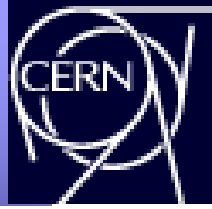




# AD-CONS / ELENA Projects



## AD / ELENA

Ongoing works + prospects



ANTIMATTER  
FACTORY





# Infrastructure



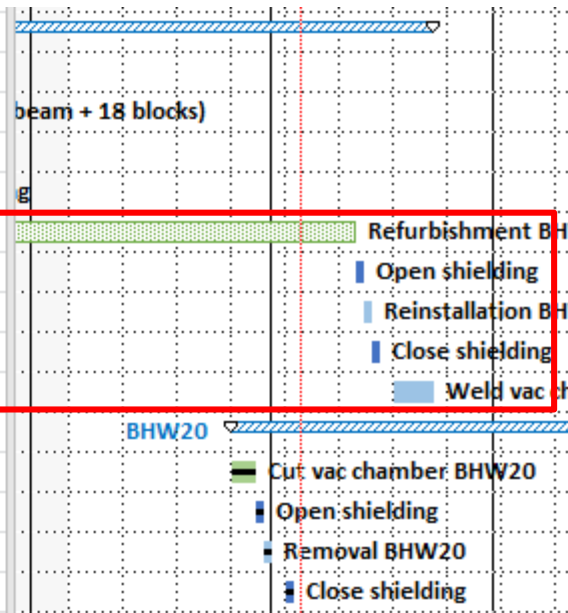
BASE exp area modif		32 days	Tue 07/01/20	Wed 19/02/20	
Remove steel cross bracing on BASE shielding	EN-EA	2 days	Tue 07/01/20	Wed 08/01/20	Remove steel cross bracing on BASE
Disconnect and move BASE access door	BE-ICS	2 days	Thu 09/01/20	Fri 10/01/20	Disconnect and move BASE access
Modify BASE exp area shielding	EN-HE	1 wk	Mon 13/01/20	Fri 17/01/20	Modify BASE exp area shield
Install new emergency exit ladder	EN-EA	2 days	Wed 12/02/20	Thu 13/02/20	Install new
Reconnect BASE access door	BE-ICS	2 days	Fri 14/02/20	Mon 17/02/20	Recon
Connect new BASE emergency exit door	BE-ICS	2 days	Tue 18/02/20	Wed 19/02/20	Cor



# AD magnets Sect 2B



BHW21			62.5 days	Wed 13/11/19	Fri 21/02/20
Cut vac chamber BHW21	TE-VSC	3 days	Wed 13/11/19	Mon 18/11/19	
Open shielding (1 beam + 18 blocks)	EN-HE	10 days	Mon 18/11/19	Mon 02/12/19	
Removal BHW21	EN-HE,TE-MS,TE-V	1 day	Mon 02/12/19	Tue 03/12/19	
Close shielding	EN-HE	4 days	Tue 03/12/19	Mon 09/12/19	
Refurbishment BHW21	TE-MS	8 wks	Wed 04/12/19	Tue 11/02/20	
Open shielding	EN-HE	1 day	Wed 12/02/20	Wed 12/02/20	
Reinstallation BHW21	EN-HE,TE-MS,EN-S	1 day	Thu 13/02/20	Thu 13/02/20	
Close shielding	EN-HE	1 day	Fri 14/02/20	Fri 14/02/20	
Weld vac chamber BHW21	EN-MME,TE-VSC	1 wk	Mon 17/02/20	Fri 21/02/20	
BHW20			155 days	Mon 27/01/20	Fri 28/08/20
Cut vac chamber BHW20	TE-VSC	3 days	Mon 27/01/20	Wed 29/01/20	
Open shielding	EN-HE	1 day	Thu 30/01/20	Thu 30/01/20	
Removal BHW20	EN-HE,TE-MS,TE-V	1 day	Fri 31/01/20	Fri 31/01/20	
Close shielding	EN-HE	1 day	Mon 03/02/20	Mon 03/02/20	

