Ingest Subsystem Overview

Carey Gire

cgire@eos.hitc.com

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Presentation Outline

Design Drivers

New Release B Features

Architecture Overview

COTS Selections/Prototypes

Design Drivers

Functional Requirements

- Receive data from external data providers
- Extract metadata, convert data as required, provide to Data Server
- Provide operator monitoring and control of ingest processing
- Storage of L0 data

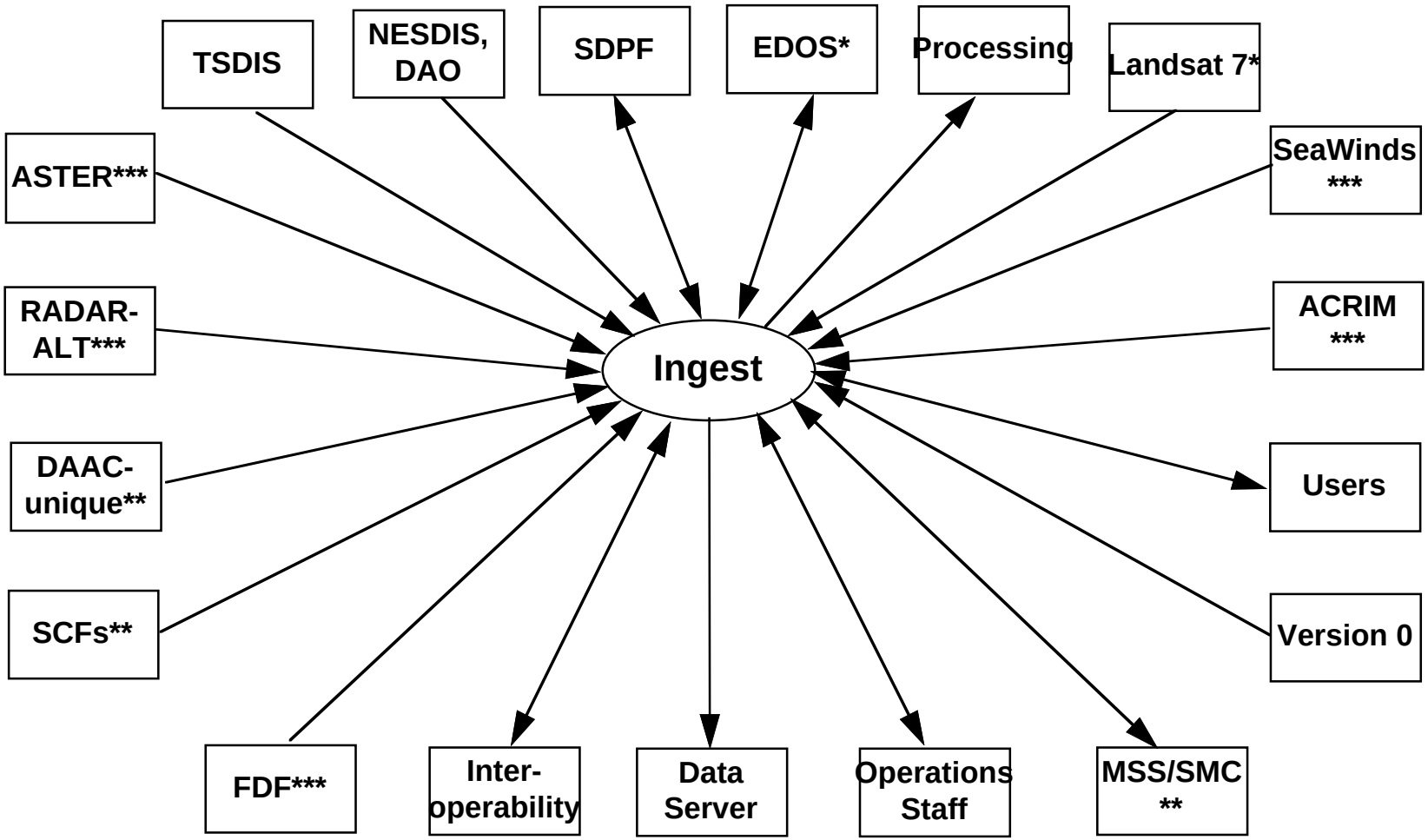
Performance/Reliability, Maintainability, Availability (RMA)

