

# **New challenges for Moving Image Archives: digital delivery, digital preservation**

## **The EDCINE project's approach**

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## The EDCINE project

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**EDCine – Enhanced Digital Cinema** funded by the European Commission within the 6th Framework Programme FP6/2004/IST/4.1  
It started in July 2006 and it ends in June 2009.  
It is focused on future enhancement of digital cinema technology in three areas:

*Networked content streaming to cinemas*

*Advanced movie experience beyond DCI*

***Digital archives and access to film archives***

16 partner consortium (4 universities and research centres, 10 companies, 2 end users)

Partners in the **archival section** of the project are:

**Cinémathèque Royale de Belgique** (Brussels, Belgium)

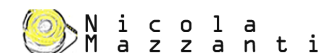
([www.cinematek.be](http://www.cinematek.be))

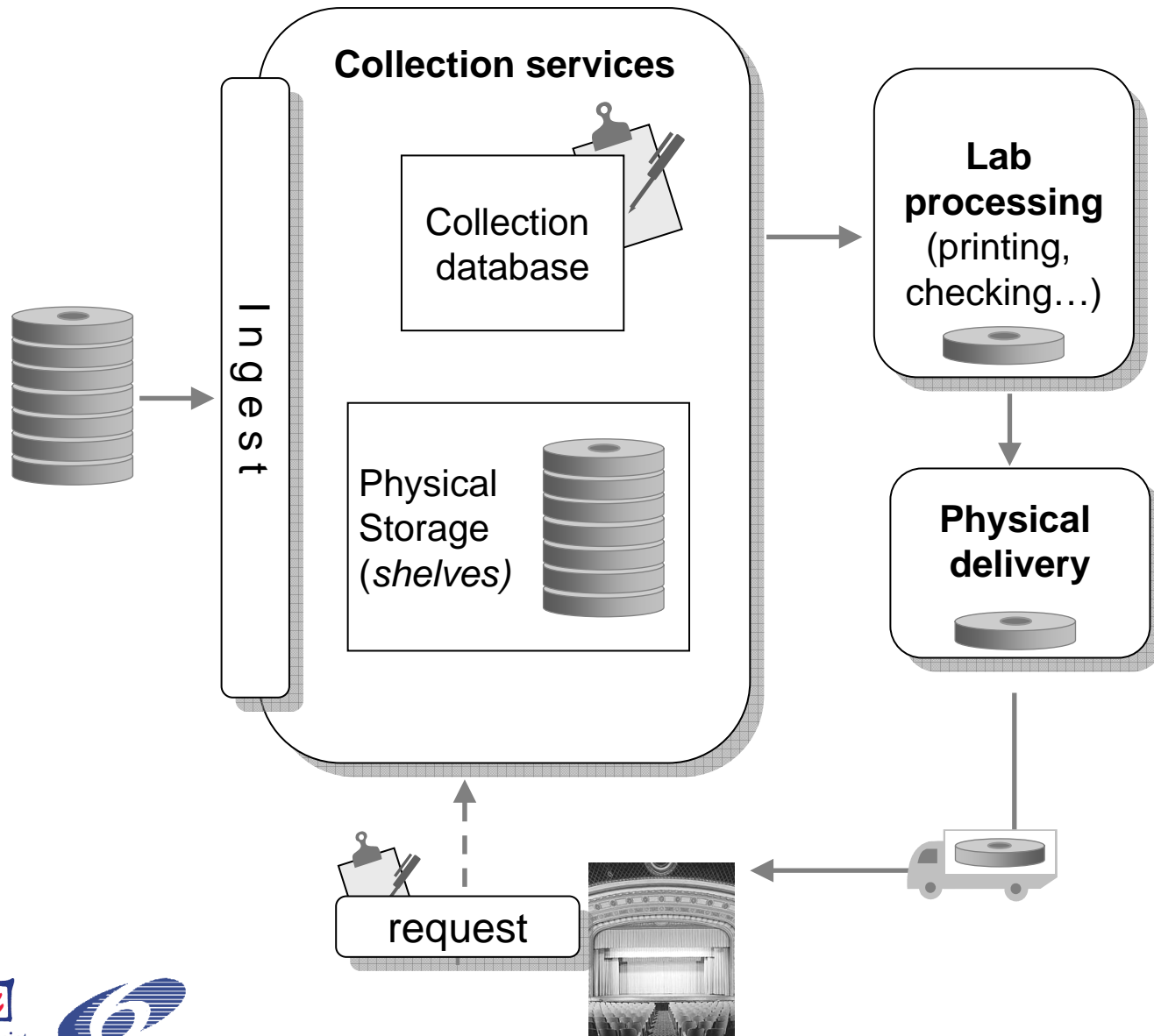
**Fraunhofer Institute for Integrated Circuits IIS** (Erlangen, Germany)

