

Scheduling work in ATLAS

Chrysostomos Valderanis

- Why me?
- Why scheduling?

		Task Name	Duration	Start	Finish	Predecessors	Resource Names	Successors	Add New C
1		Green light for shafts opening	0 days	Nov 17 '25	Nov 17 '25			2	
2		Green light for shafts opening	0 days	Nov 17 '25	Nov 17 '25	<=>\Detector installat		5	
3		Forward opening (step #1)	124.05 hrs	Nov 17 '25	Dec 8 '25				
4		Side A	45.05 hrs	Nov 17 '25	Nov 24 '25				
5		Shaft opening A side	7 hrs	Nov 17 '25	Nov 17 '25	2	140T crane, Crane driver[300%]	6,9	
6		Shaft steel covers removing	4 hrs	Nov 17 '25	Nov 18 '25	5	20T crane, Crane driver[300%]	8,7	
7		Lowering of Palazzani	1 hr	Nov 18 '25	Nov 18 '25	6	20T crane, Crane driver[200%]	15,13,9,8	
8		AMM-A lowering (20T)	1 hr	Nov 19 '25	Nov 19 '25	6,9,7	20T crane, Movement expert, Crane driver[200%]	10,30,12	
9		Hydraulics components lowering (ULX15)	4 hrs	Nov 18 '25	Nov 18 '25	5,7	Movement expert[200%], TC Support[300%]	10,8	
10		Connection AMM-A to Truck & JF cylinders	5 hrs	Nov 19 '25	Nov 19 '25	9,8	Movement expert, TC Support[300%]	11SS	
11		EIL4 Moved in R	7 hrs	Nov 19 '25	Nov 19 '25	10SS	TC Support[200%]	136,33	
12		RP survey around shielding	1 hr	Nov 19 '25	Nov 19 '25	8	RPE, Palazzani A	13	
13		Survey TAS A before opening	2 hrs	Nov 19 '25	Nov 19 '25	7,12	Survey Team, Palazzani A	14	
14		TAS rod dismounting	1 hr	Nov 19 '25	Nov 19 '25	13	Palazzani A	15	
15		Lifting of Top JFS	2.5 hrs	Nov 20 '25	Nov 20 '25	7,14,30,32	140T crane, Palazzani A, Installation engineer, Crane driver[300%]	16,38,36	
16		YX-movement of JFS	2.5 hrs	Nov 20 '25	Nov 20 '25	15,30	Movement expert, TC Support[300%], Palazzani A	18,17,39	
17		Radiation measurement	1 hr	Nov 20 '25	Nov 20 '25	16,30	RPE, Palazzani A	18	
18		Hydraulics disconnection (JF & Truck)	0.5 hrs	Nov 20 '25	Nov 20 '25	16,17	TC Support[300%], Movement expert	19	
19		Lifting of JFSL	2.5 hrs	Nov 21 '25	Nov 21 '25	18,38	140T crane, TC Support, Crane driver[300%]	20,22	
20		Radiation measurement (Buffer zone)	1 hr	Nov 21 '25	Nov 24 '25	19	RPE	72	
21		Survey of monobloc A (1)	1 hr	Nov 24 '25	Nov 24 '25	23	Survey Team, Palazzani A	26	
22		Lifting of the JF table	1 hr	Nov 21 '25	Nov 24 '25	19	TC Support, 20T crane, Crane driver[300%]	23,40	
23		Lifting of compressed truck	2.5 hrs	Nov 24 '25	Nov 24 '25	22	140T crane, TC Support[200%], Installation engineer, Crane driver	24,21,25	
24		Release of traction jacks	0.5 hrs	Nov 24 '25	Nov 24 '25	23	TC Support[200%]	28,26	
25		Rails displacement	2 hrs	Nov 24 '25	Nov 24 '25	23	TC Support[200%], Movement expert	111,26	
26		Ready for BW-A separation	0 hrs	Nov 24 '25	Nov 24 '25	21,24,25	Installation engineer, TC Support[400%], Movement expert	73,48,51, <=>\Muon endcap\32	
27		Services preparation before separation (side A)	6 days	Nov 24 '25	Dec 2 '25	26			
28		Top JFS on JFSL	1 hr	Nov 24 '25	Nov 24 '25	24	140T crane, Crane driver[200%]	40	
29		Side C	36.05 hrs	Nov 19 '25	Nov 25 '25				
30		Shaft opening C side	6 hrs	Nov 19 '25	Nov 19 '25	8	140T crane, Crane driver[300%]	31,15,16,17	
31		Top shaft net removing	1 hr	Nov 19 '25	Nov 20 '25	30	TC Support[300%], Movement expert	32,33	
32		Lowering of Palazzani	1 hr	Nov 20 '25	Nov 20 '25	31	20T crane, Palazzani C, Crane driver[200%]	36,15	
33		EIL4 Moved in R	8 hrs	Nov 20 '25	Nov 21 '25	11,31	TC Support[200%]	265,40,34	
34		Survey TAS C before opening	2 hrs	Nov 21 '25	Nov 21 '25	33	Survey Team, Palazzani C	35,36	
35		TAS rod dismounting	1 hr	Nov 21 '25	Nov 21 '25	34	Palazzani C	38	
36		AMM-C lowering	0.5 hrs	Nov 21 '25	Nov 21 '25	32,34,15	20T crane, TC Support, Crane driver[200%]	37,38	
37		Connection AMM-C to Truck & JF cylinders	3 hrs	Nov 21 '25	Nov 21 '25	36	TC Support[200%], Installation engineer	39	
38		Lifting of Top JFS	2 hrs	Nov 21 '25	Nov 21 '25	35,36,15	140T crane, Palazzani C, TC Support, Crane driver[300%]	39,19	



