Portuguese Initiatives in Future Internet Technologies and Services
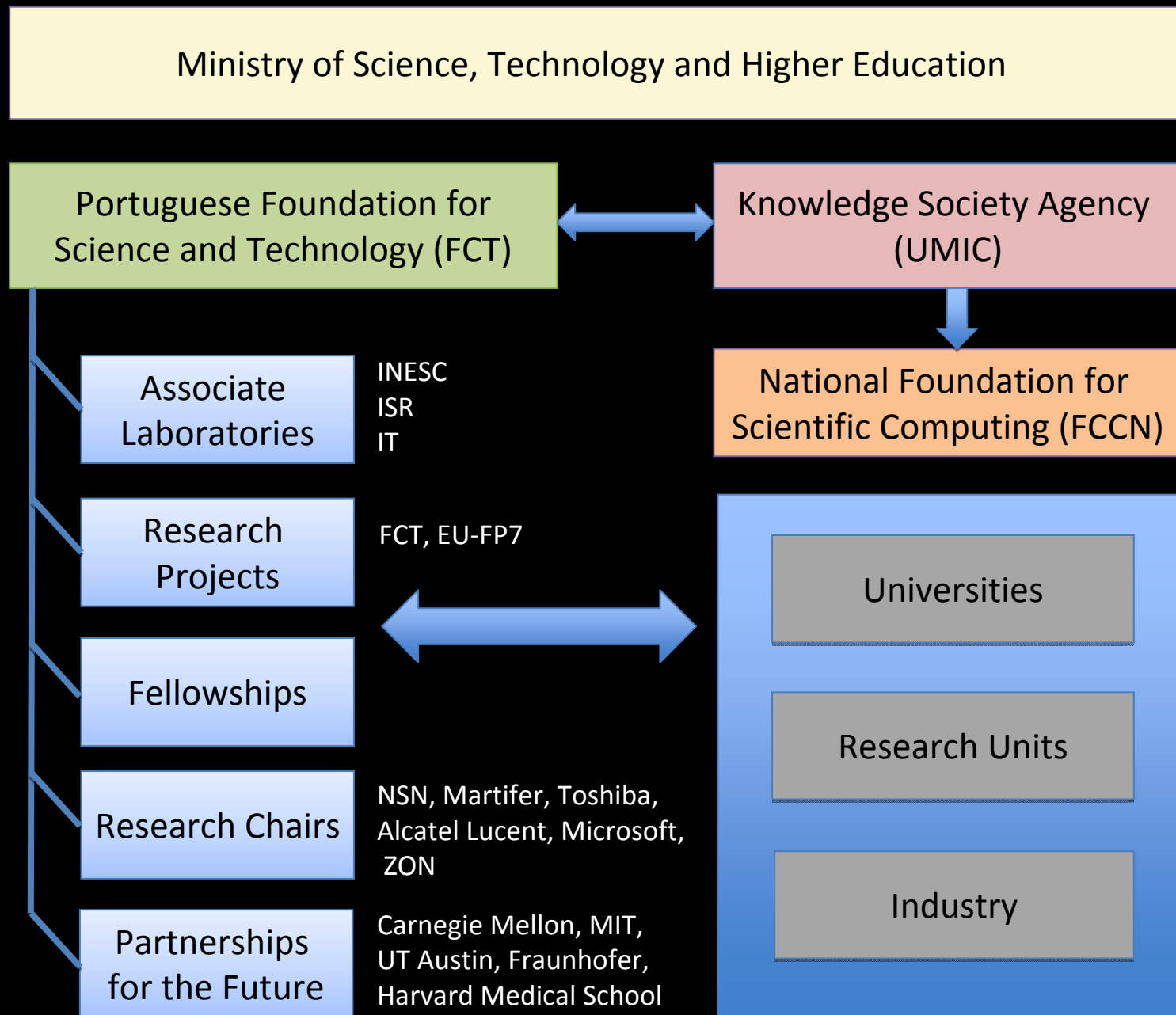
João Barros

