# The Spanish Science Industry

# Capabilities and Experience on Accelerators

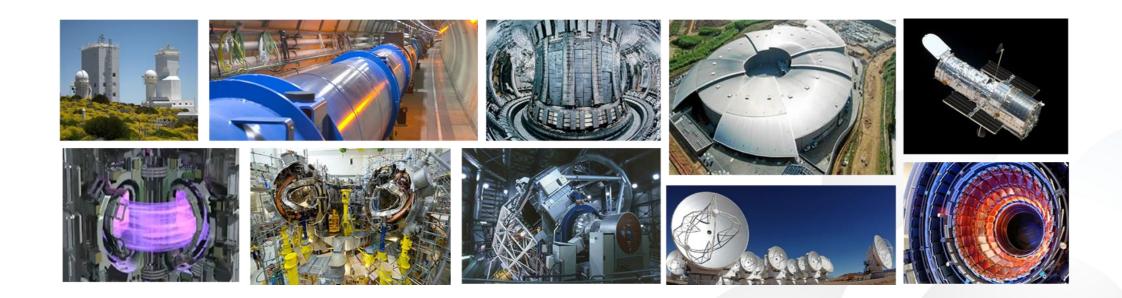
**Erik Fernández (INEUSTAR)** 

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30/10/2019



SCIENCE INDUSTRY is the economic sector which includes the companies devoted to the design, engineering, construction, updating and keeping of scientific research facilities, its equipment and other related instruments





- INEUSTAR was founded in 2010
- Private, non-profit, made-up of industrial companies related to Scientific Research Facilities as suppliers
- The first European Science Industry Association

