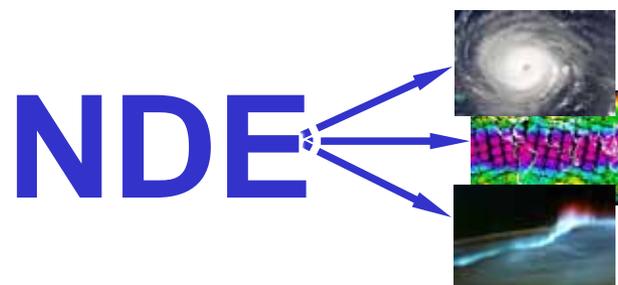




Briefing for JAG/ODAA



NPP Data Exploitation
September 13, 2011



Agenda



- NDE Mission & Objectives
- NDE Context
- Initial NDE System Configuration
- Initial ESPC Network Configuration
- NDE Product Definitions
- Initial Product Generation Capabilities
- Initial Product Generation Configuration
- NDE Product List
- Schedule to Initial Operations



Mission



NDE MISSION:

The NDE Project's primary mission is to provide near real time products derived from NPP observations to NOAA's operational and climate communities and other civilian and U.S. government users.



NDE System Objectives



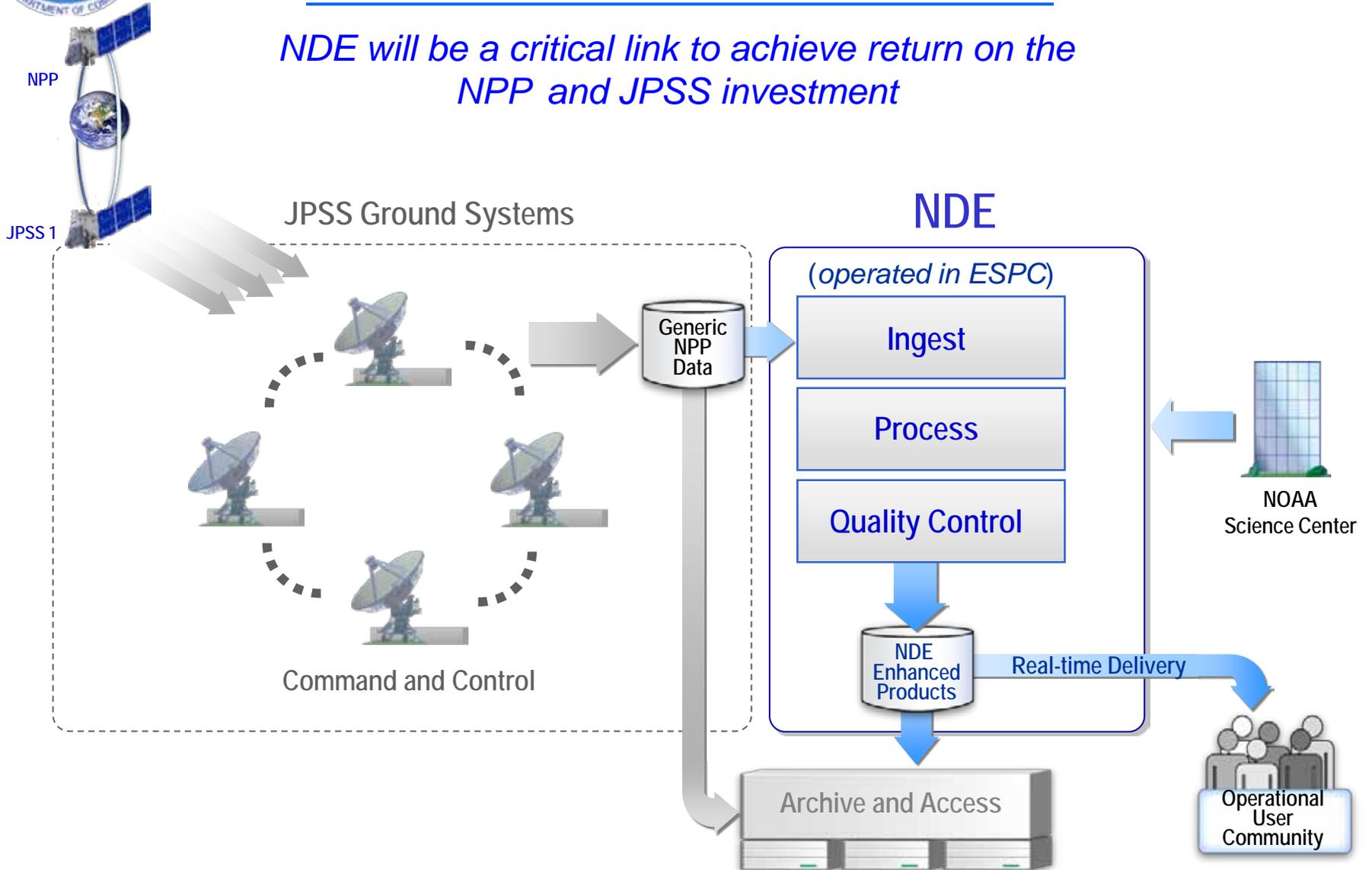
- Disseminate NPP Data Records to users
- Generate and disseminate tailored NPP Data Records (versions of Data Records in previously agreed alternative formats and views)
- Generate and disseminate NOAA Unique Products (augmented environmental products constructed from NPP Data Records)
- Deliver NOAA Unique Products, product processing elements, and associated metadata to the NOAA Comprehensive Large Array-data Stewardship System (CLASS) for long-term archiving
- Assist user systems with the implementation of NPP data
- Assist end-user preparedness for NPP data
- Develop a sustainable system that meets its user needs
- Provide software for NPP Data Record format translation and other data manipulations



