

IFAC Conference on Manufacturing Modeling, Management, and Control

MIM 2013

www.mim2013.org

**June 19-21, 2013
St. Petersburg, Russia**

Invited session on

Production planning under demand, yield and lead time uncertainties

Sponsored by IFAC TC 5.2

Proposed by:

- ... Prof. Dr. Alexandre Dolgui, Ecole des Mines de St Etienne, France
- ... Dr. Faicel Hnaien, University of Technology of Troyes, France
- ... Prof. Dr. Mohamed Aly Ould Louly, King Saud University, Kingdom of Saudi Arabia

Short presentation: Production planning is essential for companies desirous to satisfy their customers at a lower price. Various sources of uncertainties exist due to: random level of customers demand, assembly and manufacturing random lead times; random yield level for production systems, supplying reliability, etc. To decrease the influence of these uncertainties, the companies use safety stocks, but stocks are expensive. So, the problem is to control stocks and to avoid stockout while keeping a high service level. The objective of this *Invited Session* is performing a review on this topic, more particularly on advanced production planning and inventory control models under demand, yield and lead time uncertainties. A particular aspect of this session concerns models *for assembly systems*. Indeed, several types of components are needed to produce one finished product in case of assembly lines, then, the inventories of the different types of components become dependent. A delay and stockout of only one component automatically leads to a shortage due to the impossibility to assemble the finished product. In addition, appends an overstocking of the others types of components (delivered but not used). Thus, the models for this case are more sophisticated.

Keywords: Production planning, Inventory Control, Uncertainties, Assembly Systems, Newsboy model, MRP parametrization, Nervousness, Safety stocks, Safety lead-time, Lot-sizing, Forecasting, Stochastic models, Fuzzy logic, Optimization.

Contacts: dolgui@emse.fr, faicel.hnaien@utt.fr, louly@ksu.edu.sa

For author guidelines, please refer to <http://www.mim2013.org>