FROM POLICY TO PRACTICE

Digital Preservation at the Netherlands Institute for Sound and Vision, a case study

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Jornades Patrimoni Sonor i AV 2019
Barcelona, 24th of October 2019

Introduction

Netherlands Institute for Sound and Vision

Main challenges

Objectives & Analysis

S t a n d a r d i z a t i o n & I m p l e m e n t a t i o n

Lessons learned

Certification

Trajectory


SOUND AND VISION


technicolor
RNW
NPO
nps
Avro
dutchView
VPRO
NOS
rtl
rtl nederland
SOUND AND VISION
A
Media Park

PRODUCTION ARCHIVE

10 Public broadcasters

News *Current affairs*

Drama Entertainment

Documentaries

Ingest cataloguing preservation

High performance **access** and **storage**

NATIONAL MEDIA INSTITUTE

SOUND AND VISION

Museum objects Web video Games Web sites
Amateur film Photo collection
Documentaries Written press collection
Commercial RTV

Museum
Media Preservation Service
National AV Node

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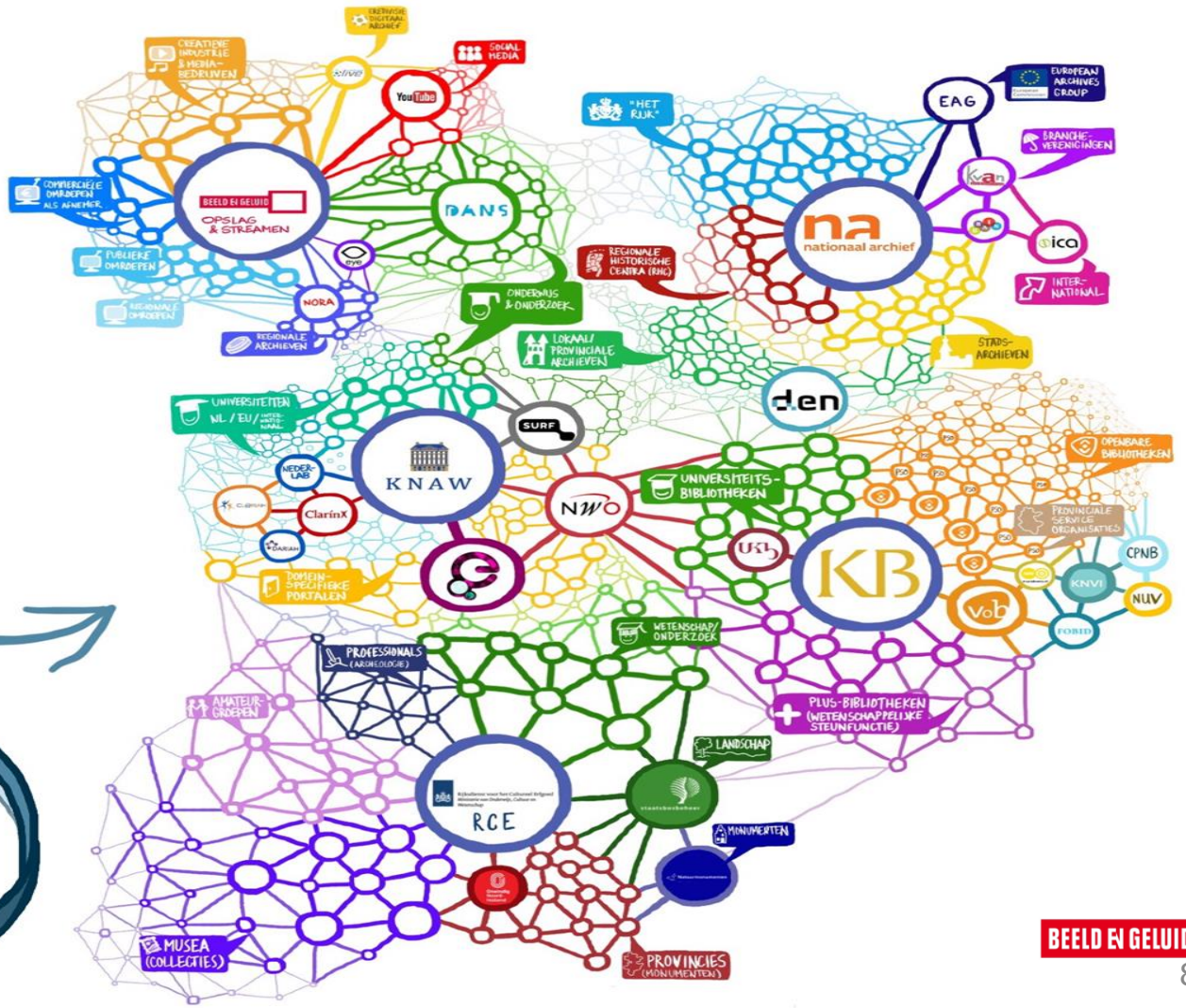
CULTURAL HERITAGE LANDSCAPE

THE NETHERLANDS



USERS AND USAGE

- Mediaprofessionals
- Creative industry
- Educational domain
- Heritage professionals
- Scholars
- General public

- Re use sequences in RTV productions
- Web channels
- Academic research
- Entertainment
- Educational settings

MAIN CHALLENGES

SOUND AND VISION

Controlling the digital volumes

1.000.000 HOURS film, video, audio; 500.000 digitised/digital born
26 PETABYTE stored to date
40.000 HOURS of high res AV-formats EVERY YEAR
HERITAGE collections ; NEW MEDIA objects

Guarding authenticity and integrity

Digital INGESTS from MANY SOURCES (broadcasters, heritage domain, www, digitization)
Complex, dynamic processes

