformance.

This objective will be addressed during the project by Work Package 4 and for a long term perspective after the EC funding period by Work Package 3.

Objective 4 - Dissemination activities

PREFORMA will also disseminate the results of the project to the wider cultural heritage community, researchers and developers beyond the consortium, in order to enable them to benefit from the research of the consortium and from the work of the project.

The wide range of dissemination and outreach activities planned by PREFORMA – which include: the web presence of the project through specialised magazines (digitalmeetsculture.net); registration to the search engines; presence on the social networks; the international conference; presentation to public events – will have the effect to create interest by other memory institutions in the results of the project, enlarging the network of users and reinforcing the impact of the initiative.

The dissemination will have two main targets:

- the memory institutions, to inform them about the availability of the open source results of PREFORMA and to encourage new organisations to join the PREFORMA network of common interest;
- the technology providers, to foster their participation to the joint tender called by PREFORMA and the new tenders that are expected to be launched after the end of the EC funding period to continue the research started in PREFORMA.

In addition, the results of PREFORMA will be presented to other networks as well and national, regional and European projects, in order to contribute to a better and more spread delivery of the impact expected by the adoption of the PREFORMA results.

The dissemination will be taken care of by Work Package 4.

1.1.3 Reference architecture and work flow

Figure 1 shows the reference architecture and workflow of the PREFORMA project. Grey parts exist already outside the project; white parts are those to be built by suppliers as the CP part of the project. The architecture and work flow will be refined by Work Package 2 as part of the specifications of the tender.

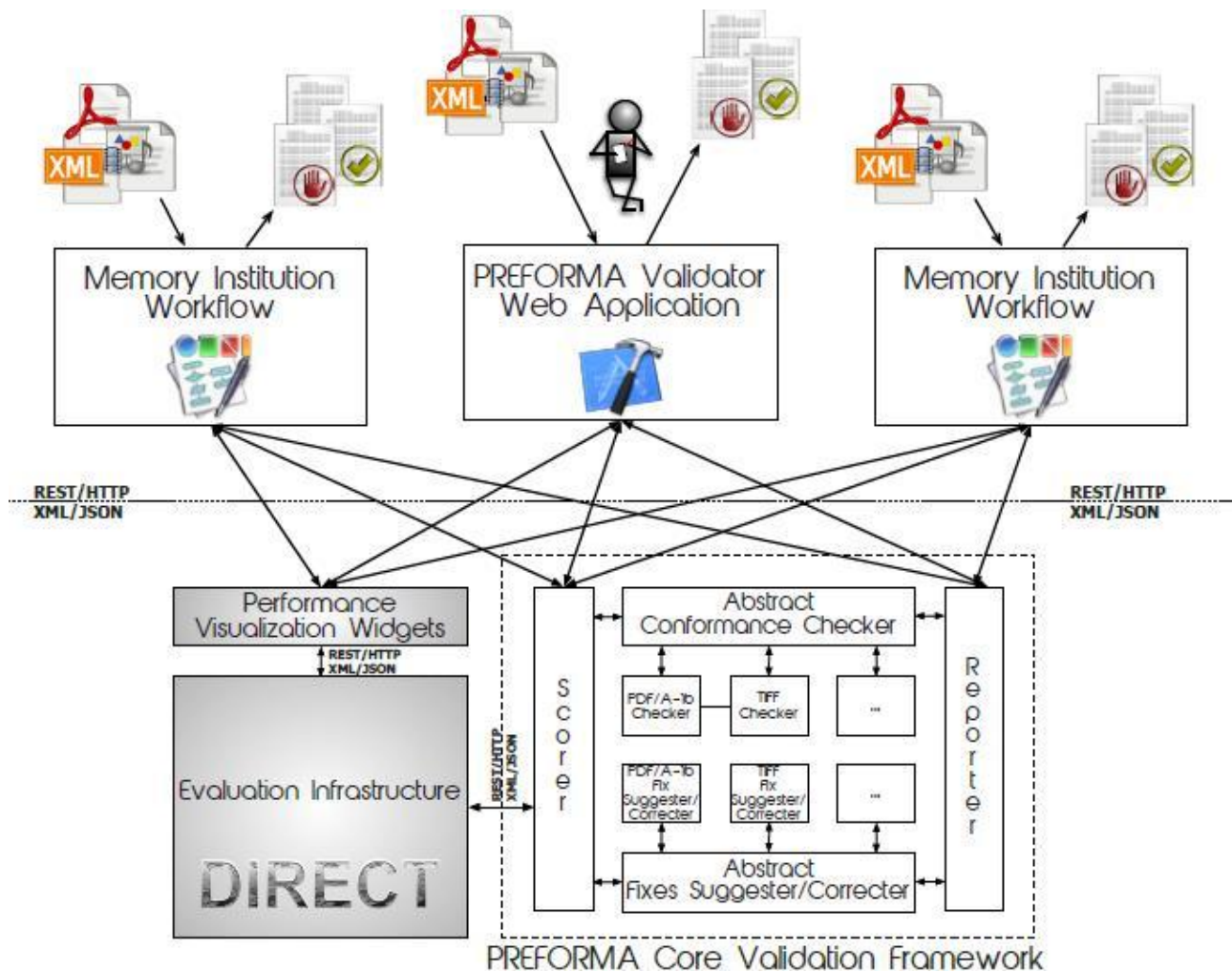


Figure 1: Reference architecture and workflow of PREFORMA.

The DIRECT Evaluation Infrastructure and the Performance Visualization Widgets already exist from previous project PROMISE Network of Excellence. They will be used to assess the new tools developed by the suppliers of the tender (which are in fact the results expected from the CP part of the project), i.e.: “Abstract Conformance Checker”, “Scorer”, “Reporter”, and “Abstract Fixes Suggester/Corrector”.

In addition, the software features of the DIRECT Evaluation Infrastructure and of the Performance Visualization Widgets will also be offered to the suppliers for storing and visualizing the outcomes of the new tools. It will be then a decision of the suppliers if they want to use these features or prefer to use different software.

The final artefact resulting from tender will be a Web application which coordinates the overall workflow from acquiring documents, analysing them, storing the outcomes of the evaluation (possibly, into the existing DIRECT infrastructure), to suggesting possible fixes, trying corrections, and generating reports.

The figure above is provided for illustrative purposes, only. It will be a task of WP2 to provide precise reference specifications for the tender and then tasks of WP5 and WP6 to develop the full technical architecture.

The architecture will be required to be designed as modular and as flexible as possible, allowing for clear extension points and plug ability. The “Abstract Conformance Checker” and “Abstract Fix Suggester” will be requested to provide a high-level interface for dealing with these two tasks while the actual implementation for a specific standard is then delegated to “drivers” specific for that standard.

Moreover, to facilitate building alternative applications and/or re-use of the produced data, the Validator Web Application will exploit a series of lightweight RESTful Web services which expose data in XML and/or JSON. This allows not only for building other Web 2.0 applications but also for exploiting alternative devices such as tablets.

The above two design choices will extend the reach and impact of the project beyond its specific objectives, since they turn PREFORMA into a more general framework for checking the conformity to document format standards, suggesting fixes and applying corrections, and reporting results of the test which can be extended to other domains than memory institutions and used as base for building innovative applications.

The basic workflow will be:

- the user selects a set of documents to be checked in the Validator Web Application;
- for each document, the Validator Web Application asks the Scorer to validate it
- the Scorer, in turn
 - o asks the Abstract Conformance Checker to check the document via the proper driver
 - o asks the Abstract Fix Suggester/Correcter to suggest possible corrections to the document via the proper driver, if needed
 - o stores the results of the validation (possibly in the DIRECT evaluation infrastructure, or others), for future access, annotation, and re-use
- the Validator Web Application receives back the results from the Scorer and uses the Reporter to generate a final report
- the Validator Web Application presents the final outcomes of the validation to the user
 - o it may also exploit some visualization widgets (histograms, tables, ...) already available in the DIRECT evaluation infrastructure

1.1.4 Open Source software repository

The project addresses archival support for a number of media types. The goal is - for each incoming file of any of these media types - to provide technical support for checking conformance against the technical specification of the file format as published by the standardisation organisation. To achieve that, three basic conditions have to be met.

1. Implementation and deployment of an Open Source software (OSS) component that provides support for conformance checking of files created in the file formats relevant for the three media types identified by project (i.e. document, images and audio-visual content).

2. Integration of the OSS component in a software system that is deployed in a specific usage context for field test at memory institutions.³
3. Validation and continuous improvement of the integrated OSS component in a pilot workflow.

Firstly, the OSS component employs an architecture where each file format is implemented as a separate OSS licensed module which can be developed and deployed independently. The architecture for the implemented OSS component allows that one or several modules (even beyond the file formats addressed in this project) can be included when deploying the component. The OSS component and each separate module is provided on an open platform (e.g. GitHub) and licensed under a copy left license that allows for use with software systems provided under different OSS and different proprietary software licenses.

Secondly, the OSS component, with one or several modules, is integrated in a software system which will be deployed, after the successful completion of the PREFORMA project, in specific usage context for field test at memory institutions. A website application will be developed in the project for testing and demonstration purposes.

Thirdly, representative sets of files provided by the memory institution will be used for validation of the software system in order to analyse effectiveness of the deployed OSS component. Two critical aspects of the performance of the OSS component are that it only accepts files which are in conformance with the specification, and that it only rejects files which are incorrect according to the specification of the file format. As files are processed in the workflow, feedback to different stakeholder groups will be provided based on analysis of the outcome of the conformance test performed for each file. In the production phase, after the successful completion of PREFORMA, feedback will be provided to: standardisation organisations (primarily aimed to improve the specification of the standard); providers of the OSS component and its modules (primarily aimed to improve the implementation and its conformance to the specification); providers of software systems in which the OSS component can be integrated (primarily aimed at improving the effectiveness of the OSS component as integrated in the work flow); users of the memory institution (primarily aimed at technical feedback on experienced problems of those organisations delivering files to the memory institution, and for obtaining experience with the OSS component in order to aid future improvements of the component). The overall purpose of the feedback is to obtain a basis for continuous improvement of the effectiveness of the OSS component when used in the workflow. Further, as part of the feedback, the OSS component will provide details on precisely what is incorrect in each file, but such information needs to be tailored to the needs of each specific stakeholder group. For example, technical details on exactly what in the file is non-conformant may be relevant for the provider of the software and the standardisation organisation, whereas a memory institution may be more interested in information concerning whether the file conforms or not.

³ To this regard, it is worth to note that the integration in the actual workflow of the memory institutions will not be part of the PREFORMA project and will be instead implemented as a follow-up of the project's results, after the EU funding period. For the purpose of testing and demonstration in the PREFORMA project, the provision of a web application will be requested to the suppliers.

1.2 Progress beyond the State-of-the-Art (relevant to CP part only)

1.2.1 State of the art in digital preservation

Definitions and strategies when preserving digital objects

The importance of preserving digital objects is well understood in today's society. Hardware and media obsolescence, lack of support for older computer formats, human error as well as malicious software can all lead to loss of digital objects. If several of these factors that are at hand, the higher is the probability that it will occur. Preservation, however, is not concerned only with sustaining single digital objects. To be used meaningfully in the future, digital objects should be preserved in context which makes them understandable to the future users.

Digital preservation is defined by the DigitalPreservationEurope project as “a set of activities required to make sure digital objects can be located, rendered, used and understood in the future”.⁴ A more comprehensive term ‘digital curation’ is often used in parallel with digital preservation. It has wider coverage and involves “maintaining, preserving and adding value to digital data throughout its life-cycle”.⁵ The key challenge in preserving usability of digital objects over time is overcoming technology obsolescence but a set of other issues around managing collections of digital objects is also involved.

There are several strategies for sustaining the use of digital objects in the future:

The *techno-centric strategy* aims to preserve original hardware and software in a usable state in the future. It involves regular storage media renewal to make sure that the physical digital objects are not corrupted.

Incremental change relies on either migration of digital objects into new formats or preserving the formats of the digital objects and using emulation to be able to use them. The migrations strategy normally uses standardized file formats which are repeatedly converted to keep up with present technical generation. The emulation strategy preserves the original file formats and uses emulation at alternative levels. During technical generation changes either to the original software, the original operating system or the original technical platform is emulated into the new technical environment, in the latter cases combined with preserved original software.

Analytical strategies are currently based on techniques used in computer forensics. The underlying logic for this strategy is to apply specialised methods for recovery of objects which are in demand in the future instead of ‘mass preservation’ which does not seem realistic, having in mind the volume of digital information.⁶

Yet another strategy seeks for ways of changing the formats of the digital objects in a way which allows the objects themselves to invoke preservation actions. Such objects are some times called *durable digital objects*.

⁴ <http://www.digitalpreservationeurope.eu/what-is-digital-preservation/>

⁵ <http://www.dcc.ac.uk/digital-curation/what-digital-curation>

⁶ The pioneering work in this domain was called *digital archaeology*

The first three strategies require rigorous organisation of processes in organisations; the fourth one is still under development. All these strategies outline the principles of preservation; in practice they are implemented within archival lifecycles that integrate various tools and/or services. These lifecycles can be specific to organisations, depending on the type of objects they hold and their target users.

Of these strategies the Migration strategy for long time has been the dominant one. Combined with the OAIS model - see below - it is used by most institutions working with digital preservation. Standardized file formats are normally used for digital objects to preserve. To avoid technical obsolescence the digital objects are converted to new standardized file formats at technical generations changes. These conversions are expected to be done without information losses. To be able to achieve that it is of vital importance to fully control the file formats, which is the core problem PERFORMA is addressing.

Stages of the digital archive life-cycle

The diversity of digital objects and types of institutions that are responsible for their preservation create a variety on the level of tools used in practice, but the underlying process could be described as universal. The pivotal standard in the domain, ISO 14721:2003 Space data and information transfer systems – Open archival information system – Reference model, widely known as the OAIS model, is a functional framework that presents the main components and the basic data flows within a digital preservation system. It defines six functional entities that synthesise the most essential activities within a digital archive: ingest, preservation planning, archival storage, data management, administration and access. Recently, these six stages have been combined into smaller numbers of use-cases that preservation systems address, e.g. a report of four major national libraries in Europe looks at three core functions – ingest, retention and access.⁷

The OAIS model looks at data stored in the digital archive as a fluid object that can (co-)exist as three types of information packages – submission (SIP) is used to transfer data from the producer to the archive, archival (AIP) is used for the archival storage and preservation, and dissemination (DIP) is used within the access function when consumers request archived materials.

As a reference model, the OAIS standard does not imply a specific design or formal method of implementation. Instead, it is left to the users of the standard to develop their own implementation by analysing existing business processes and matching them to OAIS functions. One of the confusing aspects for practical implementation has been the lack of active digital preservation (e.g., migration, emulation) as a separate functional entity. Other models of the digital preservation process have been developed that do include the active digital preservation processes as well. But, regardless of which model is followed, the preservation function is always interconnected with a number of other functions that together form the digital archive.

Over the past decade, automation of preservation functions has mainly been seen within the context of holistic software solutions that provide digital collection management as well as digital preservation tools. The digital repository software or digital archive software solutions have dominated the preservation software market while not always providing support for active digital preservation. Since digital repository software has been available as open source, it has become

⁷ BL, KB, DNB, NB, 2010.

very popular, especially for research libraries as ‘institutional repositories’. Companies, like IBM,⁸ Tessella,⁹ ExLibris¹⁰ and others, have developed dedicated software systems for digital archive management. While very practical as digital collection management tools, not all repository software solutions offer support for long-term digital preservation.

The challenges addressed by PREFORMA are in first place targeted towards the OAIS Ingest functions. These functions are here presented as two stages: preparation and transfer.

Preparation for Ingest

In the area of creation and appraisal of digital objects there are three identifiable major work areas:

- Standardisation of the communication between the information producer and an archive;
- Development of tools supporting generation and transformation of metadata; and
- Development of tools for automated or semi-automated appraisal of data.

These are three very different tasks and typically solved with diverse tools that can be integrated into larger systems for preparation of digital objects at the ingest stage.

Several standardisation efforts exist to link the OAIS reference model with tasks carried out prior to information is handed over to the archive. The Producer Archive Interface (PAIMAS) specification¹¹ was developed as a recommendation identifying, defining and providing structure to the relationships and interactions between a Producer and an Archive. It identifies four phases in the process of transferring information, suggests actions which should be carried out during each phase, and provides a general framework which facilitates the identification and/or development of standards and software tools to be used within the ingest process. A more detailed breakdown of the pre-ingest activities was proposed by the Public Record Office of Northern Ireland (PRONI)¹² that synthesized their experience. The PRONI approach foresees preliminary research on information needed for archiving of records (including file formats, metadata, migration, appraisal and access), which precedes the four stages suggested in PAIMAS.

While the PAIMAS standard looks at the formalised steps in communication between the producer and the archive, it does not detail how the preparation of the digital objects for ingest should take place. The range of tasks that are needed prior to transfer to an archive depends on the specific situation – what are the digital objects, what metadata they have, is there need to convert objects, their metadata, or both. The need for automating such processes is also obvious, because human processing of single objects on mass scale is not viable.

In short it can be concluded that there exists a number of metadata generation and file format transformation tools, but what is essential is to establish solid comparison criteria for their quality and performance. Many of these tools are developed as research pilots and need to be further adapted for use in institutional practice.

The pre-commercial solutions that PREFORMA will procure through the tender procedure will be based on these results and will improve their robustness, scalability and modularity. An analysis of

⁸ <http://www-935.ibm.com/services/nl/dias/>

⁹ <http://www.digital-preservation.com/>

¹⁰ <http://www.exlibrisgroup.com/category/RosettaOverview>

¹¹ (PAIMAS, 2004)

¹² (Smyth, 2006)

existing solutions will therefore be conducted by WP 2 in the specification of functional requirements (Task 2.2).

Transfer and Ingest of digital objects

The OAIS standard describes Ingest as the functional entity that encompasses all functions required for transfer and archiving of digital objects in an archive. This is combined with a change of responsibility for the preservation of digital objects because the materials are signed away into an archive with contractual or administrative agreements. From this point of view, the Ingest covers in parallel two separate activities:

- Technical processing to prepare digital objects for archiving and to transfer them to the archive.
- The contractual coverage of preservation-related activities.

The most important aspects for digital preservation at this stage are:

- File formats that determine the necessary technical steps during ingest;
- Authenticity, integrity and provenance data on digital objects as well as metadata;
- Completeness of metadata accompanying digital objects and the need to enhance metadata;
- Various transformations of objects that may be necessary for the export-import between software systems (the producer and the digital archive).

Further sub-divisions of the ingest process exist, for example, the Cost Model for Digital Preservation (CMDP) project in Denmark that uses eight separate ingest tasks.¹³ The Ingest framework developed within the SOAPI framework¹⁴ has a different structure and concentrates on the technical side of the Ingest. There are also examples of looking at Ingest as a set of services.¹⁵

These examples show that the composition and sequence of ingest activities differs considerably from institution to institution. This makes orchestration of smaller tools into solid workflow solutions a complex task.

PREFORMA will contribute to address this task and to make it more affordable to memory institutions.

Digital preservation in a European context

Member States have taken the position that the preservation task should be their responsibility. Therefore, each Member State is developing and implementing its national preservation strategy, which includes the preservation of digital master copies that takes place at national memory institutions or at other public institutions which are the direct responsibility of governments. National frameworks that regulate this area, like rules on legal deposit and the handling of public records exist and the publishing sector is also involved (especially with regard to the born digital material).

However, there are many commonalities that exist among the national preservation strategies which demand to be addressed in common and in a coordinated manner among memory institutions, the

¹³ (Kejser et al., 2011, 7-8)

¹⁴ <http://www.e-framework.org/Default.aspx?tabid=1007>

¹⁵ A very straightforward definition of Ingest services is provided in BL, KB, DNB, BN (2010) *Long-Term Preservation Services*. A description of LTP services in a Digital Library environment, p.13

Member States of the EU and more generally internationally in order to share solutions and to contribute to interoperability and openness. Furthermore, the problem of preserving digital cultural heritage content is common to all the cultural institutions in Europe and beyond but it is at the moment, addressed by individual projects, without really any shared approaches. Often the same problems are studied repeatedly and successful solutions are unknown by others working on the same issues. In fact, there are several R&D projects as well as e-Infrastructure initiatives¹⁶ that are producing interesting technologies and national, regional, European and international best practice, technical solutions and implementation approaches that must be exploited while planning for preservation in the cultural domain. Also, the preservation of digital information is an on-going action, to be periodically revised, in order to update data sets and metadata formats. These are time consuming activities, in particular if carried out independently by each cultural institution. Common procedures and workflows, shared internationally, would reduce the cost both in terms of time and money to be allocated to this task and would contribute to the general interoperability and openness of scientific data which is stated as the priority for the global knowledge society. The PCP approach will answer to these requirements: the joint procurement of the CP part copes with the need of a European dimension of the research; the activities planned in the CSA part cope with the need of cooperation and coordination with other existing initiatives.

The importance of long-term preservation and its complementarities to digitisation efforts was highlighted in the report of the Comité des Sages (Reflection group on bringing Europe's cultural heritage online) that clearly stated the digital preservation mandate of memory institutions.¹⁷ Important is also the EC Recommendation on digitisation and online accessibility of cultural material and digital preservation¹⁸ published by EC on 28/10/2011. The large participation of memory institutions to PREFORMA is in line with these policies

The attention and commitment of the EC to the research and development in the domain of digital preservation was highlighted at the expert workshop The Future of the Past, which was held in Luxembourg in May 2011¹⁹. This workshop discussed previous research agendas in the domain of digital preservation and formulated 13 potential research topics of high relevance to the future development of the domain. Amongst these were complex objects, standards and integration of digital preservation with digital asset management – areas where PREFORMA will provide contribution for the digital heritage domain.

