



# Living in a Digital world

Daniel Teruggi, Ina, France [dteruggi@ina.fr](mailto:dteruggi@ina.fr)

# **1) Getting into the Digital World**

## PrestoSpace (2004 - 2008)

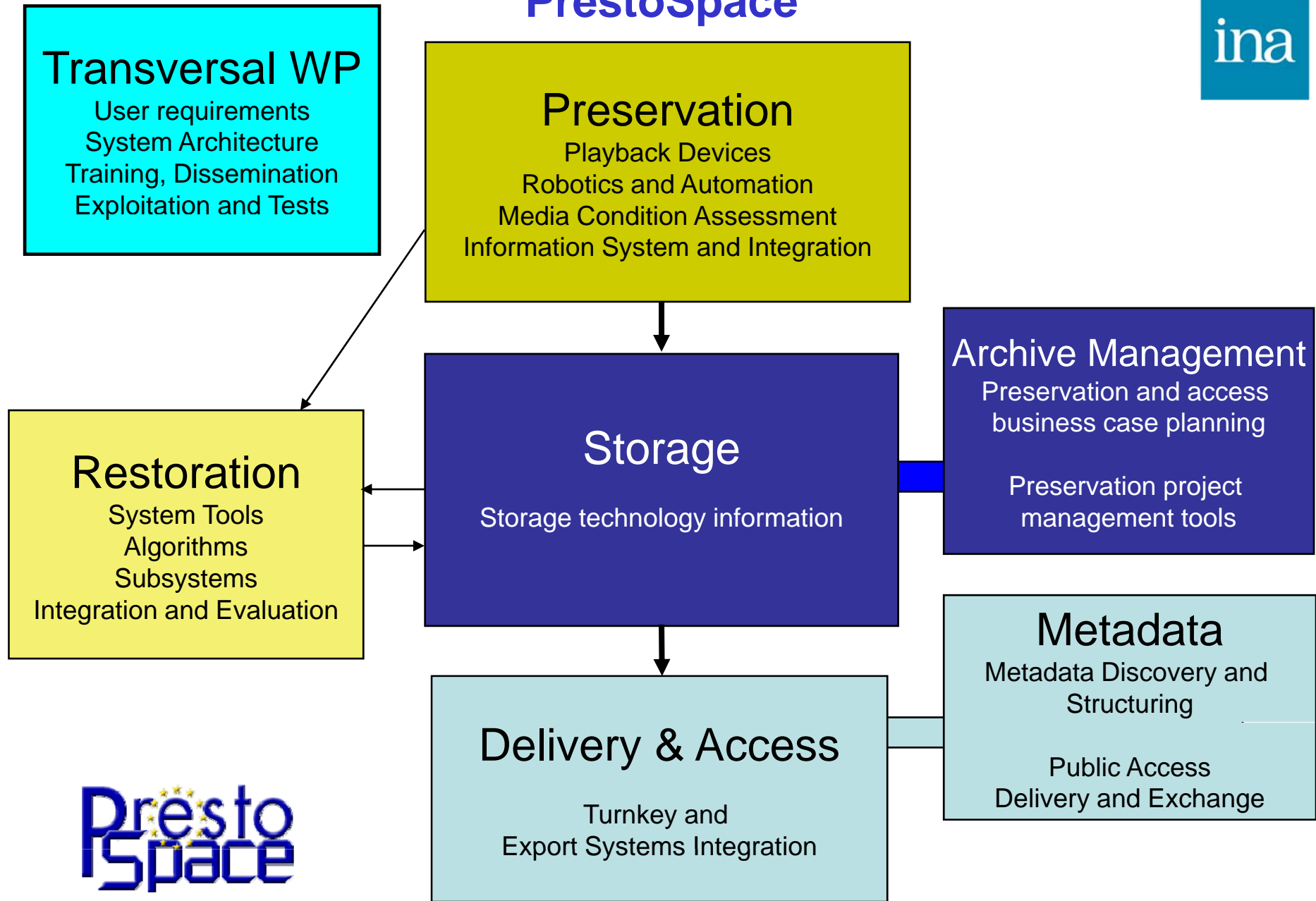
- 35 Partners collaborating in the project
- 180 Archives User Group in 52 countries
- 144 Service Providers Group in 26 countries

From new machines for audio, video, and film digitisation, to a Turnkey System for hosting Digital Audiovisual Archives

**Main objectives: making preservation faster, better, and cheaper! A main concept: the *Preservation Factory***



# PrestoSpace



**Preservation**  
 Playback Devices  
 Robotics and Automation  
 Media Condition Assessment  
 Information System and Integration



