Civil GPS Service Interface Committee (CGSIC)

International Committee on GNSS
02-07 December 2017

Captain Russell Holmes
CGSIC Deputy Chair
U.S. Coast Guard Navigation Center

GPS.GOV

Official U.S. government information about the Global Positioning System (GPS) and related topics

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SUPPORT:

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- Technical Documentation

57th Meeting of the Civil GPS Service Interface Committee

At the Institute of Navigation GNSS+ 2017 Conference
Oregon Convention Center
Portland, Oregon
September 25-26, 2017

Agenda

(Updated September 27, 2017)

Jump to Session:

Timing | State & Local | International | Surveying, Mapping & Geosciences | Plenary A | Plenary B

57th Meeting Keynote Speaker

- Dr. Keith Conner, Ph.D., Senior Engineer, Science and Technology First Responders Group, U.S. Department of Homeland Security (DHS).
- Resilience: Ability to prepare and adapt to changing conditions and withstand/recover rapidly from disruptions, deliberate attacks, accidents or naturally occurring events.
- GPS: 20th century technology receivers, inherently radios designed to trust the source of their signals with little discrimination for interference sources.
- "Trust but Verify“ be wary of signals that are "too good."

- DHS Science and Technology (S&T) component actively engaging community to address constantly changing nature of threats to GPS security and resiliency through information sharing, cooperative research and development + testing and evaluation.
- Three Best Practices documents relating to GPS receiver resiliency have been published, available to the public at www.gps.gov.
- S&T hosted multiple "Live Threat" events including a First Responder electronic jamming exercise and testing for GPS receivers used in critical infrastructure.
- S&T and the National Institute of Science and Technology (NIST) are working towards compliance program that will collaborate with multiple industry groups, leverage existing standards and specifications, and include best practices and testing procedures that address both hardware and software device components.

57th Meeting of the CGSIC

- **Robust GNSS Receivers for Ultra-Precise Time Frequency Transfer**
  Mr. Mo Kapila, Septentrio, Inc.
- **Oregon Department of Transportation's Virtual Corridor** *Mr. Chris Harris, Engineering Technology Advancement Group, Oregon DOT*
- **Status on GNSS Applications in the Nordic Countries**
  Mr. Mattias Eriksson, Swedish Mapping, Cadastral and Land Registration
- **Earthquake Fault Deformation Monitoring Program with Focus on Use of GNSS** *Mr. Larry Hothem, United States Geological Survey*
- **GPS Use in our National Parks**
  Mr. Neil Winn, GIS Specialist, National Park Service, Resource Information Services Division

All presentations posted to www.gps.gov/cgsic

CGSIC International Information Sub-Committee

7 informative presentations from around the World

- US
- China
- UK
- New Zealand
- Japan
- UN
- Nordic Countries

Next Meetings

- Europe – likely Munich GNSS Summit - spring 2018

Timing Subcommittee

Reports:

- National Institute of Standards and Technology (NIST)
- United States Naval Observatory (USNO)
- Naval Research Laboratory (NRL)
- John Hopkins Applied Physics Laboratory (APL)

Presentations:

- State of the Art GPS Timing Applications
- Robust GNSS Receivers for Ultra-Precise Time Frequency Transfer
- Traceability and GPS Timing Signals

Discussion:

- BIPM Rapid Service UTCr
- Optical atomic clocks
- Fiber optic time transfer
- 2017 CCTF Meeting

States and Local Government Subcommittee

Presentations:

- Oregon Department of Transportation's Virtual Corridor
- Boeing's Experimental Landing System experiment in Juneau, Alaska
- Use of Precision GNSS in Large Scale Asset Management
- Standardization of GNSS Threat Reporting and Receiver
- Testing (STRIKE3 Project)
- Using GPS to Generate Forest Management Maps

States and Local Government Subcommittee to be absorbed by Survey Mapping and Geosciences

Roots back to 1988 as DGPS Subcommittee

Surveying, Mapping and Geosciences Subcommittee

Notable discussions:

- National Geodetic Survey (NGS) beta release of Opus 2 Integrated data base(OP2IDB Oct 25, 2017)
- Exploring alternate option for water level measurement using GNSS in Alaska
- Realtime infrastructure for Emergency Response
- Realtime Earthquake monitoring using GNSS
- Tolerable transmitter EIRP for High Precision GNSS receiver
- Development of Low bandwidth compact RTK for GPS/GLONASS

Surveying, Mapping and Geosciences Subcommittee

NOAA Space Weather Prediction Center – *Questions for the GNSS community:*

- Is there interest in an ionosphere disturbance index derived from the comparison of position errors obtained from dual and single frequency PPP algorithms at reference stations?
- How useful is a 3-6 hour forecast of an ionosphere disturbance?

