



AGÊNCIA NACIONAL
DE INOVAÇÃO

CERN

OPORTUNIDADES INDUSTRIAIS PARA PORTUGAL

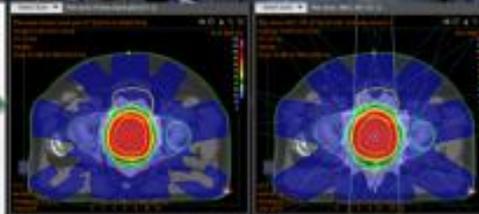
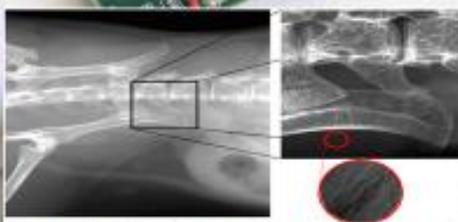
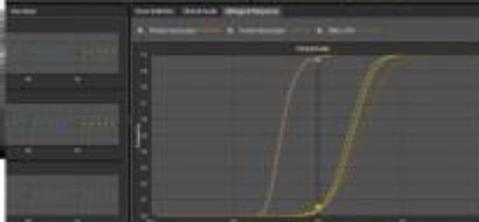
José Antão

Industrial Liaison Officer @CERN, ESO, ITER, ESRF, SKA

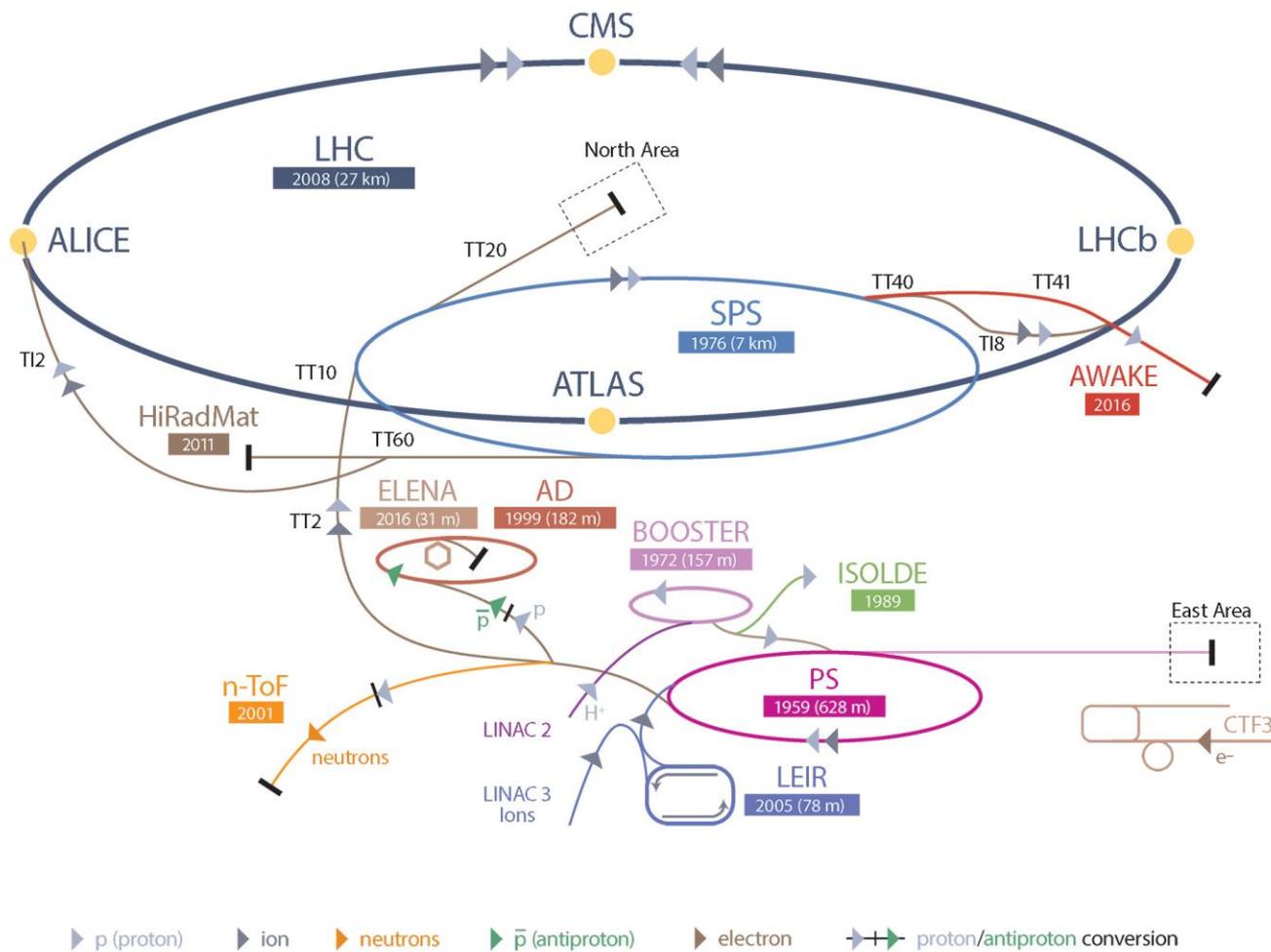
Delegado nacional Horizonte 2020 – Infraestruturas de Investigação

jose.antao@ani.pt

Lisboa
25/11/2019

<h2>Aceleradores</h2> 	<h2>Detectores</h2> 	<h2>Computadores</h2> 
		
		
<h2>Aplicações Médicas derivadas do CERN</h2> <p>http://kt.cern/medtech</p>		
<p>Aceleradores para terapia com prótons</p>	<p>Detectores para imagem e diagnóstico</p>	<p>Computadores para simulação de terapia</p>

