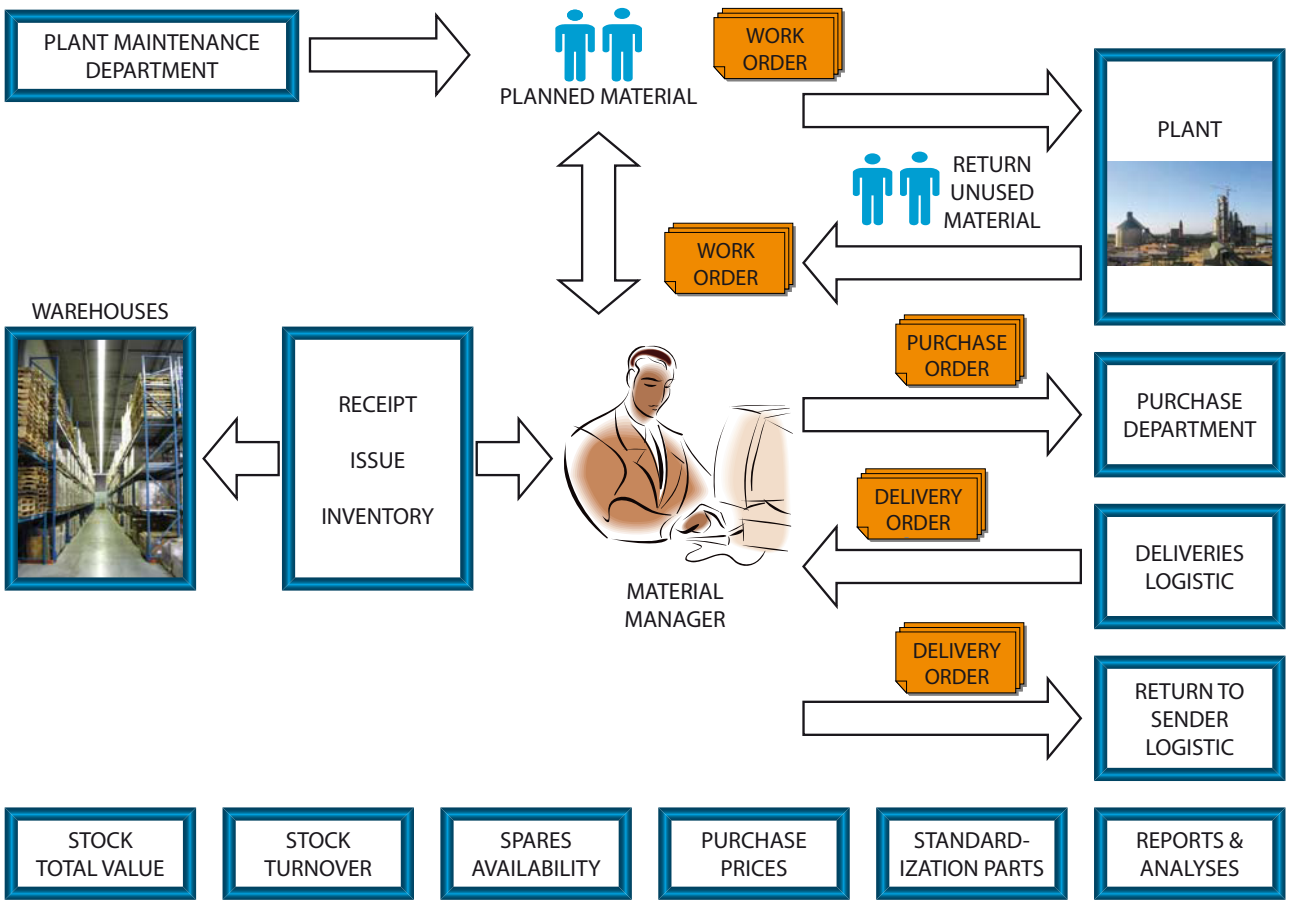
Implementation of Modern Maintenance Management System

Proper maintenance of new and existing plants is of utmost importance for optimal plant operation. Lack of good maintenance always results in lower capacity, more downtimes and higher maintenance costs due to the lack of preventative maintenance measures.

It is not sufficient to only purchase maintenance software for the successful implementation of a maintenance system. Each plant must be evaluated to determine the specific requirements posed by the existing maintenance system - or lack of it - problems must be identified and solutions to these problems must be found.

AUSTROPLAN offers maintenance expertise in the form of state-of-the-art Maintenance Management System software in combination with support provided by engineering experts.

The strategies and concepts prepared by AUSTROPLAN are incorporated into the Maintenance Management System to create a tailor-made solution to meet the needs of every individual plant.

