



The Data Center

Newsletter 1:1 (2005)

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The Data Center has been active in a number of different areas during the past several months. It has been a time of organization and growth as we develop a game plan for building an interoperable modeling system and talk with industry on the needs, challenges and next steps in making The Data Center a reality.

We are happy to announce that John R. Williams, Professor of Information Engineering, Department of Civil and Environmental Systems and Engineering Systems, MIT, and Director of the Intelligent Engineering Systems Laboratory, has begun a collaborative effort with the The Data Center. John leads a group of graduate students investigating a number of areas dealing with sensing technology, Web Services, and grid computing.

Also participating in Center activities is Tatsuya Inaba, a researcher who will be doing work at Keio University in Japan starting in June. His background is in electrical engineering and logistics with extensive knowledge of various aspects of the information technology infrastructure for Auto-ID. To date, most of Tatsuya's work has been in the area of developing pedigree systems for securing the pharmaceutical supply chain.

All information about current members of The Data Center, including graduate students from the Ph.D. program and the master of engineering programs (electrical engineering and computer science, and logistics) can be found at,

<http://mitdatacenter.org/DATACENTERpeople.htm>

Be sure to look at this web site for updates on new people joining The Data Center.

Beyond the addition of personnel, The Data Center has also been involved in a number of other activities, including seminars, workshops, and research publications.

Between December 2004 and February 2005, The Data Center held four major programs. Smart World 2004, a program hosted by the MIT Industrial Liaison Program drew 300 attendees. This program featured presentations from a number of industry leaders. You can download the presentations from the following link:

<http://mitdatacenter.org/DATACENTERpresentations.htm>

In addition to this program, we have hosted three other workshops on the following topics:

“Interoperable Modeling and the M Language”

“Defining the Dictionary”

“Business Applications”

We are currently planning a program for May 20 titled “Applications of Interoperable Modeling in the Food and Consumer Goods Industry.” This program is open to the public. There is no cost to register for this program. You can find out more details and register at the following link:

<http://mitdatacenter.org/DATACENTERevents.htm>

In the publication area, we have posted two new articles to The Data Center web site. The first article “**Location and the RFID Tag Read Event: An Important Data Element for Supply Chain Systems**” can be downloaded from the following link:

<http://www.mitdatacenter.org/MIT-DATACENTER-WH-005.pdf>

Abstract

Every day, there are countless productive opportunities lost in commerce because of a lack of interoperability concerning the data exchanged between organizations. One of the fundamental aspects regarding the long-term goal of achieving interoperability for data is the adherence to a common standard with an industry and between industries. The emergence of Auto-ID technology offers the opportunity to gather data from a number of different read points within supply chains. To make this data interoperable between organizations, the data captured at the time of reading an RFID tag must be common for all those using the technology.



Specifically, a standard for the location of a read event is becoming a significant issue that industry must come to common agreement. This article discusses the issues surrounding the development of a common standard for location.

A second article has been recently posted. The title is “**Master Production Schedule Stability Under Conditions of Finite Capacity.**” This article provides a practical example of the value of linking the output of model to the input of another model. We see a bright future for this type of approach.

Abstract

In this article, we propose a new way to improve master production schedule (MPS) stability under conditions of finite capacity. The purpose is to optimize product availability and customer service for typical situations encountered in the consumer goods industry. Using a comprehensive MPS model, we conduct a simulation study with experimental design to identify factors having a significant influence on MPS stability. Then we perform sensitivity analysis on select factors that hold the greatest promise for improvement by employing a simple predictive equation. Finally, we test a different way to plan safety stocks and report the results. In general, elimination of forecast bias and choice of safety stock method both are particularly important for improving MPS stability and ultimately customer service.

The next newsletter will provide more details on our work in developing an interoperable system for models and data.

If you would like to find out more information about The Data Center, please feel free to contact me at Edmund_w@mit.edu