*

MAIN CONDITION

SOUND AND VISION

CONTROLLED
DIGITAL PRESERVATION
ENVIRONMENT

- **LONG TERM** preservation
- Sustainable **ACCESS**
- **Integral, formalized** archiving process
- **TRUSTWORTHY** Digital Archive
- Project start 2013/2014

Sustainabillity

Access

Staff

Contracts

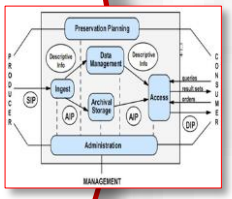
Workflows

Recognition, evidence

Model, standard

Controlled Preservation Environment

The Big Picture



Costs

Systems

TDR Certification

OAIS

Content

Metadata

Governance

Reliability

SOUND AND VISION

FROM POLICY TO PRACTICE

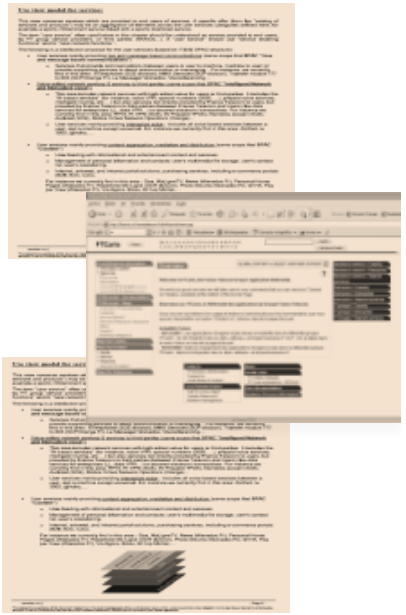
AS IS ANALYSIS

Analysis of existing functions, (meta)data, processes and procedures

Research of standards and models; gapanalysis

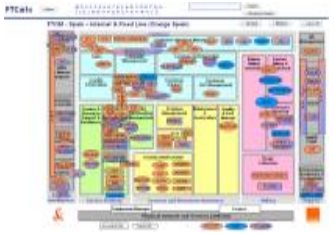
BUSINESS CONCEPT

Writing dedicated, OAIS compliant policies and definitions for all (meta)data and workflows

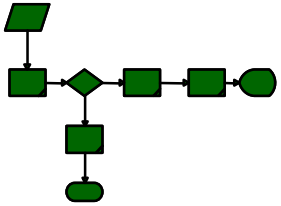


IMPLEMENTATION

Mapping workflows and (meta)data



Adjusting existing systems and embedding new MAM system



INITIAL ANALYSIS I

SOUND AND VISION

MISSION

- PRODUCTION ARCHIVE
- NATIONAL MEDIA INSTITUTE
- NATIONAL AV NODE

OBJECTIVES

- COLLECT AND PRESERVE
- SUSTAINABLE ACCESS
- AUTHENTICITY, INTEGRITY

REQUIREMENTS

CONTROL OVER DATA OBJECTS

MANAGED WORKFLOWS

METHODS

-DEFINITION DATAOBJECTS

-DEFINITION PRESERVATION METADATA

-DEFINITION INGEST, STORAGE, ACCESS PROCESSES

-DESIGN INFRASTRUCTURE ACCORDING TO DEFINITIONS

INITIAL ANALYSIS II

SOUND AND VISION

METHODS

-DEFINITION DATAOBJECTS

-DEFINITION PRESERVATION METADATA

-DEFINITION INGEST, STORAGE, ACCESS PROCESSES

-DESIGN INFRASTRUCTURE ACCORDING TO DEFINITIONS

ARCHITECTURE

INGESTIONS

- RTV
- Heritage Collections
- FILM scanning
- Preservation services
- Audio encoding
- Video encoding

Technical data
Workflow data
Rights
Descriptions

These metadata control

✓Ingest, storage, access
✓Authenticity and integrity
✓Digital sustainability

EXISTING & NEW SYSTEMS

STORAGE SYSTEM

MEDIA ASSET MANAGEMENT SYSTEMS

SYSTEMS ANALOGUE CARRIERS

INITIAL ANALYSIS III

SOUND AND VISION

INGESTIONS

- Daily ingest RTV
- Heritage Collections
- Preservation Services
- Film scanning
- Video Encoding
- Audio Encoding

Technical MD

Workflow-information

Copyright MD

Automatic
Manual
Disperged
Hidden
No overview
Inconsistent

UNKNOWN !

THESE METADATA ARE KEY

- ✓ Executing Ingest Storage and Access functions
- ✓ Identification properties of files
- ✓ Sustainable playability
- ✓ Authenticity and integrity

HOW TO IDENTIFY & CONTROL THEM?

MORE REQUIREMENTS

- Preservation policy
- Format strategies
- Service level agreements depositors/donors
- Preservation levels
- Delivery demands user groups
- Storage and access policy
- ICT infrastructure
- Training staff

SOUND AND VISION

FROM POLICY TO PRACTICE

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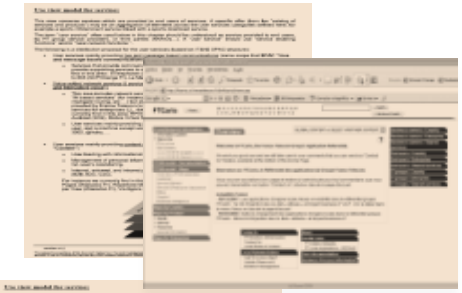
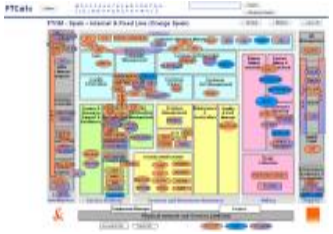
Writing dedicated, OAIS compliant policies and definitions of all (meta)data and workflows