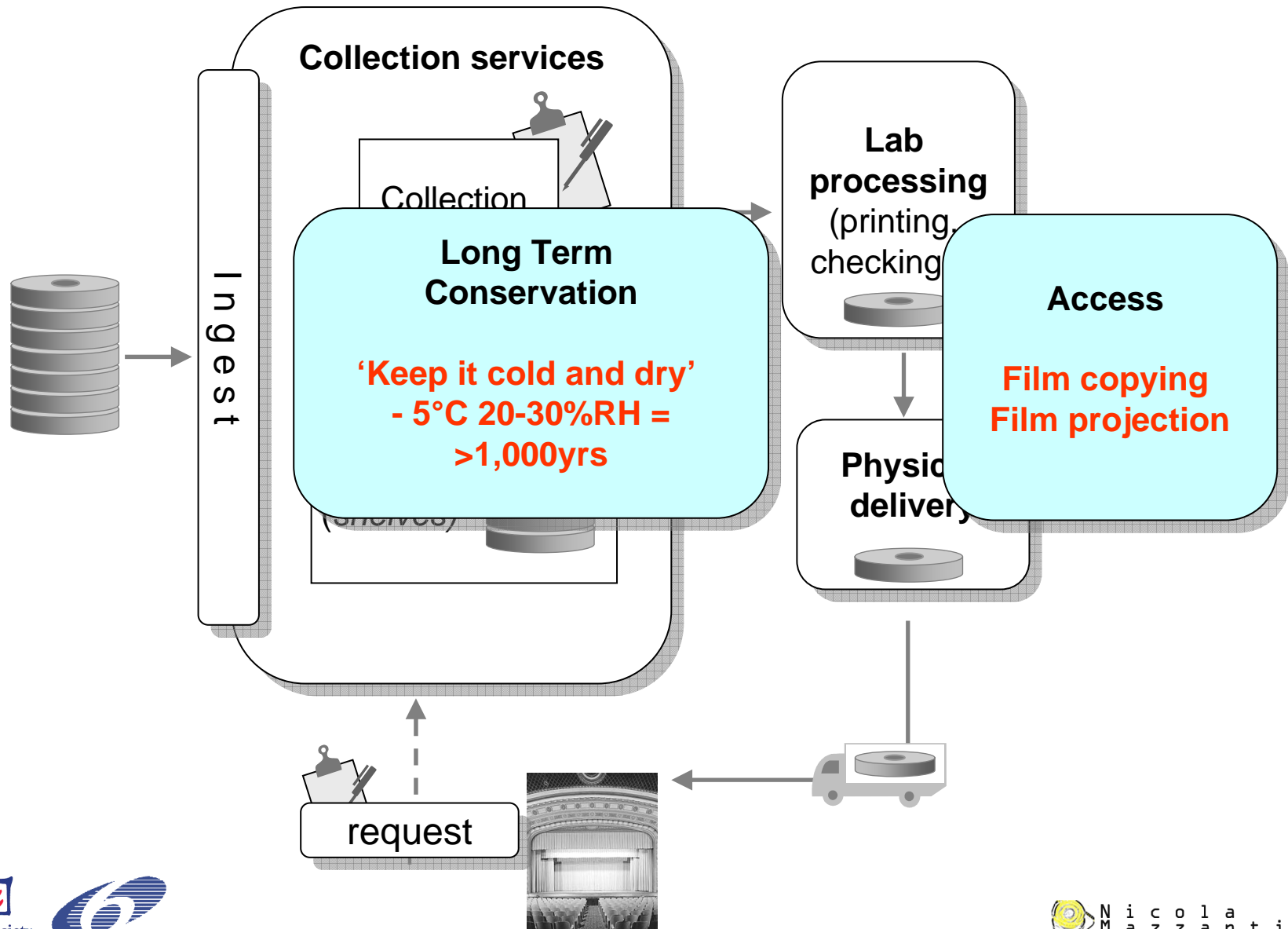
([www.iis.fraunhofer.de](http://www.iis.fraunhofer.de))