Hi-Stor  
Technologies

Reply

ROPOCO

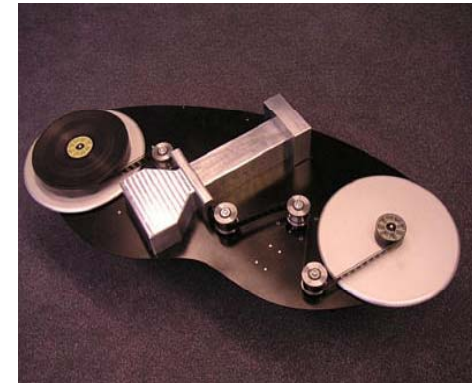
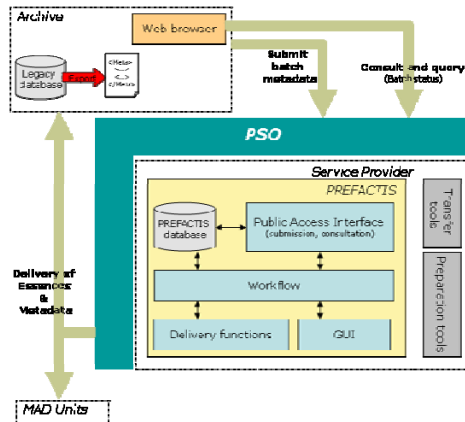
P+S TECHNIK  
Professional Cine Equipment Manufacture

