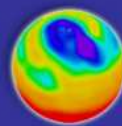




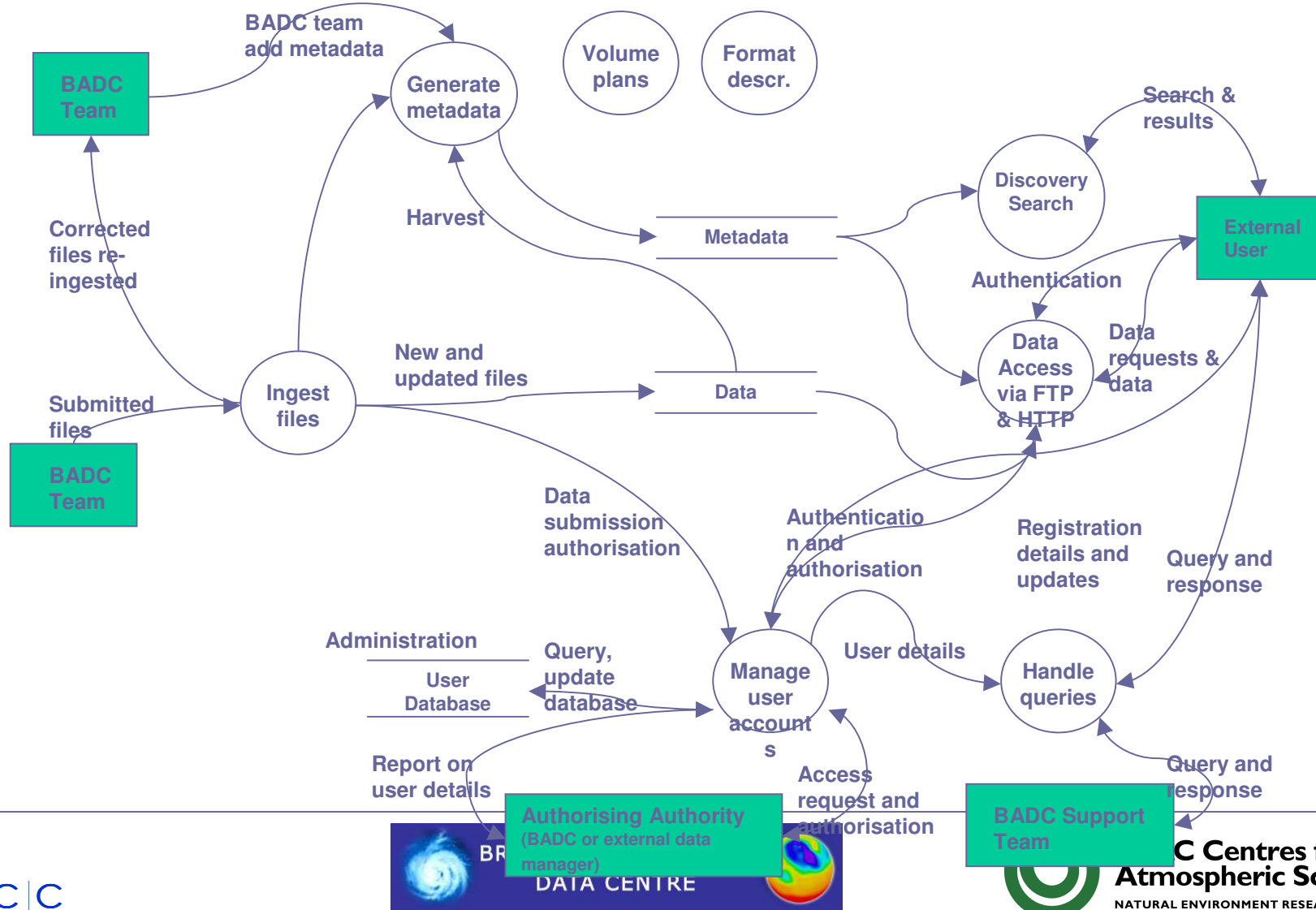
Applying the OAIS standard to CCLRC's British Atmospheric Data Centre and the Atlas Petabyte Storage Service

Corney, D.R., De Vere, M., Folkes, T., **Giaretta, D.**,
Kleese van Dam, K., Lawrence, B. N., Pepler, S.J.,
Strong, B

