



EUROPEAN  
SPALLATION  
SOURCE



# Preparing for a bright future Update on project status of the ESS

Workshop on very cold and ultra-cold neutron  
sources at ESS

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2 February 2022

# What I would like to talk about today



- 1 My view of our scientific mission
- 2 Status of the ESS Project
- 3 Our focus and our engagement
- 4 A preparation for the the real challenge

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# My view of our scientific mission





# Societial impact

## A personal view



The overarching mission of science is time-invariant:

*Improve the existence of humans as individuals for the benefit of mankind. Defining our place in the universe is part of the equation.*

Over the last decades this endeavour has encountered enormous success.

This success leads to continuously increasing expectations, which we as scientists have to meet.



**La grandeur d'un métier est peut-être, avant tout, d'unir des hommes.**

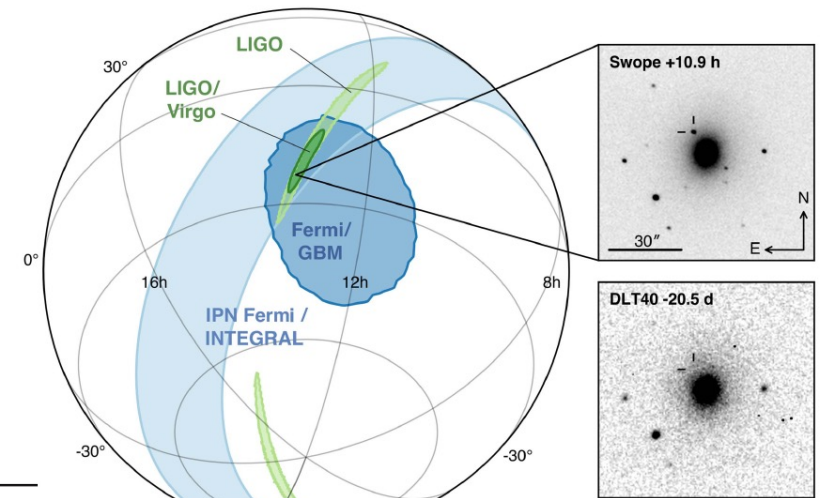
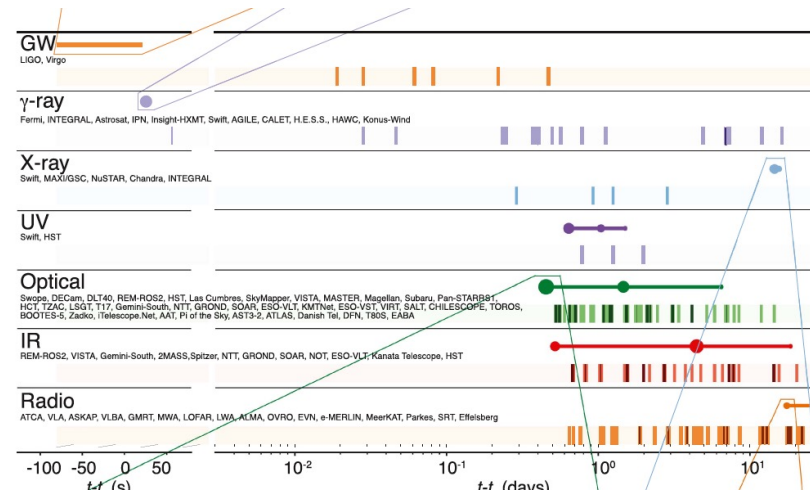
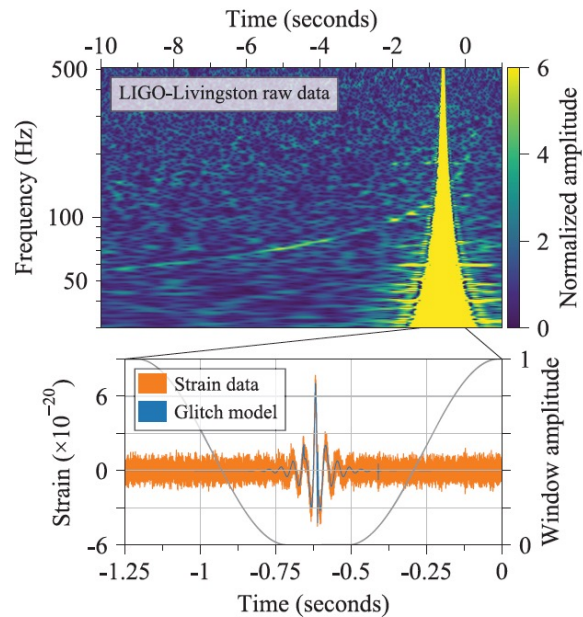
**(Antoine de Saint-Exupéry)**

**In this sense being a scientist is probably the best job in the world.**

# As scientists we do not accept the impossible as an excuse



On August 17, 2017 at 12:41:04 UTC the Advanced LIGO and Advanced Virgo gravitational-wave detectors made their first observation of a binary neutron star inspiral.



