Trusting records: 20 Years of InterPARES Research

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Havana, Cuba 18 February 2019

The Goal of InterPARES 1 and 2 (1998-2006)

To develop the body of **theory** and **methods** necessary to ensure that digital records produced in **databases** and **office systems** as well as 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 them and of society at large, regardless of technology obsolescence and media fragility.

InterPARES Trust

Goal of InterPARES 3 (2007-2012)

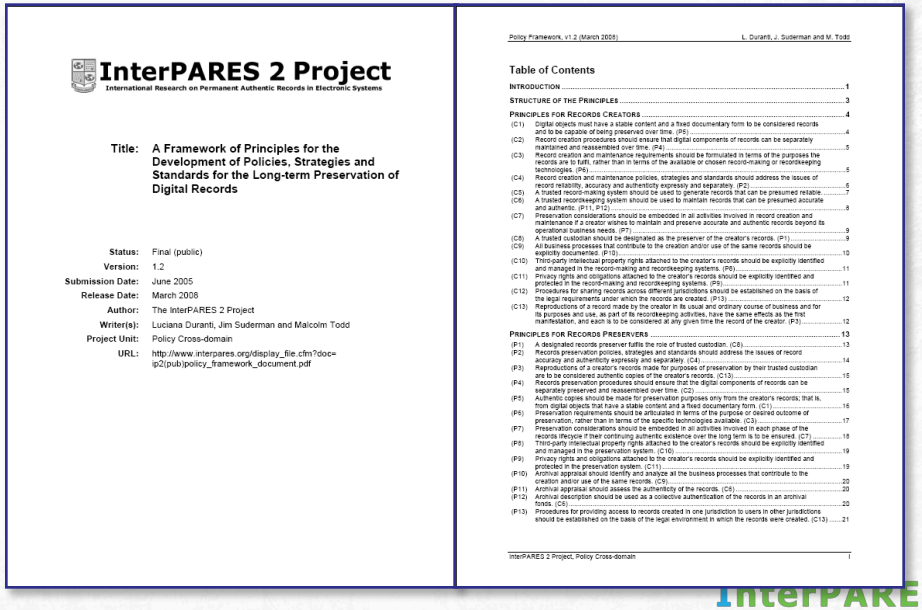
- To **enable** public and private **archival organizations and programs** with limited resources **to preserve** over the long term **authentic records** that satisfy the requirements of their stakeholders and society's needs for an adequate record of its past.

- It did so by building on the products of the first two phases of InterPARES (1998-2006)

Key IP 1 & 2 Products

Policy Framework

A framework of principles guiding the development of policies for records creating and preserving organizations



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

Title: A Framework of Principles for the Development of Policies, Strategies and Standards for the Long-term Preservation of Digital Records

Status: Final (public)
Version: 1.2
Submission Date: June 2005
Release Date: March 2008
Author: The InterPARES 2 Project
Writer(s): Luciana Duranti, Jim Suderman and Malcolm Todd
Project Unit: Policy Cross-domain
URL: http://www.interpares.org/display_file.cfm?doc=ip2(pub)policy_framework_document.pdf

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(C1) Digital objects must have a stable content and a fixed documentary form to be considered records and to be capable of being preserved over time. (P5) 4
(C2) Record creation procedures should ensure that digital components of records can be separately maintained and reassembled over time. (P4) 5
(C3) Record creation and maintenance requirements should be formulated in terms of the purposes the records are to fulfil, rather than in terms of the available or chosen record-making or recordkeeping technologies. (P6) 5
(C4) Record creation and maintenance policies, strategies and standards should address the issues of record reliability, accuracy and authenticity expressly and separately. (P2) 6
(C5) A trusted record-making system should be used to generate records that can be presumed reliable 7
(C6) A trusted recordkeeping system should be used to maintain records that can be presumed accurate and authentic. (P11, P12) 8
(C7) Preservation considerations should be embedded in all activities involved in record creation and maintenance if a creator wishes to maintain and preserve accurate and authentic records beyond its operational business needs. (P7) 9
(C8) A trusted custodian should be designated as the preserver of the creator's records. (P1) 9
(C9) All business processes that contribute to the creation and/or use of the same records should be explicitly documented. (P10) 10
(C10) Third-party intellectual property rights attached to the creator's records should be explicitly identified and managed in the record-making and recordkeeping systems. (P8) 11
(C11) Privacy rights and obligations attached to the creator's records should be explicitly identified and protected in the record-making and recordkeeping systems. (P9) 11
(C12) Procedures for sharing records across different jurisdictions should be established on the basis of the legal requirements under which the records are created. (P13) 12
(C13) Reproductions of a record made by the creator in its usual and ordinary course of business and for its purposes and use, as part of its recordkeeping activities, have the same effects as the first manifestation, and each is to be considered at any given time the record of the creator. (P3) 12
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(P7) Preservation considerations should be embedded in all activities involved in each phase of the records lifecycle if their continuing authentic existence over the long term is to be ensured. (C7) 18
(P8) Third-party intellectual property rights attached to the creator's records should be explicitly identified and managed in the preservation system. (C10) 19
(P9) Privacy rights and obligations attached to the creator's records should be explicitly identified and protected in the preservation system. (C11) 19
(P10) Archival appraisal should identify and analyze all the business processes that contribute to the creation and/or use of the same records. (C9) 20
(P11) Archival appraisal should assess the authenticity of the records. (C6) 20
(P12) Archival description should be used as a collective authentication of the records in an archival fonds. (C6) 20
(P13) Procedures for providing access to records created in one jurisdiction to users in other jurisdictions should be established on the basis of the legal environment in which the records were created. (C13) 21

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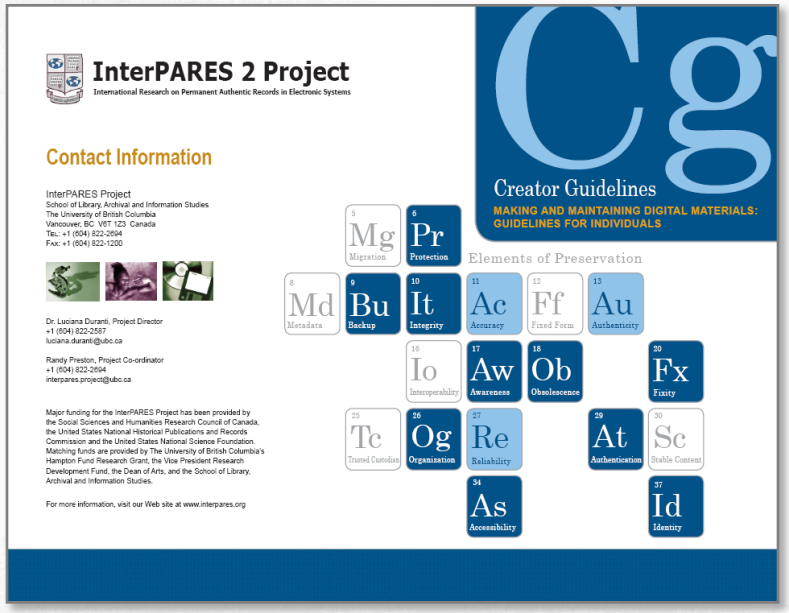
IP 1 & 2 Products

Creator Guidelines

Recommendations for making and maintaining digital materials for individuals and small communities of practice



