MTF for HL-LHC

Hector Garcia Gavela on behalf of the PDQR Office and WP4

HL-LHC Procurement, Baseline Documentation, Quality & Risk Office

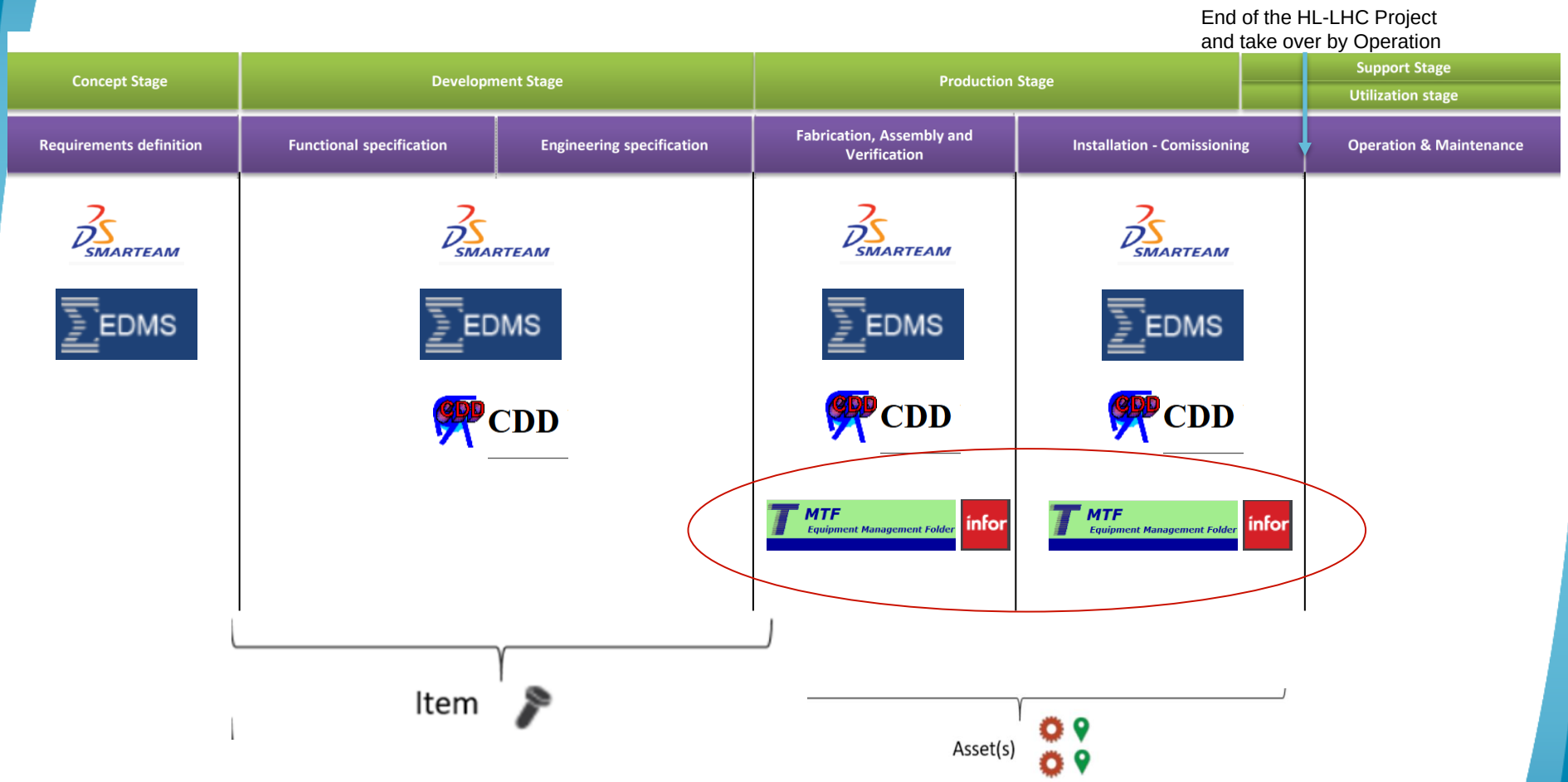
Outline

- Introduction
- Item vs Asset;
- MIP and MTF;
- MTF: Assets, Assemblies and Steps;
- Manufacturing Documents;

Why do we use MTF/EAM for HL-LHC?

- **Identification of the equipment** - Unique Serial Number for each component (asset) produced
- **Traceability of components** - what is the equipment made of
- **Production follow-up** – Electronic Manufacturing and Inspection Plan (Workflow for production and testing)
- **Storage of Manufacturing data** – Each asset will have its individual manufacturing folder with the QC reporting
- **Management of Nonconformities**
- **Installation in the machine** - What goes where

When – The full HL-LHC life-cycle



Identification

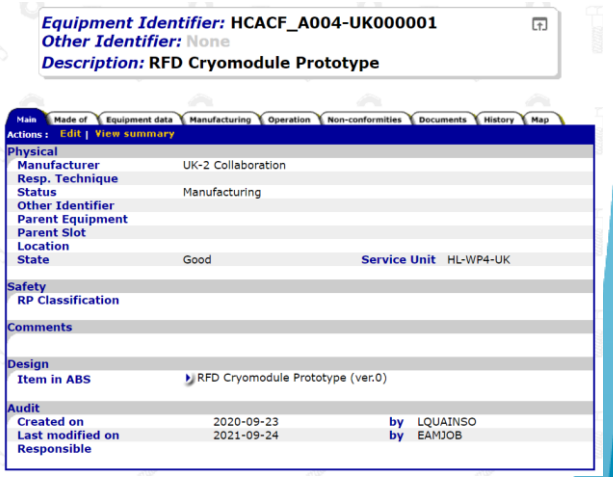
MTF / EAM is used to provide an **unique identifier** to **each component** manufactured for the Project (according to the **granularity agreed** with the **Technical teams**), based on the **PBS (Project Breakdown Structure)** and the **BOM (Bill of Materials) of the equipment**

H C A C F _ A 0 0 4 - U K 0 0 0 0 0 1

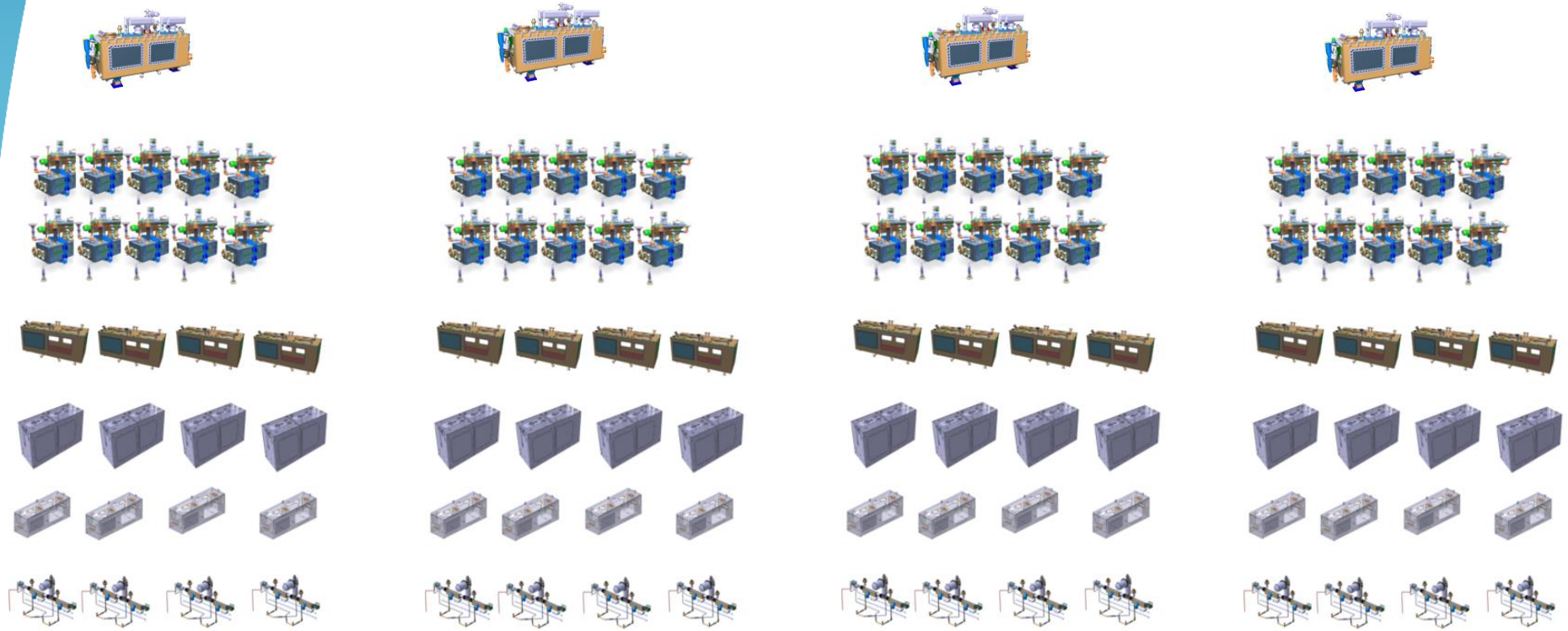
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
MACHINE CODE		EQUIPMENT CODE								SEQ. NUMBER			SEPARATOR	PRODUCTION SITE		SERIAL SEQUENTIAL NUMBER					
PREFIX CONTROLLED BY CERN										CONTROLLED BY SUPPLIER OR CERN			-	CONTROLLED BY CERN		CONTROLLED BY SUPPLIER					
PART NUMBER													-	SERIAL NUMBER							