NDE

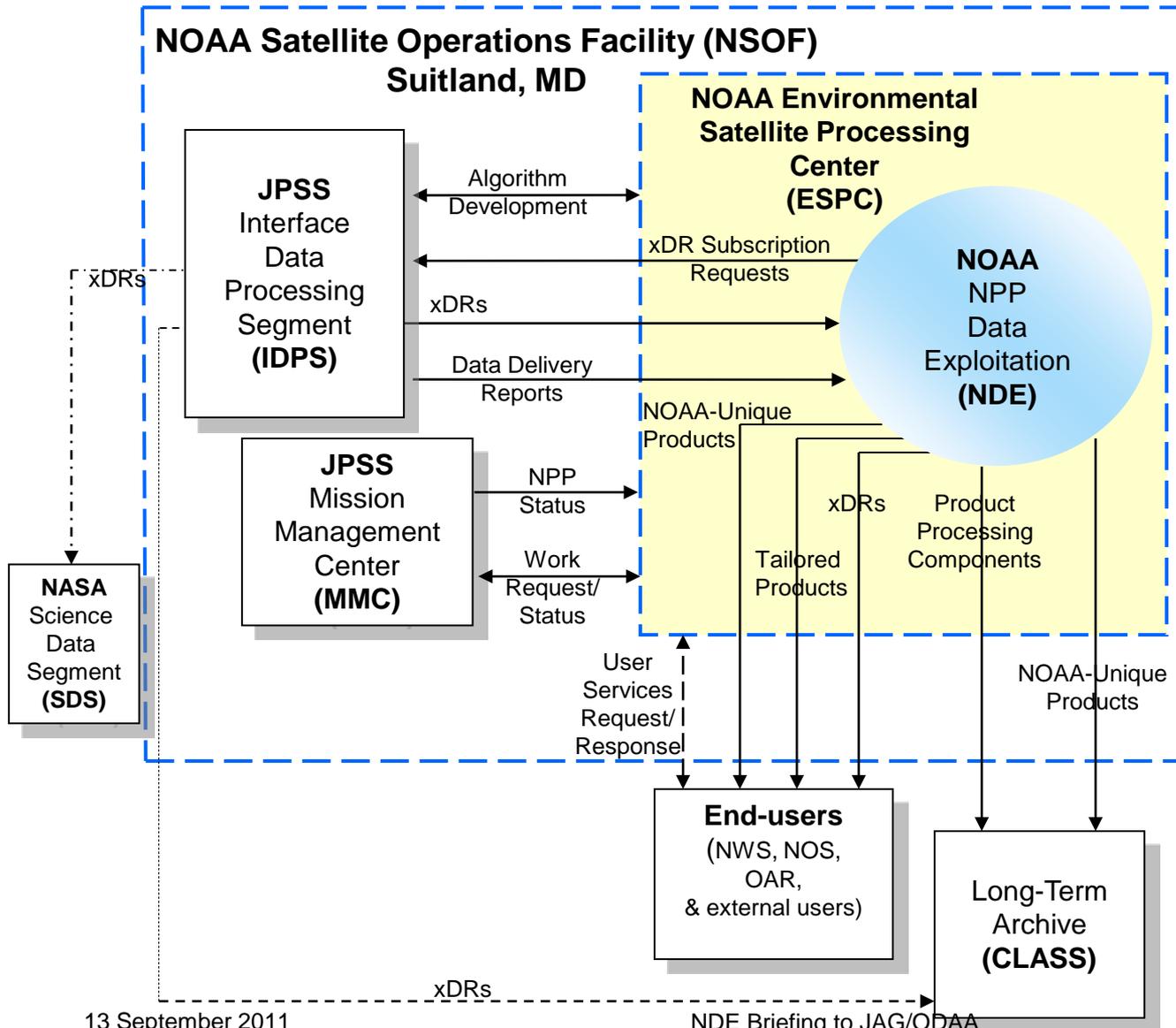


NDE will be a critical link to achieve return on the NPP and JPSS investment





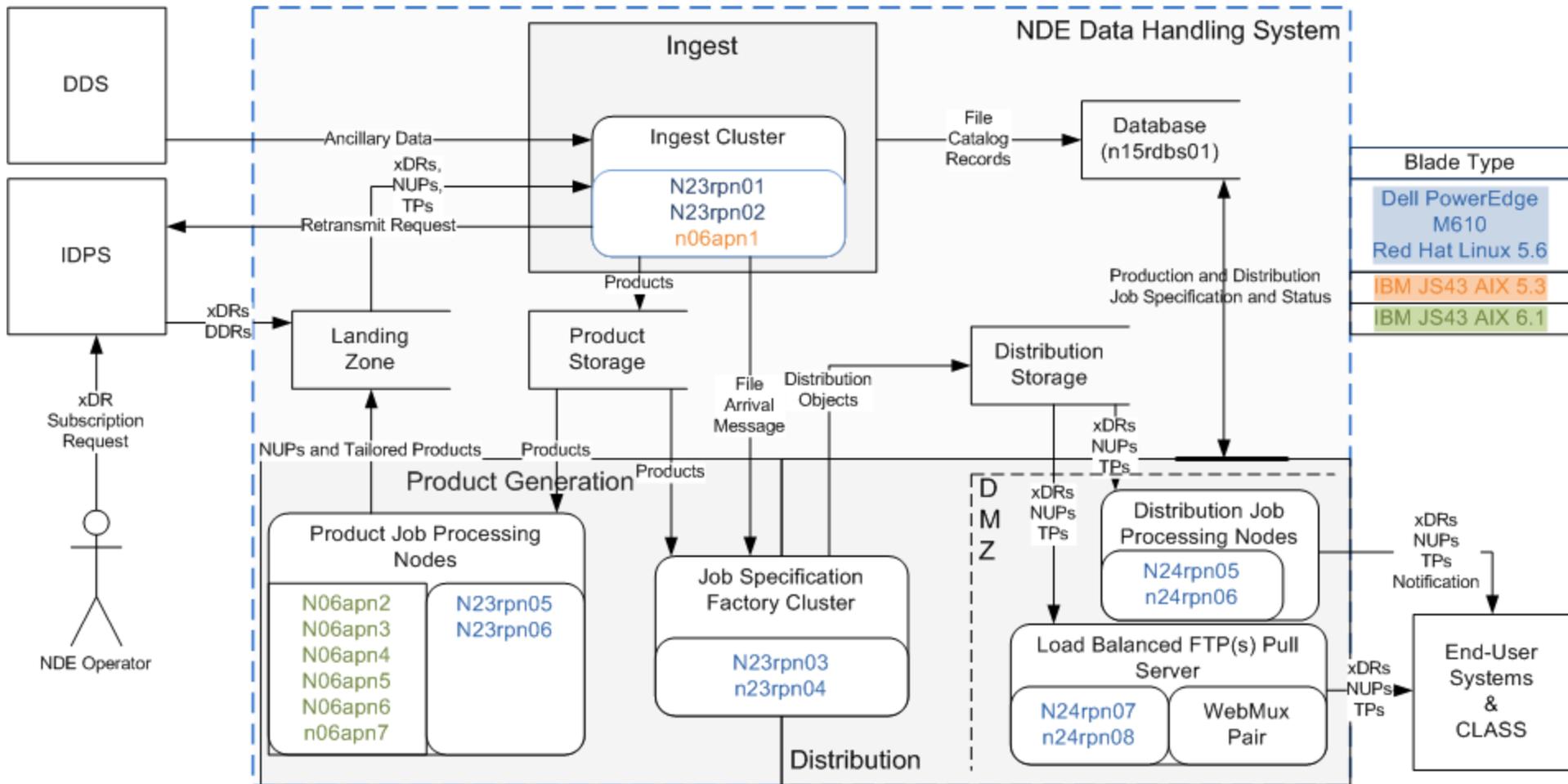
Functional Scope: The NESDIS Central



- Office of Satellite & Product Operations (OSPO) will provide common services:**
- Data Center Operations
 - Telecommunications
 - User Services (Help Desk)
 - Configuration Management
 - Security Controls
 - Distribution
 - Ingest



