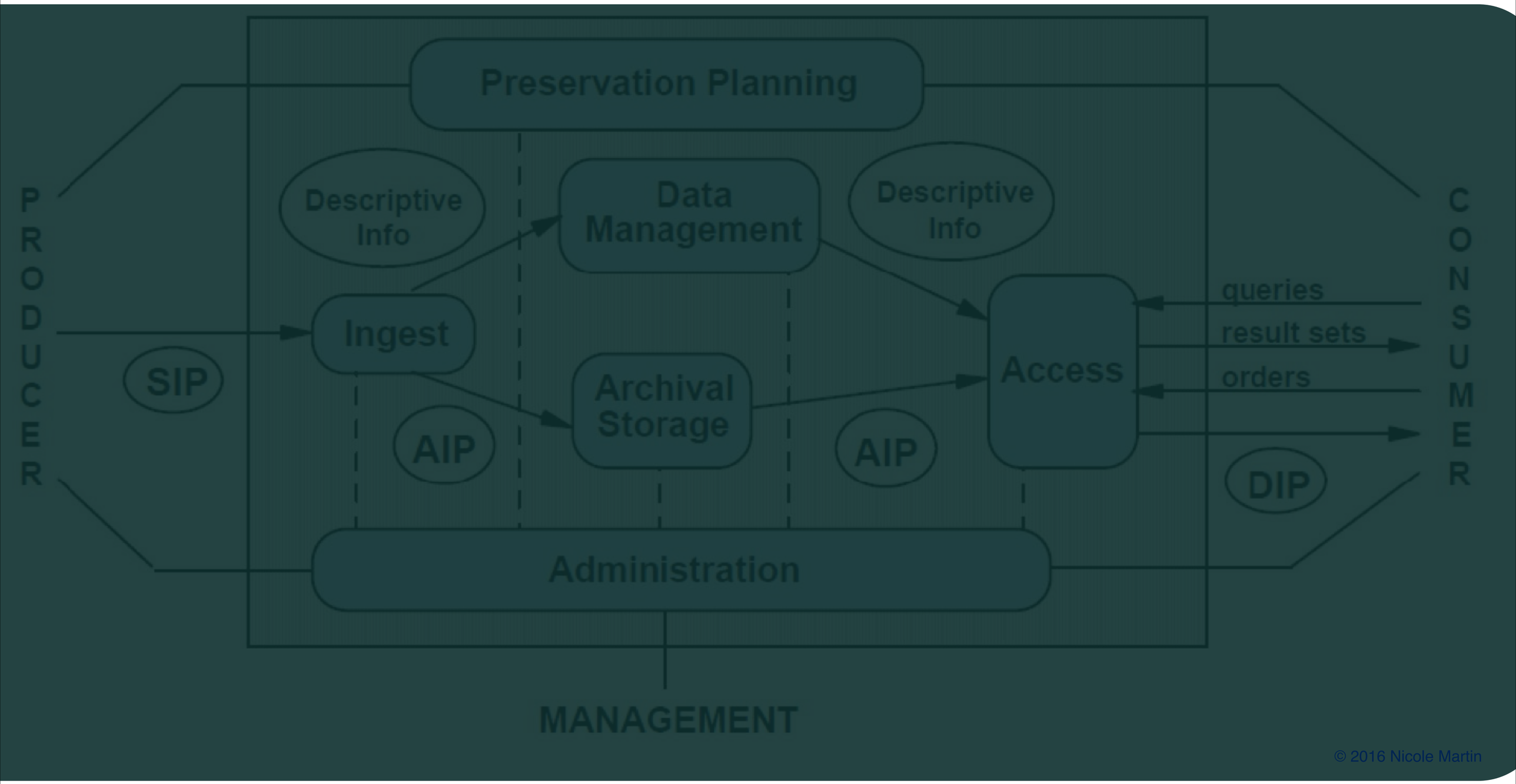
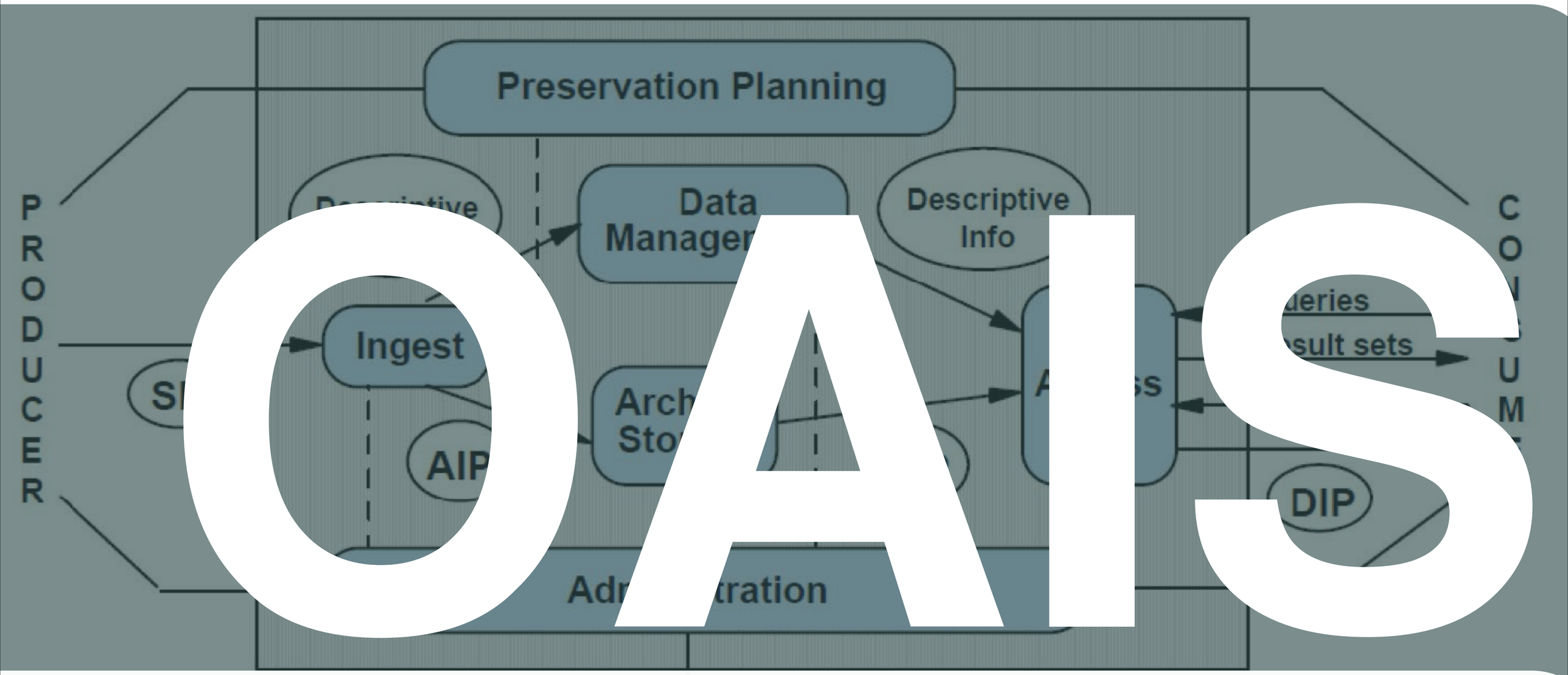
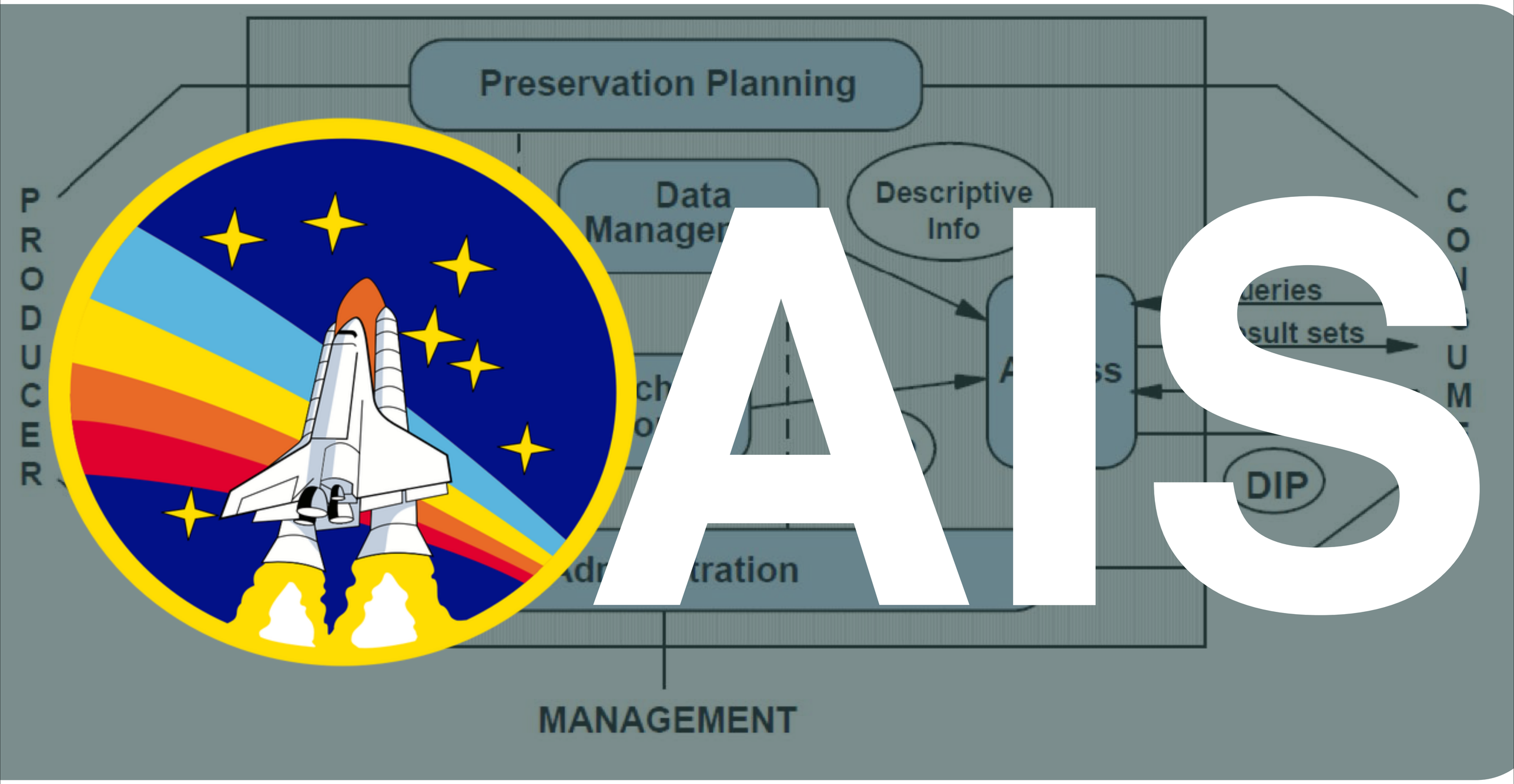




OAIS

History and Data Model


Preservation Planning
Data
Descriptive
Info
DIP
MANAGEMENT

AIS

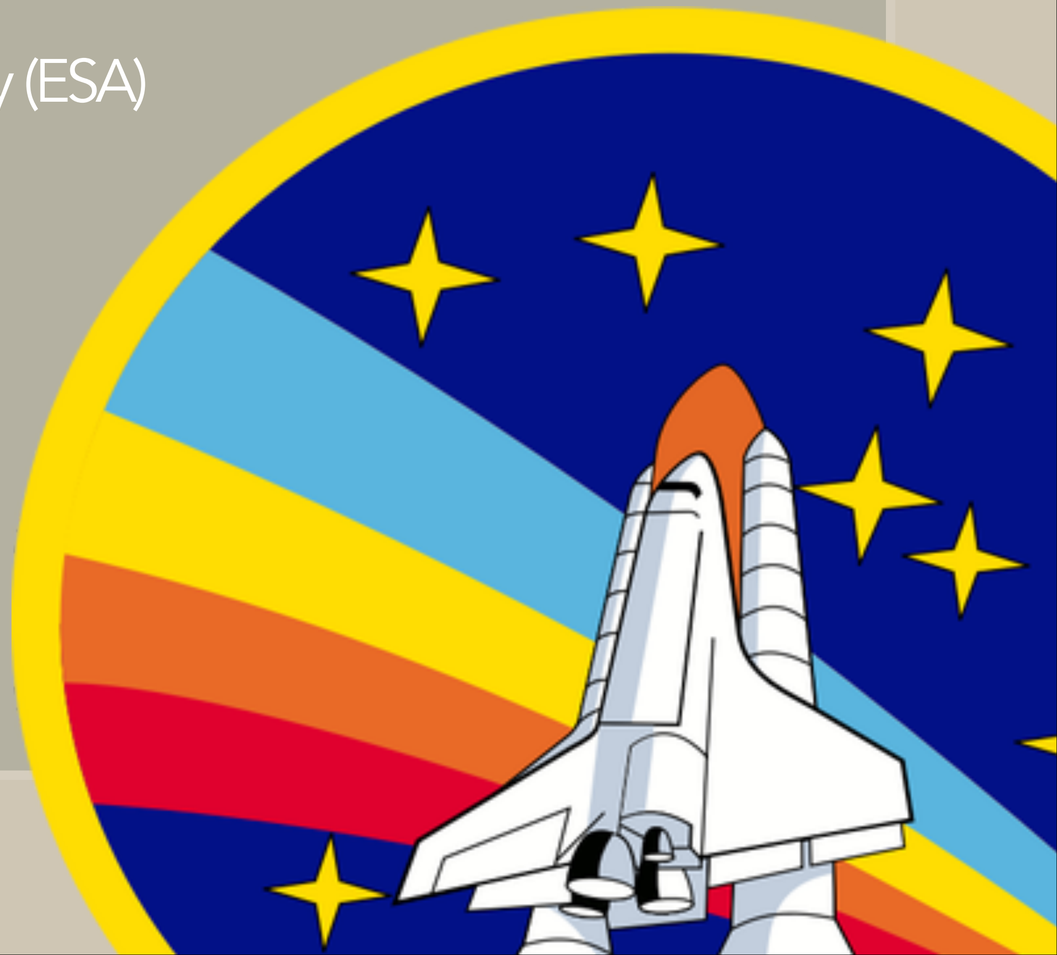
HISTORY

HISTORY

CCSDS: Consultative Committee for Space Data Systems

NASA, British National Space Center, European Space Agency (ESA)

- Established in 1982
- Standards for space data



HISTORY

ISO – International Organization for Standardization

- Established in 1947
- Based in Geneva, Switzerland
- Independent, non-governmental organization
- Volunteer members from 162 countries

HISTORY

- 1990: ISO approaches CCSDS for a digital preservation standard
- 1995: International Workshop by CCSDS
  - CCSDS consults with NARA and others
  - No preexisting standards of any kind

HISTORY

- 1990: ISO approaches CCSDS for a digital preservation standard
- 1995: International Workshop by CCSDS
  - CCSDS consults with NARA and others
  - No preexisting standards of any kind
- 1999: Draft presented to ISO
- 2003: OAIS becomes an approved ISO standard

WHAT IS IT?

WHAT IS IT?

- System for archiving physical and digital objects based on an *organizational* reference model.
- Preserve information and make it available to a designated community.

GENERAL INFORMATION

GENERAL INFORMATION

- Most widely understood digital preservation standard
- ISO 14721:2003
- FREE & OPEN
- Process-oriented, includes data model
- 148-page document known as a "Magenta book" (CCSDS Recommended Practices)

OAIS REFERENCE MODEL

OMG 148 PAGES OF DENSE TECHNICAL JARGON

OAIS REFERENCE MODEL

1. It's just a reference model
2. The model is totally abstract
3. An ISO standard can be flexible

OMG 148 PAGES OF DENSE TECHNICAL JARGON

OAIS DOES NOT REQUIRE...

