GOES-R CORE GROUND SYSTEM TECHNICAL PERFORMANCE



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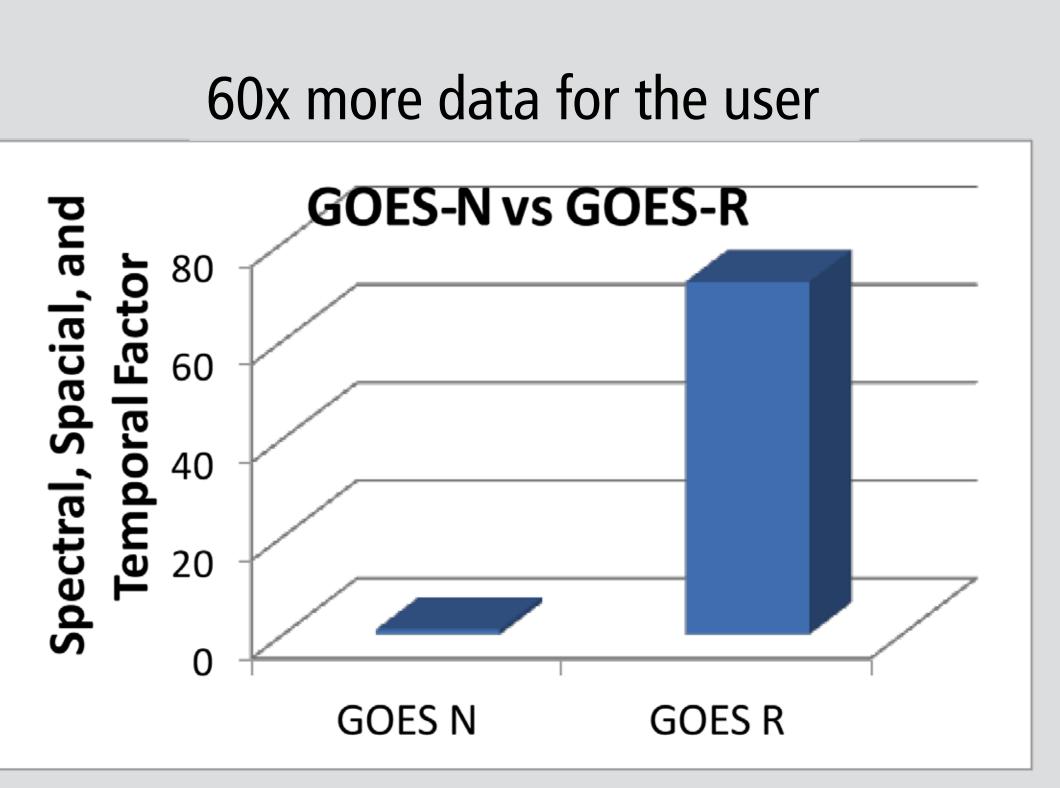
Emphasis on Mission Partnership and Collaboration

• Successful Long-Duration, 24X7 Advanced Weather Interactive Processing System (AWIPS) and Product Interface Validation • Successful Execution of All Mission Readiness Activities

- Three sites, no single point of failure, high availability
- Security high impact (NIST SP 800-53, 800-82)
- Six 16.4-meter X, L, S tri-band antennas
- Four 9.1-meter L-band receipt antennas
- Five GOES Rebroadcast simulators, 8 raw data recorders
- 147 integrated off-the-shelf products
- 5.2M lines of code (835k custom, 270k script, 4M test)
- 259 racks, 90 miles of rack interconnection cables
- 392 workstations, 5.8 PB of storage
- High throughput product precedent processing with 215 single precision trillion floating-point operations per second (110 double precision)

