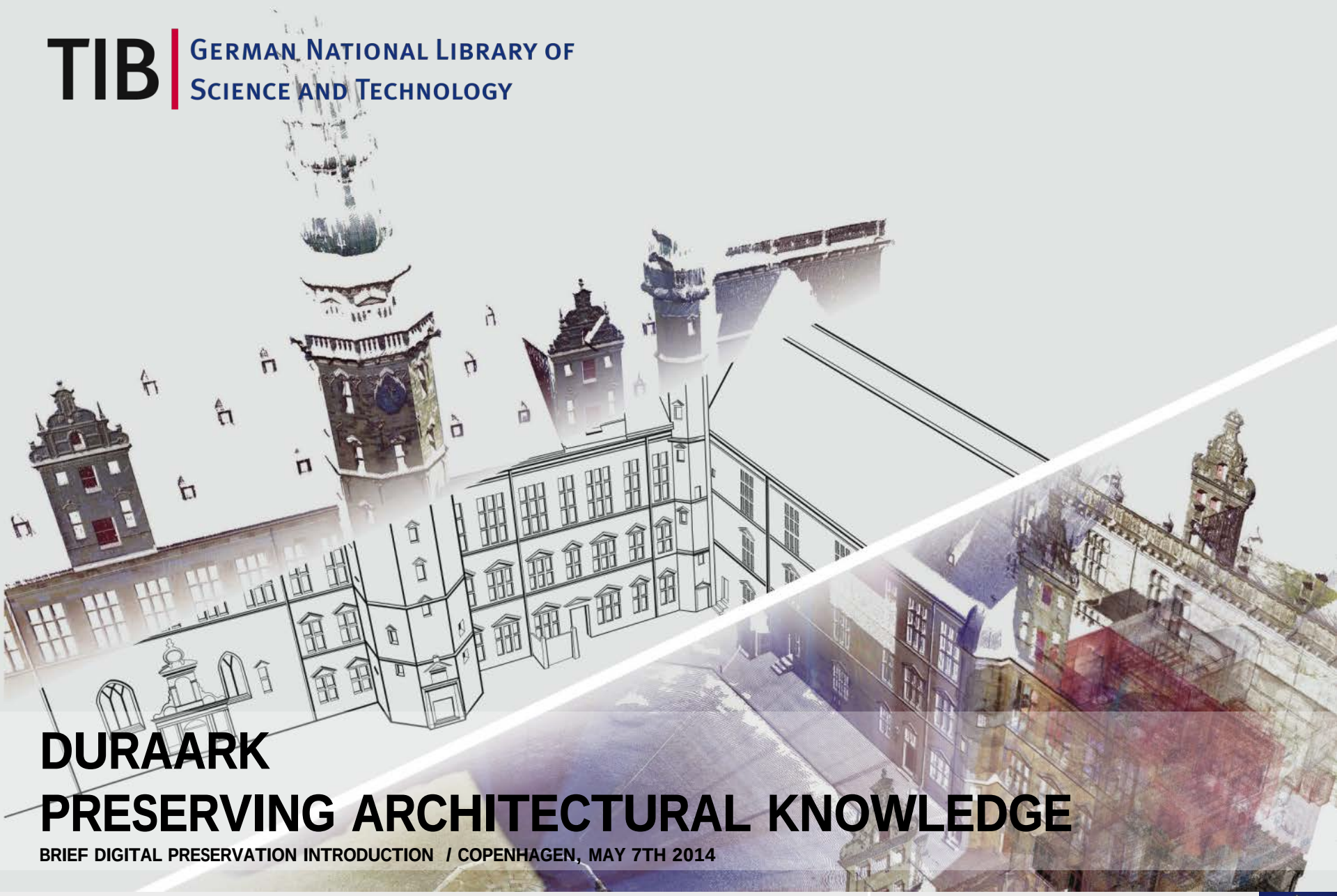
TIB | German National Library of Science and Technology



DURAARK
PRESERVING ARCHITECTURAL KNOWLEDGE

BRIEF DIGITAL PRESERVATION INTRODUCTION / COPENHAGEN, MAY 7TH 2014

Michelle Lindlar (LUH / TIB)