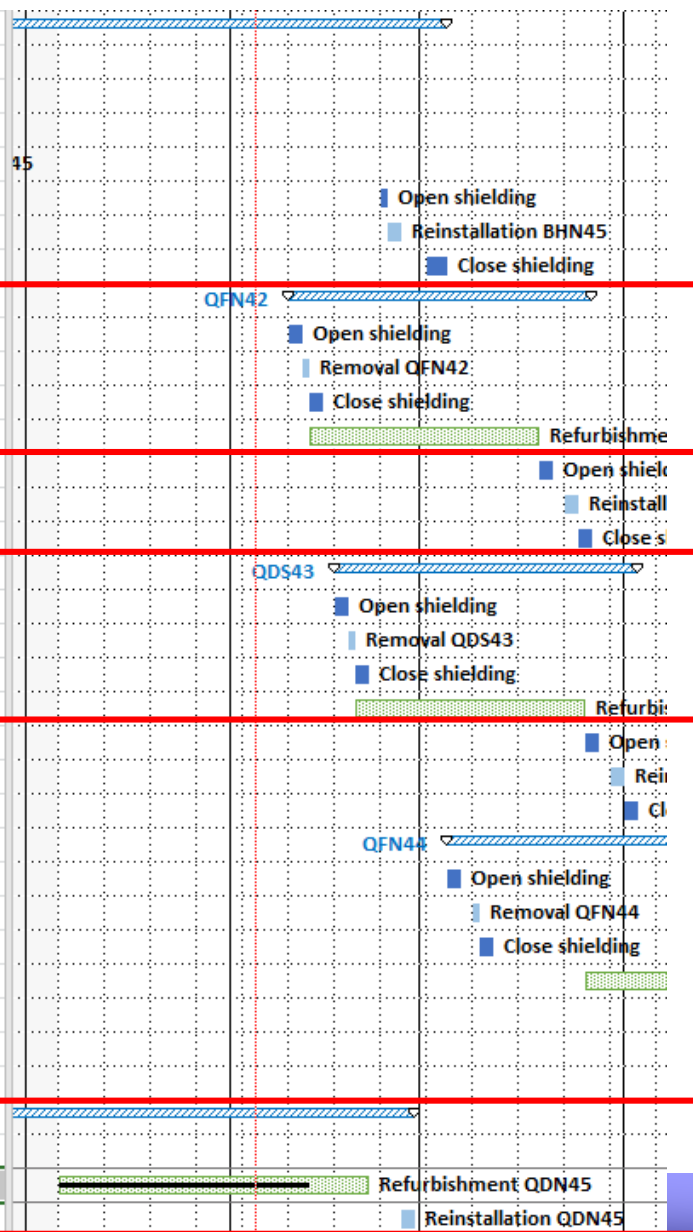




# AD magnets Sect 4B

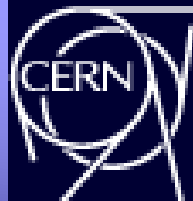


Activity	Category	Duration	Start Date	End Date	Timeline
<b>4 BHN45</b>		<b>96 days</b>	<b>Wed 09/10/19</b>	<b>Wed 04/03/20</b>	
Open shielding (15 beams)	EN-HE	7 days	Wed 09/10/19	Thu 17/10/19	
Removal BHN45	EN-HE,TE-MS,TE-V	0.5 days	Fri 18/10/19	Fri 18/10/19	
Close shielding	EN-HE	3 days	Mon 21/10/19	Wed 23/10/19	
Refurbishment BHN45	TE-MS	6 wks	Fri 18/10/19	Fri 29/11/19	
Open shielding	EN-HE	1 day	Mon 24/02/20	Mon 24/02/20	
Reinstallation BHN45	EN-HE,TE-MS,EN-S	2 days	Tue 25/02/20	Wed 26/02/20	
Close shielding	EN-HE	3 days	Mon 02/03/20	Wed 04/03/20	
<b>4 QFN42</b>		<b>34 days</b>	<b>Mon 10/02/20</b>	<b>Thu 26/03/20</b>	
Open shielding	EN-HE	2 days	Mon 10/02/20	Tue 11/02/20	
Removal QFN42	EN-HE,TE-MS,TE-V	1 day	Wed 12/02/20	Wed 12/02/20	
Close shielding	EN-HE	2 days	Thu 13/02/20	Fri 14/02/20	
Refurbishment QFN42	TE-MS	5 wks	Thu 13/02/20	Wed 18/03/20	
Open shielding	EN-HE	2 days	Thu 19/03/20	Fri 20/03/20	
Reinstallation QFN42	EN-HE,TE-MS,EN-S	2 days	Mon 23/03/20	Tue 24/03/20	
Close shielding	EN-HE	2 days	Wed 25/03/20	Thu 26/03/20	
<b>4 QDS43</b>		<b>34 days</b>	<b>Mon 17/02/20</b>	<b>Thu 02/04/20</b>	
