

Call 2011 Draft Topics & Keywords

In the Call 2011, to be published in October, two new and hot topics are addressed, namely *From Data to New Knowledge* and *Green ICT, towards Zero Power ICT*. The topics keywords and examples are given as illustration only. The *CHIST-ERA Conference 2011* in Ireland, September 5-6, brings together scientists and CHIST-ERA's representatives in order to identify and formulate promising scientific and technological challenges at the frontier of research with a view to refine the scientific content of the call. The conference is based on a number of high-level keynote talks by invited internationally renowned specialists. In addition, the attendees are encouraged to participate in the definition of the call's text, as far as is possible, with a short talk (10' + 5' discussion) or a poster presentation (A0, in portrait format).

Conference's website: <http://conference2011.chistera.eu>^[1]

1. From Data to New Knowledge

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. That means the formation of a coherent set of beliefs based on multimedia/multisource, corpus and a background theory

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

2. Green ICT, towards Zero Power ICT

Keywords:

- Low consumption devices (new processor design, new computing paradigm)
- Energy efficient system (hardware and software), architecture
- 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: when the number of sensor and the network topology are unknown, new advanced operating systems and architecture are needed. Especially if they are heterogeneous sensors, and the functions to perform collectively are a priori not well defined or unknown.

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 CHIST-ERA Conference 2011 Flyer.pdf ^[2]	742.67 KB
 CHIST-ERA Call 2011 Topics Flyer.pdf ^[3]	683.22 KB

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