1.2.2 Standardised formats in digital preservation

The following text gives some examples of standardised formats often used by memory institutions and challenges connected to the use of them.

¹⁶ Among others APARSEN, SCIDIP-ES and DCH-RP can be mentioned.

¹⁷ The New Renaissance, 2011: 6

¹⁸ Full text of the recommendation is available online at:

http://ec.europa.eu/information_society/activities/digital_libraries/doc/recommendation/recom28nov_all_versions/en.pdf

¹⁹ Billenness, C. (2011) The Future of the Past, Report on the Proceedings of the Workshop, European Commission, Luxembourg, 4 – 5 May 2011. Available: http://cordis.europa.eu/fp7/ict/telearn-digital/future-of-the-past_en.pdf

Document formats

Public authorities and other institutions producing electronic documents and media content on national level are normally using open standards adapted to specific requirements to produce their electronic files. PDF/A, and its different versions, is for example the standard mostly used by archiving institutions for electronic documents.

PDF/A is an ISO standard supported by a number of computer platforms. More and more software products have encapsulated PDF export functions, for example OpenOffice.org and Microsoft Word 2007. The mostly used reader is probably Adobe Reader but other free alternatives are also available on different platforms, and commonly used on Linux-based systems (e.g. the open source readers Okular and Evince, which both use the open source component Poppler for rendering PDF files). For producing PDF, Adobe Acrobat and Adobe PDF Library are likely to be the most popular programmes. There exists a variety of PDF formats aimed for different areas of use, including e-books and printed products.

- PDF/X-1a:2001, PDF/-1a:2003, PDF/X-3:2002, PDF/X-3:2003, PDF/X-4:2007 are ISO-standards for producing printed matters.
- PDF/A-1:2005 is a ISO-standard for PDF as archiving format (based on PDF 1.4).
- PDF/E-1 (ISO 24517-1:2008) is a ISO-standard for drawings and other kind of technical documentation (based on PDF 1.6).
- PDF 1.7 (ISO 32000-1:2008) is a ISO-standard to be used in general (based on PDF 1.7).

The introduction of new PDF versions has always been connected to the introduction of new versions of Adobe Acrobat.

- PDF 1.1 (Adobe Acrobat 2.0)
- PDF 1.2 (Adobe Acrobat 3.0)
- PDF 1.3 (Adobe Acrobat 4.0)
- PDF 1.4 (Adobe Illustrator 9.0 and later Adobe Acrobat 5.0)
- PDF 1.5 (Adobe Acrobat 6.0)
- PDF 1.6 (Adobe Acrobat 7.0)
- PDF 1.7 (Adobe Acrobat 8.0)
- PDF 1.7, Adobe Extension Level 3 (Adobe Acrobat 9.0; interpreted as PDF 1.8 by Acrobat)

The problems for PREFORMA to research in and tackle are mainly of two kinds of “lock-in” situations²⁰ that seriously can affect the possibilities to use PDF/A.

- Semantic information that is embedded in the PDF-files can sometimes only be read by readers that support the software that created the programmes that has produced the files
- Some fonts are closed in the sense that they need a specific licensing to be allowed to be distributed

Image formats

TIFF is the preservation format most often used by memory institutions for still image digitisation. The digital images are mostly created in two ways: either by digital photography and scanning. Two

²⁰ Lundell, B. (2012) Why do we need Open Standards?, In Orviska, M. and Jakobs, K. (Eds.) Proceedings 17th EURAS Annual Standardisation Conference 'Standards and Innovation, The EURAS Board Series, Aachen, ISBN: 978-3-86130-337-4, pp. 227-240.

aspects need to be considered: the file format and the metadata (administrative and technical). Between the workflow of the photographers (image manipulation) and the storing of preservation masters there is need for a stricter control.

Although validators do exist, among which JHOVE2²¹ seems to be the most accepted or promising, a suite integrating the different aspects needed by memory institutions would be of highly valued. The open-source JHOVE2 project generalizes the concept of format characterization to include identification, validation, feature extraction, and policy-based assessment. The target of this characterization is not a simple digital file, but a (potentially) complex digital object that may be instantiated in multiple files. It is clear that extending this tool with automatic or semi-automatic correction possibilities would largely contribute to a better repository. Since the end of 2012 a specific branch “JHOVE2-TIFF” exists.²² While “identification” and “validation” map already nicely with the PREFORMA demand on File Compliance, the tools for correction and the integration with existing software should be addressed in this project.

Audiovisual formats

The Material eXchange Format (MXF) is a container format for professional digital video and audio media which is developed and maintained by audio-visual industry, particular for postproduction and distribution purposes. In the near future, memory institutions will have to deal with very large numbers of these files that will be produced by software that claims to support the specific format. However, the practical use of MXF reveals a wide variety of implementations, often adapted to particular post-production and distribution context. Although this variety puts a huge burden on the use of MXF as a preservation format, several memory institutions consider using the MXF container as a preservation format because of the technical possibilities the format offers to organise content within one container. (FADGI Application Specification AS-AP (rev 1.k) MXF Archive and Preservation Format http://www.digitizationguidelines.gov/guidelines/MXF_app_spec.html). By using the industry standard container, these memory institutions adopt a pragmatic approach dealing with the huge volume of digital files they have to ingest, by avoiding extensive transcoding and rewrapping the audiovisual content. However, other institutions address technical and legal issues regarding the use of MXF, and therefore consider it an inappropriate format for long-term archiving (TAM-Arkiv, 2010). Although the format is considered an open file format by standard bodies such as SMPTE and EBU, the specification has not been published under an open license, as expected by policies in a number of European countries (e.g.. the UK, Netherlands, Sweden etc.), promotion of such a file format imposes further challenges.

From a practical standpoint for the PREFORMA project, the closed standardisation process (with a significant fee for participation) and the significant fee for getting access to the technical specification of the standard is a major obstacle for any small company or Open Source project wishing to implement and build an open feedback process related to their implementation of the standard. Further there is also an additional uncertainty for the PREFORMA project concerning the

²¹ JHOVE2: <https://bitbucket.org/jhove2/main/wiki/Home>

²² <https://bitbucket.org/slabrams/jhove2-tiff/overview>

outcome of legal negotiations related to the use of the file format (which includes production of files in the format and republication of implementation notes related to the specifications).

1.2.3 Challenges for suppliers

In the sections above some gaps are identified. They can be summarised as an urgent need for File Compliance, File Corrections and Software Conformance. The PREFORMA way to address these needs is to guarantee that what is produced according to a standard, tested for conformity, and (if needed) re-processed for corrections, happens within an iteration that is under full control of the memory institutions or others with the intention to preserve electronic documents or other electronic media content long term.

The suppliers have, therefore, to develop tools with a high level of automation and self-reliance that can provide a reference implementation of file format standards used for data objects. We call these tools “Abstract Conformance Checker”, “Scorer”, “Reporter”, and “Abstract Fixes Suggester/Correcter”. They shall all be modular and validated against standards mostly used by the European memory institutions for preserving their different kind of data objects like documents, books, images and audiovisual recordings. In addition, PREFORMA will establish feedback processes to relevant standardisation organisations for each open file format used in order to resolve any potential ambiguity in specifications of open file formats. Such feedback includes implementation notes and details on precisely how the specifications have been interpreted by the suppliers.

Today, there are tools on the market to deal with compliancy, but in many cases this doesn’t actually mean compliancy with the standard specification but rather compliancy to run on particular platforms in a system. PREFORMA will require suppliers to deliver a solution that supports compliancy tests in a vender-neutral way and, in cases when a wrapper format contains non-open file formats, provide open source licensed migration components for transformation into open file formats as part of the solution.

As PREFORMA will develop Open Source software, the project will work on specifications that are royalty free. Therefore the PREFORMA project will address technical and legal challenges related to so called “less” open file format specifications and consider the need for developing migration strategies to open file formats in order to establish sustainable ecosystems for software that meet the needs for long-term preservation by memory institutions.

A range of requirements to control and assess the quality of the implementation of standard formats have been discussed in the previous sections, demonstrating that there are still demands that are not answered by the current state of the art and that new R&D work is necessary.

PREFORMA aims to progress in this direction: the demands from the memory institutions should be addressed by developing new technologies and by integrating these technologies into innovative tools.

This represents a domain of challenges that the suppliers participating to the tender will have to meet, with the final complementary goal to achieve more advanced positions in their respective competitive markets.

1.3 Co-ordination of High Quality Research

1.3.1 Triple-Helix Collaboration

The PCP format of the project directly facilitates triple-helix collaboration between the project partners from academia and memory institutions, and industrial suppliers of solutions. This is essential, since the area of ensuring correct implementation and use of long-term sustainable data formats requires research on which formats to use, how to ensure that software for using them will be available in the far future. At the same time, only the suppliers can know what types of solutions are feasible and affordable in the near-to-medium term.

The triple-helix collaboration will be extended beyond the consortium partners, by establishing a sustainable network of stakeholders (WP3), in order to create a long-term partnership for promoting wide use of the necessary open data formats and open software for ensuring compliance of archived files.

The academic partners within and outside the consortium will participate in the Open dialogue with potential suppliers before the tender is issued, so that the memory institutions involved in the tender process can benefit from their scientific expertise. The memory institutions within the consortium will define the functional requirements based on the outcome of the Open dialogue. The Open dialogue preceding the Call for Tenders will start with the pre-announcement of the tender and include an information event for exchange with potential suppliers in month 4 (possibly in Brussels).

For the researchers, this creates clear focuses on recommended file formats that can be analysed with regards to openness, sustainability and other important principles which are necessary for ensuring successful long-term digital preservation.

For the memory institutions, this creates opportunities to pool resources in obtaining advanced and innovative tools for checking proper file format compliance at the time when data collections are to be ingested into archives.

For the suppliers, this reduces fragmentation for their market, enabling them to develop single solutions for a big market and to be more aware and closer to the actual demand of their customers.

1.3.2 Open-Source Approach

By employing an open source approach, a catalyst is created for high-quality research and development of tools for ensuring file format compliance with standards. The open source nature ensures long-term availability of the software, independent of the memory institutions and suppliers involved in the PREFORMA PCP. This approach allows for building of a sustainable research & development community from the start of the project.

Specific research will be targeting the viability of different open source licensing models²³ through stakeholder analysis and literature studies, exploiting the larger scale of the development enabled by the PREFORMA PCP.

²³ Please, refer to the paragraph about Open Source in section 1.1.2 for further discussion on this matter.

1.3.3 Standardisation

The PREFORMA PCP enables to increase the impact of the standardisation activities, by creating a European forum for researchers and memory institutions dealing with digital preservation.

The way standards are typically implemented makes the usability of them not as evident and crystal clear as it appears in common language. As an example, the LibreOffice Open Source project claims that they provide interoperability with products that implement a file format that is somewhat different from the ISO standard and which is implemented in software systems provided by the dominant company for the specific file format.²⁴

Further, the EU has done some work on in its Digital Agenda, Action 23 (Provide guidance on ICT standardisation and public procurement) that may give guidance.²⁵

In the document "D2 – Overview of Procurement Practices: Final Report" it says:²⁶

- In issue 2.35 (page 15): "The use of standards will not necessarily solve interoperability or lock in problems. Vendors are still able to maintain high switching costs even with standards and thus reduce the scope for a level playing field among suppliers by locking-in their customers to their particular implementation of the standard (e.g. if the supplier interprets the standard in a different way.)"
- In issue 2.42 (page 16): "Whilst standards that are set through formal standard setting organisations go through a formal development process, they may still contain barriers to implementation by all interested parties, may not be widely implemented by the market, or may not be implemented accurately according to the specifications. This could result in products that despite claiming to implement a standard are not interoperable with other products implementing the same standard"

In short

- There can be a fundamental difference between a specification of a standard and the implementation of the specification of a standard in a software system.
- There is an inherent complexity in any statement about the extent to which a specific standard is "implemented" in a specific software system

The PREFORMA PCP will ensure the necessary adherence to standards for files that are ingested to archives, and implicitly help increase the quality of research and development of new file-generating tools by beginning to test them for conformance early, long before they start being widely used.

1.3.4 Building Critical Mass

The PREFORMA PCP will build sufficient critical mass, both in terms of financial resources allocated to the tender and in terms of different memory institutions from different European countries, to attract strong interest from both industry and researchers.

²⁴

https://wiki.documentfoundation.org/LibreOffice_OOXML#Why_does_LibreOffice_offer_to_read.2C_edit_and_save_documents_in_OOXML.3F

²⁵ http://cordis.europa.eu/fp7/ict/ssai/study-action23_en.html

²⁶ <http://cordis.europa.eu/fp7/ict/ssai/docs/study-action23/d2-finalreport-29feb2012.pdf>

The project has from the very start a critical mass represented by 14 partners, ranging from academies, memory institutions (covering different types of content: archives, libraries and AV) and governmental bodies, SMEs and almost 3 million EUR be invested in a very focused action.

Short/medium term, this mobilises resources from both memory institutions, industry and academia to engage in an *Open dialogue* about the functional requirements and file formats to target for the tender to be issued within the project. This facilitates faster and more effective research during the lifetime of the project. The contribution of the associate partners to the project as well the wide dissemination campaign and the final international conference will support such dialogue from a concrete point of view.

Long-term, the sustainable network that will be extended through activities in WP3 creates a European forum for further PCPs and commercial tenders, helping keep this important area for public memory institutions supplied with suitable software for ensuring file format compliance in archived data collections.

1.4 Time schedule for the procurement process and planning of the phases

The procurement process is implemented in WP2 and is based on the following phases:

- Preparation of the tender, including planning, coordination of the procedure, definition of the framework contract (task T2.1)
- Definition of functional requirements (task T2.2)
- Definition of technical specifications (task T2.3)
- Definition of the selection criteria (task T2.4)
- Pre-announcement (task T2.1)
- Publication of the call (task T2.1)
- Closing of the call after two months of publication (task T2.1)
- Selection of the six suppliers who will sign the contract (task T2.4)
- Negotiation and contracting with the suppliers (task T2.1)

The following figure illustrates the time schedule of the procurement process.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---------------------------------------|---|---|---|---|---|---|---|---|---|----|
| Tender preparation | | | | | | | | | | |
| Pre-announcement | | | ↓ | | ↓ | | | | | |
| Publication | | | | | ↓ | | | | | |
| Tender closed | | | | | | | ↓ | | | |
| Selection | | | | | | | | | | |
| Negotiation & Contracting | | | | | | | | | | |
| CP subcontracts ready to start | | | | | | | | | | ↓ |

The call for tender and the actual progresses in the implementation of R&D work will be promoted within the target communities by WP4.

Once the contracts with the suppliers are signed, WP8 will continue along the whole duration of the work of the suppliers support and monitor the work of the suppliers.

Six suppliers will be selected by the tender procedure, two for each media type.

At the end of the design phase, one supplier for each domain will continue with prototyping and testing phases.

The selection of the three suppliers that continue is based on the competitive evaluation strategy defined and implemented in WP8.

1.5 Coordination Activities and Work Plan (CSA part)

1.5.1 CSA Workplan Strategy

In the PREFORMA Coordination and Support Action (CSA) part, the PREFORMA memory institutions will specify requirements and performance criteria for issuing an open tender to procure suppliers as partners in the Collaborative Project (CP) part (see section B1.6). Critical mass for attracting suppliers will be brought to the table by the PREFORMA partners themselves, attracting also interest from non-PREFORMA memory institutions to join a sustainable network of public procuring organisations and researchers.

The proposed co-ordination mechanism will progress the culture of co-operation that exists between the PREFORMA partners and extend it to external stakeholders, for achieving much improved quality on the tools available for memory institutions to ensure file format compliance and software conformance for long-term digital preservation use. At the same time, PREFORMA sets an example for how pre-commercial procurement can be used effectively for creating commonly needed tools for memory institutions.

The CSA part is also responsible for the overall PREFORMA project management, and for wide dissemination of project results. In particular, dissemination of the results of testing commonly available content generation tools for standard file formats will contribute to better future standards that are easier to implement in a conforming manner. In addition, the analysis of how the most commonly used archival file formats can be implemented under open source (copy-lefted) licences will highlight the importance of open standards allowing future-proof open source licensing alternatives.

Project Phases

The CSA part has a number of phases:

1. **Requirements** phase (M1-M5) – Financial and legal aspects will be elaborated among the partners and external stakeholders in an Open dialogue activity. Milestones: PREFORMA web site that will also host the call for tender. Information event at month 4 (possibly in Brussels)
2. **Procurement** phase (M5-M10) – The PCP tender will be published and offers evaluated, and individual framework contracts will be awarded to the selected suppliers. Milestone: Suppliers selected and contracts signed.

3. **Network Expansion** phase (M3-M48) – Starting from the PREFORMA memory institutions and academic partners, and the organisations that have signed letters-of-interest during the preparation of the proposal, more stakeholders will be invited to act as a reference group during the project (some of them will participate also to the Advisory Board and will contribute to the peer review of key project’s deliverables), with the aim of establishing a sustainable long-term network of common interest, for pre-commercial and commercial procurement for digital preservation.

4. **Outreach** phase (M30-M48) – The project results will be disseminated widely, aiming to gain broad acceptance for use of the resulting open source tools, for recruiting more stakeholders to the PREFORMA network of common interest and to contribute to the coordination of the research in this domain. Preparation and organisation of the final conference is part of this phase.

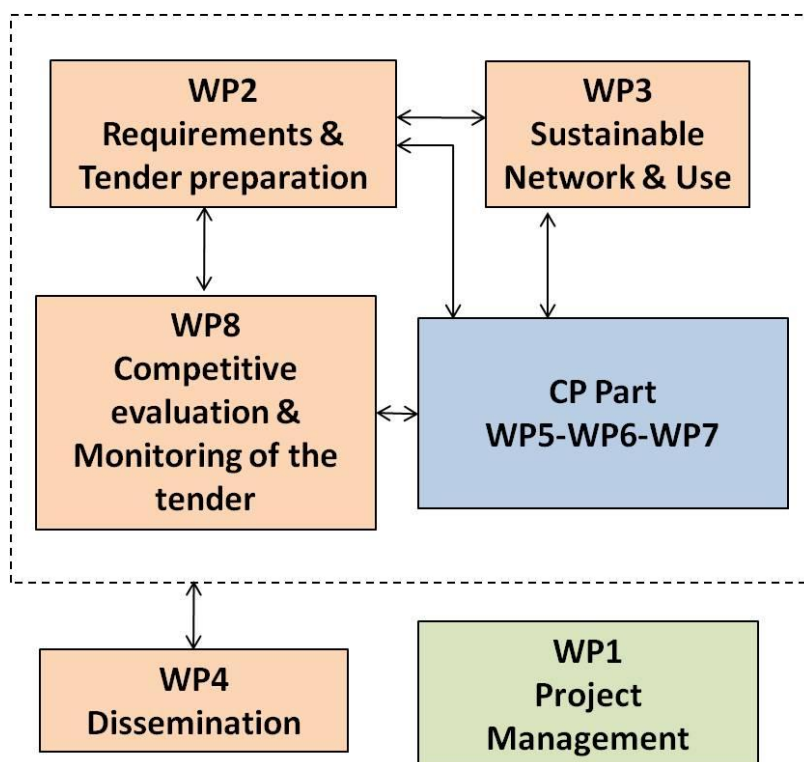


Figure 2: Dependencies between the work packages in the CSA part

The tender specification created by WP2 will serve as first input to the PREFORMA network of common interest managed by WP3. This network will act as a reference group for the joint RTD Collaborative Project (CP). The execution of the tender will be monitored by WP8 where also the competitive evaluation for the selection of the 3 suppliers who continue after the Design phase will take place. The WP4 dissemination will serve the whole project.

The overall WP timing is illustrated below. The initial Open dialogue will generate a roadmap that enables WP3 to start recruiting more external stakeholders to its network of common interest that will participate in the Open dialogue until WP2 publishes the tender. WP3 will continue to facilitate interaction between PREFORMA partners and external stakeholders until the end of the project, aiming to establish it as a long-term sustainable network for procurement among memory institutions and researchers.

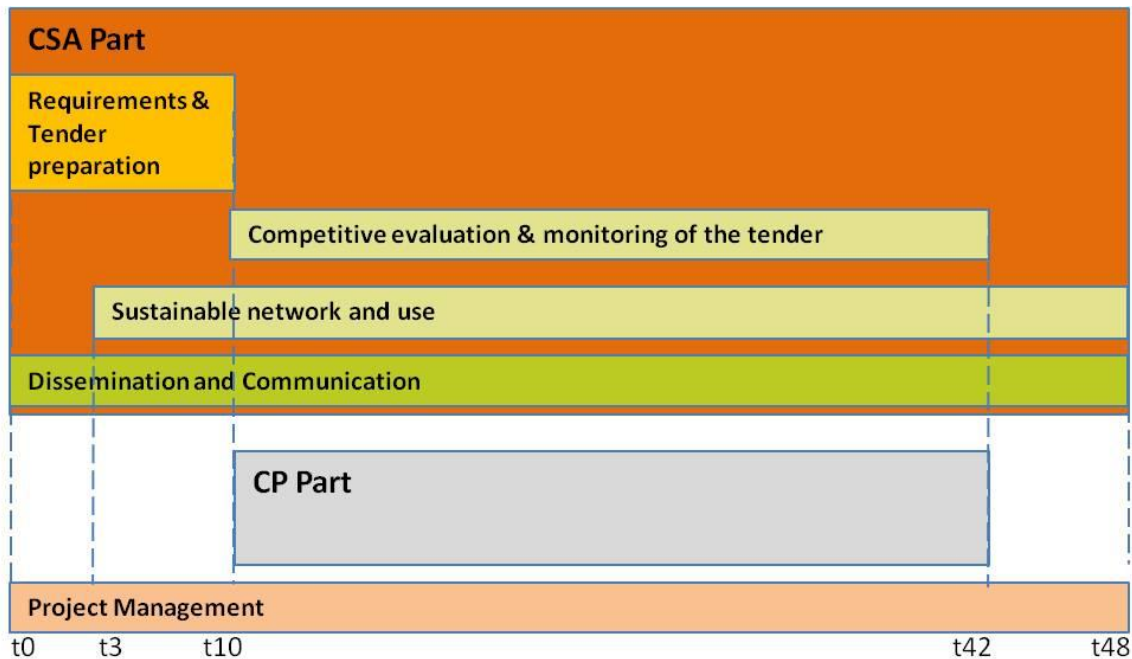


Figure 3: Overall timing of CSA work packages and the CP part

1.5.2 CSA Risks and Contingency Plans

The Project Management Team will maintain a Risk Management plan as part of its periodic meetings. Risk Management is described in section 2.1.7.

