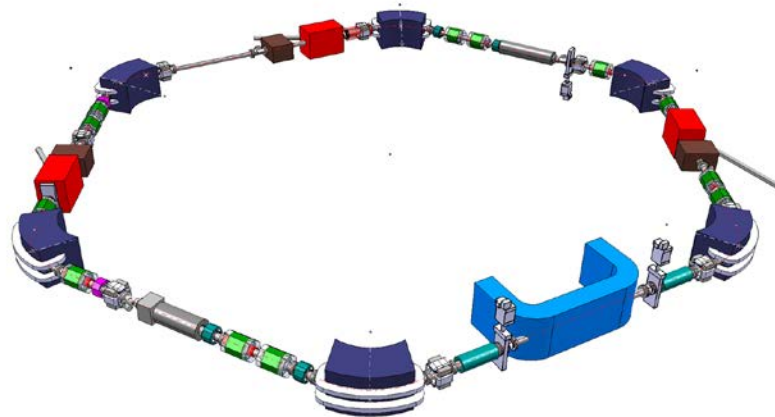


Future of CERN AD infrastructures in the context of ELENA machine integration



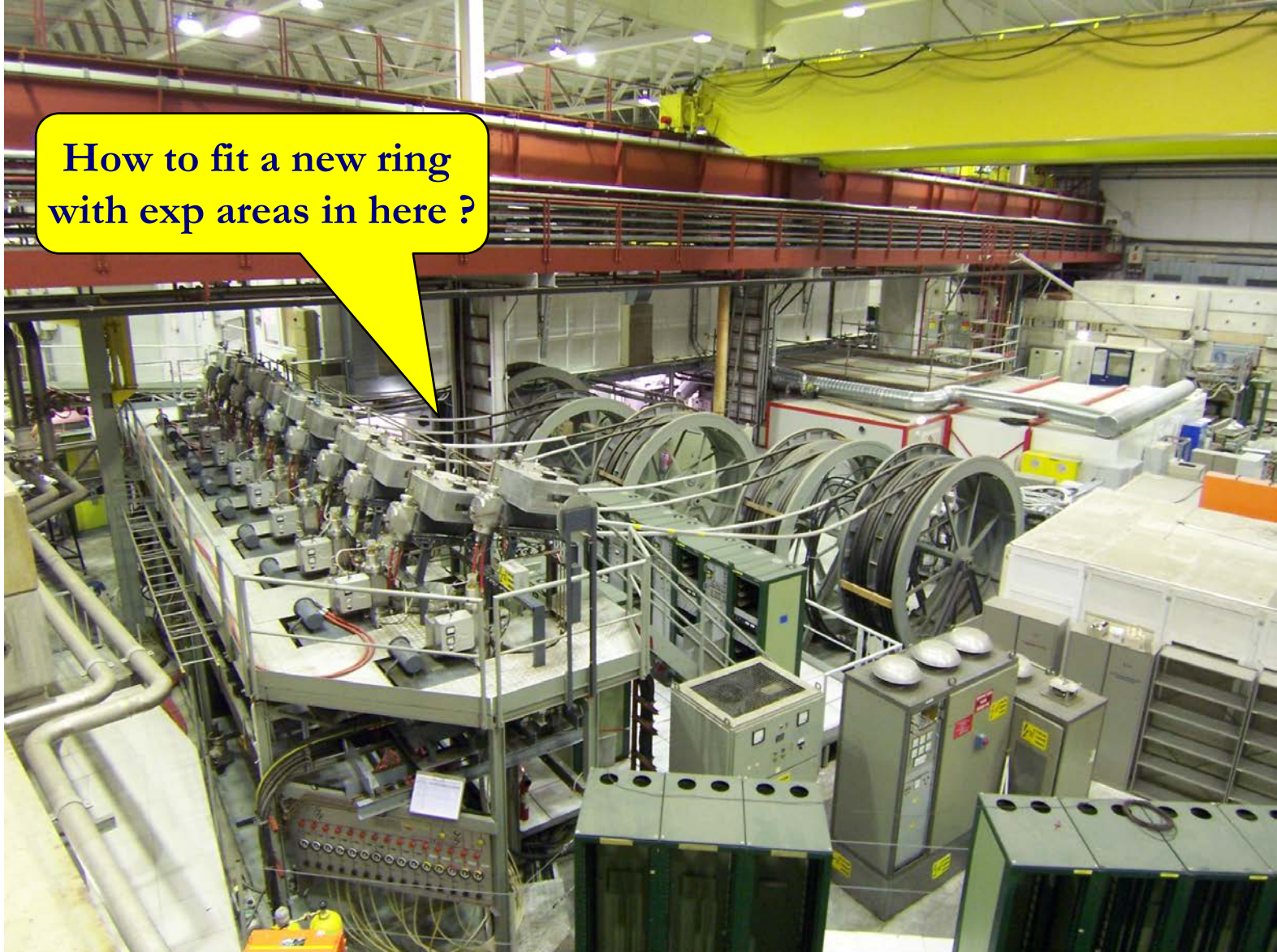
ELENA
Extra Low Energy Antiprotons

Get prepared for another 20 years

- ELENA = large prospect for antiproton physics for another 20 years
- 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)

First challenge: fit ELENA in AD hall

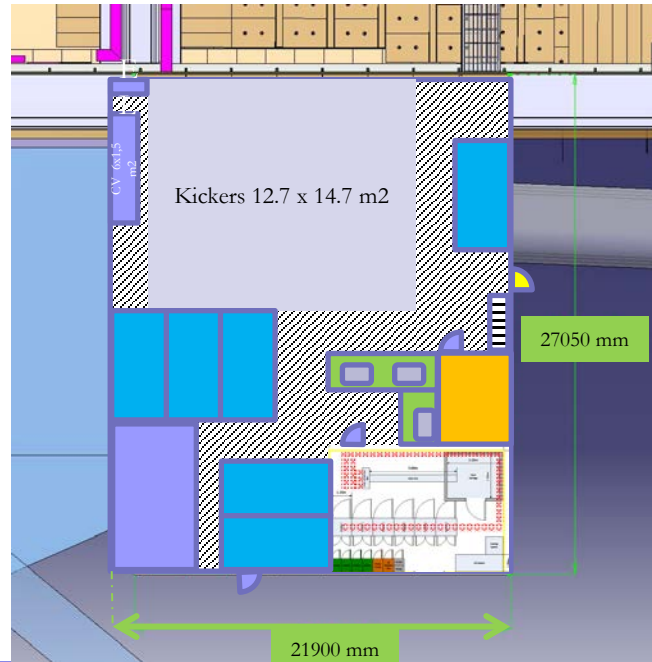
How to fit a new ring with exp areas in here ?



- 1st stage is in progress:
 - New adjacent building (bdg 93) for experiments control rooms, meeting room and cafeteria:
 - **OK** for AegiS, ATRAP and BASE
 - **Planned** for Gbar (early 2015)
 - **In discussion** for APLHA and ASACUSA (2015 ? 2017 ?)



- New annex 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

Inauguration with CERN DG
Monday 17th June



- Preparation for BASE exp area and transfer line (relocation of ATRAP cleaning room in a temporary barrack)
- ALPHA cleaning room in a temporary barrack: make space for new laser equipment
- Adaptation of transfer line 7000 to prepare for ejection towards ELENA
- Relocation of RFQD power converters and AD stochastic cooling filters