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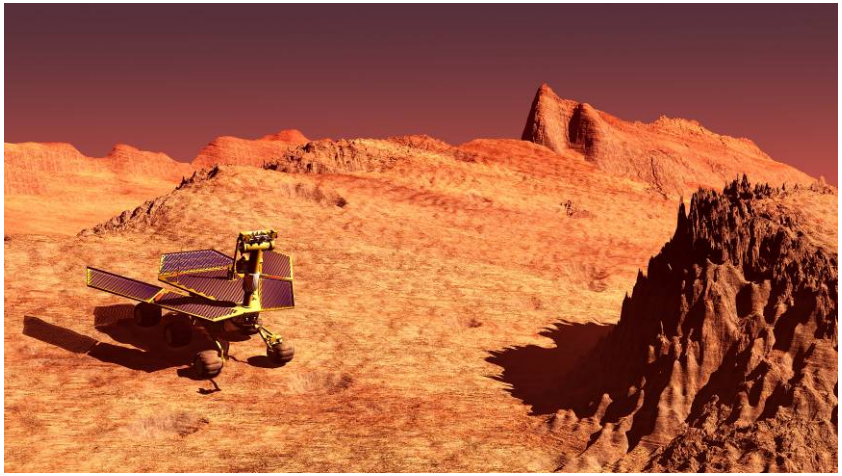
1976 Viking Mars Landings

