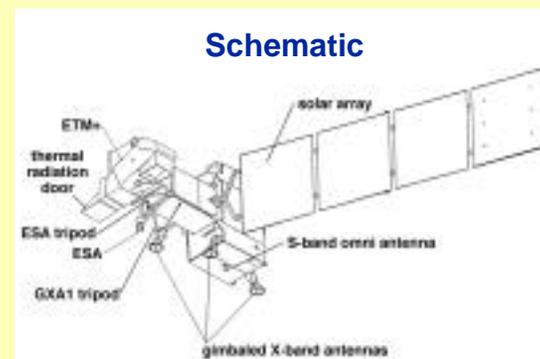
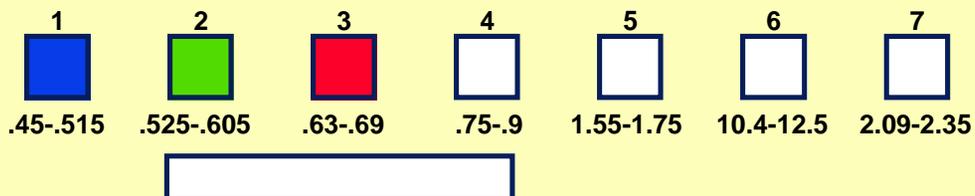


# Landsat 7

## Landsat 7 / Enhanced Thematic Mapper Highlights

- Based on the Thematic Mapper instruments of Landsats 4, 5
- New Panchromatic Band with 15m spatial resolution
- New 375 Gb (100 scene) on board solid state recorder
- New on board, full aperture, 5% absolute radiometric calibration
- Improved Thermal IR channel resolution from 120 to 60m
- Improved downlink rate from 85 Mbps to 150 Mbps

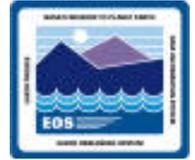
## Bands



## Artists Conception

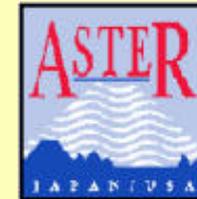


# ASTER

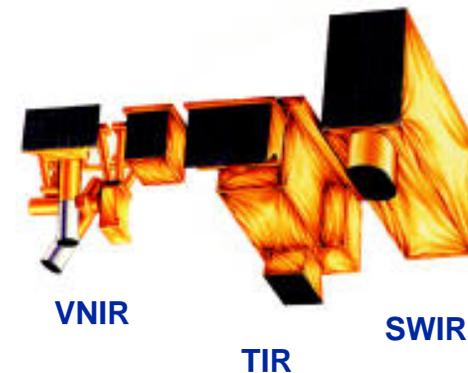


## HIGHLIGHTS

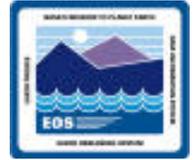
- Provides high-resolution images of the land surface, water, ice, and clouds
- 14 bands from the visible through the thermal infrared
- 3 visible bands @ 15m spatial resolution
- 1 visible stereo band @ 15m spatial resolution
- 6 short wavelength infrared bands @ 30m spatial resolution
- 5 thermal infrared bands @ 90m spatial resolution
- 60 km wide ground swath
- All Enhanced Thematic Mapper bands are represented (except Pan)
- 10 EOS Standard Products



ASTER Instrument



# MODIS



## HIGHLIGHTS

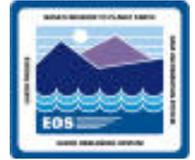
- Measures a variety of biological and physical processes over land and ocean every one to two days. Makes important atmospheric measurements
- 36 band medium-resolution, multi-spectral cross-track scanning radiometer
- 2330 km wide ground swath
- 36 bands distributed between .4 and 14.5  $\mu\text{m}$
- 2 bands imaged at 250m
- 5 bands imaged at 500m
- 29 bands imaged at 1000m
- All ETM+ bands are represented
- Impression calibration characteristics
- Large variety of valuable land products



