OFFICE OF SATELLITE AND PRODUCT OPERATIONS
NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE

Informational Topic
PDA Status

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Outline

- Overview of the system

- System timeline of events

- Operational status

- Major improvements
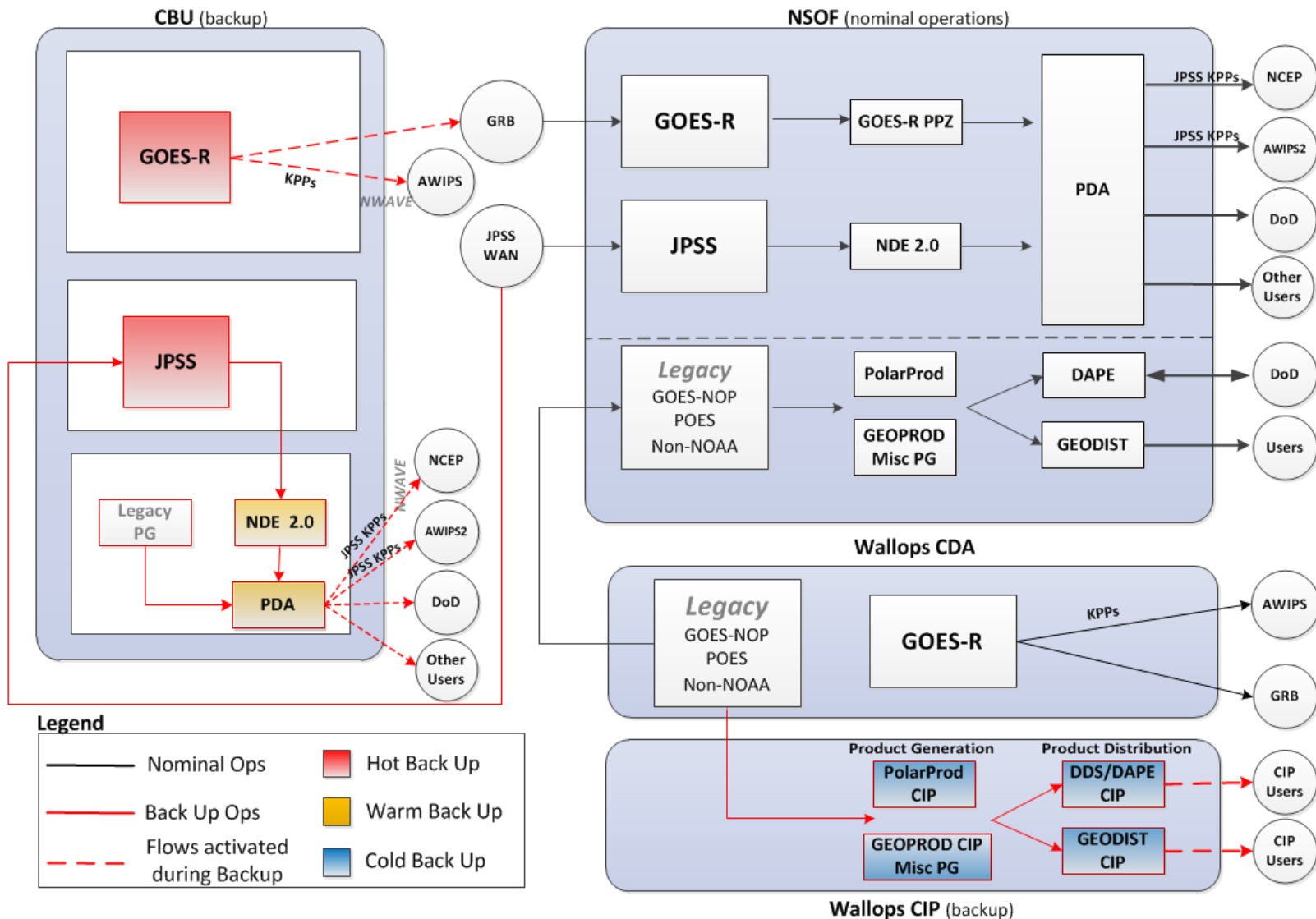
- System statistics

- Near-term activities

Product Distribution and Access (PDA)