NDE Configuration at Launch





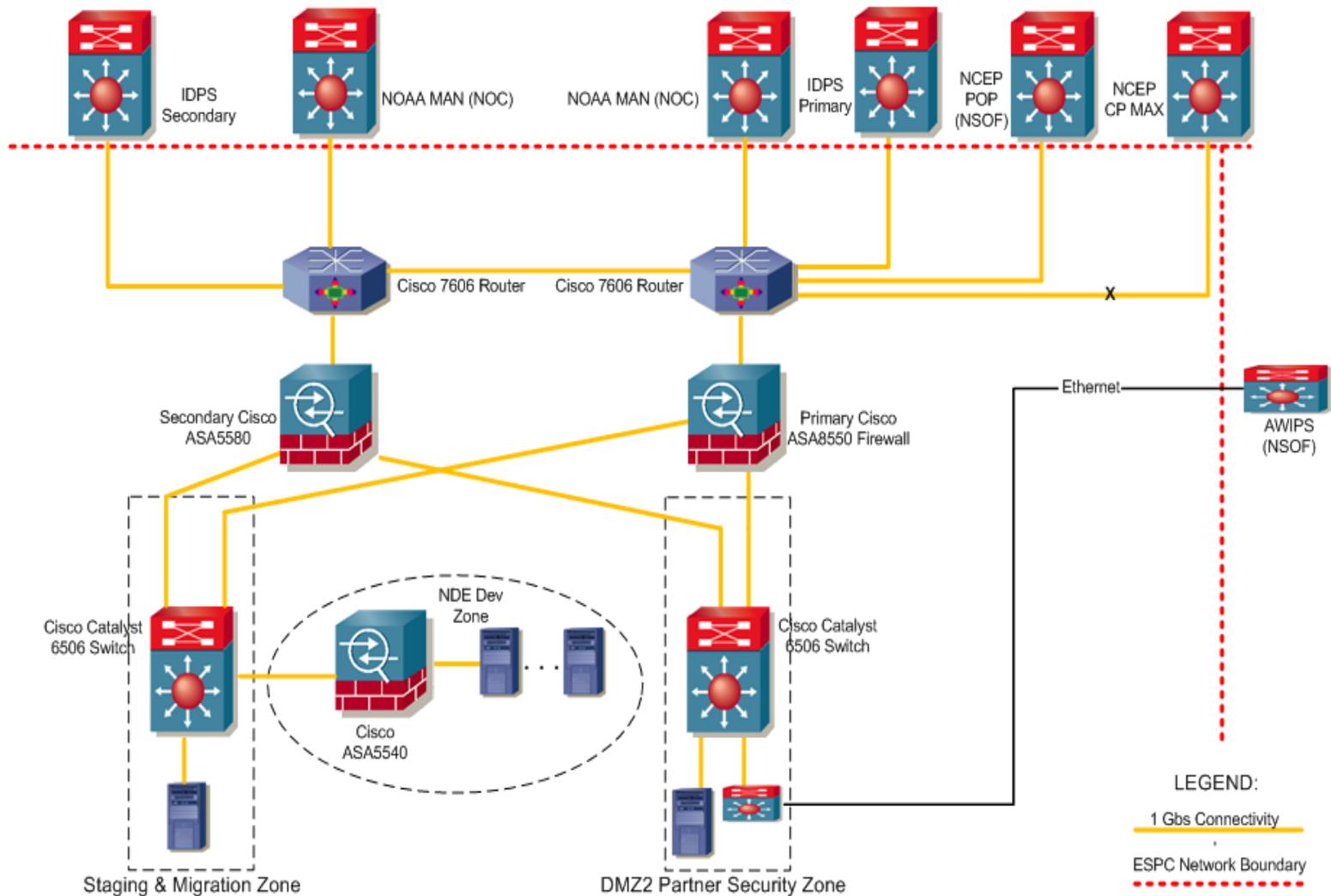
Product Distribution



- Approved User Account required
 - Test: Coordinate with Kevin Berberich/NDE
 - Operations: Coordinate with PAL
- ftp-s ([explicit mode](#)) protocol only
 - Push and Pull supported
- Notification Options
 - SOAP message
 - E-mail
 - Delivery Manifest (ftp-s push)
 - No notification



Stage 1 Network Configuration





Product Definitions



- Products delivered by NPP contractor
 - xDRs
 - Raw Data Records (RDR)
 - Sensor Data Records (SDR)
 - Temperature Data Records (TDR)
 - Environmental Data Records (EDR)
 - Application Related Product (ARP) – fire detection
 - Intermediate Products (IP)
- Products produced by NDE using xDR information
 - Tailored xDRs
 - NOAA Unique Products (NUPs)



