

Centro de Supercomputación de Galicia

CESGA (1993-2018)

Advance Computing in Galicia
for a wide R&D&I community.

Portuguese – Spanish Workshop on
Research and Education Networks and
E-Science
Salamanca, May 7th 2018

Ignacio López
Deputy Director

ESTABLISHED IN 1993 IN SANTIAGO DE COMPOSTELA (SPAIN)



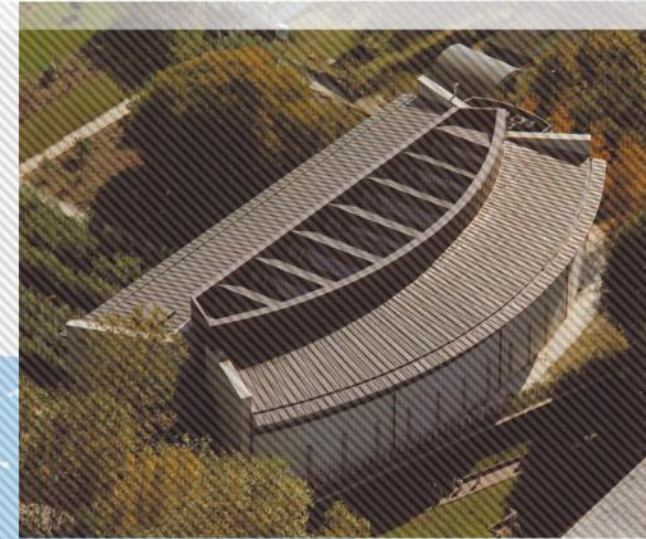
CESGA



Infraestructuras
Científicas y Técnicas
Singulares



SANTIAGO DE COMPOSTELA



MISSION

“Contribute to the advance in **Science and Technique** by means of research and the application of high performance computing and communications [...] for the **benefit of the Society**”

Non profit public foundation

70%



XUNTA
DE GALICIA

30%



CSIC

CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS



RECETGA Users

Universities



UNIVERSIDADE DA CORUÑA
Universidade de Vigo

CSIC




MBG
MISIÓN BIOLÓGICA DE GALICIA

IIM
Instituto de Investigaciones
Maritimas de Vigo

CSIC
CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS

IIAG

Xunta



E.S.O.
Ensinanza
Secundaria (*)

Public Bodies



CEIDA
CENTRO DE ESTUDIOS
UNIVERSITARIOS DE INVESTIGACIÓN
AMBIENTAL DE GALICIA

FEUGA
FUNDAÇÃO GALESIA - UNIVERSIDAD GALICIA

VIGO
CORUÑA
SANTIAGO

IEO



CENTRO
OCEANOGRÁFICO
DE VIGO

CENTRO
OCEANOGRÁFICO
DE CORUÑA

Health



Complexo Hospitalario
Universitario de
Santiago de Compostela

RTD Centres



CTC
centro tecnolóxico da came

CIS
CENTRO DE
INNOVACIÓN
E SERVIZOS
DE GALICIA

ANFACO

Intecmar
INSTITUTO TECNOLÓXICO
PARA O DESENVOLVIMENTO
E O USO DA INVENCIÓN DE GALICIA

tecnopole

Cetmar

Other

ICTS
Projects
Agreements

(*) RECETGA users
(no infrastructure
users)