MODIS Instrument



# MISR

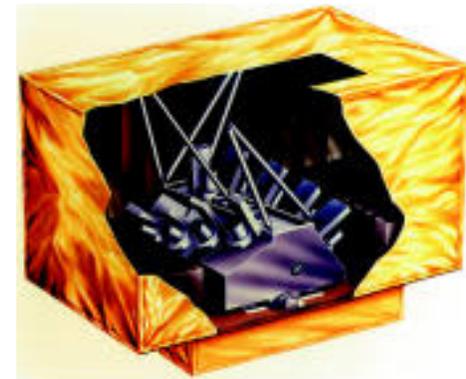


## HIGHLIGHTS

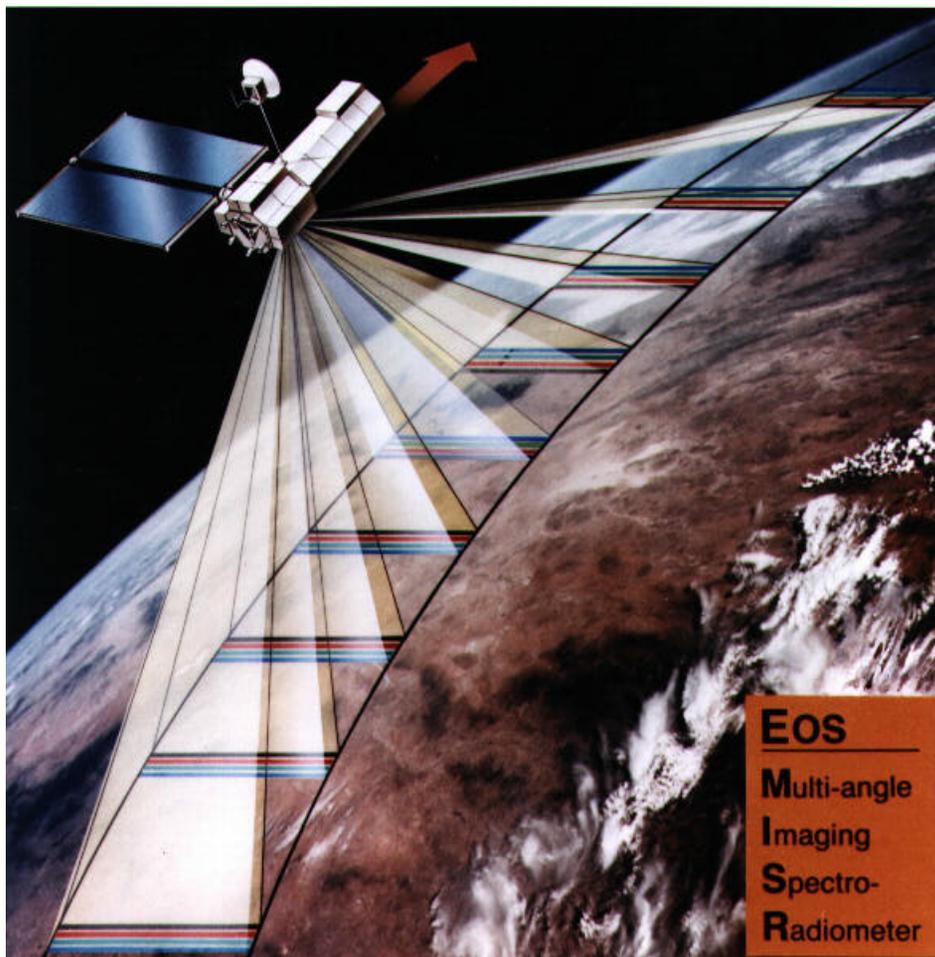
- Provides top-to-atmosphere, cloud, and surface angular spectral reflectance functions
- 9 individual CCD-based pushbroom cameras observe Earth at 9 discrete view angles: nadir,  $\pm 26.1^\circ$ ,  $\pm 45.6^\circ$ ,  $\pm 60.0^\circ$ ,  $\pm 70.5^\circ$
- Each camera images 4 bands:  $.443 \mu\text{m}$  (blue),  $.555$  (green),  $.670$  (red),  $.865$  (near-infrared)
- A total of 36 images are gathered simultaneously at either 275m, 550m, or 1100m
- The swath width is 360 km
- Significant Land Surface Products include: Radiance, Reflectance, Albedo, Angular Reflectance Properties, Precision Atmospheric Correction



