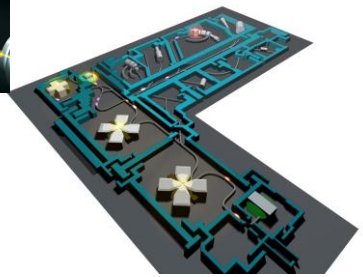
How can we continue to Xperiment Xplore Xperience the beauty of femtoscince

Xperiment Xplore Xperience

ESFRI list

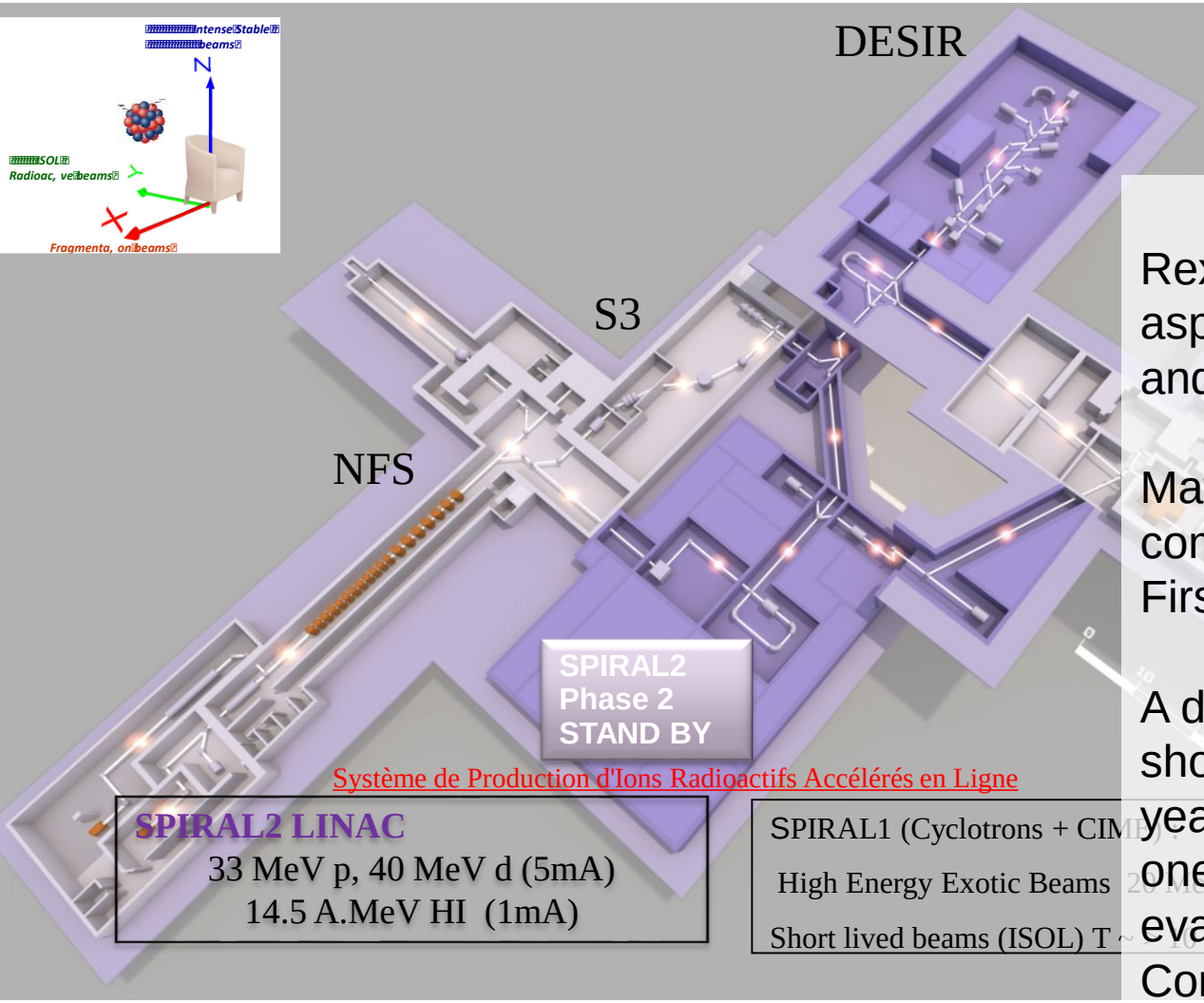


A. Navin
Grand Accélérateur National d'Ions Lourds
Caen, France

Update you on Status of GANIL
SPIRAL2 Beam time …
Major instrumentation my colleagues
Appetizer for the afternoon session