OAIS compliance simply requires fulfilling the stipulated responsibilities, and supporting the basic OAIS data model of information packages. A repository is not required to implement all the functions recommended in the OAIS model, or replicate the detailed internal data flows, to be OAIS compliant.

BENEFITS

Promotes discussion

Introduces standard terminology

Outlines repository responsibilities

Preservation metadata

Flexible framework

OPEN ISO STANDARD

5- year review period

"Open" standard, public process

Comment process maintained by CCSDS

On behalf of ISO, CCSDS solicits and reports suggestions for changes

THE OAIS REFERNCE MODEL

THE OAIS REFERNCE MODEL

Contents...

THE OAIS REFERNCE MODEL

1. Consumer: Designated Community
2. Responsibilities
3. Functional Model
4. Data Model

THE OAIS REFERNCE MODEL

1. Consumer: Designated Community
2. Responsibilities
3. Functional Model
4. Data Model

DESIGNATED COMMUNITY

DESIGNATED COMMUNITY

- Identified by the archive/repository [HIGHLY SUBJECTIVE]
- Community may change over time
- Determines what the repository will retain
- Determines how information/metadata is applied to Data Objects
- Archive/Repository managers have a responsibility to the Designated Community

RESPONSIBILITIES

RESPONSIBILITIES

- Collaborate with Designated Community to ensure collections are Independently Understandable
- Obtain data from Producers with contextual information, etc.
- Adhere to procedure: obtaining, preserving, authenticating, and distributing collections

THE OAIS REFERNCE MODEL

1. Consumer: Designated Community
2. Responsibilities
3. Functional Model
4. Data Model

THE OAIS REFERNCE MODEL

1. Consumer: Designated Community
2. Responsibilities
3. Functional Model
4. Data Model

FUNCTIONAL MODEL

FUNCTIONAL MODEL

SIX FUNCTIONS

FUNCTIONAL MODEL

SIX FUNCTIONS

1. **Ingest:** Receive  from Producers
2. **Archival Storage:** Retain and store 
3. **Data Management:** Add descriptive metadata to  , maintain database
4. **Administration:** Perform daily archives operations – review incoming  , make policy, implement standards, etc.
5. **Preservation Planning:** Develop preservation strategy, look for changes in technology
6. **Access:** Fulfill access and distribution requests made by Designated Community

