PREFORMA

FUTURE MEMORY STANDARDS

INDEX

THE PREFORMA
CHALLENGE

Memory institutions are encountering problems with increasing transfers of electronic documents and other media content for long-term preservation.

Data is normally stored in specific file formats for documents, images, sound, video etc. These file formats 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 controlled by the institutions that produces them or by the memory institutions. Conformance tests of transfers are done, but may not be totally reliable and this poses problems in long-term preservation. Data objects for preservation that have passed through an uncontrolled generative process can jeopardise the entire preservation exercise.

PREFORMA – PREservation FORMAts for culture information/e-archives – is a Pre-Commercial Procurement (PCP) project co-funded by the European Commission, under its FP7-ICT Programme. The overall intention of PREFORMA is to research critical factors in the quality of a standard implementation in order to establish a long-term sustainable ecosystem around developed tools with a variety of stakeholder groups. This is aimed to support any memory institution (or other organisation with a preservation task) wishing to check conformance with a specific standard. The tools should be innovative, provide a reference implementation for the most common file format standards and a mechanism for the assessment of the collections to be archived and for the correction of the errors.

The PCP, following the rules for tenders in public sector provides the opportunity to match the memory in-

stitutions' professional knowledge and the suppliers' skills in the development and promotion of products. Joint procurement enables PREFORMA to build a sustainable network of common interest, where the public procurers can remain in contact and cooperate beyond the EC funding period.

OBJECTIVES

PREFORMA aims to establish a set of tools and procedures in order to gain full control over the technical properties of digital content intended for long-term preservation by memory institutions.

DIGITAL CONTENT

Digital content is stored in files with specific file containers and encodings for capturing text, images, sound and moving image, depending on the systems and use cases the files originate from. These files can be produced by external organizations and transferred to memory institutions, or produced in-house by memory institutions as digital reproductions of collection items.

LONG-TERM PRESERVATION

Long-term preservation of these files requires exact knowledge and control over their technical properties, allowing memory institutions to develop an appropriate preservation strategy for the digital content (e.g. by transforming, re-packaging and emulating these files).

FULL CONTROL

To obtain this knowledge and control, preservation files are usually generated using 'standard' file formats, which normalize the way digital content is captured in a digital file. Yet, these preservation files are always generated using software that implements one particular interpretation of the 'human readable' specifications in the 'standard' document. Inevitably, ambiguities in

these specifications lead to different interpretations and hence software producing different implementations of the 'standard' file format.

In practice, a uniform implementation of a 'standard' file format is hard to enforce, because the software producing preservation files is controlled neither by the organization that produces them, nor by the memory institution that has to preserve the file.

STRATEGY

PREFORMA researches two activities that empower memory institutions to gain control over the technical properties of preservation files:

● develop an open-source conformance checker, and

● establish a healthy ecosystem around an open source 'reference' implementation for specific file formats.

The first activity is to develop an open-source toolset for conformance checking of digital files, intended for long-term preservation in memory institutions.

The conformance checker:

● verifies whether a file has been produced according to the specifications of a standard file format, and hence,

● verifies whether a file matches the acceptance criteria for long-term preservation by the memory institution,

● reports in human and machine readable format which properties deviate from the standard specification and acceptance criteria, and

● performs automated fixes for simple deviations in the metadata of the preservation file.

The conformance checker software developed by PREFORMA is intended for use within the OAIS Reference Framework and development is guided by the user requirements provided by the memory institutions that are part of the PREFORMA consortium. The conformance checker authorizes a 'reference implementation' for a standard file format, i.e. an implementation of a 'standard' specification to be used as a definitive interpretation for that 'standard' specification.

The second activity is to establish a network of common interest in order to gain control over the technical properties of preservation files: This involves:

● the adoption of a 'reference implementation' by other software applications, and

● continuous improvement of the 'standard' specification through engagement in the standardization process.

6 The network gathers all stakeholders that control different stages in the lifecycle of a preservation file, providing a sustainable and viable ecosystem for the deployment of tools developed by PREFORMA as well as tools adopting the reference implementation. These stakeholders include:

● developers, controlling the production of preservation files, e.g. by file editors or transcoders, thus aiming at improving the effectiveness and interoperability of their software.

● digital preservationists, controlling the acceptance and management of preservation files in digital repositories, thus aiming at improving the preservation status of the digital collection they maintain and the effectiveness of the ingest procedures.

● standardization bodies, maintaining the formal specifications of file formats in standards, thus aiming to improve the specification of the standard.

THE PROJECT

PREFORMA

The activities of PREFORMA PCP Project are divided into two main parts: Coordination activities and Collaborative activities.