GANIL/SPIRAL2 (INB 113)

Nuclear Physics /Material science / Atomic physics/ Applications



High Energy Beams [24- 95] MeV/u

Stable + Short lived beams

(Fragmentation > 10 µs)

Rexamination of the Safety aspects related to the cylotrons and exp halls (2011-2021)

May 2014 GANIL management committed to finish by Dec 2017
First time in 30 years

A detailed revaluation in 2017 showed we need at least 3 years more and even more in one project related to this safety evaluation
Constraint on available beam time

Challenges

Consolidation of the planning despite unforeseeable changes in the environment (ASN) and technical bumps

Clear up the backlog and try to minimizing the domino effect for the schedule

Transition stage Complete a new accelerator while running an evolving facility

Set priorities among the priorities
Optimize the available resources
Further Improve the connectivity and involvement with all national and international partners towards a common goal

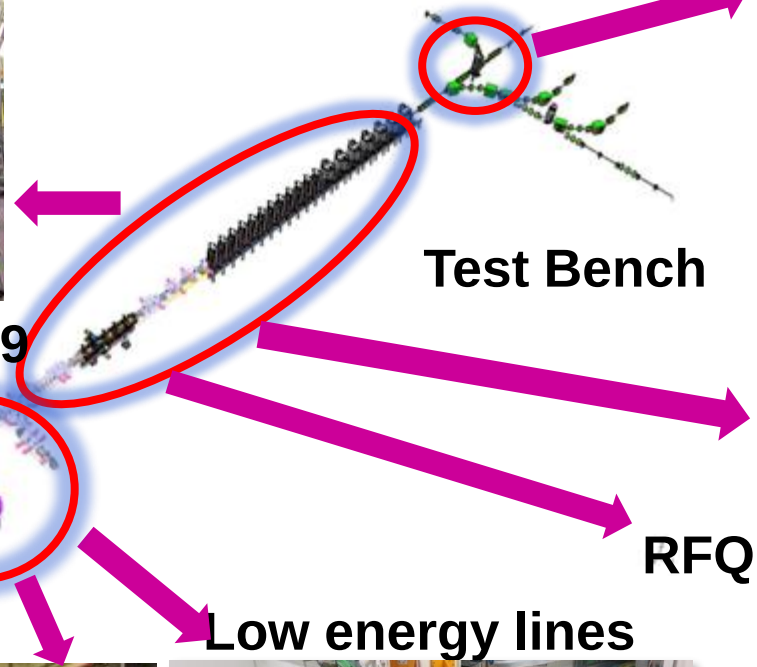
Short term
Complete the SPIRAL2 LINAC for the first experiment(s)
Provide the max possible beam time to keep up the excellence in Science
Look for new avenues to make scientific breakthroughs
Revitalize the role of the scientific community in the future of GANIL

Prepare the future
on hold at GANIL
At least till the LINAC is fully functional
Thinking will go on
How do you use the most intense beams we have …..

