

ISTITUTO DI  
SCIENZA E TECNOLOGIE DELL'INFORMAZIONE  
"A. FAEDO"

(ISTI-CNR)

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## **The Institute of Information Science and Technologies (ISTI)**

The Institute of Information Science and Technologies (ISTI) is an institute of the Italian National Research Council (CNR). The Institute is located in the CNR Research Area of Pisa.

ISTI was constituted in 2002 as a result of a merger between the Istituto CNUCE (CNUCE-CNR) and the Istituto di Elaborazione dell'Informazione (IEI-CNR).

ISTI is named in honour of Alessandro Faedo, former Rector of the University of Pisa and President of CNR, in recognition of his important contribution to the advancement of Information Science and Technologies in the Italian academic communities.

## **IEI and CNUCE**

### ***IEI***

The beginnings of the Istituto di Elaborazione dell'Informazione (IEI) can be traced back to 1954 when Pisa University, on the advice of the Nobel laureate Enrico Fermi and financially backed by the provinces of Pisa, Lucca and Livorno decided to design and construct a computer intended entirely for scientific use, the first in Italy. The CSCE (Centre for Studies on Electronic Computing) was thus founded, and in 1961 the CEP - Pisan Electronic Computer - was inaugurated. In 1962 the CSCE became part of the Italian National Research Council, and in 1968 was renamed Istituto di Elaborazione dell'Informazione (IEI).

### ***CNUCE***

CNUCE was founded on 5th July 1965 as the National University Computing Centre with the goal of providing various university faculties with a valid computing support. In 1973 CNUCE became part of the National Research Council (CNR) under the Committee for Engineering and Architecture. Besides the necessary economic support for developing Computing Services which by then had become widespread in Italy, CNR also provided the CNUCE Institute with an appropriate framework to conduct research in Computer Science.

## **ISTI: the mission**

The Institute is committed to producing scientific excellence and to playing an active role in technology transfer. The domain of competence covers Information Science, related technologies and a wide range of applications. The activity of the Institute aims at increasing knowledge, developing and testing new ideas and widening the application areas.

A distinctive feature of Information Technology is the rapid pace of developments and the easy flow of information between diverse research communities and between academia and wide sectors of industry, business and society at large. If it is to be vital and effective, research in this domain requires constant attention and prompt reaction to stimuli and to new opportunities. A further requirement is the close integration of all components of the research community.

ISTI is actively involved in collaborations with the academic world and in cooperative research and development programmes, both national and international.

In recognition of the importance of training in today's Information Society, ISTI pays great attention to involving doctoral students and post-doctoral fellows in research activities and participates actively in the doctoral programmes of the University of Pisa and other partner universities.

## **ISTI: Organisation of Research**

The organisation of the research work is aimed at stimulating flexibility and reactivity.

The backbone of the organization is constituted by dynamic units, called *Research Laboratories* or *Technology Centres*. Members of the research staff are normally involved in one or more of these units.

Independent research is also encouraged and supported.

## **ISTI: Research Laboratories**

Research Laboratories pursue a well-defined set of strongly related scientific objectives.

In addition to research, objectives may also cover technology development and training.

The teams include permanent staff, visitors, post-doctoral fellows and doctoral students, with an average number of 10 members per Lab.

The Research Laboratories are largely independent and results are subject to periodical evaluation.

The current number of Research Laboratories is 14.

# ISTI-CNR: RESEARCH LABS

Details available at <http://www.isti.cnr.it>

## SYSTEMS AND NETWORKS

Dependable Computing Lab  
High Performance Computing Lab  
Wireless Networks Lab

## SOFTWARE

Formal Methods and Tools Lab  
Software Engineering Lab

## INFORMATION MANAGEMENT

Human Interfaces in Information Systems  
Knowledge Discovery and Delivery Lab  
Multimedia Networked Information Systems

## IMAGING

Creative Virtual Systems Lab  
Signals & Images Lab  
Visual Computing Lab

## APPLICATIONS

Domotics Lab  
Mechanics of Materials and Structures Lab  
Space-Flight Dynamics Lab

## **ISTI: Technology Centres**

Technology Centres are aimed at enhancing and exploiting the patrimony of competence existing at ISTI in specific areas. Typical activities are pre-competitive development, technology transfer and training.