appox. 3,000 images / data sets gathered and stored on tape



1988 NASA wanted to retrieve data from carrier

→ software outdated, HW no longer available

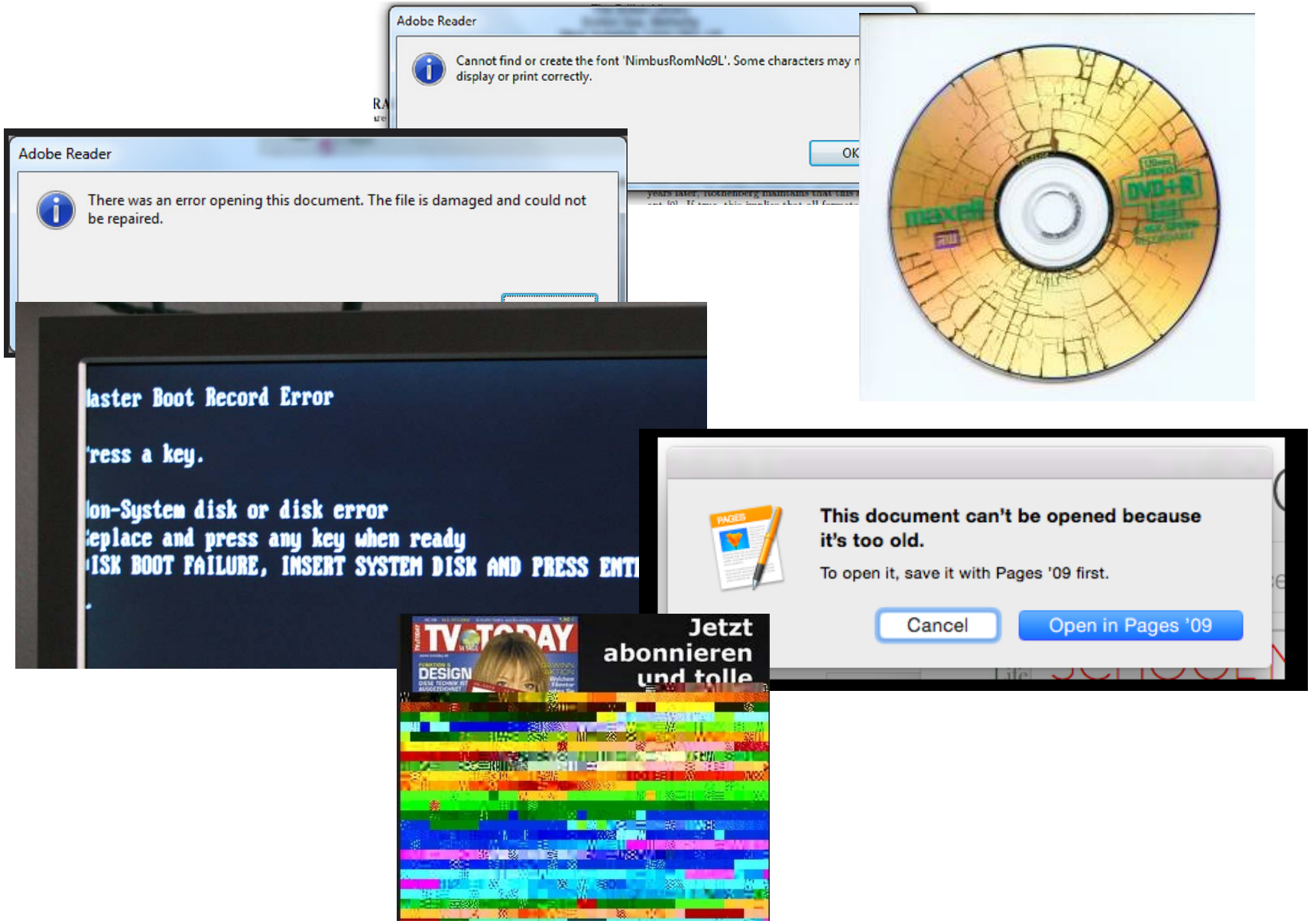
→ took 2 years to build modern software

1999 Neuro-Biologist JD Miller wanted to re-analzye the data

→ file format not readable

→ tracked down printouts and hired students to rekey it all

Famous examples of data loss: NASA



Examples of loss – everyday encounters

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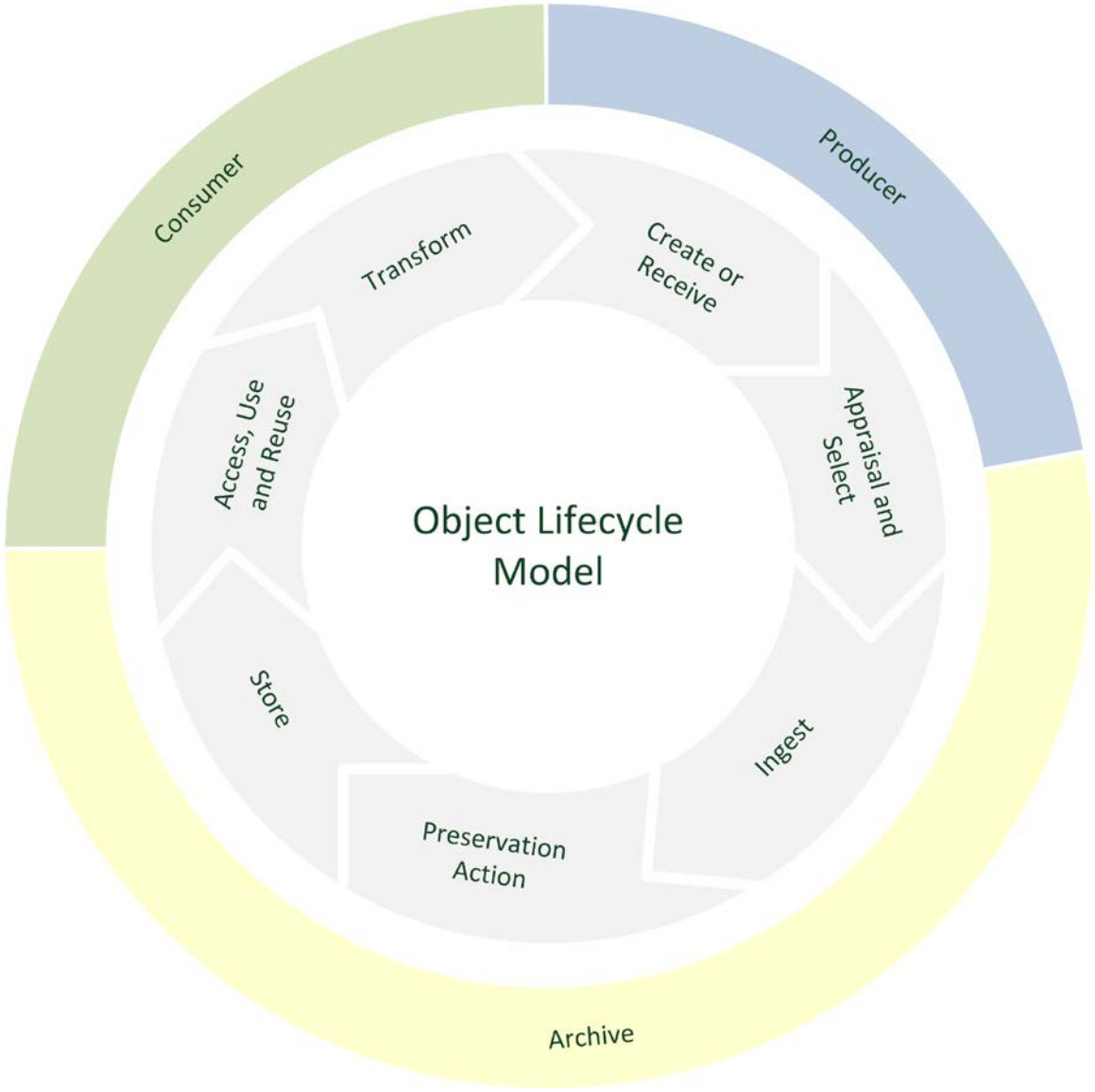