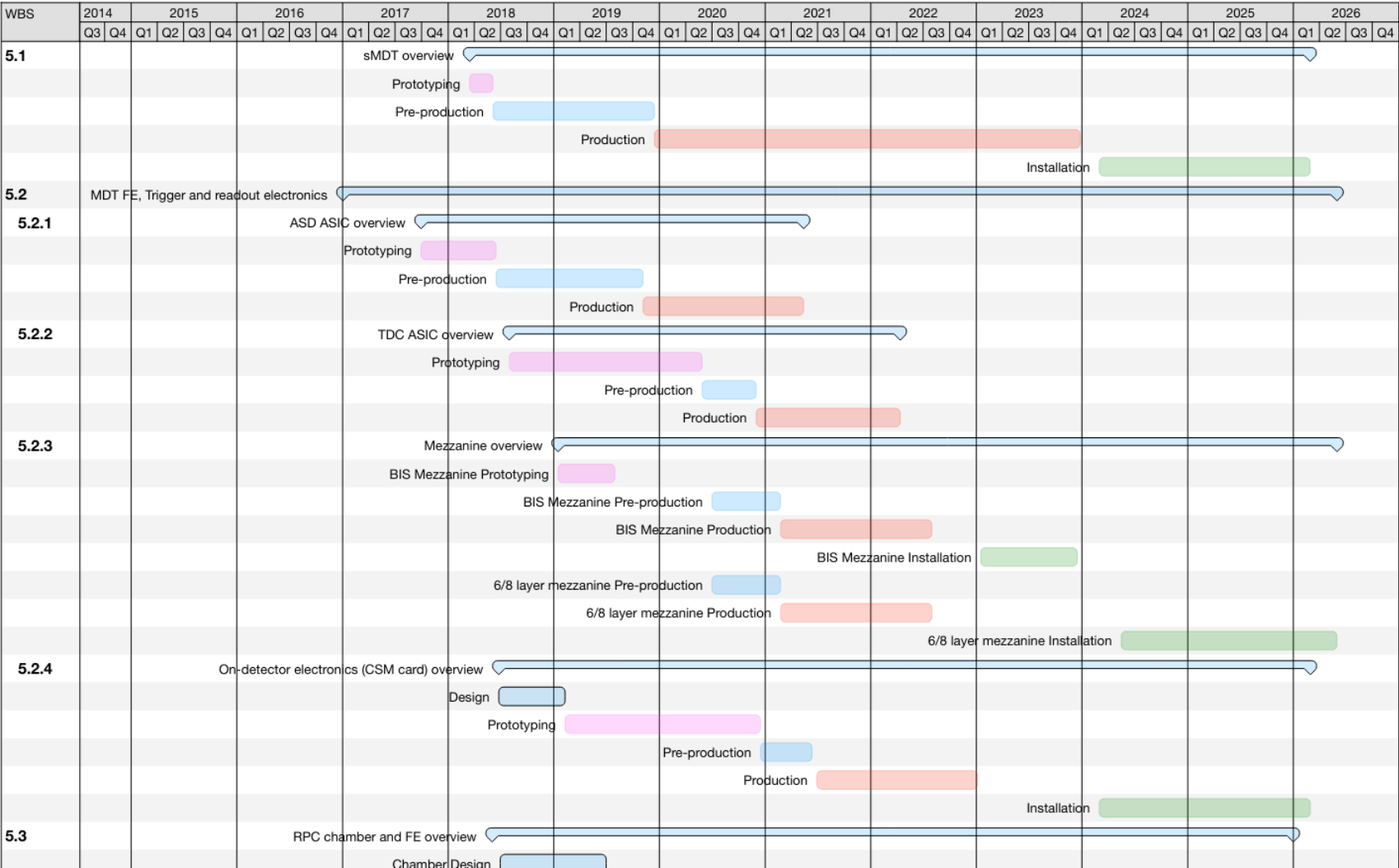
Technical Design Report for the Phase-II Upgrade of the ATLAS Muon Spectrometer

The ATLAS Collaboration

Reference: CERN-LHCC-2017-017
ATLAS-TDR-026
Created: 15th December 2017
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Prepared by: The ATLAS Collaboration