CESGA Services



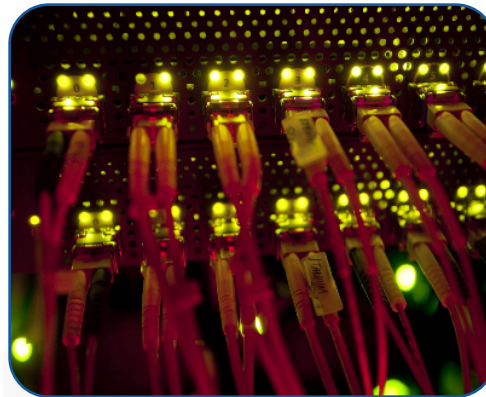
HIGH PERFORMANCE
COMPUTING



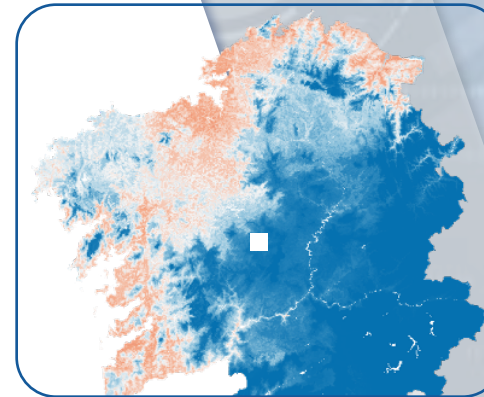
STORAGE



APPLICATIONS



COMMUNICATIONS



GIS



ELEARNING

It became # 100 of the world in the TOP500 list

galicia



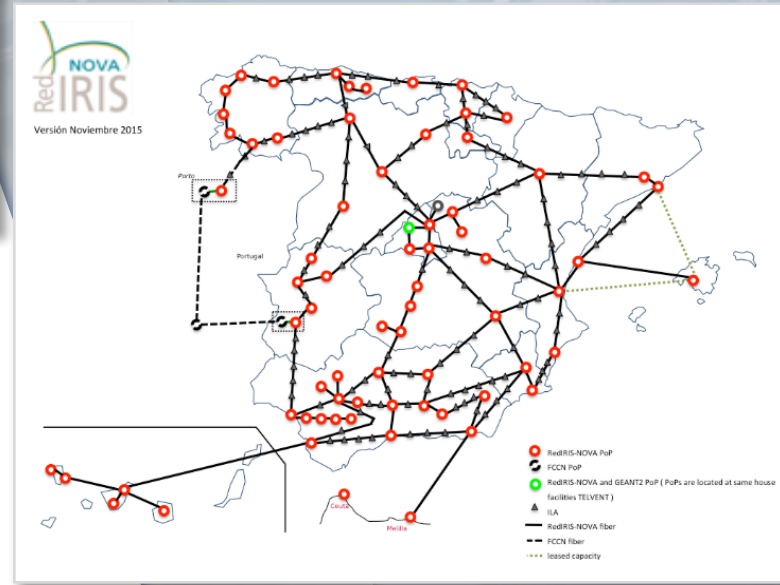
FINISTERRAE I



RedIRIS-RECETGA Dark fibre deployment



RECETGA.



SERVICES portfolio

RECETGA/RedIRIS

- **Connectivity**
 - Lambdas
 - Routing IPv4/IPv6
 - VPNs
 - Multicast
- **Monitoring**
- **PERT**
- **CERT**

RECETGA/RedIRIS

- **Mobility**
 - Eduroam
- **Email**
 - Quality: Lavadora
 - Lists, email suites
- **Digital id/Federation**
- **Data transfer**
 - Filesender
 - Aspera
 - GridFTP

CESGA

- **Specialized**
 - Computing
 - Storage
 - Cloud
 - BigData
 - Scientific Applications
- **Generic**
 - Hosting/Housing
 - Videoconference
 - LMS
 - SSL VPN
- **Support**
- **Projects**

(*) Servicios por afiliación a la comunidad académica y de investigación RedIRIS

CESGA Infrastructures



FINISTERRAE II
7700 Cores | 40TB RAM | 20GB/s I/O



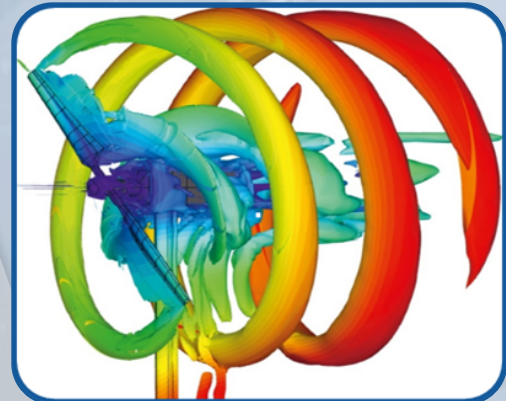
STORAGE
1PB NFS, 750TB Lustre, 820TB BDATA, 100 TB Gluster



