

DE LA RECHERCHE À L'INDUSTRIE



# EuCARD 7.3 FRESCA 2 DIPOLE

## MANUFACTURING PLANNING

ESAC Revue | Maria Durante

27 FEVRIER 2013

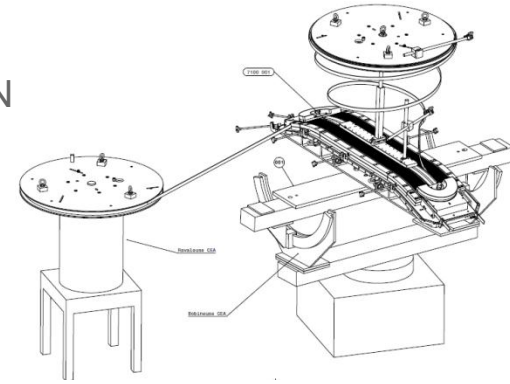
- **Procurements FOR M1: 3-4 coils**
- **Procurements FOR M1: 1-2 coils**
- **Schedule of one coil manufacturing**
- **First magnet schedule**
- **Second magnet schedule**

# PROCUREMENTS FOR M1: 3-4 COILS



## 3-4 COIL TOOLS

- Winding tooling : DELIVERED, WINDING SPOOLS UNDER MODIFICATION
- Reaction tooling : DELIVERED
- Instrumentation and splice tooling : AVAILABLE AT CERN
- Impregnation tooling : FORESEEN FOR END OF MARCH

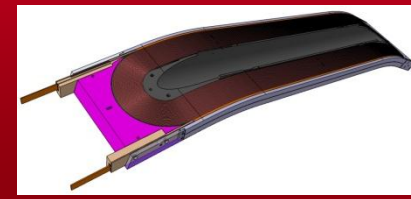


## FIRST COPPER COIL COMPONENTS - CC3401

- Insulated Copper cable : 270 m UNIT LENGTH AVAILABLE AT CEA
  - Coil components: DELIVERED, WITH  $\text{Al}_2\text{O}_3$  COATING
  - Interlayer insulation : UNDER REALIZATION (BINDER APPLICATION) AT CERN
- **Copper CC3401 coil winding is foreseen for end of March/beginning of April 2013.**

## $\text{Nb}_3\text{Sn}$ COILS : CR3401 and CR3402

- RRP  $\text{Nb}_3\text{Sn}$  strand: AVAILABLE AT CERN
  - Coil components : DELIVERED, TO BE ALUMINA COATED
  - Interlayer insulation : TO BE PROVIDED
- **First  $\text{Nb}_3\text{Sn}$  3-4 type coil is foreseen after 1-2 copper coil, for September 2013.**



## 1-2 COIL TOOLS

- Winding tooling : UNDER REALIZATION, WINDING TABLE FORESEEN FOR END OF APRIL 2013
- Reaction tooling : CALL FOR TENDER STARTED
- Instrumentation and splice tooling : AVAILABLE AT CERN
- Impregnation tooling : CAO DETAILED DESIGN UNGOING