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12.2 Schedule



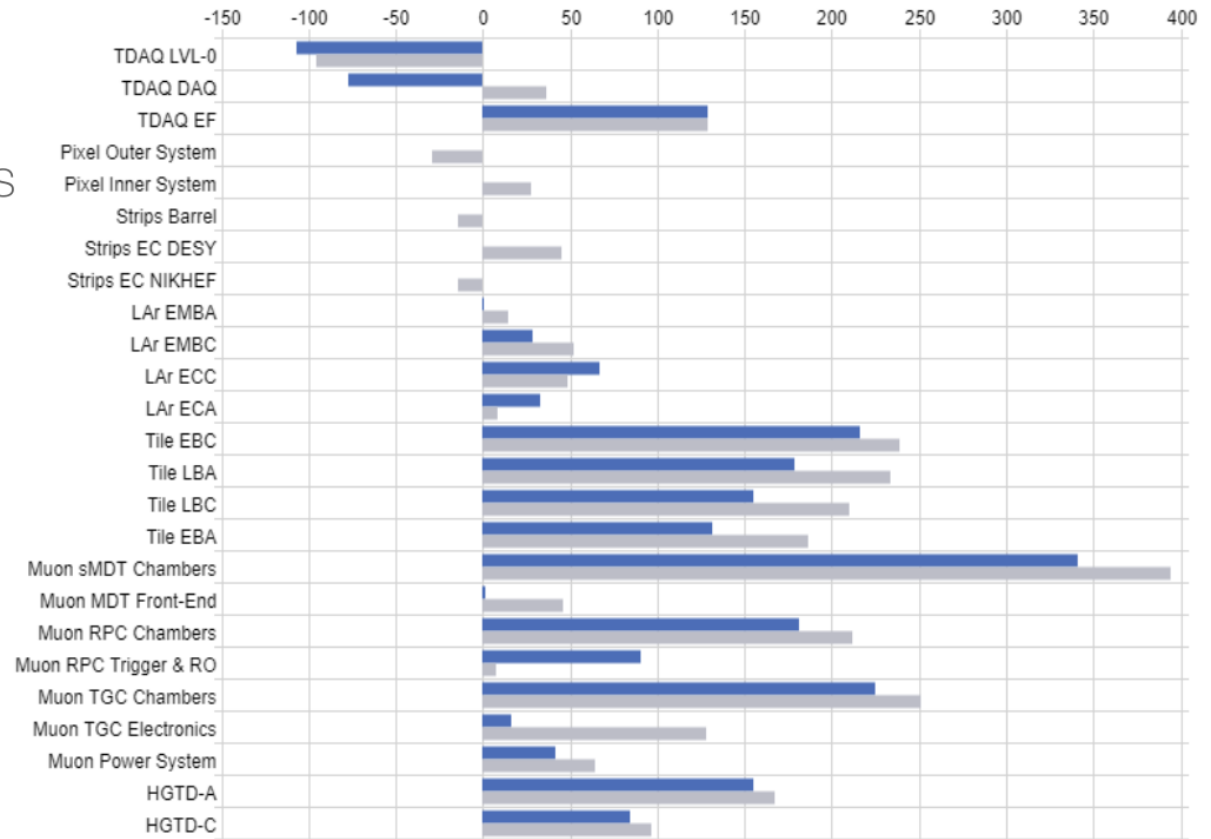
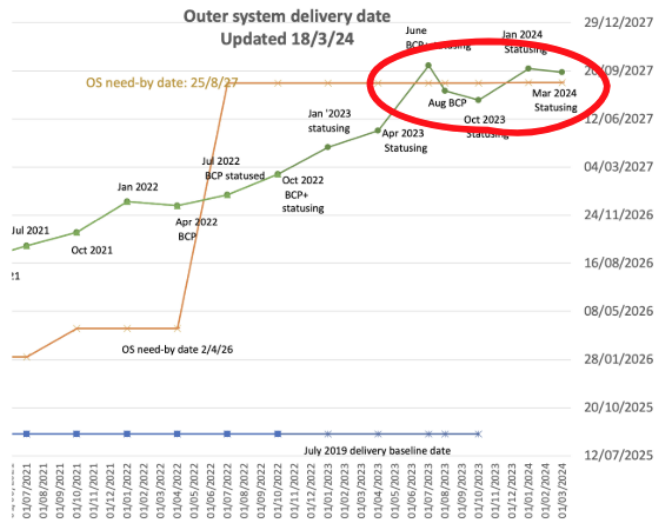
ID#	OID	WBS#	Type	Name	Start#	Finish#	Start	Finish	Duration	PRC	TOTL	#FC	#OC	Done
252	279	5.2 MDT Electronics	Summary	ASD ASIC	2017-01-02	2023-05-10	2017-01-02	-	1658	0	0	None	None	99%
253	280	5.2 MDT Electronics	Summary	ASD prototyping	2017-01-02	2018-08-21	2017-01-02	2018-08-21	427	0	-	None	None	100%
254	281	5.2 MDT Electronics	Schedule Task	Design of the 1st prototype	2017-01-02	2017-07-18	2017-01-02	2017-07-18	142	0	-	None	1	100%
255	282	5.2 MDT Electronics	PDR Review	ASD PDR	2017-07-19	2017-07-19	2017-07-19	2017-07-19	1	0	-	1	1	100%
256	283	5.2 MDT Electronics	Schedule Task	PDR followup	2017-07-20	2017-08-02	2017-07-20	2017-08-02	10	0	-	1	1	100%
257	284	5.2 MDT Electronics	P2UG Milestone	PDR completed	2017-08-02	2017-08-02	2017-08-02	2017-08-02	0	0	-	1	1	100%
258	285	5.2 MDT Electronics	Schedule Task	Submission of the 1st prototype	2017-08-03	2017-08-16	2017-08-03	2017-08-16	10	0	-	1	2	100%
259	286	5.2 MDT Electronics	Schedule Task	die production	2017-08-17	2017-11-20	2017-08-17	2017-11-20	68	0	-	1	1	100%
260	287	5.2 MDT Electronics	Schedule Task	test fixture design and fabrication	2017-08-17	2017-11-08	2017-08-17	2017-11-08	60	0	-	1	2	100%
261	288	5.2 MDT Electronics	Schedule Task	packaging	2017-11-21	2017-12-04	2017-11-21	2017-12-04	10	0	-	1	1	100%
262	289	5.2 MDT Electronics	Schedule Task	Testing of the 1st prototype	2017-12-05	2018-04-02	2017-12-05	2018-04-02	85	0	-	2	1	100%
263	290	5.2 MDT Electronics	Schedule Task	Design of the 2nd prototype	2017-09-01	2017-11-23	2017-09-01	2017-11-23	60	0	-	None	1	100%
264	291	5.2 MDT Electronics	Milestone	Submission of the 2nd prototype	2017-11-23	2017-11-23	2017-11-23	2017-11-23	0	0	-	1	1	100%
265	292	5.2 MDT Electronics	Schedule Task	die production	2017-11-24	2018-02-27	2017-11-24	2018-02-27	68	0	-	1	1	100%
266	293	5.2 MDT Electronics	Schedule Task	packaging	2018-02-28	2018-03-13	2018-02-28	2018-03-13	10	0	-	1	1	100%
267	294	5.2 MDT Electronics	Schedule Task	Testing of the 2nd prototype	2018-03-14	2018-07-09	2018-03-14	2018-07-09	84	0	-	2	2	100%
268	295	5.2 MDT Electronics	FDR Review	ASD FDR	2018-07-10	2018-07-10	2018-07-10	2018-07-10	1	0	-	1	1	100%
269	296	5.2 MDT Electronics	Schedule Task	FDR followup	2018-07-11	2018-08-21	2018-07-11	2018-08-21	30	0	-	1	1	100%
270	297	5.2 MDT Electronics	P2UG Milestone	FDR complete	2018-08-21	2018-08-21	2018-08-21	2018-08-21	0	0	-	1	2	100%
271	298	5.2 MDT Electronics	Summary	ASD production and QA/QC	2018-08-22	2023-05-10	2018-08-22	-	1231	0	0	None	None	99%
272	299	5.2 MDT Electronics	Schedule Task	Setup of automatic test fixtures	2018-08-22	2019-05-24	2018-08-22	2019-05-24	198	0	-	1	1	100%
273	300	5.2 MDT Electronics	Schedule Task	pre-production preparation	2018-08-22	2018-10-16	2018-08-22	2018-10-16	40	0	-	1	1	100%
274	301	5.2 MDT Electronics	Schedule Task	pre-production submission	2018-11-15	2018-11-28	2018-11-15	-	10	0	-	1	1	100%
275	302	5.2 MDT Electronics	Schedule Task	die production	2018-11-29	2019-04-17	2018-11-29	-	100	0	-	1	1	100%
276	303	5.2 MDT Electronics	Schedule Task	packaging of pre-production chips	2019-04-18	2019-05-27	2019-04-18	-	28	0	-	1	1	100%
277	304	5.2 MDT Electronics	Schedule Task	Testing of pre-production chips (50%)	2019-05-28	2019-08-12	2019-05-28	2019-08-12	55	0	-	1	1	100%
278	305	5.2 MDT Electronics	Schedule Task	Testing of pre-production chips (100%)	2019-08-11	2020-03-31	2019-08-11	-	167	0	-	1	5	100%
279	306	5.2 MDT Electronics	PRR Review	ASD PRR	2020-04-17	2020-04-17	2020-04-17	-	1	0	-	1	1	100%
280	307	5.2 MDT Electronics	Schedule Task	PRR followup	2020-04-17	2020-04-30	2020-04-17	-	10	0	-	1	1	100%
281	308	5.2 MDT Electronics	P2UG Milestone	ASD PRR completed	2020-04-30	2020-04-30	2020-04-30	2020-04-30	0	0	-	1	1	100%
282	309	5.2 MDT Electronics	Schedule Task	production submission	2020-07-01	2020-07-15	2020-07-01	-	11	0	-	1	1	100%
283	310	5.2 MDT Electronics	Schedule Task	die production	2020-07-16	2020-09-30	2020-07-16	-	55	0	-	1	1	100%
284	311	5.2 MDT Electronics	Schedule Task	packaging	2021-01-15	2021-02-01	2021-01-15	-	12	0	-	1	1	100%
285	312	5.2 MDT Electronics	Milestone	ASD QA/QC started	2021-02-01	2021-02-01	2021-02-01	2021-02-01	0	0	-	1	1	100%
286	313	5.2 MDT Electronics	Schedule Task	ASD QA/QC (25% completed)	2021-02-01	2023-03-23	2021-02-01	-	558	0	-	2	3	100%
287	314	5.2 MDT Electronics	Schedule Task	ASD QA/QC (50% completed)	2023-03-31	2023-04-21	2023-03-31	-	15	0	-	1	2	100%
288	315	5.2 MDT Electronics	Schedule Task	ASD QA/QC (75% completed)	2023-04-21	2023-04-26	2023-04-21	-	3	0	-	1	2	100%
289	316	5.2 MDT Electronics	Schedule Task	ASD QA/QC (100% completed)	2023-04-26	2023-05-01	2023-04-26	-	3	0	-	1	2	100%
290	317	5.2 MDT Electronics	P2UG Milestone	ASD Production and QA/QC completed	2023-05-01	2023-05-01	2023-05-01	2023-05-01	0	0	-	1	1	100%
291	318	5.2 MDT Electronics	Schedule Task	ASD shipping to mezz card production sites	2023-05-01	2023-05-10	2023-05-01	2023-05-10	7	0	-	1	3	100%

