Comprehensive Large Array-Data Stewardship System (CLASS)

Present & Future

Dean J. Carter

CLASS Operations Manager

National Climatic Data Center

Contents

- Current CLASS Configuration
- Major CLASS Data Families
- CLASS Growth to Present
- CLASS Growth to 2030
- CLASS Suomi-NPP Data Flow
- Open Archival Information System (OAIS) Reference Model (RM)
- CLASS Conveyor Belt
- Current Data Center/CLASS Division of Responsibility
- Future Vision of CLASS
- Evolution of the NOAA Enterprise Architecture

Current CLASS Configuration

Direct System Link to:
- ESPC - NOAA Environment Satellite Processing Center
- National Ice Center
- NOAA Coastal Watch
- JPSS Interface Data Processing Segment (IDPS)

CLASS NCDC, Asheville NC
- Operations
  - Ingest
  - Storage (Disk & Tape)
  - Public Access
- Test/Integration

CLASS NSOF, Suitland MD
- Direct receipt node
- Replication
- Test/Integration
- Development

CLASS NGDC, Boulder CO
- Operations
  - Ingest
  - Storage (Disk & Tape)
  - Public Access

Users

Replication via NOAA Research Network (N-WAVE)

Users

Major CLASS Data Families

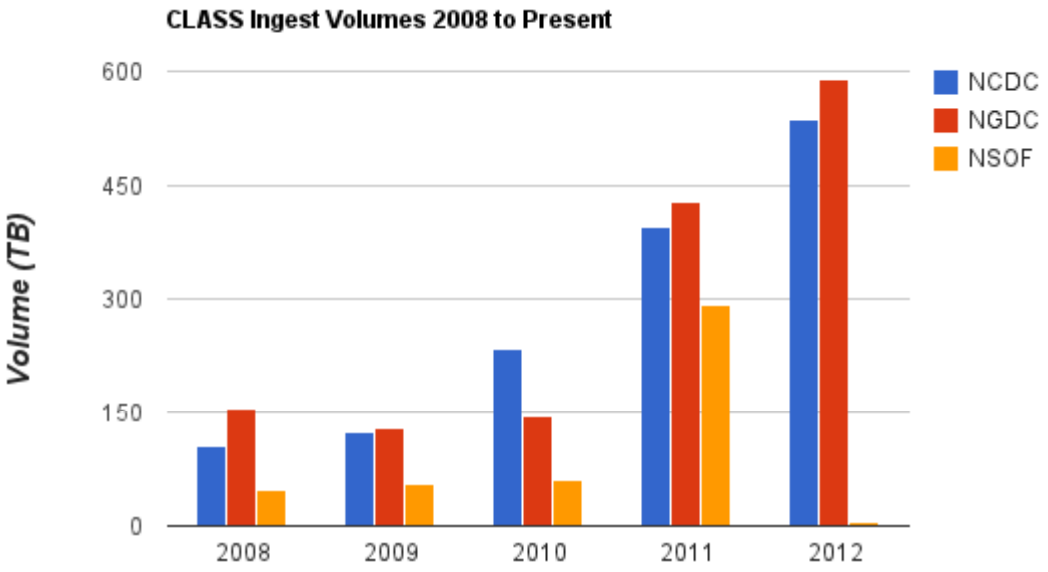
Current

- Advanced Clear-Sky Products over Oceans (ACSPO)
- Advanced Scatterometer Level 1B (ASCAT)
- Advanced Very High Resolution Radiometer (AVHRR)
- Aerosol Optical Thickness (AERO100)
- Climate Forecast System – Reanalysis (CFS-R)
- Coast Watch
- Continuously Operating Reference Stations (CORS)
- Defense Meteorological Satellite Program (DMSP)
- GOES
- POES
- Suomi-NPP
- Jason-2
- Ocean Color
- Sea Surface Temperatures (SST100)