AD environment adaptation stage 1

Transfer line 7000

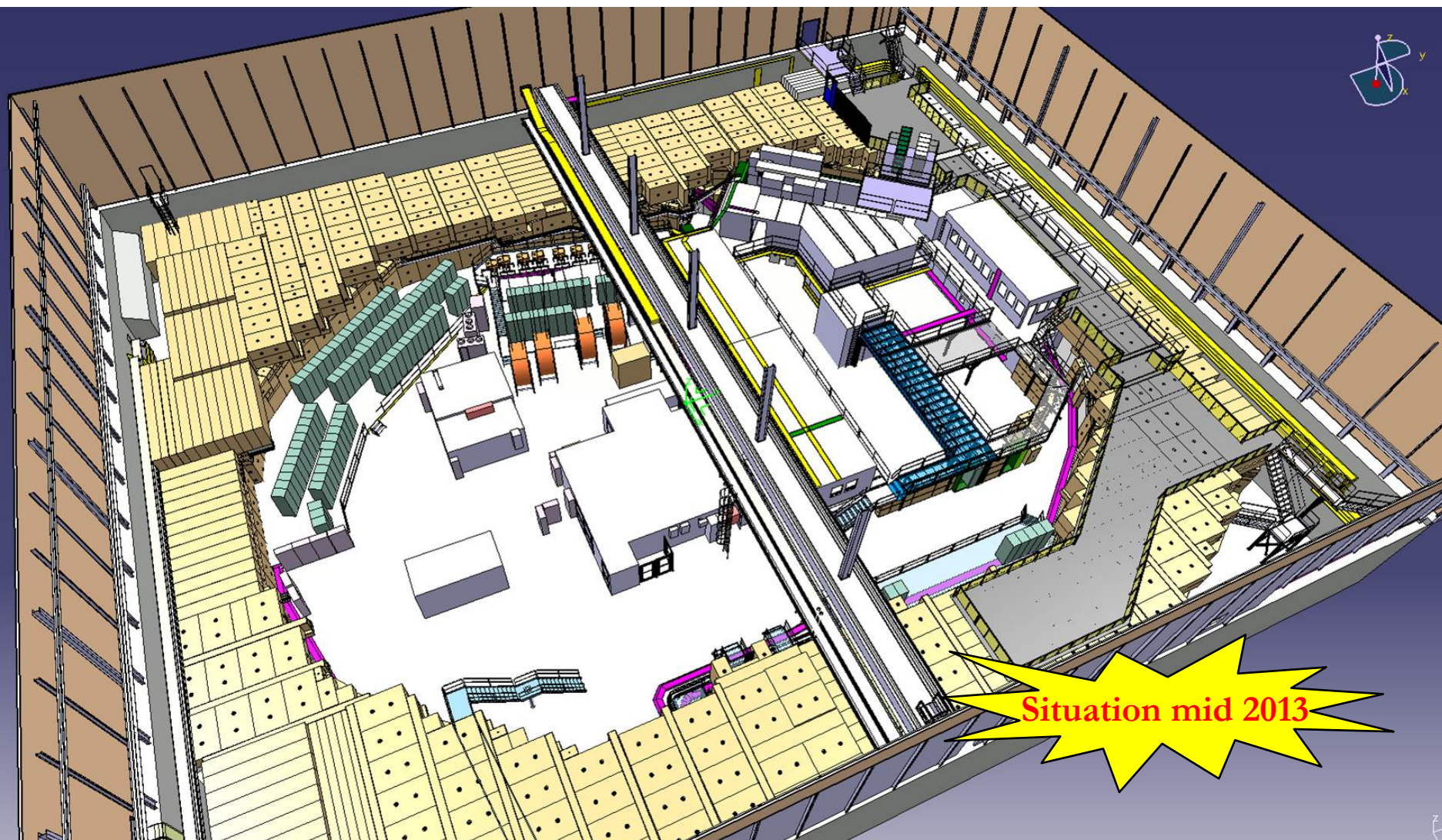
Provisional cleaning rooms for ATRAP and ALPHA

