

NGI-PT

Joao Pina
LIP Computing Team
jpina@lip.pt

NGI-PT

➤ Portuguese RC:

- U. Porto (~0.1% total SUM CPU)
- CFT-IST (~0.1% total SUM CPU)
- NCG-INGRID-PT (99.98% total SUM CPU)
 - Consortium between portuguese partners (LNEC, FCCN and LIP)
 - Services managed by LIP Computing team

➤ MoU between portugal and Spain with a creation of a joint coordination for grid computing (2005)

➤ NGI-PT in IBERGRID:

- Joint coordination
- represents ~10% of total CPU and ~5% of storage (Grid)
- NCG-INGRID-PT part of FedCloud

LIP Computing: Infrastructure I

- LIP operates the largest “general purpose” scientific computing infrastructure in the country:
 - Operates a centre (NCG) in partnership with FCCN (NREN) and LNEC, including computing and storage resources owned by LNEC
- Provides the baseline infrastructure for a national service for multidisciplinary research.
- Basic services:
 - HTC
 - HPC
 - Storage
 - Cloud (beta)
 - GPU (beta)

LIP Computing: Infrastructure II

- Total CPU cores ~2 000
 - Son of Grid Engine (SoGE) batch system
 - From which ~200 HPC, 268 LNEC, remaining are Grid and HTC
- Total ~1.4 PB storage
 - For research data running Lustre filesystem
 - Ceph for Object Storage ~100TB
 - NFS for users homes and software area ~40TB
- During 2016
 - ~9 million CPU hours (Grid)
 - 96% High Energy Physics (8.7M)
 - ~1.3 million CPU hours (HPC)
 - ~0,5 million CPU hours (Cloud) mostly services

LIP Computing e-Science activities

- Participation in several national and international Distributed Computing Infrastructures (DCI)
 - INCD - National Distributed Computing Infrastructure
 - IBERGRID - Iberian Grid Infrastructure
 - EGI - European Grid Infrastructure
 - WLCG - Worldwide LHC Computing Grid

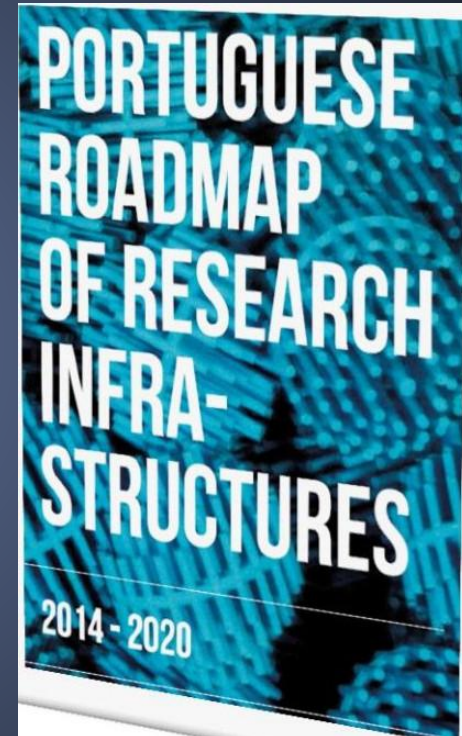
INCD

Infraestrutura Nacional de Computação Distribuída
National Distributed Computing Infrastructure



INCD: Introduction

- Aim: Provide computing services to the academic and scientific communities.
- Approved for integration in the Portuguese Science Foundation (FCT) infrastructures roadmap.
- Consortium partners LIP, FCCN and LNEC. LIP is the coordinator.
- Letters of support by U.Aveiro, U.Porto and U.Minho.
- Aligned with the european e-infrastructure roadmap