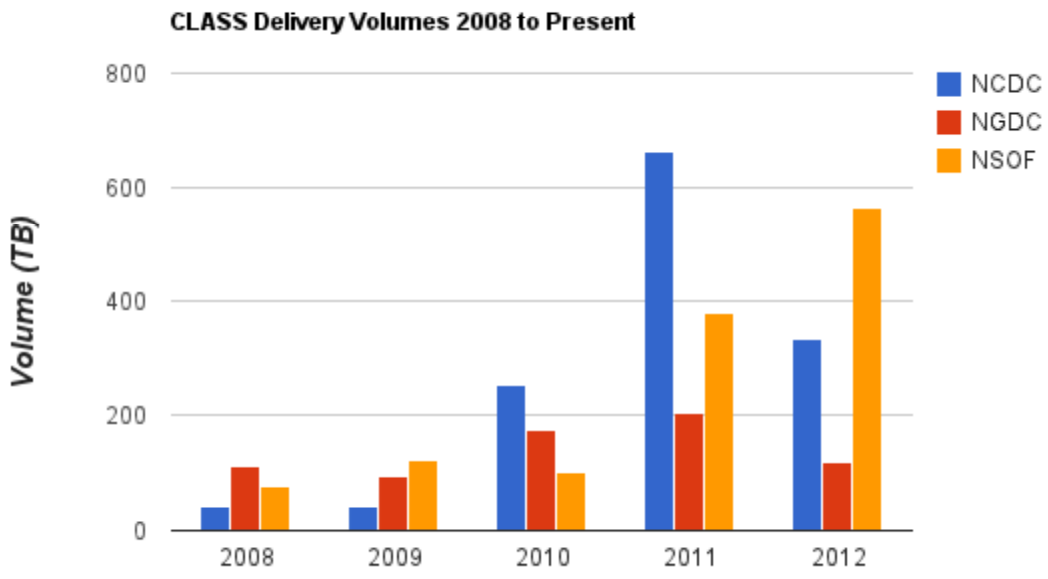
Planned

- Global Change Observation Mission – Water (GCOM-W)
- JPSS
- GOES-R
- NEXRAD

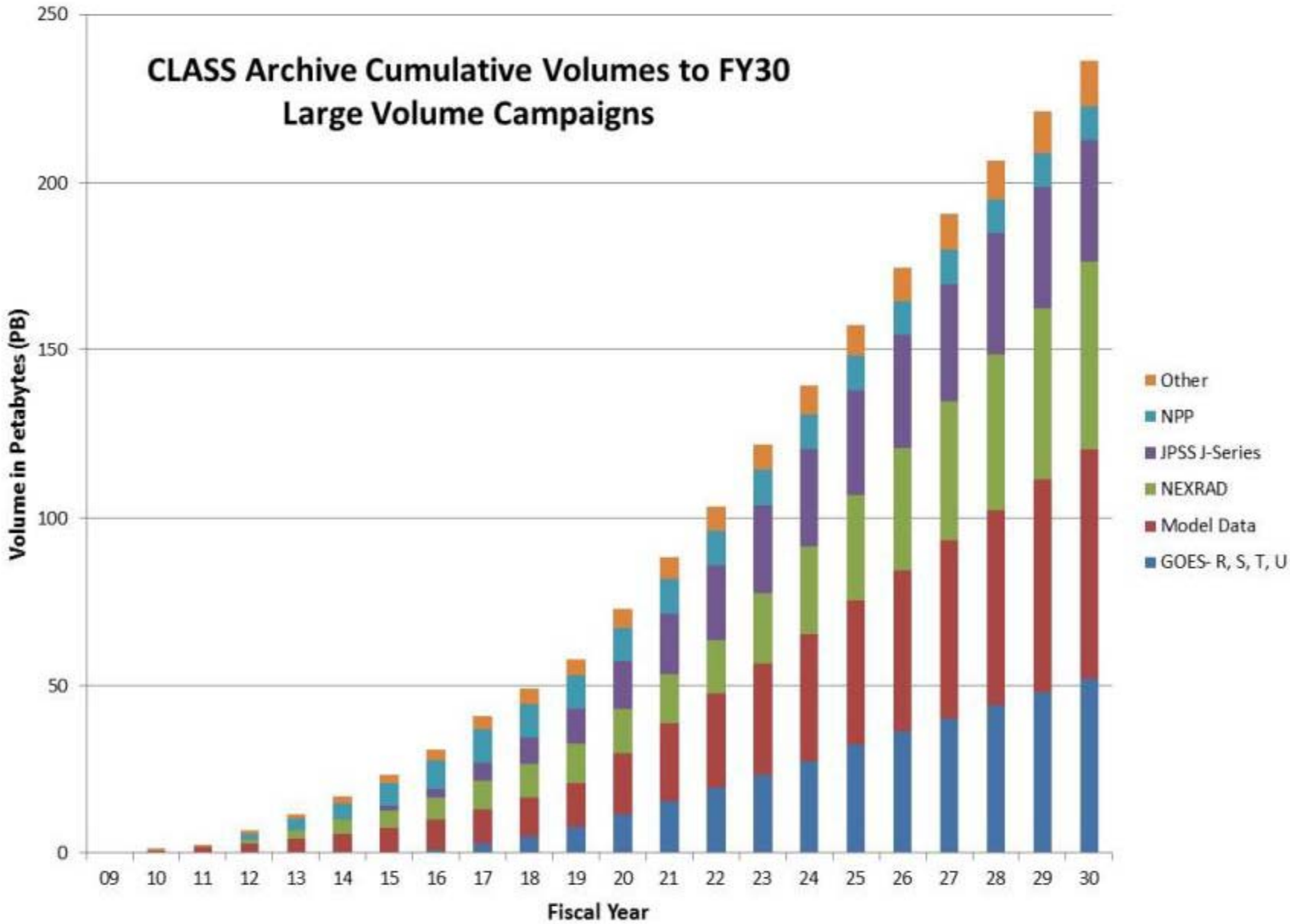
CLASS Growth to Present



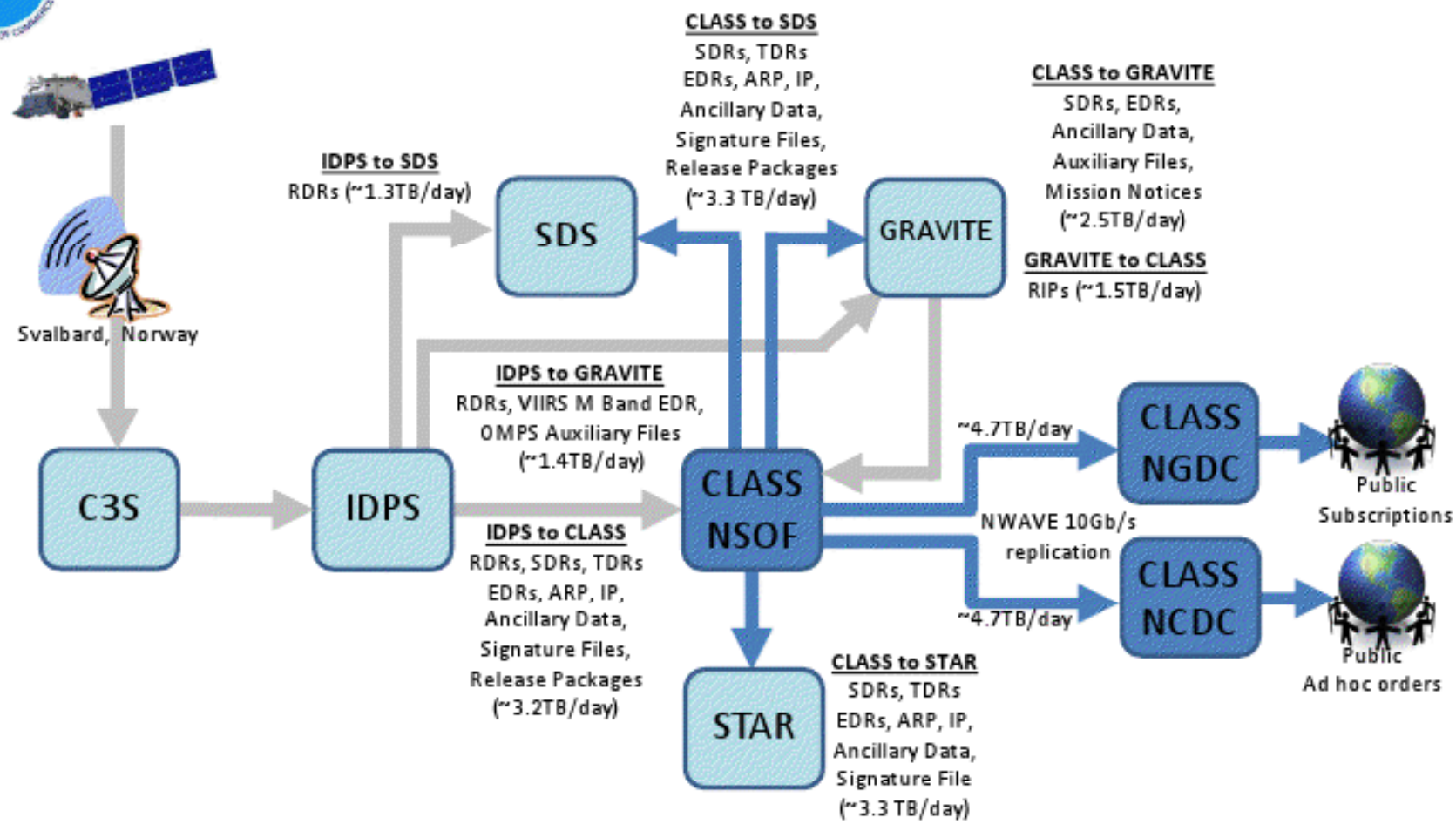
2012 numbers as of April 12



Estimated CLASS Growth to 2030



CLASS Suomi-NPP Data Flow

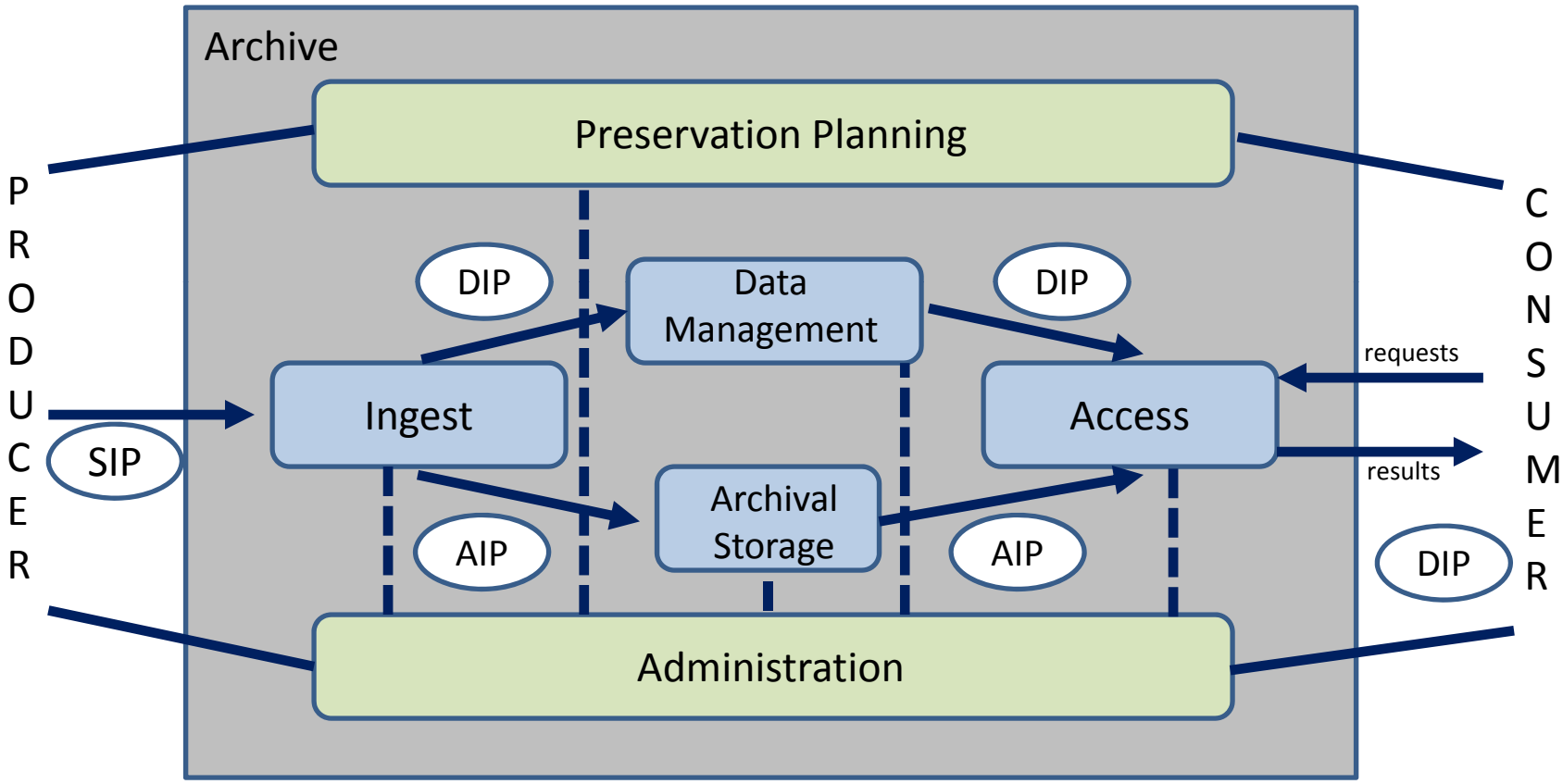


NPP Sensors
ATMS – Advance Technology Microwave Sounder
CrIS – Cross-track Infrared Sounder
OMPS – Ozone Mapping and Profiler Suite
VIIRS – Visible and Infrared Imaging Radiometer Suite

NPP Segments
C3S – Command, Control & Communications Segment
GRAVITE – Government Resource for Algorithm Verification, Independent Testing & Evaluation
IDPS - Interface Data Processing Segment
SDS – Science Data Segment
STAR – NOAA Center for Satellite Applications & Research

ARP – Application Related Product
EDR – Environmental Data Record
IP – Intermediate Product
RDR – Raw Data Record
RIP – Retained Intermediate Product
SDR – Sensor Data Record
TDR – Temperature Data Record

Open Archival Information System (OAIS) Reference Model (RM)