BASE transfer line and exp area

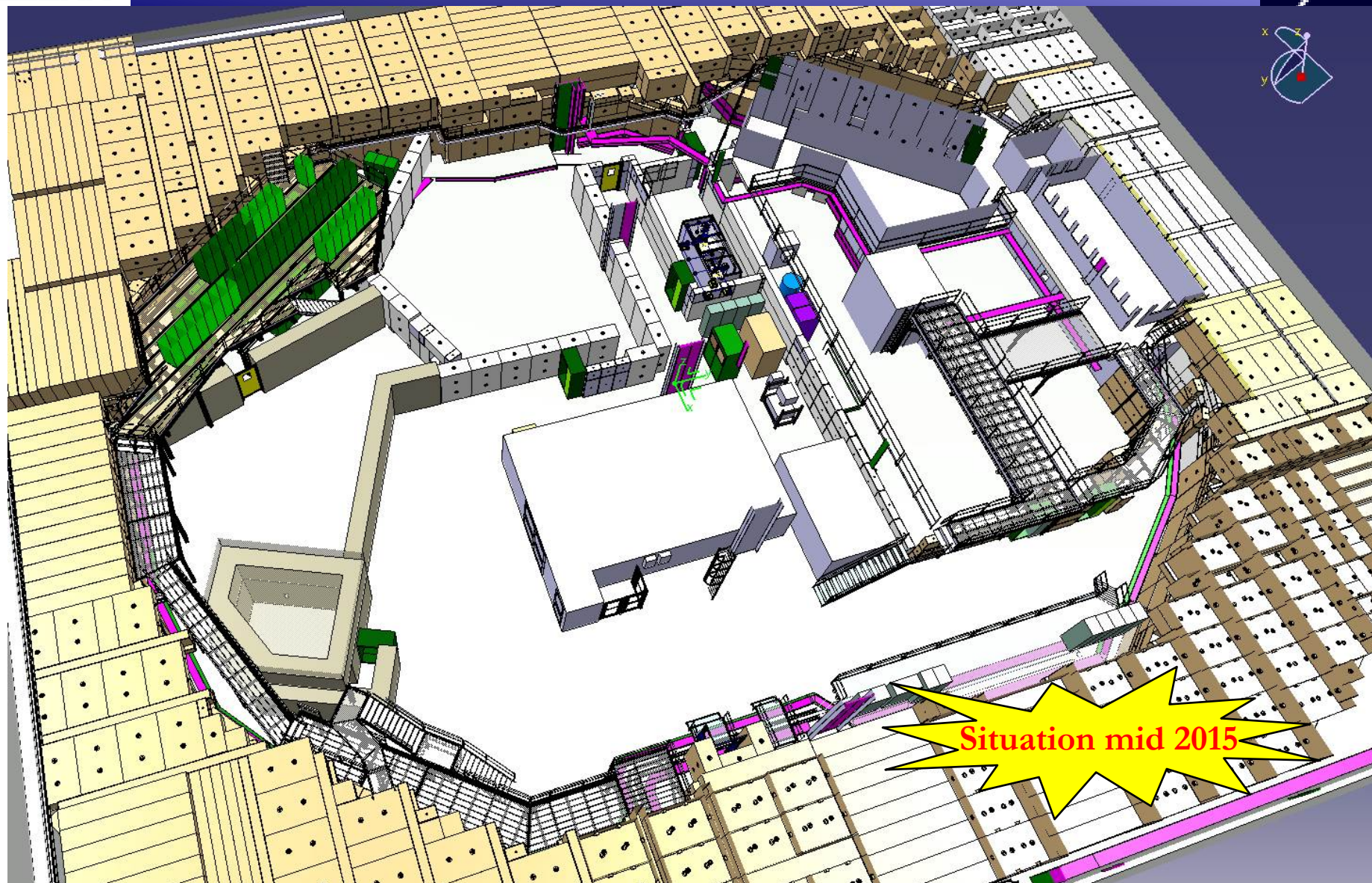
■ 2nd stage planned:

- Redistribution of **rack platform** on 2 levels: 03/2014
- Install **new gangway**: access to bldg 393, 2nd level racks, anticipate on Gbar, plan visitors platform
- Relocation of **experiments cleaning and chemical rooms** to new annex building 393: 06/2014
- Relocation of **AD workshop** to new annex building 393: 06/2014
- Relocation of **kicker generators** to new annex building 393: 01 – 06/2015
- Installation of ELENA and Gbar **shielding walls** (07/2015) + **transfer line from AD**
- Installation of **ELENA and Gbar hardware + transfer line + ion source** (2015 -2016)