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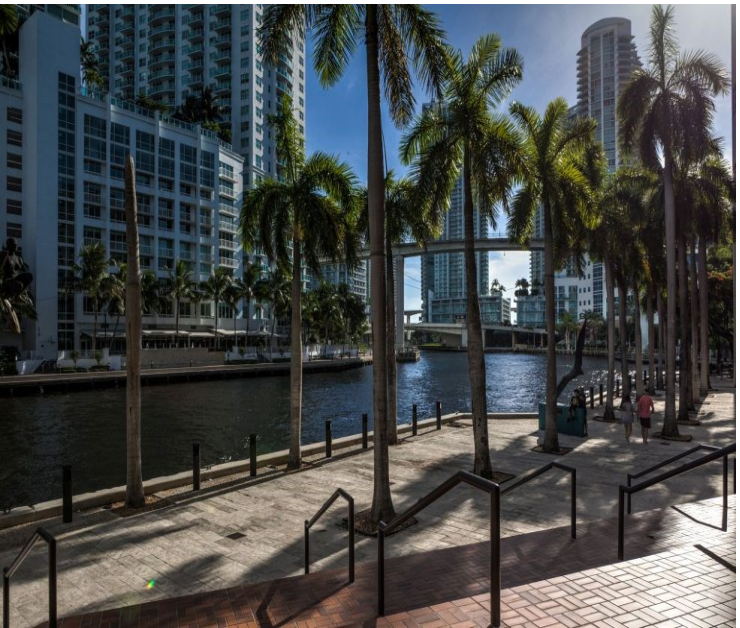
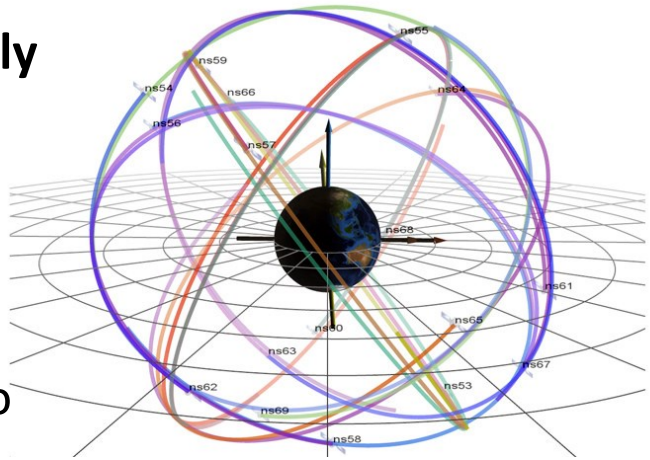
58th Meeting of the CGSIC



- Miami, Florida
- 24-25 Sept 2018
- With ION GNSS+ Conf.
- Hyatt Regency Miami

First-ever GPS data release to boost space-weather science

- More than 16 years of **space-weather data** is **publicly available** for the first time in history.
- The data comes from space-weather sensors developed by **Los Alamos National Laboratory** on board GPS satellites.
- Extreme space-weather events have the potential to significantly threaten safety and property on Earth, with resulting cascading failures



Press release from LOS ALAMOS, N.M., Jan. 30, 2017

- "..treasure trove of measurements …to **better understand** how space weather works and how best **to protect critical infrastructure**.."
- **http://www.lanl.gov/discover/news-release-archive/2017/January/01.30-space-weather-science.php**

Homeland Security

U.S. Department of Homeland Security
United States Coast Guard

GPS Test Public Notification

- Pilot and disruption reports of interference are increasing – Some may be attributed to testing
- Civil public needs a way to be notified of testing – NAVCEN posts test activity that may impact GNSS
- Briefing in WG-S during IDM topic

  Will detail U.S. testing approval process which ensures balance between transportation availability and national security interests.

Homeland Security

U.S. Department of Homeland Security
United States Coast Guard

Civil GPS Service Interface Committee (CGSIC) Contact Information

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