- EDOS performance -- 15 minutes + 15 minutes per gigabyte of L0 data
- Landsat performance -- 12 hours of L0R data ingested in 8 hours
- 0.999 availability, 20 minute mean down time (MDT)
- 15 minute switchover to backup capability

Evolvability/Scalability

- Large, increasing number of interfaces, data volumes, I/O rates
- Capability to handle 3X daily I/O load
- Ongoing Version 0 (V0) data migration

Ingest Subsystem Context Diagram



Note: * = early interface test using Release A; ** = augmented at Release B; *** = Release B

Ingest Data Size Drivers

Interface	Release A Volume Per Day	Release B Volume Per Day
GSFC - Rel A Sources (incl. TSDIS)	18 GB	18 GB
GSFC - EDOS (MODIS L0)		70 GB*
GSFC - ACRIM L0/others		<<1 GB*
GSFC - V0 Migration	5 - 10 GB	5 - 10 GB
LaRC - Rel A Sources (incl. TRMM CERES L0)	< 1 GB*	< 1 GB*
LaRC - EDOS (CERES L0, MISR L0, MOPITT L0)		47 GB*
LaRC - V0 Migration	1 GB	1 GB
EDC - Landsat-7 L0R		139 GB**
EDC - ASTER - L1A/L1B (media)		136 GB
EDC - V0 Migration		10 - 15 GB
JPL - RADAR ALT, ADEOS II L0		< 1 GB*
JPL - V0 Migration		10 - 15 GB
NSIDC - V0 Migration		<< 1 GB
ORNL		< 1 GB

*Ingested and stored in the ICLHW HWCI
**Ingested by the ICLHW HWCI, stored in DSS repository

New Release B Features

New interfaces with EDOS, Landsat 7 LPS, Landsat 7 IAS and IGSs, ASTER, ADEOS II, RADAR-ALT, SAGE III, ACRIM, additional SCFs, and other DAAC-unique IFs

Additional Release B data provider volumes and I/O rates (up to 140 GB per day)

Suspend/resume requests or classes of requests (by external data provider, or all requests), change request priority