National Director of the Carnegie Mellon Portugal Program

Future Internet Forum, Valencia, April 2010

Key Players in FI Research in Portugal

>600M€/year

Ministry of Science, Technology and Higher Education

Portuguese Foundation for Science and Technology (FCT) ⟷ Knowledge Society Agency (UMIC)

National Foundation for Scientific Computing (FCCN)

Associate Laboratories — INESC / ISR / IT

Research Projects — FCT, EU-FP7

Fellowships

Research Chairs — NSN, Martifer, Toshiba, Alcatel Lucent, Microsoft, ZON

Partnerships for the Future — Carnegie Mellon, MIT, UT Austin, Fraunhofer, Harvard Medical School

Universities

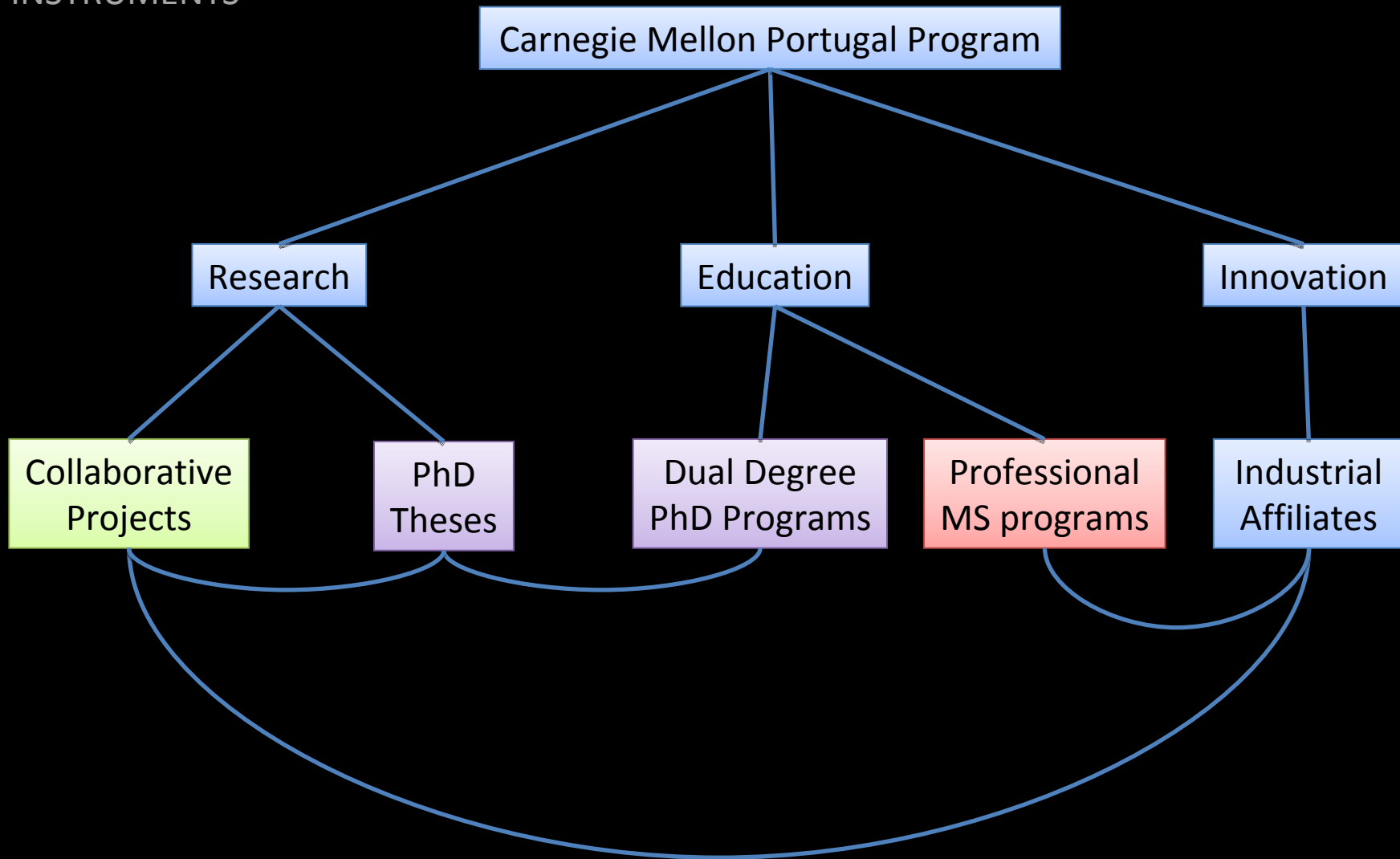Research Units

Industry

Portuguese National Initiative: Partnerships for the Future

- Carnegie Mellon Portugal (2006-2011+)
    - Future Internet Technologies and Services
    - 56M EUR, 9 universities, 39 companies, >120 PhD researchers, >150 graduate students
- MIT Portugal (2006-2011+)
    - Engineering Systems, incl. Smart Energy, Smart Transportation, Biomedical Sensing
    - 60M EUR, 6 universities, 6 major research labs, 50 companies, >300 graduate students
- Austin Portugal (2007-2012+)
    - Interactive Digital Media and Advanced Computing
    - 26M EUR
- Fraunhofer Portugal (2008+)
    - 1st Fraunhofer institute outside Germany, based at Univ. of Porto, Ambient Assisted Living
- Harvard Medical School Portugal (2009-2014)
    - Medical and Biomedical Research Web Content for citizens, students and practitioners
    - 25M EUR over 5 years

Goal: Aggregate critical mass in Future Internet Innovation

INSTRUMENTS

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                    ┌─────────────────────────────────────┐
                    │   Carnegie Mellon Portugal Program   │
