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Bridging aeronautics and aerospace (A&A) industrial practice and academic research via systematic product lifecycle management

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Abstract

The products in the A&A industry have become more complex than ever before as have the related processes, such the A380 or Boeing 787 airplanes. The product lifecycle management concept has been broadly addressed as a holistic approach to connect *product* and *process* modeling domains so that the industry can take full advantage of engineering informatics supported by modern information and computer technologies (ICTs). However, the A&A industry and the related academic research are not interfaced well enough to support healthy development cycles. It can be appreciated that the industry demands coherent answers to address those "big-picture" thematic problems instead of just the "micro" solutions currently on offer. Formulating systematic research programs with highly specified interfaces among research "nuggets" is the promising approach of governments, corporations, and clusters of small- and medium-sized players. Researchers, on the other hand, should identify their works with the "local coordinates" of a bigger picture driven by the industry and should constantly adapt their individual solutions such that they are always ready to be integrated seamlessly with other collaborative solutions. The interfacing edge definition of the puzzle, i.e. semantics standardization, is the imperative research task for both the industry and the related academic research circle. The proposed session is to develop some common understanding and explore the new challenges for the next step research in both the industrial applications and academic research fields.

Biography

Yongsheng Ma is a professor in the Department of Mechanical Engineering, University of Alberta (U of A), Canada. He joined U of A in 2007. Before that, Dr. Ma had been with Nanyang Technological University, Singapore, since 2000. From 1993 to 2000, Dr. Ma was with Ngee Ann Polytechnic and then the Singapore Institute of Manufacturing Technology (SIMTech). Dr. Ma received his B. Eng. from Tsing Hua University (1986), and both MSc and PhD degrees from Manchester University, UK (1990 and 1994). His main research areas include CADCAM, engineering informatics, feature-based product and process modelling, and product lifecycle management (PLM).