DURAARK approach: lifecycle model

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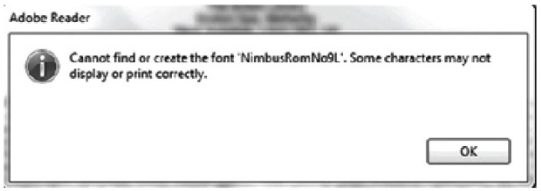
digital object

semantic preservation	conceptual object	authenticity, interpretability " How to understand/ interpret the data?"
logical preservation	logical object	logical preservation "How to open/render the file?"
bit preservation	physical object	bit preservation "How to keep the 1s and 0s?"



Archiving – what makes it so complicated ?

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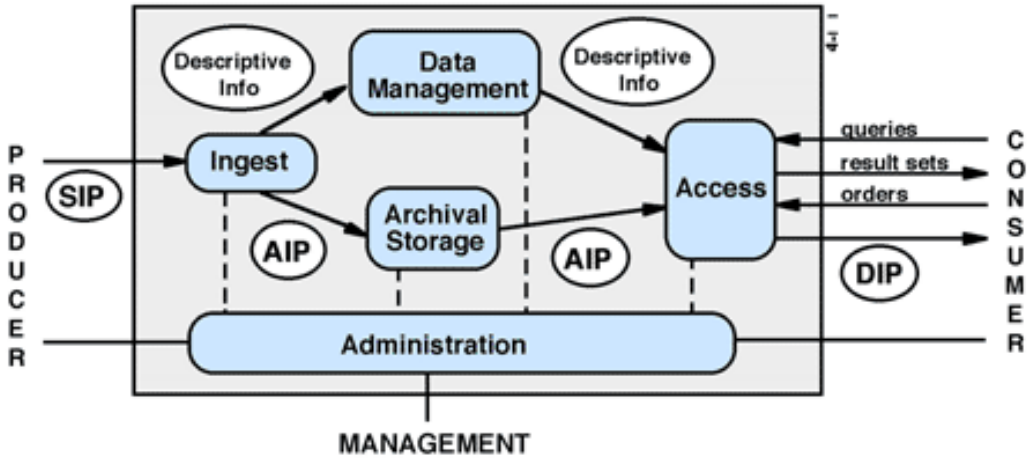
OAIS (Open Archival Information System) Reference Model - ISO 14721:2012

SIP = Submission Information Package

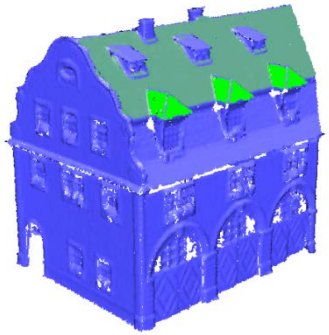
- package submitted into the archive
- largely „self-documenting“
  - objects + metadata (descriptive. administrative. structural. technical)



ISO 16363:2012 Audit and Certification of Trustworthy Digital Repositories

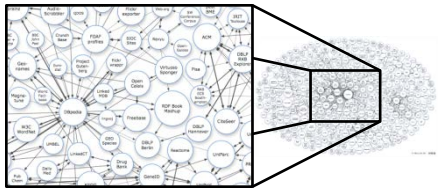
SIP – submitting information to the archive

SIP information at bit level
capture information about object‘s fixity and check at several points transparent / well-documented file format storage



SIP information at file format level
capture information about file format (what is it, what‘s in it, are there risks, what needed to open it ?)