                    └─────────────────────────────────────┘

        ┌──────────┐           ┌───────────┐          ┌────────────┐
        │ Research │           │ Education │          │ Innovation │
        └──────────┘           └───────────┘          └────────────┘

┌──────────────┐  ┌────────┐  ┌──────────────┐  ┌──────────────┐  ┌────────────┐
│ Collaborative│  │  PhD   │  │ Dual Degree  │  │ Professional │  │ Industrial │
│   Projects   │  │ Theses │  │ PhD Programs │  │ MS programs  │  │ Affiliates │
└──────────────┘  └────────┘  └──────────────┘  └──────────────┘  └────────────┘
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Carnegie Mellon Portugal Program

New Generation Networks for High-Quality Trusted Services

Software Engineering for Large-Scale Dependable Systems

Cyber-Physical Systems for Ambient Intelligence

Human-Centric Computing

Applied Mathematics

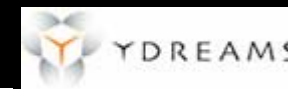Public Policy & Entrepreneurship Dynamics in New ICTs

THEMATIC AREAS

Ongoing Projects

DRIVE-IN

DISTRIBUTED ROUTING AND INFOTAINMENT
THROUGH VEHICULAR INTER-NETWORKING

How can Vehicle-to-Vehicle communication enhance driver and passenger experience, while improving road and vehicle utilization?

PIs: M. Ferreira, O. Tonguz
IT / FCUP / FEUP / UA
Carnegie Mellon University
NDRIVE, BRISA

SINAIS

Can we use distributed sensor systems and human computer interaction to induce environmentally friendly behavior?

PIs: N. Nunes, A. Dey
MITI / UMa / IST
Carnegie Mellon University
ISA

PT - STAR

Can speech-to-speech machine translation enable natural language communication between people who do not share the same language?

PIs: L. Coheur, A. Black
INESC ID / IST / FLUL / UBI
Carnegie Mellon University
Priberam