The Technology Centers work in close collaboration with the Research Laboratories, in order to foster the sharing of competence and the bi-directional flow of knowledge. As a general rule, the staff of the Technology Centers will also be involved in one or more Research Laboratory.

The Technology Centers are largely independent and subject to periodical evaluation.

Currently, the Technology Centers of ISTI are the following:

- *Information Systems* Technology Center
- *System and Software Evaluation* Technology Center

Details available at <http://www.isti.cnr.it>



## **ISTI: Independent Research**

Independent Research consists of free initiatives by individuals or small groups, aimed at widening and deepening their competence, at cultivating the spirit of diversity and at exploring interdisciplinary connections. The publication of innovative results and the open circulation of ideas within the scientific community are considered prime goals.

The Institute recognizes the importance of independent research to drive the evolutionary process of the Laboratories and to help young researchers in developing scientific initiative and working autonomously.

Independent research at ISTI is supported under a funding scheme that rewards scientific production and privileges young researchers.

## **ISTI: Teaching and training**

Training in research and technology plays a primary role in the mission of the Institute.

ISTI pursues involvement of doctoral students and post-doctoral fellows in the Institute's research programs, and participates actively in the doctoral programmes of the Pisa University and other partner Universities.

The Institute offers post-graduate courses of advanced training in specific technologies and participates to similar initiatives of other organisations.

The Institute also contributes to undergraduate teaching in the University of Pisa, as well as in several universities nationwide.

## **ISTI: Involvement in Doctorate Programmes**

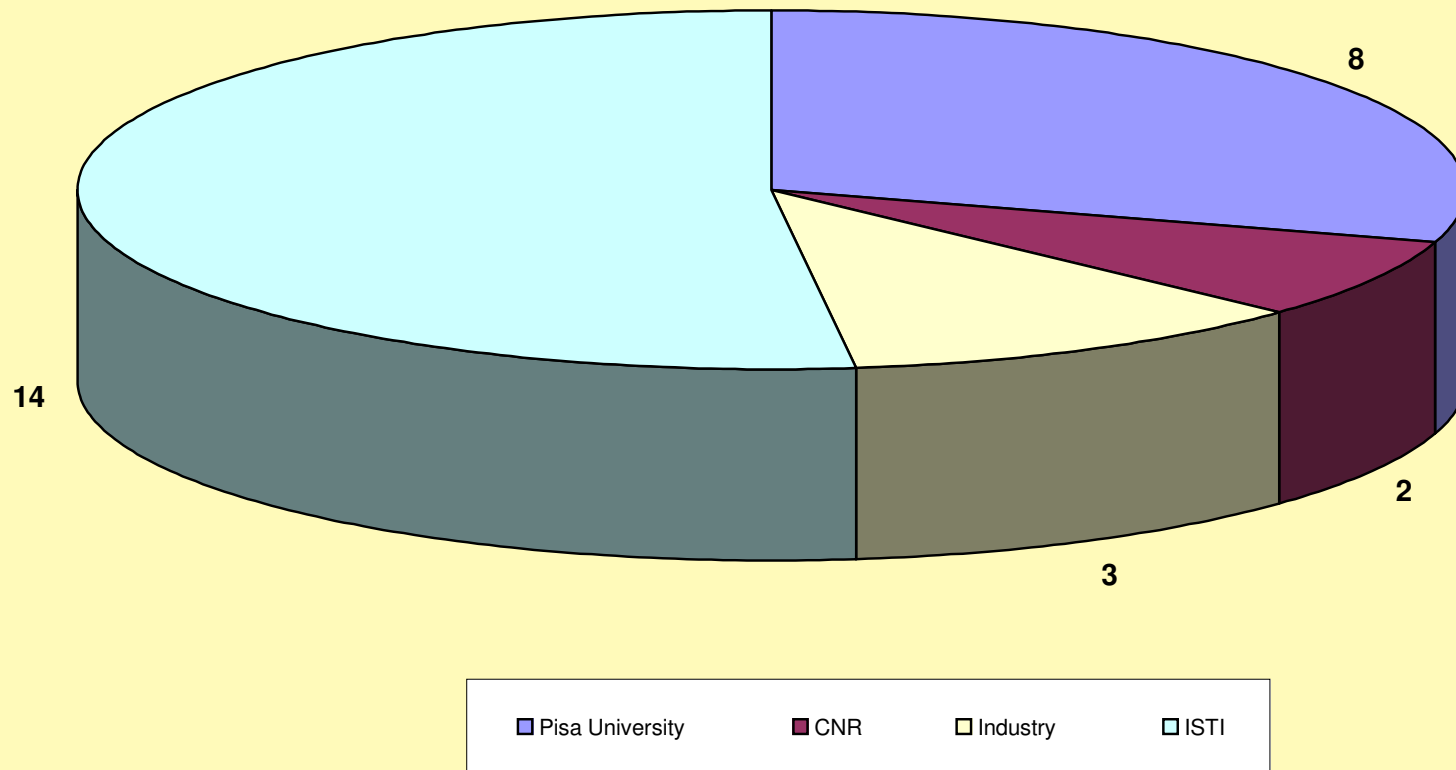
Under current regulations, Doctorate Schools are run by Universities , which are given full responsibility for student admission (by competitive selection), graduate teaching and thesis supervision. Most graduate students are supported with grants provided by Universities. Students non covered by grants should seek support from external sources.

