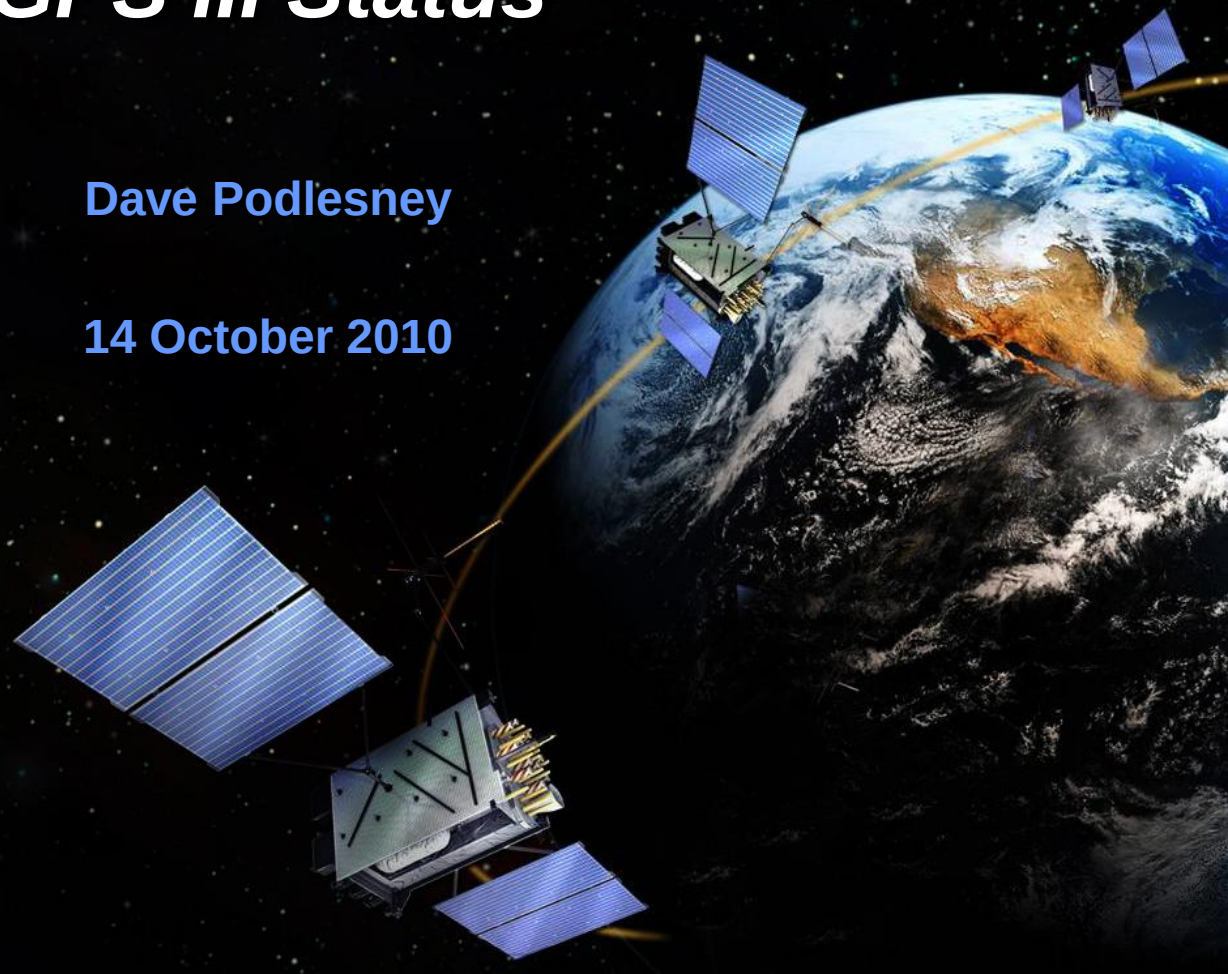
Positioning the World for Tomorrow

# *GPS III Status*

**Dave Podlesney**

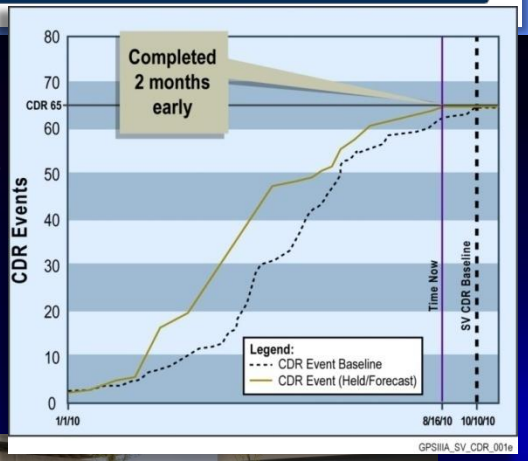
**14 October 2010**



# GPS III Overview

- **GPS III Program on contract**
  - Development of 2 GPS IIIA flight vehicles
  - Ground pathfinder & simulators
  - Capability Insertion Program for IIIB & IIIC
- **Air Force "Back to Basics" acquisition**
  - Rigorous systems engineering
  - Reinvigorated specs & standards
  - Low risk capability insertion
- **Production options start Dec 2010**
  - 2 long-lead options for 2 SVs each
  - Options for 10 production vehicles starting Dec 2011