## SECOND COPPER COIL COMPONENTS – CC1201

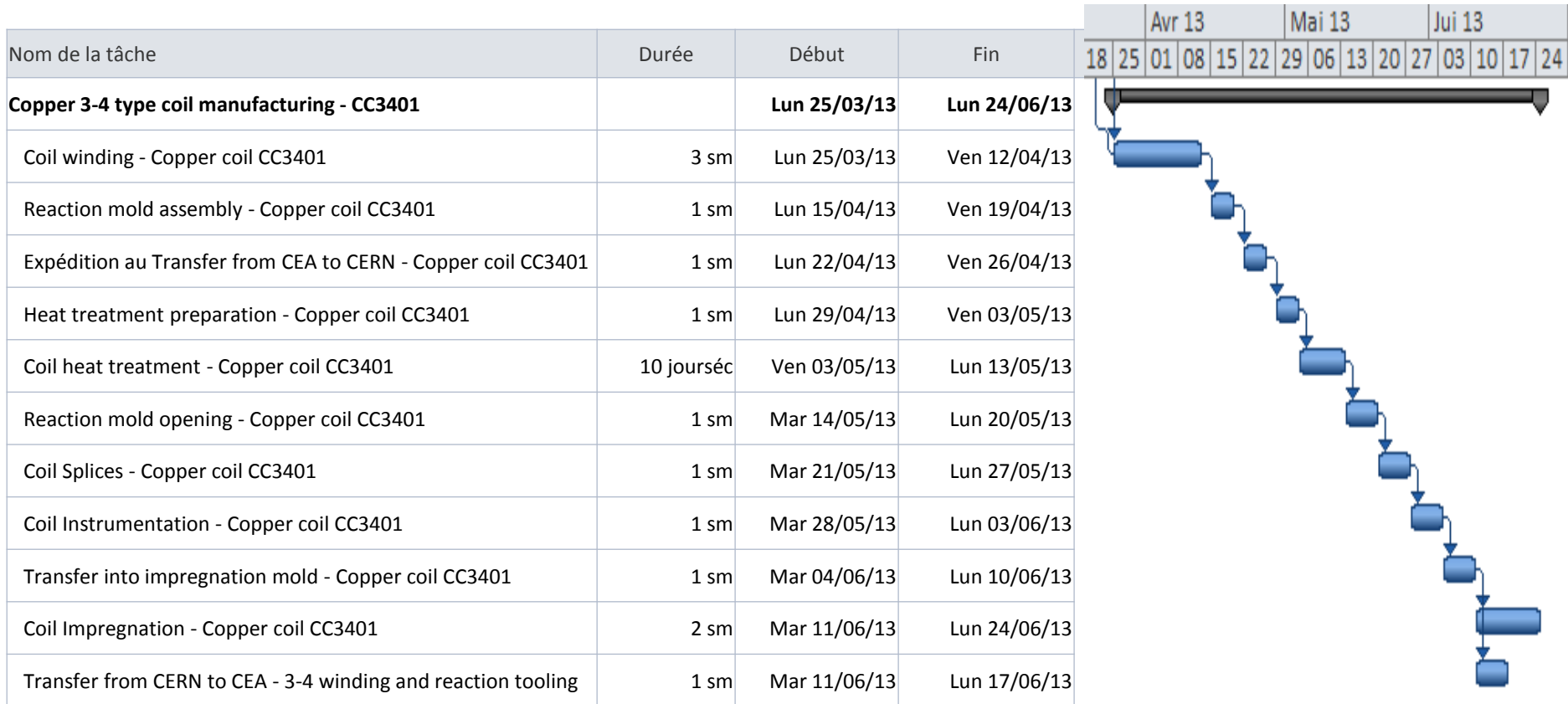
- Coil components: FORESEEN FOR MID MAY 2013  
ALUMINA COATING 5 WEEKS LATER
- Insulated Copper cable : BARE CABLE AVAILABE AT CERN, TO BE INSULATED  
→ **Copper CC1201 coil winding is foreseen for end of June.**

## Nb<sub>3</sub>Sn COILS : CR1201 and CR1202

- RRP Nb<sub>3</sub>Sn strand: AVAILABLE AT CERN
- Coil components for CR1201: FORESEEN FOR MID MAY 2013, ALUMINA COATING 5 WEEKS LATER
- Coil components for CR1202 : CALL FOR TENDER TO BE LAUNCHED  
→ **First 1-2 Nb<sub>3</sub>Sn coil winding is foreseen after 3-4 Nb<sub>3</sub>Sn coil, for November 2013;**