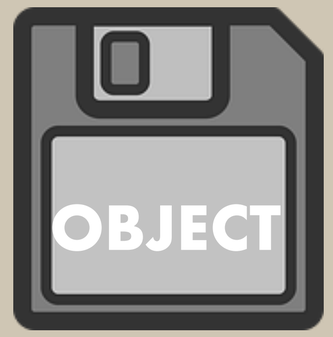
DATA MODEL

DATA MODEL

INFORMATION PACKAGES

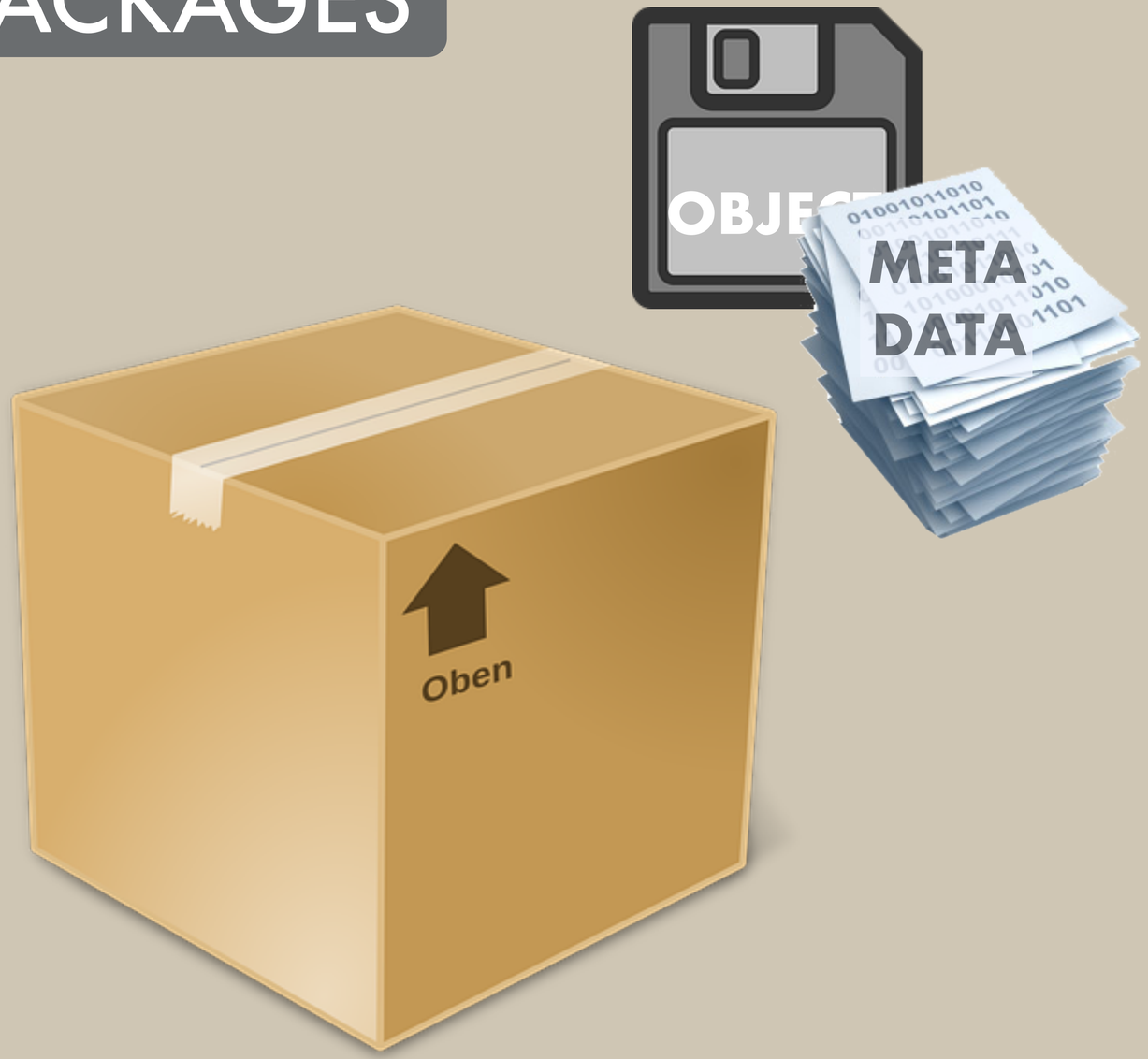
DATA MODEL

INFORMATION PACKAGES



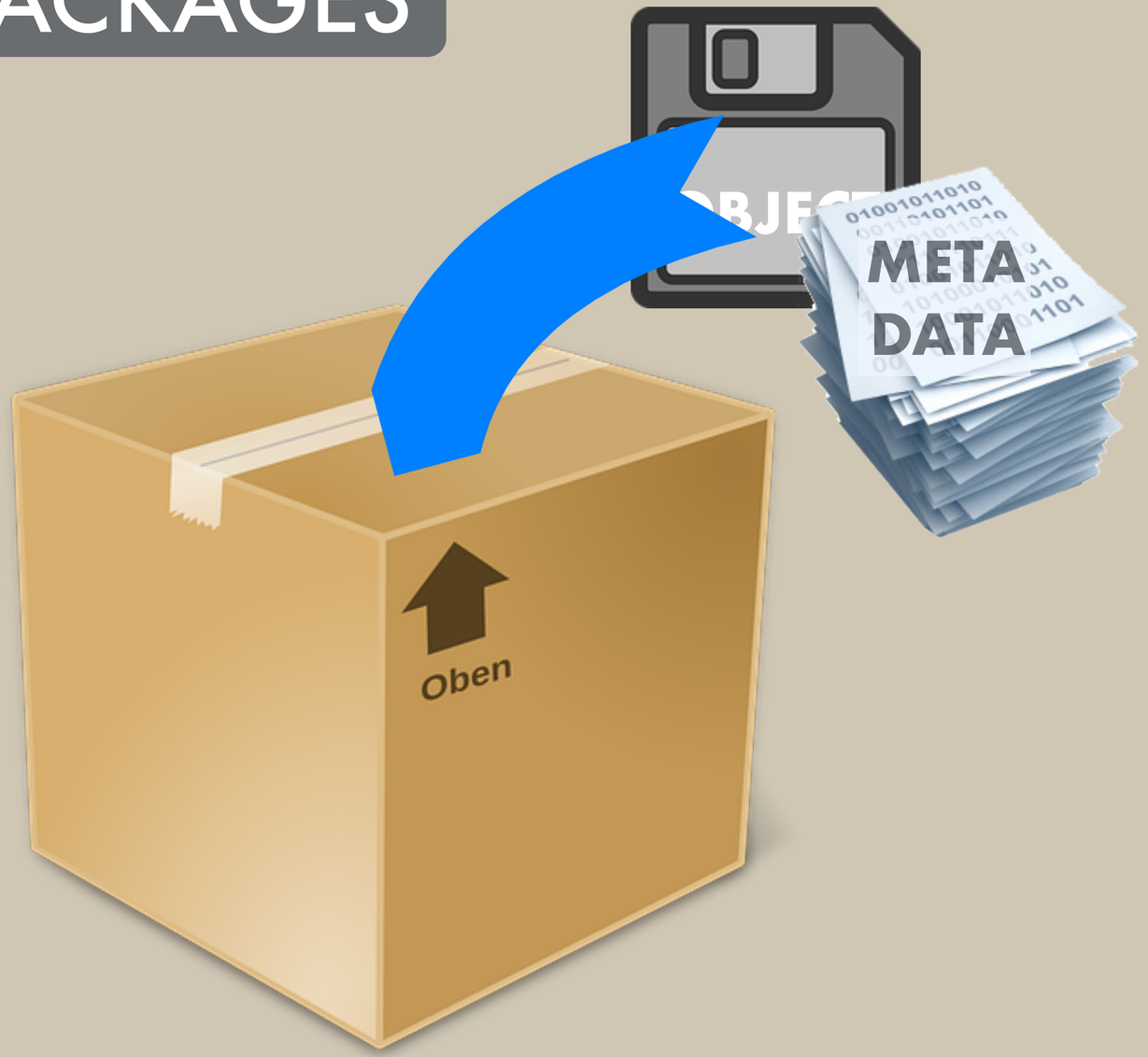
DATA MODEL

INFORMATION PACKAGES

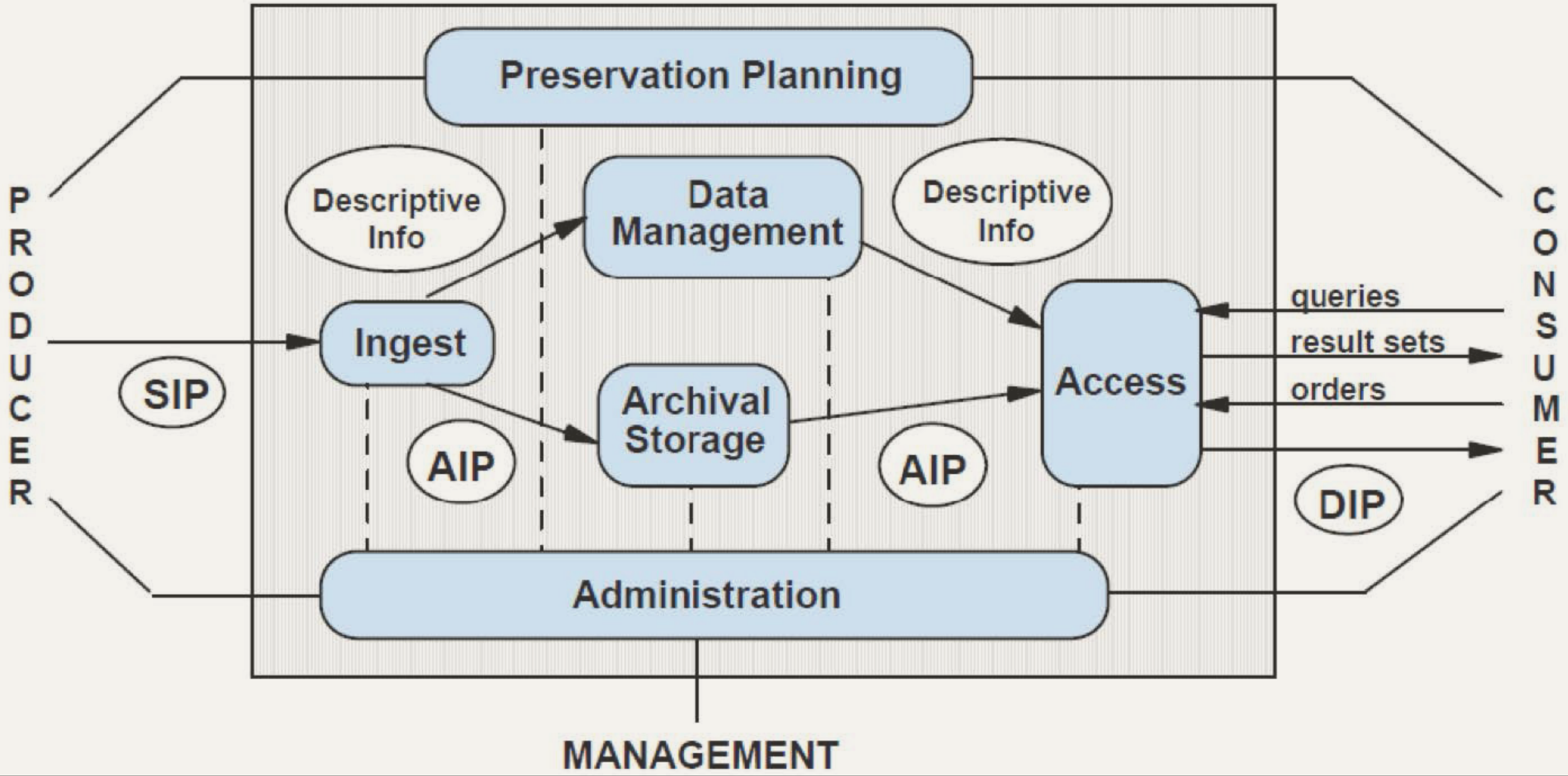


DATA MODEL

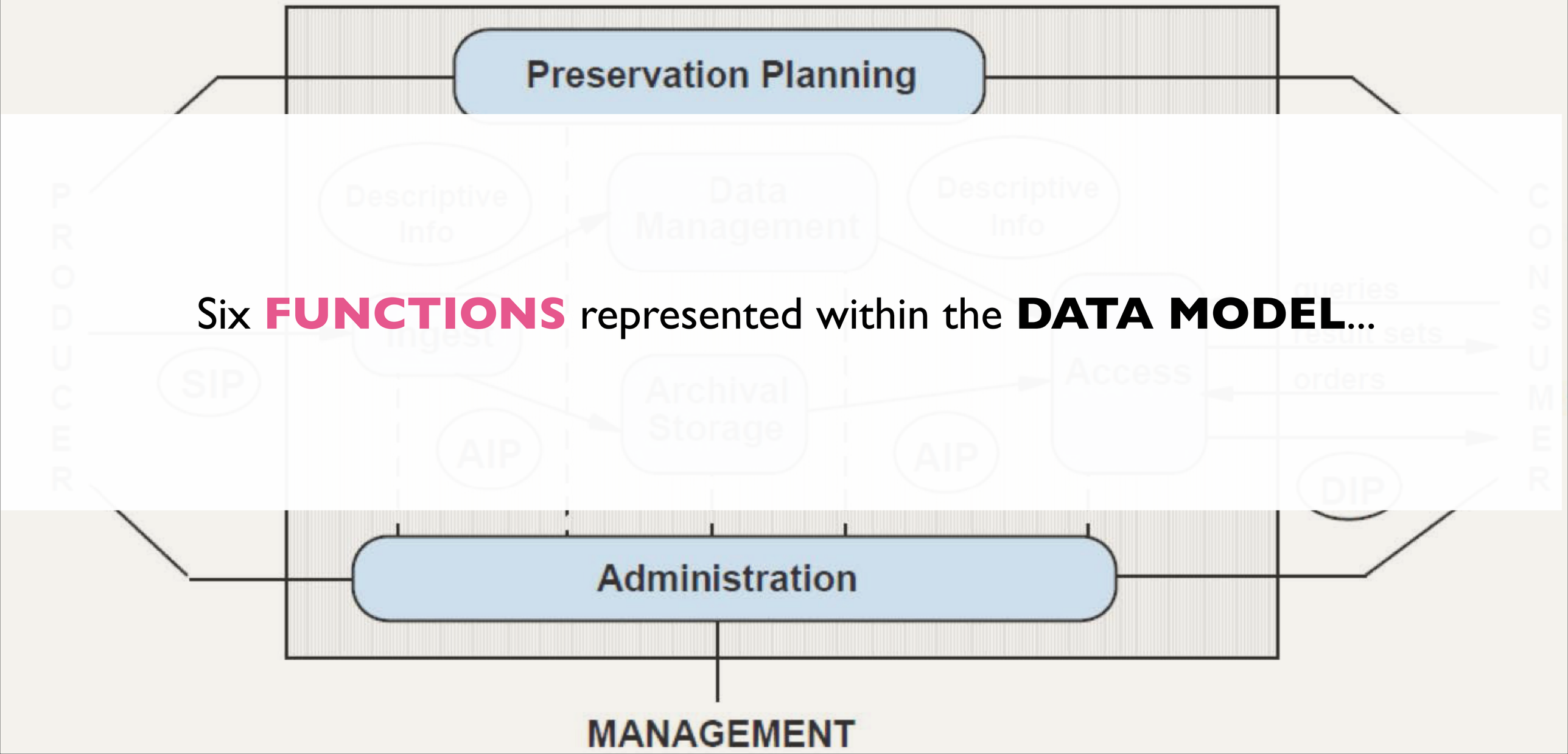
INFORMATION PACKAGES



DATA MODEL

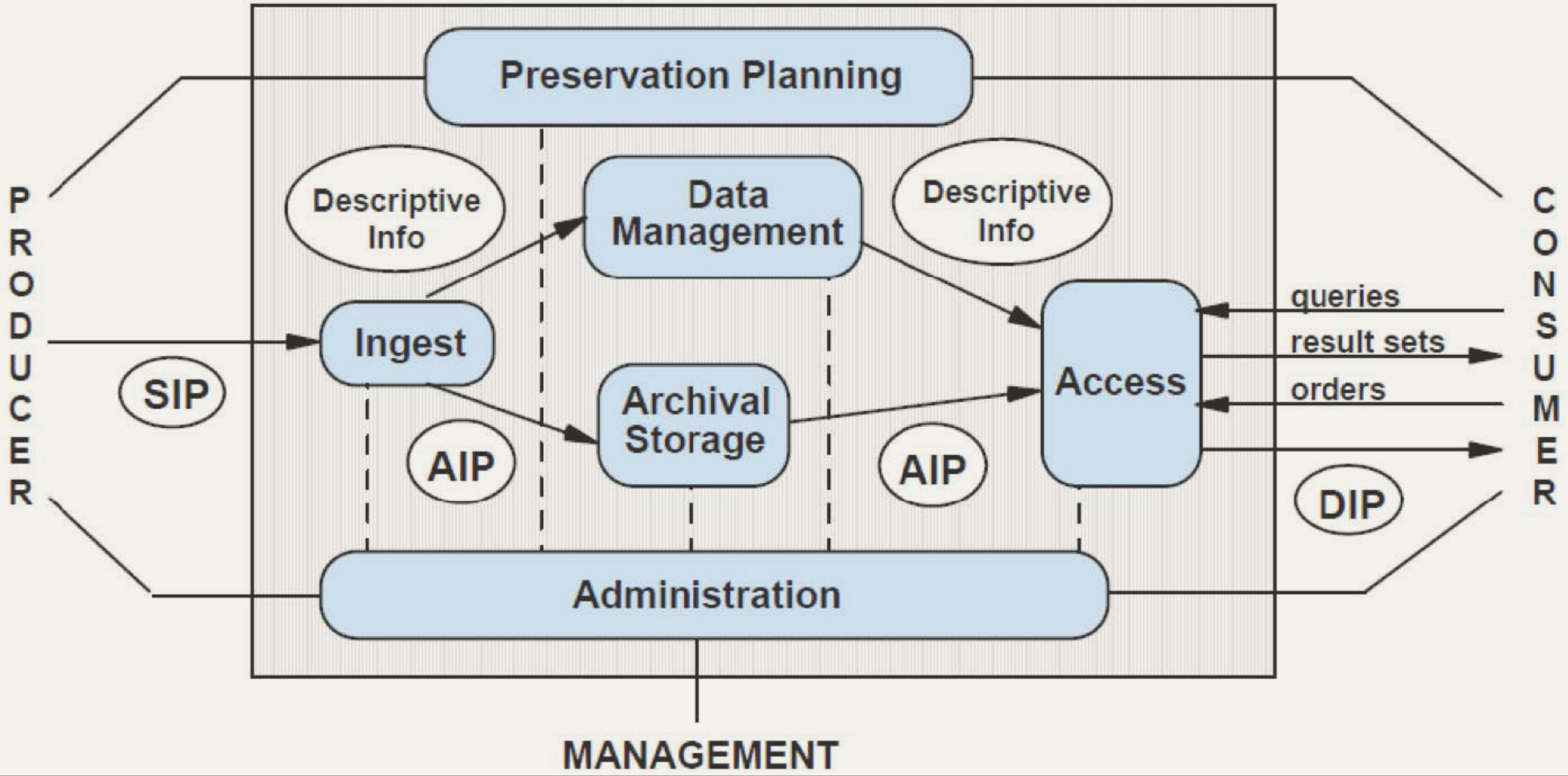

Preservation Planning
Descriptive Info
Data Management
Descriptive Info
PRODUCER
Ingest
SIP
Archival Storage
AIP
AIP
Access
queries
result sets
orders
DIP
CONSUMER
Administration
MANAGEMENT

DATA MODEL

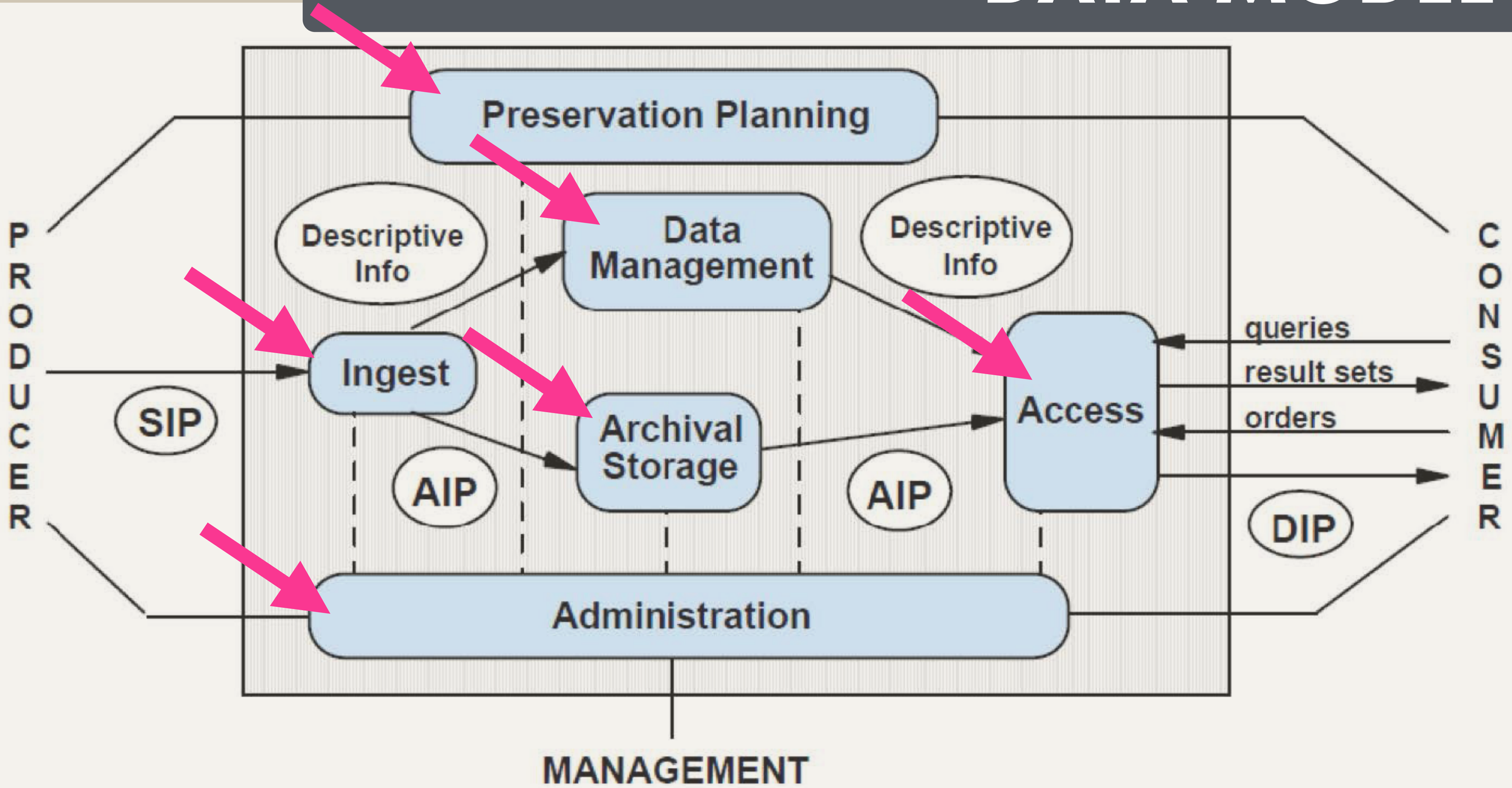


Six **FUNCTIONS** represented within the **DATA MODEL**...

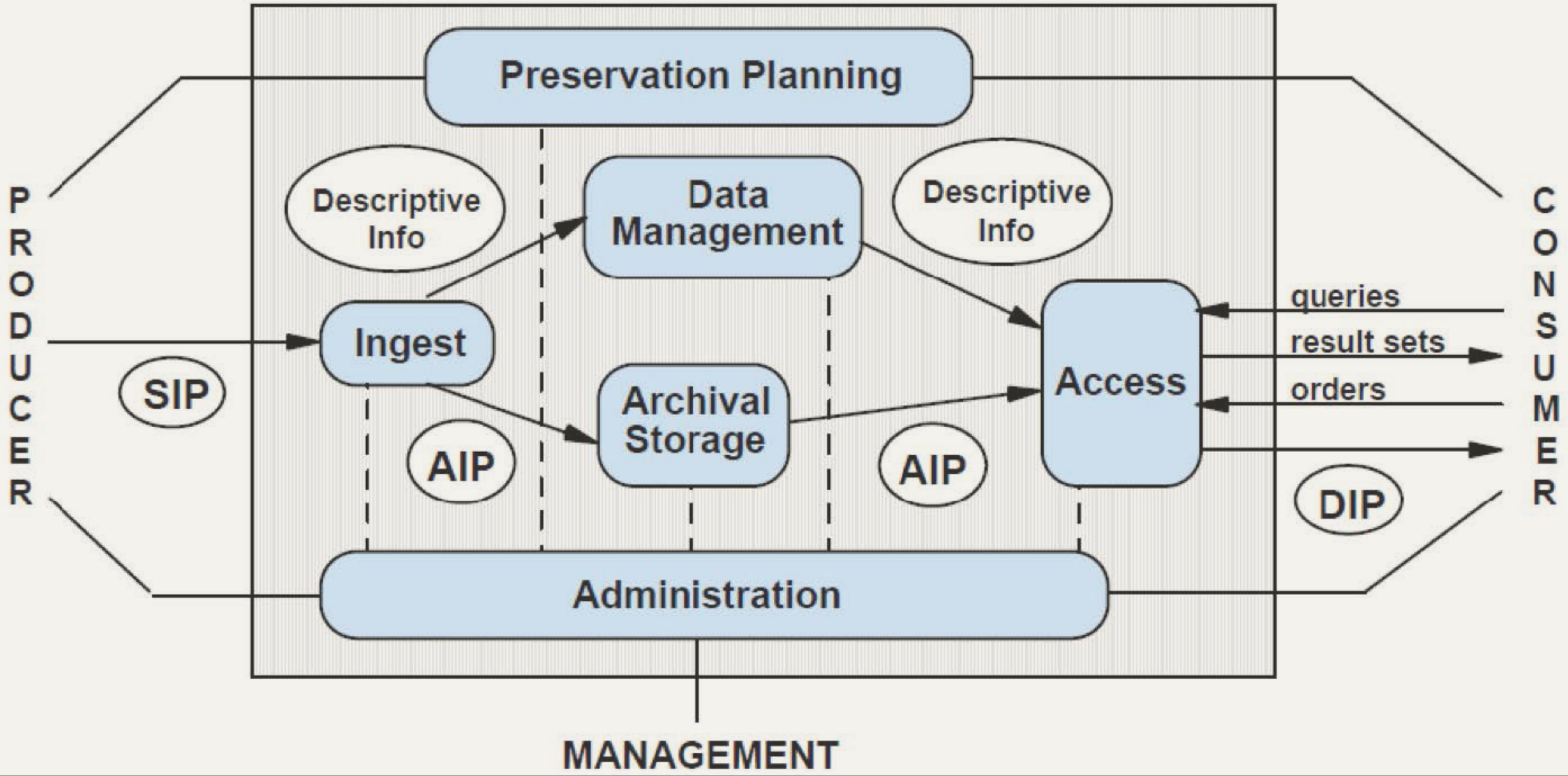
DATA MODEL


Preservation Planning
Descriptive Info
Data Management
Descriptive Info
PRODUCER
Ingest
SIP
Archival Storage
AIP
AIP
Access
queries
result sets
orders
DIP
CONSUMER
Administration
MANAGEMENT

