ELENA
Integration Layout Infrastructure
- ELENA comes in a wide context of AD facility consolidation
  - AD machine
  - AD hall infrastructure
  - Experimental areas and control rooms (present and future)
  - Space for experiments preparation and hardware storage (mostly inexistent today)
AD hall adaptation stage 1

- BASE installed
- ATRAP barrack removed
- New platform over ATRAP laser cabin
- Communication with bdg 393
- New line 7000
- Situation mid 2014
Line 7000 (ejection)

Bend towards ELENA Installed 2015

Ejection line being installed
BASE exp area and transfer line

Exp area shielding
In place

Transfer line to be installed Feb – June 14
BASE from inside...
AD hall adaptation stage 2

- Racks reorganized on 2 floors
- Kicker generators removed ELENA shielding in place
- ASACUSA chemical room removed (common cleaning room B393)
- Workshop removed GBAR shielding in place
- Situation mid 2015
AD hall adaptation stage 3

- Additional rack space if needed
- ELENA machine, injection line and source installed
- GBAR and ejection line installed

Situation mid 2016

F. Butin / ELENA collaboration
AD hall adaptation stage 4

* During CERN machines LS2 (2018):
  - Upgrade AD hall air conditioning system
  - Proposal to shift ASACUSA laser room by 5m to make space for another experiment in AD hall
  - Adapt to new ideas that will have emerged by then!
Layout of ELENA surroundings (1)

- New adjacent building (bdg 93) for experiments control rooms, meeting room and cafeteria:
  - OK for AegiS, ATRAP and BASE
  - Planned for GBAR (2015)
  - Principle agreed for APLHA and ASACUSA (2017)
  - Financing to be secured
New technical building (bdg 393) construction:

- AD kicker generators and existing workshop relocation
- Experiments hardware preparation / storage space;
- Experiments common cleaning room
- AD magnetic horn test-bench relocation

Delivery: mid 2014
B393 from inside...
And from outside…

Your logo proposals expected here before end Feb.

win 2x
ELENA position in AD hall

Compromise between space Injection and Ejection lines
ELENA machine section 3
ELENA machine section 4

F. Butin / ELENA collaboration
ELENA machine section 5

F. Butin / ELENA collaboration
ELENA machine section 6

F. Butin / ELENA collaboration
LNI (AD-ELENA transfer line)

- Very preliminary
- Details to be discussed
Integration issues

Conflict between supports kicker/ BTV/septum

Height/material false floor Wrt impact on B field
Integration issues (2)

Neutral recombination detector
Integration
Integration issues (3)

Circulation / access to machine center
Integration issues (4)

Small clearance

Section 3
Integration issues (5)

Beam envelope
Redesign vac chamber
Integration issues (6)

GBAR LINAC shielding

Large gangway also for GBAR access not financed yet
Integration issues (7)

Ground floor racks
Access and maintenance
Quality assurance in ELENA project

- Quality assurance ensured via the quality assurance manager and quality management team.
- EVM being setup, planning being revisited
- Standards are defined in 2 reference docs:
<table>
<thead>
<tr>
<th>WP ID</th>
<th>WP Name</th>
<th>Owner</th>
<th>TDR status</th>
<th>EVM Data</th>
<th>WP Description functional spec</th>
<th>Design review</th>
<th>Technical Spec</th>
<th>Market Survey</th>
<th>Tender</th>
<th>Contract</th>
<th>Production complete</th>
<th>Installation complete</th>
<th>Commissioning complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Optics &amp; Machine Parameters</td>
<td>P. Belochitski</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2</td>
<td>Integration, Commissioning &amp; Operation</td>
<td>T. Eriksson</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.3</td>
<td>User Interface &amp; safety</td>
<td>H. Breuker</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.4</td>
<td>Software Definition &amp; Integration</td>
<td>S. Pasinelli</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td>External Institutions Contact</td>
<td>W. Oelert</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.6</td>
<td>Integration, Production &amp; Validation</td>
<td>F. Butin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.7</td>
<td>Installation &amp; Planning</td>
<td>F. Butin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.8</td>
<td>Integration</td>
<td>S. Maridor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.9</td>
<td>Webmaster</td>
<td>S. Pasinelli</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Radio Protection</td>
<td>F. Froeschl</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1</td>
<td>Mechanical Design &amp; Construction</td>
<td>D. Perini</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Magnets</td>
<td>T. Zickler</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.3</td>
<td>RF &amp; Schottky Pick-Up</td>
<td>M. E. Angelotta</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.4</td>
<td>Power Converters</td>
<td>J. Bailie</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td>Vacuum System</td>
<td>P. Kersevan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.6</td>
<td>Electron Cooler</td>
<td>E. Tranquille</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.7</td>
<td>Beam Instrumentation</td>
<td>E. Tranquille</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.8</td>
<td>Injection &amp; Ejection Kickers Electronics</td>
<td>E. Carlier</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.9</td>
<td>Injection &amp; Ejection Kickers</td>
<td>L. Sermeus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.10</td>
<td>2 Injection &amp; Ejection Septas Electronics</td>
<td>E. Carlier</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.11</td>
<td>Injection, Extraction &amp; Transport Lines</td>
<td>W. Bartmann</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.12</td>
<td>Experimental Areas</td>
<td>J. Effympoulos</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.13</td>
<td>Controls</td>
<td>M. Cartin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.14</td>
<td>B-Train</td>
<td>M. Buzio</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.15</td>
<td>Interlock System</td>
<td>B. Puccio</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.16</td>
<td>H-Source</td>
<td>D. Kuchler</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.17</td>
<td>Magnetic Measurements</td>
<td>P. Galbrath</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.18</td>
<td>Survey</td>
<td>T. Dobre</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.19</td>
<td>Handling &amp; Transportation</td>
<td>S. Pelletier</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.20</td>
<td>Civil Engineering (B393)</td>
<td>L. Lopez-Hernandez</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1</td>
<td>Cooling &amp; Ventilation</td>
<td>A. Broche</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.2</td>
<td>Access System</td>
<td>J. Chapuis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.3</td>
<td>Cabling</td>
<td>J. C. Guillaume</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.4</td>
<td>Electrical Distribution</td>
<td>F. Necca</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.5</td>
<td>Scrapers</td>
<td>F. Loprete</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>