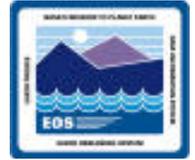
MISR Instrument



# MISR Observing Concept



# CERES

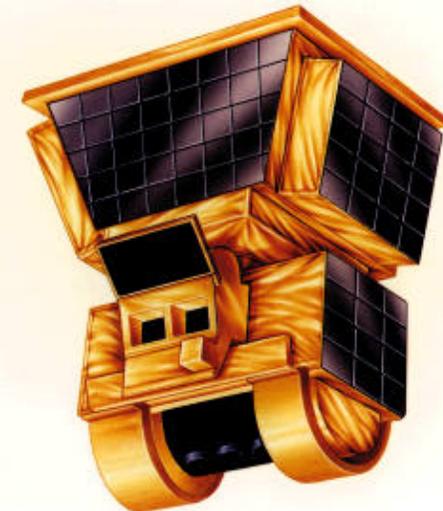


## HIGHLIGHTS

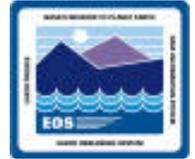
- Measure Earth's radiation budget and atmospheric radiation from the top of the atmosphere to the surface
- Two broadband, scanning radiometers: one cross-track and one rotating plane (bi-axial scanning)
- Both radiometers have 3 bands: 0.3 to  $\sim 50\mu\text{m}$ , 0.3 to  $5\mu\text{m}$ , and 5 to  $12\mu\text{m}$
- 21 km spatial resolution at nadir
- Limb to limb swath
- 13 different cloud and radiation flux standard products
- Will provide baseline cloud and radiation flux data critical to understanding and modelling climate



CERES Instrument



# MOPITT



## HIGHLIGHTS

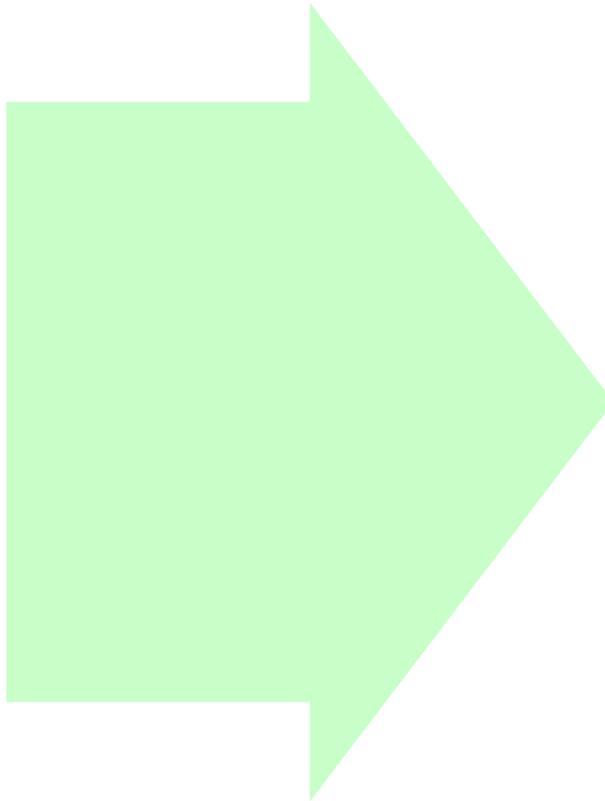
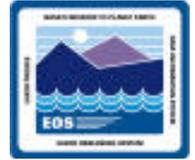
- Measures emitted and reflected infrared radiance in the atmospheric column to retrieve CO profiles and total column CH<sub>4</sub>
- Four channel correlation spectrometer with cross-track scanning
- 3 infrared bands located at 2.3, 2.4, and 4.7  $\mu\text{m}$
- 22 km spatial resolution
- 616 km wide ground swath
- In addition to the L1B radiance product, key products include Total Column CO and CH<sub>4</sub>, CO profiles
- Will permit studies of spatial and temporal distributions of CO and CH<sub>4</sub> that drive budget and source/sink studies