COORDINATION ACTIVITIES

Under the PREFORMA Coordination and Support Action (CSA), the PREFORMA memory institutions specify requirements and performance criteria for issuing an open tender to procure suppliers as partners in the Collaborative Project (CP), including the legal and financial issues.

The CSA is also responsible for the overall PREFORMA project management, setting up a wide network of stakeholders (memory institutions and research groups) and wide dissemination of the project results. Results of testing commonly available content generation tools for standard file formats will be disseminated. This will ensure future standards are easier to implement for conformance purposes. In addition, the analysis of how the most commonly used archival file formats can be implemented under open source (copy-lefted) licenses will highlight the importance of open standards and enable future-proof open source licensing alternatives.

The CSA Phases are:

●   **Project Management** (Leader: RIKSARKIVET). The Project Management Structure is composed of: a Project Management Team responsible for the management and strategic direction of the whole project and supervision of the technical and scientific work; a General Assembly responsible for making decisions

and resolving conflicts where each partner is repre-
sented; an Advisory Board, made up of experts ap-
pointed by organisations outside the consortium with
responsiblility for ensuring that the project meets
its objectives and the needs of the memory institu-
tions.

● Requirements phase (Leader: PACKED). Financial and
legal aspects are discussed among the partners and
external stakeholders in an open dialogue activity.

● Procurement phase (Leader: UNIVERSITA DEGLI STUDI DI
PADOVA). Responsible for the publication and evalua-
tion of the tender and for the establishment of the
contracts with the selected suppliers.

● Network Expansion phase (Leader: RIKSARKIVET).
Establishment of a sustainable, long-term network of
common interest for pre-commercial and commercial
procurement for digital preservation.

● Outreach phase (Leader: PROMOTER). Responsible for
large-scale dissemination of the project results
with the aim of gaining broad acceptance for use of
the open source tools, recruiting more stakehol-
ders to the PREFORMA network of common interest and
contributing to the coordination of the research in
this domain.

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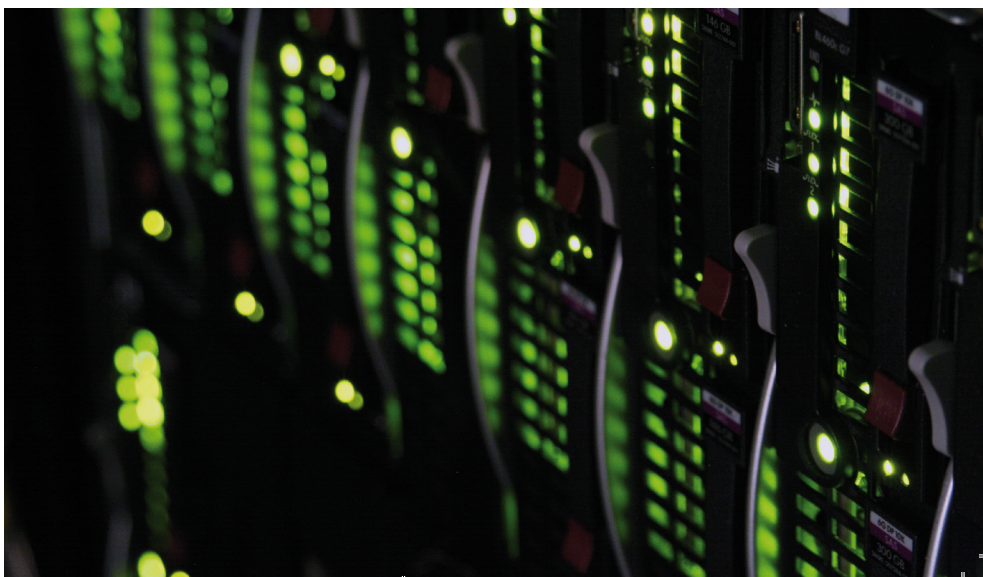
COLLABORATIVE ACTIVITIES

The Collaborative Project (CP) part is organised along
three work packages that constitute the core research
and development (R&D) work procured by the participa-
ting memory institutions:

● Design of the PREFORMA system and tools, where the
  suppliers describe their solutions in terms of de-
  tailed functions (Leader: FRAUNHOFER IDMT)

● Prototyping of the services, where the suppliers de-
  velop prototypes of their solutions, satisfying the
  agreed functional and performance criteria (Leader:
  HOGSKOLAN I SKOVDE)

● Scientific testing of the results, where the pro-
  totypes are subjected to scientific testing against
  datasets provided by the memory institutions (Lea-
  der: UNIVERSITA DEGLI STUDI DI PADOVA).

