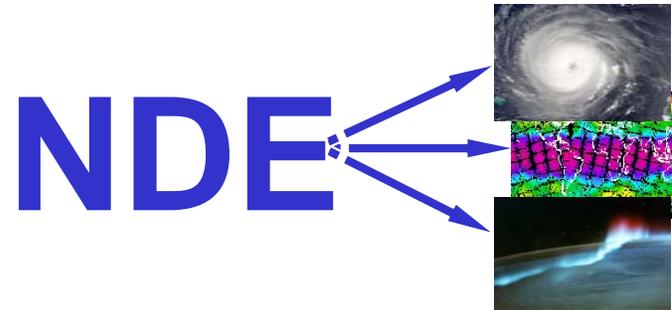




The NPOESS Data Exploitation Project



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Overview



- NDE Overview
 - Mission, Objectives, and Organization
- NDE Components
 - Project Development
 - System Development
 - User/Stakeholder Coordination
- Summary



NDE Mission and Objectives

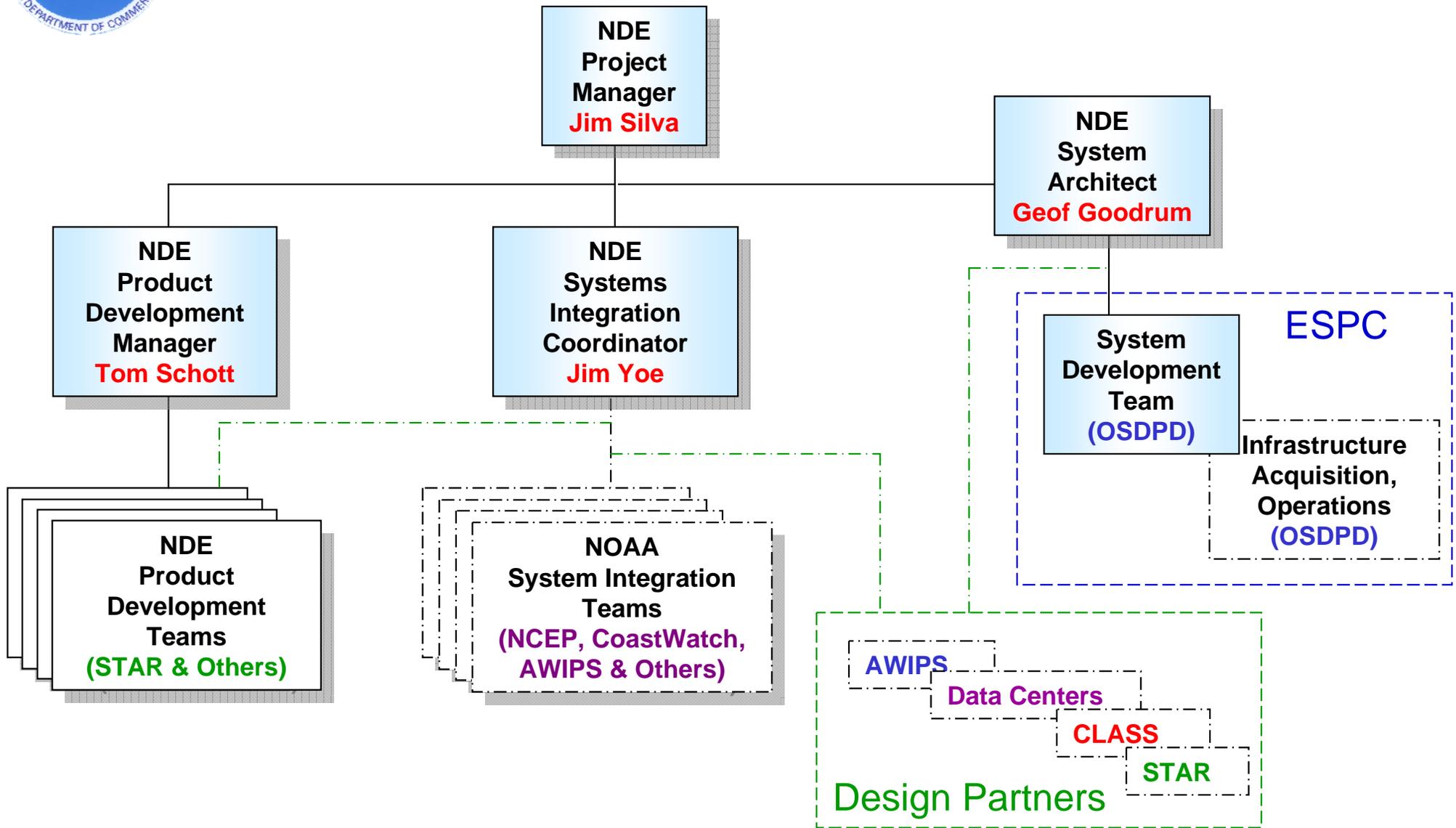


Deliver NPOESS data products and assist NOAA and other civilian operational users to realize the potential of NPOESS observations

- Disseminate NPOESS Data Records to real-time civilian users
- Generate and disseminate tailored NPOESS Data Records
- Generate and disseminate NOAA-unique products (enhanced data products constructed from NPOESS Data Records)
- Deliver NOAA-unique products, product processing elements, and associated metadata to CLASS for long-term archiving
- Provide services to customers, including NDE product training, product enhancement, and implementation support across NOAA
- Provide software for NPOESS Data Record format translation and other data manipulations



NDE Organization





NPP Phase 1

3-20 months after NPP Launch



Legacy mission continuity replacement products comprised of currently funded NUPs and xDRs

Y NOAA Unique Products (NUPs)

B NPOESS Delivered xDRs (SDR, TDR, EDR, ARP, IP)

CrIS Thinned Radiances	Blended SST	Sea Surface Temperature (SST)
CrIS Cloud Cleared Radiances	SST Anomalies	Nadir Profile Ozone
Total Precipitable Water (ATMS)	SST Degree Heating Weeks	Ozone Total Column
Snow Cover (ATMS)	SST Hot Spots	Snow Cover and Depth
Precipitation Rate (ATMS)	Coral Reef Bleaching Indices/Alerts	Imagery
