

- Organization
- Mechanics
- Rooms infrastructure
- EXOGAM hardware autofill
- Cost
- Human resources
- Planning

# AGATA Demonstrator@GANIL

## Organization

- AGATA@GANIL is a STP project with a high priority
- One extra engineer in charge of the rooms infrastructure
- A wiki site: <http://wiki.ganil.fr/gap/AGATA>
  - ❑ Espace\_Ge.doc
  - ❑ AD\_tasks\_v4.doc:
    - 5 tasks:
      - ✓ Mechanics,
      - ✓ Rooms infrastructure,
      - ✓ Equipment cabling,
      - ✓ Detectors and acquisition setup,
      - ✓ Experiment run
    - Persons in charge of subtasks
    - Costs of each subtask
    - Detailed planning

## AGATA Demonstrator@GANIL

## Organization

## Mechanics task overview

## A Tâche MECANIQUE

Sous-tâche		Responsable	Ressources Humaines (Homme. Mois)	Coût	Observations :
N°	Type				
A00	Plate forme AD	Ozille	1	7 k€	- rail de guidage plate-forme au sol - Mise en plan (sous-traitance)=> voir coût
A01	Support frame AD	Ozille	3	1 k €	- Configuration probable et maximale: 8 clovers EXOGAM + 8 TCs sur frame 1 $\pi$ - Etude à faire cahier des charges à préciser - Translation
A02	Outils de montage des détecteurs	Ozille	1	0 €	- Voir avec Daresbury (Strachan) - En cours de réflexion
A03	Porte cible	Ozille	2	7 k€	- Voir avec Gilles de France - Etude à faire cahier des charges à préciser Avec VAMOS
A04	Baies digitizers (Montage sur rails plate forme et collecteur d'eau)	Ozille	1	3 k€	- 24 digitizers (pour 8 TCs) refroidis à l'eau Baies digitizers montées sur rails à confirmer ? - Clarinettes et contrôleurs de débit intégrés au coût => info débit à renvoyer à l'automate de G1 (Voir Ropert) - Collecteur d'eau en cas de fuite => info à renvoyer à l'automate de G1 ( Voir Ropert) - Switches Ethernet à placer en haut de baie

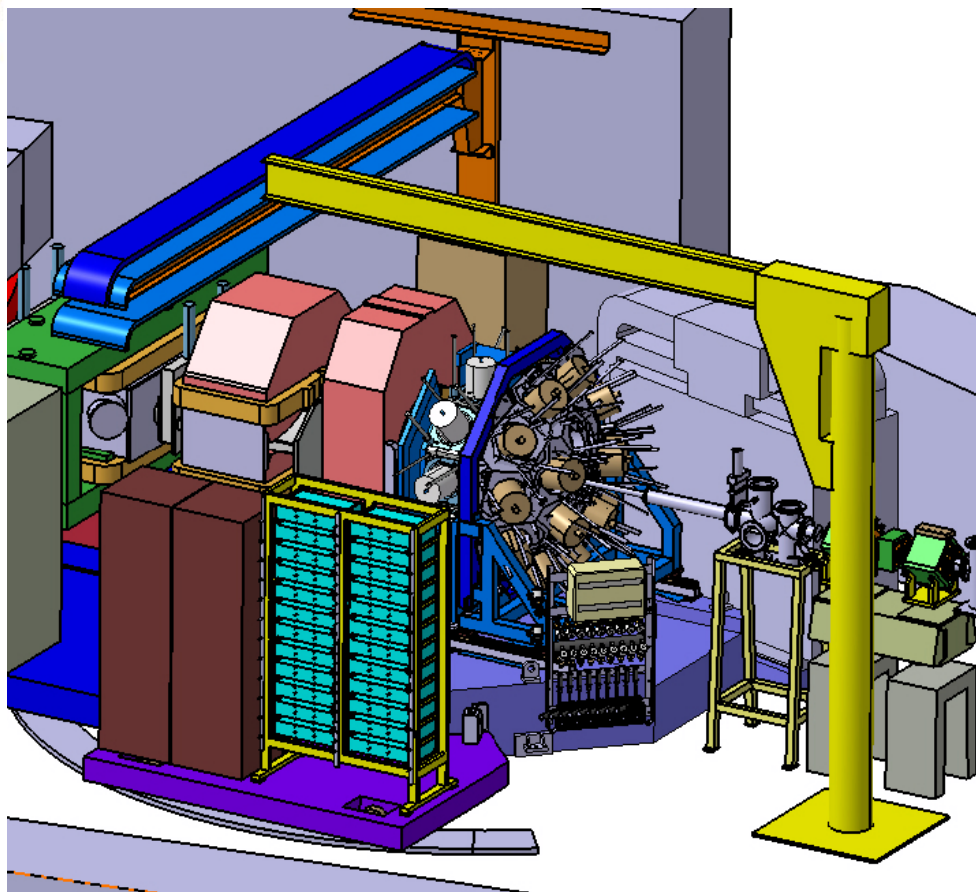
## 3 Planning et coûts :