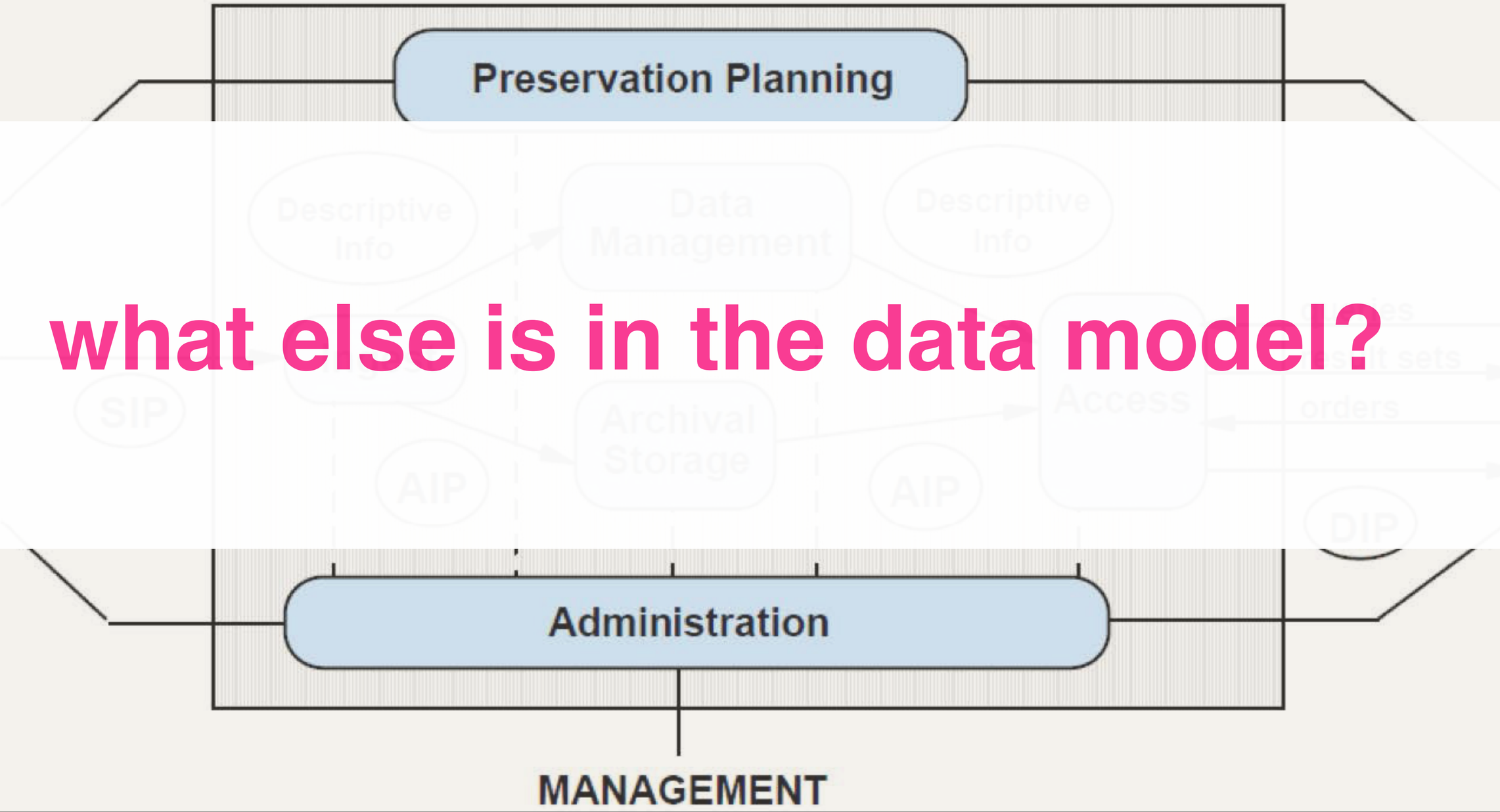
DATA MODEL


Preservation Planning
Descriptive Info
Data Management
Descriptive Info
PRODUCER
Ingest
SIP
Archival Storage
Access
queries
result sets
orders
CONSUMER
AIP
AIP
DIP
Administration
MANAGEMENT

DATA MODEL

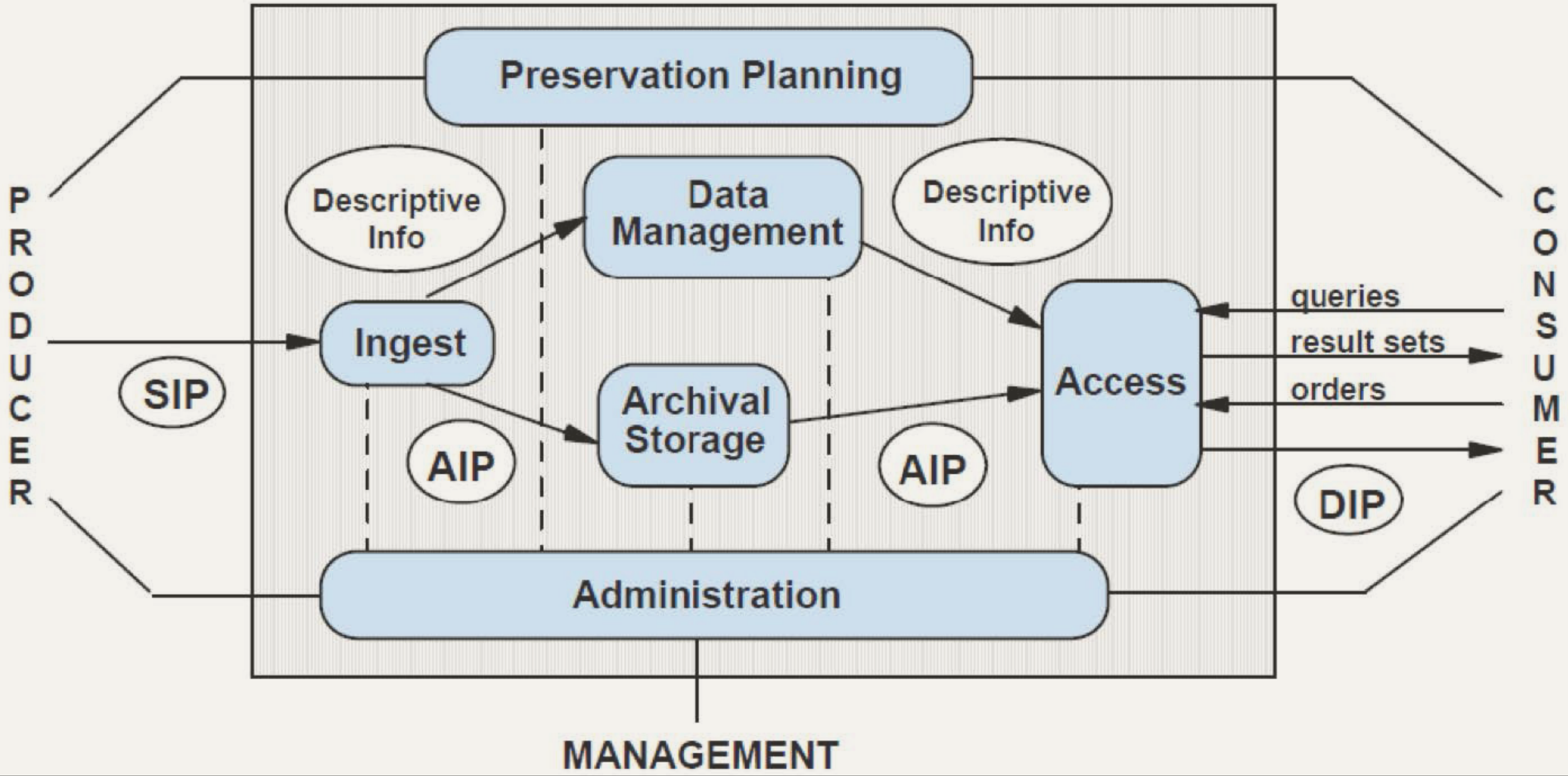

Preservation Planning
Descriptive Info
Data Management
Descriptive Info
PRODUCER
Ingest
SIP
Archival Storage
AIP
AIP
Access
queries
result sets
orders
DIP
CONSUMER
Administration
MANAGEMENT

DATA MODEL

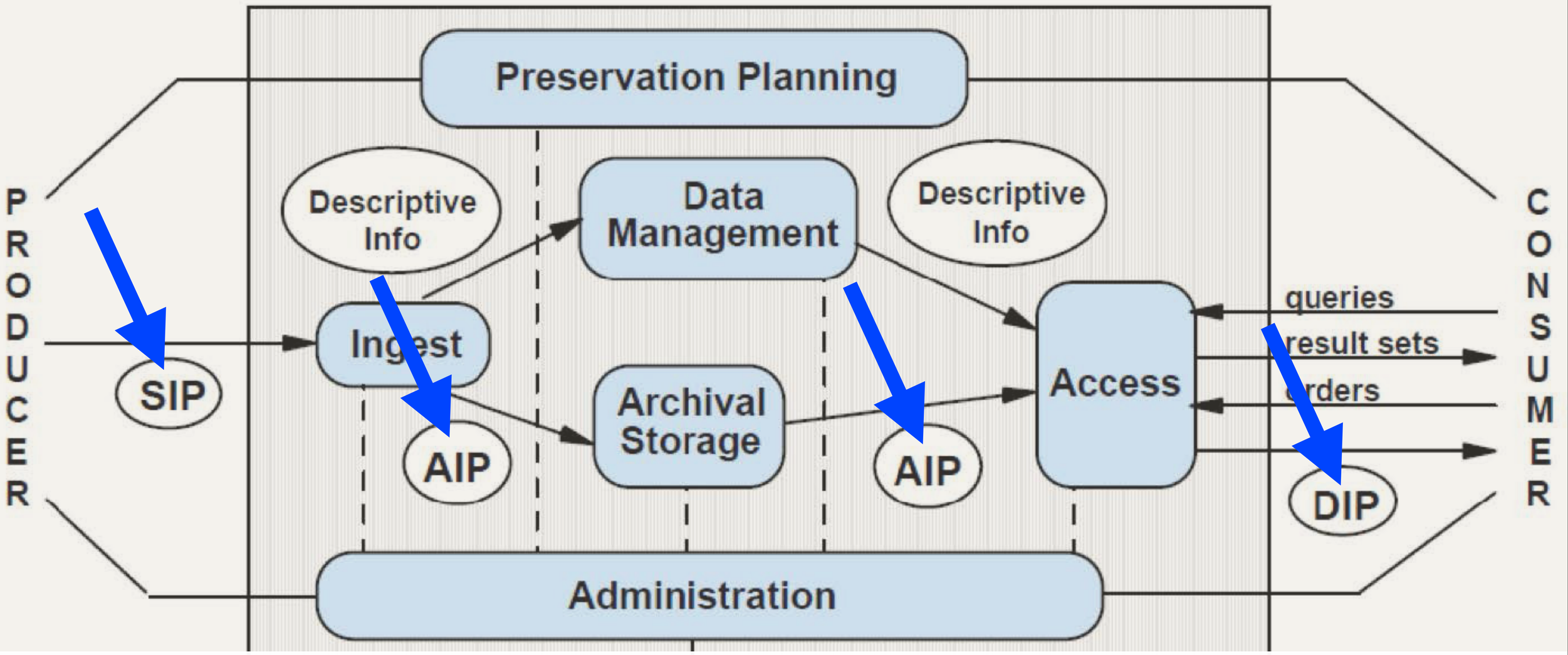


what else is in the data model?

DATA MODEL


Preservation Planning
Descriptive Info
Data Management
Descriptive Info
PRODUCER
Ingest
SIP
Archival Storage
AIP
AIP
Access
queries
result sets
orders
DIP
CONSUMER
Administration
MANAGEMENT

