Wide Area Augmentation System (WAAS) and NDGPS Update

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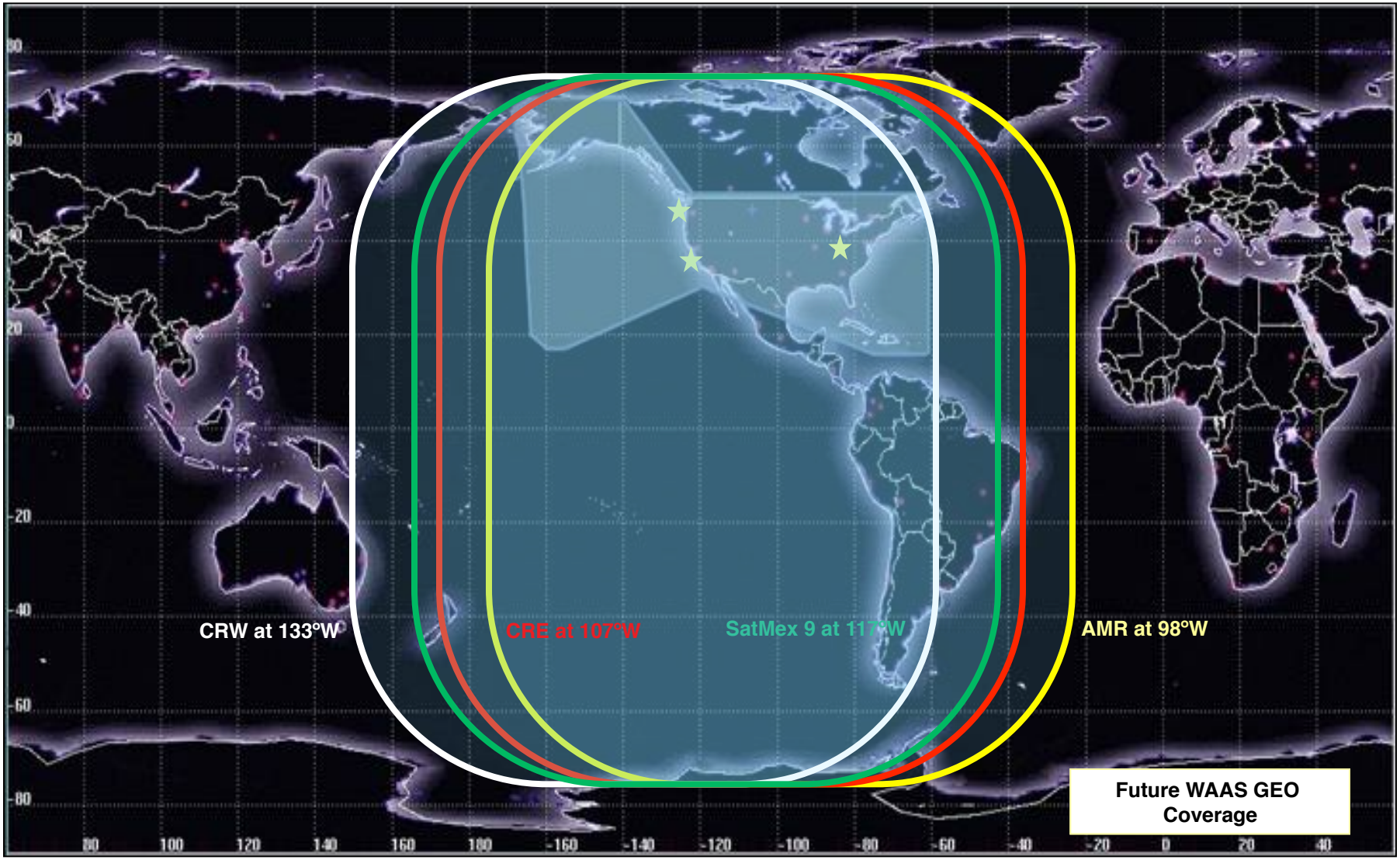
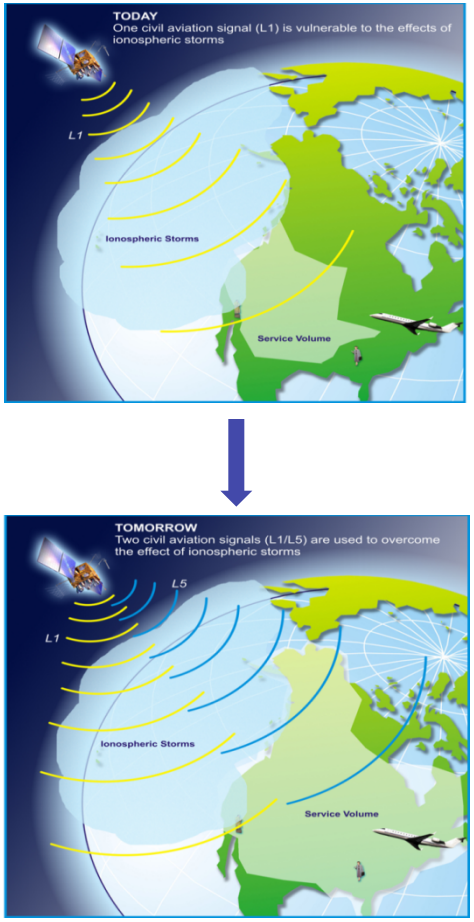
WAAS GEO Footprints