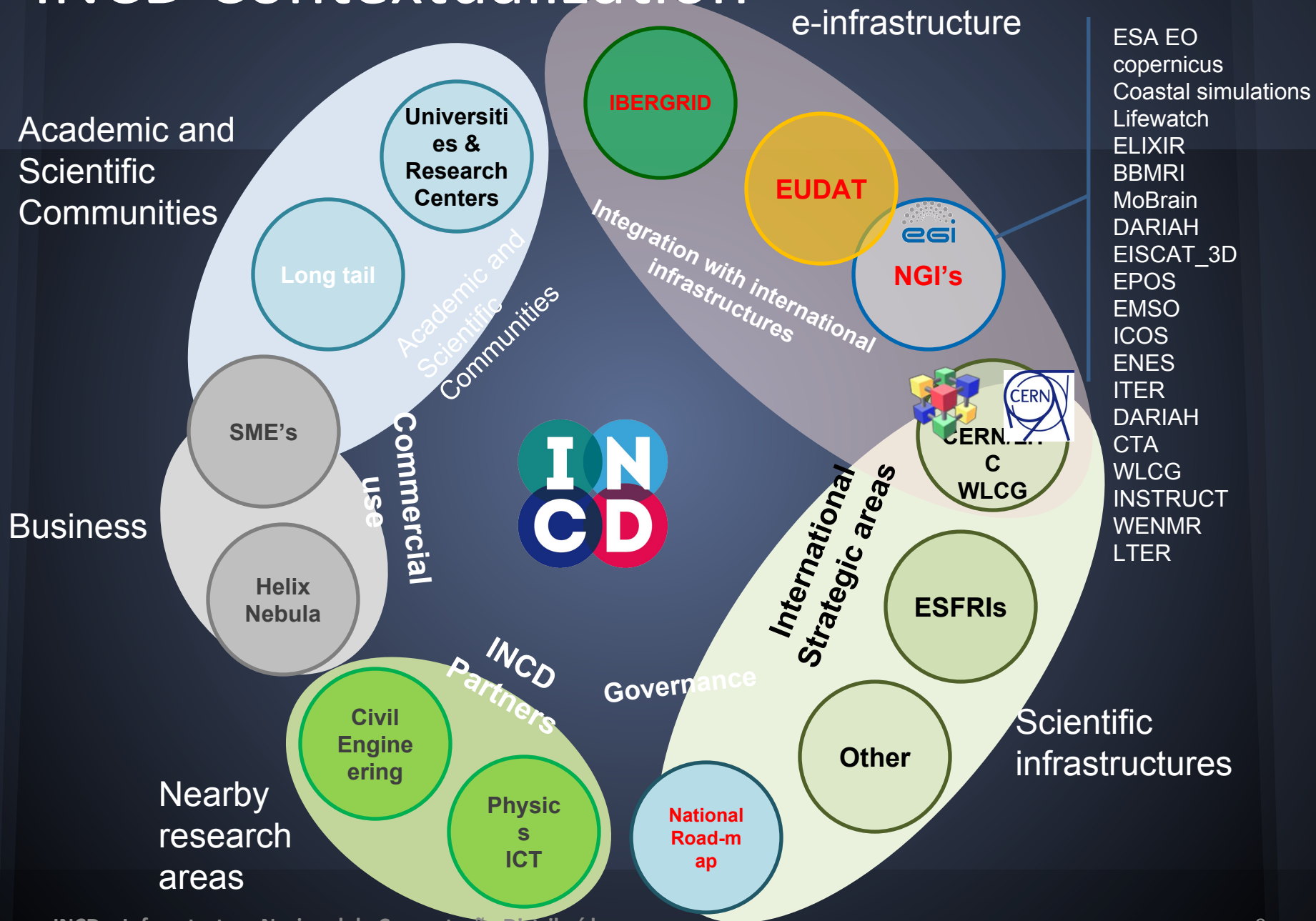


INCD timeline

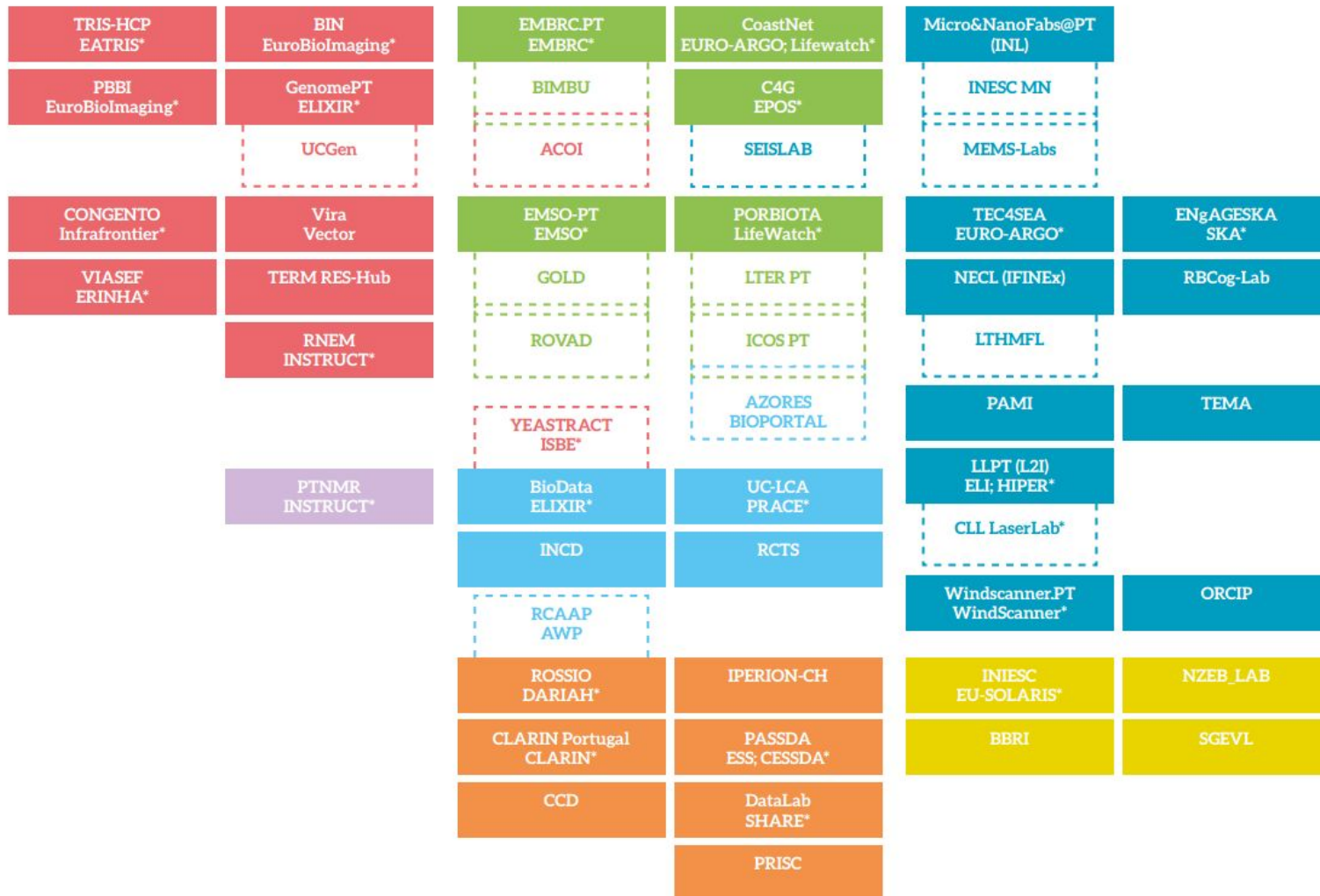
- Evolution from Grid European Projects
- MoU with WLCG: building of a datacenter
- Long process:
 - 2013 open calls for e-infrastructures
 - 2014 aproval
 - 2017 project funding approved



INCD Contextualization



National RoadMap



INCD collaborations in RoadMap

- Consortiums are still at a very early stage foreseen informal meetings between some of them for closer collaboration
- Lifewatch
 - National level (GBIF portal)
 - INDIGO DATA-CLOUD
- EMSO:
 - EMSO-DEV (SLA trough EGI)
- ELIXIR
 - providing HPC and Cloud services to national users
- CLARIN:
 - Providing GPU resources
- EMBRC
- INSTRUCT
- EPOS
- Not in Roadmap:
 - WLCG
 - ESA
 - Coastal Simulations
 - Extreme Plasma Physics
 - Medical and Health Sciences

EGI Collaboration

- Small and dispersed community with a with range of computing skills and requirements:
 - Most of the new requirements are computing with almost no storage:
 - Clusters:
 - HPC, HTC (multicore) and GPU
 - Sparks
 - Tensor flow
 - Hadoop
 - Services:
 - R-Studio
 - Galaxy
- EGI can play an important role:
 - Easy integration of resources through orchestrators
 - Development of generic webportals to access EGI services
 - Simplified access policies integrated with national AAI services
 - dissemination and training

Links

- LIP : www.lip.pt
- IBERGRID : <http://ibergrid.lip.pt> <http://www.ibergrid.eu/>
- LIP-COMPUTING - <https://www.lip.pt/computing/>
- INCD : <http://www.lip.pt/incd/#home>
- Portuguese RoadMap:
http://www.fct.pt/apoios/equipamento/roteiro/2013/docs/Portuguese_Roadmap_of_Research_Infrastructures.pdf