Item

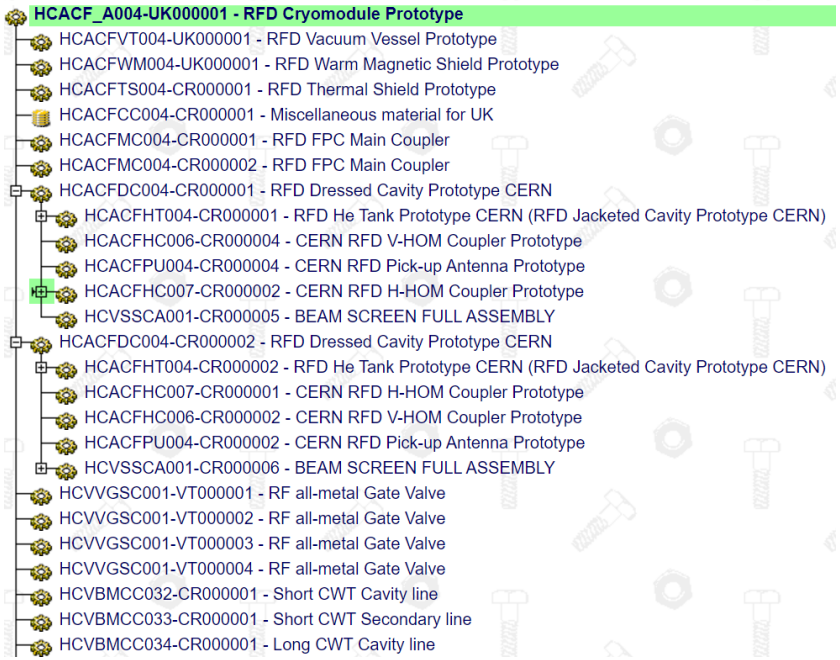
Asset(s)



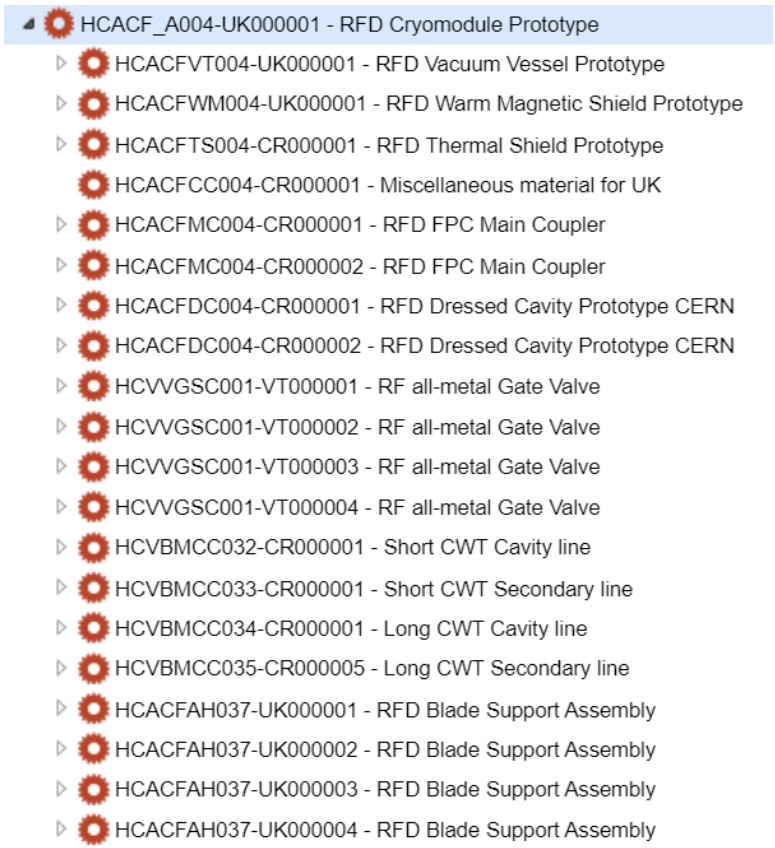
Traceability of components



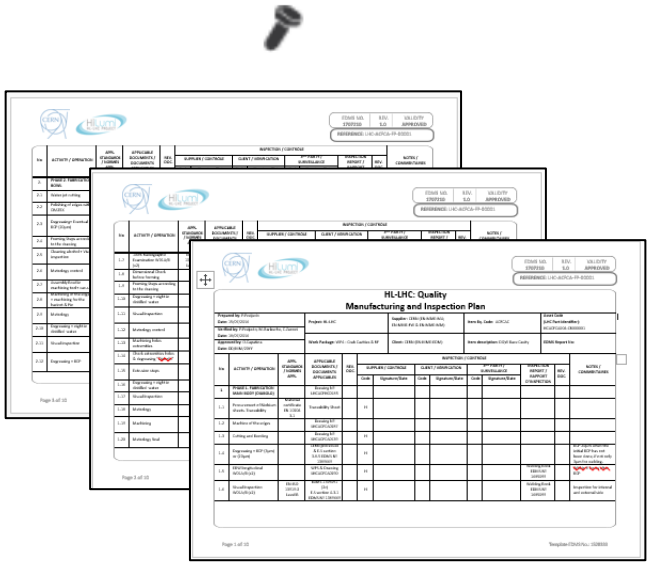
Traceability of components



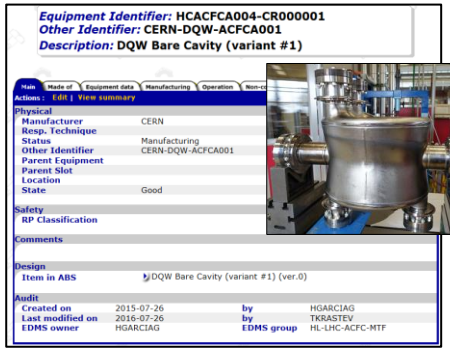
MTF used to build the assembly tree of each equipment (subcomponents assembled to the main component)

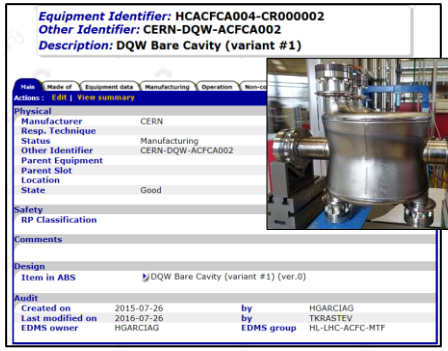


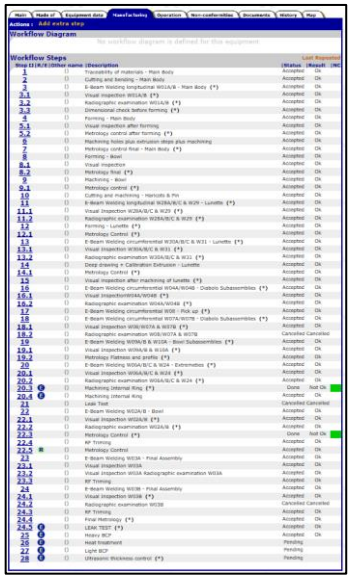
From MIP to MTF – Production Follow-up



ITEM

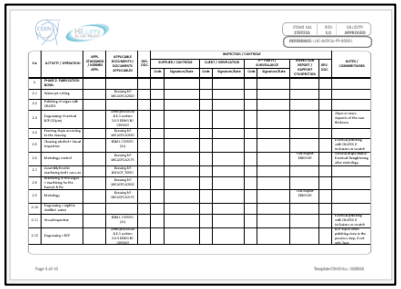


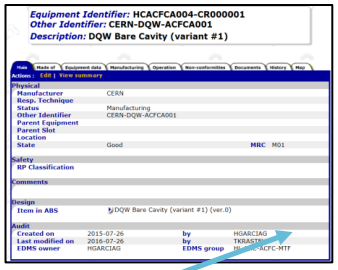


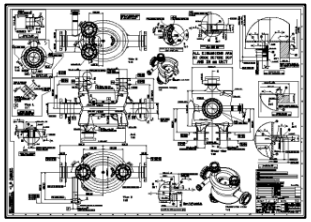


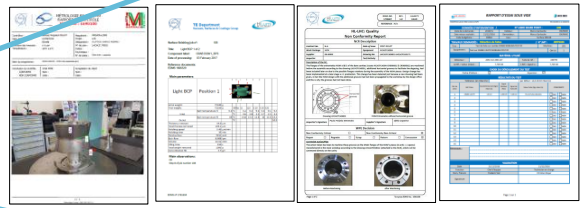
ASSET (S)

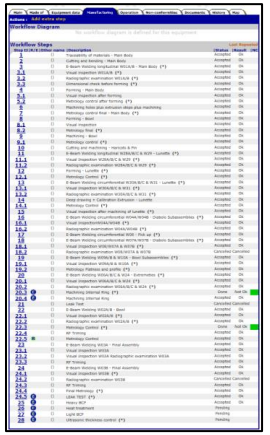
Production Follow-up and Storage of Manufacturing Data



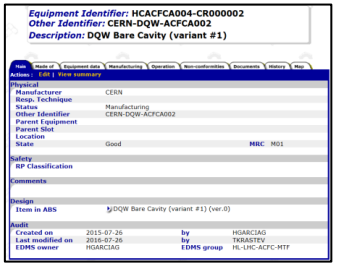








ITEM

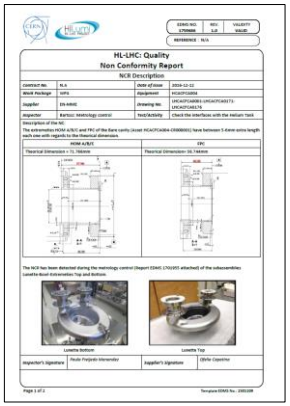


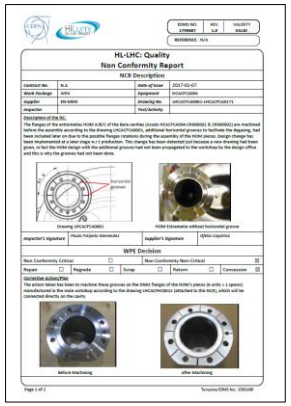
ASSET (S)

Nonconformities

Nonconformity Report (NCR)

[EDMS 1501109]





Nonconformity via MTF

Equipment Identifier: **HCACFCA005-UP000001**
Other Identifier: **None**
Description: **AUP RFD Bare Cavity Prototype**

Main | Made of | Equipment data | Manufacturing | Operation | Non-conformities | Documents | History | Map