CERN's Accelerator Complex

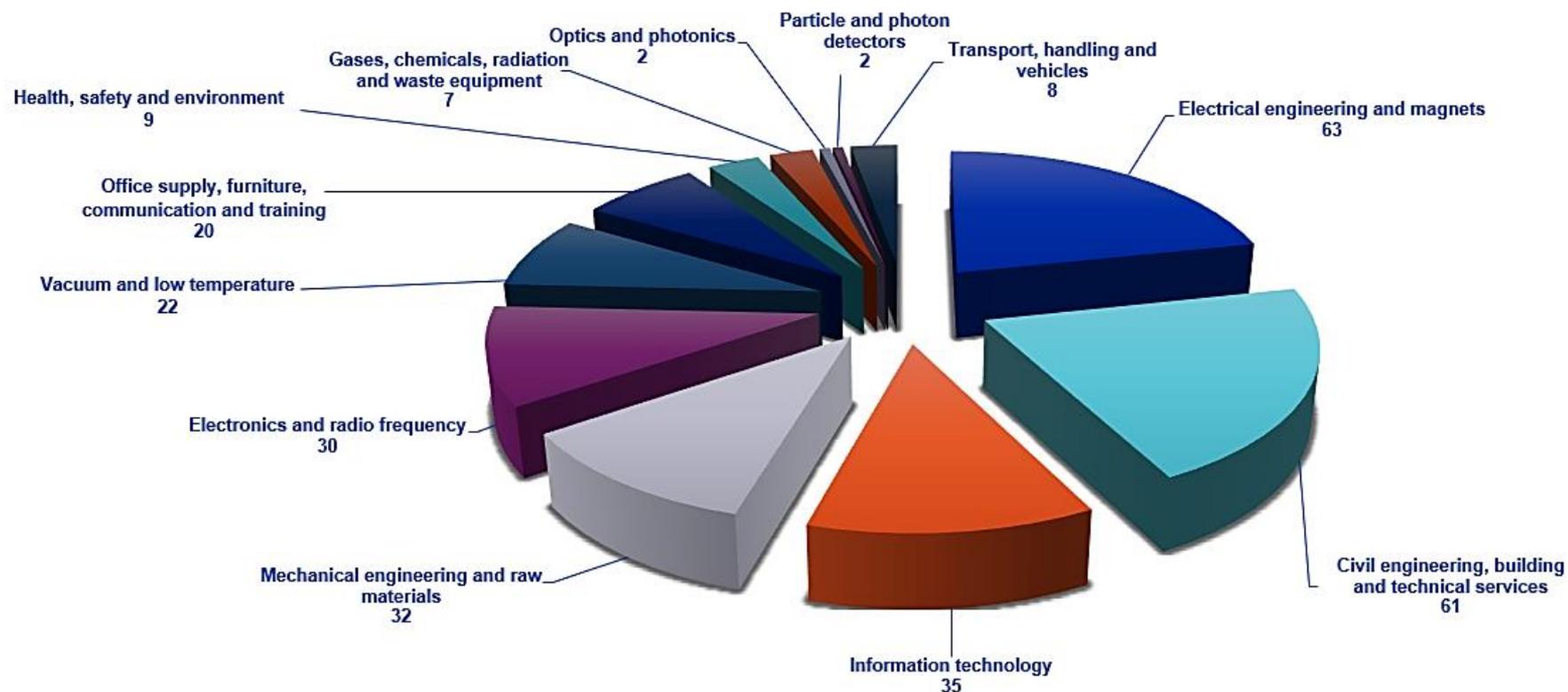


O QUE É O CERN?



Supplies (307MCHF spent in 2018 – CERN budget only)