MOPITT Instrument



# EOSDIS Core System Architecture Drivers



## *Towards ...*

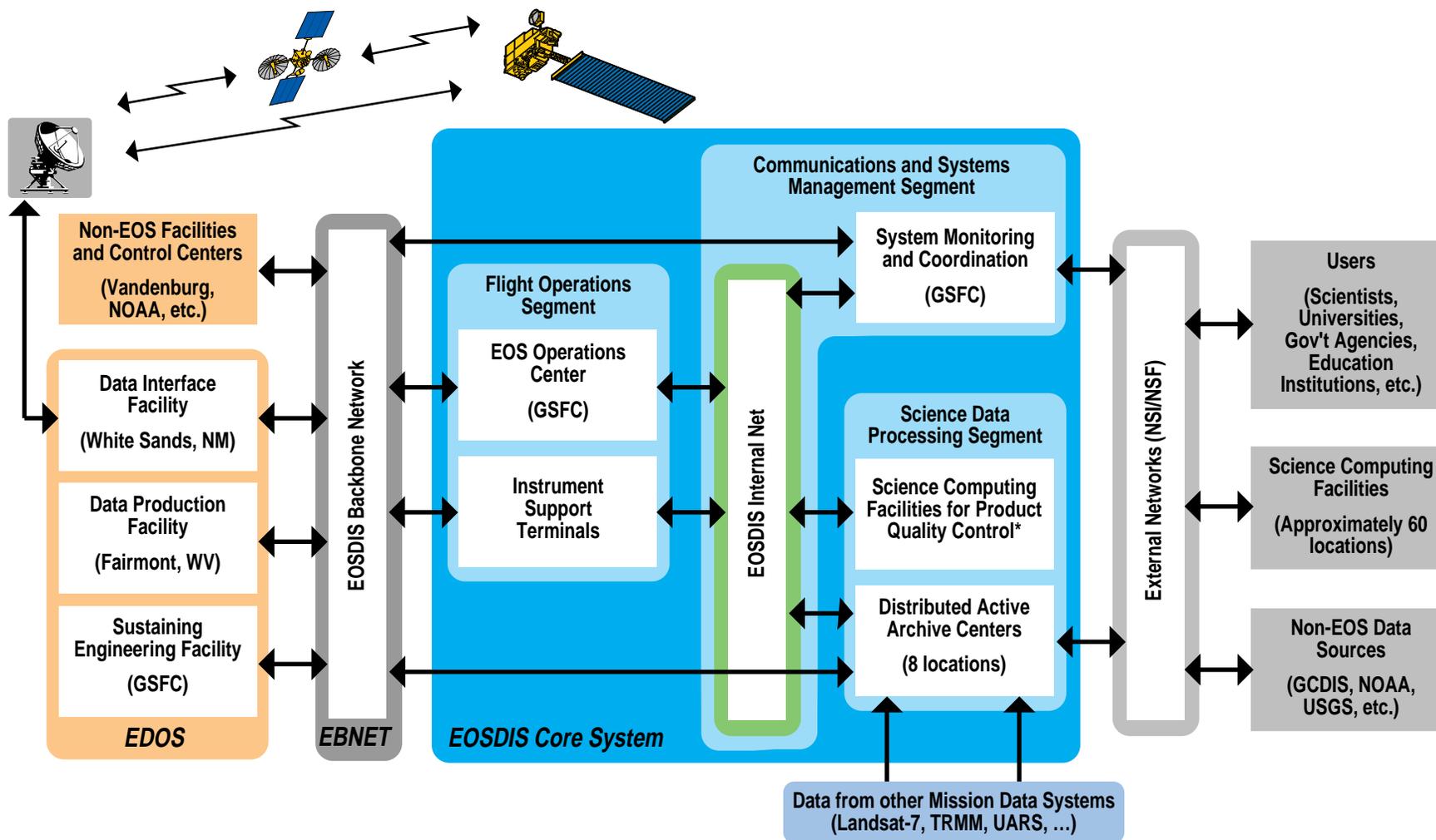
- Product “publishing” and “access”
- Seamless view of all data
- Extended provider implementation
- Heterogeneous, autonomous system components
- Scalable, extendable components
- Policy neutral
- Component reuse outside of EOSDIS