Open shielding	EN-HE	2 days	Mon 17/02/20	Tue 18/02/20	
Removal QDS43	EN-HE,TE-MS,TE-V	1 day	Wed 19/02/20	Wed 19/02/20	
Close shielding	EN-HE	2 days	Thu 20/02/20	Fri 21/02/20	
Refurbishment QDS43	TE-MS	5 wks	Thu 20/02/20	Wed 25/03/20	
Open shielding	EN-HE	2 days	Thu 26/03/20	Fri 27/03/20	
Reinstallation QDS43	EN-HE,TE-MS,EN-S	2 days	Mon 30/03/20	Tue 31/03/20	
Close shielding	EN-HE	2 days	Wed 01/04/20	Thu 02/04/20	
<b>4 QFN44</b>		<b>46 days</b>	<b>Thu 05/03/20</b>	<b>Thu 07/05/20</b>	
Open shielding	EN-HE	2 days	Thu 05/03/20	Fri 06/03/20	
Removal QFN44	EN-HE,TE-MS,TE-V	1 day	Mon 09/03/20	Mon 09/03/20	
Close shielding	EN-HE	2 days	Tue 10/03/20	Wed 11/03/20	
Refurbishment QFN44	TE-MS	5 wks	Thu 26/03/20	Wed 29/04/20	
Open shielding	EN-HE	2 days	Thu 30/04/20	Fri 01/05/20	
Reinstallation QFN44	EN-HE,TE-MS,EN-S	2 days	Mon 04/05/20	Tue 05/05/20	
Close shielding	EN-HE	2 days	Wed 06/05/20	Thu 07/05/20	
<b>4 QDN45</b>		<b>85.5 day</b>	<b>Fri 18/10/19</b>	<b>Fri 28/02/20</b>	
Removal QDN45	EN-HE,TE-MS,TE-V	0.5 days	Fri 18/10/19	Fri 18/10/19	
Refurbishment QDN45	TE-MS	7 wks	Mon 06/01/20	Fri 21/02/20	
Reinstallation QDN45	EN-HE,TE-MS,EN-S	2 days	Thu 27/02/20	Fri 28/02/20	