CLOUD
1500 cores, 72 nodes

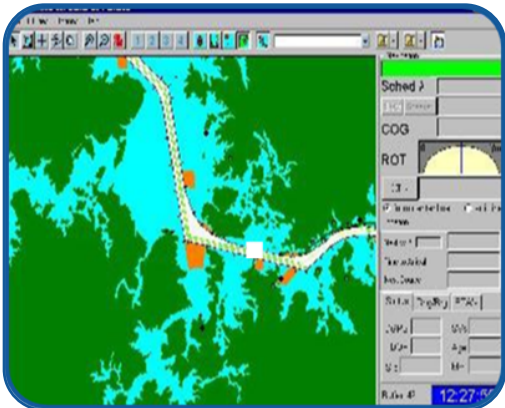


BIGDATA
1 PB (1000 TB) | 34GB/s IO



VISUALIZATION
80 cores

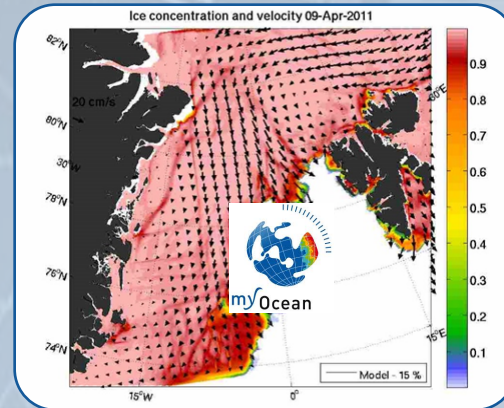
CESGA Use Cases



Large scale electromagnetsm simulation for improved radar systems



Numerical Simulation for Engineering (CTAG, Galician Automotive Technology Centre)

