Francesco Orfei

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We worked to bring together a wide scientific community interested in addressing these issues.

- Jan. 2008, Expert Consult. on “Molecular-scale Information Systems”
- July 2009, **FP7 CALL 5**, ICT-2009-5 - ICT 2009.8.6 Towards Zero-Power ICT
- Feb .2010, Expert Consult on "Disruptive Solutions for Energy Efficient ICT”
- 1st Aug. 2010, three project started (SiNAPS, GREEN SILICON, NANOPOWER)
- 1st Jan. 2011, ZEROPOWER C.A. started
- 26th July 2011, **FP7 CALL 8**, ICT 9.8 FET Proactive:MINECC
- 12th Oct. 2011, FET Proactive Information Day (MINECC) – Brussels
- 1st Sept. 2012, Starting of the 7 MINEC funded projects (Landauer, …)
- 1st Oct. 2013, Starting of the ICT-Energy C.A. (10 parners)
- 27th Nov. 2014, HiPEAC –EC Consultation on “Energy-Efficient Computing Systems”

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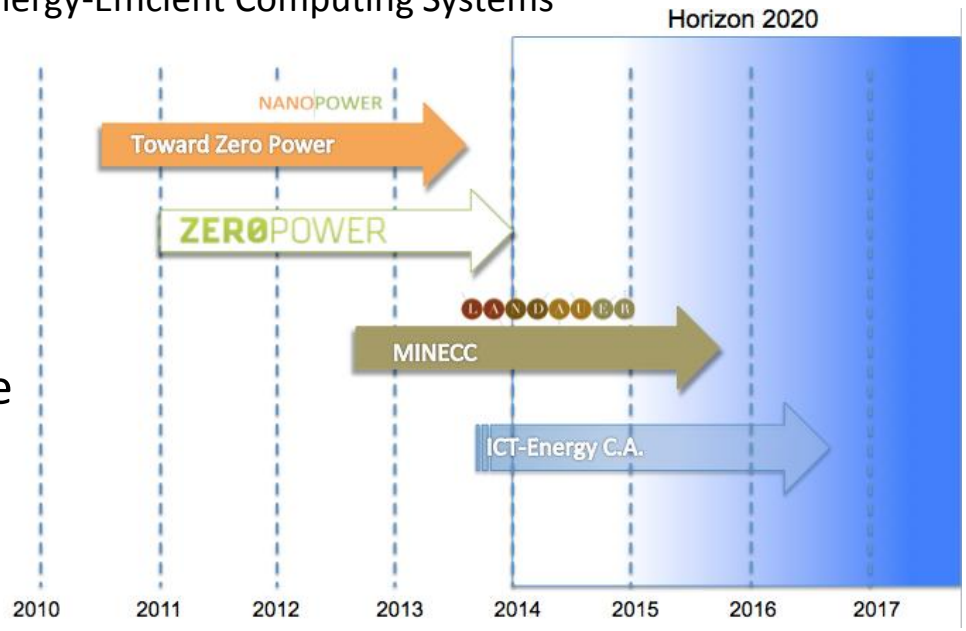
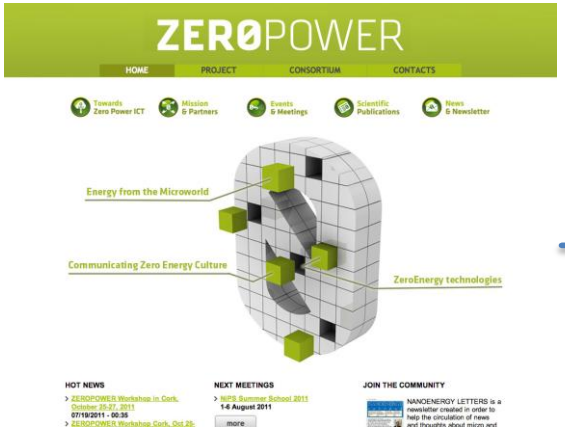
This is part of an on-going effort at European level within the FET scheme



The Coordination Action

www.zero-power.eu



- **NiPS Laboratory**, Università di Perugia (Italy)
  http://www.nipslab.org
  project **Nanopower** www.nanopwr.eu

- **Tyndall National Institute**, University College Cork (Ireland)
  http://www.tyndall.ie/
  project **SiNAPS** http://www.sinaps-fet.eu/index.html

- **Universitat Autònoma de Barcelona** (Spain)
  www.uab.cat/departament/enginyeria-electronica/
  NANERG LAB http://grupsderecerca.uab.cat/nanerglab/