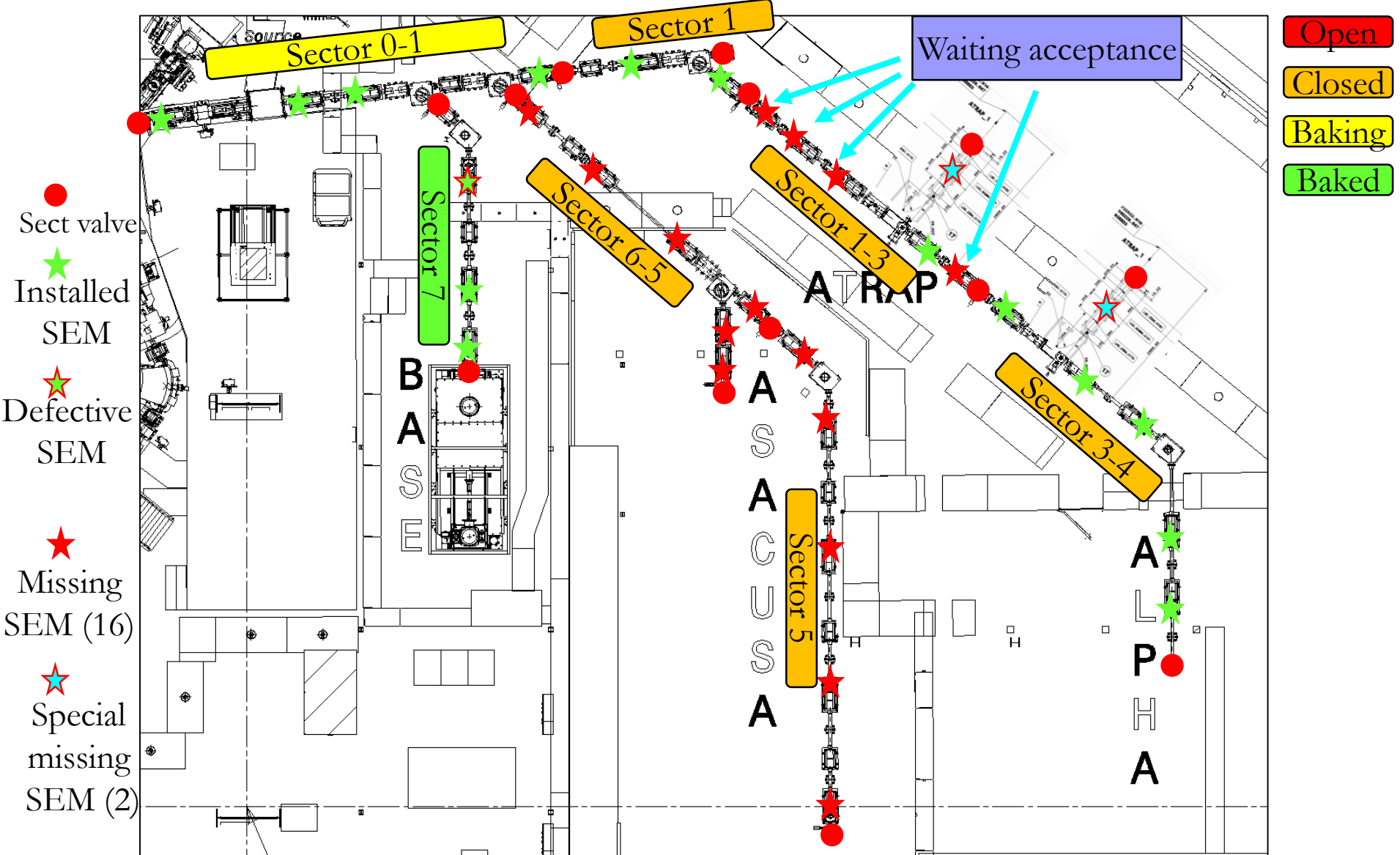


# ELENA TL installation



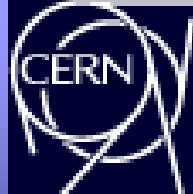
Task	Activity	Duration	Start	End	Notes
<b>☛ Vac sector 1-3 (LNE01 + ATRAP1)</b>					
Installation of vacuum equipment	TE-VSC	82 days	Wed 18/12/19	Thu 23/04/20	Installation of vacuum equipment
Pump down + leak detection	TE-VSC	1 day	Wed 18/12/19	Wed 18/12/19	
Pump down + leak detection	TE-VSC	2 days	Mon 13/01/20	Tue 14/01/20	Pump down + leak detection
Bake-out insulation	TE-VSC	1 day	Mon 06/04/20	Mon 06/04/20	
Bake-out connections	TE-VSC	2 days	Tue 07/04/20	Wed 08/04/20	
Bake-out	TE-VSC	2 wks	Thu 09/04/20	Wed 22/04/20	
Decablage	TE-VSC	1 day	Thu 23/04/20	Thu 23/04/20	
<b>☛ Vac sector 1</b>					
Installation of vacuum equipment	TE-VSC	165 days	Wed 11/09/19	Tue 12/05/20	
Pump down + leak detection	TE-VSC	1 day	Wed 11/09/19	Wed 11/09/19	
Pump down + leak detection	TE-VSC	2 days	Thu 12/09/19	Fri 13/09/19	
Bake-out insulation	TE-VSC	2 wks	Fri 20/09/19	Thu 03/10/19	
Bake-out connections	TE-VSC	2 days	Fri 24/04/20	Mon 27/04/20	
Bake-out	TE-VSC	2 wks	Tue 28/04/20	Mon 11/05/20	
Decablage	TE-VSC	1 day	Tue 12/05/20	Tue 12/05/20	
<b>☛ Vac sector 0-1 (LNE00-LNE01)</b>					
Installation of vacuum equipment	TE-VSC	87 days	Mon 09/09/19	Tue 21/01/20	
Installation of vacuum equipment	TE-VSC	2 days	Mon 09/09/19	Tue 10/09/19	
Pump down + leak detection	TE-VSC	2 days	Wed 11/09/19	Thu 12/09/19	
Bake-out preparation	TE-VSC	2 wks	Fri 13/09/19	Thu 26/09/19	
Bake-out connections	TE-VSC	1 day	Mon 06/01/20	Mon 06/01/20	Bake-out connections
Bake-out	TE-VSC	2 wks	Tue 07/01/20	Mon 20/01/20	Bake-out
Decablage	TE-VSC	1 day	Tue 21/01/20	Tue 21/01/20	Decablage
<b>☛ Vac sector 7 (BASE)</b>					
Installation of vacuum equipment	TE-VSC	57 days	Mon 16/09/19	Tue 03/12/19	
Installation of vacuum equipment	TE-VSC	1 day	Mon 16/09/19	Mon 16/09/19	
Pump down + leak detection	TE-VSC	2 days	Mon 30/09/19	Tue 01/10/19	