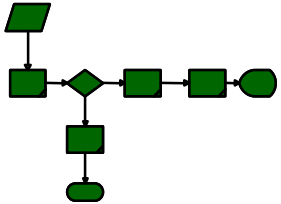


IMPLEMENTATION

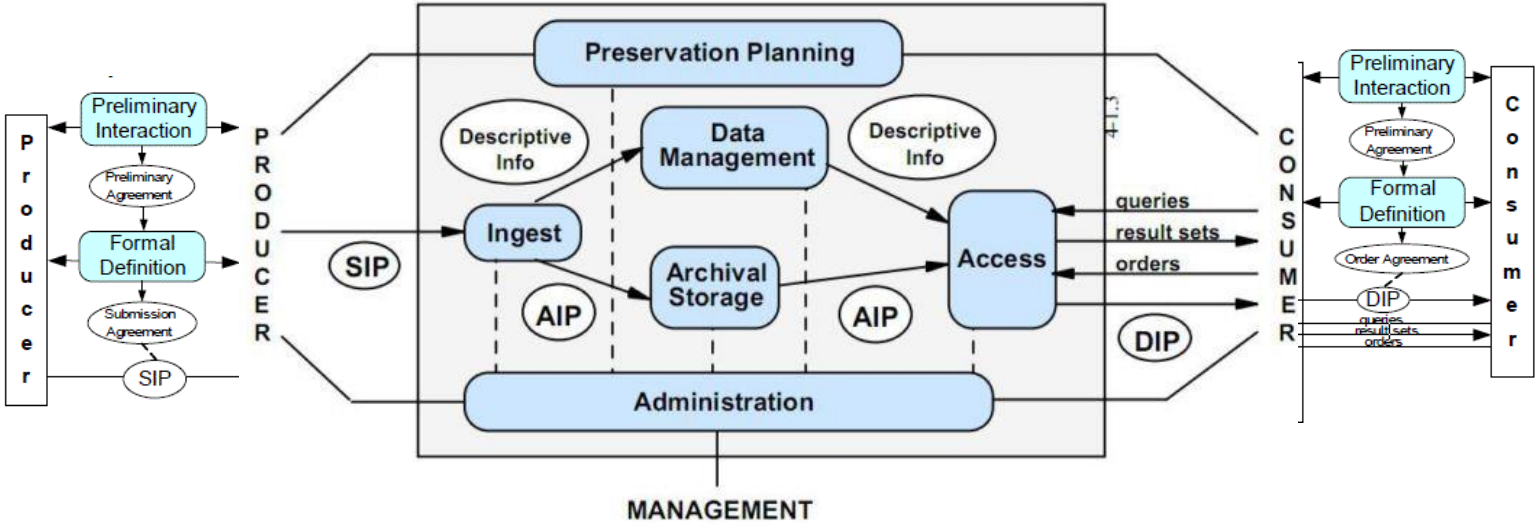
Mapping and implementing (meta)data and workflows



Adjusting existing systems and embedding new MAM system

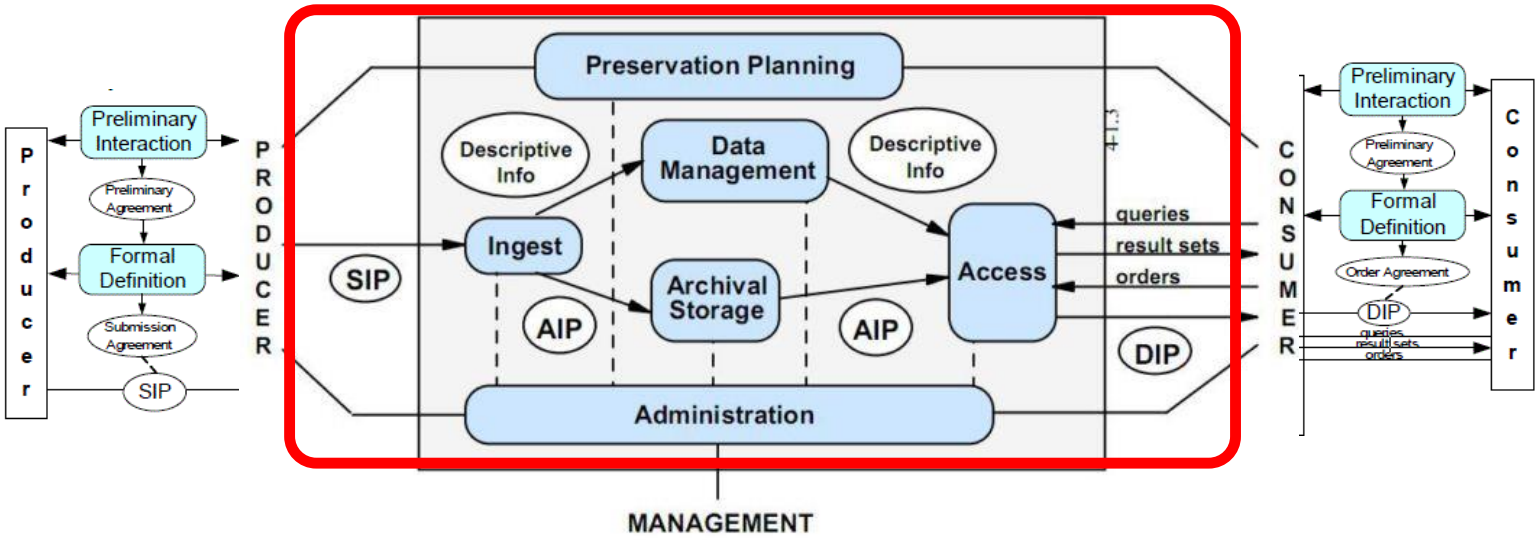


STANDARDS, MODELS



OAIS, PREMIS, PAIS, TDR-DATA SEAL OF APPROVAL (DSA), PRESTO PRIME DELIVERABLES, DRAMBORA, SPOT, EBU P-meta, PBCore, VideoMD and AudioMD, NARA reVTMD. ANSI/NISO Z39.87 .. .. ..