Each phase is executed by the suppliers selected throu-
gh the tender procedure. The CP work packages are led
by academic partners to ensure scientific quality. Me-
mory institutions provide pilot workflows and datasets
for the suppliers to test their solutions. It is fore-
seen that the prototyping will start at the end of the
design phase. A redesign phase will take place on the
basis of the results of the first release of the pro-
totype. The second release of the prototype will then
be developed and eventually passed to the test phase.

Assessment of the results of each phase will be carried
out under the supervision of the respective WP Leaders
and will be based on the competitive evaluation crite-
ria published in the tender procedure.

THE OPEN SOURCE PROJECTS

PREFORMA follows an open source approach, with the aim of establishing a sustainable research and development community comprising a diverse selection of contributors and users from different stakeholder groups.

By employing this approach, a catalyst is created for high-quality research and development of tools to ensure file formats are compliant with standards. The open source nature ensures long-term availability of the software, independent of the memory institutions and suppliers involved in PREFORMA.

Each PREFORMA Open Source project will be hosted on an open platform from the start of the design phase and will utilise best practices from community based Open Source projects. Such projects will be established during PREFORMA, and will also be active after the PREFORMA project, constituting the first step for the establishment of a vibrant long-term sustainable business community.

Each Open Source project focuses on one file format and all developments of software, and associated digital assets, related to the project (e.g. roadmaps, instructions, issues, email communication, forum dialogues, documentation, synthetic test files related to the file format handled by the project, etc.) will be available on the open platform.

Early establishment of each Open Source project is also fundamental for establishing effective processes for interaction with the organisation that controls the specific file format. The overall goal is to improve the

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quality of the file format to ensure the conformance checker remains effective for for the long-term goals of memory institutions.

All software developed in each Open Source project will be provided under two specific Open Source licenses (www.opensource.org), namely: both Mozilla Public License "MPL v2.0 or later" and under GNU General Public license 3.0 "GPLv3 or later". Furthermore, all digital assets associated with the Open Source project, including all synthetic files developed for the file format, will be provided under the Creative Commons (CC) license Attribution- ShareAlike 4.0 International (CC BY-SA 4.0) and hosted on the open platform.

Each PREFORMA open source project addresses a particular set of standard file formats that are (1) open standards, (2) considered appropriate for long term preservation by digital preservationists and (3) relevant for the memory institutions participating in PREFORMA.
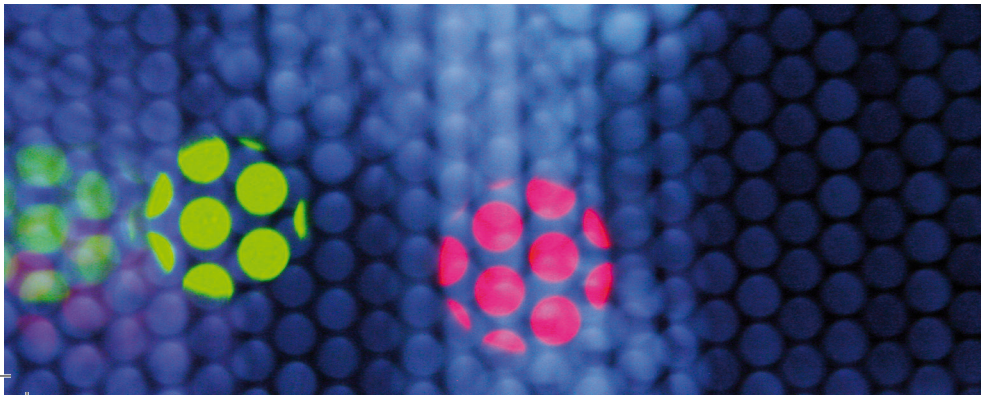
These file formats cover three major media types: text, image and audiovisual media.

TEXT

The open source project on text media researches tools and procedures for establishing a reference implementation for PDF/A. Basic research activities involve checking:

● the use of annotations, images and digital signatures,

- the use of compression schemes and transparency,

- the use of character sets and fonts,

- the use of interactive features such as executable scripts, forms and navigation tools,

- embedded administrative and structural metadata, and

- dependencies on external resources.

The conformance checker determines if a file is a PDF/A file or not. It also checks all different conformance levels in PDF/A-1, and PDF/A-2, and PDF/A-3 and provides detailed information on the criteria that have not been fulfilled.

IMAGE

The open source project on image media researches tools and procedures for establishing a reference implementation for uncompressed TIFF.