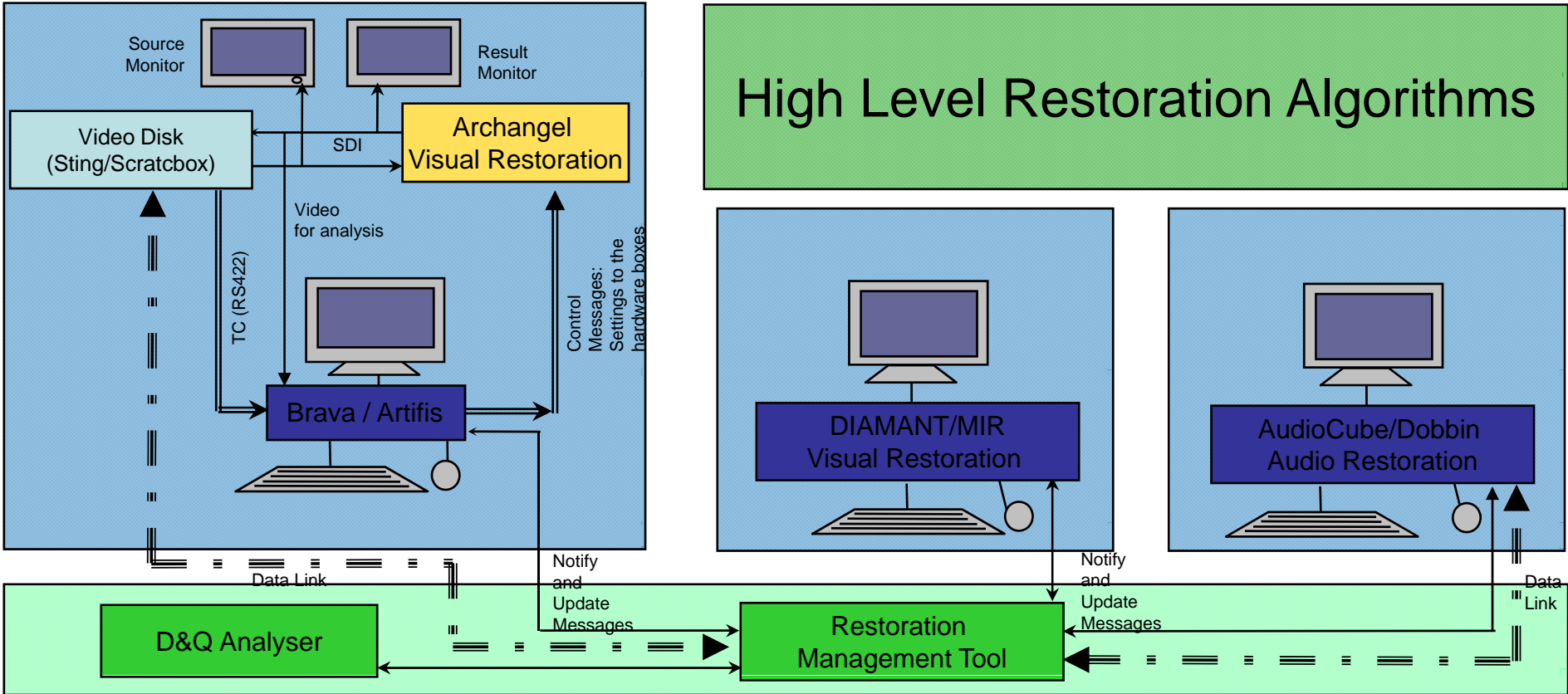


indeep



SAMMA™





**High Level Restoration Algorithms**



**Storage**  
 Storage technology information  
**Archive Management**  
 Preservation and access  
 business case planning  
 Preservation project  
 management tools

## Preservation Wiki

Preservation Guide | Main / Preservation Guide - Introduction

http://www.bbcarchive.org.uk/pmwiki/

Recent Changes - Search: [ ] Go

**PrestoSpace**

Preservation Guide  
 Navigation Guide

**Introduction**  
 Overview of Preservation  
 Getting Started  
 Develop a Strategy  
 - Collection Strategy  
 - Preservation Strategy  
 Make a Preservation Plan  
 and Budget  
 Presto Space Help  
 - Effective Technology  
 - Preservation Projects  
 Preservation Factory  
 Everything Technical  
 Answers to Questions

**Supplements**  
 The Audiovisual Culture  
 Service and Storage  
 Providers  
 Future Forecast  
 Presentations  
 Wiki Help

Originated by the Prestospace project, supported by the Cultural Heritage Programme of the European Commission Information Society Technologies Programme.

Main /  
 Preservation Guide - Introduction

General Guide to Audiovisual Preservation

Is this your problem?

If you have audiovisual media, it needs **maintenance** – or you will lose it. This guide shows how to:

- conserve old formats
- digitise for transfer to new formats
- create digital file formats
- use digital restoration
- use mass storage
- provide electronic and web access

Those are just the technologies – some strategic thinking is also needed:

- at the institution level: where you are, where you want to get
- at the project level: how to run an efficient preservation project

The strategic issues raise other 'how to' issues, which this guide also covers:

- how to estimate costs – for specific projects and for long-term maintenance
- how to fund preservation

So, where to start? The [navigation guide](#) shows the organisation of the information. Each topic gives basic information, plus where to look for more if needed.

If you want to add to this wiki, just contact [the editor](#) for instructions.

DOCUMENT: PS\_WP14\_SPM1\_D14:HTML\_Preservation\_Guide\_v3 CREATION DATE: 01.03.2008 FIRST AUTHORS: Richard Wright, BBC and the Prestospace project.  
 This entire wiki is in the public domain, under [Creative Commons](#) licence. The standard licence is here: [UK\\_CC\\_Licence](#). [Specific Credits and Acknowledgements](#)

A mixed audiovisual collection  
 Henry Hampton Collection, photo: Howard Besser

Prestospace SAM | Storage Management for Digital Archives - Microsoft Internet Explorer

File Edit View Favorites Tools Help

**PrestoSpace** Storage Management for Digital Archives [SEARCH]

**Home | Tutorials | Knowledge Base | Analysis | Events | Glossary**

**Home**

**Tutorials**

- Why Digitise
- Selecting your storage solution
- The SAM analysis tools revealed

**Introduction**

A Web site for archive owners and the public alike, which provides first point-of-call for information on audiovisual storage. The site provides information and management tools on digital technology for the storage of film, video and audio content and associated metadata. The information covers the state-of-the-art in storage technology, and include forecasts of trends over the next twenty years.

**Analysis**

- STORAGE ANALYSIS TOOL
- PRESERVATION CALCULATOR
- COST BENEFITS CALCULATOR

**Knowledge Base**

- KNOWLEDGE BASE
- Running Ahead of the Pack Storage Pipeline
- Why We Need a Data Management Summit Storage Strategies

