U.S. International Efforts to Promote Compatibility and Interoperability with the Global Positioning System

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U.S. Policy

- Consistent national policy statements from Executive and Legislative Branches
  - Congressional guidance, 1983
  - Presidential Decision Directive, March 28, 1996
  - U.S. Public Law, December 1998
  - U.S. Space-based Positioning, Navigation and Timing Policy, December 15, 2004
- Civil GPS signals to be provided free of direct user charges (since 1983)
- Selective Availability ended on May 2000 by Presidential directive
- Promote common and open standards for worldwide interoperability

U.S. GPS Policy, cont'd.

- Promote acceptance and use of GPS
  - Encourage acceptance of GPS into peaceful civil, commercial and scientific applications
  - Promote international cooperation in using GPS for peaceful purposes
- Promote safety and efficiency in transportation
- Strengthen and maintain national security

Compatibility and Interoperability

- Compatibility
  - not cause interference that unacceptably degrades the stand-alone service that the other system provides
- Interoperability
  - provide improved performance compared to stand alone system, i.e., user gets solutions that are better than or equal to that achieved by either system alone

- Goal – Seamless worldwide service for all civil and commercial users

June 2004 U.S.-European Union Agreement

- Signed on June 26, 2004 in Dublin
- Key provisions:
  - Baseline GALILEO L1 signals that both sides agree are interoperable and compatible with GPS
    - "Compatibility" includes both radio frequency and national security aspects
  - Number of articles to promote open markets and fair trade
  - Agreement to establish four follow-on working groups
    - A: Compatibility/interoperability
    - B: Trade
    - C: Cooperation on next-generation satnav
    - D: National security

Working Group Status

- **Working Group A (Compatibility/Interoperability)**
  - **March 2005 – Brussels**
    - Focus on terms of reference and work program
    - L1F/L1C signal optimization
    - GPS-GALILEO time offset (GGTO) and reference frames
    - L5/E5a compatibility
  - **June 2005 – Los Angeles**
    - Further discussion on same topics as 1st meeting
    - EU L1F optimized signal
  - **October 2005 – Fucino, Italy**

Working Group Status

- **Remaining Working Groups -**
- **Working Group B (Trade)**
- **Working Group C (Next Generation)**
- **Working Group D (National Security)**

GPS-GLONASS Activities

- Joint Statement December 10, 2004
- Key provisions agreed to by both sides:
  - Maintain interoperability and compatibility of GPS and GLONASS
  - Cooperate on matters of mutual interest related to PNT signals and systems, value added services, and global navigation and timing goods in relevant international organizations and fora
  - Will continue to provide GPS and GLONASS civil signals on a continuous, worldwide basis, free of direct user fees
  - Agreement to establish two follow-on working groups
    - 1: Compatibility/interoperability
    - 2: COSPAS-SARSAT

GPS-GLONASS Working Group Status

- **Working Group 1 (Compatibility & Interoperability)**

  October 2005 – Moscow

- **Working Group 2 (COSPAS-SARSAT)**

  June 2005 – London

  March/April 2006 - Russia

U.S.-Japan Cooperation GPS and QZSS

- Based on 1998 Joint Statement
- Common standards
- Systems use GPS L1, L2, and L5
- QZSS will improve performance in urban canyons and mountains
- U.S. and Japan have been conducting scheduled technical working groups to ensure interoperability
- Plenary Meeting held November 2004

OTHER PARTNERS

-- BRAZIL

-- AUSTRALIA

-- KOREA

-- INDIA

-- ICG

General Summary

- Cooperation addresses national security, economic, and technical issues
- Provide on a continuous basis civil space-based, positioning, navigation, and timing services free of direct user fees
- Provide open, free access to information necessary to develop and build equipment to use these services