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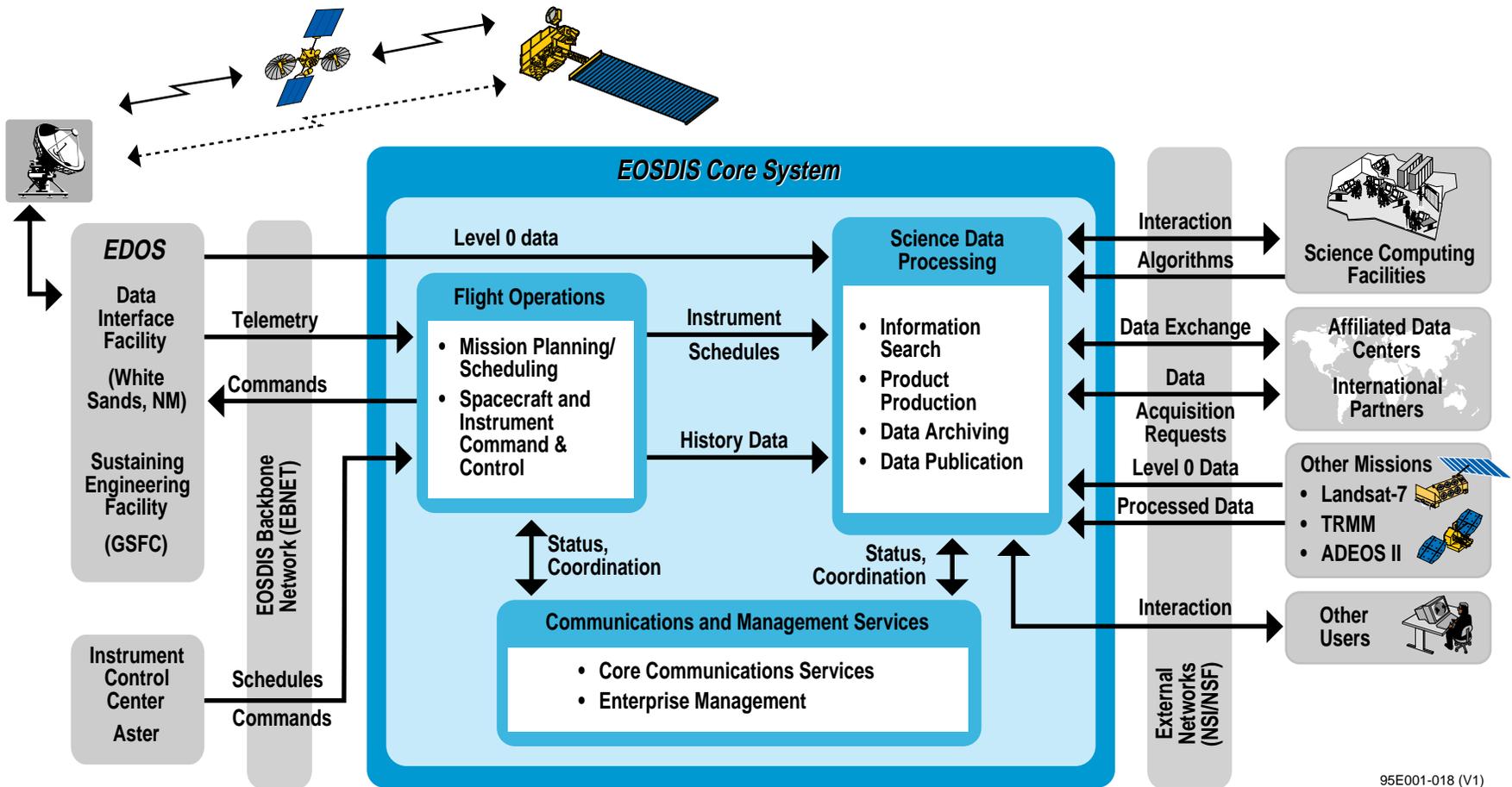
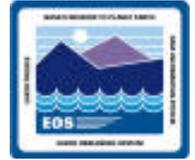
*A more evolutionary system*