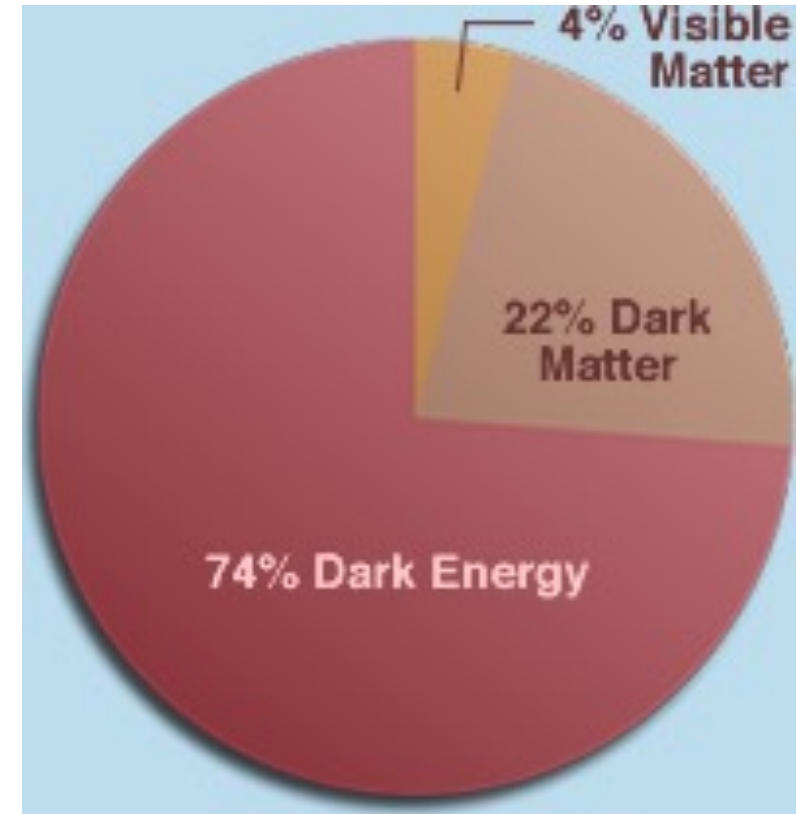
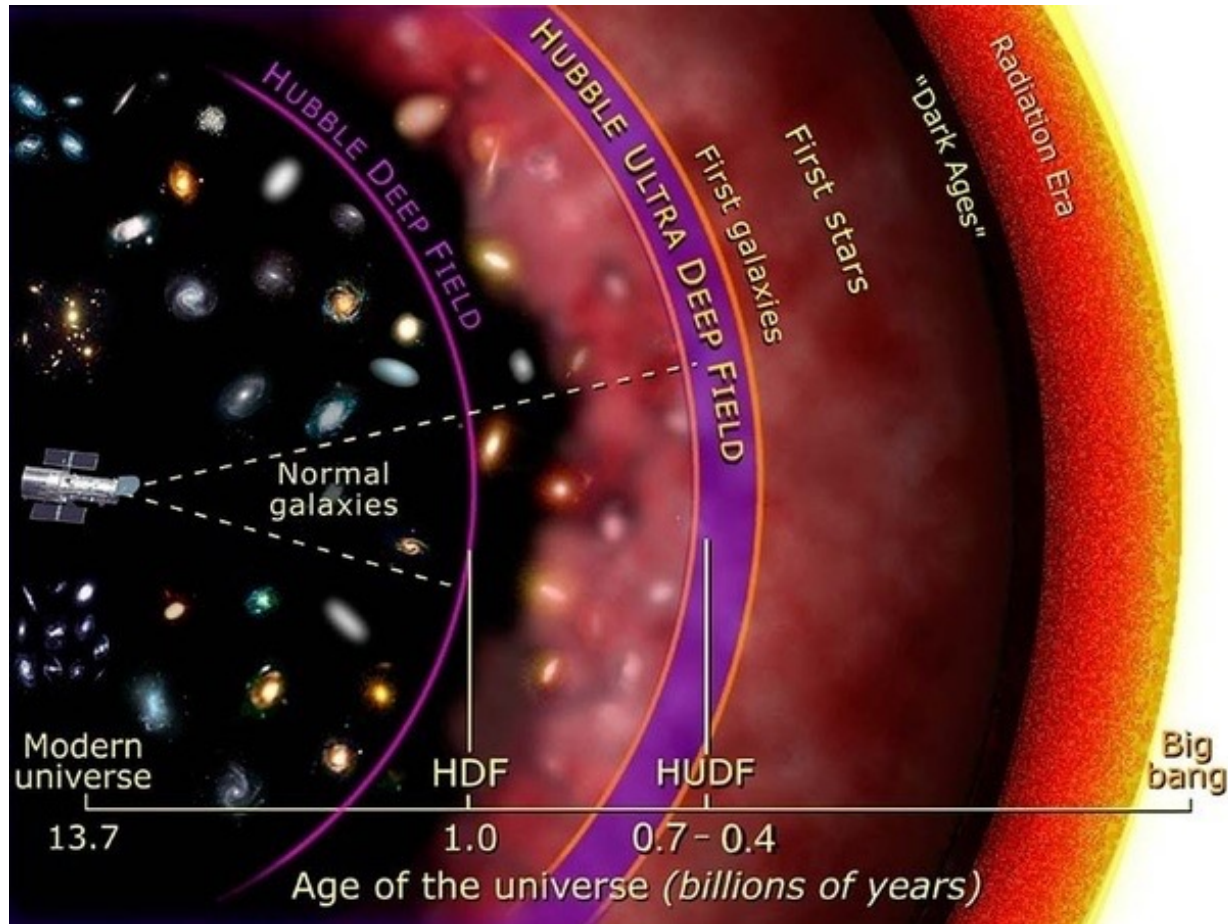
## GW170817