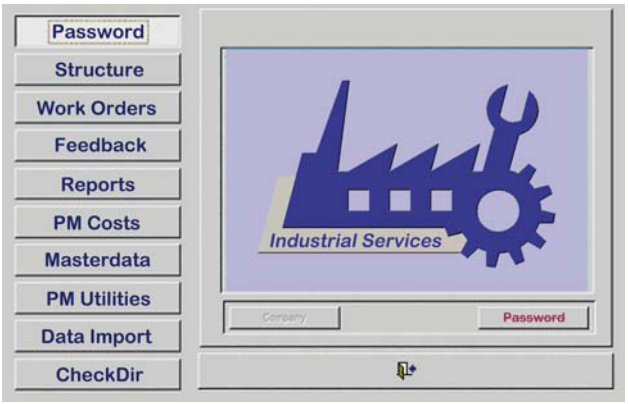


AUSTROPLAN

AUSTRIAN ENGINEERING GMBH

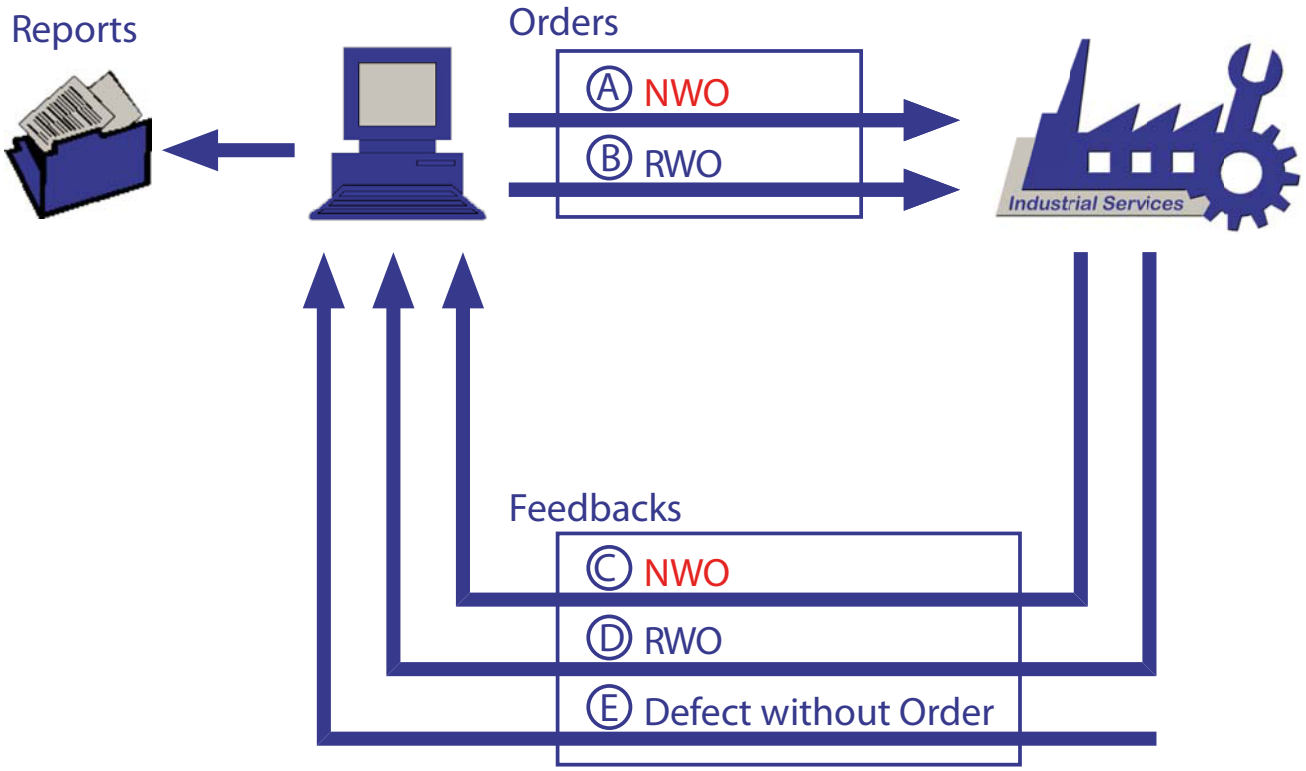
Implementation of Modern Maintenance Management System

The computerized Maintenance Management System (MMS) supports the activities of the maintenance personnel in the organization and elaboration of an effective plant maintenance programme.



Cost minimization, increase in plant availability and reliability, economical plant maintenance and increase in service life of the plant are only a few advantages of implementation of the Maintenance Management System.

The MMS is a user-friendly system containing the most important functions for maintenance planning, controlling and evaluating. The MMS supports maintenance organization by storing incoming and outgoing information in an orderly way. The stored information can be readily retrieved when necessary.



Implementation of Modern Maintenance Management System

Some main features of the MMS are:

Reports

Reports, statistics and analyses provide a basis for justification and decisions by maintenance management and support all responsible personnel.

Work Orders

MMS creates automatically inspection plans and work orders for each equipment unit for routine maintenance and repair work.

Work orders are divided into the categories NWO (Non-routine Orders - Repair Orders) and Routine orders RWO (Routine Work Orders) as well as Defect without Order. When entered into the system, the orders are processed and feedback-information can be entered into the system enabling easy documentation for maintenance and inspection and simple access for reporting.