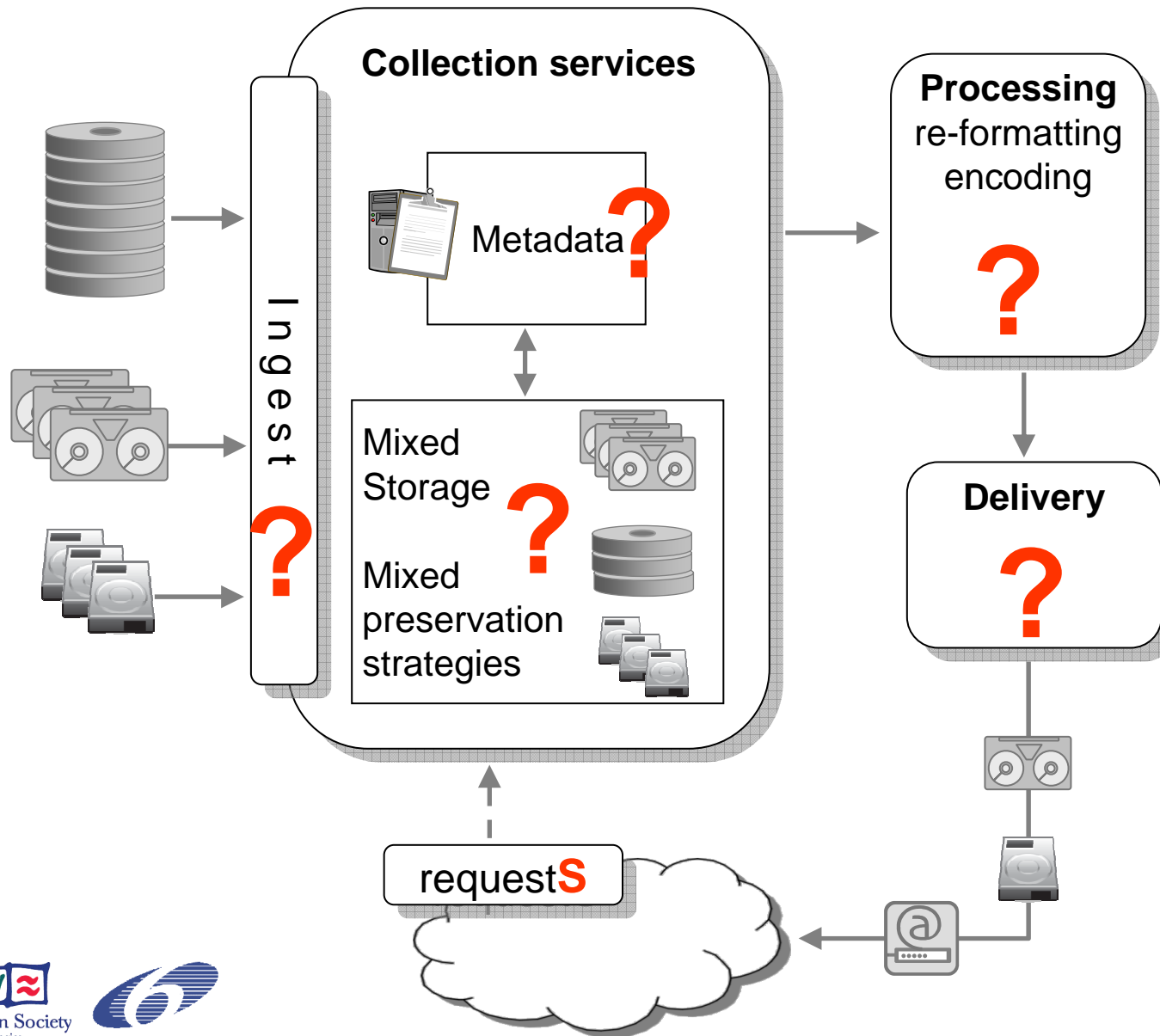
**MOG Solutions** (Oporto, Portugal)