500	525	5.2 MDT Electronics	Schedule task	Integration of final frontend electronics on bench	2024-11-08	2025-04-10	-	-	110	0	66	6	1	0%
501	526	5.2 MDT Electronics	Schedule Task	Integration of final frontend electronics on MDT/sMDT test chambers	2025-04-11	2025-08-14	-	-	90	0	66	1	1	0%
502	527	5.2 MDT Electronics	P2UG Milestone	Integration test completed	2025-08-14	2025-08-14	-	-	0	1	66	1	2	0%
503	528	5.2 MDT Electronics	Summary	Frontend electronics installation and commissioning	2025-08-15	2026-03-20	-	-	154	0	0	None	None	0%
504	1833	5.2 MDT Electronics	Milestone	(5.2) MDT frontend electronics for Endcap ready for installation	2025-08-15	2025-08-15	-	-	0	0	65	5	2	0%
506	1832	5.2 MDT Electronics	Milestone	(5.2) MDT frontend electronics for Barrel ready for installation	2026-02-18	2026-02-18	-	-	0	0	21	6	2	0%
508	1835	5.2 MDT Electronics	Milestone	(5.2) MDT frontend electronics for Endcap required for installation	2025-11-17	2025-11-17	-	-	0	0	0	1	None	0%
509	1834	5.2 MDT Electronics	Milestone	(5.2) MDT frontend electronics for Barrel required for installation (BIL MDT electronics required)	2026-03-20	2026-03-20	-	-	0	0	0	1	None	0%

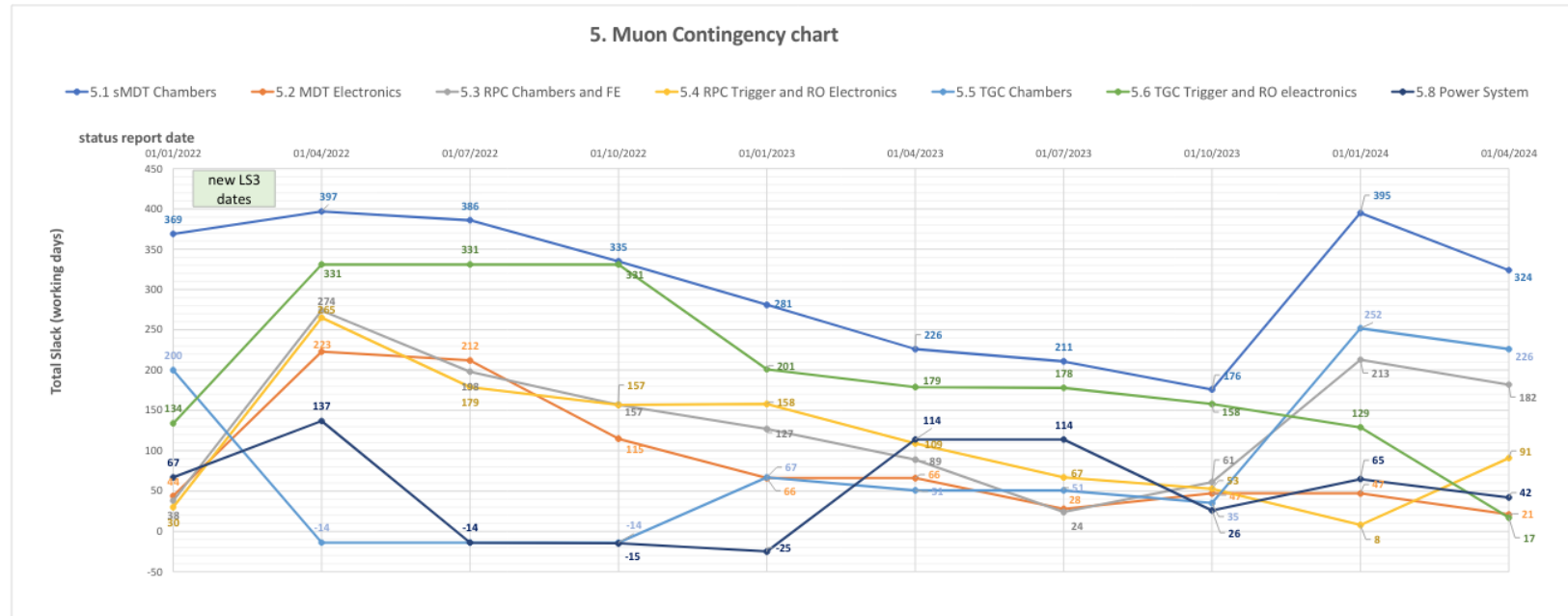
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Schedule considerations

