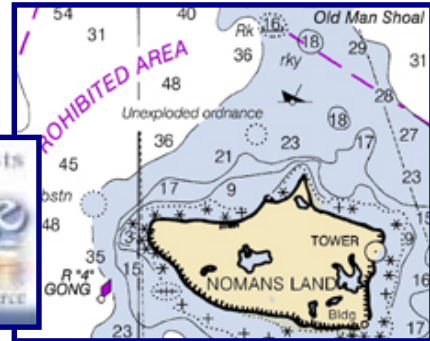# EXSYS Case Study

Improved Accuracy in Nautical Chart Cartography

In order to increase productivity, reduce subjectivity, and provide consistency in the creation of US nautical charts, the National Ocean Service's office of Charting and Geodetic Service (Marine Branch) decided to use knowledge automation systems. The constraints were:

♦ The knowledge base must be in English text
♦ The systems had to be easy to understand so maintenance could be transferred from the contractor to government personnel
♦ The systems must be able to be developed by non-programmer cartographers
♦ Fast development time

EXSYS was selected as meeting the above parameters. It was decided to begin the project by building a knowledge automation system to address a single chart feature that was representative of the entire problem. The feature selected was overhead cabling. The system was developed in 5 months at a cost of $50,000. Even in alpha testing it was found to be 94% accurate - 40% higher than human novice cartographers.

Acceptance of the system was excellent with many cartographers using it on their own time and providing comments. Due to the success of this system, the project now has 11 knowledge automation systems for different types of marine features. The complete knowledge base is over 6700 rules, but easily runs on a PC.