

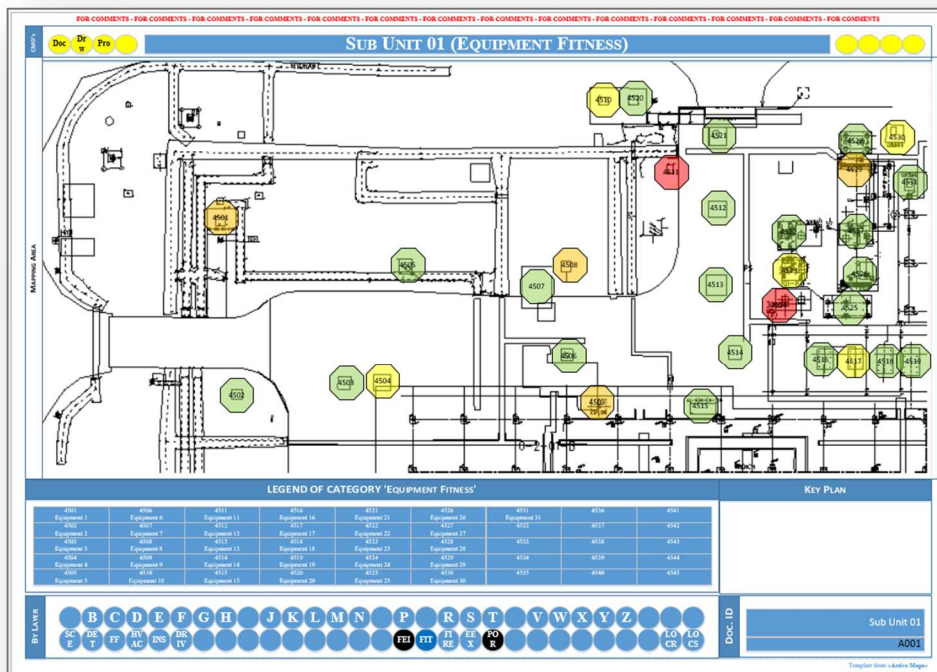
ACTIVE MAPPING
INVENTORY MANAGEMENT
REGULATIONS COMPLIANCY

ACTIVE MAPPING

Crea provides technical assistance in visualizing situations of industrial relevance on **Graphical Maps** to allow **Decision Makers** to take quick and informed decisions in order to analyse, resolve or, at most, to contain the situations.

The used visual approach is very effective in summarizing different types

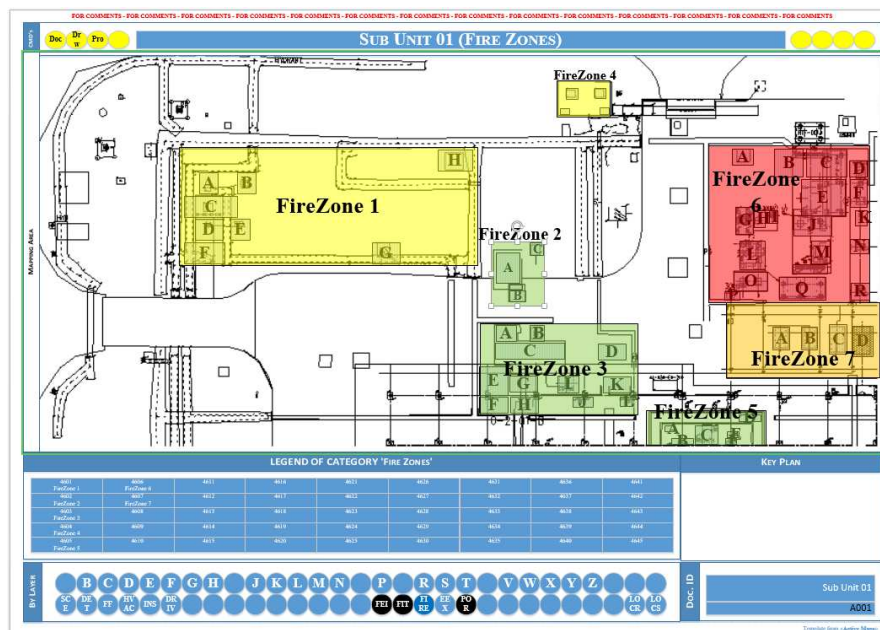
of situations in a graphical format, but the real added value is achieved when integrations with *ERP System* or *EDMS* or *Data Warehouse* are in place as for example the integrations with *Equipment, Locations, Safety Critical Equipment, Points of Emission, Notifications and Work Orders, Risks, Documents, Meteorological Station, etc.*



