



Electronic Charting for Navigation

Description and Background

The U.S. inland navigation system consists of 9,100 miles of rivers maintained by the U.S. Army Corps of Engineers (USACE) in 22 states, 23 river systems, and includes 276 lock chambers with a total lift of 6,100 feet. The highly adaptable and effective system of barge navigation moves over 625 million tons of commodities annually, which includes coal, petroleum products, various other raw materials, food and farm products, chemicals, and manufactured goods. Following recommendations by the National Transportation Safety Board, the National Academy of Science and the American Waterways Operators, Congress directed USACE to develop and publish electronic charts for the inland waterways. Inland Electronic Navigational Chart (IENC) development began in 2001, with pilot projects on the Atchafalaya River in Louisiana and Lower Mississippi River near Vicksburg, Mississippi. These projects were the first efforts to collect and convert inland waterway data, used for river and channel maintenance, into the internationally accepted "S-57" hydrographic data exchange format. This highly structured data format is commonly used for electronic chart applications and used for all USACE IENCs.

Key Capabilities

Large-scale, accurate, and up-to-date IENCs, such as those being developed, enable electronic chart systems that provide accurate and real-time display of vessel position relative to waterway features, voyage planning & monitoring, and training tools for new personnel. Integrated display of IENC river charts, radar, and Automatic Identification Systems (AIS) is possible. The IENCs are vector-based products that offer superior functionality, scalability, and embedded data about chart features; thus these vector charts offer superior capabilities over raster (scanned) chart technologies.

Current Status

IENCs are available for download, at no charge, from the USACE E-Charting web site at www.tec.army.mil/echarts. They cover the Lower Mississippi River, Mile 236 AHP to 951; Upper Mississippi River; Ohio River; Black Warrior – Tombigbee; Atchafalaya River, Red River, Illinois River and other waterways. More waterways will be charted and published as the program continues. Published IENCs will be updated with additional features and more accurate data from new waterway surveys or other sources. We will publish ongoing updates, as new data is available from channel construction and maintenance surveys.



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