

AD / ELENA

Ongoing works + prospects



ANTIMATTER FACTORY



#	AD Facility		2085 days	Mon 16/11/15	Fri 02/02/24												
▲	Cooling water un-availability		525 days	Thu 20/12/18	Wed 03/02/21												
	New small pump installation	EN-CV	5 wks	Thu 20/12/18	Wed 06/02/19												
	Demi water circuit mods	EN-CV	5 days	Tue 15/01/19	Mon 21/01/19												
	Demineralized water unavailable 2019	EN-CV	5 wks	Fri 21/12/18	Thu 07/02/19												
	Demineralized water unavailable 2020	EN-CV	9 wks	Thu 19/12/19	Wed 04/03/20												
	Demineralized water unavailable 2021	EN-CV	5 wks	Thu 17/12/20	Wed 03/02/21												
▲	Cryogenics un-availability		230 days	Mon 01/04/19	Fri 28/02/20												
	Cryo plant refurbishment 2019	TE-CRG	10 wks	Mon 01/04/19	Fri 07/06/19												
	Cryo maintenance 2020	TE-CRG	4 wks	Mon 03/02/20	Fri 28/02/20												
■	Power cuts		355 days	Wed 19/12/18	Tue 26/05/20												
	Secured networks tests 2018	EN-EL	0.5 days	Wed 19/12/18	Wed 19/12/18												
	Tests 2019	EN-EL	0.5 days	Tue 16/04/19	Tue 16/04/19												
	Auto transfer tests 2020	EN-EL	5 days	Mon 11/05/20	Fri 15/05/20												
	AUG tests 23 & 24 May 2020	EN-EL	2 days	Fri 22/05/20	Mon 25/05/20												
	Secured networks tests 2020	EN-EL	1 day	Tue 26/05/20	Tue 26/05/20												

AD magnets refurbishment

4 BHW21

Cut vac chamber BHW21	TE-VSC	3 days	Wed 13/11/19	Tue 10/03/20	Chamber BHW21
Open shielding (1 beam + 18 blocks)	EN-HE	10 days	Mon 18/11/19	Mon 02/12/19	Open shielding (1 beam + 18 blocks)
Removal BHW21	EN-HE,TE-MSC,TE-V	1 day	Mon 02/12/19	Tue 03/12/19	Removal BHW21
Close shielding	EN-HE	4 days	Tue 03/12/19	Mon 09/12/19	Close shielding
Refurbishment BHW21	TE-MSC	9 wks	Tue 03/12/19	Tue 18/02/20	Refurbishment BHW21
Open shielding	EN-HE	4 days	Tue 18/02/20	Mon 24/02/20	Open shielding
Reinstallation BHW21	EN-HE,TE-MSC,EN-S	2 days	Mon 24/02/20	Wed 26/02/20	Reinstallation BHW21
Close shielding	EN-HE	4 days	Wed 26/02/20	Tue 03/03/20	Close shielding
Weld vac chamber BHW21	EN-MME,TE-VSC	1 wk	Tue 03/03/20	Tue 10/03/20	Weld vac chamber BHW21

???

4 BHW20

Cut vac chamber BHW20	TE-VSC	3 days	Mon 27/01/20	Wed 29/01/20	Cut vac chamber BHW20
Open shielding	EN-HE	1 day	Thu 30/01/20	Thu 30/01/20	Open shielding
Removal BHW20	EN-HE,TE-MSC,TE-V	1 day	Fri 31/01/20	Fri 31/01/20	Removal BHW20
Close shielding	EN-HE	1 day	Mon 03/02/20	Mon 03/02/20	Close shielding
Refurbishment BHW20	TE-MSC	9 wks	Tue 18/02/20	Tue 21/04/20	Refurbishment BHW20
Open shielding	EN-HE	1 day	Tue 21/04/20	Wed 22/04/20	Open shielding
Reinstallation BHW20	EN-HE,TE-MSC,EN-S	1 day	Wed 22/04/20	Thu 23/04/20	Reinstallation BHW20
Close shielding	EN-HE	1 day	Thu 23/04/20	Fri 24/04/20	Close shielding
Weld vac chamber BHW20	EN-MME,TE-VSC	1 wk	Fri 24/04/20	Fri 01/05/20	Weld vac chamber BHW20

