



Production Readiness Review

TDIS

TANB

Diego Perini EN-MME
07.06.2018



Outline

- The PRR
- TDIS
- TANB

- The HL-LHC project is progressing into construction phase. Prototypes of 11 T magnets, MQXF, Crab Cavity, low impedance collimators, SC links, etc. are under construction or under test.
- The HL-LHC management deems it necessary to set up a series of reviews to assess the readiness for production of the main and most critical equipment in terms of cost, complexity of construction and performance impact.
- The committee, in agreement with HL-LHC management and GL/WP leaders is responsible for selecting the right time to review each component or equipment.
- The main scope of production readiness reviews is to assess the production readiness and the ability to start the production phase. Consequently, the functionality and design of the components reviewed are outside the scope of this committee.

From EDMS 1892005 HL-LHC Production readiness review
Mandate approved by PMM (02.11.2017) and ATSMB (19.12.2017)



EDMS No. 1892005

HL-LHC Production Readiness Review

Scope

The HL-LHC project is progressing into construction phase. Prototypes of 11 T magnets, MQXF, Crab Cavity, low impedance collimators, SC links, etc. are under construction or under test.

The HL-LHC management decides on the production of the main and minor components. The committee is responsible for selecting the main components.

The main scope of production is to start the production phase. Components that are outside the scope of this review are not purchased "off the shell" and are considered industrial product. This list will be dynamically updated.

Mandate

The committee is invited to assess the production readiness of the equipment under assessment.

1. Scope of work: is there a clear definition and clear interfaces?
2. Procedures, construction specifications, executive drawings: are all in approved status, verified by due authority, and well documented?
3. Quality Assurance is it correctly in place: procedures, documentation, check/holding points, etc.?
4. Components:
 - a. Availability and delivery schedule margin.
 - b. Logistics (flow and storage).
5. Assembly tools
 - a. Availability, qualifications
6. Production planning robustness.

This general mandate will be customized and adapted according to the different nature of the various equipment under assessment.

Modus operandi

These series of reviews are organized by the chair of the committee in collaboration with the WP leaders, in agreement with the Group Leader(s) concerned. HL-LHC PL and DHs are informed well in advance to allow their participation or by their representatives. The reviews are intended also for equipment under in-kind contribution, when this is deemed appropriate by the collaborating Institute, the Project management and by the CERN equipment owner.

Mandate

The committee is invited to assess for each equipment:

1. Scope of work: is there a clear definition and clear interfaces?
2. Procedures, construction specifications, executive drawings: are all in approved status, verified by due authority, and well documented?
3. Quality Assurance is it correctly in place: procedures, documentation, check/holding points, etc.?
4. Components:
 - a. Availability and delivery schedule margin.
 - b. Logistics (flow and storage).
5. Assembly tools
 - a. Availability, qualifications
6. Production planning robustness.

This general mandate will be customized and adapted according to the different nature of the various equipment under assessment.

Format: short and simple but efficient.

- Presentations in the morning to review the six points listed in the mandate.
- Preliminary report prepared after the presentations.
- Preliminary conclusions in the early afternoon.
- Final report in EDMS after 1 week – ten days.

The goal is to help the projects

List of Equipments for 2018

TDIS	08.03.2018
TANB	19.04.2018
11 T collared coils and cold mass	04.07.2018
Q1, Q2 Cryostats	September 2018
By-pass cryostat (11T, bypass, Conn. Cr. For point 2)	October 2018
MQXF quadrupole	Oct. Nov. 2018

Navigator

No active tags.

