Written by James Heiser on April 1, 2011



Should Homeland Security Control the GPS Network?

Americans have become accustomed to the presence of Global Positioning System (or GPS) technology embedded in everything from the GPS on their dash to their cell phones and iPads. In fact, GPS is nearly taken for granted for everything from locating a restaurant to navigating a fishing boat through the fog. But now it appears that GPS, which was developed primarily for its military applications, is rather overtly returning to its "national security" roots, as NASA plans to turn the security of the GPS system over to the Department of Homeland Security.



A "white paper" entitled "Jamming the Global Positioning System – A National Security Threat: Recent Events and Potential Cures" was produced last November setting forth the reasons why its authors believe that the GPS system should now be deemed a matter of national security. According to the "white paper," it is the ability to jam GPS signals that poses a threat, by interfering with the operation of systems dependent on the satellite signals for proper operation:

The United States is now critically dependent on GPS. For example, cell phone towers, power grid synchronization, new aircraft landing systems, and the future FAA Air Traffic Control System (NEXGEN) cannot function without it. Yet we find increasing incidents of deliberate or inadvertent interference that render GPS inoperable for critical infrastructure operations.

Most alarming, the very recent web availability of small GPS-Jammers suggests the problem will get worse. These so-called *personal protection devices* (PPDs) as well as other, readily available, more powerful devices can deliberately jam the Global Positioning System (GPS) signal over tens of square miles. They also can be devastating to the other, new foreign satellite navigation systems being deployed worldwide.PPDs are illegal to operate, but many versions are available (for as little as \$30) from foreign manufacturers over the Internet. The simplest models plug in to a cigarette lighter and prevent all GPS reception within a line of sight range of 5 to 10 miles. Current penalty for operation is simply that the device is confiscated.

We currently lack sufficient capabilities to locate and mitigate GPS jamming. It literally took months to locate such a device that was interfering with a new GPS based landing system being installed at Newark Airport, NJ.

The current plan is to further criminalize interfering with GPS signals. Technically, such deliberate interference already comes under the purview of the Federal Communications Commission (FCC); GPS "jammers" are broadcast devices, and thus are allegedly already subject to FCC regulation. In fact, the recent flurry of Internet stories covering last year's "white paper" was probably generated by a letter which the Department of Transportation (DOT) and the Department of Defense (DOD) sent to the FCC "expressing concern over elements of an ongoing analysis on the potential effects on GPS of a newly approved broadband system." According to FlightGlobal.com:

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FCC in January granted conditional approval of a L-band satellite-based broadband system to be deployed by wholesale provider LightSquared. Much of the aerospace industry says the network, which includes 40,000 transmitters that will rebroadcast the L-band signals at high power, will have significant interference effects on terrestrial and airborne GPS signals that operate in an adjacent frequency band. The aerospace industry had recommended that the approval process be based on the notice of proposed rulemaking process, a lengthy but thorough process with opportunities for public input.

The conditional approval requires that the FCC determine "that the harmful interference concerns have been resolved" before the network goes operational later this year, a determination the agency plans to make based on industry-led analyses to be completed by mid-June.

The DOD and DOT letter to the FCC seems to make it abundantly clear that they are unwilling to wait for the FCC to finish the review process, and are upset — after the fashion of all bureaucratic squabbles over "turf"— that the Federal Communications Commission was proceeding according to its mandate without soliciting input from DOT and DOD. According to FlightGlobal.com:

The letter to FCC chairman Julius Genachowski from deputy DOT secretary John Porcari and deputy DOD secretary William Lynn opens with criticism of the interference analysis, which LightSquared is responsible for delivering. "First, DOD and DOT were not sufficiently included in the development of the LightSquared initial work plan and its key milestones," say Porcari and Lynn.

"We are concerned with this lack of inclusiveness regarding input from federal stakeholders. In particular, active engagement with DOD and DOT, the national stewards and global providers of [GPS], is essential to protect this ubiquitous defence, transportation and economic utility as the [work group] proceeds."

The first recommendation offered in last November's "white paper" is that "GPS should be formally declared critical infrastructure by Executive Branch and managed as such by DHS." Presumably this would give the Department of Homeland Security the ability to simply curtail the FCC review and rule against any technology which DHS deems would interfere with such a "critical infrastructure." Of course, given the controversy over LightSquared, it remains to be seen whether such DHS would hamper the technological development. The "white paper" was issued only ten days before the launch of the first LightSquared satellite, and the company's website quotes the words of FCC Chairman Julius Genachowski regarding the potential value of LightSquared: "I was pleased to learn of the formation of LightSquared today. This new nationwide 4G wireless broadband network represents more than \$7 billion of new investment, with the potential to create more than 100,000 new private-sector jobs within five years. Today's announcement shows that FCC policies are helping grow the U.S. economy by catalyzing investment and job creation." At a time when demand for wireless broadband access is rising at an almost exponential rate, and provide jobs in the process may find its plans cut short by the dictates of "national security." Why not simply allow the FCC regulatory process to proceed?

Furthermore, it was recommended in the "white paper" that "The National Executive Committee should examine whether or not they should sponsor Legislation in Congress that addresses interference to GPS that provides substantial fines and jail time for both possession and use of GPS jammers." If such legislation is enacted, thousands of Americans who already possess such jammers may suddenly find that their fascination with a novelty item has suddenly landed them in a federal penitentiary.



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