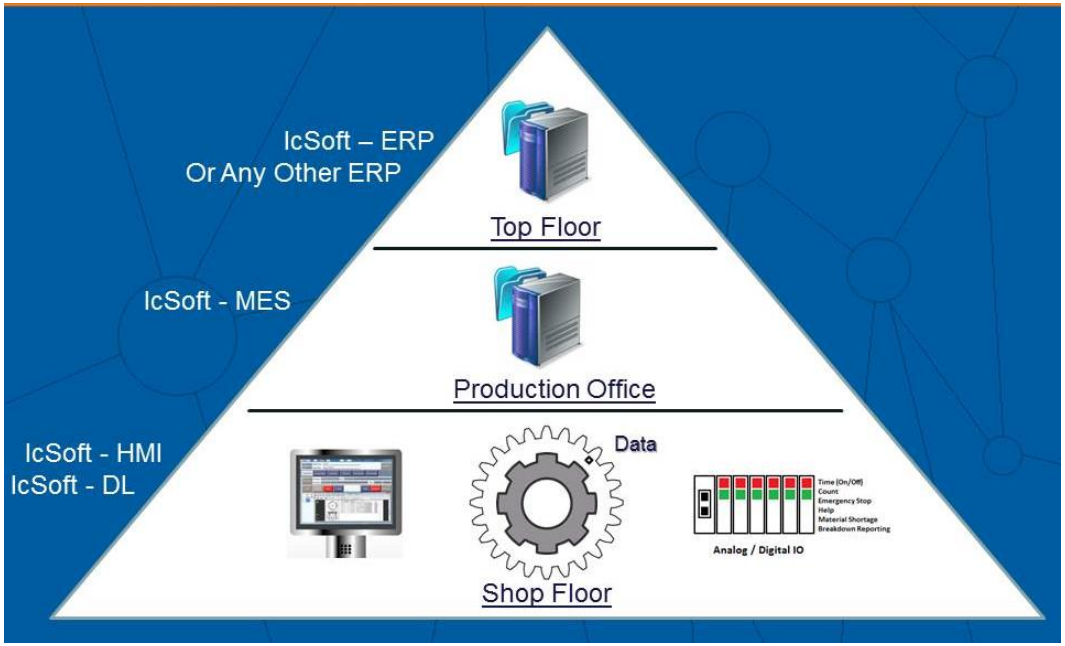
IcSoft

Paperless Factory

Shop floor information management and data acquisition system

Paperless Factory is a platform to integrate corporate decision-making and manufacturing shop-floor in real-time by connecting machines, work-places and systems, as intelligent networks along the entire value chain that can control each other autonomously.

IcSoft – Paperless Factory has features and reports that can be used for implementing lean, TPM and TOC concepts.



STANDARD FEATURES

- Online display of process and machine information
- Online setup and production data acquisition
- Online inspection data acquisition and SPC
- Online machine condition monitoring
- Tool & Die life management
- Online display of material requirement at store
- Interface Tool for data exchange with ERP

OPTIONAL FEATURES

- Machine Interface
- Measuring instrument interface
- Automated Storage and Retrieval System interface

Online Process and Machine Information

All information regarding the process and the machine is available to the operator based on the selected work order, process and the work center.