Land Surface Emissivity (ATMS)	Total Ozone (CrIS)	Ocean Color/Chlorophyll
Cloud Liquid Water (ATMS)	Trace Gases (Carbon)	Vegetation Index
Sea Ice Concentration (ATMS)	SST (AVHRR-like)	Active Fires
Snow Water Equivalent (ATMS)	Aerosol (AVHRR-like)	Atmospheric Temperature Profile
Ice Water Path (ATMS)	ATMS Radiances	Atmospheric Moisture Profile
Land Surface Temperature (ATMS)	CrIS Radiances	Aerosol Optical Thickness
Temperature Profiles (ATMS)	VIIRS Radiances	Land Surface Type
Moisture Profiles (ATMS)	OMPS Radiances	Surface Albedo
Rain Water Path (ATMS)	Cloud Mask	Cloud Cover/Layers



NPP Phase 2: 20 months after NPP Launch to 1 month prior to C1 launch



- Additional legacy products and enhanced products comprised of NUPs and xDRs not linked to mission continuity**

Y NOAA Unique Products (NUPs)

B NPOESS Delivered xDRs (SDR, TDR, EDR, ARP, IP)

Polar Winds (VIIRS)	Leaf Area Index	Cloud Base Height
Limb Profile Ozone	Fire Potential/Risk	Cloud Effective Particle Size
Blended Snow Cover	Fire & Smoke Analysis	Cloud Optical Thickness
Harmful Algal Blooms (VIIRS)	Near Coast Ocean Color	Cloud Top Height (VIIRS)
Blended Total Precipitable Water	Integrated xDRs at CrIS Resolution	Ice Surface Temperature
Tropical Rainfall Potential	Cloud Liquid Water Path (VIIRS)	Sea Ice Characterization (VIIRS)
Blended Ozone	Cloud Ice Water Path (VIIRS)	Atmospheric Pressure Profile
Clear Sky Radiances (VIIRS)	Cloud Top Temperature (VIIRS)	Quarterly Surface Type Gridded
Green Vegetation Fraction	Suspended Matter	
Vegetation Health	Aerosol Particle Size	
Vegetation Moisture	Cloud Top Temperature	
Drought Indices	Cloud Top Pressure	
Vegetation Thermal Conditions	Land Surface Temperature (VIIRS)	