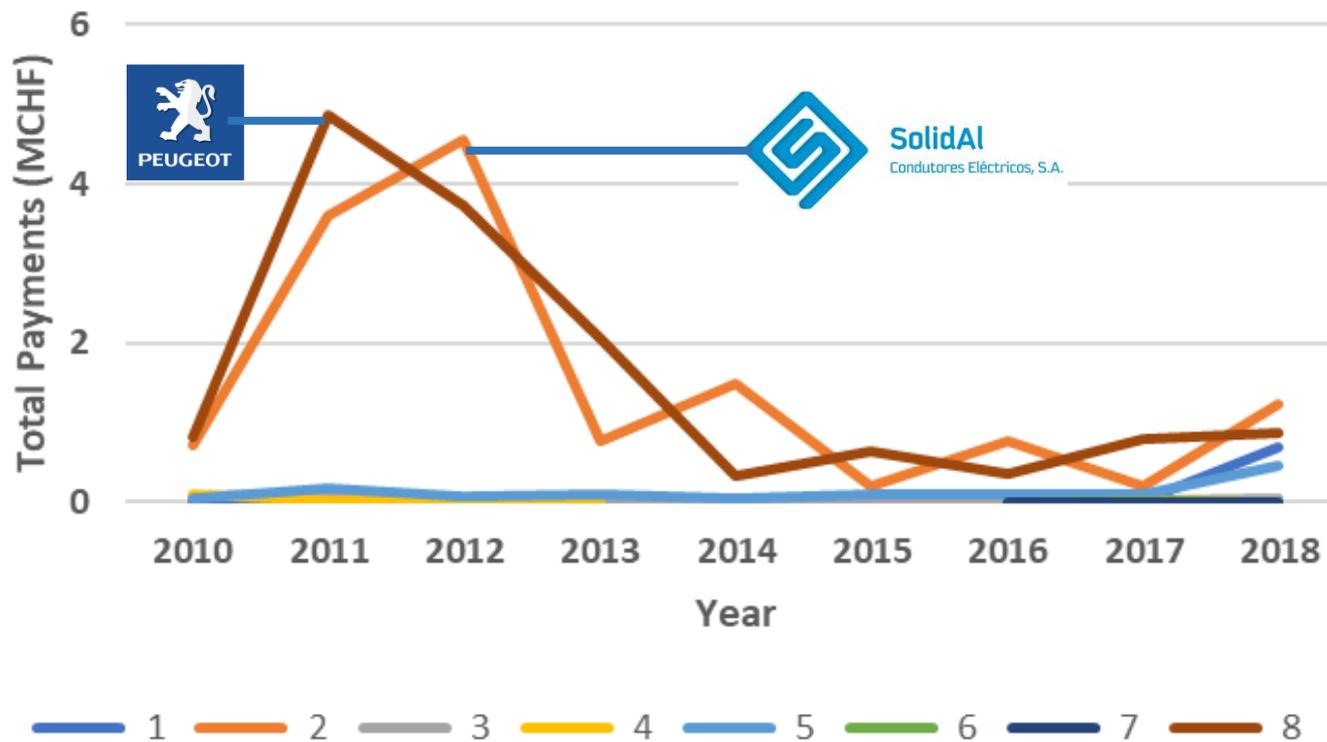
2018 Expenditure of all Member States by Procurement Code Family (MCHF)



O CERN É PARA MIM?

Sim.

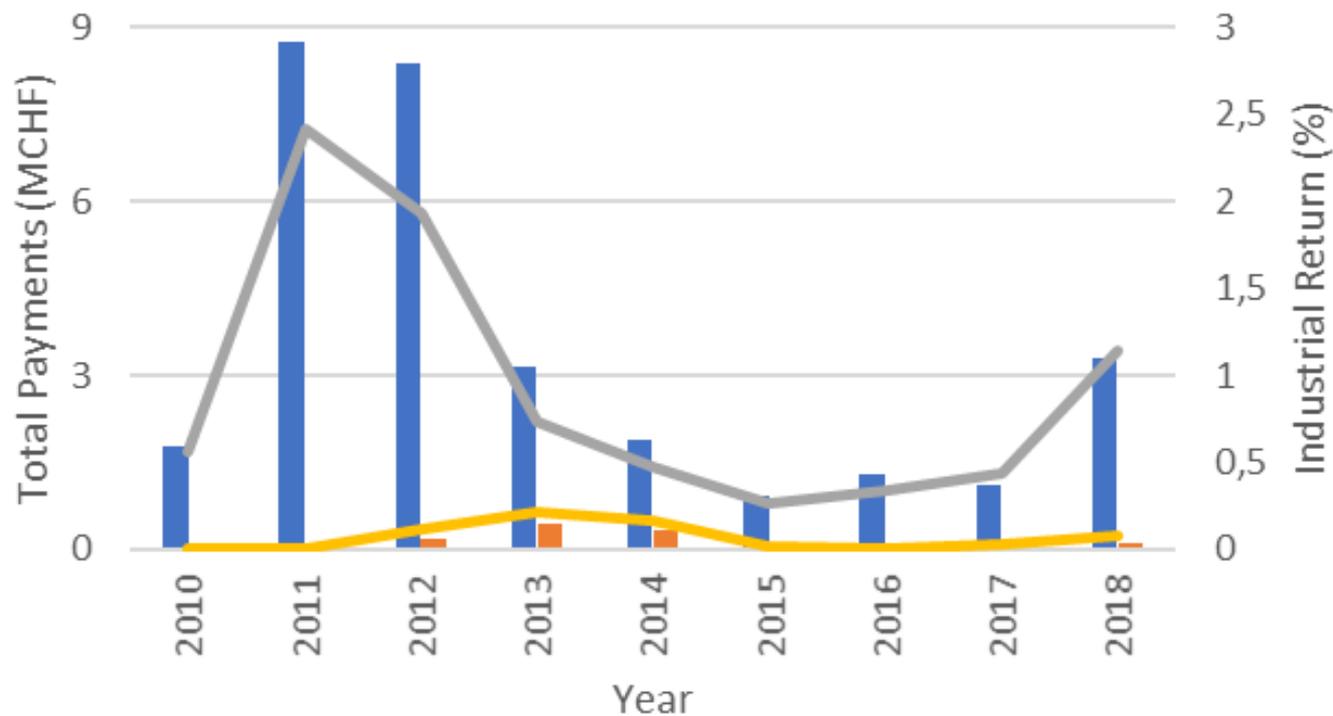
Supplies by procurement code family (PT)



- 01 Civil engineering, building and technical services
- 02 Electrical engineering and magnets
- 03 Electronics and radio frequency
- 04 Information technology