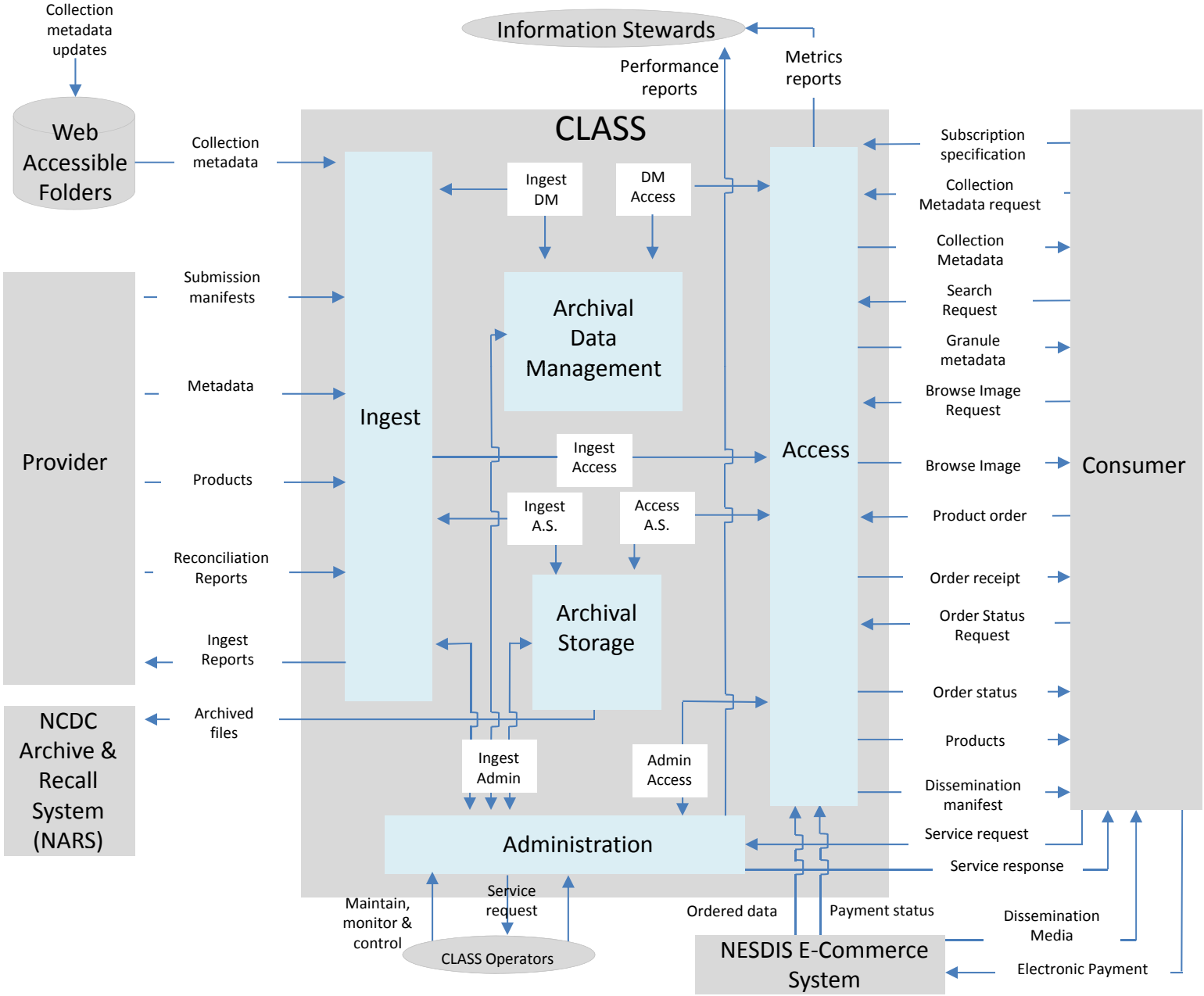


AIP – Archival Information Package

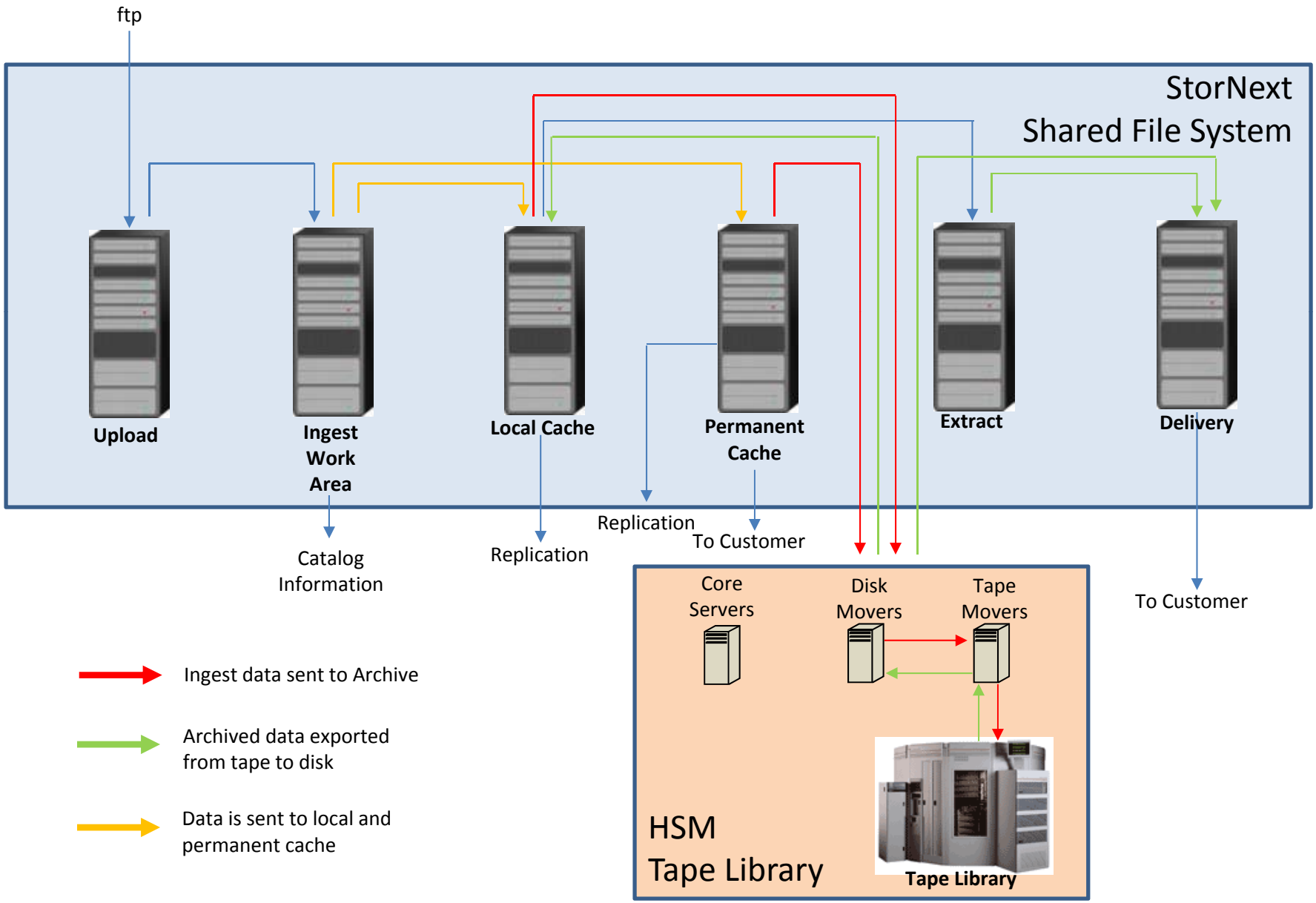
