GNSS International Activities Update

FCC Workshop on GPS/GNSS Critical Infrastructure and Public Safety
Washington, DC

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U.S. Policy Promotes Global Use of GPS Technology

- No direct user fees for civil GPS services
  - Provided on a continuous, worldwide basis
- Open, public signal structures for all civil services
  - Promotes equal access for user equipment manufacturing, applications development, and value-added services
  - Encourages open, market-driven competition
- Global compatibility and interoperability with GPS
- Service improvements for civil, commercial, and scientific users worldwide
- Protection of radionavigation spectrum from disruption and interference
Planned GNSS

Global Constellations

– **GPS (24+)**
– GLONASS (30)
– Galileo (27+3)
– Beidou (27+3 IGSO + 5 GEO)

Regional Constellations

– QZSS (4+3)
– IRNSS (7)

Satellite-Based Augmentations

– **WAAS (3)**
– MSAS (2)
– EGNOS (3)
– GAGAN (2)
– SDCM (3)
U.S. Objectives in Working with Other GNSS Service Providers

• Ensure **compatibility** — ability of U.S. and non-U.S. space-based PNT services to be used separately or together without interfering with each individual service or signal
  – Radio frequency compatibility
  – Spectral separation between M-code and other signals

• Achieve **interoperability** — ability of civil U.S. and non-U.S. space-based PNT services to be used together to provide the user better capabilities than would be achieved by relying solely on one service or signal

• Promote fair competition in the global marketplace

**Pursue through Bilateral and Multilateral Cooperation**
International Committee on Global Navigation Satellite Systems (ICG)

- Emerged from 3rd UN Conference on the Exploration and Peaceful Uses of Outer Space 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

- Members include:
  - GNSS Providers (U.S., EU, Russia, China, India, Japan)
  - Other Member States of the United Nations
  - International organizations/associations

Work Plans of the ICG Providers Forum and Working Group A

- Work Plans specify Spectrum Protection and IDM
  - Pursue the protection of radionavigation satellite service (RNSS) spectrum through appropriate domestic and international regulation
  - Facilitate Provider discussions on views and actions related to RNSS spectrum issues
  - Discuss agenda items under consideration by the ITU and its Working Parties
  - Pursue the development of a strategy to detect and mitigate interference in GNSS worldwide, taking existing regulatory mechanisms into consideration
ICG Workshops on Interference

• June 2012: First ICG/Interference Detection and Mitigation (IDM) Workshop, Vienna, Austria
  – Develop educational material on sources of interference to GNSS
  – ICG member states identify a suitable GNSS monitoring site or operations center to be recognized by the ITU as an official part of its international interference monitoring network

• April 2013: Second ICG/IDM Workshop in Honolulu, HI
  – Participants to seek information on national interference reporting forms to develop broader standardized report on interference
  – Agreement that protecting RNSS users against interference as a regulatory matter is ultimately a national responsibility that is carried out in conformity with ITU rules
Next ICG Workshop on IDM

- Hosted by the International Telecommunications Union (ITU) in Geneva – 14-15 July 2014

- Agenda topics include:
  - Updates from GNSS system providers on IDM developments
  - Updates on Radionavigation Satellite Service (RNSS) Spectrum Protection
  - Concepts for interference detection and mitigation
  - User perspective on interference detection and mitigation
  - Workshop views and recommendations
Summary

• U.S. policy encourages worldwide GPS use

• International cooperation to ensure compatibility, interoperability, and transparency is a priority

• U.S. proactively supports multilateral efforts to address **GNSS spectrum protection** and **interference detection and mitigation** through the ICG
THANK YOU!

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