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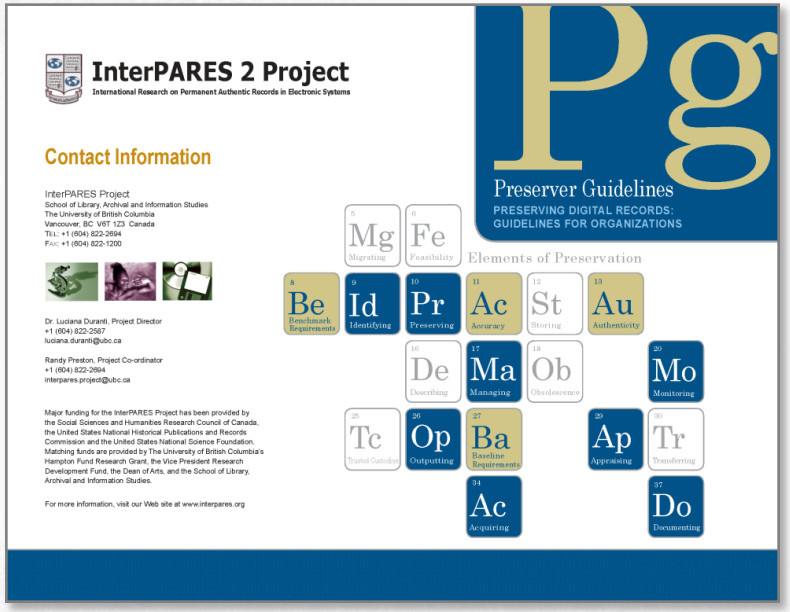
Preserver Guidelines

Recommendations for digital preservation for archival institutions



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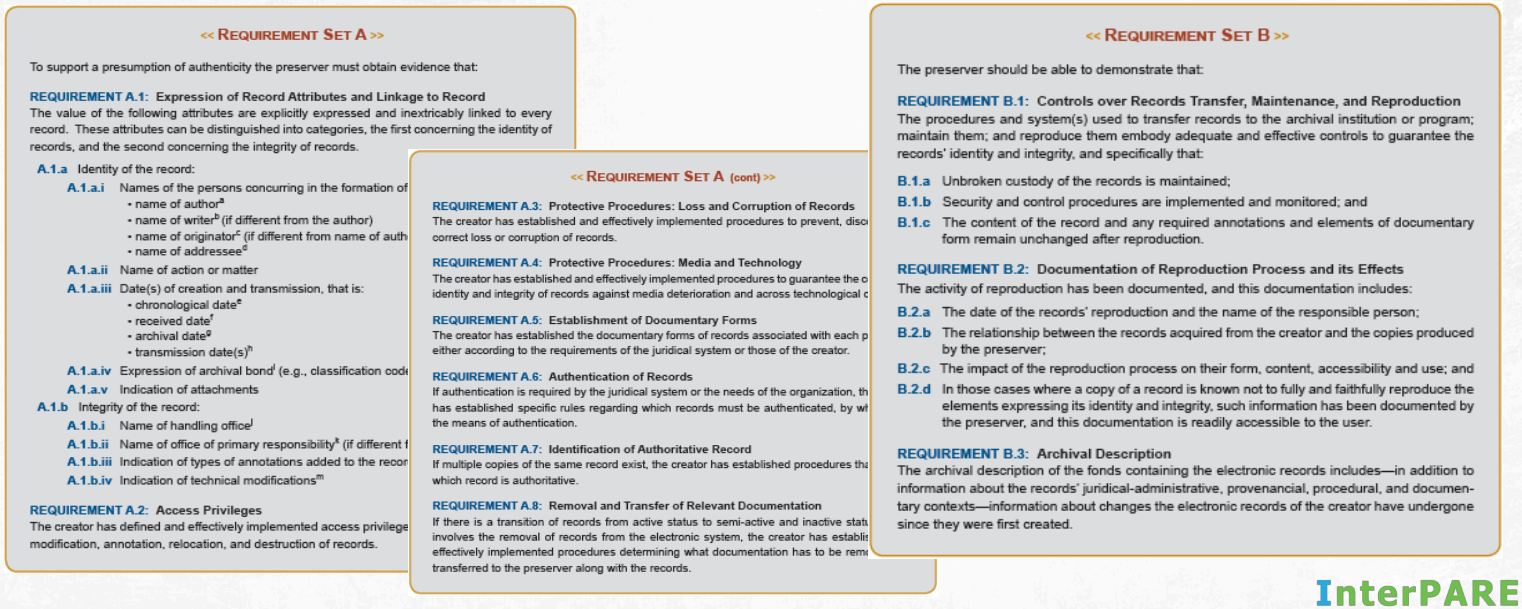
Benchmark and Baseline Requirements

Authenticity requirements for assessing and maintaining the authenticity of digital records



<< REQUIREMENT SET A >>

To support a presumption of authenticity the preserver must obtain evidence that:

REQUIREMENT A.1: Expression of Record Attributes and Linkage to Record
The value of the following attributes are explicitly expressed and inextricably linked to every record. These attributes can be distinguished into categories, the first concerning the identity of records, and the second concerning the integrity of records.

A.1.a Identity of the record:
- **A.1.a.i** Names of the persons concurring in the formation of
  - name of author[a]
  - name of writer[b] (if different from the author)
  - name of originator[c] (if different from name of auth
  - name of addressee[d]
- **A.1.a.ii** Name of action or matter
- **A.1.a.iii** Date(s) of creation and transmission, that is:
  - chronological date[e]
  - received date[f]
  - archival date[g]
  - transmission date(s)[h]
- **A.1.a.iv** Expression of archival bond[i] (e.g., classification cod
- **A.1.a.v** Indication of attachments

A.1.b Integrity of the record:
- **A.1.b.i** Name of handling office[j]
- **A.1.b.ii** Name of office of primary responsibility[k] (if different
- **A.1.b.iii** Indication of types of annotations added to the recor
- **A.1.b.iv** Indication of technical modifications[m]

REQUIREMENT A.2: Access Privileges
The creator has defined and effectively implemented access privilege
modification, annotation, relocation, and destruction of records.

<< REQUIREMENT SET A (cont) >>

REQUIREMENT A.3: Protective Procedures: Loss and Corruption of Records
The creator has established and effectively implemented procedures to prevent, disc
correct loss or corruption of records.

REQUIREMENT A.4: Protective Procedures: Media and Technology
The creator has established and effectively implemented procedures to guarantee the
identity and integrity of records against media deterioration and across technological

REQUIREMENT A.5: Establishment of Documentary Forms
The creator has established the documentary forms of records associated with each p
either according to the requirements of the juridical system or those of the creator.

REQUIREMENT A.6: Authentication of Records
If authentication is required by the juridical system or the needs of the organization, th
has established specific rules regarding which records must be authenticated, by wh
the means of authentication.

REQUIREMENT A.7: Identification of Authoritative Record
If multiple copies of the same record exist, the creator has established procedures tha
which record is authoritative.

REQUIREMENT A.8: Removal and Transfer of Relevant Documentation
If there is a transition of records from active status to semi-active and inactive statu
involves the removal of records from the electronic system, the creator has establis
effectively implemented procedures determining what documentation has to be rem
transferred to the preserver along with the records.