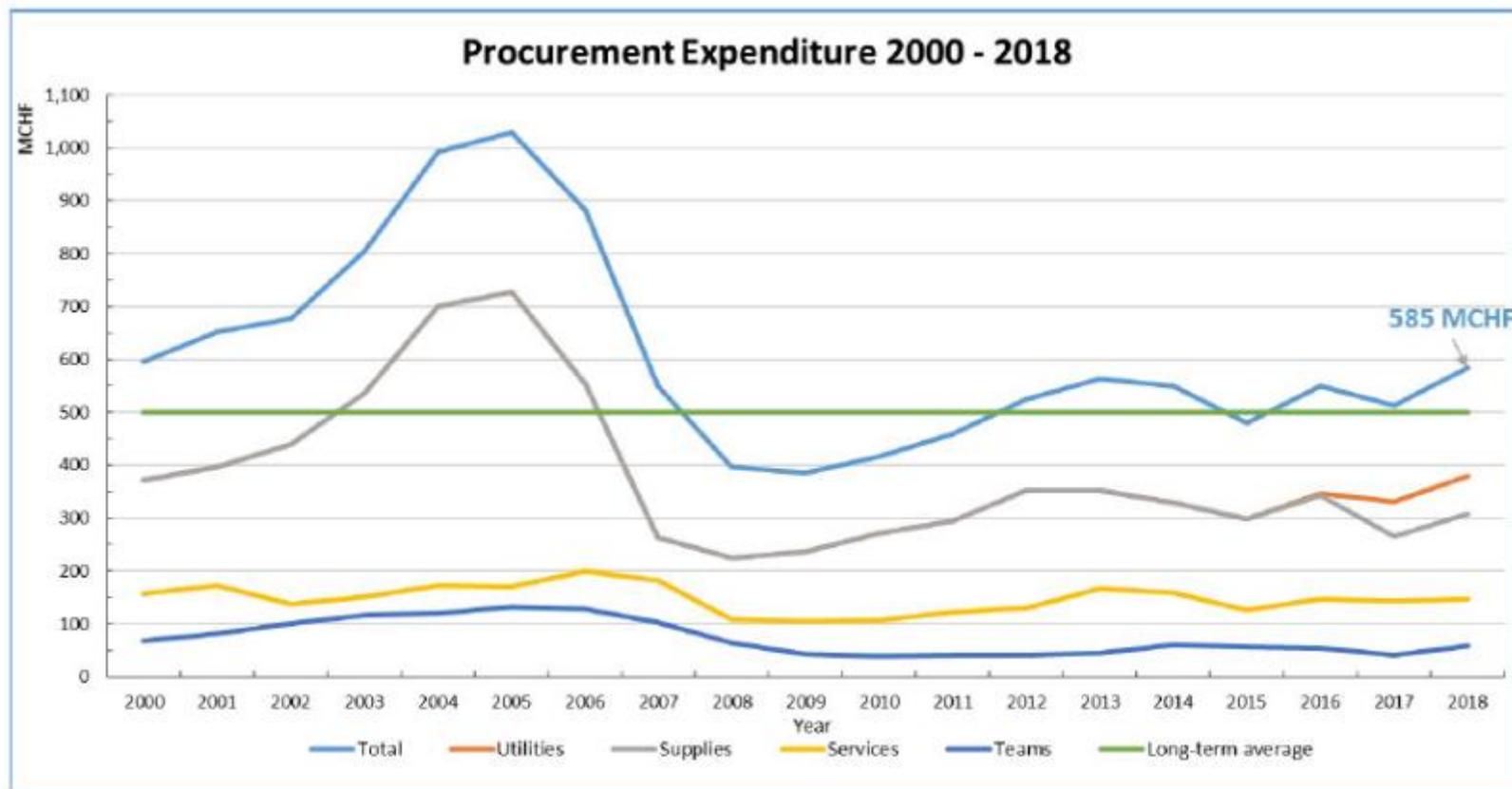
- 05 Mechanical engineering and raw materials
- 06 Vacuum and low temperature
- 07 Particle and photon detectors
- 08 Others

Industrial Return 2010-2018 (PT)

