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

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 cyclotrons 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

Look for new signals of simplicity in complexity in the new phase space of E * J T
GANIL
Grand Accelerator
a National and International Lab

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)
Deuterons beam accelerated through the RFQ

a) First experiment with NFS 2018

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

<table>
<thead>
<tr>
<th>Year</th>
<th>Events</th>
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<tbody>
<tr>
<td>2013</td>
<td>Submission of the dossier for the safety authorization for SPIRAL2 Phase 1: 18/10/13</td>
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| 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 Reexamination of Safety  
May 3 2017  Not possible before May 8 2017  
May 8 16 more demands replied June 16 (Clearance 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**

- **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
- **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

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**Assumptions for the authorization from the Nuclear safety authorities**

**Unexpected change on 26th July 2017 from the safety authorities**

**Change of Strategy and planning**

Towards Pulsed deutron beams for NFS
A Possible Scenario Oct 2017 (Hypothesis ASN)

2016 I 2017 I 2018 I 2019 I 2020

4.5 m. 4 m. 4 m. ~ 5 months (constraints SP2)

SPIRAL1 new beams

AGATA @ GANIL with VAMOS, N-Wall (?), MUGAST Gas filled …

An extra year requested

GANIL cyclotrons

LINAC Sourc RFQ

Cooling RF(?)

S3 : assembly

SPIRAL2 Phase 1

FAZIA/ INDRA

LISE improvements + LISE

GANIL cyclotrons

LISE

LISE

SPIRAL1 tests

GANIL cyclotrons

LISE

SPIRAL1 new beams

SPIRAL1 tests

All Details in the Question session in the afternoon

Next GANIL PAC 29 30 Nov 2017, SC 29 30 Jan 2018
Time lines “réexamen de sûreté for GANIL cyclotrons and beam halls” Apologies for the French slide

Surveillance environnementale du site : stations de surveillance ; piézomètre ; caractérisation bassin d’orage ; débitmètre d’eaux usées

Mise à jour du rapport de sûreté

Correction des faiblesses dans les protections radiologiques

Amélioration de la défense incendie : limitation de la propagation ; tenue au feu des structures ; récupération des eaux d’extinction ; …

Maitrise du confinement radioactif : ventilation nucléaire dans D2, G4 et D3 ; récupération et filtration des gaz de pompage avant rejet

Nouveau local d’entreposage des déchets nucléaires

Modification de sorties de secours

Tenue des structures du bâtiment des aires d’expérience : tenue climatique des charpentes ; tenue au séisme des blocs de béton

Need access to cyclotrons beam halls
Strategy with respect to the safety file

Step 1.1
- Test of the cavities in the LINAC

Step 1.2
- Characterize the deuteron beam
- Remove the Test bench

Etape 2
- Qualification of a proton beam in the LINAC

Etape 3
- Send the protons to NFS

Etape 4
- The use of Actinide targets in NFS

Etape 5
- S3 ready to receive beam (not yet fully consolidated)

Actinide target will Not be used in NFS

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.