Changes
Project SPIRAL2 LINAC NFS S3
DESIR
Now under the management of GANIL
Improved coordination
Detailed planning despite a moving schedule for a clearance of ASN
Complete the LINAC
Improve the interaction with the ASN

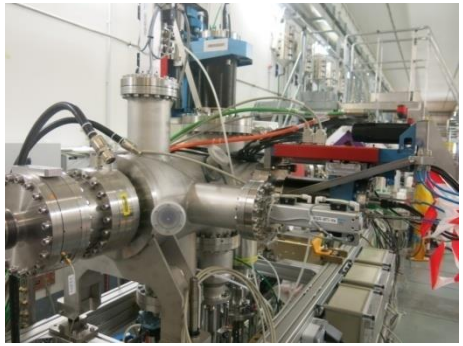
LINAC SPIRAL2

Superconducting cavities 19

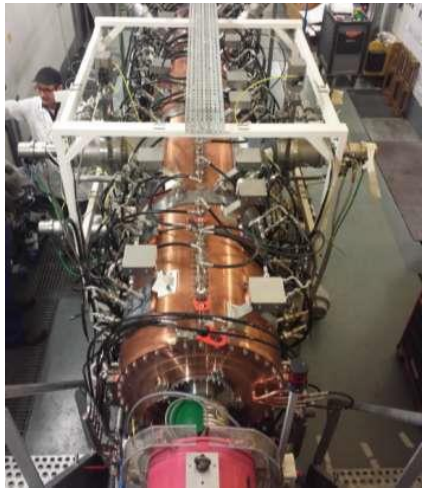


High energy Beam lines

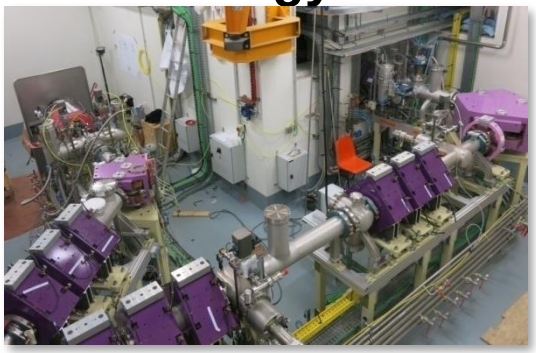
Test Bench

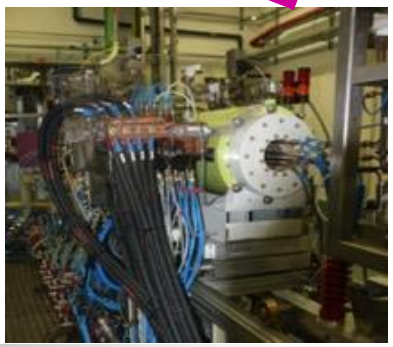


RFQ



Low energy lines