Basic research activities involve:

- checking the use of 'baseline', 'extension' and 'private tags',

- checking the use of color profiles,

- assessment of user-specific acceptance criteria based on technical parameters of the digital image, and

- executing automated fixes for making TIFF files compliant with baseline specifications.

The conformance checker determines if a file is an uncompressed TIFF file or not. It also checks the use of 'baseline', 'extension' and 'private' tags, as well as user-specific acceptance criteria. The tool provides detailed information on the criteria that have not been fulfilled.

AUDIOVISUAL

The open source project on audiovisual media resear-
ches tools and procedures for establishing a referen-
ce implementation for an audiovisual file, using FFV1,
Dirac or JPEG2000 for encoding moving image, uncompres-
sed LPCM for encoding sound and MKV or OGG for wrapping
audio and videostreams in one file.

Basic research activities involve defining a profile for
an audiovisual preservation file that allows for:

● capturing uncompressed or mathematically lossless
  compressed audio- and video- or image streams,

● preserving the image and sound properties of the
  'original' audio-visual resource,

● capturing a comprehensive set of preservation data.

The conformance checker developed in this open-source
project validates one container file format and one vi-
deo/image codec, chosen by the supplier from the stan-
dards mentioned above, and uncompressed LPCM encoded
audio.

The conformance checker determines if a file is conform
the selected standard specifications or not. It also
provides detailed information on the criteria that have
not been fulfilled.

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MARKET CONSIDERATIONS AND BUSINESS OPPORTUNITIES

PREFORMA serves a well-defined public need through the PCP mechanism, i.e. to purchase an open source solution which will provide the memory institutions with full control over the implementation of the standard formats of their archive.

This open source project will open a new area of ad-ded-value services. The European service and technology providers will be able to serve this market with more competitive products due both to the results of the procurement, which will be available within the open source community and to the coordination actions put in place by the project, which will continue to be a reference point through the network of common interest established by PREFORMA.

PREFORMA targets three groups of stakeholders in the exploitation of the core component and modules:

- Research organisations with a scientific interest in identification, validation and normalisation of digi-tal files. These organisations may provide technical and expert advice to cultural stakeholders.

- Developers and enterprises contributing code to the PREFORMA tools and developing services based on the-se tools, primarily the enterprises participating in

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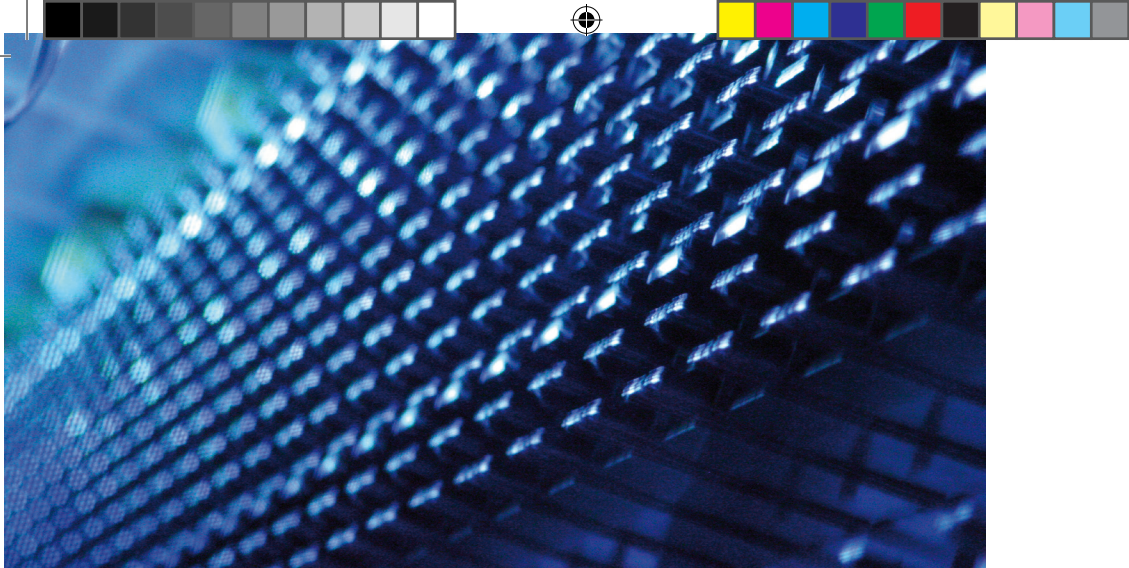
the tender but subsequently other developers that are interested in contributing code.

● Memory institutions deploying the core components and modules in their digitisation and preservation workflows. The main expected impact of PREFORMA is to reduce curation and preservation costs and to impro-ve curation and preservation capacity and competen-ces in public organisations, including small archi-ves.

