Honeywell’s High-performance Process Manager (HPM) is the most popular process controller, operational in the process industries since 1996. The upgrade of the HPM to the Enhanced High-performance Process Manager (EHPM) can now be done on-process, and is now as easy as redundant controller parts failure replacement. The TRUE on-process migration will modernize your HPM controllers to the latest technology during plant operation.

Challenges in Industrial automation market
Today’s competitive market requirements have refocused plant investment priorities on maintaining profitability by improving efficiency and reducing costs. Ageing control systems technology introduces risks impacting plant operation and net operating profits. This is due to reduced availability and increased costs of replacement parts & knowledgeable resources. Modernizing the “heart” of the control system – process controllers – is a major undertaking requiring significant engineering effort, CAPEX investment and process downtime. In situations where process constraints do not allow for a production stop, complex procedures are developed for a loop-by-loop changeover during the migration of the old controller to the new one.
Can a controller migration become a simple activity performed during plant operation? Yes, because Honeywell now offers TRUE On-Process Migration of the HPM to EHPM eliminating the need to shut the process down, while minimizing the re-engineering effort as compared to a rip and replace approach.

Planning for automation investments
Medium and long term automation investment evaluations traditionally consider three possible options related to control system:

1. Continue operation with the ageing controllers with risk of obsolescence (people and materials) and increased OPEX investments caused by increase of equipment failures and cost of replacement parts or skilled labor
2. Full replacement of the controllers with new ones requiring significant CAPEX investments, engineering, testing etc. plus production loss due to process shutdown
3. Controller modernization to extend the operational life of the controllers and process operation with potential risk of production downtime during the migration.

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.

The new Honeywell solution for continuous evolution
The new TRUE On-Process Migration of redundant HPM to EHPM controllers addresses the lowest risk approach for migration of process controllers with no control engineering effort for migration and no process downtime. Automation investments for migration can be done in an incremental manner by a step-wise migration approach of the devices on the control network.

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 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 (Fault Tolerant Ethernet) technology. This unified control environment:

- provides significant increase of the longevity of operation of the control system,
- reduces the dependency on ageing workforce knowledge and technology materials,
- enables additional operational benefits applying integration with newest process controllers and features.
The HPM to EHPM TRUE On-Process Migration Approach
The industry’s first TRUE On-Process Migration for HPM controllers to EHPM controllers has been developed in response to the increased economic needs to improve profitability from continued revenue streams at reduced operational investment cost.

The on process migration:
- retains full uninterrupted plant operation during controllers migration,
- retains 100% of Intellectual property (IP) in control, operation, applications, displays,
- eliminates the need for loop-by-loop changeover steps during controllers’ migration,
- makes the migration as simple as replacing a failed component in redundant controller,
- and with proper preparation, reduces the controller migration time to less than hour.

The Innovative approach to simplify HPM to EHPM migration
The TRUE on-process HPM to EHPM migration is supported by a temporary hybrid coax/FTE Universal Control Network (UCN).

STEP 1: On-process creation of a Hybrid UCN
Honeywell’s new Enhanced Network Bridge (ENB) is specifically designed to temporarily enable dual citizenship on both coax and FTE control network during the upgrade of the coax-based devices to FTE (Figure 1). The ENB is available as an upgrade kit of the Network Interface Module (NIM) that provides support of the hybrid coax/FTE based 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.

STEP 2: TRUE On-Process Migration of HPM to EHPM
The TRUE on-process redundant HPM to EHPM migration is executed by applying configuration checkpoints of the control system in the following sequence:
1. Upgrade secondary NIM electronics to ENB, connect FTE cables, and start-up using checkpoint
2. Switch over NIM to ENB
3. Upgrade remaining NIM electronics to ENB, connect FTE cables, and start-up using checkpoint
4. Hybrid network operational in full ENB redundant configuration

STEP 3: On-process transition of the hybrid UCN to the FTE based Unified Control Environment
With the migration of the last coax-based devices to the FTE network, the hybrid UCN must be transitioned to the FTE based Unified Control environment.

The creation of the hybrid UCN infrastructure with redundant NIM, can be done on-process applying configuration checkpoints of the control system in the following sequence:
1. Upgrade secondary NIM electronics to ENB, connect FTE cables, and start-up using checkpoint
2. Switch over NIM to ENB
3. Upgrade remaining NIM electronics to ENB, connect FTE cables, and start-up using checkpoint
4. Hybrid network operational in full ENB redundant configuration
checkpoint in the following sequence:

1. Remove secondary ENB electronics related to coax infrastructure, disconnect coax cables, and restart using checkpoint. Secondary becomes ENIM
2. Switch over ENB to ENIM
3. Remove remaining ENB electronics related to coax infrastructure, disconnect coax cables, and restart using checkpoint
4. ENIM operational in full redundant configuration on the Unified Control Environment

Minimum software requirements for on-process migration
The ENB requires the TPN system to be upgraded to release R686.1 or higher. Hybrid TPN/EPKS systems with ENB additionally require minimum EPKS software release R432.1 (released).

Benefits to Honeywell customers
By implementing the TRUE on-process NIM to ENB and HPM to EHPM migration, Honeywell customers can:

- Eliminate risks for HPM controllers migration by transitioning the significant turnaround controller modernization task to a routine task with possibility of incremental (one-by-one) control devices modernization between the turnarounds
- Ensuring crucial system life extensions with minimal investment effort where configuration, data settings, custom applications and displays remain unchanged
- The unit turnover schedules become less critical for modernization due to on-process migration possibilities.
- It also helps avoid costly rip and replace migrations, which can be more expensive and less secure than phased modernization techniques

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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