



Computerized Maintenance Management System

Plant Health Care - the highway to better Reliability, Availability Maintainability

The ever changing scenario of global competition and technological advancement pose major challenges and incessant pressure on the maintenance department, whose major objective is to provide safe and secure continuous operation at highly demanding levels.

The health of the machine has a considerable **IMPACT** on the productivity & efficiency of the plant and consequently determines the profitability of the organization.

IMPACT- The cost-effective, complete solution



The flagship creation of Hofinsoft

Hofinsoft are in the business of Enterprise Asset Management for over 2 decades pioneering in maintenance management and **IMPACT** is the outcome from the lessons of the past and essentials of the future.

We have developed and successfully installed maintenance management software in a variety of platforms at a number of domestic and international client locations.



The IMPACT Edge

- ✘ Reduced maintenance cost
- ✘ Improved productivity & efficiency
- ✘ Better Availability, Reliability and Maintainability
- ✘ Reduced overtime
- ✘ Increased Profitability
- ✘ Maximizing Capacity utilisation
- ✘ Reducing Maintenance cycle times
- ✘ Efficient on-line work planning
- ✘ Empowering the decision making process by 'information' availability anytime anywhere
- ✘ Adhering to Operational and Environmental safety standards.

Deriving optimum benefits across the value chain by integrating all functional and business processes



Key features

- ✘ Seamless integration with the materials system
- ✘ Comprehensive work order generation and tracking
- ✘ Monitoring and control of spare parts and manpower
- ✘ Exhaustive equipment history and cost history
- ✘ The ready reckoner trouble shooting guide
- ✘ Storage and retrieval of Engineering Drawings
- ✘ Links to external systems like PLC & DCS
- ✘ 3 Levels of reporting - Top / Middle / Operational
- ✘ Intelligent & Intuitive error message handling
- ✘ Multi level security
- ✘ Exhaustive manuals & documentation
- ✘ Import / Export
- ✘ Interactive Report Writer & Graphical reports

Basic System

Equipment Database

This is an exhaustive information of the equipment that are available in the plant which helps to identify, update and review the details of the Assets to

- ✘ Help build an exhaustive commercial / technical specifications, engineering drawings, equipment history, warranty information etc.
- ✘ Provide identifying subassemblies of an Equipment as a unique equipment Id. (Physical identification)
- ✘ Provide linking of a Trouble shooting guide
- ✘ Provide grouping of Equipment based on Type & Subtype of equipment
- ✘ Help track costs, failures on an equipment enabling management identify operating inferiority

Trouble Shooting Guide

This acts as a knowledge bank and ready reckoner. The details of the probable trouble and corrective actions can be registered. The system is dynamic to accept such details when a new trouble occurs.

It also permits to add on possible steps in an already recorded trouble, thereby facilitating updates at all levels. Interactive query facilities are also provided.