- Committees
 - Technical Coordination
 - Steering Committee
 - Coordination Group
 - Parameter and Lay-out Committee
 - Documents with restricted access
 - Review Committee
 - Production Readiness Reviews
 - TDIS PRR
 - TANB PRR
 - Shared Documentation TANB PRR
 - 1966193 (v.0.1) Production Readiness Review TANB Report
 - Indico Upload (until 2017)
 - 11T PRR
 - 1892005 (v.1.1) Mandate of the HL-LHC Production Readiness Review
 - 1892029 (v.0.1) HL-LHC PRR Annex 1 List of equipment to be reviewed
 - Manufacturing Readiness Reviews
 - 1398298 (v.1.0) Report of the HiLumi-LHC/LARP Crab Cavity System External Review Committee
 - 1452213 (v.1.0) Report of the HiLumi-LHC/LARP International Review of the Superconducting Cables for
 - 1452216 (v.1.0) LHC Collimation Review 2013, report of the review committee
 - 1481633 (v.1.0) Report of HL-LHC/LARP International Review of the Inner Triples Quadrupoles (MQXF) D
 - 1481647 (v.1.0) Report of the 2nd International Review of the HL-LHC 11 T Dipoles at Collimator Section
 - 1573550 (v.1.0) Report of the HL-LHC (WP4) SPS Cryo-module Engineering Review
 - 1687439 (v.1.0) Report from the Review Panel for the Conceptual Design Review of the HL-LHC Magnet C
 - 1697730 (v.1.0) Report for the Review of the 11T Dipoles at Collimator Section for the HL-LHC
 - 1707725 (v.1.0) Review Panel Report for the International Review of the Inner Triplet Quadrupoles (MQXF)
 - 1738816 (v.1.0) Report from the Review Panel on e-lenses for HL-LHC
 - 1807471 (v.1.0) Report on the HL-LHC Magnet Circuits Internal Review
 - 1838019 (v.1.0) Review Panel Report for the International Review of the Conceptual Design of the Cold Po
 - 1866663 (v.1.0) Report from the Review Panel on the e-lens concept readiness for integration into the HL-L
 - 1947601 (v.1.0) Report of the International Review of the Cooling and Ventilation Systems Design for HL-L
 - 1952142 (v.1.0) Report of the International Review of the Crab Cavity Performance for HL-LHC
 - Project Management Meetings
 - Technical Working groups
 - Interaction with the FR and CH authorities
 - Executive Committee
 - Project Steering Meetings

CERN-0000183810 Public access
Production Readiness Reviews

Info

More info

Documents Structure Used in Access rights History

#	Id	Title	Files	Status	Created on	Author	Document type
20	1892005 v.1.1	Mandate of the HL-LHC Production R...	2	Released	2018-01-29	Cecile NOELS	Report
30	1892029 v.0.1	HL-LHC PRR Annex 1 List of equipme...	2	In Work	2018-01-15	Cecile NOELS	Report