and add to the most fascinating story of all times.



**Doing so we discover new riddles.**

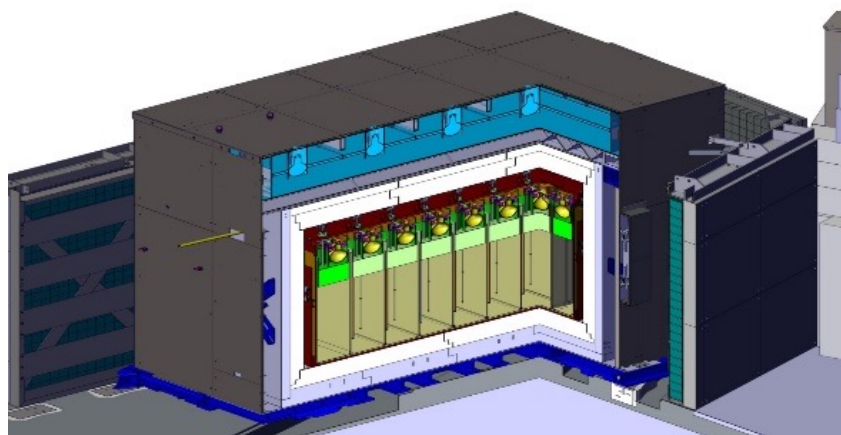
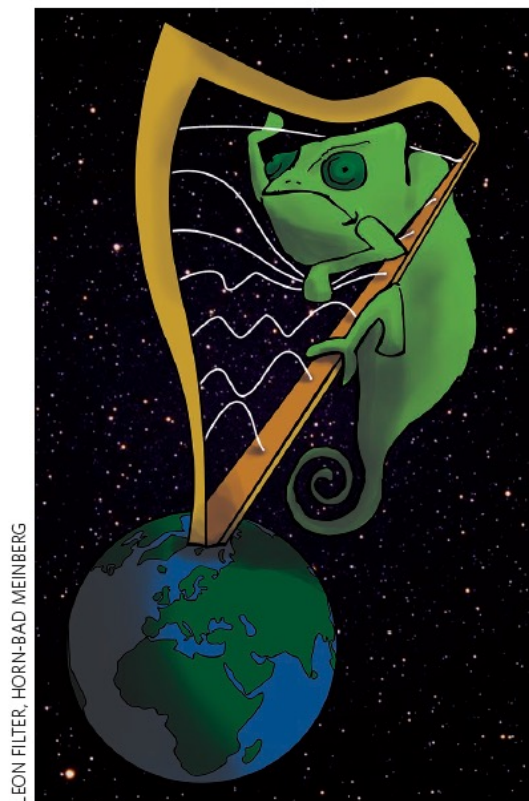