Tâche	2007				2008				2009				2010			
	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
A00																
A01																
A02																
A03																
A04																
A05																
A06																
A07																
A08																
A09																
B00																
B01																
B02																
B03																
B04																
B05																
B06																
B07																
B08																

# AGATA Demonstrator@GANIL

## Mechanics

### AGATA Demonstrator TCs + EXOGAM clovers + VAMOS



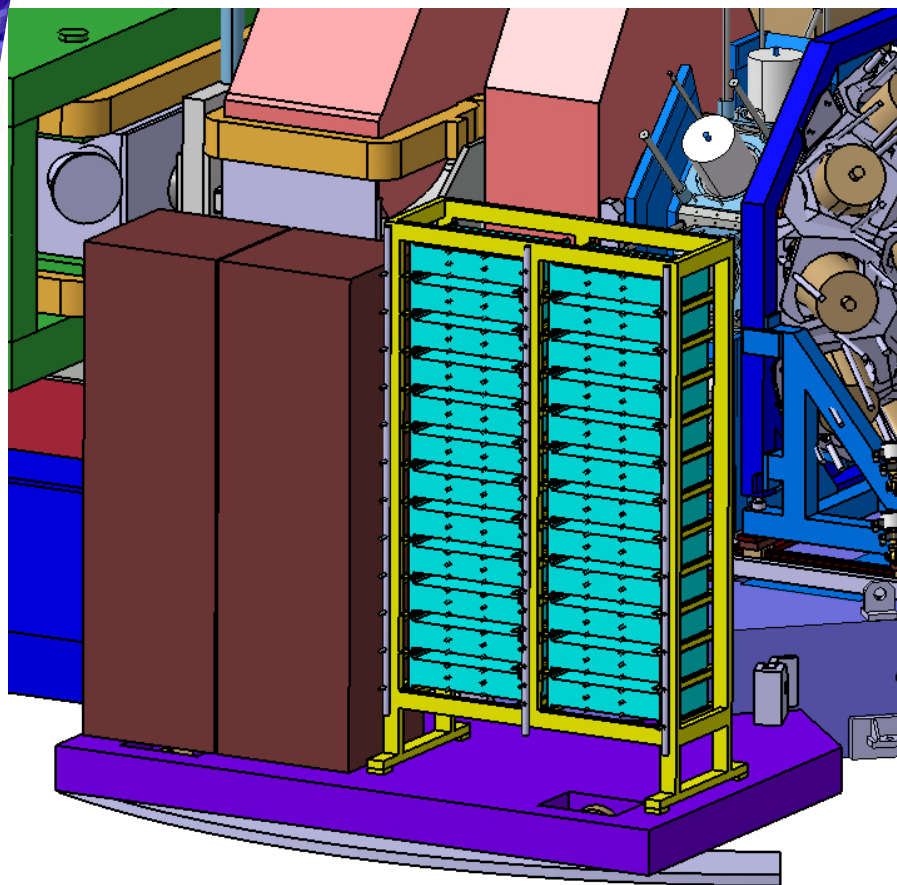
ozille@ganil.fr

- 1  $\Pi$  frame.
- 8 TCs and 5 EXOGAM clovers  
 $\Rightarrow$  radius from the target to the crystal @130mm
- 8 TCs and 8 EXOGAM clovers  
 $\Rightarrow$  radius from the target to the crystal @234mm
- VAMOS platform can rotate from  $0^\circ$  to  $45^\circ$ .

