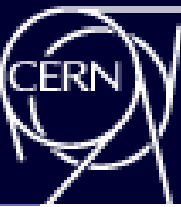




AD-ELENA



ADUC 11th February 2025

AD facility

Maintenance - Consolidation

Developments

François BUTIN – BE-EA



ANTIMATTER FACTORY





NewALPHA CR



New TELMAX
Exp Area
+ PAX test beam



AD machine :

- 2 magnets extracted for refurbishment (QFN26 and BHN17): re-installed W6 and 8
- Routine maintenance for:
e-cooler + BCCCA + C10 + C02 RF cavities
+ injection/ejection kickers, septa magnets
- BIPM gas injection valve repair
- New power converters for injection line magnets



-ELENA / ion source:

- Ion source large maintenance performed + power supply conformity improvement + HV transformer oil exchange
- Routine maintenance of main systems

-Infrastructure

- Major works on BT switchboards replacement – causes disruptions
- Cabling for access safety system and for TELMAX



Disruptions expected

-Cooling water ~1 week: 24th-28th Feb

-Cryogen fluids distribution stopped ~2 weeks: 24th Feb -7th March
Arrangements agreed for BASE anticipated lHe delivery.

-Access to AD shielding areas limited during magnets extarction / re-installation:
14th – 21st Feb: opening for BHN17, no access to ALPHA cryo platform

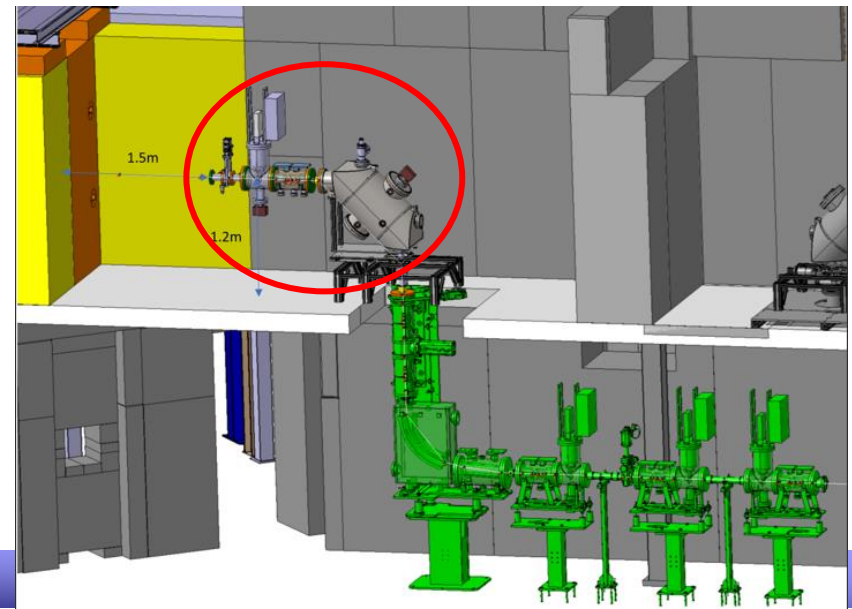
-Timing for crane usage,
to limit perturbation to
BASE measurements:

	MO	Tue	Wed	Thrs	Fri	Sat	Sun
0	CALM						
1	CALM						
2	CALM						
3	CALM						
4	CALM						
5	CALM						
6	CALM						
7	CALM						
8	BASE Maintenance and axial	CALM	BASE Maintenance and axial	CALM	BASE Maintenance and axial	CALM	
9							
10	CALM						
11	CALM						
12	CALM						
13	CALM						
14	CALM						
15	CALM						
16	CALM						
17	CALM						
18	CALM						
19	CALM						
20	CALM						
21	CALM						
22	CALM						
23	CALM						

Next YETS will be short: 14.5 weeks (+Xmas break)

“All groups are requested **not to make substantial changes** in order to be able to shorten the hardware and beam commissioning time, gaining more time for physics”

- End of AD beam: 8th December 2025
- Restart of physics: 2nd April 2026
- Possible in principle to refurbish 1 quadrupole (11 weeks needed) – TBD !
- Routine maintenance
- Installation of TELMAX horizontal beam line section (ECR in approval loop), or delayed if no immediate need





AD-CONS project status



-Magnets refurbishment:

- Status: Will continue till LS3 included
- Planning: 12 (13) main magnets + 6 steerers/solenoids during LS3
- Financing: secured

-AD e-cooler:

- Status: project on track for swap with new cooler during LS3
- Financing is secured

-Stochastic cooling:

- Status: New kickers have to be engineered and produced – no design available yet.
Future of amplifiers needs to be secured (regular failures)
- Financing: not secured yet

-Cooling and ventilation:

- Status: Planned for LS3
- Next: Studies in progress, and works to take place during LS3
- Financing: HVAC + hydraulics secured



AD-CONS WP's (Continued)



-Power convertors:

- Status: ongoing. Injection line optimization in progress (magnets + convertors)
- Next: bulk of spending/installation work after LS3 (mains)
- Financing: secured

-Cryo fixed distribution system:

- Status: stalled
- Next: Need to study the complete system with local liquefactor
- Financing: cost estimated to 8.3 MCHF, potential savings 0.6 MCHF/year. Will depend on AD long term future

-Magnetic horn (after production target):

- Consolidation approved

- Priorities should be established **in the light of the anticipated physics program of AD experiments beyond LS3-LS4**, and the corresponding anticipated needs of AD/ELENA machines operation.
- New physics experiments proposals proposed at SPSC to be analyzed
- Official call for TELMAX test beam time sent by physics coordinator. 2 “customers” already in the waiting line !
- Operating slots of ELENA during YETS and during LS3 with Hminus ion source to be discussed/agreed among experiments