# EOSDIS Data Flows and Elements

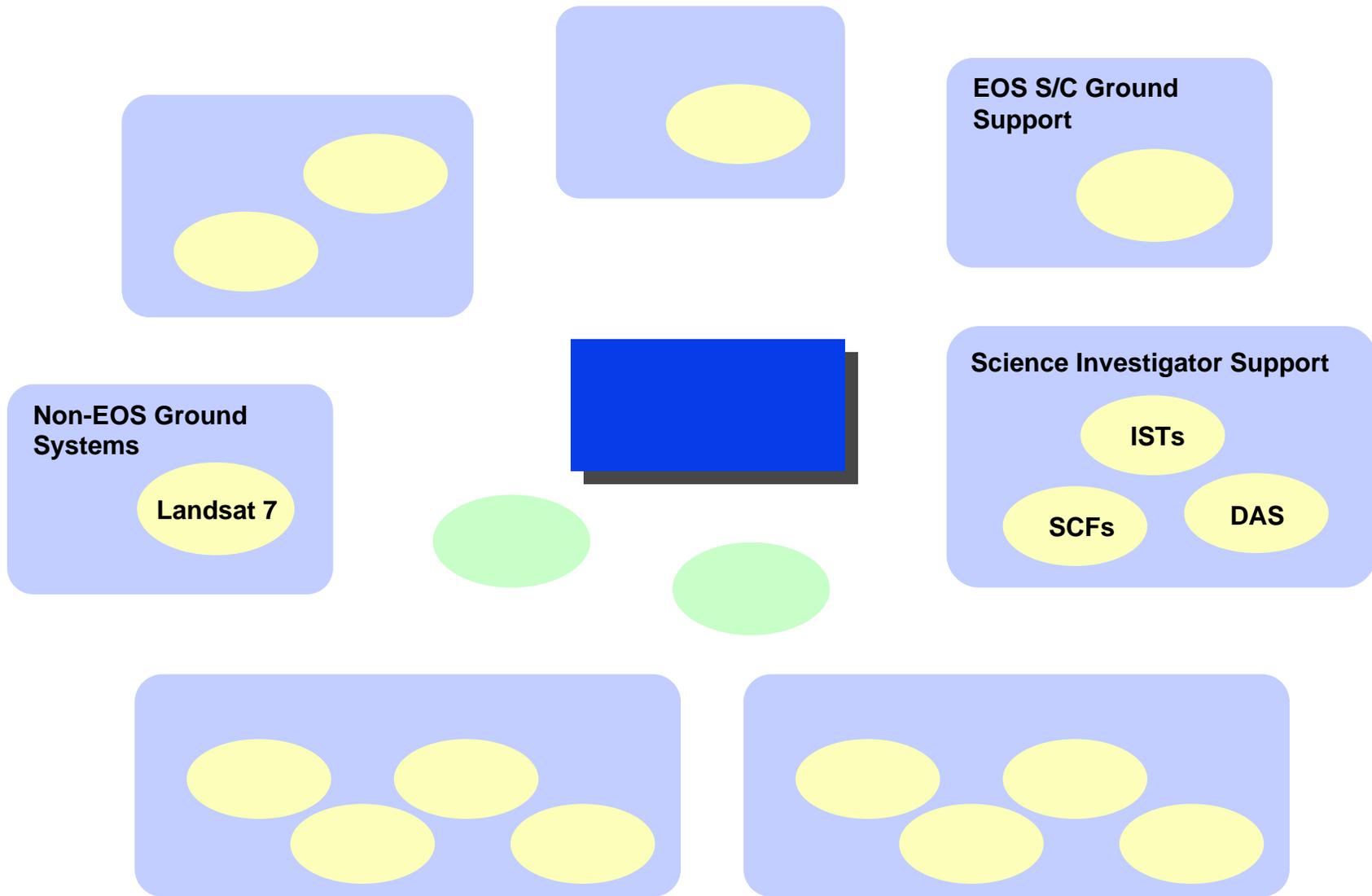
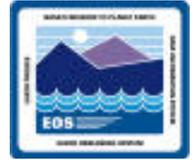


