InterPARES 2 Project
International Research on Permanent Authentic Records in Electronic Systems

Overview of InterPARES 2 Intellectual Framework

Introduction

InterPARES 2 is a multidisciplinary international collaboration that is applying a multi-method approach to the development of concepts, processes and tools that will help in the securing of a protected and lasting environment for the digital records produced in interactive, dynamic and experiential systems in the course of artistic, scientific and electronic government activities. This document provides an overview of the intellectual framework within which this research is situated for the purpose of promoting among the researchers a shared understanding of the key concepts, issues and methods involved in the project.

Research goal

The goal of InterPARES 2 is to ensure that the portion of society's recorded memory that is digitally produced in interactive, dynamic and experiential systems in the course, and as a byproduct of, artistic, scientific and electronic government activities can be created in accurate and reliable form, and maintained and preserved in authentic form, both in the short and the long term, for the use of those who created it and of society at large, regardless of incompatibility, obsolescence and media fragility.

Research objectives

- To develop an understanding of interactive, dynamic and experiential systems and of the records produced and maintained in them, of their process of creation, of their linkages to digital records produced and maintained in other systems and to non-digital records produced in the course of the same activities by the same person or organization, and of their present and potential use in the artistic, scientific and government sectors;

- to formulate methods for ensuring that these records are generated and maintained by the creator in such a way that they can be trusted as to their content (that is, are accurate and reliable) and as records (that is, are authentic);

- to formulate methods for selecting among them those that have to be kept after they are no longer needed by the creator in the ordinary course of activity because of their legal, administrative, social or cultural value;

- to develop methods and strategies for keeping the records selected for continuing preservation in authentic form over the long term;

- to develop processes for analyzing and criteria for evaluating advanced technologies for the implementation of the methods listed above in ways that respect cultural diversity and pluralism; and

- to identify and/or develop specifications for policy, metadata, and automated tools necessary for the creation of an electronic infrastructure capable of supporting the creation of accurate and reliable, and the preservation of authentic digital records.

Stakeholders

The beneficiaries of the new knowledge produced by this project are

- individual records creators who need to keep their records for continuing use, for reference, for carrying out other activities, as evidence of their work, as proof of their or other people's rights, or for cultural purposes;
- organizations and institutions of all kinds, including governments, which must be able to rely on accurate, reliable, and authentic records in order to carry out their business, to understand previous activities, to ensure continuity, to guarantee security, etc.;
- archivists, and any other professionals whose primary responsibility is to ensure the permanent and authentic preservation of those records, however produced, that are necessary to the ongoing protection of rights and culture, and to the perpetuation of individual, institutional, and group memory of activities and accomplishments;
- researchers of all disciplines, who need to be able to trust the documentary sources they use to generate new understanding and create new knowledge;
- educators in all disciplines involved in the research so that they can prepare future records creators and preservers to generate and keep records that are accurate, reliable and authentic;
- the computer and information technology sector, which must understand the needs of its markets and consumers in order to serve them better; and
- the citizenry at large, who must always be able to scrutinize the actions of governments by having long term access to their records, to protect their own rights by ensuring that they are attested to by adequate records, to participate in governance by online interactive means, and to have access to the authentic documentary sources of the past, in order to contribute to the public debate, the development of knowledge and the promotion and preservation of culture.

Guiding concepts

The conceptual foundation of InterPARES 2 has to be found in the work produced by InterPARES 1. In this regard, essential documents are the Glossary, the Template for Analysis,[1] and the Requirements for Assessing and Maintaining the Authenticity of Electronic Records, which can all be found on the InterPARES Web site, in the "Findings of the InterPARES Project," Appendices.[2] Every researcher must be familiar with these documents. The researchers of each domain and cross-domain should read the directly relevant documents issued in the course of InterPARES 1.