Actions : Add extra step

Workflow Diagram

No workflow diagram is defined for this equipment

Workflow Steps — Last Repeated

Step	R/E	Other name	Description	Status	Result	NC
0	()		MIP Attachment	Done	Ok	
1	()		Traceability of materials (*)	Accepted	Ok	
5	()		Visual inspection EB18-LV (MIP 14) (*)	In Progress		
10	()		Visual Inspection EB17-HV (MIP 20) (*)	In Progress		
15	()		Radiographic examination EB17-HV (MIP 21) (*)	Pending		
20	()		Dimensional Control VHOM Por Weldment (MIP 24) (*)	In Progress		
25	()		Visual Inspection EB15-HV (MIP 32) (*)	In Progress		
30	()		Radiographic examination EB15-HV (MIP 33) (*)	In Progress		
35	()		Visual Inspection EB48-HV (MIP 39) (*)	In Progress		
40	()		Radiographic examination EB48-HV (MIP 40) (*)	In Progress		
45	()		Visual Inspection EB14-HV (MIP 47) (*)	In Progress		
50	()		Radiographic examination EB14-HV (MIP 48) (*)	In Progress		
55	()		Visual Inspection EB16-HV (MIP 54) (*)	In Progress		

A Nonconformity Report is attached to the step in which the deviation was found (Manufacturing Folder) and it is part of the Quality Dossier of the Project

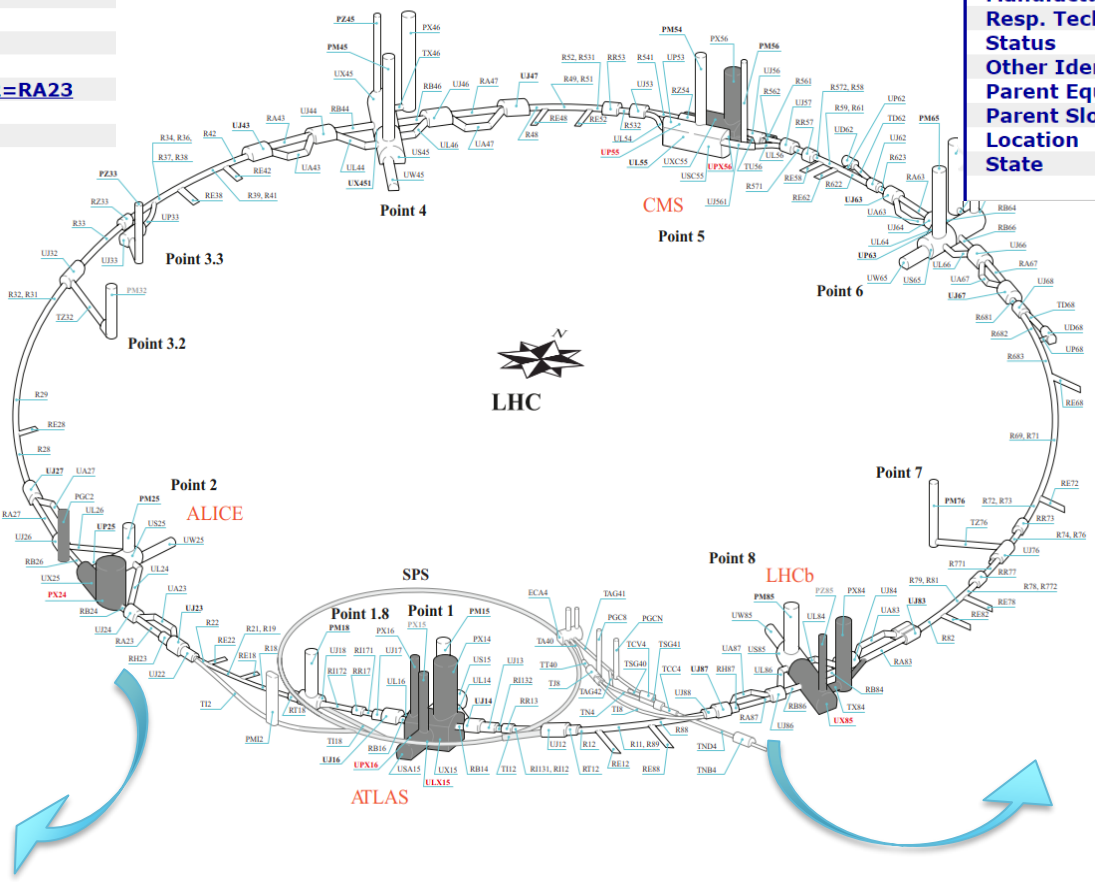
Decision about Non Conformity

Repair ☐	Regrade ☐	Scrap ☐	Return ☐	Concession ☐

What goes where in the machine

Manufacturer	CERN
Resp. Technique	
Status	Installed
Other Identifier	
Parent Equipment	
Parent Slot	TDIS.A4L2=RA23
Location	RA23
State	Good

Manufacturer	CERN
Resp. Technique	
Status	Installed
Other Identifier	
Parent Equipment	
Parent Slot	TDIS.A4R8=RA87
Location	RA87
State	Good



Equipment Identifier: HCTDIS_002-CR000001
Other Identifier: None
Description: Beam Absorber for Injection Segmented (Pre-series P2)

Manufacturer	CERN
Resp. Technique	
Status	Installed
Other Identifier	
Parent Equipment	
Parent Slot	TDIS.A4L2=RA23
Location	RA23
State	Good
Service Unit	T01

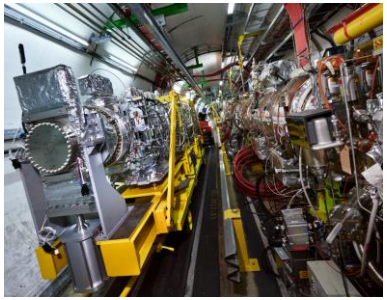
Safety
RP Classification

Comments

Design
Item in ABS Beam Absorber for Injection Segmented Pre Series (ver.0)

Audit

Created on	2018-04-24	**by**	BEALMEID
Last modified on	2022-07-08	**by**	EDGRENIE
Responsible			



Equipment Identifier: HCTDIS_001-CR000001
Other Identifier: None
Description: Beam Absorber for Injection Segmented (serie)

Manufacturer	CERN
Resp. Technique	
Status	Installed
Other Identifier	
Parent Equipment	
Parent Slot	TDIS.A4R8=RA87
Location	RA87
State	Good
Service Unit	T01

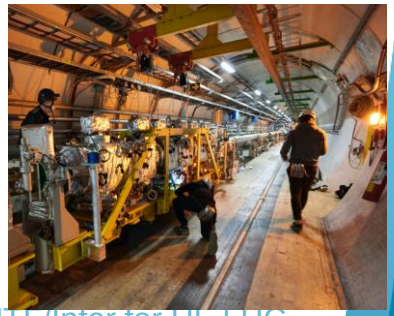
Safety
RP Classification

Comments
TS2 2022 / debit d'eau faible à 0.59L/min. prevoir reajustement
Débit réglé a 0.8l/min pour les deux circuits voir photos. (2780173 v.1)

Design
Item in ABS Beam Absorber for Injection Segmented Series (ver.0)

Audit

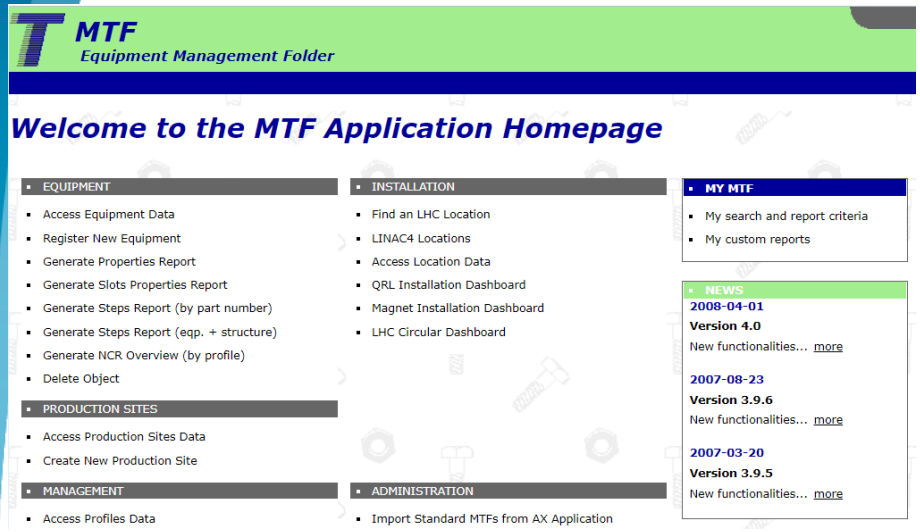
Created on	2018-08-01	**by**	BEALMEID
Last modified on	2022-09-15	**by**	RSEIDENB
Responsible			



MTF

- MTF (Equipment management Folder formerly **M**anufacturing and **T**esting **F**older) is the dedicated tool for the follow-up of Production/QC activities and the storage of documentation during this phase of the project (All the Manufacturing & Test data).
- MTF is an integral part of EDMS. Documents uploaded to MTF will became EDMS doc, documents already in EDMS can be attached to MTF.
- Handling and storage of manufacturing and test data (including nonconformities) of the equipment.
- MIP (Manufacturing & Inspection Plan) is the main input in order to build the MTF of the equipment.

MTF



Link to MTF - https://edms5.cern.ch/pls/asbuilt/mtf.home?cookie=25019603

Equipment Folder : Main Info

Equipment Identifier: HCACFCM003-UK000001
Other Identifier: None
Description: DQW Cold Magnetic Shield Series

Main | Made of | Equipment data | Manufacturing | Operation | Documents | History | Map

Actions : Edit | View summary

Physical			
Manufacturer	UK-2 Collaboration		
Resp. Technique			
Status	Manufacturing		
Other Identifier			
Parent Equipment			
Parent Slot			
Location			
State	Good	MRC	AC01
Safety			
RP Classification			
Comments			
Design			
Item in ABS	DQW Cold Magnetic Shield Series (ver.0)		
Audit			
Created on	2018-11-11	by	DGOMEZTR
Last modified on	2020-04-20	by	BEALMEID
EDMS owner	DGOMEZTR	EDMS group	HL-LHC-WP4-MTF

Equipment Folder : Main Info

Equipment Identifier: HCACFCM003-UK000002
Other Identifier: None
Description: DQW Cold Magnetic Shield Series

Main | Made of | Equipment data | Manufacturing | Operation | Non-conformities | Documents | History | Map

Actions : Edit | View summary

Physical			
Manufacturer	UK-2 Collaboration		
Resp. Technique			
Status	Manufacturing		
Other Identifier			
Parent Equipment			
Parent Slot			
Location			
State	Good	MRC	AC01
Safety			
RP Classification			
Comments			
Design			
Item in ABS	DQW Cold Magnetic Shield Series (ver.0)		
Audit			
Created on	2018-11-11	by	DGOMEZTR
Last modified on	2020-04-20	by	BEALMEID
EDMS owner	DGOMEZTR	EDMS group	HL-LHC-WP4-MTF

Outline

- EDMS and MTF;
- Item vs Asset;
- MIP and MTF;
- MTF: Assets, Assemblies and Steps;
- Manufacturing Documents;
- Handling Nonconformities.