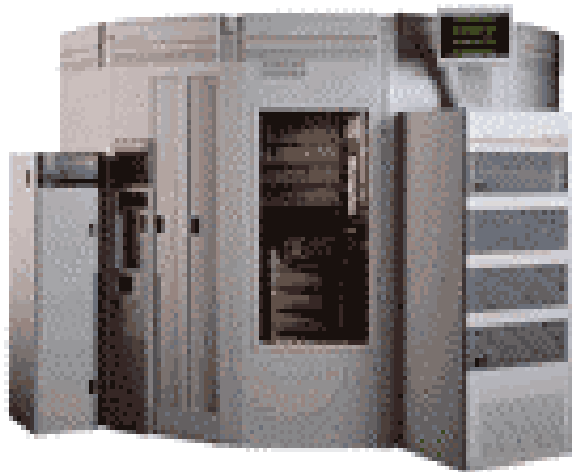


- The OAIS Reference Model is an important international standard for archive systems
- British Atmospheric Data Centre (BADC) is examining its use of the Atlas Petabyte Store (APS) as its long term storage system
- This presentation compares the BADC/APS system to OAIS
- Context:
 - Looking at Certification of BADC and APS
 - CCLRC as member of Digital Curation Centre (DCC)

Functional Diagram of BADC/APS



Atlas Petabyte Store

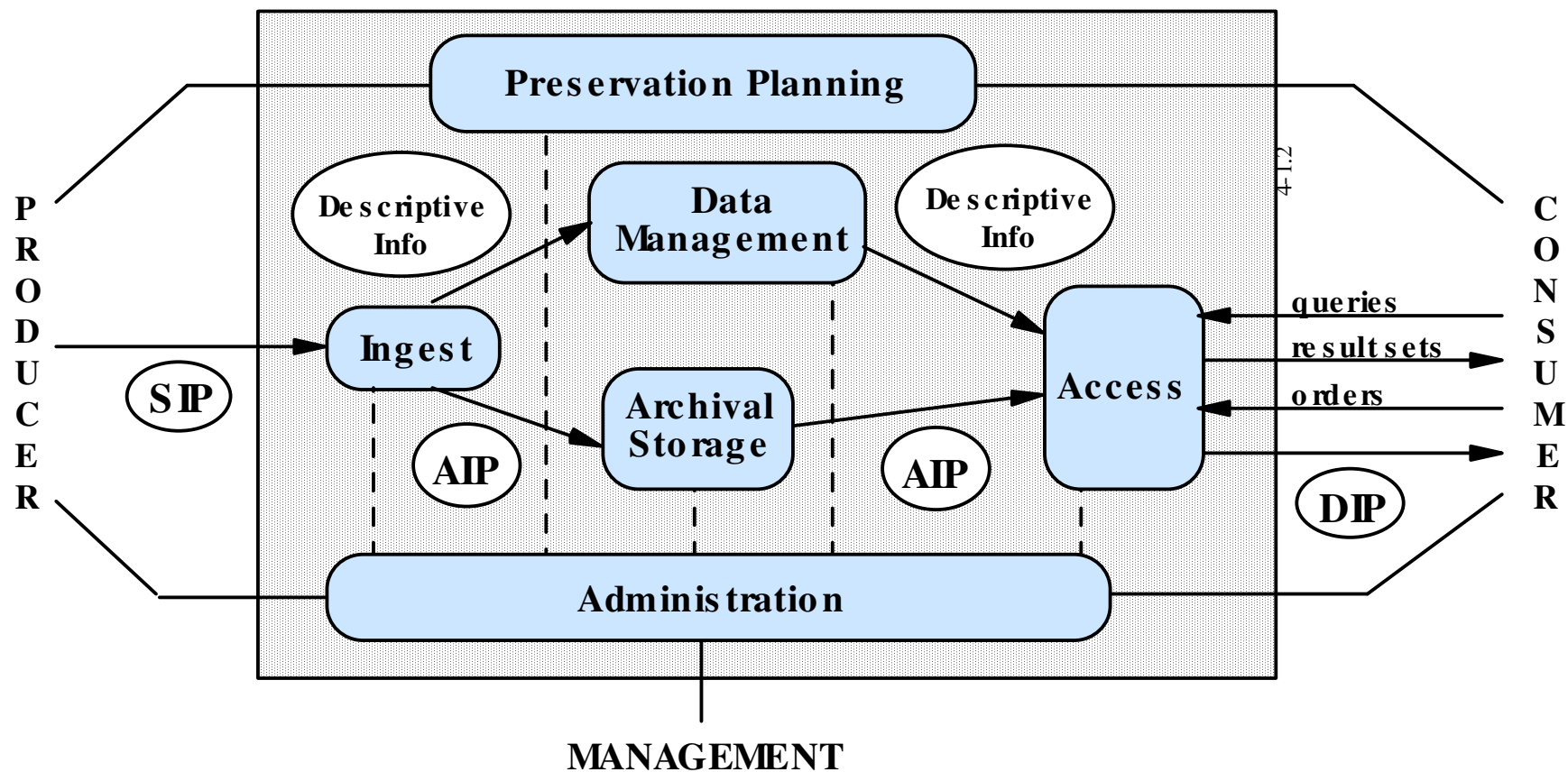


- On-line, nominal capacity of 1 Petabyte
- Based on an STK 9930 (PowderHorn) tape robot.
- The ADS team recently migrated from IBM 3590 (10GB) tape drives to STK 9940B (200GB) drives.
- CCLRC have written a custom SRB driver for this for CMS

OAIS Reference Model (ISO 14721)

- Open Archival Information Systems (OAIS)
- Reference Model
- Describes:
 - Functional Model
 - Information Model
 - Detailed functional description
 - Mandatory responsibilities
 -