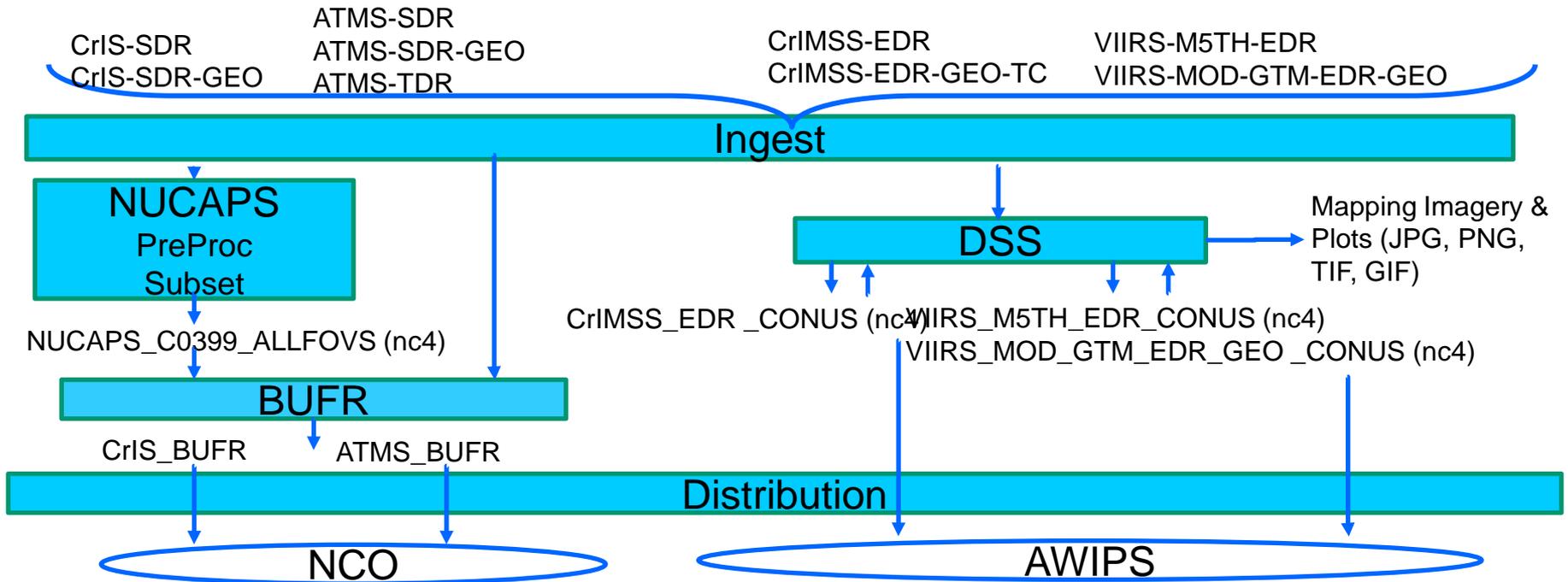
Initial Product Generation Capabilities



- CrIS-ATMS Product Processing Project (aka NUCAPS)
 - Creates CrIS radiance channel subset for numerical weather prediction community
- BUFR Reformat Toolkit
 - Takes ATMS radiances and puts them into BUFR format
 - Takes NUCAPS CrIS thinned radiances and puts them into BUFR format
- NDE tailoring tools
 - Tailors xDR and NUP information to meet end user requirements. Options include:
 - Formatting, projections, re-gridding, sub-sampling, etc.
 - Generate tailored VIIRS imagery products over AWIPS CONUS Area of Interest (AOI) in NetCDF4 format
 - Generate mapped imagery products (Mercator, cylindrical, stereographic, etc.) in JPEG, GIF, PNG, and TIFF formats



Product Configuration





Product Schedules



- NDE generates product suite required for initial operations in July 2012

ATMS Radiances	Jul-12
<i>ATMS Radiances (BUFR)</i>	Jul-12
CrIS Radiances	Jul-12
<i>CrIS Radiances (BUFR)</i>	Jul-12
VIIRS Radiances	Jul-12
<i>VIIRS Radiances (BUFR)</i>	Jul-12
VIIRS Imagery	Jul-12

Blue cells = JPSS contractor delivered products (referred to as xDRs)

Yellow cells = NOAA Unique Product (NUPs)

Red text = satellite product development has not started

Dates indicated NDE Ops Planning Date = products reach operational status



Product Schedules



- NDE transitions products into operations after initial operations

OMPS Radiances	Sep-12
<i>Polar Winds (VIIRS BUFR)</i>	Oct-12
<i>Rainfall Rate (ATMS)</i>	Oct-12
<i>Total Precipitable Water (ATMS)</i>	Oct-12
<i>Snow Cover (ATMS)</i>	Oct-12
<i>Land Surface Emissivity (ATMS)</i>	Oct-12
<i>Temperature Profiles (ATMS)</i>	Oct-12
<i>Moisture Profiles (ATMS)</i>	Oct-12
<i>Cloud Liquid Water (ATMS)</i>	Oct-12
<i>Sea Ice Concentration (ATMS)</i>	Oct-12
<i>Snow Water Equivalent (ATMS)</i>	Oct-12
<i>Ice Water Path (ATMS)</i>	Oct-12
<i>Land Surface Temperature (ATMS)</i>	Oct-12
<i>Rain Water Path (ATMS)</i>	Oct-12
<i>Green Vegetation Fraction</i>	Dec-12
<i>Ozone Limb Profile Radiances</i>	Dec-12