Under a cooperation agreement with the University of Pisa, ISTI is a privileged partner of the University in doctorate programs. Graduate students are engaged in doctoral work in the Institute under supervision of research staff members of ISTI, which also called to teach graduate courses. The Institute provides grants to students not supported by the University. To a limited extent, further support is provided by CNR, which finances additional grants managed by the University.

A similar partnership has been established informally with Scuola Superiore S. Anna, also based in Pisa.

Currently, the number of students engaged in doctoral work at ISTI is 27.

## Graduate Students at ISTI: Sources of Grants



## **ISTI: Post-graduate Training**

The Institute offers, or has recently offered, advanced training by running, or contributing to, post-graduate courses covering the following topics:

- Training course for Software Evaluators (Technology Center "System and Software Evaluation")
- Master course on Data Mining on Enterprise Databases (Laboratory "Knowledge Discovery and Delivery")
- Master course on Data Mining (Technology Center "Information Systems")
- Training courses on Spacecraft Flight Control Systems (Laboratory "Space Flight Dynamics")
- Tutorials and short courses held at several international conferences and summer schools (Laboratory "Networked Multimedia Information Systems").

## **ISTI: Undergraduate Teaching**

Members of the research staff of ISTI teach undergraduate courses at the University of Pisa, University of Florence, University of Siena, University of Sassari, Scuola Superiore S. Anna and Technical University of Eindhoven.

An approximate number of 35 undergraduate students of the Università di Pisa are currently engaged in preparation of their final dissertations at ISTI, under the supervision of ISTI research staff members.

## ISTI and ERCIM

ERCIM - the European Research Consortium for Informatics and Mathematics - aims to foster collaborative work within the European research community and to increase co-operation with European industry. Leading research institutes from sixteen European countries are members of ERCIM.

CNR has been member of ERCIM since 1988 and IEI-CNR (now merged into ISTI-CNR) has been delegated to represent CNR into the Board of Directors, the Executive Committee and Editorial Board of ERCIM. In 2002 this mandate has been transferred to ISTI-CNR.

The member institutes are entitled to participate to an exchange programme for European scientists and to access to financial help for organizing conferences and workshops.

ERCIM activities include the formation of working groups, the workshop sponsorship and a Fellowship Programme.

The Fellowship Programme was launched in 1990 to enable young scientists from around the world to perform research at ERCIM institutes.