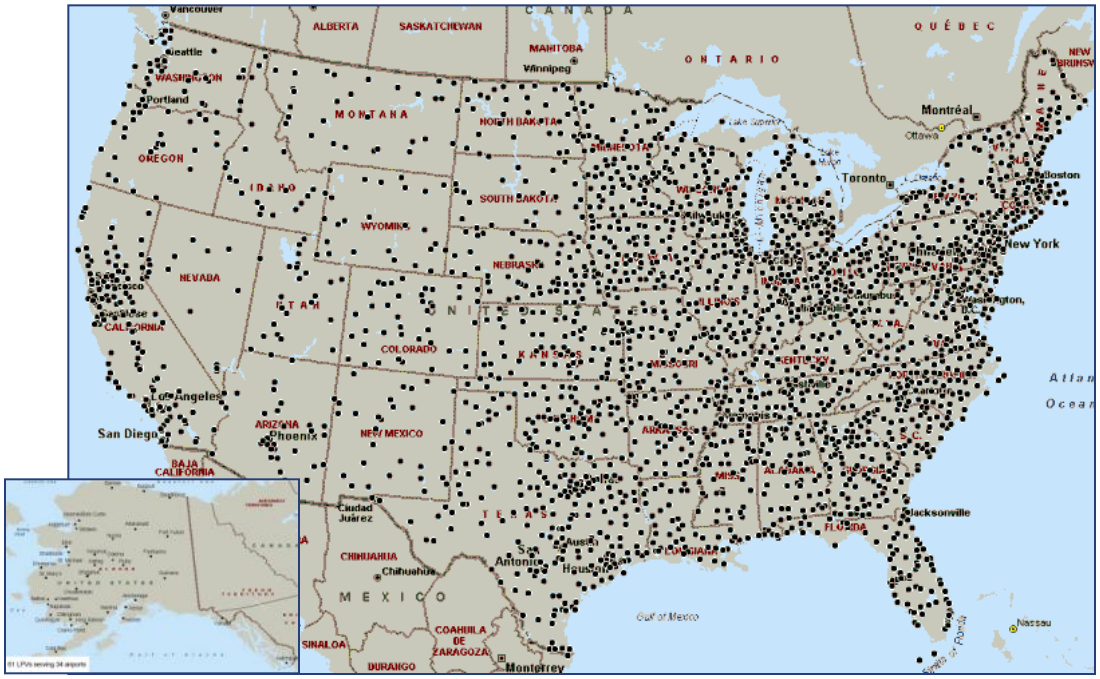


WAAS Phase IV Dual Frequency Operations Status

- Transition from use of L2 P(Y) to L5
  - Planned 'Sunset' of L2P(Y) is driver for transition
- Phase IV Segment 1 consists of 5 Releases
  - Release 1 (Processor Upgrades) currently on schedule to be complete by summer of 2017
  - Release 2 (GEO 5) on schedule for operational GEO by the end of CY2017
- Dual-Frequency Multi-constellation Capability (DFMC)
  - MOPS and SARPs development underway
- Advanced RAIM (ARAIM)
  - Concept definition underway to look at avionics centric approach for use of multi-constellation GNSS



Procedures & Users Depending on WAAS



- Procedures
  - As of October 15, 2015 4,186 WAAS Procedures published
    - 3,590 LPV procedures
    - 596 LP procedures

- Approximately 85,500 WAAS equipped aircraft
- All classes of aircraft are served in all phases of flight
- Enabling technology for NextGen programs
  - Automatic Dependent Surveillance Broadcast (ADS-B)
  - Performance Based Navigation (PBN)

Future of Nationwide Differential GPS (NDGPS)

- Current system utilizes 84 broadcast sites to provide positioning accuracy of 1-3 meters across 92% of CONUS
- Few users of the NDGPS broadcast
- USCG, DOT, and US Army Corps of Engineers Plans:
  - Retain NDGPS at 21 sites for single station near-shore coverage
  - Decommission 62 sites
  - One US Army Corps of Engineers (USACE) site to remain
- Termination of NDGPS broadcast at 62 proposed sites planned for Jan. 15, 2016*

* November 16, 2015: 90-day FRN comment period closes; Impact and alternative site use assessed

Proposed NDGPS Coverage with 62 Sites Decommissioned