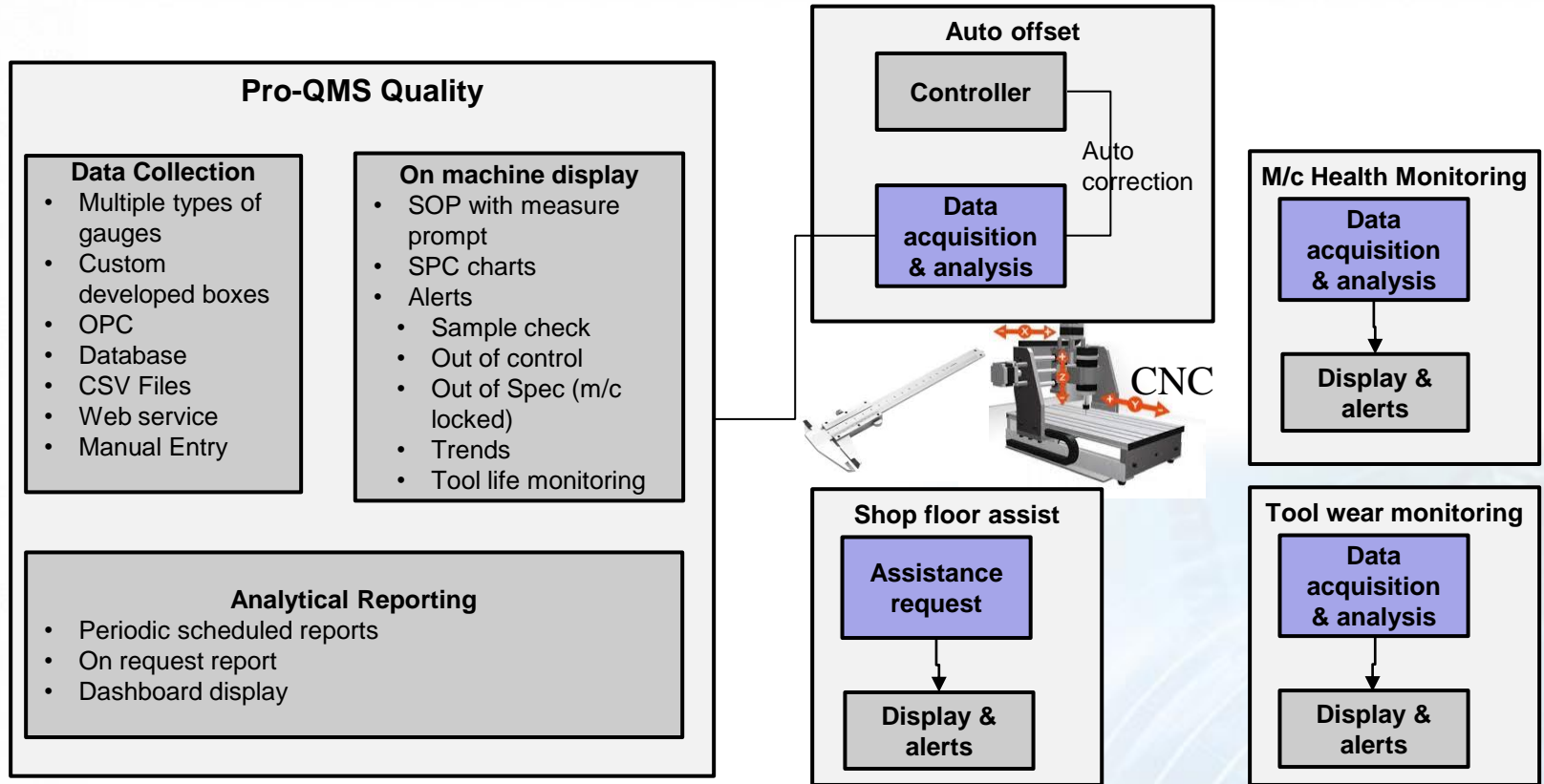




Focus Area for Product Machine Shop OEE



- **Data pushed to cloud server (AWS or Azure) for IoT and display on dashboards.**
- **OEM monitoring**
- **Lot of data on machine performance for the parts manufactured**
- **Analytics on data collected**