With precision neutrons take up the challenge of answering those riddles



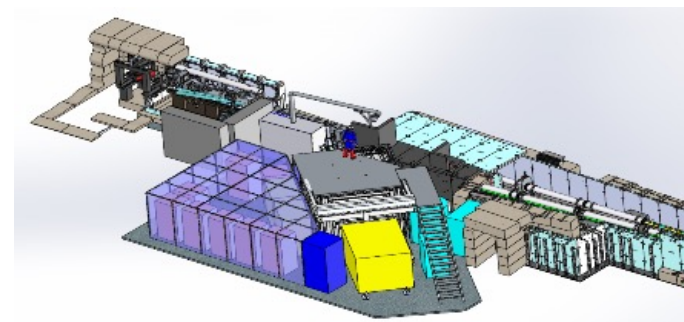
## ESS at some point must heed the call

You will hear a lot about this in this workshop

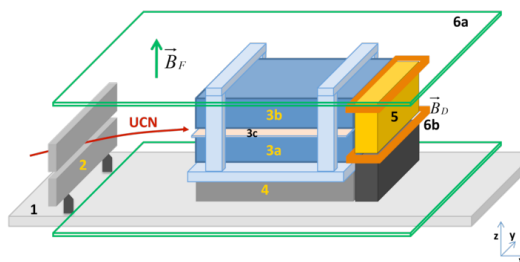


Stereo

Pan-EDM



Q-Bounce





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## Status of the ESS project





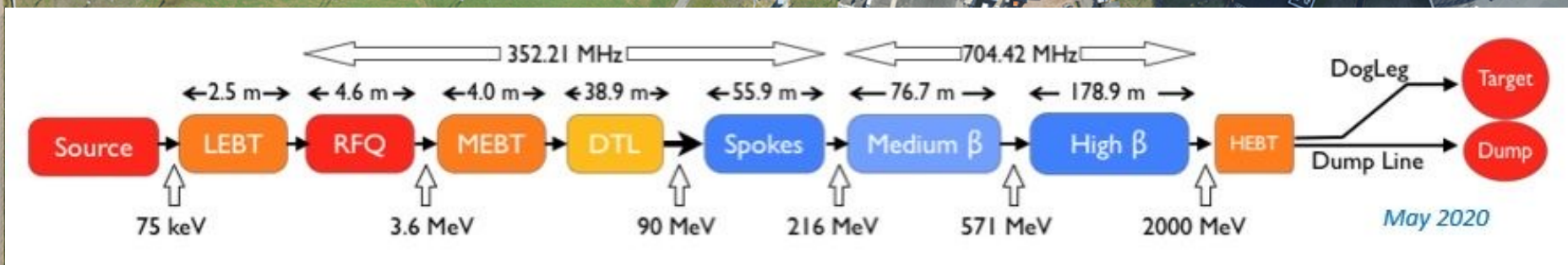
# Civil Construction

All conventional facilities have been finished and have been handed over to ESS at the end of last year.





# Accelerator



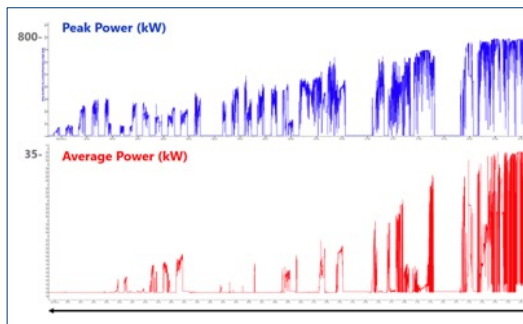


# Accelerator



## RFQ Conditioning Completed Successfully

- 8 Weeks – Summer of '21
- Crowning of many years efforts
- 750 kW, 14 Hz, 3.2 ms