4 Magnet group 4B

4 BHN45

Open shielding (15 beams)	EN-HE	7 days	Wed 09/10/19	Thu 17/10/19	Open shielding
Removal BHN45	EN-HE,TE-MSC,TE-V	0.5 days	Fri 18/10/19	Fri 18/10/19	Removal BHN45
Close shielding	EN-HE	3 days	Mon 21/10/19	Wed 23/10/19	Close shielding
Refurbishment BHN45	TE-MSC	6 wks	Fri 18/10/19	Fri 29/11/19	Refurbishment BHN45
Open shielding	EN-HE	3 days	Mon 17/02/20	Wed 19/02/20	Open shielding
Reinstallation BHN45	EN-HE,TE-MSC,EN-S	2 days	Thu 20/02/20	Fri 21/02/20	Reinstallation BHN45
Close shielding	EN-HE	3 days	Wed 26/02/20	Fri 28/02/20	Close shielding

4 QFN42

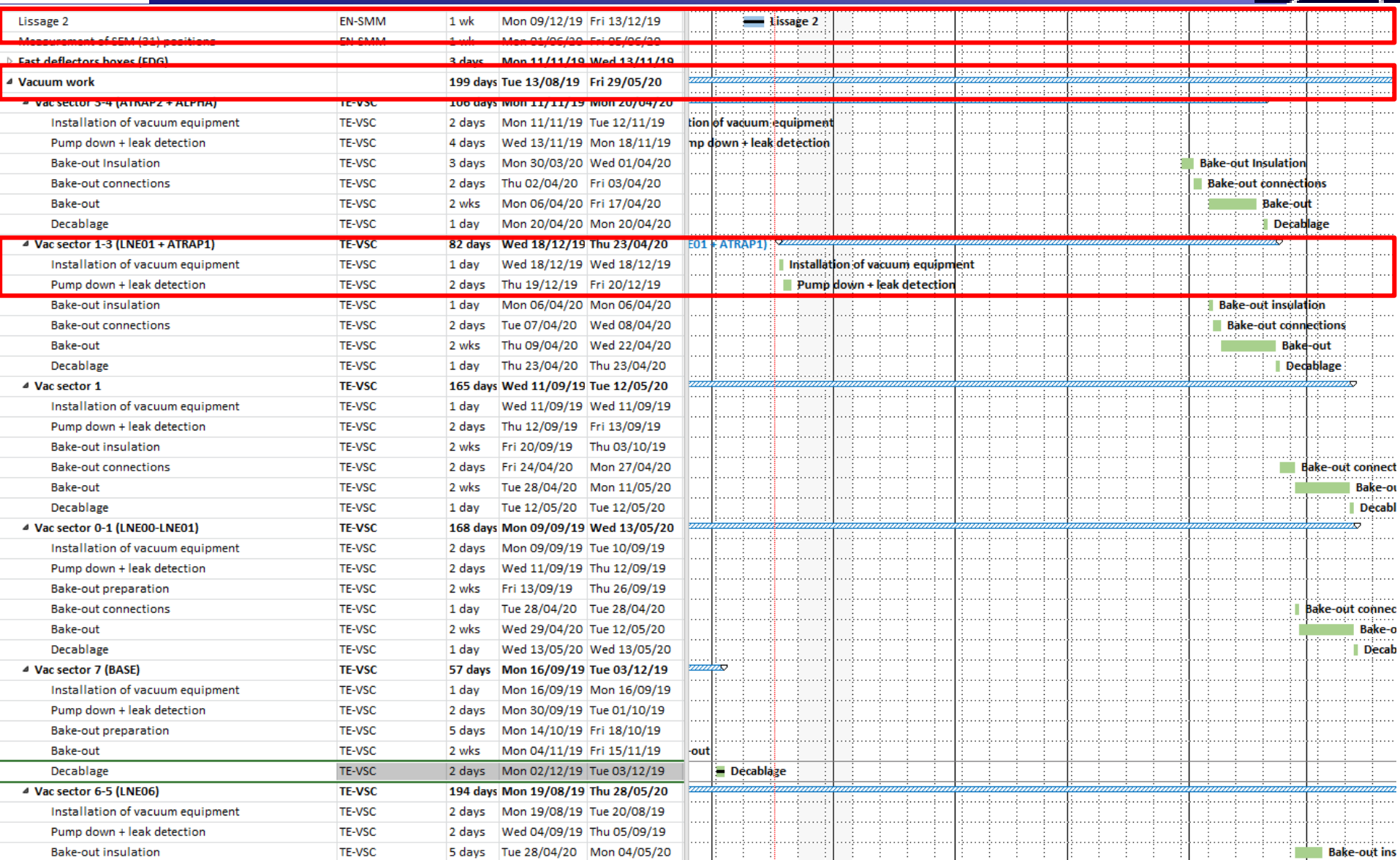
4 QDS43

4 QFN44

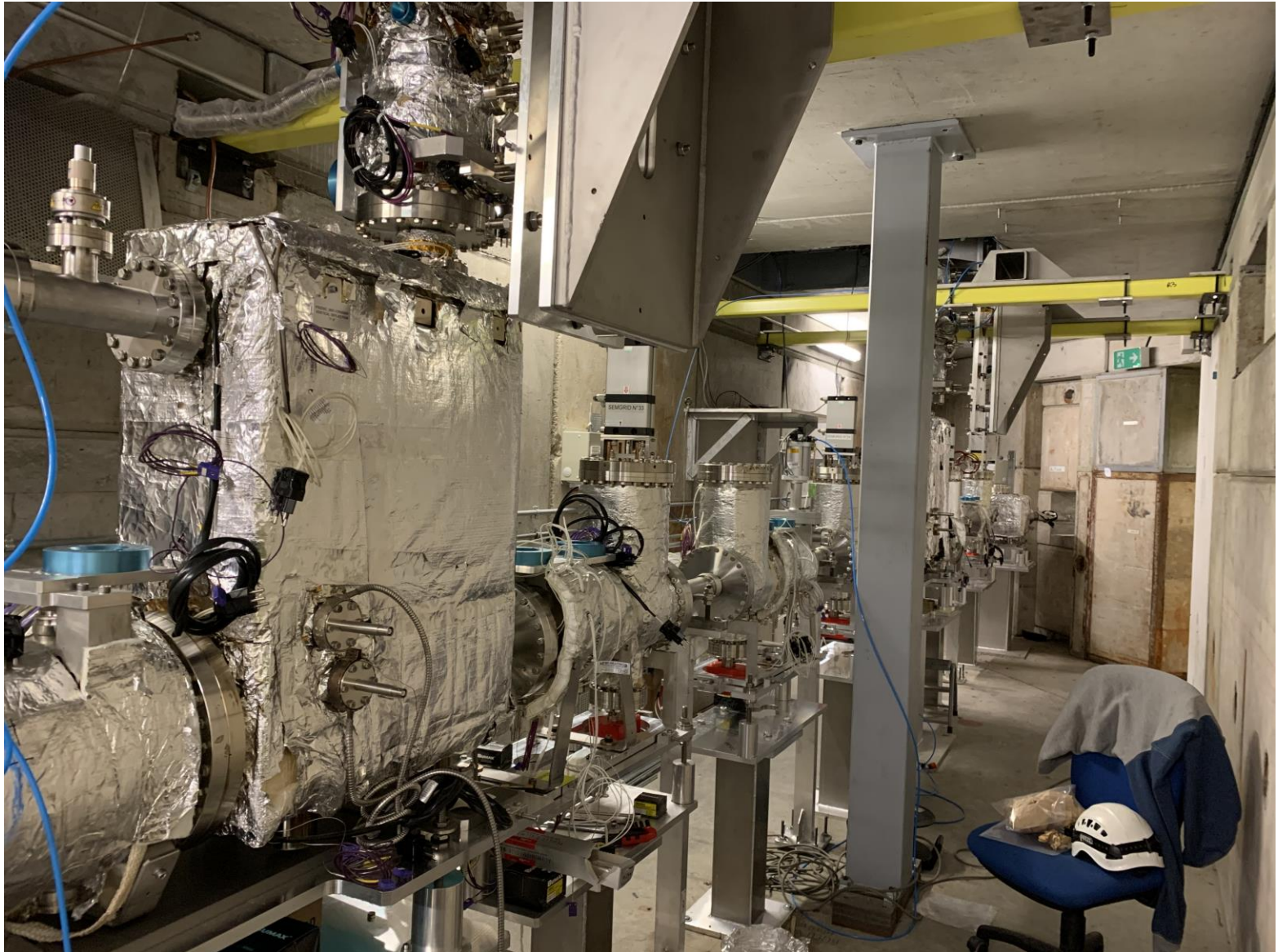
4 QDN45

Removal QDN45	EN-HE,TE-MSC,TE-V	0.5 days	Fri 18/10/19	Fri 18/10/19	Removal QDN45
Refurbishment QDN45	TE-MSC	6 wks	Mon 06/01/20	Fri 14/02/20	Refurbishment QDN45
Reinstallation QDN45	EN-HE,TE-MSC,EN-S	2 days	Mon 24/02/20	Tue 25/02/20	Reinstallation QDN45

