COST Action **Euro-TM**
European Researchers Unite
to Unleash Potential of Multi-Core Architectures
via Transactional Memory Computing

The **Action IC1001: Transactional Memories: Foundations, Algorithms, Tools, and Applications (Euro-TM)**, funded by the **European Commission** in the context of the **COST (European Cooperation in Science and Technology)** European framework, is nearing its end. **Euro-TM** has served as a pan-European science and technology network of researchers working in the area of Transactional Memory (TM) with **Prof. Panagiota Fatourou** from FORTH ICS acting as the representative of Greece.

The advent of multi-core architectures caused a disruption in software development. While, in the past, each new generation of processors produced faster sequential executions, over the last decade and in the future, processors will become only marginally faster, due to limitations of physics laws. However, the computational capacity of modern CPUs will keep on growing by increasing the number of parallel processing units that future architectures will make available. It is therefore very important to provide software developers with abstractions and tools to simplify parallel programming.

Transactional Memory has recently emerged as a promising concurrent programming paradigm. In Transactional Memory, programmers are required only to identify which code blocks should run atomically, and not how concurrent accesses to shared state should be synchronized. How this result is achieved is totally transparent to the developers, benefitting ease of programming, and yielding to reductions in the development cost and time-to-market.

Launched in 2011, and chaired by **Prof. Paolo Romano**, of INESC-ID, the **COST Action Euro-TM** is a pan-European research network that connects European researcher units working in the area of Transactional Memory. Bridging more than 200 researchers from 50 institutions in 17 European countries, **Euro-TM** aimed at consolidating European research on this important field, by coordinating the European research groups working on interdisciplinary aspects of Transactional Memory, including theoretical foundations, algorithms, hardware and operating system support, language integration and development tools, and applications.
To this end, Euro-TM has implemented a number of diverse dissemination activities aimed at raising awareness on scientific results and fostering international collaborations. Up to date, Euro-TM has organized 9 international scientific workshops, 2 doctoral schools, and dissemination events in the largest European open-source conference (FOSDEM 2014). Notably, Euro-TM has gathered together not only researchers from academia, but also from industry, across all the spectrum of events.

On the scientific side, Euro-TM has funded dozens of short-terms scientific collaborations between different European research units. This has led to the production of numerous interdisciplinary publications in top scientific conferences and journals. Researchers of the Euro-TM COST Action have been directly involved in two of the most exciting recent evolutions in the area, namely the development of hardware supports for IBM and Intel processors, and the standardization of language level supports for C++.

Additional information on the scientific and dissemination activities of Euro-TM can be found on its online portal:

http://www.euromt.org

along with pointers to teaching material, existing tools, projects, and related events in the area.

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