Item vs Asset

Item

- The concept;
- Associated with technical specifications, drawings, conceptual specification, manufacturing procedures, test procedures;
- Everything needed before production.

EDMS

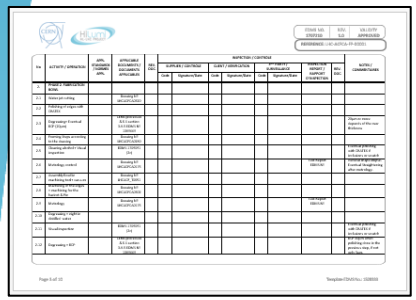
Asset

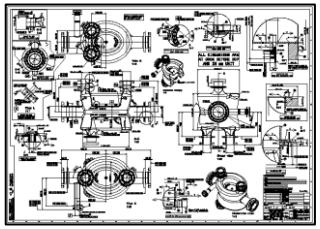
- The real thing;
- Associated with all the manufacturing documentation (e. g. Metrological Reports, Material Certificates, Welds inspection …);
- Manufacturing Records.

MTF
Equipment Management Folder

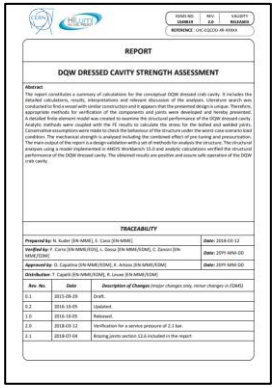
One item can have one or more assets!

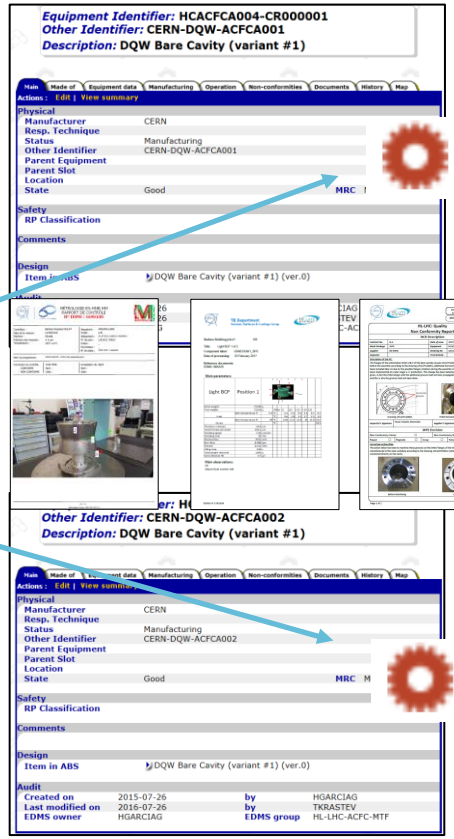
MIP as the basis of MTF Set up





ITEM





ASSET (S)

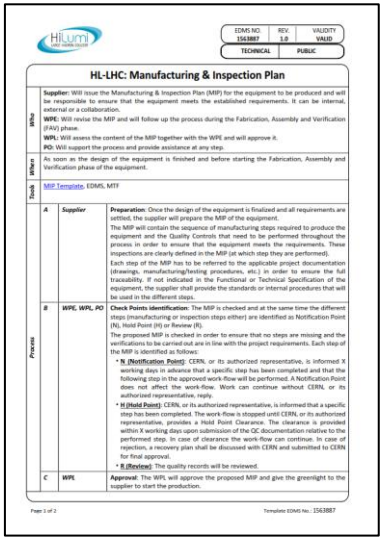
Outline

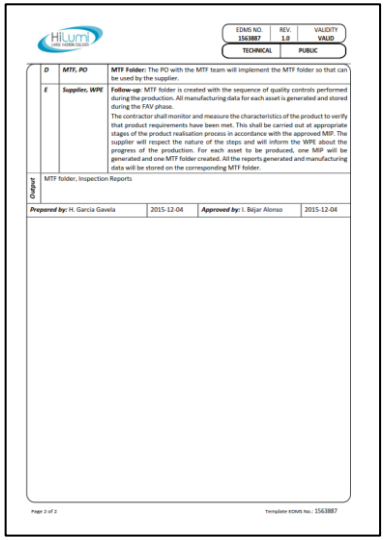
- EDMS and MTF;
- Item vs Asset;
- MIP and MTF;
- MTF Assets and Assemblies, Steps;
- Manufacturing Documents;

Manufacturing Inspection Plan - MIP

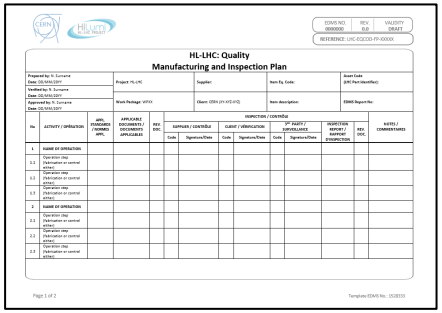
Manufacturing and Inspection Plan

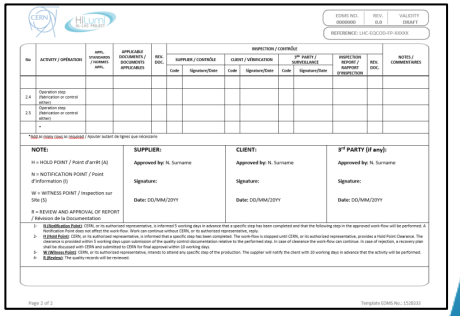
- **PROCEDURE: 1563887**


HL-LHC: Manufacturing & Inspection Plan


MTF folder, Inspection Reports

- **TEMPLATE: 1528333**


HL-LHC: Quality Manufacturing and Inspection Plan



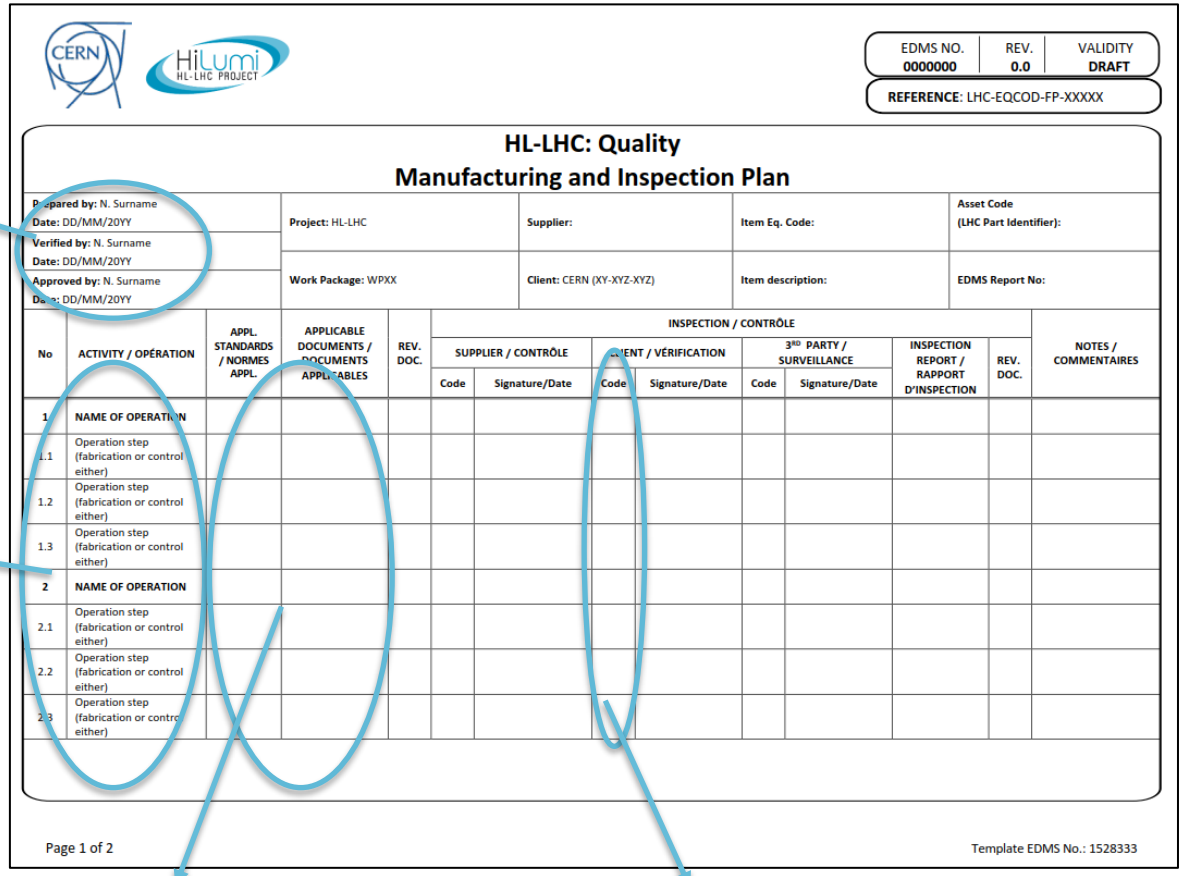
Manufacturing Inspection Plan - MIP

Verification and approval following HL-LHC documentation approval process.

Sequence of required steps to manufacture the equipment (both fabrication and QC activities).

