

Behavioural Modelling of Analogue and Mixed Systems

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Abstract

For promoting behavioural modelling and simulation, for the design of analogue, mixed and multi-technological systems, mainly using the standard language VHDL-AMS, a non-lucrative association has been created in 2000. Members coming from Universities and Industry (researchers, engineers, companies, universities, teaching staff, students) participate in actions such as workshops, conferences and congress, web page, Open Library, course programs, reports and publications, participation in projects and industrial contracts.

The increasing complexity of integrated circuits results today in the System One Chip (SOC) trend : a large variety of functions - numerical, analogue and mixed - coexist on a same chip. That imposes a questioning of the traditional design methods, particularly in the analogue and mixed fields.

Solutions are emerging : the hierarchical design (Top-Down, Bottom-Up), the re-use of already designed blocks (design Re-use, IP-based design). In parallel, the use of HDLs (Hardware Description Languages), such as the standard VHDL-AMS, spreads.

Specialists in design and test encounter more and more the problem of modelling. Indeed, they often face incomplete standard libraries or a multitude of badly documented models.

New methodologies are to be defined : in design, modelling, management of libraries, etc. These methodologies must be tested and validated.

BEAMS proposes to link various experiments so that new ideas, methodologies, techniques, libraries of IP models, training programs, etc. can emerge. The paper presents these motivations and actions.