

ASG SUPERCONDUCTORS

MEETING INFN/CERN JULY, 31ST 2024

PROJECT: D2
UPDATED SCHEDULE

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COILS MANUFACTURING



MBRD1

Task Mode	Task Name	Start	Finish	2023										
				Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
175	MBRD1 assembly	Wed 01/02/23	Thu 19/10/23	[Gantt bar spanning Feb to Oct]										
176	Manufacturing of first aperture (2 poles)	Wed 01/02/23	Wed 05/04/23	[Gantt bar spanning Feb to Apr]										
177				[Gantt bar spanning Apr to May]										
178				[Gantt bar spanning May to Jun]										
179				[Gantt bar spanning Jun to Jul]										
180				[Gantt bar spanning Jul to Aug]										
181				[Gantt bar spanning Aug to Sep]										
182				[Gantt bar spanning Sep to Oct]										
183				[Gantt bar spanning Oct to Nov]										
184				[Gantt bar spanning Nov to Dec]										
185				[Gantt bar spanning Dec to Jan 2024]										
186				[Gantt bar spanning Jan to Feb 2024]										
187				[Gantt bar spanning Feb to Mar 2024]										
188				[Gantt bar spanning Mar to Apr 2024]										
189				[Gantt bar spanning Apr to May 2024]										
190				[Gantt bar spanning May to Jun 2024]										
191				[Gantt bar spanning Jun to Jul 2024]										
192				[Gantt bar spanning Jul to Aug 2024]										
193				[Gantt bar spanning Aug to Sep 2024]										
194				[Gantt bar spanning Sep to Oct 2024]										
195				[Gantt bar spanning Oct to Nov 2024]										
196				[Gantt bar spanning Nov to Dec 2024]										
197				[Gantt bar spanning Dec 2024 to Jan 2025]										
198				[Gantt bar spanning Jan to Feb 2025]										
199				[Gantt bar spanning Feb to Mar 2025]										
200				[Gantt bar spanning Mar to Apr 2025]										
201				[Gantt bar spanning Apr to May 2025]										
202				[Gantt bar spanning May to Jun 2025]										
203				[Gantt bar spanning Jun to Jul 2025]										
204				[Gantt bar spanning Jul to Aug 2025]										
205				[Gantt bar spanning Aug to Sep 2025]										
206				[Gantt bar spanning Sep to Oct 2025]										
207				[Gantt bar spanning Oct to Nov 2025]										
208				[Gantt bar spanning Nov to Dec 2025]										
209				[Gantt bar spanning Dec 2025 to Jan 2026]										
210				[Gantt bar spanning Jan to Feb 2026]										
211				[Gantt bar spanning Feb to Mar 2026]										
212				[Gantt bar spanning Mar to Apr 2026]										
213				[Gantt bar spanning Apr to May 2026]										
214				[Gantt bar spanning May to Jun 2026]										
215				[Gantt bar spanning Jun to Jul 2026]										

First Delivery: October 2023

Return to ASG for Repair: July 2024

Repair Activities: running, completion foreseen within Aug'24

Testing Activities: not started, completion foreseen within mid Sep'24

Second Delivery: foreseen within end of Sep'24
(possible delay due to forwarder internal issues not yet foreseeable)

Task Moc	Task Name	Start	Finish	2025										
				Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
181	MBRD1 Repair	Tue 23/04/24	Fri 20/09/24	[Gantt bar spanning Apr to Sep]										
182	Customs, Supplier and ASG formalities	Mon 29/04/24	Fri 28/06/24	[Gantt bar spanning Apr to Jun, labeled 'completed']										
183	Preparation to shipment (Mission @ CERN)	Tue 23/04/24	Wed 24/04/24	[Gantt bar spanning Apr to Apr, labeled 'completed']										
184	Shipment from CERN to ASG	Mon 01/07/24	Wed 03/07/24	[Gantt bar spanning Jul to Jul, labeled 'completed']										
185	Repair Activities @ ASG	Thu 04/07/24	Fri 30/08/24	[Gantt bar spanning Jul to Aug, labeled 'running']										
186	Testing Activities @ ASG	Mon 02/09/24	Fri 13/09/24	[Gantt bar spanning Sep to Sep, labeled 'estimated, not yet scheduled']										
187	Shipment from ASG to CERN	Mon 16/09/24	Fri 20/09/24	[Gantt bar spanning Sep to Sep, labeled 'estimated, not yet scheduled']										

