



PREPARING NOW FOR THE 21ST CENTURY

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**Presented at NAV99/ILA28
November 1, 1999**



Overview

- Interagency GPS Executive Board
- Additional Civil GPS Frequencies
- GPS Vulnerability Assessment
- Spectrum Issues
- Nationwide DGPS
- Federal Radionavigation Plan



INTERAGENCY GPS EXECUTIVE BOARD

- **Meeting May '99**

- Reviewed:

- Progress Toward L5 Implementation
- GPS Modernization Alternatives
- International Activities

- Directed:

- Stand-up IGEB Executive Secretariat (July 1, 1999)
- Development of National Plan for GPS and its Augmentations



INTERAGENCY GPS EXECUTIVE BOARD

- **Meeting Aug '99**
 - Reviewed:
 - Options for L5 Signal Implementation
 - GPS Modernization Alternatives
 - Status of FY00 Budget Requests
 - International Activities

 - Approved Director of IGEB Executive Secretariat

- Next Meeting - late October



ADDITIONAL CIVIL GPS SIGNALS

- **Dec '98 OMB Passback and Jan '99 White House Memo:**
 - Defined 2nd & 3rd civil signals
 - 2nd civil signal at L2
 - 3rd signal (L5) at 1176.45 Mhz (safety-of-life)
 - Directed IGEB to resolve technical/funding problems by August '99 for implementing L5
- **IGEB Formed L5 Implementation Steering Group:**
 - Established 4 Working Groups to Assess Technical & Procedural Measures for Sharing
 - Define Signal
 - Preserve Military and Civil Operational Capabilities
 - Minimize total cost to the US Government
 - International Outreach
- **Decision Options Presented to IGEB on August 16, 1999**
 - Final Report is in Preparation



GPS VULNERABILITY ASSESSMENT

- **PDD 63 Directs DOT to evaluate vulnerability of Transportation reliance on GPS.**
 - Volpe National Transportation System Center tasked to conduct two-phase study
 - Consultation with DOD

- **Volpe Completed first Phase**
 - Interim Draft Report Delivered July, 1999.
 - Phase 2 to begin in September, 1999



SPECTRUM ISSUES

- **Preparing for WRC 2000**
 - Protecting L1 Band from MSS incursions
 - Clearing L1 Band of footnotes for non-ARNS systems
 - Space-to-Space (s-s) Allocation for L1 and L2
 - Expands from Space-to-Earth (s-E) to (s-E and s-s).
 - International Coordination and Registration of new GPS Frequency:
L5 = 1176.45 (+/-12 Mhz)

- **Protection of GPS Signals from Interference caused by Other Systems**
 - e.g., Ultra Wideband Transmissions



NATIONWIDE DGPS

- **\$37M to Implement; \$7M Annual O&M**
 - Nationwide implementation Planned by end of 2002.
- **Report to Congress (July '99) discusses costs, benefits, & roles :**
 - Railroads - Basis for Positive Train Control System
 - National Intelligent Transportation System
 - Emergency Response



FEDERAL RADIONAVIGATION PLAN

- **Now called 1999 Plan**
 - Need to address post 1998 decisions
 - Ready to be signed by SEC DOT and SEC DEF
 - Pending Decision on Loran-C
- **Loran-C Report to Congress**
 - Significant issues Involved:
 - Questions on rationale for terminating end of 2000 vs maintaining for at least several more years
 - substantial recapitalization costs involved (Over \$110 million)
 - Anticipate report to Congress in mid to late Fall



SYSTEMS POLICY: 1999 FRP

- *GPS:*

- SPS: Available Free of Direct Charge
- PPS: Available Only to Military & Civil Users Authorized by DOD
- A 2nd Civil Signal at L2
- 3rd Civil Signal (L5) at 1176.45 MHz for Safety-of-Life Applications



SYSTEMS POLICY: Augmentations to GPS

- ***Maritime DGPS:***
 - FOC Declared on March 15, 1999
- ***Aeronautical Augmentations (WAAS/LAAS):***
 - WAAS/Cat 1: Initial Capability September 2000
 - LAAS/CAT II/III: Available by 2003 at a few selected airports
- ***Nationwide DGPS***
 - 2002 IOC (Single Coverage)
 - 2003 FOC(Double coverage)



SYSTEMS POLICY :

Phasedown of Land-based Systems

- **Precision Approach Systems**
 - ILS CAT I: Begin Phasedown in 2008
 - ILS CAT II/III: Phasedown not expected before 2020
 - MLS CAT I:
 - Development program canceled.
 - Phasedown to begin in 2008
- **VOR/DME:** Begin Phasedown in 2008
- **Marine Radiobeacons:** Non-DGPS Phased Out by 2000
- **Aeronautical Nondirectional Beacons**
 - Begin Phase Down of Stand -alone NDBs in 2008
 - Separate transition plan for NDBs in Alaska
- **TACAN: Target Date to Begin Phasedown is 2007**¹²



SYSTEMS POLICY :

Phasedown of Land-based Systems

- **Loran-C**

- Approved Policy on Loran-C Pending
- DOT Secretary Requested \$10.2M in FY00
 - Received \$10M in FAA Budget to Maintain Loran-C
 - Administration Evaluating Long-term Disposition
- Report to Congress Expected in Fall of 1999
- 1999 FRP to be Published Following Loran Decision