PREFORMA advocates a number of business opportuni-ties for the suppliers and members of the open source project:

● Combinations with other software offerings: Use of open source software developed in PREFORMA as a com-plement to other commercial software products, e.g.

  ○ in combination with text, image or moving image editors, facilitating the production of preserva-tion files;

  ○ in combination with digital repositories, faci-litating assessment of files being ingested and processed by a Trusted Digital Repository;

  ○ in combination with transcoding software, facili-tating validation when migrating files.

- Selling optional proprietary extensions: develop extensions to the open source software to be sold using a closed license. This may include:

  - additional conformance checkers for other preservation formats that plug into the same environment/ecosystem;

  - additional reporter modules that facilitate integration of the open-source software in other proprietary software products.

- Selling professional services: provide services for deploying the open source software into the legacy systems and the networked environments of the memory institutions, e.g. providing

  - consulting services;

  - customization;

  - technical support.

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THE PREFORMA NETWORK

THE CONSORTIUM

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

The Swedish National Archives is the coordinator of the project and leads the Coordination and Support Action (CSA)-Sustainable Network WP.

Nine partners are memory institutions that manage programmes and digital archive projects and whose core business is the management and preservation of these archives. They represent different organisations, ranging from national cultural institutions, audio-visual archives, public libraries to local memory institutions. Despite their different administrative position and size, they share the same needs and expectations for digital preservation. They play the role of procurers and users in the project. They establish the requirements of the tender, provide the datasets against which the results of the procured research and development (R&D) services will be assessed and contribute to the wide communication and promotion of the project results. They also contribute to the sustainability plan for the project results by engaging their contacts with

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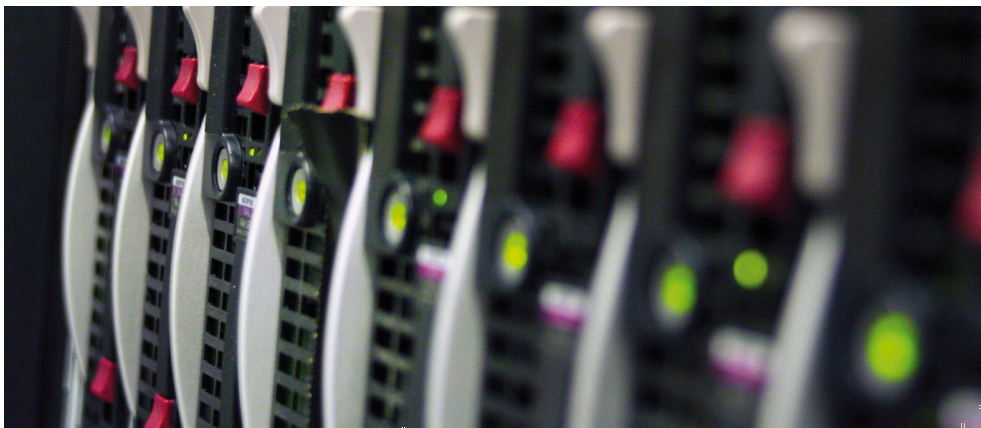
other memory institutions in Europe and worldwide. This will establish a network of common interest that will continue to maintain and improve the system and tools developed in the project, accommodating new standards and new features.

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

- Three research centres, two Universities (Sweden and Italy) and one institute of the Fraunhofer-Gesellschaft, providing expertise on standardisation and system testing.

- Two small enterprises (Belgium and Italy), providing expertise on tenders specifications and communication.

20 RIKSARKIVET, SWEDEN

The National Archives of Sweden is the leading archival institution in Sweden with responsibility for 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.

As a cultural heritage institution the National Archives also disseminates information on the tools and services developed by PREFORMA to other memory institutions in Sweden (e.g. libraries, museums) through the special secretariat for coordination of digitisation, on line access and digital preservation in the cultural heritage sector that the National Archives has organised on behalf of the Swedish Ministry of Culture.

The National Archives plays a significant role in re-
search and cooperates with the universities and other
parts of scientific community.

Website: riksarkivet.se

PROMOTER SRL, ITALY

Promoter is a Pisa-ba-
sed company established
in 1996. Its core compe-
tencies emerge from the
fusion of expertise and
experiences in the areas
of information & communi-
cation technologies, multimedia innovation, business
promotion and project management. Promoter operates
in several fields, including technical development of
ICT platforms and web-design, multimedia production,
electronic and web publishing, corporate consulting,
and dedicated online services for the promotion of cul-
ture and tourism.