- Enterprise distribution system for delivering near real-time data to our core, time critical users
- Includes:
  - Product Generation Segment called NDE
  - New network infrastructure and services called EI
  - Peers with NOAA's high speed NWAVE network for external WAN connectivity
  - Utilizes secure data transfer protocols
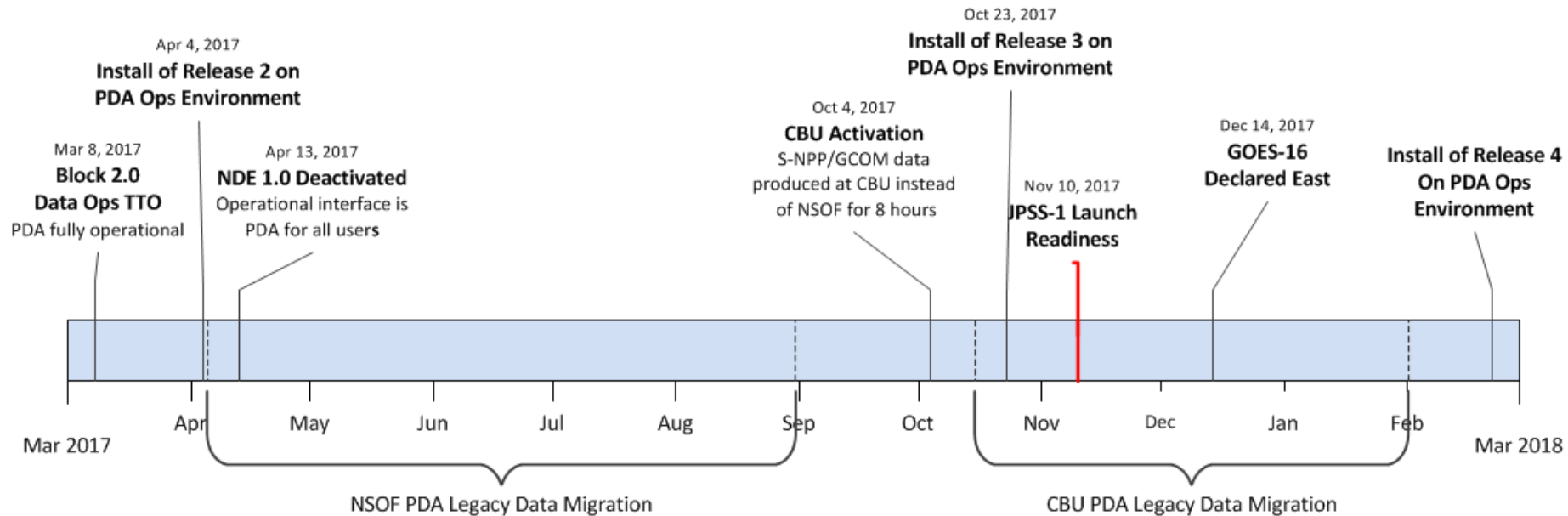- Locations: **NSOF**, **CBU**, Wallops CDA, NASA/GSFC and Fairbanks CDA

PDA Simple Diagram

Timeline of PDA Events

Operational Status of PDA

Ops System	Sep	Oct	Nov
Performance	G	G	G
Reliability	Y	Y	Y
Infrastructure (EI)	G	G	G
Multi-Mission (2)	G	G	G
Multi-Mission (4)	--	--	--
Fault Detection	Y	Y	Y
Anomaly Response	G	G	G
IT Security	G	G	G
Backup/COOP	Y	G	G

G	Functioning as intended	Y	Intermittent problems/ disruptions	R	Significant failures/ problems

Major Improvements

- High speed trans-Atlantic link established with our major international partner (EUMETSAT) – completed

- Switch from software-based load balancer to hardware load balancer – hardware being installed (Nov)

- Enable multi-mode for the test environment to support concurrent test activities - funded

- Improve reporting capabilities for the system and network infrastructure - funded

- Making products GTS ready w/ WMO header insertion – requirement approved

- Creating a "hot" PDA back-up where the production suite is always running - new requirement being established

PDA Statistics

PDA Statistics for all data (including GOES-16 and JPSS)	
Number of User Groups	68 Active out of 120 Total
Total Distributed Data Size	5.78 TB/day
• Distributed to 'Pull' Users (53 Users)	3.66 TB/day
• Distributed to "Push" Users (15 Users)	2.10 TB/day

Largest Data Consumers – Distributed Data Size	
STAR	1.52 TB/day
DoD	1.1 TB/day
ESPC Shared File System	475 GB/day

Additional Data Consumers of Interest – Distributed Data Size	
To NWS	278 GB/day
To EUMETSAT	39.8 GB/day

Report period covers: 10/1/2017 to 10/24/2017

PDA to DoD File Transfer Avg Stats

Daily Average Transfer Speed – PDA to DoD

DoD User Groups	September	October
AF_AFWA	2.7 sec	4.8 sec
NAVY_FNMOC	26.2 sec	11.9 sec
NAVY_JTWC	0.5 sec	0.5 sec
NAVY_NAVO	8.4 sec	7.9 sec

