Civil GPS Service Interface Committee (CGSIC)

ICG-14

UN International Committee on GNSS

09 December, 2019
Bengaluru, India

Rick Hamilton
CGSIC Executive Secretariat
All meeting material is posted to
www.gps.gov/cgsic/meetings/2019
GPS Week Number Rollover

- Extensive public outreach
  - CGSIC Bulletins
  - Broadcast Notice to Mariners
  - US Air Force guidance/recommendations
  - DHS guidance/recommendations
- Government coordinated testing to test equipment readiness for WNRO
  - US Air Force
  - DHS
  - Equipment manufacturers
NOTE: The Global Positioning System Directorate has approved a change to the Navstar GPS Control Segment to User Support Community Interfaces (ICD-GPS-240 and ICD-GPS-870) which will remove GPS satellite plane/slot and clock information from the Operational Advisory message. This change proposal was approved by the GPS Interface Control Working Group in December of 2018. SVN/PRN, Block Type, and NANU details will continue to be included.

A depiction of the GPS constellation of satellites with slot and plane designations is provided here as an easy to read graphic for use by the GPS user community.

**GPS Constellation Status for 09/03/2019**

<table>
<thead>
<tr>
<th>Plane</th>
<th>Slot</th>
<th>SVN</th>
<th>PRN</th>
<th>Block Type</th>
<th>Clock</th>
<th>Outage Date</th>
<th>Nanu-Type</th>
<th>Nanu-Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1</td>
<td>65</td>
<td>24</td>
<td>IIF</td>
<td>CS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>2</td>
<td>52</td>
<td>31</td>
<td>IIR-M</td>
<td>RB</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>3</td>
<td>64</td>
<td>30</td>
<td>IIF</td>
<td>RB</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Authorized GPS Testing

- Planned, authorized government GPS testing has seen:
  - 32% annual increase since 2015
  - More diverse locations nationwide
  - Extended testing periods
- Continue to coordinate approvals and publicize authorized testing
2019 GPS Problem Reports

- **Unknown Interference, 40**
- **User Equipment, 35**
- **Insufficient Information, 3**
- **ICD Violation, 3**
- **Mapping Issue, 4**

**OCONUS (32)**
- Maritime (28)
  - Egypt (9)
  - Malta/Libya (9)
  - China (5)
  - Yemen
  - Lebanon
  - Ukraine
  - Cyprus
  - Greece
- Land (4)
  - Germany
  - Spain
  - India
  - Brazil

**CONUS (8)**
- Maritime (5)
  - Mobile, AL (4)
- Pensacola, FL
- Land (3)
  - Abilene, TX
  - Carson City, NV
  - Puerto Rico

17 appeared related to Week Number Rollover
Civil GPS Users are encouraged to submit reports of GPS problems to NAVCEN. A form to submit reports can be found on our GPS Problem Reporting webpage. Some information from those reports is shared here along with input from interagency partners and the most likely cause of the report.

Descriptions for each of the fields is at the bottom of the page.

*Fields are as provided by the reporting source and are unedited.*

<table>
<thead>
<tr>
<th>Date/Time of Disruption</th>
<th>Date Submitted</th>
<th>Location</th>
<th><strong>Type</strong></th>
<th>Description</th>
<th>Cause</th>
<th>NAVCEN Date Closed</th>
</tr>
</thead>
</table>
| 11/04/2019 12:00 am Mountain Standard Time | 11/21/2019 | Mesa | Transportation | USER: I have had a disruption to all of my mail service. I do not know if there was a recent update to the GPS system. I have ordered packages from 4 different sources of which I previously ordered from and had no issues. For some reason the Unit number sometimes shows up in forms as Apartment is not coming up correctly and all of my packages are being returned. One of the companies I ordered from told me that the Unit number is showing as part of the street address. Was there a recent update that is causing this. I have had no problems with delivery up until the first of November.
NAV CEN: User provided information on how to contact mapping software providers to update their location details. | Mapping Issue | 11/27/2019 |
| 10/22/2019 10:00 CST | 11/12/2019 | many US locations | Transportation | USER: Provides telematics devices to the Transportation industry. We use GPS to provide location data for commercial vehicles and leverage this to enable Electronic Logging Devices for them to work correctly and record drivers hours of service information to ensure they are compliant. We had many devices working correctly. Then suddenly on October 22 2019 we started losing GPS position data and this has been sporadic ever since. Logs showed that there were 13 SAT in view. But the data said zero satellites tracked. This has not been seen before. What event occurred that | User Equipment | 11/27/2019 |
Use of AIS for Marine Investigations

Chesapeake Bay Entrance
Waterways Risk Assessment and Support Division

- Traffic Statistics for PAWSA
- General GIS Support for Waterways issues.
Our team are maritime geographic information system (GIS) experts and information analysts.

We turn the data in the NAIS database into useful information for the CG and maritime community:
- Create tailored reports of archived AIS traffic data
- Support everything from academic studies to casualty investigations to legal claims

We ensure the data integrity of the NAIS database:
- Help the maritime public to report accurately and we aid in compliance efforts
- Systematically comb and correct the data as it becomes part of the historical public record

We approve interagency and public requests for NAIS information:
- Handle the FOIA requests
- Screen agencies’ request to establish AIS live feeds
Maritime Traffic and Tracking Analysis Division

AIS for Marine Pollution Surveillance applications

Marine Pollution Surveillance Report (MPSR)

Maritime Traffic Analysis

REPORT DATE/TIME: [Format]
DATA SOURCE: SENTINEL 1A
MSI: Interferometric Wide (IW) VV
RESOLUTION: 20 meter
IMAGE DATE/TIME:

Possible Oil
Possible Thicker Oil
Suspicious Point Source
[Longitude/Latitude] 4.26 km²
Total Area of Possible Oil
AREA/BLOCK: N/A

REMARKS:
Possible oil was observed in satellite imagery. The anomaly is unconfirmed as oil. The anomaly was segmented, measured 14.4 km in the SW-NE direction, and appeared to be attached to a moving point source. The anomaly also crossed the international water boundary. Measured winds at the time of observation were 15 km and from the E. Confidence was determined to be Medium-High given the anomaly’s association with a point source while progressing in a continued to the background surroundings.

CONFIDENCE: Medium-High
Low, Medium, Medium-High, High

For further information on oil spill response and assessment go to https://response.nationalresponse.com/ and https://response.nationalresponse.com/

© Copernicus Sentinel data (2019)
(FedRamp = Federal Risk and Authorization Management Program)
NAVcen Contact Information

Navigation Information Service

http://www.navcen.uscg.gov

E-mail: nisws@navcen.uscg.mil
Phone: +1 703 313 5900
Fax: +1 703 313 5920

Civil GPS Service Interface Committee Secretariat
E-mail: rick.hamilton@uscg.mil