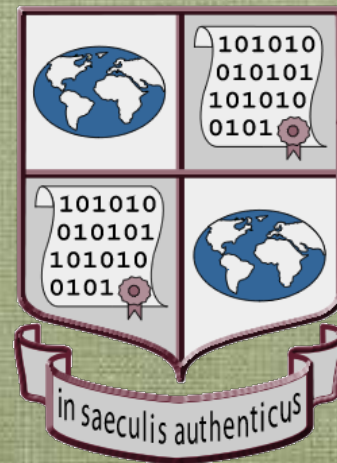
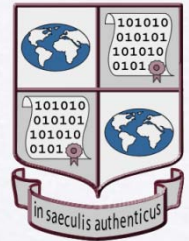


The Same Dance Forever: Is It Possible Or Even Desirable?



Dr. Luciana Duranti
InterPARES Project Director

Performing Arts and Digital Medium



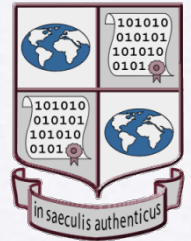
- Script/Score/Notations as instructions, Performance as the work, Recording of the performance as the evidence and memory of it
- Use of the digital medium as
 - a component of the work
 - a means to enact the work
 - a means for re-performing the same work

Problems for Re-use in the Long-term



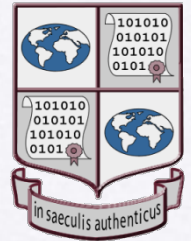
- A computer is needed to read digital materials: The medium does not contain any given work or portion of it, but only bit-strings
- It is not possible to preserve digital materials but only the ability to reproduce them
- There is no longer an original
- Authenticity is no longer verifiable on the work itself

...and more



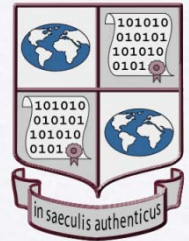
- The easiness of reproduction makes it difficult to identify the final version
- The Internet makes intellectual property increasingly difficult to protect
- Viruses and technology failures make it easy to lose everything
- Technological obsolescence makes digital materials inaccessible very fast
- Hybrid systems

...and bad habits make it worse



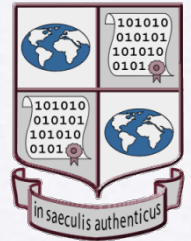
- Creating materials in different applications that are intended to interact, but without description of the interaction
- Not doing regular back-up and upgrading of files
- Not keeping media in the right climatic environments
- Not refreshing the media

and worse...



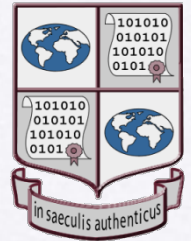
- Using proprietary or legacy systems
- Not migrating the materials to new technology
- Hoping that emulation will take care of long-term access
- Not protecting the documents from malicious or accidental tampering—trusting personal or institutional custody
- Using protection systems—encryption or digital signatures—that do not allow for preservation

InterPARES Goal



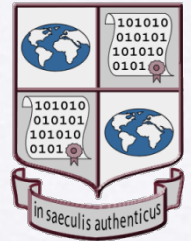
To ensure that the portion of society's recorded memory digitally produced in dynamic, experiential and interactive systems in the course of artistic, scientific and e-government activities can be created in accurate and reliable form and maintained and preserved in authentic form, both in the long and the short term, for the use of those who created it and of society at large, regardless of digital technology obsolescence and media fragility.

InterPARES 2: 2002-2006



- Major funding from SSHRC, NHPRC, NSF, UBC, ANAI, UNESCO (for last 18 months)
- 21 countries in 5 continents, 100 researchers
- Public and private sectors
- Academics and professionals (80% to 20%)
- Archival science, diplomatics and records management; music theory, composition, performance; film theory, production, description; dance and theatre theory; a variety of hard and social sciences; jurisprudence; computer science and engineering

Methodological Principles



- Interdisciplinarity
- Transferability
- Open Inquiry
- Layered Knowledge Environment
- Multi-method design: surveys, case studies, modeling, prototyping, diplomatic and archival analysis, and text analysis, etc. to address domain and cross-domain research questions

Key Concepts



Authenticity: the trustworthiness of an entity as such. An authentic object is one that has not been tampered with or otherwise corrupted. Authenticity comprises identity and integrity.