# Vacuum sectors / SEMs

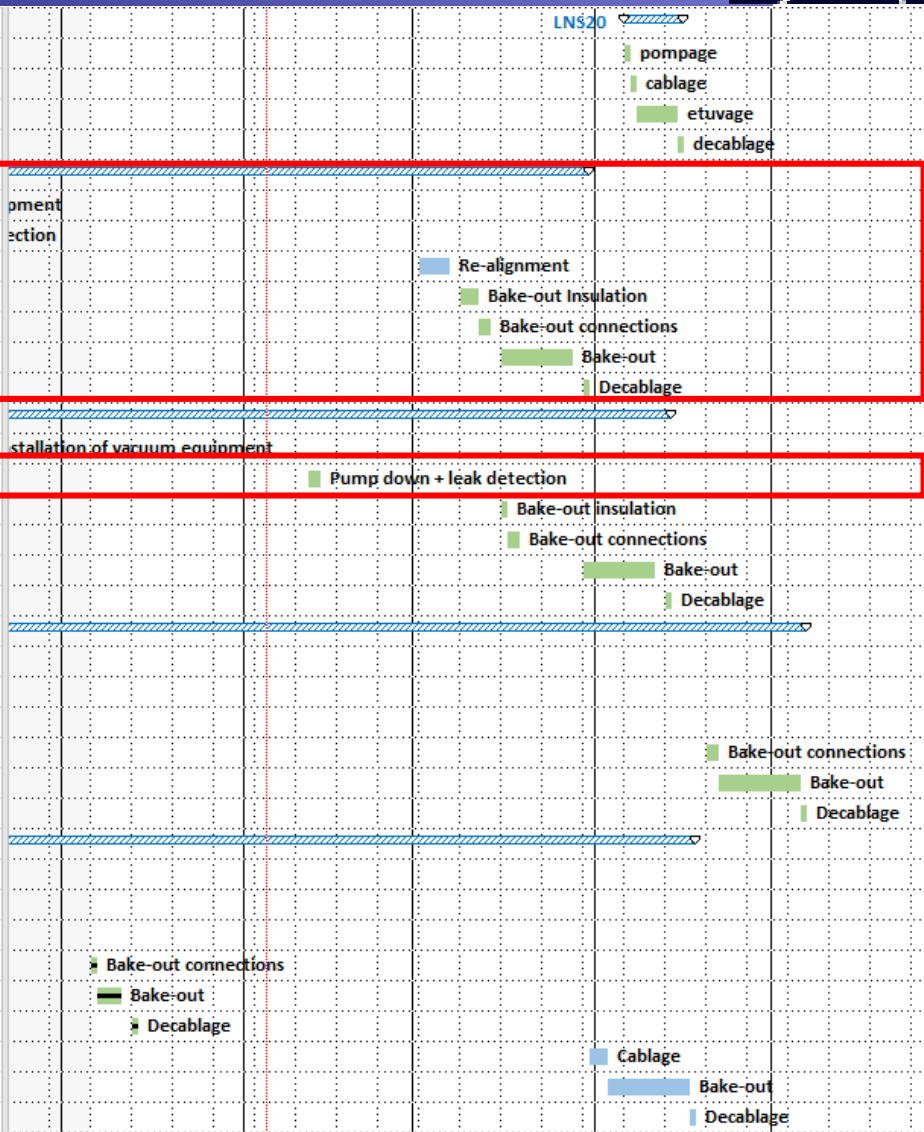




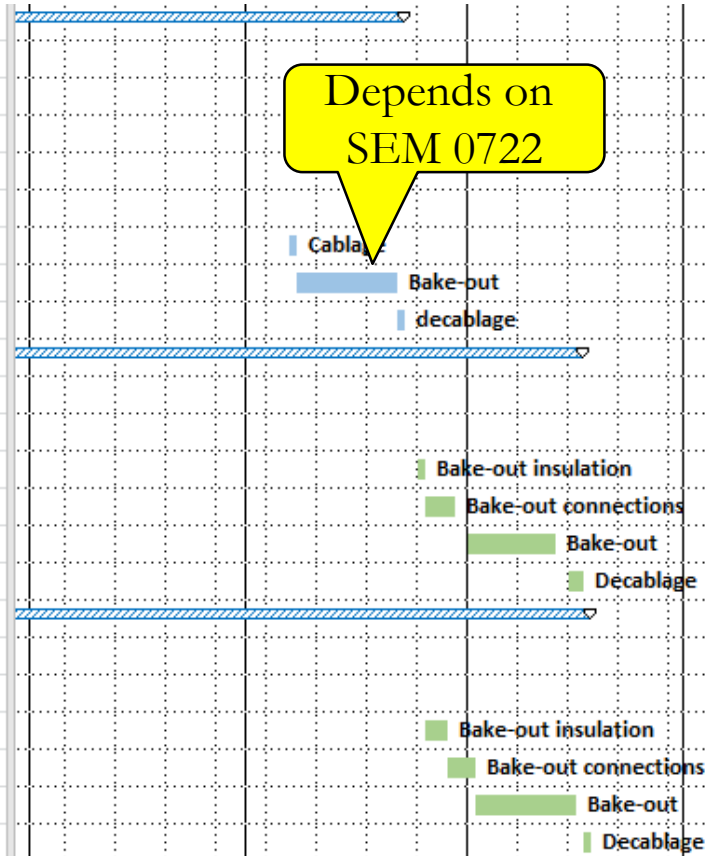
# Vacuum work



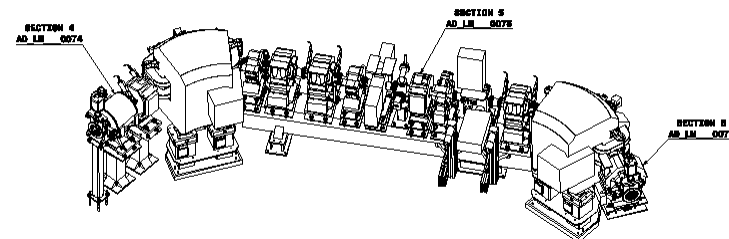
Task	Category	Duration	Start	End
<b>LNS20</b>				
pompage	TE-VSC	1 day	Mon 06/04/20	Mon 06/04/20
cablage	TE-VSC	1 day	Tue 07/04/20	Tue 07/04/20
etuvage	TE-VSC	1 wk	Wed 08/04/20	Tue 14/04/20
decablage	TE-VSC	1 day	Wed 15/04/20	Wed 15/04/20
<b>Vac sector 3-4 (ATRAP2 + ALPHA)</b>				
Installation of vacuum equipment	TE-VSC	2 days	Mon 11/11/19	Tue 12/11/19
Pump down + leak detection	TE-VSC	4 days	Wed 13/11/19	Mon 18/11/19
Re-alignment	EN-SMM	1 wk	Mon 02/03/20	Fri 06/03/20
Bake-out Insulation	TE-VSC	3 days	Mon 09/03/20	Wed 11/03/20
Bake-out connections	TE-VSC	2 days	Thu 12/03/20	Fri 13/03/20
Bake-out	TE-VSC	2 wks	Mon 16/03/20	Fri 27/03/20
Decablage	TE-VSC	1 day	Mon 30/03/20	Mon 30/03/20
<b>Vac sector 1-3 (LNE01 + ATRAP1)</b>				
Installation of vacuum equipment	TE-VSC	1 day	Wed 18/12/19	Wed 18/12/19
Pump down + leak detection	TE-VSC	2 days	Wed 12/02/20	Thu 13/02/20
Bake-out insulation	TE-VSC	1 day	Mon 16/03/20	Mon 16/03/20
Bake-out connections	TE-VSC	2 days	Tue 17/03/20	Wed 18/03/20
Bake-out	TE-VSC	2 wks	Mon 30/03/20	Fri 10/04/20