- **University of Glasgow** (United Kingdom)
  http://www.gla.ac.uk/departments/electronicsandelectricalengineering/
  project **GREEN Silicon** http://www.greensilicon.eu/GREENSilicon/index.html

www.ict-energy.eu

To bring together the existing "Toward Zero-Power ICT“ community organized within the ZEROPOWER C.A. and the novel "MINECC“ (Minimising energy consumption of computing to the limit) community

NiPS Laboratory
Noise in Physical Systems

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ICT-Energy consortium/community

Partner	Group	Project
UNIVERSITY OF PERUGIA COORDINATOR	NiPS Laboratory	LANDALEB
ROSKILDE UNIVERSITET		ENTRA
RUPRECHT-KARLS-UNIVERSITAET HEIDELBERG	EMCL	Exa2Green energy-aware numerics
BARCELONA SUPERCOMPUTING CENTER - CENTRO NACIONAL DE SUPERCOMPUTACION	BSC	PARA DIME
ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	EPFL ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE LTS2 ESL	PHIDIAS

Partner	Group	Project
AALBORG UNIVERSITET	AALBORG UNIVERSITY	SENSATION
HITACHI EUROPE LIMITED	HITACHI Inspire the Next	TOLOP
UNIVERSITY OF BRISTOL	University of BRISTOL	EACO
UNIVERSITY OF GLASGOW	University of Glasgow	GREEN SILICON
UNIVERSITY COLLEGE CORK	UCC University College Cork, Ireland Coláiste na hOllscoile Corcaigh	MANPOWER, SiNAPS SQWIRE, PowerSWIPE DEEPEN

The MINECC call was successful and 7 project have been funded

✓**LANDAUER** – Operating ICT basic switches below the Landauer limit

✓**ENTRA** – Whole-Systems Energy Transparency

✓**EXA2GREEN** – Energy-Aware Sustainable Computing on Future Technology – Paving the road to Exascale Computing

✓**PARADIME** – Parallel Distributed Infrastructure for Minimization of Energy

✓**PHIDIAS** – Ultra-Low-Power Holistic Design for Smart Biosignals Computing Platforms

✓**SENSATION** – Self Energy-Supporting Autonomous Computation

✓**TOLOP** – Toward Low Power ICT

Energy required to operate computing devices

They both sits on a common scientific ground:

Micro and nano scale energy management

Energy available from the environment

“battery-free” devices

The coordination activity is aimed at:

✓ assessing the impact of the research efforts developed in the groups involved in the different consortia

✓proposing measures to increase the visibility of ICT-Energy related initiatives to

- ➢ the scientific community
- ➢ targeted industries
- ➢ to the public at large through exchange of information, dedicated networking events, science books and media campaigns.

