

# it\_news

## HAPPY NEW 2008

Dear Friends and Colleagues

Let me start by wishing you and your families a Happy New 2008.

In the dawn of a new year it seems appropriate to review the year that just ended. By many accounts 2007 was a good year. Firstly because of your work IT scientific output reached a new peak. This issue of *it\_news* reports on the last prizes and a IEEE fellow awarded to IT collaborators. My warmest congratulations to all.

A second and non negligible factor was funding. At long last FCT made good on its promises and paid its dues in time.

The third and last, but certainly not least, factor is the increase in the number of PhD students which rises our expectations for the future.

According to the best information available, in 2008, IT will be evaluated and the result of this evaluation will define the level of FCT funding. Be ready.

In 2008 we need to work more closely together. Just like an orchestra, with its many musicians, each with its own instrument and playing his own part, sounds coherent and harmonic, we should work more together to make the whole larger than the sum of its parts. I believe that IT has the expertise and the critical mass. Playing together, in tune, we are bound to achieve more and reach higher.

Let's do it.

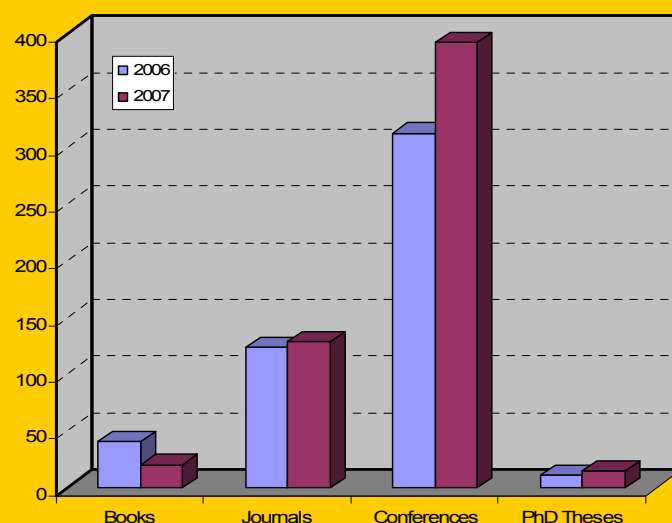
*Carlos Salema*

## IT Lisboa Christmas Dinner



From the photos, it is evident that everybody was enjoying it. This time, victory went to the "rookies", with the contribution of a large number of graduation students, appearing for the first time.

## IT key indicators 2006 / 2007





In November 2007, after the IEEE Board of Directors meeting, our colleague

**Fernando Pereira** (<http://www.img.lx.it.pt/~fp/>), from it Lisboa, was elevated to the grade of **IEEE Fellow**, for contributions to object-based digital video representation technologies and standards.

The grade of Fellow recognizes unusual distinction in the profession and is conferred by the IEEE Board of Directors upon a person with an extraordinary record of accomplishments in any of the IEEE fields of interest. The accomplishments that are being honoured shall have contributed importantly to the advancement or application of engineering, science and technology, bringing the realization of significant value to society. The IEEE Fellows are an elite group from around the globe. The IEEE looks to the Fellows for guidance and leadership as the world of electrical and electronic technology continues to evolve.

Congratulations Fernando Pereira for this important achievement!



## A PAPER AWARD ...

Francisco Monteiro received the Best Paper Award at the European Conference on Wireless Technology during the European Microwave Week 2007 (8-12 October 2007), jointly organized by the European Microwave Association and the IEEE Microwave Theory and Techniques Society, in Germany. The awarded paper is entitled "Euclidean Distances in Quantized Spaces with Pre-stored Components for MIMO Detection" and it proposes a simple signal processing technique which allows to decrease the computational complexity involved in the maximum likelihood detection of MIMO signals in spatial multiplexing architectures. By interpreting the MIMO lattice as a multidimensional image, it was possible to import a technique previously known in the field of image signal processing. The proposal is particularly interesting when the receiver is implemented with VLSI technology rather than a DSP unit. This work spun out of the research that Francisco Monteiro is doing at the University of Cambridge, United Kingdom, where he is reading for the PhD degree focusing on low complexity receivers for MIMO systems.



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## PARTNERSHIP

Critical Software and Instituto de Telecomunicações will develop an innovative technology that allows the detection and classification of vessels based on a new generation of high resolution satellite images. The aim of this initiative is to control the European external border effectively and according to the activities lead by the European Agency FRONTEX. This public/private partnership is financed by Agência de Inovação, which aims to enforce the existing collaboration between the institutions and the Portuguese manufacturing on the strategic domain of the remote detection with satellite images.

In this project, images acquired by the new TerraSAR-X satellite will be used. TerraSAR-X bears a powerful SAR sensor with unprecedented high spatial resolution. A space based ocean monitoring system will improve safety and security at sea, supporting authorities in case of storms, search and rescue operations, fishery control, and coastal patrol activities.

Among other things, this technology will allow:

- the detection of floating objects with only a few meters dimension;
- to classify vessels and provide valuable information concerning the type, speed and activity of the vessel.

## AND MORE AWARDS UNTIL THE END OF 2007...

### Best Conference Paper Awards

- To A. Teixeira, A. Ferreira and P. Monteiro, for the paper *40 Gb/s All-Optical Multi-Wavelength Conversion via a Single SOA-MZI for WDM Wavelength Multicast*, presented at the OECC/IOOC International Conferences, Kanagawa, Japan, in July.
- To João Oliveira, Mário Figueiredo and José Bioucas-Dias, for the paper *Blind estimation of motion blur parameters for image deconvolution*, presented at the 3rd IAPR Iberian Conference on Pattern Recognition and Image Analysis, Girona, Spain, in June.
- To Vítor Jesus, Susana Sargento, Daniel Corujo, Nuno Sénica, Miguel Almeida and Rui Aguiar, for the paper *Mobility with QoS Support for Multi-Interface Terminals: Combined User and Network Approach*, presented at the 12th IEEE Symposium on Computers and Communications, Portugal, in July.

### Other Awards

- To Mário Figueiredo, the Scientific Award UTL/Santander Totta, in the field of Computer Science. The Ceremony will take place in January 2008.
- To António Abreu, one of the three awards of the 2007 edition of Scientific Partnership for Innovation, promoted by IAPMEI for his work on rechargeable electronic implants.

