SoC Engineering Trends as Impacted by New Applications and System Level Requirements

Wednesday, March 23
9:45am-10:15am

Bernard Candaele
Department Head, SoC, IC & EDA
Thales, Paris Colombes, France

The SoC increasing integration scale as well as the system and customer requirements are important factors for a complete revisit of the development models for electronic products. New customer models ask for software driven electronics. Software engineering is moving to a component-based and MDA development approach to be applied to embedded applications. Hardware engineering is moving to SSDI System Level Development and Reuse methodologies. The 2 approaches have now to be further developed and combined for next generations SoC’s to get high quality and adaptable designs at a reasonable development cost. New application-level quality standards have also to be part of the complete development flow.

It is demonstrated through several examples these new methodologies: system engineering methodology on software radios (UML, PIM Platform Independent Model and PSM Platform Specific Model) and its current extension to the hardware parts (SCA, OCP potential extensions), system engineering in line with the Common Criteria development and qualification process for new security products (PP Protection Profile and ST Security Target,…), development and validation methodology in line with DO254 standard for new safety products in avionics (formal verifications, …). Impacts on SoC architectures and design techniques will be discussed during the talk.

About Bernard Candaele
Bernard Candaele is the Head of Thales SoC, IC & EDA Department. After a first experience at Intel, Chandler and at Cimatel, Paris (common design Center for Intel/Matra-Harris) as IC designer and project leader for micro-controllers, he is with Thomson-CsF since 1988. He has been project leader of the Csam project for Thomson digital processing ASICs and then had several managing responsibilities inside the company. He has competencies in managing EDA solutions for embedded electronics development, in SoC projects for telecom, multimedia and security related product, and in R&D activities in co-operation within European and national programs. Bernard Candaele is member of Thales Hardware Engineering Steering committee, an IEEE member and he is author or co-author of more than 50 papers.