NPP Not In Phase 1 or 2



Y	NOAA Unique Products (NUPs)
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Net Solar Radiation at TOA (CERES)	Rainfall Prediction (ATMS)
Outgoing Longwave Radiation at TOA (CERES)	Tropical Cyclone Intensity (ATMS)
Downward Longwave Radiation at TOA (CERES)	Hazard Support (Volcano) (VIIRS)
Downward Shortwave Radiation at TOA (CERES)	Hazard Support (Tropical) (VIIRS)
Cloud Products (CERES)	Fire Burn Scars (VIIRS)
Outgoing Longwave Radiation TOA (VIIRS)	Cloud Types (AVHRR-like)
Outgoing Longwave Radiation (CrIS)	Inversion Strength and Height (CrIS)
Downward Shortwave Radiation TOA (VIIRS)	CO2 Slicing Derived Cloud Top Pressure (CrIS)
Ocean Optimized Cloud Mask	
Chesapeake Bay Ocean Color	
Emiliana Huxleyi Blooms	



System Development



Architectural Context: New Technologies

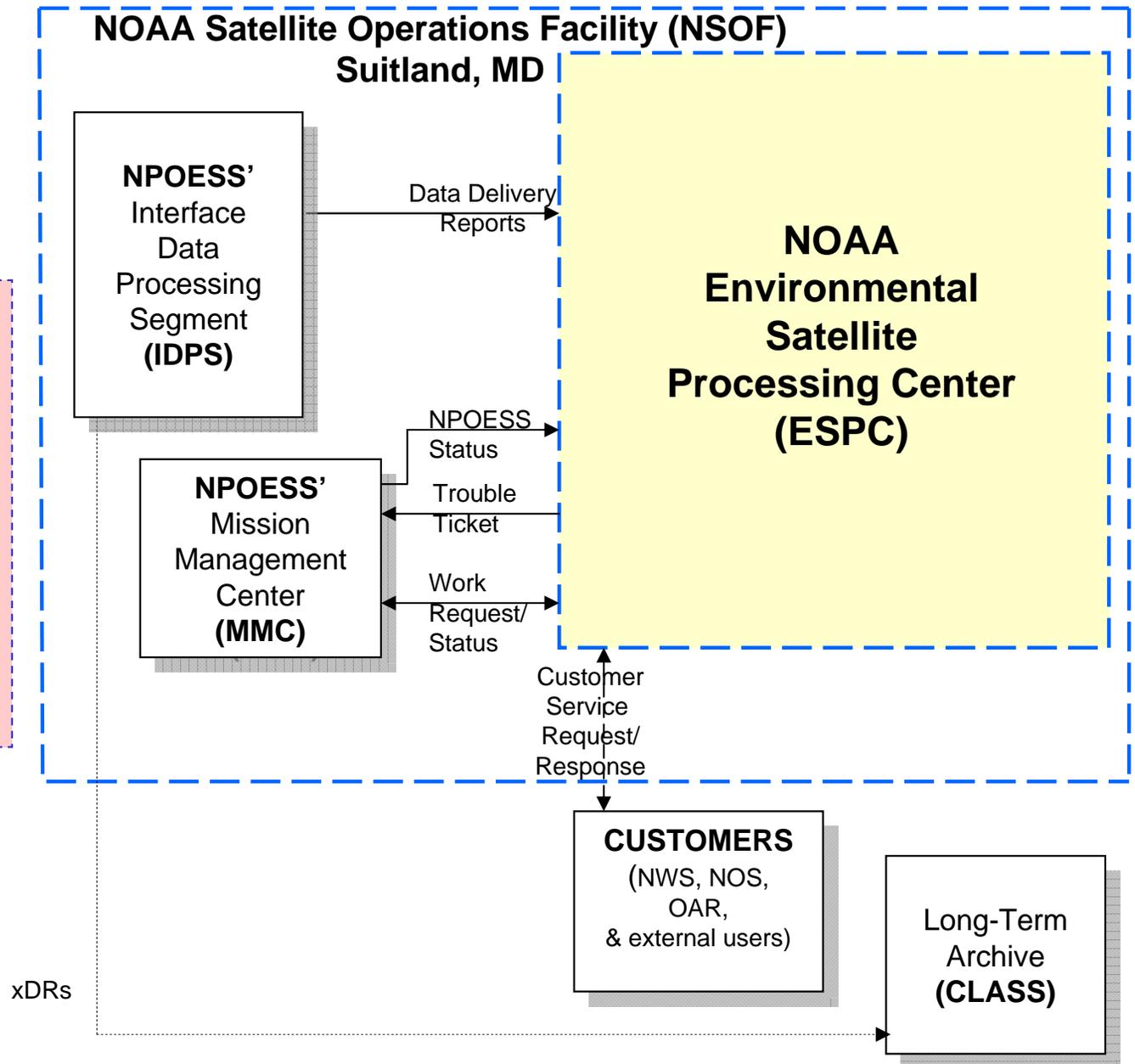
- Database Management System
- Service Oriented Architecture
- Storage Area Network
- Customer Interface
 - Data Formats
 - Data Distribution Options
 - Notification Options
 - Online Services