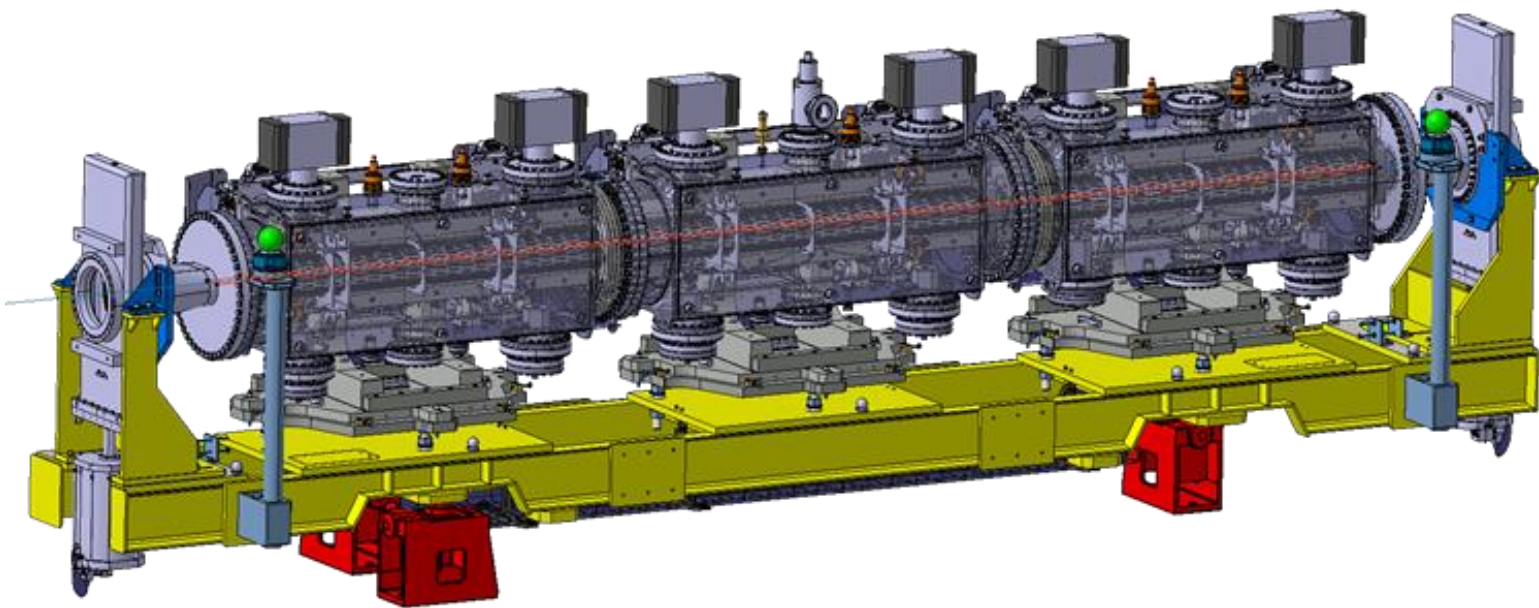
Page 1 of 1





All the documentation in EDMS

TDIS

EDMS 1921625

The TDI is the protection system in case of failure of the MKI. The TDI system showed several weak points already during RUN1. Several interventions were carried out during LS1 and YETS 2016-17 but still some issues are affecting its performance. Furthermore, HL-LHC foresees to double the injection stored energy and significantly increase the energy density. For all the above reasons it has been decided to design a new TDI, the so called TDIS and install it during LS2.



	TDIS Description and scope of project	<i>Chiara Bracco</i> 
	112-2-032, CERN	08:30 - 08:50
	Q&A	
	112-2-032, CERN	08:50 - 08:55
09:00	Assembly procedure	<i>Luca Gentini</i> 
	112-2-032, CERN	08:55 - 09:15
	Q&A	
	112-2-032, CERN	09:15 - 09:20
	Manufacture and Inspection Plan	<i>David Carbajo Perez</i> 
	112-2-032, CERN	09:20 - 09:40
	Q&A	
	112-2-032, CERN	09:40 - 09:45
	Coffee break	
	112-2-032, CERN	09:45 - 10:00
10:00	Procedures, specifications and drawings	<i>David Carbajo Perez</i>
	112-2-032, CERN	10:00 - 10:20
	Q&A	
	112-2-032, CERN	10:20 - 10:25
	Schedule and logistics	<i>Antonio Perillo Marcone</i> 
	112-2-032, CERN	10:25 - 10:45
	Q&A	
	112-2-032, CERN	10:45 - 10:50
11:00	Closed session + lunch	
12:00		
13:00		
	112-2-032, CERN	10:50 - 13:20
	Conclusions	
	112-2-032, CERN	13:30 - 14:00
14:00		

Comments of the reviewers (M. Modena, I. Bejar Alonso, A. Bertarelli, B. Nicquevert, D. Perini (Chairman))

Chiara Bracco: **TDIS Description and scope of project**

- Risk analysis document: the document exists and shall be released.

Luca Gentini: **Assembly procedure**

- The assembly procedure is well defined and documented, tools are correctly designed.

David Carbajo Perez **Manufacture and Inspection Plan**

- The assembly at CERN is justified by the small number of TDIS and the need of controlling carefully the assembly procedure. Furthermore we need to have the expertise in the house in case of further repair or maintenance.

Antonio Perillo-Marcone **Schedule and logistics**

- We strongly recommend so solve the space problem (storage already a problem, assembly space as of July) that is considered as the major concern found during the review.
- Another concern to be addressed is the distance between the assembly area and the metrology facilities, in particular the potential risk of transporting high precision devices.
- Concerning the metrology resources it is confirmed that the request has been raised, positively answered and added in PLAN.