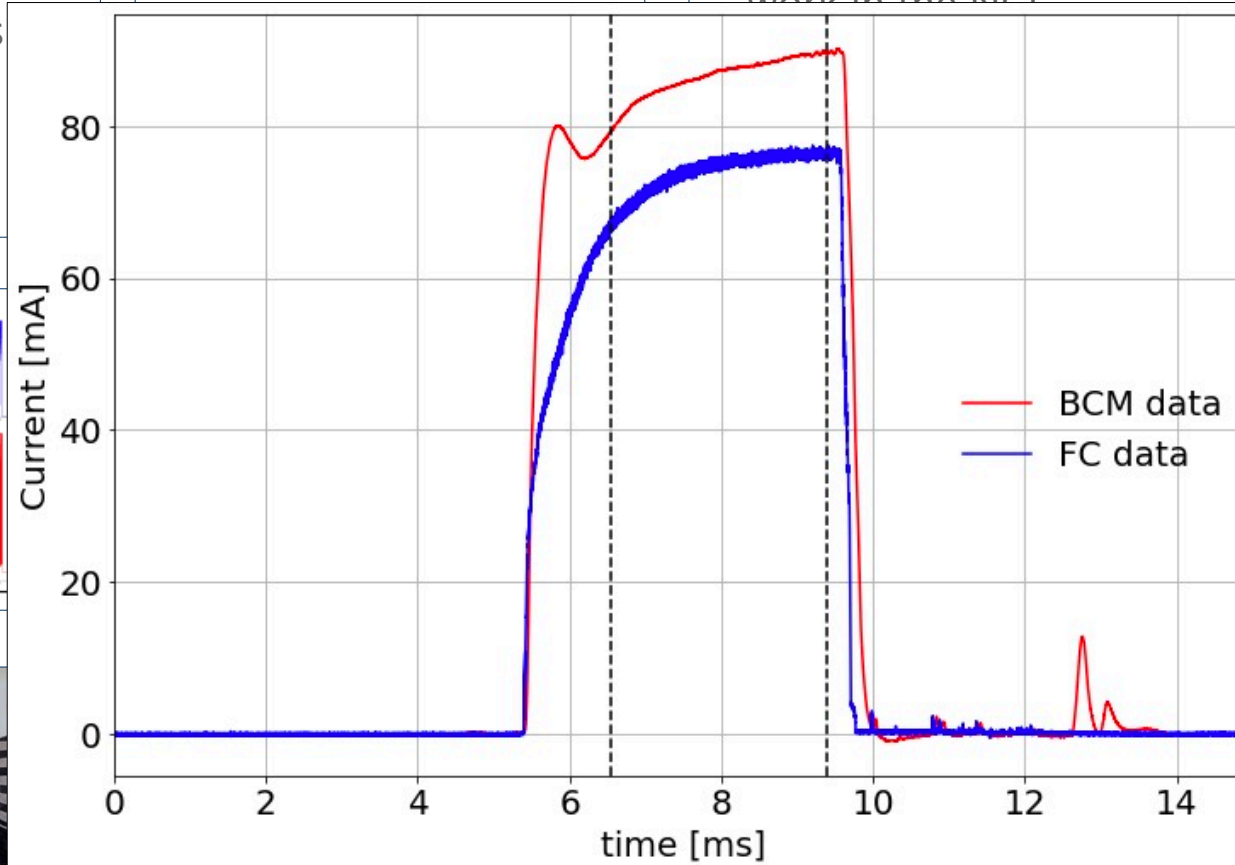


## First DTL in the tunnel

- Tank installed and connected.