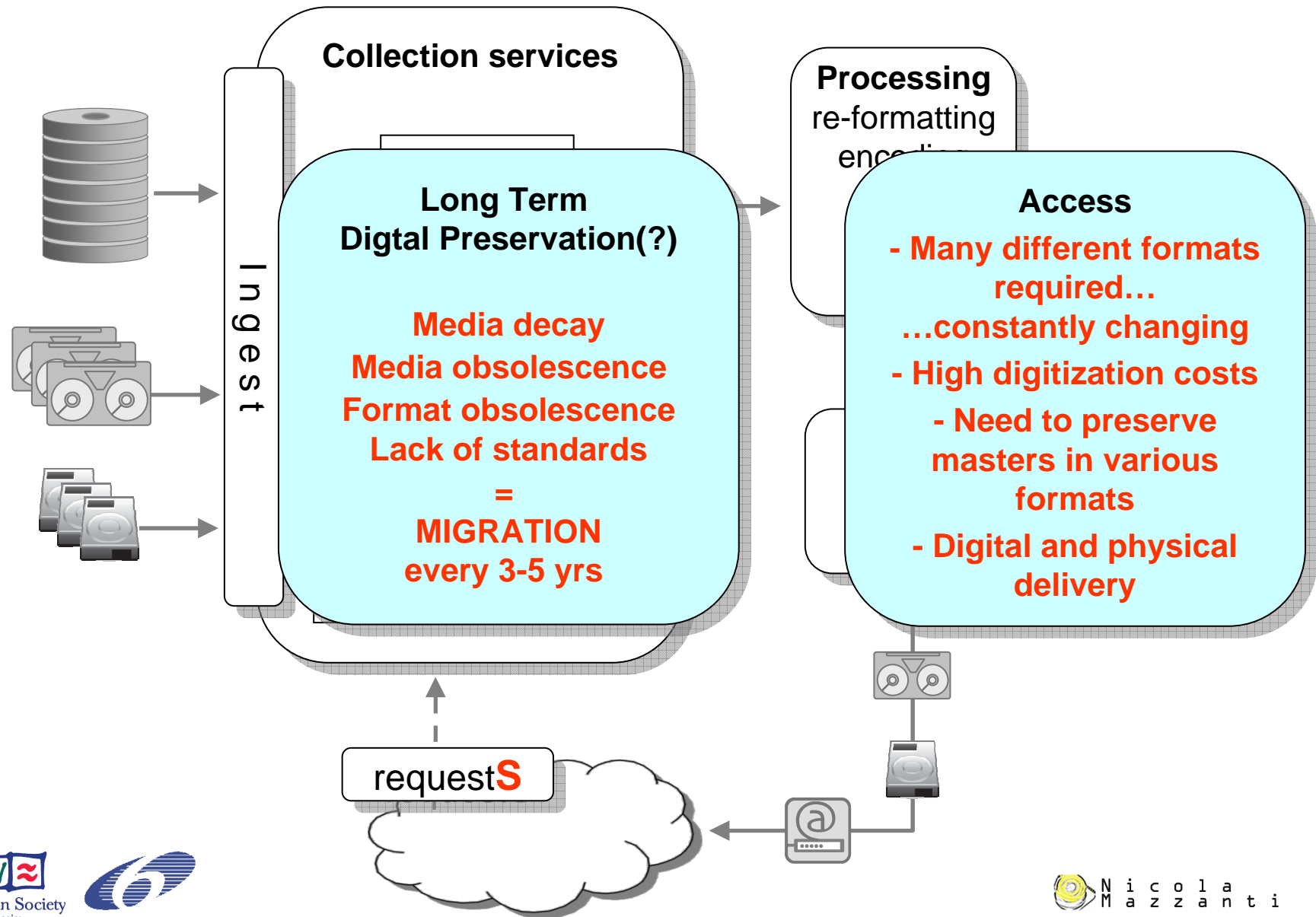
([www.mog-solutions.com](http://www.mog-solutions.com))







