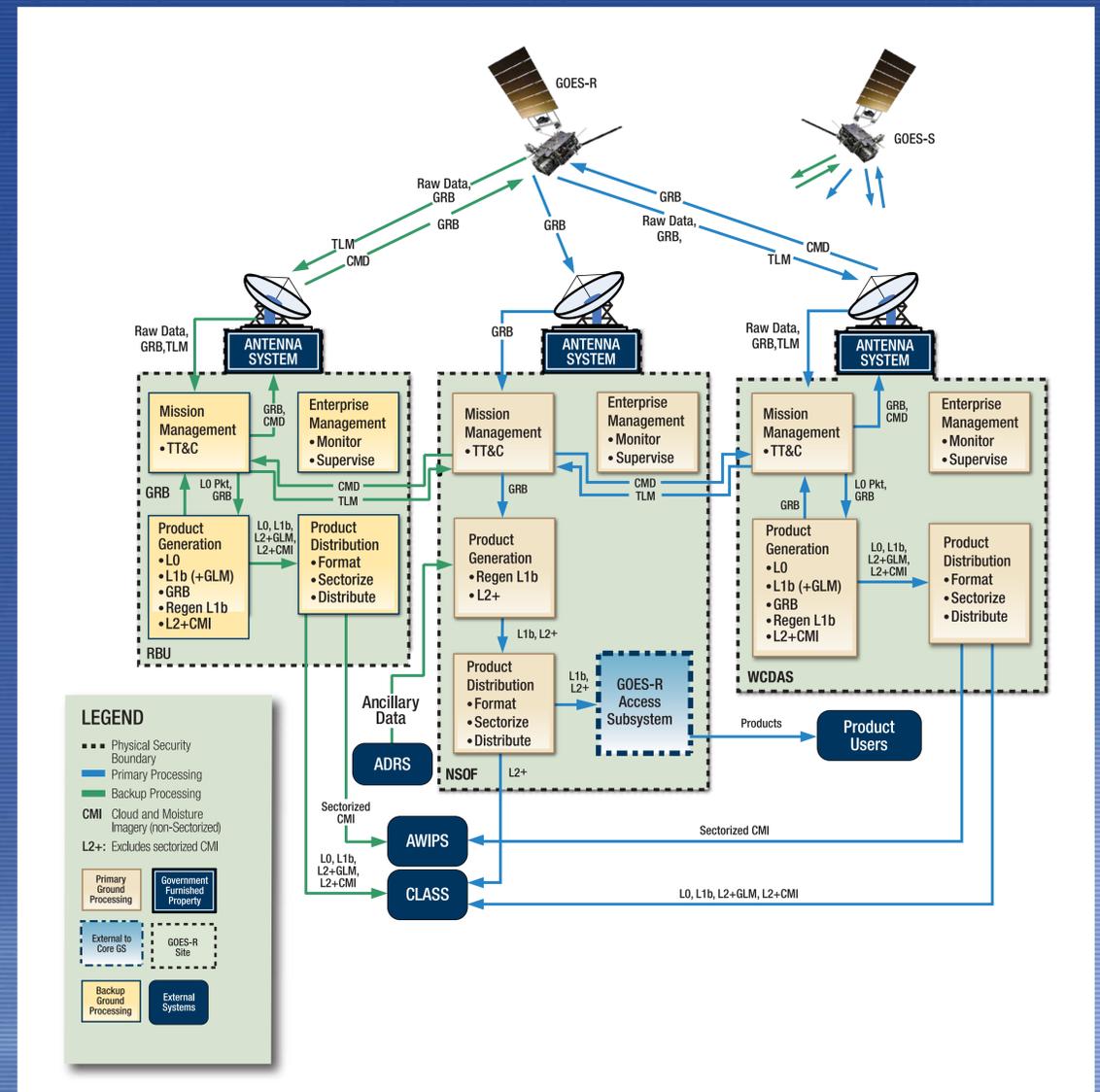




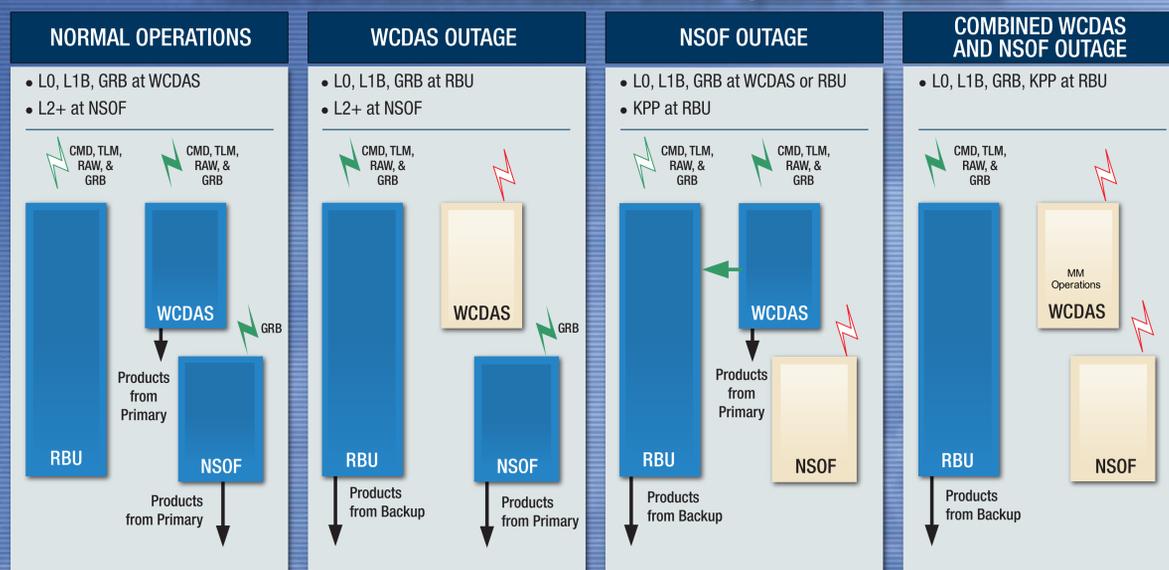
How Goes-R Will Limit Outages and Improve Continuity of Operations

Author: Les Spain

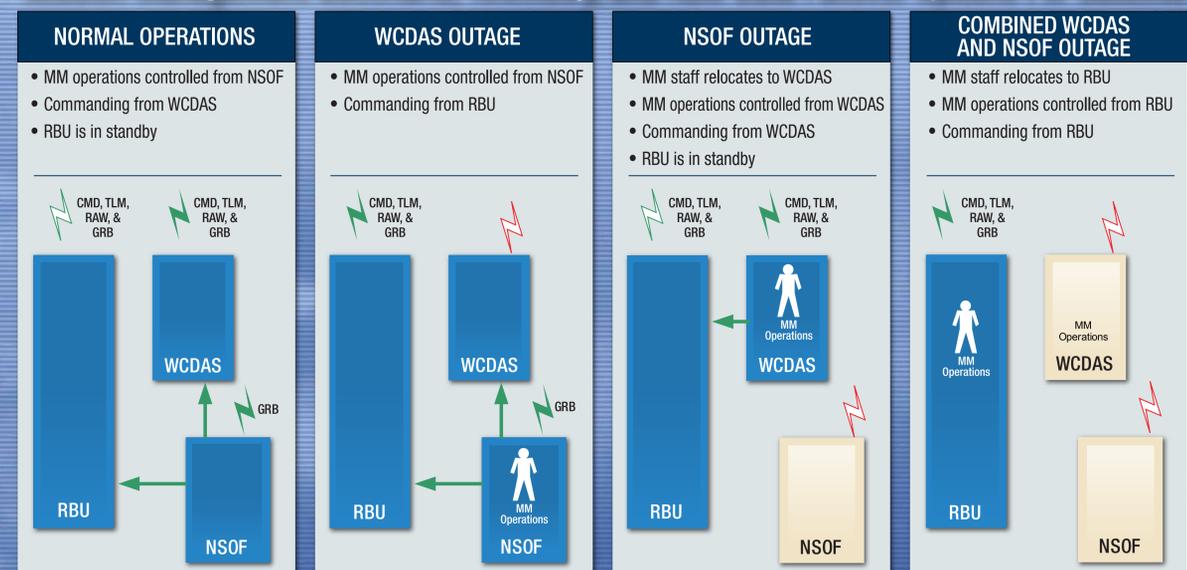
- GOES-R satellites' autonomous features provide flexibility, simplify operations, and ensure satellite health and safety
- GPS-based navigation to maintain position and operate for up to 14 days without command contact with the ground and lower outage time during and following maneuvers
- Fault detection and correction capabilities that contribute to successful recovery from component failures
- Consultative Committee for Space Data Systems (CCSDS) Protocols and Low-Density Parity Check (LDPC) code permit improved communications packet handling and error detection and correction
- Instrument management supports fully autonomous or ground-directed instrument operations
- Ground system incorporates geographically isolated backup facility that mimics the ability of the primary site to command the spacecraft, produce and uplink GRB, and generate KPPs
- Enterprise management capability to enable operators to supervise their local site and distribute GS components, infrastructure, and interfaces
- Ground segment highly redundant with no design single-point failure modes and multiple data path alternatives per satellite



Product Generation/Distribution Failover Options Per Satellite



Mission Management Command, Telemetry, and Raw Data Failover Options Per Satellite



LEGEND

- Facility experiencing outage
- Facility operating normally
- Product/Data Flow to Externals
- MM Operations Personnel resident at this facility
- Downlink and uplink both nonfunctional
- Facility downlink and uplink (where specified) fully functional
- Facility operating as hot backup (telemetry, raw data, and GRB received, command ready but not transmitted)