Pro-QMS

The Production & Quality Monitoring System

Functional Areas Coverage

On-Line In-Process
CTQs Data Capture
from Gauges and
Other Sources like
Data Bases

SPC Control Charts
Display, Interpretation
and Alerts at the
Work-Station

Dashboard at the
Production Line and
Plant Level with Drill
Down

On-line Machine
Health, Production
Data, and Down Time,
Data Collection and
Andon Display

Supplier On-Line
CTQs Data Capture
from Gauges and SPC
Control Charts
Displays with Alerts

Web Dashboard for
Access from
Anywhere at Anytime



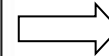
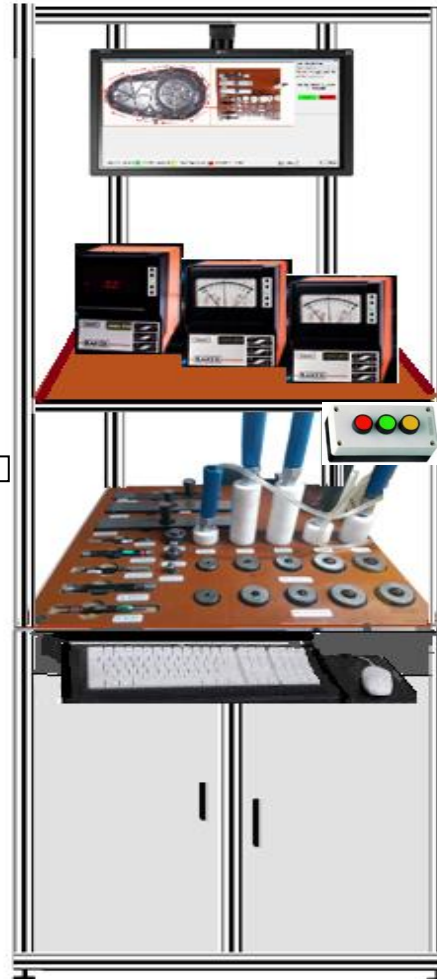
Pro-QMS

Improved Quality

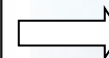
Quality Process made Intuitive. Easy and Fail-Proof



Control Panel –
I/O Module



Bottom View of Gauge Table
(Proximity Sensors to link
Gauges and User Interface)