DATA MODEL



packages

DATA MODEL

GESPACKAGESPACKAGESPACKAGESPACKAGESPACKAGE

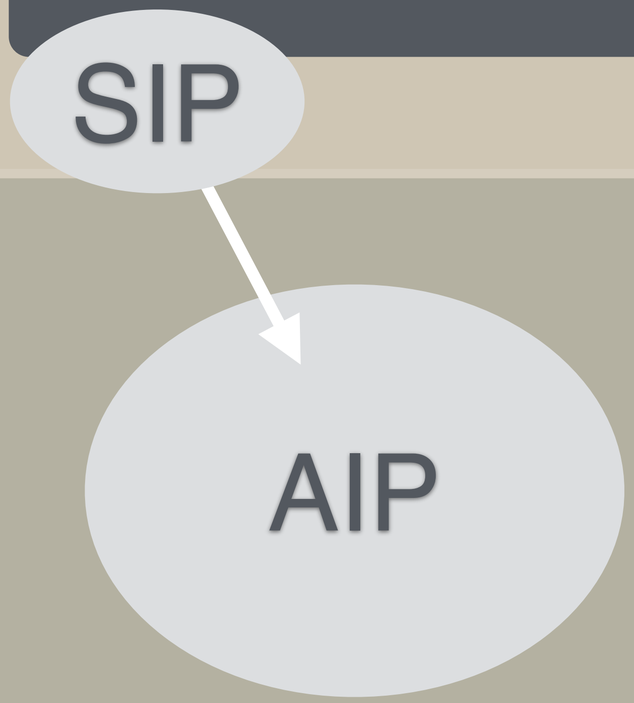
RAW CONTENT & METADATA

SUBMISSION ARCHIVAL DISSEMINATION

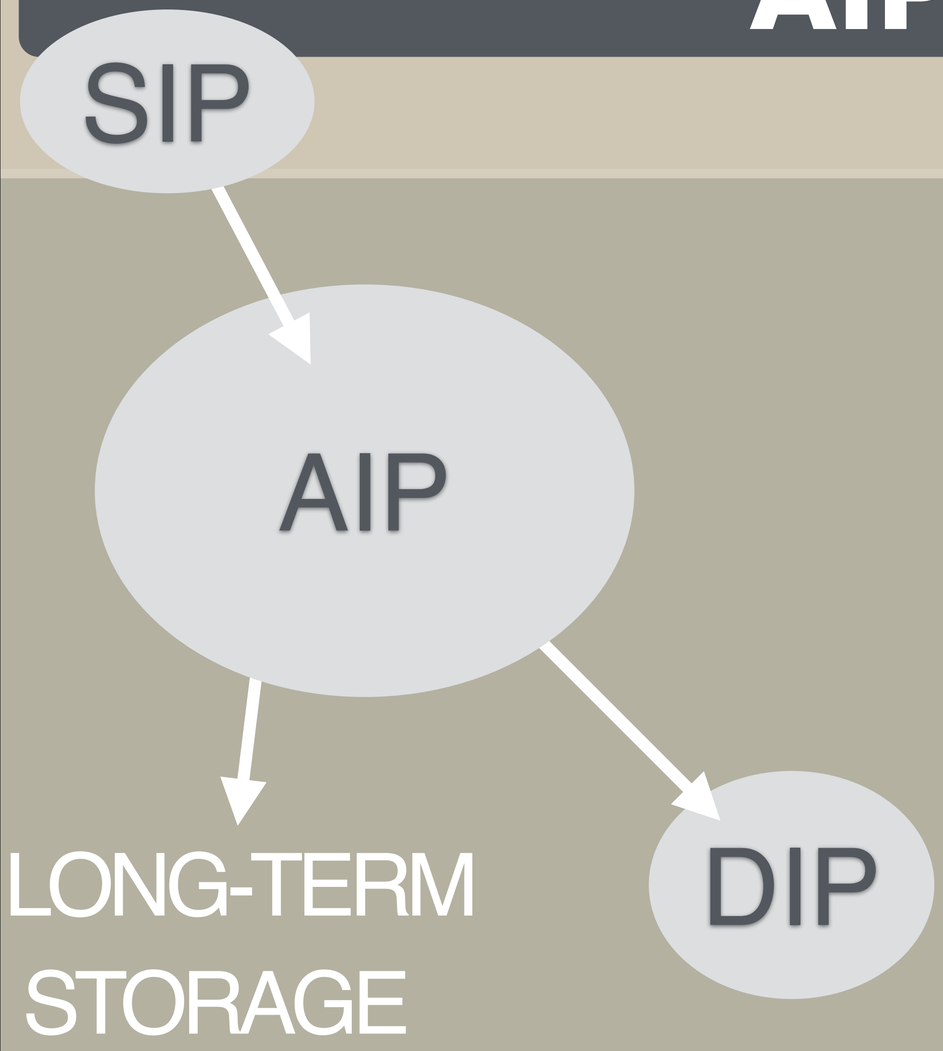
AIP: ARCHIVAL INFORMATION

SIP

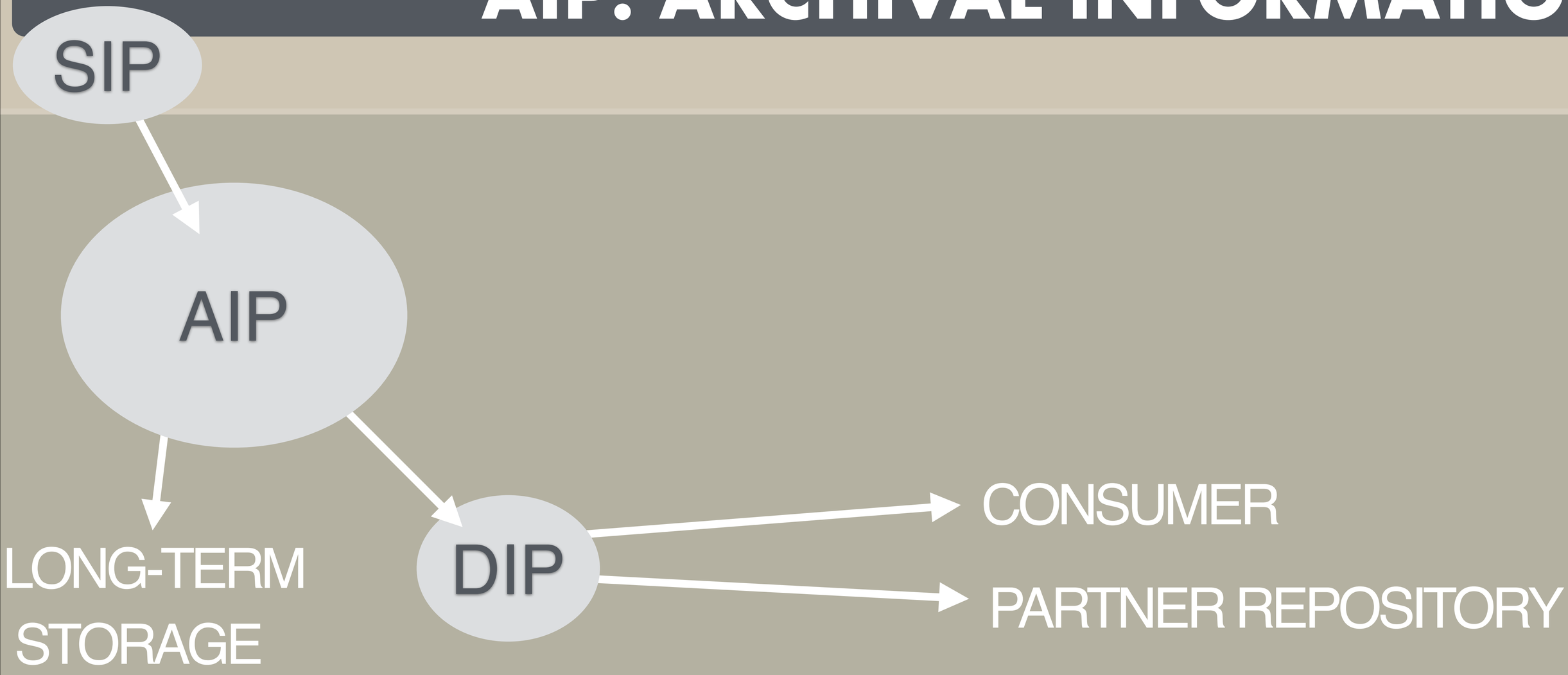
AIP: ARCHIVAL INFORMATION



AIP: ARCHIVAL INFORMATION



AIP: ARCHIVAL INFORMATION



PACKAGE CONTENTS

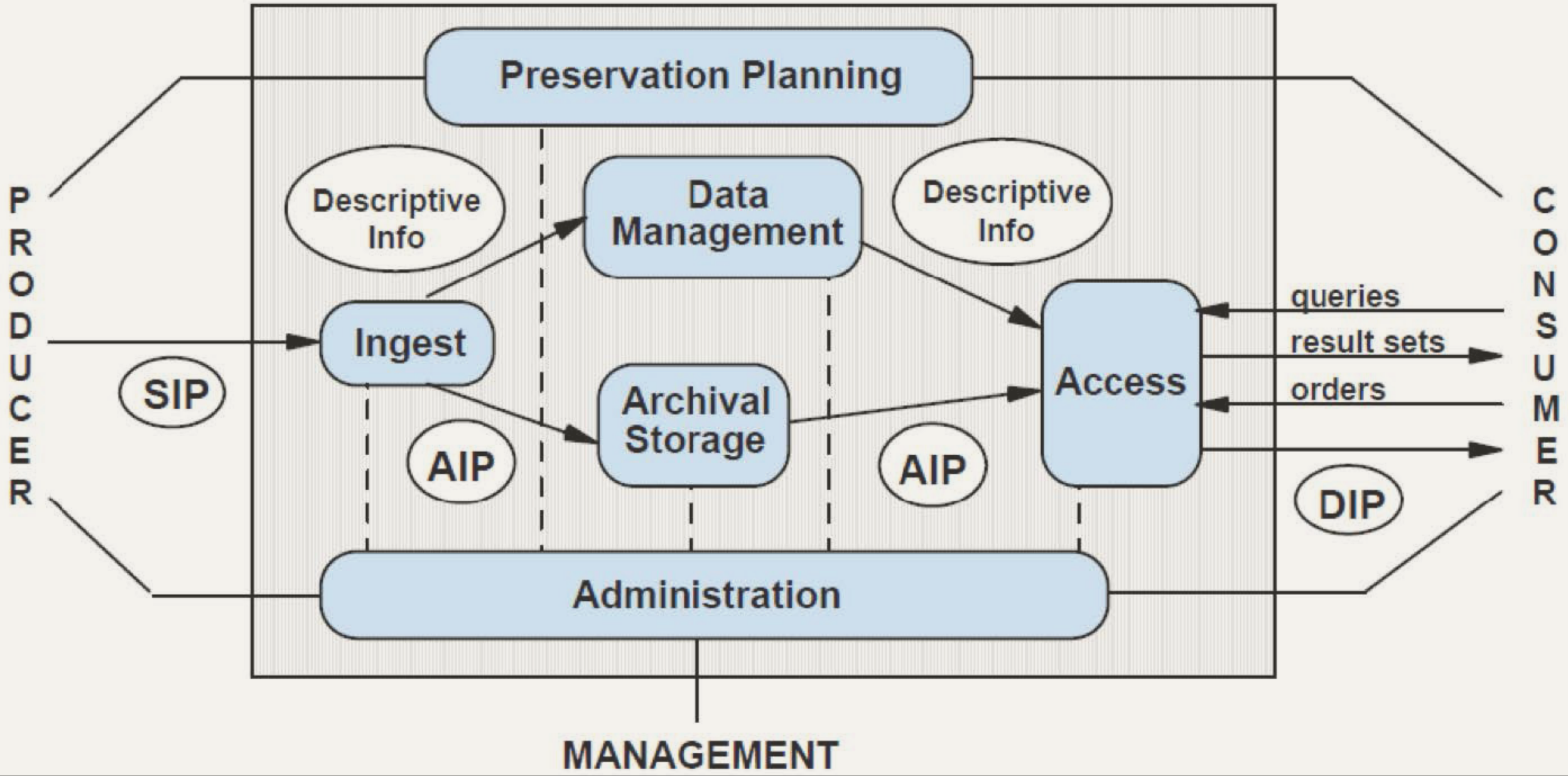
#IP

PACKAGE CONTENTS

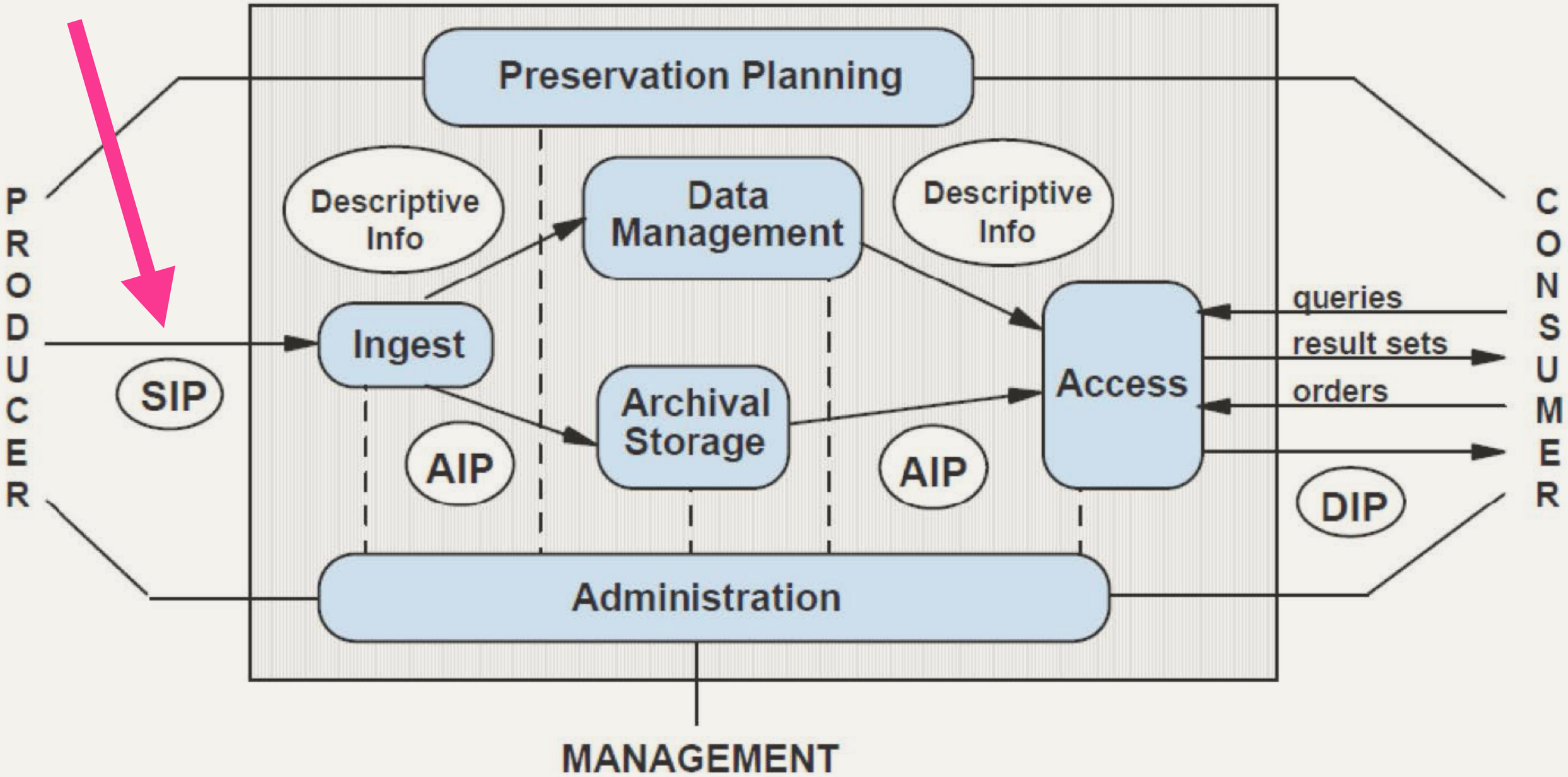
#IP

Data Object, Content Information (CI), Preservation Description Information (PDI), Package Information (PI), Descriptive Information (DI), Representation Information, Provenance Information, Reference Information, Context Information, Fixity Information, Rights Information

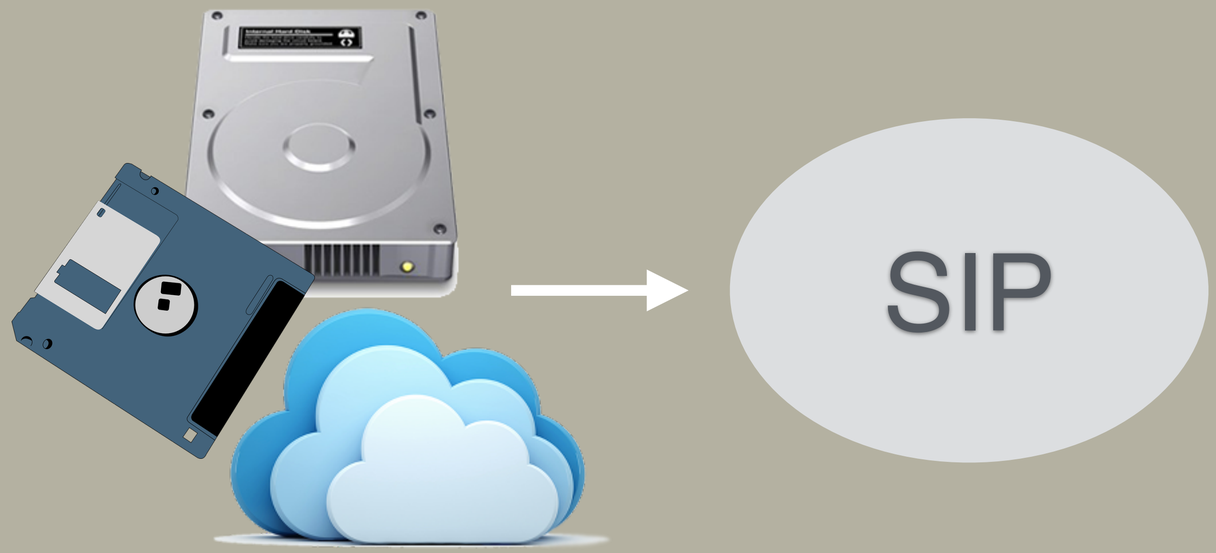
DATA MODEL


Preservation Planning
Descriptive Info
Data Management
Descriptive Info
PRODUCER
Ingest
SIP
Archival Storage
AIP
AIP
Access
queries
result sets
orders
DIP
CONSUMER
Administration
MANAGEMENT

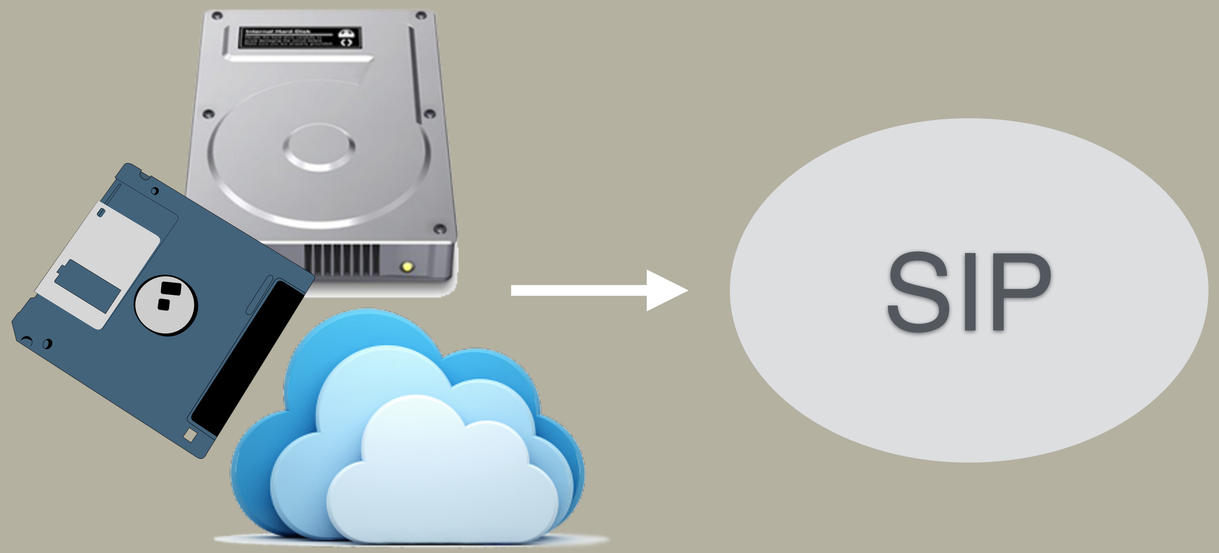
DATA MODEL


Preservation Planning
Descriptive Info
Data Management
Descriptive Info
PRODUCER
Ingest
SIP
Archival Storage
AIP
AIP
Access
queries
result sets
orders
DIP
CONSUMER
Administration
MANAGEMENT