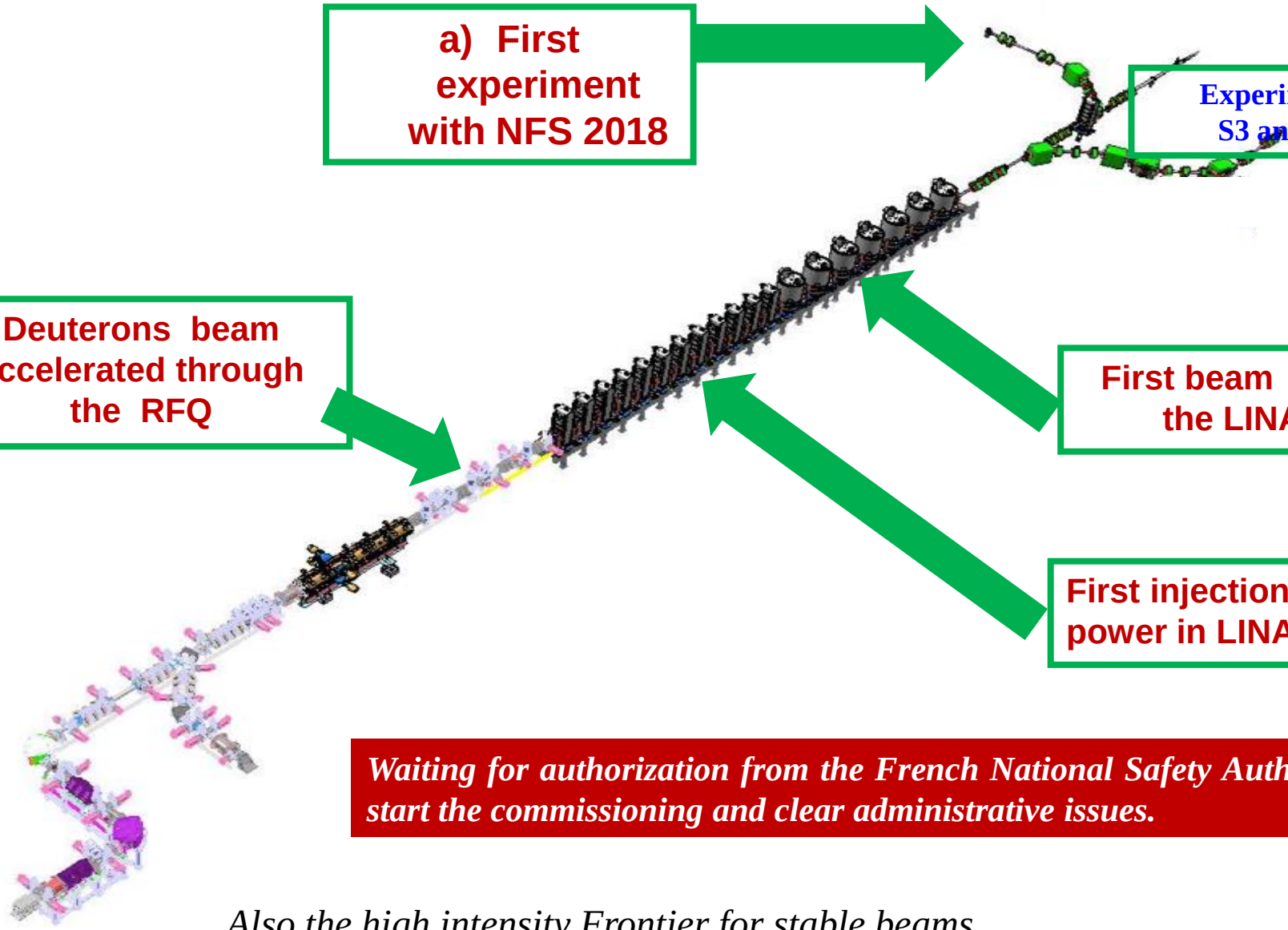




Ion sources

To be fully ready technically for beam around Sept 2018 (Schedule in the process of consolidation)

Status SPIRAL2 LINAC & more



a) First experiment with NFS 2018

Experiment with S3 and DESIR

Deuterons beam accelerated through the RFQ

First beam out of the LINAC

First injection of RF power in LINAC

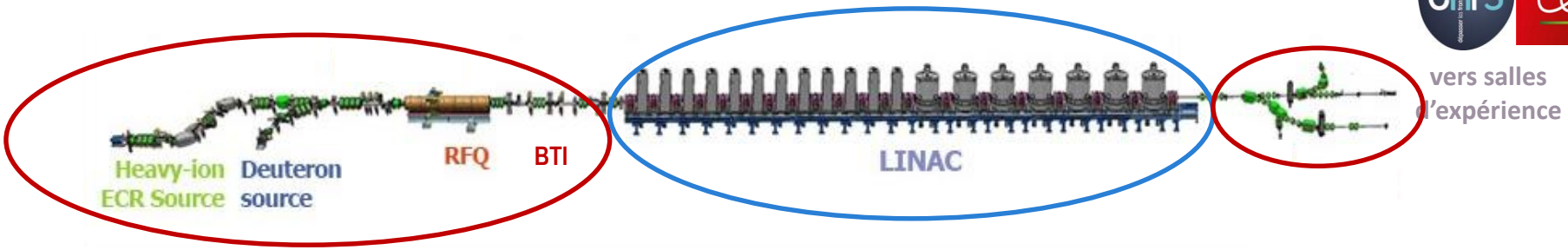
Waiting for authorization from the French National Safety Authority to start the commissioning and clear administrative issues.