ERCIM publishes a quarterly Newsletter "ERCIM News" as well as a wide variety of technical reports, workshop, proceeding, etc.

Visit <http://www.isti.cnr.it> for additional information

## **ISTI and W3C**

The World Wide Web Consortium (W3C ) was created to lead the Web to its full potential by developing common protocols that promote its evolution and ensure its interoperability. W3C is an international industry consortium jointly run by the MIT Laboratory for Computer Science (MITLCS) in the USA, the National Institute for Research in Computer Science and Control (INRIA) in France and Keio University in Japan. Since January 1st, 2003 the W3C European Host has been moved from INRIA to ERCIM. This change allows W3C to better leverage research relationships throughout Europe, while maintaining its historically strong relationship to INRIA, one of the ERCIM founders. Services provided by the Consortium include: a repository of information about the World Wide Web for developers and users, and various prototype and sample applications to demonstrate use of new technology. To date, nearly 450 organizations are Members of the Consortium. For more information see <http://www.w3c.org/>

The Italian Regional W3C Office is hosted by ISTI-CNR. The activity of the hosting laboratory is described in detail at <http://www.isti.cnr.it>

## **ISTI: THE LIBRARY**

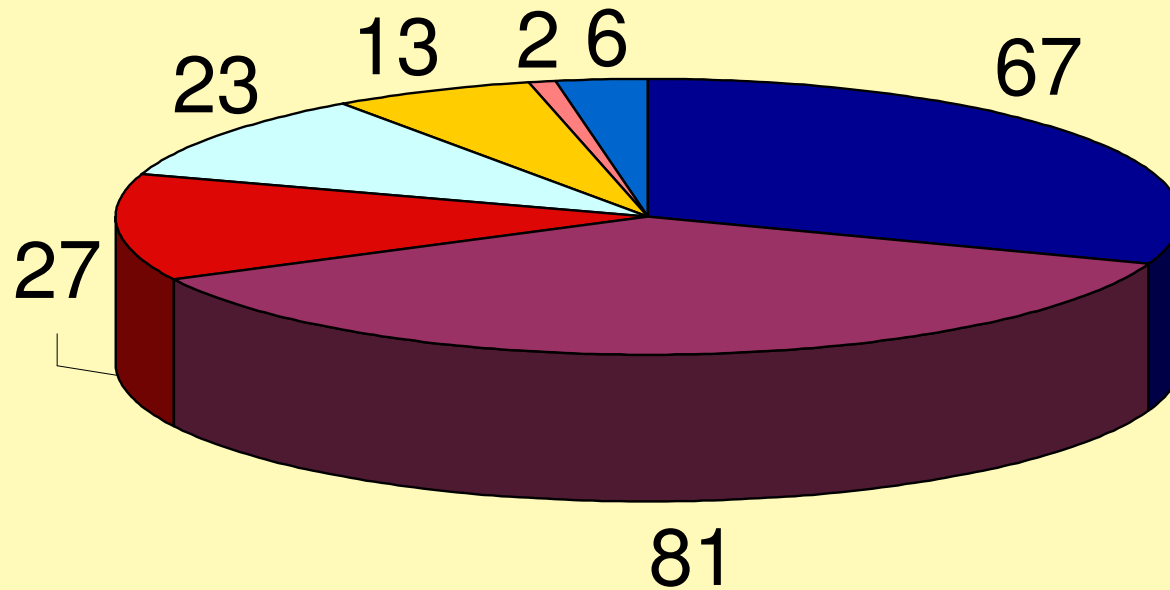
The ISTI library began life in 1954 with the Center for Studies on Electronic Computing (CSCE) of the University of Pisa (later IEI-CNR) and is thus one of the oldest ICT Libraries in Europe and probably the most complete Italian library in the field. It contains over 15000 books, 800 serial publications (400 subscriptions are currently maintained) and a number of bibliographic, full-text and numeric databases. The Library also preserves the historical archives of papers and publications of CSCE and IEI as well as current archives of ISTI.

