

Customized Stamp for Fruit Boxes

PROJECT BRIEF

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Description: SIMS Manufacturing has been providing fruit box stamping equipment for more than 20 years. In the early years the stamping equipment was mechanical and was quite reliable. The problem arose when regulatory rules mandated more complex messages to be stamped on the box. Due to competition and other pressures SIMS took a hiatus in stamping equipment, but loyal customers convinced SIMS to get back into the game. SIMS made 2 attempts to create robust but easy to use stamping software, with other vendors, before contacting Concept Systems Inc.

The goal of this project was to create an easy to use, comprehensive user interface for all of SIMS customers' varying needs. An additional goal was to utilize an industry standard database to make data management easier and provide more flexibility and modularity for data reporting. The result is SIMS Inkjet Software, in which SIMS has installed at 14 locations that pack apples, cherries and pears.

The SIMS Inkjet Software that Concept Systems provided communicates with a barcode scanner to determine each box's contents and retrieve the information on that box from its database. The system then sends a customized image to as many as 4 varying-color inkjet printers from Domino Amjet. Images are generated with a built-in graphical editing function that allows the selection, placement, size, and orientation of all the available data. Each piece of data that is printed on the individual box of apples plus the weight of the apples can be tracked. This can be as many as 56 different pieces of data such as: grade, size, apple branding, variety, government data, serial numbers for tracking product all the way from the store back to the grower. The box's data is then stored for up to a year in a Microsoft SQL database in order to be retrieved later for reporting purposes. Reports are embedded into the software but are also available over the customer's local intranet. The software also communicates with SIMS Box Trafficking software to route boxes depending on their barcode and with a PLC/weigh scale to control rejects if a box is underweight or its barcode is invalid.

SIMS Inkjet Software is easy for SIMS' technicians to setup and requires modest training for the end operator while having enough sophistication to manage large amounts of data in an increasingly regulated fruit industry.

In addition, as new custom features have been requested by SIMS' customers Concept Systems has worked closely with SIMS to design and develop the new add-ons to fit into the existing software seamlessly, allowing SIMS to provide additional feature options to both its prospective and existing customers.

Results

- Complete turnkey solution for printing customized labels on the sides of fruit boxes, requiring about 10 feet of conveyor space
- Easily configurable system, without custom programming, for a wide variety of fruit packing plants
- Reduced setup costs

- Robust Database/Reporting Options
- Scalability built into the application - can run one line with a single PC or can be expanded to multiple lines and an array of clients with a server without code changes.
- The existing Delphi application's look & feel is maintained in order to reduce operator training requirements.



Services Provided:

- System design and programming
- Start-up & Commissioning for a number of printer models and ink colors.
- Add-on design and programming
- Customer interface & support

Technologies/Platforms Used:

- Microsoft Visual Studio 2005
- Allen-Bradley Micrologix 1100 PLC
- Microscan Barcode Scanner
- Cardinal Scale
- Domino Amjet C-series printers
- Ethernet Communications
- Active Server Pages and Crystal Reports