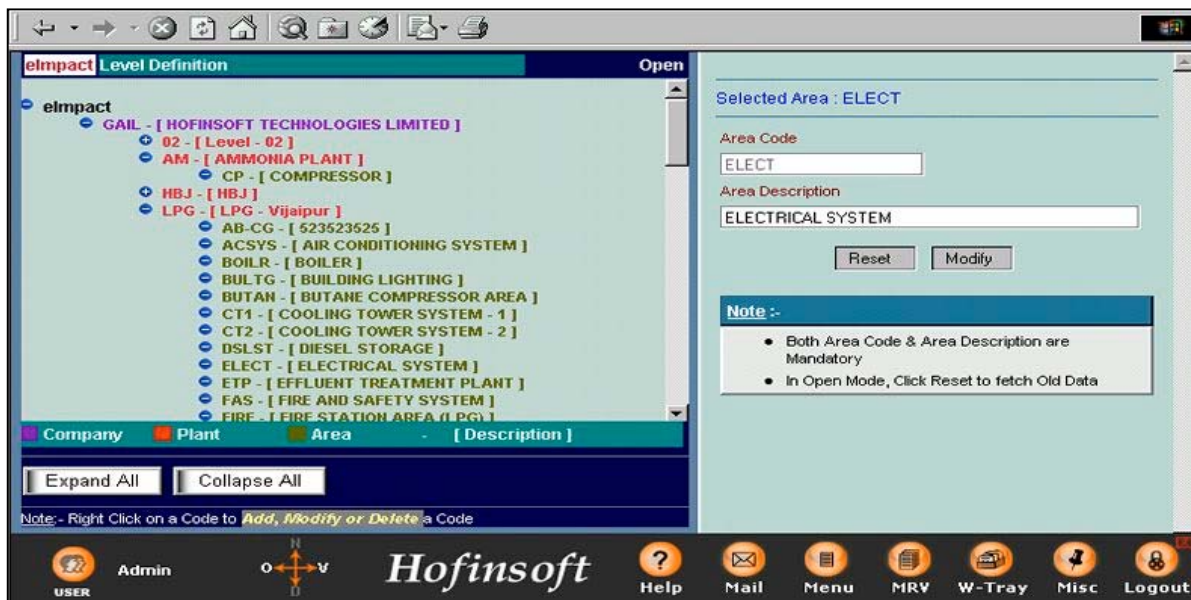
Planned Maintenance & Schedules

Planned and preventive work orders offer great flexibility in managing different types of maintenance activities. IMPACT supports the following classes of maintenance work -

Preventive, Opportunity, Turnaround and Condition based. This module provides for defining specification sheets for preventive maintenance, periodic overhauls and Lubrication.

It has provisions for -

- ✘ Important technical data like clearance, torque level etc.
- ✘ List of special spares and special tools required to carry out the activity
- ✘ Type of crew required to have effective planning and coordination
- ✘ Authorization and printing of field implementation sheets
- ✘ Postponing of scheduled jobs at the discretion of the planner
- ✘ Defining detailed maintenance instructions



Work Control

Work order is of paramount importance in a maintenance management system which serve as an instrument for communicating with the maintenance staff. This acts as a primary means of tracking all maintenance related activities as well as labor and material cost information.

IMPACT supports 5 types of work orders –

- ✘ Maintenance dept. to workshop for machining, fabrication etc.
- ✘ Breakdown work orders
- ✘ Adhoc work orders
- ✘ Preventive maintenance work orders
- ✘ Run hour based maintenance work orders

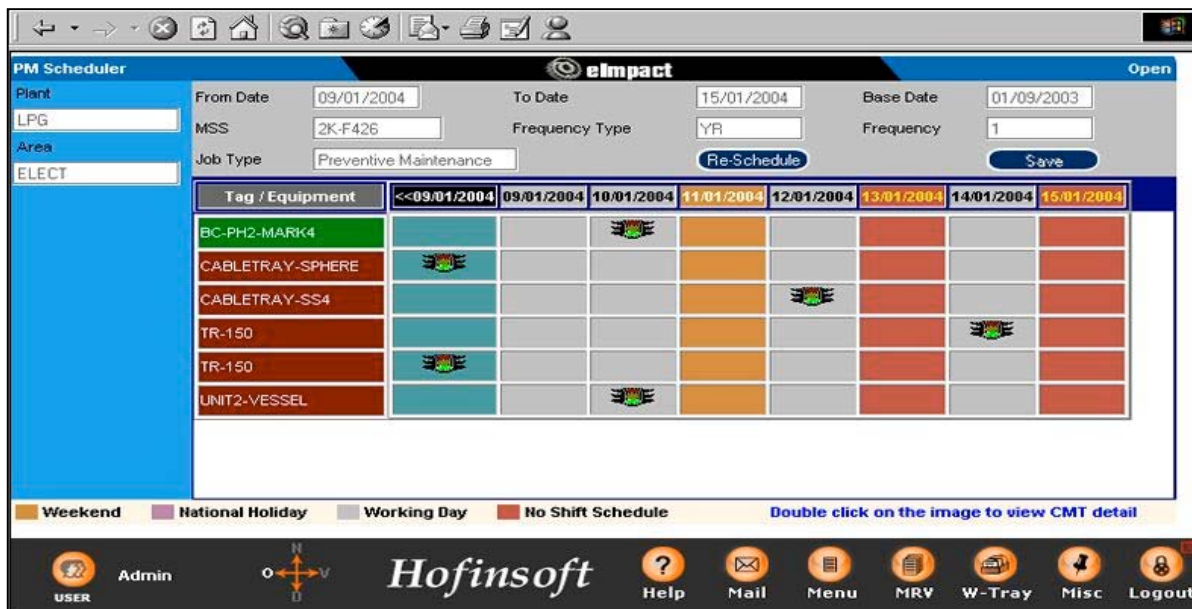
IMPACT enables to create , manage and update work orders and record costs & historical information.

