

# THE SIGNIFICANT PROPERTIES OF (DIGITAL) FILM

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# Significant Properties

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The technical, intellectual, and aesthetic characteristics of digital objects that must be preserved over time

What is significant about film and must necessarily be preserved?

## What all this has to do with sustainability

- ◎ “[A]s a complex technological artifact, film has always been the site of interpretative contestation, and is now, once again, because of digitization” (Fossati 2009, 155).
  - Film as Original
  - Film as Art
  - Film as Dispositif
  - Film as State of the Art
- ◎ If we fail “to specify what photochemical film was, we stand to lose important historical knowledge and awareness of the essence of cinema as a cultural form” (Streible 2013, 229)

- Fossati, G. (2009) *From Grain to Pixel: The Archival Life of Film in Transition*. Amsterdam University Press.
- Streible, D. (2013) "Moving Image History and the F-Word; or, Digital Film Is an Oxymoron." *Film History: An International Journal* 25 (1): 227-235.

## What all this has to do with sustainability

- ⦿ What are the essential characteristics of the film we want to preserve (or at least what we understand them to be)?
- ⦿ How can we preserve these in the most efficient and culturally sensitive way?

**WHAT → HOW**

# Structure of the Presentation

1. Overview of significant properties in digital preservation—OAIS as an example
1. Focus and challenges of current “significant properties” research in information science
1. “Significant properties” of digital moving images.
  - What we know!
  - Where next?

# Digital Preservation—Authenticity

- Digital objects are continually copied, transferred, and reformatted
  - MIGRATION — ongoing transfer of the bit stream data constituting a digital object into new file formats
  - EMULATION — reproduction of the original hardware and software environment

# Digital Preservation—Authenticity

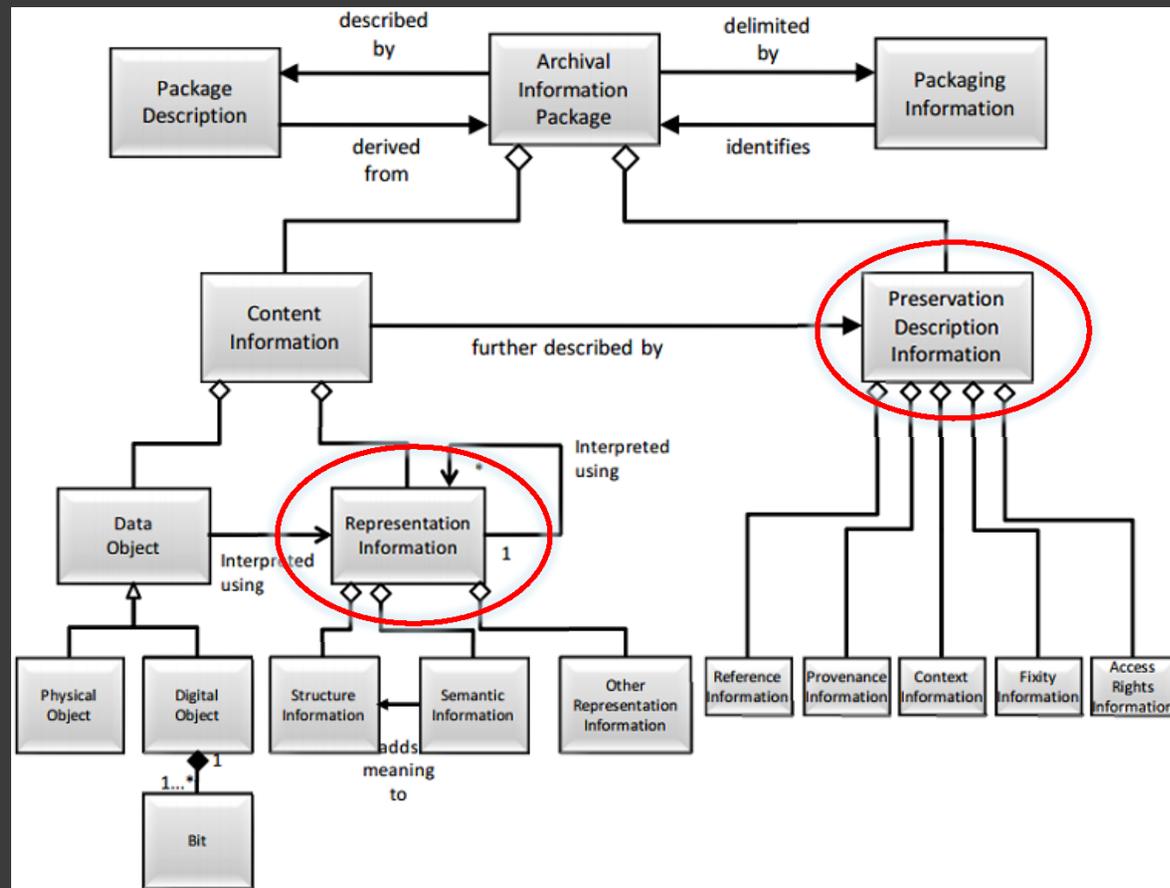
- ⊙ In either case Significant properties matter
  - MIGRATION — how accurately the new format captures the significant properties of the original object
  - EMULATION — what are the significant properties of the original object that need to be reproduced in the emulation environment

