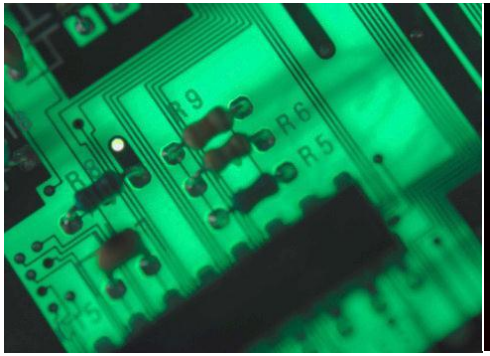
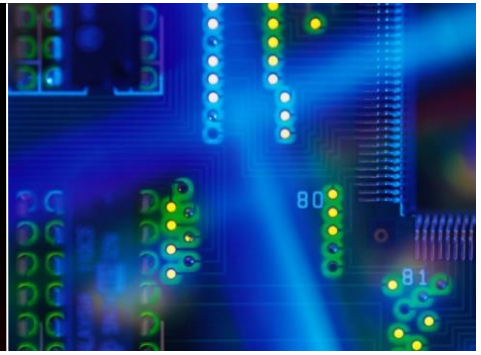
INESCTEC
TECHNOLOGY & SCIENCE
| ASSOCIATE LABORATORY

1985
THIRTY
YEARS
2015

FROM KNOWLEDGE
GENERATION
TO SCIENCE-BASED
INNOVATION





Research and Technological Development

Technology Transfer and Valorisation

Advanced Training

Consulting

Pre-incubation of Technology-based Companies

Eduardo Silva
Coordenador do Centro de Robótica

Our Mission

GOALS:

Internationally competitive R&D

+

An effective interface between the academic world and society

RESULTS:

Better science in Portugal

&

A more competitive business fabric

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Institutional

INESC TEC

- Private non-profit association
- Public Interest Institution since 2001
- Associate Laboratory statute awarded in 2002 by the Portuguese Ministry of Science
- Awarded the level of Excellent in 2014 by an international evaluation board of the Ministry of Science

MAIN FIGURES

Partnership-based resources = 1,515,000 M€

Turnover = 14.4 M€

R&D Centres = 12

Collaborators = 937

- ***R&D*** *= 802*
  - ***PhD*** *= 359*
    - ***Integrated PhDs*** *= 267*
- ***Support Services*** *= 52*

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Sources of funding (Number of Projects)

Sources of Funding	Year				
	2010	2011	2012	2013	2014
National Programmes	***73***	***94***	88	***89***	***65***
European Union Programmes	20	***27***	***28***	***35***	***31***
R&D Services and Consulting	***87***	***97***	***104***	104	116
Other Sources of Funding	9	6	***9***	***6***	***4***
Other External Sources	***3***	***4***	***7***	***8***	7
Internal	6	***8***	***8***	***6***	***4***
Total	198	***236***	244	248	**227**

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The research units and the knowledge production chain

Basic research | Applied research | Development | Technology transfer and valorisation

CREATIVE KNOWLEDGE

- Applied Photonics
- Telecommunications and Multimedia
- Power and Energy Systems
- Robotics and Intelligent Systems
- Enterprise Systems Engineering
- Information Systems and Computer Graphics
- Innovation, Technology and Entrepreneurship
- Industrial Engineering and Management
- Biomedical Engineering
- Real Time Embedded Computing Systems
- High Assurance Software
- Artificial Intelligence and Data Analysis
- Advanced Computing Systems