Image (c) 2004 Graham Howard

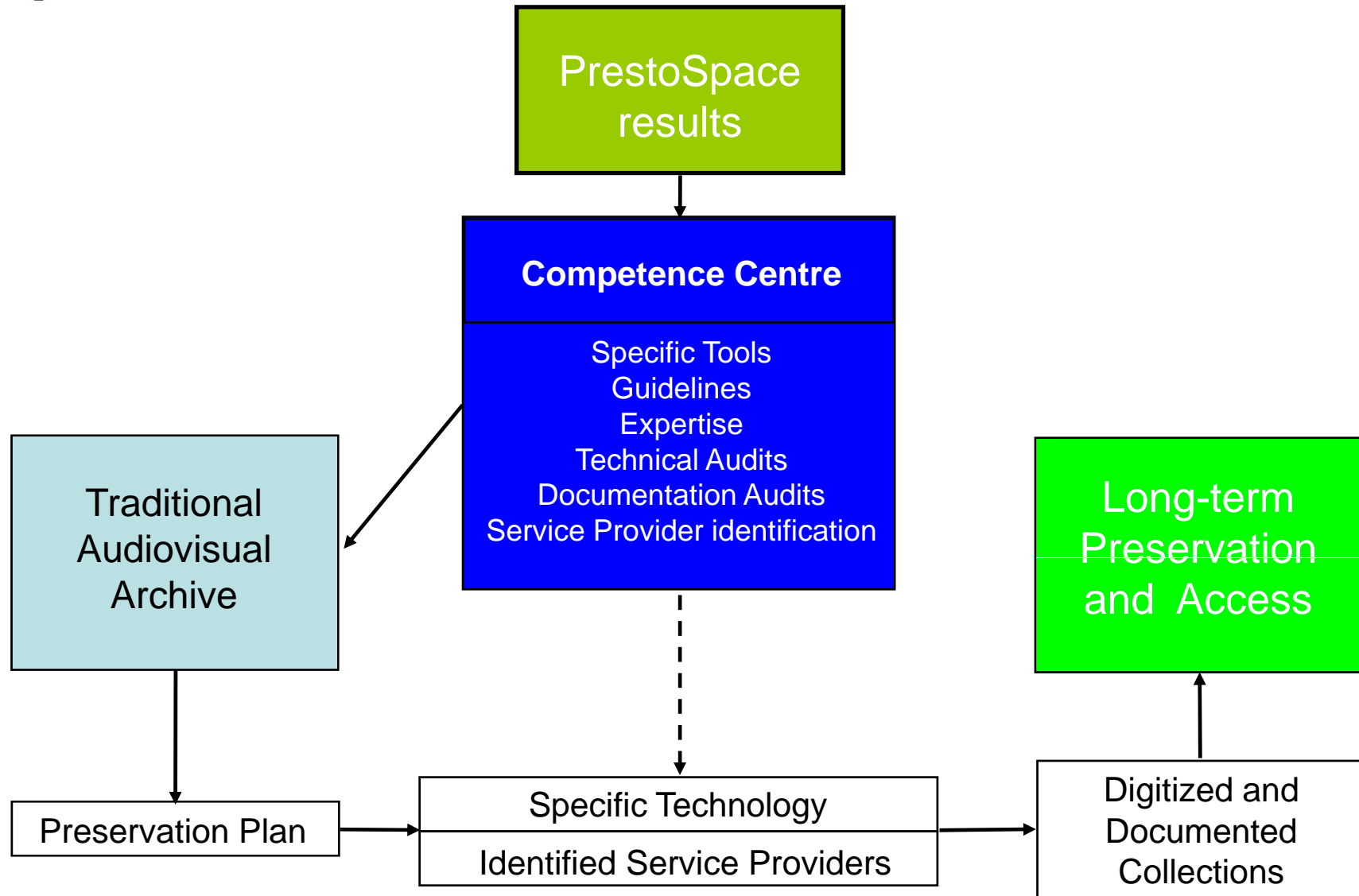
The SAM analysis tools revealed

Why digitise? This tutorial explains about...

What is this site all about?

## Website for Storage management

- **Storage information**
  - Strategic planning
  - STAG group
- **Business Cases**
  - How to finance projects
- **Project management**
  - How to organise a project





## **2) Staying in the Digital World**

## *Migration; Multiple Definitions for the Same Word*

**Conservation:** Keeping objects (contents) from the past to make them available in the future

**Preservation:**

## *Migration; Multiple Definitions for the Same Word*

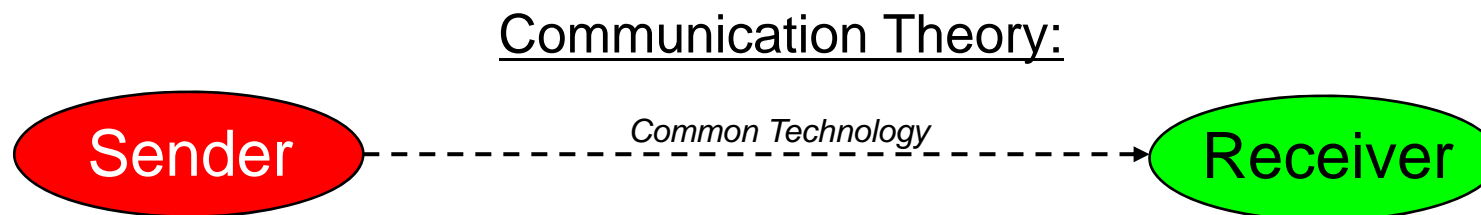
**Conservation:** Keeping objects (contents) from the past to make them available in the future