SIP: SUBMISSION INFOMATION

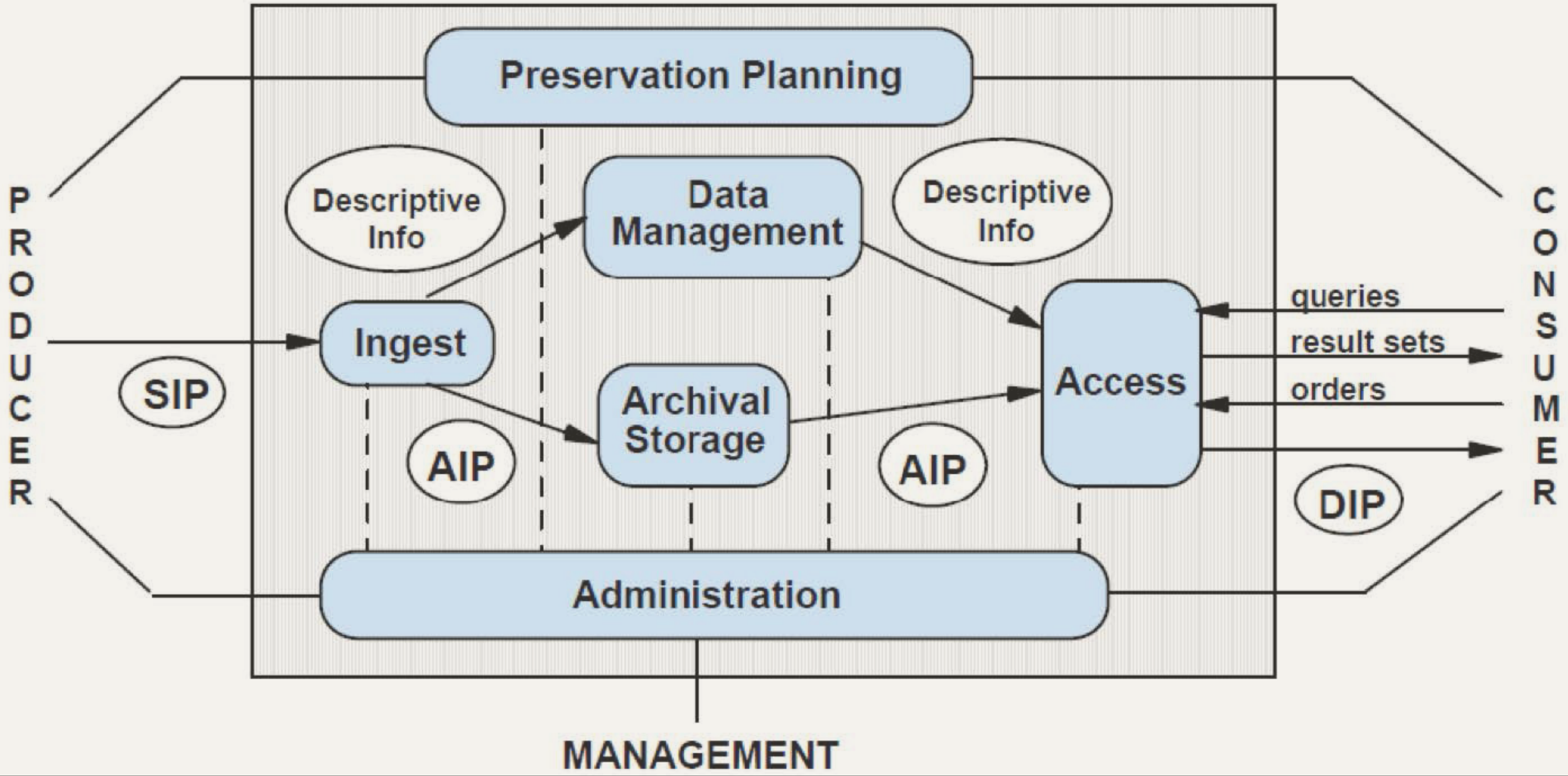


SIP: SUBMISSION INFOMATION

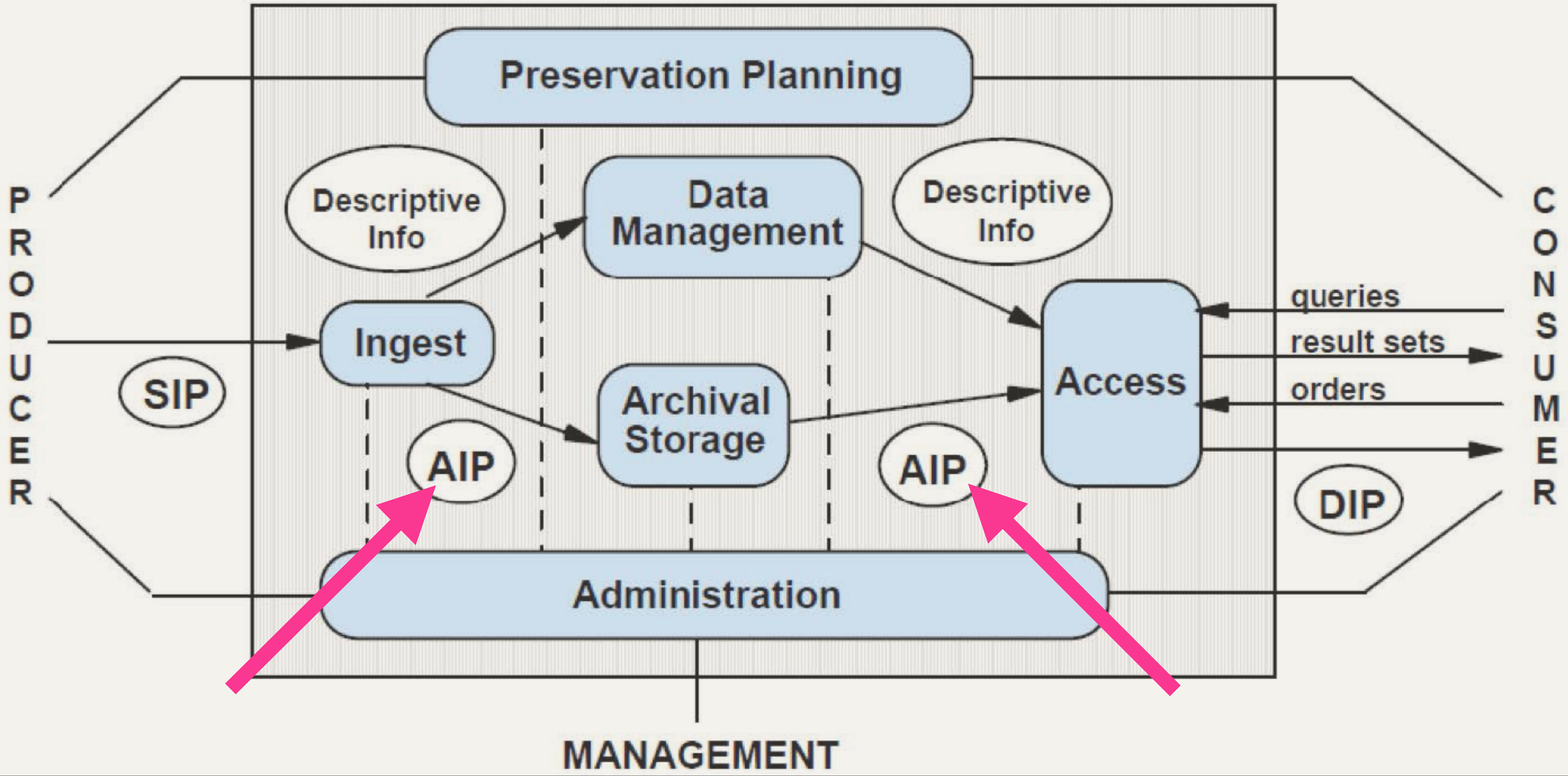


- Negotiate content with producers
- Submission agreement form (rights, info on how object will be treated in repository)
- Quality Assurance (checksums, etc.)
- Transfer logs (rsync)
- Repository ingest

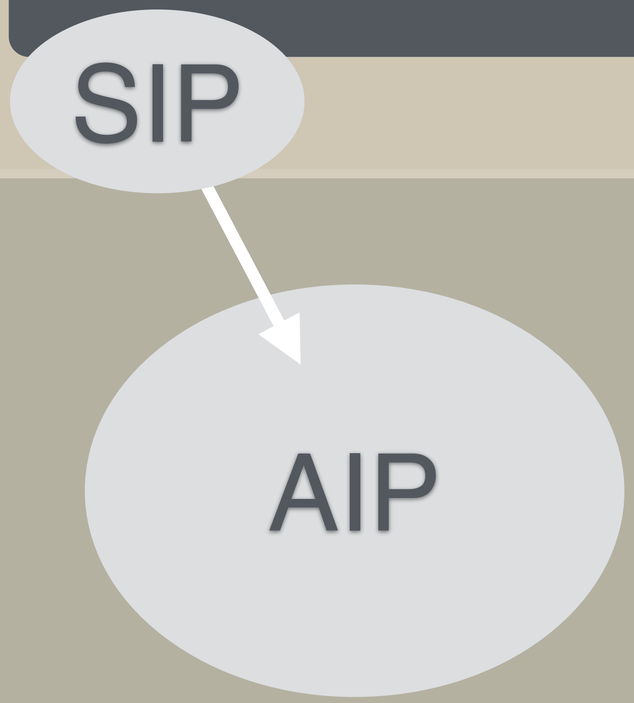
DATA MODEL


Preservation Planning
Descriptive Info
Data Management
Descriptive Info
PRODUCER
Ingest
SIP
Archival Storage
AIP
AIP
Access
queries
result sets
orders
DIP
CONSUMER
Administration
MANAGEMENT

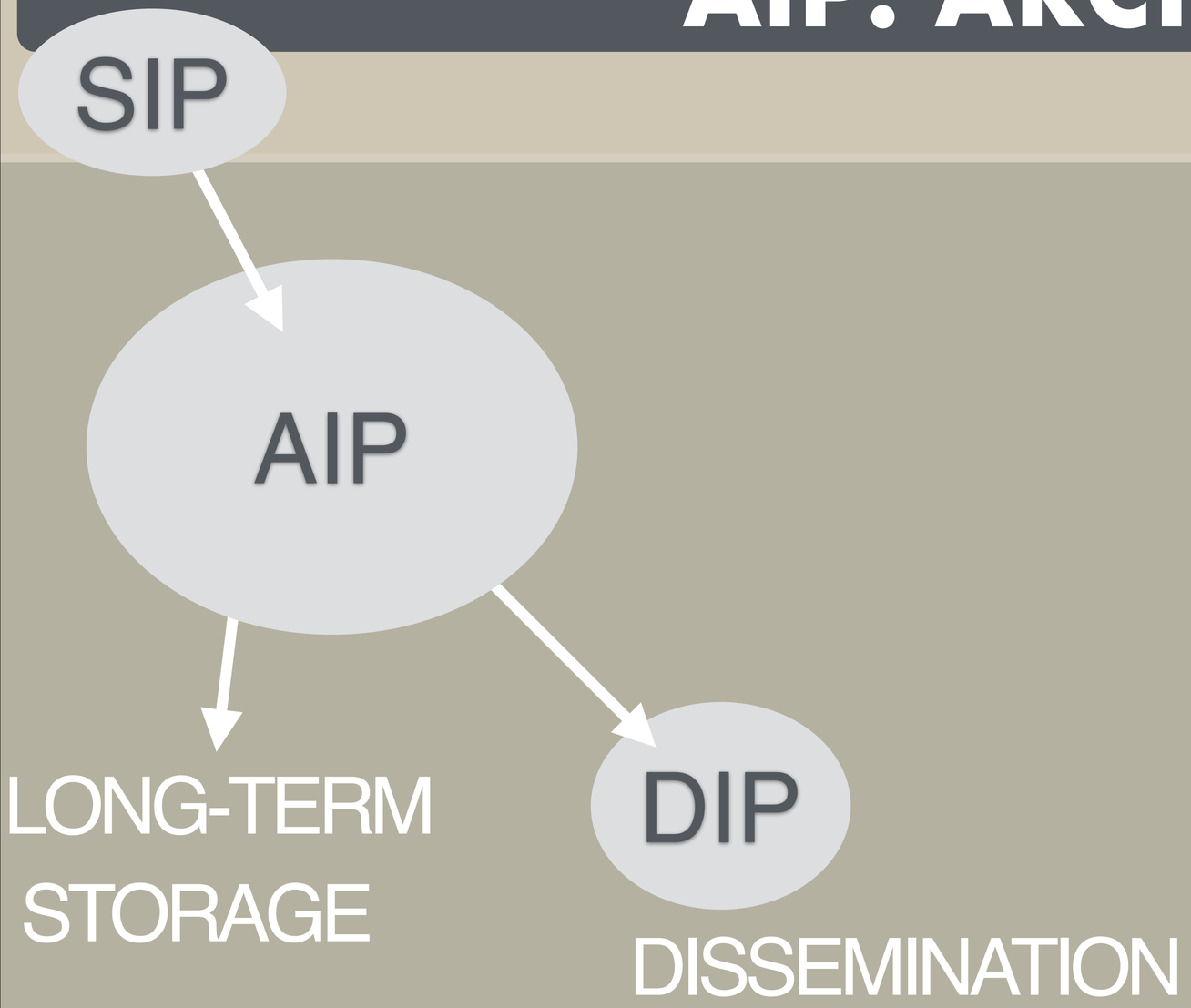
DATA MODEL


Preservation Planning
Descriptive Info
Data Management
Descriptive Info
PRODUCER
Ingest
SIP
Archival Storage
Access
queries
result sets
orders
CONSUMER
AIP
AIP
DIP
Administration
MANAGEMENT