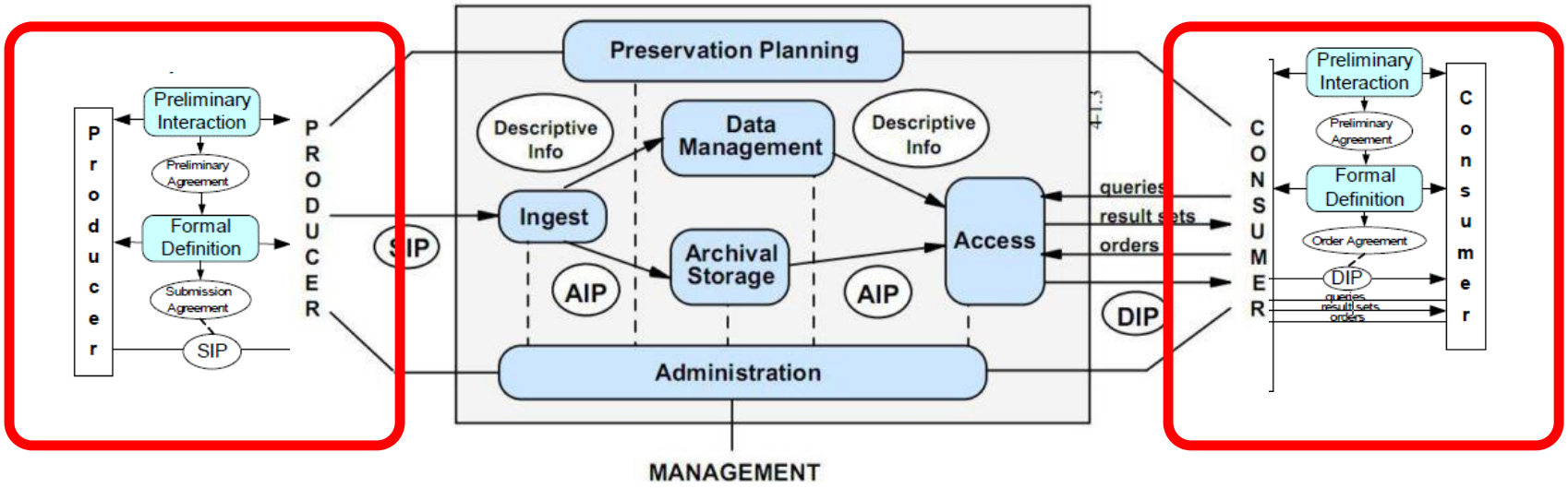
PROCESSES AND (META)DATA



- ✓ Information Model Digital Archive
- ✓ Preservation Metadata Dictionary

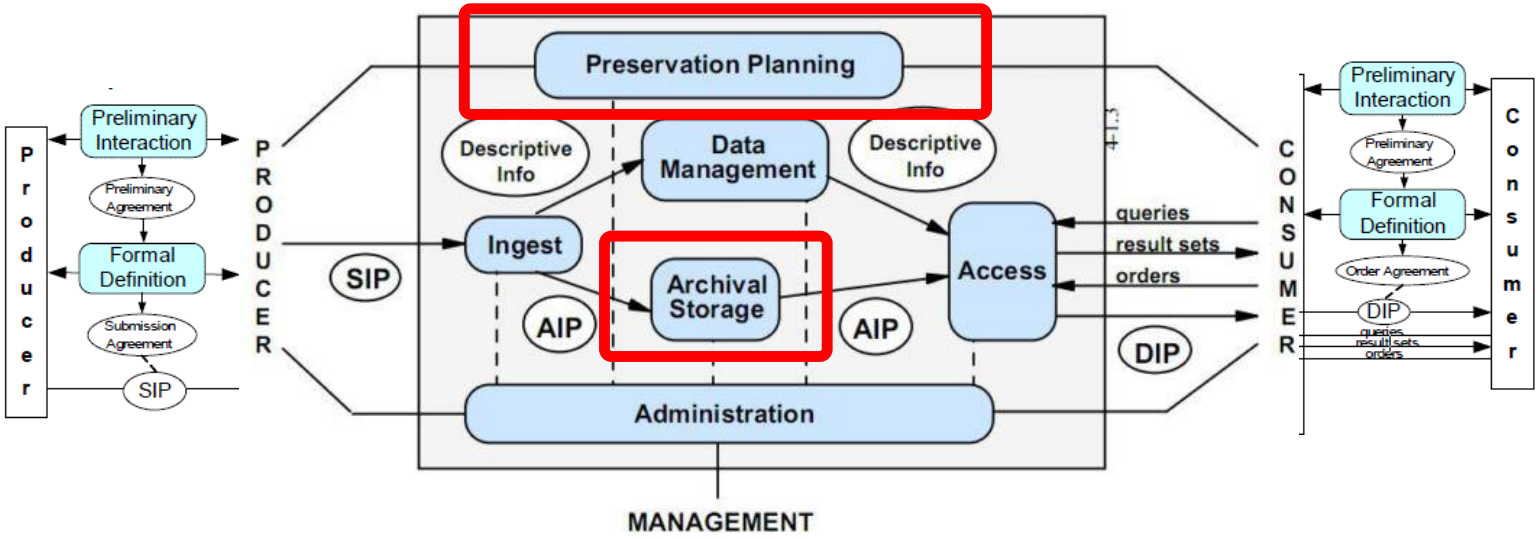
Life cycle management: workflows en events
Information Package Definitions SIP, AIP, DIP
Inventory of technical and provenance attributes of all NISV file formats