Promoter features solid and longstanding experience in
the management of EU projects, with particular regard
to the dissemination and communication activities, ha-
ving been involved in many initiatives since the early
1990s. Dissemination/marketing strategy, software deve-
lopment, wsystem design, technology transfer, academy/
industry collaboration, business architecture, consul-
tancy and project management represent the main exper-
tise of the company.

Promoter's last product is www.digitalmeetsculture.net,
an innovative communication platform for collecting and
sharing information and events related to the digi-
tal culture, in a global dimension, while taking into
account the different approaches that scientific, huma-
nistic and artistic culture have to the digital age.

Website: www.promoter.it

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PACKED VZW, BELGIUM

PACKED vzw is a non-pro-
fit organisation that has
grown from a platform
organisation for the ar-
chiving and preservation
of audiovisual arts into a
centre of expertise for digital cultural heritage, sup-
ported by the Ministry of Culture of the Flemish Commu-
nity.

PACKED plays a key role in Flanders and Brussels in
developing and disseminating expertise in digitisation
and digital archiving. PACKED 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, but still has a
strong interest in the preservation of digital media
art.

PACKED is not only active in Flanders and Belgium, but
also on a European and international level.

Website: www.packed.be/en/

FRAUNHOFER IDMT, GERMANY

The Fraunhofer-Gesel-
lschaft zur Foerderung der
angewandten Forschung e.V.
is Europe's largest inde-
pendent organization for
applied research, consisting of currently 80 structu-
ral units with 66 institutes on 40 locations throughout
Germany. With a budget of almost 2 billion EURO per
year, project research both for government and the pu-
blic sector as well as for the industry is to be propo-
sed and performed.

Fraunhofer IDMT, located in Ilmenau, Thuringia, evol-
ved from a subsidiary of Fraunhofer IIS ("Home of MP3")
to an independent institute in 2004. Approximately 75
full-time employees and 150 students are working in va-
rious research fields, including e.g. acoustics, bio-in-
spired computing, integrated learning and knowledge
representation environments, data representation and
UI design, A/V signal analysis and search, interacti-
ve 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 oppor-
tunities 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.

Website: www.idmt.fraunhofer.de/en.html

UNIVERSITY OF SKÖVDE, SWEDEN 23

University of Skövde is
one of the most speciali-
sed universities in Sweden
and its research is focu-
sed on the development and
use of advanced informa-
tion technology systems
and models.

Over a number of years research they have addressed
various aspects of openness. Their research team brin-
gs to PREFORMA significant experience of research and
practice related to Open Source and Open Standards.
Specifically, they contribute expertise concerning dif-
ferent stakeholder roles (including providers, develo-
pers and users) in this area.

Previous activities include involvement as partner and
leader in several international and national research

projects. Current activities include research on va-
rious aspects of openness impacting on long-term su-
stainability of software systems with associated digi-
tal assets.

University of Skövde is an academic member in the
Eclipse Industry Working Group PolarSys (www.polarsys.
org). Through PolarSys, which focuses on very long-
term maintenance of software engineering tools, they
are well positioned to address challenges relevant for
PREFORMA that concern very long-term support and main-
tenance of software systems and associated digital as-
sets.

Website: www.his.se/en/

UNIVERSITA DEGLI STUDI DI PADOVA, ITALY

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The University of Padua is
one of the oldest univer-
sities in Europe, and one
of the biggest in Italy.
The University has 8 scho-
ols and 32 departments in
almost all the disciplines
and the research areas.

UNIVERSITÀ
DEGLI STUDI
DI PADOVA

There are more than: 2,100 research staff; 2,100 tech-
nical and administrative staff; 60,000 students; 11,700
graduate every year; and, 1,500 PhD students.
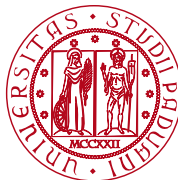
The Department of Information Engineering (DEI),
established in 1987, is one of the biggest departments
of the University, with about 100 research staff among
full, associate, and assistant professors; 35 technical
and administrative staff; about 130 PhD and Post-doc
students; and, more than 2,000 graduate students. The
research carried out at DEI ranges from microelectro-
nics, to optics, telecommunications, and to computer
science. Within this last discipline, the research is

carried out on parallel architectures, advanced compu-
ting paradigms and algorithms, robotics, software en-
gineering, 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, hypertex-
ts, multilingual information access, digital libraries,
and experimental evaluation.