#### Some Spanish Industries Involved In Science Industry Sector



























'ISSIAN

VLORIMEV

















































Cryovac







**AER**nnova





















gasNatural





















#### Other Spanish science industry stakeholders (science and technology)



















de Huelva









































UNIVERSIDAD DE CASTILLA-LA MANCHA





**IFN** 















CAMPUS OF INTERNATIONAL EXCELLENCE













#### Map of Spanish Singular Scientific facilities and Particle Physics research groups





#### Spanish Government contributes to many Scientific Facilities

















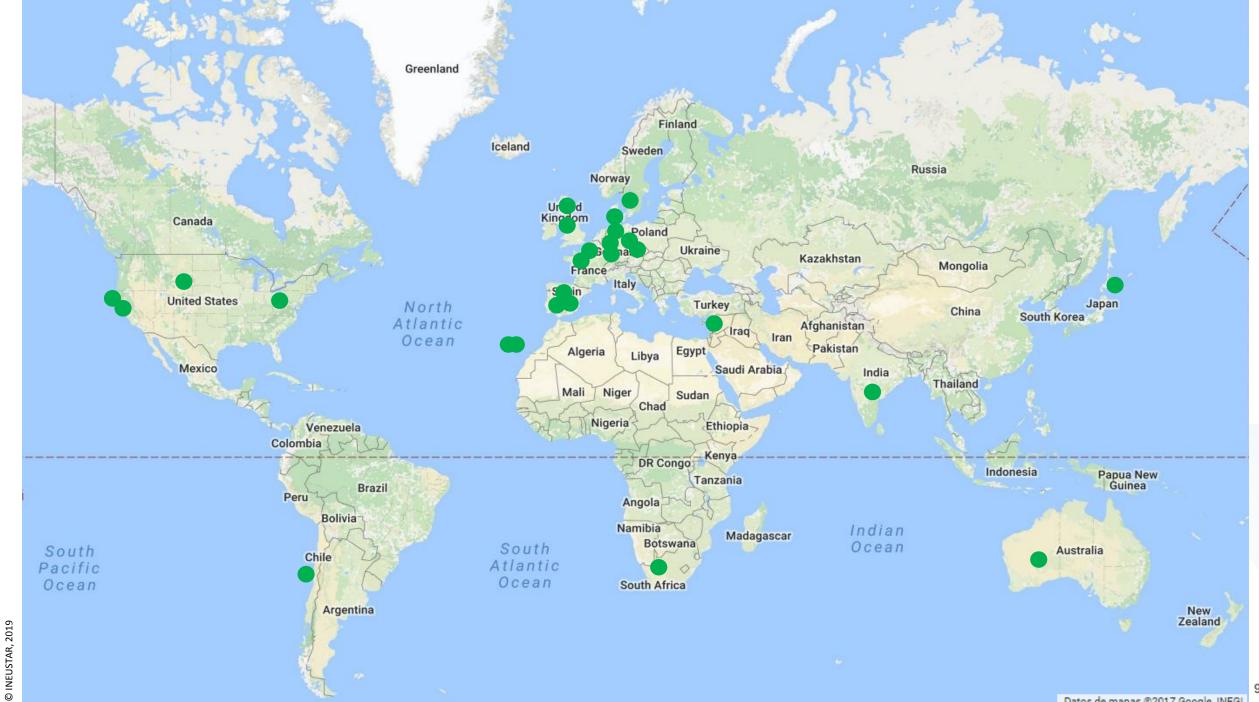




#### But Spanish companies work for many other scientific facilities along the world







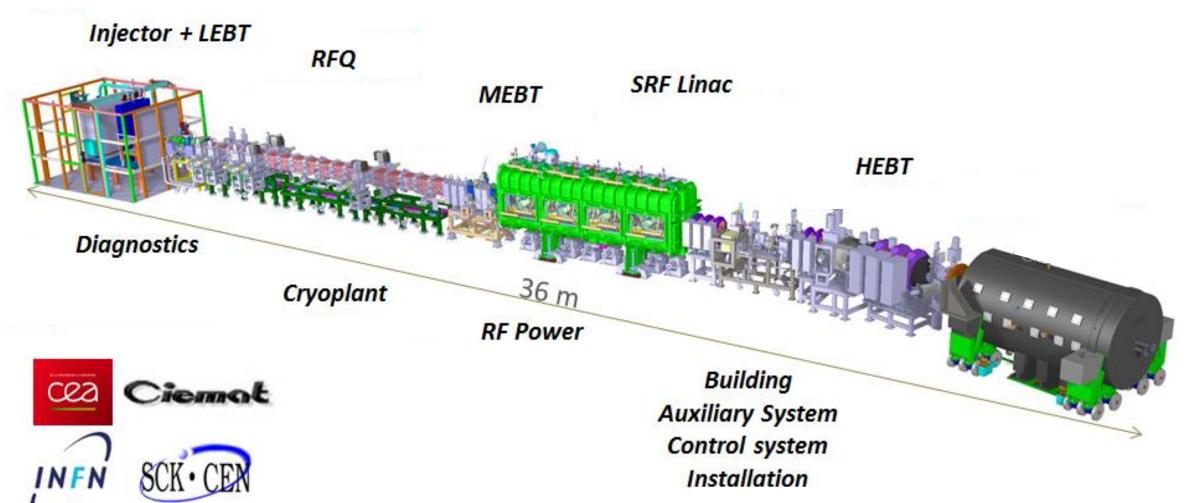
#### Resume of some Critical Technologies in CLIC