DEPOSITORS AND USER GROUPS



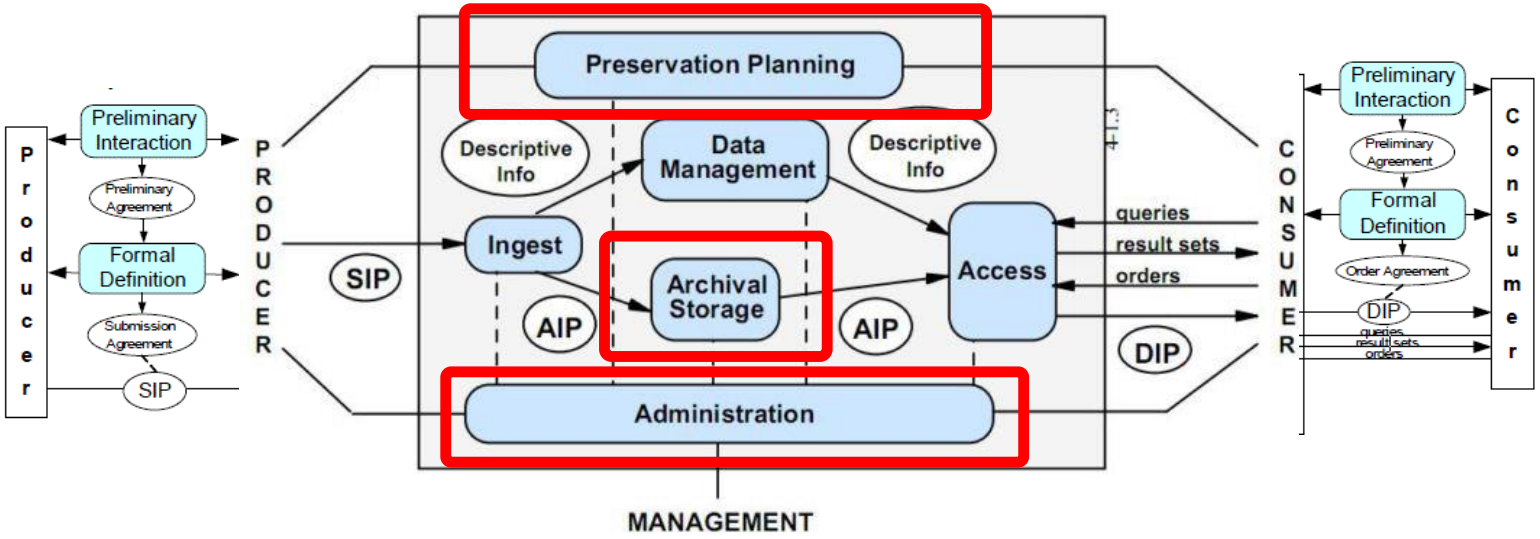
- ✓ Guidelines for Submission and Order Agreements
- ✓ Standard Service Level Agreement
- ✓ Designated Communities: Typology and technical demands
- ✓ Designated Communities: Monitoring Mechanisms

STORAGE AND PRESERVATION



- ✓ Archival Storage Policy
- ✓ Guidelines for Preservation and Migration
- ✓ Templates Preservation and Migration plans
- ✓ Technology Watch procedures

ICT RELATED TOPICS



- ✓ Security Policy
- ✓ Risk management approach
- ✓ Backup Policy
- ✓ Disaster recovery planning

SOUND AND VISION

FROM POLICY TO PRACTICE

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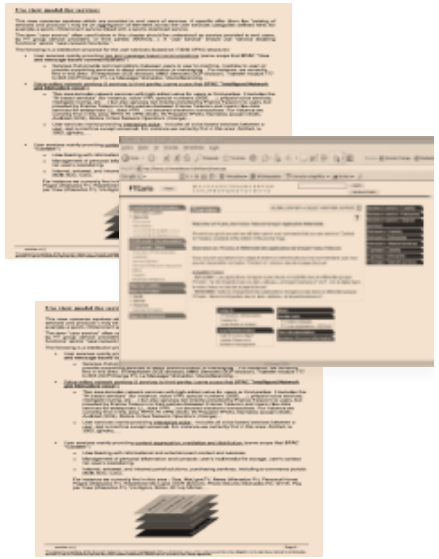

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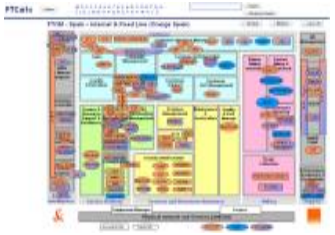

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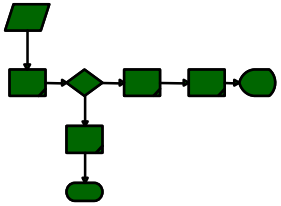
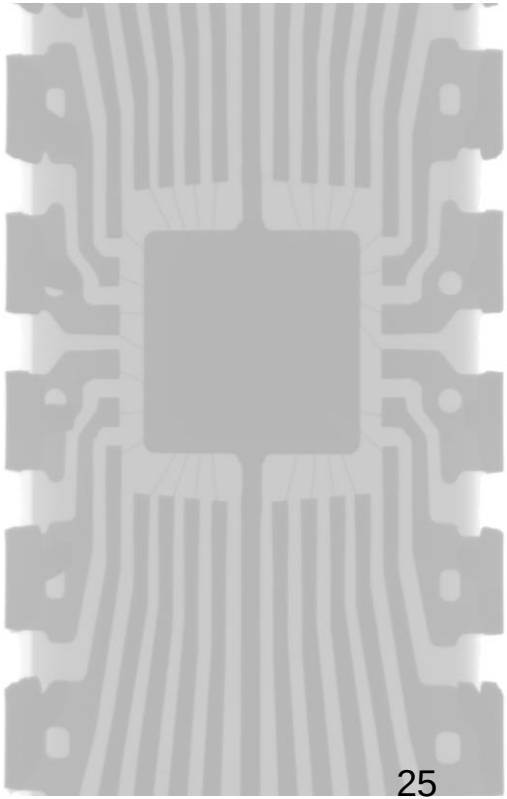