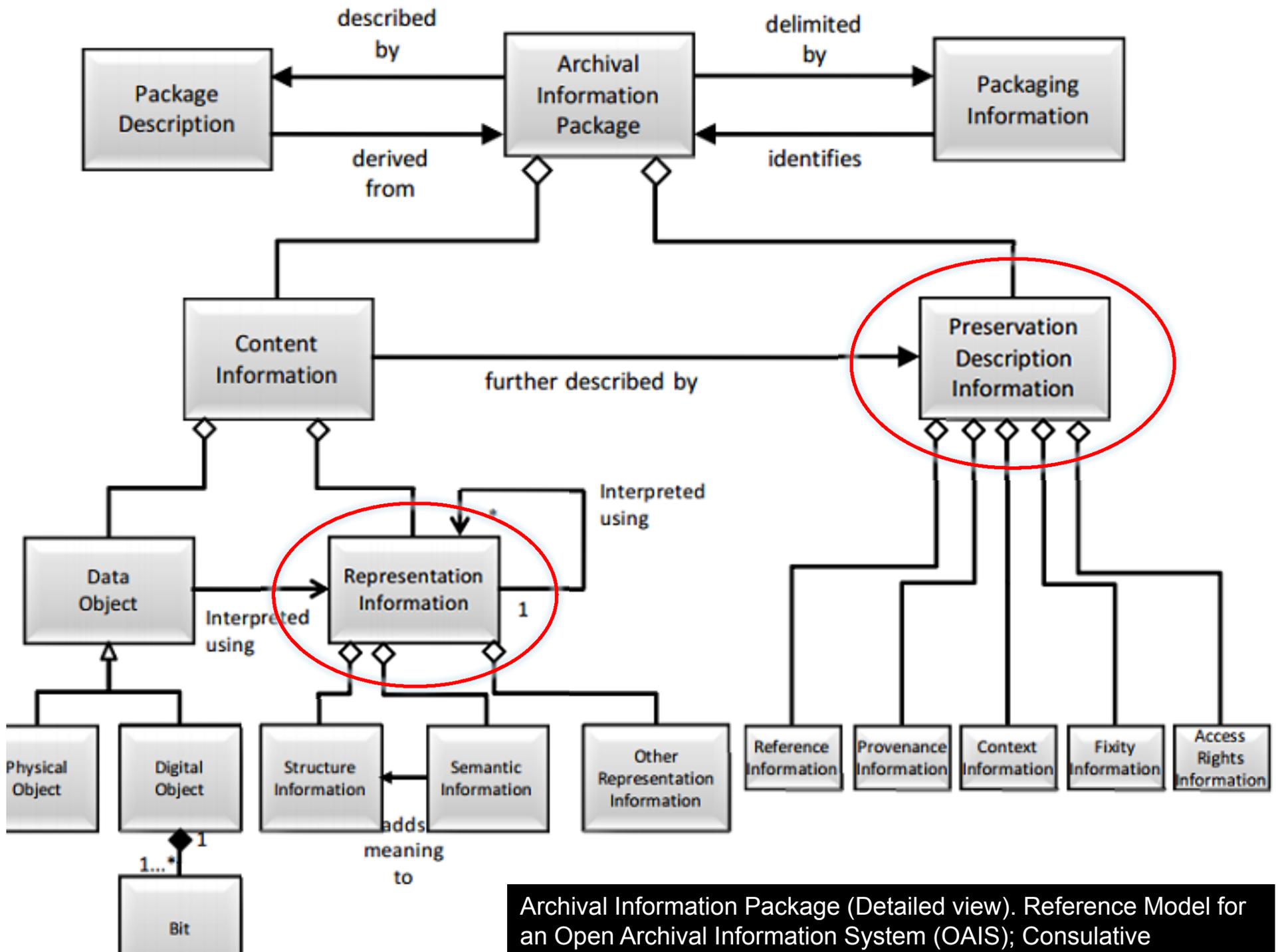
Digital preservation = The ongoing transformation of data

How to be sure “whether or not a particular transformed digital object can be said to have the same level of authenticity as the object which underwent the transformation” (Giaretta 2011, 214).