# EOSDIS System Context

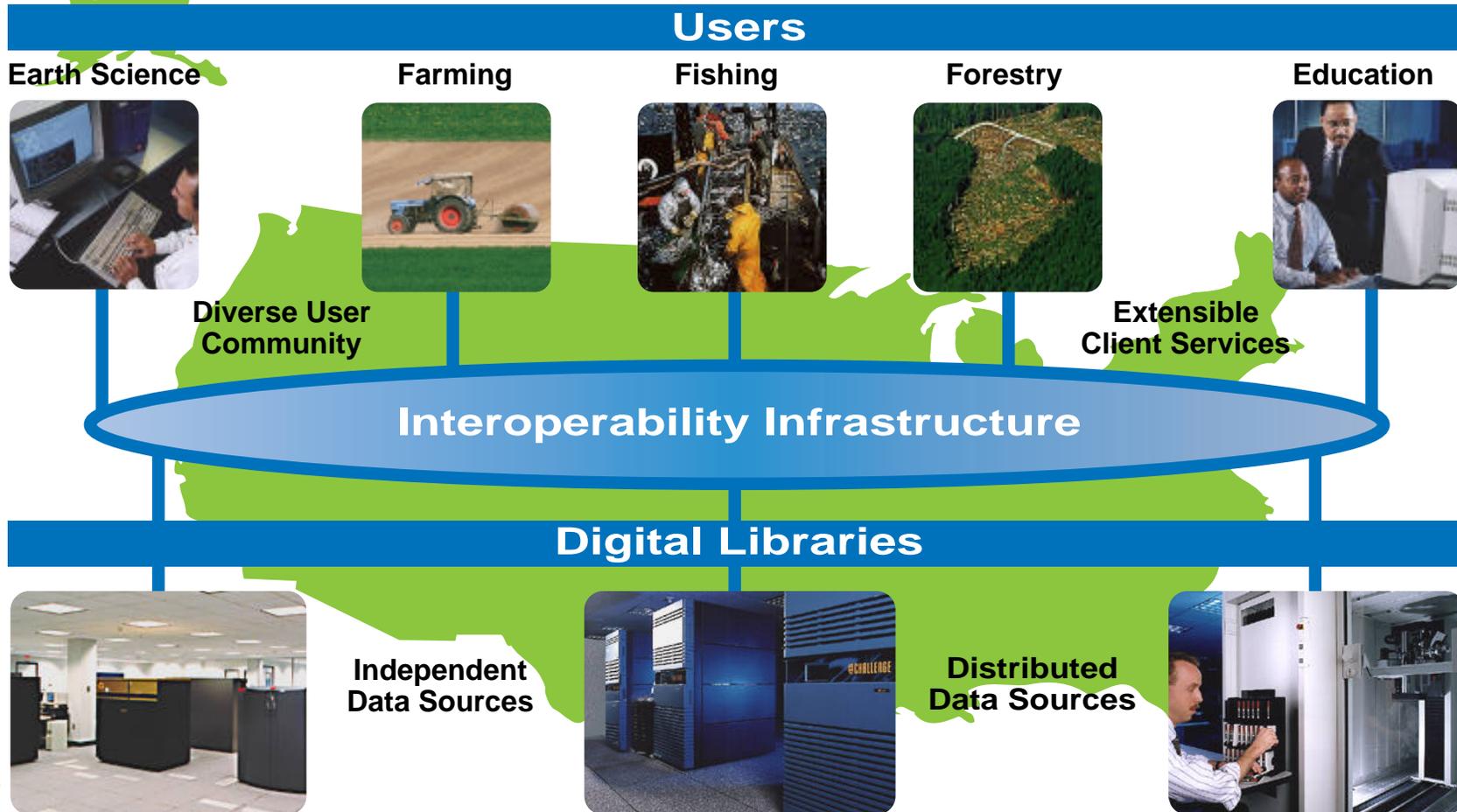
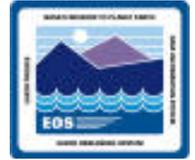


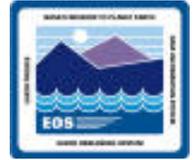
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# ECS External Interfaces

