



**SPACE-BASED POSITIONING
NAVIGATION & TIMING**

NATIONAL EXECUTIVE COMMITTEE

Space-Based PNT Advisory Board Tasking

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Space-Based Positioning, Navigation and Timing**



New Taskings



- **Background**
 - Advisory Board completed previous taskings and submitted final report in June 2009
 - September 2010: EXCOM unanimously approved five new taskings in three general areas for current cycle
- **Requested Actions**
 - Conduct research, prepare written report of findings and recommendations by February 2012
 - Provide 20 minute Executive Summary briefing at November 2011 Space-Based PNT Executive Committee meeting
 - Please provide briefing slides two weeks prior to EXCOM meeting



Non-ICD Compliant Civil/Commercial Receivers



Evaluate the implications of user non-compliance with GPS ICD specifications and potential solutions.

- **Recent events revealed some legacy receiver equipment may not be compliant with ICDs (both civil and military)**
 - Issues cause USAF to expend resources to investigate disruptions or outages to ensure issues are/are not U.S. Government induced
- **ICDs are published and intended to give receiver manufacturers design guidance and ensure backward compatibility**
 - Is this enough or do we need a receiver certification process?
 - What are the implications to receiver manufacturing industry?
 - Should this be a U.S. Government or private sector activity?



PNT Architecture Assessment



Perform an independent assessment of the way ahead for the National PNT Architecture Implementation Plan.

- **What can the Departments and Agencies do to ensure the successful implementation of the Plan?**
- **What sort of organizational, functional, or technical issues does the Board believe may impede successful implementation of the Plan?**
- **How can the Departments and Agencies reduce the likelihood that these impediments occur?**
- **How can the Departments and Agencies reduce the effect these impediments may have?**



GPS Commercial Outage Impact Assessment



Using scenarios and available data, conduct an assessment of the impact to U.S. commercial infrastructure of GPS outages over time (minutes, hours, days, weeks, etc.)

- **Study should assess impact of GPS outages (current and future) to a representative sample of varied commercial and industrial sectors, factoring in internally designed backups and reliance on accuracy/availability of GPS over time**
- **Do results justify need for commercial or civil GPS backup capabilities?**
- **What is the extent of impact?**
- **What sectors are most vulnerable and to what extent?**



Role of PNT in Cyber Networks



Evaluate specific role(s) of space-based PNT in the operation of civil/commercial cyber networks.

- Provide empirical evidence of the role of space-based PNT in civil/commercial networks associated with critical U.S. infrastructure
- If space-based PNT is critical to civil and commercial cyber networks, indicate:
 - how and where space-based PNT is used in these networks;
 - what PNT services are used by the networks;
 - how network systems or backups are used to mitigate loss of access to space-based PNT services;
 - the minimum space-based PNT access required to operate each network (satellites in view and/or required PNT information)
- If network systems or space-based PNT backups are used by commercial cyber networks, how long can system or backup operations be sustained without access to space-based PNT?

Combined with “GPS Commercial Outage Impact Assessment”



Advisory Board Technical Subcommittee



Establish an Advisory Board subcommittee capable of evaluation and timely feedback on emerging technical issues affecting commercial interests.

- **GPS programmatic and policy changes are increasingly affecting commercial GPS users and manufacturers**
 - Semi-codeless phase-out
 - SVN 49 mitigation strategy
 - L2C phase relationship
- **Establish subcommittee chaired by one or more members of the Advisory Board**
 - May include other industry/academia reps selected by its chairs
 - Convene only in response to specific taskings

Current Advisory Board Charter is already structured to implement this proposal