



## CHIST-ERA Conference 2011

### Call's Text Definition

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

The text of the CHIST-ERA calls are defined and then published within six months only after the topics selection based on the research community expertise and long-term vision to maintain a high level of relevance in very competitive evolving areas which need reactivity.

In the call 2011, to be published in late September or beginning of October 2011, two new and hot topics are addressed:

- **From Data to New Knowledge**
- **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.

5-6 September 2011  
Tyndall National Institute  
Cork, Ireland

Information: <http://conference2011.chistera.eu>





## ***Topics of the Call 2011***

### **1. From Data to New Knowledge (D2K)**

The research area comprises 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 (G-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.



## Conference's Programme

Schedule	05/09/2011 – G-ICT	06/09/2011 – D2K
08:30 – 09:00	Martin Hynes & Raymond Fournier <b>Welcome Address</b>	Martin Hynes & Raymond Fournier <b>Welcome Address</b>
09:00 – 10:30	Giorgos Fagas – 30' <b>Nanotechnology Designed For Energy-sustainable Electronics</b> Babak Falsafi – 30' <b>Computing With Dark Silicon</b> Rudolf Sollacher – 30' <b>Green &amp; Smart – Large Scale Wireless Sensor &amp; Actuator Networks</b>	Tim Furche – 30' <b>The Ontological Nany: Fully Automated, High Accuracy Data Extraction In Vertical Search</b> V́ctor Maojo Garća - 30' <b>Extracting Multi-Level Information In Biomedicine</b> Kalina Bontcheva - 30' <b>From Text To Knowledge: Waving, Not Drowning</b>
10:30 – 11:00	<i>Posters Session - Coffee Pause</i>	<i>Posters – Session - Coffee Pause</i>
11:00 – 12:30	Marc Duranton - 30' <b>New Computing Architectures For Green ICT</b> Clivia M. Sotomayor Torres – 30' <b>Phonon Engineering And Confined Acoustic Phonons In Si Membranes</b> Christopher Crispin-Bailey – 15' <b>Rethinking CPU Foundations</b> Thomas Mikolajick – 15' <b>Cool Silicon For Europe</b>	David Sadek - 30' <b>Cognitive Agents, Natural Dialogue, And Commonsense Knowledge Processing: What's Next?</b> Lori Lamel – 30' <b>Some Open Challenges For Spoken Language Processing</b> Edouard Geoffrois – 30' <b>Data &amp; Evaluation: Critical Resources For Research In Knowledge Processing</b>
12:30 – 13:30	<i>Lunch Break</i>	<i>Lunch Break</i>
13:30 – 15:00	Dirk Pesch – 15' <b>Energy Aware Communication Framework For Wireless Sensor Networks</b> Marise Baffleur – 15' <b>Energy Harvesting For Batteryless Unattended Sensors</b> Antonio Rubio – 15' <b>Energy Harvesting – Strategies For Ultra Low Power Consumption and Reliability</b> Carlos Untiedt – 15' <b>Energy Harvesting Through Thermoelectricity: An Atomic Scale Approach</b> Jacques-Olivier Klein – 15' <b>Bio-inspired architectures With Memristive Devices &amp; Energy Efficient Coding Scheme</b> Jaafar Elmighani – 15' <b>Green ICT: Beyond Sleeping Memories</b>	Sylviane Cardey – 15' <b>A Micro-systemic Approach For Dependable Natural Language Processing</b> Nirmalie Wiratunga – 15' <b>Experiential Knowledge Discovery From Web Data</b> Abdelaziz Bouras – 15' <b>Long Term Knowledge Archiving And Preservation</b> Bertrand Jouve – 15' <b>Complex Networks Emerging From Large Databases: New Mathematical And Computational Tools</b> Maira Monika Schuler – 15' <b>Process Understanding Through Data &amp; Knowledge Management In The Pharma Field</b> Catherine Garbay – 15' <b>Sensemaking In Socio-physical Environments: Toward Comprehensive Holistic Modeling</b>
15:00 – 15:30	<i>Coffee Pause</i>	<i>Coffee Pause</i>
15:30 – 16:00	Mihai Adrian Ionescu - 30' <b>Title N.A.</b>	Stefan Decker – 30' <b>From Linked Data To Networked Knowledge</b>
16:00 – 16:45	General Discussion	General Discussion
16:45 – 17:15	<i>Coffee Pause</i>	Sebastian Reick <b>Information Session For Applicants To Call 2011</b> <i>Coffee Pause</i>
17:15 – 17:45	CHIST-ERA & SAB Meeting	CHIST-ERA & SAB Meeting
17:45 – 18:30		CHIST-ERA Internal Meeting
18:30	<i>Social Event</i>	<i>End of Conference</i>



## ***Venue & Directions***

The conference will take place in the premises of the *Tyndall National Institute*. Tyndall is located in the Lee Maltings complex close to the centre of Cork city. The main entrance is on Dyke Parade which runs from the junction of Mardyke Parade and Sheare's Street to the city's Mercy hospital. The entrance is located at the river end of this street - across the road from the primary entrance to the Mercy hospital.

Postal address: **Tyndall National Institute, "Lee Maltings", Dyke Parade, Cork, Ireland**

Internal EU flights are available directly to Cork airport from many major European cities. The main carriers are *Aer Lingus*, *British Airways*, *bmi* and *Ryanair*. Other international flights are available to *Dublin airport* and *Shannon airport*. Cork airport is conveniently located just 8 kilometers from Cork city centre. It is served by bus and coach companies as well as taxis and hackneys all allowing you to get to and from Cork airport with ease.



The River Lee Hotel, which is the nearest hotel to Tyndall, offers a special rate to the attendees of the conference: 95€/night (breakfast included). Would you be interested in this offer, you would be kindly invited to quote "Tyndall" whilst booking (by August 22). The closest hotels and B&Bs are the *River Lee Hotel*, *Lancaster Lodge Hotel*, *Hayfield Manor Hotel*, *The Kingsley Hotel*, *Garnish Guest House*, *Killarney Guest House*, *College View Apartments*. The website of the University College Cork shows a wider range of hotels around the conference's venue.

The *Euro* is the local currency of the Republic of Ireland. Citizens living within the EU and most other western countries including Australia, Canada, New Zealand, and South Africa must have a valid passport or national identity card as appropriate; but do not require visas. Ireland has a mild, temperate climate. Summer temperatures generally range from 15°C to 20°C. The country is on Greenwich Mean Time (GMT) and in accordance with daylight saving, clocks are put forward one hour from mid-March to end of October. During summer it stays light until as late as 11 pm.