

International Loran Association

741 Cathedral Pointe Lane, Santa Barbara, CA 93111 USA
Ph: 805.967.8649 fax: 805.967.8471 email: ila@loran.org www.loran.org

Detailed studies in the USA and Europe have shown clearly that Enhanced Loran (e-Loran) will be the principal internationally-recognized backup of GNSS position, navigation and timing services for safety and national security:

In the USA:

- In 2001, the Department of Transportation's Volpe Transportation Systems Center reported: "Backups for positioning and precision timing are necessary for all GPS applications involving the potential for life-threatening situations or major economic or environmental impacts." They recommended continuation of the Loran-C modernization program.
- In 2004, the Department of Transportation's Navigation Task Force Report concluded: "If Loran can meet requirements for non-precision approach for aviation users, harbor entrance and approach for maritime users, and improved performance for time and frequency users, and is cost effective, Loran should be included in the future navigation mix."
- In 2004, the Federal Aviation Administration concluded: "a modernized Loran system (e-Loran) could satisfy the current Non-Precision Approach, Harbor Entrance and Approach, and timing/frequency requirements in the United States and could ... mitigate the ... effects of a disruption of GPS services."
- In 2005, authors at the US National Institute of Standards and Technology and the US Naval Observatory identified e-Loran as "the best available backup source to GPS for precise time synchronization ... and frequency control in the United States."
- During the past seven years, the United States has funded e-Loran testing and development, and modernization of its 24 Loran transmitting stations, with an investment of \$140M. Funding continues for e-Loran testing, development and installation as well as further modernization of 6 Alaskan stations.

In Europe:

- In 2004, the Helios Technology study for the European Radio Navigation Plan reported to the European Commission: "Loran-C is the only real stand-alone alternative to satellite radio-navigation services for many market sectors (including maritime, land and timing). It delivers 22% of the policy benefits for only 4% of the annual total operating cost".
- In 2004, France decided to keep Loran-C available at least until 2015, to continue to operate its own stations, to support the station in Ejde (Faeroes), and to loan a transmitter to the UK for its new Rugby station.
- In 2005, the UK Department for Transport recognized: Loran's indispensable role complementing GNSS as the central tool in delivering e-navigation; Loran's value in permitting the accelerated phase-out of traditional aids to navigation; and the expected confirmation ... of Loran's role as an essential component in the Galileo programme."

In Asia:

- The Far East Loran Service (China, Japan, Korea and Russia) has upgraded Loran-C timing control and service, and has stated that service will continue for the foreseeable future. China has successfully completed testing Eurofix service.

In the Middle East:

- In 2005, Saudi Arabia has introduced Eurofix on its Loran-C service throughout the Kingdom, will add a fourth transmitting station in 2006 and is considering timing service upgrade in the near future.

E-Loran: The Best Backup for GNSS Position, Navigation and Timing!

Board of Directors, 2006: Langhorne Bond, President ♦ (unnamed), Vice President ♦ Robert Lilley, Secretary ♦ Erik Johannessen, Treasurer ♦ Linn Roth, Past President ♦ Thomas Celano ♦ James T. Doherty ♦ Thomas Gunther ♦ Tamotsu Ikeda ♦ Sherman Lo ♦ Jacques Manchard ♦ Gerard Offermans ♦ William F. Roland ♦ Douglas S. Taggart ♦ Nicholas Ward ♦ Paul Williams ♦ Durk van Willigen