# SCHEDULE OF ONE COIL MANUFACTURING

■ Schedule of one coil manufacturing : first copper coil



# FIRST MAGNET SCHEDULE

Nom de la tâche	Début	Fin	Semestre 1, 2013												Semestre 2, 2013					Semestre 1, 2014					Semestre 2, 2014					Semestre 1, 2015					Semestre 2, 2015															
			F	M	A	M	J	J	A	S	O	N	D	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D							
⊕ Preparation for first 3-4 copper coil	Mar 19/02/13	Ven 05/04/13	[Gantt bar]																																															
⊕ First 3-4 copper coil manufacturing - CC3401	Lun 25/03/13	Lun 24/06/13	[Gantt bar: First 3-4 copper coil manufacturing - CC3401]																																															
⊕ Preparation for first 1-2 copper coil	Jeu 25/04/13	Mer 26/06/13	[Gantt bar]																																															
⊕ First 1-2 copper coil manufacturing - CC1201	Mer 26/06/13	Ven 25/10/13	[Gantt bar: First 1-2 copper coil manufacturing - CC1201]																																															
⊕ Preparation for first 3-4 Nb3Sn coil	Lun 22/07/13	Lun 02/09/13	[Gantt bar]																																															
⊕ First Nb3Sn 3-4 coil manufacturing - CR3401	Lun 02/09/13	Jeu 05/12/13	[Gantt bar: First Nb3Sn 3-4 coil manufacturing - CR3401]																																															
⊕ Preparation for first 1-2 Nb3Sn coil	Lun 14/10/13	Lun 28/10/13	[Gantt bar]																																															
⊕ First 1-2 Nb3Sn coil manufacturing - CR1201	Lun 28/10/13	Jeu 06/02/14	[Gantt bar: First 1-2 Nb3Sn coil manufacturing - CR1201]																																															
⊕ Preparation for second 3-4 Nb3Sn coil	Jeu 21/11/13	Jeu 05/12/13	[Gantt bar]																																															
⊕ Second 3-4 Nb3Sn coil manufacturing - CR3402	Jeu 05/12/13	Ven 21/03/14	[Gantt bar: Second 3-4 Nb3Sn coil manufacturing - CR3402]																																															
⊕ Preparation for Second 1-2 Nb3Sn coil	Ven 24/01/14	Ven 07/02/14	[Gantt bar]																																															
⊕ Second 1-2 Nb3Sn COIL manufacturing - CR1202	Ven 07/02/14	Mer 14/05/14	[Gantt bar: Second 1-2 Nb3Sn COIL manufacturing - CR1202]																																															
⊕ Nb3Sn Coil test station preparation	Lun 02/01/12	Mar 01/07/14	[Gantt bar: Nb3Sn Coil test station ready for tests]																																															
Assembly of first dipole magnet	Jeu 15/05/14	Mer 09/07/14	[Gantt bar: Assembly of first dipole magnet]																																															
Tests of first dipole magnet	Jeu 10/07/14	Mer 01/10/14	[Gantt bar: Tests of first dipole magnet]																																															
⊕ Preparation for Nb3Sn spare coil	Jeu 01/05/14	Jeu 15/05/14	[Gantt bar]																																															
⊕ Nb3Sn spare coil manufacturing - CRXX03	Jeu 15/05/14	Mar 19/08/14	[Gantt bar: Nb3Sn spare coil manufacturing - CRXX03]																																															

# SECOND MAGNET SCHEDULE

Nom de la tâche	Début	Fin	3																														
			Semestre 1, 2014					Semestre 2, 2014					Semestre 1, 2015		Semestre 2, 2015			Semestre 1, 2016															
			D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
+ PROCUREMENTS FOR M2	Lun 06/01/14	Ven 24/10/14																															
+ Preparation for Third 3-4 Nb3Sn coil	Lun 02/06/14	Jeu 16/10/14																															
+ Third 3-4 Nb3Sn coil manufacturing - CP3401	Jeu 16/10/14	Mar 20/01/15																															
+ Preparation for Third 1-2 Nb3Sn coil	Lun 21/07/14	Jeu 13/11/14																															
+ Third 1-2 Nb3Sn coil manufacturing - CP1201	Jeu 13/11/14	Mar 17/02/15																															
+ Preparation for fourth 3-4 Nb3Sn coil	Jeu 27/11/14	Mar 20/01/15																															
+ Fourth 3-4 Nb3Sn coil manufacturing - CP3402	Jeu 11/12/14	Mar 17/03/15																															
+ Preparation for fourth 1-2 Nb3Sn coil	Jeu 25/12/14	Mar 17/02/15																															
+ Fourth 1-2 Nb3Sn coil manufacturing - CP1202	Jeu 08/01/15	Mar 14/04/15																															
Assembly of second dipole magnet	Mer 15/04/15	Mar 09/06/15																															
Tests of second dipole magnet	Mer 10/06/15	Mar 01/09/15																															

**THANKS FOR YOUR ATTENTION**

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