INTER FACES
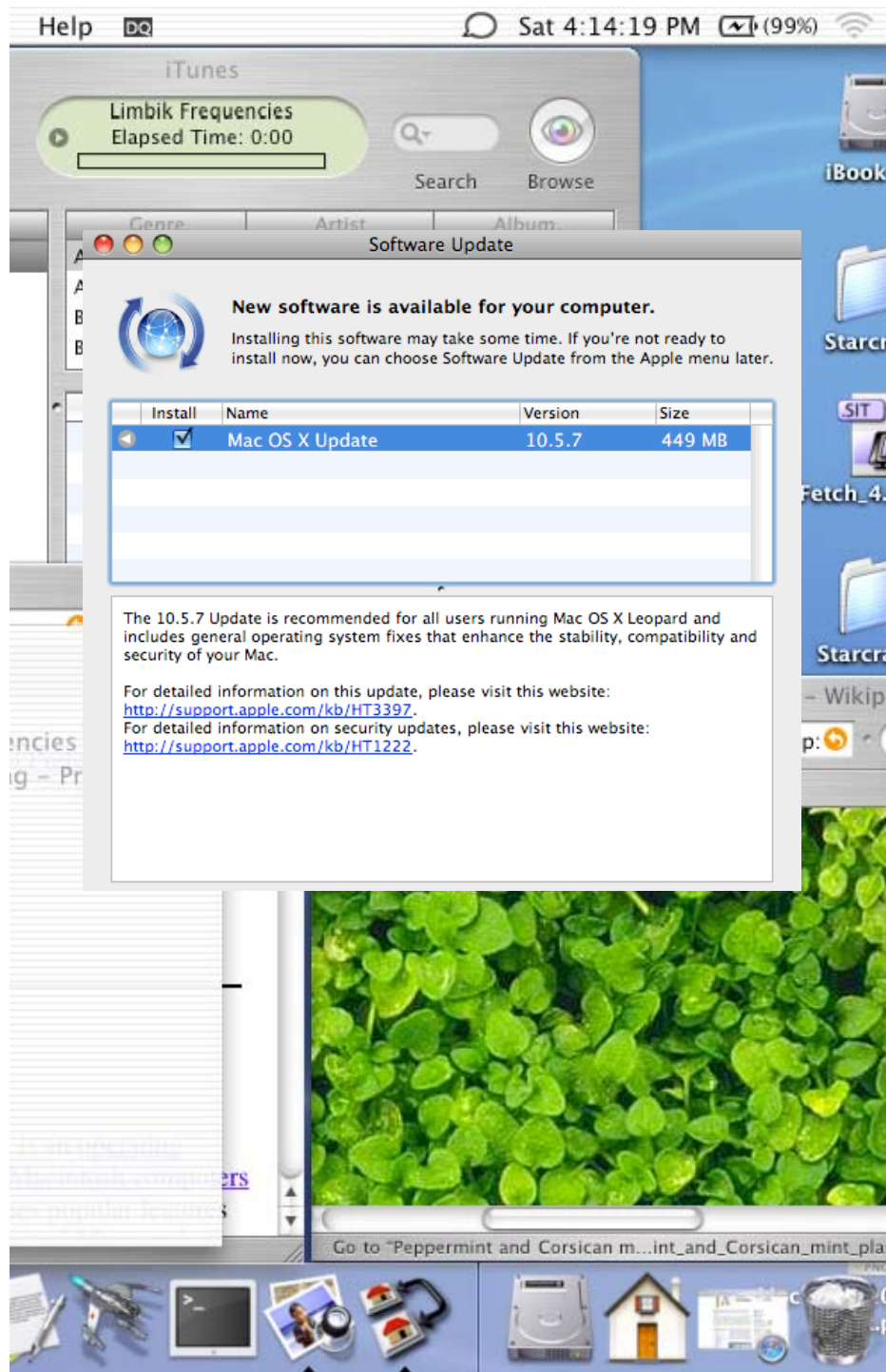
How can advanced logic be used to ensure that different software modules operate securely and correctly with each other?

Pis: L. Caires, F. Pfenning

FCTUNL/FCUL

Carnegie Mellon University

OutSystems

Vital Responder

How can cyber-physical systems and wearable technologies form a network to assist and reduce the risks of first responders in critical events?

PIs: J. P. Cunha, P. Narasimhan
IT / IEETA / FCUP / FEUP / UA
Carnegie Mellon University
Bio Devices

WESP

Can we ensure stronger web security and privacy by designing more intuitive user interfaces?