Also the high intensity Frontier for stable beams

SPIRAL2 – ASN the story continues

2013	submission of the dossier for the saftey authorization for SPIRAL2 Phase 1 : 18/10/13
2014-2016	
	Partial Authorization : 30/10/14 Dec 2015 proton beam in RFQ Subsequent tests with He and O beams July 2016 2 modules cooled
2017	2017 Feb 10 meeting with ASN to rediscuss SPIRAL2 and delay in Rexamination of Safety May 3 2017 Not possible before May 8 2017 May 8 16 more demands replied June 16 (Cleareance Expected Oct 2017) 27 july but instead 30 more demands and connection between REX *July Last major indent put* *Completion of LINAC and beam line for NFS to be ready by Sept 2018*

SPIRAL2 Where we were in July



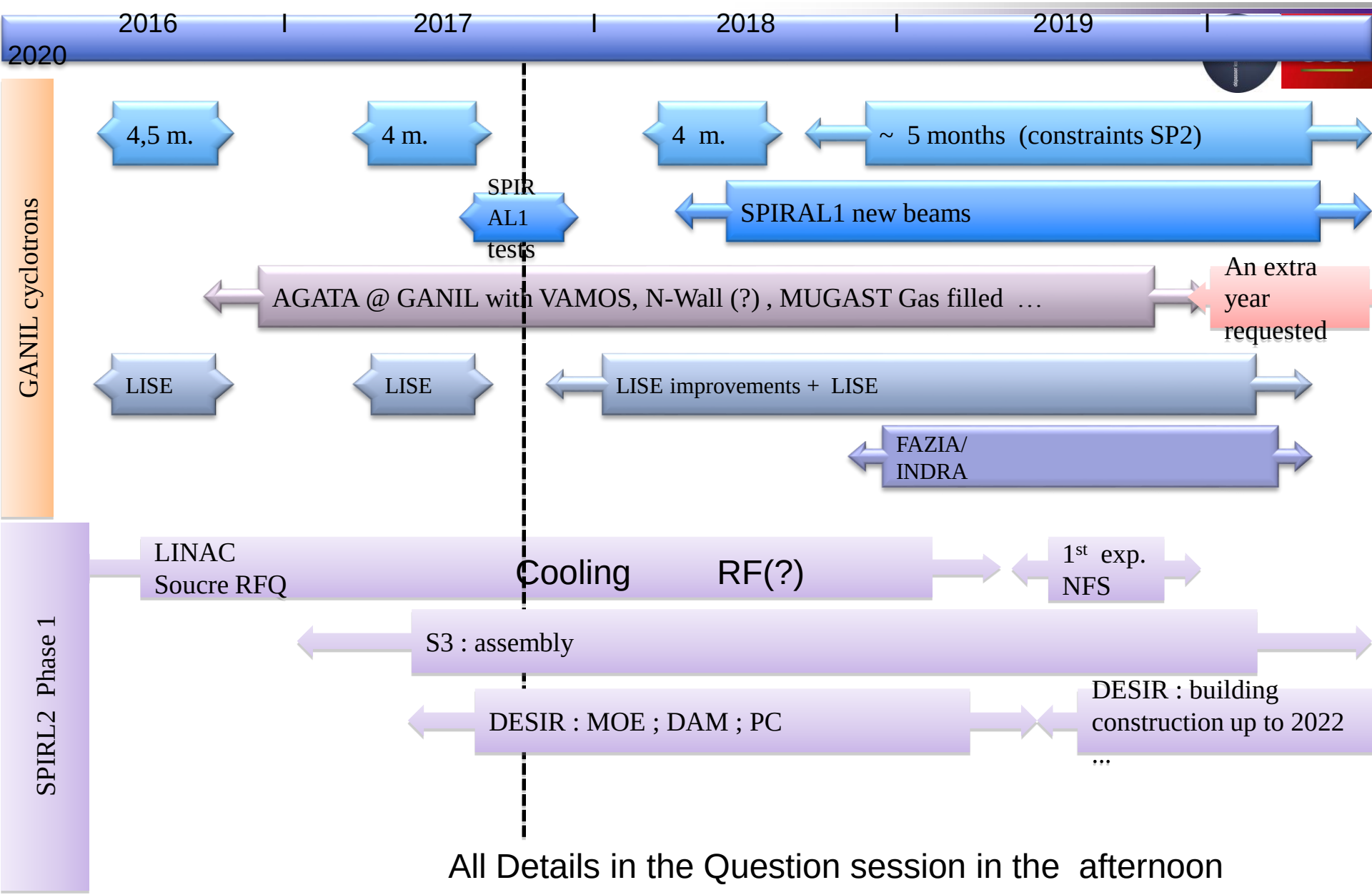
Injecteur LINAC LHE

J1: qualification with RFQ beam on BTI (excluding deutons)
J2a: Deuteron beam extracted from the source (Commissioning)
J2b: Deuterons accelerated by the RFQ on the BT
I J3a: RF qualification of two CMA and one CMB modules
J3b: LINAC modules cooled
J3c: all cavities qualified with RF
J4: first beam accelerated to the Beam Dump LINAC
J5 Physics

Need Autorisation from Nuclear Security Authorities

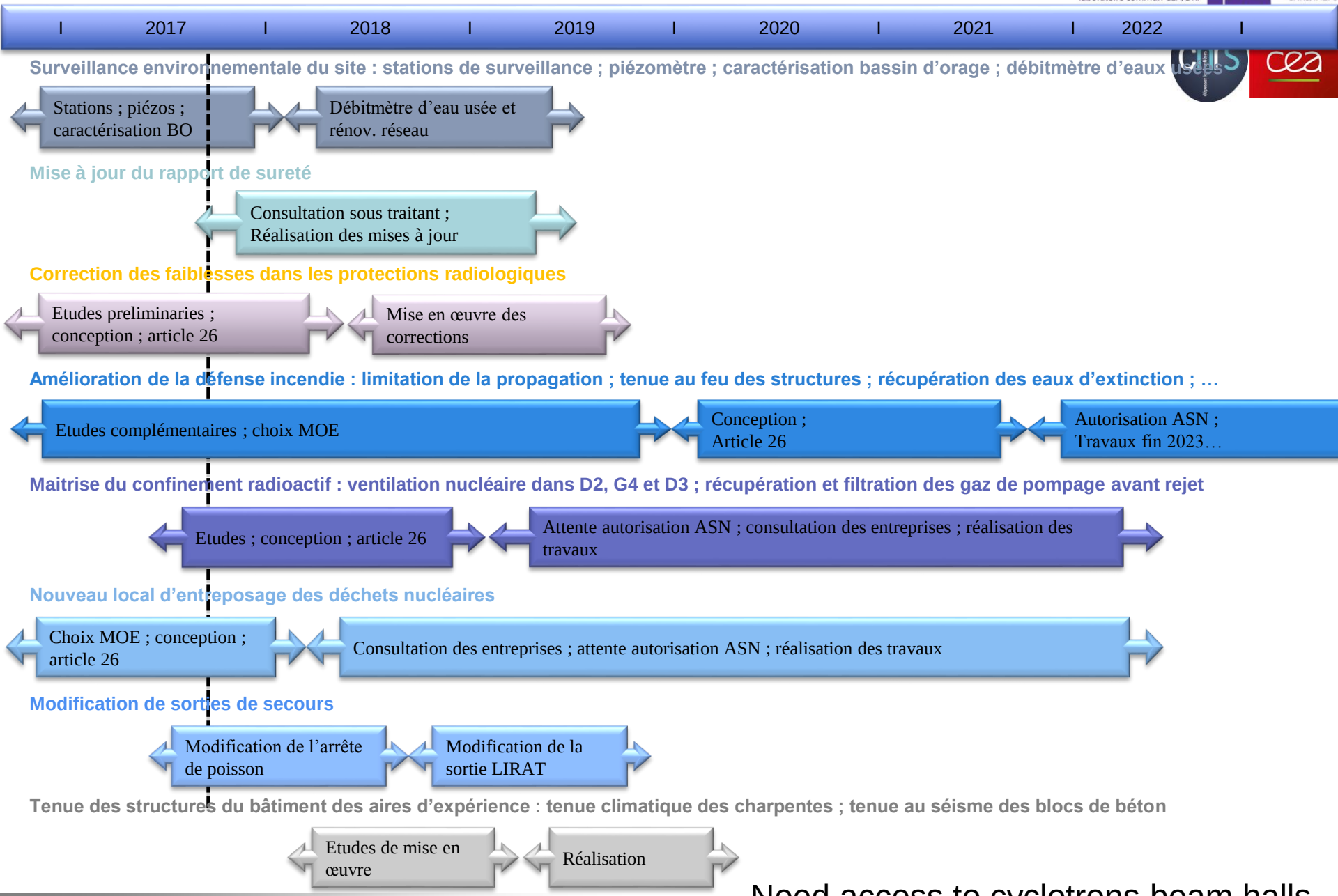
Assumptions for the autorization from the Nuclear safety authorities
Unexpected change on 26th July 2017 from the safety authorities
Change of Stradegy and planning
Towards Pulsed deutron beams for NFS

