Achieving Continuous Improvement
Golden Run operating conditions by Centerlining Solution
Statistical Process Control (SPC) Overview

Unified real-time asset and process monitoring solution
Performance Monitoring with UAS Capabilities

- Sentinel engine perform real time data collection, calculation and rules to detect various exception to fix problems early.
- Create performance baseline to estimate and compare in real time to enable continuous improvement.

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Centerline & Key Process Parameter – Control Chart

1. Select Asset
2. Select Control Chart
3. Select Product
4. Select Batch
5. Select KPP/Attribute

Centerline Plot:
- The trend is plotted between batch start/batch end
- Plot:
  - Upper Machine Limit, Upper Warning ML
  - Lower Machine Limit, Lower Warning ML
  - Target
  - Actual Value from Historian

KPP Control Chart:
- The trend is plotted between Batch start/Batch end/current time
- Chart:
  - UCL, LCL, Average, Warning UCL, Warning LCL (Limits are calculated based on sigma deviations using last n good batches on the fly)
  - Actual Value from Historian
Golden Run Compare
Event Detection & Notification

• Symptom / Fault Model
  - Rule logic for triggering event
  - Event Actions
    ▪ OPC A&E ‘Event’
    ▪ E-mail
    ▪ CMMS (SAP or Maximo) work request
    ▪ Mobility - Push Notification

  - Manage Events
  - Define Fault Severity
  - Define Recommended Action
  - Minimize Chatter
    ▪ ‘Contextualized’ – rule executes only when context is true i.e. Paper Machine running
    ▪ On-Delay & Off Delay

• Simple & Complex Rules
Dashboard Heatmap – value over warning limit
Quality Parameters ControlChart - Alarms

**Range Chart:**
- The trend is plotted between batch start/batch end.
- Chart:
  - Historical Range Average, Range Upper Limit
  - Range (difference between max and min of values entered for sample)

**Quality Value Chart:**
- The trend is plotted for all the Lots in Batch.
- Chart:
  - Lower Reject Limit, Lower Warning Limit
  - Historical Average
  - Upper Reject Limit, Upper Warning Limit
  - Actual Value from QO average of 3 or 6 values entered for samples
OptiVision Roadmap

OptiVision R542
- Master Data - Workflow Simplification
- Notification Management and Mobile alerts – Generic event based alerts
- Enhanced Warehouse & Logistics applications
- Trim feature improvements
- Standard SAP Interfaces – faster go-live
- Document Manager
- KPI and Dashboard adaptation

OptiVision Trim IQ:
- Trim Analytics powered optimization – intelligence to improve solution efficiency
- Simplified Workflow – fewer steps to efficient solution

OptiVision Tools Enhancements:
- HTML5 compliant application rendering - Web based, compatible to run on multi-format, multi-devices
- Secure User Menu & Printer (SOX Admin enhancements) - better reporting
- Infra upgrade – technology platform refreshed to be on latest Windows & SQL/Server

OptiVision Enterprise Analytics & Visualization:
- Enterprise level, KPIs – one version of truth across Enterprise
- Golden Run & Centerlining – Sentinel based Analytics & Visualization

Early Adopter Pilot - OptiVision Smart Production Operations:
- Mobility enabled Production Tracking applications – Improve operator productivity
- Analytics & Intelligence on application areas – insights for informed decision making
- Workflow Simplification - operator interferes only on exception based responses

Connected Enterprise OptiVision:
- Honeywell Sentience 2.0 powered OptiVision – Connected Lower Total Cost of Ownership
- Trusted Enterprise – Cyber security at Enterprise level
- Orchestrated Workflow Management – analytics & intelligence driven workflow
- Analytics & Intelligence at Enterprise level – Top-down driven decisions on base data
- Expanded Smart Production Operations – Enhanced Asset and Resource Productivity
- Strengthen Batch MES - P&S modules, S88 compliance & Batch specific features*
- Protect Core Business – Tools enhancements & CAB recommended features

* Exact release dates to be confirmed
* Content of any individual release may be changed
* Forward looking plans, not commitments
* Batch features might be advanced based on customer permits