Civil GPS Service Interface Committee
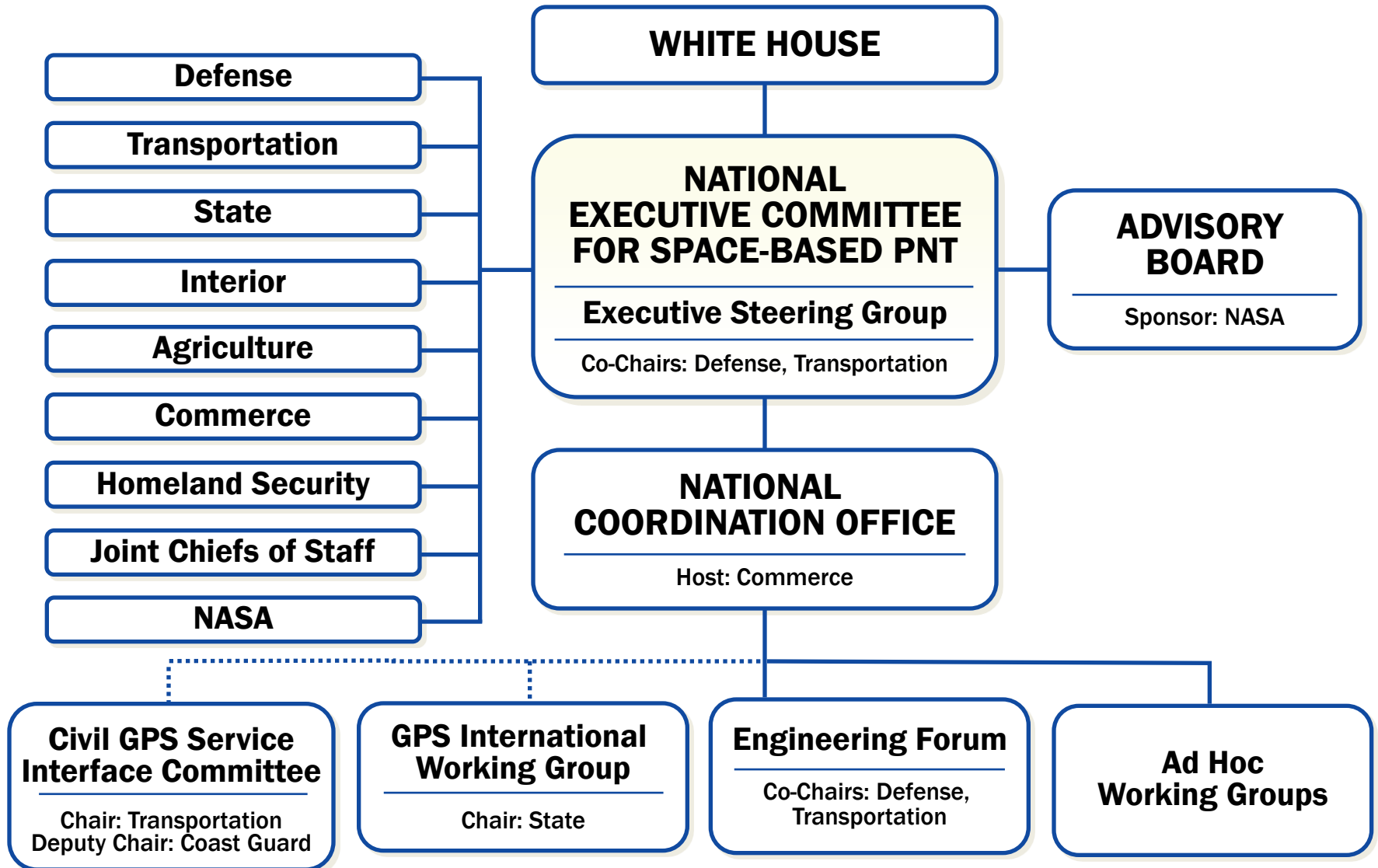
at the
Munich Satellite Navigation Summit