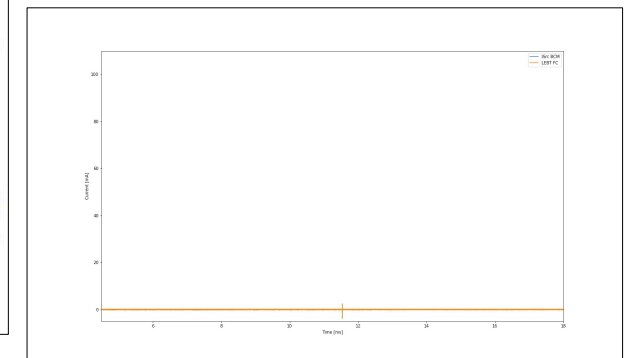
## Transition to Operation

- **Control Room** now coordinates actual daily work in the NCL

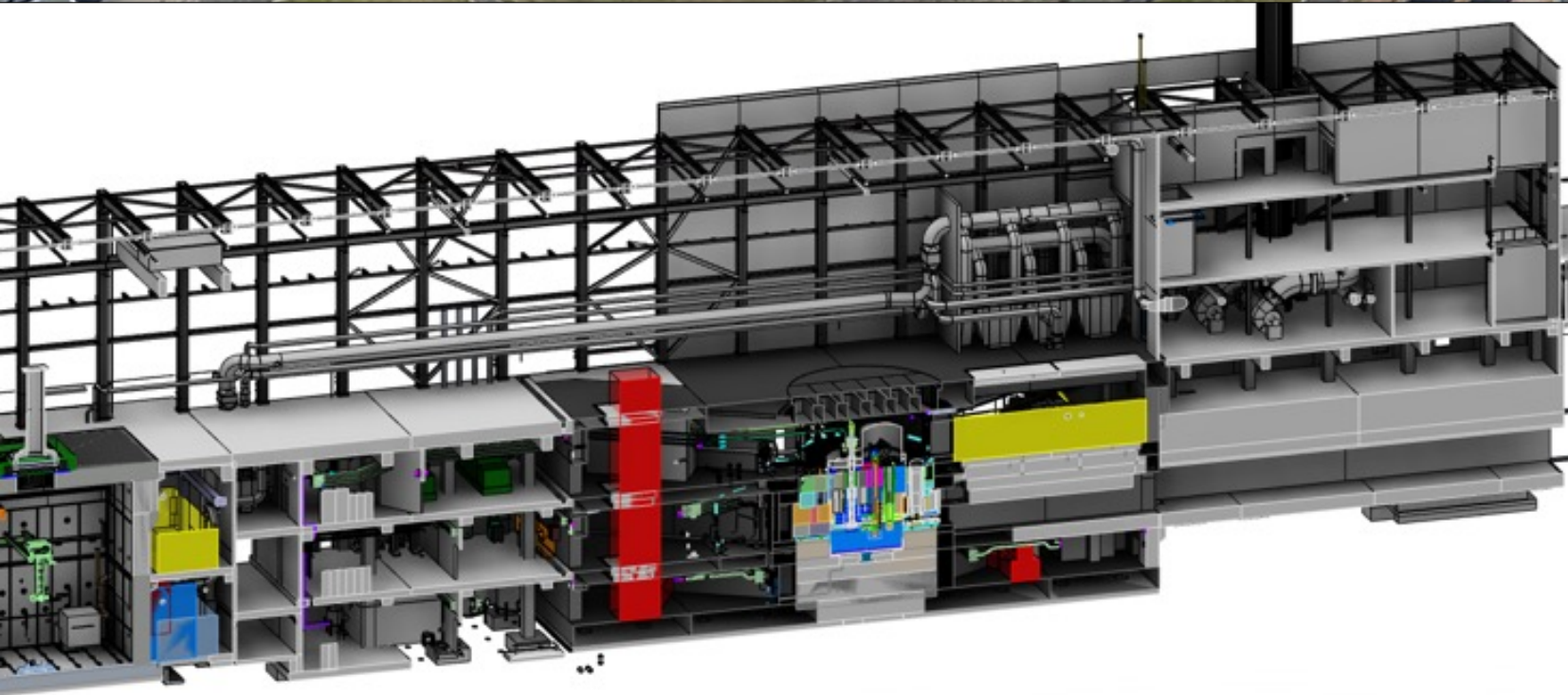


## Start of Beam Commissioning to MEBT FC

- Completion of installation
- Infrastructure done
- Multiple reviews: **TRRs, SAR2A, SRR2A**
- Critical Systems deployed
- Horizontal and support systems
- Licence from SSM

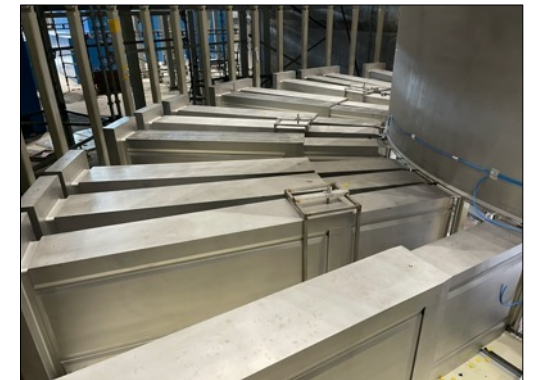
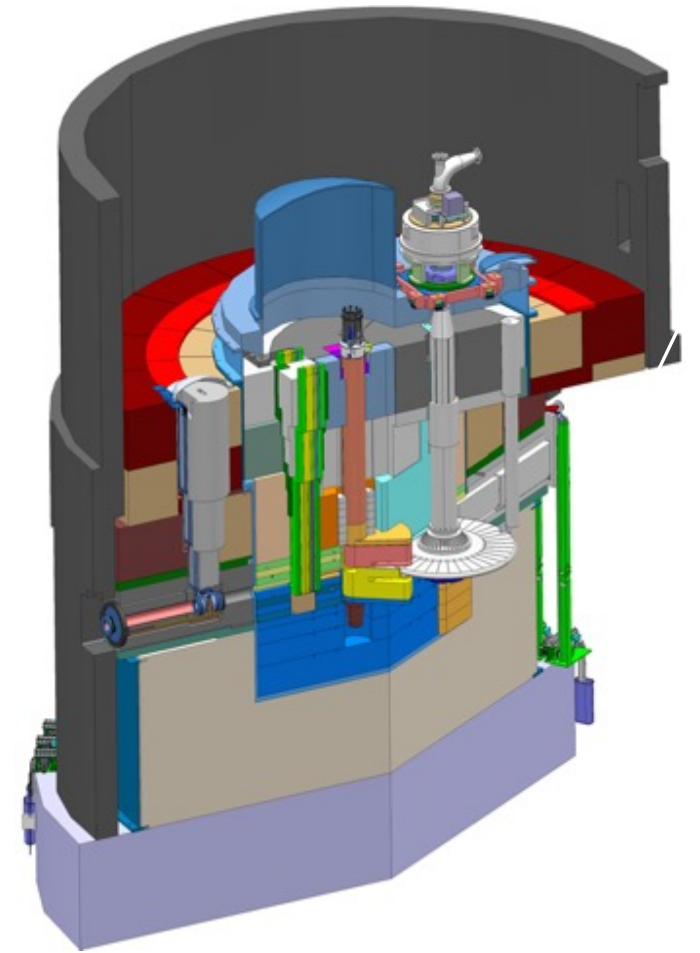