METADATA AND WORKFLOWS

Identification and formalization of ALL preservation metadata in ALL workflows, by way of:

- Metadata mapping : determine (per AV format) where in systems the metadata sit and make them accessible as preservation metadata

- Process mapping : identify existing and new workflows in terms of OAIS compliant preservation functions, fixate in information architecture



PRESERVATION METADATA DICTIONARY

- Per AV-format: standardized properties on file, bitstream and representation level
- Generated at creation, QC, logging, extracting, ingesting, storage
- Expressed as preservation metadata : i.c. technical, copyright and process properties
- PREMIS compliant

- ✓ Control and overview of all digital files
- ✓ Audit trail
- ✓ Collection management and ICT reports
- ✓ Migration and preservation planning
- ✓ Guarding authenticity & integrity

MEDIA ASSET MANAGEMENT SYSTEM

DIGITAL AUDIOVISUAL ARCHIVE of THE NETHERLANDS

Adapted VizRT product
Internal catalogue
Websites with search interfaces and ordering services
License management
Quality Analysis software BATON
Transcoders
Workflow management module
➞ OAIS compliant

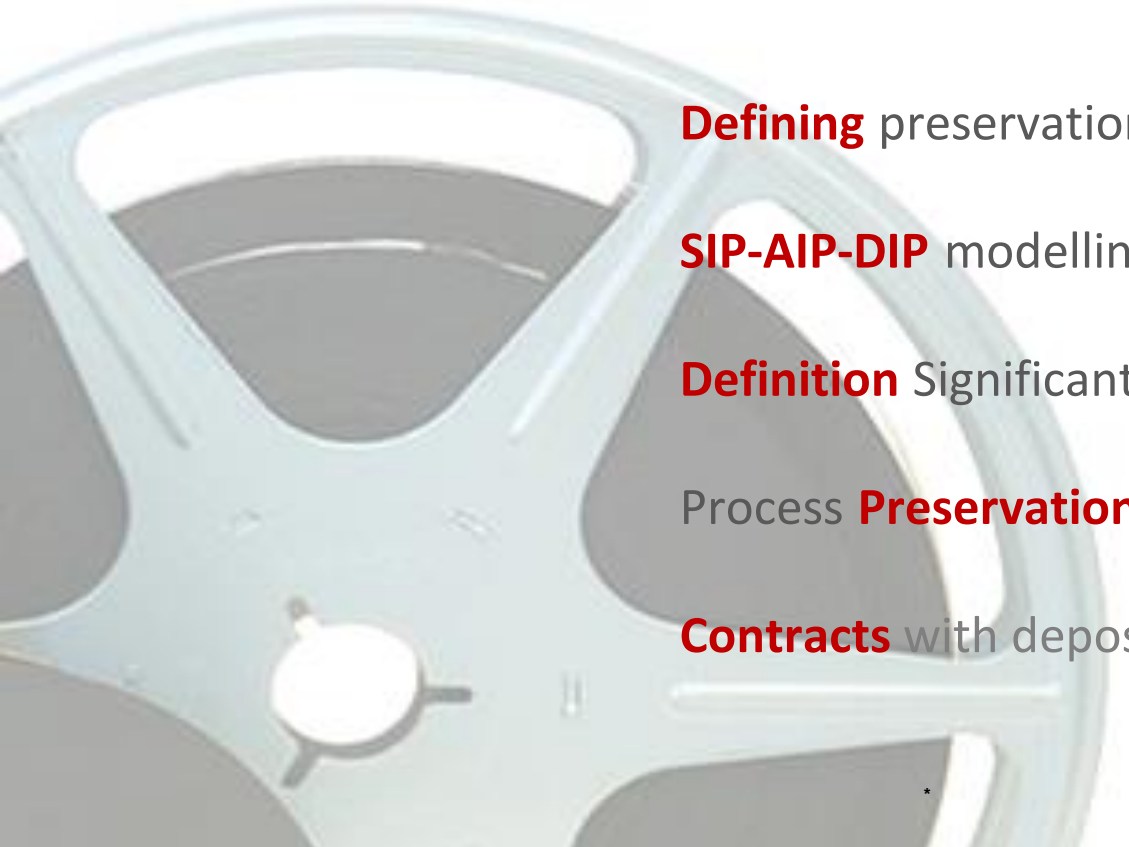
MAM & PRESERVATION

- **Control of all processes files and metadata**
  - Quality
  - Completeness
- **Error processing**
  - Manual repair of errors/ restart of tasks/actions
  - Report to depositors of preservation status
- **History of tasks/actions**
  - Demonstrate actions have been performed according to agreed specifications
  - Reports that demonstrate that processes comply with contracts depositors
- **Extraction of metadata**
  - Linking preservation metadata to archival objects

MAM & PRESERVATION

Linking file to copyright information and depositor	(ISO 16363: 3.5.1)
License- and order management	(ISO 16363: 4.6.1)
Technical control file- and metadata formats	(ISO 16363: 4.2.5.1)
Link to descriptive metadata	(ISO 16363: 4.5.3)
Calculation and storage checksums	(ISO 16363: 5.1.1.3)
Check completeness SIP	(ISO 16363: 4.1.5)
Check completeness ingested collection	(ISO 16363: 4.2.9)
Keeping track of locations and copies of the files	(ISO 16363: 5.1.2)
Overview errors during ingest proces	(ISO 16363: 5.1.1.3.1)
Extract and make searchable of technical metadata	(ISO 16363: 4.2.6)
History of tasks/actions	(ISO 16363: 4.1.8)