SIP information at semantic level
descriptive metadata about the object and extended information about the object‘s context



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„Digital Preservation Systems“

Good at archiving (e.g. logical preservation processes such as metadata extraction)

Need to be extended for all formats

Unsure wether they meet the requirements of the domain

archivematica

ExLibris Rosetta

Preservica Digital Preservation

bomsync

DALUX

dRofus

„Domain Systems“

Stellar domain knowledge – meeting the needs of the stakeholders

Usually little support of digital preservation requirements

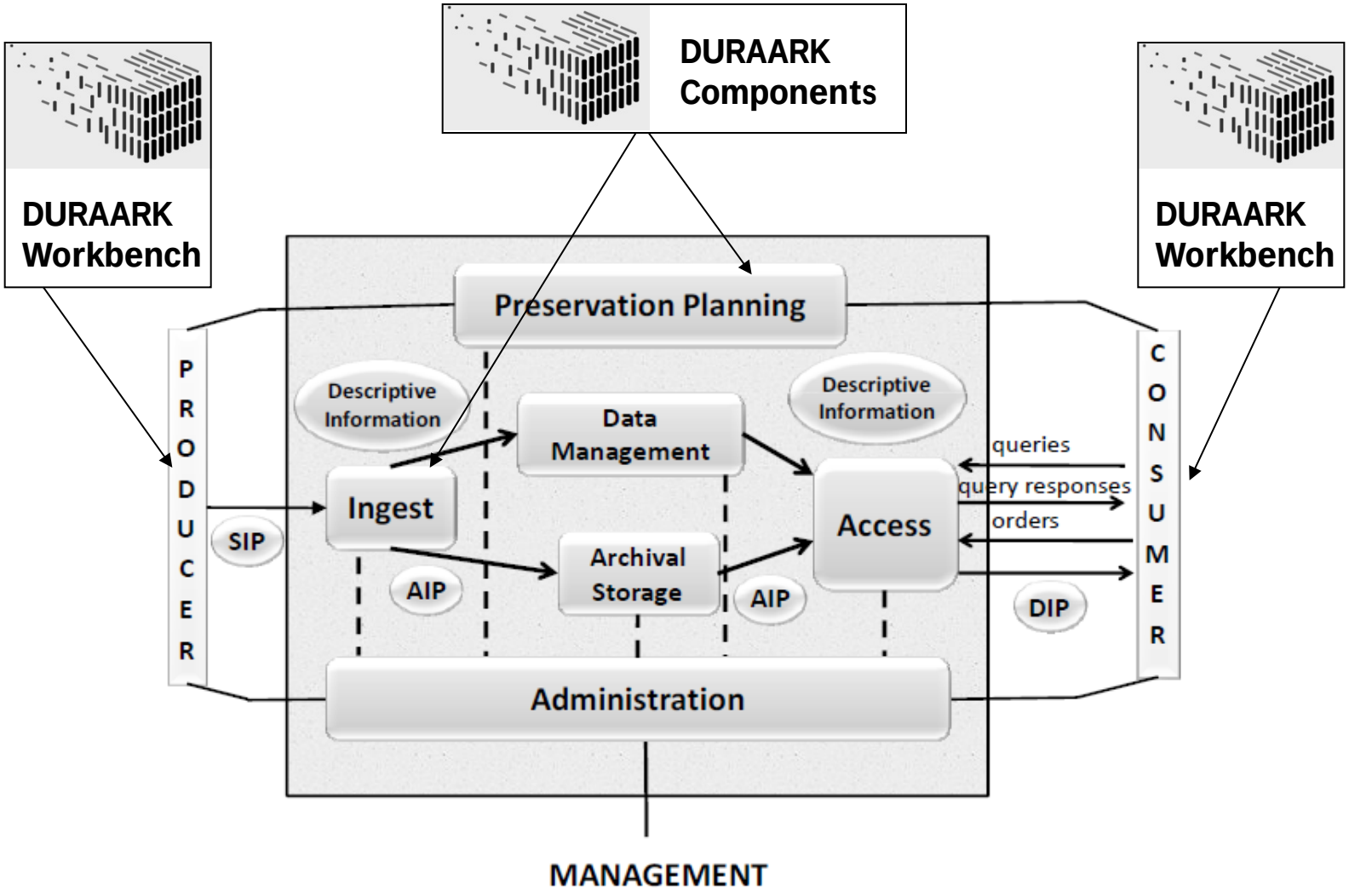
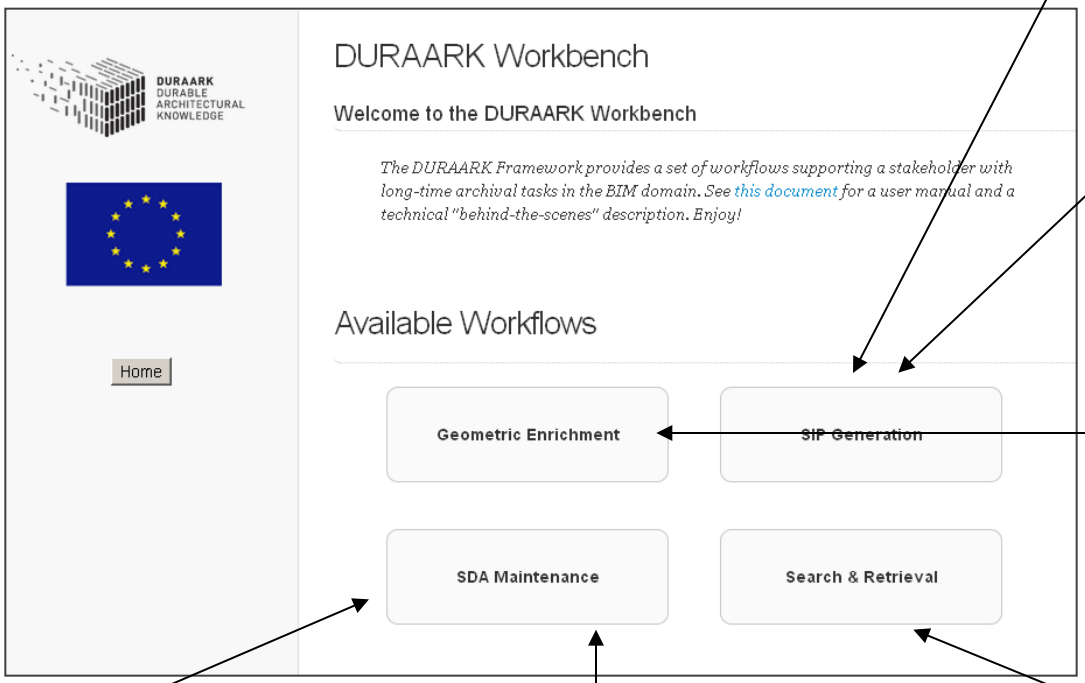


