

Distributed Expert System in Port Area

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A high quality examination is always necessary in naval transports. The paper presented contains a general strategy for Distributed Expert Systems implementation using Jess philosophy and provides an overview of the various expert systems and the role they play in the port. Different elements in naval transports and its combinations possibilities lead to control strategy of the Expert Systems development.

We can easily notice that only a small part of our experience is used to solve a particular problem. We also mention that although we possess a large amount of knowledge acquired from practical activities, the solving of a practical problem uses very few pieces of information. In this way, a high-level control process is generated that is employed to solve the problem. An expert system must be complex enough to solve particular problems too. Hence, even for problems with a low level of complexity, it is necessary, that the expert system be able to permit a high level control as well as a low level control, both controls being based on an 'excitation-response' type of rule. A correct definition of the two levels is absolutely necessary in order that the expert systems separate them. Thus, the high level control of an expert system (production system) is defined as a set of rules that allow the activation/inhibition of the "excitation-response" type of rules according to the basic principles of the system.

The use of two sets of cooperative expert systems enables the container terminal to expedite the unloading and loading of container vessels and enhance marine services. Such an improvement is necessary in order that the port can compete with neighboring ports that have the advantage of inexpensive labor and large port space. By integrating these systems with each other and with other computer-based information systems, the operation terminal was able to triple volume of business with the same number of employees and reduce the turnaround time of vessels to 25-30% of that in the neighboring ports.

The bulk of global trade moving through the world's ports is shipped via containers. A typical port will handle several containers each day, and the goal of the port is to move these containers as quickly and most cost-effectively as possible. Goods delayed at port are invariably tardy upon delivery to customers, thus incurring late charges. It is therefore essential that a port be able to efficiently and rapidly receive, store and dispatch containers. A shipping line may opt to tranship its goods through anyone of several ports on the coast of the Black Sea. Constanta containers terminal, located in the Constanta, section of the Port of Constanta/ Agigea, is one of the largest, most modern and best-equipped container terminals in this geographic area. Business applications of expert systems are continuing to increase in number and diversity. International business applications of expert systems, however, are few and far between.