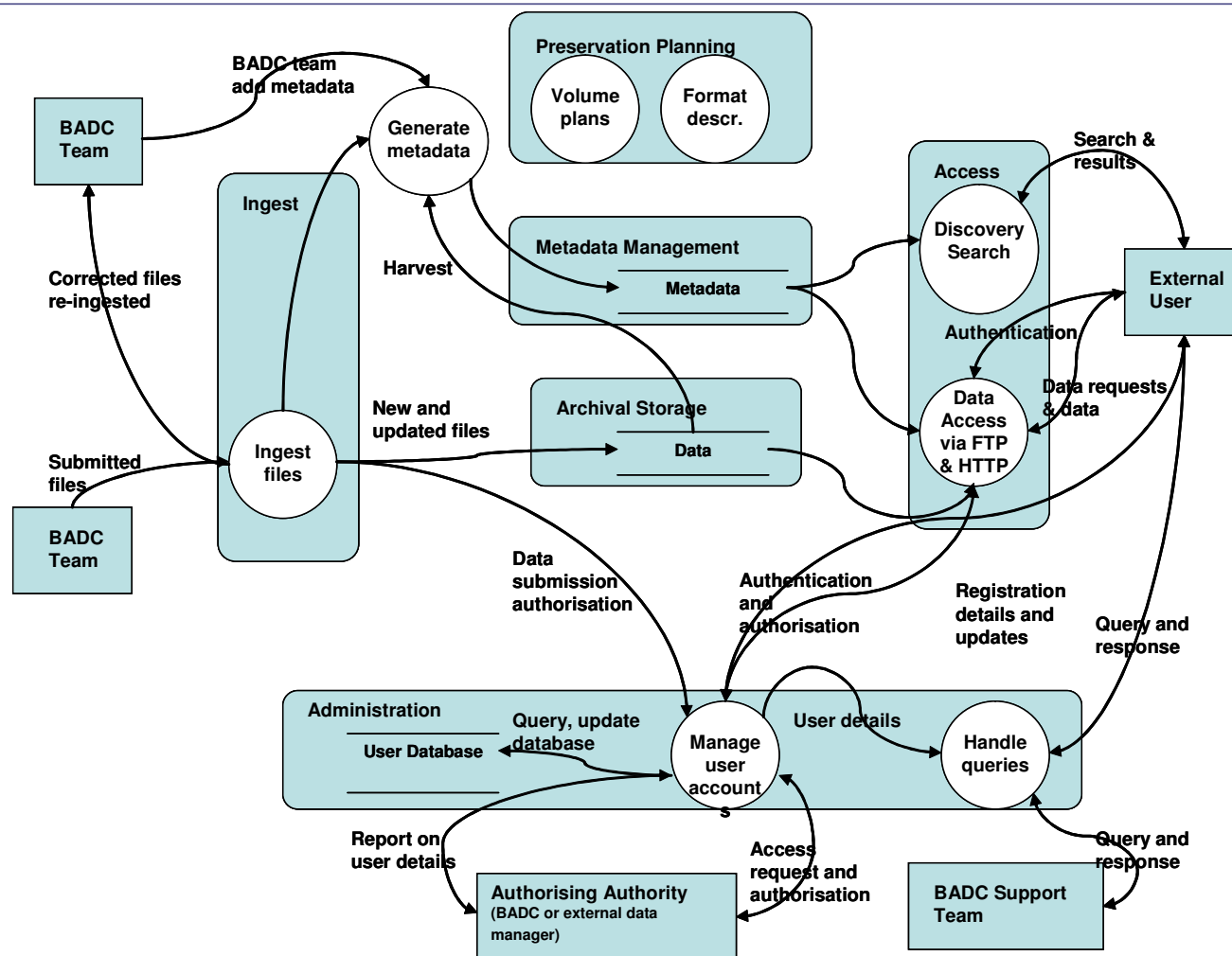
OAIS Functional Model



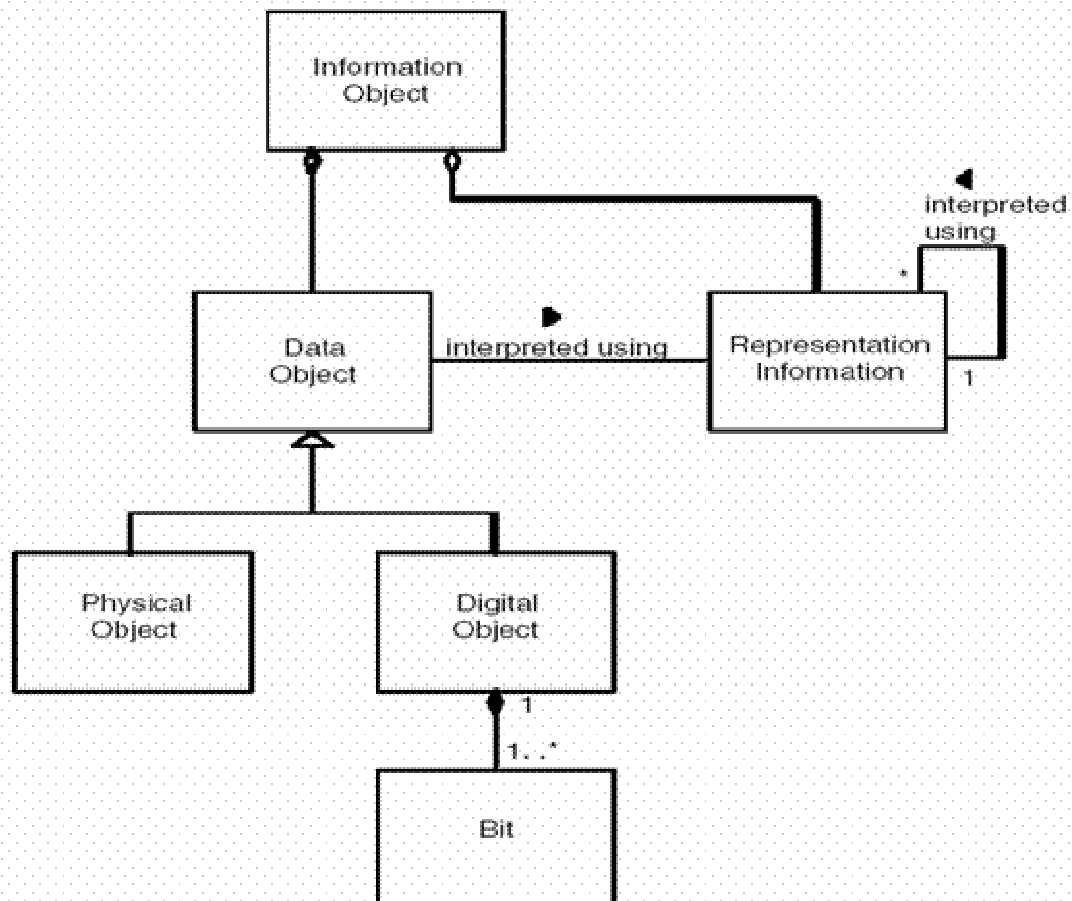
OAIS Mandatory Responsibilities

- Negotiate for and accept appropriate information from information Producers.
- Obtain sufficient control of the information provided to the level needed to ensure Long-Term Preservation.
- Determine, either by itself or in conjunction with other parties, which communities should become the **Designated Community** and, therefore, should be able to understand the information provided.
- Ensure that the information to be preserved is **Independently Understandable** to the Designated Community. In other words, the community should be able to understand the information without needing the assistance of the experts who produced the information.
- Follow documented policies and procedures which ensure that the information is preserved against all reasonable contingencies, and which enable the information to be disseminated as authenticated copies of the original, or as traceable to the original.
- Make the preserved information available to the Designated Community.

