Honeywell's Enhanced Network Bridge (ENB) provides possibilities for an incremental, non-disruptive approach to modernize the coaxial Universal Control Network (UCN) devices to the unified Fault Tolerant Ethernet (FTE) based control environment between Total Plant Network (TPN) and Experion® Process Knowledge System (PKS).

Today's competitive global marketplace and raw materials price development have refocused plant investment priorities on profitability improvement by continued production revenue streams. The performance, availability and supportability of the control system can have a significant impact on the net operating profit of the plant. New technology provides opportunities for operational effectiveness improvements and addresses the sustainability for long-term production. Transitioning to this technology needs to be executed at the lowest total cost of ownership with minimal production losses.

Commitment to continuous evolution
For more than 40 years, Honeywell has stood behind customer investments in its plant automation technology. Our commitment to continuous technology evolution enables industrial operations to modernize their legacy control assets step-by-step, to a new, modern automation system while at the same time retaining capital investments and protecting valuable intellectual property.

Honeywell’s modernization roadmap incorporates full flexibility in lifecycle planning, including long-term support of existing equipment and upgrades for plant performance improvements.

Unified Control Environment
The unified control environment between Total Plant Network (TPN) system and Experion Process Knowledge System (PKS) system provides a sustainable FTE-based control infrastructure, integrating the latest Honeywell control and safety equipment on a common physical hardware network.

With the unified control environment, control-level devices are connected to common hardware infrastructure using FTE technology. Controllers can then be integrated into this common hardware infrastructure utilizing Universal Control Network (UCN) protocol for the TPN control network, and/or the Control Data Access (CDA) protocol for the Experion control network.

This unified control environment:
- reduces the dependency on ageing workforce knowledge
- simplifies the maintenance of the control system, and
- addresses the long-term process operations.

For Honeywell users, the unified control environment provides a logical path for migration of legacy Data Hiway and UCN installations to Experion PKS at minimal investment cost, process disruption and changes to intellectual property.

Modernization of the control infrastructure to FTE technology requires a one-time modernization of coax-based control networks during the plant turnaround.

Enhanced Network Bridge
Honeywell’s new Enhanced Network Bridge (ENB) allows incremental modernization of the coax-based control devices to the FTE technology.

The ENB is specifically designed to temporarily enable dual citizenship on both coax and FTE control network during the modernization of coax-based devices to FTE. The ENB is available as an upgrade kit of the Network Interface Module (NIM) that provides support of the hybrid coax/FTE based Universal Control Network (UCN).

The ENB supports all functions of the NIM with additional capabilities to enable communications between coax- and FTE-based devices on the same logical UCN network.

Figure 1. Honeywell Enhanced Network Bridge (ENB) transitions controller’s modernization to a simple task
After modernization of the coax-based control and safety devices to the FTE network, the ENB must be transitioned to the Enhanced Network Interface Module (ENIM) that operates solely with the FTE control network infrastructure.

Innovative approach to simplify modernization of legacy control devices
The ENB together with the migration solutions for UCN connected devices, provides the simplest non-disruptive approach for legacy controller’s modernization to the latest technology. It carries the lowest total cost of ownership transition via:

- Retention of system integrity and peer-to-peer communication between coax and FTE devices during modernization.
- Flexibility for modernization on stand-alone TPN systems or Hybrid TPN/EPKS systems.
- On-process NIM to ENB upgrade and setup of the hybrid coax/FTE UCN network
- On-process High-performance Process Manager (HPM) to Enhanced High-performance Process Manager (EHPM) with no changes in configurations, displays or applications
- On-process transitioning of ENB to ENIM after completion of control devices modernization.
- Modernization of Fail Safe Controller (FSC) to Safety Manager with no changes in field wiring, footprint, displays and safety applications
- Migration of the Logic Manager (LM) to the C300 controller and Enhanced Logic Manager Module (ELMM) with retention of peer-to-peer communication, control applications and displays
- Modernization of (Advanced) Process Managers – (A)PM's to EHPMs retaining displays and applications

After the modernization, the control system can have a common Human-Machine Interface (HMI) and unified physical control network, allowing control devices to easily integrate / expand with the latest generation of Experion PKS controllers and safety systems. The advanced control solutions and the new functions within Experion PKS controllers can additionally improve the effectiveness of plant operations.

Benefits to Honeywell customers
By implementing the controller’s modernization using controllers migration solutions applying ENB, Honeywell customers can:

- Effectively expand sustainability of process operations up to 2035.
- Gain independence from ageing workforce knowledge with minimal training requirements.
- Reduce modernization cost impact for controller upgrades by more than 50%

The simplicity of controller modernization also:

- Eliminates production downtime caused by the on-process control network and HPM controller modernization to EHPM.
- Transitions the significant turnaround controller modernization task to a routine task with possibility of incremental (one-by-one) control devices modernization between the turnarounds
- Minimizes engineering effort as configuration, data settings, custom applications and displays remain unchanged

Expert support around the world
Honeywell is committed to lifecycle support and helping customers meet their business needs for automation planning. Our high-value service and support capabilities have more global reach and presence than any other supplier.

With Honeywell’s approach, linearity of capital investments, together with efficiency improvements is fully supportable using an incremental modernization and upgrade approach. Currently, more than 8,000 Honeywell technicians use collective expertise to work for customers in 67 countries. Our support teams are driven to the highest standards developed by Global Migration Centre of Excellence to meet customer requirements for ease of use, effective maintenance and optimal use of customer’s engineering effort. Honeywell also provides world-class customer support via our Global Technical Assistance Center (TAC).

For More Information
Learn more about how Honeywell’s EHPM solution can help you migrate to the latest control technology, visit our website www.honeywellprocess.com or contact your Honeywell account manager.

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