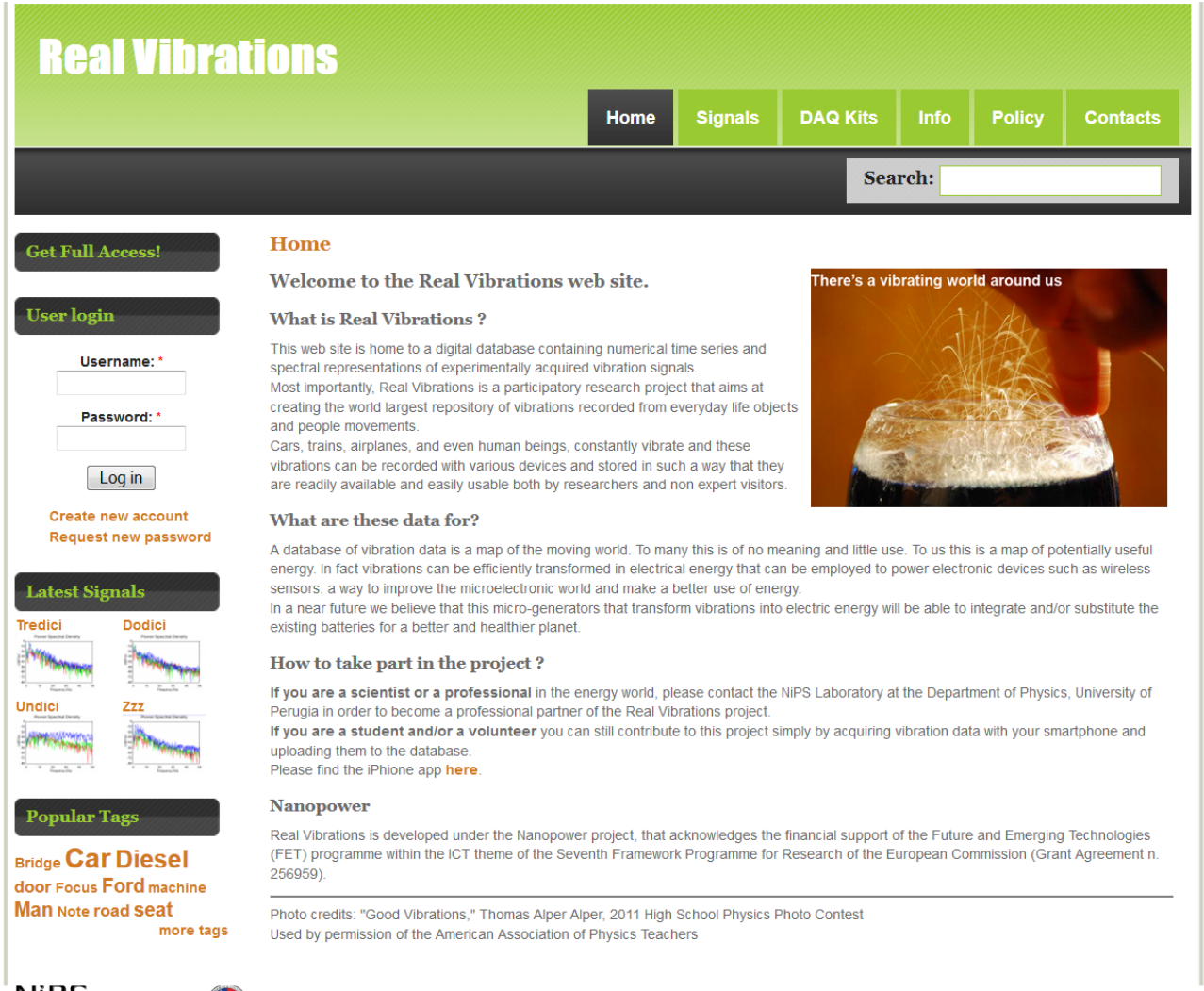
✓ inspiring more research projects in this emerging area

✓ facilitating broader interaction and feedback among the consortia members and stakeholders

✓ realizing a benchmarking system, i.e. a set of tools and prescriptions that will be used to compare the efficiencies of different ICT devices

Free/open Vibrations database

http://realvibrations.nipslab.org



More than 500 records of:

- Aquarium
- Air conditioner
- **Aircraft**
- Bathroom tap
- Bath tub
- **Bridge**
- **Bicycle**
- **Bus**
- **Car**
- Cell Phone
- Copier
- Flush toilet

…

ICTenergy

www.ict-energy.eu

ICTenergy

www.nanoenergyletters.com

Micro-Energy day

http://www.microenergyday.eu

This initiative aims at spreading the initiative through Europe as an opportunity to increase awareness among the specialist and also among the general public of the role of energy consumed by small electronic devices.

During this day the ICT-Energy partners will organize science communication events in their locations.

Perugia

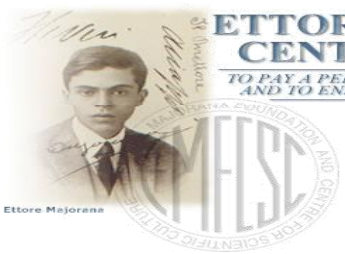
Barcelona

Educational activities

2010

2011

2012



ETTORE MAJORANA FOUNDATION AND CENTRE FOR SCIENTIFIC CULTURE

TO PAY A PERMANENT TRIBUTE TO GALILEO GALILEI, FOUNDER OF MODERN SCIENCE AND TO ENRICO FERMI, "THE ITALIAN NAVIGATOR", FATHER OF THE WEAK FORCES

23-27 July 2012, Erice (Sicily)

2013

Summer School "Energy management at micro and nanoscales"
Perugia (IT), July 8-10, 2013

2014

Summer School ICT-Energy
Perugia 14-18 July 2014

2015

NiPS Summer School
"ICT-Energy: energy consumption in future ICT devices"
Fiuggi, Italy – July 7-12, 2015
www.nipslab.org/summerschool2015

To know more…

Save the dates

- **Micro-Energy Day**, June 20th, 2015

- **NiPS Summer school**: Fiuggi, Italy, July 7-11, 2015

(www.nipslab.org/summerschool)

- **ICT-Energy Academia-Industry Clustering/**

Networking workshop, Bristol, UK, Sept. 14-16, 2015

- Sept- 14th, One-day training course

-Sept. 15-16, Workshop research/industry

www.ict-energy.eu

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