# AGATA Demonstrator@GANIL

## Mechanics

### AGATA Demonstrator TCs + EXOGAM clovers + VAMOS



ozille@ganil.fr

#### Preliminary studies:

- AD framework:
  - frame + linear guiding system + manual control
  - Estimated cost: 12k€
- Platform
  - Dimensions:  $L * W = 2500\text{mm} * 1500\text{mm}$
  - Estimated cost: 10k€
- 2 DSS (19" 42U) cabinets:
  - Dimensions:  $H * W * D = 2000\text{mm} * 600\text{mm} * 600\text{mm}$
- Digitizers cabinets:
  - Dimensions:  $H * W * D = 2000\text{mm} * 600\text{mm} * 600\text{mm}$
  - Two columns for 24 digitizers
  - Specific design: weight, water pipes

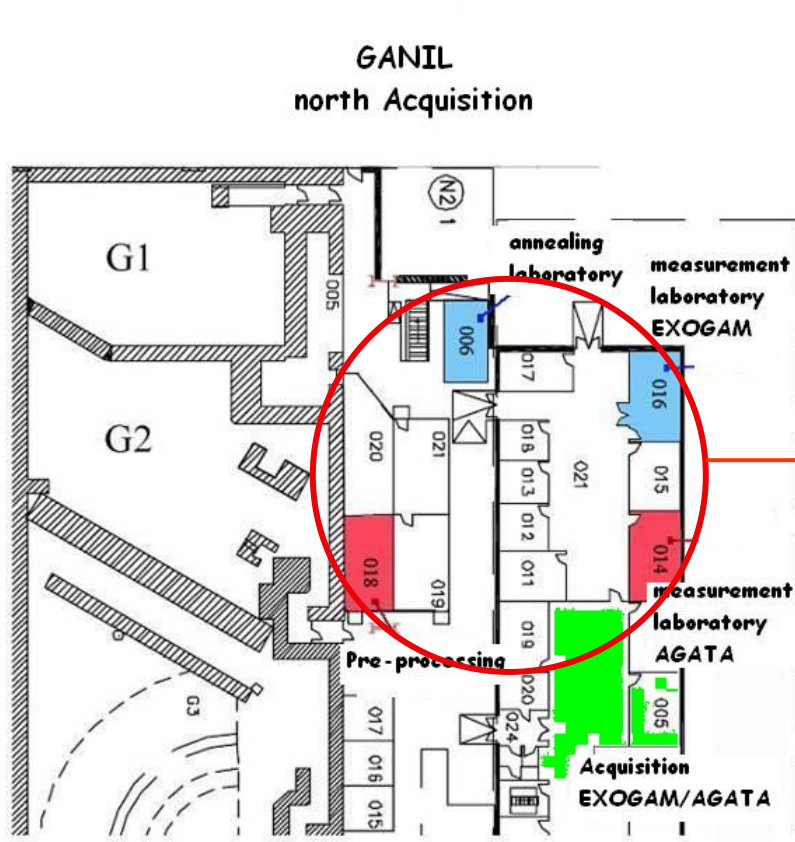
#### Detailed design:

- AD framework, Platform, digitizers cabinets
- Start on September



# AGATA Demonstrator@GANIL

## Rooms infrastructure



### Experimental area:

- G1

### Preprocessing room:

- 018 -> 019

### Ge detectors (AGATA and EXOGAM) area:

New layout is being studied

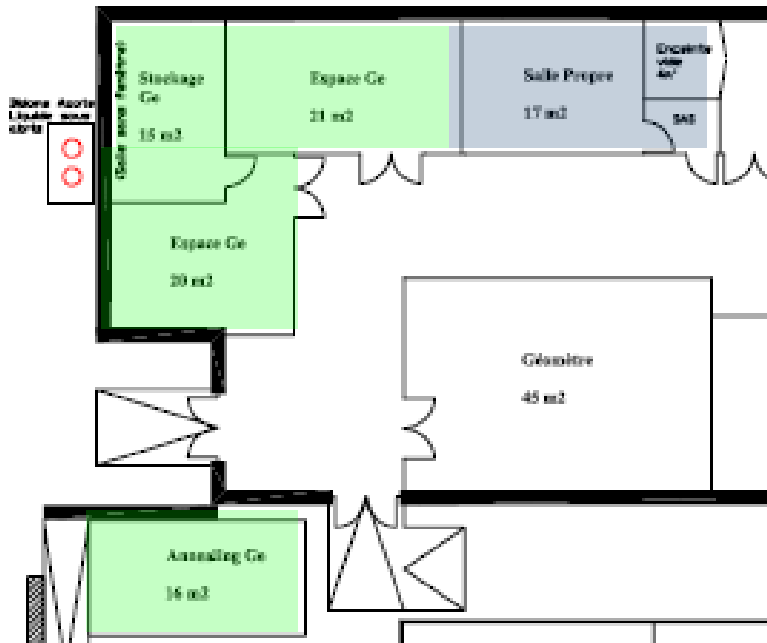
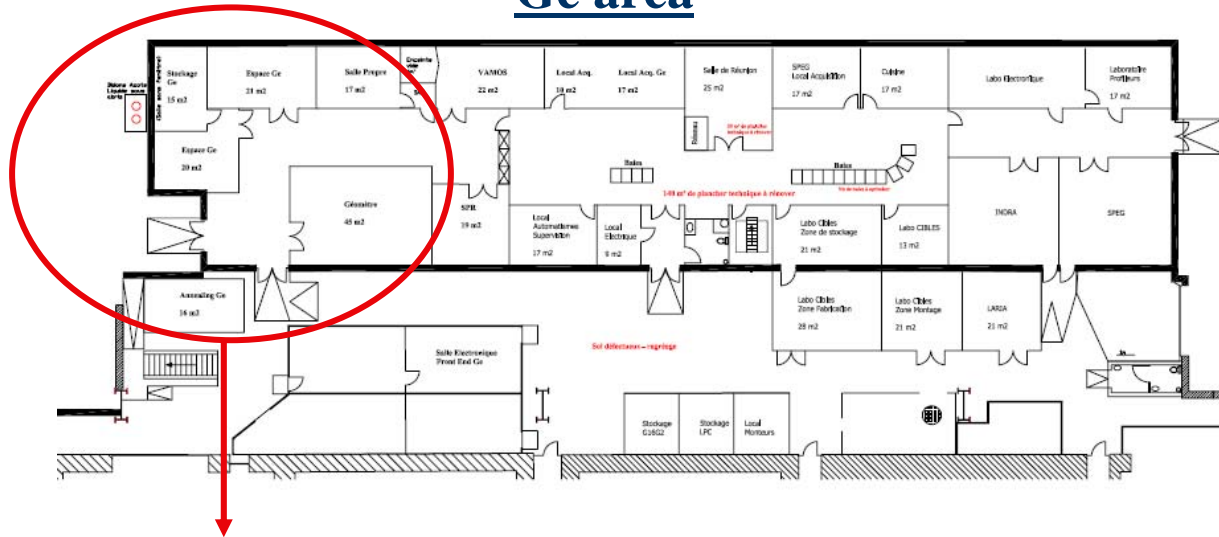
- Tests room
- Stocking room
- Annealing room

### Organization:

- STP project: AGATA@GANIL
- 1 engineer of the Aires Experimentales group
- Patrimoine group

## AGATA Demonstrator@GANIL

## Rooms infrastructure

Ge areaGe area main features:

- Espace Ge.doc:  
<http://wiki.ganil.fr/gap/AGATA>
- 2008 schedule :
  - Rooms reallocation (June 08)
  - Technical specifications redaction (July 08)
  - Security and quality checks => ASN approbation?
  - Technical specifications addressed to the Patrimoine group
  - Contact of companies (September 08)
  - Building work (January 2009)