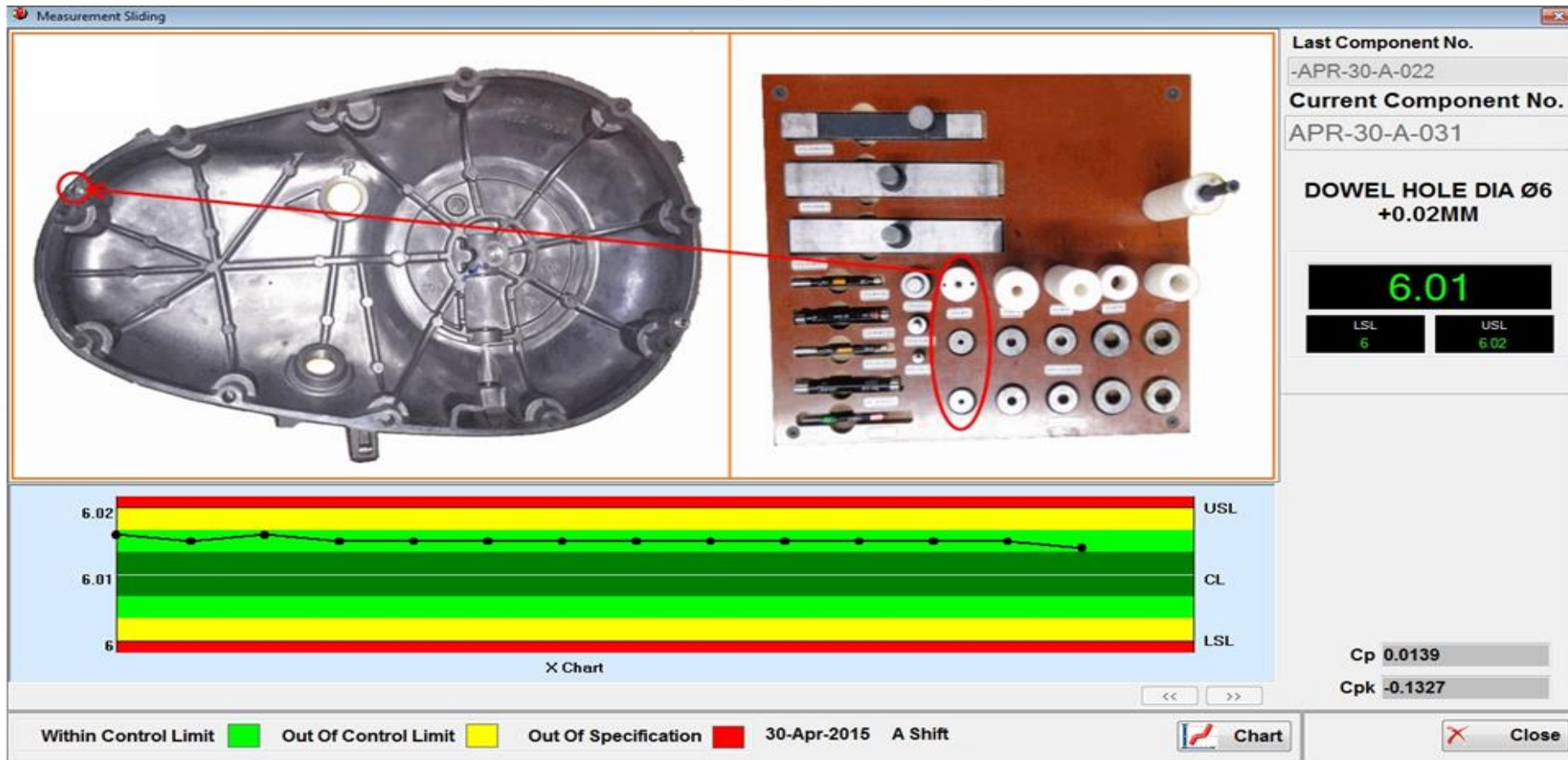
Industrial PC



Pro-QMS

Improved Quality

*Quality Process made Intuitive, Easy and Fail-Proof
For Variable Parameters*





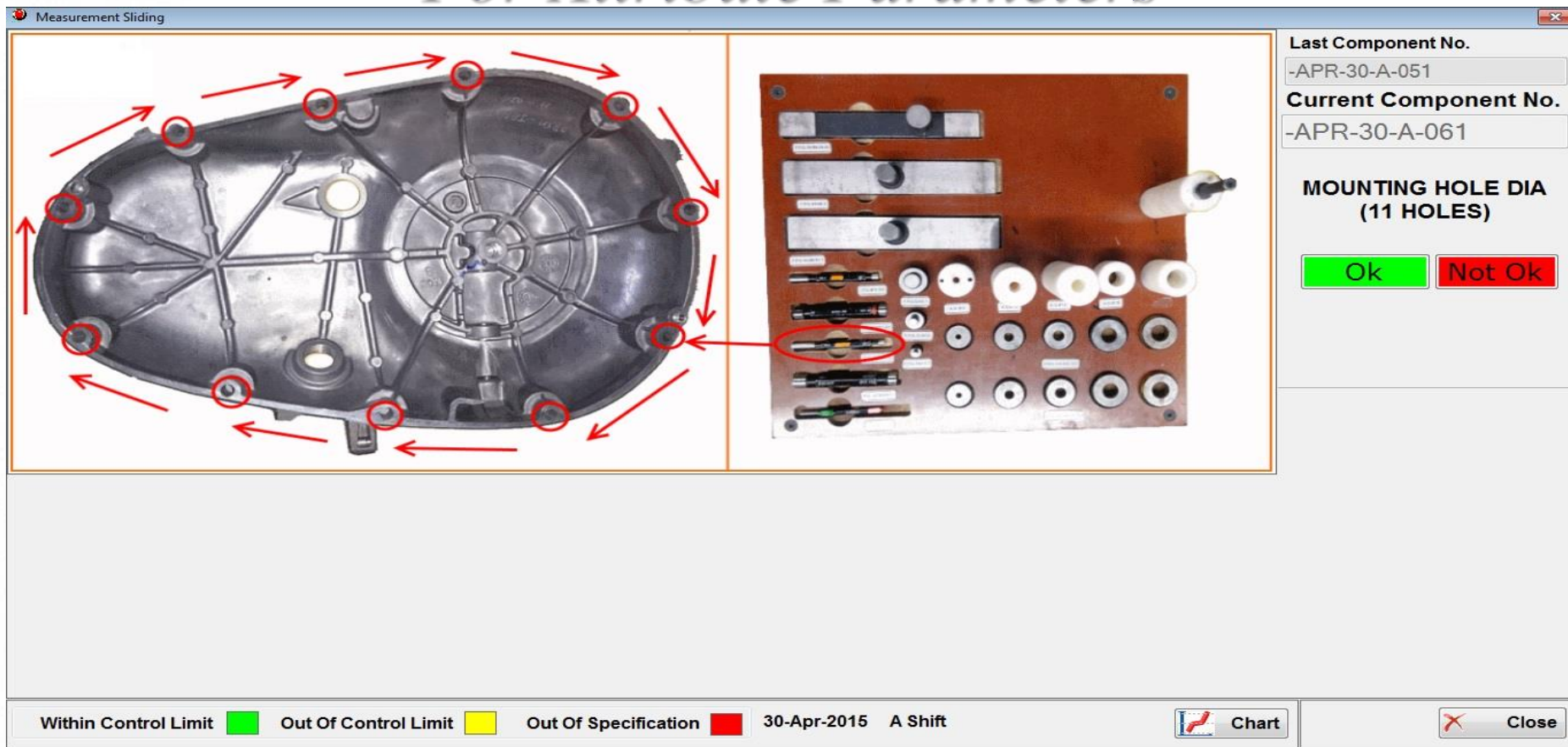
Pro-QMS

Improved Quality

Quality Process made Intuitive, Easy and Fail-Proof

For Attribute Parameters

Measurement Sliding



Last Component No.
-APR-30-A-051

Current Component No.
-APR-30-A-061

MOUNTING HOLE DIA (11 HOLES)