Residenz Muenchen, Munich, Germany
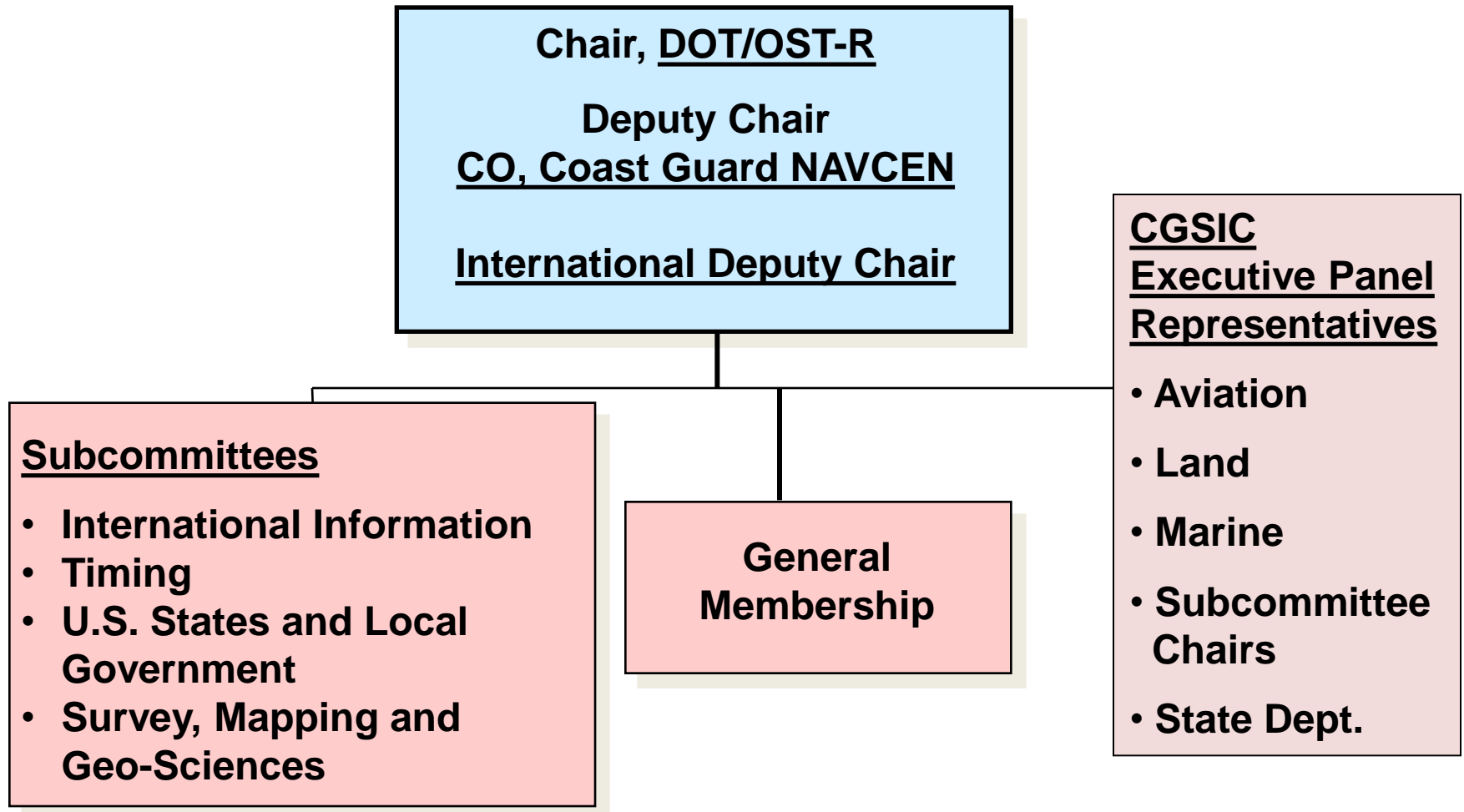**March 16, 2017**

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GPS Civil Users Need A Means For:

➢ Receiving system information (system status, health and modernization plans).

➢ Providing civil input/feedback (feedback on adequacy of signals for user needs, new applications).

➢ Global participation.

➢ Reporting interference/outages (process for interference detection and mitigation).

➢ Having an advocate (a means by which system users can be represented in all parts of the system planning and operation).

U.S. Space-Based PNT Organization Structure

WHITE HOUSE

Defense

Transportation

State

Interior

Agriculture

Commerce

Homeland Security

Joint Chiefs of Staff

NASA

NATIONAL EXECUTIVE COMMITTEE FOR SPACE-BASED PNT

Executive Steering Group

Co-Chairs: Defense, Transportation

ADVISORY BOARD

Sponsor: NASA

NATIONAL COORDINATION OFFICE

Host: Commerce

Civil GPS Service Interface Committee

Chair: Transportation
Deputy Chair: Coast Guard

GPS International Working Group

Chair: State

Engineering Forum

Co-Chairs: Defense, Transportation

Ad Hoc Working Groups

Civil GPS Service Interface Committee (CGSIC)

Chair, DOT/OST-R

**Deputy Chair
CO, Coast Guard NAVCEN**

International Deputy Chair

**CGSIC
Executive Panel
Representatives**

- **Aviation**
- **Land**
- **Marine**
- **Subcommittee Chairs**
- **State Dept.**

Subcommittees

- **International Information**
- **Timing**
- **U.S. States and Local Government**
- **Survey, Mapping and Geo-Sciences**

General Membership

**CGSIC is the World-Wide Forum Between Civil
GPS Users and U.S. Government Service Providers**

GPS.gov

56th Meeting of the Civil GPS Service Interface Committee

At the Institute of Navigation GNSS+ 2016 Conference
Oregon Convention Center
Portland, Oregon
September 12-13, 2016

Agenda
(Updated September 13, 2016)

Jump to session:

Cooperation between Global Service Centers

➢ Work on interoperability, compatibility and transparency in our systems through the International Committee on GNSS.