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[1] The Template for Analysis is a decomposition of an electronic record into its constituent elements, defining each element, explaining its purpose and indicating whether and to what extent that element is instrumental in assessing that record's authenticity. See Appendix 1 of the "Long-term Preservation of Authentic Electronic Records: Findings of the InterPARES Project" on the InterPARES web site at www.interpares.org

[2] See http://www.interpares.org/book/interpares_book_q_gloss.pdf, http://www.interpares.org/book/interpares_book_j_app01.pdf, and http://www.interpares.org/book/interpares_book_k_app02.pdf.

However, some of the basic concepts developed by InterPARES 1 will have to be revisited and possibly changed in light of the changing technological environment and of the broadening of the records producing activities that are under investigation. Among these, the key ones are the concepts of *record* and of *authenticity*. Moreover, InterPARES 1 has partly relied on theory developed in the course of a previous research project, called "The Preservation of the Integrity of Electronic Records", or the UBC project (the InterPARES Web site has a link to its Web site), specifically as it regards records creation and maintenance, the concept of reliability and the methods ensuring it. Also the concept of reliability will have to be revisited for the same reasons mentioned above from several perspectives. In addition, InterPARES 2 has introduced the concept of accuracy as one of its primary concerns. This concept will have to be examined, developed and defined for the purposes of the research.

Given that, on the one hand, the concepts of record, accuracy, reliability and authenticity have yet to stabilize with regard to the systems under examination, and that, on the other hand, the need for a working definition for them, this overview has attached a document including a preliminary discussion of these terms.

The InterPARES 2 research proposal has also introduced several terms related to the types of records producing systems that it will analyze. The typology presented—interactive, dynamic and experiential—was only indicative of the categories mentioned in the existing literature and provisional. As indicated in the first objective of this project, we will examine very complex, highly interactive system and develop a typology that will help us to understand them and to address their different characteristics. It might very well be that dynamic and experiential are only sub-categories of interactive systems and that other not yet identified types exist. To initiate an examination of the concepts related to types of digital systems, a discussion paper has been posted on the InterPARES Web site, by the title "Project and Focus-Specific Definitions of 'Interactive', 'Experiential', and 'Dynamic'".

Guiding methodological principles

1. Interdisciplinarity
The project is interdisciplinary in the measure in which its goal and objectives can only be achieved through the contribution of several disciplines. For example, one of the methods chosen to develop ways of creating records whose accuracy and reliability can be protected overtime is to conduct an exploratory study of cases in each of the areas of activity identified. In order to analyze the nature, characteristics, behaviour, relationships and process of creation of the interactive, dynamic and experiential records produced in the course of artistic, scientific and electronic government activities, we need to gather a deep understanding of those activities, their purpose, their phases and the component actions, their byproducts and their structure, and their context, but also their technological environment and their use. Thus, to understand the records generated in the course of producing digital music, for example, we need music theorists and composers, as well computer engineers and scientists, and music historians. Also to analyze the results of the case studies we need the contribution of methodologies developed in the context of a variety of disciplines. Among these, text analysis, diplomatic analysis, statistical analysis, etc.

2. Transferability

The ultimate goal of the project is archival in nature, in that it is concerned with the development of a trusted record making and keeping system[3] and of a preservation system that ensures the authenticity of the records under examination over the long term. This implies that the work carried out throughout the project in the various disciplinary areas must be constantly translated in archival terms and linked to archival concepts, which are the foundation upon which the systems intended to protect the records are designed. However, upon completion of the research, the archival systems need to be made accessible and comprehensible to records creators, organizations and institutions and disciplinary researchers. In other words, the research outcomes must be translated back into the language and concepts of each discipline that need to make use of them. In light of the above, it is essential to illustrate the key archival concepts that are at the core of the InterPARES 2 research, so that each discipline can identify the corresponding entities within its own body of knowledge.

3. Open inquiry

InterPARES 1 had its epistemological roots in the humanities, specifically in diplomatics and archival science. In contrast, InterPARES 2, while planning as one part of its research to test some of the outcomes of InterPARES 1 in a range of applied settings, espouses no epistemological perspective or intellectual definitions a priori. Instead, researchers in each working group will identify the perspective(s), research design, and methods that they believe to be most appropriate to their inquiry.

