



# ***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



<http://www.oosa.unvienna.org/oosa/en/SAP/gnss/icg.html>



# *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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