

GeoCoastPilot

Linking the Coast Pilot with Geo-referenced Imagery & Chart Information

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When faced with the task of bringing a vessel to an unfamiliar port, the mariner typically relies on more than just a chart. Whether commercial or recreational, this consumer of marine information usually consults sources supplemental to the charts, such as a Coast Pilot or a cruising guide. Currently the NOAA Coast Pilot is a text document with a few images. It references prominent on-shore features but only provides precise geographic locations for a few of them. We have built a software prototype that uses hyperlinks to integrate Coast Pilot information with precisely geo-referenced imagery of shore features displayed in a 3D chart environment.

GeoCoastPilot is a prototype application built on GeoZui4D that provides the mariner with an integrated 3D environment for exploring Portsmouth Harbor. GeoCoastPilot fuses information from Chapter 9 of NOAA Coast Pilot 1 with charts, S-57 data, images of landmarks, and high-resolution bathymetry for the area around Portsmouth Harbor. When the mariner clicks on a hyperlinked feature in the Coast Pilot text, the 3D view is brought to the image and/or location of feature and any related S-57 data is displayed. If an image or S-57 object is clicked, associated Coast Pilot text is highlighted and any additional related S-57 data is displayed. In addition, links to federal regulations (CFRs) in the Coast Pilot text bring up the full text of the referenced regulations. GeoCoastPilot serves as a research prototype of what is likely to evolve in commercial products, and highlights the challenges that must be overcome in order to provide the mariner what they will ultimately be looking for.

XML is the active ingredient to GeoCoastPilot that gives it the ability to fuse disparate data sources together. Once items in the original Coast Pilot text are identified, the text can be marked up with XML tags identifying these items as key shore features, regulations, or attributes of interest. These tags can then be mapped to information in other sources through various attributes: to S-57 information by name; to raster charts and bathymetry by geographic position; to photographic imagery by feature name; to federal regulation by title and section. The potential also exists to map the tagged information to online resources, including tide and current tables, websites of facilities of interest on- or near-shore, or sites of interest agreed upon by communities of like-minded consumers.

This presentation will give a demonstration of GeoCoastPilot and its main features, and will briefly mention some implications that similar applications may eventually have on near-shore mapping operations and marine information systems.