The reason for this openness is that InterPARES 2 is conceived to work as a "layered knowledge" environment, in the sense that some of the research work will build upon knowledge developed in the course of the UBC Project and InterPARES 2, some will take knowledge of similar issues developed in other areas of endeavour and bring it to bear on records creation and preservation, some will reconcile knowledge about records and their attributes, elements, characteristics, behaviour and qualities existing in various disciplines and develop it for archival purposes, and some will explore new issues and study entities never examined before and develop entirely new knowledge.

4. Multi-method design

Each case study as well as each of the other research activities will be carried out using the methodology and the tools that the dedicated investigating team considers the most appropriate for it. The methods used are surveys, case studies, modeling, prototyping, diplomatic and archival analysis, and text analysis.

The research is to be guided by the research questions organized by domain and cross-domain, which were developed for the research project proposal and are now posted as a separate document entitled "IP2 Research Questions" on the InterPARES Web site, Researchers' Restricted Area, Documents, Miscellaneous Documents.[4] In addition, the researchers themselves, in preparing their case studies tools and framing their inquiries, are to be guided by twenty-two research questions developed by the International Team, which can also be found on the InterPARES Web site, Researchers' Restricted Area, Case Studies.[5]

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[3] A trusted record making and keeping system comprises the whole of the rules that control the creation, maintenance, and use of the records of the creator and that provide a circumstantial probability of the accuracy, reliability and authenticity of the records within the system. [I think this and other definitions should be deleted from this particular document]

[4] See http://www.interpares.org/_private_ip2/ip2_documents/ip2_wk5_research_questions.pdf.

[5] See http://www.interpares.org/_private_ip2/22_questions.cfm.

Structure of research activities within InterPARES 2

InterPARES 2 research activities are subdivided as follows:

	FOCUS 1 **Artistic activities**	FOCUS 2 **Scientific activities**	FOCUS 3 **Governmental activities**
DOMAIN 1 **Records creation &** **maintenance**	**Working Group 1.1** Creation and Maintenance of Artistic Records	**Working Group 1.2** Creation and Maintenance of Scientific Records	**Working Group 1.3** Creation and Maintenance of E-Government Records
DOMAIN 2 **Authenticity, accuracy** **& reliability**	**Working Group 2.1** Accuracy, Reliability, Authenticity of Artistic Records	**Working Group 2.2** Accuracy, Reliability, Authenticity of Scientific Records	**Working Group 2.3** Accuracy, Reliability, Authenticity of E-Government Records
DOMAIN 3 **Methods of appraisal** **& preservation**	**Working Group 3.1** Appraisal and Preservation of Artistic Records	**Working Group 3.2** Appraisal and Preservation of Scientific Records	**Working Group 3.3** Appraisal and Preservation of E-Government Records

Terminology Cross-domain

Policy Cross-domain

Description Cross-domain

Modeling Cross-domain

Domains: The research has been divided into three domains of inquiry, each addressing a specific set of research questions: (1) the first domain will investigate the nature of the records under examination and the process of their creation; (2) the second domain will study the concepts of reliability, accuracy and authenticity, as they are understood in the various disciplinary areas involved in the research; (3) the third domain will test existing appraisal and preservation methods on the records in question and develop and test new ones. The grouping of researchers into Domain Task Forces promotes interdisciplinary collaboration where issues of concern are common to different types of activities.

Focuses: Each domain comprises three focuses, each addressing a type of records: (1) the records of artistic activities, (2) of scientific activities, and (3) of e-governmental activities. The simultaneous grouping of researchers into Focus Task Forces allows for conducting case studies of records creators in the context of each type of activity, analyzing their records from creation to their ultimate appraisal and preservation by archival institutions or programs.