An easily scalable and extensible enterprise ground system

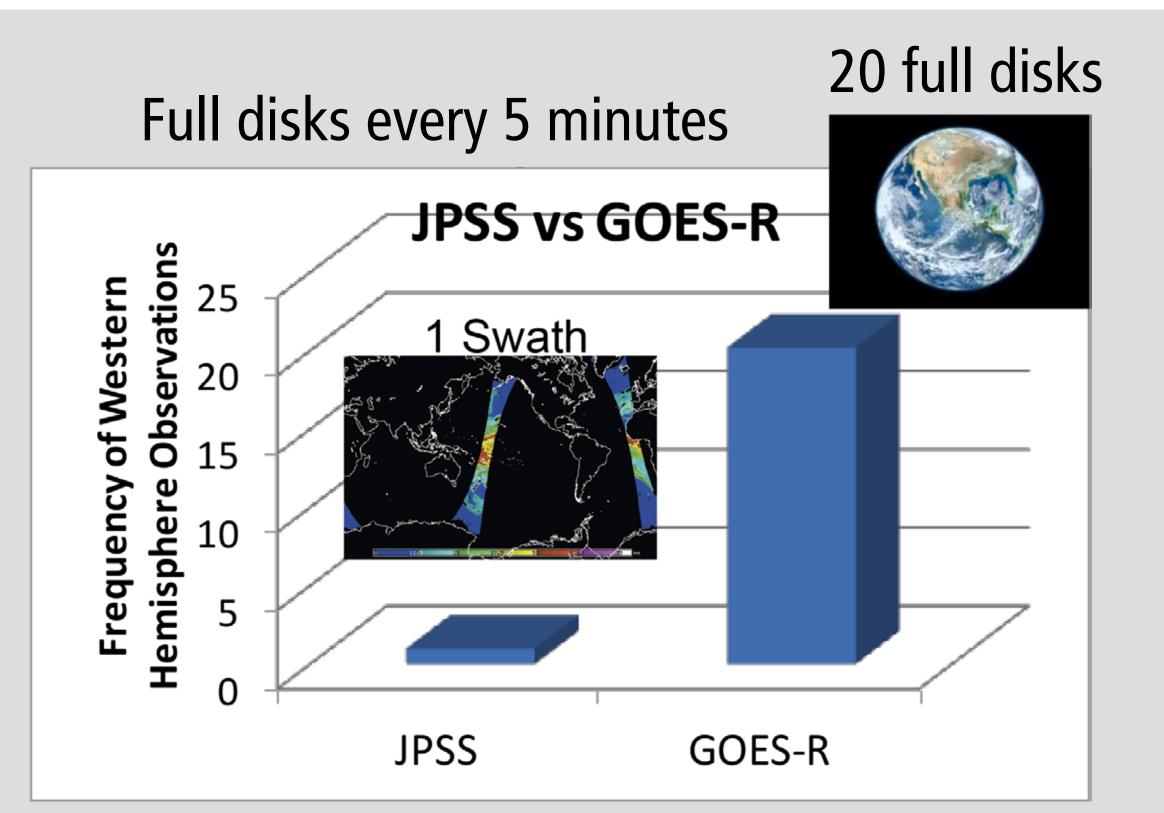




- GOES-R processes >10x more data and provides this data 6x more often than current system
- Users will receive more than
 60x data than from current system



Receives critical solar flux data in 1.8 seconds from GOES-R to protect critical infrastructure