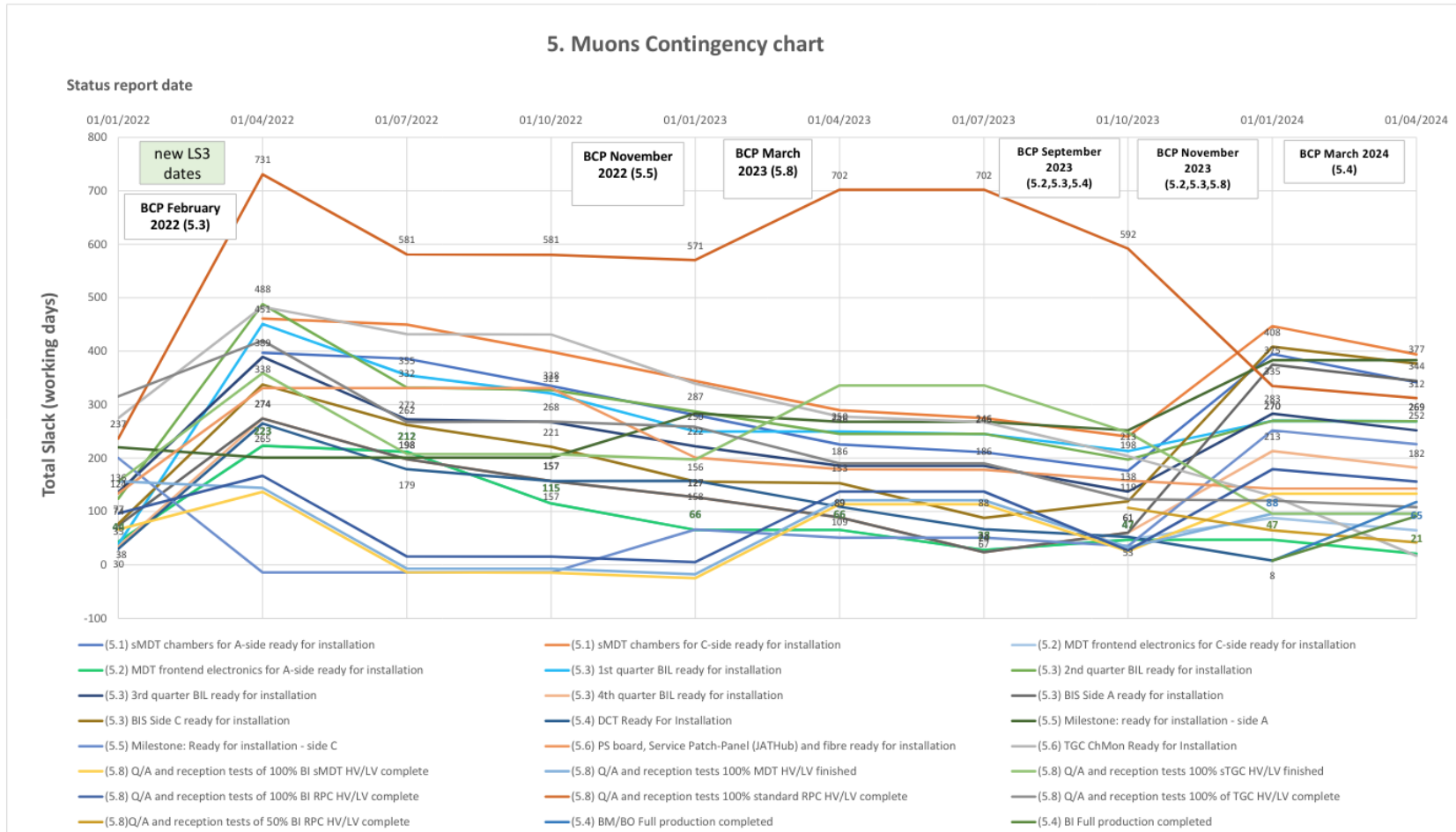
- We remain **critical** in many areas
 - ... but also some positive signs
 - e.g. rather stable contingency in Pixel over a few statusing!