MBRD2

Task Moc	Task Name	Start	Finish	2024			
				Sep	Oct	Nov	Dec
229	✓ MBRD2 assembly	Mon 04/09/23	Wed 10/04/24				
230	✓ ▸ Manufacturing of first aperture (2 poles)	Mon 04/09/23	Thu 26/10/23				
240	✓ ▸ Manufacturing of second aperture (2 poles)	Tue 10/10/23	Mon 06/11/23				
250	✓ ▸ Magnet completion	Wed 08/11/23	Wed 10/04/24				
251	✓ Collaring apertures assembly	Wed 08/11/23	Wed 08/11/23				
252	✓ AI S						
253	✓ Elec						
254	✓ Low						
255	✓ Mag						
256	✓ Mov						
257	✓ Upp						
258	✓ Yoke						
259	✓ Stiff						
260	✓ Movement of Magnet with crane support	Thu 07/12/23	Mon 11/12/23				
261	✓ Electrical & Magnetic Measurements	Mon 18/12/23	Wed 20/12/23				
262	✓ 15mm head plates installation	Thu 21/12/23	Thu 21/12/23				
263	✓ 50mm head plates installation	Fri 22/12/23	Fri 22/12/23				
264							
265							
266							
267	✓ Packing & Documentation	Fri 05/04/24	Mon 08/04/24				
268	✓ Delivery of MBRD2	Tue 09/04/24	Wed 10/04/24				

Delivery: April 2024

Repair Activities: ASG Mission to CERN on May'24

Testing Activities @ CERN: completion on June'24

Temporary Acceptance by INFN: 06 June 2024

Waiting for SAT at CERN

Contractual deadline agreed by ASG and INFN: 9 months after the delivery (in this case, the Temporary Acceptance) > March 2025