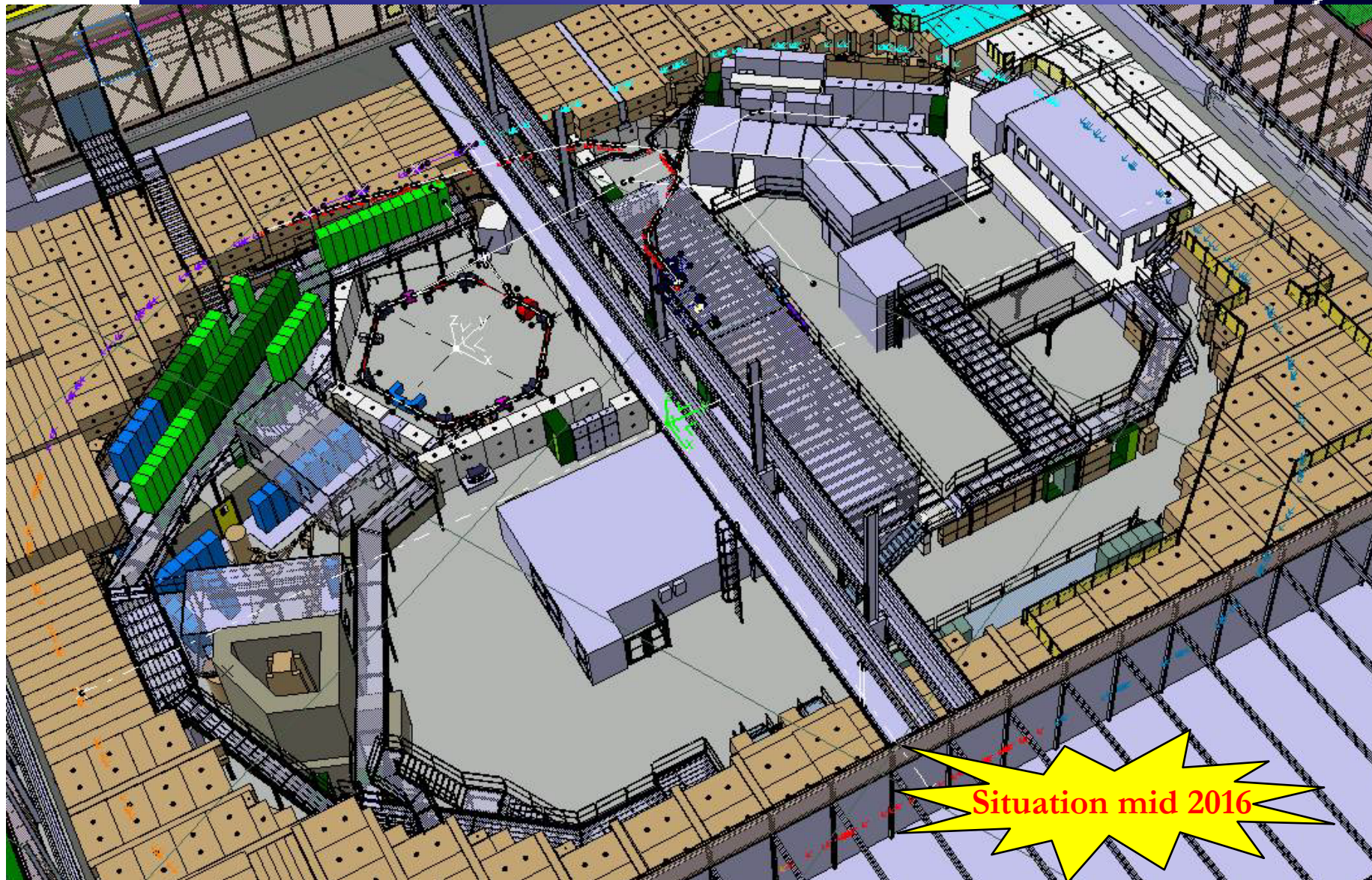
AD environment adaptation stage 2



AD environment adaptation stage 2

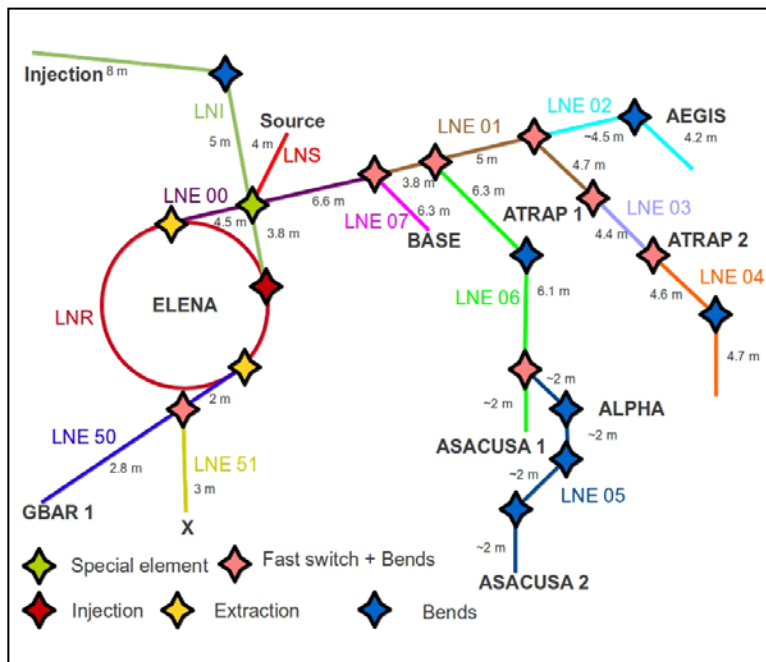


AD environment adaptation stage 2



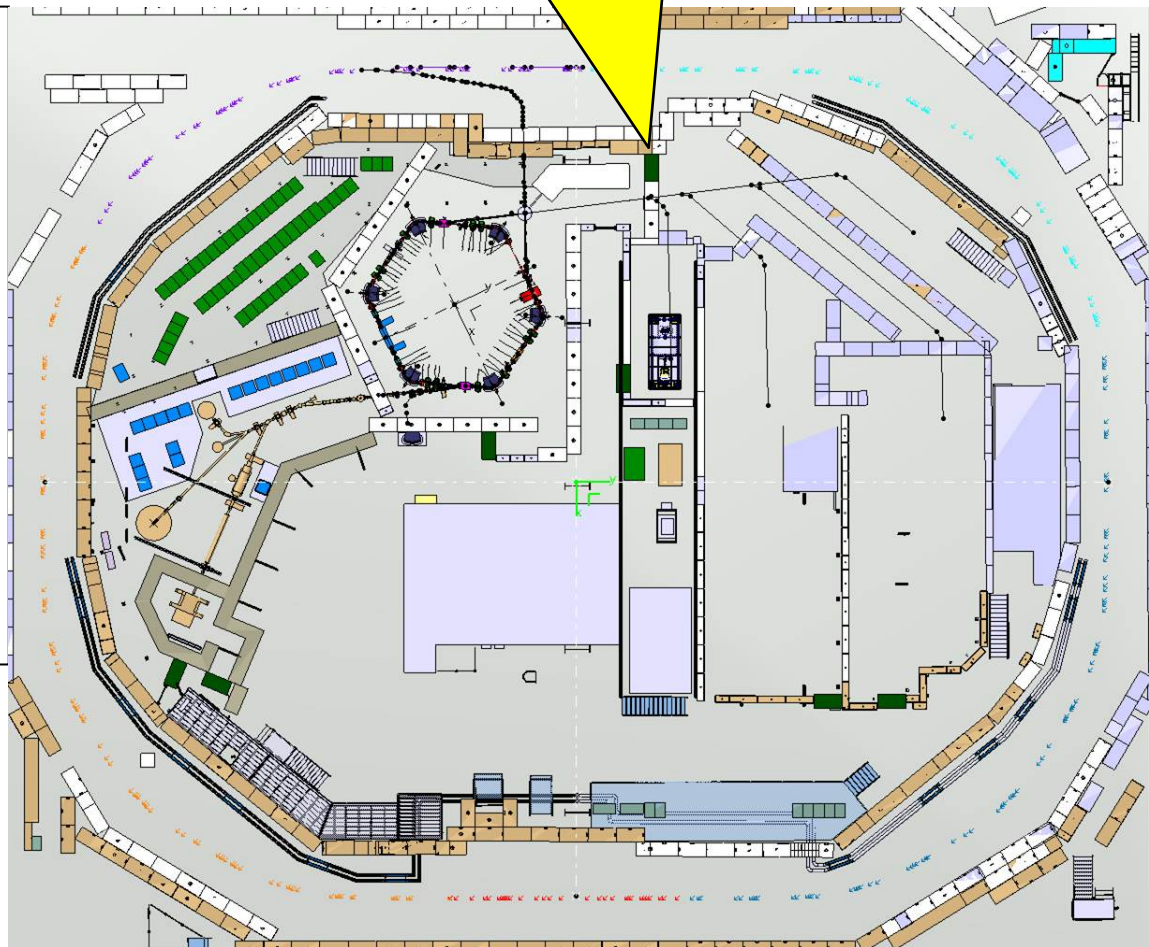
- ELENA commissioning with ion source (mid 2016 till end 2016), then:
 - Preparation for installation of **electrostatic transfer lines** to existing experiments
 - Removal of elements of **AD shielding wall**, attached infra equipment, adaptation of access control systems (01 – 05/2017)
- Get ready for **first ELENA beam to experiments** in June 2017