The Risk Management Plan aims to:

- identify those risks which might impact the project;
- ensure that each risk is analysed for probability and impact;
- ensure that there is an agreed containment plan for each risk (the proposed plan may be not to do anything for an identified risk);
- identify an appropriate contingency plan (as part of the containment plan) for high risks;
- allocate ownership for the risks and its containment plan typically to a Work Package leader.

Below the very first Risk Management Plan for the CSA part of the project is presented. It will be brought up-to-date at the start of the project and also reported in new versions in the Annual reports and in the Final Report.

| Risk | Probability 1-5 | Impact 1-5 | Score P x S | Action to Prevent/Manage Risk |
|-------------------------------------------------------------------------------------------------------|--------------------|---------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Organisational | | | | |
| Lack of organisational coherence | 2 | 3 | 6 | Could be caused by one or more specific underlying reasons ranging from communication difficulties to particular staffing difficulties at one or another of the partner organisations. Initially, the chances of this will be minimised by ensuring that the PREFORMA is built on the strengths and experience of each partner organisation. Subsequently this can be minimised by ensuring the use of Consensual values within the PREFORMA A strong management structure Effective use of communications technology Frequent planning and review. |
| Lack of consensus with community on direction | 2 | 4 | 8 | The success of the PREFORMA will depend heavily upon the level of participation and acceptance from different stakeholder groups, in the CSA part from the memory institutions and their engagement in the PREFORMA network of common interest. Therefore, the process to organise such a network will start immediately. Also, the contributions from the Advisory Board will help to face this risk. |
| Difficulty in coordinating the consortium due to diversity in terms of culture and areas of expertise | 1 | 4 | 4 | PREFORMA will use modern tools for communicating at a distance. All work material will be available in a project portal. This system will provide easy access to project files, contact information and meeting scheduling. |
| Loss of focus or departure from original aims | 1 | 3 | 3 | Strong management structure, with regular planning reviews. Ensure that appropriate |

| | | | | |
|----------------------------------------------------------------------------------------------------------------------|----------------------------|-------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | evaluation and QA procedures are in place. |
| Failure to get adequate buy-in among the memory institutions | 2 | 4 | 8 | Identify memory institutions that play a key role and therefore need to be involved. Increase the number of them that sign a letter of intent. Monitor progress in developing links with memory institutions as part of regular management meetings. |
| Delays in the work caused by failure in the consortium to recruit sufficient staff from start of the project. | 1 | 4 | 4 | The consortium members have before the project starts a clear view of their respective role in the project which makes it possible for them to engage the competences that are needed. |
| Technical | Probability 1-5 | Severity 1-5 | Score P x S | |
| Failure to deliver and maintain an adequate online infrastructure for the dissemination of information and resources | 1 | 4 | 4 | Ensure adequate resourcing. Ensure clear ownership. Build services from existing technical resources to get the service to start. |
| There are not enough responses to the call for tender. | 2 | 4 | 8 | The success of the PREFORMA will depend heavily upon the level of participation and acceptance from different stakeholder groups, in the CP part from the suppliers. The pre-announcement of the call will make it possible for WP 2 to get an early overview of the situation. Both WP 3 and WP4 are engaged in the work of ensuring an open and fruitful dialogue with the suppliers. |

| | | | | |
|--------------------------------------------------------------------|----------------------------|-------------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Quality of the responses to the call for tender is not good enough | 1 | 5 | 5 | <p>There are three media types that are expected to be covered by the suppliers.</p> <p>If the quality of the responses to the call is not sufficient and there is no sufficiently good result in one specific media type, the General Assembly can decide to renounce to cover that specific media type and to fund more suppliers in one of the other two media types.</p> <p>The responses to the call for tender will be ranked on the basis of the quality of the offers against the criteria published in the call.</p> <p>The first 6 suppliers will be invited to the negotiation; the following suppliers whose quality is still sufficient will remain in a reserve list, to be activated in the case of failure of the first ranked suppliers.</p> |
| Missing consensus on the selection of the suppliers | 2 | 4 | 8 | Clear, sound and precise selection criteria will be the basis to settle possible dispute due to different points of view among the partners. |
| Legal | Probability 1-5 | Severity 1-5 | Score P x S | |
| Failure to establish agreement over IPR issues | 1 | 4 | 4 | Ensure IPR is addressed within CA agreement discussions. |
| | | | | |
| Serious disputes between consortium members | 1 | 4 | 4 | <p>Aim to minimise the chances of disputes occurring by ensuring regular and clear communication between consortium members. Partners should aim to build and nurture a culture of openness and trust.</p> <p>Where pre-dispute areas are suspected, offline discussions should be initiated.</p> <p>Where disputes become unavoidable, ensure a clearly agreed “disagreement</p> |

| | | | | |
|--|--|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | management” process is built into the Consortium agreement, and that this is followed. Several partners have already successfully worked together and this should help to more easily understand and trust each other. |
|--|--|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

1.6 Collaborative Activities and Work Plan (CP part)

1.6.1 CP Workplan Strategy

The CP workplan is organised along three work packages that constitute the core of the R&D work procured by the participating memory institutions: design of the PREFORMA system and tools, prototyping of the services, and scientific testing of the results against a range of data sets provided by the memory institutions. Each WP is executed by the suppliers selected through the tender procedure. The CP work packages are led by academic partners to ensure scientific quality, with memory institutions as task leaders that bring pilot workflows and data sets for the suppliers to verify their solutions.

The CP work plan as described here ensures that the tender satisfies the requirements for R&D Services contracts, and for maintaining a proper balance between reimbursements and supplier risk in order to not constitute state-support to those companies.

The dependencies between the CSA part (see section B1.5) and the CP work packages are illustrated below:

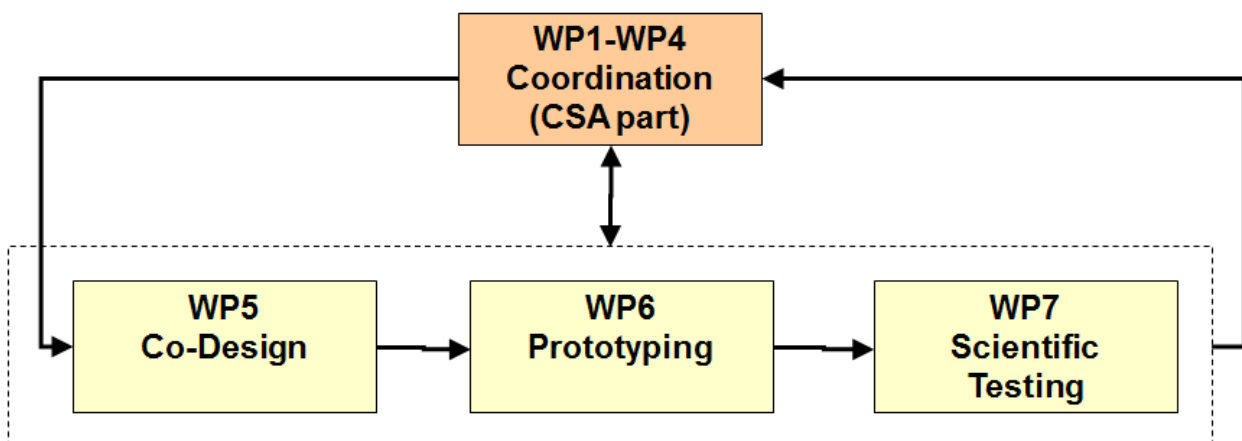


Figure 4: Dependencies between the CSA part and the CP work packages

The CSA part (see section B1.5) carries out the tender procedure and defines the functional and performance criteria to be met by the suppliers, and also the legal and financial issues are clarified. There remains a close relation with the CSA part throughout the execution of the CP part. The CSA

part that coordinates a wide network of stakeholders (memory institutions and research groups) acts as a reference group for the CP part. The CSA part is also responsible for all tender-related issues, including contracts and selection of suppliers (6 suppliers in WP5, reduced to 3 in WP6 and WP7).

When the CP part starts, the selection of the winners of the tender has already been carried out and the suppliers have been contracted and are ready to start their work. In WP5, the suppliers describe their solution paths in terms of detailed functions (use cases), detailed system interfaces and user interfaces. In WP6, the suppliers will develop prototypes of their solutions, satisfying the agreed functional and performance criteria. The prototypes are then subjected to scientific testing in WP7, against datasets provided by the memory institutions. The outcomes of the CP part are disseminated widely by the CSA part.

Two demonstrations of the prototypes are foreseen at month 24 and month 36, as part of the activities subcontracted in WP6.

One demonstration of the final software is foreseen at month 42, as part of the activities subcontracted in WP7.

The software developed by the suppliers is delivered on the Open Source Portal of PREFORMA.

In the figure below, the overall timing of the CP work packages is illustrated:

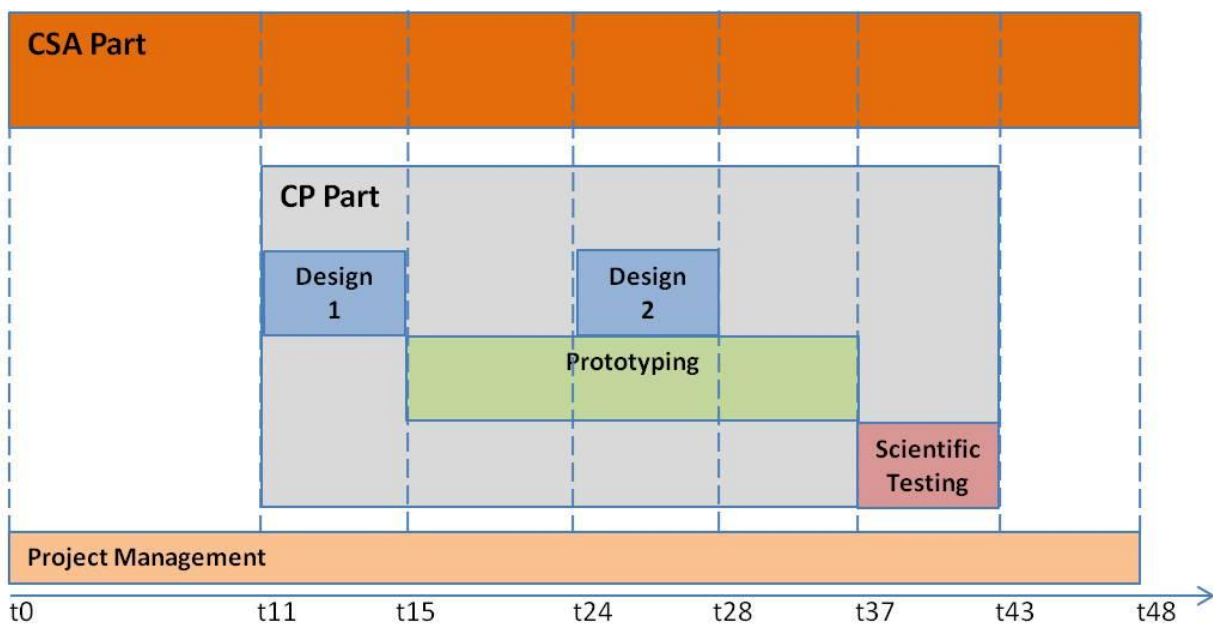


Figure 5: Overall timing of the CP work packages and the CSA part

The organisation of the three CP work packages is based on an iterative process, where it is foreseen that at the end of the design phase, the prototyping starts; on the basis of the results of the first release of the prototype a re-design phase is carried out; on the basis of the re-design, the second release of the prototype is developed eventually passed to the test phase.

Six suppliers are planned to be selected at the end of the tender procedure (two for each media type) to carry on the first design phase that lasts 4 months and completes with the ranking of the delivered designs. The suppliers of the best three designs (one for each domain) are requested to proceed to

the prototyping phase, which includes two releases and the re-design phase and which lasts 22 months in total. The suppliers are then requested to proceed to the testing phase that lasts 6 months. Assessment of the results of each phase is carried out under the supervision of the respective WP Leaders and based on the competitive evaluation criteria published in the tender procedure.

The final results of the work done by the subcontractors working in the CP part are the following:

- The 4 modules, corresponding to “Abstract Conformance Checker”, “Scorer”, “Reporter”, and “Abstract Fixes Suggester/Correcter” for each media type, namely: documents, images, audio-visual records
- The Technical Reference of these modules and their API, to provide full information for the future integration of the modules in the actual work-flow of the memory institutions; such integration is not part of the PREFORMA project, even if the activities of the CSA part aim to prepare the community of users that will do it after the end of the PCP phase;
- The web applications (one developed by each supplier) that provide the user interface to the 4 modules.

The technical environment for the testing and demonstration of the software is based on this web application which is included in the tender.

Such web application will be used to test and demonstrate the prototypes during the implementation of WP6 and eventually for the final testing with the data sets provided by the memory institutions, during the implementation of WP7.

The DIRECT infrastructure will act as the storage of the results of the testing along the whole software implementation.

1.6.2 CP Risks and Contingency Plans

The Project Management Team will maintain a Risk Management plan as part of its periodic meetings. Risk Management is described in section 2.1.7.

The Risk Management Plan aims to:

- identify those risks which might impact the project;
- ensure that each risk is analysed for probability and impact;
- ensure that there is an agreed containment plan for each risk (the proposed plan may also be to do anything for an identified risk);
- identify an appropriate contingency plan (as part of the containment plan) for high risks;
- allocate ownership for the risks and its containment plan typically to a Work Package leader.

Below the very first Risk Management Plan for the CP part of the project is presented. It will be brought up-to-date at the start of the project and also reported in new versions in the Annual reports) and in the Final Report.

| Risk | Probability 1-5 | Impact 1-5 | Score P x S | Action to Prevent/Manage Risk |
|-----------------------------------------------------------------------------------------|----------------------------|-------------------------|------------------------|---------------------------------------------------------------------------------------------|
| Technical | Probability 1-5 | Severity 1-5 | Score P x S | |
| Failure to set up a technical environment that can in a trustful way test the tools and | 2 | 4 | 8 | Ensure adequate resourcing. Ensure clear ownership of responsibility between the consortium |

| | | | | |
|------------------------------------------------------------------------|----------------------------|-------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| services developed by suppliers | | | | (Task 2.5 and the suppliers Task 7.1) |
| The quality of the work done by the subcontractors is not satisfactory | 2 | 5 | 10 | <p>The contract with the suppliers will foresee the possibility to ask for the reimbursement of the money in the case that the quality of the results does not respect the criteria established by the procurers in the contract itself.</p> <p>The contract will include periodic technical reviews that will be run as part of the monitoring activities of WP8.</p> <p>In the case of total failure, the following options will be considered by the General Assembly for decision:</p> <ul style="list-style-type: none"> - to renounce the tools for the failing media type; - to negotiate with the supplier(s) in the reserve list <p>Concerning the financial capability of the suppliers, a legal and financial assessment of the subcontractors will be run at the negotiation phase, before signing the contracts.</p> |
| Legal | Probability 1-5 | Severity 1-5 | Score P x S | |
| Failure to establish agreement over IPR issues | 1 | 4 | 4 | Ensure IPR is clearly addressed within the tender. |
| | | | | |

| | | | | |
|----------------------------------------------------|----------|----------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Serious disputes between consortium members</p> | <p>2</p> | <p>4</p> | <p>8</p> | <p>Aim to minimise the chances of disputes occurring by ensuring regular and clear communication between consortium members. Lead member and directors of work package should aim to build and nurture a culture of openness and trust, wherever possible. Where pre-dispute areas are suspected, offline discussions should be initiated. Where disputes become unavoidable, ensure a clearly agreed dispute management process is built into the Consortium agreement, and that this is followed.</p> |
|----------------------------------------------------|----------|----------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

1.7 GANTT Chart

The GANTT Chart provided in the next page refers to the whole project, including both the CSA and the CP part.

The legend of the codes used in the GANTT Chart follows:

| |
|------------------------------------------------------|
| C: Conference |
| D: Deliverable |
| dem: demonstration |
| IE: Information Event |
| intD: Internal deliverable on the Open Source Portal |
| EW: Experience Workshop |
| MS: Milestone |
| OW: Open source Workshop |
| P: Prototype |
| R: Review |

2 Section 2: Implementation

2.1 Management structure and procedures

2.1.1 Project Management Challenges

The complexity of any system connected to long-term digital preservation is a key project management challenge, also in PREFORMA, to ensure that the resulting software is effective, efficient, usable, scalable, portable and reliable. The work performed by suppliers in the Collaborative Project part (WP5, WP6, WP7) is therefore monitored by technical experts from memory institutions (task leaders) as well as digital preservation researchers from the scientific partners (work package leaders). In particular, the supplier design specifications (D5.1 and D5.2) will be jointly reviewed by T2.5 Evaluation Strategy and Assessment.

A second challenge is to visibly ensure external acceptance and a widespread use of the outcomes of the project. This is the responsibility of the Coordination and Support Action part (mainly WP3, WP4). Early visible external acceptance will ensure supplier interest in the tender (WP2), and wide visible external acceptance in the later stages will boost membership in the sustainable network (WP3). Therefore, the project will strongly disseminate the tender and project results from the very start until the final conference (WP4). To monitor the congruence of the execution of these outreach activities a Communication Coordinator will be appointed, that is also the WP4 Dissemination and Communication leader.

The project is expected to coordinate high-quality research (see section 1.3), both within PREFORMA academic partners, but also by facilitating strong scientific publications and establishing links with external research groups. To ensure scientific coherence and quality, a Scientific Coordinator will be appointed, that is also the WP7 Scientific Testing leader.

Managing the consortium and its multi-disciplinary partners, spanning multiple countries, is also a challenge, especially when it, on top of that, has to deal with a number of suppliers. To guarantee an adequate management of these challenges, the Project Manager, the Scientific Coordinator and the Communication Coordinator constitute a coordination team handling day-to-day management.

The proper execution of the tender procedure, the selection of the suppliers and the assessment of the results of the work procured will be a special challenge due to the fact that PREFORMA uses the PCP instrument where the CP part of the project is executed as a subcontract and not directly by the partners.

2.1.2 Project Management Objectives

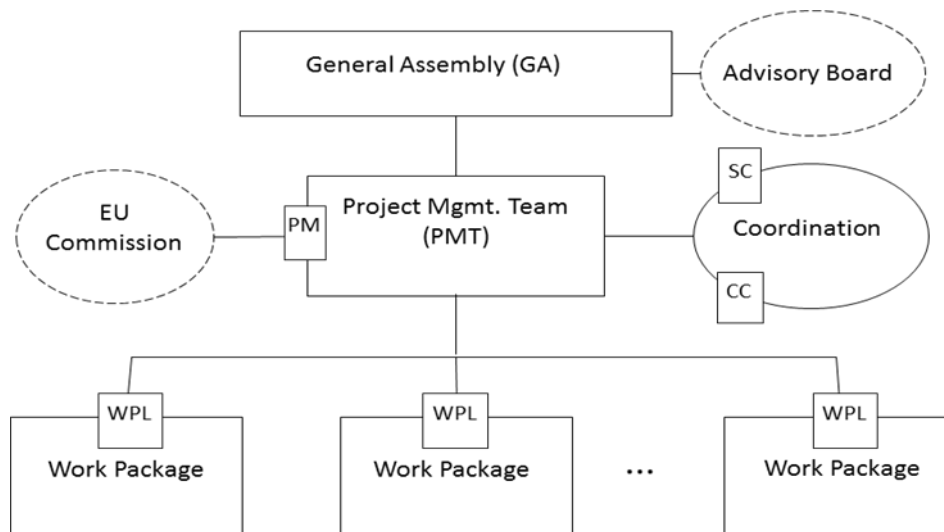
The Project Management has four main objectives to be achieved:

- efficient decision-making and work monitoring, through a suitable organizational structure and use of modern distance-spanning collaboration tools;
- effective management of the joint PCP that will be launched and executed by the selected suppliers during the project;
- provide early conflict resolution mechanisms between parties concerned, if any conflict arise;

- ensure that ethical and legal obligations are fulfilled.

2.1.3 Organisational Structure

The following figure represents the structure of the Project Management organisation.



General Assembly (GA): The GA is the highest authority of the project where each partner is represented. Major changes in the project are decided by the GA, and the project milestones are monitored for suitable planning and timely completion. GA decides on (re)allocation of resources or redefinition of work packages, deciding on changes in partner participation and resolving conflicts based on the principles agreed in the consortium agreement, for example IPR issues. It meets twice each year, or on demand, and it is chaired by the Project Coordinator. Each member has one vote and conflicts are resolved by majority decisions.

Project Management Team (PMT): The PMT is responsible for the management, work and directions in the whole project, the work packages, and supervises the technical and scientific work with responsibility for decisions concerning the overall project management

Members of the PMT are the Project Coordinator (chair), the Scientific Coordinator (SC), the Communication Coordinator (CC) and the Work Package Leaders (WPL). PMT meetings will be held in person at least every six months, and frequently by online e-meetings in between.