Space Vehicle CDR 16-19 Aug




# GPS III Team

**Solid, Experienced Team Executing GPS III in Partnership with GPSW**

# *New GPS IIIA Mission Capabilities*

- **Improved Anti-jam**
  - Increased Military signal Power by 3-6 X
- **Improved Accuracy**
- **New L1C Signal**
  - Galileo compatible signal (L1C)
  - Improved multipath performance
- **Enhanced Signal Flexibility**
- **GPS III Space Vehicle Platform**
  - Modular growth to full Capability Description Document (CDD) capabilities
  - Fully compliant with Government Mission Assurance requirements

***Improves Mission Capabilities, Following Back to Basics Fundamentals***

# GPSIII Development & Manufacturing

- **CDR completed Aug 2010 – 2 months early**
  - Culmination of 64 lower-level reviews
  - Manufacturing approved with no liens
- **1st Contractual Delivery per plan**
  - Bus Real Time Simulator (BRTS), 17 Sep 2010
- **Program transitioned to manufacturing phase**
  - 13 of 59 Manufacturing Readiness Reviews conducted, 41 total planned by year-end
  - 7 Engineering Development Units (EDUs) delivered, 22 total planned by year-end
- **LM Facilities Upgrades underway**
  - GPS Processing Facility structure nearing completion
  - GPS III Spherical Near Field Range certified 15 Sep
  - Passive Intermodulation Test Chamber set up for GPS III certification testing

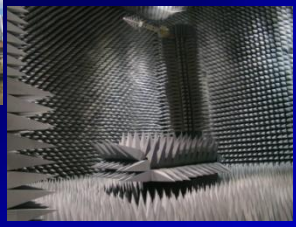
Space Vehicle CDR 16-19 Aug

BRTS - Delivery and Acceptance Complete


MRR Execution Plan

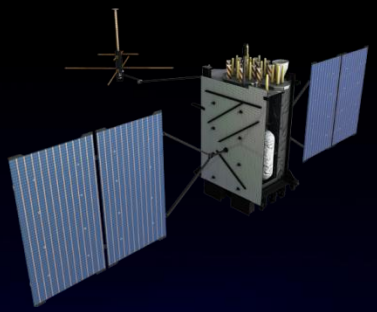
GPF Structure

Spherical Near Field Range

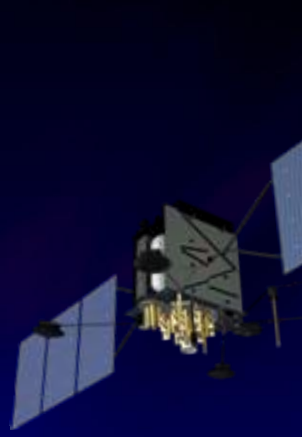


PIM Chamber

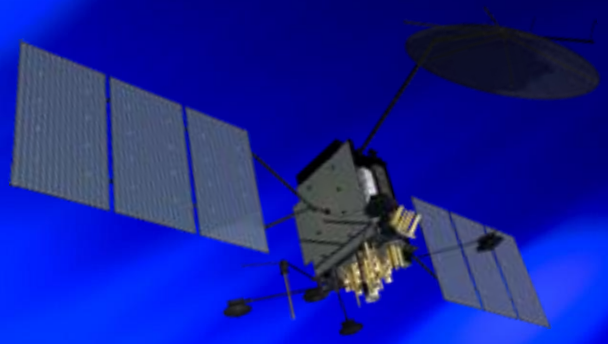
# GPS III Capability Insertion



- **GPS IIIA**
  - Increased accuracy
  - Increased Earth Coverage Power
  - Additional civil signal (L1C)
  - Bus capacity for IIIB and IIIC



- **GPS IIIB**
  - Real-time command and control cross-links
    - Allows satellite uploads via single contact
    - Improves constellation accuracy



Images Courtesy of USAF

- **GPS IIIC**
  - High-power spot beam
    - Provides increased anti-jamming capability for the military
  - Improved integrity

***Flexible, High Confidence Path to Future Capabilities***

# GPS III Way Ahead

- Successfully transition from design to manufacturing
  - Focus on production staffing, material deliveries
  - Build additional schedule margin
- Proceed to GPS Non-flight Satellite Testbed (pathfinder vehicle) in 2011
  - Deliver supporting Engineering Units
  - Drive out issues before flight unit builds
  - Complete and integrate Flight Software
- Drive performance of key subsystems
  - Meet schedules and execute predictably
  - Control costs across supply chain
- Start production spacecraft long-lead procurement
- Support Analysis of Alternatives for future capabilities