A Possible Scenario Oct 2017 (Hypothesis ASN)



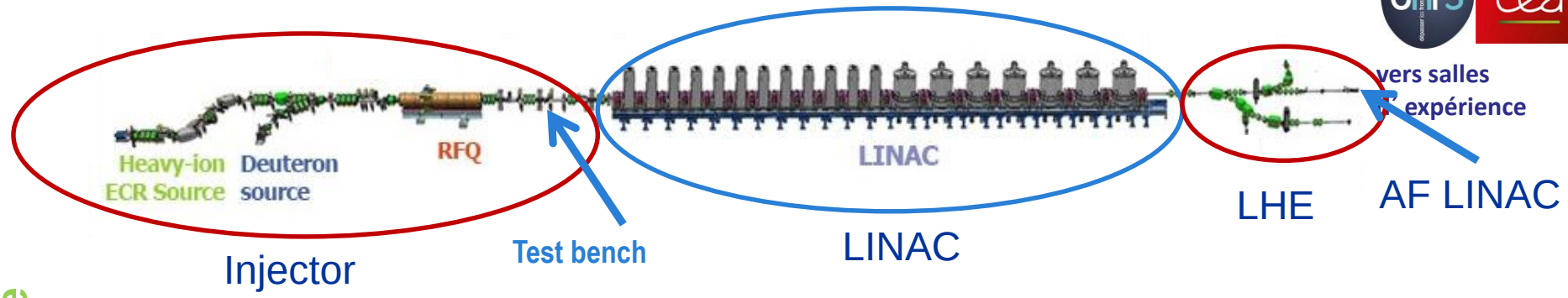
All Details in the Question session in the afternoon

Time lines “rééxamen de sûreté for GANIL cyclotrons and beam halls ” Apologies for the French slide



Need access to cyclotrons beam halls

Stradegy with respect to the safety file



Autorisation Mise en service

Step 1.1
- Test of the cavities LINAC

Step 1.2
- Charecterize the deutron beam
- Remove theTest bench

Etape 2
- Qualification of a proton beam in the LINAC

Etape 3
- Send the protons to NFS

Actinide target will Not be used in NFS

Etape 4
- The use of Actinide targets in NFS

Etape 5
- S3 ready to recieve beam (not yet fully consolidatte d

4-6 mois → **4() mois** → **12 mois**

Summary

Many Steps to improve the temporal coherence between the various pre determined objectives

On an improved path with ASN

Primary goal pulsed neutron beams in NFS for the first experiment with a minimum Operation of GANIL cyclotrons (and S3 DESIR at the earliest)

New beams in SPIRAL1, new physics opportunities ACTAR TPC, AGATA + VAMOS + LISE MUST2 …..

All this would not be possible with the help of various IN2P3 and CEA labs and our international partners.

GANIL is YOUR lab and we are only the caretakers along with you to fulfill your scientific dreams

Detailed discussion now and in the afternoon

Thanks to our colleagues and many of you who brought GANIL till what is today and will take it to greater heights.