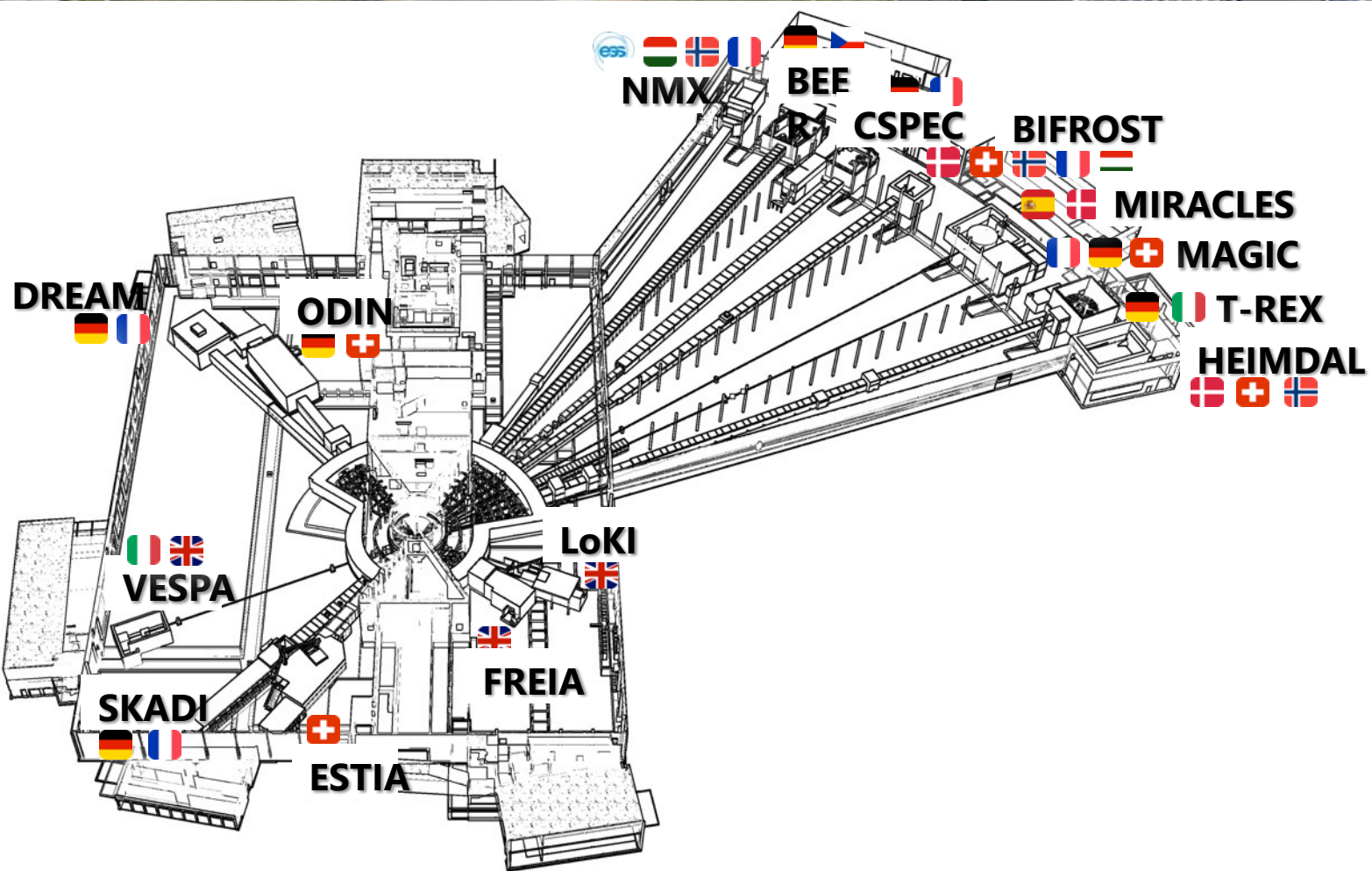


# Target



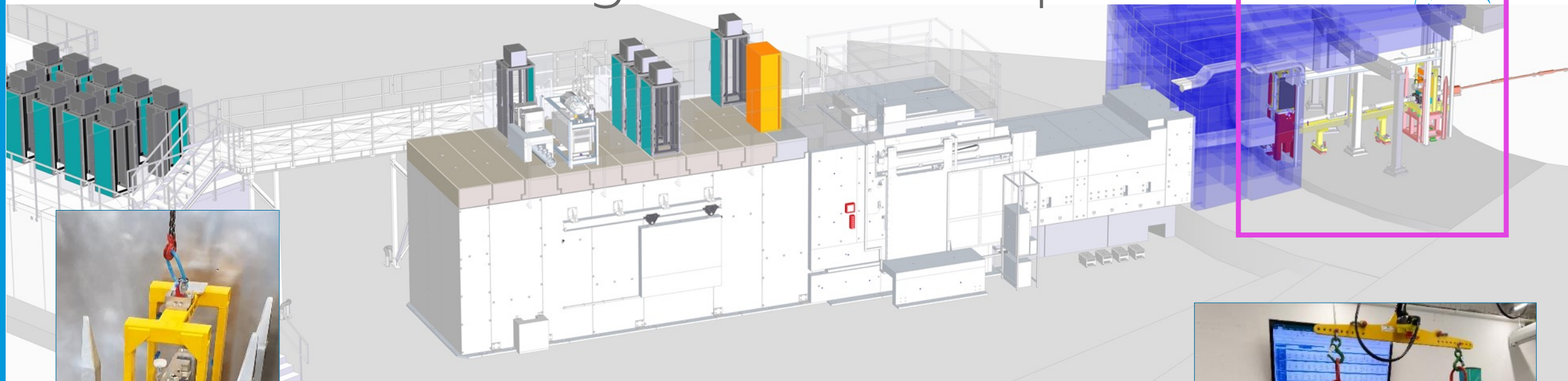


# Instruments

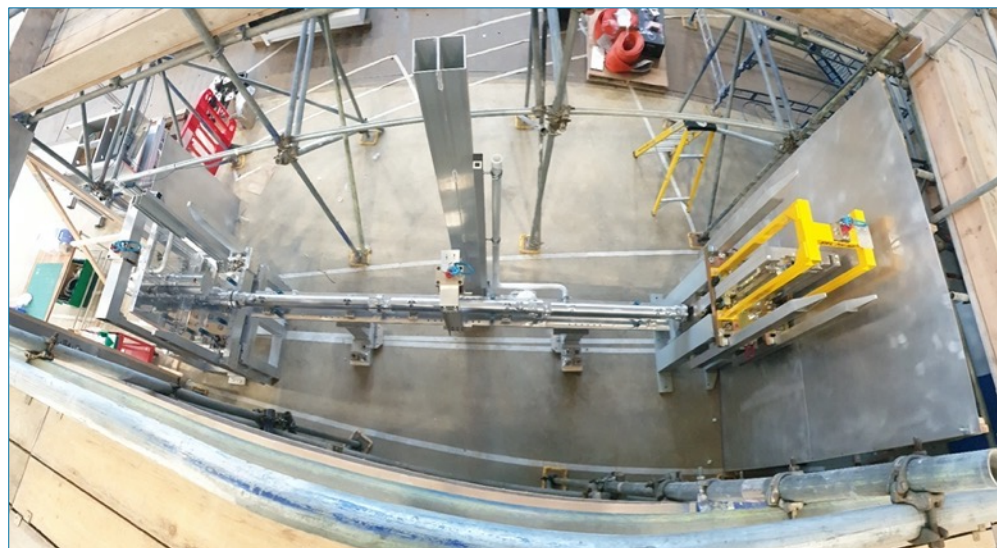




# Instruments arriving on site: example LOKI



Heavy Shutter  
manufacture  
complete.  
Currently  
preparing for FAT



In-bunker components pre-build



NBOA delivered to ESS



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## Our focus and our engagement



The pandemic as well as technical and organizational problems have brought us off track.



# A new journey with a new trajectory



In 2021 we have deployed great efforts to establish a new baseline.

We, the ESS, are fully convinced about our capacity to deliver the project according to the new baseline.

This conviction is based on the rigorous work that went into the re-baselining exercise and that fully integrated our partners.

Being granted the required resources at an adequate level is a necessary condition for success.

We are aware that the success of delivering the project will hinge on implementing changes in culture and management and we fully engage to make these changes happen.





# Core of the scope

Sub-headline to strengthen the headline above

The ESS project will be successfully terminated in 2027 allowing for steady state operation from 2028 onwards.

The accelerator at that moment will deliver 2MW of beam power at 80% reliability.

A minimum of 8 instruments will be ready for user operation with all others in the final stage of hot commissioning.

The organization will be ready for steady state operation including an ambitious science programme.

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A preparation for  
the the real  
challenge



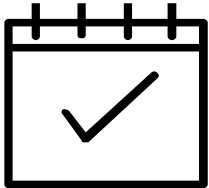


# ESS Journey

We enter a new phase



Your work over the next days is  
Very Important for us.



Our success over the next 6 years will secure over 40 years of science at the highest level of excellence.

Scientific attractiveness will be key for the long haul.





Looking forward to your conclusions!