➢ Work country-to-country through bi-lateral GNSS talks to improve communications between centers to benefit user communities of the world.

➢ Improve processes for Information sharing to respond to the needs of equipment manufacturers and user communities.

Cooperation and Information Sharing Between Provider Service Centers

| Name	Country	URL
Information Analysis Center	Russia	http://glonass-iac.ru/en/
US Coast Guard Navigation Center	U.S.	http://www.navcen.uscg.gov/
William J. Hughes Technical Center WAAS Test Team	U.S.	http://www.nstb.tc.faa.gov/index.htm
European GNSS Service Centre	EU	http://www.gsc-europa.eu/
iGMAS Service Center	China	http://www.csno_tarc.com
QZ-vision	Japan	http://qz-vision.jaxa.jp/USE/en/index
IGS portal	IGS	http://igs.org/

U.S. Coast Guard
Navigation Information Service (NIS)
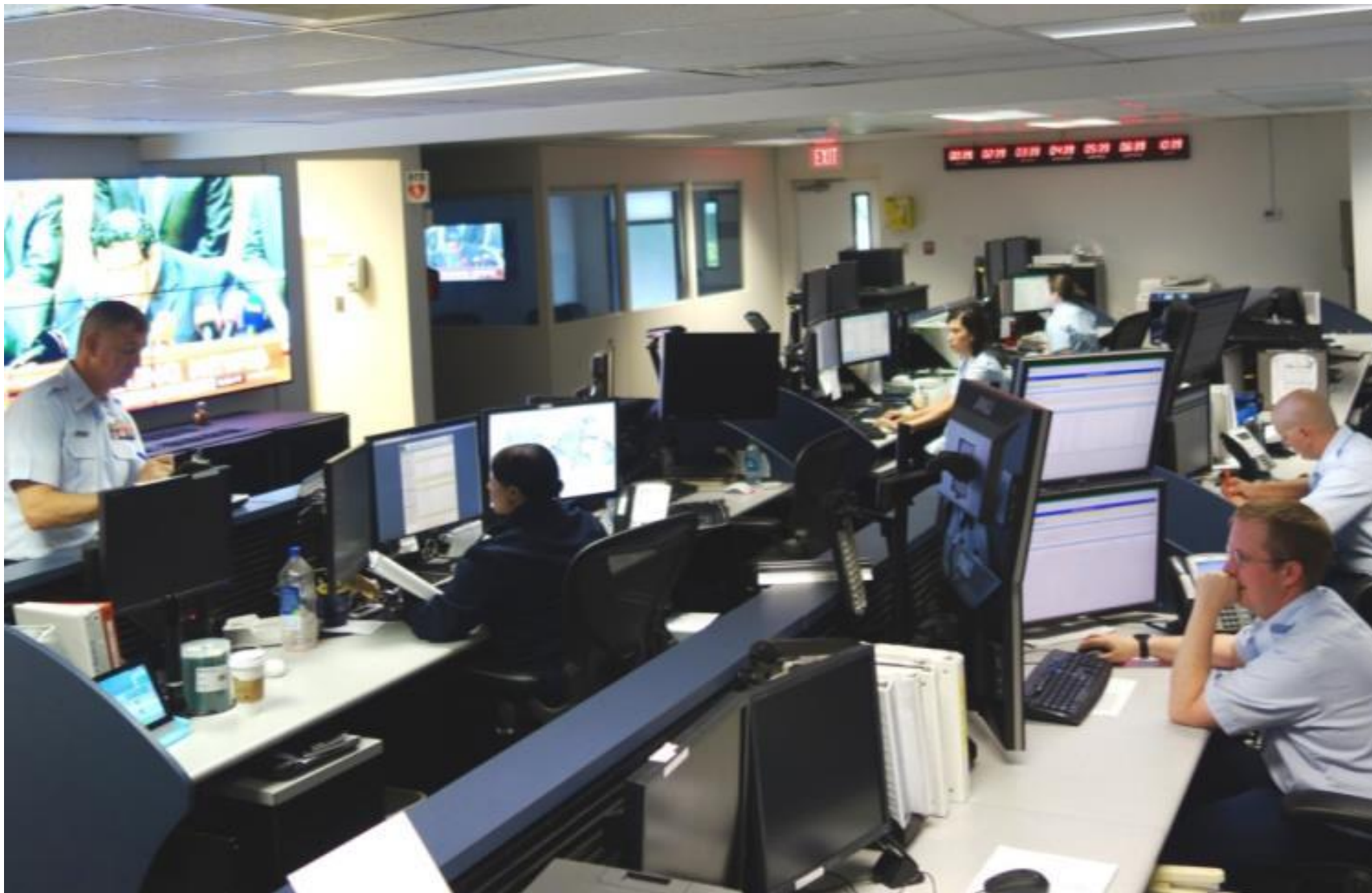
Users reporting mapping problems