INNOVATION AND VALUE

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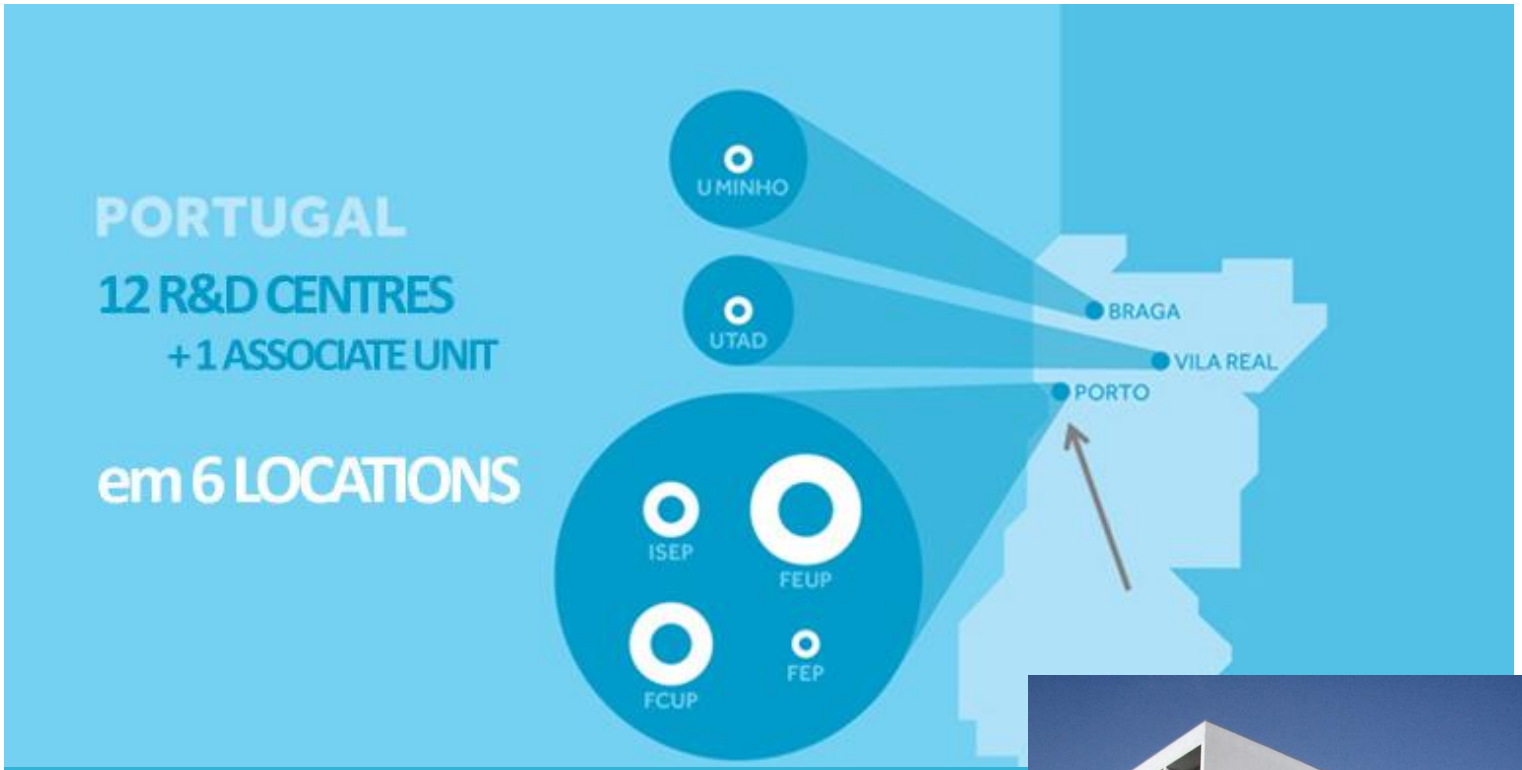
Geographic Location



Associados:

U.PORTO

INESC

INSTITUTO POLITÉCNICO DO PORTO

Privileged Partners:

Universidade do Minho

utad

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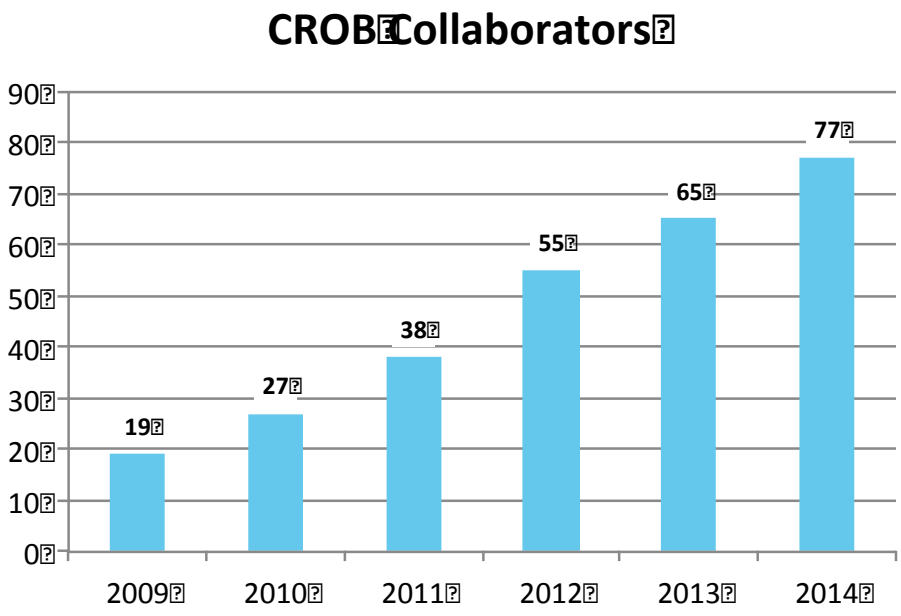
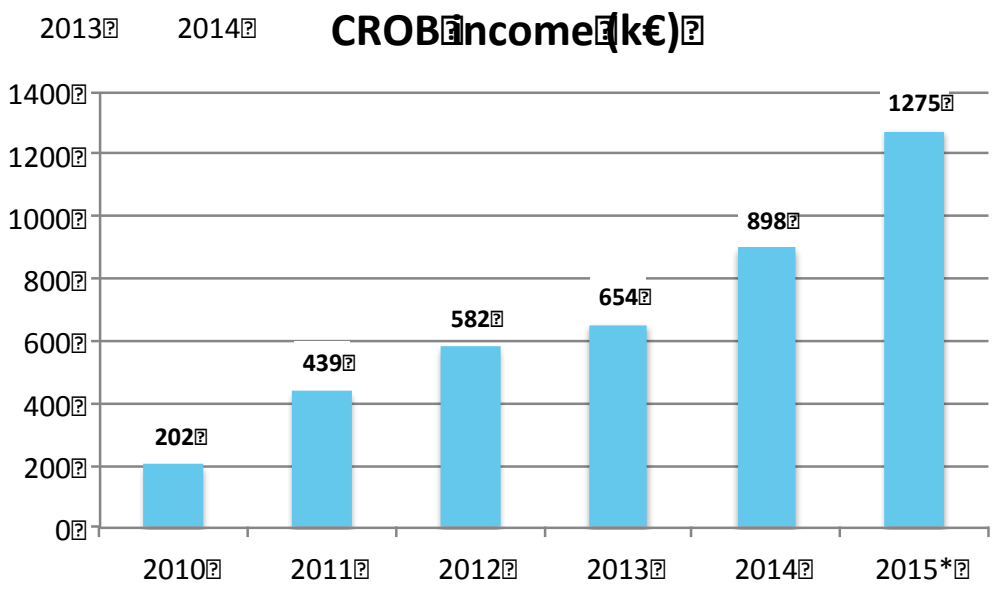
CROB - Centre for Robotics and Intelligent Systems





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Tec4sea – Research Infra structure

www.tec4sea.com

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TEC4SEA OBJECTIVES

- **A place where is possible to realize a multidisciplinary research on technology for the oceans grouping R&D and Businesses**

- Enables full validation and evaluation of technological solutions designed for the ocean environment

- To support research, development, and testing of new technologies along 4 major research lines:
  - **Marine robotics**;
  - **Technologies and systems for underwater monitoring**;
  - **Broadband wireless communications systems**;
  - **Acoustic systems**.

