

Torino, October 2013



CROSS LAYER EARLY RELIABILITY EVALUATION

FP7 EU funded research project launched to investigate design methodologies for early reliability evaluation for digital systems in the forthcoming computing Continuum

Torino, October, 2013. The European Commission has launched a joint FP7 Collaboration Project CLERECO aiming to investigate new design methods for early reliability evaluation of digital systems in the forthcoming computing continuum. The CLERECO project consortium includes Politecnico di Torino (Italy) acting as project coordinator, National and Kapodistrian University of Athens (Greece), Centre National de la Recherche Scientifique - Laboratoire d'Informatique, de Robotique et de Microélectronique de Montpellier (France), Intel Corporation Iberia (Spain), Thales SA (France), Yogitech S.P.A. (Italy) and ABB AS (Norway).

Advanced multifunctional computing systems based on future technologies hold the promise of a significant increase of the computational capability that will offer end-users ever improving services and functionalities (e.g., next generation mobile devices, cloud services, etc.).

Reliability of electronic systems will become an ever-increasing challenge for information and communication technology and must be guaranteed without penalizing or slowing down the characteristics of the final products.

CLERECO research project recognizes the importance of accurately evaluating the reliability of systems early in the process to be one of the most important and challenging tasks toward this goal. Being able to precisely

evaluate the reliability of a system means being able to carefully plan for specific countermeasures rather than resorting to worst-case approaches. CLERECO project will be fundamental in the development of scaled systems for the next decade..

The proposed CLERECO framework for efficient reliability evaluation and therefore efficient exploitation of reliability oriented design approaches starting with the earliest phases of the design process will enable circuit integration to continue at exponential rates. It will enable the design and manufacture of future systems for the computing continuum at a minimum cost (e.g., up to 50% less area, up to 50% less energy, etc.) contrary to existing worst-case design solutions for reliability.

The applications of such chips will play a major role in our society and can be seen through the prism of future computing systems ranging from avionics, automobile, smartphones, mobile systems, Personal Computers (PCs) and future servers utilized in the settings of Data Centers, Grid Computing, Cloud Computing and other types of HPC systems.

For further information on the CLERECO Project, contact:

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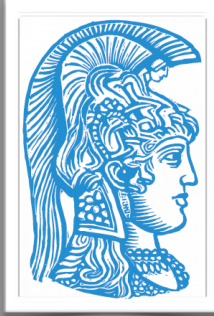
**October
15th-16th, 2013**

**CLERECO Kick-off
Meeting**

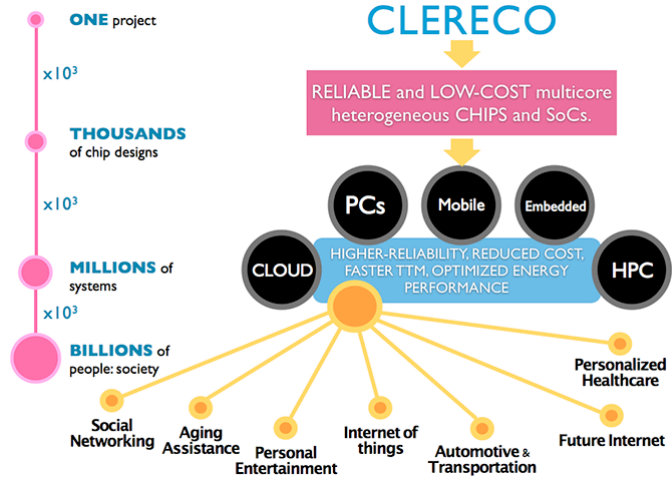
CLERECO

partners meet at Politecnico di Torino for the kick-off meeting of the project that will officially start the project's research activity.

PARTNERS



YOGITECH



Politecnico di Torino

Politecnico di Torino (POLITO) is one of the leading technical-scientific universities in Italy and in Europe founded 150 years ago. Politecnico di Torino is a strongly research-oriented university and conducts applied research projects with several partners. Within CLERECO, POLITO participates through the TestGroup of the Department of Computer and Control Engineering (DAUIN). The Test Group is specialized in testing and fault tolerance methodologies with emphasis on test generation, reliability models and error correcting codes for microprocessors and memories.

National and Kapodistrian University of Athens

The National and Kapodistrian University of Athens (UoA), established in 1837, is the oldest university in Greece and among the top ranked ones. In CLERECO, UoA will participate through the Department of Informatics & Telecommunications, the top Computer Science department of the country, globally recognized with continuous participation in ICT research and development projects funded by the EU, the Greek government, and the industry. The Computer Architecture and Digital Design Laboratory is specialized in dependable computer architectures and fault tolerance methodologies for general purpose and embedded architectures with emphasis on error detection and diagnosis, online test, and post-silicon validation for microprocessors, embedded processors and multicore/multithreaded processor architectures.

CNRS - LIRMM

The Centre National de la Recherche Scientifique (CNRS) is a government-funded research organization, under the administrative authority of France's Ministry of Research. CNRS laboratories (or research units) are located throughout France, and employ a large body of tenured researchers, engineers, and support staff. CNRS participates in CLERECO through the Laboratoire d'Informatique, de Robotique et de Microélectronique (LIRMM) that is a research center jointly depending from CNRS and the University of Montpellier II. With about 400 people, it is one of the most important laboratories in France.

Intel Corporation Iberia S.A.

Intel is the world's largest semiconductor chip maker, based on revenue. Intel is transforming itself into a

computing company that delivers complete solutions in the form of hardware and software platforms and supporting services. Intel Labs Barcelona (ILB) is part of the Microprocessor and Programming Research Labs in Intel Labs conducting research in the areas of processor microarchitecture and software development tools for all different market segments. ILB research focuses on increasing the performance of future processors while reducing their energy consumption and providing outstanding reliability with emphasis on the synergy between HW and SW to design innovative techniques.

Thales SA

Thales is a global technology leader for the Defense & Security and the Aerospace & Transportation markets. With its 22,500 engineers and researchers, Thales has a unique capability to design, develop and deploy equipment, systems and services that meet the most complex security requirements. Thales has an exceptional international footprint, with operations around the world working with customers as local partners.

Yogitech S.p.a.

YOGITECH S.p.A. is a semiconductor IP Design & Verification Company, funded in August 2000, headquartered in Pisa (Italy). The background of the company is on VLSI Design & Verification and expertise on fault tolerance from nuclear physics and satellite applications. YOGITECH S.p.a. has a recognized experience in the application of functional safety norms (IEC 61508, ISO 26262, EN 50128/9 etc.) for the design and validation of integrated circuits used in safety critical domains (automotive, industrial, railway, medical).

ABB AS

ABB AS in Norway is a part of the global ABB Company with about 2000 employees. ABB is a global leader in power and automation technologies that enable utility and industry customers to improve their performance while lowering environmental impact. The ABB Group of companies operates in around 100 countries and employs about 145,000 people. ABB Corporate Research (CRC) is a part of ABB containing more than 800 scientists worldwide working on various research areas for Power and Automation industry.