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Special Session on:

**Applying lean in the non-Make-To-Stock sector:
criticalities, solutions and applications**

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Description:

Wastes identification and removing has become a key issue to achieve competitiveness and to survive in the modern manufacturing environment. In order to achieve this goal, several manufacturing paradigms have been proposed. Amongst these paradigms, lean production has increased its importance, and it is now recognized as the most influential one. The concept of lean is based on the dichotomy of value and wastes, and its main goal is to meet customer's expectations in a better way, by focusing on a continuous waste elimination process. Although Lean originated in Low-Variety-High-Volume manufacturing companies, it has been frequently applied also in other contexts, especially in the non-Make-To-Stock sector, where its application is particularly challenging. Indeed, those manufacturing environments are characterized by a high level of variability, and their performances depend on several interrelated parameters. Within this context, it is widely recognised

that no “fool proof” way is available for implementing lean principles, because they must be properly reinterpreted to fit the specific requirements of the industry where they need to be applied. Generally speaking, the non-MTS sector can be broadly parted in two clusters: (i) Make-To-Order companies, where most or all operations to manufacture an end item are only performed after a customer order has been received and (ii) Engineer-To-Order companies, where products are manufactured to meet a specific customer’s needs and require unique engineering, or at least a significant and specific customisation. Within both these clusters, several lean tools can be applied. As an example, the lean approach in (i) focuses on lead time stabilisation and WIP control to optimise production (e.g. CONWIP, Workload Control, synchro-MRP, POLCA etc.). Conversely, the typical lean approach in (ii) endorses both organizational and technical issues: during project planning the main goal is to foster cooperation and synchronization of office activities, e.g. scrumban and lean office tools, while during project execution it is important to simplify engineering through standardization and product communalities, e.g. design for lean and knowledge management tools. Unfortunately, scientific literature in these two clusters is rather disparate. Although a great amount of literature is available in (i), several research questions still exist:

- given a production environment, no framework is available to select the most appropriate production planning and control system; • once this system has been selected, it needs to be fine-tuned: how to do so is still not clear;
- to our knowledge, no production module of commercial ERP systems exists to support such an implementation.

On the other one hand, the situation in (ii) is even more confused: literature is very scarce on this subject, and lean tools themselves still need to be adapted to this sector. Thus, it is needless to say that no lean oriented project management software exists. Aim of this special session is to bring together academics and professionals, so as to share knowledge, experiences and research on this matter from several different industrial engineering disciplines. In particular, original contributions are sought in the following topics:

- research and applications of hybrid production planning and scheduling (e.g. methods for selection and application, appropriate tools for adjusting and integrating said systems in real contexts);
- heuristics and meta-heuristics for hybrid production planning and control systems;
- lean oriented information systems and management;
- lean / hybrid Manufacturing Executions Systems;
- lean project management tools;
- intelligent control and product-driven systems;
- monitoring of hybrid manufacturing systems.

Further information: Submissions to the special sessions will be through the same submission site and under the same rules as for the main conference. Please, consult the general call for papers of the IESM 2015

conference at <http://www.iesm15.org/evenements/iesm2015/call-papers> or the conference web site at <http://www.iesm15.org/> for more and updated details.