

21. Archival Science Colloquium / International Symposium

Archivschule Marburg
Forschung | Schulung | Dokumentation

InterPARES Trusta

Preservation as a Service for Trust

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Marburg, 8 June 2016



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Trust is about vulnerability

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Trust is about risk management

- Trust falls between hope and certainty

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- Like any risk, it requires the management of a deviation from the expected

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Trust is a process

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Trust is contextual

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Trust is about culture



- **65%** of Norwegians 🇳🇴 say most people can be trusted, compared with only **3%** of Brazilians 🇧🇷
- There is evidence that trust is associated with country-level measures such as wealth, education, and ethnic homogeneity

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Trust is an economic asset



- Information has become a **commodity** with economic value. Trust is the framework that allows such value to thrive, move and be exchanged

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Trust and records



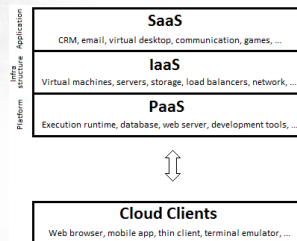
- Records provide **evidence** of our actions and thoughts, and they allow us to communicate across space and time
- Such **communication is deeply based on trust**
 - Trust is embedded into records
 - Trust is involved in transmission process
- Digital environment makes everything more **complex**

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Neither SaaS nor IaaS nor PaaS



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PaaS



**Preservation.
as a Service.
for Trust.**

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Objective



- Create a model for preserving digital records in the Cloud while maintaining their authenticity
- The model defines functional and data requirements for actions, agents and objects interacting in a **preservation space** not limited to a single repository or system

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Critical issue



- Operational responsibilities for preservation distributed, contracted or subcontracted
- Digital records moved through diverse systems, repositories and technologies
- Increasing vulnerability



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Approach



- Preservation is realized through a set of related activities that can be carried out by different service providers using different technologies, under separate and independent operational control



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Challenges in modelling



The model is being designed to be applicable across as broad a **variety of contexts** as possible:

- heterogeneity of **types** of information objects
- variety of applicable **directives** (laws, regulations, standards, policies, business rules, agreements)
- varying **conditions** of ownership, access, use, exploitation
- diverse institutional **arrangements** and **relationships** between the parties

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Challenges in modelling



The model is being designed to be

- independent of any specific technology
- implementable

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PaaST uses UML



- UML = Unified Modelling Language
- Requirements modeled in UML can be used in the **automatic generation of code**

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PaaST builds on archival concepts



- The theoretical framework of Archival Science provides the foundational knowledge needed to model the preservation function in the Cloud
- In addition, two major models for preservation:
 - OAIS (Open Archival Information System)
 - CoP (Chain of Preservation)

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Tweaking OAIS - #2



OAIS

Digital and non-digital objects

PaaST

Digital objects only

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Tweaking OAIS - #3



OAIS

It deals with information

PaaST

It deals with records

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Tweaking OAIS - #4



OAIS

It does not specify a design or an implementation

PaaST

It is formulated to facilitate implementation in software

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Tweaking OAIS - #5



OAIS

- It deals with information not necessarily *machine actionable* (e.g., English dictionary and grammar)

PaaST

It aims at facilitating automated methods for preserving digital information



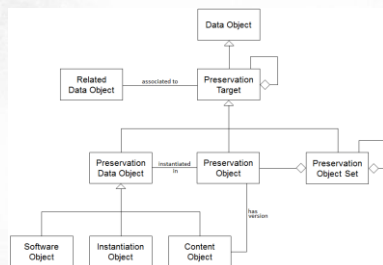
It deals with information that is *machine actionable*

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PaaST. Information model



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PaaST. Environment



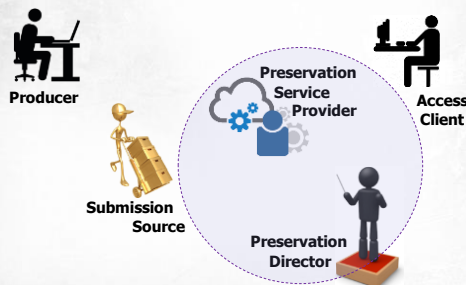
- Different agents interact in a modular and integrated way to perform different sets of preservation activities
- Party:** person or organization that is involved in the activities entailed by the PaaST requirements
- A party is defined by the activity

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PaaST. Parties



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Past. Activities

Range of preservation activities covered by PaaST:

- **negotiation** of the terms and conditions under which preservation is performed
- **transfer** of records to be preserved to a Service Provider
- **management** of records into the archives
- **delivery** of records (or copies or extracts) to Clients

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PaaST. Capability

- Action or a set of actions that can be performed in support of digital preservation
- Capabilities respond to PaaST requirements and may be combined into composite *services*
- Articulated in four groups

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PaaST. Capabilities

- **Management**
- **Information processing**
- **Object processing**
- **Preservation Processing**

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Where are we now?



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PaaST. Functional requirements

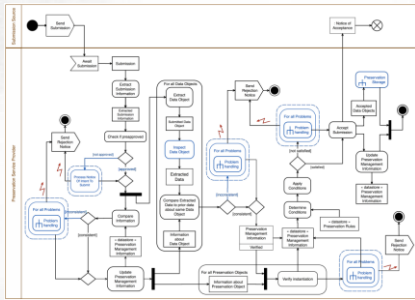
1. Management

1.1 Control

ID	Description	Requirement
1.1.1	Formulate controls	The service shall provide the capability to formulate executable Preservation Controls
1.1.1.1	Formulate rules	The service shall provide the capability to formulate an executable Preservation Rule that embodies a provision of an applicable Preservation Service Contract
1.1.1.2	Determine Preservation Condition	The service shall provide the capability to combine information about a specific case with a Preservation Rule to determine a condition that applies to the case
1.1.1.3	Formulate rules (repeatable)	The service shall provide the capability to formulate an executable Preservation Rule that defines a repeatable Preservation Process
1.1.1.4	Enforce PaaST Profile	The service shall provide the capability to formulate an executable Preservation Rule to determine compliance with a specification in a PaaST Profile
1.1.1.5	Enforce problem resolution	The service shall provide the capability to formulate an executable Preservation Rule to enforce a requirement for problem resolution

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PaaST. Activity diagrams



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PaaST as a standard



- The Object Management Group (OMG) is developing a standard on digital preservation based on the functional requirements being defined in PaaST



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The prologue is past



*«We have a **broad base of experience** from which to reach some conclusions and view the future [...]»*

David Warner, former president of the Society of American Archivists

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The prologue is past



- We can no longer trust documents using the same approach and methods of the past
- However, such approach and methods provide the solid ground on which we can create new perspectives, models and tools



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The prologue is PaaST



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Thank you
for your attention!



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