POLICY, NOT TECHNOLOGY



Defining preservation metadata

SIP-AIP-DIP modelling

Definition Significant Properties

Process **Preservation Planning**

Contracts with depositors and user groups

SOUND AND VISION

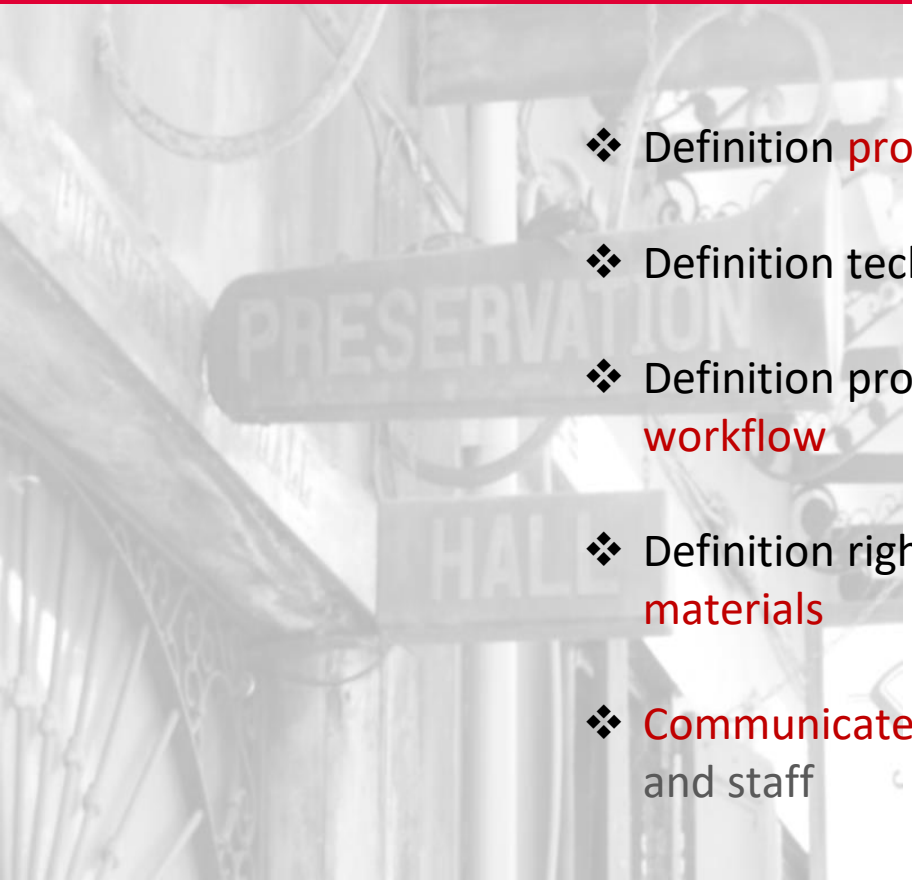
Digital Preservation is

Not (just) digital storage
Not (just) formats
Not (just) technical metadata
Not (just) migration
Not (just) technology

= Coherent, overall governance and control
of all archival activities, processes, transactions…

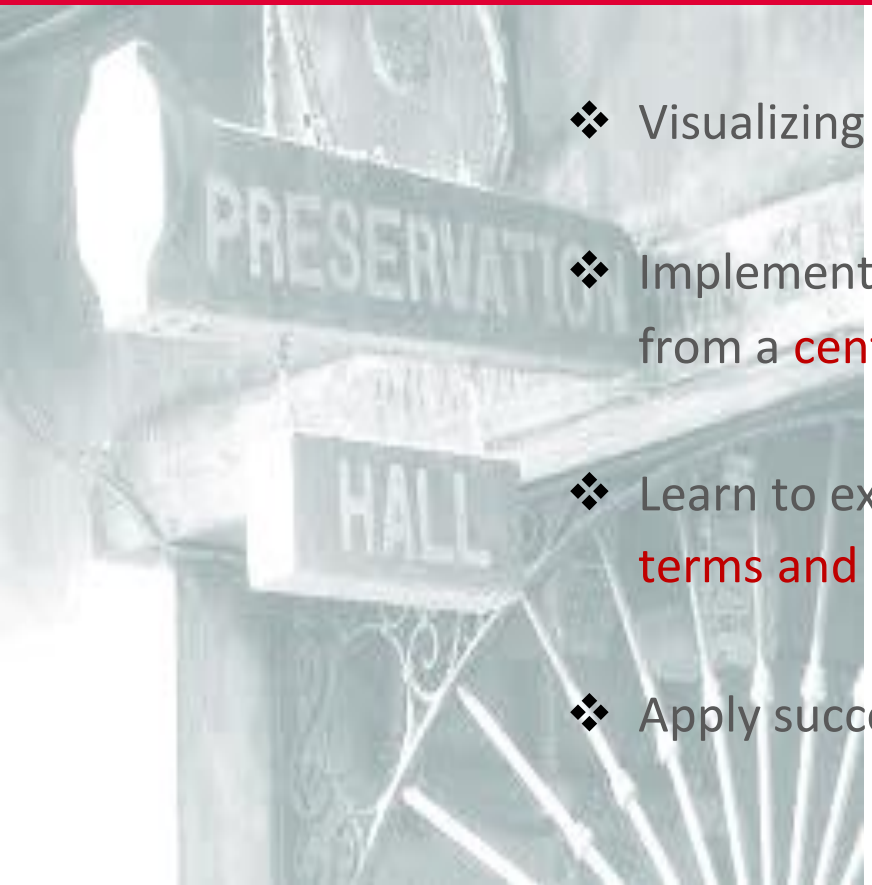
1. Alligned with demands depositors, user groups and collection policy
2. In practice realized by integral metadata- and workflowmanagement