<< REQUIREMENT SET B >>

The preserver should be able to demonstrate that:

REQUIREMENT B.1: Controls over Records Transfer, Maintenance, and Reproduction
The procedures and system(s) used to transfer records to the archival institution or program; maintain them; and reproduce them embody adequate and effective controls to guarantee the records' identity and integrity, and specifically that:

- **B.1.a** Unbroken custody of the records is maintained;
- **B.1.b** Security and control procedures are implemented and monitored; and
- **B.1.c** The content of the record and any required annotations and elements of documentary form remain unchanged after reproduction.

REQUIREMENT B.2: Documentation of Reproduction Process and its Effects
The activity of reproduction has been documented, and this documentation includes:

- **B.2.a** The date of the records' reproduction and the name of the responsible person;
- **B.2.b** The relationship between the records acquired from the creator and the copies produced by the preserver;
- **B.2.c** The impact of the reproduction process on their form, content, accessibility and use; and
- **B.2.d** In those cases where a copy of a record is known not to fully and faithfully reproduce the elements expressing its identity and integrity, such information has been documented by the preserver, and this documentation is readily accessible to the user.

REQUIREMENT B.3: Archival Description
The archival description of the fonds containing the electronic records includes—in addition to information about the records' juridical-administrative, provenancial, procedural, and documentary contexts—information about changes the electronic records of the creator have undergone since they were first created.

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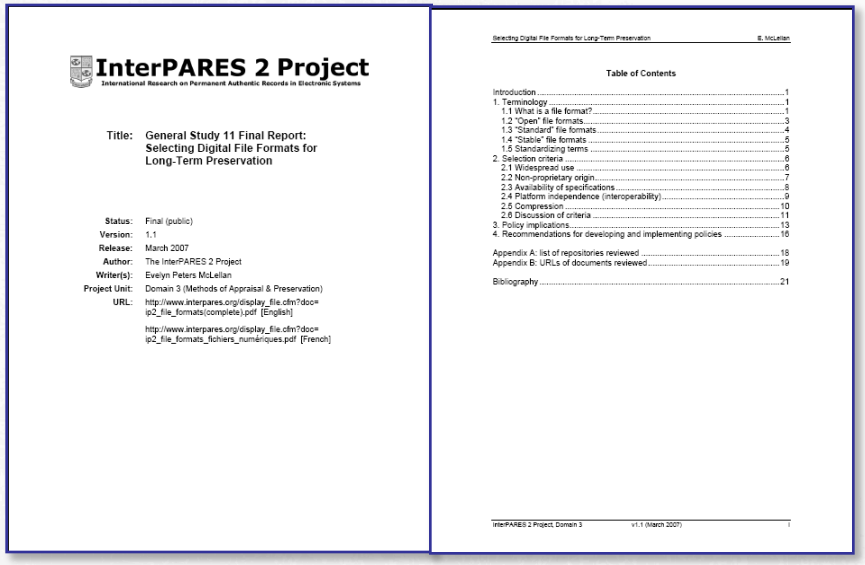
IP 1 & 2 Products

File Format Selection Guidelines

Principles and criteria for adoption of file formats, wrappers and encoding schemes



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

Title: General Study 11 Final Report: Selecting Digital File Formats for Long-Term Preservation

Status: Final (public)
Version: 1.1
Release: March 2007
Author: The InterPARES 2 Project
Writer(s): Evelyn Peters McLellan
Project Unit: Domain 3 (Methods of Appraisal & Preservation)
URL: http://www.interpares.org/display_file.cfm?doc=ip2_file_formats(complete).pdf [English]

http://www.interpares.org/display_file.cfm?doc=ip2_file_formats_fichiers_numériques.pdf [French]

Selecting Digital File Formats for Long-Term Preservation E. McLellan

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InterPARES 2 Project, Domain 3 v1.1 (March 2007) i

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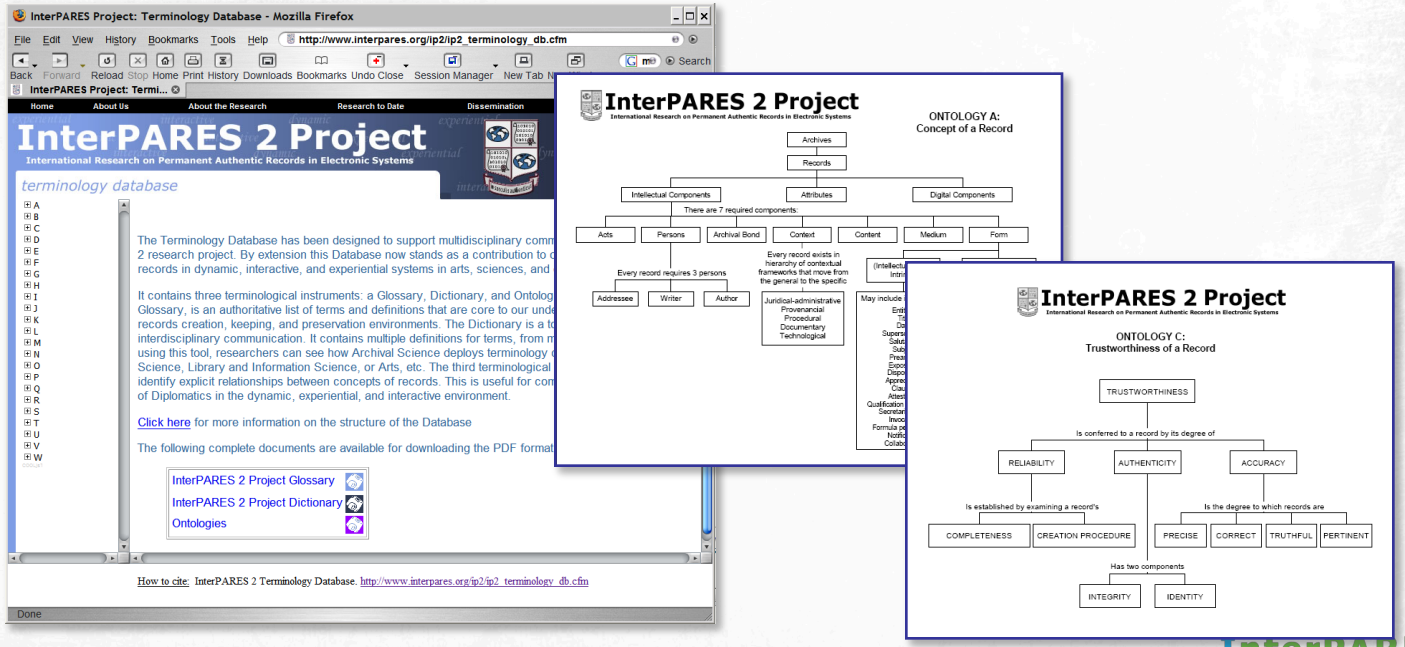
IP 1 & 2 Products