Functional Scope Boundaries: NPOESS and ESPC



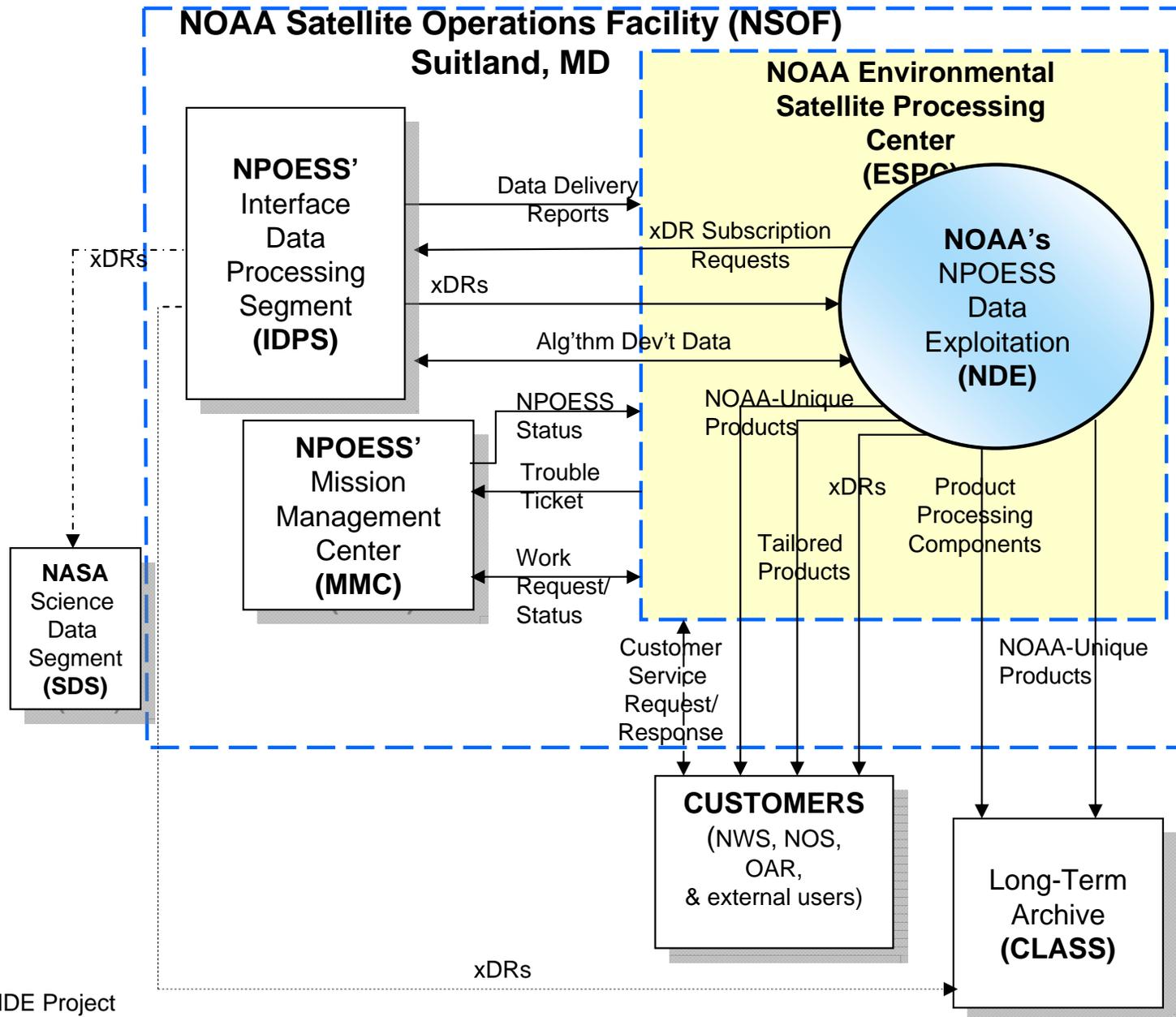
- ESPC will provide common services:**
- Data Ctr Operations
 - Telecommunications
 - Customer Services (Help Desk)
 - Systems Management
 - Security Controls