**Preservation:** Communication with the future

## *Migration; Multiple Definitions for the Same Word*

**Conservation:** Keeping objects (contents) from the past to make them available in the future

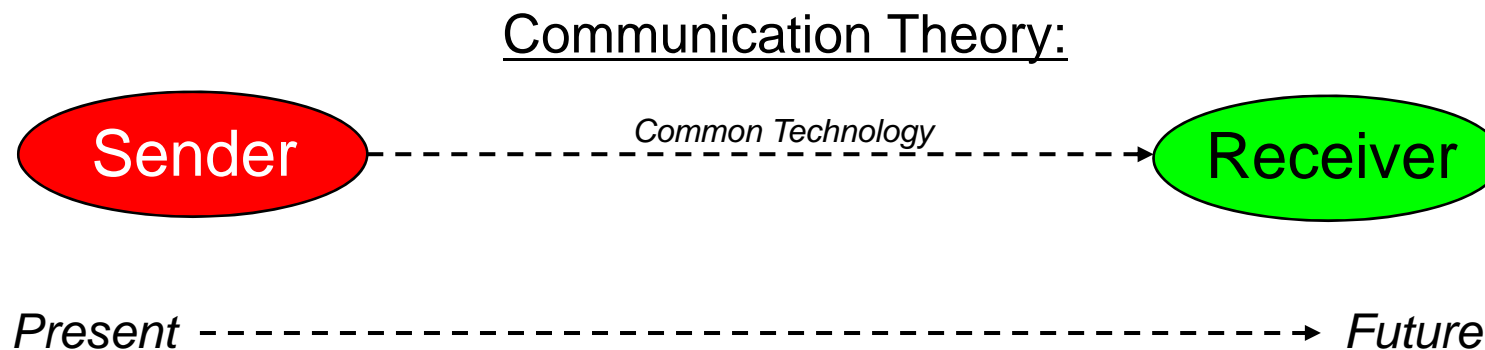
**Preservation:** Communication with the future



## *Migration; Multiple Definitions for the Same Word*

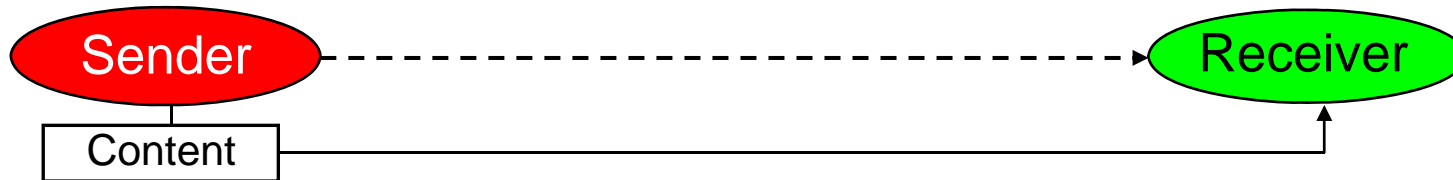
**Conservation:** Keeping objects (contents) from the past to make them available in the future