PIs: V. Kostakos, N. Sadeh UMa, IST/UTL

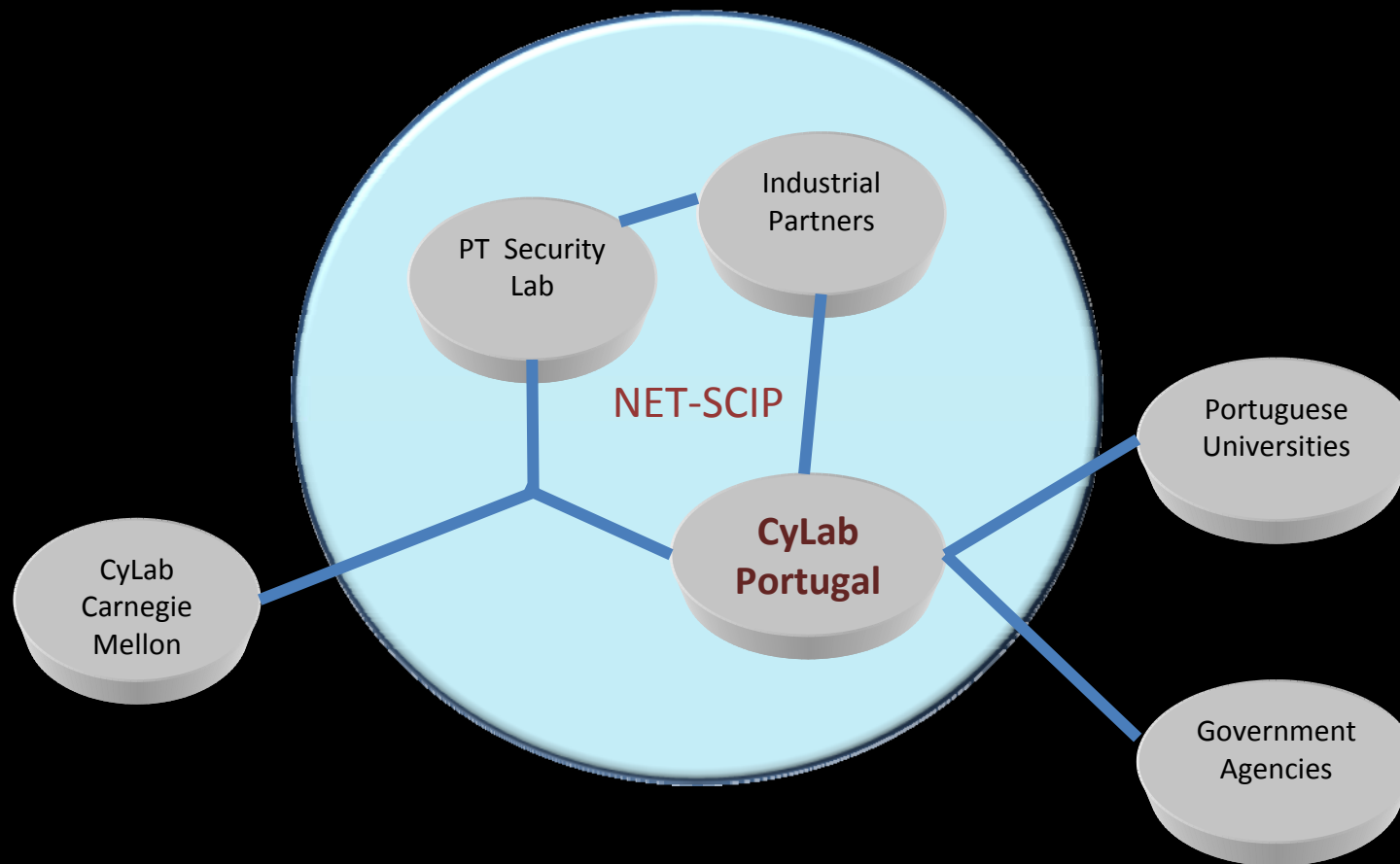Carnegie Mellon University Portugal Telecom / Sapo

Aeminium

Can we write programs for parallel processors in a simple and provably correct way?

Pls: P. Marques, J. Aldrich FCTUC, UMa

Carnegie Mellon University Novabase

NET-FIT – Innovation Network in Future Internet Technologies and Services

A thematic network in future internet technologies and services, capable of addressing challenging problems that are practically relevant and technically deep.

A common platform for universities, companies and government agencies to collaborate on the development of comparative advantages for Portugal.