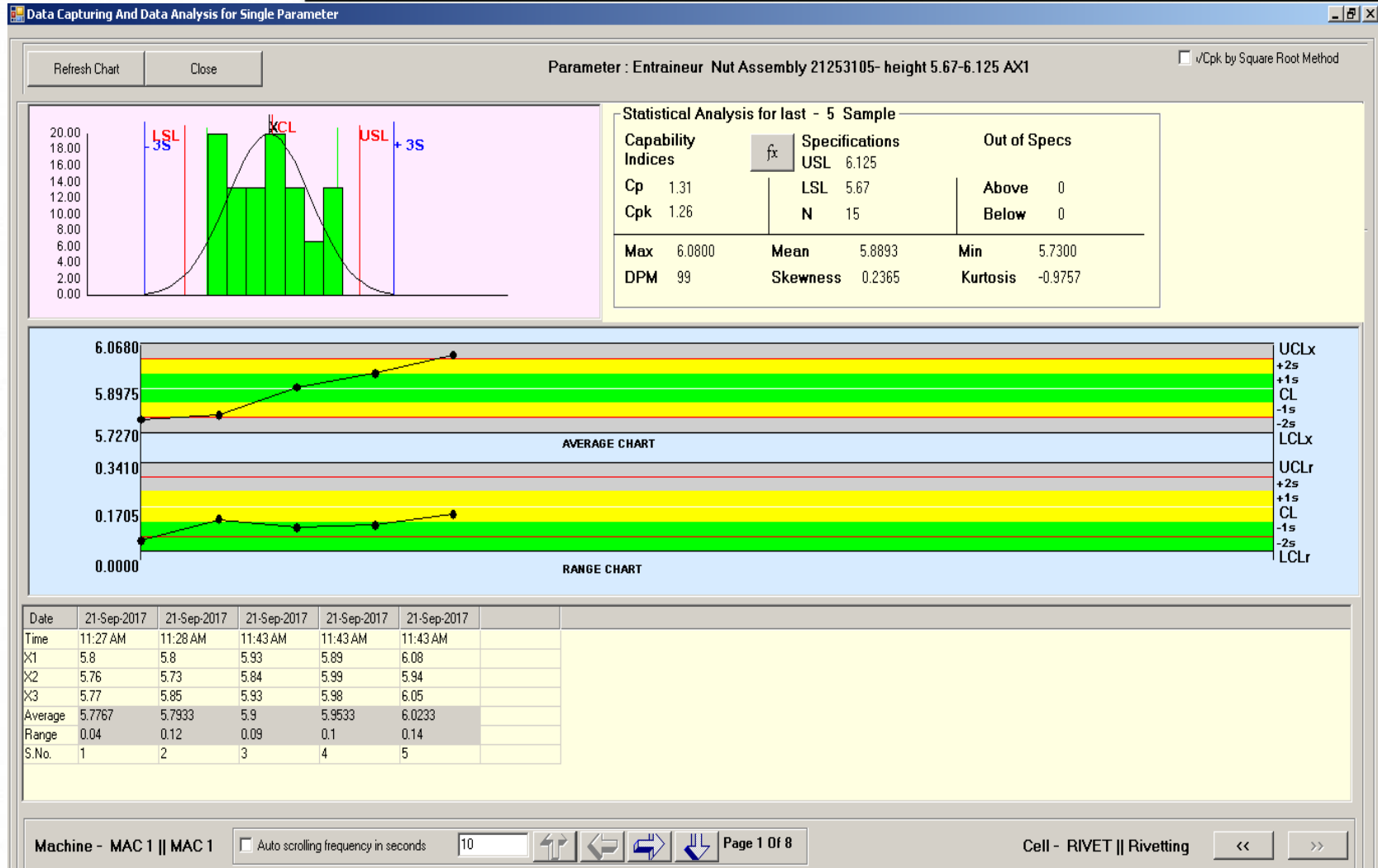
Ok **Not Ok**

Within Control Limit ■ Out Of Control Limit ■ Out Of Specification ■ 30-Apr-2015 A Shift Chart Close



Pro-QMS

Improved Quality





Pro-QMS

Web Dashboard view – Plant Level



Pro-QMS

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admin1 ▾

Plant

Hyderabad ▾

Location

ACB ▾


ProductLine

MainLine ▾

Subline

BML-1 ▾

Refresh

Station	Image	Cp	Cpk	Parts	Operation	Parameters		
CTWiring1 Torque		2.02	1.94	MVS 3 Part ▾	CT Wiring1 Torque ▾	CT Wiring Torque 4 NM ▾		
CTWiring2 Torque		3.58	2.96	MVS 3 Part ▾	CT Wiring2 Torque ▾	CT Wiring Torque 0.8NM ▾		
Mechanism Torque		4.29	2.38	MVS 3 Part ▾	Mechanical Torque ▾	Mechanism Torque 5NM ▾		
Bornier Torque		15.27	4.19	MVS 3 Part ▾	Bornier Torque ▾	Bornier Torque 15NM ▾		
MPole Torque		7.07	6.32	MVS 3 Part ▾	MPole Torque ▾	Mobile Pole Torque 7NM ▾		
Inferior Torque		7.71	7.31	MVS 3 Part ▾	Inferior Torque ▾	Inferior Torque 7NM ▾		



Pro-QMS

Salient Features of the system

- Ability to create comprehensive Quality Assurance Plan for all components & operations.
- Facility to create masters and configure the system.
- Online data acquisition from multi-gauging fixtures and digital measuring equipment, SCADA System, Files, Databases, CMM and so on.....
- Online instantaneous computation and display of Control Charts and Run Charts (XbarR, XbarS, XMR, X, Pre-Control, P, NP, U, C, etc.) as well as Histograms (including the test for normality) with calculation / display of Skew ness, Kurtosis, Cp, Cpk, Pp and Ppk values.
- Interpretation of Run Charts / Control Charts and feedback to the operator.
- Display of Control Charts of the critical operations on manager's stations for remote monitoring.
- Email/SMS Alerts for Non-Conformity.
- Online non-conformity management with respect to both disposal and corrective actions with causes.
- Measurement Systems Analysis (MSA) including GR & R, Linearity, Stability & Bias.
- Monitoring of gauges with respect to calibration, feedback on Instruments due for Calibration.
- Facility to print / email several reports like performance analysis by shift / machine / operator; corrective actions pending; cost of rejection; gauges due for calibration; etc.
- Facility to export measurement data, for the selected period, for a component, to MS Excel for root cause analysis.
- Scalable client / server architecture.
- Ability to provide data to the other ERP or any other Specific systems like Tableau.
- Facility for customization.



Thank You