The PMT tasks are: approval of the project results with regard to the deliverables, analysing the commission reviewers' comments at the operative level and initiating necessary actions, monitoring technical progress, ensuring coherence of the overall project objectives, arranging review meetings, identifying dependencies between work packages, agreeing on technical issues concerning two or more partners, assigning cross-work package monitoring tasks to work package leaders, and assigning tasks for review meeting preparation.

PMT proposes to the GA any necessary changes in WP leader assignments and budget reallocations. PMT will when needed establish taskforces as described further below.

The Project Coordinator (PC) appointed by partner RA is responsible for the overall coordination of the project and is the contact person for the European Commission. The PC is in

charge of the project planning and monitoring, progress reports, milestone reports, cost statements, audit certificates, budgetary overviews and reviews of the organization. The Project Coordinator is assisted by experts on administrative, financial and legal matters.

The Scientific Coordinator (SC) appointed by partner UNIPD is responsible for monitoring the project's scientific work and providing assistance and cross-coordination for the researchers in the project. The Scientific Coordinator is also monitoring progress towards the scientific objectives of the project, creating and fostering connections with other research activities, and ensuring excellence of the research results. The SC is also the WP7 Leader.

The Communication Coordinator (CC) appointed by partner PROMOTER is responsible for harmonising the communication activities, with particular regard to the work done in WP2, WP3 and WP4. The Communication Coordinator is also monitoring progress towards the outreach objectives of the project, creating synergies and cooperation with other memory institutions that are not partner in the project but that will join the PREFORMA network of common interest, and ensuring harmonisation, balance and efficiency of the project communication. The CC is also the WP4 Leader.

The Work Package Leaders (WPL): Each work package is led by a Work Package Leader (WPL), who is responsible for the work carried out within the WP. The WPL is providing quarterly reports for the PMT detailing the evolution of the work and the achieved results, and any problems or risks identified. Coordination between work packages is handled by *the coordination team*, composed by PMT, SC and CC.

The Work Package Leader is responsible for the timely completion of deliverables and used man-hours. Details of the planning and progress within the WP will be passed on to the PMT for consideration and support. The WPL shall assign work groups for different tasks, plan and control activities within their work package, ensure preparation of deliverables, check results of different partners working on their tasks, identifying any possible problem, control costs and budget in the scope of the work package. The WPL is responsible for quality control of deliverables within the work package.

One WP Leader is assigned for each WP in the CSA and in the CP parts. The WP Leaders of the CP part will be responsible to monitor the correct execution of the subcontracting R&D work procured through the tender procedure. Assessment of the deliverables and approval of the instalments will occur on the basis of the criteria established in the supplier's contracts, by WP2.

A PCP tender evaluation committee (PCP-tec) is established among the members of the PMT, chaired by the Project Manager. In addition, Experts from the National Archives of Croatia and Denmark accepted to participate. They will contribute on a voluntary basis via electronic communication means. It is planned for the reimbursement of travel and subsistence costs for their participation to the Final Conference.

Advisory Board: To ensure that the project will keep in line with the needs of memory institutions, an Advisory Board will be established during the first 6 months of the project. The Board will be chaired by the Project Manager and consists of experts appointed by organisations outside the consortium that have skills useful for the project. All members of the Board must have solid expertise in the context of preservation of cultural heritage but also competence for international projects.

Initially, the Board will be composed by three members. New members can be added to the Board along the project execution, on the basis of the decision of the General Assembly. The members of the Board will not receive payment for their work but can be reimbursed for the travel and subsistence costs when attending meetings they are invited to by the Project Manager (for example the final conference).

The Board may suggest recommendations for the development of the exploitation strategy and possible new actions to continue the research. It will work mostly via teleconferences and online tools and will disseminate information of its activities and results through its dedicated channel, active on the international www.digitalmeetsculture.net information portal, which also will host the interactive repository of public documents and other available material produced by the Board.

Co-ordination task forces: Specific taskforces for Co-ordination will be established when needed. .

An exploitation task force will be established whenever an external opportunity or project results imply swift action to be taken for protecting continued royalty-free use of all IPR developed, or for protection of continued openness of the established business ecosystem. Read more on the management of IPR issues in section 3.2.6.

To ensure successful project work and achievement of goals, it must be possible to handle any conflicts in an effective manner. Conflicts between partners are, therefore, resolved by the GA or the PMT, depending on the issue. For preparation of a decision, the GA or PMT can appoint a legal task force to suggest solutions. Preferably project partners' legal departments will be used as the taskforce.

Consortium agreement: The Consortium agreement signed by the partners details individual responsibilities, rights, deadlines and outputs to be achieved, together with all other contractual obligations and processes. It indicates how issues arising between partners will be addressed. The following main principles are defined for the Consortium agreement:

Decision-making

The GA is responsible for the overall direction of the project and decides on issues that have a major impact on the project. It approves the main project deliverables. The PMT makes all decisions needed to carry out the project as planned. The PMT also decides on appointing required taskforces.

Payment

The Co-ordinator transfers funding from the Commission to the partners according to the general conditions of the Contract with the Commission. The contract ruling the distribution of EU-funding is the Consortium Agreement.

Intellectual Property Rights and Ownership of Results

The Consortium Agreement defines access rights to background and ownership of foreground which are specific to PREFORMA. In all circumstances the provisions of the European Commission Grant Agreement take precedence over other agreements.

Conflict resolution

In the framework of this project and according to the generally accepted relevant definitions, a 'conflict' is defined as a situation where the interests, attitudes and judgments of single partners

differ to such extent that the difference of opinion cannot be harmonised by their own efforts. If such situation arises, a swift and fair conflict resolution is required to ensure the project advance. In conflicts which cannot be settled immediately by discussions between partners, the dispute shall be presented to the Project Coordinator, who will ascertain the nature and cause of any misunderstanding and ensure that all partners are aware of the facts. If the conflict is not resolved by discussions and negotiations at this stage, the matter shall be arbitrated by the Project Management Team or the General Assembly. Any decision required will be by common consent and, if ultimately necessary, voting according Consortium Agreement.

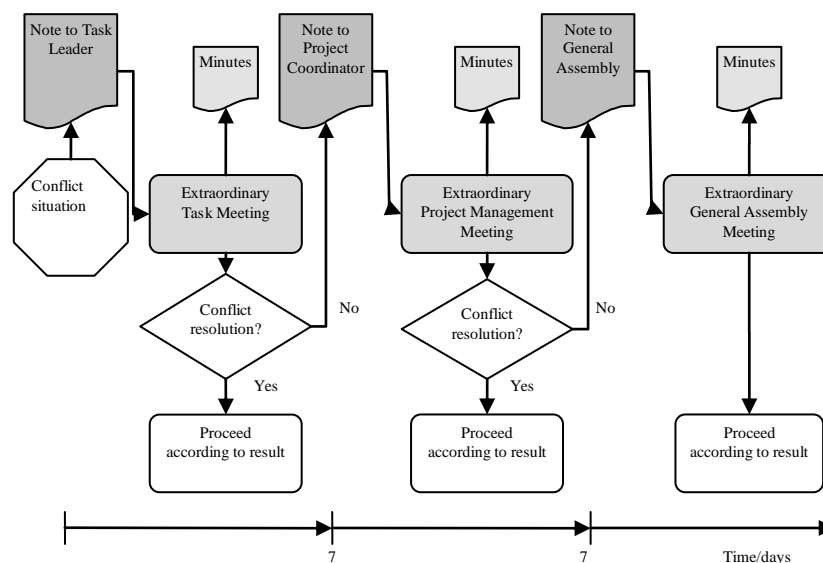


Figure 6. Conflict resolution workflow

The conflict resolution workflow includes:

- Extraordinary Task Meeting related to all partners involved in the task;
- Extraordinary Project Management Meeting related to each partner being responsible for the project advance; commonly, this Project Management Meeting should be considered as a late conflict resolution instance form;
- Extraordinary General Assembly related to the General Assembly members, the PC and the staff of the partners' parties involved in the conflict.

The Consortium Agreement also includes the procedures for representation of the partners in the tender procedure. The lead procurer who will publish the tender and sign the procurement contracts on behalf of the group of procurers is the Coordinator, namely Riksarchivet (Sweden).

2.1.4 Scope, Time and Cost Management

The Description of Work (DoW) for this project may be updated when there are necessary changes due to external or internal circumstances. Any changes will typically be proposed to the Commission when sending Annual Reports. The General Assembly and the Commission approves any new DoW.

2.1.5 Quality Management

Requirement specifications and quality assurance objectives will be clearly defined and documented. The work programme allocates clear, single-organisation, responsibility for each task, even where the responsible organisation has to coordinate inputs from other participants. Agreed definitions of procedures for acceptance and quality control will be established and carried out by the respective WPL.

The Project Handbook will promote high quality work and results with focus on both work processes and the deliverables. Handling of project reports related to project deliverables and/or milestones will also be described. The Project Handbook shall include a general description of the procedure for acceptance of reports as well as for technical implementations.

2.1.6 Communications Management

An active communication within and from the project will be achieved through frequent online meetings of work package participants and news and information posted to the project portal. Managerial, administrative and financial issues communication and information flow will be achieved through regular communication between the PC, the SC and the CC, meetings of the Project Management Team and distribution of reports by the Project Coordinator.

Formal meetings (PMT, GA) will be notified at least 2 weeks in advance. Agenda, proposed resolutions, decisions and supporting documentation will be available to all attendees at least 1 week before the meeting. Issuing of all documents will be via the chair who is responsible for compiling all submissions from partners. Meetings minutes will be issued within 5 working days.

A state-of-the-art web based project portal will be used – it has functions for document storage, team list with email, version handling, project planning, project calendar, project news and discussions. A public project website will also be set up, providing access to information, announcements and publicity material. The best eMeeting systems will be used (currently Google+ Hangout is among the easiest) to keep project members connected to each other and to promote short meetings on demand and regular project and WP meetings.

2.1.7 Risk Management

Risks will be frequently identified, quantified, and analysed, resulting in risk mitigation actions, including contingency plans. The PMT will monitor and address the highest-rated risks, as part of its periodic meetings. An agreed risk containment plan for each high-priority risk will typically be assigned to a work package leader, the Scientific Coordinator, the Communication Coordinator or the Project Coordinator. See sections B1.5 and B1.6 for an initial table of identified risks and contingency plans.

2.2 Individual participants

2.2.1 RA - National Archives 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 has the supervision of public records of all state agencies. The National Archives' commission by law is to preserve, organise and care for these 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 1970 an increasing number of records in electronic form have been transferred to the National Archives. Parts of the National Archives are also the Research Centre SVAR (Svensk Arkivinformation), that provides scanned and digitalised records for customers over the Internet, Media Converting Centre (MKC), specialised on large scale production of digital images from different media, and the newly established Secretariat for coordination of digitisation, digital preservation and digital access at state founded cultural heritage institutions (archives, libraries, museums). The National Archives has been – and still is - a partner in several EU funded projects concerning digitisation, Internet access, and digital preservation like EUAN, Minerva, MinervaPlus, MinervaEC, LEAF, QVIZ, APEnet, PROTAGE (coordinator), DC-NET, LINKED HERITAGE, DCH-RP and AthenaPlus. The National Archives is also one of the institutions in Sweden that has special funds from the Government for research programmes in its sphere of activities.

Dr. Börje Justrell is Director and Head of Operational Support at the National Archives of Sweden. He has since 1989 been responsible for technical matters at the National Archives. Justrell has been teaching archival science at the University of Stockholm for many years and has been a member of international committees within the archivists' professional association, ICA. He has been representing Sweden in expert groups on digitisation and digital preservation within the European Commission and also worked in a number of EU projects like Minerva and MinervaPlus and their spin offs. He was the coordinator of the EU project PROTAGE on digital preservation in the 7th framework programme and between 2003 – 2009 responsible for an advanced international training programme for developing countries conducted by the Swedish National Archives and sponsored by the SIDA, the Swedish International Development Cooperation.

Borje Justrell has the role of the Project Manager in PREFORMA.

Magnus Geber is the Principal Administrative Officer at the Information and Preservation Department at the National Archives of Sweden. He has since mid 1980s worked as an expert on electronic archives and digital preservation and for many years given lectures in these subject at university level. Geber has been member of a number of expert groups, both nationally and internationally, and also worked in EU projects like Protage.

2.2.2 PACKED - Centre of Expertise in Digital Heritage

As a centre of expertise in digital heritage supported by the Ministry of Culture of the Flemish Community, PACKED plays a central part in Flanders and Brussels in centring the development of expertise in digitisation and digital archiving, and in spreading the acquired expertise. It aims at improving and safeguarding the quality and efficiency of actions with regard to digitisation and digital archiving within the broader field of cultural heritage. PACKED is one of the founders and core members of the Platform 'Duurzame Digitale Toegankelijkheid - Vlaanderen' (Sustainable Digital Access - Flanders), a platform advocating sustainable access to digital collections. It embeds its activities not only within the context of Flanders and Belgium, but is also largely active on a European and international scale. PACKED is actively involved in the family of projects surrounding Europeana. It also has a strong interest in the preservation of digital media art. Previous to becoming a centre of expertise in digital heritage, it acted as a platform for the development and dissemination of expertise in the archiving and preservation of audio-visual art.

PACKED will include the PREFORMA tools in the Flemish 'Cultural Heritage Standards Toolbox' (CEST) and support the use of them in the assessment and normalisation of digital collections prior to acquisition by memory institutions.

Relevant projects: CEST (Cultureel Erfgoed Standaarden Toolbox), a toolbox of standards for digitisation and digital archiving; Obsolete Equipment, a two-year research project on the preservation of display and playback equipment for both computer-based and video-based art; participation in EU funded projects: DCA - Digitising Contemporary Art - as Coordinator; ATHENA - Access to Cultural Heritage Networks across Europe - as WP leader; AthenaPlus – as WP leader; Linked Heritage - Coordination of Standards and Technologies for the Enrichment of Europeana - as partner.

Rony Vissers is the executive director of PACKED, and project leader of the DCA project. His previous professional experience ranges from collection manager at argos – centre for art and media (Brussels) to being a creator, producer and distributor of various media art projects. He also worked as a curator of film, video and music at the art centre STUC (Leuven). He holds master's degrees in information and library science, library and documentation science and communication sciences.

Bert Lemmens is involved in the CEST project. Bert has worked a.o. for Amsab (Institute for Social History, Ghent) as researcher in the European project HOPE, for MovE (cultural heritage aggregator of the province of East-Flanders) and for the NAI - Netherlands Architecture Institute as a collection registrar. Bert holds a master's degree in art history and a master's degree in conservation.

2.2.3 PROMOTER - Promoter Srl

Promoter's technical background and expertise range from software integration and development, to portal development, application security, ontology management, database management, web-oriented and object-oriented programming (C++, Java, PHP among others), Web Services development, digital preservation, Digital Rights Management and IPR Protection. Promoter's staff has been involved in several projects of the European Commission, especially targeted at the tourism and cultural heritage sectors, to design and develop software systems and trusted multimedia web applications based on digital certificates and XML technologies. Promoter's skill in the ontology management and Semantic Web technologies relies on the experience in the field of IPR metadata modelling. Promoter's staff presented in the last year a domain ontology which focuses on Digital Rights Management and aims at providing a comprehensive conceptualization of the basic relationships and entities in the Intellectual Property Rights domain in order to identify all possible rights associated to a digital work and to enable the formulation of algorithms running on contents, metadata and background knowledge to recognize possible rights violations and changing rights situations in digital archive materials. Promoter's technical activities include also Content Management Systems (CMS), web design and development and analysis of adaptive user interfaces (AUI), i.e. user interfaces which adapts and changes its layout and elements to the needs of the user or context. Promoter has been involved in a wide range of local and international projects in team-building, project management, technical development and business planning of innovative products. In addition to its commercial activities, the company participated to many projects in the domain of the digital cultural heritage since the nineties to the most recent Europeana Best Practice Networks and e-infrastructure projects.

Main tasks in the PREFORMA project

Promoter will provide the coordination of outreach activities, giving publicity to the call for tender and disseminating the results of the project to the target audiences, also including the use of its www.digitalmeetsculture.net platform.

The web presence of PREFORMA will be realised by using the digitalmeetsculture.net portal where a dedicated area will be opened to host the communication and of PREFORMA activities and its knowledge base.

Dr. Antonella Fresca, general director of Promoter. Graduated in Computer Science at the University of Turin. ICT expert, working on European cooperation projects and policy development frameworks. Member of the Concertation Table of the Italian Ministries of Culture and Research, about the implementation of the Joint Programming Initiative on Cultural Heritage. Technical Coordinator of DCH-RP, EuropeanaPhotography, Linked Heritage, DC-NET ERA-NET, INDICATE, MINERVA series and MICHAEL series. Advisor of the Italian Ministry of Cultural Heritage and Activities from 2002 to 2012. Project Officer at the European Commission from 1999 to 2002. Previously: policy advisor for the High Technology Network of the Tuscany Region, advisor of Italian and European organizations in the area of electronic publishing, e-learning, online services and applications. Product manager at Tower Tech. Researcher at Olivetti Pisa, Ivrea and at the Olivetti Advanced Technology Centre in Cupertino (CA).

Antonella Fresca has the role of the Communication Coordinator in PREFORMA.

2.2.4 Fraunhofer – Fraunhofer Gesellschaft zur Foerderung der angewandten Forschung e.V.

The Fraunhofer-Gesellschaft zur Foerderung der angewandten Forschung e.V. is Europe's largest independent organization for applied research, consisting of currently 66 institutes on 40 locations throughout Germany. Fraunhofer IDMT, located in Ilmenau, Thuringia, evolved from a subsidiary of Fraunhofer IIS ("Home of MP3") to an independent institute in 2004. About 75 full-time employees along with about twice as much students are working in various research fields, including e.g. acoustics, bio-inspired computing, integrated learning and knowledge representation environments, data representation and UI design, A/V signal analysis and search, interactive media applications, as well as content aggregation and distribution. In particular, business domains like digital preservation need personalized interfaces for an easy, natural and transparent interaction with the system. Such trends lead to an abundance of new opportunities for handling and using domain-driven content, but also create difficult challenges e.g. with respect to security, privacy and copyright, which need to be tackled. Data Representation and Interfaces (DRI) has developed strategic R&D competence on user-friendly networked environments including learning to allow managing individual concepts, and structuring digital content as well as building social networks. Such environments consider existent and necessary abilities and skills of the users in order to not only proactively recommend and filter digital content, but also to tailor the system and their user interfaces accordingly. Individual preferences / profiles are a key function within such a framework. DRI develops advanced technologies and procedures to evaluate new developments in web agents, machine learning, multimodal dialog mechanisms, user interfaces. Many of the results in research and development are to be further adapted and used in various business environments like electronic record and knowledge management systems, evaluation, assessment, and eHealth. User interfaces with adaptive and personalized solutions for those domains are developed and adapted. The group has comprehensive R&D competence in various fields including integrated data and sensor fusion, advanced education and training measures, assessment of training, and user-friendly networked environments essential to allow managing individual ethical / social concepts.

Fraunhofer leads WP5 (Design) and contributes to System WP6 (Prototyping) and WP7 (Testing). Finally, Fraunhofer also contributes on validation, exploitation, and dissemination of project results.

Peter Pharow, head of DRI, is senior researcher with knowledge in portable personal devices, security, safety, privacy as well as evaluation. He was a member of various FP5, FP6, and FP7 R&D projects, among them the PROTAGE project. Peter has organized topic-related workshops and sessions at various events, and he co-chairs EFMI WG "Personal Portable Devices" and is member of EFMI WG "Security, Safety and Ethics". Peter recently led the evaluation task for ontology, infrastructure, visualization, and machine learning / annotation of the German THESEUS project (2007 – 2012).

Christian Saul, DRI, received his diploma in Computer Science from the Technical University Ilmenau, Germany, in 2007. He was then with the Institute of Integrated Hard- and Software Systems at the Technical University of Ilmenau before he joined the DRI research team at IDMT as a Ph.D. researcher. His application-based research focuses on technology-enhanced learning, evaluation, adaptability, and assessment. Christian actively worked for PROTAGE and managed the respective evaluation processes.

2.2.5 HS – University of Skövde

University of Skövde is one of the most specialised universities in Sweden and our research is focused on the development and use of advanced information technology systems and models.

Over a number of years research we have addressed various aspects of openness. We have significant experience with research and practice related to different stakeholder roles (including providers, developers and users) related to Open Source and Open Standards.

Previous activities include involvement as partner and leader in several international and national research projects. In collaboration with leading academic partners we conducted rigorous research in the EU FP6 CALIBRE project (2004-2006), which involved novel research and extensive interaction with European industry and presented a roadmap for future research on the Open Source phenomenon. As partners in the CALIBRE-project, the ITEA-project COSI and the ITEA2-project OPEES, we have experience of international collaboration, and close collaboration with many leading researchers and practitioners in areas related to the Open Source phenomenon. Current activities include research on various aspects of openness impacting on long-term sustainability of software systems with associated digital assets.

We have significant experience in qualitative research approaches for analysis of organisations, networks and actors representing other relevant stakeholder roles affecting (or affected by) open communities. Recent experiences include research projects with small and large companies active in Open Source software projects and Open Standards, as well as policy makers and public sector organisations involved in strategic decision making affecting the potential offered by open communities and adoption of Open Standards and Open Source Reference Implementations.