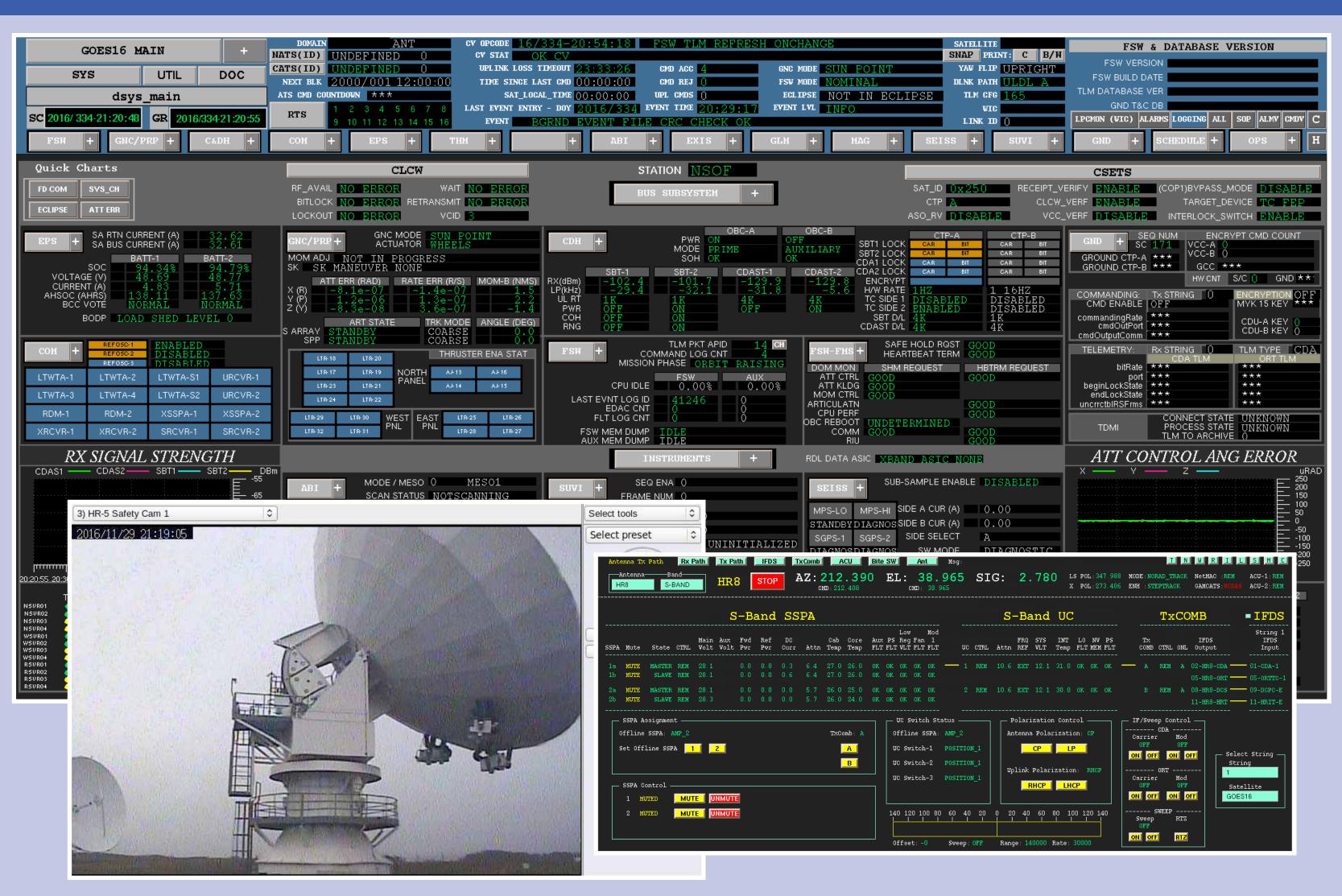
GOES-R processes the entire Western
 Hemisphere 20x in the time Joint Polar Satellite
 System observes 1 swath around the world



Receives continuous pipeline of key performance parameter (KPP) sectorized image tiles as instrument data is processed by the GOES-R Ground Segment