Website: ims.dei.unipd.it/

NETHERLANDS INSTITUTE FOR SOUND AND VISION, THE NETHERLANDS

The Netherlands Institu-
te for Sound and Vision is
an advanced and trendset-
ting audiovisual archi-
ve that has successful-
ly made its way into the
digital realm. It maintains and provides access to 70
per cent of the Dutch audiovisual 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 broa-
dcasting corporations and is also engaged in Europe's
largest-scale digitisation programme Images for the
Future. Sound and Vision has made available thousands
of hours of archive footage online for various end-user
services, including dedicated services for the creati-
ve industries, education and research. The institute
operates as a visitor attraction aimed at the general
public and is visited by over 200,000 people annually.

BEELD EN GELUID

Sound and Vision has a strong Research & Development department. The multi-annual research agenda includes themes such as: building search interfaces to meet expectations of various user groups; new annotation approaches: (semi)automatic and using crowdsourcing; semantic interoperability; dynamic contextualization of the collections (also leveraging archived webpages); innovative interaction models, including second screen applications; digital preservation for long-term access.

Website: www.beeldengeluid.nl/en/dossier/5145/rd

ROYAL INSTITUTE FOR CULTURAL HERITAGE, BELGIUM

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Established in 1948, the Koninklijk Instituut voor het Kunstpatrimonium / Institut royal du Patrimoine artistique (KIK-IRPA) is one of ten scientific institutions falling within the competence of the Federal Ministry of Scientific Policy. KIK-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 Belgium, 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. KIK-IRPA specialists advise researchers and curators of both public and private collections. An impressive photo library is also available for public use. The photo library con-

tains, at present, over one million photos. Furthermo-
re, the publications, the photo inventory and the or-
ganization of courses, conferences and seminars reflect
the role KIK-IRPA plays in the promotion of heritage
and the diffusion of tools for researchers and the
public. The Institute groups these laboratories, conser-
vation-restoration workshops, photographic workshops, a
photo library and a library in a single building.

Website: www.kikirpa.be

GREEK FILM CENTRE AE, GREECE

Greek Film Center is a public benefit non-profit legal
entity. It is administra-
tively and financially
autonomous and operates
in the public interest.
It is governed by private
law and by the provisions
of the 3905/2010 law. The
main objective of Greek Film Center is to support and
co-produce films of Greek Artists. The largest part of
the Greek Film Centre's budget is invested in film pro-
duction. Particular emphasis is given to supporting the
work of new filmmakers but in its selections, a special
place is reserved for the films of more mature directors
who already have a distinguished filmography to their
credit.

As a result of this activity, Greek Film Center holds
an extended movie database and archive ranging from
1908 to 2010. The GFC is focusing on actions that fur-
ther preserve, save, build and demonstrate - using the
latest technology - a significant number of films. This
broadens the possibilities of cultural and commercial
promotion of Greek cinema providing information not
only to interested professional or scholars, but also
to any potential member of the public.

Website: www.gfc.gr

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LOCAL GOVERNMENT
MANAGEMENT AGENCY, IRELAND

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 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 an 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.

Website: www.lgma.ie/en

STIFTUNG PREUSSISCHER KULTURBESITZ, GERMANY

The Stiftung Preussischer Kulturbesitz (Prussian Cultural Heritage Foundation) is an internationally renowned cultural institution and an important player in the humanities and the social sciences. It was founded in 1957 to preserve the collections of the Prussian state, which was dissolved after the war, as heritage for all of Germany.

The Foundation includes museums, libraries, archives, and research institutes. Its collections have a universal character. They document the evolution of human culture from its beginnings to the present in Europe and on other continents. Today the Foundation is contributing crucially to the redesign of Berlin's historical center.

Five institutions are united under the Foundation's roof: the Staatliche Museen zu Berlin (National Museums in Berlin), the Staatsbibliothek zu Berlin (Berlin State Library), the Geheimes Staatsarchiv Preussischer Kulturbesitz (Secret State Archives Prussian Cultural Heritage Foundation), the Ibero-Amerikanisches Institut (Ibero-American Institute) and the Staatliches Institut für Musikforschung (State Institute for Music Research). All aspects of cultural tradition are represented within the Foundation.

The Institut für Museumsforschung (Institute for Museum Research) was founded in 1979 as Institut für Museumskunde (Institute of Museology), and renamed in 2006. It provides services to museums throughout Germany as well as to the Staatliche Museen zu Berlin in the areas of research, practical dissemination of knowledge, and documentation. It supplements the activities of the re-

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gional museum associations as well as the advisory and public bodies in each of the German states.

The scope of the institute's work includes visitor research, support and consultancy for museums in digitisation, development of tools, long-term archiving, museum management, documentation, thesauri, new media and education. The Institute co-operates with national and international partners in many projects to achieve these goals.