This visualization technique is even more effective if it is possible to visualize, on demand, details of a specific situation using **ERP** or any other information tool.

Scope of this service is to facilitate, as much as possible, the creation of visual synoptic describing relevant plant's situations like:

- ✦ Work Orders with Scheduling Problems, or generating Potentially Risks
- ✦ Systems/Equipment Fire and Explosion Indexes
- ✦ Fire Loads
- ✦ System/Equipment Performances
- ✦ Critical Risk Areas
- ✦ HSE situations.



This graphical maps visualization leads to the following benefits:

- ✦ To Display a Synoptic of a plant's situations using info from interface with Corporate Information Systems (like CMMS, DBUW or other Data Warehouse) highlighting importance of situation with a colour schedule.
- ✦ To Allow graphical reporting of plant's situations.
- ✦ To Allow immediate querying of Corporate System if external calls are allowed.

INVENTORY MANAGEMENT

Crea services comprehend technical assistance in building up an effective **Inventory Management**, as this is of capital importance in Maintenance Management of the Company assets,

this in order to limit to the strictly necessary quantities, all the spares allocated to warehouse in such a way to keep contained **Operational Expenditure (OPEX)** as much as possible.

Our main capabilities cover the following services:

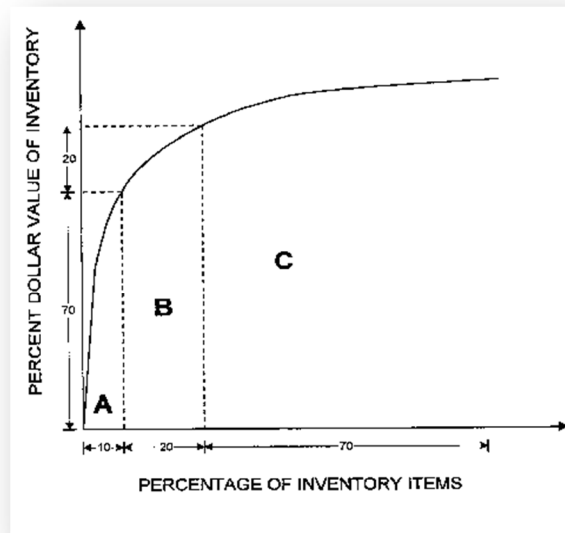
- ✦ **Codification Methodology** in order to be able to easily apply statistical analysis on materials warehouse stock and movements.
- ✦ **Standardization of Materials Descriptors** very important for a quick identification of the materials in the many lists of a Maintenance Management System.
- ✦ **Spare Parts Interchangeability List (SPIL)** to standardize purchased spare parts and reducing materials stocks, through the management of two or more years of spare part lists.

This is of great importance especially at the beginning of every project when, e.g., suppliers' warranties play a relevant role in the early management of the new plant, so the knowledge of Manufacturers Information on selected equipment.

Finding an acceptable compromise between real materials needs and guarantees requires a detailed analysis and the availability of reliability information.

- ✦ **Inventory Replenishment Plans and Policies**, which are of paramount importance either in avoiding stock out scheduling *Preventive Maintenance* or *Corrective Maintenance* tasks in order to reduce the *OPEX* and the chances to be out of stock on demand due to item replacements.
- ✦ **ABC Analysis** to determine importance of materials in stock. An important part of Inventory Management is the evaluation of the value of parts composing the inventory.