David Carbajo Perez **Procedures, specifications and drawings**

- We recommend to consolidate the metadata (versioning, numbering and validity) and to obtain the full approval of the documentation before the manufacturing process.
- The review committee acknowledges the completeness and quality of the drawing folders.

Conclusions of the review

The reviewers acknowledge the completeness of the documentation and the good advancement of the TDIS project. The production can start providing that a few actions listed below will be carried out.

Actions recommended in order of priority:

- Solve the space problem: storage already a problem, assembly space as of July.
- Complete and release the full documentation package.
- Consolidate the transport strategy: during assembly and installation.

Navigator

CERN-000188155 Public access
Shared Documentation TDIS PRR

No active tags

- TDIS PRR
 - Shared Documentation TDIS PRR
 - Graphite
 - TZM Back Stiffener
 - CuCrZr Blocks
 - Vacuum Vessels
 - LHC-TDIS-ES-0002 (v.1.0) Conceptual...
 - LHC-TDIS-ES-0001 (v.0.9) TDIS - Funct...
 - 1905241 (v.0.1) TDIS - Engineering spe...
 - 1851373 (v.1) TDIS_prototype_validation...
 - 1851379 (v.1) TDIS FEA reports
 - 1908640 (v.1) TDIS cooling system calcul...
 - 1906421 (v.1) Jaw block fitness - toler...
 - 1824345 (v.1) TDIS drawing folder (LHC...
 - 1890369 (v.1) TDIS Mechanical table dr...
 - 1895486 (v.1.0) Berceau Drawing folder
 - 1801363 (v.1.0) TDIS tank drawings
 - 1890383 (v.1) TDIS tank tools drawing f...
 - 1853151 (v.1) TDIS tools drawing folder
 - 1906340 (v.1) Bill of Materials TDIS - Fo...
 - 1847656 (v.4) Vacuum layout for the inst...
 - 1906443 (v.1.0) TDIS General Design In...
 - LHC-TDIS-CI-0001 (v.1.0) IT-4333 - Sup...
 - LHC-TDIS-CI-0002 (v.0.1) DO-30795 - S...
 - LHC-TDIS-CI-0003 (v.1.1) DO-30794 - S...
 - LHC-TDIS-CI-0004 (v.0.1) DO-30809 - S...
 - LHC-TDIS-CI-0005 (v.1.1) DO-30810 - S...
 - LHC-TDIS-CI-0006 (v.1.1) DO-31337 - Su...
 - LHC-TDIS-CI-0007 (v.1.0) DO-31269 - S...
 - 1907964 (v.0.1) ECR - TDIS
 - 1904937 (v.0.1) TDIS (WP14) Safety As...
 - 1453561 (v.1.0) HIF WP14 TDIS Const...
 - 1453587 (v.1.0) HIF WP14 Test & Oper...
 - 1908642 (v.1) List of Documents for the...
 - 1921625 (v.0.9) Production Readiness Rev...
 - TANB PRR
 - Shared Documentation TANB PRR
 - LHC-TANB-ES-0001 (v.1.0) Conceptual...
 - LHC-TDDM-ES-0001 (v.1.0) Conceptu...
 - LHC-TANB-ES-0002 (v.0.9) TANB - Fun...
 - LHC-TANB-ES-0003 (v.0.1) TANB - Eng...
 - 1773244 (v.6) Vacuum layout for the inst...
 - 1903915 (v.1.0) HL-LHC INTEGRATION
 - 1903915 (v.1.0) HL-LHC INTEGRATION
 - 1903915 (v.1.0) HL-LHC INTEGRATION

Documents Structure Used in Access rights History

Create new document Attach document Detach Auto Link Export to Excel Request access Add all to Caddie Edit Tags Hide Obsolete Per page 100 View mode