Findings pertinent to the museums are published in three serial publications: 'Berliner Schriften zur Museumsforschung', 'Materialien aus dem Institut für Museumsforschung' and 'Mitteilungen und Berichte aus dem Institut für Museumsforschung'. The institute also publishes annual statistics on museums in Germany.

Website: www.smb.museum/en/museums-and-institutions/institut-fuer-museumsforschung/home.html, www.preussischer-kulturbesitz.de/en.html

30 AJUNTAMENT DE GIRONA, SPAIN

The mission of the Records Management, Archives and Publications Service (abbreviated SGDAP in Catalan) of the Girona City Council is to ensure 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 two 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.).

Website: www.girona.cat/sgdap

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EESTI VABARIIGI KULTUURIMINISTEERIUM, 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

REPUBLIC OF ESTONIA
MINISTRY OF CULTURE

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.

With regard to cultural heritage, the scope of the Ministry of Culture is to ensure the safekeeping of cultural heritage and proper depository conditions for cultural goods by means of a legal basis, a protective organisation structure, methodological foundations and a system of national measures.

Website: www.kul.ee/

32 KUNGLIGA BIBLIOTEKET, SWEDEN

Kungliga Biblioteket, or "KB", is the National Library of Sweden. KB has been collecting virtually everything printed in Sweden or in Swedish since 1661. As well as TV and radio programs, also movies and videos distributed in Sweden, Swedish music and computer games are collected.

The National Library of Sweden has three main duties: to collect and preserve all Swedish publications, and make the material available to the public; to serve as the infrastructure for the Swedish research community; to be a research library, with a primary emphasis on the humanities and social sciences.

The National Library coordinates the activities of Sweden's research libraries. This entails, among other

things, central purchasing of licenses for research
databases and scientific publications that are then used
by universities and other research libraries. The li-
brary also operates and maintains the nationwide col-
lective catalogue, LIBRIS, which contains references
to six million titles from more than 300 libraries in
Sweden.

The collections at KB consists of approximately 140
shelf kilometres and more than 8 million hours of audio
visual content. The audiovisual content consists of
video and audio tapes, CDs and DVDs. 2/3 of the col-
lection is audio and the remainder video. In the di-
gital archive, there are more than 4 million hours,
where 1.8 million hours are digitised by the National
Library.

Website: www.kb.se/

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THE COMMUNITY

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PREFORMA targets a wide digital preservation community
by providing specifications and feedback to developers,
standard bodies and memory institutions.

The network of common interest of PREFORMA is being
set up with representatives from memory institutions,
researchers and developers who are interested in con-
tributing to the definition of requirements and taking
part in the assessment and exploitation of the results
produced by the suppliers. The project aims to ensure
the establishment of a process of open dialogue betwe-
en the memory institutions and the technology providers
who develop the software. This process of open dialogue
can continue beyond the end of the project.

PREFORMA is particularly interested in engaging with:

● Memory institutions and cultural heritage organisa-
  tions (coordinating or representing memory insti-
  tutions) involved in (or planning) digital culture
  initiatives which will utilise the tools developed
  by PREFORMA.

● Developers contributing code for the PREFORMA tools
  and developers implementing the reference implemen-
  tations in production software.

● Research organisations providing technical advice
  and expertise to cultural stakeholders.

● Standardisation bodies maintaining the technical
  specifications of the preservation formats addressed
  in PREFORMA.

● Funding agencies, such as Ministries of Culture and
  national/regional administrations, that own and ma-

nage 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.

- Other projects in the digital culture, e-Infra-structures and policy arenas.

Follow us on www.preforma-project.eu or contact us at info@preforma-project.eu to join the PREFORMA open source community!

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MAIN EVENTS

Several activities have been planned during the project in order to raise awareness and disseminate the results of the project and to engage both with the open source community and with the memory institutions who will benefit from the software developed by the technology providers.

These activities include:

BRUSSELS
MARCH 5TH, 2014

Workshop for memory institutions to discuss and agree on the functional requirements and technical specifications of the reference implementation tools to be developed in PREFORMA.

BRUSSELS
APRIL 4TH, 2014

Public Information Day to present the PREFORMA call for tender and to facilitate engagement and consultation with potential suppliers.

STOCKHOLM
DECEMBER 2015

Training event dedicated to Open Source companies in connection with the first Prototype Demonstration.

BERLIN
DECEMBER 2016

Experience Workshop for memory institutions in connection with the second Prototype Demonstration, where the PREFORMA partners will share their experiences of working with suppliers under R&D services agreements.

STOCKHOLM
DECEMBER 2017

Final conference where the results of the project will be presented.

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