Using Assessments to Improve System Availability

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Agenda

• Introduction
• Customer Needs
• What is it?
• Why do this
• The Assessments
• How is an audit performed
• The benefits
• Starting the process
“Our Customers have experienced an increased demand on resources and skills to support the modern automation infrastructure, in particular the Open Systems, which has distracted their key resources towards routine maintenance tasks, preventing them to focus on core value-added activities”.

Honeywell has created around **Integrated Automation Assessment (IAA)** a process together a set of tools and best practices to:

- Facilitate our Clients a detail knowledge of their actual automation infrastructure.

- Benchmark their Operational Safety and Performance against Industrial Best Practices.

- Plan of their Control System Lifecycle evolution to optimize its Total Cost of Ownership.

Allowing our Customers to run at their peak Reliability, Safety and Efficiency
Customer Needs

- Manage growing system complexity across multiple platforms
- Understand and adopt best-practices to achieve best-in-class
- Plan maintenance around longer turnaround cycles
- Understand & perform all system maintenance activities
- Ensure maximum system uptime
IAA is a 360 assessment of Honeywell control infrastructure to evaluate the system health, performance and supportability, as well as operational alarm and control benchmarking.

- Assess your control system set up and configuration
- Assess your control system performance
- Understand the risks and exposure
- Understand the missed opportunity

Understanding your system weakness will enable proactive support, resulting in much higher reliability.
Evolution towards Proactive Maintenance Model Based on Performance

Cost

Reliability

Preventative

Performance Centric

Proactive

Corrective

- Reactive, MTTR driven
- Linked to immediate qualified labor response
- Availability of spares P1 & P2
- 24/7 availability

Time Based

- Time based maintenance
- Hot fix updates
- Test protocols
- AV updates

Centered on Performance

- Audits
- On condition monitoring
- Performance indicators
- Loop diagnostics
- Valve diagnostics

Best Practices

- Benchmarking
- Lifecycle management
- Performance continual improvement
IAA Report Structure

- Executive Summary
  - High level Findings and Recommendations
- Detailed Section Analysis
  - Control System
    - Configuration Remarks
    - Performance Metrics
  - Lifecycle status & path forward
    - Unsupported products
    - Potential Upgrade Scenarios
  - Process Control Performance
    - Detailed Loop Identifications
    - Valve Diagnostics
  - Alarm Bench Mark
    - Alarm initiation rates
    - Identification of “worst actors”
    - Comparison to EEMUA requirements

CONFIGURATION
- FTE Network Installation and Configuration
- Security Updates & Antivirus Verification
- Controller Status
- Operating System Performance
- EPKS Client Server Configuration
- Verification of Graphics Performance
- Back Up and Recovery Assessment

Lifecycle Status

CONTROL LOOP PERFORMANCE
- 35% of Loops are Excellent
- 22% Loops are Acceptable
- 38% of Loops are Fair
- 3% of Loops are Poor
- 2% are Open Loops
Performance Analysis

- For TPS and EPKS
- Baseline Status
  - After upgrade
- Identify critical issues
  - Key observations
  - Recommendations
- Planning
  - Changes over time
IAA - Assess Your Control Performance

Loop Attainment

- **Control Performance**
  - Poor performing loop prioritization
  - Identification of control loop issues
  - Resolution plan generation

- **Alarm Performance**
  - Alarm initiation rates
  - Identification of “worst actors”
  - Comparison to legislative requirement
  - Layout of resolution plan
## Assessing Control Performance

### Detailed Status Of All The Loops With Each Unit, With Direct Identification Of Oscillation Interactions And Sticky Valves

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Alarm Performance

- EEMUA Benchmark Rank Shown
- Several Alarm Activity Benchmarks Displayed
How is the Audit Performed?

- **Data is collected non-invasively**
  - Collection performed by local Service team
  - Collected from files on the system, or data collected over time

- **Data is then transferred to Honeywell data server**
  - System performance metrics and benchmarking handled
  - System architecture compared to current support recommendations

- **Report is then presented back to site**
  - Hard copy of detailed report
  - Presentation and discussion over findings
Data Collectors

- Existing collectors are used on the system
  - Installed and preconfigured in most cases
  - Some installation needed on some sites
  - Evolution path to automated data collection
    - TPC & Experion systems

- Collectors run “behind the scenes”
  - Collect system information and diagnostics
  - Only loop performance collection requires configuration

- Encrypted files are downloaded onto removable media
IAA - Identified Areas for Attention

- Serious physical and cyber security risks
- Inadequate maintenance procedures
- Environmental maintenance risks
- Insufficient skills/training
- Poor graphic utilization
- Inappropriate spare parts
- Poor data backup procedures
- Outdated disaster recovery plan
- Missing documentation and procedures
- Inappropriate power feed and distribution
- Insufficient UPS capacity
- Obsolete (unsupported equipment in operation)
**The Benefits**

- Prioritized focus areas to help get started
- Improved system and plant reliability
- Increased production / yield
- Greater control of operating costs (fewer surprises)
- Reduced risk of fines

**Specific Examples**

- Oil refinery justified adding base skills freeing up key resources for process optimization
- Paper mill prioritized investment requirements needed for funding
- Chemical plant improved reliability and safety by correcting power and wiring issues
Get the right **knowledge and tools** to the right people to enable them to **improve their effectiveness** and make the right process, and . . .

... **execute that process with results!**