University of Skövde is a academic member in the Eclipse IWG PolarSys (www.polarsys.org). Through PolarSys, which focuses on very long-term maintenance of software engineering tools, we are well placed to address challenges related to very long-term support and maintenance of software systems and associated digital assets,

Assistant Prof. Björn Lundell (Ph.D.) is the lead researcher at the University of Skövde's Informatics Research Centre. He is currently the project leader for the industrially focused ORIOS project on Open Source implementations of standards. He participated in FP6 (CALIBRE) and ITEA (COSI) and was Skövde's lead researcher for the ITEA-2 project OPEES, which focused on support and very long-term maintenance of software tools and its associated digital assets. He was program co-chair for Open Source Systems, 2012 (organiser OSS'09), Founding fellow of the Open Forum Academy, and founding chair of Open Source Sweden (an industrial association of Swedish open source companies)

Dr. Jonas Gamalielsson is a researcher at the University of Skövde's Informatics Research Centre. He has extensive experience of software systems, both from industry and academia since 1990, and he is currently participating in the ORIOS project (2012-2015), an industrially focused project financially supported by the Swedish KK-foundation, which explores standards and their implementations in Open Source software in collaboration with a number of different organisations. In the context of this and other projects Dr. Gamalielsson has gained significant experience concerning different kinds of research studies involving analysis of software standards and Open Source software implementations.

2.2.6 UNIPD - University of Padua

The University of Padua is one of the oldest universities in Europe, and one of the biggest in Italy. There are more than: 2,100 research staff; 2,100 technical and administrative staff; 60,000 students; 11,700 graduate every year; and, 1,500 PhD students.

The Department of Information Engineering (DEI), established in 1987, has about 100 research staff among full, associate, and assistant professors; 35 technical and administrative staff; about 130 PhD and Post-doc students; and more than 2,000 graduate students. The research carried out at DEI ranges from microelectronics, to optics, telecommunications, and to computer science. Within this last discipline, the research is carried out on parallel architectures, advanced computing paradigms and algorithms, robotics, software engineering, computer music, and information management. DEI has been the first department in Italy to be ISO 9001:2008 certified for quality.

The Information Management Systems group (IMS), established in 1987, carries out research on many aspects of information processing, with a strong focus and a long history on information retrieval, hypertexts, multilingual information access, digital libraries, and experimental evaluation. The IMS group has participated in several EU projects: PROMISE27 (Contract n. 258191, NoE), an FP7 network of excellence on the experimental evaluation of multilingual and multimodal information access systems, where the IMS group acts as project coordinator; ELIAS28 (ESF RNP project) which aims at developing an evaluation methodology for multilingual information access system directed at user-oriented interactive evaluation; CULTURA29 (Contract n. 269973, STREP) which aims at building innovative adaptive services and interactive environment to offer genuine user empowerment and unprecedented levels of engagement with digital cultural heritage collections and communities; EuropeanaConnect30 (Contract n. ECP-2008-DILI-528001, Best Practice Network) which aimed at developing and testing services for the European Digital Library; Europeana v1.031 (Contract n. ECP-2008-DILI-558001, Thematic Network) which aimed at releasing the first running prototype of the European Digital Library; TELplus32 (Contract n. ECP-2006-DILI-510003, Targeted Project) which aimed extending and enhancing The European Library; TrebleCLEF33 (Contract n. 215231, Coordination Action) which aimed at promoting the experimental evaluation in the MLIA field and organizes the CLEF Initiative34 (Conference and Labs of the Evaluation Forum); SAPIR35 (Contract n. IST-045128, STREP) which aimed at developing a P2P large-scale architecture for searching and retrieving complex multi-media and audio-visual documents; DELOS36 (Contract n. G038-507618, NoE) was an FP6 network of excellence on digital libraries.

Dr. Nicola Ferro³⁷ is assistant professor in computer science at DEI of the University of Padua and member of the IMS research group. His main research interests are digital libraries and their architectures, and multilingual information access and search engines and their evaluation. He is coordinator of the PROMISE FP7 network of excellence on the evaluation of multimedia and multilingual information access systems. He is chair of the Steering Committee of CLEF, the European initiative for the experimental evaluation of search engines, which involves around 200 research groups at international level. He is member of the Steering Committee of ELIAS, the ESF

²⁷ <http://www.promise-noe.eu/>

²⁸ <http://www.elias-network.eu/>

²⁹ <http://www.cultura-strep.eu/>

³⁰ <http://www.europeanaconnect.eu/>

³¹ <http://version1.europeana.eu/>

³² <http://www.theeuropeanlibrary.org/portal/organisation/cooperation/telplus/>

³³ <http://www.trebleclef.eu/>

³⁴ <http://www.clef-initiative.eu/>

³⁵ <http://sysrun.haifa.il.ibm.com/sapir/index.html>

³⁶ <http://www.delos.info/>

³⁷ <http://ims.dei.unipd.it/members/ferro/>

network on the evaluation of information access systems. He led WP2 of the TrebleCLEF FP7 project about the overall evaluation infrastructure for CLEF; he led Tasks 2.1 and 2.5 of the EuropeanaConnect project about the integration and evaluation of multilingual information access and translation components in Europeana. He was scientific leader of the DL.org³⁸ FP7 CSA working group on quality and evaluation of digital libraries.

He has published more than 90 papers on digital library architectures, interoperability, and services; multilingual information access and its experimental evaluation; the management of the scientific data produced during evaluation campaigns. He has been program co-chair of CLEF 2010 (Int. Conf. on Multilingual and Multimodal Information Access Evaluation), IRCDL 2012 and 2013 (Italian Research Conference on Digital Libraries), SEBD 2012 (Italian Symposium on Database Systems), and program chair of the PROMISE Winter School 2013 on information retrieval and databases. He is PC member of major conferences (SIGIR, ECIR, CIKM, TPD, JCDL, WI) and reviewer for major journals (ACM CSUR, ACM TALIP, IEEE TKDE, IPM, JASIST, IR, IS, IJoDL).

He is member of ACM and IEEE; he is advisory member of the Information Retrieval Society of India (IRSI).

Nicola Ferro has the role of the Scientific Coordinator in PREFORMA.

Prof. Maristella Agosti is full professor in computer science, with a main focus on databases, digital libraries and information retrieval, at the Department of Information Engineering of the University of Padua, Italy. She is one of the founding members and the coordinator of the Information Management Systems (IMS) research group of the department. She coordinates and coordinated a number of national and international research projects, and she has been the organizer of national and international conferences. From 2011: leader of the unit of the Department in the European project on CULTivating Understanding and Research through Adaptivity - CULTURA. From 2010: active research member of the European network of excellence PROMISE - Participative Research labORatory for Multimedia and Multilingual Information Systems Evaluation. Member of the evaluation team of experts for the Industrial and Information Engineering area of the Italian Research Assessment Exercise (VQR 2004-2010) performed by the National Agency for the Evaluation of Universities and Research Institutes (ANVUR). Chair from 2009 to 2012 of the Steering Committee of the International Conference on Theory and Practice of Digital Libraries (TPDL). Member of the Editorial Board of the International Journal on Digital Libraries (Springer-Verlag). Member of the Board of the Italian association for digital humanities and digital culture. Her actual interests are evaluation of digital libraries and archives, digital library systems, digital humanities, evaluation infrastructures, retrieval of information in cultural heritage, information access through search engines and digital libraries, user's interaction with digital cultural heritage collections.

Dr. Gianmaria Silvello took the master degree in Computer Engineering, University of Padua in 2006 and the Ph.D. in Information Engineering from the Doctorate School in Information Engineering of University of Padua in 2011. Since 2011, he is post-doc researcher at DEI of UNIPD and member of the IMS research group. Since 2006 he has been working on the design and development of a digital archive system called SIAR (Regional Archival Information System) in cooperation with the Italian Veneto Region and the Archival Supervising Office for the Italian Veneto Region of the Italian Ministry of Cultural Heritage. Since 2010 he has been working on the field of Information Retrieval Evaluation within the PROMISE European network of excellence. Furthermore, he has participated and participates in several national and international projects among which PROMISE, CULTURA, SAPIR, and DELOS.

³⁸ <http://www.dlorg.eu/>

2.2.7 BEELD EN GELUID - The Netherlands Institute for Sound and Vision

The Netherlands Institute for Sound and Vision maintains and provides access to 70 per cent of the Dutch audio-visual heritage, comprising approximately 750,000 hours of television, radio, music and film and web video, making Sound and Vision one of the largest audiovisual archives in Europe. Sound and Vision is the business archive of the national broadcasting corporations and is also engaged in large-scale digitization efforts of its analogue holdings. Currently (October 2012), the digital holdings comprise 5 petabytes. Sound and Vision has brought thousands of hours of archive footage on-line for various end-user services, including dedicated services for the educational market, footage sales, creative reuse, mobile access. Sound and Vision also operates a visitor attraction aimed at the general public, the Media Experience, which is visited by over 200,000 people annually.

The Research and Development department focuses on a number of key research topics, including: digital durability ensuring long-term access, understanding user requirements, new annotation approaches, (semi)automatic or using crowd sourcing, contextualization, semantic interoperability and visualisation. Sound and Vision R&D is an experienced partner in national and European research projects and active in the international organisations FIAT/IFTA, IASA, EBU and UNESCO. Recent research projects include AXES (FP7), LinkedTV (FP7), LiWA (FP7), CoSyne (FP7), DigiBIC (FP7), PrestoPRIME (FP7), EUscreen (eContentplus) and Europeana V2 (ICT-PSP). Sound and Vision is host to the EU PrestoCentre competence centre for audiovisual digitisation and digital preservation, and technical co-ordinator of the EUscreen Best Practice Network on access.

Johan Oomen is head of the Netherlands Institute for Sound and Vision R&D Department and researcher at the Web and Media group of the VU University Amsterdam. He is mainly working on externally (FP7, ICT-PSP, CATCH) funded research projects that focus on providing access to digital heritage on the web. Oomen holds an MA in Media Studies. He has worked for the British Universities Film and Video Council and the RTL Nederland.

Roeland Ordelman is senior researcher and senior project manager R&D at NSIV and researcher in Speech & Language Technology and Multimedia Retrieval at the University of Twente (PhD 2003). He is co-founder of XMI (Cross Media Interaction), a company that provides services for automatic, speech-based annotation of audio data. He has been working on a number of national and international projects in the area of multimedia retrieval and speech and language technology.

Erwin Verbruggen works at the Research & Development department of the Netherlands Institute for Sound and Vision. He is in charge of communications for EUscreen and oversees the technical development of the Journal of European Television History and Culture. He also works on a number of projects related to digitisation and search in audiovisual archives.

Maarten Brinkerink is project manager at the R&D department. He holds an MA in New Media and Digital Culture and specializes in the distribution of cultural content using digital media. He manages innovative projects like Open Images (an open media platform) Oorlogsmonumenten in Beeld (a location-based iPhone app that enriches war monuments with audiovisual heritage) and Waisda? (a multiple award winning crowd sourcing game for collecting metadata for audiovisual content).

2.2.8 KIK-IRPA - Royal Institute for Cultural Heritage

Established in 1948, the Royal Institute for Cultural Heritage is one of ten scientific institutions falling within the competence of the Federal Ministry of Scientific Policy. IRPA is committed to the inventory, the scientific study, the conservation and the promotion of the country's artistic and cultural property. The Institute, whose chief mission is research and public service, represents a unique instrument for the heritage of our country, both movable and immovable.

Three departments group art historians, photographers, chemists, physicists and conservator-restorers. By comparing their observations, they gather reference material and study works of art from different points of view: their composition, evolution, ageing of materials and how to treat them. Any restoration treatment will be based on this detailed pre-study.

Our specialists advise researchers and curators of both public and private collections. An impressive photo library is also available for public use. The photo library contains, at present, over one million photos. Furthermore, the publications, the photo inventory and the organization of courses, conferences and seminars reflect the role IRPA plays in the promotion of heritage and the diffusion of tools for researchers and the public.

The Institute groups laboratories, conservation-restoration workshops, photographic workshops, a photo library and a library in a single building.

Erik Buelinckx: scientific researcher in Art History. He is also responsible for European Projects and for the institute's documentary image databases. He holds Masters in "Information and Library Science", "Documentation and Library Science" and "Art History and Archaeology". Currently he is in the last stage of a PhD in Art History (2014). He has an experience spanning over ten years on the different levels which constitute the creation, maintenance and conservation of digital (meta)data about cultural heritage. He works in the Department of Documentation where he is responsible for documentary image databases and digitisation projects, and was part of the Information Crossroads Cultural Heritage project. At the University of Antwerp he was responsible for a project on web-based education. He has experience in European projects like DC-NET, Partage Plus & Athena Plus. He is a member of the Belgian National Consultation Panel for Cultural Heritage and Global Change (JPI), and works on several interregional and international collaborations on multilingual thesauri in the field of cultural heritage.

- Buelinckx, Erik, 'Resurrections' in CIHA2012 – The Challenge of the Object/Die Herausforderung des Objekts (to be published in 2013).
- Buelinckx, Erik, 'Albert Daenens en Willem Gijssels. Een Brusselse anarchistische kunstenaar en een Vlaamse dichter' in *Zuurvrij*, n° 21, December 2011, p. 50-57.
- Buelinckx, Erik & Opstaele, Hans, 'Integration of High-Resolution tiled Pyramidal Tiff Images of Old Glass Negatives in an Online Photo Library for Consultation, Research and Conservation' in *Digital Heritage. Proceedings of the 14th International Conference on Virtual Systems and Multimedia. Short Papers*, Budapest, Archeolingua, 2008, pp. 84-89.
- Buelinckx, Erik. 'Institut royal du Patrimoine artistique: programme de numérisation' in *Vie des Musées. Bulletin de l'Association Francophone des Musées de Belgique*, 2005, nr. 19, p. 25.
- Buelinckx, Erik en Koeck, Nadia, 'Informatiekruispunt Cultuurpatrimonium: valorisatie van het Belgisch kunstpatrimonium via het Internet', in *Informatie 2001*, Brussel, 20-21 September 2001, p. 46.

2.2.9 GFC - Greek Film Center

Greek Film Center is a public benefit non-profit legal entity. It is administratively and financially autonomous and operates in the public interest and in accordance with the rules of private economy. It is governed by private law and by the provisions of the 3905/2010 law. The G.F.C. enjoys all the administrative and judicial exemptions as well as all the juridical and real privileges of the State.

The main objective of Greek Film Center is to support and co-produce films of Greek Artists. It holds an extended database of its productions ranging during a period of more than a century, from 1908 to 2010. GFC organises important festivals focusing on specific aspect of filming, for example the Emotion Pictures Film Festival organized from 2007 till 2009 which was the first festival held in Greece on the genre of documentary as a mean to highlight the concerns of artists from around the world on the topic of disability and to encourage the development of a fruitful social dialogue.

In addition GFC manages its own publications, including a bi-monthly magazine, addressing an international audience.

Grigoris Karantinakis has studied set and costume design in Lykourgos Stavrakos Film School, Athens. He also holds a Master of Fine Arts from the National Cinema School in Moscow. He has been involved as a Director and Co-scriptwriter in multiple filmography, theatre and TV projects. He has also been employed as an Artistic Assistant of the Artistic Director on National Theatre of Northern Greece (NTNG). Since 2011, he has been holding the position of the General Director for the Greek Film Centre supervising and directing the work of all departments, implementing the decisions of the Board of Directors within the framework of the internal rules and regulations of the G.F.C., as well as the approved programs and the annual budget.

Anna Kasimati holds a Bachelor of Arts in Communication Studies from the Coventry University in England and a Master of Arts in Communication Policy Studies from the City University of London as well as a Degree (Bachelor of Arts equivalent) in Communication, Media and Culture, Panteion University. She has almost 10 years of experience in Communication, Media and Culture issues. During the last three years she has been appointed as a Head of Research and European Programmes Office by the Greek Film Centre for the programming of European funds at national level, implementation, operation, monitoring and management of approved projects under the the National Strategic Reference Framework-NSRF.

2.2.10 LGMA - Local Government Management Agency

Libraries Development, Local Government Management Agency was established in 2012 to continue the functions of the now dissolved An Chomhairle Leabharlanna, The Library Council, established in 1947. The functions of Libraries Development include the following:

- the provision of advice, assistance and services to library authorities in relation to the public library service.
- the making of such recommendations to and the provision of such services for the Minister in relation to the public library service
- action to promote and facilitate library co-operation within Ireland and internationally.

Libraries Development manages the national policy for the digitisation of public library holdings and the national digitisation research and initiatives arising. Activities 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. Libraries Development works with national education bodies to develop content to support the education curriculum in schools, with libraries to develop literacy and numeracy supports and liaises with teacher training colleges to tailor content and content applications to the requirements of the teacher. The organisation has participated in a number of EU projects including Activate, Cultivate, MINERVA, MinervaPlus, MinervaEC, EuropeanaLocal and is currently the national participant in the Linked Heritage, ENUMERATE and AthenaPlus projects.

Key personnel:

Annette Kelly is the Head of Libraries Development. She is the library advisor to the Minister for the Environment, Community and Local Government and is responsible for the development of library strategy at national level. Annette manages the Changing Libraries Programme for the provision of electronic services in public libraries in Ireland. Annette is one of two 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 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 liaising with education bodies to deliver a teacher education programme on cultural heritage content. Joan is currently managing the creation of an historic digital book collection online and is co-ordinating the Irish input into the Linked Heritage project. Joan has managed the Irish input to a number of EU projects including Activate, MINERVA, MinervaPlus, MinervaEC, EuropeanaLocal and Linked Heritage.

2.2.11 SPK - Prussian Cultural Heritage Foundation

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.

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, aliving 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 development, e.g. the harvesting format "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 memory institution providing inputs to the requirement analysis and technical specification of the tender. It participates as procurer to the tender. It also participates to the dissemination activities.

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 "Visitorrelated 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.

Dr. Stefan Rohde-Enslin studied ethnology and political science. He is a member of staff of the Institute for Museum Research, State Museums in Berlin responsible to support museums in questions of digitisation and long term preservation 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.

2.2.12 AJGI – Girona City Council

The mission of the Records Management, Archives and Publications Service (abbreviated SGDAP in Catalan) of the Girona City Council is to assure the preservation of and access to the municipal documentation, from the oldest documents to the most recent ones. For this reason, the SGDAP is structured in three specific but related services: the Girona Municipal Archives (AMGi) and the Centre for Image Research and Diffusion (abbreviated CRDI in Catalan), which are in charge of the management, handling and safekeeping of the municipal documentation and the city's graphic documents, respectively, and the Municipal Publications Service, which is responsible for the dissemination of studies relating to the population and the territory of Girona city.

Through its specific services, the SGDAP is a key point of reference for professionals in Spain. For instance, the AMGi is a model institution in the handling and dissemination of historic documentation, as is shown precisely by the publication of the Document Collection of the Municipal Archives and by the design, implementation and operation of the system for managing the City Council's documents.

The SGDAP website brings together information and resources from the AMGi, the CRDI and the Municipal Publications Service, including the free open consultation of digitised documents that total over one million pages from the press, 145.000 photographs (and the references of over 1.500.000) as well as over 1.700 hours of video, 630 hours of radio and more than 1.600 graphic documents (posters, prints, programmes, etc.), in addition to specific resources on past events in the city, Girona's urban history, and photographic techniques and processes (daguerreotypes, chronophotography, albumen prints, etc.).

<http://www.girona.cat/sgdap/cat/index.php>

Joan Boadas i Raset has held the position of Girona Municipal Archivist since 1990. He also holds the positions of General Manager of the Cinema Museum, Director of Research and Image Diffusion Centre and is Head of the Municipal Records Management, Archives and Publications. He has written a number of books and articles on the topic of archives. He has been President of the Coordinator of Spanish Archivists Associations between 2003 and 2005 and President of the Catalonia Archivist Association (AAC) from 2001 to 2005 and is currently the representative of AAC on the SPA Steering Committee. In May 2009 he was nominated ICA (International Council on archives) commissioner for photographic and audiovisual archives.

Sònia Oliveras i Artau is a computer science engineer at the Department of Records Management, Archives and Publications of the City Council of Girona, where she works on the digital records preservation, and data privacy management. She has been a lecturer on Electronic Records Management at the Escola Superior d'Arxivística i Gestió de Documents (ESAGED, High School of Archives and Records Management) of Autonomous University of Barcelona, and she has taught courses on this matter, Computer Science and Data Privacy at the University of Girona, the Girona City Council, the Autonomous University of Santo Domingo and in national, regional and local public administrations. She has collaborated in MoReq 2 revision and participated in the international project InterPARES 3, and has written and collaborated in different articles on Electronic Records Management.

2.2.13 EVKM - Ministry of Culture Estonia

Within the Estonian Government, the Ministry of Culture is responsible for organising 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, MICHAEL Plus, Athena and CARARE projects and currently is participating in PREFORMA, Linked Heritage and ATHENA Plus projects.

The mission of IT Division is to coordinate and support digitisation activities and developing different IT solutions for institutions under the ministry.

Estonian cultural institutions actively digitise collections and therefore there is growing demand for new services in the fields of digital preservation.

Key Personnel

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 ITsystems (the IT systems of the museums and libraries) and coordinating the IT-related fields of activities (digitalisation).

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

2.2.14 KB - National Library of Sweden

The National Library of Sweden derives its origin from the private book collections of the Swedish kings and its actual age is unknown. It gained importance in the middle of the 17th century and got the status of a national library in 1661, when a royal ordinance about deposit copies was issued. It has performed the functions of a national library in the modern sense of the word since 1878, after moving from its old premises in the Royal Palace to the present library building in central Stockholm. The National Library describes and preserves all Swedish printed materials and makes its collections available to the public. It also collects publications with Swedish associations published in other countries. From 1st of July 2012 The National Library have a new law, e-legal deposit with which the library collects and describes digital documents. This, of course, puts new demands on preservation of digital objects, as well as handling of metadata in relation to the object.