Decablage	TE-VSC	1 day	Mon 13/04/20	Mon 13/04/20
<b>Vac sector 1</b>				
Installation of vacuum equipment	TE-VSC	1 day	Wed 11/09/19	Wed 11/09/19
Pump down + leak detection	TE-VSC	2 days	Thu 12/09/19	Fri 13/09/19
Bake-out insulation	TE-VSC	2 wks	Fri 20/09/19	Thu 03/10/19
Bake-out connections	TE-VSC	2 days	Mon 20/04/20	Tue 21/04/20
Bake-out	TE-VSC	2 wks	Wed 22/04/20	Tue 05/05/20
Decablage	TE-VSC	1 day	Wed 06/05/20	Wed 06/05/20
<b>Vac sector 0-1 (LNE00-LNE01)</b>				
Installation of vacuum equipment	TE-VSC	2 days	Mon 09/09/19	Tue 10/09/19
Pump down + leak detection	TE-VSC	2 days	Wed 11/09/19	Thu 12/09/19
Bake-out preparation	TE-VSC	2 wks	Fri 13/09/19	Thu 26/09/19
Bake-out connections	TE-VSC	1 day	Mon 06/01/20	Mon 06/01/20
Bake-out	TE-VSC	4 days	Tue 07/01/20	Fri 10/01/20
Decablage	TE-VSC	1 day	Mon 13/01/20	Mon 13/01/20
Cablage		3 days	Tue 31/03/20	Thu 02/04/20
Bake-out		2 wks	Fri 03/04/20	Thu 16/04/20
Decablage		1 day	Fri 17/04/20	Fri 17/04/20



Task	TE-VSC	Duration	Start	End
<b>4 Vac sector 7 (BASE)</b>	<b>TE-VSC</b>	<b>170 days</b>	<b>Mon 16/09/19</b>	<b>Fri 22/05/20</b>
Installation of vacuum equipment	TE-VSC	1 day	Mon 16/09/19	Mon 16/09/19
Pump down + leak detection	TE-VSC	2 days	Mon 30/09/19	Tue 01/10/19