#### Linac under installation in Rokkasho: LIPAC for IFMIF EVEDA





#### Linac under installation in Rokkasho: LIPAC for IFMIF EVEDA



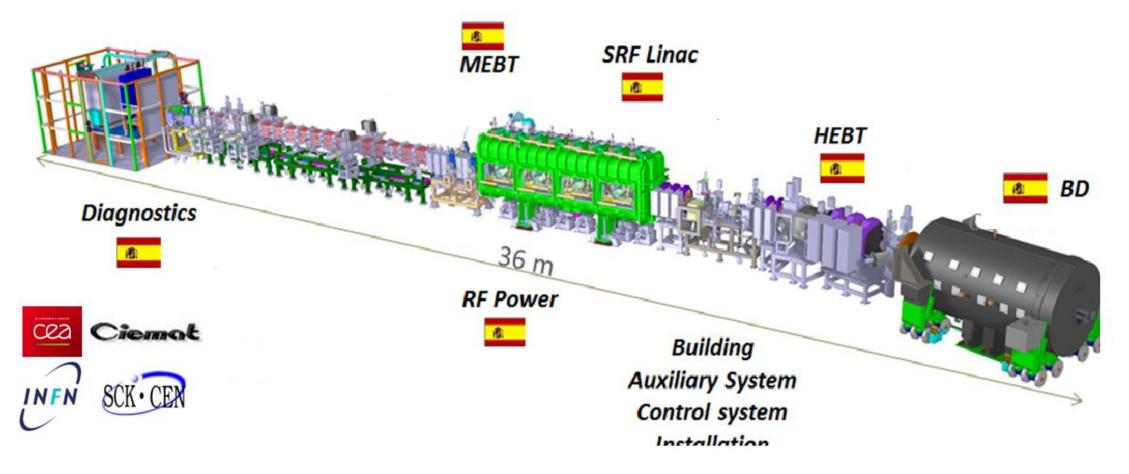


# LIPAc: Linear IFMIF Prototype Accelerator

Deuteron beam: I=125 mA P=1.125 MW

















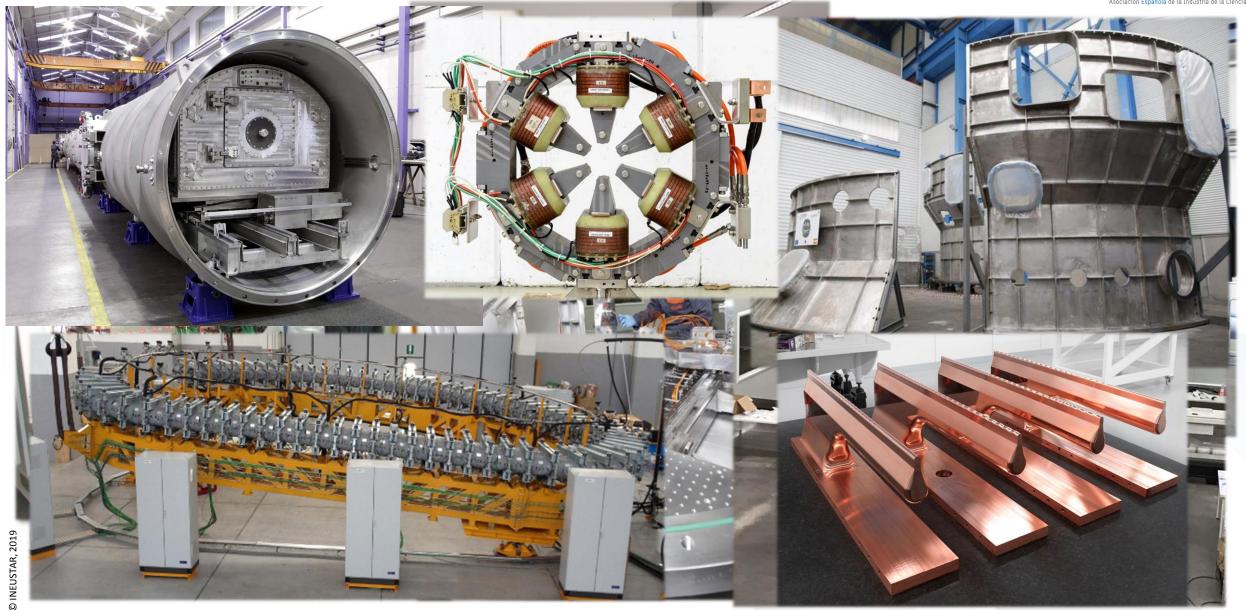












#### Medium-long term vision and COLLABORATION



Consultancy to government

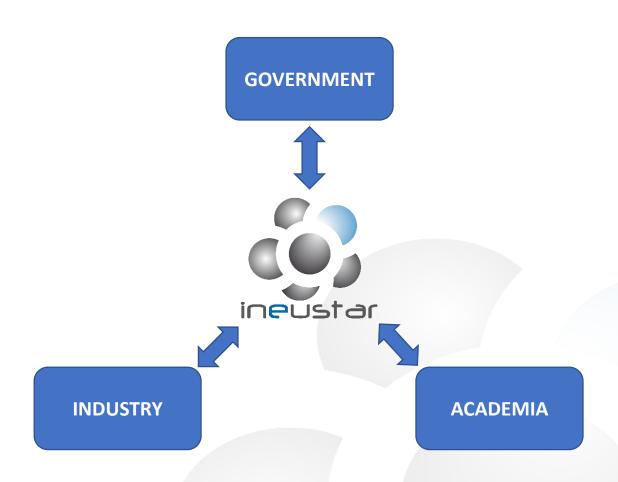
Relation between industry and academia

Relation between companies

Definition of common (industry-academia) interests

In kind contributions

**R&D Programs** 



#### Medium-long term vision and COLLABORATION



More efficiency

Less permanent costs

More economic impact

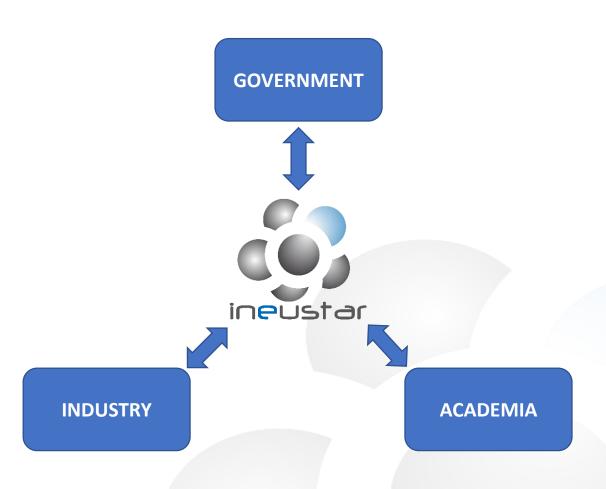
Fast technology transfer

More activity and jobs

Better social role projection

Boost of R&D promotion

New activities attraction



#### Recipe of success: Medium-long term vision and COLLABORATION



#### **EXAMPLES OF INEUSTAR PROGRAMS**

 Promotion of start-ups based on Science Facilities disruptive technologies.

**INEUSTAR-PIONEERS** 

http://ineustar.com/en/pioneers-main











## **EXAMPLES OF INEUSTAR PROGRAMS**





#### **CONCLUSIONS**



- It is time to turn prototypes into real colliders
- Industrialization is a key challenge in this moment
- Companies developing prototypes are key in the industrialization, but it is time to open to new companies
- Spanish Industry is a mature well referenced Industry and with collaboration culture ready to deal with industrialization challenges
- They exist many tools for support international collaborations (specific for Spain-Japan technological Collaboration: JSIP)

# THANK YOU FOR YOUR ATTENTION!

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#### 2. Bilateral Program JSIP **Basic Scheme** Cooperation Agreement (Dec.03,2008) NEDO **JSIP Evaluation of Eligibility Evaluation of Eligibility** Eligibility Label For For JSIP Eligibility For For JSIP Eligibility Financial Aid Approval Approval Financial Aid Joint Development Project Companies Joint Technology Development Agreement Research Institutes Companies Universities New technology, New technology-based product Global Market