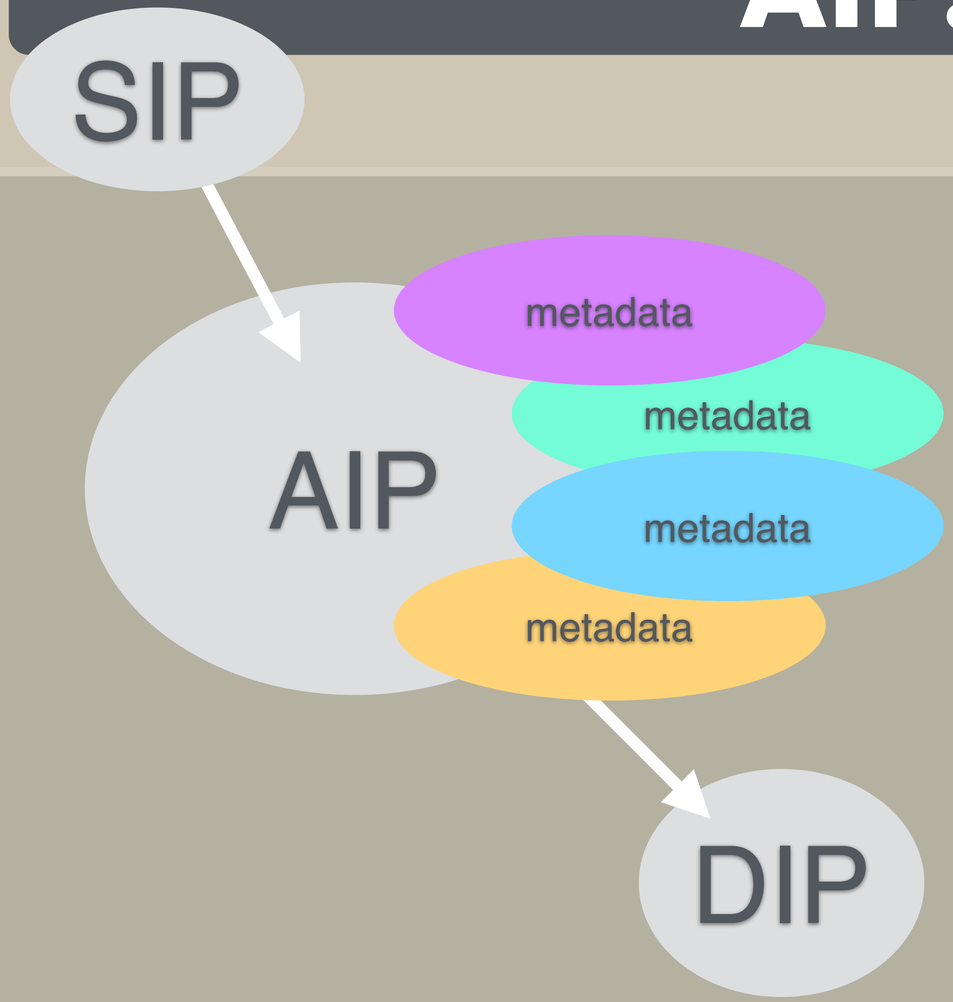
AIP: ARCHIVAL INFORMATION



AIP: ARCHIVAL INFORMATION

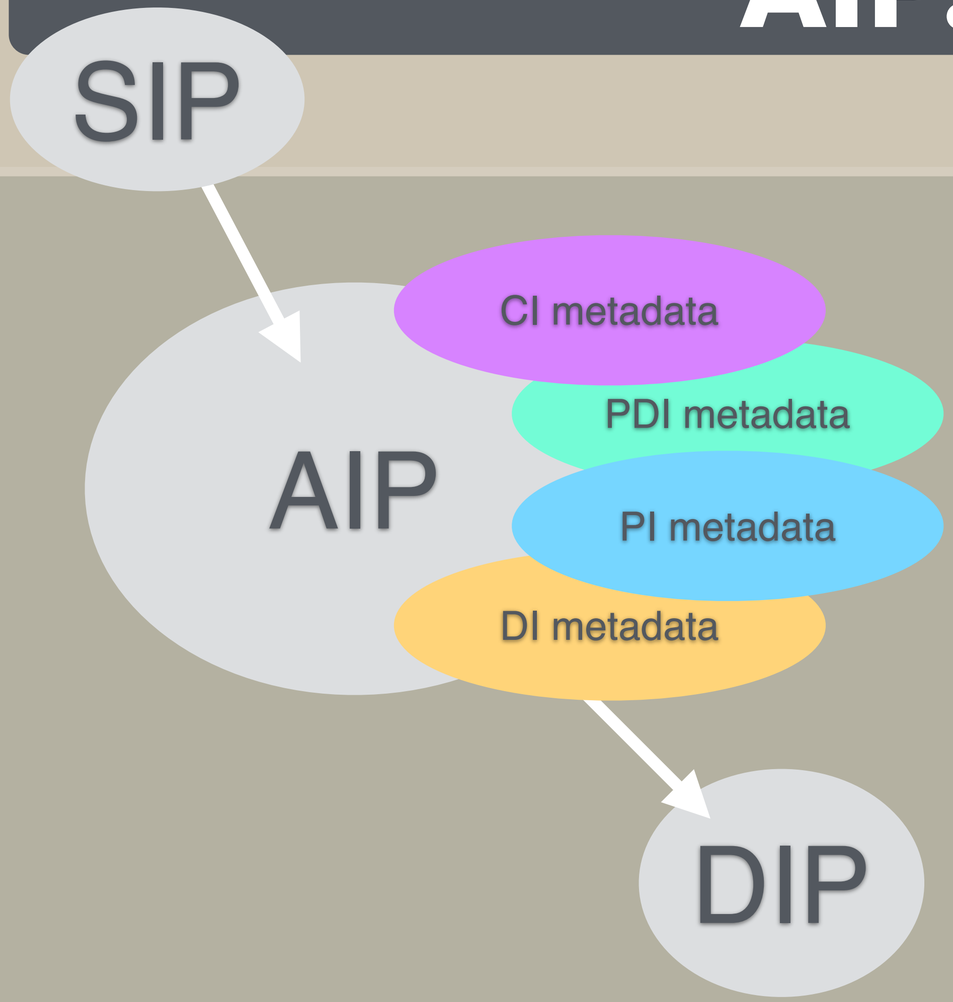


AIP: ARCHIVAL INFORMATION



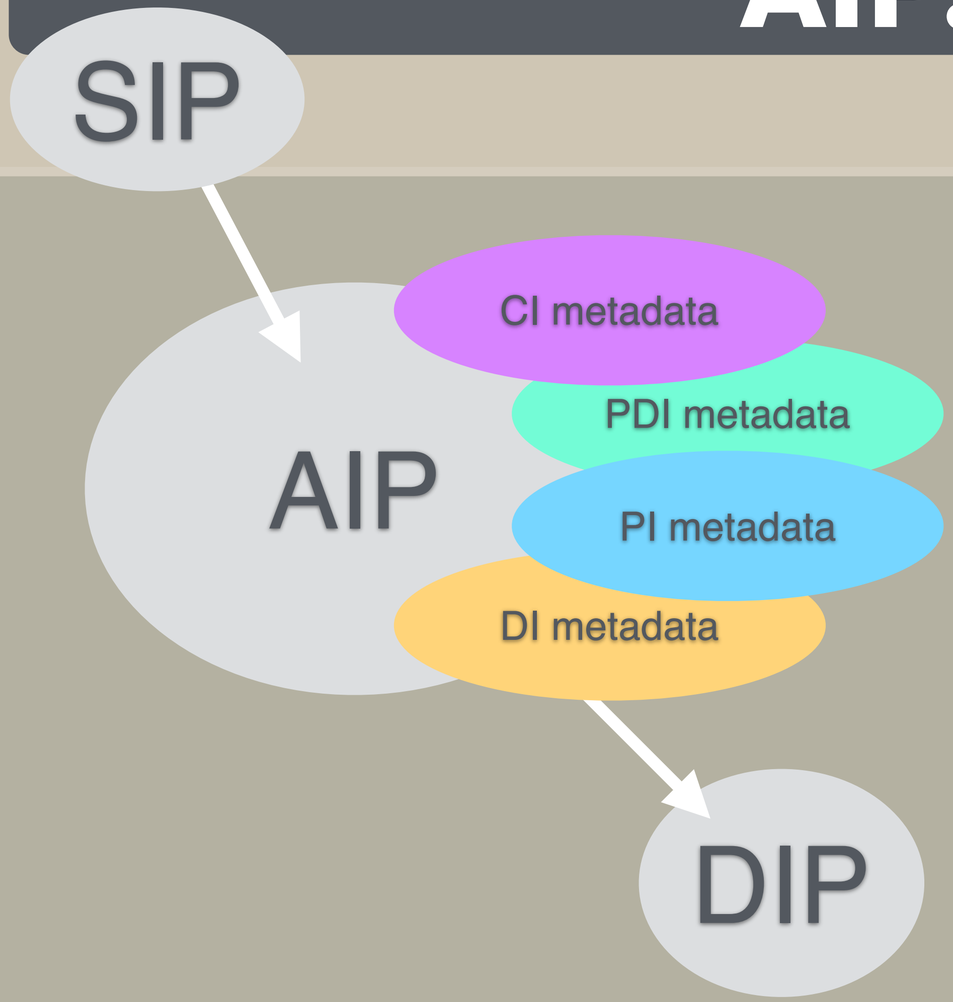
AIP Metadata

AIP: ARCHIVAL INFORMATION

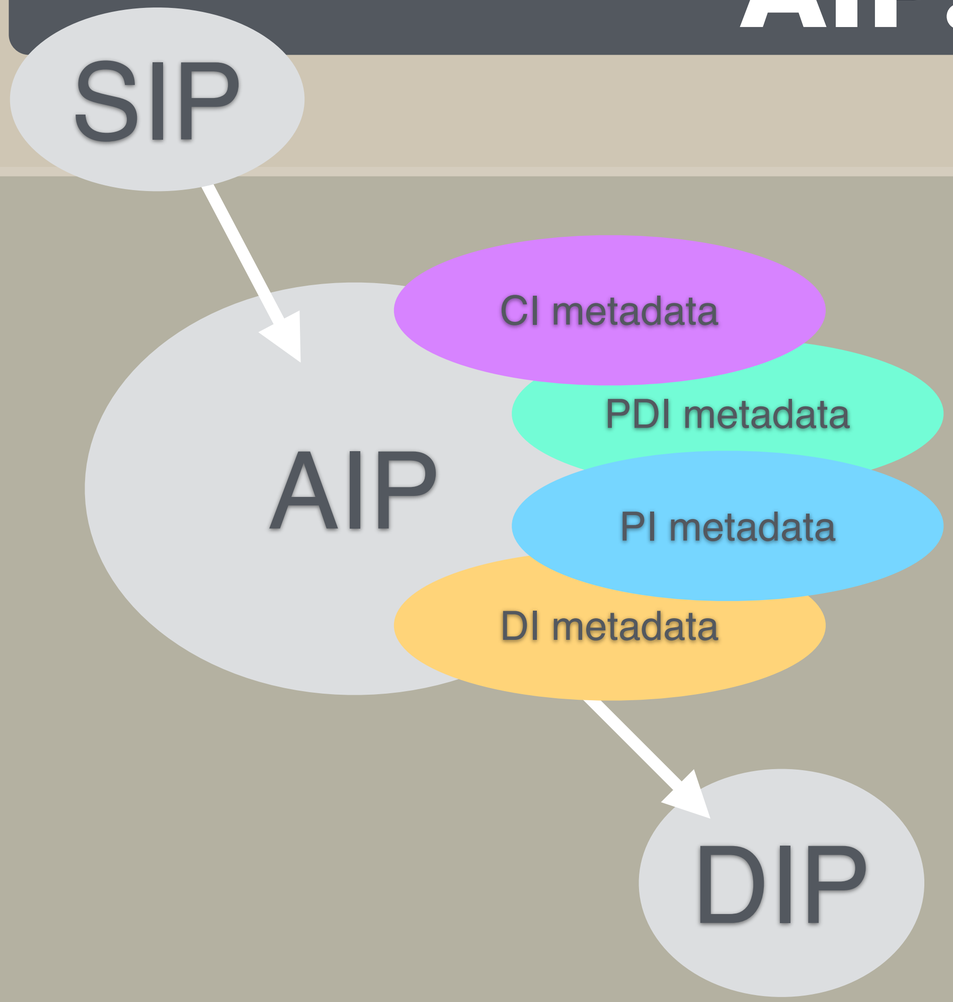


AIP Metadata: Types

AIP: ARCHIVAL INFORMATION

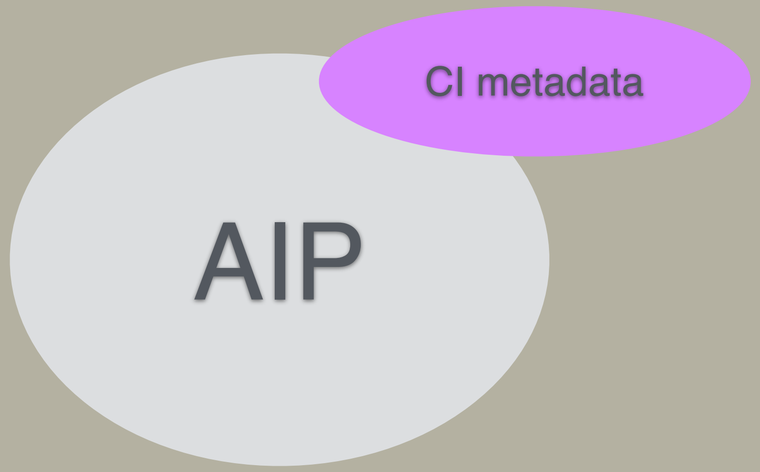


AIP: ARCHIVAL INFORMATION



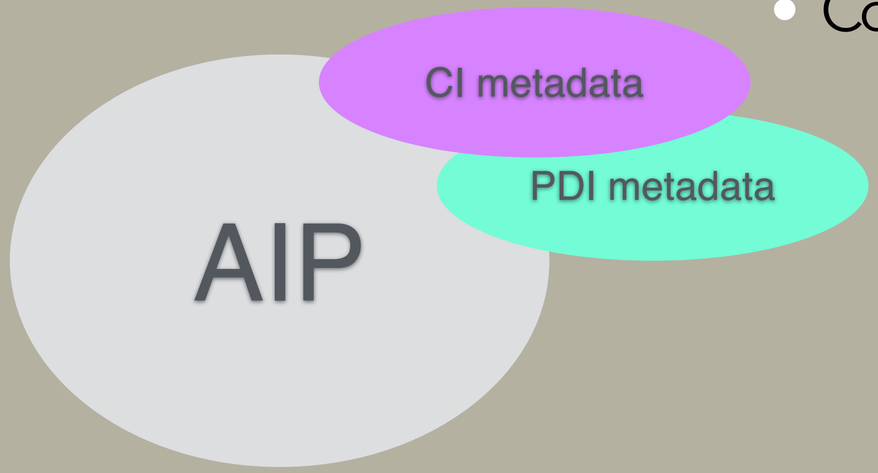
- Content Information (CI)
- Preservation Description Information (PDI)
- Packaging Information (PI)
- Descriptive Information (DI)

AIP: ARCHIVAL INFORMATION



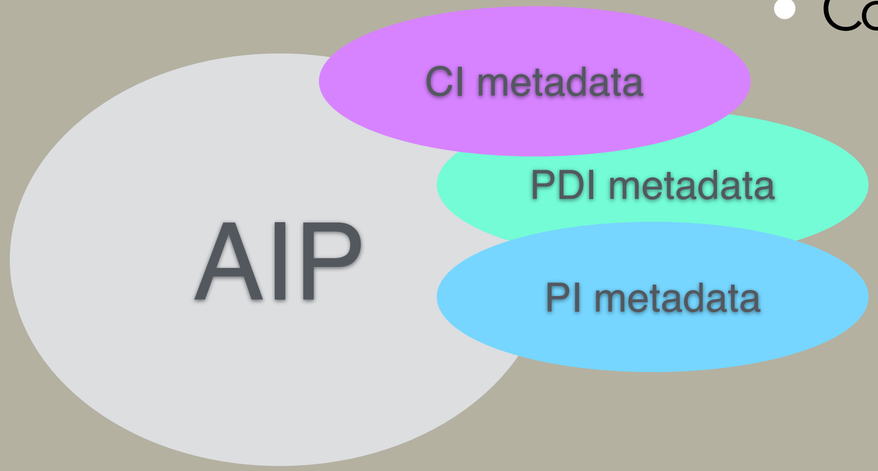
- Content Information (CI):
  - Data Object: The actual data
  - Representation Information: Render Instructions (JHOVE)

AIP: ARCHIVAL INFORMATION



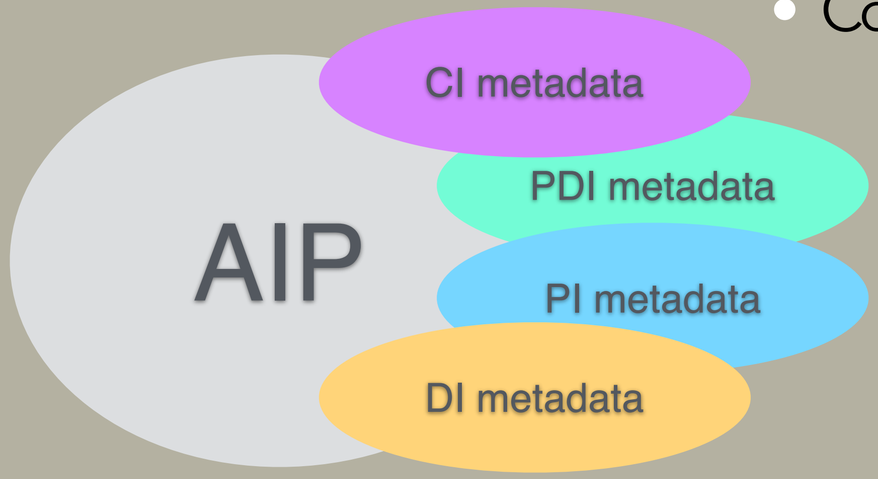
- Content Information (CI):
  - Data Object: The actual data
  - Representation Information: Render Instructions (JHOVE)
- Preservation Description Information (PDI):
  - Rights Information: Copyright
  - Provenance Information
  - Reference Information: Unique IDs, ISBN, etc.
  - Fixity Information
  - Context Information: Structure, Relationships

AIP: ARCHIVAL INFORMATION



- Content Information (CI):
  - Data Object: The actual data
  - Representation Information: Render Instructions (JHOVE)
- Preservation Description Information (PDI):
  - Rights Information: Copyright
  - Provenance Information
  - Reference Information: Unique IDs, ISBN, etc.
  - Fixity Information
  - Context Information: Structure, Relationships
- Package Information (PI):
  - "I am an object in a package!"