**Preservation:** Communication with the future

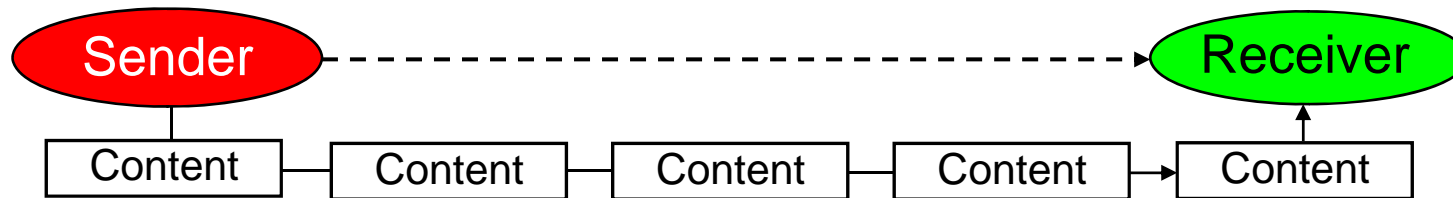


# Three ways of sending Digital contents to the Future:

1) Change now, recover later



2) Change continuously



3) Don't change, it will be solved later

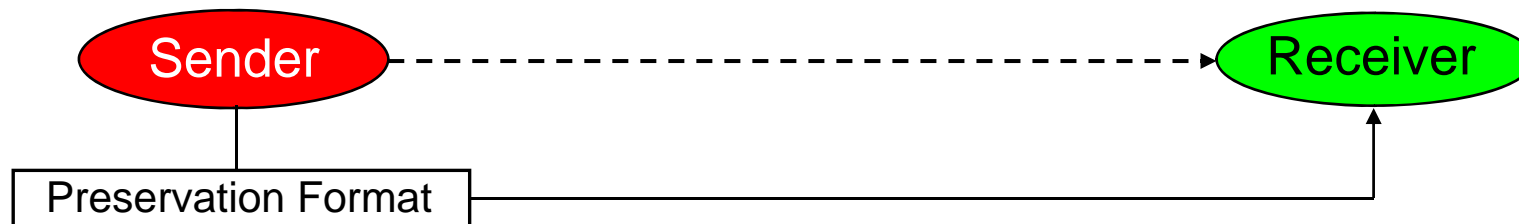


Present ----- Different Technologies -----> Future

# Three migration approaches to Digital Content



1) **Migration on ingest:** change your contents to a chosen format



Implication:

Postpones migration but does not solve the problem

Some issues:

**UPF:** Universal Preservation Format

**UVC:** Universal Virtual Computer

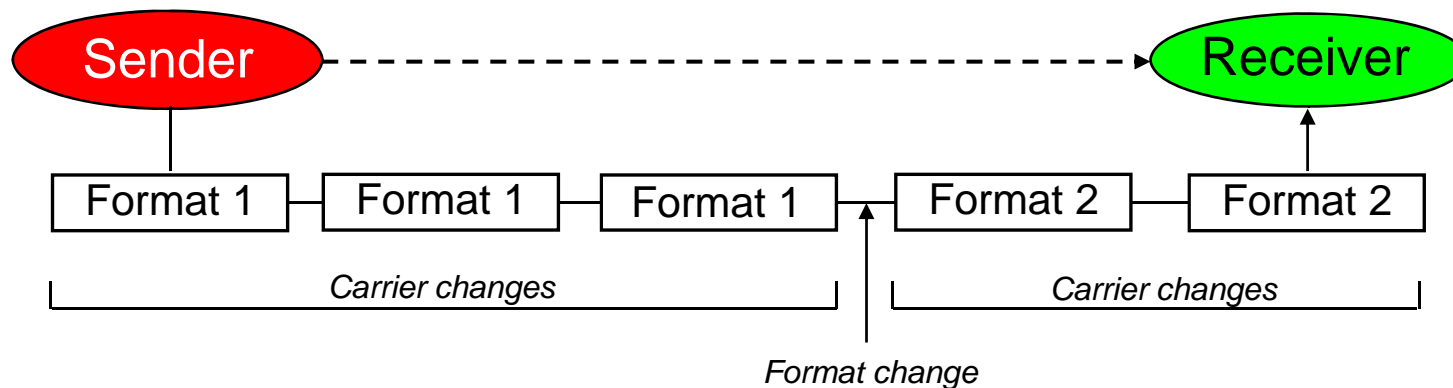
**Efficient solutions for repositories**

*Present* ----- *Different Technologies* ----- *Future*

# Three migration approaches to Digital Content



2) **Batch Migration** : change when necessary (media or format obsolescence)



Associated concepts:

**Refreshing:** transfer same data to a new carrier

**Integrity check:** is the data the same that it is supposed to be?

**Transcoding or Conversion:** changing formats

**Efficient solution for continuously used contents!**

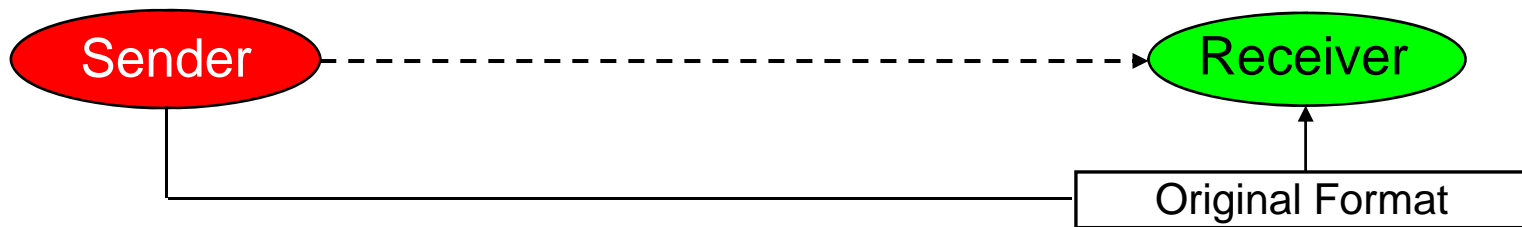
Present ----- Different Technologies -----> Future



# Three migration approaches to Digital Content



## 3) Migration on access: postpone migration until you need it



Very useful if:

- Correct representation of information and structure as well as semantic labels on the structures present within the record (OAIS)
- Representation description of the Preservation environment

Also called:

**Emulation:** replicating the functionality of an obsolete system

Implication:

- Need to very precisely describe the original environment
- Need to archive format converters or develop access software

*Present* - - - - - *Different Technologies* - - - - - *Future*

## Some implications

- Migration strategies have to be evaluated, planned and applied regularly (active preservation)
- In any case **Replication** (creating duplicate copies) has to be continuously applied
- Very important related issues are **Authenticity** and **Versioning**
- Each domain has its own preservation constraints and strategies
- The Audiovisual domain, due to the huge volumes, represents a very particular and complex case for Migration

### **3) A new project for Digital contents**



# PrestoPRIME

FP7 3<sup>rd</sup> Call

Integrated Project – 42 months

Starting date : 1/1/2009

Partners : INA, BBC, RAI, JRS, B&G, ORF, ExLibris,  
Eurix, Doremi, Technicolor, IT Innov., Vrije Universiteit  
Amsterdam

Universität Innsbruck

European Digital Library Foundation



# PrestoPRIME Summary

- R&D for the long-term preservation of digital audiovisual objects, programmes and collections. Increasing access by integrating the media archives with European on-line digital portals in a digital preservation framework.
  - **O1** To research and develop means of ensuring the permanence of digital audiovisual content in archives, libraries, museums and other collections.
  - **O2** To research and develop means of ensuring the long-term future access to audiovisual content in dynamically changing contexts.
  - **O3** To integrate, evaluate and demonstrate tools and processes for audiovisual digital permanence and access.
  - **O4** To establish a European networked Competence Centre to gather the knowledge created by PrestoPRIME and deliver advanced digital preservation advice and services in conjunction with the European Digital Library Foundation and other projects.

## Some PrestoPRIME actions

- Models and Metadata for Audiovisual long-term preservation
- Storage strategies and rule sets for preservation
- Processing and workflows for Audiovisual migration
- Content quality appraisal and risk management
- Multivalent approaches to long-term AV media preservation
- Infrastructures for AV content storage and processing
- Metadata interoperability for access
- User-generated and contextualised metadata
- Content provenance and tracking
- Audiovisual rights modelling at European level
- Integration of Archives, Libraries and user generated content
- and...

# Some PrestoPRIME actions

## WP2 - **Models and environments for Long-term Audiovisual Preservation**

- What does long term mean? Making digital preservation explicit and specific in audiovisual context
- How are preservation actions implemented? Sequence of operations beyond usual IT system timescales

Strong relation to implementation WPs (3 and 4)

# Some PrestoPRIME actions

## WP3 – **Data management and processing for media preservation**

Implementing the strategies, tools, models, rules from WP2

- Processing and workflows for audiovisual migration
- Content quality appraisal and risk management
- New and complementary alternatives to migration based strategies by using a multivalent approach
- Infrastructures for audiovisual content storage and processing





# Some PrestoPRIME actions

## **WP4 –Long-term audiovisual access and use in changing contexts**

- Mapping of metadata models and vocabularies
- User generated metadata strategies
- Video fingerprinting for content tracking and identification
- Rights modelling at European level



# Some PrestoPRIME actions

## WP5 –Integration and validation

- Software infrastructure, services and collaborative tools
- Preservation platform implementation
- Integration of PrestoPRIME software with a commercial system

