GSC – US Coast Guard Navigation Center (NAVCEN) Cooperation

Prague, November 2014

European GNSS Agency (GSA)
US Coast Guard Navigation Center (NAVCEN)
The centres: GSC and NAVCEN
European GNSS Service Centre (GSC)

- The GSC is the single interface for users of the Galileo:
  - Open Service (OS) and Commercial Service (CS)

- GSC Nucleus (GSC-n) is the precursor of the fully fledged GSC, and it is conceived as an integral part of the European GNSS infrastructure

- GSC-n basic functionalities: dedicated Helpdesk, publication of Notice Advisory to Galileo Users and management of the GSC-n web portal

- **GSC v1** (first fully fledged version) is being developed in parallel to support, amongst other, the dissemination of commercial data through a real-time interface
  - The GSC in under GSA management.

  [http://www.gsc-europa.eu](http://www.gsc-europa.eu)
Primary support node to non-aviation and **non-military civil/commercial users** with GPS issues.

Coordination with the GPSOC (2nd Space Operations Squadron’s GPS Operations Center) for problem reports or inquiries analysis requiring in-depth or specific knowledge.

Service operation and information provision that enhances the **safety, security, and efficiency of U.S. waterways and civil GPS users**.

Serves as the **U.S. focal point** for implementation of e-Navigation.

Sources: [http://www.navcen.uscg.gov/](http://www.navcen.uscg.gov/)  
[http://www.insidegnss.com/node/802](http://www.insidegnss.com/node/802)
GSC-NAVCEN cooperation undertaken within an established frame

EU-US bilateral cooperation agreement:
Establishing the principles for the cooperation activities between the United States of America and the European Union in the field of satellite navigation. The GPS-Galileo Agreement established 4 working groups for cooperation on:

A. Radio frequency compatibility and interoperability;
B. Trade and civil applications;
C. Design and development of the next generation of systems; and
D. Security issues related to GPS and Galileo.

EC-GSA Exploitation Delegation Agreement:
EC delegates the Galileo Service Provision to the GSA as an initial step towards the full Galileo Exploitation Phase. The agreement provides a framework and budget for the development of services and operations.
GSC-n – NAVCEN cooperation
Operational Points of Contact:

<table>
<thead>
<tr>
<th>European GNSS Service Centre Nucleus (GSC-n)</th>
<th>US Coast Navigation Center (NAVCEN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS Helpdesk</td>
<td>Navigation Information Services</td>
</tr>
<tr>
<td><a href="mailto:helpdesk@gsc-europa.eu">helpdesk@gsc-europa.eu</a></td>
<td><a href="mailto:TIS-PF-NISWS@uscg.mil">TIS-PF-NISWS@uscg.mil</a></td>
</tr>
<tr>
<td>+34 91520 6568 / 6567</td>
<td>+01 703 313 59305900</td>
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Operational cooperation:

- The GSC-n is collaborating with the US Coast Navigation Center (NAVCEN) to report requests and incidents reported from users
- GSC-n web portal will point to the US Coast Navigation Center site so that users interested in GPS may check the GPS system status
- NAVCEN website will point to GSC-n web portal so that GPS users may check the relevant Galileo information
<table>
<thead>
<tr>
<th>Nature of request</th>
<th>Request to GSC-n</th>
<th>Request to NAVCEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concerning Galileo</td>
<td>GSC-n internal</td>
<td>Forward to GSC-n for further treatment and notify user</td>
</tr>
<tr>
<td>Concerning GPS</td>
<td>Forward to NAVCEN for further treatment and notify user</td>
<td>NAVCEN internal</td>
</tr>
<tr>
<td>Concerning Galileo and GPS</td>
<td>Requiring input</td>
<td>Requiring input</td>
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<tr>
<td></td>
<td>GSC-n to collect answer on GPS part from NAVCEN and reply in a consolidated manner</td>
<td>NAVCEN to collect answer on Galileo part from GSC-n and reply in a consolidated manner</td>
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<tr>
<td></td>
<td>NOT Requiring input</td>
<td>NOT Requiring input</td>
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<tr>
<td></td>
<td>GSC-n to reply to user and forward to NAVCEN for information</td>
<td>NAVCEN to reply to user and forward to GSC-n for information</td>
</tr>
<tr>
<td>Concerning joint services or compatibility issues between GPS and Galileo</td>
<td>GSC-n to consolidate proposed reply with NAVCEN and reply to user</td>
<td>NAVCEN to consolidate proposed reply with GSC-n and reply to user</td>
</tr>
</tbody>
</table>
Incidents reporting cooperation procedure

Two scenarios have been identified

GPS NAVCEN receives an incident report concerning the Galileo system

• GPS NAVCEN POC forwards the incident report to the GSC-n POC via email
• NAVCEN informs the user that the incident has been forwarded to GSC-n
• GSC-n registers and treats the incident internally following established procedures
• GSC-n replies to the user accordingly

GSC-n receives an incident report concerning GPS

• GSC-n PoC forwards the incident to GPS NAVCEN PoC via email
• GSC-n informs the user that the incident is forwarded to NAVCEN
• NAVCEN registers and treats the incident internally following established procedures
• NAVCEN replies to the user accordingly
Possible further operational interfaces with similar Service Centres already operational in other regions

BEIDOU

GLONASS

QZSS

IRNSS
http://www.isro.org/satellites/irnss.aspx
China Satellite Navigation Office (CSNO)
Test and Assessment Research Center (TARC)

BEIDOU

Location: Beijing, xxx, China
Phone:
PNT Providers: Public Contact Information

Galileo

European GNSS Agency - Galileo Service Center

GALILEO
http://www.gsc-europa.eu/

GALILEO CONSTELLATION STATUS
http://www.gsc-europa.eu/system-status/Constellation-Information

GALILEO HELP DESK
http://www.gsc-europa.eu/helpdesk/contact-form

Location: Madrid, xxx, Spain
Phone:
PNT Providers: Public Contact Information

Roscosmos GLONASS Analysis/Information Center

GLONASS

GLONASS CONSTELLATION STATUS

GLONASS REPORT A PROBLEM

Location: Moscow, Russian Federation
Phone:
GPS

GPS, U.S. Coast Guard Navigation Center

GPS
http://www.navcen.uscg.gov/

CONSTELLATION STATUS
http://www.navcen.uscg.gov/?Do=constellationStatus

INQUIRIES/PROBLEM REPORTS
http://www.navcen.uscg.gov/?pageName=gpsUserInput

Location: Alexandria, Virginia, USA
Phone: 1-703-313-5900
The Indian Space Research Organization (ISRO) Navigation Centre

IRNSS
http://www.isro.org/satellites/irnss.aspx

Location:  xxx, xxx, India
Phone:
QZSS

QZSS INQUIRIES

Location:xxx, xxx, Japan
Phone:
THANK YOU

GSA PoC:

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NACVEN PoC:

• Rick HAMILTON (USCG Navigation Center)
  • Stephen.R.Hamilton@uscg.mil