# AGATA Demonstrator@GANIL

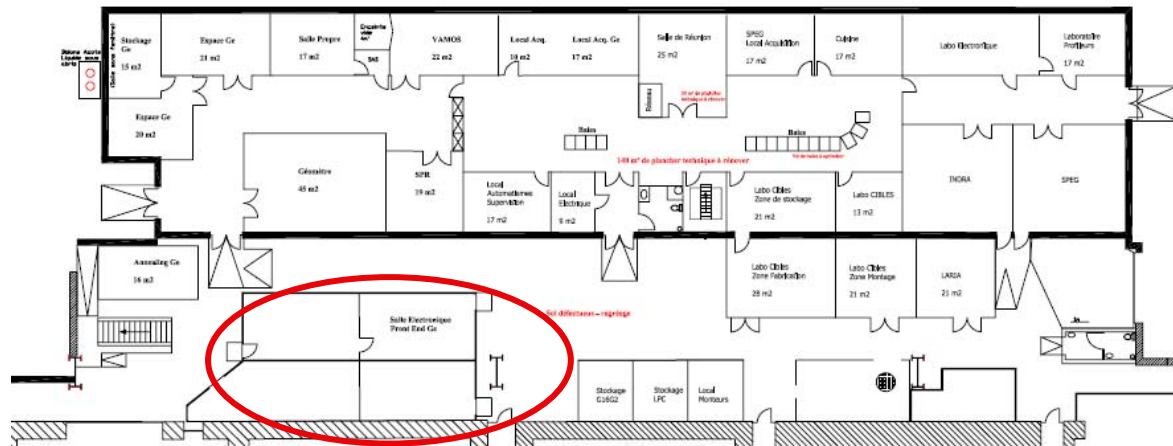
## Ge area specifications

## Rooms infrastructure

	Test room	Stocking room	Annealing room
Surface area	20 m <sup>2</sup>	20 m <sup>2</sup>	15 m <sup>2</sup>
Electrical power	Main = 15kW	Main = 5kW, <u>Battery = 1kW / 10h</u>	Main = 5kW
Security	Fire + anoxia	Fire + anoxia	Fire
Fluids	Water, Compressed air	Water, <u>LN2 line</u>	Water, Compressed air
Specific requirements	<u>Hygrometry control,</u> <u>Temperature control,</u> CEM.	<u>Hygrometry control,</u> <u>Temperature control,</u>	Exhaust pipe, Ventilation.
Network	yes	yes	no
Equipment	NIM & VXI modules, <u>TNT2 boards,</u> Power supplies, Pulse generator, Oscilloscope, PC.	Table for TCs and clovers, LN2 tank, <u>LN2 Autofill hardware,</u> PC.	Pumps Oven

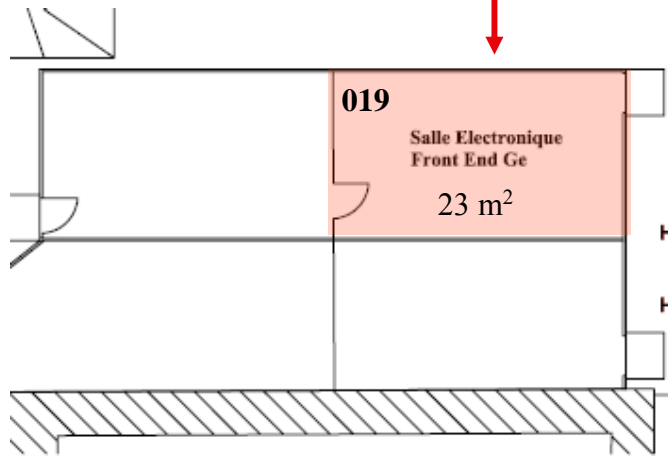


## Ge area



**Preprocessing room, 019:**

- Room features:
  - Surface area: 23 m<sup>2</sup>
  - Air conditioned
  - Cooled water pipe
- Technical specifications :
  - ATCA processing (for 8 TCs):
    - P = 12kW
    - 2 cabinets with water cooling system
  - PSA units:
    - P = ? kW
    - Cabinets (quantity, size, features): ?
    - Network connections: ?



# AGATA Demonstrator@GANIL

## EXOGRAM hardware autofill

### Exogam parts of the Autofill

#### Elements to order by Ganil

2007 prices

component	reference	manufacturer	number	price	
-----------	-----------	--------------	--------	-------	--

#### Valve Control Crate

19" Crate with Card rails and Backplane Connectors			1	2140,1	2140,10
Switch Module	1223	GSI	1	92,75	92,75
Power Supply Module Type Haltec TSR 735-5/15	1221		1	198	198,00
Valve Control Cards		GSI			
BSD Dry Contacts Panel ?		GSI ?	1		
<b>total</b>				<b>2430,85</b>	

#### Profibus Crate

19" Crate			1	176,21	176,21
Front Plates 8TE/3HE with 10 Lemo female connectors TYPE ERA.0S.302.CLL			2	40,65	81,30
Front Plates 8TE/3HE with D Sub connector 25 pins TYPE ST 25 61 G3, female			2	3,85	7,70
Front Plates 8TE/3HE with D Sub connector 9 pins TYPE ST 09 61 G3, female			1	3,21	3,21
front plates 10TE/3HE			2	2,95	5,90
switch module			1	92,75	92,75
<b>total</b>				<b>367,07</b>	

