



GPS International Diplomatic Activities

**51st Civil GPS Service Interface
Committee (CGSIC) Meeting**

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2010 U.S. National Space Policy

Space-Based PNT Guideline: Maintain leadership in the service, provision, and use of GNSS

- Provide civil GPS services, free of direct user charges
 - Available on a continuous, worldwide basis
 - Maintain constellation consistent with published performance standards and interface specifications
 - Non-U.S. PNT services may be used to complement services from GPS
- Encourage global compatibility and interoperability with GPS
- Promote transparency in civil service provision
- Enable market access to industry
- **Support international activities to detect and mitigate harmful interference**



Planned Satellite-Based Navigation Systems

- Global Constellations
 - **GPS (24+)**
 - GLONASS (30)
 - Galileo (27+3)
 - Compass (27+3 IGSO + 5 GEO)
- Regional Constellations
 - QZSS (3)
 - IRNSS (7)
- Satellite-Based Augmentations
 - **WAAS (3)**
 - MSAS (2)
 - EGNOS (3)
 - GAGAN (2)
 - SDCM (3)



Ratification of U.S.-EU GPS–Galileo Cooperation Agreement

- As a matter of policy, the U.S. and European Commission have considered the U.S.-EU GPS-Galileo Agreement to be in force since its signing in June, 2004
- The EU has also informed the U.S. that all member states have accepted legal provisional application since November 1, 2008
- In November 2010, the U.S. was informed that all EU Member States had deposited entry-into-force notes and the U.S. subsequently sent an entry-into-force diplomatic note to the EU on June 6, 2011, to the EC Depository
- **The Final step for full legal ratification is EU Parliament approval, required under the new Lisbon treaty - expected this fall**



Bilateral Consultations (1)

U.S.-EU Cooperation

- May 2011 video conference was the last “plenary-type” meeting with the EU
- GPS-Galileo Issues were also discussed at the June 2011 U.S.-EU Space Policy Dialogue in Brussels
- *WG-A*: An ITU operator-to-operator coordination meeting will take place September 27, 2011
 - Focus will be on GPS III, WAAS and EGNOS
- *WG-B*: an October 2011 video conference is scheduled to discuss trade and commercial issues including EU’s interest in Lightsquared’s potential impacts to GNSS



Bilateral Consultations (2)

U.S.-Russia Cooperation

- *WG1*: Last met in Vienna, June 8, 2011.
 - Agenda included detailed presentation on the Russian proposed SBAS known as SDCM, assignment of GPS L1 C/A PRN codes, and GLONASS CDMA signal plans
- *WG2* : Next meeting October 31-November 3 in U.S.
 - Research on Distress Alerting Satellite System space/ground segments

U.S.-Japan Cooperation

- Annual plenary meeting held in Washington, D.C., Jan. 13, 2011.
 - Progress noted on QZSS monitoring stations on Guam and Kauai.
 - Both sides reaffirmed close cooperation on GNSS issues, with no major outstanding problems or issues.
 - The future contribution of QZSS to the space-based PNT services of Japan and the important contribution of GNSS cooperation to the peaceful development of the Asia-Pacific region were discussed



Bilateral Consultations (3)

U.S.-China Cooperation

- U.S. and China concluded ITU operator-to-operator coordination on signal compatibility between GPS and COMPASS in Sept. 2010
- Discussions on broader cooperation issues take place during meetings of the International Committee on GNSS (ICG)
- Government officials from both nations participated in a bilateral U.S. National Academy of Engineering and Chinese Academy of Engineering GNSS workshop held in Shanghai, May 2011

U.S.-India Cooperation

- In July, 2011, the U.S. and India convened the third U.S.-India Joint Working Group on Civil Space Cooperation in Bangalore
- Parties agreed to resume work on interoperability between GPS, the Indian GPS Aided Geo Augmented Navigation System (GAGAN), and the proposed Indian Regional Navigational Satellite System (IRNSS)



International Committee on Global Navigation Satellite Systems (ICG)

- Emerged from 3rd UN Conference on the Exploration and Peaceful Uses of Outer Space held in July 1999
 - Promote the **use of GNSS** and its **integration into infrastructures**, particularly in developing countries
 - Encourage **compatibility and interoperability** among global and regional systems
 - Met annually since 2006
- Members include:
 - **GNSS Providers** — China, EU, India, Japan, Russia, United States
 - Other interested Member States of the United Nations
 - International organizations/associations
 - CGSIC is an Associate Member



ICG Providers Forum

- Six space segment providers listed previously are members
- Purpose:
 - Focused discussions on **compatibility and interoperability**, encouraging development of complimentary systems
 - Exchange detailed information on systems & service provision plans
 - Exchange views on ICG work plan and activities
- Providers have agreed that all GNSS signals and services must be compatible and open signals and services should also be interoperable to the maximum extent possible
 - Definition of **compatibility** includes respect for spectral separation between each system's authorized service signals and other systems' signals
 - **Interoperability** definition addresses signal, geodetic reference frame realization, and system time steerage considerations



ICG-6 Outcomes

The 6th meeting of the ICG, to include the Providers Forum and four working groups, was hosted by the Government of Japan in Tokyo, September 5-9, 2011

- Development of Multi-GNSS monitoring networks were a major topic of discussion
 - ICG endorsement of the IGS Multi-GNSS Experiment
 - Subgroup will be formed to collectively investigate international GNSS monitoring and assessment
- Templates describing the geodetic and timing references for all systems have been completed and will be available on the ICG website
- Subgroup to be formed which will focus on GNSS applications



U.S. Contributions to ICG-6

- **Presentations:**
 - U.S. system and policy update
 - Including information on the status of the LightSquared authorization
 - Earthquakes and Other Natural Hazards: GNSS for Disaster Management
 - FAA GNSS Update
- **Proposals:**
 - Potential improvements to the ICG's web site
 - Joint Japan-U.S. Recommendation for an Interference Detection and Mitigation (IDM) Workshop was approved by the Committee
 - Time and location still to be determined
 - Recommendation for GNSS service providers to define the Space Service Volume (SSV) was approved



Summary

- U.S. policy encourages worldwide use of civil GPS and augmentations
- International cooperation at all levels is a priority
- Increased attention is being placed on interference detection and mitigation
- U.S. is pleased at progress at the International Committee on GNSS (ICG) to increase cooperation among system providers and improve services to users worldwide



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