Bake-out preparation	TE-VSC	5 days	Mon 14/10/19	Fri 18/10/19
Bake-out	TE-VSC	2 wks	Mon 04/11/19	Fri 15/11/19
Decablage	TE-VSC	2 days	Mon 02/12/19	Tue 03/12/19
Cablage		1 day	Thu 07/05/20	Thu 07/05/20
Bake-out		2 wks	Fri 08/05/20	Thu 21/05/20
decablage		1 day	Fri 22/05/20	Fri 22/05/20
<b>4 Vac sector 6-5 (LNE06)</b>	<b>TE-VSC</b>	<b>207 days</b>	<b>Mon 19/08/19</b>	<b>Tue 16/06/20</b>
Installation of vacuum equipment	TE-VSC	2 days	Mon 19/08/19	Tue 20/08/19
Pump down + leak detection	TE-VSC	2 days	Wed 04/09/19	Thu 05/09/19
Bake-out insulation	TE-VSC	1 day	Mon 25/05/20	Mon 25/05/20
Bake-out connections	TE-VSC	4 days	Tue 26/05/20	Fri 29/05/20
Bake-out	TE-VSC	2 wks	Mon 01/06/20	Fri 12/06/20
Decablage	TE-VSC	2 days	Mon 15/06/20	Tue 16/06/20
<b>4 Vac sector 5 (LNE05)</b>	<b>TE-VSC</b>	<b>212 days</b>	<b>Tue 13/08/19</b>	<b>Wed 17/06/20</b>
Installation of vacuum equipment	TE-VSC	2 days	Tue 13/08/19	Wed 14/08/19
Pump down + leak detection	TE-VSC	2 days	Thu 15/08/19	Fri 16/08/19
Bake-out insulation	TE-VSC	3 days	Tue 26/05/20	Thu 28/05/20
Bake-out connections	TE-VSC	2 days	Fri 29/05/20	Mon 01/06/20
Bake-out	TE-VSC	2 wks	Tue 02/06/20	Mon 15/06/20
Decablage	TE-VSC	1 day	Wed 17/06/20	Wed 17/06/20



