SPACE-BASED POSITIONING
NAVIGATION & TIMING
NATIONAL COORDINATION OFFICE

Policy Update

National Space-Based PNT Advisory Board
Cocoa Beach, Florida

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National Coordination Office

U.S. Policy

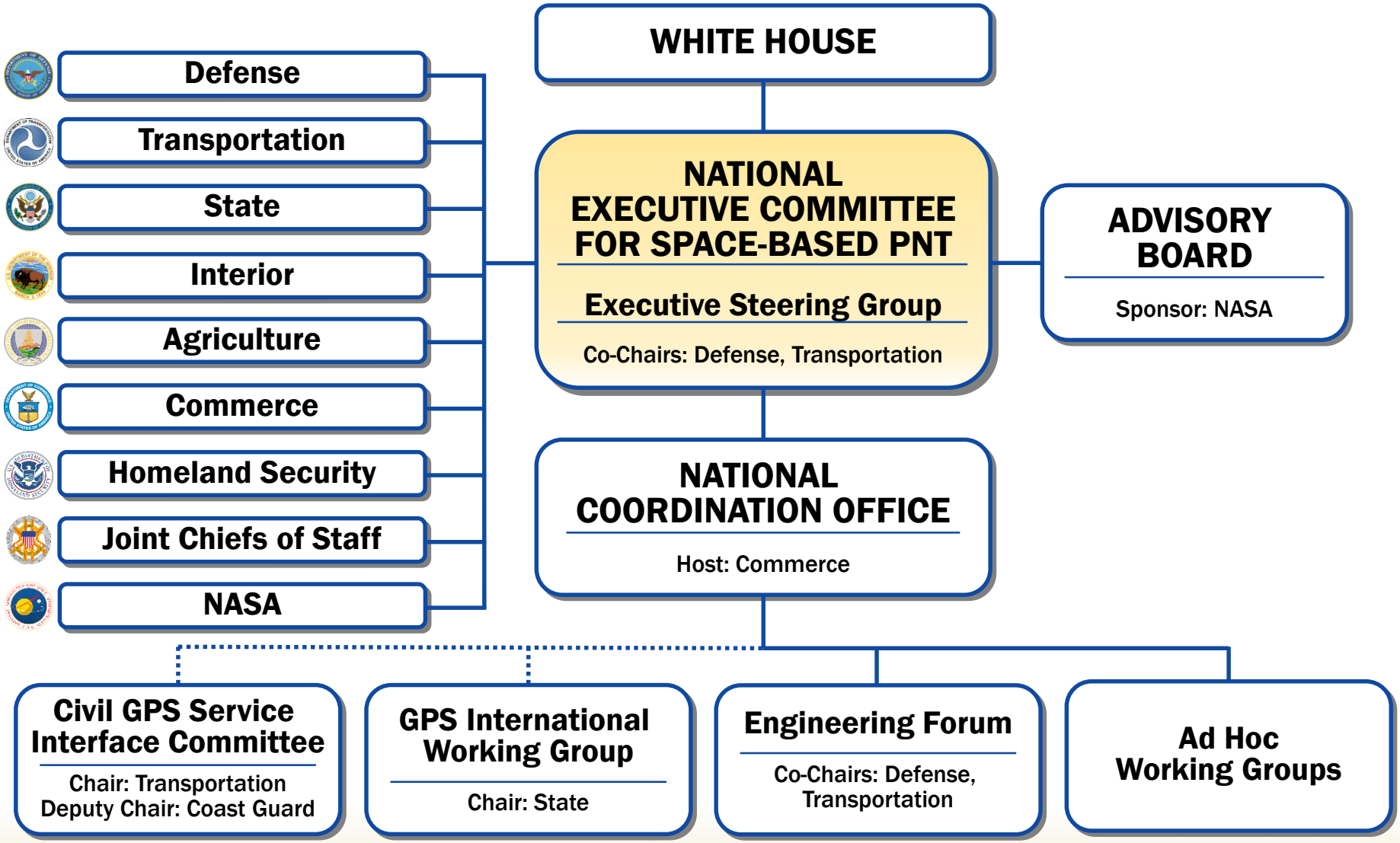
The U.S. must maintain its leadership in the service, provision, and use of Global Navigation Satellite Systems (GNSS)

- Continuous, worldwide, free of direct user fees
- Encourage compatibility and interoperability with foreign GNSS services and promote transparency in civil service provisioning
- Operate and maintain constellation to satisfy civil and national security needs
  - Foreign PNT services may be used to augment and strengthen the resiliency of GPS
- Invest in domestic capabilities and support international activities to detect, mitigate and increase resiliency to harmful interference

U.S. Policy

- NSPD-39, the Space-Based Positioning, Navigation, and Timing Policy from 2004, is in the process of being updated by the National Space Council
- Remarks by DOT General Counsel at the 6th Meeting of the National Space Council:
  - Under National Security Presidential Directive 39, issued in December 2004, the United States is committed to developing, maintaining and a modernizing the global positioning system, or GPS, and other satellite-based navigation systems, including backup capability in the event of a disruption of GPS.
  - …"Working closely with the Commerce Department, NTIA, and the FCC," DOT's adjacent band compatibility study "shows we need strong, consistent policies to ensure protection for satellite-based navigation."

National Space-Based PNT Organization



The Airwaves Are Not Safe

- Computers and the Internet: Once Upon a Time…
  - A GPS receiver is more computer than radio…
- GPS relies on spectrum – no longer a safe haven
- GPS receivers require Cybersecurity
- U.S. Policy directs PNT resiliency (NSPD-39, PPD-4, PPD-21, EO 13800, National Cyber Strategy)

"Known but unmitigated vulnerabilities are among the highest cybersecurity risks…"

(EO 13800: Strengthening the Cybersecurity of Federal Networks and Critical Infrastructure)

What Can You Do Now?

- CIOs: Include GPS enabled devices in Cybersecurity plans
- Be a demanding customer - toughen GPS devices:
  - Incorporate valid range checking and other elements of latest GPS Interface Specification (IS-GPS-200K *)
  - Incorporate DHS Best Practices (*Improving the Operation and Development of Global Positioning System (GPS) Equipment Used by Critical Infrastructure, Jan 2017 *)*

* Documents available on www.gps.gov

Protect GPS and Critical Infrastructure that Relies on GPS

Thank You

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