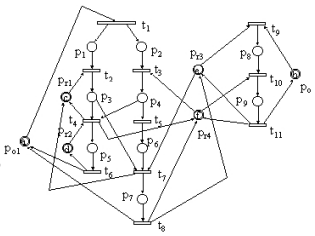
Discrete Event Dynamic Systems 1
Chairs: MuDer Jeng, Meng Chu Zhou

Manufacturing Modeling Using Process Nets with Resources

MuDer Jeng[1], Xiaolan Xie[2] and YiSheng Huang[3]
[1]National Taiwan Ocean University, [2]INRIA/ENIM - Ile du Saulcy and [3]Fu-Shin Institute of Technology and Commerce

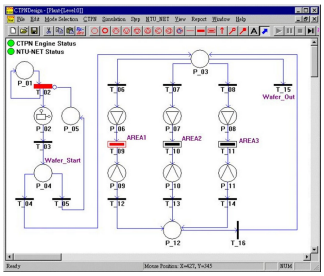
- Introduction
- The Proposed Nets and their Conditions
- Qualitative Properties of PNRs
- Conclusions



Modeling and Performance Evaluation of a Controlled IC Fab Using Distributed Colored Timed Petri Net

C. H. Kuo and H. P. Huang
National Taiwan University

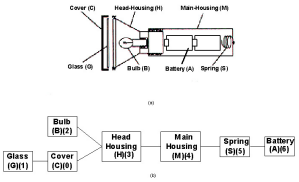
- For highly model-mixed and flexible routing manufacturing system
- Integrate with MES system
- Provide conflict resolution and token competition rules
- Consider throughput, stage move, WIP(wafer in process) distribution, lot cycle time, utilization of IC Fab



Disassembly Modeling, Planning, and Application: A Review

Y. Tang[1], M. C. Zhou[1], E. Zussman[2] and R. Caudill[3]
[1]New Jersey Institute of Technology, [2]Technion Israel Institute of Technology and [3]MERC

- Motivation
- Modeling Disassembly Processes
- Disassembly Process Planning
- Conclusion



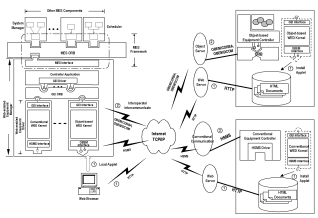
Adaptive Supervisory Control under Sensor Unavailability

H. Darabi and M. A. Jafari
Rutgers University

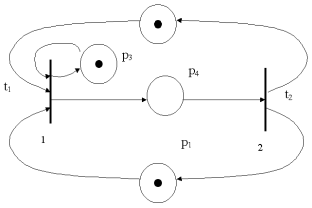
Developing a Web-enabled Equipment Driver for Semiconductor Equipment Communications

F. T. Cheng, M. T. Lin and R. S. Lee
National Cheng Kung University

- Connecting a different machine to an Eq manager usually needs to modify the associated Eq driver, which is diffcult.
- To solve this problem, we propose a Web-enabled Eq Driver (WED) that uses the mobile object technology & a web browser.
- It has been built at NCKU and will be demoed.
- The proposed WED establishes a novel, efficient, and versatile scheme for semiconductor Eq communications.



Incremental Optimization of Timed Cyclic Event Graphs

A. Giua, A. Piccaluga and C. Seatzu
University of Cagliari

- Problem: allocate a given number of tokens tokens so as to maximize the firing rate of a cyclic event graph
- Solution: incremental optimization algorithm
- The algorithm is very efficient both in terms of computational time and memory requirements
- Necessary and sufficient conditions for the convergence to the optimum have been provided