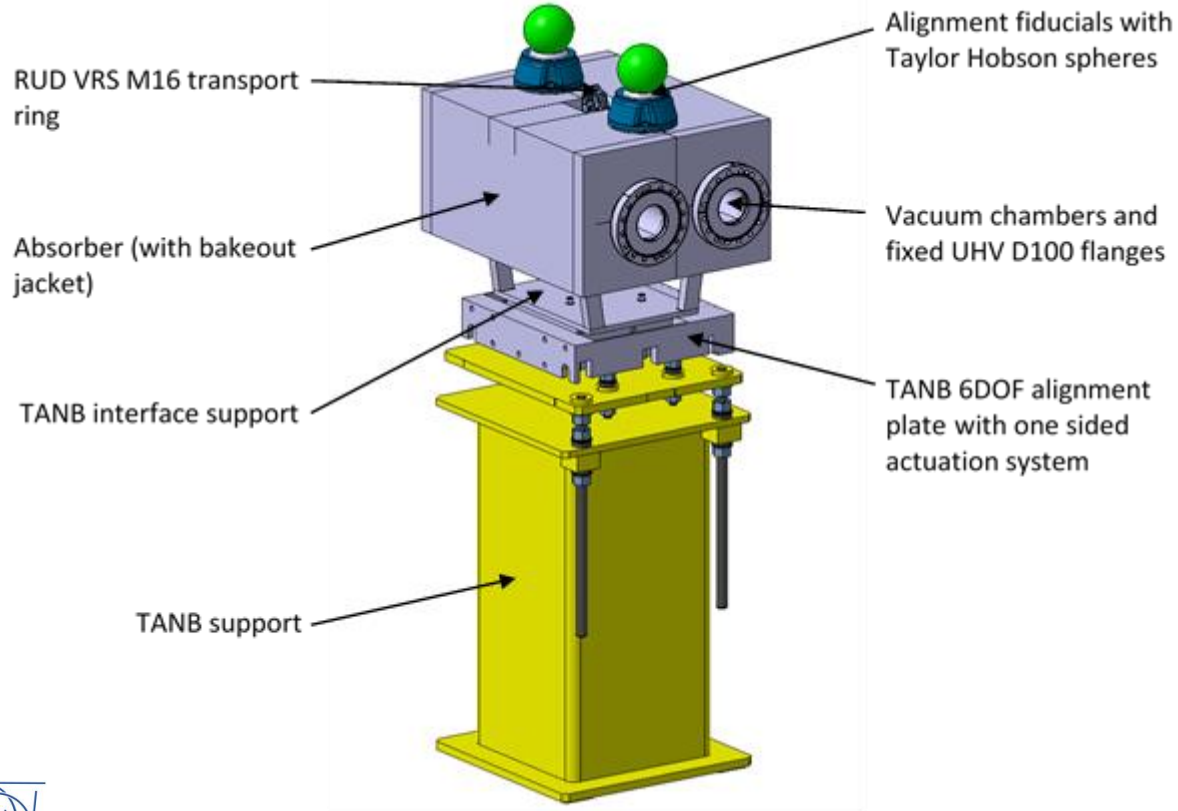
#	Id	Title	Files	Status	Created on	Author	Document type	Tags
20	LHC-TDIS-ES-0002 v.1.0	Conceptual Specification HL INJECTION ABSO...	2	Released	2014-06-24	WPL: J. Uythoven WPE:	Engineering Specifica...	
40	LHC-TDIS-ES-0001 v.0.9	TDIS - Functional Specification	2	Under Approval	2018-03-02	C. Bracco, A. Lechner, D.	Engineering Specifica...	
50	1905241 v.0.1	TDIS - Engineering specification	1	In Work	2018-02-15	DAVID CARBAJO PERE	Note	
60	1851373 v.1	TDIS_prototype_validation_activities_planning	1	In Work	2017-09-29	DAVID CARBAJO PERE	Note	
70	1851379 v.1	TDIS FEA reports	3	In Work	2017-09-29	DAVID CARBAJO PERE	Report	
80	1908640 v.1	TDIS cooling system calculation	1	In Work	2018-02-26	DAVID CARBAJO PERE	Report	
90	1906421 v.1	Jaw block fitness - tolerance analysis	1	In Work	2018-02-19	DAVID CARBAJO PERE	Report	
...	1824345 v.1	TDIS drawing folder (LHC TDIS_0001)		In Work	2017-06-30	Luca GENTINI	Drawing Folder	
...	1890369 v.1	TDIS Mechanical table drawing folder		In Work	2018-01-09	Luca GENTINI	Drawing Folder	
...	1895486 v.1.0	BercEAU Drawing folder		Released	2018-01-24	Luca GENTINI	Drawing Folder	
...	1801363 v.1.0	TDIS tank drawings		Released	2017-04-25	Luca GENTINI	Drawing Folder	
...	1890383 v.1	TDIS tank tools drawing folder		In Work	2018-01-09	Luca GENTINI	Drawing Folder	
...	1853151 v.1	TDIS tools drawing folder		In Work	2017-10-06	Luca GENTINI	Drawing Folder	
...	1906340 v.1	Bill of Materials TDIS - Follow-up file	1	In Work	2018-02-19	David Carbajo Perez	Note	