Cross-domains: Four cross-domains have been established; in each a Cross-domain Research Team addresses a key objective common to all domains: (1) the Terminology Research Team will control the use of terms and related definitions in all areas of the research, thereby

ensuring consistency among the various research units while keeping into account disciplinary and cultural differences; (2) the Policy Research Team will articulate principles that should guide the development of policies, standards and strategies for the creation, maintenance, appraisal and preservation of authentic and reliable records in the digital environments under investigation; (3) the Description Research Team will develop guidelines for the intellectual control and archival description of all types of records studied; (4) the Modeling Research Team will translate and describe the results of InterPARES 2 research into formal models to enable their verification and validation and to support (internal and external) communication and dissemination.

Working Groups: The organizational matrix is constituted of three domains represented vertically and three focuses represented horizontally, for a total of nine areas. Working groups have been formed within each area, constituted of investigators with diversity of expertise.

Roles of research units: (1) the primary role of Focus Task Forces is to gather and analyze case studies and other data of relevance to each type of activity across multiple domains of inquiry; (2) the primary role of Domain Task Forces and Cross-domain Research Teams is to correlate these findings across focuses and formally address the project's research questions from an interdisciplinary and multicultural perspective; (3) the primary role of the Working Groups is to ensure that, in the context of the activity of each focus, the research questions of each domain will be adequately addressed, as well as to provide input through their chairs to the decisional process that is carried out at the International Team workshops.[6]

Task Forces, Research Teams and Working Groups meet face to face twice a year in plenary research workshops to engage in scholarly debate and development of new knowledge, to review and discuss research units' activities and findings, to distribute tasks and responsibilities, and to perform research activities which require the physical presence of researchers, such as modeling. These workshops are the primary means of ensuring interdisciplinarity, transferability, open inquiry and the use of multiple methodologies.

For a detailed description of the responsibilities of InterPARES members, see the Organizational Policy, posted on the InterPARES Web site on the Researchers' Restricted Area, Documents.[7]

Expected outcomes

The expected outcomes of the research conducted in Domain 1 are, in addition to the research tools developed for investigating the research questions and methodology statements, case studies overviews, templates for analysis, entity and activity models, and work-flows.

The expected outcomes of the research conducted in Domain 2 are: scholarly papers discussing the meanings of the concepts in question in each discipline, comparing and reconciling them; scholarly papers presenting a theory of reliable record-making and keeping in each activity and contextualizing it; and guidelines for records creators outlining methods for the reliable production and maintenance of records that can be authentically preserved.

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[6] The International Team, chaired by the Project Director and comprising the chairs of the nine working groups, of the three cross-domain research groups, and of the national and multinational teams, meets for a four-day research workshop twice a year to share the findings, reconcile them, direct the research, and decide on dissemination activities.

[7] See http://www.interpares.org/_private_ip2/ip2_documents/ip2_organizational_policy(10-2002).pdf.

The expected outcomes of the research conducted in Domain 3 are: prototypes of appraisal and preservation systems, appraisal and preservation activity models that satisfy the requirements of the records of all activities examined, walkthroughs of the case studies, and guidelines for records preservers.

The expected major outcome of the research conducted in the Terminology Cross-domain is the Project Glossary. In the process of building it, scholarly papers will be produced on the evolution of terms, and on concepts across disciplines and cultures.

The expected outcomes of the research conducted in the Description Cross-domain are scholarly comparative discussions of existing descriptive standards, and an intellectual framework for the development of descriptive standards for the records under examination.

The expected outcomes of the research conducted in the Policy Cross-domain are papers outlining and critically examining existing standards, scholarly works addressing the research questions, and guidelines for developing policies, strategies and standards at the international, national and organizational level.

The expected outcomes of the research conducted in the Modeling Cross-domain are: an integrated model of the lifecycle of electronic records, a data-model based upon this integrated model, and walkthroughs of the models with data from the case studies to validate the models.

Respect of the timeline outlined in the "Milestones" document is vital to the achievement of these outcomes in such a sequence that the work of each unit can support that of the other. The Milestones document can be found on the Web site's Researchers' Restricted Area, in the "Documents" section.[8]

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[8] See http://www.interpares.org/_private_ip2/ip2_documents/ip2_milestones_10_02.pdf.