# Significant Properties: OAIS as an Example

- OAIS' definition of Authenticity = Identity and Integrity





# Significant Properties: An Attempt to Enhance the Effectiveness and Cultural Sensitivity of OAIS

- “those components of a digital object deemed necessary for its long-term preservation [...] to ensure the object remains intelligible.” (Cedars Guide to Digital Collection Management, 2002)
- “the properties that affect the quality, functionality, and look-and-feel of a digital object” (Headstron and Lee 2002, 220)
- “The characteristics of a digital object that must be preserved over time in order to ensure their continued accessibility, usability, and meaning” (Wilson 2007).

- Cedars Guide to Digital Collection Management (2002). CURL Exemplars for Digital ARchiveS
- Hedstrom, M., and Christopher A. L (2002) "Significant Properties of Digital Objects: Definitions, Applications, Implications." In *Proceedings of the DLM-Forum*, vol. 200: 218-27.
- Wilson, A. (2007) "Significant properties report." InSPECT Work Package 2.

## Significant Properties: An Attempt to Enhance the Effectiveness and Cultural Sensitivity of OAIS.

- ◎ OAIS Representation Information = format, encoding scheme, algorithm
- ◎ Significant Properties = intellectual intent, aesthetic qualities, and experiential qualities

# Significant Properties: An Attempt to Enhance the Effectiveness and Cultural Sensitivity of OAIS.

- ◎ Data-Centric = Representational Information in OAIS
- ◎ People-Centric = Significant Properties

➤ Faniel, I., and Elizabeth Y. (2011) "Significant properties as contextual metadata."  
*Journal of Library Metadata* 11 (3-4): 155-165.

# The Challenges of People-Centric Definition

- ⊙ “significant properties are not assumed to be empirical; thus, collection managers and archivists will make judgments at levels appropriate to fulfill their preservation responsibilities and meet the needs of the archive’s user communities.” (Cedars Guide to Digital Collection Management, 2002)
- ⊙ “Significant properties that affect the aesthetics, implied meaning, and affordances of digital objects tend to be much more subjective and tied to the context of creation and use” (Headstron and Lee 2002, 220)
- ⊙ A definition must “take into account the perspectives of different groups of users, and therefore can never be defined in absolute, universal terms” (Yeo 2010, 15)

- Cedars Guide to Digital Collection Management, (2002) CURL Exemplars for Digital ARchiveS
- Hedstrom, M, and Christopher A. L. (2002) "Significant Properties of Digital Objects: Definitions, Applications, Implications." In *Proceedings of the DLM-Forum*, vol. 200: 218-27.
- Yeo, G (2010) "Nothing is the same as Something Else: Significant Properties and Notions of Identity and Originality." *Archival Science* 10 (2): 85–116.

# “Significant Properties of Moving Images”: The Joint Information Systems Committee (JISC) Report

## What we know

- size and shape of the individual images
- the rendering of image quality
- the speed of projection
- and the presence or absence of accompanying audio track.

## What we don't know

- understanding how the “notion of artistic intent” can be semantically represented and preserved along with digital moving images (51)
- and similarly how the “environment in which the material was intended to be seen” can be represented and preserved (52)

➤ Coyne, M, and Stapleton, M. (2008) “The Significant Properties of Moving Images.”  
*JISC Digital Preservation Programme.*

# Solutions from within our community

- ⊙ “By combining their vast set of skills in handling analog objects as well as moving to new paradigms provoked by the digital age, moving image archivists can continue to play a critical role in preserving our cultural heritage and ensuring that today's works will last well beyond the life of the team that produces them” (Besser 2001, 52)
- ⊙ Film archivists’ in-depth knowledge of analogue film has an important role to play in the digital domain

# Data models and Description Standards as a conceptual framework

## ◎ FRBR

- Work
- Expression
- Manifestation
- Item

## ◎ “BIBFRAME AV Modeling Study: Defining a Flexible Model for Description of Audiovisual Resources”

- Knight, G. and Pennock, M. (2009) “Data without Meaning: Establishing the Significant properties of Digital Research.” *International Journal of Digital Curation* 4 (1): 159-174.
- Van Malssen, K. (2014) “BIBFRAME AV Modeling Study: Defining a Flexible Model for Description of Audiovisual Resources” URL: <http://www.loc.gov/bibframe/pdf/bibframe-avmodelingstudy-may15-2014.pdf>

# Looking Beyond our Community: electronic and time-based arts preservation

DOCAM

<http://www.docam.ca/>



Variable Media Questionnaire

<http://variablemediaquestionnaire.net/>



## So Again, What All This Has to Do with Sustainability

- ⦿ What to preserve?
- ⦿ How to Preserve it?
- ⦿ Research on the concept of significant properties can get us closer to answering the what question!

Thank you!