Applicable documentation which supports the related activity such as drawings, procedures, standards, guidelines, acceptance criteria, checklists, etc.

Codification of the activity by the client (see next slide)



CERN HiLumi HL-LHC PROJECT

EDMS NO.	REV.	VALIDITY
0000000	0.0	DRAFT

REFERENCE: LHC-EQCOD-FP-XXXXX

HL-LHC: Quality
Manufacturing and Inspection Plan

Prepared by: N. Surname Date: DD/MM/20YY	Project: HL-LHC	Supplier:	Item Eq. Code:	Asset Code (LHC Part Identifier):
Verified by: N. Surname Date: DD/MM/20YY				
Approved by: N. Surname Date: DD/MM/20YY	Work Package: WPXX	Client: CERN (XY-XYZ-XYZ)	Item description:	EDMS Report No:

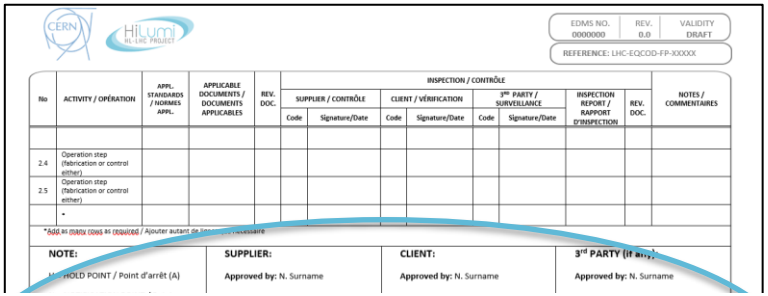
No	ACTIVITY / OPÉRATION	APPL. STANDARDS / NORMES APPL.	APPLICABLE DOCUMENTS / DOCUMENTS APPLICABLES	REV. DOC.	INSPECTION / CONTRÔLE						INSPECTION REPORT / RAPPORT D'INSPECTION	REV. DOC.	NOTES / COMMENTAIRES
					SUPPLIER / CONTRÔLE		CLIENT / VÉRIFICATION		3RD PARTY / SURVEILLANCE				
					Code	Signature/Date	Code	Signature/Date	Code	Signature/Date			
1	NAME OF OPERATION												
1.1	Operation step (fabrication or control either)												
1.2	Operation step (fabrication or control either)												
1.3	Operation step (fabrication or control either)												
2	NAME OF OPERATION												
2.1	Operation step (fabrication or control either)												
2.2	Operation step (fabrication or control either)												
2.3	Operation step (fabrication or control either)												

Page 1 of 2

Template EDMS No.: 1528333

Manufacturing Inspection Plan - MIP

- The different activities will be categorized by the client during the verification and approval process. The assigned categories shall be respected along the process (N, H, W, R or a combination of those).



EDMS NO. 0000000 | REV. 0.0 | VALIDITY DRAFT

REFERENCE: LHC-EQCOD-FP-XXXXX

No	ACTIVITY / OPÉRATION	APPL. STANDARDS / NORMES APPL.	APPLICABLE DOCUMENTS / DOCUMENTS APPLICABLES	REV. DOC.	INSPECTION / CONTRÔLE							NOTES / COMMENTAIRES
					SUPPLIER / CONTRÔLE		CLIENT / VÉRIFICATION		3RD PARTY / SURVEILLANCE		INSPECTION REPORT / RAPPORT D'INSPECTION	REV. DOC.	
					Code	Signature/Date	Code	Signature/Date	Code	Signature/Date			
2.4	Operation step (fabrication or control either)												
2.5	Operation step (fabrication or control either)												
	-												

*Add as many rows as required / Ajouter autant de lignes que nécessaire

NOTE:	SUPPLIER:	CLIENT:	3rd PARTY (if any):
H = HOLD POINT / Point d'arrêt (A)	Approved by: N. Surname	Approved by: N. Surname	Approved by: N. Surname

We can set these categories on MTF. Since parallel activities are not allowed in the platform, it is not recommended to stop the workflow. Therefore, we can at least indicate the activity code in the name of the activity as per the MIP.

NOTE:	**SUPPLIER:**	**CLIENT:**	**3rd PARTY (if any):**
H = HOLD POINT / Point d'arrêt (A)	**Approved by:** N. Surname	**Approved by:** N. Surname	**Approved by:** N. Surname
N = NOTIFICATION POINT / Point d'information (I)	**Signature:**	**Signature:**	**Signature:**
W = WITNESS POINT / Inspection sur Site (S)	**Date:** DD/MM/20YY	**Date:** DD/MM/20YY	**Date:** DD/MM/20YY
R = REVIEW AND APPROVAL OF REPORT / Révision de la Documentation			

1- **N (Notification Point)**: CERN, or its authorized representative, is informed 5 working days in advance that a specific step has been completed and that the following step in the approved work-flow will be performed. A Notification Point does not affect the work-flow. Work can continue without CERN, or its authorized representative, reply.
2- **H (Hold Point)**: CERN, or its authorized representative, is informed that a specific step has been completed. The work-flow is stopped until CERN, or its authorized representative, provides a Hold Point Clearance. The clearance is provided within 5 working days upon submission of the quality control documentation relative to the performed step. In case of clearance the work-flow can continue. In case of rejection, a recovery plan shall be discussed with CERN and submitted to CERN for final approval within 10 working days.
3- **W (Witness Point)**: CERN, or its authorized representative, intends to attend any specific step of the production. The supplier will notify the client with 10 working days in advance that the activity will be performed.
4- **R (Review)**: The quality records will be reviewed.

Manufacturing Inspection Plan - MIP

- MTF shall be the Electronic MIP (e-MIP). We will extract from the MIP those steps that are relevant for the production and will have documentation associated to build the MTF.
- There is no stopper to have the full MIP on MTF, however from practical point of view it is highly recommended to have a MTF Workflow more simplified (easier management).
- Intermediate steps are fully necessary to check that requirements are being met but we can just leave the final step, which confirms that requirements are achieved.

Example:

No	ACTIVITY / OPÉRATION	APPL. STANDARDS / NORMES APPL.	APPLICABLE DOCUMENTS / DOCUMENTS APPLICABLES
3	**MACHINING**		LHCMCBXFA002
1.1	Vast machining		
1.2	Dimensional check		
1.3	Intermediate machining		
2.1	Dimensional check		
2.2	Fine machining		
2.3	Final dimensional check		
4	**WELDING**		
2.4	Edges preparation		WPS / WPQR
2.5	Welding W12		

MIP

MTF

5	Traceability of materials
10	Dimensional control after fine machining

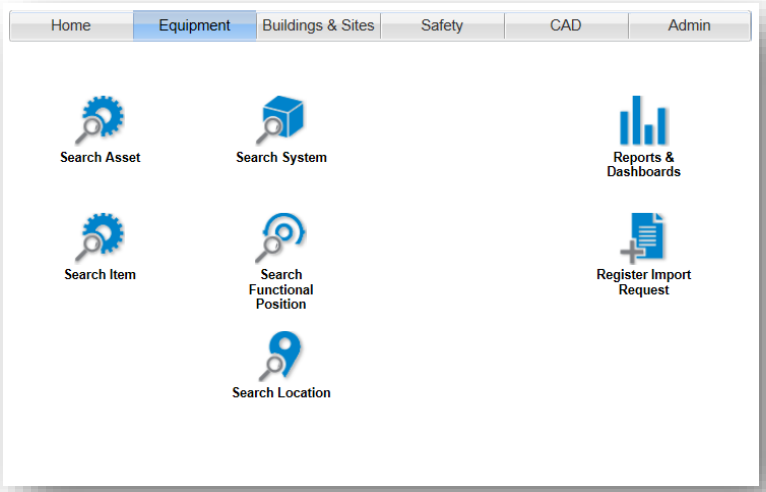
Outline

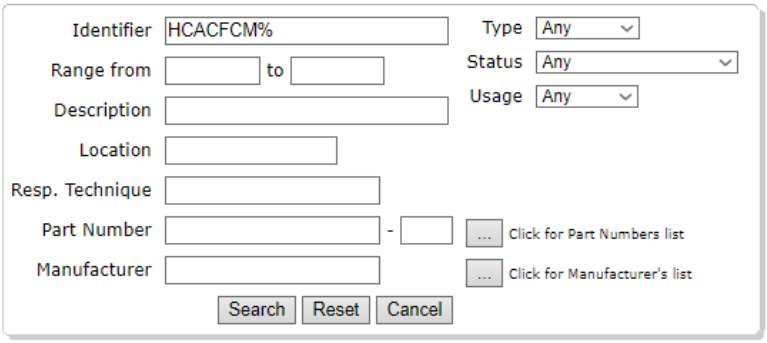
- EDMS and MTF;
- Item vs Asset;
- MIP and MTF;
- MTF: Assets, Assemblies, Steps;
- Manufacturing Documents;

Access to MTF

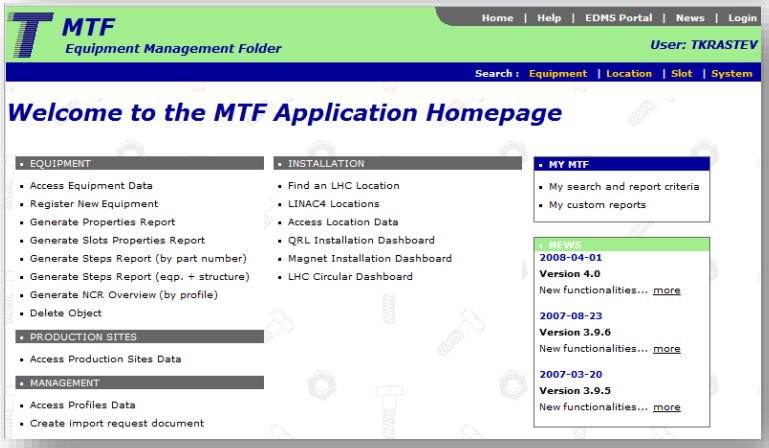
We may access to the MTF of each asset through EDMS, Equipment Search (1), or directly from MTF Application Homepage (2).