Histories of Work Orders

Chronological histories can be prepared for each equipment unit for routine and repair work.

Material Consumption

Spare parts and consumables used for routine and repair work can be listed separately or in groups in an evaluation report.

Weak Point / Top-Ten Analysis

The weak point analyses allows the identification of those parts which particularly influence the efficiency of production by cumulating and evaluating the frequency of defects, personnel / material costs and delay time for each single item of equipment. The top-ten analysis provides documentation and analyses of the 10 most cost intensive equipment units.

Other Reports

The report generator function of the database environment enables the creation of other customer-specific reports.

Expert Maintenance Consultancy

As an initial step towards the implementation of efficient maintenance systems, AUSTROPLAN carries out a detailed analysis of the existing maintenance programme. This analysis includes but is not limited to:

- Overall costs being expended for maintenance
- Plant reliability, availability and downtimes
- Status of preventive maintenance
- General status of part's lifetime
- Status of spare parts availability
- Status of existing maintenance hard- & software

AUSTROPLAN evaluates the general organization of the existing plant maintenance system with regard to its procedures and effectiveness.

AUSTROPLAN's analysis also identifies to what extent and where the implementation of the Maintenance Management System would be specifically advantageous.

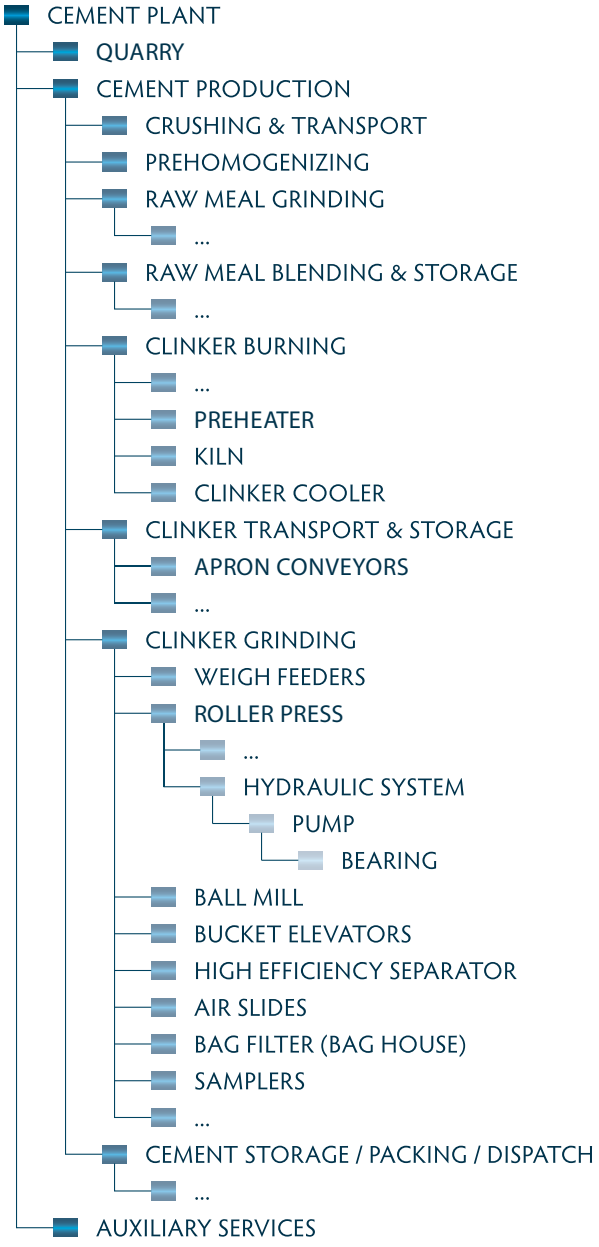
Based on the analyses of the collected data the elaboration of detailed individual maintenance strategies will be carried out. Organizational and work methods will be developed based on the specific requirements of the individual plants. The elaboration of the organizational and work methods will be directly linked to the relevant features and benefits of implementing using the MMS.

The MMS software will be pre-configurated to meet the specific needs of each individual plant thus ensuring that the system can be used from day one. Additional recommendations regarding supplementary hardware and software will be made if necessary.

Implementation of Modern Maintenance Management System

AUSTROPLAN provides expertise in the implementation of the Maintenance Management System by:

- Providing assistance in the preparation of the basic data
- Defining the functions required by the individual client and adapting the system functions to meet their specific needs
- Training of the user and software personnel
- Providing assistance and support during the system start-up and operation
- Providing analyses of the performance of the system and implementing improvement procedures after the system has been in operation for a while



AUSTROPLAN Austrian Engineering GmbH
Hietzinger Kai 133, 1130 Vienna, Austria • E-Mail: vienna@austroplan.at
Phone: +43 1 89189 0 • Telefax: +43 1 89189 299 • www.austroplan.at