International Contest "Students vs. ICT"

The NiPS Lab – Noise in Physical Systems (www.nipslab.org) – at the Physics Department of the University of Perugia (Italy) organizes the first edition of the international contest "Students vs. ICT".

The contest arises from the European project "ICT-Energy", coordinated by the NiPS Lab and funded by the European Commission through the Seventh Framework Program. One of the aim of the "ICT-Energy" coordination action is to increase the visibility of "ICT-Energy" related initiatives to the scientific community, to specific industries and to the public at large through exchange of information, dedicated networking events and media campaigns. An introductory video to the "ICT-Energy" coordination action can be found at https://youtu.be/-mzp-s4bfP4.

The goal of the contest is to get the schools involved in promoting and attracting interest in the "ICT-Energy" themes, especially for what concerns the reduction of the energy consumption in the ICT devices.

In fact, if it's extremely clear the importance of the ICT sector both in economics and everyday life, likewise it's evident how many efforts have still to be done in order to create devices energetically more efficient.

The "ICT-Energy" consortium is composed of 10 European partners who study everything related to ICT and energy, from the software, hardware and physics point of view.

Application Form

The contest occurs both at national and European level and is open to High School students. It's divided into the following four sections and categories:

1. **Elettronics:**
   a) open theme concerning an ICT device;

   b) an IOT (Internet Of Things) device based upon an embedded "Raspberry Pi" (https://www.raspberrypi.org/) board or equivalent, capable of acquiring information from the environment through specific detectors/sensors and sharing them with a server or a user application by the internet;

2. **Telecommunications:**
   a) open theme concerning a device/protocol/client-server application able to send and receive information via radio/cable;

b) an IOT (Internet Of Things) device/protocol/client-server application capable of sending information via radio (WiFi, Bluetooth, other property protocols) or via cable, both directly and through gateway;

3. **Software:**
    a) open theme about ICT, from simulation or application software to server side application and social networks;

    b) an app for mobile devices (Android, iOS, Windows) related to the IOT (Internet Of Things) able to connect with electronic devices for domestic, industrial and scientific purposes;

4. **Graphics:**
    a) a short video about the energy theme in the electronic devices for ICT and/or IOT, pointing out their implications and changes in the nowadays society. The video must be 3-minutes long at most and saved as a MOV or MP4 file. The video must be an original and unpublished work, with pictures and music respecting copyrights. An example can be found at https://youtu.be/-mzp-s4bfP4;

    b) a single picture or a photo/drawing collection about the ICT or IOT subject: each work must be original, unpublished and respecting copyrights. These products must describe some peculiar aspect of the energy dissipation for ICT/IOT devices.

The contest is open to either single students or entire classes (or a portion of them), coordinated by a teacher that has not to be necessarily the group leader. In order to apply for the contest, participants are required to fill the participation form attached to the competition announcement and send it to ictcontest@ict-energy.eu within and not later than the **31rst March 2016**.

Participants can only compete in a single category. In case a work can fit more than a category, please indicate the main one.

The works must be original, unpublished and not awarded in previous contests. The works will remain properties of their respective author, even if NiPS Lab will be free to use them for its institutional activities.

The NiPS Lab experts will provide supports to the participants for the entire length of the contest, through both face to face meetings at the Physics Department of the University of Perugia and a dedicated forum accessible upon registration (each participant will be asked to apply for registration).

Lastly, a dedicated page on Facebook and a Google+ community will be available for fast communication and ideas exchanges. Their respective addresses are http://www.facebook.com/studentsvsict and https://goo.gl/O6W4N2.

Presentation of the works

A detailed description of each work must be sent to ictcontest@ict-energy.eu within and not later than **12.00 a.m.** of the **15th May 2016**, **CET**. The violation of the time limit leads to the disqualification of the participant.

All the material must comprise a complete documentation, composed at least of the following details:

a) Number and name of the participants
b) Team leader
c) Team leader e-mail
d) Title of the work
e) Category
f) School and coordinating teacher
g) List of the material produced and a complete report of the work (only for the Electronic, Software and Telecommunication categories).

To the winners of the categories Electronics, Software and Telecommunication will eventually be asked to send the original material to NiPS Lab for verification.

Judgment

The commission will be composed by professors and researchers both from the NiPS Lab group and the "ICT-Energy" consortium and from potential partners from the industry world. The commission will judge all the works within and not later than the **31st May 2016**.

The jury will assess the works based on eligibility and judging criteria which are described in detail in the following:

- for Electronics, Telecommunications and Software categories:
  1. Relevance to the theme
  2. Originality and creativity
  3. Complexity of the project
  4. Energetical impact of the project
  5. Attention devoted to the reduction of the energy consumption
  6. Impact of the project within the social context.

- for the Graphics category:
  1. Relevance to the theme
  2. Originality and creativity
  3. Complexity of the project
  4. Potential impact of the project toward the public opinion for what concerns the energy theme in ICT
  5. Preferences arising from social networks (Facebook and Google+, each team will be notified to publish his work on a dedicated page). These will represent the 20% of the final judgment.

The judgment of the commission is unquestionable. The final result will be communicated via e-mail, through the Facebook page (https://www.facebook.com/studentsvsict) and the Google+ Community (https://goo.gl/O6W4N2).

Awards

The winner of each category will be awarded in the following way:

a) **Electronics:** a demo board for IOT

b) **Telecommunications:** a demo board for IOT
c) **Software:** a smart device
d) **Graphics:** a data storage device

The second and third classified per section will be awarded a plaque.

Each participant will receive a certificate of attendance.

The Commission reserves its unquestionable right to not admit to the Call projects that are not coherent with the objectives of the contest. The Jury reserves not to award all the prizes and/or to give other mentions outside the Regulations, as well as award ex aequo prizes.

National award

The award ceremony will take place in Perugia, Italy, at the beginning of June. Further details will be communicated to the participants as soon as possible. The ceremony will be disseminated through the NiPS Lab and "ICT-Energy" project channels of communication: website, Facebook page, Twitter and newsletter. The event will be open to the contestants and the citizenry at large.

The winner students will be invited to show their works at the next edition of the Micro-Energy day schedule in Perugia, 16 Jun 2016 (please, visit the website http://www.microenergyday.eu/) and organized within the "ICT-Energy" coordination action.

European award

The contest occurs at the same time in different European countries, open to students of the same level. Therefore, at the end of the national award, the Commission will award the best works within the European context.

To the winner of each section will be awarded a plaque, and the works will be shown both at the International Science Conference "ICT-Energy 2016: Minimizing energy consumption of computing" scheduled in Aalborg, Denmark, 16-19 Aug 2016, and at the final review of the "ICT-Energy" project, foreseen in Bruxelles, Belgium, at the end of the current year.

Storage and use of the works

All works will be catalogued and conserved in the NiPS Lab archives.

The NiPS Lab reserves the rights to publish or exhibit them within potential exhibitions connected to the "ICT-Energy" coordination action.

For further information, please write to ictcontest@ict-energy.eu or visit the website http://www.ict-energy.eu/studentsvsict.