Editor's Note

The research and technological activities SARTI carried out during the second semester of 2004 are presented in this, the third issue of Instrumentation Viewpoint.

The effort involved in continuing to publish a magazine is much greater than publishing the first issue and for this reason I have to thank all the SARTI members and other collaborator groups for their innovative research and technology transfer contributions.

Hopefully, the editorial line that we are following in this the third issue is now clear. The papers published in these three Instrumentation Viewpoint magazines are, in the main, papers written by SARTI research group, some contributions by the Associated Unit and universities where we have established a collaboration agreement.

However, we welcome the chance to publish papers from other groups carrying out similar research and development.

In spite of the present situation, we are open to publish papers of other research and development groups with the same line of activities. For all that has been exposed, we reinforce our initial approach.

We hope to present your collaboration in the next issue. Our goal is to make Instrumentation Viewpoint not only a window for our activities but also to share experiences with instrumentation colleagues.

Best regards from your partner
Antoni Mànuel, PhD
Director of TDC SARTI

The RESEARCH GENERAL MANAGEMENT of the Ministry of Science and Technology awarded a series of grants within the framework of the National Research an Development plan 2004-2007 to the Technological Development of Remote Acquisition Systems and Data Processing Center (SARTI).

Distributed Virtual Laboratory for the Acquisition and Processing of Oceanographic Data

A distributed virtual experimentation environment is being developed for Spanish oceanographic ships by a multidisciplinary team under the TICC2000-1027 project frame. The experience gained during these years, together with significant advances in the field of TIC has allowed us to plan a more ambitious project which deals with the modelling and construction of distributed systems which involves the information technologies (hardware and software) and also communications, telematics and electronics technologies. The new challenges are the real time implementation of the distributed environment in Spanish oceanographic ships and in the Juan Carlos I Antarctic base, the use of embedded PCs like TINI or SNAP which, thanks to their size, can be integrated in the measurement equipment, data accessibility through internet, the possibility of configuring experiments remotely and in short, the possibility of «living the campaign from earth».

The built-in Web Services architecture in this environment not only represents an important advance but also brings up more opportunities for creating a flexible, open and secure environment.

In fact, CORBA, Java and RMI include base technologies, the mobile agents make the distributed calculation for the local real time processing easy and the configurable processes without prerequisites and Web Services provides a distributed, open and secure architecture. Web Services is a software environment in which the services are provided by URI identified applications, whose interfaces and methods are explained using XML. They are both user-friendly and easily found. With this new architecture, we achieve a totally distributed system since users can be distributed in an intranet or in internet, the applications can be distributed and they can be found thanks to the UDDI and LDAP services, the process can be distributed using Java Beans and RMI, data are distributed using RMI and all that in a secure environment thanks to SOAP and HTTPS.

Moreover, and as an additional value, a wireless system will be designed to monitor and protect the researchers and vehicles in the Antarctic and a web space will be created to share information and knowledge with educational and scientific purposes.