



Control Systems at ITMA 2003

Robert Barnhardt, Juan Hinestroza, and Jeffrey Joines
College of Textiles, North Carolina State University

ABSTRACT

A comprehensive analysis of the current trends and technologies in control systems for the textile industry is presented. Our approach was first to dissect the important components of an integrated control system and then to determine if and how the components are converging to provide manageable and reliable systems throughout the chain from fiber to the ultimate customer. Although the implementation of advanced process control strategies is not foreseen in the immediate future, it is apparent that the textile industry is slowly moving toward modular machines and systems. The dedicated systems still prevalent today are gradually being replaced by standard units, distributed automation concepts and an increasing connectivity of the production floor with planning and scheduling systems. This level integration has the potential to optimize the information flow throughout the entire Supply Chain.

Keywords: Control systems, Supply Chain, information flow, process control.

Introduction

The “Control Systems” assignment was appealing to the three faculty assigned to the topic because of its breadth of subject matter. It allowed us to think of control systems from the machine level to the Supply Chain.

The official ITMA 2003 Catalogue contained 533 listings under the general topics

“Software Design, Data Monitoring and Processing, (CAD/CAM/CIM) and Integrated Production. Some of the listings were redundant; however, the sheer number of them is representative of the interest and importance of these topics to the industry. In addition, the listings included companies from around the globe.

The following table indicates the distribution of activities involved with the 533 exhibitors:

Table 1. Distribution of System Activities

CAD (Computer Aided Design) vendors	116	22 %
CAM (Computer Aided Manufacturing) vendors	217	41 %
CIM (Computer Integrated Manufacturing) vendors	144	27 %
Integrated Production vendors	56	10 %
Totals	533	100 %