Terminology Database

Including a glossary, a dictionary and ontologies



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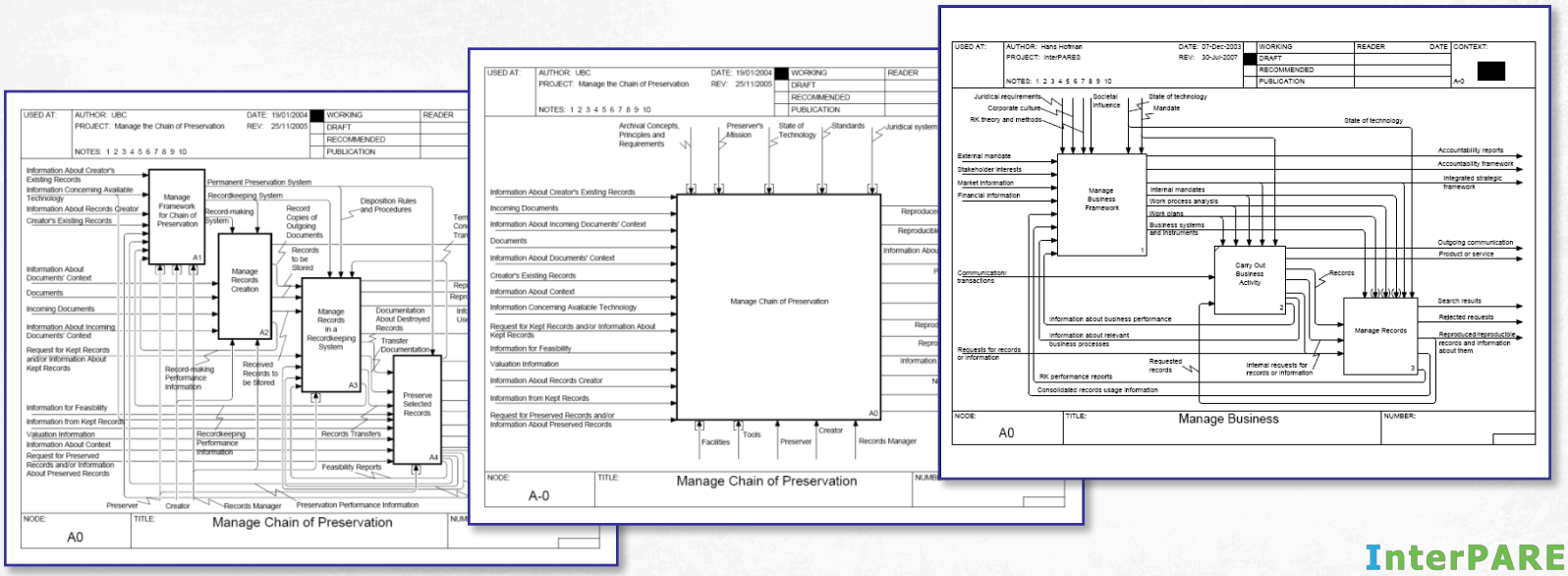
IP 1 & 2 Products

Two Records Management Models

Chain of Preservation (COP) Model (lifecycle)

Business-driven Recordkeeping (BDR) Model (continuum)



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IP 1 & 2 Final Products

Two books:

Luciana Duranti, ed. *The Long-term Preservation of Authentic Electronic Records: Findings of the InterPARES Project* (San Miniato: Archilab, 2005). Available on line at http://www.interpares.org/book/index.cfm

Luciana Duranti and Randy Preston, eds. *InterPARES 2: Interactive, Dynamic and Experiential Records* (Roma: ANAI, 2008). Available on line at http://www.interpares.org/ip2/book.cfm.

InterPARES 3 General Studies

- National Standards Relevant to IP3
- Community Archives e-Records Assessment
- Public Sector Audit Report for Digital Recordkeeping
- Records Management Policies and Procedures Template
- Cost-benefit Models
- Ethical Models
- File Viewers
- **Education Modules**
- Open Source Records Management Software
- Metadata Applications Profiles
- Organizational Culture & Risk Assessment

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InterPARES 3 General Studies

- Web 2.0/Social Media
- **Terminology Database**
- Analysis of Other Digital Preservation Projects
- International Standards Relevant to IP3
- Annotated Bibliography Database
- E-mail Preservation
- Preservation of Registries

InterPARES Products

All InterPARES 1-3 Products are available at

www.interpares.org

Records Online

Increasingly individuals and organizations choose to keep their records on line. The primary **uses** of the online environment are:

- Backup
- Collaboration
- Distribution (including social media)
- Recordkeeping
- Long-term storage
- Keeping Archives

Internet vs Cloud

Internet providers are "entities providing users the ability to communicate through a computer system that processes or stores computer data on behalf of such communication or users." (Budapest Convention on Cybercrime, 2001). Three "actions" relate to the definition of provider: **communication, data processing** and **data storage.**

Cloud computing is a "model for enabling convenient, on-demand network access to a **shared** pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be **rapidly provisioned and released** with minimal management effort or service provider interaction." (National Institute of Standards and Technology, 2009)

The services offered by Internet and Cloud Providers are **not regulated** or **transparent.**

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Trust on the Internet or Cloud

- The **standard of trust** online is that of the ordinary marketplace, *caveat emptor*, or **buyer beware**

- **What is trust?**

- Some view it as a four-level progression: from **individual**, as a personality trait, to **interpersonal**, as a tie directed from one person to another (son to father); to **relational**, as a property of a mutual relationship (people doing business); and **societal**, as a feature of a community as a whole.

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InterPARES Definition of Trust

- InterPARES defines trust as confidence of one party in another, **based on alignment of value systems with respect to specific actions or benefits**, and involving a relationship of voluntary vulnerability, dependence, and reliance, based on risk assessment
- Substantially, trust involves acting without the knowledge needed to act, by **substituting the information that one does not have with other information**, e.g. the testimony of witnesses, oral tradition, documentary evidence

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Questions to Ask Providers

- How can a **confidentiality** of information be protected?
- How can a human or legal person's **privacy** be protected?
- How can an organization's **forensic readiness** be maintained and **compliance with the law** ensured?
- How can an organization's records' **accuracy, reliability, and authenticity** be guaranteed and verifiable?
- How can an organization's records and information **security** be enforced?
- How can an organization maintain **governance** upon the records entrusted to the Internet or the Cloud?
- How can the **preservation** of records of permanent value be ensured?

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The Classic Response

- Choosing to keep records online is a **Risk Assessment** decision where Risk = probability x impact. It is a question of comparison. If one cannot have everything, what does one give up?

- The first choice offered us is **between Transparency and Security**: providers offer trust through technology and location independence.

- The second choice offered us is **between Control and Economy**: Providers offer trust through control on expenditures.

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The Trust Challenge

If we decide to carry out our activities online, we must find a balance between **trust** and **trustworthiness**, which is needed to ensure a balanced trust relationship.

Trust constitutes a risk which can only be mitigated by the establishment of a **trust balance**: we must trust trustworthy trustees and trustworthy records.

InterPARES Trust (2013-2019)

The **goal of InterPARES Trust** was to generate the theoretical and methodological **frameworks** that will support the development of integrated and consistent local, national and international **networks of policies, procedures, regulations, standards and legislation concerning digital records online**, to ensure public trust.

InterPARES Trust has been funded by a SSHRC Partnership grant and matching funds from UBC and all the partners (in cash and/or in kind)

InterPARES Trust Participants

- The **International Alliance** comprises 7 Teams:
  - North America
  - Latin America
  - Europe
  - Asia
  - Australasia
  - Africa
  - Transnational Organizations
- Supporting Partners
- Pro-bono Consultants
- Management Team

A total of 490 researchers in 42 countries

Partners

- Universities
- National & Regional Archives
- Libraries
- Governments
- International Organizations
- Businesses
- Individual researchers

Methodology

- **Archival and diplomatics methods**
- **Resource-based theory** because of the need to understand the technologic, managerial and relational means of maximizing competitive advantage
- **Risk management** because of the need to identify vulnerabilities and ways to mitigate them
- **Design theory** because of the need to develop policy in situations with unknown variables
- **Digital forensics**, because of the need to assess the authenticity of digital materials that do not reside in the systems in which they were produced and kept
- **Human computer interaction**; **aero-spatial, cybercrime, and telecommunication law**; **organizational theory**, etc.