➢ "My Grandmother's address is wrong in GPS and I am worried about emergency services getting to her. You need to fix it."

➢ "My customers cannot find my business location in GPS, please fix it."

➢ "GPS is sending trucks down our road that cannot fit. You have to stop them."

➢ "GPS is directing customers to a competitor's location instead of mine. The address is wrong and needs to be corrected."

"If you send one more car down my driveway in the middle of the night, I don't care, I'm putting out a spike strip."

Private Property Driveway

Bridge demolished and closed in 2009

MickeyBPhotography

Why do we follow digital maps into these places?

© Ross Parry Agency

It is not enough anymore to just input data into GIS databases

We need to find a way to attribute the data

Need data to activate voice over software

Warn users when the vehicle they are using is not appropriate for the path they are turning on to

Reported Incidents of Interference

- Jammers overwhelm anti-theft devices on cars and trucks enabling undetected movement

- Have been used in vicinity of airports disrupting air traffic

- Illegally establishing quiet zones and text-free zones in Churches and Schools

- Facilitating criminal activity

- Used to defeat attempts to document road use for taxes

- Used to defeat the fleet tracking devices in company cars and trucks

- Interfering with port operations

These uses of jammers are <u>all illegal in the U.S.</u>

http://miamicaptain.com/

Interference Reporting

U.S. process starts with problem report to NAVCEN, FAA or FCC

- Different than ITU form
    - Problem Rpt vs After Action Rpt

- Service Center triage to confirm problem

- Initial interagency conference call to provide for a coordinated government response, discussion on way ahead

- Priority assigned will determine level of response and agencies involved

Purpose: The Coast Guard Navigation Center will use this information to disseminate navigation safety notices and updates to individuals upon request and to receive reports of aid to navigation outages, issues or discrepancies.

Routine Uses: Coast Guard personnel will use this information to disseminate safety notices and updates and to aid in the repair or investigate reports of navigation outages, issues or discrepancies. Any external disclosures of data within this record will be made in accordance with DHS/ALL-002, Department of Homeland Security General Contact Lists, 73 Federal Register 71659, November 25, 2008, and DHS/USCG-013, Marine Information for Safety and Law Enforcement System of Records, 74 Federal Register 30305, June 25, 2009.

Disclosure: Furnishing this information is voluntary; however, failure to furnish the requested information may hinder your request for navigation safety related information.

* Denotes a required field

1) * Your Name:

2) * Email Address:

3) * Telephone number: [i.e. - (703) 313-5900]

4) Preferred method and time to be contacted if additional information is necessary: Click Here For Choices / Click Here For Choices

5) *What was the start time and date of the GPS disruption? Date: 10/28/2015 Time: Zone: Select Time Zone

6) * Is the GPS disruption ongoing? Select

7) * Where did the disruption occur? (LAT/LONG; Nearest City or landmark) Lat Long City/Landmarks

8) GPS user equipment make and model (receiver manufacturer and model, antenna type, etc...)? Remaining Characters 3000

9) GPS installation type (aviation, marine, surveying, agriculture, transportation, timing)? Click Here For Choices Other:

10) What was the elevation of the GPS antenna? Click Here For Choices ○ Above Ground Level ○ Above Sea Level

11) What GPS frequency are you using? (press Ctrl while selecting to select multiple satellites) L1 (1575.42 MHz) / L2 (1227.6 MHz)

12) How many satellites were being tracked at the time of the disruption? Click Here For Choices

13) Which satellites were being tracked at the time of the disruption? (press Ctrl while selecting to select multiple satellites) Don't Know / SVN23/PRN32 / SVN24/PRN24

Interference Report Form:
https://www.navcen.uscg.gov/?pageName=gpsUserInput

Resiliency

➢ GPS is widely used across all sectors/transportation modes

➢ GPS enabled technology is increasingly yielding benefits

➢ Need to anticipate, accommodate, and accelerate innovation

➢ Need to understand and mitigate the risks associated with new technologies

➢ Work with private, public and international partners to increase resilience

Civil GPS Service Interface Committee (CGSIC) Contact Information

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