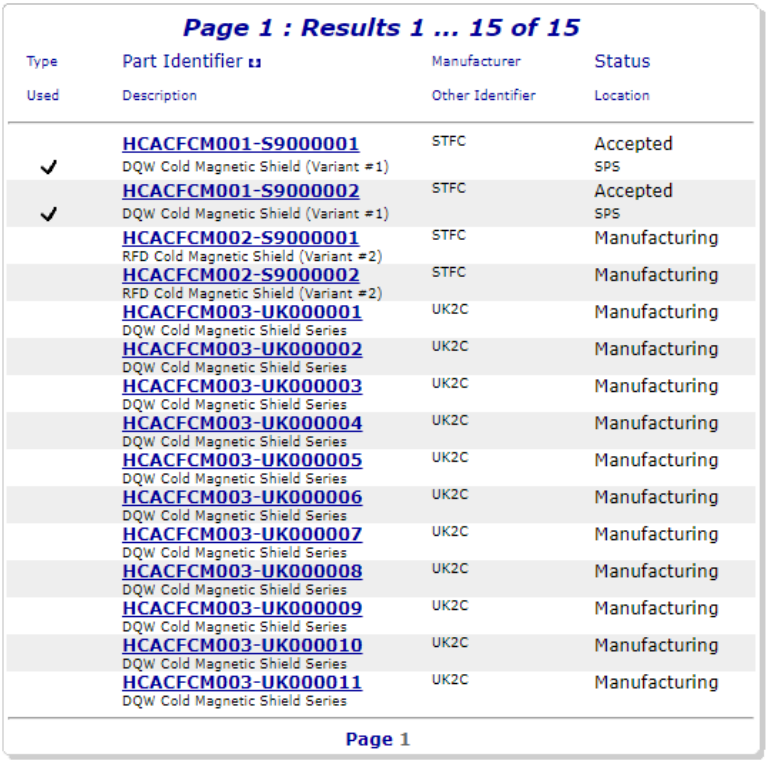
1





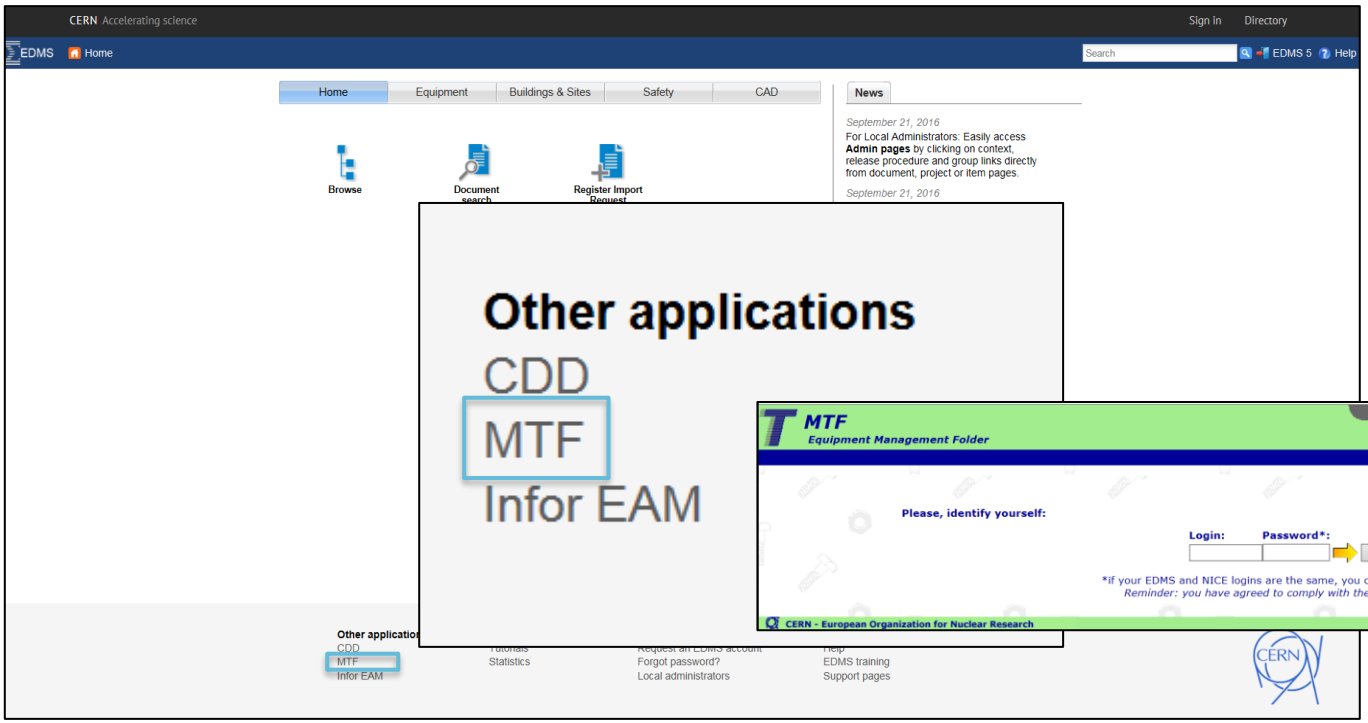
2





Access to MTF

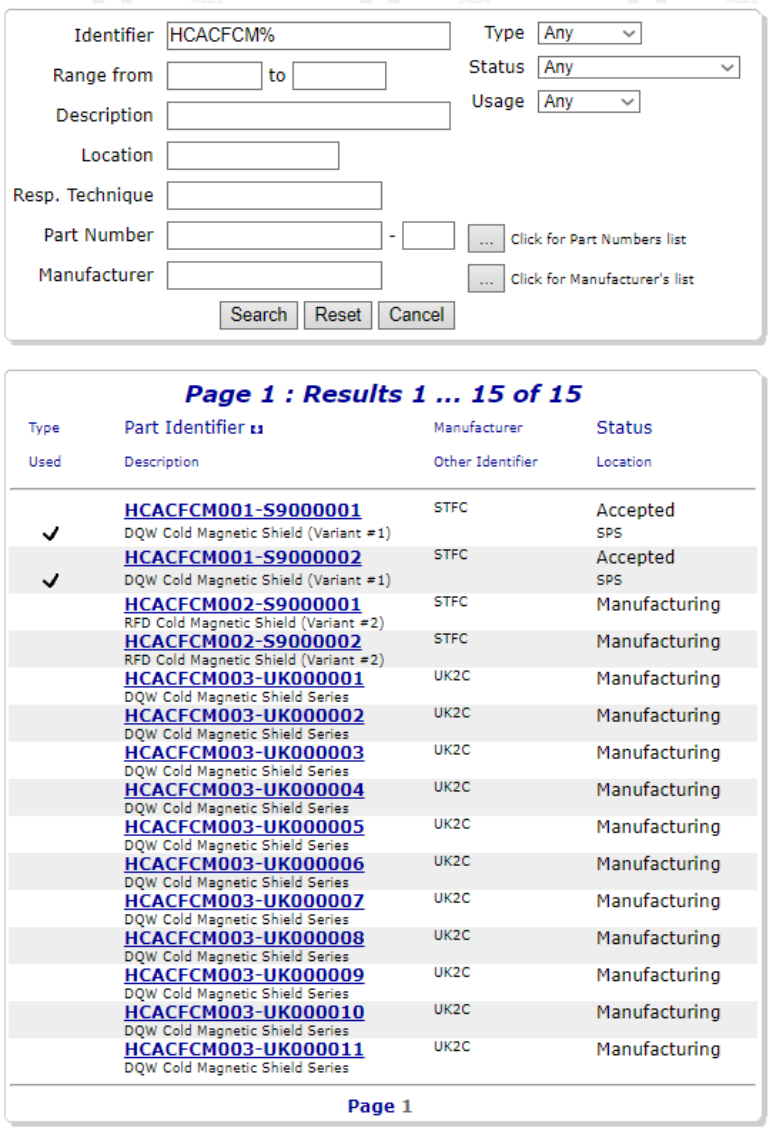
- From EDMS - https://edms.cern.ch/ui/#!master/portal/tab?home



MTF can be only used with a CERN Nice Account
Externals to apply for one!

- From MTF - https://edms5.cern.ch/asbuilt/plsql/mtf.home?cookie=15935572

Access to MTF



Identifier: HCACFCM%
Type: Any
Range from: to
Status: Any
Description:
Usage: Any
Location:
Resp. Technique:
Part Number: - ... Click for Part Numbers list
Manufacturer: ... Click for Manufacturer's list
Search | Reset | Cancel

Page 1 : Results 1 ... 15 of 15

Type / Used	Part Identifier / Description	Manufacturer / Other Identifier	Status / Location
✓	HCACFCM001-S9000001 DQW Cold Magnetic Shield (Variant #1)	STFC	Accepted SPS
✓	HCACFCM001-S9000002 DQW Cold Magnetic Shield (Variant #1)	STFC	Accepted SPS
	HCACFCM002-S9000001 RFD Cold Magnetic Shield (Variant #2)	STFC	Manufacturing
	HCACFCM002-S9000002 RFD Cold Magnetic Shield (Variant #2)	STFC	Manufacturing
	HCACFCM003-UK000001 DQW Cold Magnetic Shield Series	UK2C	Manufacturing
	HCACFCM003-UK000002 DQW Cold Magnetic Shield Series	UK2C	Manufacturing
	HCACFCM003-UK000003 DQW Cold Magnetic Shield Series	UK2C	Manufacturing
	HCACFCM003-UK000004 DQW Cold Magnetic Shield Series	UK2C	Manufacturing
	HCACFCM003-UK000005 DQW Cold Magnetic Shield Series	UK2C	Manufacturing
	HCACFCM003-UK000006 DQW Cold Magnetic Shield Series	UK2C	Manufacturing
	HCACFCM003-UK000007 DQW Cold Magnetic Shield Series	UK2C	Manufacturing
	HCACFCM003-UK000008 DQW Cold Magnetic Shield Series	UK2C	Manufacturing
	HCACFCM003-UK000009 DQW Cold Magnetic Shield Series	UK2C	Manufacturing
	HCACFCM003-UK000010 DQW Cold Magnetic Shield Series	UK2C	Manufacturing
	HCACFCM003-UK000011 DQW Cold Magnetic Shield Series	UK2C	Manufacturing