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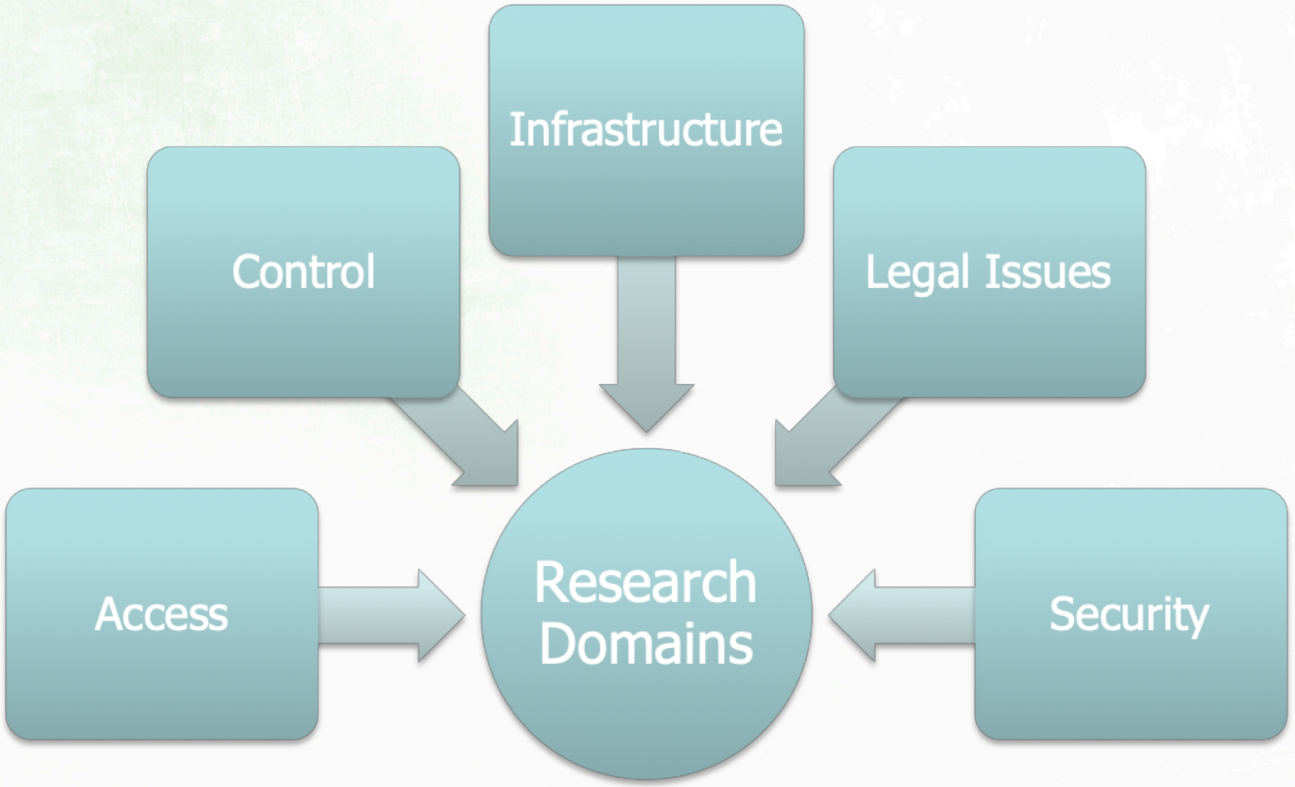
Research Domains



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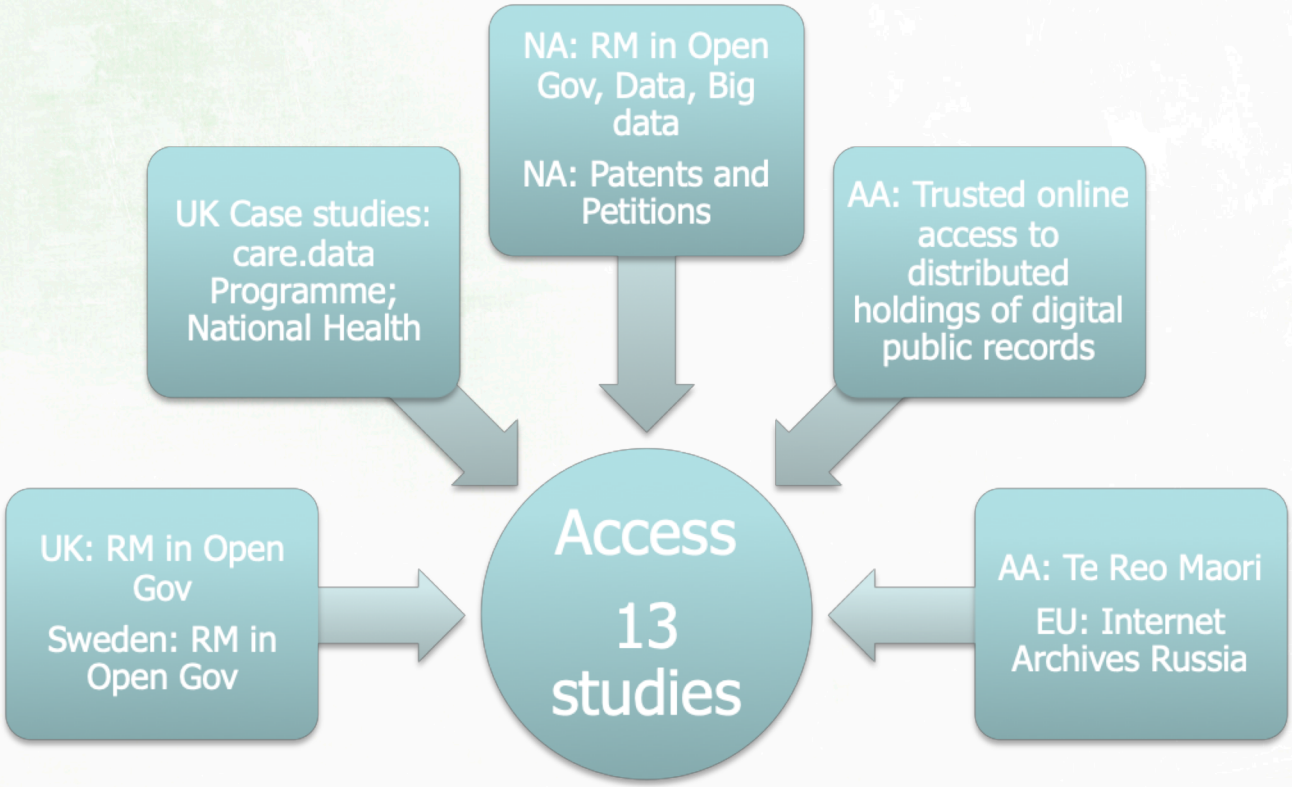
Access