More information about The National Library can be found on <http://www.kb.se/>

Key Personnel:

Elisabeth Mannerfeldt is Division Manager Digital Collections, responsible for managing systems development, metadata and digital preservation. The division was created 2012 for addressing the new e-legal deposit act in Sweden, developing IT systems and providing information to content producers. 2003-2011 she was a managed projects at Uppsala university and National Library, among others, Digital Collecting according to the new e-legal deposit act in Sweden, Catalogue Digitisation of an older catalogue including work processes and the new digital catalogue, Educational Information System.

Bengt Neiss is an IT-architect and operation manager at the National Library. He has been active in the area of IT since 1985. Since joining the National Library in 1997 he has been involved in the areas of process and software development, archiving the Swedish web, persistent identifiers and standardization on local, national and international level. His principle area of responsibility is long term preservation of digital content.

2.2.15 Partners' roles in the project

| Participant no. * | Part. short name | Role |
|--------------------|------------------|---------------------------------------------------------------------------------|
| 1 (Coordinator) | RA | Coordinator WP3 Leader Hosting the final conference in Sweden at month 48 |
| 2 | PACKED | WP2 Leader |
| 3 | PROMOTER | WP4 Leader Providing the Communication Coordinator |
| 4 | Fraunhofer | WP5 Leader |
| 5 | HS | WP6 Leader Hosting the Open Source Workshop in Sweden at month 24 |
| 6 | UNIPD | WP7 Leader |

| | | Providing the Scientific Coordinator |
|----|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7 | BEELD EN GELUID | Memory institutions contributing to the analysis of requirements, provision of data sets for testing, dissemination and networking Principal domain of interest: audio-visual data |
| 8 | KIK-IRPA | Memory institutions contributing to the analysis of requirements, provision of data sets for testing, dissemination and networking Principal domain of interest: documents and images |
| 9 | GFC | Memory institutions contributing to the analysis of requirements for the audio-visual domain, provision of data sets for testing, dissemination and networking Principal domain of interest: audio-visual data |
| 10 | LGMA | Memory institutions contributing to the analysis of requirements, provision of data sets for testing, dissemination and networking Principal domain of interest: documents and images |
| 11 | SPK | Memory institutions contributing to the analysis of requirements, provision of data sets for testing, dissemination and networking Principal domain of interest: documents and images Hosting the Experience Workshop in Berlin at month 30 |
| 12 | AJGI | Memory institutions contributing to the analysis of requirements, provision of data sets for testing, dissemination and networking Principal domain of interest: audio-visual data, documents and images |
| 13 | EVKM | Memory institutions contributing to the analysis of requirements, provision of data sets for testing, dissemination and networking Principal domain of interest: documents and images |
| 14 | KB | Memory institutions contributing to the analysis of requirements, provision of data sets for testing, dissemination and networking Principal domain of interest: documents and images |

2.2.16 Consortium as a whole

The consortium of PREFORMA is composed by 14 partners, from 9 European countries, ranging from the North to the South of the EU. Its good geographic spread is also complemented by a good scientific and technical spread of competences and expertise.

Nine partners are memory institutions that own programmes and projects of digital archives and whose core business is in fact the management and preservation of these archives. They represent different organisations, ranging from national cultural institutions, audio-visual archives, public libraries and local memory institutions. Despite their different administrative position and actual sizes of the organisations, they share same needs and expectations towards the digital preservation issues. They play the role of procurers and users in the project. They will establish the requirements of the tender, will provide the data sets against which the results of the procured R&D services will be assessed and will contribute to the widest communication and promotion of the project results. They will also contribute to the sustainability plan of the project results, by activating their contacts with other memory institutions in Europe and world-wide to establish a network of common interest, that will continue to maintain and improve the system and tools developed in the project, accommodating new standards and new features.

The Swedish National Archives is the coordinator of the project and leads the CSA-Sustainable Network WP. The idea of the PREFORMA sustainable network is based on the successful previous experiences of the MINERVA and MICHAEL series and more recently the DC-NET and DCH-RP projects, where many of the PREFORMA partners participated and that left after the EC funding period an active network of organisations and people who share common interests on digitisation and preservation of cultural heritage. The PREFORMA project belongs to this family of initiatives that have been at the basis of the construction of the national cultural portals and eventually contributed substantially to the advent of Europeana.

Five partners contribute to the execution of the project with their specific expertise, namely:

- Three research centres - two Universities (one in Sweden and one in Italy) and one institute of the Fraunhofer - providing expertise on standardisation and system testing,
- Two small enterprises (one in Belgium and one in Italy) providing expertise respectively on tenders specifications and communication.

The team from the University of Skovde is actively involved in the work of international standardisation bodies and participates to the work of the EC on standards and their experience and knowledge is fundamental for the PREFORMA project which is so much centred on standards matters. The partner leads the CP-Prototyping WP6.

The team from the University of Padua is the coordinator of PROMISE, as Network of Excellence devoted to system testing techniques, which will be applied in the assessment and testing of the project results. The partner leads the CP-Testing WP7 and the CSA-Competitive Evaluation and Monitoring of the Tender WP8.

The team from the IDMT Institute of the Fraunhofer owns an extensive expertise on the assessment of systems design related in particular to the interaction of technology, functionality, usefulness, usability, reliability topics. The partner leads the CP-Design WP5.

Packed, the Belgium SME, manages the national cultural portal for the Flanders Community and has a very large experience in preparing and managing the procurement of services for the portal and for the Flemish memory institutions involved. The partner leads the CSA- Requirements & Tender Preparation WP2.

Promoter, the Italian SME, owns and manages the digitalmeetsculture.net online magazine that provides news and information about digital culture initiatives in Europe and in the world. The magazine will host a channel dedicated to PREFORMA, where the tender will be publicised, the results of the project disseminated and the technical resources made available to the network of common interest. The partner leads the CSA-Dissemination WP4.

2.2.17 Other Countries

PREFORMA has no participants outside of the EU member states.

2.2.18 Additional Partners

PREFORMA has no as-yet unidentified participants in the CSA part of the project (WP1-WP4).

Suppliers with winning bids on the tender to be issued will participate in the CP part (WP5-WP7) according to the functional requirements and performance criteria defined by WP2. They will contribute open source solutions for checking, reporting and correcting file format issues, both at the time of ingestion into digital archives and for validating the compliance of content generation tools with standards. The immediate contact for each supplier will be with the current task leader which is always one of the memory institution partners, supervised for quality assurance by the current WP5-WP7 work package leader which is always an academic project partner. Ultimately, the quality of work of the suppliers is assured through the selection process of which suppliers that will be allowed to continue into the next project phase.

PREFORMA will liaise with several memory institutions and research groups outside the project in the sustainable network of common interest that WP3 will create. Mechanisms will be created for how to involve those – if interested – in taking part in the PREFORMA tender, and the same mechanisms can then be used for future joint pre-commercial procurements. The external memory institutions will collectively act as associate partners of the PREFORMA project.

Support letters from memory institutions and other organisations across Europe have been collected at the time of preparation of the proposal. These organisations will be the starting point of the network of common interest. This shows that there is great interest in PREFORMA already at this early stage, and proves that the PREFORMA objectives are of critical importance.

2.3 Resources to be committed

The core objective of the PREFORMA project is to organise the tender to procure pre-commercial R&D services from a range of European technology suppliers, in order to serve the needs and requirements of the participating memory institutions. In addition, complementary to this core objective, the PREFORMA project aims to organise a wide dissemination campaign in order to inform the other European memory institutions about the results achieved and to plan for the sustainability of the PREFORMA network of common interest. The PREFORMA network is intended to provide benefits to the cultural heritage sector (whose institutions will be users of the developed technologies) and to the research sector (including both ICT and digital humanities).

In order to achieve these goals, the key resources for the project are threefold:

- the co-funding of the **costs of the procurement**;
- experienced **personnel** who have the expertise and the track record to successfully coordinate the organisation of the tender, its publicity, the dissemination of the project results and the creation of a network of cultural and research institutions;
- **other direct costs** to cover the travel and subsistence costs of the partners to attend the project meetings, the costs for the legal assistance to the tender, the costs for the realization of the dissemination material and the costs for the final conference.

The total costs of the procurement amounts to 2,805,000 euro. This amount is budgeted to cover the following R&D work:

- 6 suppliers of the first design phase;
- 3 suppliers of the second phase that includes: first prototyping, second design, second prototyping;
- 3 suppliers of the third phase, corresponding to the final testing with real data sets provided by the memory institutions.

The first design phase is estimated to value 65,000 euro, for each supplier.

The second phase is estimated to value 700,000 euro, for each supplier.

The third phase is estimated to value 105,000 euro, for each supplier.

The tender will be called for the whole procurement that includes: first, second and third phases.

Breakdown of the participation to the procurement costs by Public Procurers

The following table shows the percentage of total effort per partner and the breakdown per partner in terms of percentage of EU contribution. The distribution is the result of negotiations among the partners, taking into account the size of each memory institution and the relative need for the PREFORMA tools.

| Partner short name | Percentage of participation to the procurement | Budgeted cost of the procurement in € | Budgeted co-funding of the procurement by the partner in € |
|--------------------|------------------------------------------------|---------------------------------------|------------------------------------------------------------|
| RA | 25% | 711.667 | 177.917 |

| | | | |
|-----------------|-----|---------|---------|
| BEELD EN GELUID | 8% | 211.667 | 105.833 |
| KIK-IRPA | 14% | 391.667 | 97.917 |
| GFC | 4% | 101.667 | 50.833 |
| LGMA | 8% | 211.667 | 52.917 |
| SPK | 14% | 391.667 | 97.917 |
| AJGI | 8% | 211.667 | 52.917 |
| EVKM | 6% | 161.667 | 40.417 |
| KB | 15% | 411.667 | 102.917 |

In addition to the subcontracting for the procurement, the following subcontracting costs are foreseen for support services:

| | Amount in euro | Partner |
|------------------------------------|-----------------------|----------------|
| Legal expert | 10,000 | RA |
| Services for the final conference | 10,000 | RA |
| Production of promotional material | 8,000 | PROMOTER |

Significant personnel time and effort will be needed in order to prepare the tender, to monitor and assess its execution and to meet the coordination and dissemination aims of the project, and this is reflected in the dedication of man-power to the project by all partners. This effort will be made up of the work of senior engineers, ministry/agency officials, technical advisors, communication experts and also some administrative and secretarial support.

The total number of person-months for the whole project is 223. The allocation among the partners have been carefully made to have balanced involvement in the CSA part, and additional budget for partners leading work packages and tasks or making identified contributions.

The project management effort is of 27 person-months along the 48 months of project's duration. This reflects the employment of a Project Manager by the Coordinator, 2 p-m allocated to Communication and the Scientific Coordinators, 1 p-m allocated to the other partners for their contribution to the management activities of the project.

The remaining costs are for travel and dissemination.

Costs for dissemination include the costs for: 1 international conference in Sweden (10,000 euro budgeted in the subcontracting of RA), the printing of dissemination material (8,000 euro budgeted in the subcontracting of PROMOTER) and the organisation of the Open Source Workshop in Sweden and the Experience Workshop in Berlin.

Travel costs have been estimated as € 115,500. This includes the partners' travel costs considering the reimbursement of travel and subsistence to attend 4 project meetings (on average once per year), 1 person per meeting, during 4 years of project duration + additional technical/management meetings for WP and Task leaders. In order to keep down the costs for the project, when participating in conferences, the partners will exploit other sources of funding (such as other projects in the same domain). The partners are committed to supplement their travel and subsistence budget with their own internal resources, if needed. In addition to the partners' travel costs, c €

7,000 are allocated in the budget of the Coordinator for the reimbursement of travel and subsistence to experts attending the workshops and the final Conference.

The total cost of the project is c € 4.758.000.

The total request of funding is c €3,526,000.

The cost of the CSA part is c € 1,589,000.

The cost of the CP part is € 2,805,000 (allocated to the suppliers selected through the tender).

The cost of the Project Management is c € 364,000 corresponding to c 6,65% of the total project costs.

Breakdown by Work-package

The project person-power is broken down by work-package as follows:

| WP1 | WP2 | WP3 | WP4 | WP5 | WP6 | WP7 | WP8 |
|-----|-----|-----|-----|-----|-----|-----|-----|
| 12% | 19% | 18% | 20% | 1% | 1% | 8% | 22% |

The RTD work in WP5, WP6 and WP7 is executed by the suppliers selected by the tender.

2.4 Indicators

| Indicator No. | Relating to which project objective / expected result / WP? | Indicator | Method of measurement (name of partner responsible) | Expected Progress | | | |
|---------------|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------|-----------|
| | | | | Year 1 | Year 2 | Year 3 | Year 4 |
| 1 | WP1 | Advisory Board | Advisory Board established | 3 members accept to join the Advisory Board | 3 members | 3 members | 3 members |
| 2 | WP2 | Functional requirements and technical specifications for the tender agreed among the partners | Included in D2.2 Tender Specifications / PACKED | Requirements included in the tender published at month 5. Precise definition of the requirements contributes to a smooth execution | | | |

| | | | | | | | |
|----|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|----------------------|------------------------------------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------|
| | | | | of the tender | | | |
| 3 | WP2 | Suppliers contracted | Contracts signed by the Coordinator (on behalf of the consortium) with the suppliers | - | 6 contracts signed | 3 suppliers continue with prototyping | 3 suppliers continue with testing |
| 4 | WP3 | Network of common interest established | Cooperation Agreements signed / PROMOTER | 2 members | 5 members | 10 members | 20 members |
| 5 | WP3 | National working groups | Working groups established in the partners home countries | Preparatory meetings | Invitation to the Open Source Workshop | Invitation to the Experience workshop | Invitation to the final conference |
| 6 | WP3 | Open Source Workshop | Workshop held / HS | - | 20 participants | - | - |
| 7 | WP3 | Experience Workshop | Workshop held / SPK | - | - | 30 participants | - |
| 8 | WP4 | Visibility of the PREFORMA website | Google Analytics / PROMOTER | 100 visitors | 500 visitors | 1,000 visitors | 2,000 visitors |
| 9 | WP4 | Final conference | Participants to the conference / RA | - | - | - | 150 |
| 10 | WP7 | <p>PREFORMA software:</p> <ul style="list-style-type: none"> - Validation Web Application up and running - PREFORMA Core Validation Framework defined (API) and implemented - DIRECT and PREFORMA services integrated | Source code delivered on the Open Source Portal / the Suppliers | - | Release specifications + initial implementation; 3 supplier components implemented | Final implementation; 3 supplier components implemented | 9 data sets processed for testing and validation |

3 Section 3: Impact

3.1 Expected impacts listed in the work programme

3.1.1 Reduced preservation costs and improved preservation capacity

Reduced preservation costs and improved preservation capacity and competences in public organisations dealing with digital preservation, including small archives.

Improved capacity

PREFORMA deliberately targets the identification and validation process, since it is the weakest link in the digital preservation lifecycle, particularly at the moment when digital objects are ingested in the digital preservation infrastructures of memory institutions.

These institutions typically have a comprehensive preservation infrastructure in place. However, its performance is often undermined by diverging implementations of file formats, which obstruct the preservation actions of the infrastructure or even prevent digital objects from being ingested.

One way of dealing with this problem, is moving away from procuring out-of-the-box preservation solutions and building capacity within the institution to remediate the preservation workflow in terms of the object to be ingested.

Memory institutions heavily rely on open source components for building these workflows, since only software under an open license allows them to build tailor-made solutions.

PREFORMA aims for strengthening this approach by procuring an open source validation platform that enables memory institutions to make a better assessment of the digital objects they acquire and facilitates the improvement of the preservation infrastructure they already have in place.

PREFORMA deliberately procures an open source software component that can be easily integrated in the existing preservation workflows. Therefore the testing phase deliberately includes an implementation in the existing preservation workflows of the participating memory institutions.

This will not only improve the preservation efforts of the particular memory institution, but should also ensure and demonstrate the feasibility of the integration of the tools developed by PREFORMA in existing infrastructures.

Forward looking approach to societal changes; Reduce fragmentation in public sector demand for ICT solutions

PREFORMA not only targets developers and memory institutions within the user community of the procured tools. PREFORMA also targets the wider digital preservation community, by providing specifications and feedback to developers, standard bodies and other memory institutions.

PREFORMA will disseminate the specifications of reference implementations, specifically for preservation purposes, among developers, standard bodies and other memory institutions with the objective of building consensus on the use of these implementations in preservation environments.

This should enable developers to include code libraries for these implementations in other types of preservation tools, but also in common desktop applications.

These tools and applications may include viewers, emulation and migration tools for these implementations which may result in out-of-the-box preservation solutions for smaller memory institutions and inclusion in document management solutions for enterprises and public sector organisations.

Reduced Cost

Memory institutions are facing a wide range of file formats and subsequent implementations, often only relevant for their own collection domain.

Developing identification and validation services for each format in its particular domain would mean a huge fragmentation of the available budget for research and development. Moreover, since these applications are limited to specific domains, the viability of the user community for the support and uptake of these applications is too small.

By organizing a joint procurement for a validation platform that facilitates multiple file formats and implementations, the cost of research and development of validation tools for future file formats will be limited to the development of smaller modules that can be plugged in into the core components of the validation profile. This would as well reduce the cost of implementing the validation of new file formats in the preservation workflow, since the core component will already be part of this workflow.

By using the validation platform, procured by PREFORMA, memory institutions obtain a flexible and more sustainable validation platform that reduces the future cost of validating new types of digital objects.

Through the user and developer community built by PREFORMA, memory institutions may benefit from research & development procured by other institutions that use the same platform.

Market uptake and scale

By publishing the specifications, core components and modules under an open licence, PREFORMA also aims for a proactive approach towards digital preservation by targeting developers outside the preservation community.

The availability of reference implementations and corresponding validation tools facilitates the inclusion in software used in production environments.

By targeting developers of software for creative industries and desktop applications, enterprises and public sector organisation may dispose of practical tools to facilitate the production of documents aligned with the preservation demands of the memory institutions archiving their content.

Rights

PREFORMA avoids distributing IPR of the R&D activities exclusively to the public authority, or the technology provider. On the contrary, in the domain of file format identification and validation,

it is essential that other developers and memory institution can freely dispose of the tools and specifications produced. On the long term, this will increase the conformance of documents archived by memory institution.

By choosing a PCP approach, PREFORMA will avoid to include IPR in the contract negotiations. The distribution of rights will be published upfront in the tender documents.

PERFORMA distinguishes between three types of project results as to the rights status:

- Specifications of reference implementations: open licence
- Core components & modules: “Abstract Conformance Checker”, “Scorer”, “Reporter”, and “Abstract Fixes Suggester/Correcter” will be open license.
However, the technology could be adopted by the suppliers also outside the preservation domain. Adoption in Creative software and document management may improve the migration of documents from a production to an archiving environment. Should endorse wide commercialization of the software
- Implementation related software: user interfaces, integration
free usage rights, share, but preferably allow re-use of results in new products and services. May endorse the inclusion of the conformance checker in the preservation products of big software providers. Require the technology partners to license out implementations to third party suppliers under fair and reasonable market conditions. Allocating these rights with the suppliers enables the supplier to develop the exploitation of preservation services base on the core components and modules. The customization effort is more interesting for the supplier when he can consider it an investment in intellectual property which can be reapplied later as a building block for other projects.

3.1.2 Strengthened position of European service and technology providers

The issue of digital preservation requires interoperability and coherence of solutions across borders and cross-border cooperation between public purchasers.

For this reason, the European service and technology providers must address a market that is in its own essence European and even wider.

The private companies and research centres that will participate to the PREFORMA tender - and in particular those who will win the tender - will have the unique opportunity to work within a truly European environment, without having to face and resolve case by case the difficulties due to the fact that the procurers belong to different countries. These problems will be addressed in the CSA part of the project and will not be charged on the shoulders of the service and technology providers.

The large number of procurers which participate to PREFORMA, their different nature and expertise as well as their different countries of origin will offer the very relevant benefit to the suppliers to work closer and with a direct contact with a wide range of customers that include national and public libraries, museums, archives, audio-visual recording archives as well as national and local governmental bodies. Such a rich representation of requirements and needs will be a very valuable opportunity to develop solutions that are more focused to provide effective answers to the customers' demand.

For the reasons explained above, the commercial products that will be ready to be eventually engineered and commercialised by the suppliers at the end of the PREFORMA project will have better chances to reach a good position on the market.

However, this will be true not only for the three providers who will be selected as the winners of the full tender, but also for all the other service and technology providers who will participate to the whole tender procedure or will be involved in the networking and coordination activities, i.e.:

- all the enterprises and research centres involved in the project through publicity and dissemination activities of PREFORMA, as interested potential suppliers, will get in direct contact with a large number of memory institutions all over Europe;
- by participating to the R&D phases of PREFORMA, the winning suppliers - the 6 suppliers who will be selected to provide the design phase and the 3 suppliers who will be selected to provide the prototypes - will have the opportunity to test their results in a dynamic and European environment, against real data sets, under the supervision and monitoring of centres of excellence from the PROMISE NoE;
- the participants to the final conference will have eventually the possibility to know the achievements of PREFORMA and to discuss directly with the memory institutions of PREFORMA and with the others involved in the network of common interest established by the project.

The open competition is also expected to contribute to reinforce the commitment of the technology centres, who will be engaged in the virtuous exercise to produce the best proposals and the best results which can guarantee their success within the tender process. A fair competitive environment can have positive impact on the performances of the participants.

The networking and coordination activities carried out within the CSA part of the project will allow the technology suppliers (those who participate to the tender, those who win the tender, those interested in the subject of the tender but not directly playing an active role) to better understand the workflows of the memory institutions in their actual preservation work, to discover the weakest points that need innovative solutions, to develop products that better encounter the demand and eventually to offer the best mid-long term solutions to the European memory institutions, including the technological results achieved by PREFORMA.