Distributed Data – PDA to DoD

DoD User Groups	September	October
AF_AFWA	917.2 GB/day	942.9 GB/day
NAVY_FNMOC	96.4 GB/day	102.9 GB/day
NAVY_JTWC	0.022 MB/day	0.022 MB/day
NAVY_NAVO	120.3 GB/day	102.2 GB/day

PDA to NWS/NCEP File Transfer Avg Stats

Daily Average Transfer Speed – PDA to NCEP

User Groups	September	October
NCEP_EMC	0.14 sec	0.20 sec
NCEP_IDP	0.15 sec	0.13 sec
NCEP_WCOSS	0.05 sec	0.07 sec

Distributed Data – PDA to NCEP

User Groups	September	October
NCEP_EMC	37.37 GB/day	62.7 GB/day
NCEP_IDP	115.32 GB/day	129.9 GB/day
NCEP_WCOSS	16.12 GB/day	22.2 GB/day

Near-term Activates

- Status of DDS
  - DDS at NSOF
    - All legacy data is 100% transferred to PDA
  - DDS at CIP
    - N-WAVE connectivity between CIP and CBU expected to go in early November
    - Awaiting OSAAP direction memo defining legacy KPP/critical products required to be backed up
- DDS is expected go best effort "8x5" upon the successful conclusion of a NCEP 30-day performance test
- Once CIP data is synchronized to the PDA at CBU, all DDS systems will begin the decommissioning process
- DAPE systems will remain as is, but no new data will be added to the system

Thanks

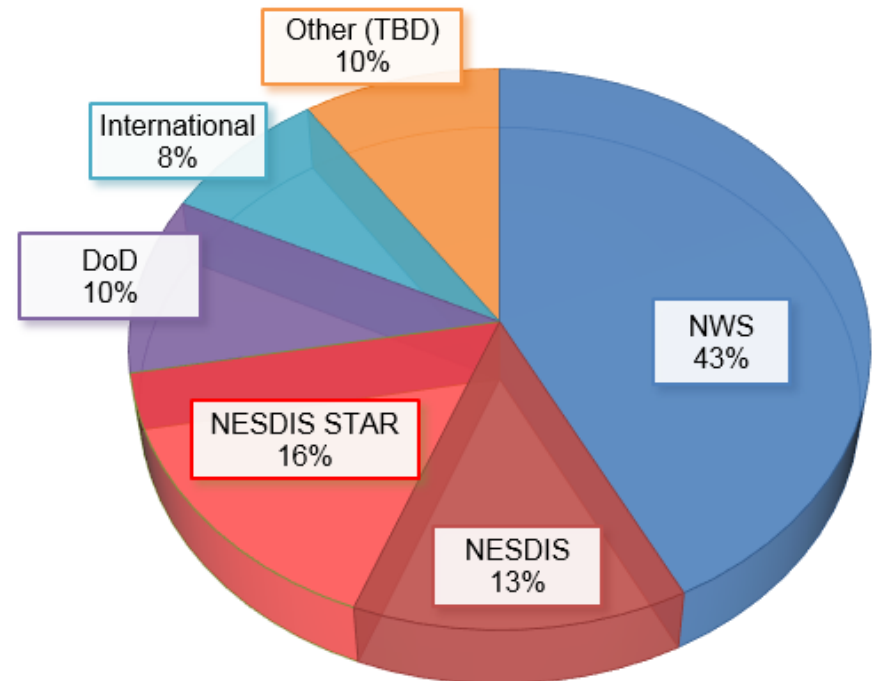# Backup

PDA Data Allocation: System Capacity Overview

- PDA was initially designed with a data volume capacity egress rate of ~40 TB/day (at 25 Gbps); PDA and infrastructure is scalable to meet growing demand

- As of January 30, 2017 ~41.55 TB/day has been allocated to approved users

PDA Daily Data Allocation by Major User Category (TB/day)		
NOAA	NWS	17.65
	NESDIS	5.55
	NESDIS STAR	6.75
DoD		4.25
International		3.4
Other (TBD)		3.95
Total		**41.55**

PDA Egress - Daily Data Allocation

- Other (TBD) 10%
- International 8%
- DoD 10%
- NWS 43%
- NESDIS STAR 16%
- NESDIS 13%

Note - These data allocations per user are maximums and for many of the big data consumers it is unlikely they will fully utilize as much data as currently allocated over the next 12-24 months