

PTA Subcommittee

PROTECT, TOUGHEN & AUGMENT (PTA) SUBCOMMITTEE

Members:

- **John Betz, Chair**
- Tim Murphy, 1st Vice-Chair
- Tom Powell, 2nd Vice-Chair
- Penny Axelrad
- Scott Burgett
- Pat Diamond
- Renato Filjar
- Michael Hamel
- Larry James
- Vahid Madani
- Todd Walter

Role/ Study Areas:

- *Protect: Transparent & balanced spectrum management*
- *Toughen: Ensure ITAR does not unduly constrain civil & Commercial interests*
- *Augment: GDGPS, Complementary PNT, GNSS Signal Monitoring*

PTA Subcommittee activities

- Kickoff meeting in February
- P-T-A sub-group meetings, fact finding
- Coordination with other sub-groups
- Draft study proposals

Protect (P) Study Proposal

- Networked GNSS Interference Detection and Reporting
 - Survey current and emerging GNSS receiver technology for capabilities to detect and report both in-band and adjacent band interference
 - Investigate the placement of interference sensors to detect and report personal privacy jammers or other mobile low power interference sources
 - Survey methods for collecting GNSS receiver interference data, via wireless and other communications networks
 - Investigate different governance options for processing interference data: where (local, state, federal) and who (public, private), funding
 - Assess methods for validating potential interference reports, confirm actual interference events, eliminate false alarms due to other phenomena
 - Evaluate government stakeholders for potential lines of notification and authority
 - Propose candidate end-to-end Networked GNSS Interference Detection and Reporting architectures

Toughen (T) Study Proposal

- Removing Export Control Barriers to Deployment of CRPAs in Commercial Applications
 - Survey current export control regimes that apply to CRPAs
 - Document the state of foreign knowledge and products involving CRPAs.
 - Collect data from commercial companies concerning current CRPA products and future development plans
 - Determine to what extent current export control regimes are discouraging development and fielding of commercial products
 - Identify options for changes to export control regulations to encourage wider adoption of CRPAs in commercial applications
 - Formulate a menu of potential recommendations to the EXCOM for the PNT Advisory Board to consider

Augment (A) Study Proposal

- Augmenting Critical Timing using Oscillators and Networks (ACTION)
 - Explore need and opportunity for augmenting GPS-derived timing, obstacles to augmentation
 - Focus on technologies that are primarily already available, require no additional infrastructure deployment, can be customized to meet different needs (accuracy, expected GPS outage duration), avoid Government investment or involvement, complement other augmentations and efforts
 - Focus on augmentations that address jamming or spoofing, GPS failure to provide useful signals, and temporary (hours or a few days) loss of satellite-based navigation and timing
 - Consider roles of competent satnav receivers, clocks, and two-way time transfer over fiber to meet critical infrastructure application needs
 - Examine specific use cases, collaborating with staff from Department of Homeland Security, NIST, and other organizations
 - Evaluate role of U.S. Government in informing, motivating, and guiding owner/operator actions including risk management evaluations and selecting time augmentation technologies, as well as its role in improving affordability of promising technologies and accelerating their adoption.
 - Recommend specific steps that U.S. Governments and Agencies can take based on these findings

Potential fact-finding activities

- PNT use case research, outreach
- Examine use cases and markets with uniquely critical PNT dependence
- Vendor interviews on PNT resiliency