Authorization of work request

- ✘ Generation of work orders/field implementation sheets
- ✘ Reserve parts for each work order based on job plan estimates
- ✘ Assign employees to work orders scheduled for future shifts and track each person's availability as they are assigned via planning module

Interactive planning of upcoming work based on priority of outstanding work and availability of people.

Once a work order is completed, all actual costs are posted in the equipment history file. In addition, a detailed record of all parts used on a particular work order is retained. A special remainder column for capturing pending work is provided.



Historical work order information, which is accessed through on-line inquiries, can be used in work order planning.

The system provides accurate maintenance cost information and your decision making can be based on up-to-the-minute historical cost data. The system can display cost breakdowns of work order including details of each skill and other expenditures. Estimates and actuals can be compared.

Opportunity Maintenance

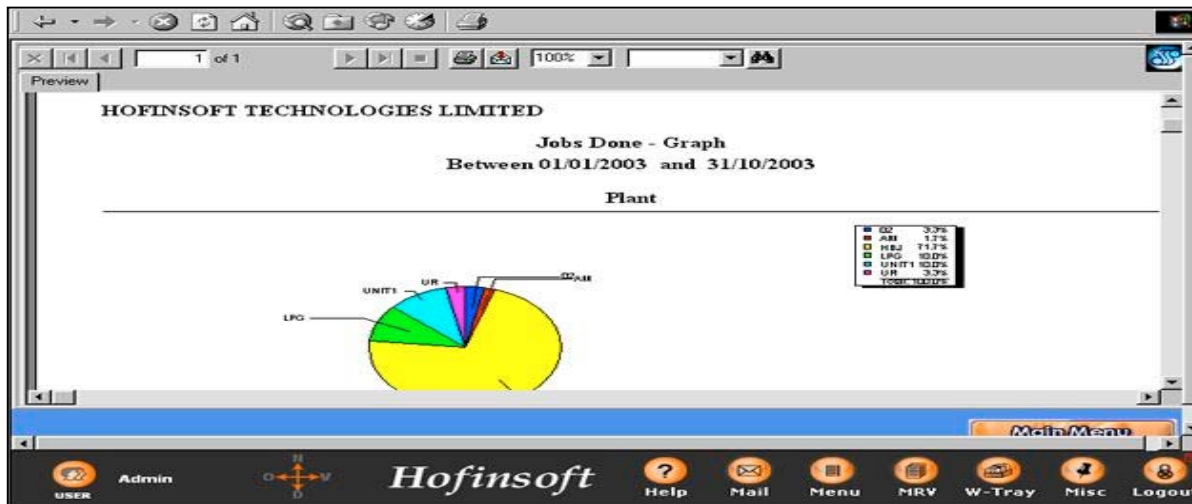
This module enables the user to record any corrections required on any equipment or plant which was possibly observed when the user was on his usual rounds of the plant. Such activities are recorded into the system as when the need becomes apparent.

The listing can be reviewed any time and if an opportunity arises, it can be used to complete all the jobs in the pipeline. The system also permits taking up of any pending preventive maintenance job activities that might have been postponed.

Reports

Standard reports provided include

- ✘ Job steps list (PM/OH)
- ✘ Job steps list (Lubrication)
- ✘ Job Status (PM/OH)
- ✘ PM Implementation
- ✘ Equipment history
- ✘ Failure analysis
- ✘ Recurring Failures
- ✘ Backlog report
- ✘ ISO related reports
- ... and many more





An interactive report writer is also provided to enable the user to create his own reports.