Metadata extraction for Release B data types

HTML forms for selected Release B data types

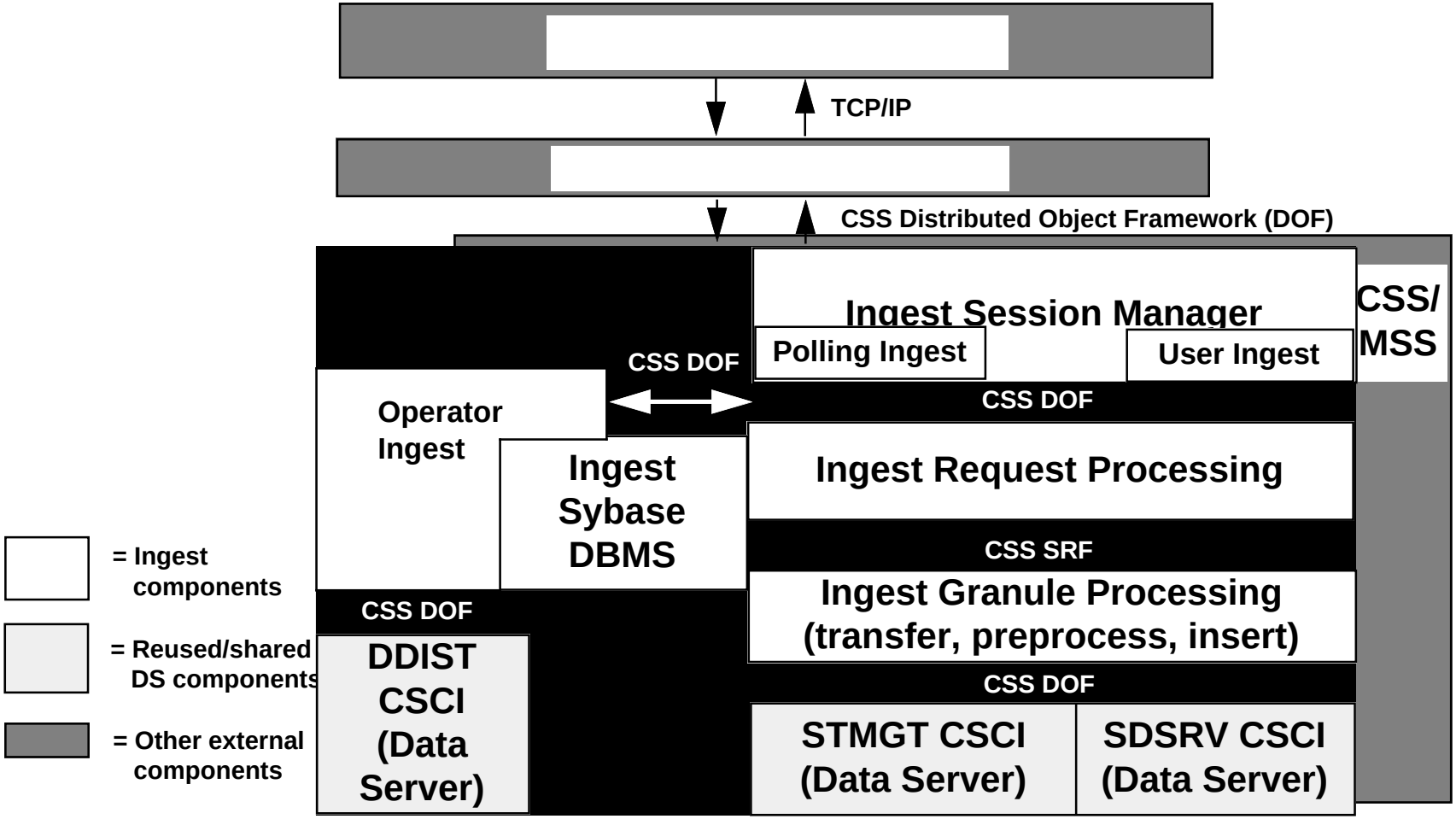
Additional media ingest capabilities (ASTER, Landsat 7 IGS)

Hardcopy digitizing/scanning

Increased Commonality/Maintainability

- Fully integrated with CSS and MSS infrastructure components

Ingest CSCI Architecture



Ingest Subsystem
Ingest CSCI Architecture (cont.)

Ingest Gateway
- Provides hand-shaking for DAN-driven automated ingest (developed by CSS)

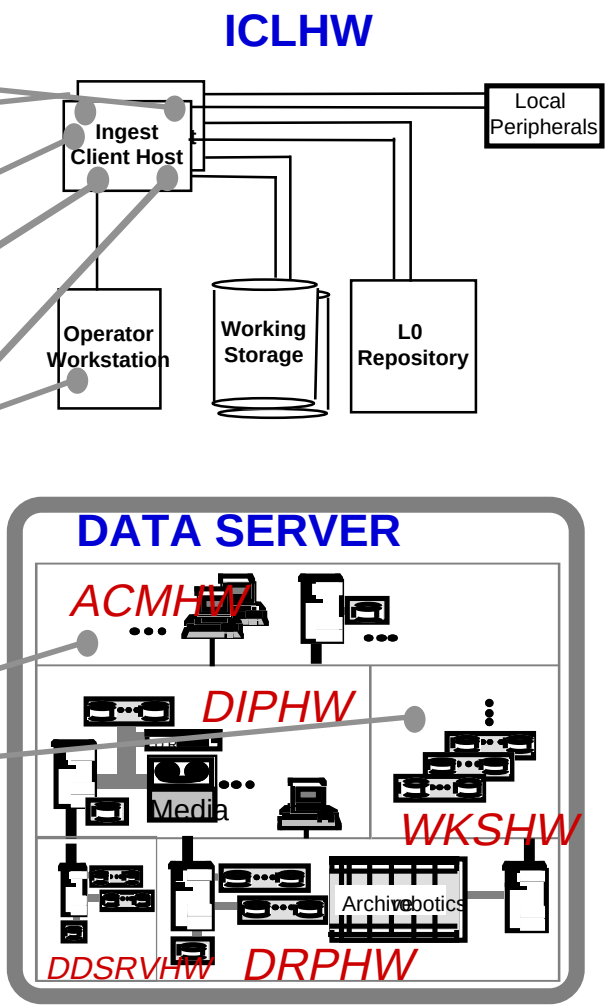
Ingest Session Manager
- Provides hand-shaking for DAN-driven automated ingest

