MAINTENANCE ENGINEERING

A New Approach For A More Efficient Maintenance
Planning And Management

Contents

Presentation

Crea provides technical assistance in developing a total new approach in the field of Maintenance Engineering, by helping the client in collecting and standardizing maintenance related data, creating the basis for an optimized maintenance database.

This approach leads to more efficient maintenance planning and management and to have a return in OPEX and Business Performance.

This scope is achieved through a software called Data Build-up Warehouse, developed passing through the main issues faced by clients during the management of maintenance planning.

Main scope of the Data Build-up Warehouse (in short "DBUW") is to facilitate:

- Extraction, Transformation and Loading (ETL) data process to Data Warehouse,
- the master data build-up or quality check maintaining consistency with all received information or managing inconsistencies.
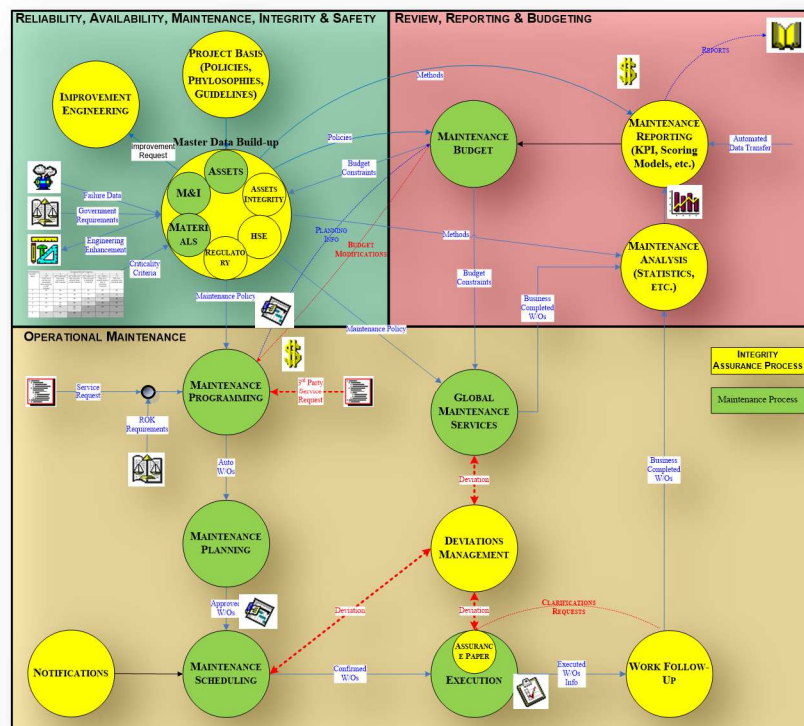
Data Build-up Warehouse

DBUW stores data in one single repository which can be used by all Corporate Services granting a high level of standardization.

Data are uploaded and temporary saved with the main goal of allowing cleansing and transformation of received information to ensure data quality and consistency before it is used by *DBUW*.

This allow the creation of Master Data, which can be modified or integrated depending from the final goals assigned to *DBUW*.
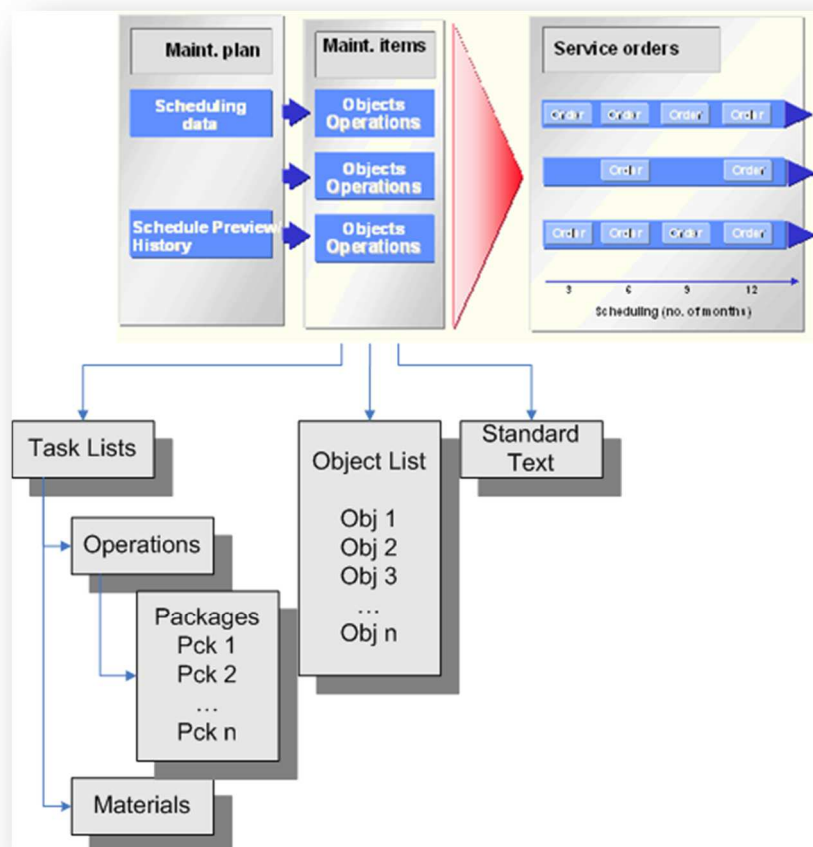
Master Data and Data Warehouse

These data are then used by DBUW to achieve different scopes related to Maintenance optimization and standardization. So Master Data are, then, split, inside the software Data Warehouse, in several Sections or Data Marts, each of them identifies a sub process of the software:

☀ **Assessments**: the equipment data collected and standardized can be used by the corporate to make any kind of assessment with the guarantee of having complete and uniformed data.