Machine Information

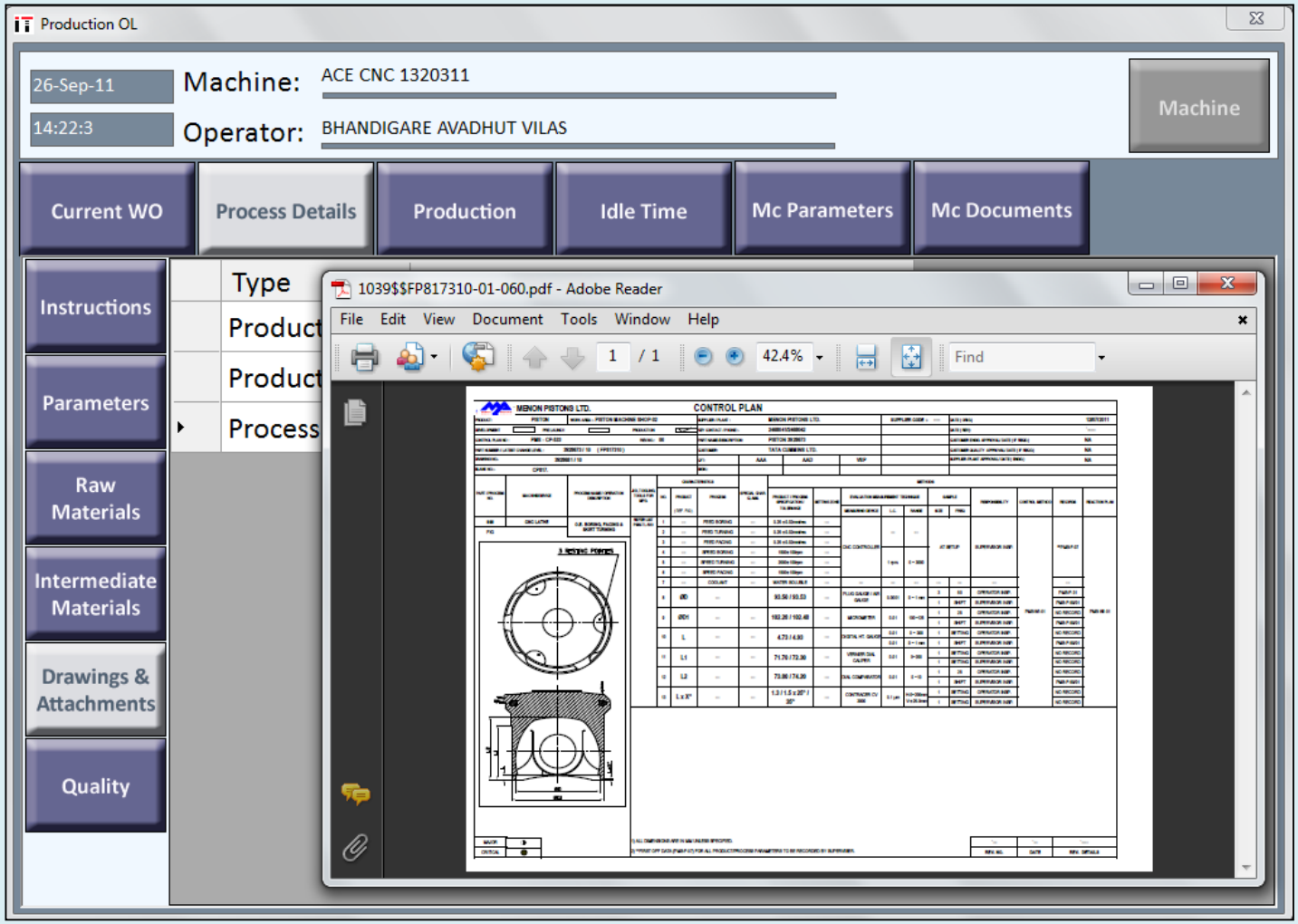
- Machine preventive maintenance plan / checklist
- Machine parameter settings
- Machine condition monitoring

Production Information

- Control Plan
- Work instructions / videos
- Material required
- Process parameter setting
- Drawings and other visual production aids