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Control

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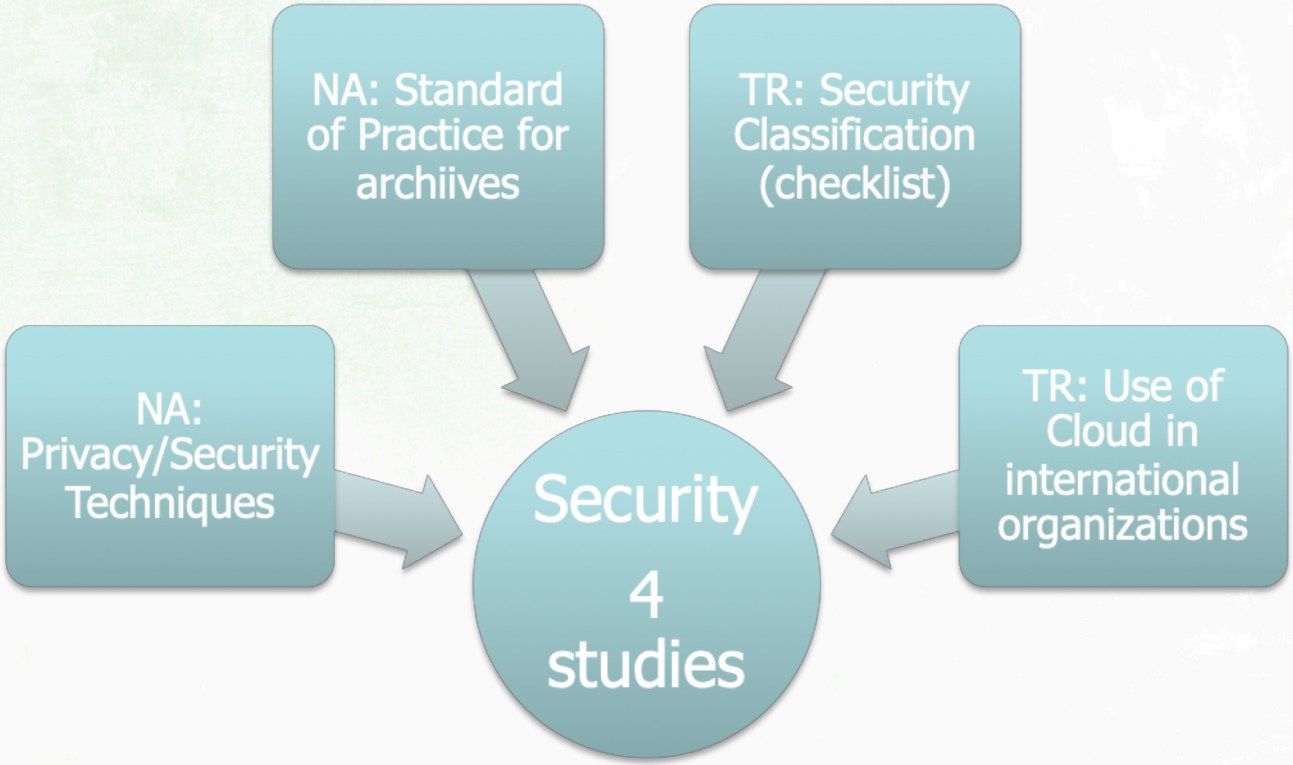
Security