Jan – Feb 2013 Product Suite



<i>Aerosol Optical Depth (AVHRR-like)</i>	Jan-13
<i>Atmospheric Moisture Profile (CrIS/ATMS)</i>	Jan-13
<i>Atmospheric Temperature Profile (CrIS/ATMS)</i>	Jan-13
<i>Clear Sky Brightness Temperatures</i>	Jan-13
<i>Cloud Top Fraction (CrIS)</i>	Jan-13
<i>Cloud Top Pressure (CrIS)</i>	Jan-13
<i>CO2 Slicing Derived Cloud Top Pressure (CrIS) [New]</i>	Jan-13
<i>CrIS Cloud Cleared Radiances</i>	Jan-13
<i>Ocean Optimized Cloud Mask</i>	Jan-13
<i>Ozone (CrIS)</i>	Jan-13
<i>Sea Surface Temperature (SST)</i>	Jan-13
<i>Sea Surface Temperature (SST) (BUFR)</i>	Jan-13
<i>SST (AVHRR-like)</i>	Jan-13
<i>Stability Products (CrIS)</i>	Jan-13
<i>Trace Gases (Carbon Dioxide, Methane, Sulfur Dioxide)</i>	Jan-13
<i>Blended Rain Rate</i>	Feb-13
<i>Blended SST (Imagery)</i>	Feb-13
<i>Blended Total Precipitable Water</i>	Feb-13
<i>Blended Total Precipitable Water Anomaly</i>	Feb-13
<i>Coral Reef Bleaching Indices/Alerts</i>	Feb-13
<i>SST Anomalies</i>	Feb-13
<i>SST Degree Heating Weeks</i>	Feb-13
<i>SST Hot Spots</i>	Feb-13



April 2013 Product Suite



- NDE transitions production system to OSPO and products reach full up operational status (includes products on previous slides)
 - JPSS program has declared xDRs as operational; cal/val complete

Active Fires	Apr-13
Aerosol Optical Thickness	Apr-13
Aerosol Optical Thickness (BUFR)	Apr-13
Aerosol Particle Size	Apr-13
Atmospheric Moisture Profile	Apr-13
Atmospheric Pressure Profile [New]	Apr-13
Atmospheric Temperature Profile	Apr-13
Cloud Base Height [New]	Apr-13
Cloud Cover/Layers	Apr-13
Cloud Effective Particle Size	Apr-13
Cloud Mask	Apr-13
Cloud Optical Thickness	Apr-13
Cloud Top Height (VIIRS)	Apr-13
Cloud Top Pressure	Apr-13
Cloud Top Temperature	Apr-13
Ice Surface Temperature [New]	Apr-13
Land Surface Temperature (VIIRS) [New]	Apr-13
Land Surface Type	Apr-13
Nadir Profile Ozone	Apr-13
Ocean Color/Chlorophyll	Apr-13

Ozone (BUFR)	Apr-13
Ozone Total Column	Apr-13
Quarterly Surface Type Gridded [New]	Apr-13
Sea Ice Characterization (VIIRS)	Apr-13
Snow Cover	Apr-13
Surface Albedo	Apr-13
Suspended Matter [New]	Apr-13
Vegetation Index	Apr-13



New Product Requests



- To request new NOAA Unique Products not identified in the previous slides, follow the SPSRB process.
 - <http://projects.osd.noaa.gov/spsrb/>
- To request new tailoring (e.g. data format, map projection, subsetting) of NUPs identified in the previous slides, submit request through the appropriate product IPT (NESDIS Product Area Lead).



Schedule



- Sep-Oct 2011: Begin procurement of the Production #1 hardware suite
- Nov 2011: Deliver Implementation Plan for Production Environment
- Dec 2011: Complete transition of NDE software into ESPC System Inventory
- Feb 2012: NDE Production Environment Integration completed
- Mar 2012: Publish annual update of ESPC System Security Plan (SSP) to include NDE as part of Continuous Monitoring; NDE Production Environment authorized to distribute under existing ESPC ATO
- Apr 2012: System operator and network administrator training begins, to include interim error response and monitoring procedures until monitoring tool build in 2013
- Apr 2012: Operational Readiness Review (ORR)
- Apr 2012: OSPO begins 24x7 Operations Support