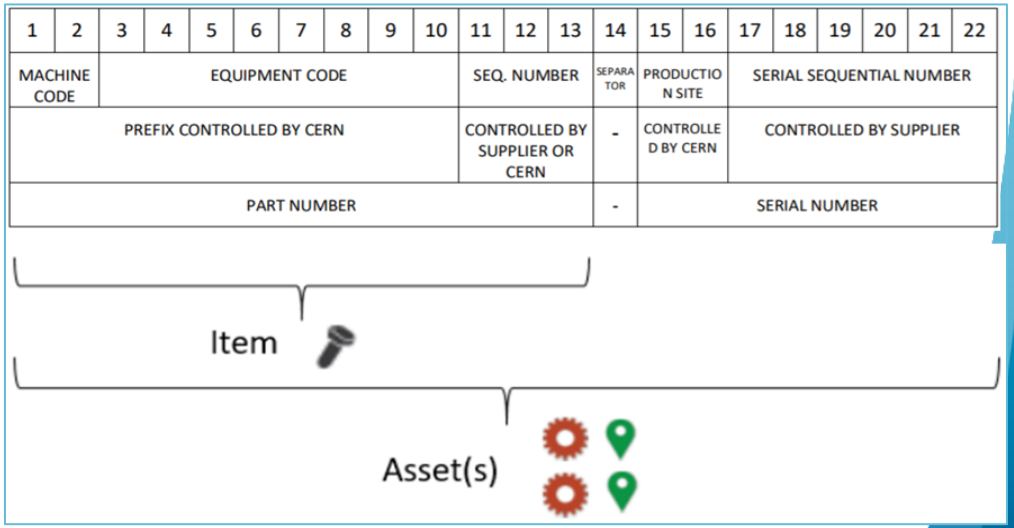
Page 1

Items/Assets?

We can see the number of assets (physical entity/ies produced from one design) that belong to an item (conceptual entity).

How we may see the assets?

We introduce the name of the item and therefore we will see the number of assets that will be manufactured from this item.



MTF Assets

Each asset will have its Manufacturing and Testing Folder (MTF), where all documentation/data generated during the FAV & Installation will be stored.

Equipment Folder : Main Info

Equipment Identifier: **HCACFCM003-UK000001**
Other Identifier: None
Description: **DQW Cold Magnetic Shield Series**

Main | Made of | Equipment data | Manufacturing | Operation | Documents | History | Map

Actions : Edit | View summary

Physical			
Manufacturer	UK-2 Collaboration		
Resp. Technique			
Status	Manufacturing		
Other Identifier			
Parent Equipment			
Parent Slot			
Location			
State	Good	MRC	AC01
Safety			
RP Classification			
Comments			
Design			
Item in ABS	DQW Cold Magnetic Shield Series (ver.0)		
Audit			
Created on	2018-11-11	by	DGOMEZTR
Last modified on	2020-04-20	by	BEALMEID
EDMS owner	DGOMEZTR	EDMS group	HL-LHC-WP4-MTF

If you have the access rights, you can use the 'Edit' button to change the status, manufacturer, state and other information about equipment.

Main information of the asset

Equipment Folder : Main Info

Equipment Identifier: **HCACFCM003-UK000001**
Other Identifier: None
Description: **DQW Cold Magnetic Shield Series**

Main | Made of | Equipment data | Manufacturing | Operation | Documents | History | Map

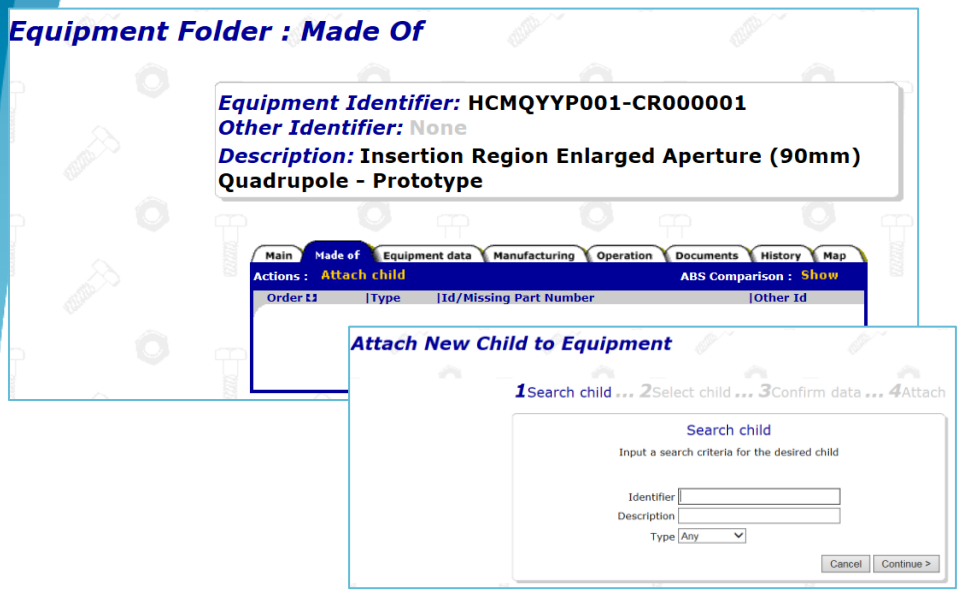
Actions : Edit | View summary

Physical			
Manufacturer	UK-2 Collaboration		
Resp. Technique			
Status	Manufacturing		
Other Identifier			
Parent Equipment			
Parent Slot			
Location			
State	Good	MRC	AC01
Safety			
RP Classification			
Comments			
Design			
Item in ABS	DQW Cold Magnetic Shield Series (ver.0)		
Audit			
Created on	2018-11-11	by	DGOMEZTR
Last modified on	2020-04-20	by	BEALMEID
EDMS owner	DGOMEZTR	EDMS group	HL-LHC-WP4-MTF

Main information of the asset may be found in this tab:

- Manufacturer of the equipment
- Current Status
- Current Location
- State
- RP Classification
- Access rights
- Etc.

Assembly Breakdown Structure



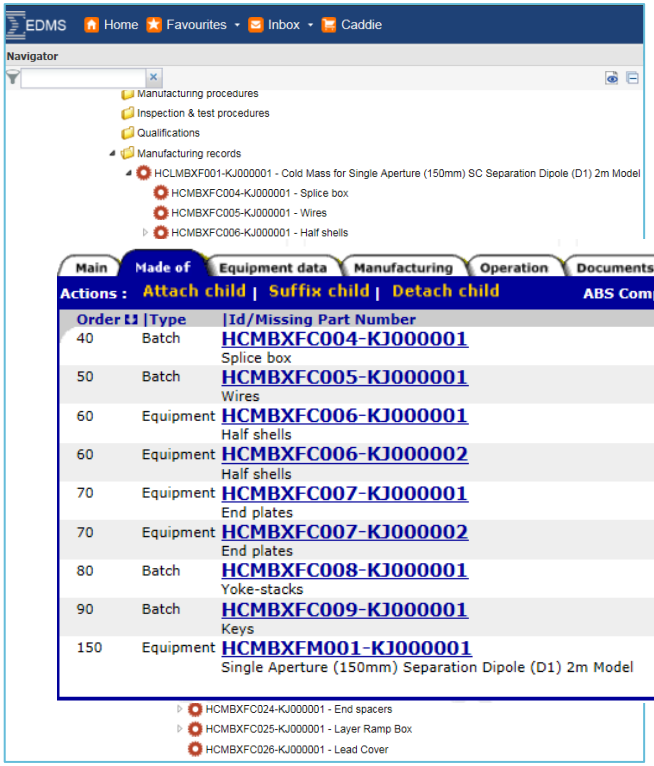
Assembly Breakdown Structure (ABS)

ABS allows to keep traceability of the components that are used to build the equipment (these components to have their MTF as well)

We just have to attach the 'child' (component) that have been previously set up within the system

D1 – Separation Magnet

Level	Eq. Code	Item Description							Category/Item	Own Class	Quantity
	MBXFM	Separation Dipole									1
	LMBXFM		Cold Mass						HCLMBXFM001		1
	MBXFC				End covers				HCMBXFC001		2
	MBXFC				Nozzles				HCMBXFC002		Batch
	MBXFC				Beam tube				HCMBXFC003		1
	MBXFC				Splice box				HCMBXFC004		Batch
	MBXFC				Wires				HCMBXFC005		Batch
	MBXFC				Half shells				HCMBXFC006		2
	MBXFC				End plates				HCMBXFC007		2
	MBXFC				Yoke-stacks				HCMBXFC008		Batch
	MBXFC				Keys				HCMBXFC009		Batch
	MBXFC				SS Collars				HCMBXFC010		Batch
	MBXFC				GFRP Lead Collars				HCMBXFC011		Batch
	MBXFC				Quench heaters				HCMBXFC012		Batch
	MBXFC				Ground Insulations				HCMBXFC013		Batch
	MBXFC				Brass protection				HCMBXFC014		Batch
	MBXFM		Magnet						HCMBXFM001		1
	MBXFC			Upper Coil					HCMBXFC015		1
	MBXFC				Cable				HCMBXFC016		1
	MBXFC				Wedges				HCMBXFC017		Batch
	MBXFC				End spacers				HCMBXFC018		Batch
	MBXFC				Layer Ramp Box				HCMBXFC019		Batch
	MBXFC				Lead Cover				HCMBXFC020		Batch
	MBXFC			Lower Coil					HCMBXFC021		1
	MBXFC				Cable				HCMBXFC022		1
	MBXFC				Wedges				HCMBXFC023		Batch
	MBXFC				End spacers				HCMBXFC024		Batch
	MBXFC				Layer Ramp Box				HCMBXFC025		Batch
	MBXFC				Lead Cover				HCMBXFC026		Batch



Main information of the equipment

Equipment Identifier: **HCACFCM003-UK000001**
Other Identifier: None
Description: **DQW Cold Magnetic Shield Series**

Main | Made of | Equipment data | Manufacturing | Operation | Documents | History | Map

Actions : History

External Links

No external data link exists

Property Values

Property	Nominal Value	Value	Unit
Dimensions			
Length			cm
Width			cm
Height			cm
Weight			kg
Value of goods			CHF

This option will allow us to set the main parameters (nominal values) that will be checked during production (dimensions, mechanical properties, electrical values, magnetic checks, etc.). During the inspection the actual values shall be added (more for performance point of view).

