UNIT 217/94

Centro de Instrumentação

Objectives and Achievements

This part of the report will allow you to describe the way in which the Unit is organized and managed, to give the general objectives of the research within the Unit and finally to give a brief description of the main achievements of the research carried out in the Unit as a whole during the evaluation period 2003-2006. A maximum number of characters (without spaces) is allowed in each field. If the number of characters exceeds the maximum you will not be able to complete the form and an error message will appear when you try to save your work.

---

1. Unit Description (2000 ca.)

Here indicate form of organization and management.

The Research Unit Centro de Instrumentação, CI, (Instrumentation Centre) is composed by three Research Groups:

1- Grupo de Instrumentação Atómica e Nuclear (GIAN), (Atomic and Nuclear Instrumentation Group);

2- Grupo de Automação e Instrumentação Industrial (GAII), (Automation and Industrial Instrumentation Group);

3- Grupo de Electrónica e Instrumentação (GEI), (Electronic and Instrumentation Group).

Groups 1 and 2 already existed within the CI, being Group 3 a result of the merging of the existing Research Unit designated as Centro de Electrónica e Instrumentação (CEI) with the CI Research Unit .

I

Unit Coordinator

1) Conducts the Unit scientifically and financially, presides to the Executive Committee and the Scientific Council;

2) Can nominate a Vice-Coordinator to help accomplish their tasks and substitute him for short periods of absence on leave;

3) Is elected for a period of 3 years, within the Scientific Council, among the Full and Associate Professors in effective functions in the FCTUC.

II

Group Coordinator

1) Is designated as Principal Investigator and nominated by the Unit Coordinator;

2) Leads the Group scientifically and advises on the budgets of the proposed projects;

3) His mandate coincides with the Unit Coordinator mandate.

III

Executive Committee

1) Is composed by the Unit Coordinator, the Vice-Coordinator and Group Coordinators;

2) Executes the budget, distributes the material resources (equipment and spaces) and coordinates the staff, if it exists;

3) Prepares the proposals for the annual Activity Reports (and other reports) and the Activity Programs to be presented to the Scientific Council and to the Permanent External Advisory Committee.

IV

Scientific Council

1) Is composed by all the members of the CI having Ph.D.;

2) Elects the Unit Coordinator;

3) Evaluates and approves all the Activity Reports and Activity Programs presented by the Executive Committee, as well as the Unit budget distribution, and produces a report to be sent to FCT.

V

Permanent External Advisory Committee

1) The members are indicated by the Unit Coordinator and approved by the Scientific Council.

2) Is composed by the following members:

Dr Breskin, Amos – WIS - Israel

Dr Pellet, Claude – IXL – Université de Bordeaux

Dr Matos Ferreira – Full Professor – IST – Lisboa

Dr Marques dos Santos – Full Professor – FEUP - Porto

2. General Objectives (3000 ca.)

This refers to the current aims of the Unit as a whole.

R&D and innovation in the generic field of instrumentation – encompassing systems, apparatus, and methods – there involving radiation and particle physics, digital processing techniques and embedded systems platforms.

Different, complementary approaches are to be pursued in order to fulfill such objectives:

- International and national cooperation with different research groups;

- Collaboration in multi-disciplinary projects by applying the group know-how and equipments to environmental evaluation and cultural heritage assessment through quantitative x-ray fluorescence analysis;

- Industry related projects and partnerships, promoting innovation through both technology transfer and higher level, continuing education of technical staff;

- Active support in the promotion of spin-off firms involving graduates in either physics or physics engineering.

3. Main Achievements in the 2003-2006 period (3000 ca.)

Highlights from past research over the period under evaluation.

The overall information about the research units Centro de Instrumentação e Centro de Electrónica e Instrumentação for the period 2003-2006 can be found in the site "http//c-instr.fis.uc.pt/".

The unit research resulted in a total of 72 publications in International Journals with refereeing, with more than 100 citations, 113 presentations in international symposia. In addition, 11 PhD, 11 MSc and 17 undergraduate Diploma projects were concluded under the human resources formation. 25 research projects were submitted and funded by FCT.

A new research area was started in our group in 2006-2007, concerning Biomedical Engineering, involving 13 undergraduate students for Diploma projects. This meant a considerable human and financial allocation of resources.

Regarding this new area, a number of new collaborations were started up in which students always play some kind of role. A total of 5 out of the 13 EBM students of the center are now staff members of some of the companies involved.

Involvement with national international research institutions having in mind collaboration in projects of international impact.

Involvement with the industrial sector thus attracting human and material resources . Also, interdisciplinary academic work has triggered a number of innovative opportunities, especially with the dept.of Civil Engineering of our Faculty, by creating CAE tools for the analysis and simulation of large-scale water and wastewater systems, and, also with the University's Institute for Interdisciplinary Research (III), by developing a systems platform for the remote operation of environmental data gathering.