5. Muon Contingency chart_the shortest contingency of each WBS LVL2_status update 01-Apr-2024 (ver.19-04-2024)

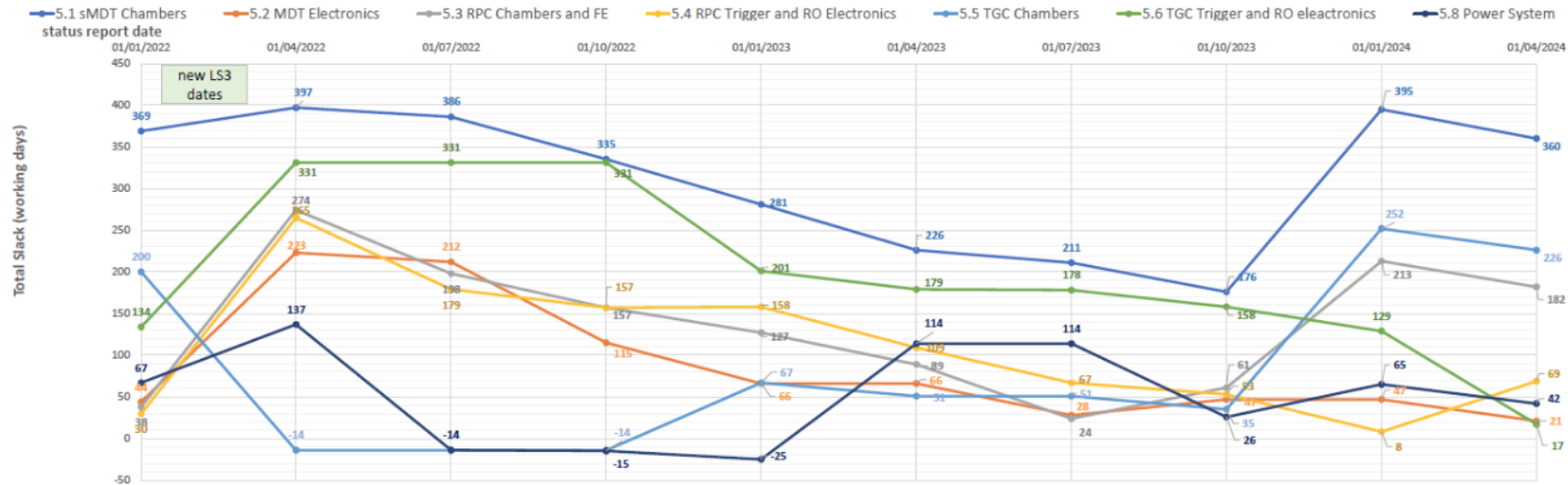


5. Muons Contingency chart, status update 01/Apr/2024, (PMO, ver.19/04/2024)



Muon Contingency and Statusing

5. Muon Contingency chart_the shortest contingency of each WBS LVL2_status update 01-Apr-2024 (ver.26-04-2024)

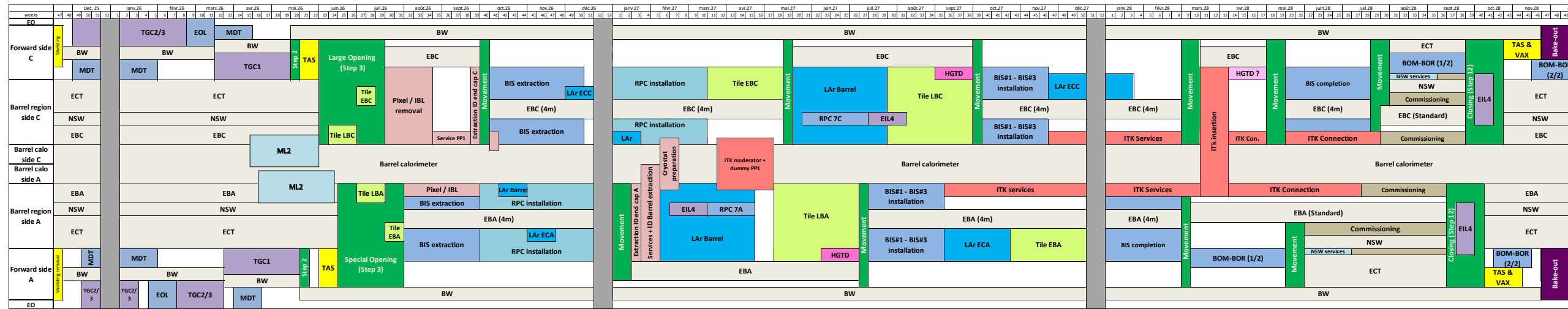


WBS	Q4 2023	Q1 2024
5.1	395	324
5.2	47	21
5.3	213	182
5.4	8 (BCP)	69
5.5	252	226
5.6	129(CM)/143	17 (CM)/143
5.8	65	42

Q3 2023 BCPs	
5.2	CSM production schedule optimization
5.3	FE ASIC submission scheme, Aluminum frame construction schedule (from in Kind Russia to external company)
5.4	separation of BI DCT task chain from BM/BO – originally to be developed in parallel
Q4 2023 BCPs	
5.2	target dates from A/C-side to Endcap / Barrel: Endcap by Nov 2025, Barrel by March 2026
5.3	revision on cable from chamber to DCT (now by a company), triplets production (was slow, matched to the mechanics delivery), DCS schedule (power system by CAEN stays similar)
5.8	Prototype and delivery priorities, quicker turnaround by CAEN
Q1 2024 BCPs	
5.4	optimizing prototyping schedule, target date change (now shortly before installation)

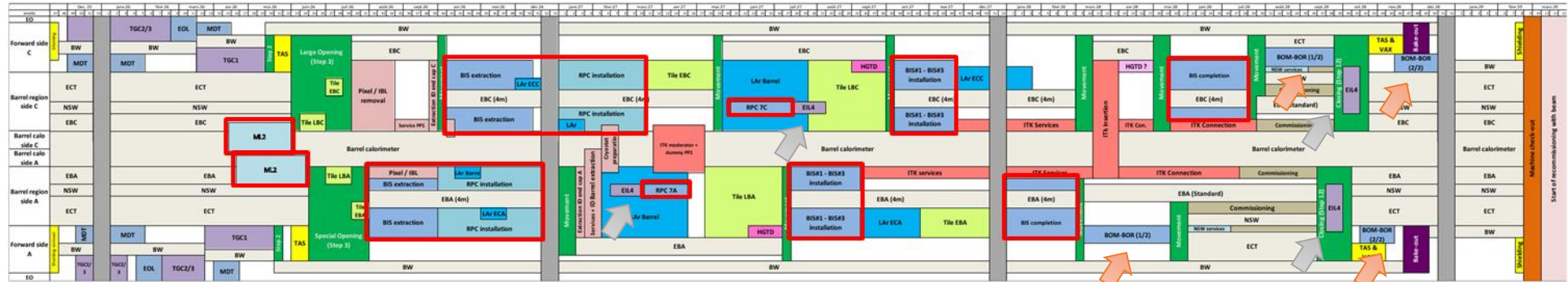
Variation of DFCP during last year by sub-projects

Sub-projects	DFCP (wd)	Variation from Apr 2023	Current tasks on critical path	Comments	Mitigation
5.1 sMDT detectors	324	+99	External (5.2): readiness of electronics	Chamber production done; slack increase due to installation date	All chambers being transferred to CERN (BB5).
5.2 MDT electronics	21	-44	sMDT + legacy mezzanine boards, CSM boards	Minor problems identified during pre-production for Mezz and CSM, which have been addressed	6-layer Mezz production in two institutes; QA/QC task in parallel to production
5.3 RPC detectors and FE electronics	182	+93	FE PCB	Production speed was limited by mechanics production capacity, which was all revised. Overall reach to production slower.	Some margin for speed increase
5.4 RPC Trigger and RO electronics	91	-18	Prototype-0 test of BI DCT	Delayed due to finalization and test with RPC BI FE electronics; transfer and decoding working, PDR end of May	Conservative schedule, plan with 5.3, might be able to skip one iteration for BI prototype
5.5 TGC detectors	226	+175	Chamber construction	Installation schedule shifted to 2027	Pilot installation of EIL4 sector. Legacy TGC (same work team) replacement anticipated
5.6 TGC electronics	17	-162	Charge monitoring system	PS board and JATHub production on schedule; personnel changes in ChMon	PS board production in June, QA/QC preparation ongoing
5.8 Power system	42	-72	Prototype delivery and test	Took long time for preparation of tender documents	Close communication with CAEN on prototype delivery schedule, priority on most modules for new detectors