Manufacturing Workflow

Equipment Identifier: **HCACFCM003-UK000001**
Other Identifier: None
Description: **DQW Cold Magnetic Shield Series**

Main | Made of | Equipment data | Manufacturing | Operation | Documents | History | Map

Actions : Add extra step

Workflow Diagram

No workflow diagram is defined for this equipment

Workflow Steps

Step	R/E	Other name	Description	Status	Last Repeated Result	Last Repeated NC
5		()	Traceability of Materials	Pending		
10		()	Sheet Metal Working	Pending		
15		()	Visual Inspection	Pending		
20		()	Dimensional Control	Pending		
25		()	Cleaning-Degreasing	Pending		
30		()	Heat Treatment	Pending		
35		()	Visual Inspection	Pending		
40		()	Magnetic Measurements	Pending		
45		()	Shipping	Pending		
50		()	Reception at CERN	Pending		
55		()	Validation Test & Acceptance	Pending		

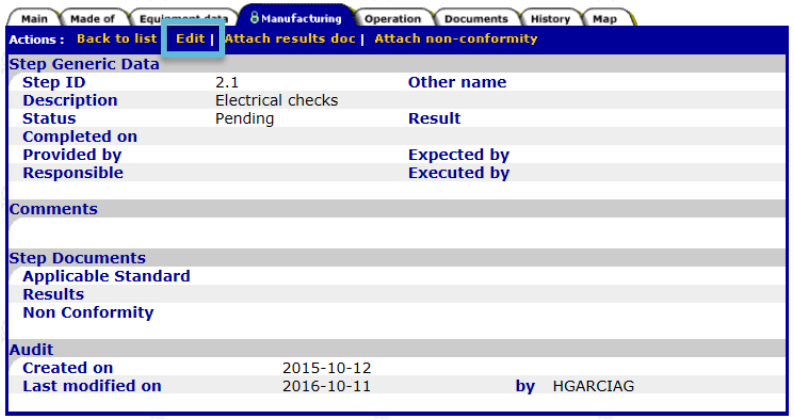
Before starting the production, productions steps (manufacturing and QC) to be settled (MIP):

- Implementation on MTF;
- Feed MTF folder of each asset during the production.

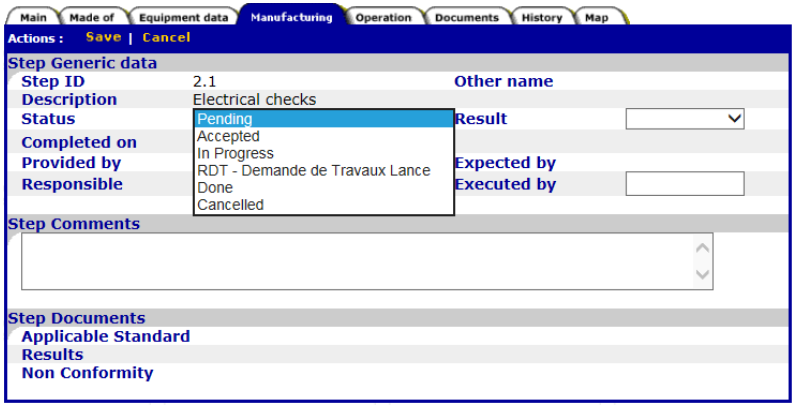
Approval of fabrication steps

Each step to be approved upon completion. We click in the Workflow Step number and then we EDIT to give the acceptance of the step and results **OK** (if the step would not have been accepted, then in results we select **Not OK**)

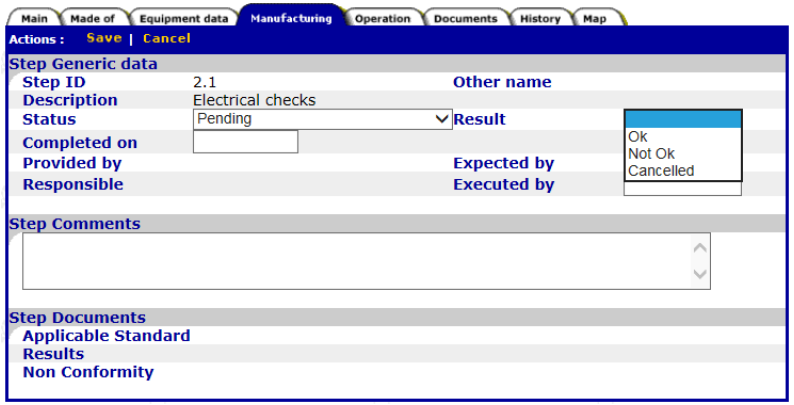
1



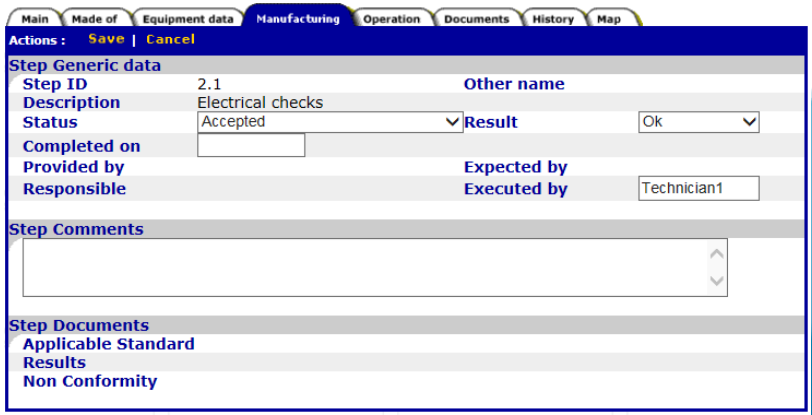
2



3



4



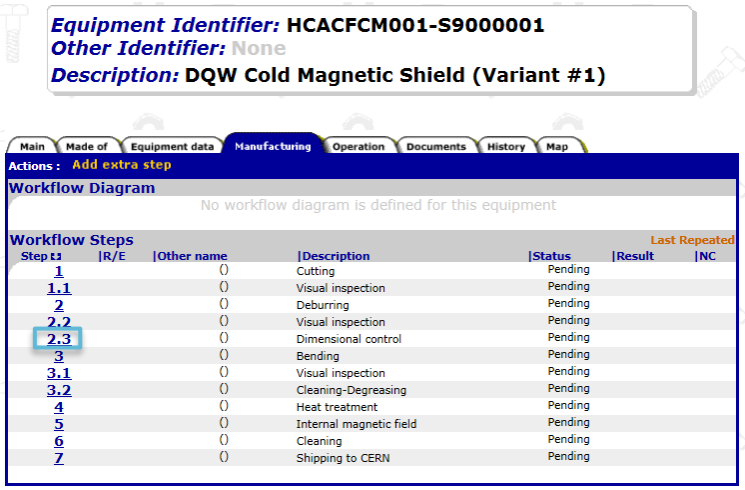
⚠ Once we finish, do not forget to save!!!!

Outline

- EDMS and MTF;
- Item vs Asset;
- MIP and MTF;
- MTF: Assets, Assemblies, Steps;
- Manufacturing Documents;

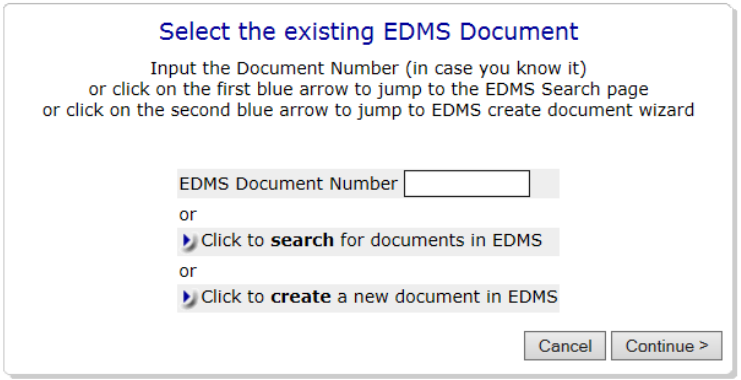
Manufacturing Documentation

Reports and documents related to each step to be attached in the MTF folder of each asset. Documents can be previously uploaded on EDMS or can be attached directly in MTF (if so, EDMS document is created automatically).



The step is approved and the report with results is attached.
If the step is not approved and a Non Conformity is opened, we can also attach it.

Document to attach from EDMS or directly on the step (it will be then automatically created on EDMS).



The document associated to this step of the asset is attached in MTF.

This process is to be repeated for each asset.

Other documents to be attached

Equipment Identifier: **HCACFCM003-UK000001**
Other Identifier: None
Description: **DQW Cold Magnetic Shield Series**

Main | Made of | Equipment data | Manufacturing | Operation | Documents | History | Map

Actions : Attach document — Display: Extended

LHC-ACFCM-FR-0003 v.**0.9**	Dimensional Control DQW CMS HCACFCM003-UK000001 and HCACFCM003-UK000002	In Work
Doc. page	31022_-_M4K0175_DIMENSIONAL_REPORT **xlsx** (260 Kb) Dimensional_Report_Deviations_Analysis **xlsx** (16 Kb)	

1 Document Type ... **2** Select Document ... **3** Confirm data

Select Document Type

Chose if the Document is a:
(ONLY these two cases should be attached here)

- ○ Additional Document
- ○ Additional Non-Conformity (not linked to any Step)

Cancel | Continue >

Any other document can be attached to the MTF of the asset:

- Material certificates
- Manufacturing drawings
- MIP
- Welding maps
- Etc.

Outline

- EDMS and MTF;
- Item vs Asset;
- MIP and MTF;
- MTF: Assets, Assemblies, Steps;
- Manufacturing Documents;

Conclusions

- Manufacturing Records (Material Certificates, Quality Control Records, Test Records, Vérifications, etc.) are to be stored in MTF (integral part of EDMS)
- The tool is also granting the traceability of the assemblies (what goes where)
- Each asset represents the produced entities and they are individually traced

Thanks

Questions?