...	1847656 v.4	Vacuum layout for the installation of the TDIS	1	Released	2018-01-31	PABLO SANTOS DIAZ	Report	
...	1906443 v.1.0	TDIS General Design Internal Review Decembe...	2	Released	2018-02-19	David Carbajo Perez	Note	
...	LHC-TDIS-CI-0001 v.1.0	IT-4333 - Supply of TDIS Vacuum Vessels	5	Released	2017-10-17	Emilien Rigutto, David C.	Technical Specificatio...	
...	LHC-TDIS-CI-0002 v.0.1	DO-30795 - Supply of TZM stiffeners for the TDI...	2	Released	2017-06-21	David Carbajo Perez	Technical Specificatio...	
...	LHC-TDIS-CI-0003 v.1.1	DO-30794 - Supply of RF-Screens for the TDIS ...	2	Released	2018-02-16	David Carbajo Perez	Technical Specificatio...	
...	LHC-TDIS-CI-0004 v.0.1	DO-30809 - Supply of graphite blocks for the T...	2	Released	2017-06-27	David Carbajo Perez	Technical Specificatio...	
...	LHC-TDIS-CI-0005 v.1.1	DO-30810 - Supply of Ti-6Al-4V absorbing bloc...	2	Released	2018-02-16	David Carbajo Perez	Technical Specificatio...	
...	LHC-TDIS-CI-0006 v.1	DO-31337 - Supply of Ti-6Al-4V jaws clamps for...	2	Released	2017-07-13	David Carbajo Perez	Technical Specificatio...	
...	LHC-TDIS-CI-0007 v.1.0	DO-31269 - Supply of raw material (Ti-6Al-4V) f...	4	Released	2018-02-07	David Carbajo Perez	Technical Specificatio...	
...	1907964 v.0.1	ECR - TDIS	1	In Work	2018-02-23	Chiara Bracco	Note	
...	1904937 v.0.1	TDIS (WP14) Safety Assessment Form	1	Engineering Check	2018-02-14	Antonio Perillo Marcone,	Safety Report	
...	1453561 v.1.0	HIF WP14 TDIS Construction	1	Released	2014-12-18	Antonio Perillo-Marcone	Note	