- LS-3 Schedule v.9.4 released in June, in-depth review on Oct. 5th and 6th 2023

– <https://edms.cern.ch/document/1920006> <https://edms.cern.ch/document/2333880>



– BI , BOM/BOR ➔, EIL4 ➔

You are logged into the Task Tracker as Alessandro Polini, connected to task group Muon-TC with restricted privileges

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Group Tasks: Muon-TC

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ID:	Tag:	Assigned to:	Starting date:	Due by date:	Last Updated:	Report By:	Title	Priority:	Status:
Muon-TC-14	Follow up	Corrad, Massimo Kloutchnikova, Tatiana	2021-04-30	2024-03-29	2024-03-19	2024-05-31	Preliminary Layout of Sect 11/15 BSM and BIR RPC Chambers --> now BOM/BOR	Normal	late
Muon-TC-15	Follow up	Aieli, Giulio Polini, Alessandro Valderanis, Chrysostomos Dushkin, Andrei Pastori, Enrico	2021-06-18	2024-03-29	2024-03-19	2024-05-31	Collect Muon Services and Document Needs	Normal	late
Muon-TC-18	Follow up	Aieli, Giulio Polini, Alessandro	2022-02-28	2024-03-29	2024-03-19	2024-05-31	Replacement of BIS RPC Flat Cables by High-Density Cables	Normal	late
Muon-TC-24	Follow up	Aieli, Giulio Polini, Alessandro Valderanis, Chrysostomos	2023-02-15	2024-05-31	2024-03-19	2024-06-28	Regular Reporting on Progress of RPC Gas Task Force	Normal	in progress
Muon-TC-27	Discussion organisation	Valderanis, Chrysostomos	2023-11-10	2024-06-28	2024-03-19	2024-05-31	Consolidate the Person Power Estimate for EMJEO MDT Electronics Replacement	Normal	in progress
Muon-TC-28	Discussion organisation	Rumler, Andre Velaquez Gutierrez, Gerardo	2023-11-10	2024-06-28	2024-03-19	2024-06-28	Define Space and Necessary Infrastructure for Dedicated TGC Read-Out Rack	Normal	in progress
Muon-TC-29	Discussion organisation	Okumura, Yasuyuki Quercia, Lorenzo	2023-11-10	2024-06-28	Never	2024-03-29	Work Out Scenarios in Case Chambers are Found to be Faulty After Installation	Normal	in progress
Muon-TC-30	Discussion organisation	Quercia, Lorenzo Raymond, Michel	2023-11-10	2024-06-28	2024-03-19	2024-05-31	Add Surface Testing to Schedules (BIS into Phase II Schedule, SX1 into LS3 Installation Schedule)	Normal	in progress
Muon-TC-31	Discussion organisation	Polini, Alessandro Valderanis, Chrysostomos	2023-11-10	2024-06-28	2024-03-19	Not set	Develop Procedure for Sensor Transplantation (MDT->MDT) Including Risk Mitigation	Normal	in progress
Muon-TC-32	Discussion organisation	Quercia, Lorenzo	2023-11-10	2024-06-28	2024-03-19	2024-09-20	Develop Mechanism for Positioning the BIL Chambers After Moving Back and Forth	Normal	in progress
Muon-TC-33	Follow up	Aleksa, Martin Raymond, Michel	2023-11-10	2024-06-28	2024-03-19	2024-05-31	Include Maintenance and Upgrade Works on RPC Gas System in LS3 Schedule	Low	in progress
Muon-TC-34	Discussion organisation	Valderanis, Chrysostomos	2023-11-10	2024-06-28	2024-03-19	2024-05-31	Develop Commissioning Schedule and Link to Availability of Needed Infrastructure	Normal	in progress
Muon-TC-1	Follow up	Polini, Alessandro Fleischmann, Philipp Pontecorvo, Ludovico	2019-09-16	2023-06-21	2023-06-21	2023-06-21	Thermal Simulation of the Cavern	Normal	Completed
Muon-TC-2	Follow up	Aieli, Giulio Corrad, Massimo Kroha, Hubert	2019-09-16	2019-11-30	2020-10-30	Not set	Collect all space needs for Muon Phase II Upgrade	Normal	Completed
Muon-TC-3	Discussion organisation	Pontecorvo, Ludovico	2019-09-16	2019-11-30	2020-11-06	Not set	Check BIS availability	Normal	Completed
Muon-TC-4	Organise	Pontecorvo, Ludovico Raymond, Michel	2019-09-16	2019-11-30	2020-11-06	Not set	Test of Rotating EIL4	Normal	Completed
Muon-TC-5	Organise	Fleischmann, Philipp	2019-09-16	2019-12-27	2021-04-30	Not set	Test of Electronics Exchange	Normal	Completed
Muon-TC-6	Follow up	Aieli, Giulio Corrad, Massimo	2019-11-15	2020-06-26	2020-09-04	Not set	Determine weight of RPC chambers behind BSM and BIR chambers in sectors 11 and 15	Low	Completed
Muon-TC-7	Follow up	Dushkin, Andrei Raymond, Michel	2019-11-15	2020-02-28	2020-05-29	Not set	BIS Floor Re-Inforcement	Normal	Completed
Muon-TC-8	Follow up	Corrad, Massimo Hori, Yasuyuki	2020-11-06	2021-03-26	2021-01-15	Not set	Collect Information on TGC Charge Monitoring	Low	Completed
Muon-TC-9	Follow up	Aieli, Giulio	2020-11-06	2021-09-30	2021-06-18	2021-06-18	HV for BIR RPCs	Low	Completed
Muon-TC-10	Follow up	Aieli, Giulio Aleksa, Martin	2020-11-06	2021-04-30	2021-06-18	2021-04-30	LV for BIR RPCs	Low	Completed