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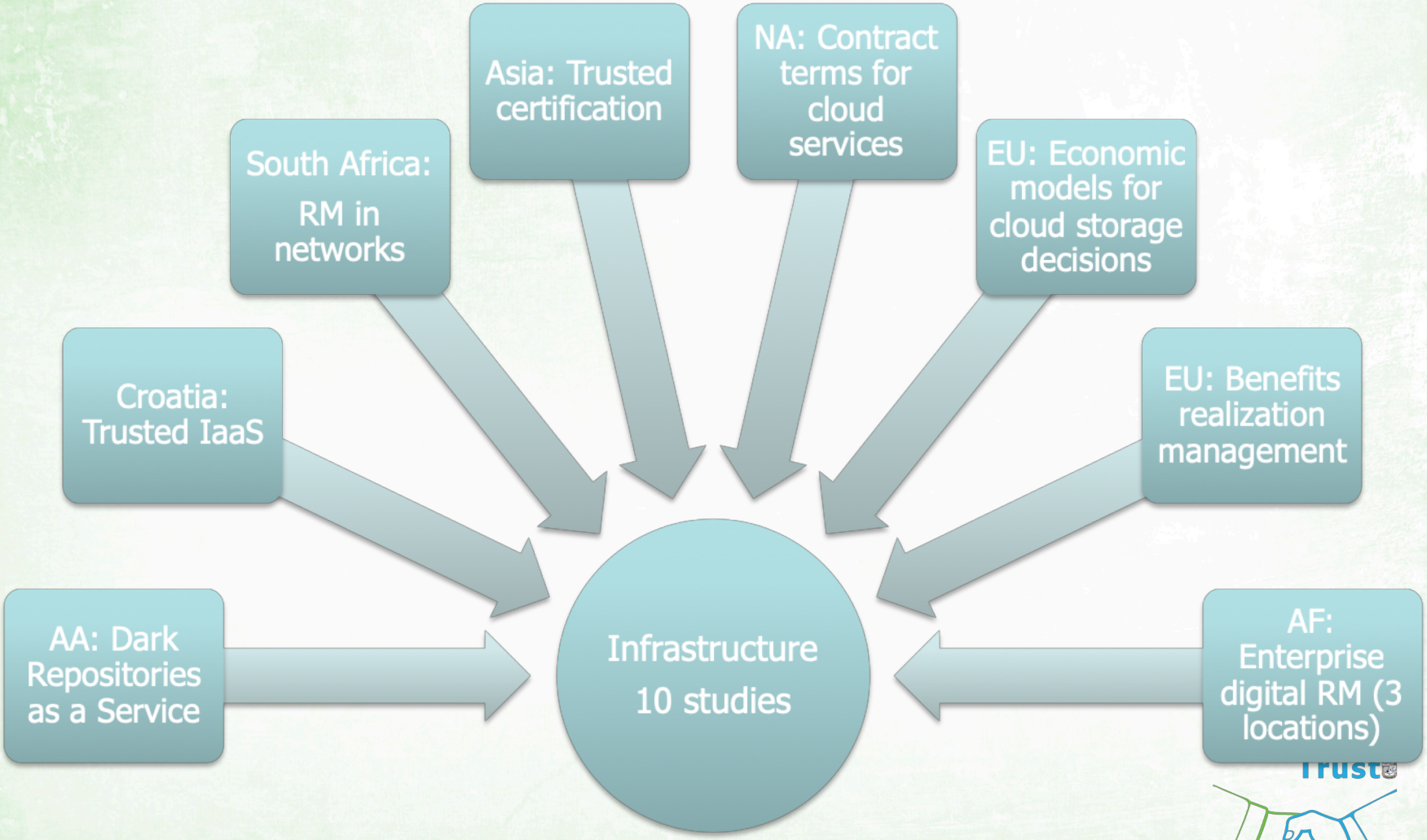
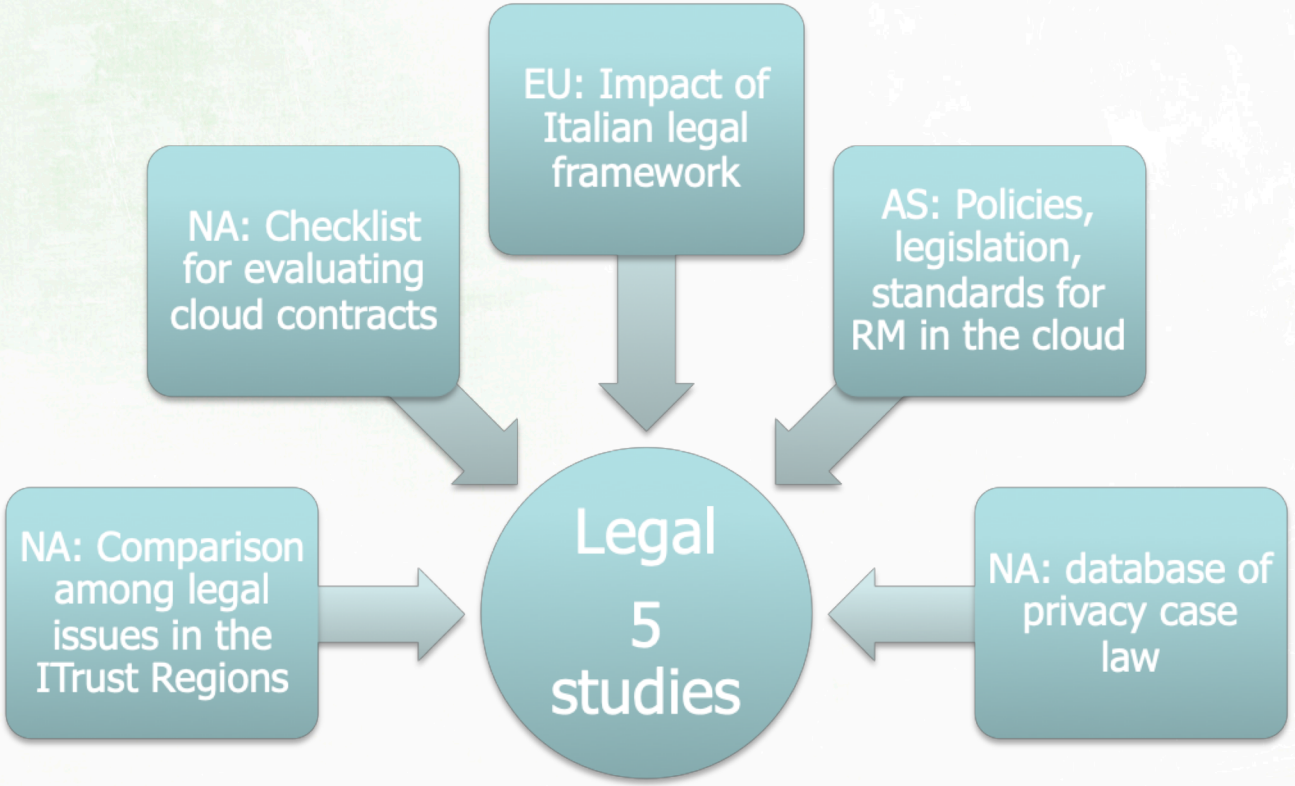
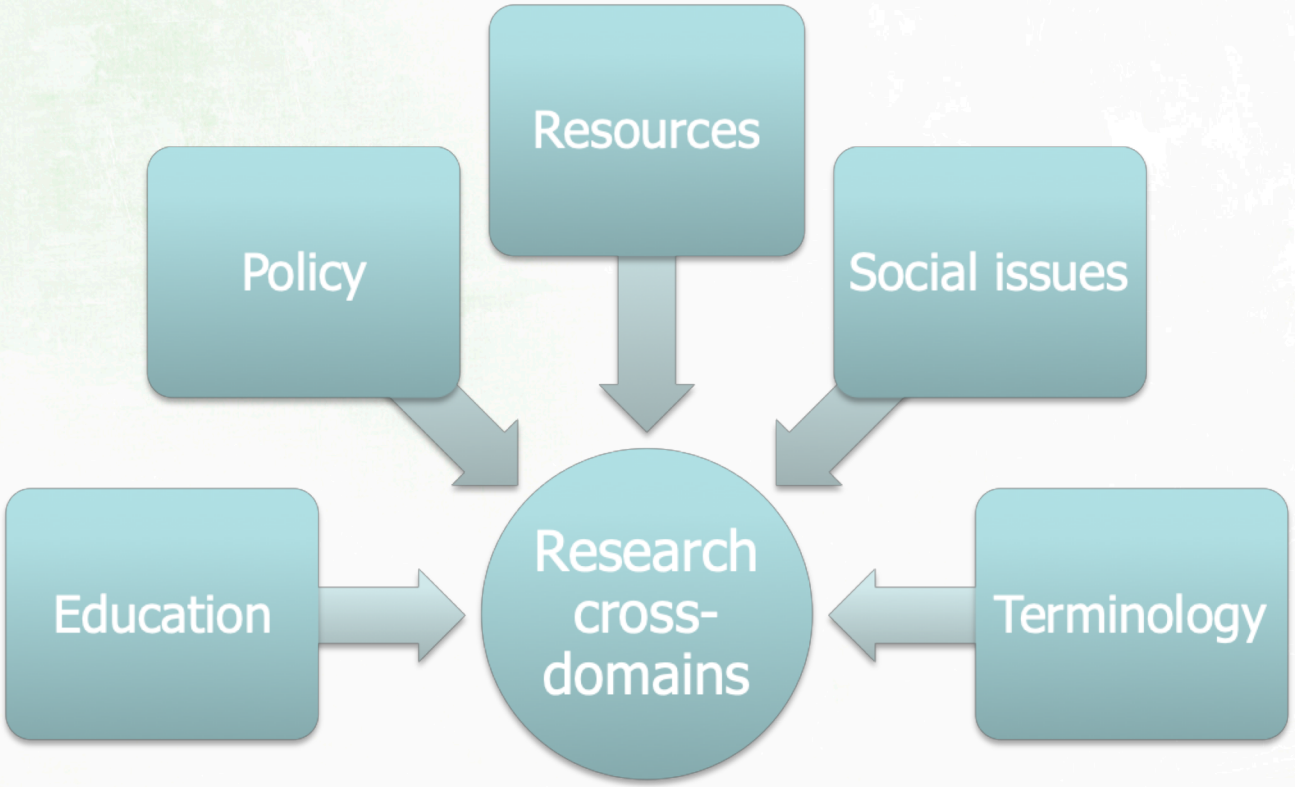
Infrastructure