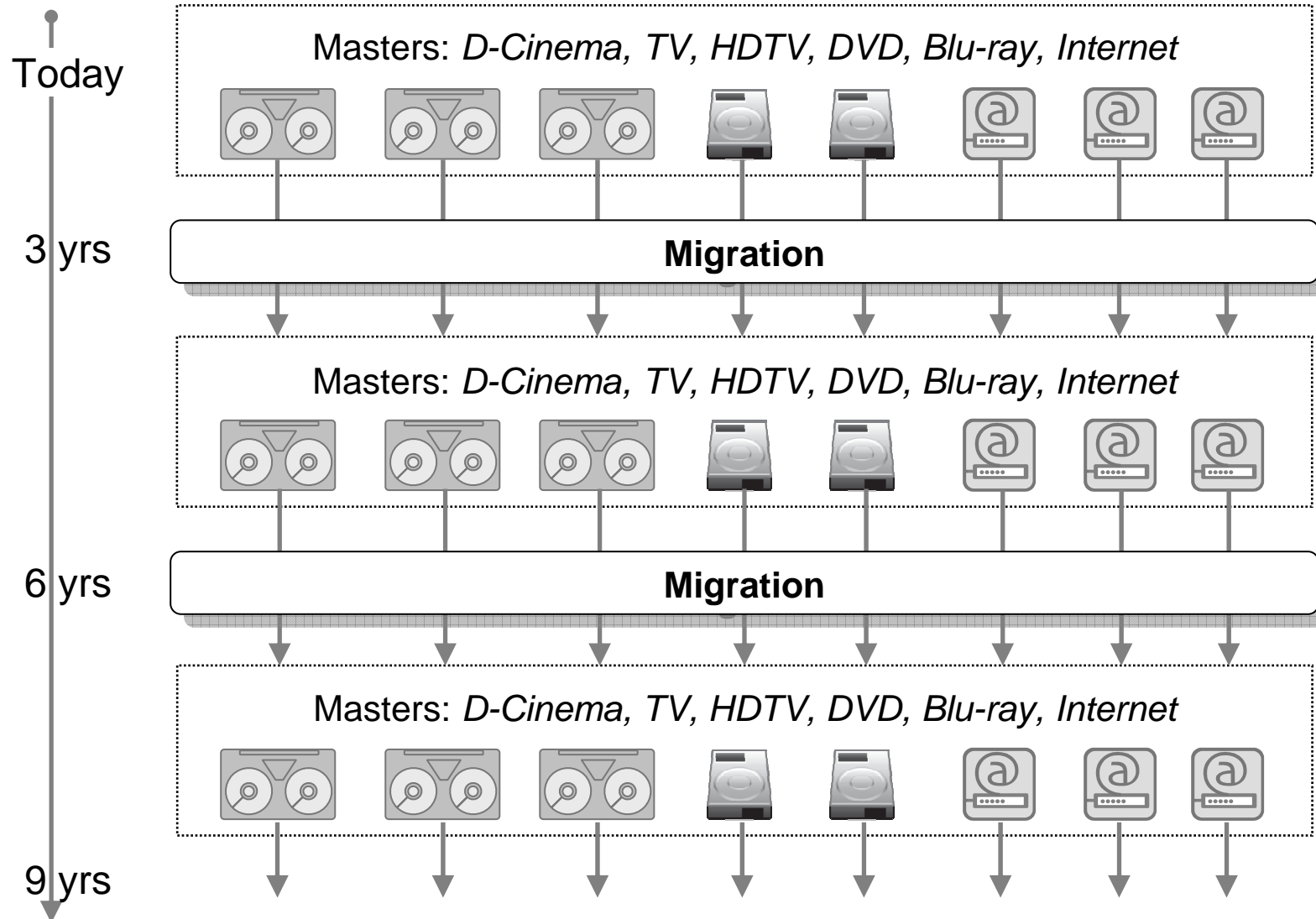






# An established model...changing

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How do we store and distribute/access and preserve cinema collections in this new environment?

- Multiple formats at ingest (analog *and* digital)
- Multiple delivery channels and formats for multiple purposes and users
- Multiple formats means multiple masters, higher storage costs, costly migrations
- 'Long Term Digital Preservation' means complex and costly media and format migrations coming every 3-5 years

These questions apply to all:

- Public, non profit archives
- Content owners, commercial archives
- The media industry as a whole...



