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Editor

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Preface

This is the fifth edition of the ApplePies Conference, held in Rome, Italy, in September 2016. The conference aims at offering a wide and reasoned overview of electronic applications in several domains, demonstrating how electronics has become pervasive and ever more embedded in everyday objects and processes.

The computational, storage, and communication power of current electronic systems is such that we may really say that their applications are limited only by the designer's fantasy. This represents a great challenge for practitioners, managers, and academicians in ICT Engineering. The challenge also stresses the importance of multidisciplinary knowledge, expertise, and collaboration, in order to support a virtuous iterative cycle from user needs to new products and services. The cycle goes through the whole system engineering process, which typically encompasses requirement elicitation, specification management, software and hardware design, laboratory and user testing and verification, and maintenance management.

For either an embedded or cyberphysical system to be successful in the current globalized market competition, at least one of the following features must be provided: innovation, high performance, and good cost/performance ratio. Designing and implementing each one of such features requires a deep knowledge of both the system's target application and domain, and of the technologies that are potentially able to fulfill the expected goals.

One of the most important factors for the success of a project consists in the adoption of a suited design flow and related tools. Only seldom are simple top-down or bottom-up methods able to meet the time- and cost-related challenges of nowadays market scenarios. Even if every application stems from recognizing one or more key user needs, a proper design, implementation, and maintenance require mastering the most suited technologies and tools in order to support efficient and effective development and life cycle management of electronics applications. Support tools must also be able to capture and share a team's experience in the design and implementation process, as it allows anticipating possible problems that may not appear on the paper.

All these challenging aspects call for the importance of the role of the university as a place where new-generation designers can learn and practice with

cutting-the-edge technological tools and are stimulated to devise solutions for challenges coming from a variety of application domains, such as healthcare, transportation, education, tourism, entertainment, cultural heritage, and energy.

This conference wants to report and discuss several examples of designs and become a reference point in the field of electronics systems design, trying to fill at scientific and technological R&D level a gap that the most farsighted industries have already indicated and are striving to cover.

Genoa, Italy Alessandro De Gloria

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