Identity refers to the attributes of an object/work that uniquely characterize it and distinguish it from others.

Integrity refers to the wholeness and soundness of an object . An object has integrity if it is intact and uncorrupted

Authentication: a means of declaring authenticity at a point in time

Work Accomplished



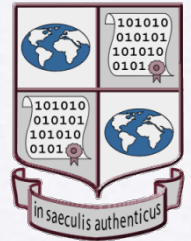
- 21 case studies have been completed and represented in activity and entity models, and analysed according to diplomatic and archival principles
- surveys of websites, of the practices of digital photographers, composers, and film makers, of the practice of preservation of interactive music, of file formats and encoding languages used for non-textual materials
- annotated bibliographies and literature reviews, conceptual analyses of the findings of the reviews, and bibliographic databases for the management of references

Work Accomplished (cont.)



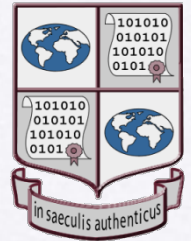
- **Terminology:** a terminology database including 4 lexicographic instruments, a Register, a Dictionary, a Glossary and a Thesaurus
- **Modeling:** Manage the Chain of Preservation model depicting all the activities involved in the management of electronic entities throughout their lifecycle, from creation to permanent preservation

Work Accomplished (cont.)



- **Description:** Metadata Schema Registry, which is a centralized repository of schemas that will aid to identify metadata sets, or the combinations of elements from several sets which are appropriate to serve various recordkeeping needs
- **Policy:** the identification of barriers to preservation which currently exist in laws, regulations, policies and standards concerning copyright and intellectual rights, privacy and freedom of information, authenticity and authentication, open standards and open source, and records and archival management

Work in Course



Development of

conceptual responses to the original research questions, primarily concerning the identification of the entities to be preserved, and

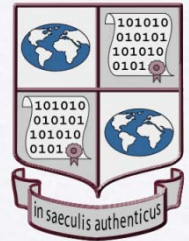
Production of:

guidelines for creators and preservers; appraisal and preservation methodologies and procedures;

frameworks and models for the development of policies, strategies and legislation; and

descriptive schemas for digital entities

Example of Surveys



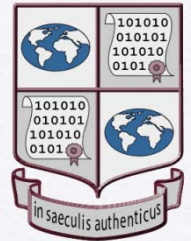
The MUSTICA Initiative. The study team sought to develop a typology of interactive digital music compositions in order to support discussion and analysis of the preservation needs of interactive, digital compositions by identifying the intellectual and physical components of a variety of digital, interactive musical works created by composers at the Institute de Recherche et Coordination Acoustique/Musique (IRCAM) and Groupe de Recherches Musicales (GRM) of Institut National de l'Audiovisuel (INA). This research is co-funded by France's Centre National de la Recherche Scientifique (CNRS).

Case Studies in the Arts



Obsessed Again..., a work for bassoon and interactive electronics written in 1992 by Canadian composer Keith Hamel. The work was designed to use commercial hardware and software but the required equipment has become obsolete. The case study team identified both digital and non-digital entities associated with the work, articulated the requirements for musical authenticity based upon the entities and the various interactions, is building a performable, authentic realization of the work, and developing a method for its long-term preservation.

Case Studies in the Arts (cont.)



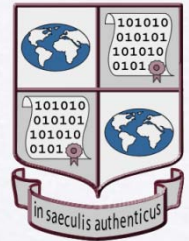
The Electronic Cafe International (ECI) is a multimedia international network for showcasing creative, multi-cultural, multi-disciplinary, collaborative telecommunications. This case study deals with a wide variety of media types that now pose the problems of aging and obsolescent formats. ECI's activities took place from the mid-1970s to the present. The most known works are: 1980 "Hole in Space" and "Electronic Café' 1984"

Case Studies in the Arts (cont.)

