

Tech Insider

China Poses Threat to GPS, Backup System at the Ready
By Allan Holmes | Thursday, May 31, 2007 | 04:47 PM

The following item was posted by Bob Brewin.

China now has the capability to jam the Global Positioning System, widely used by both the military to, say, guide precision weapons and by civilians to, for example, provide timing for telecom networks, according to the annual Defense Department [report](#) on “Military Power of the People’s Republic of China” submitted to Congress May 25.

According to the report, China acquired jammers from the Ukraine in the late 1990s, which are capable of jamming GPS, and since then the country has probably developed its own jammers.

That is one reason why in January the departments of Homeland Security and Transportation asked for public comments on whether an updated version of the terrestrial [Loran](#) (Long Range Navigation) system, which was first deployed in World War II, be used as a GPS backup system.

Loran receivers can determine their location by computing the time intervals between signals received from three or more transmitters, while [enhanced Loran](#) (e-Loran) provides more precise signals through the use of an added data channel. The Coast Guard (part of Homeland Security) says because Loran and e-Loran transmitters use high-powered transmitters and low-frequency signals compared with the low-power and high-frequency signals for GPS, both Loran systems are less susceptible to jamming or interruption than GPS.

Besides jamming, GPS signals can be knocked out by solar flares, the National Oceanic and Atmospheric Administration [reported](#) in April.

Zachariah Conover, president and chief executive officer of CrossRate Technology, which has developed an integrated GPS/Loran receiver, said the dual threats posed by solar flares and jamming to GPS illustrate the need for e-Loran. Conover, who worked on Loran while in the Coast Guard, said he has learned Homeland Security and Transportation departments have “accepted the recommendation that e-Loran be continued as the long-term backup to GPS.”

This decision has not been announced publicly, Conover said, because the departments are bickering over who will pay for build-out and operation of the e-Loran system. The Coast Guard has spent \$160 million to modernize Loran since 1997, and Conover said the funding requirements are minimal, about \$30 million a year to operate e-Loran.

“The dickering over whose budget the system goes into is holding up a policy decision that everyone knows needs to be made. And this lack of a decision is wasting both time and money and is keeping the American taxpayer from experiencing the benefits of the e-Loran system while leaving them susceptible to GPS outages,” Conover said.

The United Kingdom has no intention of waiting to deploy its own e-Loran capabilities, which it considers essential as a back up to GPS. The General Lighthouse Authorities (GLA) of the United Kingdom and Ireland – which operate aids to navigation systems and lighthouses – announced May 31 that they awarded a 15-year contract to develop a state of the art e-Loran system to serve the two countries.

The GLA said the e-Loran system will complement GPS and insure users will be able to obtain electronic positioning, navigation and timing signals when satellite service is disrupted. The e-Loran contract award dovetails with the long-term [GLA Radio Navigation Plan](#) released May 29, which states that e-Loran is the only viable candidate to provide a backup for GPS.