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Date of the meeting : 08 July 2021

**WP6a Technical follow-up : Meeting Minutes #1****Project/Activity:** HL-LHC – Cold Powering (WP6a)**Participants :** F.Di Ciocchis (FdC), P.Cruikshank (PC), Y.Leclercq (YL), R.Betemps (RB), P.Schneider (PS), E.Castrillo (EC), D.Ochoa (DO), A.Gharib (AG), M.Curylo (MC), C.Halbert (CH)**Agenda:**Indico event <https://indico.cern.ch/event/1055245/>

1. Present purpose of the meeting
2. Share team's holidays and absence (useful to schedule activities in the upcoming months)
3. Continue to follow-up the DFH action list (updated list below)
4. AOB

## Discussion &amp; comments:

**2. Share team's holidays and absence**

	July					August				Sept		
	27	28	29	30	31	32	33	34	35	36	37	38
FdC												
RB												
FP												
AG												
CH												
PS												
PC												
DO												
EG												
YL												
MC												



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### 3. Status of actions (Continue to follow-up the DFH action list)

#### DFH

▪ Action #1: Follow-up weld qualification campaign (FdC)

A list of all the pressure-retaining lip welds was prepared for both DFHX and DFX. The list was sent to Julien Debeux (EN-MME, weld engineer in charge of the qualification plan) who specified which lip weld configuration has been already qualified in the past for other projects. A dedicated meeting was held on 09/07 involving FdC, YL, RB and Julien Debeux. To save time we agreed to define the qualification plan for DFH/DFX/DFM/Current Leads/Cluster F within the same job. A first proposal of tests plan has been discussed. Additional points to be addressed :

- ➔ FdC to prepare DFM pressure-retaining welds list (preliminary list) to be integrated with the others.
- ➔ FdC to assess DFX lip welds stress distribution
- ➔ RB to provide Current leads pressure-retaining welds list
- ➔ YL to contact Andre Jacquemod for Cluster F welds list

▪ Action #2: Finalize feet design ensuring compatibility with installation sequence (RB)

Activity on-hold.

Tunnel floor unevenness has been measured. Results presented by Stephane Maridor, available [here](#).

▪ Action #3: Perform test to validate flexible design (RB)

A test was performed by manually “shaping” the helium flexible of the 18kA CL. RB confirmed that the design is ok even though he underlined his worries about difficulties we may face during the installation.

▪ Action #4: Measure actual flexibles length (RB)

The flexible’s length was measured, there is 5mm deviation with respect to the nominal length specified on the reference drawing. RB confirmed that the flexible length has been updated on the drawing with the correct one.

▪ Action #5: Follow-up flexible design report approval (PS,DO)

- DFHM ➔ EDMS #[2574367](#)
- DFHX ➔ EDMS #[2521112](#)

Comments from Jerome Fleiter still missing. DO received comments from Simon Hopkins.

- ➔ DO, PS to integrate Simon’s comments.

#### DSH (SC Link)

▪ Action #1: SC Link design validation (RB, PC)

Potential update of the SC Link end interface to a conical shape to facilitate the cables insertion. According to AG this modification is not really necessary.

- ➔ RB to ask Julien Hurte his feeling about the real need of this modification.



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- Action #2: Reel procurement follow-up (PC, RB)  
Multiples quotes were received. Contract not signed yet but the DAI is placed. Marc Careil is the technical contact. Most probably we will order the reel to a French company that provided the cheapest offer. Delivery expected by November 2021 and test to be done by Q1 2022.
- Action #3: Reel design validation (PC)  
Marc Careil performed a test on the existing reel design. Dedicated presentation from Erik Richards about the SC Link transport operations, available [here](#).

#### DFLH (Current Leads)

- Action #1: Finalize CL drawings (RB, PC)  
Ongoing regular meeting with AP on a weekly basis to check drawings and agree about manufacturing needs and limits. Few modifications made on the drawings mainly concerning tolerances. Drawings are expected to be signed by Jerome Fleiter in two weeks.
- Action #2: Production follow-up (RB, PC)  
PC underlined the need of arranging regular meeting with Pierre Moyret (EN-MME, in charge of the CL production planning) to identify any potential stopper/issue in the manufacturing in order to ensure on-time delivery.
  - ➔ **PC to contact Alessandro Dallocchio (EN-MME) to discuss and agree on the best collaborative way to follow-up the CL manufacturing.**
- Action #3: HSE conformity assessment (FdC)  
PC suggested to exploit the same table created for the DFH (for gathering all the required documents) to request the PED conformity assessment to HSE.
  - ➔ **FdC to send to JF the Excel template to gather all the documents needed to request the PED conformity assessment to HSE.**
- Action #4: Review models and integration of CL's transformers boxes (RB, AG)  
Transformer's boxes have been modelled and integrated in SM18/Tunnel. Dedicated meeting will be held involving RB and AG to review the models.

#### Cables & Splices

- Action #1: Splices & tooling design (RB, FP, PS)  
Design activities on-hold. FP and RB are waiting for Jerome Fleiter/Julien Hurte feedbacks before finalizing the design.
- Action #2: Design splices anti-pulling system (PC, RB, FP)  
A first meeting was held to initiate the discussion. During the meeting Julien Hurte raised uncertainties concerning the actual flexibility of HTS. PC underlined the need of arranging dedicated recurrent meetings to follow-up these activities. As a starting point, a summary table of the HTS cable's requirements is needed.



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→ PC to prepare an action plan to be then shared with Amalia Ballarino and Jerome Fleiter. The action plan will be circulated to the team.

#### 4. AOB

- PC suggested to include Current Leads lip welds as well as DFX-DCM interface lip weld (for Cluster F) to the weld qualification campaign (DFH - Action #1).
- YL suggested to include DFM lip welds to the weld qualification campaign (DFH - Action #1).
- YL suggested to add the follow-up of the DSHM-DFM installation study to the action list
- YL suggested to add the DFX production follow-up to the action list
- MC mentioned that cabling and handling test reports of the SC Link are being published
- PC will arrange dedicated meeting about the handling test of the SC Link
- YL requested to discuss the nominal position in the LHC tunnel of the DFX's top plate

**Next Meeting:** 5<sup>th</sup> of August 2021

**Prepared by:** F.Di Ciocchis

**Date:** 13-07-2021

#### List of actions:

N.	Action	Owner	Due date	Status
<b>DFH</b>				
1	Follow-up weld qualification campaign	FdC		Ongoing
2	Finalize feet design ensuring compatibility with installation sequence	RB		On-hold
3	Perform test to validate flexible design	RB		Done
4	Measure actual flexibles lengths	RB		Done
5	Follow-up flexible design report approval	PS, DO		Ongoing
<b>DFM</b>				
1	Follow-up DSHM-DFM installation study in the LHC tunnel	PS, YL		New
<b>DFX</b>				
1	Production follow-up			New
<b>DSH (SC Link)</b>				
1	Validate SC Link design	RB, PC		New
2	Reel procurement follow-up	PC		Ongoing
3	Reel design validation	PC, RB		Ongoing
<b>DFLHA/ DFLHB/ DFLHD (Current Leads)</b>				
1	Finalize CL drawings	RB		Ongoing
2	CL production follow-up	PC, RB		New
3	Send documents list to JF for HSE conformity assessment	FdC		New
4	Review models and integration of CL's transformers boxes	RB, AG		Ongoing
<b>Cables &amp; Splices</b>				
1	Finalize splices & tooling design	RB, FP, PS		On-hold
2	Design splices anti-pulling system	PC, RB, FP		Ongoing