Ingest any type of moving images to two different standard formats / packages:

- Master Archive Package (MAP) for long-term preservation
- Intermediate Access Package (IAP) for access

Compression: JPEG 2000

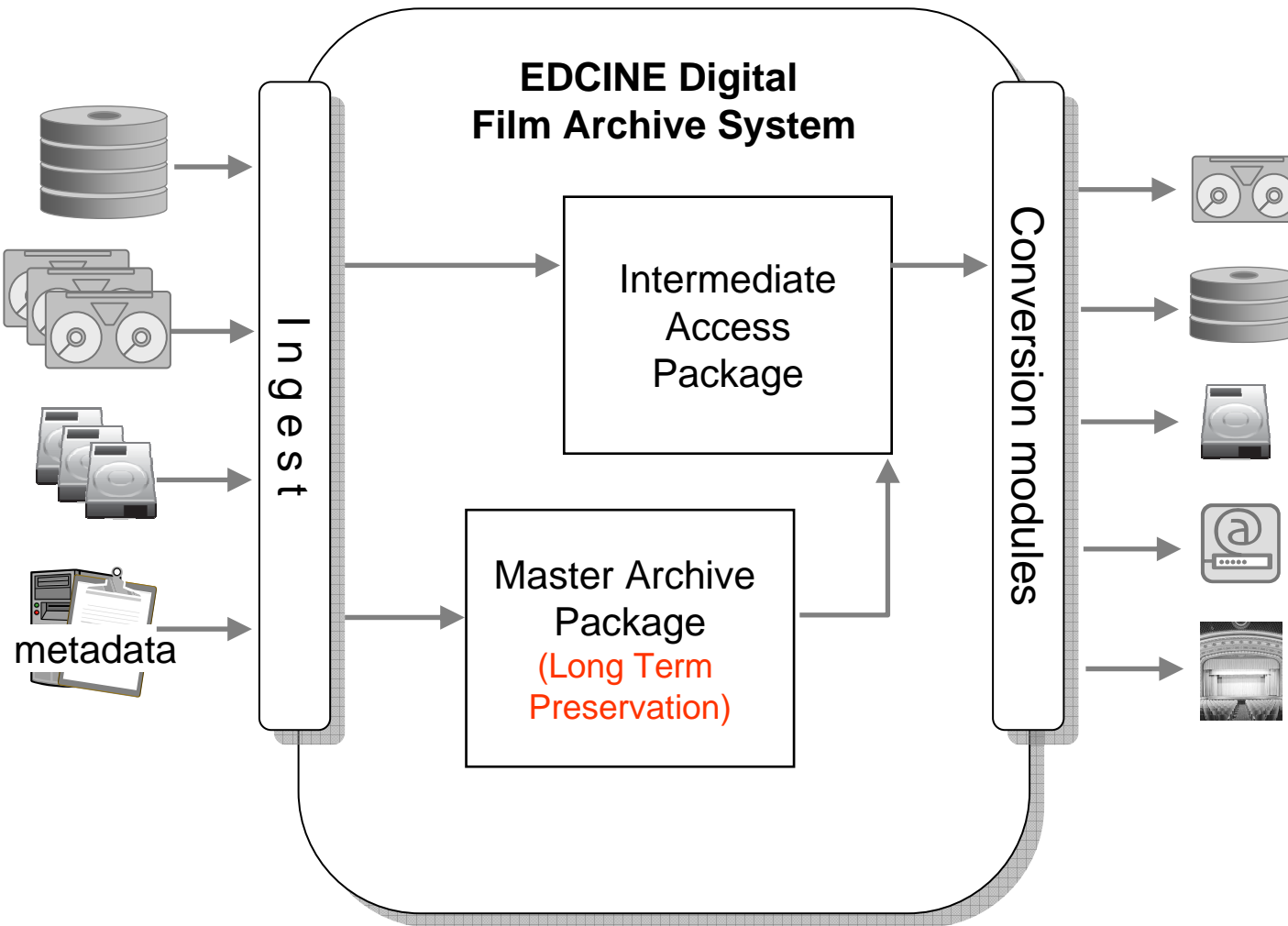
Container and metadata: MXF

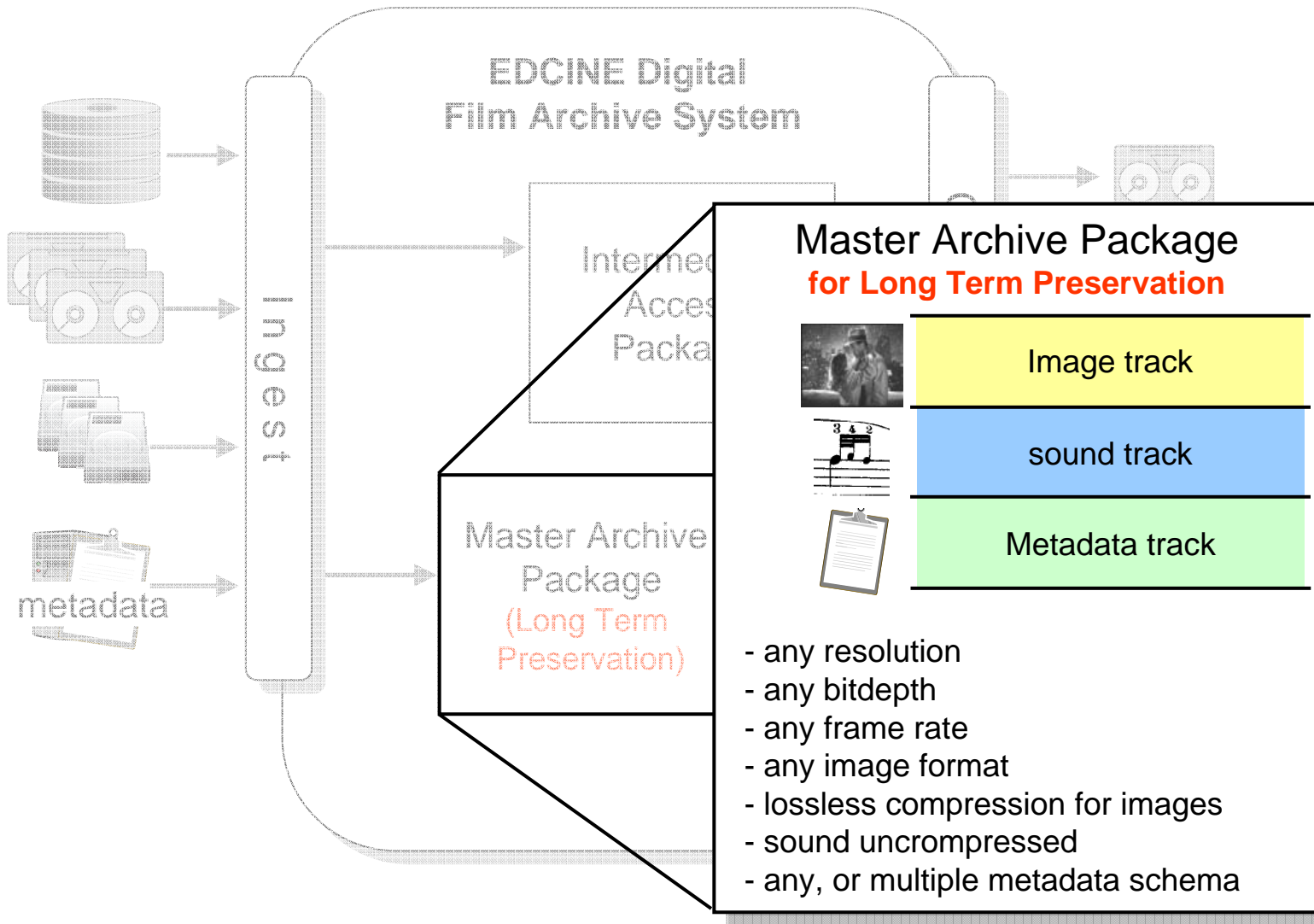
Asset store approach: OAIS model

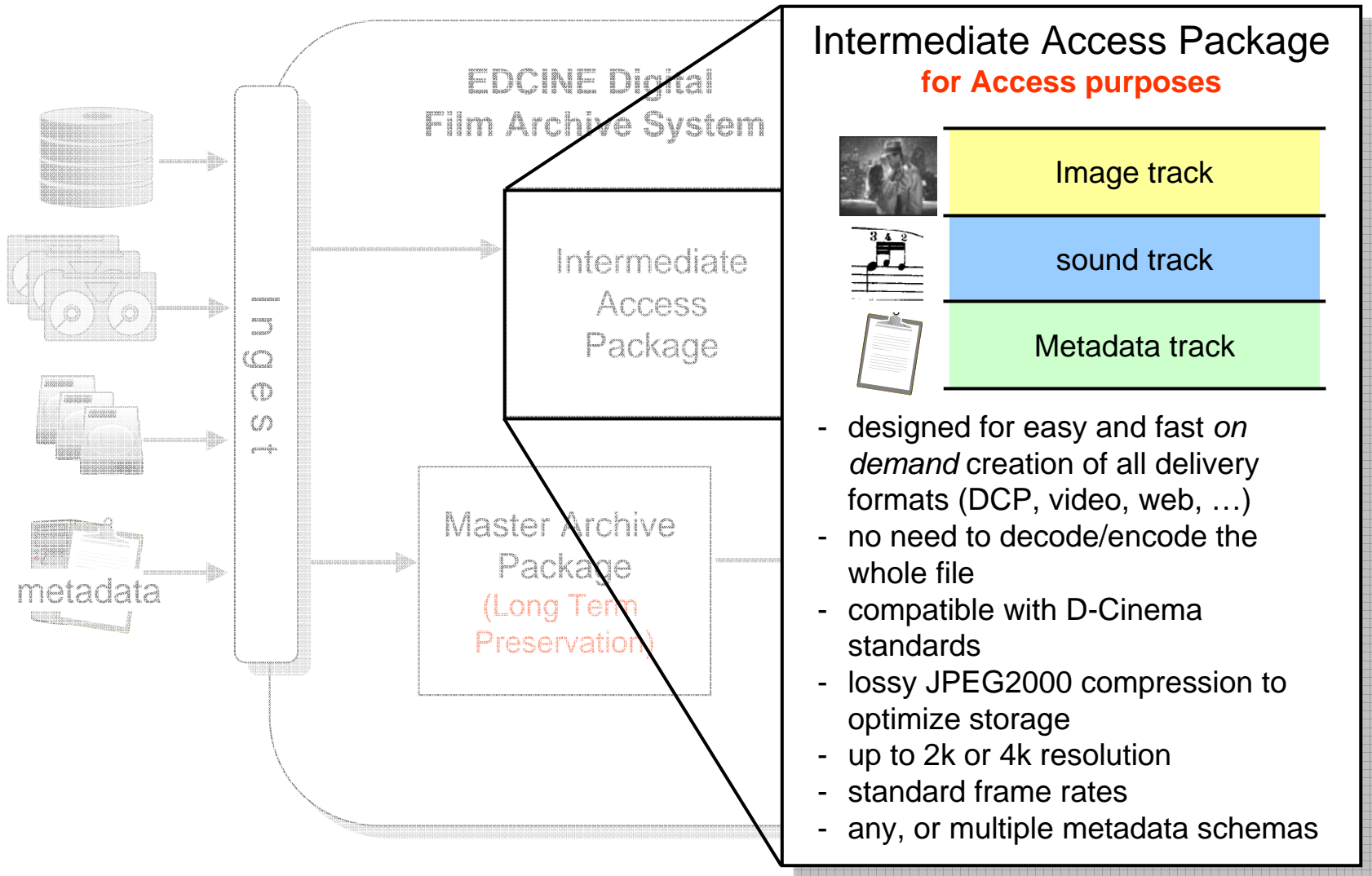
Different distribution formats can be created *on demand* from the IAP

Need to migrate one format only

Use only open standards







## Key advantages for archives:

- based on open standards, no proprietary formats, open source solutions possible (JPEG2000, MXF)
- MAP and IAP are ISO standards for digital preservation of cinema, video
- based on the OAIS reference model (ISO standard) ensures preservation of metadata
- one format only must be migrated – no multiple migrations needed
- ingest can change over time by using different conversion modules, can be used for all types of moving images, and it is ready for any future development
- scalable and modular, can be tailored on small or large archives
- strong metadata management: MXF allows to use any metadata schema, even multiple metadata sets can be stored and managed together
- possibility to produce on demand all delivery formats from D-Cinema to TV masters and Internet versions
- File formats for preservation are a standard now, and a prototype exists to demonstrate the concept and the technology (*demo tomorrow, same place*)

### *MOG:*

Toboggan Mediaconverter (Integration of IAP/MAPs into Software Tool)

### *Fraunhofer:*

- Licensing of Transcoding Kernel and JPEG2000 Tools  
(Encoder/Decoder/Player)
- Development and licensing of Entry-Level and Turnkey-System Solutions
- Support of pilot-installations

### *Entry level solution:*

- single-PC solution, transcoding system only with manual control

### *Turnkey system:*

- complete solution: archive management system with database, web user interface, transcoding system, storage system
- software and hardware

### *Customized solution:*

- individually tailored to customer's requirements



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