Also sector LNE50 will have to be re-baked, to be defined when...





- LNE05-06 and 07 are aligned and smoothed
- LNE01-03: waiting for pump down
- LNE04: waiting for new MADX for realignment wrt ALPHA : alignment starting 02 March
- LNE07 re-measured after B-O
- Measurements done on LNE00 at 0; 1; 0 bar
- LNE50 re-measured →?

} OK



# ELENA cabling



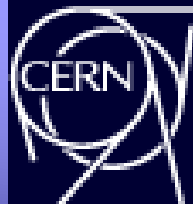
EN-EL: 6 Jan – 27 March

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 + WIC
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 sect 0-1, 1, 5, 6-5, 7
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 sect 1-3, 3-4
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 TL



Task	Responsible	Duration	Start	End	NE02 (Aegis)
Flexible cooling pipes removal	EN-CV	1 day	Mon 31/08/20	Mon 31/08/20	Flexible cooling pipes removal
Cables disconnection	BE-BI,TE-MSC	1 day	Tue 01/09/20	Tue 01/09/20	Cables disconnection
Vacuum disconnections	TE-VSC	1 day	Wed 02/09/20	Wed 02/09/20	Vacuum disconnections
Magnets + supports removal (3)	TE-MSC,EN-HE	1 day	Thu 03/09/20	Thu 03/09/20	Magnets + supports removal (3)
GEM + supports removal (2)	BE-BI,EN/HE	1 day	Fri 04/09/20	Fri 04/09/20	GEM + supports removal (2)
Emergency exit ladder installation	EN-EA	1 day	Mon 07/09/20	Mon 07/09/20	Emergency exit ladder installation
Tracing on the floor	EN-SMM	3 days	Tue 08/09/20	Thu 10/09/20	Tracing on the floor
Floor drilling	EN-MME	1 day	Fri 11/09/20	Fri 11/09/20	Floor drilling
Supports installation	EN-MME	1 day	Mon 14/09/20	Mon 14/09/20	Supports installation
Cable tray + cables pulling	EN-EL	3 days	Tue 15/09/20	Thu 17/09/20	Cable tray + cables pulling
Electrostatic elements installation	TE-VSC,EN-HE	2 days	Fri 18/09/20	Mon 21/09/20	Electrostatic elements installation
Alignment	EN-SMM	3 days	Tue 22/09/20	Thu 24/09/20	Alignment
Installation of vacuum equipment	TE-VSC	2 days	Fri 25/09/20	Mon 28/09/20	Installation of vacuum equipment
Pump down + leak detection	TE-VSC	2 days	Tue 29/09/20	Wed 30/09/20	Pump down + leak detection
Smoothing	EN-SMM	2 days	Thu 01/10/20	Fri 02/10/20	Smoothing
Bake-out preparation	TE-VSC	5 days	Mon 05/10/20	Fri 09/10/20	Bake-out preparation
Bake-out	TE-VSC	2 wks	Mon 12/10/20	Fri 23/10/20	Bake-out
Decablage	TE-VSC	1 day	Mon 26/10/20	Mon 26/10/20	Decablage
Signal + power cables connections	BE-BI,TE-ABT	3 days	Tue 27/10/20	Thu 29/10/20	Signal + power cables connections
HW commissioning	BE-BI,TE-ABT	1 wk	Fri 30/10/20	Thu 05/11/20	HW commissioning

Will need horizontal static SEM available !

To be worked around other ELENA lines commissioning...