The mechanism of multiple suppliers working in parallel within the design-prototype-testing phases of the procurement will allow the research of possible alternative solutions to the demand represented in the call for tender, with a higher probability to get better deliverables from the suppliers' side.

The testing of these solutions against a set of jointly defined performance criteria will improve the quality of the final results. Also, the testing reports will be beneficial for other service and technology providers who could be interested to re-use the open-source results of PREFORMA.

Finally, PREFORMA will serve through the PCP mechanism a well-defined public purchasing need, i.e. to give to the memory institutions the full control over the implementation of the standard formats of their archive, opening a new area of added-value services. The European service and technology providers will then be able to serve this market with more competitive products, thanks both to the results of the CP part of the project – which will be available within the open source community - and to the coordination actions put in place by the CSA part of the project – which will continue to be a reference point through the network of common interest.

3.2 Dissemination and exploitation of project results

3.2.1 Target groups & communication means

Target Groups

On an overall level, the project targets nearly the whole value-chain of the DCH sector, from the public funding bodies (ministries and agencies) to stakeholders (memory institutions that owns the content), commercial enterprises (publishers and creative industries), culture, education and research bodies, and end users (researchers, educators, students, practitioners and amateurs, in short the “general public”). In particular, the following seven particular groups will be targeted in PREFORMA’s dissemination and exploitation activities:

Memory institutions (museums, libraries, archives, etc.) and cultural heritage organisations coordinating or representing memory institutions (e.g., NEMO, EMF, ICOM, EBLIDA, FIAT-IFTA, CENL). This target group involves institutions and organisations that are involved in (or planning) digital culture initiatives and use the tools through the PREFORMA project.

Developers contributing code for the PREFORMA tools as well as developers implementing the reference implementations in production software. This target group involves enterprises developing tools for PREFORMA and/or providing services for the use of these tools by memory institutions, as well as enterprises providing desktop applications for text, image, sound and video editing, with an interest in improving the sustainability of the files produced.

Research organisations providing technical and expertise advice to cultural stakeholders. This target group involves academic research groups and research organisations working on standardisation of file types and procedures to assess digital files.

Standardisation bodies maintaining the technical specifications of the preservation formats dealt with in PREFORMA. This target group involves standard organisations and communities willing to use the feedback on reference implementations of preservation formats, collected by the PREFORMA project.

Funding agencies, such as Ministries of Culture and national/regional administrations. This target group involves agencies that own and manage digitisation programmes and may endorse the use of the PREFORMA tools in the digitisation process.

Best practice networks endorsing the use of open standards in creating and managing digital content. This target group involves standardisation bodies and organisations endorsing best-practices in preservation among memory institutions.

Other **projects** in the digital culture, e-Infrastructures and policy arenas. This target group involves projects that consider the use of PCP.

These stakeholders are all experts, researchers, and policy makers in the field of digital preservation; the WP4 Dissemination and Communication work package will interact with them as recipients of the dissemination activities and engage them in building a European group of interest for the exploitation of the project results.

To ensure that PREFORMA will have an impact at EU level, it is important that information is disseminated to appropriate audiences in a timely manner.

Communication Means

PREFORMA will employ a range of complementary *communication mechanisms* to transmit the project messages to its target audiences. They include the following:

Website

Methods for communication will include a public website, where stakeholders can access information bespoke to be of interest to them, and which can be used by the project partners.

The project website will publish all project knowledge assets. It will announce the events organised by the project, as well as other events that are relevant, and will be updated immediately after every dissemination and/or concertation event, so that the website is a very up-to-date reflection of the project at all times. This includes prompt publication of project intermediate results, discussion papers, presentations, and seminars and workshop minutes. In order to increase the number of users accessing the website, it will be featured as a dedicated area within the digitalmeetsculture.net portal that already reached an average of 5,000 visitors per month.

Final Conference

The project will deliver one international conference at the end of the project to present the final results. The conference will be held in Sweden with the aim to illustrate and promote the results of the pre-commercial tender. The conference will offer an opportunity for as many members as possible of the network of common interest (created around the project by the participants to the dissemination activities) to come together and discuss the topic of digital preservation. The conference foresees also the participation of EC representatives and experts in digital preservation, from both partner and non-partner countries.

Dissemination material

An initial set of promotional materials will be produced:

- Project logo;
- Presentation material including a template and a basic presentation in English (to be translated in other partners' languages);
- Project factsheet in English (to be translated in other partners' languages);
- Leaflet;
- FAQs;
- Posters for project dissemination during scientific events;
- Self-portable banner to be used in the occasion of dissemination events.

On the basis of the project outputs, additional promotional and communication material will be produced, such as:

- Updated versions of the leaflet;
- Booklets with synthesis of the most interesting results.

All the material will be made available online and some of it will also be printed. Customised gadgets with project's URL and logo will be produced – always avoiding unnecessary wasting of

money - in order to be distributed at the final conference and other meetings (e.g. shoppers or pens or other promotional gadgets).

Media and scientific journals

Progresses and results will be illustrated in proceedings and professional journals.

Here is a list of peer reviewed journal, a selection of which the PREFORMA consortium will target during the project lifetime:

- International Journal of Digital Curation;
- Ariadne, web magazine for information professionals in archives, libraries and museums;
- First Monday;
- International Journal on Digital Libraries;
- Journal of digital information;
- SCRIPT-ed;
- World Digital Libraries;
- Digitalia.

Moreover, short articles will be published in projects newsletters, e-bulletins (Apogonline, iMAL, iSGTW, Key4Biz, HPC in the cloud and NUANCE), blogs and portals managed by the European Commission (i.e. Research & Innovation) and at national level in partners' countries. A *show-case* about PREFORMA will be opened and maintained in the *digitalmeetsculture* portal by PROMOTER providing links to the major outcomes of the project.

Presentations of PREFORMA at third party events

In close cooperation with all WPs, PREFORMA will contact the organisers of international, European and national events and workshops organised by other institutions and projects. Project presentations will be customised in order to illustrate objectives, activities and outputs of the project contextualised for the specific event.

Here is a list of conferences and workshops, a selection of which the PREFORMA consortium will attend during the project lifetime:

- Europeana and Europeana Group project conferences;
- DARIAH, CLARIN and DASISH events;
- iPres Conference
- Other events by European projects related to digital preservation and e-humanities;
- EVA conferences;
- Museums and the Web;
- World Digital Library conferences;
- ESOF
- Academic open source conferences (e.g. IFIP WG 2.13 International Conference on Open Source Systems)
- Academic open standards conferences (e.g. Euras, SIIT, etc.)
- Open source industrial associations (e.g. Open Source Sweden)
- Open source community conferences (e.g. FOSDEM)
- Open source industrial conferences (e.g. Open World Forum)
- National policy maker events (e.g. Almedalsveckan)
- Open source expert networks (e.g. Open Forum Academy)
- Governmental IT standardization advisory committees (e.g. IT-standardiseringsrådet, which is part of the Swedish national e-Gov initiative)

Conferences, concertation meetings and information days organised by the European Commission will also be targeted.

Metrics and Assessment

The success of the dissemination will be assessed in terms of take-up of the initiative by stakeholders and expected users.

As also provided in the Indicators table, the following metrics and assessment are applied:

- If the website receives a significant number of individual visits, and many visits from beyond the partner countries;
- If the final conference is well attended, both in terms of number of participants and in the quality of the interaction and discussion among the participants;
- If the technical and mass media publish articles or features which concern PREFORMA;
- If new organisations join the PREFORMA community of interest.

Disseminating knowledge in the AV domain

A special attention will be devoted to the dissemination in the AV domain, that has some specificities to be taken into account also during the dissemination.

One set of actions is aimed at those within the archive, preservation and technology communities, to draw existing players into the scope of the project; a second is aimed at those with professional needs to engage with media preservation; and a third is to those with no special engagement with media preservation but who ought to know about it, either because their decisions will have implications for us all, or because their lives (and personal collections) will in some way be impacted.

The first line of dissemination will address the existing structures in the professional communities, and the connections built up over the years first by the core partners (the national audiovisual archives), by the Presto family of projects, and more recently by PrestoCentre. NISV is host to the PrestoCentre. There are a number of important professional associations and intermediaries, together with several newer national and European initiatives growing out of preservation research, which provide efficient access points for communicating with a large number of archives on the one hand and the digital preservation community on the other. All of these groups are in some way grappling with the problem of making the transition from analogue to digital preservation, and are more than willing to be involved in developing, evaluating, and sharing knowledge about archiving audiovisual content.

The International Federation of Television Archives (FIAT/IFTA) has more than 250 members, made up of television archives, multimedia archives and libraries engaged in the preservation and exploitation of moving images and recorded sound. FIAF, the International Federation of Film Archives, is a 'movie world'-equivalent of FIAT/IFTA with 84 full members, which are specialist archives dedicated to collecting, cataloguing, preservation, providing access to and restoring films, and another 67 affiliates. DFI has been a full member since 1946; it is also a member of the Association of European Cinémathèques (ACE), a European grouping that brings together 41 national and regional film archives with the aim of preserving the European film heritage. They will all be targeted by the dissemination activities of PREFORMA, participating to their events and providing dissemination material.

The International Association of Sound and Audiovisual Archives (IASA) was established in 1969 in Amsterdam as a medium for international co-operation between archives that preserve recorded sound and audiovisual documents. IASA has a technical committee which writes influential guidelines documents. TC-04 has become the reference for audio digitisation and preservation. Besides IASA, Partners in PERFORMA are also engaged with the Association of Moving Image Archivists (AMIA), which reaches individuals as well as institutions, PERFORMA will continue to disseminate through connections, established by PrestoCentre, with national libraries and archives and with their umbrella bodies, the International Federation of Library Associations and the International Congress on Archives ICA — and, of course, Europeana.

3.2.2 Exploitation

PERFORMA will provide an online platform for the exploitation of the core components and modules. This platform will facilitate the interaction between memory institutions, developers and research institutions when developing, deploying and assessing the PERFORMA tools. The exploitation platform fosters the transparency of the development process for all stakeholders. PERFORMA aims for an open approach, sharing the specifications, code and artefacts produced by PERFORMA using open licence in order to improving the alignment of research, development and deployment activities undertaken by the consortium. Hence the project starts the exploitation of the core component and modules from the very start of the development process, with the aim of establishing a sustainable user and developer community around the applications by the end of the project. This open approach should also create a low barrier opportunities for users and developers not part of the PERFORMA consortium, to contribute to the development of the core component and modules. This may involve in particular developers and users from outside the cultural heritage domain.

PERFORMA will target three groups of stakeholders in the exploitation of the core component and modules.

Developers

(Issues: involving developers, removing market barriers, addressing SME's, distributing IPR)

Via the exploitation platform, PERFORMA will target all enterprises contributing code for the PERFORMA tools and developing services based on these tools, first and foremost the enterprises participating in the tender but subsequently also other developers that are interested to contribute to the code. The exploitation platform will meet their needs as to technical documentation on the core component and the modules and information about the terms under which they can contribute to the code. PERFORMA will provide a virtual meeting place where developers may discuss current development issues and the future development path for the tools.

To this end, PERFORMA will create a developer's workspace, including a 'get involved' describing the terms under which developers can contribute to the project, an archive with all project documentation, a development timeline, a developer forum, code repository and bug tracking tool. These communication channels will enhance the visibility of the developer community around the PERFORMA tools and invite new developers to use and contribute to the source code. By providing free access to all the technical documents and a single access point

where developers take note of the project objectives and terms of contributing to the code, PREFORMA creates low commitment opportunities for external developers and service providers to participate in the development of the core components and modules.

PREFORMA aims at involving developers (SME's) from all over Europe to actively use the exploitation platform and use it for all communications about the subsequent development cycles of the tools and deployment of the tools in the memory institutions.

Memory institutions

(Issues: involving stakeholders)

Via the exploitation platform, PREFORMA will target memory institutions deploying the core components and modules in their digitisation and preservation workflows. The platform will facilitate the interaction between developers and memory institutions when analysing their current workflow and integrating the software in their local infrastructure. The exploitation platform will enable the stakeholders to monitor the progress and the feedback on the deployment process. The platform will meet the memory institutions needs for user documentation and training, the objectives and actions of the PREFORMA project and information about enterprises providing services based on the PREFORMA tools. PREFORMA will also provide a virtual meeting place where users can report bugs and discuss the (desired) functionalities of the tools.

To this end, PREFORMA will create a user's workspace, including a wiki for developing the usage case of each memory institution, a beginners guide for the deployed tools, detailed user documentation, training materials, a user forum and bug tracker and a section with links to enterprises providing additional services based on the tools. By providing this information free and without charges from the start of the project, PREFORMA facilitates the formation of an open user community that should enable the tools to be further developed after the PREFORMA project ends.

PREFORMA aims at realising a user workspace involving memory institutions to actively use this workspace when providing feedback for the development of the tools. PREFORMA will provide the required user documentation and maintain a section with links to enterprises providing services based on the tools.

Research organisations

(Issues: involving stakeholders, distributing IPR)

PREFORMA will target research organisation with a scientific interest in identification, validation and normalisation of digital files and who may provide technical and expertise advice to cultural stakeholders. PREFORMA will meet their interest in the technical issues raised in the development cycles of the tools and the practical demands of users in the memory institutions.

To this end, PREFORMA will inform research institutions about the project through academic journals that report on the proceedings of the PREFORMA project. PREFORMA will also participate in specific conferences on the intersection of academic research and developers of Free and Open Source Software. By using these communication channels, PREFORMA will generate more interest among academic researchers involved in the open-source community, which may result in gaining new expertise to solve issues in the development process.

PREFORMA aims at publishing articles in academic journals related to e-humanities and open-source software development and at participating in conferences in the same field.

3.2.3 Dissemination

PREFORMA will provide a platform for the dissemination of the project results. This platform will facilitate the communication of the achievements of the PREFORMA project to the wider preservation community. Also here, PREFORMA will target five groups of stakeholders in the dissemination of the project results.

The communication with each stakeholder group will take into account:

- What information each group requires?
- The format (and the media) in which they need this information?
- How this information has an impact on the target group?
- How this impact will be measured?

Developers

PREFORMA will target developers of software for creating digital objects, raising their interest to implement the reference implementations developed by PREFORMA in text, image, audio or video-editors.

Standard bodies

PREFORMA will target organisations and communities maintaining the technical specifications of the preservation formats handled by the PREFORMA tools

Best-practice networks

PREFORMA will target best-practice networks, such as standardisation bodies and cultural heritage organisations (PrestoCentre, APA) endorsing best-practices in preservation among memory institutions. Such networks might be interested in endorsing the tools developed by PREFORMA as part of preservation toolbox.

To this end, PREFORMA will actively communicate the progress and achievements of the project via the communication channels provided by these networks, such as mailing lists, newsletters, web announcements, professional social networks, etc. By using these existing communication channels, PREFORMA will gain recognition among the existing preservation networks in the cultural heritage world.

PREFORMA aims at cooperating with other best-practice networks in the domain of digital preservation and e-humanities.

Funding agencies

PREFORMA will target funding agencies, such as Cultural Ministries and national/regional administration, managing digitisation programmes. Such agencies might show interest in using the tools developed by PREFORMA in assessing digitisation projects and monitoring preservation issues. PREFORMA will meet their interest in user documentation for the tools, reference

implementations for normalisation of digital files, sharing their particular needs as to the assessment of digital files.

To this end, PREFORMA will provide the relevant documentation and specification via a public project website, describing the objectives of the PREFORMA tools and including all references to the documentation produced. PREFORMA will also communicate with funding organisations by participating in national and regional events related to digital preservation and by dissemination promotional materials. By using these communication channels, PREFORMA will promulgate the achievements of the PREFORMA project among policy makers.

PREFORMA aims at involving public agencies in the use of PREFORMA tools for quality assessment in digitisation projects.

Projects

PREFORMA will target other projects in the digital culture, e-Infrastructures and policy arenas. PREFORMA will share its experiences regarding PCP in innovating public services in collaboration with enterprises and research organisations.

To this end, PREFORMA will publish the results of the PREFORMA project on its project website and in relevant journals and newsletters. The results will also be discussed at length at the final international conference.

PREFORMA aims at sharing experiences on PCP with other projects in the field of digital preservation and e-Infrastructure.

3.2.4 Network of common interest

The network of common interest of PREFORMA will be set up with representatives from memory institutions, researchers and developers who are interested to contribute to the definition of the requirements and to take part in the assessment and the exploitation of the results produced by the suppliers in the CP part of the project.

The network will start with the organisations who expressed their interest in the project at the time of the preparation of the proposal.

There are 11 organisations that in fact cover the different profiles of the expected members.

This initial network will be the base for a sustainable network of common interest existing beyond the EU funded period and aiming at encouraging future use and development of PREFORMA tools and services, possibly also via new future joint procurements.

The organisation of national working groups will contribute to the growth of the network of common interest.

The network of common interest will be naturally liaised and integrated with the possible new “Network of procurement” (see next section for more information), as its future legal basis for new procurements.

The resources created for the establishment of the network of common interest will be gathered in the Terms of Reference of the network and made available for replication. Also the activities carried

out for the animation of the network will be documented in the dissemination reports that will be made available to the subscribers of the network. They will include:

- Conferences and conference proceedings
- Regularly updated online information and documentation;
- Seminars and webinars, with podcasts of the events when available;
- Meetings with representatives of the cultural heritage, ICT research, software developers, e-Infrastructures communities in member states beyond the consortium and presentation of the PREFORMA initiative;
- Training materials created and training events delivered to non-consortium member states;
- Handbooks, recommendations and best practice guides, crystallising the results of the project;
- Contacts and mailing lists.

PREFORMA will seek for synergies with already existing networks and working groups.

The added value of the PREFORMA network of common interest is mostly related to the experience that the specific action of the pre-commercial procurement, carried out jointly by memory institutions from all over Europe will deliver. Such added-value will be elaborated by the members of the network of common interest, via Skype conferences, exchanges of email, ad-hoc meetings and shared with other organisations and groups, all over Europe and beyond.

The knowledge and experience discussed in the network of common interest will be the starting point for the more focused objective of the Network of procurement.

3.2.5 Network for Procurement

Exploitation and use of the results of the tender on the long term is vital for the project. The way DCH institutions and providers of preservation services and tools intend to proceed after the project has ended must be described and agreed among the institutions and organisations involved in the project as partners on the basis of the assessment of the results of the tender.

In month 42 the project will deliver a sustainability plan that will describe the future use of PREFORMA tools and services. This plan will investigate the possibility to establish a business case for a network of procurement. The investigation will tackle and propose an agreement on the following aspects:

- the legal personality of the organisation that will maintain the project results after the end of the project
- who will continue maintaining the open source code
- who will coordinate the activities of the user and developer community etc
- expansion towards other areas and standards (eg. e-books, 3D etc.)

3.2.6 Individual Partner Dissemination and Exploitation

1. RA – National Archives (SE)

The National Archives of Sweden is the leading archival institution in Sweden and has also the supervision of public records deposited by all state agencies. The National Archive is commissioned by law to preserve, organise and care for these 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. In this role the National Archives will disseminate and exploit the results of PREFORMA as a part of its legal task, including its right to give regulations for preservation of public records.

As a cultural heritage institution the National Archives also will spread the knowledge of the tools and services developed by PREFORMA to other memory institutions in Sweden (e.g. libraries, museums). This will be done through the special secretariat for coordination of digitisation, on line access and digital preservation in the culture heritage sector that the National Archives has organised on behalf of the Swedish Ministry of Culture. The National Library of Sweden, a partner in the PREFORMA project, is also taking part in this coordination.

The National Archives has as a special task to pursue research and cooperate with the universities and other parts of scientific community. Also in this context the National Archives will disseminate and exploit PREFORMA outcomes.

A national working group covering the mentioned target groups will be organised.

2. PACKED - Packed Expertisecentrum Digitaal Erfgoed VZE (BE)

As a centre of expertise in digital heritage, PACKED vzw means to play a central part in Flanders in centring the development of knowledge, experience and expertise regarding digitisation and digital archiving, and in spreading the acquired knowledge, experience and expertise. In this way, the centre of expertise means to improve and guard the quality and efficiency of actions in regard to digitisation and digital archiving within the broader field of cultural heritage. Disseminating the results of projects in which the organisation is involved, in this particular case PREFORMA, is thus one of the core tasks of PACKED vzw.

The results of the PREFORMA projects will be disseminated to the Flemish cultural heritage field through incorporation in CEST (<http://www.projectcest.be>), an online toolbox developed by PACKED that provides information on putting (digital) cultural heritage standards into practice. One of the CEST-sections focuses on tools for file validation and the PREFORMA results will therefore become part of the tools that are offered.

We will also investigate how the newly established VIAA (Flemish Institute for Audiovisual Archiving) can benefit from the PREFORMA results, in particular with regards to audiovisual file validation.

As a result of the CIP-ICT PSP project 'Digitising Contemporary Art' which PACKED coordinates until June 2013, a wiki which partly focuses on long term preservation of digital files and their metadata (in particular images, audiovisual content, ... relating to contemporary art) will be constructed. The PREFORMA-tool can also be offered as a useful resource on that platform.

3. PROMOTER – Promoter S.l.(IT)

Promoter is an SME that operates in the domain of added-value services for digital cultural heritage. The knowledge acquired in the PREFORMA project will be a very important asset to be in the position to offer more competitive services to its customers, about planning digital preservation solutions and adopting the tools and technologies developed by PREFORMA. In addition, hosting

the PREFORMA web activities on its digitalmeetsculture.net portal, will benefit the improvement of the portal's information, making it more interesting for its users.