		Unique ID	Task Name	Duration	Start	Finish	Predecessor	Resource Names	Successors	Project	Add New Column
1		36	Side C	134.5 days	Nov 25 '25	Jun 23 '26				Muon endcap	
2		142	Ready for BW-C separation	0 hrs	Nov 25 '25	Nov 25 '25			3	<>\LS3 opening	
3		130	Services preparation before separation (side C)	6 days	Nov 25 '25	Dec 3 '25	<>\LS3 opening\48	TGC electronics	4	Muon endcap	
4		67	TGC1-C separation	12 hrs	Dec 3 '25	Dec 5 '25	3	TC Support[400%],Configuration engineer,Movement exp	11,6,33,12	Muon endcap	
5		40	BW-C TGC3 (PS boards)	47 days	Dec 5 '25	Feb 24 '26				Muon endcap	
11		21	BW-C MDT EMS (1 shift / 1 team)	272 hrs	Dec 5 '25	Feb 5 '26	4	MDT team,Elevating platform	13,58	Muon endcap	
12		143	ELMB2 EMS replacement (1 team)	64 hrs	Dec 5 '25	Dec 17 '25	4	Elevating platform,MDT team	43	Muon endcap	
13		122	Extra time with EMS accessible	32 days	Feb 5 '26	Mar 23 '26	11	Elevating platform,MDT team[50%]		Muon endcap	
14		38	EOL-C electronics (2 teams)	152 hrs	Feb 19 '26	Mar 18 '26	9	MDT team[200%],Palazzani C,Elevating platform	16,58,15	Muon endcap	
15		144	ELMB2 on EOL-C (2 teams)	32 hrs	Mar 18 '26	Mar 24 '26	10,14	MDT team[200%],Palazzani C,Elevating platform	16	Muon endcap	
16		69	TGC2/3-C separation	12 hrs	Mar 24 '26	Mar 25 '26	14,10,15	TC Support[400%],Configuration engineer,Movement exp	24,17,19	Muon endcap	
17		70	BW-C MDT EML (1 shift / 2 teams)	136 hrs	Mar 25 '26	Apr 21 '26	16,41	MDT team[200%],Elevating platform[200%]	20,18,58,19	Muon endcap	
18		123	Extra time with EML accessible	17 days	Apr 21 '26	May 18 '26	17	Elevating platform,MDT team[50%]		Muon endcap	
19		145	ELMB2 on EML (1 team)	64 hrs	Apr 21 '26	May 4 '26	16,17	Elevating platform,MDT team	48	Muon endcap	
20		71	BW-C closing at park position	8 hrs	May 19 '26	May 20 '26	17,27,28	TC Support[400%],Configuration engineer,Movement exp	29,<>\LS3 opening	Muon endcap	
21		138	Muon end cap completed side C (EOS excluded)	0 days	May 20 '26	May 20 '26	20			<>\Detector installation	
22		135	JFC3 up to surface	2 hrs	May 20 '26	May 20 '26	20			<>\LS3 opening	
23		42	BW-C TGC1 (PS boards)	35 days	Mar 25 '26	May 19 '26				Muon endcap	
29		72	EOS-C electronics + ELMB2	180 hrs	May 20 '26	Jun 23 '26	20	MDT team[200%]	57	Muon endcap	
30		68	Side A	158 days	Nov 24 '25	Jul 23 '26				Muon endcap	
31		141	Ready for BW-A separation	0 hrs	Nov 24 '25	Nov 24 '25			32	<>\LS3 opening	
32		140	Services preparation before separation (side A)	6 days	Nov 24 '25	Dec 2 '25	<>\LS3 opening\26	TGC electronics	33	Muon endcap	
33		75	TGC1-A separation	12 hrs	Dec 5 '25	Dec 8 '25	4,32	TC Support[400%],Configuration engineer,Movement exp	35,42	Muon endcap	
34		96	BW-A TGC3 (PS boards)	47 days	Dec 8 '25	Feb 25 '26				Muon endcap	
40		147	ELMB2 on EOL-A (2 teams)	32 hrs	Feb 20 '26	Feb 26 '26	43,38	MDT team[200%],Elevating platform,Palazzani A	45,41	Muon endcap	
41		115	EOL-A electronics (1 shifts / 2 teams)	152 hrs	Feb 26 '26	Mar 25 '26	42,38,40	MDT team[200%],Elevating platform,Palazzani A	58,45,17	Muon endcap	
42		76	BW-A MDT EMS (1 shift / 1 team)	272 hrs	Dec 8 '25	Feb 6 '26	33	MDT team,Elevating platform	44,41,58	Muon endcap	
43		146	ELMB2 EMS replacement (1 team)	64 hrs	Dec 17 '25	Jan 12 '26	12	MDT team,Elevating platform	40	Muon endcap	
44		124	Extra time with EMS accessible	32 days	Feb 6 '26	Mar 24 '26	42	Elevating platform,MDT team[50%]		Muon endcap	
45		77	TGC2/3-A separation	12 hrs	Mar 25 '26	Mar 27 '26	39,41,40	TC Support[400%],Configuration engineer,Movement exp	46,50	Muon endcap	
46		78	BW-A MDT EML (1 shift / 2 teams)	136 hrs	Mar 27 '26	Apr 23 '26	45	MDT team[200%],Elevating platform[200%]	47,58,55,48	Muon endcap	
47		125	Extra time with EML accessible	16 days	Apr 23 '26	May 19 '26	46	Elevating platform,MDT team[50%]		Muon endcap	
48		148	ELMB2 on EML (1 team)	64 hrs	May 4 '26	May 15 '26	46,19	MDT team,Elevating platform		Muon endcap	
49		101	BW-A TGC1 (PS boards)	34 days	Mar 27 '26	May 20 '26				Muon endcap	
55		79	BW-A closing at park position	8 hrs	May 20 '26	May 21 '26	53,54,46	TC Support[400%],Configuration engineer,Movement exp	<>\Detector instal	Muon endcap	
56		139	Muon end cap completed side A (EOS excluded)	0 days	May 21 '26	May 21 '26	55			<>\Detector installation	
57		81	EOS-A electronics + ELMB2	180 hrs	Jun 23 '26	Jul 23 '26	29	MDT team[200%]		Muon endcap	
58		132	MDT electronics replacement done on EMS and EML both sides	0 days	Apr 23 '26	Apr 23 '26	11,17,42,46,1		<>\Muon BI\6,<>\Muon	Muon endcap	

