



MANUFACTURING AND TEST FOLDER FOR RF STRUCTURES AND RF COMPONENTS



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Abstract

Manufacturing and test folder (MTF) is used in CERN for product life cycle management. It is closely linked to Engineering data management system (EDMS) and these two together enable us to follow through the whole lifecycle of product from design to the dismantling. MTF is the place to store information about production, tests, installation, operation and the end of project. It will also include log of use and log of maintenance. MTF replaces old paper folders and is easier to use. With MTF it is easy to follow the progress of manufacturing and it also makes it simple to find all the documents concerning specific structure. [1]

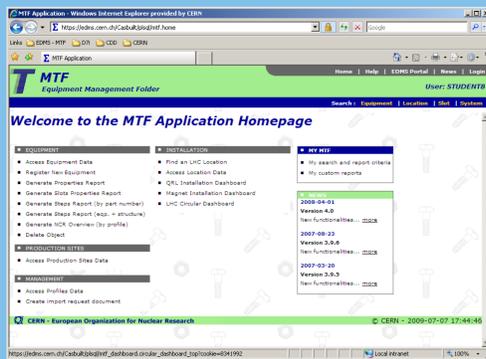
EDMS and MTF

EDMS and MTF complete each others. EDMS includes information of the design, such as structure, parameters etc. EDMS is also used to store documents which are then linked to MTF.



View of the same structure in EDMS and in MTF. In MTF you can see the listing of components needed.

MTF



MTF Application Homepage for registered users.

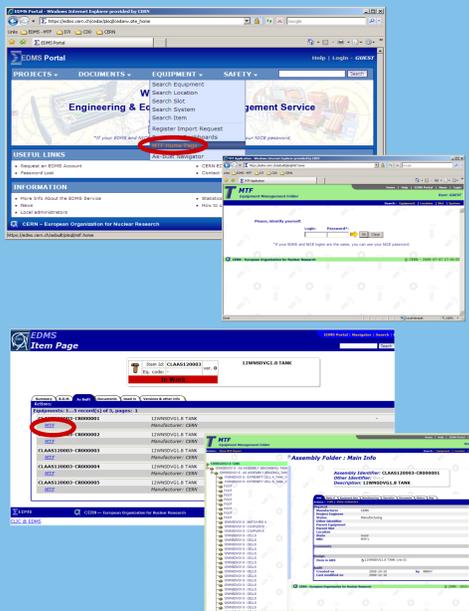
Assembly folder



Assembly folder is used to gather all the information of one assembly. Unique identifier separates manufactured assemblies from each other's and documentation and history can be used track differences in manufacture. Non conformities can also be added.

Ways to access MTF

You can log in to MTF with your NICE account from the EDMS front page or then via EDMS structures.



Bill of Material BOM

Bill of Material BOM is created from the drawings of structures. This information is the amount and type of parts needed for the structure. For now this part is done by hand but it will be automated in the near future.

Drawings can be found from Cern Drawing Directory CDD and linked to the structures in EDMS.

Workflow steps

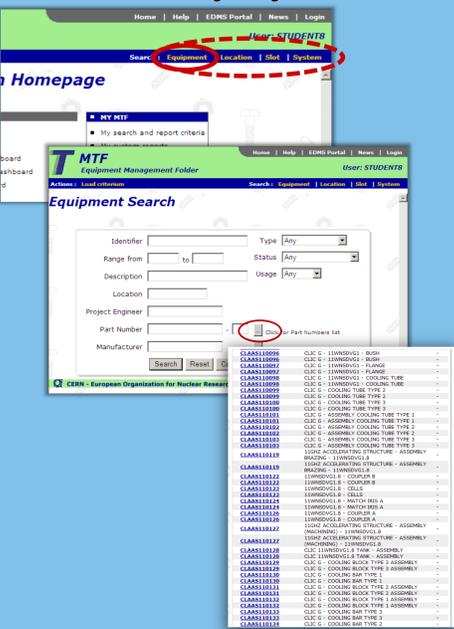
With workflow diagram we can follow the progress of manufacturing. Additional steps can be added or steps can be cancelled. By clicking on the step you will find the results or non conformity documents.



Different structures require different workflows. That is why diagram vary. By clicking on the step, you will find more information on the step including test results, non conformities etc.

Search in MTF

You can search in MTF by several different criteria. Main categories are Equipment, Location, Slot and System. You can also browse through categories.



Manufacturing step details



Detailed view on step number 5. Most important information are the dates and results. Also non conformities can be added, but only administrator can remove them. All the documents are links to EDMS and they can be added by simply using their EDMS id. This field is updated by local MTF administrator.

Workflow for PETS



Manufacturing Power Extraction and Transfer Structure (PETS) requires 34 different steps. Every step includes results from the step.

CONCLUSION

MTF provides a strong tool for product life cycle management. It is also used with LHC and it will also be used as well in the future. In the near future data transfer from EDMS to MTF will be automated thus limiting changes of human errors. For members of CLIC MTF provides an easy tool for searching information and following progress of manufacturing. In the future MTF can be used for tracking the sources of non conformities and breakdowns. Unique id given to each part makes it possible to track down smallest errors. Also this id enables to follow, for example, the radioactive contamination of tools.

ACKNOWLEDGMENT

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REFERENCES

- [1] M. Saifoulina, "Item/Equipment Creating Process for CLIC Accelerating Structures in EDMS/MTF databases", EDMS id 1061835.
- [2] R. Bray, "Presentation for the CERN EDMS for EN-ICE", EDMS id 1003101