REVEAL YOUR BEST

CATCHING UP WITH EXPERION INNOVATIONS
June 2019
Americas HUG – Monday 4:45pm
Introduction

• Greg is the DCS Migration Centre of Excellence Leader, responsible for the team supporting migration planning and preparation, which drives migration success and ongoing improvement of DCS system migrations.

• Greg has been with Honeywell for 22 years in various roles as a Field Service Specialist, GTAC Engineer, GTAC Manager and now Migration CoE Leader and is based in Newcastle, Australia.
Setting the scene

• When staying on older Experion releases, we not only miss out on valuable new features and products, we expose the DCS to risks
• What are those new features and functions?
• What are those risks?
Catching up with Experion innovations – R400

• **Controller Release Independence** – allows the Experion Level 2 nodes to be migrated to the new release, while leaving the controller behind.
  – E.g. EPKS Server is R510, while controller is R432.
  – New controller functionality will not be available while using interoperability

• Available from R400
Catching up with Experion innovations – R400

• **Improved IO Firmware Support** - Experion R301.2 Series A and Series C I/O firmware will be supported for future Experion releases

• I/O firmware upgrades will not be required for migration

• Available from R400
Catching up with Experion innovations – R400

• **Profibus Gateway Module**

• Flexible
  – Profibus DP Master connect to many different PB slaves

• Robust and Reliable
  – High Availability with Redundant Modules
  – Robust Communication over FTE

• Reduces Total Installed Cost
  – Two DP Networks, reduced cost and footprint
  – Large I/O Buffer, Maximize DP topology
  – Standard Function Blocks and Displays

• Available from R400
Catching up with Experion innovations – R400

• Custom Algorithm Blocks in C300/ACE
  • Reduce Implementation Effort
    – Many Function Blocks → One CAB Block
    – Develop once, use everywhere
    – Development Environment same as CAB/ACE
    – CAB runtime is included in the base C300 license.
    – Only one CAB developer license and can develop CAB blocks for C300 and ACE across entire system.
  • Reduce Troubleshooting Time

• Available from R400
Catching up with Experion innovations – R410

• **Universal IO** - fit more IO per cabinet with compact package. In addition to supporting analog or digital, input or output on every channel, you have a dedicated HART modem on every channel for greatly improved performance as well as faster pulse input support.

• Easily Adapts to Changes
  – Mitigates delays due to late design inputs / changes at any stage in project

• Reduce Infrastructure Costs
  – Saves precious control room space

• Fewer spares
  – One UIO module vs. Four Standard Modules

• Available from R410
Catching up with Experion innovations – R410

• **Server Peer Responder** - Robust controller peer-to-peer communication with other subsystems (SCADA, TPN, remote Experion clusters) which removes need for OPC mailboxing
  – The capability saves a huge amount of time in configuration and trouble shooting, is a more direct path and hence more robust.

• Available from R410
Catching up with Experion innovations – R430

• **Experion Orion Console** - Design with large 4K monitors supporting flexible layouts based on human factors analysis of operator needs
  – Footprint matches existing consoles
  – Fully redundant power, screen, KB.
  – Reuse existing displays within SafeView

• Operators can do more
  – Effectively handle a greater scope of responsibility
  – Assess and respond faster to abnormal situations

• Available from R430
Catching up with Experion innovations – R43x

- **Direct Migration** – reduced migration hops and risk by supporting migration to destination point release.

- **Multihop migrations**

- **R431** – starting from a clean point release

- **R432 and newer** – any starting point
Catching up with Experion innovations – R431

- **C200 to C300 Migration** - Live upgrade process when your system has C200/C200E with PMIO.
- Series A and its strategies will be in Inactive state during the process.
- C200 to C300 Upgrade Tool can be used by Honeywell.
  - Server/Controller Readiness
  - CNET to FTE
  - C200 to C300 Transformation (and FIM2 to FIM4/8)
  - C200 to C300 Upgrade

- Available from R431
- Customer Session – Tuesday 10:30am
- Edward Bullerdiek, Marathon Petroleum Company
- Hot Cutover of FIM2’s to FIM4’s - a Success Story
Catching up with Experion innovations – R432

• **C300 Hardware V3** - C300 (CC-PCNT02) introduced to support more functionality executing in the C300 controller.

• Enables Profit Controller, Experion Batch Manager R500, Ethernet Interface Module.

• Supports redundancy with C300 (CC-PCNT02)

• Backwards compatible with earlier Experion releases

• Available from R432
Catching up with Experion innovations – R500

• Windows 10 and Server 2016
  – EPKS R500 (and later)
  – Addresses cyber security concerns over Windows 7 and Server 2008 R2 EOL in 1Q2020
  – Earliest Adoption = Longer Lifecycle
Catching up with Experion innovations – R500

• ControlEdge PLC - part of the ControlEdge family of controllers. Benefit from an easier configuration, efficient operations, and reduced maintenance

• Tight integration with Experion, Supports Universal IO, OPC UA

• High security with built-in firewall

• Available from R500
Catching up with Experion innovations – R500

• **ACE Rapid Restart** - allows ACE software and operating system security patches to be updated with almost no downtime allowing your profit making applications to stay on line

• Available from R500
Catching up with Experion innovations – R500

- **Experion Profit Controller** – runs within C300 or ACE platforms making it easier than ever to apply advanced control to even more processes.