LESSONS LEARNED

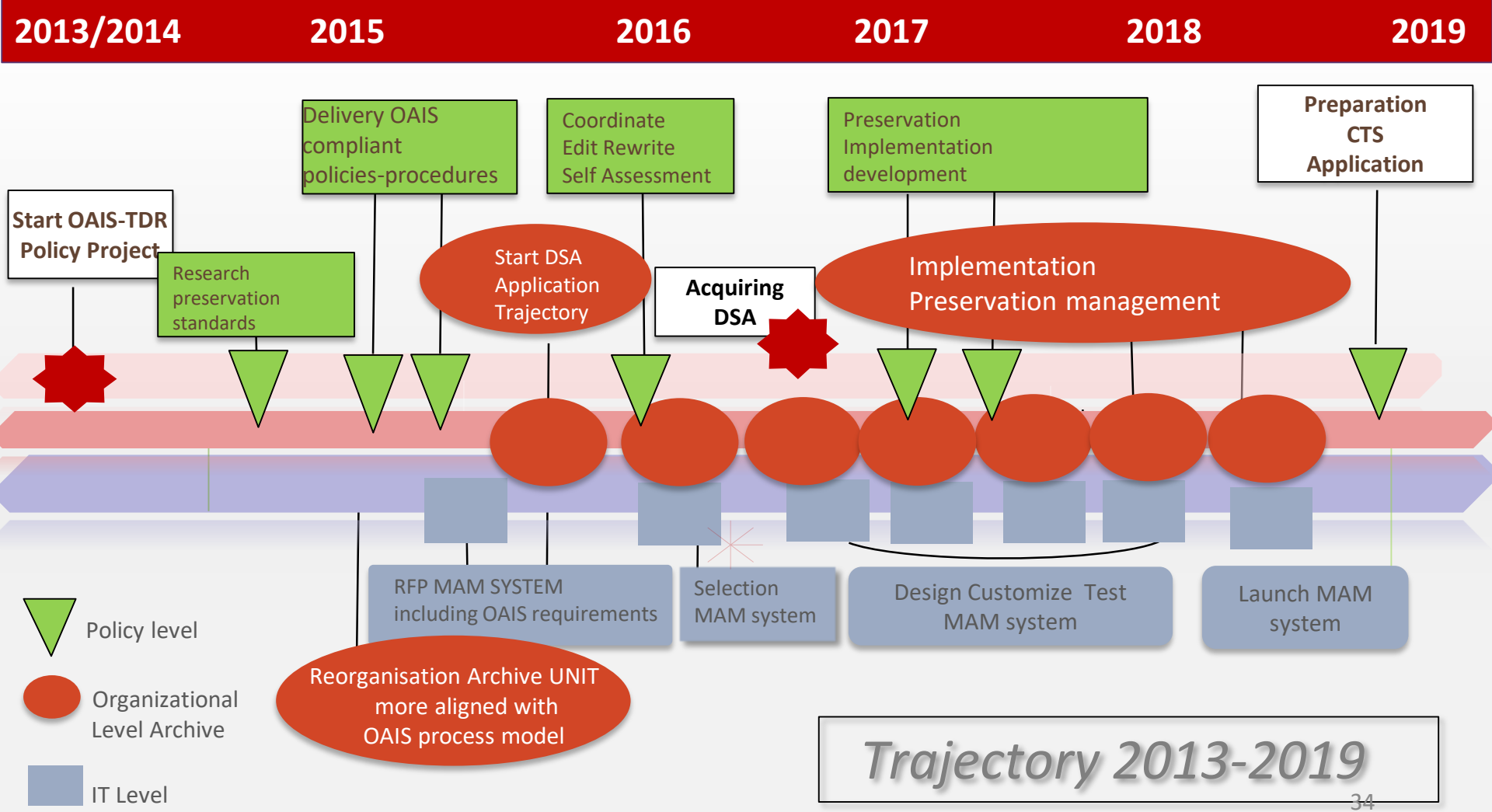


- Definition processes throughout
- Definition technical metadata on the content
- Definition process/provenance metadata on the actions and the workflow
- Definition rights metadata on what can (not) be done with the materials
- Communicate significance of standardization to management and staff

LESSONS LEARNED



- Visualizing ‘digital preservation’ from the bigger picture
- Implementation metadata- and workflow management from a central reference framework
- Learn to express *existing* AV processes in preservation terms and concepts
- Apply successively, from existing practice


2013/2014
2015
2016
2017
2018
2019
Start OAIS-TDR Policy Project
Research preservation standards
Delivery OAIS compliant policies-procedures
Coordinate Edit Rewrite Self Assessment
Start DSA Application Trajectory
Acquiring DSA
Preservation Implementation development
Implementation Preservation management
Preparation CTS Application
RFP MAM SYSTEM including OAIS requirements
Selection MAM system
Design Customize Test MAM system
Launch MAM system
Reorganisation Archive UNIT more aligned with OAIS process model
Policy level
Organizational Level Archive
IT Level
Trajectory 2013-2019

Levels of trustworthiness

CERTIFICATION

SOUND AND VISION

- **Basic certification** is granted to repositories which obtain Data Seal of Approval certification **(DSA**)
- **Basic Certification** for repositories which obtain Core Trust Seal Certification **(CTS**)
- **Extended Certification** is granted to Basic Certification repositories which *in addition* perform a structured, externally reviewed and publicly available self-audit based on **DIN 31644**
- **Full Certification** is granted to repositories which *in addition t*o Basic Certification obtain **full external audit and certification** based on **ISO 16363**

MORE?

Digital Preservation Policy NISV
http://publications.beeldengeluid.nl/pub/388

Public Preservation Policy Documents
https://publications.beeldengeluid.nl/

Preservation Metadata Dictionary
https://publications.beeldengeluid.nl/pub/615

Full NISV application DSA
https://assessment.datasealofapproval.org/assessment_195/seal/pdf/