DIP – Dissemination Information Package

SIP – Submission Information Package

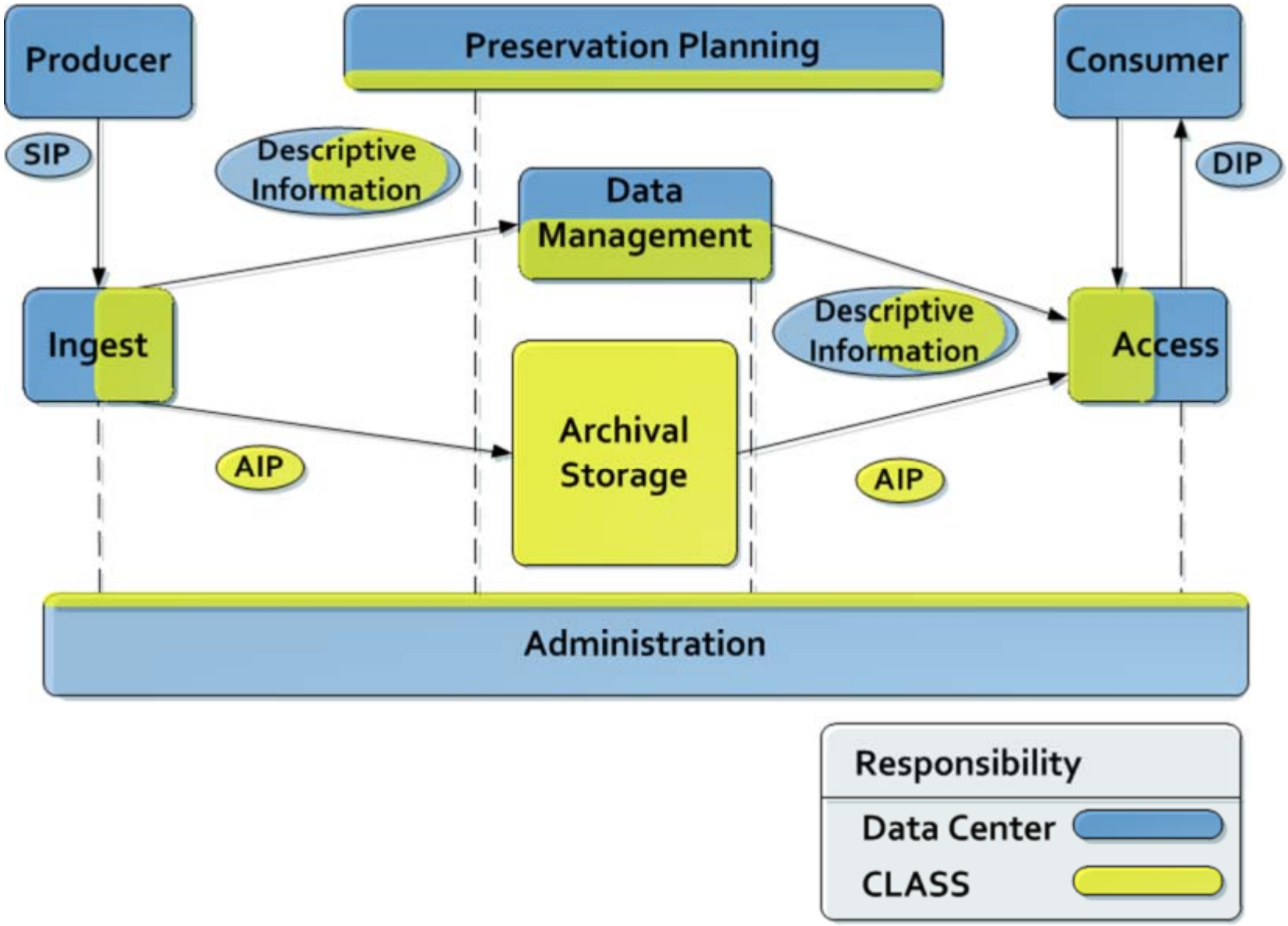