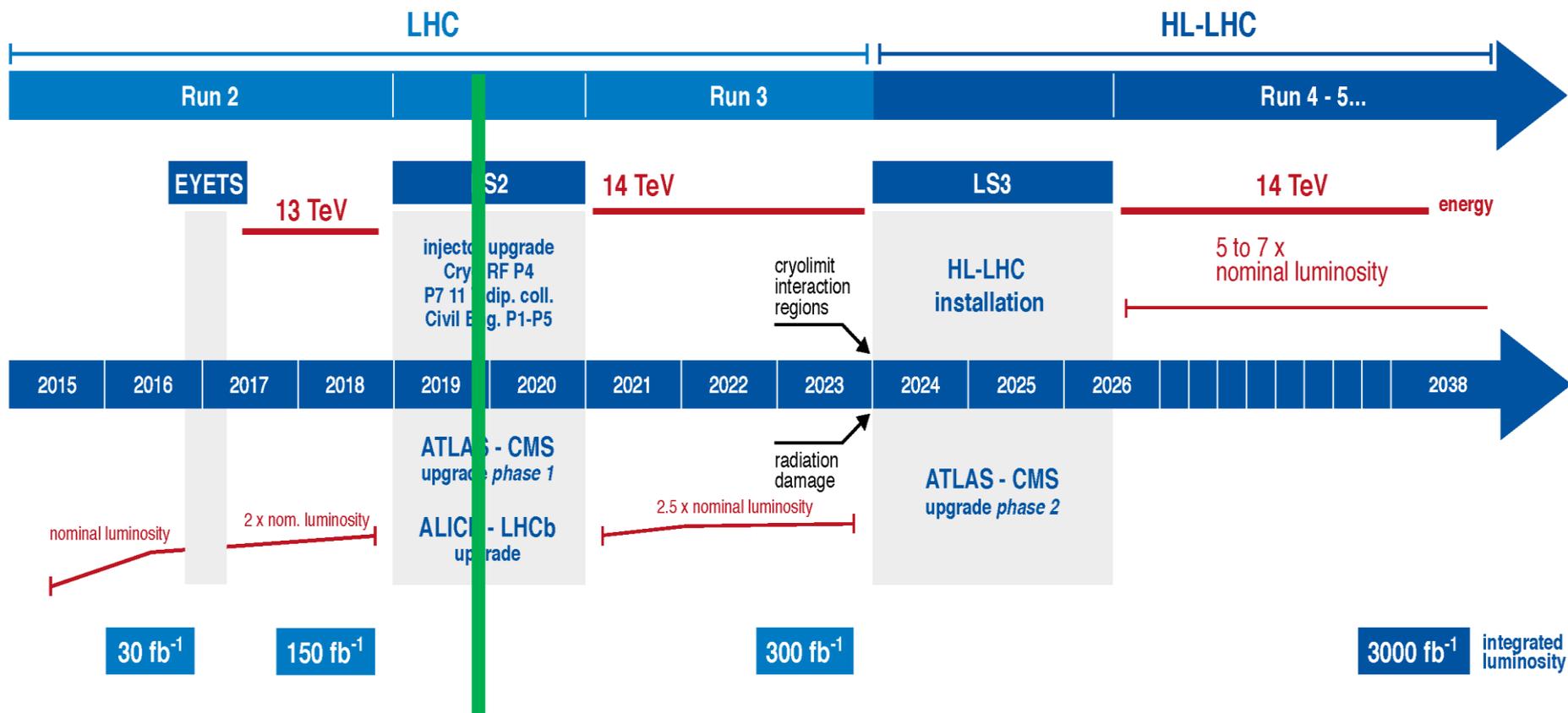


■ Total Payments Supplies ■ Total Payments Services
— Industrial Return Supplies — Industrial Return Services

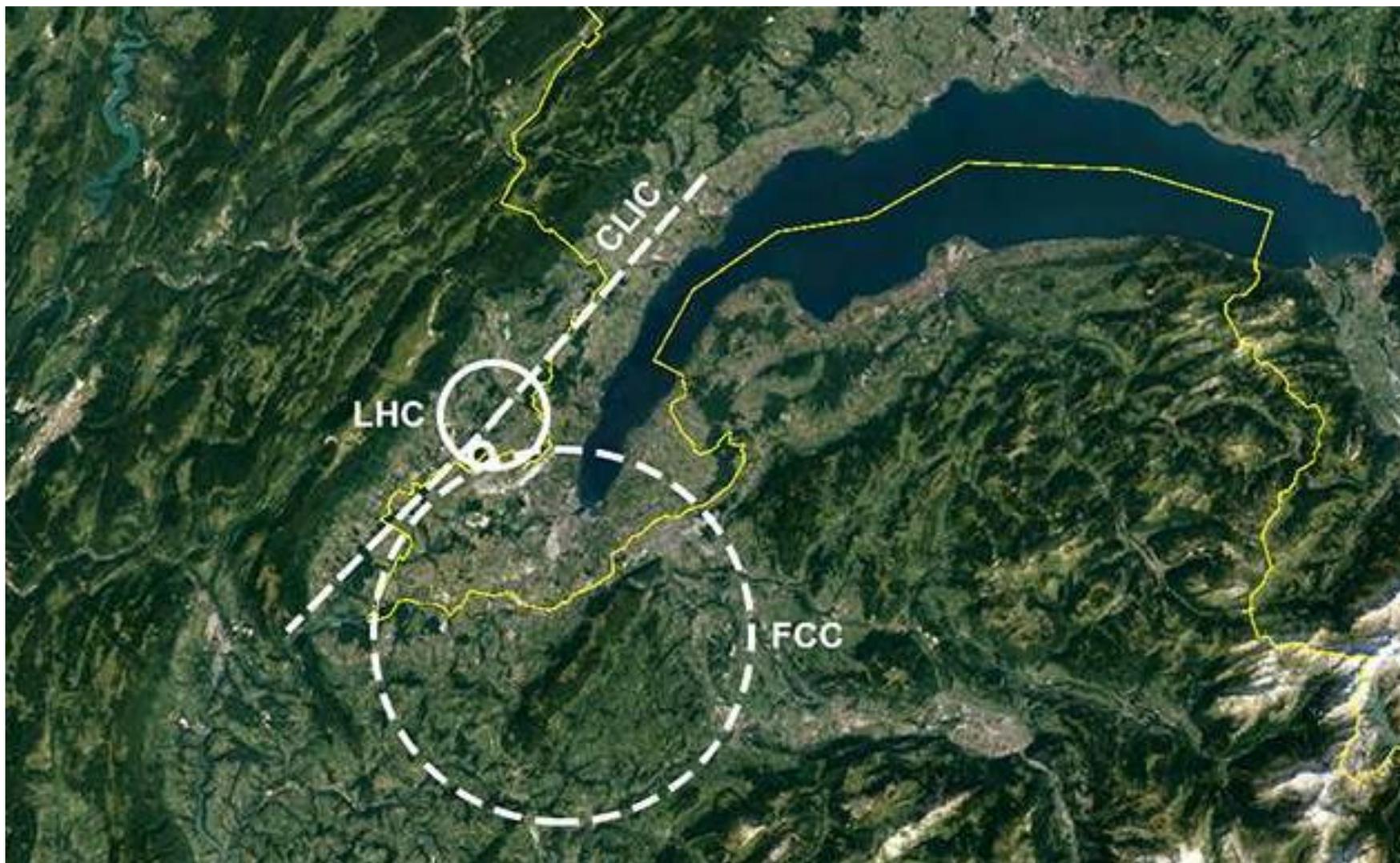
O CERN AINDA PRECISA DE COMPRAR MUITA COISA?



