IENC

By Bill Bergman

The US Army Corps of Engineers (USACE) held its annual IENC (Inland Electronic Navigation Charts) partnering meeting in St. Louis earlier this month. Denise LaDue put together yet another informative and worthwhile event where all of the parties interested in Inland Electronic Navigation gathered to exchange ideas and keep abreast of events happening in this arena. One piece of news was the announcement that the Army Corps is phasing out support for the S57 3.1 chart format. They are instead encoding in the Inland ENC 2.2 standard. This prompted the questions 'Can HYPACK® display the new format data?' and 'Can you explain what the difference between the formats are?'. Let's explore the answers in this article.

S57 Format

S57 is a standard developed by the IHO for the encoding and exchange of Hydrographic data. One part of the standard defines the file format where the data resides. In essence, it is a database where spatial (location) and feature (objects, attributes) data is stored in a well defined format. Another part of the standard allows for the definition of product specifications. The product specification gives a framework for interpreting and validating the information in the file itself. It was left to another standard, S52, to prescribe how to make a visual representation of the S57 data. (Fun Fact: An S63 chart is simply an S57 that has been encrypted to support licensed usage.)

The S57 standard has evolved over time to its current revision of 3.1. Many of the changes have related to the Object and Attribute catalogs. These catalogs define available types of features (Buoy, Dredge Area etc) and the attributes these features are able to contain. A bridge, for instance, can have fields to store Name and Clearance information but not, for example, its Weight. Over time Objects have been added, some have been retired along with similar modifications to attributes.

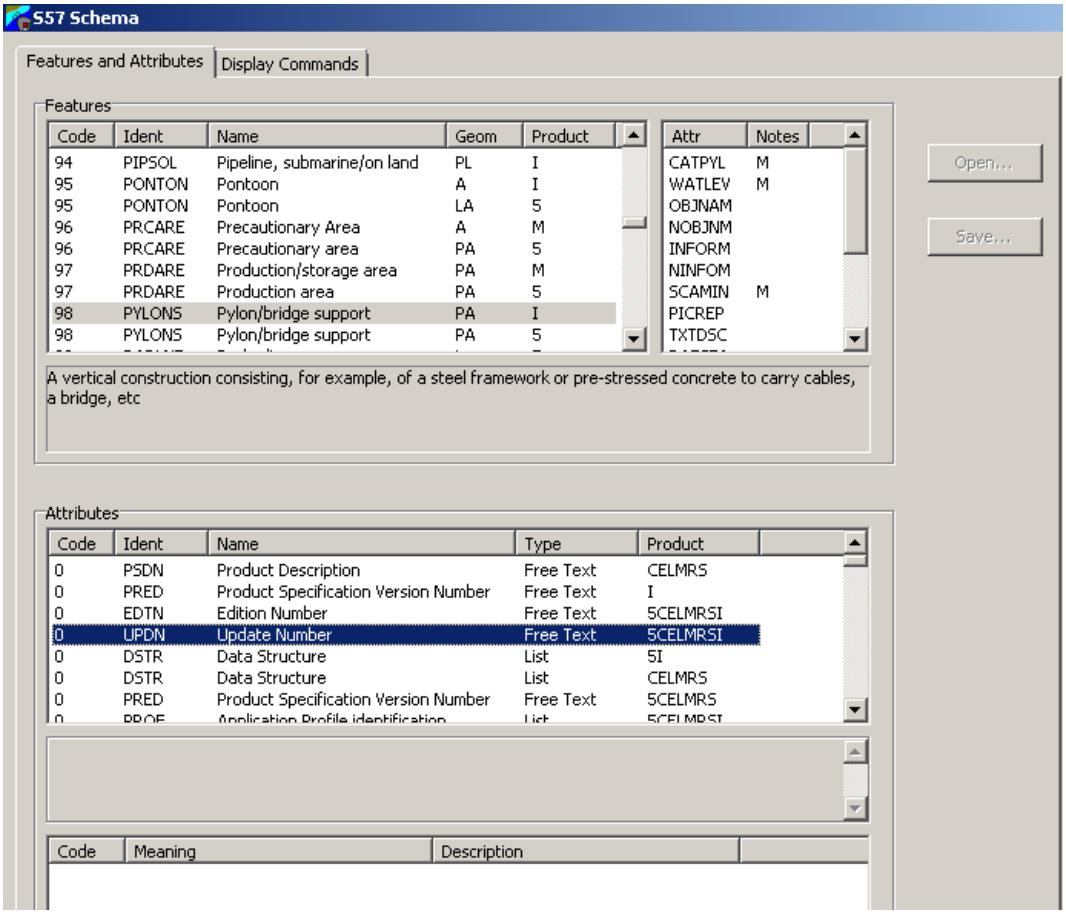
When inland electronic charts were first developed, it quickly became apparent that the available S57 catalogs, which were developed for oceangoing vessels, didn't suit the unique, navigationally significant features found on the inland waterways. Instead of trying to extend the S57 standard to encompass inland-specific needs, it became much more expedient to develop a standard specially suited to the inland community. Thus the IENC standard came into being.

IENC 2.2 Format

The good news for software is that the **IENC standard** retains a good chunk of the S57 standard from which it came. The Feature and Attribute catalogs are certainly modified as well as many technical constraints inside other parts of the product specification. For instance, an inland chart need not be constrained by 2 latitudes and 2 longitudes. In HYPACK®, our electronic chart engine has been designed to handle these different but similar chart formats in a transparent fashion.

Figure 1 shows the Schema dialog from the encEditor software. This is the place to go when you want to investigate the low-level details regarding objects, the type of geometry they can encode, the types of attributes they can be associated with, the data types for attributes and the product specification in which they all live.

FIGURE 1. *The Schema Dialog from the encEditor Software*



Enough about the chart differences and back to the first question. The answer: Yes, HYPACK® can use the IENC 2.2 version charts without any issues.