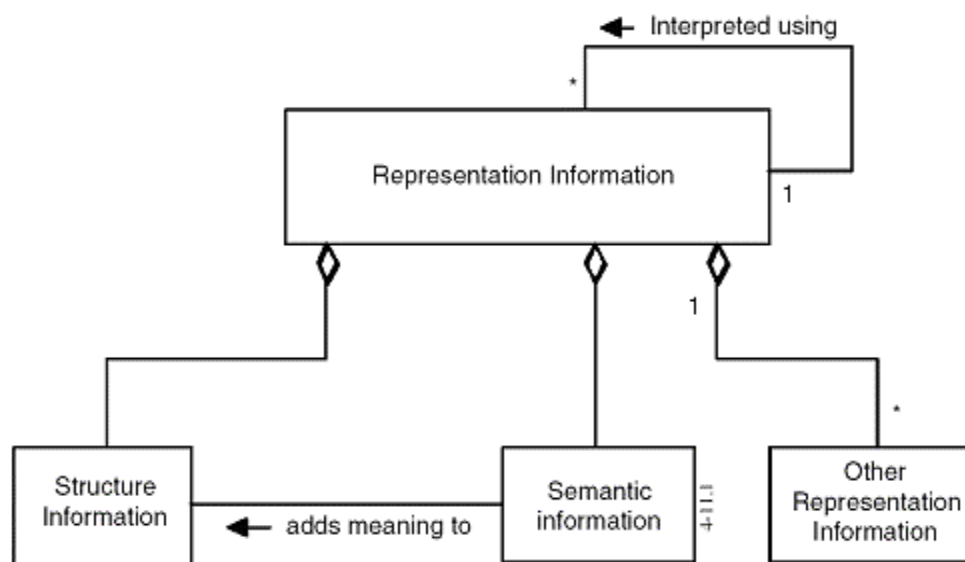
BADC mapped to OAIS

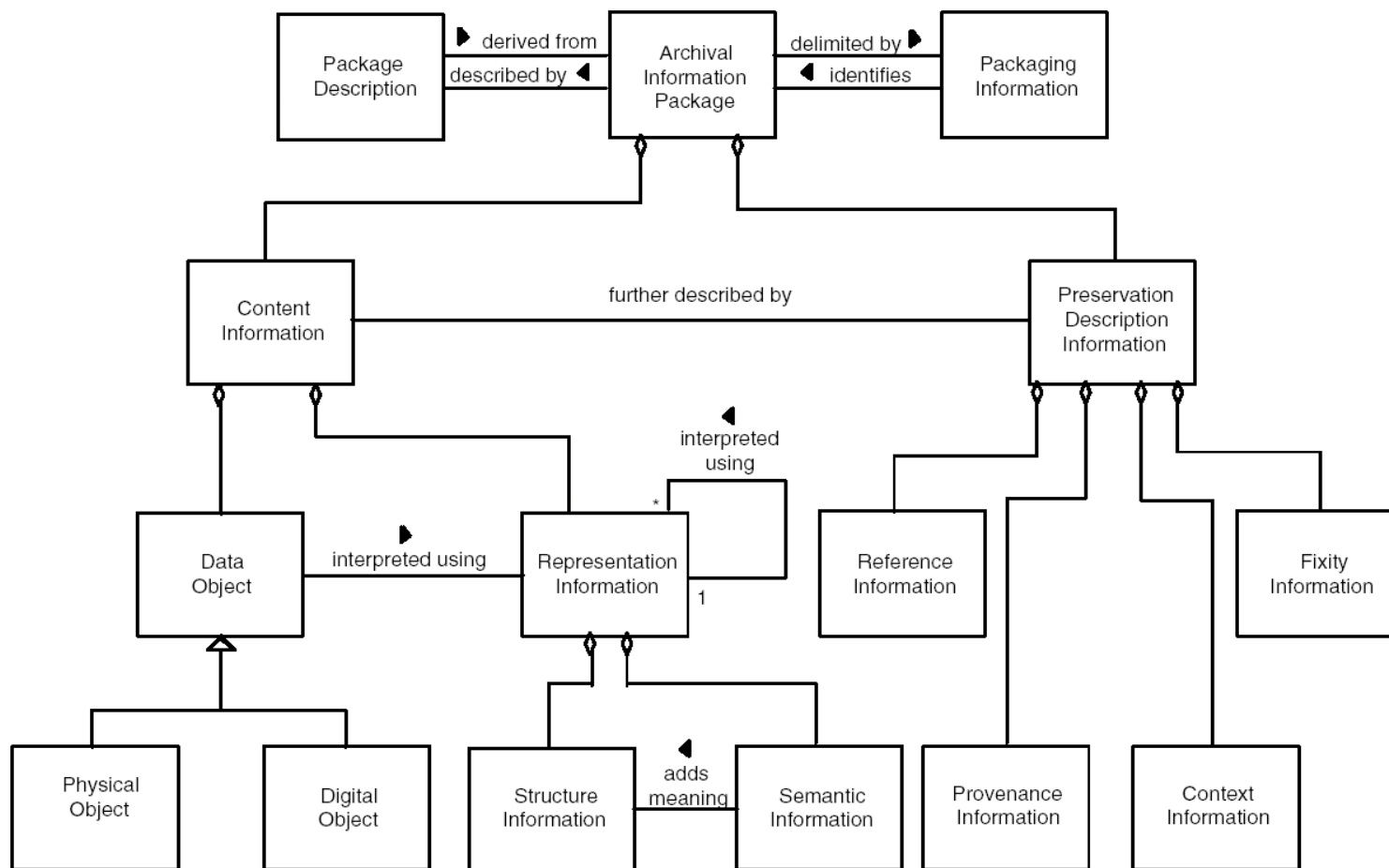


OAIS Information Object



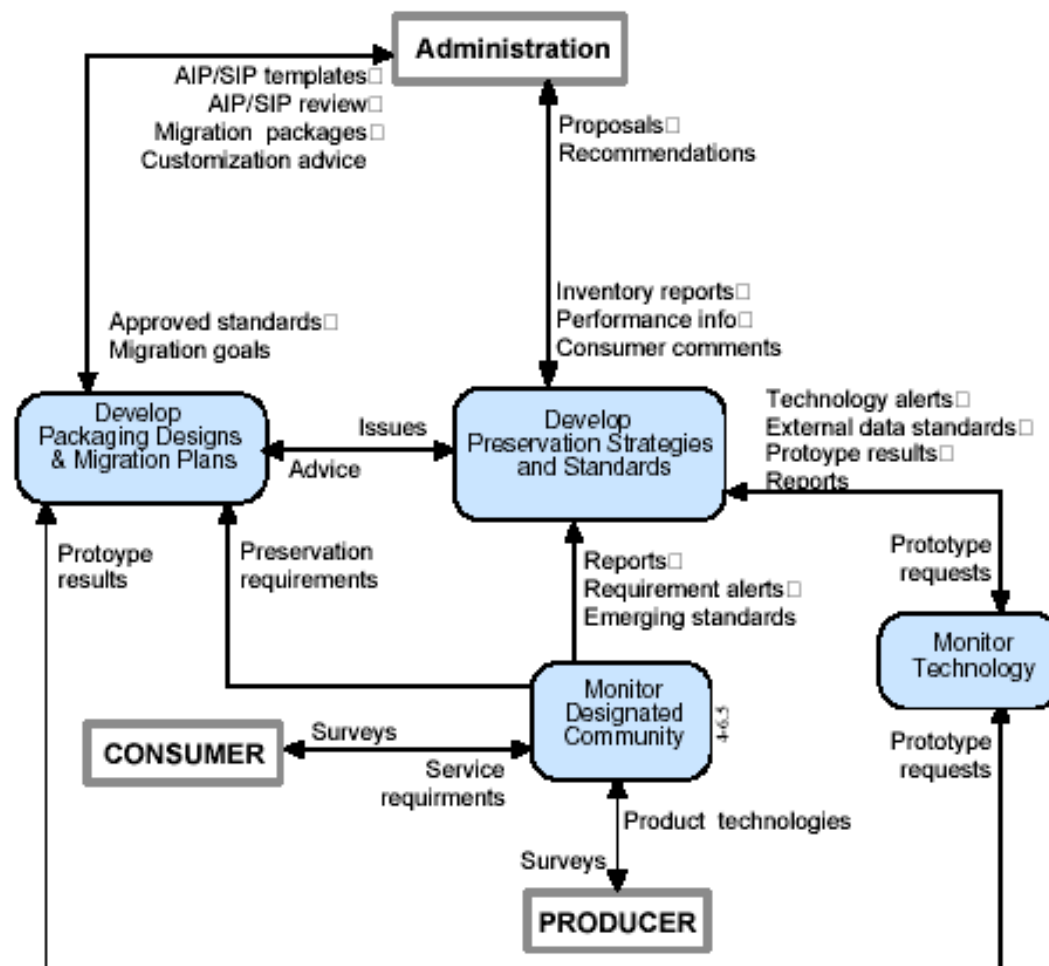
OAIS Representation Information





- monitors the environment of the OAIS and provides recommendations to ensure that the information stored in the OAIS remain accessible to the Designated User Community over the long term even if the original computing environment becomes obsolete.