Additional Modules

Condition monitoring

The system provides for a condition based approach to maintenance (CBM). Condition Monitoring facilitates better prediction capability due to the availability of sophisticated detection and diagnostic instruments. CBM eliminates wasteful maintenance work and improves equipment availability which is a key factor to profitability. CBM enables Planned Maintenance which greatly motivates the maintenance personnel who are tired of fail-fix-fail syndrome.

In CBM, the equipment condition is closely monitored by a selective combination of CM techniques and PM inspection to ensure that the equipment operates within the design constraints such as - temperature, expansion, vibration, axial position etc.

- ✘ Early warning of deteriorating conditions to prevent equipment failure and avoid costly repair
- ✘ Continuous monitoring allows maintenance to be done on necessary basis rather than periodic
- ✘ Provides a description of the machinery condition to determine the need for maintenance activity without the need for disassembly and its consequences

It addresses itself to attain this by defining the limits of the various conditions monitored and measuring the same using special instruments.

Condition monitoring trend analysis built into the system gives sufficient warning to the field personnel, to get ready to correct the situation so that the repair is carried out in an organized and planned manner reducing equipment down time.



Integration to Hand-held monitors to download data...

Runlog Status Based

Plant: HBJ
 Runlog Date: 09/01/2004
 Tag Number: 53-PU1001A
 Description: FEED WATER PUMP - A
 Stop Time: Reason Code:
 Remarks:

	Tag Number	Description	Status	Start/Stop	Reason Code
1	53-PU1001A	FEED WATER PUMP - A	RUN	10.00	STA
2	53-PU1001A	FEED WATER PUMP - A	SHUT	10.30 BD	BRE
3	53-PU1001A	FEED WATER PUMP - A	RUN	11.00	

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The system provides for

- ✘ Defining the condition monitoring observations along with the desired readings
- ✘ Defining the alert and shutdown limits
Generating schedules for observing these readings
- ✘ Accepting feedback of readings taken
- ✘ Trending these readings and extrapolating the next possible reading, and warn in case there is a possibility of it exceeding the alert or shut down value even before the next schedule for observation.

Budgeting

Budgets are prepared for the dept / equipment for a given period. Information regarding the amount spent on different classes of maintenance with detailed break-up of resources can be accessed at any point of time.

Job contracts

Jobs that are not taken up within the factory would be contracted out. The reasons for contracting the jobs could be

- ✘ Work shop is overloaded
- ✘ Skilled manpower not available
- ✘ Bulk requirement
- ✘ Techniques and methods not available
- ✘ Materials not available

The system provides for follow up, monitoring and control of all contracted-out jobs

Turnaround

This module aims at planning, scheduling and follow up on maintenance turn around / annual shut down. The system provides for accepting details of jobs to be done, permits splitting of activities into sub activities, permits planning material and crew, identifies and keeps track of jobs subcontracted to contractors.

The system provides for

- ✘ Defining schedule for each activity
- ✘ Feedback on list of activities completed
- ✘ List of activities not completed on schedule
- ✘ List of activities due for completion still pending
- ✘ Report on schedules, planned versus actual
- ✘ Reports on materials used, planned versus actual
- ✘ Report on third party contract jobs
- ✘ Cost of turnaround

Inspection

Inspection of pipelines, pressure vessels and relief valves is a continuous process which also involves statutory regulations.

The system provides a comprehensive module to build up their database along with technical information, plan for their inspection, accept the inspection details and provide facility for comprehensive querying, trending and reporting.

Tool crib

Manages issue of Tools to Employees / Contractors for use and generates reminders for returns. Provides reports like ageing reports / cost reports for follow-up/recovery.

Performance indicators and maintenance MIS

- ✘ Red alert report highlighting the worst performing machines
- ✘ PM effectiveness
- ✘ Reliability, Availability and Maintainability report
- ✘ Maintenance cost summary
- ✘ Delay analysis
- ✘ Pareto Analysis



Architecture : Client Server / WEB

RDBMS : ORACLE / SQL Server

OS : Unix / Windows NT / 2000

GUI : VB6 / ASP

Ready to use Standard Templates available



Interface with MS Project for PERT / CPM analysis