4. Fraunhofer - Fraunhofer Gesellschaft zur Foerderung der Angewandten Forschung E.V (D)

Fraunhofer as Europe's largest independent organisation with a specific focus on applied research has meanwhile established a comprehensive network of research partners and industry contacts (mainly SME) in Germany and beyond. From a dissemination viewpoint, scientific events like congresses and conferences but also Fraunhofer-internal research and development events will be used for forwarding the scientific results of the project in general, and Fraunhofer's project results in particular, to the research community. Areas like assessment, evaluation and validation will mainly be addressed, accompanied by areas like secure media content distribution, usability, and metadata for content search and recommendation. Moreover, Ph.D. theses, master and bachelor theses will be used to further disseminate the project results. From an exploitation viewpoint, Fraunhofer will use its various contacts to both large industries like Siemens, and "creative" SME representatives in Germany and beyond for bringing the developed new technology to market.

5. HS - University of Skövde (SE)

The University of Skövde is one of the most specialised universities in Sweden and our research is focused on the development and use of advanced information technology systems and models. Areas of expertise include organisational and technological aspects of the ICT area. As partners in a number of high profile research projects, including the EU FP6 CALIBRE-project, the ITEA-project COSI and the ITEA2-project OPEES, we have experience of international collaboration, and close collaboration with many leading researchers and practitioners in areas related to the Open Source phenomenon. For the University of Skövde, the PREFORMA project will contribute to increased knowledge and provided us a strengthened position as a recognised knowledgeable partner in the area for the PREFORMA project, and in particular in the Open Source area. Firstly, results from the PREFORMA project will strengthen the societal and industry relevance in our course offerings. Secondly, results from the PREFORMA project will contribute to improve our competitiveness in the Swedish academic ecosystem from increased knowledge of longevity of software systems with associated digital artefacts in the software sector. Results from the project will be disseminated through high profile academic, practitioner, and community dissemination channels.

6. UNIPD - University of Padua (IT)

The participation in PREFORMA fits very well with some of the main research lines which UNIPD is pursuing in the last years – namely, experimental evaluation for information access systems and digital libraries, digital library architectures and services, and will allow UNIPD to consolidate its leading position in the field. PREFORMA will give UNIPD the possibility of consolidating and greatly improving the DIRECT system which will be made available as one of the building blocks of the PREFORMA platform. Indeed, DIRECT will complement the components and tools developed by other partners and exploited to manage and provide access to the outcomes of the

testing and evaluation activities. But the improvement of DIRECT will represent only the concrete outcome of the collaboration with the other partners, since on a methodological and scientific level UNIPD expects to have a great benefit from the integration and cooperation with the other partners in terms of shared competencies and of the possibility of consolidating its leading position in the evaluation field by applying its competencies in a concrete setting. Finally, PREFORMA will give UNIPD the possibility of consolidating and better exploiting also its own research lines and systems: for example, UNIPD is developing digital library and digital archive systems for some Italian national project and would greatly benefit from the possibility of exploiting the PREFORMA approach to evaluate and test them.

7. BEELD EN GELUID - Stichting Nederlands Instituut Voor Beeld En Geluid (Sound&Vision, NL)

Sound and Vision will use the tools as part of their in-house preservation workflow. Currently, Sound and Vision looks after 750.000 hrs of material, most of which will be digitized in the context of on-going digitization programmes, notably the Images for the Future programme. Impact will be increased through three channels. Sound and Vision will exploit the results of the project through the PrestoCentre. PrestoCentre works with experts, researchers, advocates, businesses, public services, educational organisations and professional associations to enhance the audiovisual sector's ability to provide long-term access to cultural heritage. More specifically, it will include the results in the website of the centre, its workshops and documentation. PrestoCentre is hosted by Sound and Vision. Secondly, the FIAT-IFTA community (the International Federation of Television Archives) will be targeted. Sound and Vision currently provides the president of this world-wide organization. PREFORMA results will be shared through the website, through the yearly Media Management seminars and will be included in technical reports. Finally, the EUscreen community will be targeted. EUscreen is the aggregator for television heritage and contributes large quantities of television heritage to Europeana. EBU is one of the core partners of EUscreen. Through PrestoCentre, EUscreen and FIAT-IFTA, we will ensure that all relevant stakeholders will be aware of the project and its outcomes.

8. KIK-IRPA -The Royal Institute for Cultural Heritage (BE)

The Royal Institute for Cultural Heritage (KIK-IRPA) is one of ten Federal Scientific Institutions, which fall under Belgian Science Policy (BELSPO). Those institutions offer scientists an exceptional framework and set of research tools, and their artistic and historical collections attract more than 1.2 million visitors a year. Since 1989 KIK-IRPA, which is responsible for keeping a photographic inventory of the Belgian Cultural Heritage, is working on making its collection of 1.000.000 photographs online available to the public. Technological restraints limited the quality and number of digital images. A larger digitisation program by BELSPO was launched in 2003, but the storing and preservation of data were financially not taken into account, so during those years several in-house projects were developed to tackle these problems. On the federal level KIK-IRPA will promote PREFORMA to the other federal scientific institutions from the start of the project because a new digitisation project will run from 2014 to 2017. In this new program KIK-IRPA will play a leading role in storage and preservation and serve as a contact and reference point for the other institutions. On Belgian level collaboration on the study of digital preservation already exists with PACKED and together they are member of the "Platform for digital sustainability in

Flanders". Through BELSPO KIK-IRPA participates in PREFORMA, Digital Cultural Heritage Roadmap for Preservation, a coordination action supported by the European Commission under the e-Infrastructure Capacities Programme of Seventh Framework Programme for Research (FP7). As a partner in several projects in which content will be delivered to Europeana, currently Partage Plus (2012-2014) and Athena Plus (2013-2015), KIK-IRPA will use these projects to act as an information in-between and as an example of the implementation of the PREFORMA output.

KIK-IRPA will also contribute with presentations about the use and advantages of the PREFORMA output, applied on its own collection, on international conferences on digital cultural heritage. Visits to the institution to see how the results of the PREFORMA-project will be applied will be arranged for those interested.

9. GFC - Ellinko Kentro Kinematografou (Greek Film Center, GH)

Due to the growing volume of its digitised film productions - a volume that is expected to further increase exponentially in the future, GFC seriously considers issues concerning the challenges of securing long term access and usage of its archives on a strategic level. GFC has implemented its "Digital Archive" with funding from the National Operational Program "Information Society". The Digital Archive now includes digitised film material of total 404 hours and 19 minutes in 4K, 2K and digital beta SD. This corresponds to 284 feature films, documentaries and short films. This effort will continue aiming at including the list of films that have been produced with the financing or support of the Greek Film Center, from its inception until today, summing a total of 892 films. Therefore, GFC acknowledges the strategic importance of the PREFORMA objectives and plans to further support and promote the project results in its extended network of International collaborators. GFC is a frequent participant in events such as International Film Festivals and International Markets of Audiovisual Content and can promote the PREFORMA practices there.

In addition GFC will participate, promote and support the events organised by PREFORMA itself.

As far as the actual exploitation of PREFORMA tools is concerned, GFC plans to employ them firstly on its "Digital Archive" and for this purpose will contribute with information regarding the specific digital preservation needs of audiovisual content and film archives in particular. GFC plans to further support the introduction of PREFORMA tools to film archives of its established Network of collaborators, and for this purpose will actively work with consortium to develop the appropriate collaboration schemes.

10. LGMA - Local Government Management Agency (Eire)

Digital preservation is a topic under review and discussion in Ireland with a concern about the need for a strategy at national and local level. LGMA will present the proposed PREFORMA solutions and services at a range of national strategy meetings, conferences and workshops to policy makers, national and local institutions and professional seminars. These will include the National Advisory Forum for libraries, the LAI/CILIP Joint Conference, regional training workshops for cultural heritage and specific seminars and workshops on digital preservation for Irish cultural heritage institutions.

LGMA will use its membership of international co-operative bodies to highlight the project and its progress including ALMA UK, NAPLE Forum and the joint North-South Heritage Forum.

LGMA will also use its online and print media to promote and update the cultural community in Ireland on the project and its progress and LGMA will use its membership of national co-operative bodies to highlight the project and its progress including the EU Focus on the Cultural Heritage, Pathways to Learning and the Library Association of Ireland.

11. SPK - Stiftung Preussischer Kulturbesitz (D)

SPK (Stiftung Preußischer Kulturbesitz - Foundation Prussian Heritage) is Germany's largest cultural heritage complex composed of one of the biggest German libraries, the state archive of the former state of Prussia, sixteen big museums in Berlin, the Ibero-American institute and the Institute for Music-Research.

Since many years SPK is a core-member of the German network of competence for digital preservation called "nestor" (www.langzeitarchivierung.de). This is a well established network inside the cultural heritage domain in Germany. Newsletter and mailing list of this project have many participants also from Austria and Switzerland. Inside the nestor-network SPK is leading a working group for non-textual media where big cultural heritage institutions especially from the video and film-sector are involved. These channels (the broader network and the working group) will be used to disseminate the results and activities of the project. In addition to this: Every year the nestor-network has its so called "Practitioners Day", this is a very good opportunity to reach hundreds of people.

The Institute for Museum Research who is representing the SPK in the consortium is closely connected to most of the museums in Germany. It is collaborating in many aspects with the regional and national museums associations all over the country. This will be another channel for the dissemination of the outcomes of the projects.

12. AJGI - Ayuntamiento de Girona (ES)

The Records Management, Archives and Publications Service (abbreviated SGDAP in Catalan) of Girona City Council (Ayuntamiento de Girona), as a memory institution, wants to assure the preservation and access to the municipal documentation, from the oldest documents to the most recent ones. SGDAP's digital documents include different types of file format: text, images, sound and video. These digital documents can be digitized or born digital.

SGDAP also participates and collaborates with international archival institutions such as ICA. International Council on Archives (<http://www.ica.org>), CCAAA. Co-ordinating Council of Audiovisual Archives Associations (<http://www.ccaaa.org>) and CAA. Coordinadora de Asociaciones de Archiveros (<http://www.archiveros.net>). All these associations are to be used for the dissemination of the results of PREFORMA project.

Some international and national archival events, specially 2nd ICA Annual Conference, the 9th European Conference on Archives and the 13th Image and Research Conference –which will be hold in Girona from the 13th to the 15th of October 2014–, will be significant means of dissemination for spreading PREFORMA project knowledge.

Finally Girona City Council will disseminate information about the PREFORMA project and its results through local administration networks to promote the preservation of their digital documents at long term. The final software developed by PREFORMA project will be an important element in the Girona City Council system. It will contribute to verify digital documents before their ingest into these systems and improve their preservation at long term.

13. EVKM - Eesti Vabariigi Kultuuriministeerium (Ministry of Culture, E)

There are many memory institutions under the jurisdiction of the Estonian Ministry of Culture that handle large-scale cultural heritage digitalization projects. Digitalization is a an expensive and time-consuming process and it is therefore essential for memory institutions to make sure that the files resulting from the digitalization process correspond to all necessary standards and would be accessible for use over a long period of time. Since analogue material tends to disintegrate over time, the digitalized material might become the only remaining information concerning cultural objects. This is why digitalization and long-term preservation are crucial. One of the preconditions for safe long-term digital preservation is the correspondence of digitalized files to given standards. Currently, the examination procedure for determining the conformity of files is carried out using commercial software, which is often under the control of the creator of the format. Therefore, our memory institutions can't be sure that their files actually correspond to the standards. Often, the smaller memory institutions don't carry out the validation procedure and, instead, trust the software products creating the files. The Estonian Ministry of Culture is planning to integrate the software created under the PREFORMA project to the digitalization processes workflow of Estonian memory institutions.

14. KB - Kungliga Biblioteket (National Library of Sweden, SE)

The National Library of Sweden, as a memory institution, is in a phase in which different types of digital collections are emerging. These are, besides the library's own digitisation, collections of the Swedish web and digital collections of radio and television. The organisation is also facing a major challenge with the effects of a new legislation on legal deposit of digital content published and made available to the public on the Internet.

One of the challenges when dealing with large digital collections and to preserve them is to maintain knowledge about which formats collections contain. The results of the project will be very important when you have large digital collections to preserve. The software developed within the project will be used in a technical platform, developed at the National library, for reception, ingest and preservation of digital collections, such as content received as legal deposit or collections created through the library's own digitization. It will be a vital component in the preservation workflow within the system. Being able to verify that received digital content conforms to specifications is very important for successful conservation.

Knowledge of the results achieved within the project will be communicated to the National library's traditional partners in research- and university libraries within Sweden. Several of these have cultural heritage collections with digitization activities of their own as well as in house production and publishing of digital publications.

As a result of new legislation for legal deposit of electronic resources, new contacts are being established with organizations covered by the legislation. Through this channel, the National library

will reach those developing publishing systems for the various organizations and this will make it possible to disseminate information about the projects work and results. By having access to a reference implementation that supports different file formats suitable for long term preservation, that will be publicly available through open source, a dialog can be initiated to bring about features in publishing systems, so that deliveries of published information in formats suited for digital preservation can be obtained directly from the source.

In summary, one can say that the Swedish national library will disseminate information about the project and its results through established networks where the results of the project are deemed to be of vital importance for the preservation of digital information. The software that will be developed in the project will also be an important component in the Swedish National library's systems and processes aimed at preserving digital information for the future.

3.2.7 Intellectual Property Rights

Intellectual property rights will be managed in accordance with Appendix 6 of the call text: Specific Requirements for the implementation of Pre-Commercial Procurement (PCP). In particular, ownership rights of IPRs generated by a supplier during the PCP contract will be assigned to that supplier, and the public purchasers will be assigned a free licence to use the R&D results for internal use as well as the right to require participating companies to license IPRs to third parties under fair and reasonable market conditions. As motivated below, continued availability of open solutions will be ensured by requiring Open Source licencing under the GPLv3 model, and third party companies will be ensured the possibility to add own modules to the solutions by also licensing it under the MPLv2 model.

There are a number of different open source licenses (www.opensource.org) and a subset of these, so called copyleft³⁹ licenses, are recognised as specifically appropriate for protecting developed software for preserving openness over long life-cycles. It should be noted that copyleft licenses are often used when implementing file formats (e.g. for PDF, both Poppler and iText use copyleft licenses). Research results show that the clear majority of contributors to open source projects, and in particular those active in small open source companies, prefer the GNU General Public (GPL) license (Lundell et al., 2011). Use of such a license establishes a strong protection for continued openness for both suppliers and those adopting such software. In particular, if an open file format can be implemented and provided under the GPL v3 license it provides a strong indication that the file format is provided under royalty-free licensing conditions (EU, 2012), something which significantly promotes long-term sustainability for files that need to be maintained and archived in this format over very long life-cycles. For small companies developing and providing software under the GPL v3 license, it provides them a protection for the continued openness of their investments, as this license does not allow competitors to take and continue development under a different license. In case a competitor, for example, takes the developed software and uses it under a proprietary license, there are initiatives (e.g. such as those provided by Free Software Foundation) to help the initial developers to protect their efforts and developed software provided under GPL v3

³⁹ "Copyleft is a general method for making a program (or other work) free, and requiring all modified and extended versions of the program to be free as well" (<http://www.gnu.org/copyleft/>)

so that all respect the GPL v3 licensing conditions. For memory institutions that adopt developed software that has been developed and provided openly by suppliers under the GPL v3 license, it provides the strongest protection against lock-in as it promotes a long-term sustainable business ecosystem related to the open file format (Lundell, 2012).

However, for some usage scenarios at memory institutions, it may be that specific legacy archiving systems provide limited opportunities for integration of GPL licensed software. Although knowledgeable open source companies in many usage scenarios do not consider use of GPL licensed software as problem, it may be that certain suppliers prefer a different type of copyleft license which allow for additional opportunities for how developed software can be integrated with existing legacy systems. Therefore, all developed software in the PREFORMA project will only be provided under two different copyleft licenses, namely the GPL v3 license or later and the Mozilla Public License (MPL) v2 or later. Hence, all developed and provided software under these two licenses is identical, and all software is synchronously released. All associated digital assets developed during the project will be provided under copyleft conditions. Therefore, all associated digital artefacts (e.g. instructions, manuals, documentations, test cases, etc.) developed during the project will be provided under the Creative Commons (CC) license Attribution-ShareAlike 3.0 Unported (CC BY-SA 3.0) in order to allow for use of relevant examples and test cases when demonstrating effectiveness of developed software in a variety of different usage contexts.

In summary, the PREFORMA project acknowledges and is based on contemporary research which shows that "for electronic archiving the OSS licence GPL has been recommended for software that handles data that needs to be kept for (very) long life-cycles as it creates an "ecosystem" around the software that is independent of the organisation that generated it. In this context OSS is seen as a strategy for long-term maintainability—as well as minimising the risk of lock-in." (Lundell et al., 2011, p. 1540). Therefore, only the earlier mentioned copyleft open source licenses will be used for establishing a vibrant and sustainable business ecosystem for memory institutions.

The licensing rules are handled by Work Package 2 and specifically Task T2.1 Tender preparation.

References

- EU (2012) Implementing FRAND standards in Open Source: Business as usual or mission impossible?, EC Workshop, impossible?, Report of FRAND and OS event, Brussels, Belgium, 22 Nov., http://ec.europa.eu/enterprise/sectors/ict/files/ict-policies/report-from-frand-os-conference-22nov12_en.pdf
- Lundell, B. (2012) Why do we need Open Standards?, In Orviska, M. and Jakobs, K. (Eds.) Proceedings 17th EURAS Annual Standardisation Conference 'Standards and Innovation, The EURAS Board Series, Aachen, ISBN: 978-3-86130-337-4, pp. 227-240.
- Lundell, B., Lings, B. and Syberfeldt, A. (2011) Practitioner Perceptions of Open Source Software in the Embedded Systems Area, *Journal of Systems and Software*, Vol. 84, No. 9, pp. 1540-1549.

4 Section 4: Ethical Issues

4.1 Ethical issues identified

PREFORMA does neither collect nor process any kind of genetic data, nor does the project collect and process information about sexual lifestyle, ethnicity, and political opinion, religious or philosophical conviction of the volunteers. We are not collecting and processing clinical or health data. Person-related or personalised data (e.g. age, behaviour by completing a particular task, etc.) may be recorded, stored, and processed for the purposes of the project, especially exploring usability of the tools developed during the project life time.

The processes of storing data long-term have ethical issues related to individuals' social and personal protection. Processing any kind of personal data always bears ethical threats and risks that need to be considered by appropriate organisational and technical solutions. Dealing with these issues in research and development is always a challenge.

The PREFORMA partners will conform to current legislation and regulations in the countries where the research will be carried out. Because of the nature of the PREFORMA project with suppliers responding to a tender on European level, it is not possible to say before the project has started where the research will take place. The intention is that the tender itself will be handled by just one partner and under the legislation of that country in mind.

Where required by national legislation or rules, the partners will seek the approval of the relevant Ethics Committees prior to the start of the RTD activities that might raise ethical issues. The research activities have to conform to national legislation. The PREFORMA Scientific Coordinator has a special responsibility to oversee the ethical conduct of the work performed.

4.2 Legal Issues

In our modern society one is clearly faced with the importance of privacy and secrecy rules and related legislation in the domain of ICT. Violation of privacy and data protection rules negatively influences the life quality of citizens (e.g. test results, examination marks, etc. can affect the professional life). All parties involved in data handling need to carefully record, store, process, transmit, update, modify, use, or lock and remove these data and consider the following developments, among others:

- ISO/IEC 27002:2005 (renumbered, was ISO/IEC 17799) International Standards Organization: Information technology — Code of practice for information security management;
- Privacy as a fundamental human right recognised in the European Directive 2002/58/EC as well as in other EU communications like the European Directive 95/46/EC, in the United Nations' Declaration of Human Rights, the International Covenant on Civil and Political Rights and in many other international and regional treaties has to be protected in a highly developed democratic society.

4.3 Gender Issues

Within the context of the PREFORMA project, there are several different areas of R&D. In many areas, the proportion of female researchers is significantly lower than that of male researchers. This may well be due to the historical bias (cultural and otherwise) against women choosing technology-based careers. Whilst the PREFORMA project does not claim that it can (single-handedly) change this bias overnight, it will

- examine (and where necessary, analyse) the situation in each of the work packages, in comparison to similar projects elsewhere in the EU, to identify actions that may be taken to remedy imbalances; where appropriate, the project or work packages will undertake such actions, monitoring and reporting on actions in the appropriate deliverable.
- In tender take in gender aspects as one requirement

The PREFORMA project is willing to contribute (where appropriate) to cross-project activities in this area, for example with the new FP7 Genovate project (www.genovate.eu – site to be created) promoting more female academic leaders.

PREFORMA project partners have already identified particular fields in which the implementation of female workforce has proved to be very successful. Within this project, they will share their positive experience and aspire to encourage the involvement of women in the field of research and development as well as project management. Consideration of the fact that innovation is affected by both male and female perspective will be taken into account from the beginning of the project. This project ensures a balanced task distribution between female and male scientists:

The project uses gender-neutral terminology as far as possible.

The same disposition applies to the women participation in the evaluation and implementation tasks of this project.

The Foundation for Women Entrepreneurs⁴⁰ (Malta) will be invited to provide advice. The Foundation, established in 2001, is an independent non-profit organisation, which has been set up for the promotion of opportunities, awareness building, training and research in the field of Women Entrepreneurs and other gender issues. It is part of AFAEMME (Association of Organisations of Mediterranean Businesswomen) and MEDITER Network, an economic and social network between all countries around the Mediterranean basin. It is part of the European Network of Women Entrepreneurs set up by the Directorate-General for Enterprise and Industry and also represents female entrepreneurs on the Business Platform for Multilingualism set up by the European Commission, Directorate-General for Education and Culture (DG EAC) since 2009.

⁴⁰ www.women.org.mt