Functions of Preservation Planning

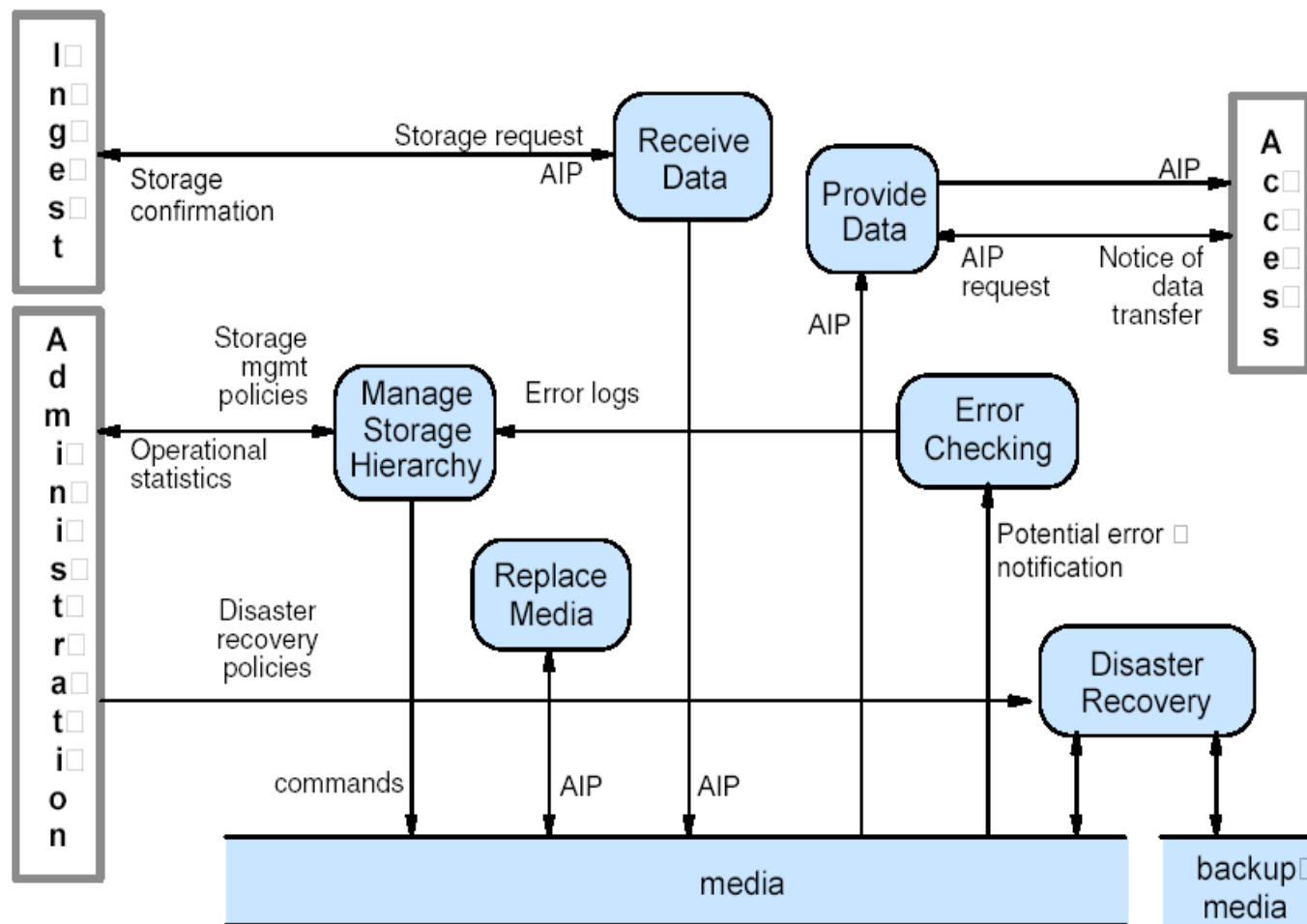


- Easy to map to functional model
- AIP needs to be better defined
 - Representation Information
- Designated Community
- Preservation Planning
 - Needs work
 - DCC could play a part in this