Remove AD wall indent and attached services

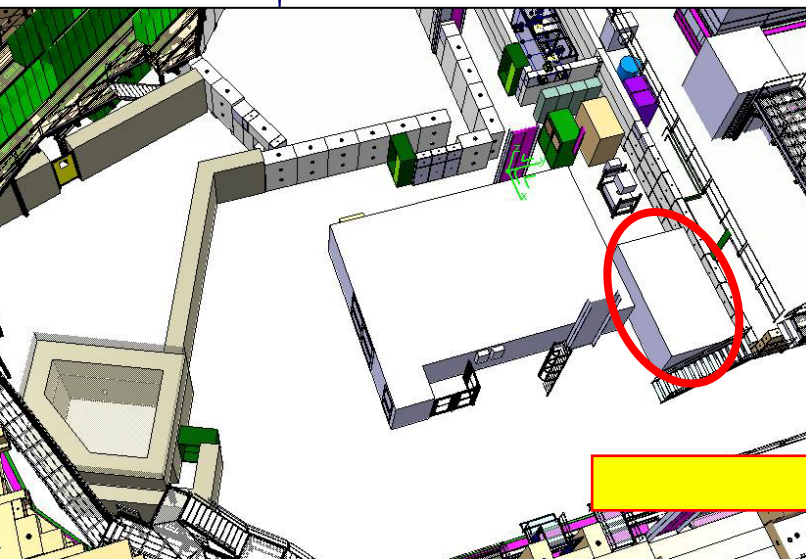


ELENA transfer lines to experiments

Courtesy G. Vanbavinckove, W. Bartmann

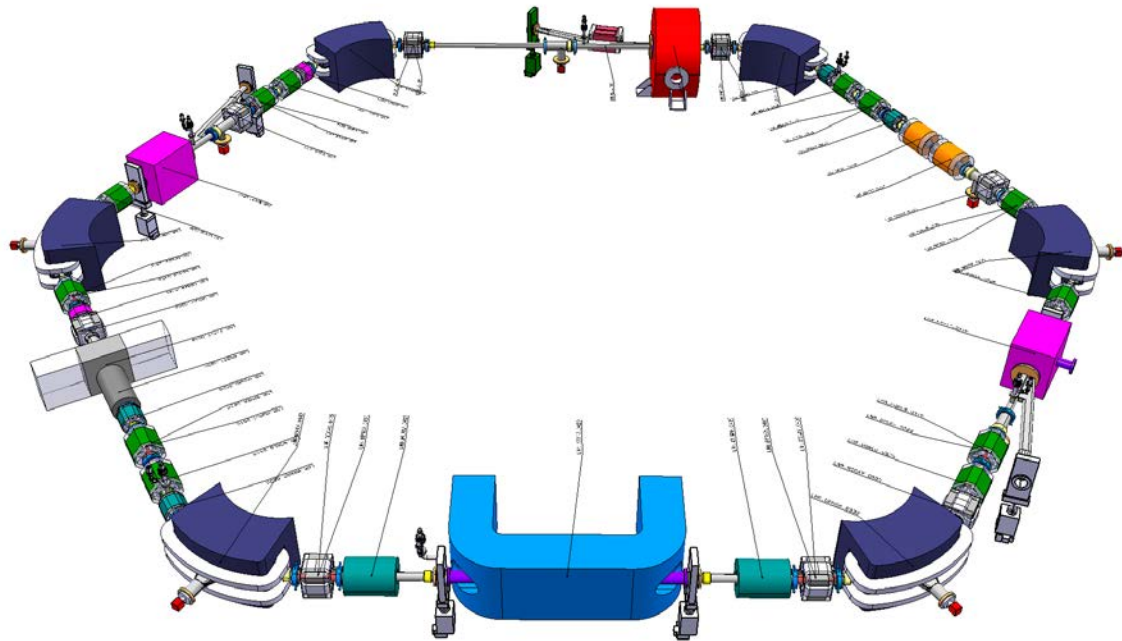


- During CERN machines LS2 (2018):
 - Upgrade AD hall **air conditionning** system
 - Proposal to **shift ASACUSA laser room** by 5 m to make space for another experiment in AD hall
 - **Adapt to new needs** that will have emerged by then



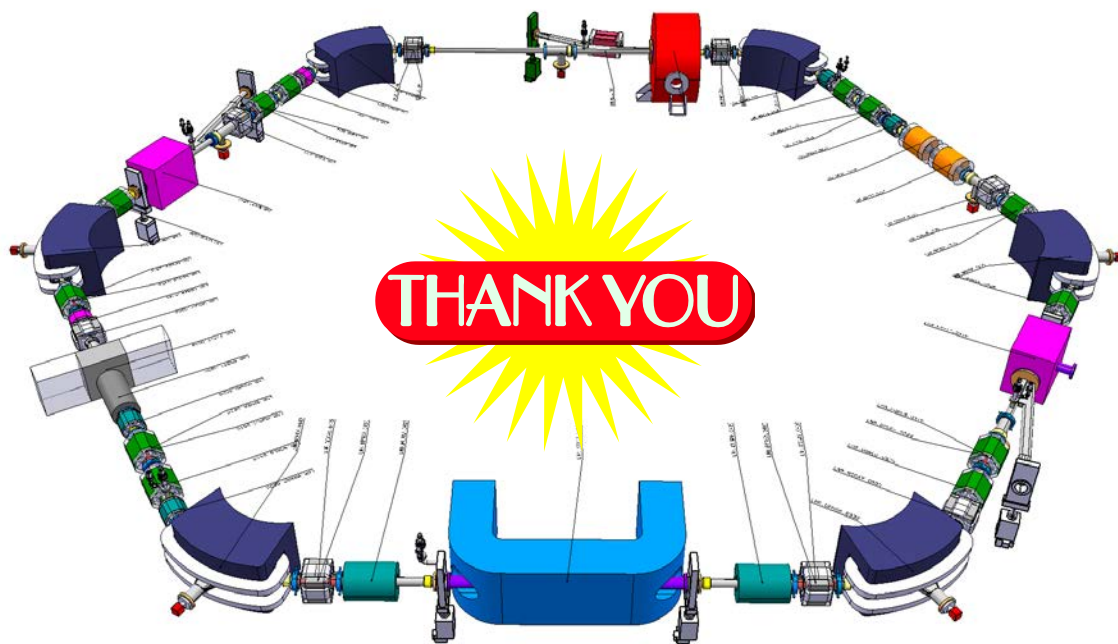
- Quite some work ahead of us, with clear roadmap !
- More details available at <https://edms.cern.ch/document/1269362/1>

CERN CH-1211 Geneva 23 Switzerland		EDMS NO. 1269362	REV. 0.2	VALIDITY DRAFT
ELENA		REFERENCE AD hall		
Date: 2013-03-05				
Technical Note				
Plans for AD hall adaptation in view of ELENA era				
<p>ABSTRACT: This document presents the plan for AD hall adaptation (relocation of the Control Rooms and cleaning rooms of the existing AD experiments, RF cubicles, workshop, installation of new gangways etc.) in the context of the preparation for the ELENA era.</p>				
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Special thanks to O. Choynet , J.M. Lacroix, S. Maridor (Catia sketches), ELENA core team (continuous support), AD users (stimulation and patience) !

F. Butin / ELENA collaboration