Legal issues



Research Cross-Domains



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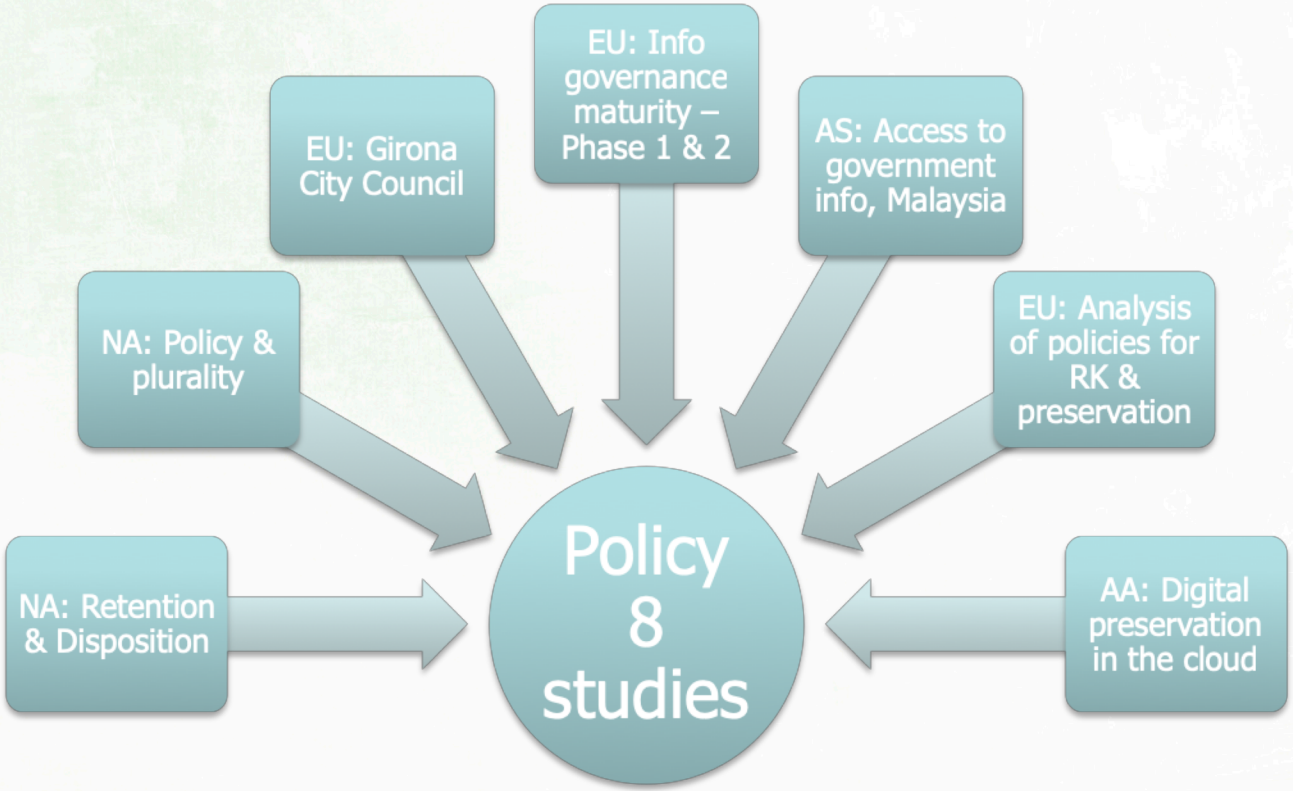
Policy



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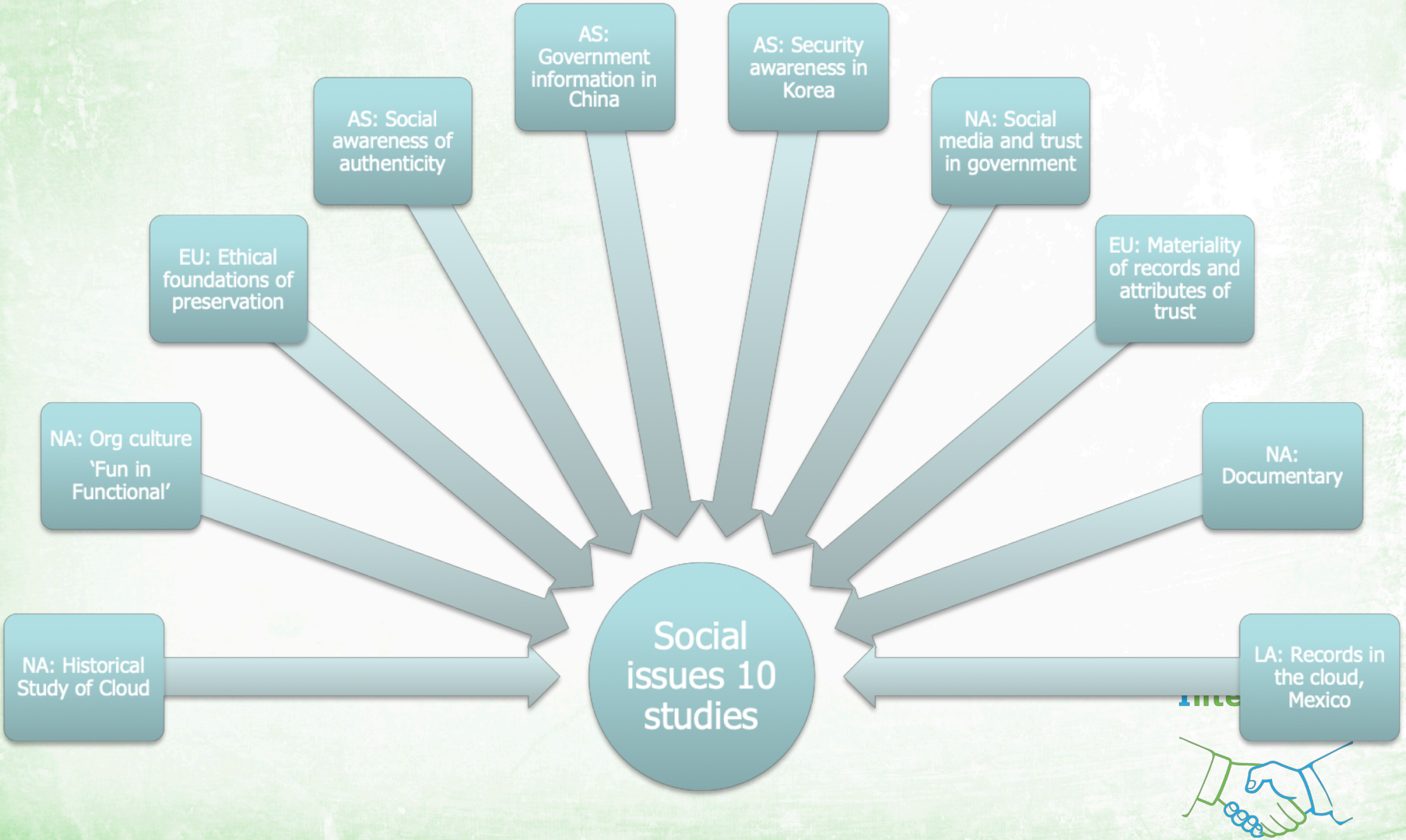
Social Issues



Resources & Education

- Terminology Database
- Literature reviews
- Ontology of functional activities for archival systems (TR)
- Reports (NA)
  - Notes on International Law
  - Trust in Law
  - Trust in Business
  - Trustworthy Smart Grid Infrastructures
- Review and update of Digital Records Pathways (AA/NA)
- Curriculum Alignments at Institutions of Higher Learning in Africa (AF)

Research Dissemination is authored by InterPARES Trust researchers and research assistants. They will be listed below on an ongoing basis.

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[5] Reports

[2] Sponsorships

[2] Videos

The Books!

Luciana Duranti and Corinne Rogers eds. *Trusting Records in the Cloud* (London and Chicago, Ill.: Facet Publishing and Society of American Archivists, 2019).

12 chapters covering the main findings of the project that are relevant to all cultural and juridical environments.

By Routledge, Taylor and Francis Group:

A book by the African Team

A book by the European Team

A book by the Transnational Team

THANK YOU

www.interparestrust.org

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