The Library is publicly available. Services include:

- Reference and personal instruction
- Web accessible OPAC-On Line Public Access Catalogue
- Web access to electronic journals and thematic databases
- On-demand acquisition of books
- Lending, document delivery and interlibrary loan
- Printing, downloading and photocopying
- A study room with 30 places.

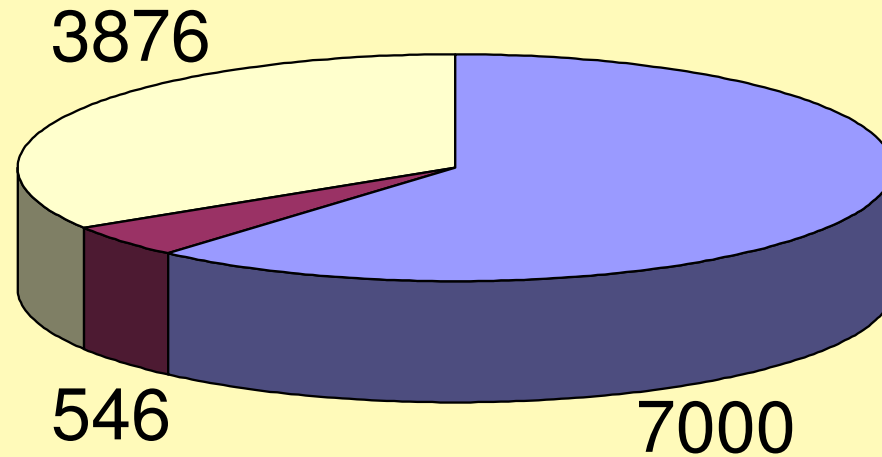


## ISTI-CNR: Staff



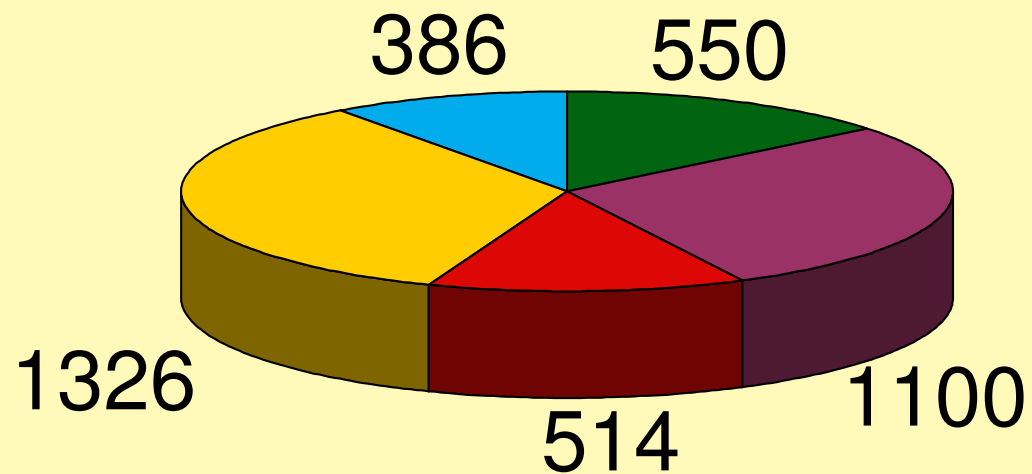
■ Technical and Administrative Staff	67
■ Research Staff	81
■ PhD Students	27
■ Graduate Fellows	23
■ Post-doctoral Fellows	13
■ Visiting Researchers	2
■ Support Fellows	6

## ISTI-CNR Budget 2003, kEuro



■ Cost of Permanent Staff (administered by CNR)	7000
■ Maintenance and utilities (administered by CNR)	546
□ Cumulative Available Funds	3876

## ISTI-CNR Budget 2003: detail of available funds (kEuro)



■ CNR	550
■ National Research Projects (Government)	1100
■ Public and Local Administrations	514
■ EEC Projects	1326
■ Industry and other Private Sources	386