Quality Information

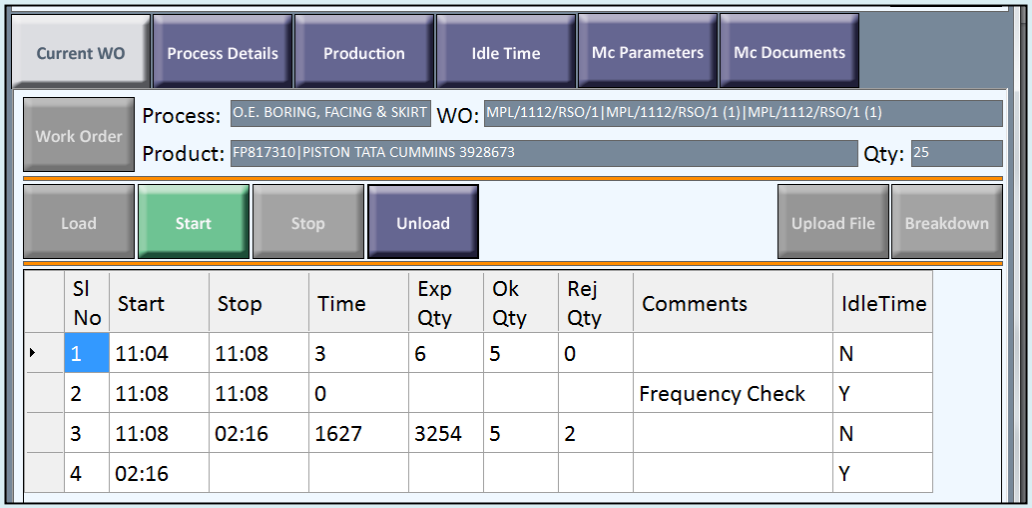
- Patrol/Sample inspection plan
- Dimensional and other inspection details



Online setup, production and inspection data acquisition

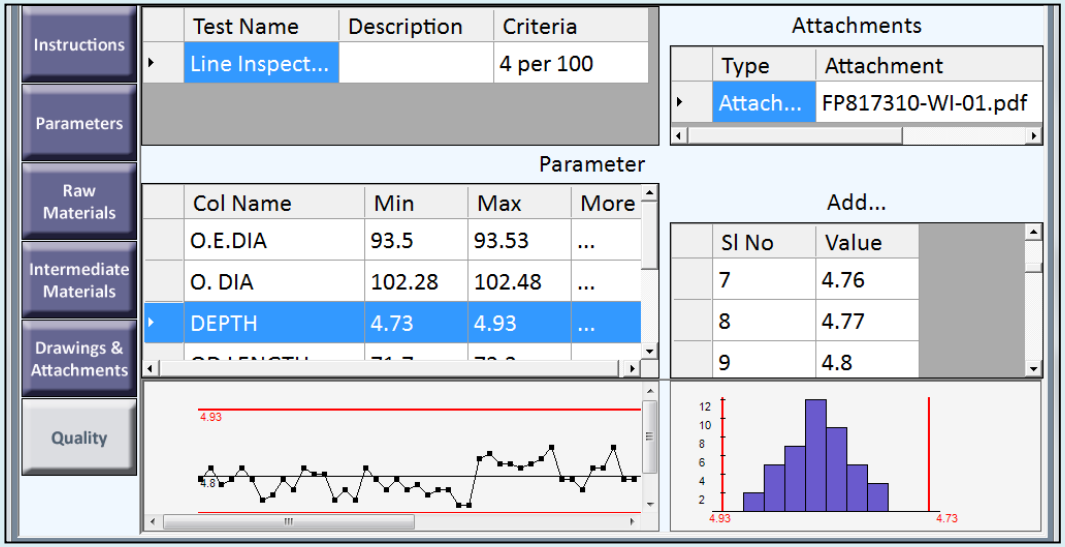
- Barcode/RFID enabled production tracking/recording
- Online data acquisition
  - **Production:** Start time; end time, down time with reasons, production quantity etc.
  - **Quality:** Rejected quantity with reasons, dimension data, chemical composition etc.
  - **Process:** Process parameters like temperature, pressure, flow etc.
  - **Machine:** Power, bearing temperature, pressure, vibration etc.
- Vision Inspection
- Material Consumption
  - Manual/Barcode/RFID for traceability
  - Automatic based on FIFO
- Tool & Die Life Management

