

# TotalPlant™ Solution Modernization: Experion® Local Control Network

## Solution Note

**With Honeywell's commitment to continuous technology evolution, plants can take what was once a legacy system and gradually, in a step-by-step fashion, move it forward to become part of a new, modern system while at the same time protecting existing asset investments.**

### Introduction

Honeywell continues to enable customers to take advantage of state of the art control system technology while protecting their intellectual property investment.

Honeywell's on process incremental upgrade to Experion LCN modernizes the control system infrastructure and enables the Industrial Internet of Things (IIoT by Honeywell). Existing control strategy, field terminations, applications, history and graphics can be retained allowing users to focus on high value improvements.

This strategy maintains safe and reliable controls while modernizing and evolving with the most advanced technologies. It keeps established, reliable systems running longer, extends uptime, and preserves investments in hardware and network infrastructure.

### Challenges

In an uncertain global economy, every manufacturer is under growing pressure to reduce costs while improving performance.

Plants running the TotalPlant™ Solution (TPS) system need to avoid obsolescence by employing modern technology. TPS introduced in 1998, helped establish open plant automation with a host of advanced applications. However, its users are now dealing with compliance issues related to new safety regulations, as well as increasing system support challenges.



*The convergence of people, parts and planning issues has created a perfect storm threatening potential disruptions in the industrial sector.*

The Perfect Storm, looming on the horizon for many customers, can be summarized into five main areas relating to age of the workforce, age of the technology, economic conditions, maintenance costs, and risk associated with change.

Perfect Storm	Perfect Solution
Aging Workforce	Train and enable next generation of employees on latest technologies to solve new challenges instead of re-writing legacy code
Missed Profit Opportunities due to aging technology (cost of doing nothing)	Leverage Experion and Advanced Software technologies (DynAMo) that are IIoT by Honeywell-ready and address Cybersecurity
Economic Conditions	Enable access to OPEX or CAPEX options (Hardware refresh, Assurance 360)
Cost to Maintain and Acquire Hardware	Modernize hardware, while retaining Intellectual Property (Experion LCN)
Risk of Change	Retain Intellectual Property

Figure 1. This table presents a quick overview of the challenges, along with appropriate solutions.



An aging and rapidly retiring skills base and the ever increasing pace of technology development compound the challenges of legacy systems.

Honeywell offers solutions to address each of these areas, encapsulated in TotalPlant Solution Modernization. The introduction of Experion LCN is a key product to facilitate that modernization.

### How Experion LCN Works

Expanding on the Enhanced TPS Node capabilities, the Experion LCN (ELCN) further enables continuous innovation for Honeywell customers. Using our proven Experion Fault Tolerant Ethernet (FTE) infrastructure, a new ELCN bridge connects Experion to Classic Coax LCN. Once this connection is established, the LCN coax connection can be removed one LCN node at a time. Instead of a hardware connection for every Experion TPS node, only one redundant ELCN bridge pair is needed to enable virtualization.

### Benefits to Industrial Sites

Industrial operations concerned with transforming their legacy control system can realize numerous operational and business benefits from TPS modernization. This transformation can improve business results, enable expansions, and improve sustainability, while protecting existing infrastructure, production and intellectual property in terms of both applications and graphics.

Honeywell’s secure path to current technology offers seamless integration with

architecture, with standards-based functionality, regulatory support capabilities, and integrated operation from the field, through the plant, to the business level.

Honeywell’s TPS modernization solution minimizes operating disruptions and maintains overall consistency, as well as delivering optional lifecycle advantages with virtualization. Honeywell is committed to helping you sustain your automation platform, and at the same time, take advantage of the most up-to-date technologies.

After modernization, the control system can have a common Human Machine Interface (HMI) and unified physical control network, allowing control devices to integrate/expand easily 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.

Modernization also opens the door to Honeywell’s IIoT, an approach that connects people to assets, automates predictive analytics, and enables increased collaboration.



Industrial Internet of Things (IIoT) by Honeywell enables digital transformation by connecting people, assets, and processes.