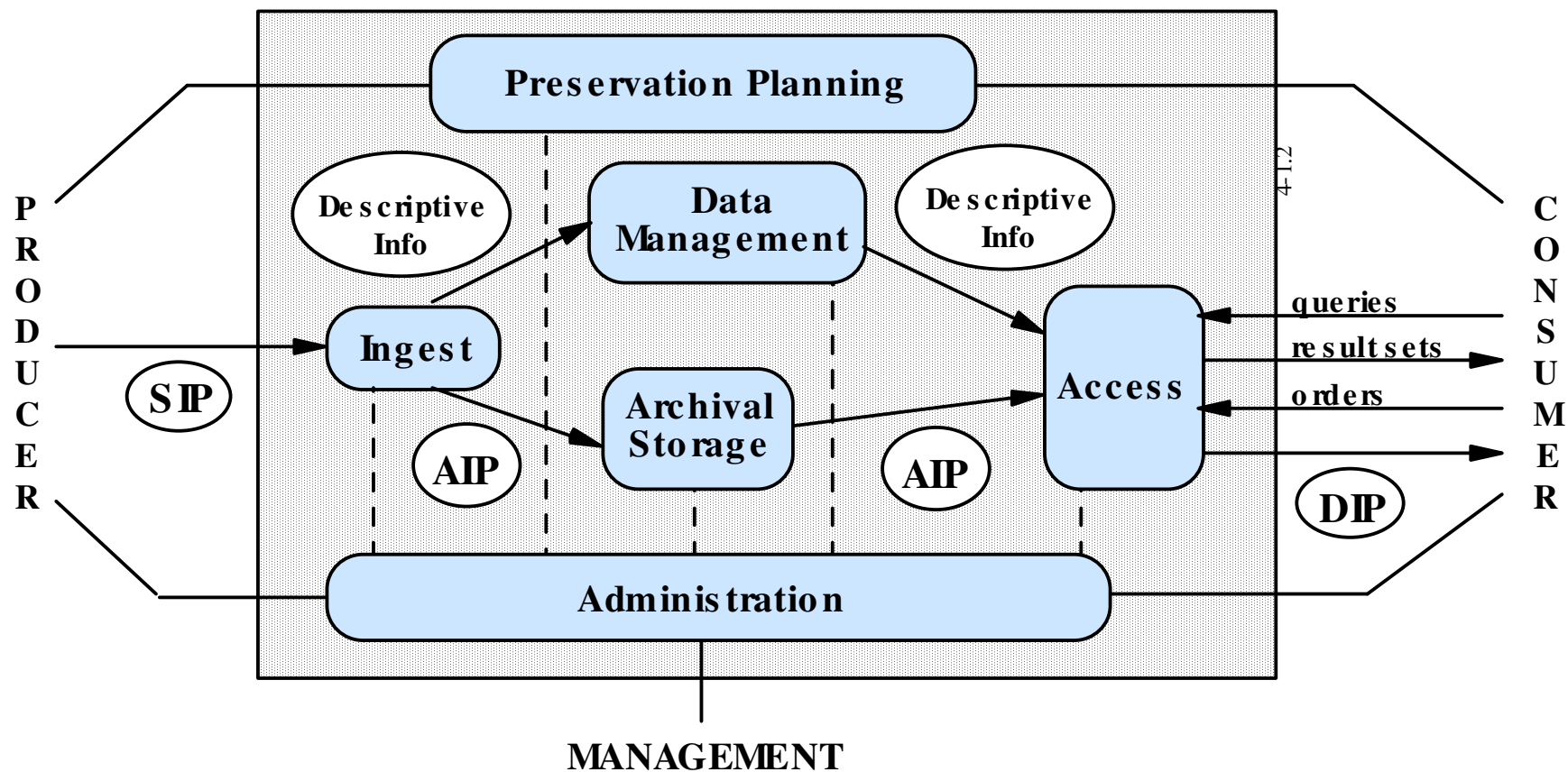


CCLRC

Functions of Archival Storage



OAIS Functional Model





CCLRC Comparison with OAIS with APS

- APS has within it
 - Storage
 - Metadata (e.g. which files are where)
 - Preservation Planning
 - Administration
- It ingests data and allow that data to be accessed
- Key Question
 - What is it's Designated Community?

OAIS Mandatory Responsibilities

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- The BADC/APS combination can clearly be mapped to the OAIS functional model.
 - The latter provides, at the very least, a checklist to use to identify limitations in the system in terms of information preservation.
 - Preservation Planning in particular
- On the other hand, by not simply ticking each item on the checklist we can raise some important questions about granularity of compliance.
 - By looking at what may be regarded as an extreme case, namely the APS by itself, we can raise other questions.
- These questions will inform the discussions in the development of: certification standards, BADC, APS and DCC