CERN ROADMAP (LHC, HL-LHC)



DEPOIS DO HL-LHC (FCC ou CLIC)



O CERN É PARA MIM?

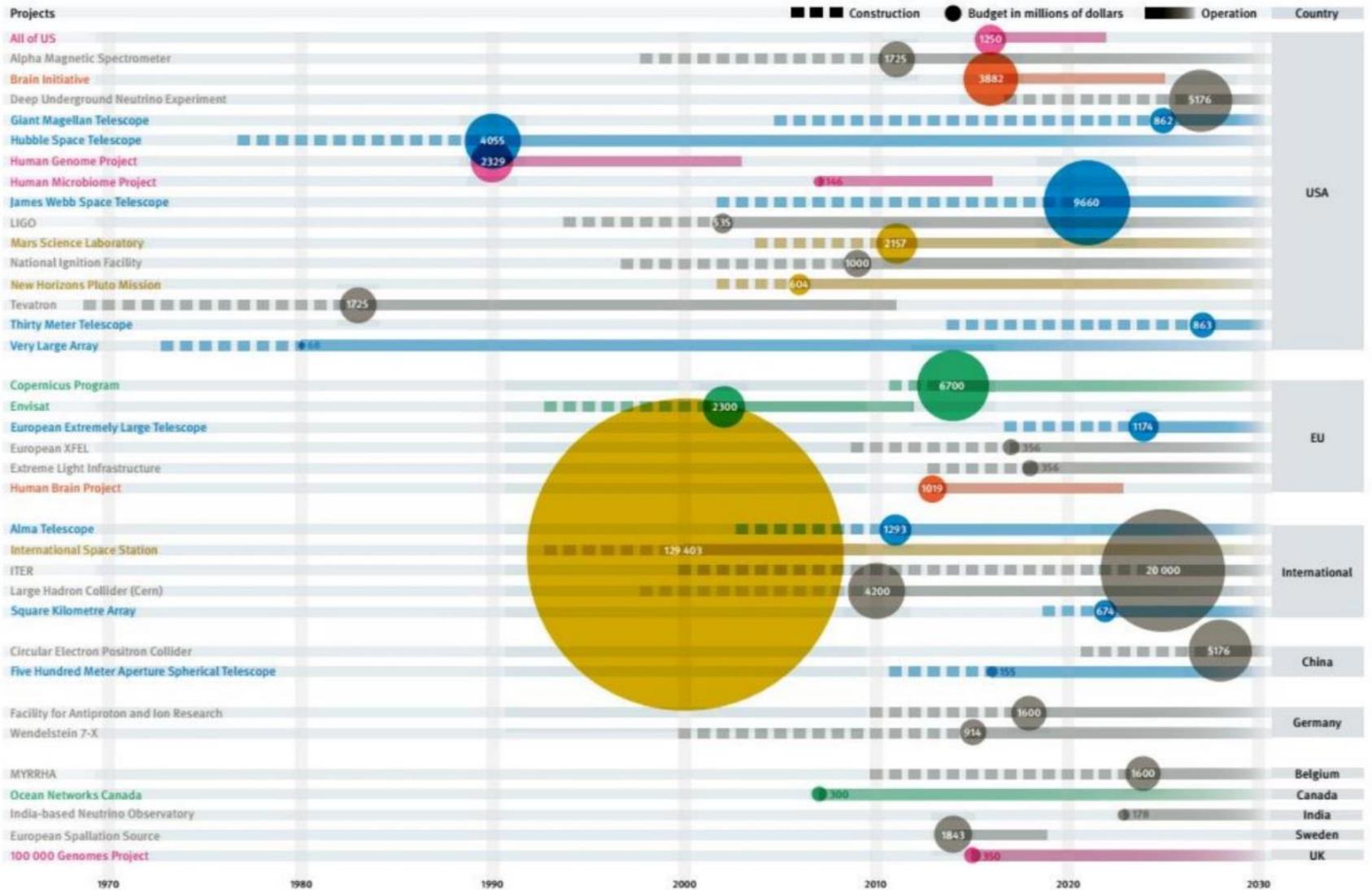
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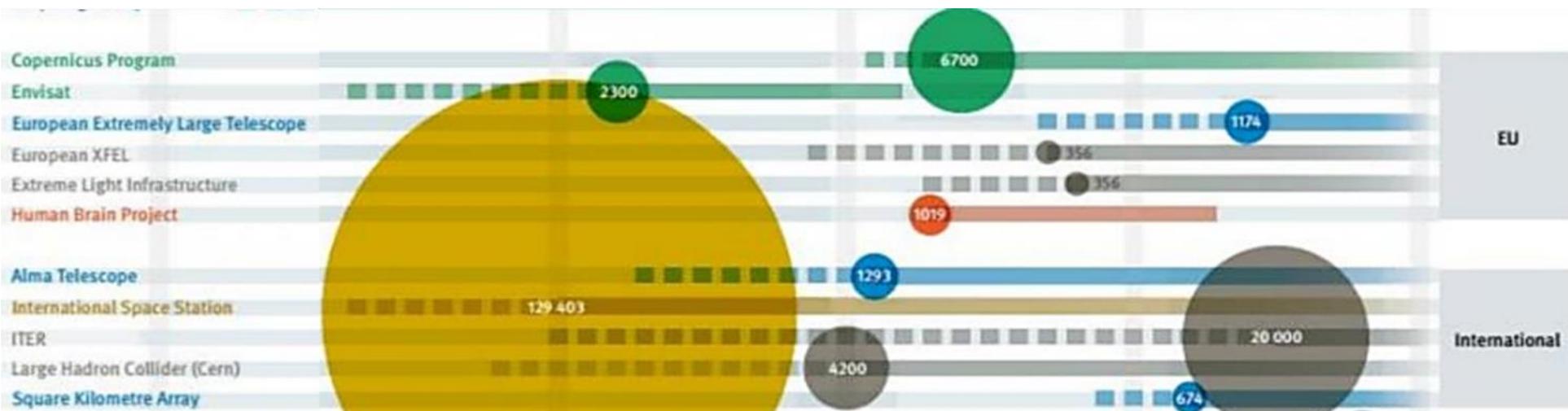
O CERN AINDA PRECISA DE COMPRAR MUITA COISA?

