Synopsis

• Two BioMCN Methanol plants upgraded to Honeywell’s Experion® Local Control Network (ELCN) technology in July 2018
• ELCN enabled BioMCN to virtualize Experion TPS Servers and Stations, and optimize the total cost of ownership when conducting a hardware refresh
• One BioMCN plant had been shut down for 10+ years, and the other was undergoing maintenance
• Experion LCN scope was for both Methanol facilities
• This presentation will describe the benefits and experiences derived from a migration that included Experion LCN
About Bio Methanol Chemie Nederland (BioMCN) Farsum

• Headquartered in The Netherlands, BioMCN part of OCI is one of Europe’s largest producers of bio-methanol, a second-generation biofuel

• BioMCN is committed to making a substantial contribution to the development and use of better biofuels
  - First company in the world to start commercial production of bio-methanol on a large industrial scale
  - Converts crude glycerine – a by-product of biodiesel – into Methanol
  - Methanol production maintains energy value for transportation fuels, thus improving the potential for CO₂ emission reductions even further
About BioMCN Operations

• BioMCN has been operating at the chemical cluster Delfzijl, The Netherlands, for more than 10 years
  - Owns two Methanol plants: M1 and M2
  - M1 is capable of producing 440 thousand metric tons per year, and is Europe’s fourth largest plant
  - M2 is a mothballed plant capable of producing 430 thousand metric tons per year
  - Multi-million € investment will refurbish second methanol production line
About Methanol Production

• BioMCN produces two types of Methanol: bio-methanol and regular (also known as grey) Methanol
  - Developed the procedure for producing Glycerine based methanol but this is not a green feedstock we use at the moment.
  - The green component at the moment is Bio-Natural gas and Bio-CO2 injection.
  - Constantly investigating possibilities for more Bio-usage and aim for improving our Carbon footprint.
Plant History

- BioMCN has been able to retain its intellectual property investments during more than 30 years of plant operation
  - 1980s: Installed Honeywell TDC 3000 DCS
  - 2000s: M2 Methanol plant mothballed
  - 2018: Upgrade to modern Honeywell Experion control technology undertaken
  - 2018: M2 Methanol production line to be restarted
Reasons for Migration

- OCI purchased BioMCN’s plant assets and sought to expand Methanol production
- Market demand created the need to increase capacity and optimize plant operations
  - Minimize cost to restart production on M2 plant shutdown over a decade ago
  - Update cyber security and refurbished original control room using new desktop and IKB
  - Upgrade to Fault Tolerant Ethernet (FTE) infrastructure to prepare for future growth
  - Set-up M1-M2 plants to run with same operators
  - Remove Classic LCN coax
Project Team Challenges

- BioMCN needed start up Methanol production one and a half months earlier than expected, with only two weeks notice
  - Experion LCN introduced in late February
  - Local resources trained in early July
  - Start-up plant within two weeks of training
  - Configure and stage Virtualization architecture at Honeywell Amsterdam facility
  - Leverage local Honeywell TPS and Experion field expertise for ELCN configuration
  - Remove Classic LCN coax and install FTE infrastructure
What is Experion LCN?

- Honeywell’s ELCN solution offers a secure and cost-effective approach for modernization to FTE technology and integration with Experion PKS
  - Moves legacy control platform forward to become part of a new, modern system while leveraging existing assets
  - Offers standards-based functionality, regulatory support capabilities, and integrated operations
  - Maintains overall control system consistency
  - Delivers lifecycle advantages with Virtualization technology
  - Extends lifespan of the TPS/TDC environment by applying FTE
  - Unifies TPS and Experion
What ELCN Offers

• ELCN modernizes the Classic LCN infrastructure without impacting the customer’s configuration
  - Modernize without disturbing operations
  - Phased node-by-node upgrade
  - Move display and history request traffic to FTE
  - Retain graphics, controllers and I/O
Best Practices and Prerequisites

- To take advantage of the ELCN solution, it is important to address prerequisites
- All TPN Nodes MUST be minimum TPN687 prior to start of upgrade
- Experion R501 and above requires Server 2016/Windows 10
- Check LCN load prior to upgrade
- Use FTE best practices guidelines
- Use Virtualization best practice guidelines
Conclusion

• Honeywell’s ELCN solution enabled BioMCN to economically increase its Methanol plant capacity
  - All graphics, control strategies, controllers, I/O processors and wiring were untouched
  - ELCN modernization using Virtualization will allow modernization of graphics in the next phase
  - Corporate DCS standard for new owner was a different vendor, but ELCN clearly was the right choice
Conclusion (Cont’d)

• When planning a control system migration with ELCN, there are a few things you should do to ensure your project is successful and add additional value to the overall effort
  - Have reasonable expectations for the migration solution
  - Detailed Migration Plan with both site and Honeywell participation
  - Don’t skip prep work if you want a painless project
  - Plan for possible intermediate steps in the upgrade process
Thank You