Resilient Navigation & Timing Foundation
Board of Directors Meeting Minutes

February 11, 2019

I. Convening

The board met at the Fortnightly Library, Herndon, VA from 10:00am to 11:00am, February11, 2019. Mr. Dana Goward, Mr. Martin Faga, Mr. Charles Schue, and Mr. William Porter attended in person. Ms Nancy Smith sent her regrets.

The proposed agenda for the meeting was discussed and approved/ modified and approved.

II. Approval of the minutes from prior meetings

The minutes from the December 18th board meeting were reviewed and approved.

III. Regular Business: Detailed information on the foundation's recent activities and finances for the months of December and January was provided in advance of the meeting. The board reviewed these written reports.

IV. New Business

a) The board voted (Mr. Goward abstaining from the discussion and vote) to reimburse the Mr. Goward for travel expenses for December and January in the amounts of $80.97 and $100.95 respectively, funds permitting.

b) The Foundation held a member Open Forum on 29 January. Seventeen members attended in person or called in. The board discussed member input.

c) Focus areas for foundation efforts this year were discussed, along with revisions to the PTA Policy Recommendations. The board agreed upon the document attached hereto.

V. Other Business

a) None

Martin Faga

Martin Faga, Chairman of the Board

Attached: RNTF Focus Areas for 2019 & Revised PTA Policy Recommendations

RNT Foundation Focus Areas for 2019 – Draft for Board Mtg 11 Feb 2019

- Protect
    - Work with FCC & DHS on crowd-sourced interference detection.
    - Propose to House and Senate revisions to Communications Act of 1934 to better enable enforcement against jamming/spoofing
- Toughen
    - Support DHS/NIST development of voluntary receiver standards
    - Work with SAE to develop a GNSS receiver equipment (includes receiver, software, antenna, etc.) standards that include resilience to jamming, spoofing, and resistance to allocated adjacent band transmissions.
    - For both efforts above, recognize dynamic and constantly evolving nature of threats so as to not put users/ manufacturers "in a box."
- Augment -Work with Congress, Executive Branch, others to:
    - Fund and execute National Timing Resilience and Security Act
    - Identify the lack of a terrestrial wireless PNT system as a missing piece of needed critical infrastructure
    - Recognize GNSS disruption as a cybersecurity issue
- General Education and Engagement
- Social Media
- Speaking engagements/conferences

2019 proposed new text is highlighted and eliminated text ~~crossed out~~.

Protect, Toughen, Augment

Policy Recommendations for

*Global Navigation Satellite Systems**

Protect GPS/GNSS

- Recognize PNT as critical infrastructure
- Designate and empower a lead federal official
- ~~Protect the adjacent bands to GNSS as "Quiet" neighborhoods~~
- Ensure authorized transmissions in adjacent frequency bands do not exceed highest power provided for by industry standard adjacent band compatibility masks.
- Make ownership of jammers a misdemeanor
- Make use of jammers a felony
- Make anti-jamming and anti-spoofing laws enforceable at all levels of government
- Establish a national system to detect & rapidly locate jamming
- Ensure sufficient enforcement personnel to detect, prevent, respond to and prosecute jamming

Toughen Receivers & Users

- ~~Develop standards for jam-resistant receivers to include ARAIM and RAIM~~
- Develop industry standard compatibility mask that defines adjacent band rejection performance.
- Use receivers capable of resisting jamming, spoofing, adjacent band interference, other disruptions in critical infrastructure and applications.
- Establish as an industry best practice having more than one source of precise Position, Navigation and Timing (PNT) for critical infrastructure
- For critical infrastructure that uses space-based PNT, establish as an industry best practice being able to continue normal operations in the event of an extended GNSS service disruption.

Augment GPS/GNSS Services

- Provide a wireless, wide-area, difficult to disrupt, diverse PNT service to augment GNSS.
- Encourage development of numerous, complementary terrestrial PNT services to increase resilience (integrated radar, local positioning systems, inertial, etc.)

~~*Adapted from presentations and positions advocated by Dr. Brad Parkinson and discussed at the US government's Position, Navigation and Timing Advisory Board. The Resilient Navigation and Timing Foundation heartily supports these proposed policies and initiatives.~~

Thanks to Dr. Brad Parkinson for his help and inspiration developing these recommendations