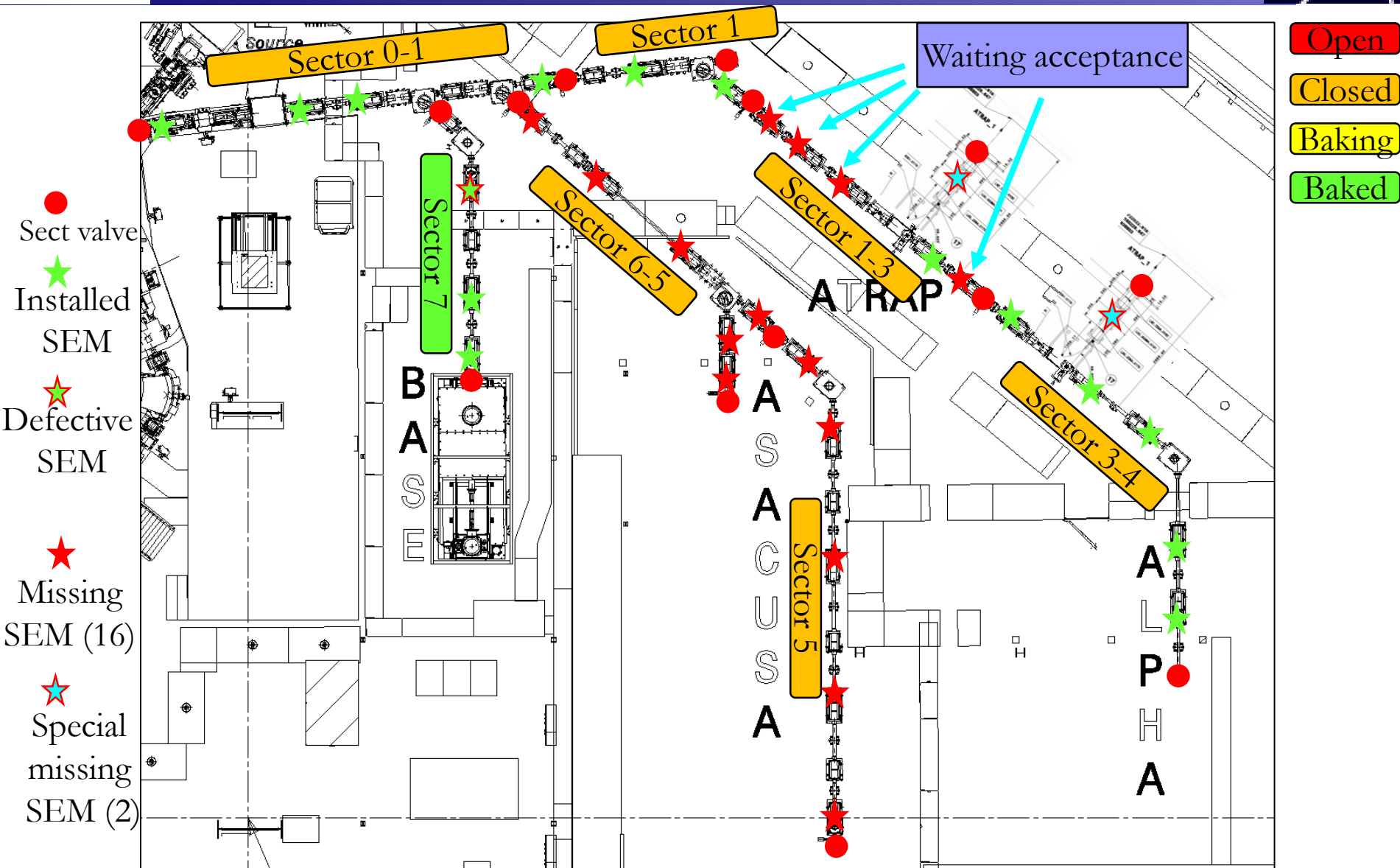
ELENA TL installation



LNE03: closed now !



Vacuum sectors / SEMs



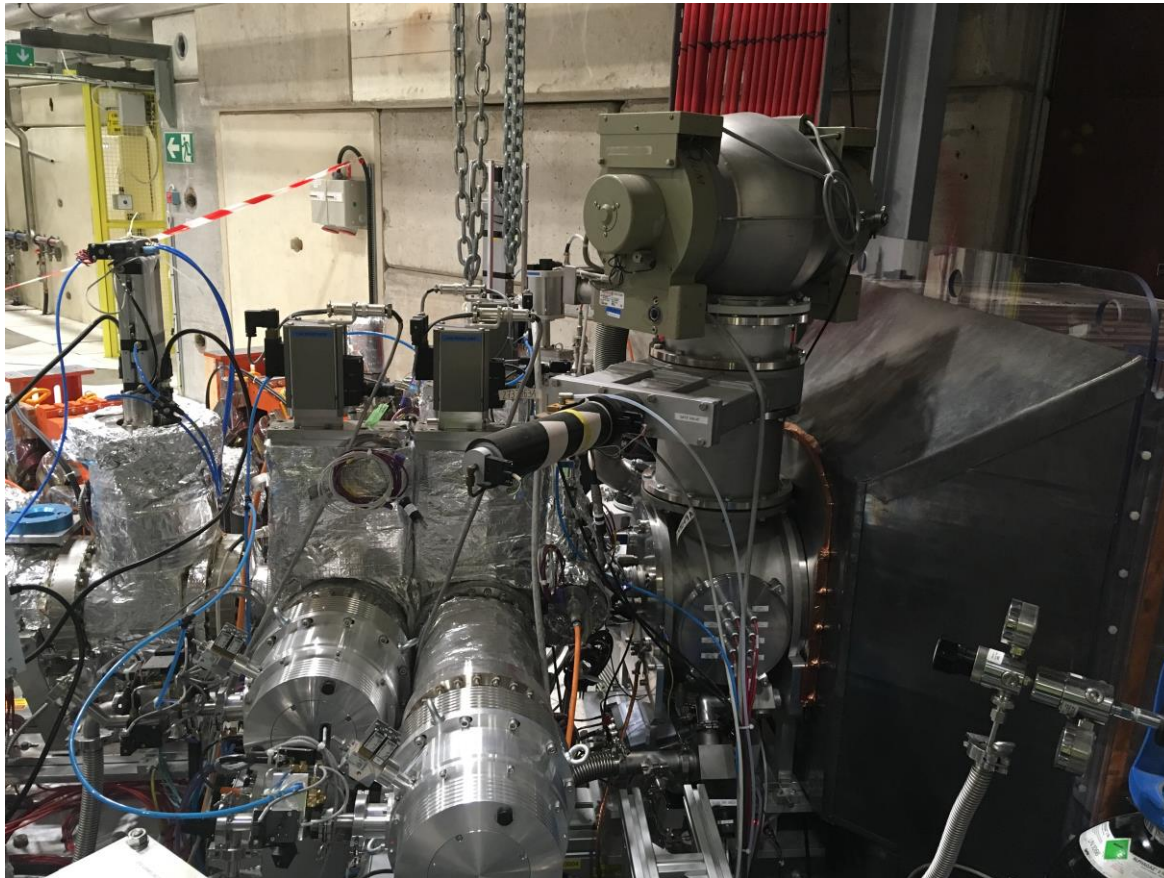
- #0 LNE.BSGWA.0010 Horizontal OK, vertical less than half working
- #4 LNE.BSGWA.0060 About half wires not working, horizontal and vertical
- #8 LNE.BSGWA.5020 Only one failed wire
- #1 LNE.BSGWA.5060 Only a few failed wires
- #7 LNE.BSGWA.0008 Less than half working, horizontal and vertical
- #6 LNE.BSGWA.0015 Less than half working, horizontal and vertical
- GBar About half wires not working, horizontal and vertical
- + a number of issues with electronics cards...
- Need 2 tanks for assembly...