#### PROFIBUS module set

Profibus slave	BK3120	Beckhoff	1	170	170,00
Pt100 terminal	KL3204	Beckhoff	5	180	900,00
Digital output terminal	KL2124	Beckhoff	5	40	200,00
Digital input terminal	KL1124	Beckhoff	7	40	280,00
Power supply 5v terminal	KL9505	Beckhoff	2	55	110,00
Analog Input terminal	KL3052	Beckhoff	1	50	50,00
End terminal	KL9010	Beckhoff	1	30	30,00
Phoenix compact PS			1	130	130,00
<b>total</b>				<b>1870,00</b>	

#### Cables and accessories

Pt100 5m cable LN2 with a Lemo connector and a D-Sub 9pins connector		Ganil	8		
--	--	-------	---	--	--

- Hardware items for 8 EXOGAM clovers controlled by the AGATA PLC
- List must be checked by GSI lab
- Are the hardware items assembled and cabled?
- Total cost = 4667€
- Updated quotation for late 2008
- How will GANIL proceed to order?

## AGATA Demonstrator@GANIL

Cost

Location	Item	Quantity	Total price	Provider	AD component
Experimental Area	AD platform	1	10 k€	GANIL	NO
	Frame support (+ guiding system)	1	12 k€	GANIL	NO
	Target support	1	7 k€	GANIL	NO
	Mechanical design contracted out	1	24 k€	GANIL	NO
	Alignment tools	1	5 k€	GANIL	NO
	Digitizers cabinet (12 digitizers per cabinet)	2	6 k€	GANIL	YES
	Hardware autofill for 8 EXOGAM clovers	1	5 k€	GANIL	YES
	Battery (1 kW, 10 h)	1	7 k€	GANIL	NO
From Experimental Area to Processing Room	Optical cables (70m, 12 channels; 6*24 segment_digitizers)	144	21 k€	GANIL	NO
	Optical cables (70m, 8 channels; 24 core_digitizers; 1 AGAVA)	25	4 k€	GANIL	NO
Processing Room	ATCA cabinet	2	17 k€	?	YES
	PC pizza box cabinet	2	2 k€	?	YES
Test Room	AGAVA	2	4 k€	GANIL	NO
	NIM crate	1	6 k€	GANIL	NO
	TNT2 cards	2	10 k€	GANIL	NO
	Oscilloscope (4 channels, 500 MHz)	1	10 k€	?	YES
	Pulse generator	1	6 k€	?	YES
	PC (2GB)	1	1 k€	?	YES
	Light AGATA DSS (Axis LV, coupleurs, PLC, hardware)	1	13 k€	?	YES
Stocking Room	Table	1	1 k€	GANIL	NO
	Autofill (hardware and PLC)	1	7 k€	GANIL	NO
	Tank (200l)	1	15 k€	GANIL	NO
	Battery (1kW,10 hours)	1	7 k€	GANIL	NO
Annealing Room	Oven	1	6 k€	?	YES
	Primary pump	1	2 k€	?	YES
	Secondary pump	1	5 k€	?	YES
<b>COST</b>			<b>215 k€</b>		

# AGATA Demonstrator@GANIL

## Human resources

TASKS	GANIL staff	FTE (Men. month)
Management	- Physicist	3
	- Hardware engineer	3
Mechanics	- Design engineer	12
	- Surveyor	1
	- Assembly technician	1
Rooms and infrastructure	- General resources	5
Equipment and cables	- Electronic engineer	5
	- Instrumentalist engineer	5
EXOGAM and AD (Installation and test)	- Physicist	3
	- Software engineer	3
	- Hardware engineer	3
	- Instrumentalist engineer	3

## AGATA Demonstrator@GANIL

## Planning

Tasks	2007				2008				2009				2010			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Mechanics	Studies						Manufacturing				Assembly					
Rooms			Studies				Building				Infrastructu re					
Equipment					Purchase						Installation					
Cables									Purchase		Cabling					
AD EXOGAM											EXOGAM Assembly, Test		AD +			
													AD Assembly, Test		EXO GAM	

**NB: SPIRAL2 accelerator planning**

2011: Assembly at GANIL

2012: First beam at GANIL