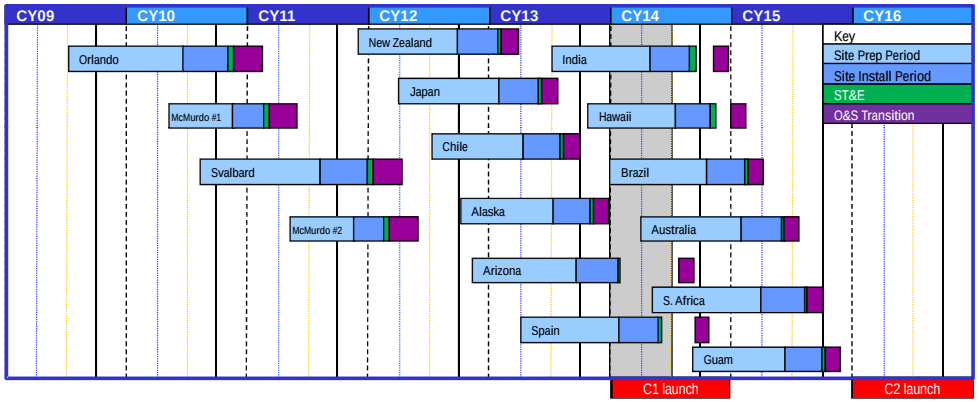
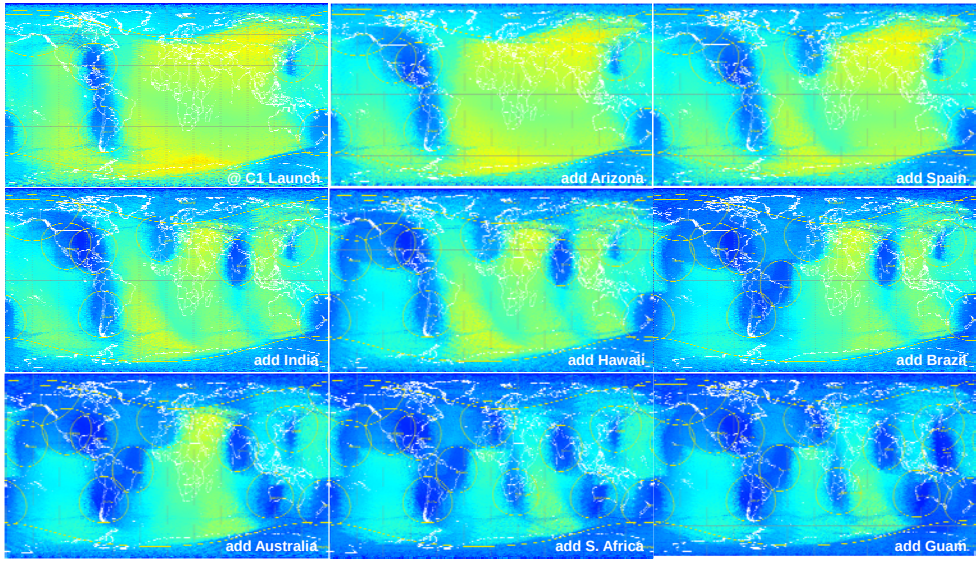
C3S Expandability: SafetyNet™ and McMurdo Improvements

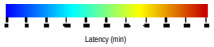
A key feature of the National Polar-orbiting Operational Environmental Satellite System (NPOESS) is the Northrop Grumman Aerospace Systems patented data collection architecture called SafetyNet™. Globally distributed ground receptors (15) developed by Raytheon Company, collect up to ten times as much weather data four-to-five times faster than current polar-orbiting weather satellites. Once collected, these data are forwarded near-instantaneously to US weather centrals via the global fiber optic network for processing in environmental prediction models.



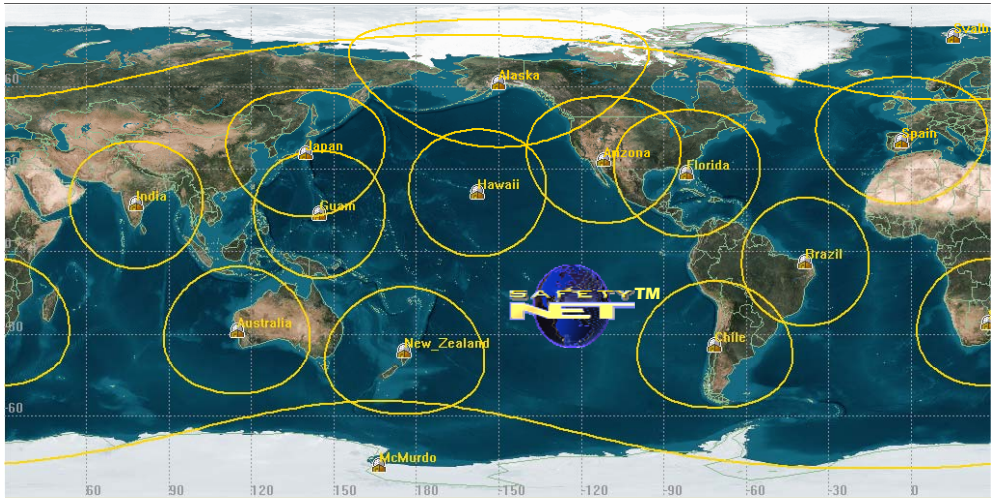
Addition of NPOESS Receptor sites incrementally improves System Latency. By C1 launch, 95% System Latency is expected to be ~40 minutes



All SafetyNet™ Sites – 95% System Latency



Michael L. Jamilkowski
Raytheon Company
NPOESS IPO Site Manager
301-562-5276, mljamilkowski@raytheon.com
Silver Spring, MD



SafetyNet™ - 15 globally distributed SMD receptor sites linked to the Centrals via commercial fiber – enables low data latency and high data availability…

Orlando, Florida

McMurdo, "T-Site"

Svalbard, Norway

McMurdo Station, Antarctica

First Receptor Assembly at Factory – September 2009

- **Full motion to track polar satellites**
- **Ka-Band frequency, receive-only**
- **Autonomous operations**

NPOESS Benefits McMurdo Station, Antarctica Science Community

- *Off-continent communications antennas upgraded by NPOESS -- increased National Science Foundation (NSF) McMurdo Station data rate by >3 times.*

The Phase 1 upgrade of the 7.2 meter antenna completed in January 2008.

The Phase 2 upgrade of the 11 meter antenna is scheduled for completion in January 2010.

Joseph M. Paciaroni
Raytheon Company
NPOESS Global Networks and Infrastructure
720-858-5104, jmpaciaroni@raytheon.com
Aurora, CO

www.npoess.noaa.gov