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## Think & Do Featured Applications

### Inland Paper Board and Packaging Inc.

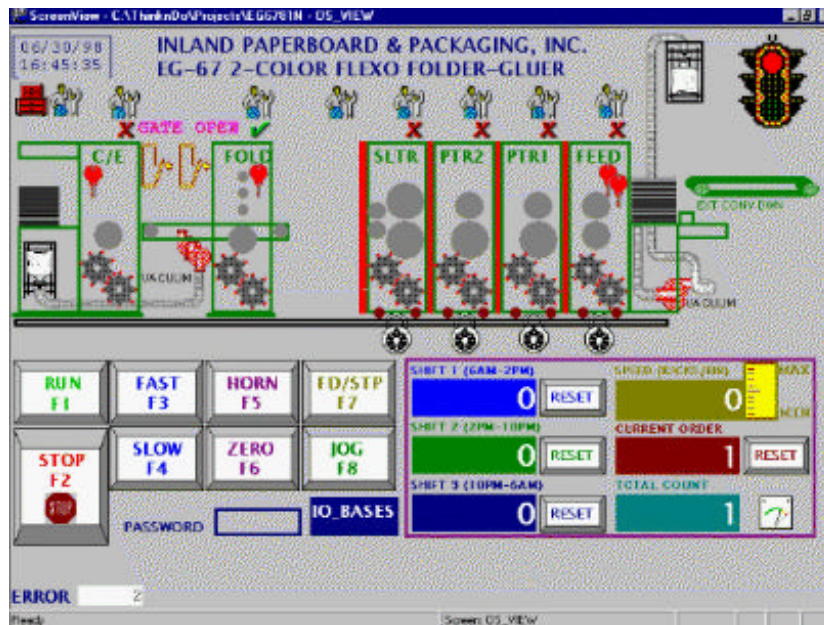
### Corrugated Box Application

#### Overview

Inland Paper Board and Packaging (Los Angeles, CA), a corrugated box manufacturer, selected **Think & Do** software and Ethernet I/O for their new high-speed Flexo Folder-Gluer machine which converts corrugated board to finished boxes. The Inland machine is a multi-station production system which performs a sequence of cutting, folding and gluing operations according to operator selected box designs.

A number of factors influenced Inland's decision to adopt **Think & Do** PC-based control for their new machine. One factor was **Think & Do** software's open architecture and use of standard interfaces to other Windows applications (such as Visual Basic). Another important factor was the fast responsiveness and low cost of the complete controls solution. Using **Think & Do** PC-based control allowed Inland to design a controls solution which readily integrated with their business systems, allowing direct transfer of manufacturing data from I/O devices into their business systems.

With extensive prior experience in PLC-based controls solutions, Inland carefully considered all the issues before switching to PC-based control. Scott Ngo, an Inland Plant Engineer, evaluated a number of alternatives before adopting Think & Do software and Ethernet I/O. Based on his discussions with suppliers and other users, he concluded PC-based control with Ethernet communications is "the future of the automation industry."



#### Implementation

The controls implementation on the Flexo Folder-Gluer machine uses two commercial Windows NT compatible PCs. One PC handles the runtime chores while the second PC serves primarily as an application test and debug station. The Ethernet connection between the two PCs allows the application developer to make

changes to logic and screens without disturbing the production process, and then to incorporate the changes using **Think & Do** software's on-line change capability.

The runtime PC handles nearly 500 digital and analog I/O points distributed among seven I/O racks. All of the I/O racks communicate with the PC over a single Ethernet network using a standard multiport Ethernet hub. Along with the **Think & Do** application, the runtime PC also executes a Visual Basic program running specialized pre-programmed routines. The system was implemented in a fraction of the time that was estimated with their traditional approach (an Allen-Bradley PLC with PanelView).

## Key Benefits

According to Scott Ngo of Inland, their adoption of **Think & Do** software as the basis for their PC-based controls strategy has yielded substantial benefits. The benefits included:

- dramatic reduction in costs
- faster and easier application programming and debug
- much less engineering time required to implement controls and operator screens
- substantially faster logic scan time than traditional PLC solutions
- open architecture system allowing for scalability and extensibility
- standard, easy networking to other PCs and applications

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