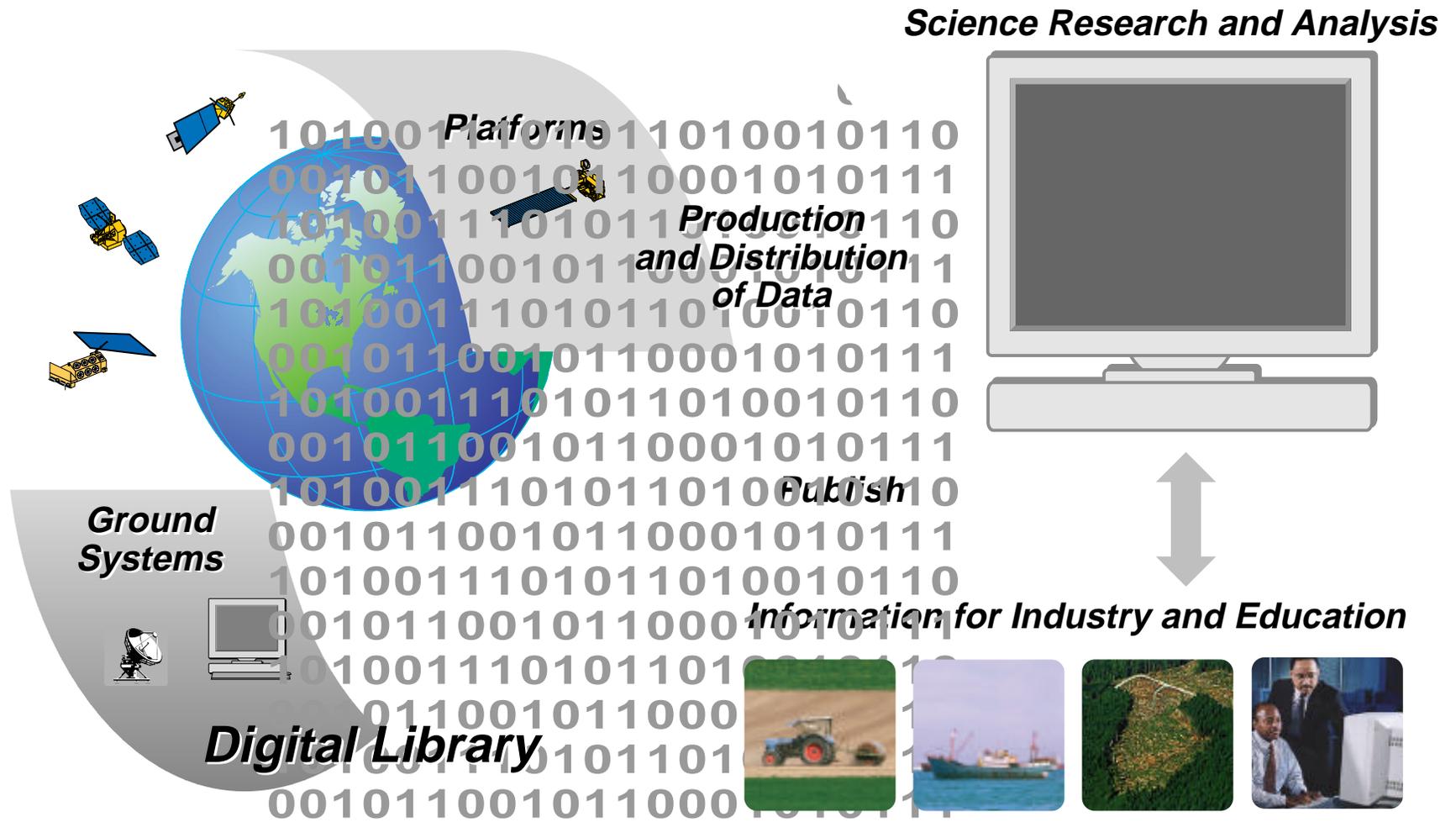


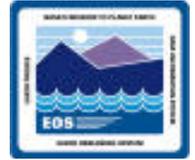
# The ECS Digital Library





# Push / Pull





# FOS Overview

## Overall mission requirements

- **Multiple mission support**
  - **Support up to seven concurrent EOS missions**
  - **Provide extensions for additional spacecraft and instruments**
  - **Provide support for multi-vendor spacecraft**
  - **Simultaneous simulations, test, development and operations**
- **Global visibility and distribution**
  - **Instrument Support Terminal (IST) Software Toolkit**
    - Provides remote access Instrument Operations Teams**
    - Globally distributed (e.g., ASTER - Japan, MISR - JPL, MOPITT-Toronto)**
- **Provides integrated system solution for scheduling, real-time, and off-line functions**
- **Provides ability for quick access and analysis of engineering data for long term spacecraft fleet performance**
- **Provide automated functions to reduce operational life-cycle costs**