Ingest Request Processing Manager
- Creates and manages ingest requests

Polling Ingest Client
- Provides polling interval-driven automated ingest

User Network Ingest (GUI)
- Provides GUI interactive ingest and status monitoring

Ingest Granule Processing Server
- Performs granule processing (data transfer, conversions, reformatting, metadata extraction and checking, Data Server interface)



Ingest Subsystem
Ingest CSCI Architecture (cont.)

Ingest DBMS (Sybase)

- **Provides data base storage of Ingest tables**

STMGT CSCI

- **Manages Level 0 data repository--reuse from Data Server**

SDSRV CSCI

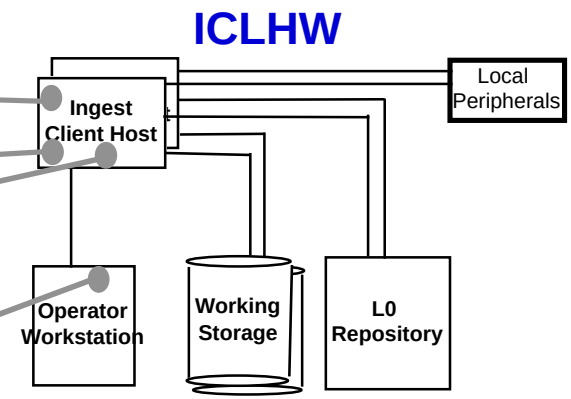
- **Provides data dictionary services and insert service--reuse from Data Server**

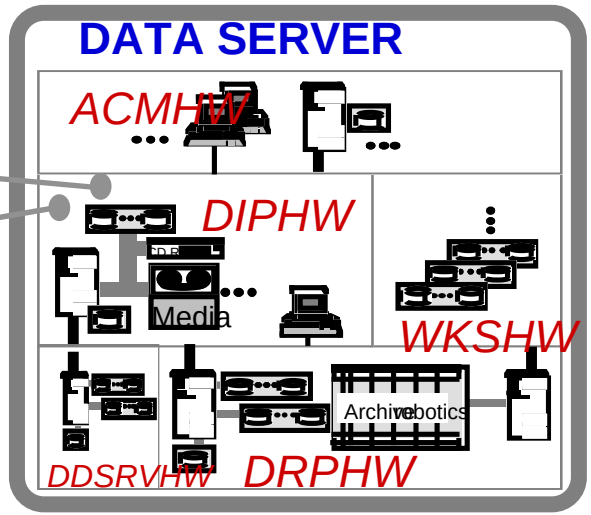
Operator Ingest (GUI)

- **Provides GUI monitoring and control of ingest processing**
- **Media ingest interface**

DDIST CSCI

- **Provides media (e.g., 8mm tape) access--share with Data Server**





COTS Selections/Prototypes

New COTS in Release B

- **Illustra DBMS (shared with or reused from Data Server)**
- **Hardcopy Digitizing/Scanning hardware/software**
- **EMASS Archive Tape Library (Grau robotics/3590 media)**

Release B Prototypes Completed

- **Evaluated AutoSys as a manager of ingest requests; not selected; did not fit Ingest Subsystem requirements**