NIST
National Institute of
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U.S. Department of Commerce

MARYLAND ROBOTICS CENTER
THE INSTITUTE FOR SYSTEMS RESEARCH

Next Generation Packaging, Kitting, and Palletizing: Can one robot do it all?

Dates: February 09, 2012
Time: 9:00 AM - 1:00 PM

Location:
Room# C105
Georgia World Congress Center
Address:
285 Andrew Young Intl. Blvd. NW
Atlanta, GA 30313.

Organizers:

Dr. Stephen Balakirsky
Intelligent Systems Division, NIST
301-975-4791

Dr. Raj Madhavan
University of Maryland, College Park
301-975-2865

ipmas@nist.gov

Seminar @ MODEX 2012
Bringing together vendors, researchers, and end-users

In the material handling community, three apparently disparate subgroups exist in the areas of kitting, packaging, and palletizing. There are, however, significant similarities in these tasks, in the way their requirements are represented, and in how their performance is evaluated. This seminar will explore these similarities and look for ways in which common representations and automated planning systems can be developed to enhance performance and simplify setup and execution. The desired end results are next generation material handling systems and the measurement science and standards for planning and modeling. The resulting systems will be flexible to a wide range of applications.

The goal of this workshop is to explore material handling with respect to kitting, packaging, and palletizing in order to find areas of common interest where resources may be combined to provide impact to the overall industry.

The attendees of the workshop will strive to answer the following questions:
1) What are the areas of similarity and difference between kitting, packaging, and palletizing?
2) Can a common representation be developed for world, plan, and execution knowledge that will serve these communities?
3) How can these systems be evaluated and tested? What performance measures and test methods are appropriate?

Leading researchers and experts from industry will attend. The seminar will consist of briefings from invited speakers and discussions aimed at deriving necessary future steps and identifying potential collaboration. The discussions and items stemming from the session will be released as a White Paper seeking additional input from the broader community that will then be translated into concrete action items.

The seminar is free to all registered show attendees.

Background & Motivation
Currently, material handling tasks associated with manufacturing and assembly operations are a mix of automated and manual systems with very limited market penetration of automated systems into small- and mid-sized companies. Lack of automation is due to difficulties in using today's generation of robots for tasks that include requirements such as small lot sizes and product variability. In addition, infrastructure requirements and high levels of required expertise make them cost prohibitive. A major contributing factor is that current manufacturing robots have little or no understanding of the world around them and no capability to dynamically change their actions if the environment or task changes. This restricts them to operate in highly constrained environments and makes it difficult to change from one task to another. We believe that systems that are capable of modifying their behavior by generating and adapting plans will overcome these limitations and that these systems will require detailed knowledge of and a consistent representation for both the manufacturing environment and the plans.