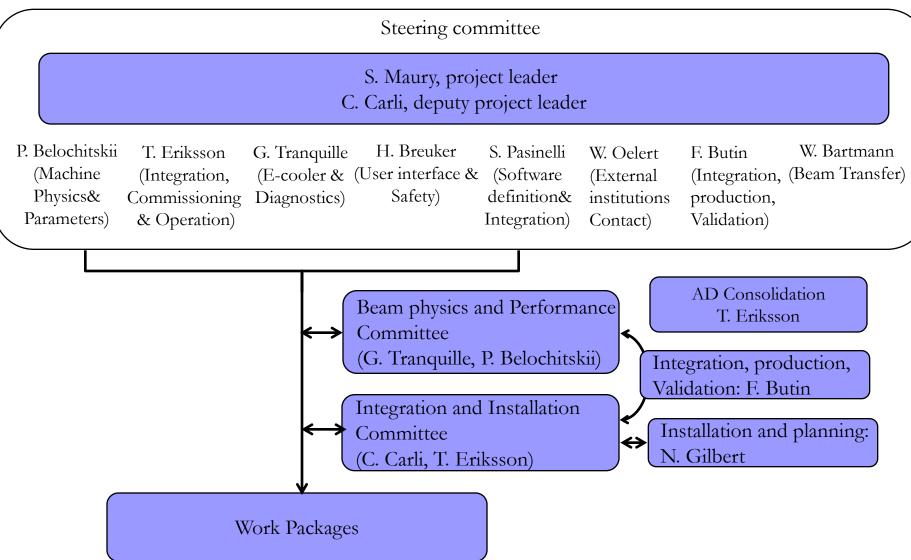
### ELENA Project Structure







### **ELENA Committees and Meetings**

|  | Beam | <b>Physics</b> | and ] | Performance | Committee | (BPPC) | ) |
|--|------|----------------|-------|-------------|-----------|--------|---|
|--|------|----------------|-------|-------------|-----------|--------|---|

- □ Define the parameters of the ELENA ring and the transfer lines to ensure that they fit the physics requirements (Ring optics, electron cooling, instrumentation, injection & ejection, ion source ....).
- ☐ Chaired by Gerard Tranquille and Pavel Belochitskii with Olav Berrig scientific secretary

#### **■ ELENA Installation and Integration Committee (IIC)**

- □ Practical Implementation of the machine and lines discussed in the BPPC (space available/required for equipment, general infrastructure, civil engineering ....)
- □ Chaired by Christian Carli and Tommy Eriksson with Bertrand Lefort scientific secretary

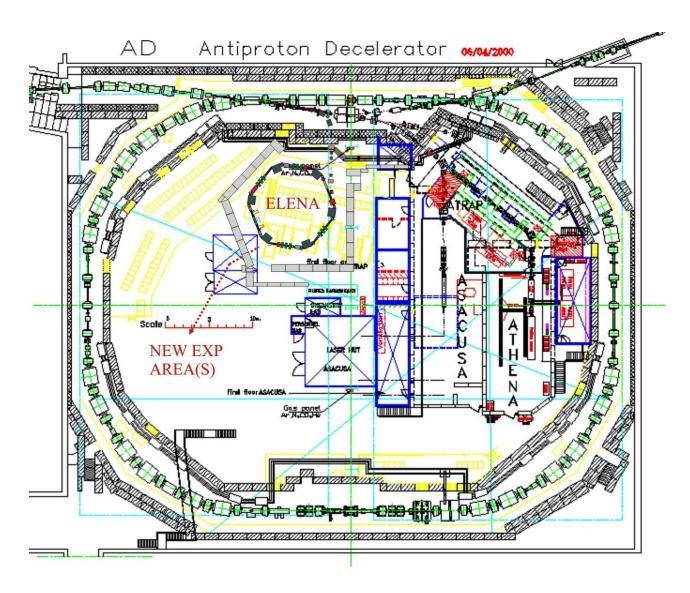
#### Meetings of both committees on Thursdays

☐ Frequency of Installation and Integration Committee: maximum every second week alternating with BPPC ... depending on needs (open issues)

- Communication between committees: issues identified in Installation and Integration Committee may be trigger re-discussion in BPPC
- Invitations to both committees and project meetings to one and the same mailing list
  - ☐ Keep everybody possibly interested informed,
  - □ People should not feel obliged to attend meetings in case they are convinced that they are not needed
  - ☐ If some people concerned are not invited, please inform us (and feel free to forward invitations)



#### ELENA – Present Layout in AD/ELENA Hall





### PROPOSAL TO MEASURE THE GRAVITATIONAL BEHAVIOUR OF ANTIHYDROGEN AT REST (SPSC-P-342)

- From the SPSC meeting (17<sup>th</sup> and 18<sup>th</sup> of January 2012)
- The SPSC **further reviewed** the proposal to measure the gravitational behaviour of antihydrogen at rest, SPSC-P-342.
- The Committee **appreciates** the carefully worked out proposal and acknowledges the elegance of the proposed methods as well as the interest of the physics addressed.
  - The Committee **received** additional information satisfactorily answering the points raised in the review process.
- In the light of this the Committee **recommends approval** of the experiment.
- The committee **advises** the collaboration to proceed towards an MOU with a detailed schedule and defined commitments of the partners.



