PTTI WORKSHOP
SESSION C
"PRESENT & FUTURE NEEDS: IS GPS THE ONLY PTTI SOURCE?"

Moderator: R. L. Filler, US Army Research Laboratory

The session opened with the topic of reliance on GPS for precise time. The moderator read the following submission from John Vig, Army Research Laboratory:

> *"GPS is an outstanding navigation system, and it is also an accurate source of precise time due to the presence of high quality atomic clocks on the GPS satellites. It makes good sense for military systems to take advantage of the precise timing ability of GPS, however, although GPS is not at risk today, as more and more systems become dependent on this system, GPS becomes a more and more attractive target for future adversaries. (GPS has been designed for high survivability, but GPS satellites are not impossible to shoot down, GPS ground control stations are vulnerable to attack and sabotage, and GPS can be jammed.) Some system designers believe that, due to the availability of precise time from GPS, low quality clocks can be designed into systems that would otherwise require high accuracy clocks. Systems that rely on GPS without having clocks good enough to maintain autonomous synchronization will become unavailable whenever GPS is unavailable. GPS should be used to assist with clock synchronization and not as a substitute for good clocks. A DoD policy is needed on the conditions under which other DoD systems may rely on GPS."*

Comments (paraphrased from memory)

1. Lt. Col. Freer (USAF): There should NOT be a DoD policy. This is reminiscent of the DoD policy on Ada. Let "market pressures" decide on reliance on GPS.
2. Dr. G. Winkler: There should be a request to have a formal PTTI requirement placed on GPS. It now only has a navigation requirement.
3. Dr. S. Stein: There should be backups to GPS such as LORAN and/or comm. systems.

The second topic was the questionnaire borrowed from Frequency and Time Systems (FTS). It was suggested by Dr. Gernot Winkler, USNO, that a questionnaire of this sort might be useful for defining the requirements of the PTTI community.

Comments

1. The moderator asked several rhetorical questions:

   a. "Who are the right people to fill out such a questionnaire?"

   b. "Who are the right people to receive the data?"

2. Phil Talley, The Aerospace Corp., related a story about his trying to arrange a PTTI session on user requirements. Seven or eight prime contractors were interested initially but backed out in the end. The reason is unknown.

The third topic was "Poor coupling between system developers and government laboratories." The moderator read the following submission from John Vig:

> *"The frequency control technology area is different from most others in that the majority of experts in the field are at government or government related organizations, i.e., at NIST, ARL, NRL, USNO, AFOSR, Aerospace Corp., Jet Propulsion Laboratory, and Johns Hopkins Applied Physics Laboratory. The major system contractors have minimal expertise and no R&D capability in this field. Yet, when a problem arises that calls for R&D, not only do the contractors (and government program managers) have no incentive to make use of the expertise that resides in government, there is a disincentive for involving the government laboratories. The contractors usually look upon the government laboratories as competitors for the available R&D funds, and the program managers are usually reluctant to admit to the lack of a required component; obtaining the necessary components is 'the contractor's problem.' "*

Comments

The question of responsibility was raised. If a government entity makes a suggestion to a contractor, the contractor takes this as a requirement, and possibly a change of scope so the contractor can charge the government for added work.

Final Comment from Moderator

Workshops such as this one should be the main agenda for the PTTI meeting. We need more of them with preadvertised topics to get wider participation. The proceedings, should be published with action items and, in future years, follow–up reports on accomplishments.