CLASS Adherence to OAIS-RM



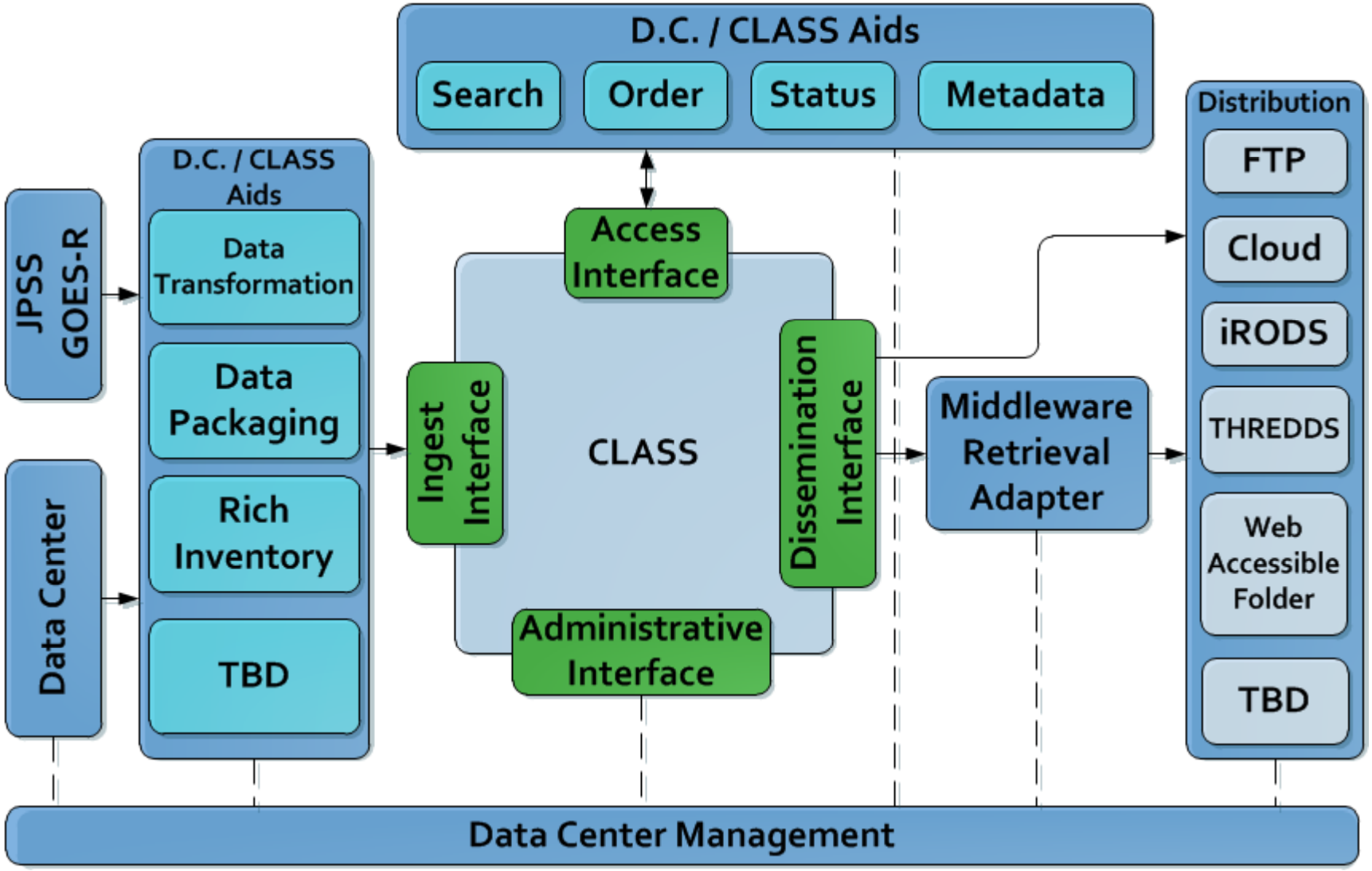
CLASS Conveyor Belt



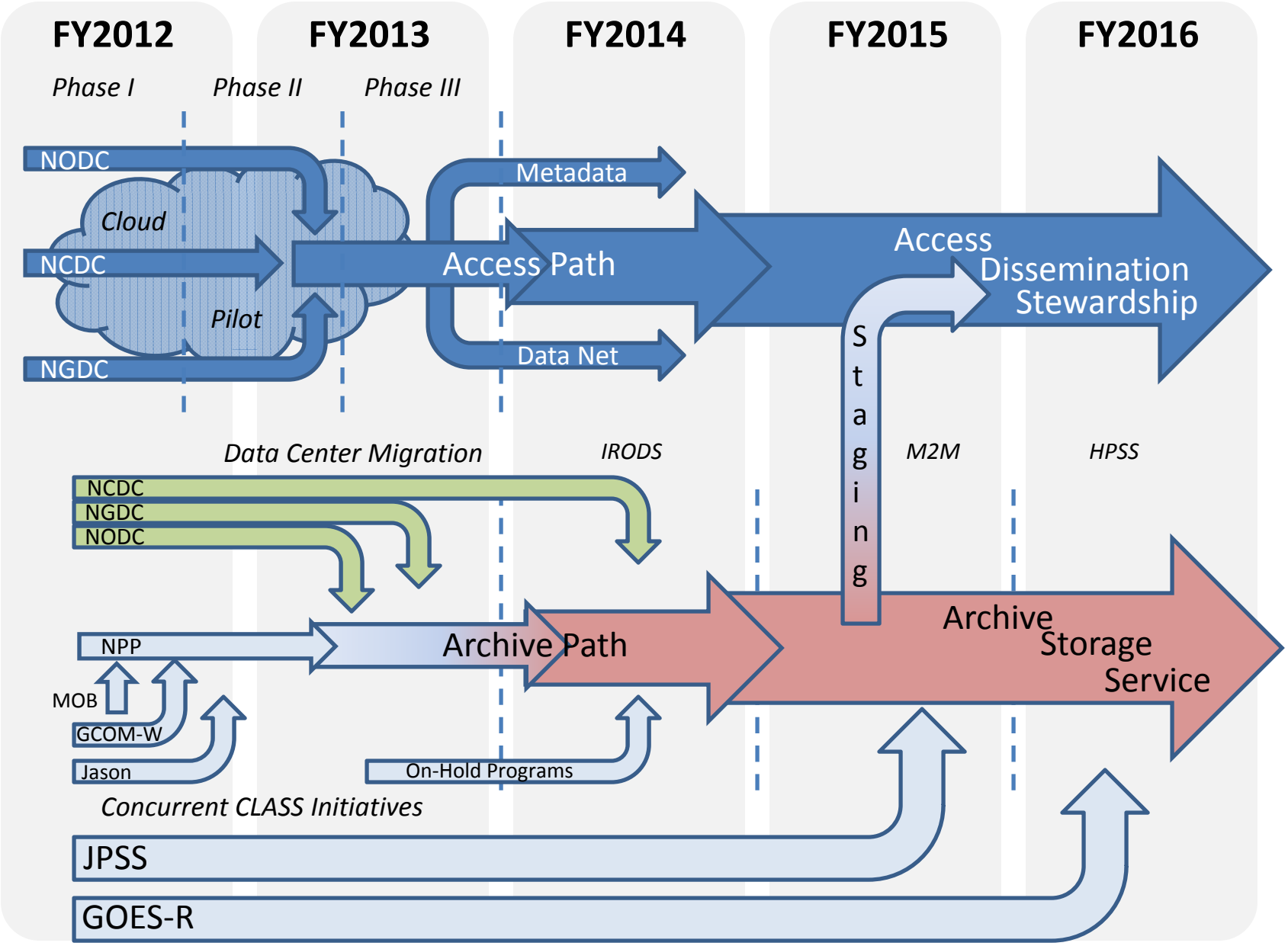
Current Data Center/CLASS Division of Responsibility



Future Vision for CLASS



Evolution of the NOAA Enterprise Architecture



?