The NOAA Central

NOAA Central





System Development



- System to consist of 3 IT environments
 - Science Algorithm Development & Integration
 - System Test
 - Production
- System implemented in successive builds
 - Each adds functionality and complexity



Sub-system Builds for NPP



Build	Description	Start Date	End Date
1	Ingest	4/24/2008	5/6/2009
2	Production	2/23/2009	11/3/2010
3	Distribution	1/8/2010	1/14/2011
4	Customer Services	6/1/2010	4/12/2011
5	Monitoring & Reporting	4/12/2011	2/20/2012

- Repeat Build Sequence for NPOESS
- Production includes XDR tailoring as well as generation of NUPs



Systems Integration



- Program Coordination
 - NOAA Goal Teams & Programs
- Stakeholder Coordination
 - What
 - Interface specification, service agreements
 - Schedule and resource coordination
 - Support Testing
 - Outreach and training for products and applications
 - Establish Product/Stakeholder Integration Teams - 2010
 - With whom
 - Product Developers & Product Area Leads
 - End Users and Operational Centers supporting



Some Current SI Activities



- Collaboration with the Numerical Weather Prediction Community
 - Support improved forecasting through assimilation of NPP/NPOESS data
 - JCSDA, NESDIS/STAR, NCEP (EMC, CPC, and NCO)
 - Selected data products to be BUFR formatted
- Collaboration with the AWIPS Technology Infusion Project
 - Coordinate schedules, architectures, smart push-pull for data
 - Work with NWS HQ to identify product requirements
 - NWS Telecommunications Operation Center as distribution gateway
- Collaboration with the NOAA Hydrometeor Testbed
 - HMT gets enhanced data to support forecasts/warning
 - NDE gets data/expertise to validate precipitation products
- Outreach and Training
 - New applications, new users foreseen
 - Leverage existing programs, efforts, and facilities
 - COMET, SPORT, NOAA Cooperative Institutes, VISIT Program, GOES-R Proving Ground, HMT



Summary



- NPP and NPOESS will offer
 - New & Improved polar data products, based on
 - New Sensors – improved resolution, coverage, SNR
 - Advanced science algorithms
 - Reduced data latency (NPOESS SafetyNet)
- NDE will offer
 - New ways of serving data users
 - New/expanded applications for data products
- Success (the “E”) depends on communication & coordination
 - Product developers, operational users, research community, and NDE and the Environmental Satellite Processing Center
- *Visit the NDE Webpages: <http://projects.osd.noaa.gov/NDE/>*