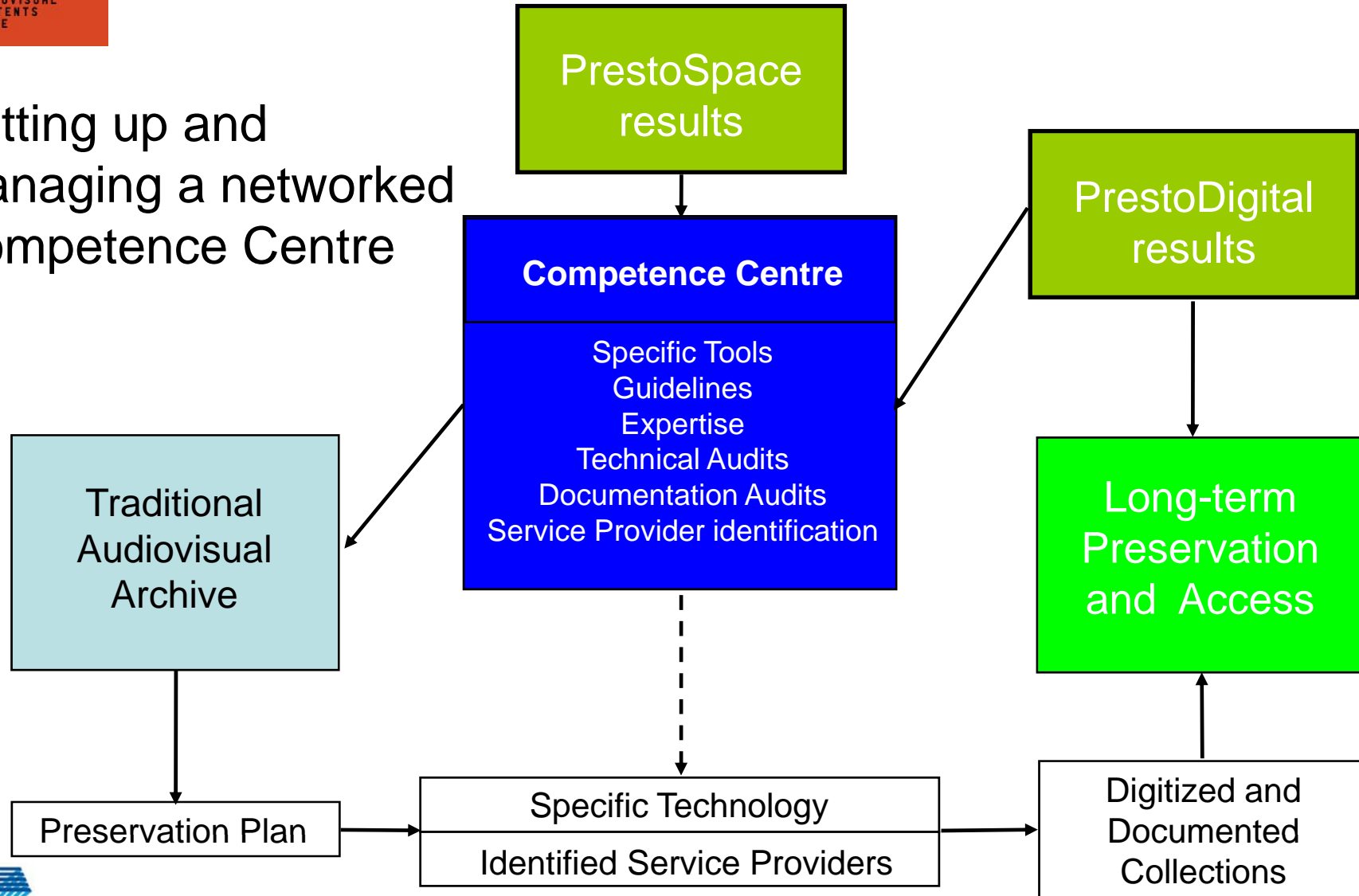


# Some PrestoPRIME actions

## **WP6 – A European Audiovisual Competence Centre**

- Community portal for the audiovisual domain on digital preservation and digitisation
- Information portal for digital preservation knowledge, best practices, tools and services
- Dedicated services for content holders
- Network of associated information institutions
- Strong link with Europeana

Setting up and managing a networked Competence Centre



<http://screeningthefuture.eventbrite.com/>



# PrestoPRIME



PrestoPRIME is the continuation of the philosophy of PrestoSpace with the common objective of **fostering Audiovisual Digital Libraries.**

The challenge is: **contents in the Digital world**; once you got there, how to stay there!

Building a **Competence Centre** is a strong landmark for the future

We started in 2000 with Presto, **PrestoSpace** create the conditions for opening preservation factories, **PrestoPRIME** will bring solutions to manage digital contents (migration, protection, search, access)