MBRD3

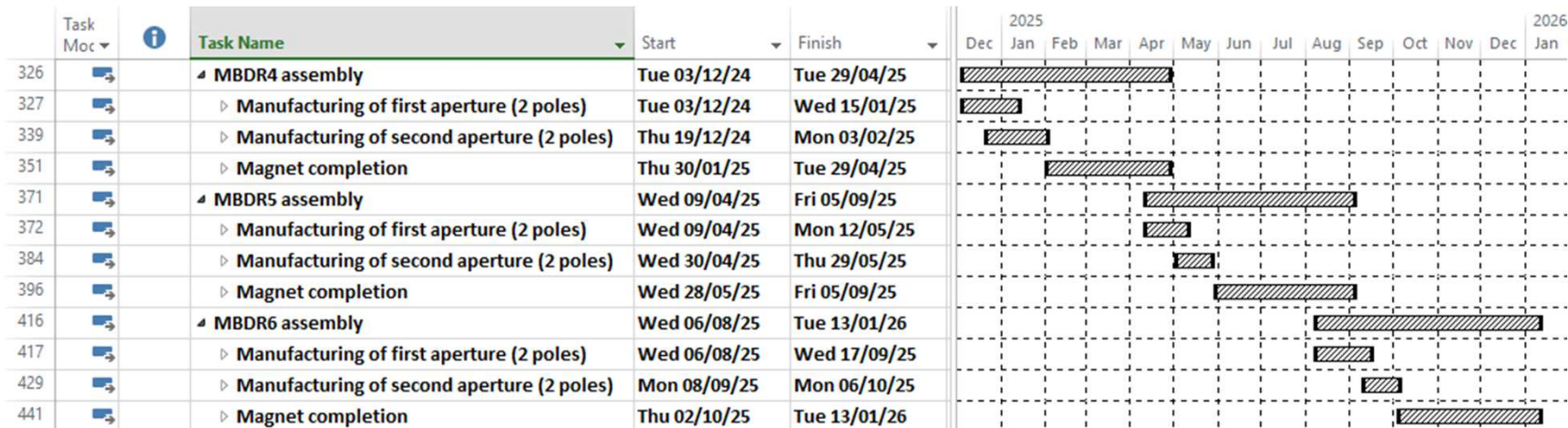
Task Moc	Task Name	Start	Finish	2024												
				Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
269	▾ MBRD3 assembly	Wed 06/12/23	Thu 19/12/24	[Gantt bar spanning Dec 2023 to Dec 2024]												
270	▸ Manufacturing of first aperture (2 poles)	Wed 06/12/23	Fri 12/04/24	[Gantt bar from Dec 2023 to Apr 2024]												
280	▾ Manufacturing of second aperture (2 poles)	Tue 19/03/24	Fri 27/09/24	[Gantt bar from Mar 2024 to Sep 2024]												
281	✓ Coils preparation	Tue 19/03/24	Wed 20/03/24	[Gantt bar from Mar 2024 to Mar 2024]												
282	✓ Coils coupling	Wed 20/03/24	Wed 20/03/24	[Gantt bar from Mar 2024 to Mar 2024]												
283	✓ Ground Insulation installation	Thu 21/03/24		[Gantt bar from Mar 2024 to Mar 2024]												
284	✓ PTFE coated sheets installation	Tue 26/03/24		[Gantt bar from Mar 2024 to Mar 2024]												
285	✓ Collars installation with temporary keys insertion	Wed 27/03/24		[Gantt bar from Mar 2024 to Mar 2024]												
286	✓ Electrical test after collars installation	Tue 02/04/24		[Gantt bar from Apr 2024 to Apr 2024]												
287	✓ Collaring (1st attempt)	Wed 10/04/24		[Gantt bar from Apr 2024 to Apr 2024]												
288	✓ Aperture disassembly (following NCR)	Thu 11/04/24		[Gantt bar from Apr 2024 to Apr 2024]												
289	✓ Aperture repair (following NCR)	Thu 11/04/24		[Gantt bar from Apr 2024 to Apr 2024]												
290	✓ Aperture re-assembly (following NCR)	Fri 12/04/24	Mon 15/04/24	[Gantt bar from Apr 2024 to Apr 2024]												
291	✓ Collaring (2nd attempt)	Tue 16/04/24	Thu 18/04/24	[Gantt bar from Apr 2024 to Apr 2024]												
292	✓ Aperture disassembly (following NCR)	Fri 19/04/24	Tue 23/04/24	[Gantt bar from Apr 2024 to Apr 2024]												
293	✓ Aperture repair and re-assembly (following NCR)	Mon 20/05/24	Tue 27/05/24	[Gantt bar from May 2024 to May 2024]												
294	✓ Collaring (3rd attempt)	Tue 28/05/24	Tue 28/05/24	[Gantt bar from May 2024 to May 2024]												
295	✓ Aperture repair and re-assembly (following NCR)	Mon 03/06/24	Fri 28/06/24	[Gantt bar from Jun 2024 to Jun 2024]												
296	✓ Collaring (4th attempt)	Mon 01/07/24	Mon 01/07/24	[Gantt bar from Jul 2024 to Jul 2024]												
297	✓ Aperture disassembly (following NCR)	Tue 02/07/24	Fri 05/07/24	[Gantt bar from Jul 2024 to Jul 2024]												
298	Root Cause Identification	Mon 08/07/24	Fri 30/08/24	[Gantt bar from Jul 2024 to Aug 2024]												
299	Aperture repair and re-assembly (following NCR)	Mon 02/09/24	Fri 06/09/24	[Gantt bar from Sep 2024 to Sep 2024]												
300	Collaring (5th attempt)	Mon 09/09/24	Fri 13/09/24	[Gantt bar from Sep 2024 to Sep 2024]												
301	Electrical and dimensional tests	Mon 16/09/24	Tue 17/09/24	[Gantt bar from Sep 2024 to Sep 2024]												
302	Magnetic measurements	Wed 18/09/24	Thu 19/09/24	[Gantt bar from Sep 2024 to Sep 2024]												
303	INFN approval	Fri 20/09/24	Mon 23/09/24	[Gantt bar from Sep 2024 to Sep 2024]												
304	✓ Report 1st Aperture	Thu 02/05/24	Tue 07/05/24	[Gantt bar from May 2024 to May 2024]												
305	Report 2nd Aperture	Tue 24/09/24	Fri 27/09/24	[Gantt bar from Sep 2024 to Sep 2024]												
306	▸ Magnet completion	Tue 24/09/24	Thu 19/12/24	[Gantt bar from Sep 2024 to Dec 2024]												

Shipment foreseen within Dec'24, but probably earlier if:

1. Green Light from INFN/CERN for 5° Collaring Attempt > within end of Aug'24
2. HN300 Kapton sheets available from CERN > within end of Aug'24
3. Successful completion of the 5° collaring attempt

VS-06 Collaring Activities have been estimated, not yet scheduled

OVERALL PRODUCTION OF REMAINING MAGNETS



MBRD4-5-6 Manufacturing Activities have been estimated, not yet scheduled

The Overall production of the remaining 6 apertures could be anticipated under these conditions:

- ASG receive the Green Light from INFN/CERN
- CERN provide the HN300 Kapton sheets also for VS-07 and the others apertures (ASG kindly request, due to the high leadtime of ASG supplier, estimated in, at least, 60 working days; NB: the materials will be reintegrate to CERN when available)

ASG needs, however, what above as soon as possible in order to:

- Understand if the problem occurred on VS-06 could affects the others coils (VS-07 manufacturing is considered part of the VS-06 root cause process)
- Optimize the Production of the remaining magnets, reducing the leadtime and increasing efficiency of the Labour hours.