AIP: ARCHIVAL INFORMATION



- Content Information (CI):
  - Data Object: The actual data
  - Representation Information: Render Instructions (JHOVE)
- Preservation Description Information (PDI):
  - Rights Information: Copyright
  - Provenance Information
  - Reference Information: Unique IDs, ISBN, etc.
  - Fixity Information
  - Context Information: Structure, Relationships
- Package Information (PI):
  - "I am an object in a package!"
- Descriptive Information (DI):
  - Package description for discovery

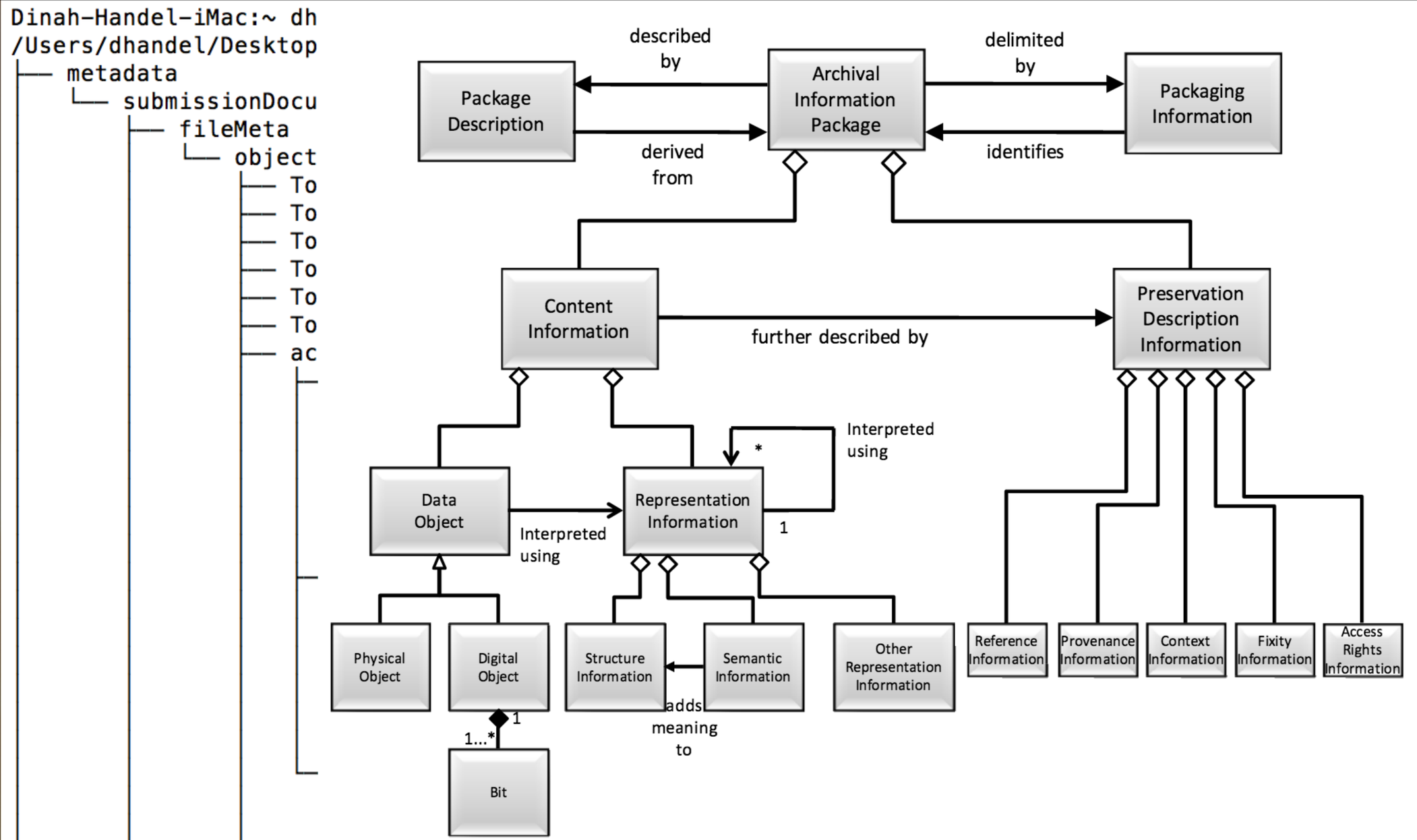


Figure 4-18: Archival Information Package (Detailed View)

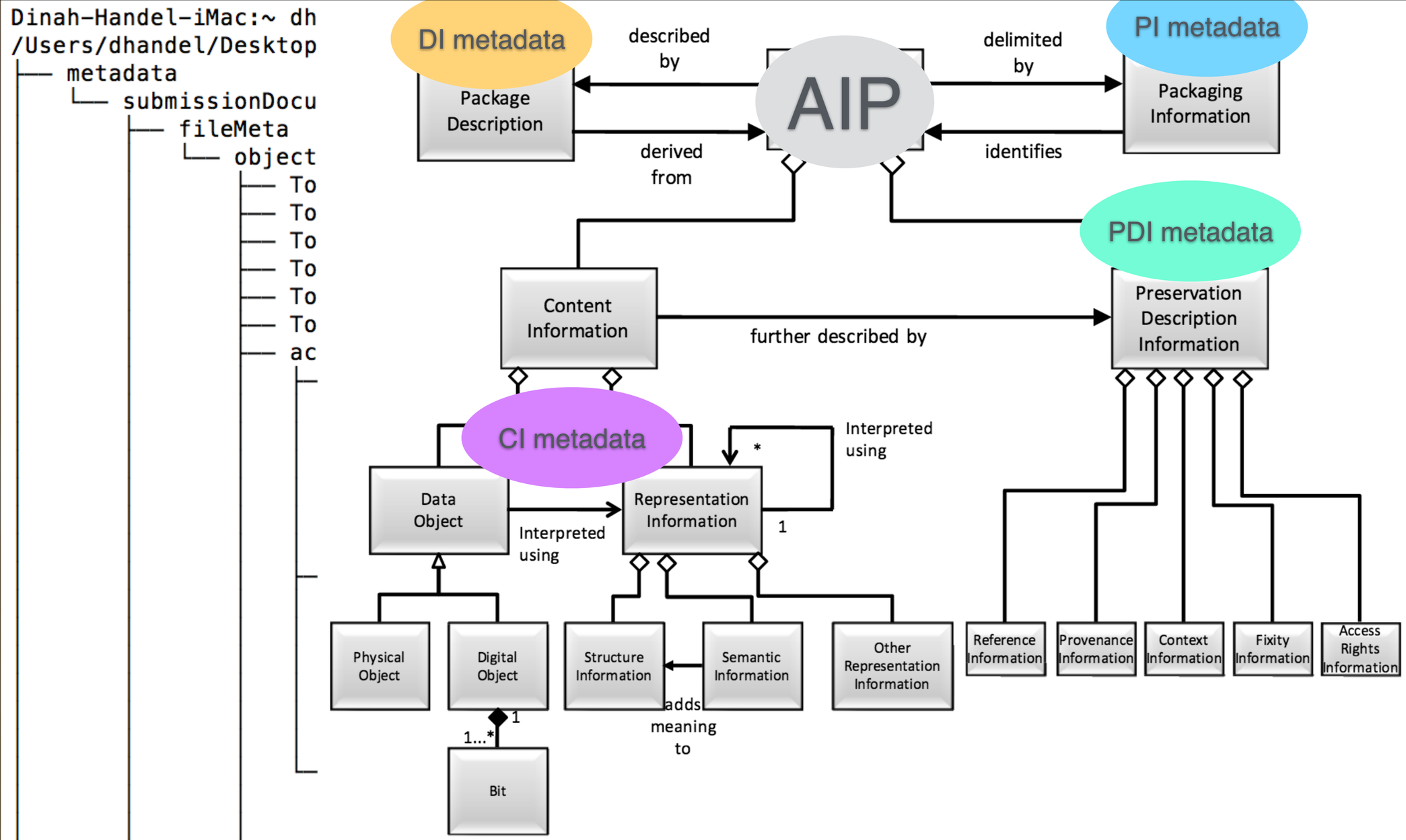
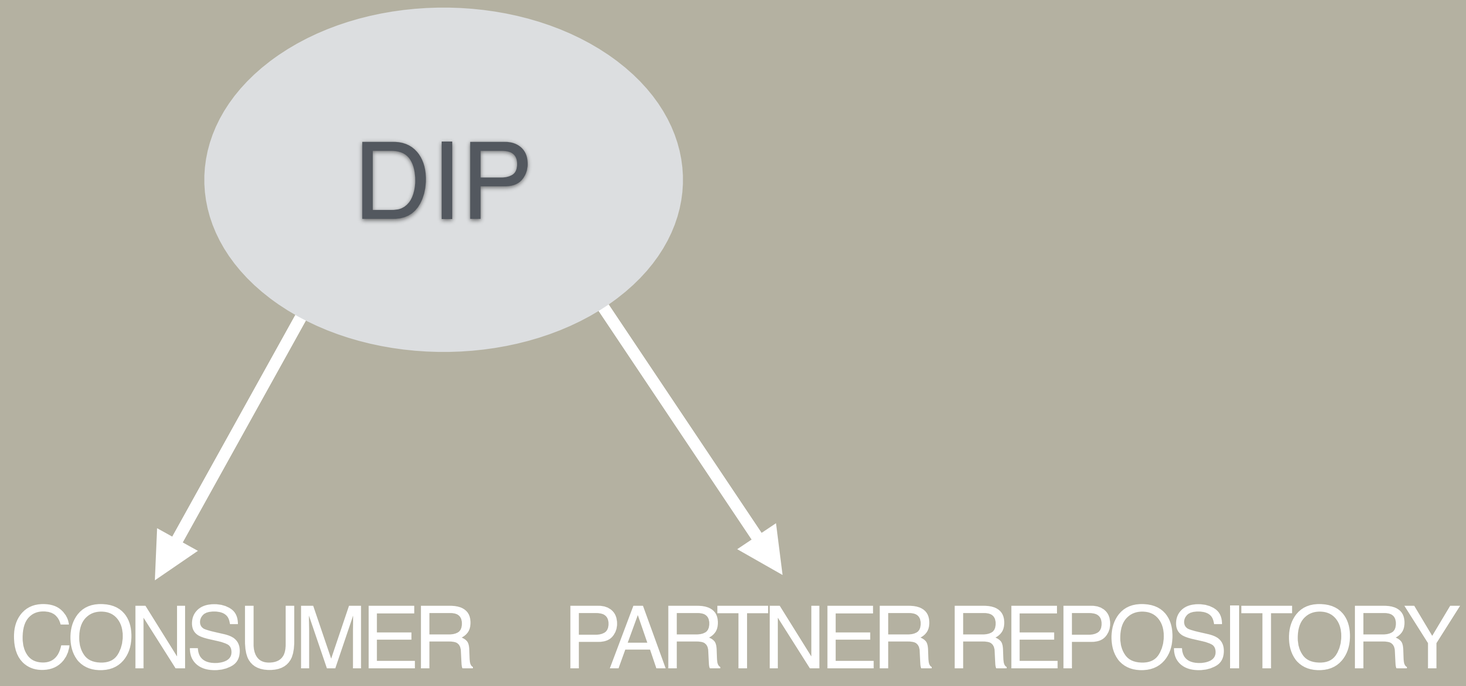


Figure 4-18: Archival Information Package (Detailed View)

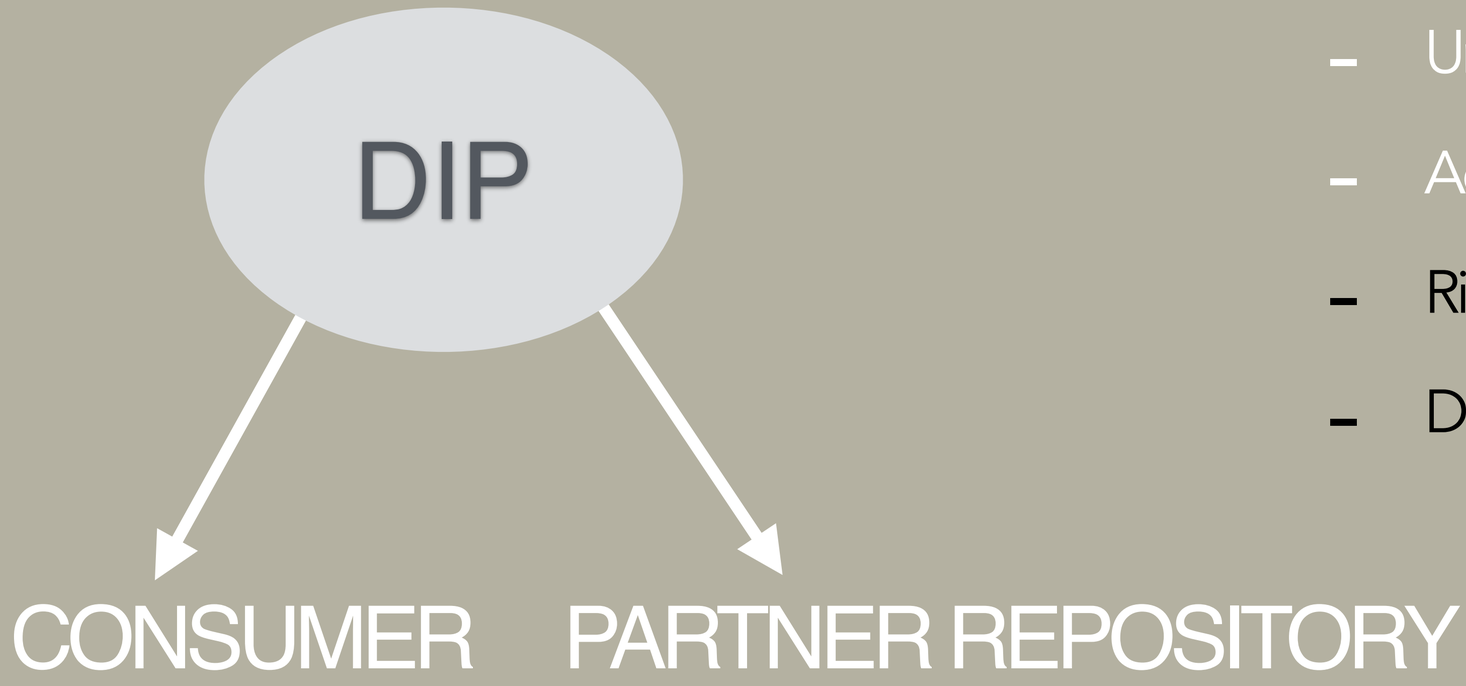
DIP: DISSEMINATION INFORMATION

DIP

DIP: DISSEMINATION INFORMATION



DIP: DISSEMINATION INFORMATION



- Understandable by consumer
- Access copies
- Rights Information
- Descriptive Information

the end.