Invitation to PhD defence

Tufail Habib will defend his PhD thesis:

System Design of Mechatronic Products
Models and Methods to Utilize Mass Customization

Friday, October 10, 2014, 10 a.m. in auditorium 1.208, Fibigerstræde 16, Aalborg, Denmark.

Abstract
Mass Customization has been recognized as a successful strategy in the design and development of products tailored to specific customer needs. In the last two decades, product modularity and product platforms have been advanced as effective strategies and concepts to achieve the purpose of mass customization and to offset some of the challenges faced by businesses due to frequent and rapid changes. When a product or process is modularized, the elements of its design are split up and assigned to modules according to some architecture or plan.

The application of the research area mechatronics comes from the functional and spatial integration of subsystems with various engineering disciplines that represents an important means of successfully creating innovative products. The innovation potentials of mechatronics are accelerated by the changing demands of the customers, which imply that mass customization has an important role in this area. As modern mechatronic systems are increasingly becoming complex in terms of their size and multi-disciplinary character, system level design and development play a crucial role, especially in supporting complexity management, conceptual design, and the integration of domains to attain desired results.

Applying system architecting, a method is proposed to support the development of product architecture for the next generation by (a) effectively utilizing the design knowledge of the current generation, and by (b) computationally supporting the development process. With the application of mass customization concepts, business capability can be achieved by solution space development and functional improvements. This work contributes by performing system decomposition, the identification of interface relationships and structure analysis for complexity management in multi-domain products. These issues are addressed with the development of models and methods using consumer and industrial products as case examples.

The opponents for the PhD defence are:

Professor, Lars Hvam
Department of Management Engineering, Technical University of Denmark

Forskningsleder Lektor Ph.D., Civ. Ing. Arne Bilberg.
Mads Clausen Institutet, Denmark

Associate professor, Jens Henrik Andreen, (Chairman)
Department of Mechanical and Manufacturing Engineering
Aalborg University, Denmark

The supervisor for the thesis has been Associate Professor Kaj Asbjørn Jørgensen and Associate Professor Kjeld Nielsen. The public PhD defence will be hosted by Associate Professor Thomas Ditlev Brunø, Department of Mechanical and Manufacturing Engineering, AAU. The defence constitutes a 45 minutes presentation by Tufail Habib followed by a short break and a discussion session with questions from the opponents and the auditorium.

After the defence, at approximately 13:00 hours, the Department of Mechanical and Manufacturing Engineering will host an informal reception in Fibigerstræde 14, Common Room.

All are welcome!