- LNE05-06 and 07 are aligned and smoothed
- LNE01-03: waiting for pump down
- LNE04: waiting for new MADX for realignment wrt ALPHA

- LNE07 re-measured after B-O
- Measurements done on LNE00 at 0; 1; 0 bar
- LNE50 re-measured

Results in January

- New transformer installed and operational
- Tests ongoing with circulated and ejected beam

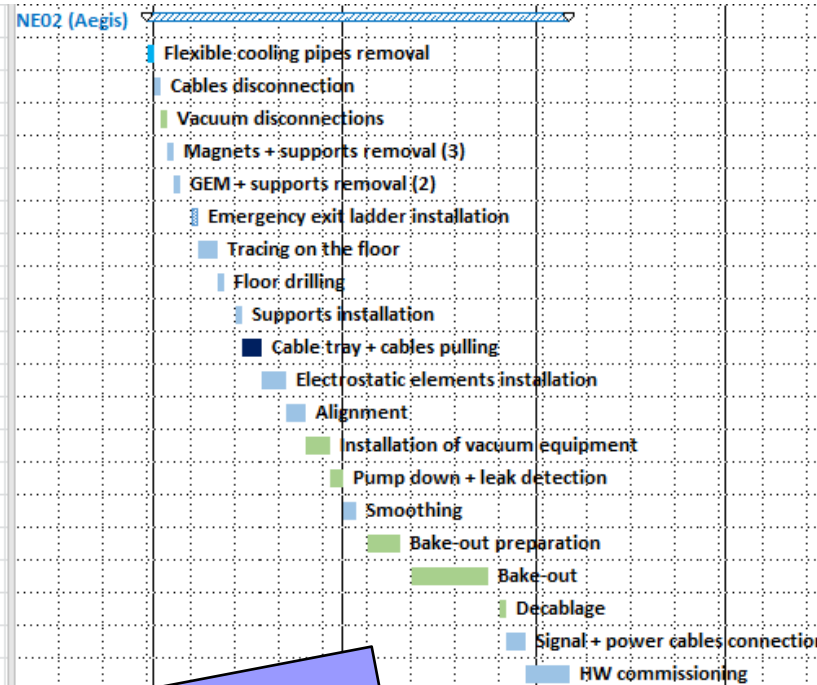


EN-EL: 6 Jan – 27 March

Installation of AC: power sockets for bake-out part 2	EN-EL	2 wks	Mon 06/01/20	Fri 17/01/20	Installation of AC: power sockets for bake-out part 2
Installation of control cable trays	EN-EL	2 wks	Mon 06/01/20	Fri 17/01/20	Installation of control cable trays
Installation of control cables for vacuum	EN-EL	3 wks	Mon 20/01/20	Fri 07/02/20	Installation of control cables for vacuum
Installation of HV cables for electrostatic elements	EN-EL	4 wks	Mon 10/02/20	Fri 06/03/20	Installation of HV cables for electrostatic elements
Installation of control cables for electrostatic elements + WIC	EN-EL	3 wks	Mon 09/03/20	Fri 27/03/20	Installation of control cables for electrostatic elements
Optical fibres and boxes plus patch cords installation	EN-EL	2 wks	Mon 16/03/20	Fri 27/03/20	Optical fibres and boxes plus patch cords installation
FDG cabling power/control and connectors sect 0-1, 1, 5, 6-5, 7	TE-ABT	2 wks	Mon 30/03/20	Fri 10/04/20	FDG cabling power/control and connectors
FDG cabling power/control and connectors sect 1-3, 3-4	TE-ABT	1 wk	Wed 13/05/20	Tue 19/05/20	FDG cabling power/control and connectors
Electrical connection of ZQNA sect 0-1, 1, 5, 6-5, 7	TE-ABT	1 wk	Mon 30/03/20	Fri 03/04/20	Electrical connection of ZQNA sect 0-1, 1, 5, 6-5, 7
Electrical connection of ZQNA sect 1-3, 3-4	TE-ABT	1 wk	Wed 13/05/20	Tue 19/05/20	Electrical connection of ZQNA sect 1-3, 3-4
Electrical connection of SEM sect 0-1, 1, 5, 6-5, 7	BE-BI	1 wk	Mon 30/03/20	Fri 03/04/20	Electrical connection of SEM sect 0-1, 1, 5, 6-5, 7