Sim.

MAS POSSO APLICAR A EXPERIÊNCIA DO CERN EM MAIS ALGUM LADO?

BIG SCIENCE, BIG BUSINESS





Estados-Membros

- Conselho-Geral
- Comité de Finanças
- ILO
- Outros comités

OBRA DO ITER (OUTUBRO 2019)



EXEMPLOS DE TECNOLOGIAS ENVOLVIDAS (ITER)



Civil Works



Superconducting Magnets



Large Vacuum Equipment



High Temperature Components



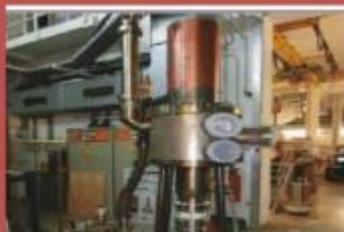
Robotic Remote Handling



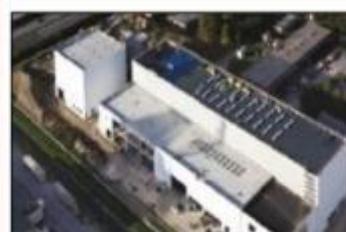
Cryogenics systems



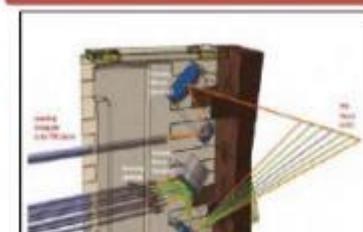
Materials and manufacturing



Power and Radio Frequency



Particle beams



Measurement Systems



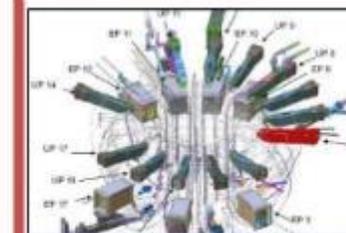
Tritium Technology



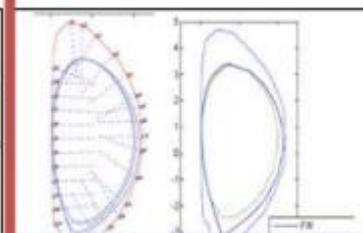
Large Mechanical Structures



Control and Data Systems



Diagnostics and Sensors

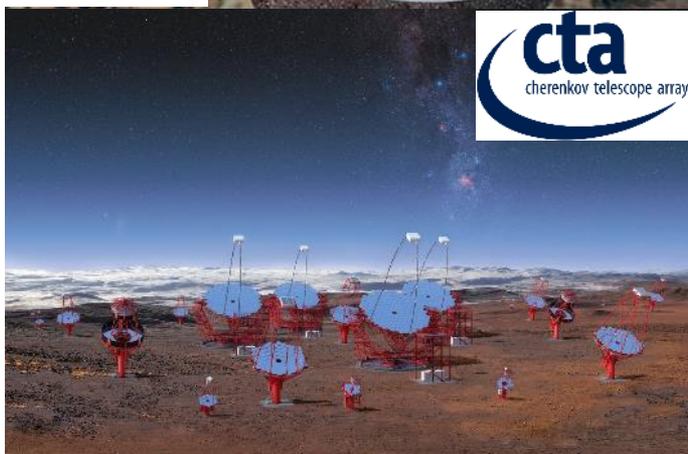
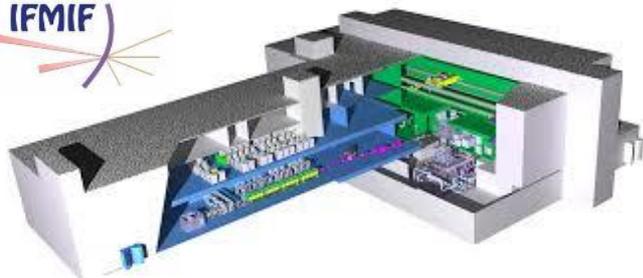