- It’s the same powerful capability as you’ve always had with Profit Controller software, in an easier to manage, higher uptime environment. This means no more operating system patches, and of course the C300 can be fully redundant.

- Requires C300 (CC-PCNT02) Hardware

- Available from R500
Catching up with Experion innovations – R500

- **Ethernet Interface Module (EIM).** The Series C EIM IO module serves as a communication link between other Experion nodes and 3rd party devices which communicate over Ethernet via open protocols.

- Simple Integration with Wide Range Of Devices, Native Support for Ethernet/IP and IEC 61850 Networks

- Available from R500
Catching up with Experion innovations – R500

• **Backup Control Center for SCADA** effectively expands Experion’s highly robust server redundancy solution to quad-redundancy with server pairs backing each other up between remote locations.

• Virtualization-based disaster recovery solution specifically designed for the process control market
  – Enables industrial organizations to achieve faster, more reliable, and more affordable disaster recovery protection
  – Simplifies and automates the key elements of disaster recovery
    ▪ Setting up disaster recovery plans
    ▪ Testing disaster recovery plans
    ▪ Executing failover when a control center disaster occurs
    ▪ Failing back to the primary datacenter

• Available from R500
Catching up with Experion innovations – R500

• **EUCN On Process Migration; Enhanced Network Bridge (ENB)** support allows communication between coaxial-based UCN and FTE-based EUCN communication networks and enables OPM from HPM to EHPM with standalone firmware

• Available from EPKS R500.
Catching up with Experion innovations – R501

• **Experion Local Control Network (ELCN);** transition from classic Coax-based LCN to Ethernet based ELCN.
  - Experion R501.1, and TPN R687.1, ESVT, EST, EAPP, ACE-T, HM and ELCN Bridge. These are Windows Server 2016 (or Windows 10 for EST) Physical and/or Virtual. Physical ENIM (Redundant), and AM (Non-Redundant) in the Universal Embedded Appliances (UEA).
  - Experion R501.4/R511.1 and TPN R688.1, Redundant AM, EHB and EPLCG, Virtual Appliances for AM, ENIM, EHB and EPLCG

• **ELCN Sessions**
  - Training: Virtual Experion LCN Appliance Deployment – Tuesday 3:45pm
  - Integrate your production operations to Experion LCN with Enhanced Logic Manager Module on ControlEdge PLC – Wednesday 10:30am
  - Workshop: Optimizing Operational Design during Migrations Using Experion LCN, OpenVEP, and UniSim – Wednesday 3:45pm
  - Training: Fault Tolerant Ethernet (FTE) Network Best Practices for Experion and Experion LCN Virtual Deployments
Catching up with Experion innovations – R510

• **Unit Operations Controller (UOC, vUOC)**; a high value, low cost, rack-based process controller that can be applied to any process control application in any industry

• The UOC also provides a standalone, fully functioning class-based batch system without requiring a separate batch server

• UOC sessions
  – Upgrade your existing C200 controllers with Series A IO to ControlEdge UOC – Wed  11:30am
  – UOC and vUOC Configuration/Simulation – Wed 2:30pm
RISKS
Technical Support

- Honeywell HPS Product Support Policy defines what GTAC support and Software support we provide.
  - Current
    - eligible for all applicable support programs made available by HPS.
  - Supported
    - eligible for all applicable support programs made available by HPS, except 3rd party software
    - eligible for migration support to a Full Support Software Product.
  - Phased-Out
    - limited to restoration of serious LOV/LOC Incidents, not including Root Cause Analysis
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<th>Product Lifecycle Phase</th>
<th>Intended Support that may be available</th>
<th>Full</th>
<th>Legacy</th>
<th>Phased-Out</th>
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<td>Major Functional enhancements</td>
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<td>HPS-TS (GTAC) support</td>
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<td>PAR fixes -Critical</td>
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<td>Shipment - assembled units</td>
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<td>Shipment - parts</td>
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<td>Certified recycled parts</td>
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<td>Kits and Enhancements for upgrades</td>
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<td>Applicable for migration of predecessor products</td>
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<td>Parts repair/return services</td>
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Migration Effort

- Experion Migration supports N-3 Releases
  - EPKS R51x supports single hop migration from R41x (and newer)
  - EPKS R40x (and older) must perform a multi-hop migration
    - E.g. R400 → R501 → R511
  - EPKS R501 additional support for N-4 R31x

- Staying on older releases increases migration effort
Which release do I migrate to?

Customer Migration Destinations

Source: Arial Narrow 10 point
How to migrate?

• **Training**

• **Experience**
  – Have you done a migration before?
  – Honeywell have hundreds of trained and certified employees with multiple migration experiences. Taking lessons learned from other systems and applying them to yours

• **Come and speak to us in the Demo Room at our stand.**
  – Migration Automation Planning and Sharing of Best Practices, Owen Sillett – Tuesday 2:30pm