Production Data



Sl No	Start	Stop	Time	Exp Qty	Ok Qty	Rej Qty	Comments	IdleTime
1	11:04	11:08	3	6	5	0		N
2	11:08	11:08	0				Frequency Check	Y
3	11:08	02:16	1627	3254	5	2		N
4	02:16							Y

Sample Inspection

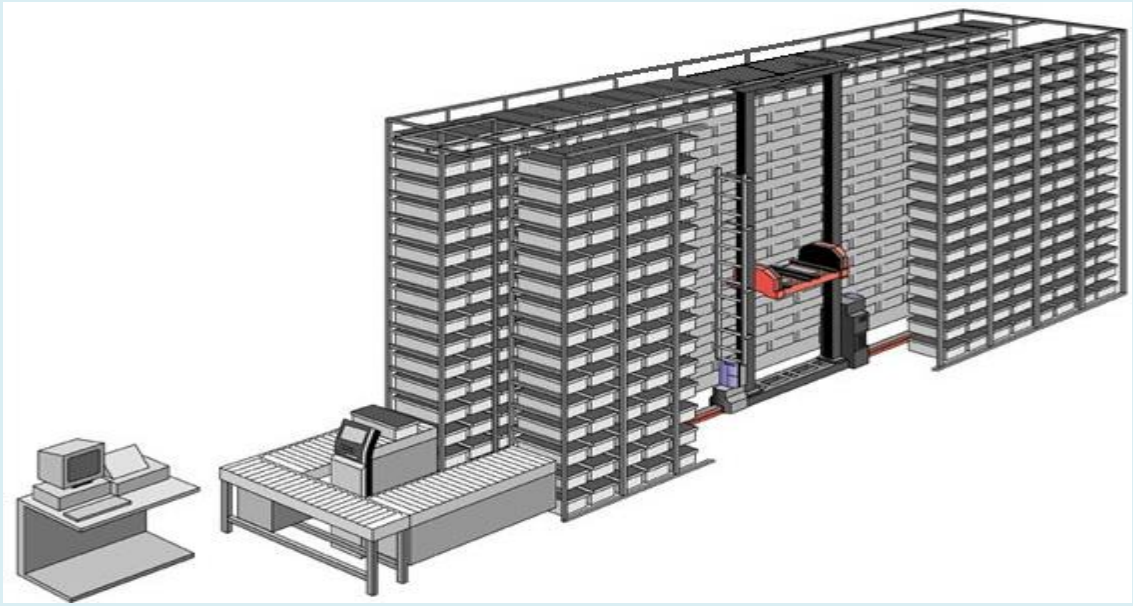


Online Store Management System (Under Development)

- Online Display of Material Requirement at Store
  - Display material, quantity, machine & expected time
  - Flash urgent requirements
- ASRS Interface
  - Interface Automated Storage & Retrieval System for keeping the required materials available for delivery

Expected Material Requirement at Machines

Interface with Automated Storage & Retrieval Systems



Optional Features

Machine and instruments can be interfaced using digital IO, data logger or SCADA for control and data acquisition.

- Machine Interface
  - PLC / PC interface
  - Production data acquisition
  - Process Parameters setting & acquisition
  - Condition monitoring
  - File & data upload
  - Automation / Process control
- Measuring instrument / Gauge interface

Reports, Analysis and Benefits

Designed to complement an ERP system. Automates and streamlines factory operations by combining Online Display of Process and Machine information (paperless) with Shop Floor Data Acquisition.

- Online machine loading and OEE (Overall Equipment Efficiency)
- Rejection analysis
- Delay analysis
- Trend and Correlation analysis
- Productivity improvement
- Accurate costing
- Asset / Condition Monitoring
- Lean manufacturing