Figure 4-1: OAIS Functional Entities

OAIS architecture

deposit 3D architectural objects to a preservation system

enrich BIM with metadata from SDA



Monitor the evolution of a structure over time

Detect differences between planning and as-is-state

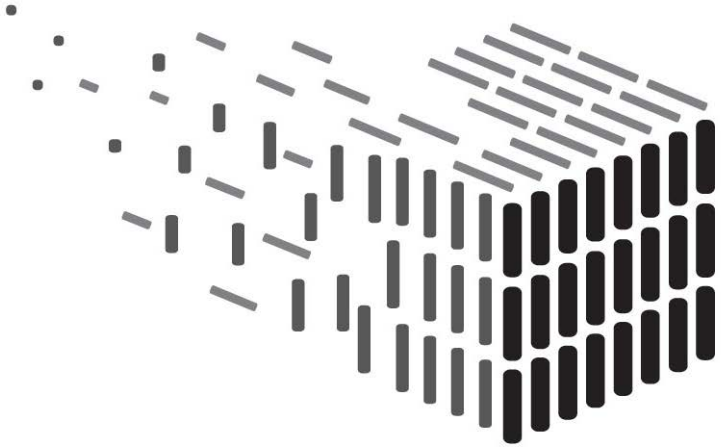
Identify similar objects within a point-cloud-scan

maintain the Semantic Digital Archive

search and retrieve archived objects

Plan, document and verify retrofitting/energy renovation of buildings

Exploit contextual information for urban planning



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Thank you. Questions? Suggestions?

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