Plasma Engineering

ALGUMAS INFRAESTRUTURAS EM CONSTRUÇÃO/IMPLEMENTAÇÃO



ALGUMAS INFRAESTRUTURAS PLANEADAS



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MAS POSSO APLICAR A EXPERIÊNCIA DO CERN EM MAIS ALGUM LADO?

Sim

Big Science Business Forum 2020



Save
The
Date!

**Granada (Spain)
6-9 October 2020**

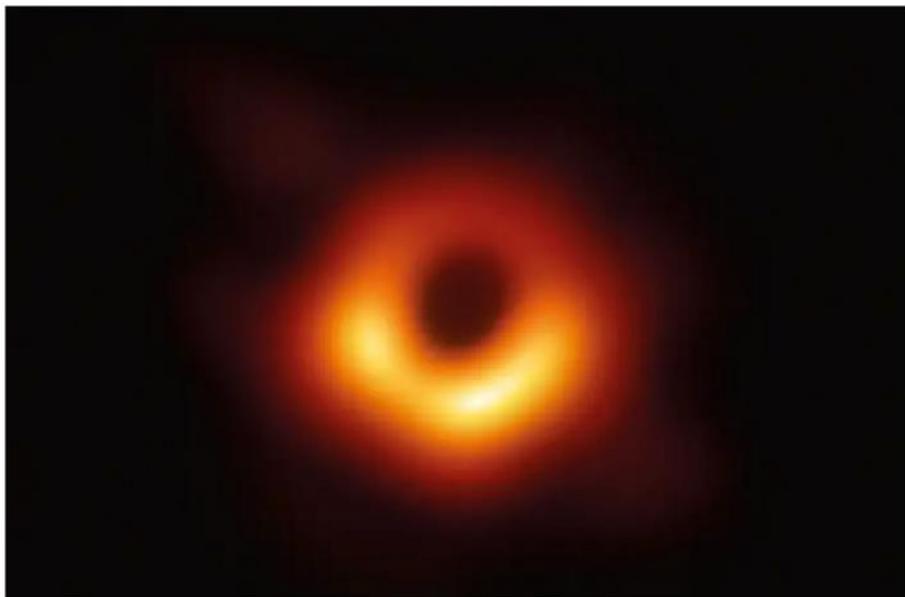


Black hole breakthrough: a lot done, much more to do

The first direct image of a black hole is another triumph for Einstein's general relativity - but to make further progress we must look for even better theories



SPACE | LEADER 16 April 2019

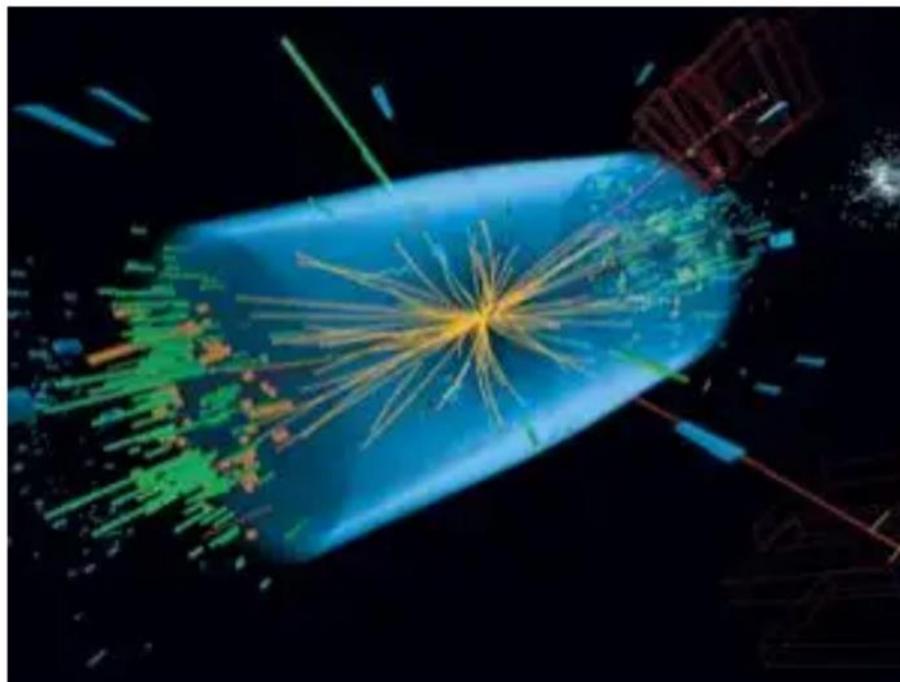


EHT Collaboration

Celebrations as Higgs boson is finally discovered



TECHNOLOGY 4 July 2012





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Obrigado!