TANB

EDMS 1966193

The Neutral Beam Absorber (TANB) is designed to absorb the flux of forward high-energy neutral particles produced at the interaction region of IP8. Together with a dedicated mask situated in front of D2, It provides the necessary shielding for the downstream twin aperture superconducting magnet D2 and the outer triplet quads (Q4, Q5, and Q6).



	TANB Description and scope of project	<i>Francisco Sanchez Galan</i>	🔗
	112-R-028, CERN		08:30 - 08:50
	Q&A		
	112-R-028, CERN		08:50 - 08:55
09:00	Installation procedure	<i>Pablo Santos Diaz</i>	🔗
	112-R-028, CERN		08:55 - 09:15
	Q&A		
	112-R-028, CERN		09:15 - 09:20
	Manufacture and Inspection Plan	<i>Miguel Lino Diogo Dos Santos</i>	🔗
	112-R-028, CERN		09:20 - 09:40
	Q&A		
	112-R-028, CERN		09:40 - 09:45
	Coffee break		
	112-R-028, CERN		09:45 - 10:00
10:00	Procedures, specifications and drawings	<i>Miguel Lino Diogo Dos Santos</i>	🔗
	112-R-028, CERN		10:00 - 10:20
	Q&A		
	112-R-028, CERN		10:20 - 10:25
	Schedule and logistics	<i>Francisco Sanchez Galan</i>	🔗
	112-R-028, CERN		10:25 - 10:45
	Q&A		
	112-R-028, CERN		10:45 - 10:50
11:00	Closed session + lunch for reviewers		
12:00			
13:00			
	112-R-028, CERN		10:50 - 13:20
	Conclusions		
14:00	112-R-028, CERN		13:30 - 14:00

Comments of the reviewers (M. Modena, I. Bejar Alonso, A. Bertarelli, B. Nicquevert, D. Perini (Chairman))

Francisco Sanchez Galan: **TANB Description and scope of project**

- The PRR recommends to structure the documentation so to give a clear view of the evolution of the specification requirements and consequently the design on the TANB.
- The panel notes that the present TANB solution does not cover the requirements for a potential operation of LHCb at nominal luminosity (post LS3)
- The panel notes that there are no spares foreseen in the plan given the absent of delicate and active actuation systems. For the vacuum components that potentially could be damaged during TANB installation or backing, we suggest to check the spare policy together with concerned groups and WP12.

Pablo Santos Diaz: **TANB Installation procedure**

- The PRR acknowledge that the WP8 has found an agreement to move the BPM equipment and that has found a common solution for the alignment. This configuration can be reused for other equipment and will reduce the dose received by the survey and the BI teams.
- The LHC ECR has been informally circulated and up to now has not shown any critical point for any of the parties involved.

Miguel dos Santos: **Manufacture and Inspection Plan**

- The on paper MIP must be implemented in MTF.

Miguel dos Santos: **Procedures, specifications and drawings**

- The PRR acknowledge the design files prepared for the TANB and the alignment table but remarks the need to implement some changes, mainly:
 - structure of the design files with assembly drawings
 - improvement and correction of geometrical specifications
 - slight modification of the interface between the two tungsten blocksIt is suggested to do the improvements quickly as they are needed for the Price Enquiry.

Francisco Sanches Galan: **Schedule and logistics**

- The delivery schedule of the tungsten seems demanding. It seems that there is a relatively large contingency and this should cover possible delays.

Conclusions of the review

The reviewers acknowledge the completeness of the documentation and the good advancement of the TANB project. In particular we want to mention the nice job of optimization of size and performances. This has given significant savings in terms of costs. The work on the alignment table has positive consequences on other applications.

The production can start providing that a few actions listed below will be carried out.

Actions recommended in order of priority:

- Revise, correct and urgently release the construction drawings.
- Complete and release the full documentation package.
- Clean the documentation folders, move to obsolete the documents referring to previous configurations.

- Shared Documentation TANB PRR
 - LHC-TANB-ES-0001 (v.1.0) Conceptual Specificat
 - LHC-TCDDM-ES-0001 (v.1.0) Conceptual Specific
 - LHC-TANB-ES-0002 (v.0.9) TANB - Functional Sp
 - LHC-TANB-ES-0003 (v.0.1) TANB - Engineering S
 - 1773244 (v.6) Vacuum layout for the installation of
 - 1903915 (v.1.0) HL-LHC INTEGRATION REPORT
 - 1844506 (v.2) Integration study for TANB installat
 - LHC_EC-0014 (v.1.0) HL-LHC ECR - WP8. Char
 - 1937016 (v.1) System Safety Assessment_TANB
 - 1960603 (v.1) TANB 3D Model
 - 1949911 (v.1.0) Drawing Folder TANB Absorber
 - 1960605 (v.1) TANB BOM
 - 1960607 (v.1.1) TANB MIP
 - 1752658 (v.1) TANB Thermomechanical FEA
 - LHC-TANB-CI-0001 (v.1) DO-31468 - Supply of ab
 - 1960756 (v.1) Alignment Plate 3D Model
 - 1931852 (v.1.0) Drawing Folder Alignment Plate
 - 1960759 (v.1) Alignment Plate BOM
 - 1960761 (v.1.1) Alignment Plate MIP