# **ELENA Workpackages**

|   |                | 2012 | 2013 | 2014 | 2015 Budget code |
|---|----------------|------|------|------|------------------|
| 1 Project Management                        | S.Maury        | 1.35 | 1.45 | 0.7  | 0.7              |
| Budget                                      |                | 50   | 50   | 50   | 50 Bc1           |
| 2.1 Optics and Machine Parameters           | P.Beloshitskii | 0.5  | 0.7  | 0.4  | 0.7              |
| External manpower                           |                | 0.8  | 0.2  |      |                  |
| Budget                                      |                | 30   |      |      | Bc2              |
| 2.2 Integration Commissioning and Operation | T.Eriksson     | 0.4  | 0.6  | 0.6  | 0.6              |
| Budget                                      |                |      |      |      | Bc3              |
| 2.3 Mechanical Design and Construction      | D.Perini       | 0.2  | 0.2  | 0.2  | 0.2              |
| External manpower                           |                | 2.8  | 4.8  | 2.8  | 0.3              |
| Budget                                      |                |      |      |      | Bc4              |
| 2.4 Software Definition and Integration     | S.Pasinelli    | 0.2  | 0.6  | 0.6  | 0.3              |
| Budget                                      |                |      |      |      | Bc5              |

Just an example: all names and numbers are pure fictive!



#### Contributions from outside Institutes

| A                              | В              | С         | D          | Е         | F  | G              | Н             | 1     |
|--------------------------------|----------------|-----------|------------|-----------|--|----------------|---------------|-------|
| Institution                    | lable contribu | ution To  | be applied | for       | Work Pa  | ckage - Comr   | nents         |       |
|                                | Manpower       | Financial | Manpower   | Financial |  |                |               |       |
| Univ. Tokyo & MPQ-MPI          | 7 FTE.Y        | 2 MCHF    |            |           | Micro-wire monitor, E-cooling?                     |                |               |       |
| Cockcroft Institute & Univ's   |                |           | 6 FTE.Y    | 1 MCHF    | Life-time a  | nd other beam  | dynamics stud | lies, |
|                                |                |           |            |           | equipment  | s, prototyping |               |       |
| Triumf                         | 0.1 FTE.Y      |           | ?          | ?         | Design (conceptual) of 100 keV lines               |                |               |       |
| Univ. Brescia                  |                | 50 kEUR   |            |           |  |                |               |       |
| CEA-IRFU Saclay                |                |           | 2 FTE.Y    | 300 kEUR  | Magnet construction at Sigmaphi (& follow-up?)     |                |               |       |
| Denmark                        |                |           | 6 FTE.Y    | 800 kCHF  | Magnet (main) construction plus manpower @CERN     |                |               |       |
| IKP - FZ Julich                | 3 FTE.Y        |           |            |           | H- source (if not other contrib's to be discussed) |                |               |       |
| US (Berkeley)                  |                |           | 3 FTE.Y    |           | Beam dynamics, LLRF Schottky (to be defined by us) |                |               |       |
| HIM/MAM                        |                |           | 3 FTE.Y    | 150 kCHF  | Workshop (support, vacuum equipment)               |                |               |       |
| MSL Stoc <mark>k</mark> holm   | 0.5 FTE.Y      |           | 1 FTE.Y    |           | Beam line design, commissioning (partly financed)  |                |               |       |
|                                |                |           |            |           |  |                |               |       |
| Total                          | 10.6 FTE       | 2.06 MCHF | 21 FTE     | 2.35MCHF  |  |                |               |       |
| Promises in Feasibility report | 11.5 FTF       | 2.00 MCHF | 17 FTF     | 4.05 FTE  |  |                |               |       |

# **ELENA**

# Some preliminary milestones

- Ring optics and layout: Spring/2012
- Transfer lines: Mai/2012 (?)
- TDR: October/2012 (Review of the project?)
- Manpower/budget profiles and schedule: March/2012
- Magnets design: December/2012 (?)
- AD Hall preparations: 01/2013-03/2014
- ELENA Installation: 01/2014-03/2015
- ELENA commissioning: from 04/2015
- p or H- or no source: 12/2011
- Design of the new building: 10/2011-04/2012 (Discussions started!)
- Delivery of the new building: 10/2013
- Moving the kicker platform: 10/2013-03/2014
- AD Start-up: 05/2014



#### Transfer lines WS

- In the ELENA Project transfer lines are very important with a need to build electrostatic transfer lines for the experimental areas and to do so we need first to learn about that.
- Experts are invited (ISOLDE, COCKROFT, ASACUSA, ...)
- Have a nice discussion, definition and convergence to our needs.

Have a nice meeting!