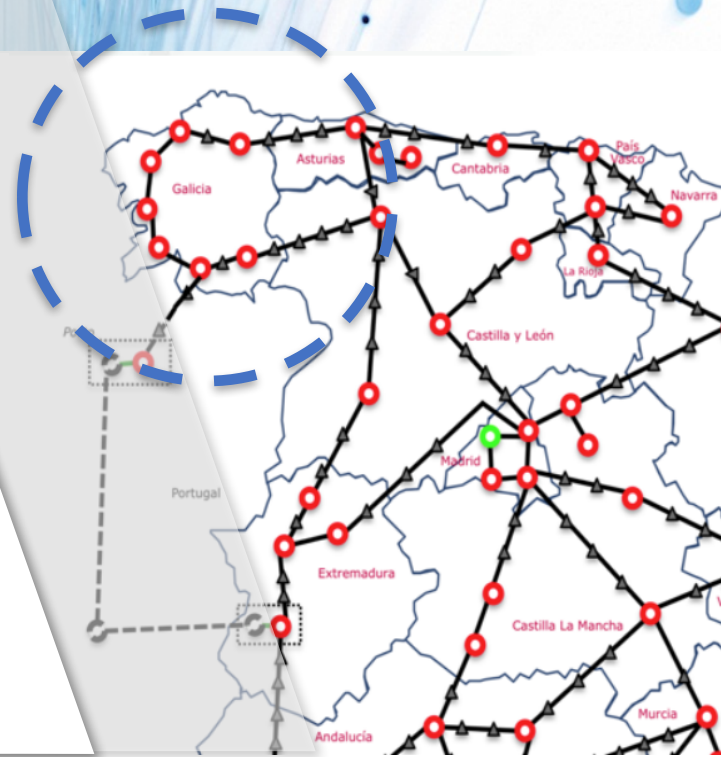


European IBI Area: Ocean Forecasting Service

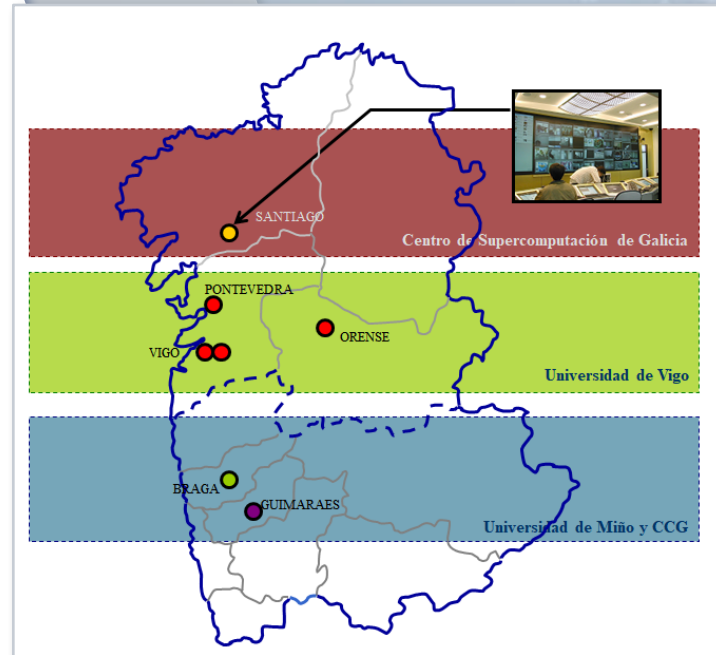


Projects

Spain – Portugal E-Science

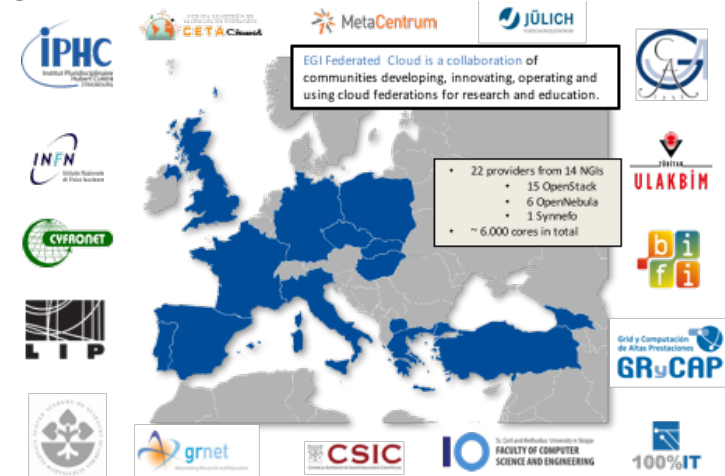


Trans Portugal Galicia NETWORK (TorgaNET)



Grid/Cloud european projects

- EOSC-Hub – 2018-2020: Fedcloud, Accounting, software V&V
- PRACE-5IP, PRACE-4IP: 2015 – 2019 – Operations, Tier-1 access
- EGI-Engage: 2015-2017: Fedcloud, Accounting , software V&V
- EGI-Inspire: 2010-2014: Grid, cloud, accounting
- EGEE-I,II,III: 2004-2010: Grid & accounting
- EMI: 2010 – 2013: software development
- EELA-2: 2008 – 2010: grid & accounting
- Int.eu.grid: 2006 – 2008: grid & HPC
- Crossgrid: 2002 – 2005: grid & HPC



HPC/Cloud SME Oriented



<http://www.cloudpyme.eu>



Technological Centres



Quantum Mission

Positioning the Euroregion Galicia - North of Portugal in the development of quantum technologies, adapting them to local specificities and priorities, to achieve scientific and technical relevance in this field.



Universidade do Minho



Universidade de Vigo



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9




View of current Status of e-science in Spain

- Excellent RedIRIS Network
- Excellent HPC service through RES
- Excellent long term collaboration in Cloud (Grid)
- Very good Infrastructures, but no national data infrastructure yet (we are working on this)
- But we still have to make some effort to integrate everything better.

**Do the users move
their data fast?**



Opportunities of collaboration Spain/Portugal

- To continue good collaboration between RedIRIS and RCTS
 - To integrate MACC in RES
 - To build together a Data Infrastructure
 - Iberian OSC
 - Lifewatch ERIC
- 

THANK YOU

#WeAreHPC



"Una manera de hacer Europa"