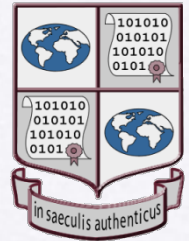


Waking Dream, a performance piece for two people using multiple theatrical elements. The case study team seeks to identify the digital and non-digital components such as software, hardware designs, audio, articulate the requirements for performance authenticity for the piece, build a performable, authentic realization of the piece, and develop a method for the future storage, retrieval, migration and access of the work.

Case Studies in the Arts (cont.)



The work of Stelarc, a performance artist who frequently collaborates with computer programmers, technicians and scientists. His art is exhibited or performed in diverse environments including galleries, aerial suspensions and the Internet. The case study team is interested in learning where the creation of the performance begins and ends with Stelarc's art. In addition, the fragility of the environments in which the works are created and performed raises questions relating to issues of reliability and authenticity.

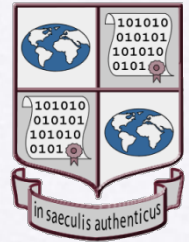


Observations

- The work remains the performance and the score/script/notation is still a set of instructions
- But, computer codes, patches, synthesiser, video feeds, etc. and the interaction between the performer(s) and all of the above are both integral part of the performance and key instruments to its enactment and re-enactment

Hypothetically, we could either

- fix the components in a definitive form with one final act of interpretation and representation, or
- generate a description of all these components and their interaction that allows to re-create the work



What is the Purpose of Preservation?

- To show the work as it was experienced by those who interacted with it when it was created—impossible
- To re-create, re-execute or re-install the work as it was—emulation
- Show various elements of the work—migration of digital parts

or better

- To show the documentation of the work and of the interaction between it and the users when the work was created
- To enable a subsequent non-identical performance in which the essence of the work is conveyed, not necessarily its form and behaviour

Documentation of Work and Interactions



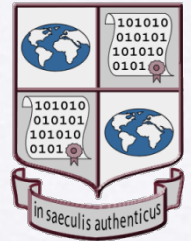
- Documents resulting from planning (e.g. sketches)
- Documents resulting from creation of work (hardware and software programs and codes)
- Documents resulting from the execution of the work (e.g. images, graphics, text)
- Documents capturing the major components of the work (e.g. single channel video feeds)
- Documents created to document the work (e.g. interviews, videos, photos, news, e-mails)

Enabling Subsequent Performance: Rhizome ArtBase



- Connected art object: it comprises the description of the work and its components, a thumbnail of the work, keywords and metadata, a link to the URL of the work, the biography of the artist, and his/her certification that this aggregate of parts corresponds to the work and constitutes an adequate representation of it
- Cloned art object: it includes, in addition, an authentic copy of the work preserved in the server of the project

Outcome



- The object captures the essence of the work
- The author/creator is an active participant in preservation
- Authenticity ensured by the involvement of the author/creator in the creation of a surrogate reflecting his intentions

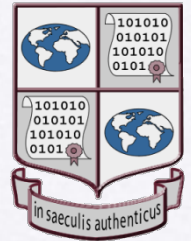
Possible Procedure



1) Identify:

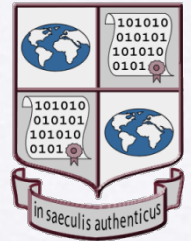
- the boundaries of the entity constituting the work
- the essence of such entity, i.e., its constituent parts and digital components to be kept stable as content, fixed as form, and linked among themselves
- its attributes to be manifested in metadata permanently attached to the score/script/notations
- the necessary accompanying documentation of what is not fully preservable, that is, interactivity, connectivity, and functionality

Possible Procedure (cont.)



- 2) Assemble the stabilized essence of the work, its metadata and system documentation and treat this entity as the work.
- 3) Attach author's certification
- 4) Give it to a trusted custodian for keeping and upgrading

One cannot help wondering...



Being able to re-enact the same dance
forever...

...it may be possible, but...is it desirable?

It is not up to us preservers to decide...

InterPARES Web Site



www.interpares.org