## Migration Planning

Success with modernization depends on developing a multi-year migration plan that can include support at every stage of the automation lifecycle. Service programs can include Assurance 360, Solution Enhancement Support Program (SESP), Kits & Enhancements, Hardware Refresh, and Lifecycle Management.

For instance, Assurance 360 transforms how you manage and maintain systems. Honeywell

the Experion PKS systems. Honeywell provides agreed service levels rather than prescribed quantities of materials and labor. Users take a strategic view to minimize the total cost of ownership, guarantees performance, and utilizes the automation system to improve business results.

Honeywell offers flexible solutions you can live with and grow with when you develop a modernization plan tailored to your unique site requirements. Without the need to “rip and replace” existing control systems, Honeywell modernization protects your intellectual property, retains physical assets, and leverages the value of your technology investments.

The ELCN bridge and appliance nodes use

the universal embedded appliance with these specifications:

MECHANICAL SPECIFICATIONS	
Overall dimensions	16.02 X 19.0 X 1.719 inch
Approximate weight	7.5 In Kg
COMMUNICATION CABLE INTERFACE	
FTE Cable A & B	SCTP Type
Down-link Ethernet Cable	Ethernet cable (802.3)
Redundancy Cross cable	SCTP Type (ANSI/TIA/EIA-568-B.1-2001, ET SEQ)
ELECTRICAL SPECIFICATION	

ENVIRONMENTAL SPECIFICATIONS		
ITEM	SPECIFICATION	
Mounting	19 inches Shelf	
Operating Temperature	Operating Temperature (Cabinet- External)	0~50 °C
	Operating Temperature (Cabinet- Internal)	0~70 °C
	Operational Transient (0.25C/Min. for 1hr. Max)	15 °C
Storage/Shipment Temperature	-35~70 °C	
Humidity(R-H) (All classes)	5-95%	
	Max Wet Bulb	32
Altitude (Feet) (All Classes)	Operating – Maximum	7500 ft
	Shipping/Storage Maximum	45000 ft
Dust (All Chasses)	Filters are effective down to	10 Microns

Input AC Voltage Requirement	90~264VAC @47~63Hz					
AC Power for Redundant TCMI pair	Up to 100W @ 80% efficiency					
Operating Vibration (Sinusoidal)		Equipment mounted/set on the floor			Equipment mounted/set other than on the floor	
	(5-20Hz)	0.3mm/.012in			0.7mm/0.28in	
	(20-150Hz)	0.25g			0.5g	
	All three axes, 60 minutes each axis, 5 minutes/range (Six sweeps: 5-150-5) (20 Hz is approximate, extract crossover frequency is determined by the intersection of displacement and acceleration.)					
Shipping Vibration (Random)	(10-500Hz)	See curves All three axes, 60minutes each axis, random spectrum				
Shock	Site Induced	4g @25ms	4g @25ms			
	Shipping/Storage	0-10kg	10-20kg	20-30kg	30-50kg	>50kg
	Not packaged for shipping Least of rotational drop height from intended installed orientation of 45 degrees about all edges	100mm	100mm	100mm	100mm	100mm
	Packaged for shipping Vertical drop height	900mm	750mm	600mm	450mm	200mm

### For More Information

To learn more about Honeywell's TotalPlant Solution Modernization and how Experion LCN can help to reduce risk while implementing new technology, visit our website [www.honeywellprocess.com](http://www.honeywellprocess.com) or contact your Honeywell account manager.

Experion® is a registered trademark and TotalPlant™ is a trademark of Honeywell International Inc. All other trademarks are the property of their respective owners.

### Honeywell Process Solutions

1250 West Sam Houston Parkway South  
Houston, TX 77042

Honeywell House, Arlington Business Park  
Bracknell, Berkshire, England RG12 1EB UK

Shanghai City Centre, 100 Zunyi Road  
Shanghai, China 200051

[www.honeywellprocess.com](http://www.honeywellprocess.com)

SO-16-15-ENG  
June 2016  
© 2016 Honeywell International Inc.

**Honeywell**