We facilitate the execution of a simplified ABC analysis, based on Pareto's law, which states that a high cost percentage is covered by a small percentage of important line items in a stock.



The methodology requires the financial definition of the three (or more) classic categories and, then, automatically assigns a default category to the material in the inventory.

This approach to Inventory Management leads to the **following benefits**:

- ✦ **To Allow** the creation of a standardized Materials Register.
- ✦ **To Facilitate** the identification of multiple coding of same material from different Suppliers.
- ✦ **To Allow** the creation of Models Spare Part Lists to be used in equipment Bill of Materials.
- ✦ **To Allow** a standardized approach in Materials Optimization.

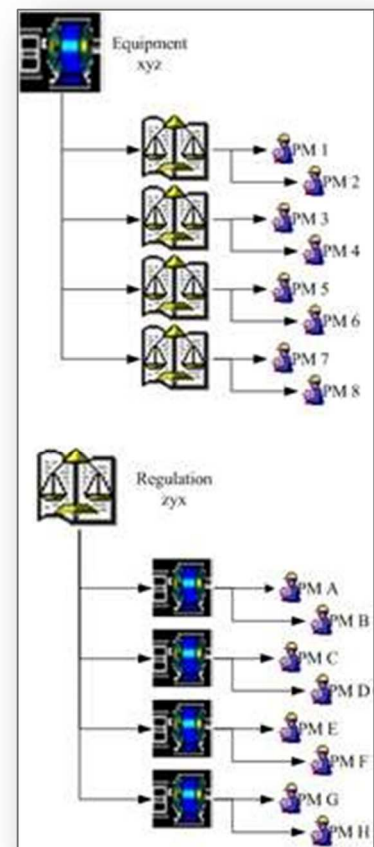
REGULATIONS COMPLIANCY

Crea provides technical assistance in achieving a fully compliant Maintenance Management System with the main scope of exposing those regulations **having an impact on Corporate Business**.

This Impact is usually defined by **Maintenance & Inspection Requirements** for particular *Item Types* and/or *Environmental Conditions*.

The approach to assure this kind of compliance is the following:

- ✦ **To Insert** all Regulation Items (articles, sub-articles, etc.) in a Hierarchical way.
- ✦ **To Assign** to each Regulation Item a set of Regulation Requirements defined as:
 - Job to be performed
 - Range of frequencies to be applied
 - List of Applicable Item Categories
 - List of Applicable Item Types
 - List of Applicable Environmental Condition
 - If requirement is applicable for equipment maintained with Run to Failure Policy
 - If requirement is applicable for Safety Critical Equipment
 - If requirement is applicable for Operation Critical Equipment
- ✦ **To identify**, for every TAGGED/NON TAGGED Equipment, all regulations and pertinent articles applicable to the engineering items.
- ✦ **To identify**, for every Government Regulation, all applicable TAGGED/NON TAGGED Equipment sorted by regulation articles.
- ✦ **To identify** all Maintenance Routines required by Government Regulations.



Compliance shall be continuously monitored in order to fit new requirements due to legislation updates and the **Maintenance Management System** should be capable to facilitate this process.

For every **Government Regulation** the following will be defined:

- Referred Item Type
- Referred Location
- Referred Substance
- One or more reference Quantities.

Above attributes will be used to identify the **Equipment** managed by applicable regulations and will lead to the following **benefits**:

- **To Facilitate** the identification of regulations applicable to Corporate Assets.
- **To Facilitate** the identifications of regulations applicable to Maintenance and Inspection Programs.
- **To Facilitate** the identification of regulations applicable to HSE.

Contacts

Via Romolo Murri, 21 – 48124 Ravenna – Italy

Phone: +39 0544 1738000

Mail: commerciale@crea-srl.com

Web site: igeam.it/ingegneria/

Gianfranco Mangiapane: gmangiapane@crea-srl.com

Claudio Pratella: cpratella@crea-srl.com