Electrical connection of SEM sect 1-3, 3-4	BE-BI	1 wk	Wed 13/05/20	Tue 19/05/20	Electrical connection of SEM sect 1-3, 3-4
Commissioning ELENA TL's	BE-RF, TE-ABT, BE-O	215 days	Wed 20/05/20	Tue 30/03/21	Commissioning ELENA TL's
Power converters tests	TE-EPC	1 wk	Wed 20/05/20	Tue 26/05/20	Power converters tests
WIC test	TE-MPE	1 wk	Wed 20/05/20	Tue 26/05/20	WIC test
Power electronics commissioning	TE-ABT	3 wks	Wed 20/05/20	Tue 09/06/20	Power electronics commissioning
Control & software commissioning	TE-ABT	3 wks	Wed 10/06/20	Tue 30/06/20	Control & software commissioning
Commissioning with beam	BE-OP	37 wks	Wed 01/07/20	Tue 30/03/21	Commissioning with beam

Systems connections

▲ LNE02 (Aegis)	TE-VSC	49 days	Mon 31/08/20	Thu 05/11/20
Flexible cooling pipes removal	EN-CV	1 day	Mon 31/08/20	Mon 31/08/20
Cables disconnection	BE-BI,TE-MS	1 day	Tue 01/09/20	Tue 01/09/20
Vacuum disconnections	TE-VSC	1 day	Wed 02/09/20	Wed 02/09/20
Magnets + supports removal (3)	TE-MS,EN-HE	1 day	Thu 03/09/20	Thu 03/09/20
GEM + supports removal (2)	BE-BI,EN/HE	1 day	Fri 04/09/20	Fri 04/09/20
Emergency exit ladder installation	EN-EA	1 day	Mon 07/09/20	Mon 07/09/20
Tracing on the floor	EN-SMM	3 days	Tue 08/09/20	Thu 10/09/20
Floor drilling	EN-MME	1 day	Fri 11/09/20	Fri 11/09/20
Supports installation	EN-MME	1 day	Mon 14/09/20	Mon 14/09/20
Cable tray + cables pulling	EN-EL	3 days	Tue 15/09/20	Thu 17/09/20
Electrostatic elements installation	TE-VSC,EN-HE	2 days	Fri 18/09/20	Mon 21/09/20
Alignment	EN-SMM	3 days	Tue 22/09/20	Thu 24/09/20
Installation of vacuum equipment	TE-VSC	2 days	Fri 25/09/20	Mon 28/09/20
Pump down + leak detection	TE-VSC	2 days	Tue 29/09/20	Wed 30/09/20
Smoothing	EN-SMM	2 days	Thu 01/10/20	Fri 02/10/20
Bake-out preparation	TE-VSC	5 days	Mon 05/10/20	Fri 09/10/20
Bake-out	TE-VSC	2 wks	Mon 12/10/20	Fri 23/10/20
Decablage	TE-VSC	1 day	Mon 26/10/20	Mon 26/10/20
Signal + power cables connections	BE-BI,TE-ABT	3 days	Tue 27/10/20	Thu 29/10/20
HW commissioning	BE-BI,TE-ABT	1 wk	Fri 30/10/20	Thu 05/11/20



Pending approval by SPSC / RB