☀ **Technical Objects**: detailed identification of assets' parameters and technical information, physical position of relevant elements and of stored materials and related important documents useful to the correct management of the assets.

☀ **Maintenance & Inspection**: Maintenance Plans, Maintenance Items, Task Lists with their materials, support services, special tools, etc., with extended job specifications and, whenever necessary, a Workplace Risk Assessment.

☀ **Materials**: Main Catalogue, Spare Part Lists, Characteristics, Suppliers, Storing Locations, Initial Materials Requisition Plans, etc.
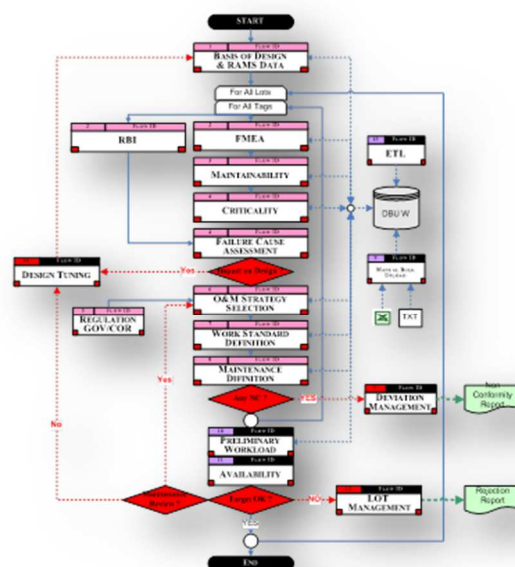
❋ **HSE related information**: like Noise Levels, Vibration Levels, Electro-magnetic Levels, Chemical Agents Expositions, Biological Agents Expositions, Pressurized Equipment, etc.

❋ **Asset Integrity**: Safety Critical Equipment (SCE), Safety Integrity Level (SIL), Operational Reliability Improvement Process (ORIP), Active Maps (AMAP), Fire & Explosion Index (F&EI), Business Performance, Hazardous Area Classifications (HAC) Criticality Risk Assessment (CRA), Action Plans (AP)

❋ **Data Banks**: Reliability Data Bank (RelDB), Substances Data Bank (SDB), Meteorological Data Bank (MDB), Regulatory Compliance Data Bank (RegDB)

❋ **Regulatory Compliance**: focused in organizing *Government & Corporate Regulation* plus *Public Best Practices* in order to facilitate the compliancy verification

❋ **Site Surveys**: the goal is to verify any engineering statement whenever doubts have arisen or to perform a quality check of engineering statements before starting and extensive Data Build Up Activity from engineering document. Site survey should be performed having in mind clear objectives and the Software facilitates the organization of all documentation created during surveys.
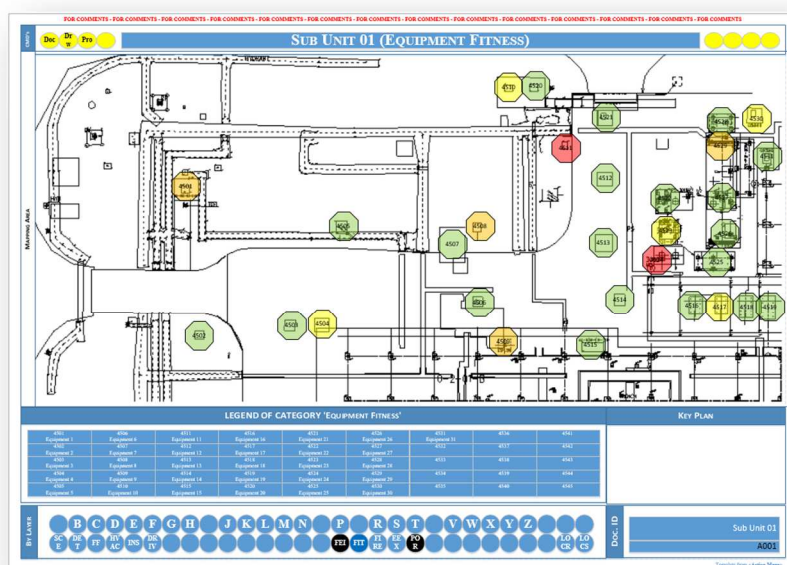
Maintenance Primary Goal

Maintenance primary goal is to prevent or mitigate the consequences of failure of an equipment.

This may be obtained by preventing the failure before it actually occurs with Planned Maintenance and Condition Based Maintenance, ensuring that assets continue to perform their intended functions with expected efficiency in their present operating context.

A successful implementation of a well-customized Maintenance Engineering System will lead to increase costs effectiveness and to have a greater understanding of the level of risk that the Company is actually facing.

Contacts

Via Romolo Murri, 21 – 48124 Ravenna – Italy
Phone: +39 0544 1738021
Gianfranco Mangiapane: gmangiapane@crea-srl.com
Claudio Pratella: cpratella@crea-srl.com
Website: igeam.it/ingegneria/