



Homeland
Security

Fact Sheet

Enhanced Long Range Navigation (eLoran)

Purpose: The U.S. Department of Homeland Security began implementing an independent national positioning, navigation and timing system to complement the Global Positioning System (GPS) in the event of an outage or disruption in service. The enhanced long range navigation – eLoran -- system will be a land-based, independent system and will mitigate any safety, security, or economic effects of a GPS outage or disruption. GPS is a satellite-based system widely used for positioning, navigation, and timing.

The eLoran system will be an enhanced and modernized version of Loran-C, long used by mariners and aviators and originally developed for civil marine use in coastal areas. In addition to providing backup coverage, the signal strength and penetration capability of eLoran will provide support to first responders and other operators in environments that GPS cannot support, such as under heavy foliage, in some underground areas, and in dense high-rise structures. The system will use modernized transmitting stations and an upgraded network.

Background: Loran is a low-frequency, high-power radio-navigation system using land-based radio transmitters to allow users to determine their position. The U.S. Coast Guard currently operates the United States Loran-C system with 24 Loran stations within the continental U.S. and Alaska. Many nations including Canada, Japan, South Korea, Russia, China and several countries within the European Union operate Loran systems. Although it still provides navigation accuracy for transportation, the larger user base is expected to be critical infrastructure.

Highlights:

- In 2009, the administration of the LORAN-C program will migrate to the Department of Homeland Security's National Protection and Programs Directorate in preparation for conversion of LORAN-C operations to eLORAN. The U.S. Coast Guard is expected to continue operation of the system on a reimbursable basis in 2009.
- Loran-C was operated by the Coast Guard for 50 years as an aid to navigation to facilitate safe and efficient maritime transportation/commerce - 1/4 mile nautical accuracy for the coastal zone and en route navigation for aviation under authority of 14 USC 81 - to facilitate safe and efficient maritime commerce in navigable waters of the United States.
- eLoran supports timing and frequency applications such as telecommunications networks, electric utilities, securities trading, and computer networks; all of which are part of the nation's critical infrastructure. This makes eLoran a very robust systemic back-up to GPS.

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