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Interventions fields

- Deep Sea (Raw materials)
- Fisheries
- Aquaculture
- Safety & Security
- Environment monitoring (mining impact assessment)
- …

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Stairways towards Horizon 2020, a short movie

Participation in the First Atlantic Forum (Açores, Set 2012) and NCP Guidance.
Pontus (underwater mining impact assessment) Proposal submission
Atlantic Forum Workshops
Pontus 1º stage award (DEC 2012)
Pontus 2º stage (Mar 2013) (Fail)
EIP on Raw Materials Annual Forum (2013)
ERDEM Commitement (Jan 2014) award
EIT KIC on Raw Materials consortium
H2020 Vamos (underwater mining) submission (April 2014)
EIT KIC on Raw Materials proposal submission (SET 2014)
H2020 Vamos (underwater mining) award (SET 2014)
EIP on Raw Materials High Level Conference and Horizon 2020 Brokerage Event on Raw Materials (Dec 2014)
EIT KIC on Raw Materials award (Dec 2015)
H2020, 3 Raw Materials proposal submission (April 2015)
EIT Kava activities submission

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ERDEM

Environmentally Responsible Deep-sea Mining

European Commission

EIP Raw Materials Recognized Commitment

ERDEM

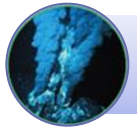
An Ecosystem based approach in managing the exploitation of deep-sea resources

Develop and Pilot novel cost effective, remote and immersive technologies allowing a **tele-mining system** concept.

Deliver a mobile, wireless Environmental Impact monitoring system.

Introduce new techniques to assess resilience of Deep Sea Ecosystems and of biodiversity

Study and analyse environmental dynamics, population variability and connectivity of communities in deep sea habitats



Provide advanced understanding of geological processes associated to the minerals' extraction.

Governance, Legal instruments and Management Practices, Policy Recommendations and Standardization of tools and methods for assessing environmental impact

Role of Robotics

ERDEM

•Contribute to the development of technologies for downsized, intelligent, mineral exploration and extraction equipment that will be capable of operating autonomously in extreme environments.

•Contribute to the development of new monitoring technologies and methodologies that ensure a sustainable exploration and exploitation of marine resources, and augment awareness of environment (monitoring, inspection, surveillance, modelling, sensing).

•Driven by the long-term vision of extending and supporting the mankind presence in large, usually hostile, oceanic environments, based on the development of long-term autonomy and robotic solutions.

http://www.tec4sea.com/

¡vamos!

ation and Awareness System

This project has received funding from the European Union's Horizon 2020 research and innovationprogrammeunder grant agreement No 642477".

KIC EIT Raw Mater

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What is a EIT-KIC

KIC (acronym of Knowledge Innovation Community) is:

•A thematic innovation community that develop innovative products and services, foster new business, encourage growth and nurture young entrepreneurial talent

•Characterised by a high degree of integration, a long-term perspective, efficient governance, the co-location model and the entrepreneurial culture

•Unique partnerships that increase Europe's capacity for innovation by bringing together leading companies, universities and research labs

•Driven by a pursuit of excellence

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EIT (European Institute of Innovation and Technology)

The EIT is an EU body that enhances Europe's ability to innovate by nurturing young entrepreneurial talent and supporting new ideas through the Knowledge and Innovation Communities (KICs).

The EIT is the first EU initiative bringing together the three sides of the "knowledge triangle": business (companies and SMEs), higher education institutions and research centres.

The EIT aims to increase the cooperation and integration between higher education, business and research to facilitate the transition from:

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