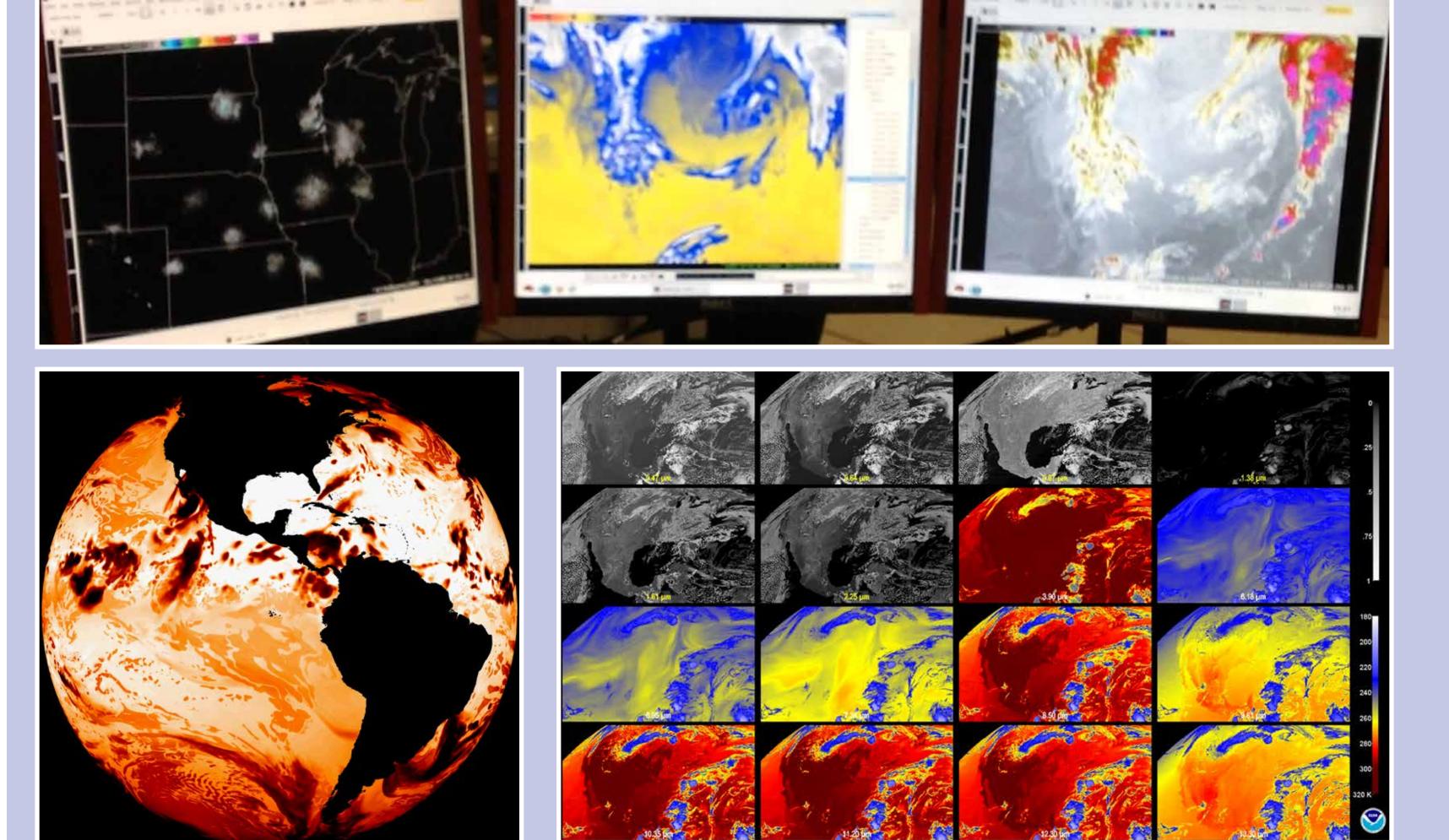
Meeting National Environmental Satellite, Data, and Information Service's goal of timely delivery of environmental data to protect our nation's economy, security, and quality of life

Mission Management



- During orbit raising:
- Achieved seamless telemetry
 connectivity during progression through
 NASA Integrated Services Network sites
- Tracked satellite in view, validated telemetry receipt and satellite commanding using ground system
- Concurrent and flexible command, telemetry, and data handling for L, X, S bands across 3 sites
- Remote antenna management
- Functionality includes mission planning, scheduling, and spacecraft navigation

Product Generation / Distribution



- Supported National Weather Service integration and operations with 24x7 data flow from East, West, and post-launch test slots
- Experienced no KPP outages to AWIPS
- Distributed over 20 million products / 27 TB
- Exercised mode / meso changes over 30 times
- Tracked Hurricane Matthew
- Created and distributed L0 and L1b products during PLT

Enterprise Management



- Informational screens provide overall situational awareness of the operational state of the Ground Segment
- Includes status of the GOES satellite(s)
- Operator can issue ground directives to any service for any satellite
- Operator can view all events, severity, and services affected