

Topics & Keywords

CALL 2011 Pre-Announcement

European Coordinated Research on Long-term Challenges in ICST

The ERA-NET CHIST-ERA is looking for highly innovative and multidisciplinary projects in ICST, new ideas and original solutions, involving interdisciplinary skills in order to strengthen broader communities in the merging of their understanding and their questioning.

In the call 2011 (autumn), two new and orthogonal topics are addressed:

1. **From Data to New Knowledge**
2. **Green ICT, towards Zero Power ICT**

1. From Data to New Knowledge

From Data to New Knowledge concerns the interdisciplinary computational concepts, methodologies and tools for forming productively useful new knowledge from large masses of heterogeneous data.

Keywords:

- Deep knowledge acquisition to allow high level inferences
- Script knowledge extraction
- Multi-scale data abstraction
- Massive data processing
- Learning by reading / Machine reading: automatic, unsupervised understanding of heterogeneous multimedia documents, formation of a coherent set of beliefs based on multimedia/multisource corpus and background theories

Examples:

- Built the knowledge of a domain from data extracted of the web as example the history of a country (multi-scale vision)
- In CAD systems, build automatically a maintenance manual for a new device, using data from data bases of devices having close parts (possibly extracted from the web), and maintenance rules



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2. Green ICT, towards Zero Power ICT



Keywords:

- Low consumption devices (new processor design, new computing paradigm)
- Energy efficient system architecture (hardware & software)
- Energy harvesting



Examples:

- The storage of large amount of data is more and more energy consuming due to the increase in the size of these data. New type of memory are foreseen (for instance resistive memories), that are non-volatile and will allow to shut-down the power in these memories. This raises questions especially for the low consumption exascale computing: what kind of new architecture (neuromimetic, associative, data driven...)? How to incorporate distributed computing capabilities among these sleeping memories?
- Distributed unattended sensor network that wake-up according their energy harvesting capabilities: What kind of new advanced operating systems and architecture are needed when the number of sensor and the network topology are unknown? What happens if they are heterogeneous sensors and the functions to perform collectively are a priori not well defined or unknown?



Strategic Conference in Ireland

Cork (Ireland), 5-6 September 2011

The topics keywords and examples are given as illustration. The text of the call 2011 (autumn) will be defined during the strategic conference organised by IRCSET and Tyndall in Cork, 5-6 September 2011. This conference aims to bring together around 50 experienced and young scientists in order to identify and formulate promising scientific and technological challenges at the frontier of research related to the call's topics. The expected audience is a balanced combination of scientists from academia and industry and CHIST-ERA research funding organisations.



You are kindly invited to participate in the definition of the scientific content of the call.

Further information and registration on www.chistera.eu!

The conference is based on a number of high-level lectures by invited internationally renowned specialists; each attendee will be encouraged to contribute through poster presentations or short talks.

Call Information

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Dr. Raymond Fournier
Coordinator of CHIST-ERA
French National Research Agency (ANR)
Tel: +33 1 7354 8149
Raymond.fournier@agencerecherche.fr

Mathieu Girerd
Chargé de mission CHIST-ERA
French National Research Agency (ANR)
Tel: +33 1 7354 8213
Mathieu.girerd@agencerecherche.fr



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