Documents Structure Used in Access rights History

#	Id	Title	Files	Status	Created on	Author	Document type	Tags
30	LHC-TANB-ES-0001 v.1.0	Conceptual Specification HL - LHCb NEUTRAL ...	2	Released	2015-08-31	WPL: I. Efthymiopoulos,	Engineering Specifica...	
40	LHC-TCDDM-ES-0001 v.1.0	Conceptual Specification HL - Mask for D2 Prote...	2	Released	2014-08-24	WPL:H. Burkhardt, I. Eft	Engineering Specifica...	
70	LHC-TANB-ES-0002 v.0.9	TANB - Functional Specification	2	Under Approval	2018-06-04	Francisco Sanchez Galai	Engineering Specifica...	
80	LHC-TANB-ES-0003 v.0.1	TANB - Engineering Specification	1	In Work	2018-04-04	Francisco Sanchez Galai	Engineering Specifica...	
90	1773244 v.6	Vacuum layout for the installation of the mask T...	1	Released	2018-03-16	PABLO SANTOS DIAZ, F	Report	
...	1903915 v.1.0	HL-LHC INTEGRATION REPORT FOR INSTAL...	1	Released	2018-03-27	Michele MODENA	Report	
...	1844506 v.2	Integration study for TANB installation	1	Released	2017-11-30	PABLO SANTOS DIAZ	Report	
...	LHC_EC-0014 v.1.0	HL-LHC ECR - WP8. Changes to the Baseline fr...	1	Released	2016-07-19	H. Burkhardt, F. Sanchez	Engineering Change ...	
...	1937016 v.1	System Safety Assessment_TANB	1	Engineering Check	2018-03-19	NORA GRADA	Safety Report	
...	1960603 v.1	TANB 3D Model	2	Released	2018-03-29	MIGUEL LINO DIOGO D	CAD 3D Model	
...	1949911 v.1.0	Drawing Folder TANB Absorber		In Work	2018-03-21	Miguel Lino Diogo Dos S	Drawing Folder	
...	1960605 v.1	TANB BOM	1	Released	2018-03-29	MIGUEL LINO DIOGO D	Note	
...	1960607 v.1.1	TANB MIP	3	Released	2018-04-10	MIGUEL LINO DIOGO D	Note	
...	1752658 v.1	TANB Thermomechanical FEA	3	Released	2017-02-01	MIGUEL LINO DIOGO D	Note	
...	LHC-TANB-CI-0001 v.1	DO-31468 - Supply of absorbing blocks for TANB	2	In Work	2018-03-29	Francisco Sanchez Galai	Technical Specificatio...	
...	1960756 v.1	Alignment Plate 3D Model	1	Released	2018-03-29	MIGUEL LINO DIOGO D	CAD 3D Model	
...	1931852 v.1.0	Drawing Folder Alignment Plate		Released	2018-03-13	Miguel Lino Diogo dos S	Drawing Folder	
...	1960759 v.1	Alignment Plate BOM	1	Released	2018-03-29	MIGUEL LINO DIOGO D	Note	
...	1960761 v.1.1	Alignment Plate MIP	1	Released	2018-04-10	MIGUEL LINO DIOGO D	Note	



Conclusions

- The PRR, a useful ‘last control’ before starting the production.
- Light format: the work required to the project engineers is relatively small. In principle all the procedures and the documentation should be already available.
- For the TDIS and TANB the review was positive. We spotted a few points requiring attention but globally the situation is under control and the production can start.
- As a ‘side’ effect the documentation of the projects is well defined and stored in EDMS. All this thank to the valuable help of Isabel’s team.



Thank you for your attention

