

## Customers Discuss Successful System Migration Projects at 2015 Emerson Exchange

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### Keywords

Migration, Emerson, DeltaV, DCS, CHARMs, FlexConnect

### Summary

During the 2015 Emerson Exchange Americas in Denver, Colorado, ARC Advisory Group had the opportunity to discuss Emerson Process Management's current competitive system migration strategy with a number of the company's clients and the different approaches used to migrate from legacy systems to the company's current DeltaV offering.

Emerson Process Management offers several different approaches to migration that allow the end user flexibility to modernize various aspects of their legacy process automation system gradually over time or all at once, depending on their requirements.

Emerson Process Management has put a lot of effort into developing effective migration solutions for competitor systems as well as its own legacy systems. The Emerson Exchange Americas is one of the best places to see customer case studies as well as the latest Emerson product, application, and service offerings for migration. Today, every

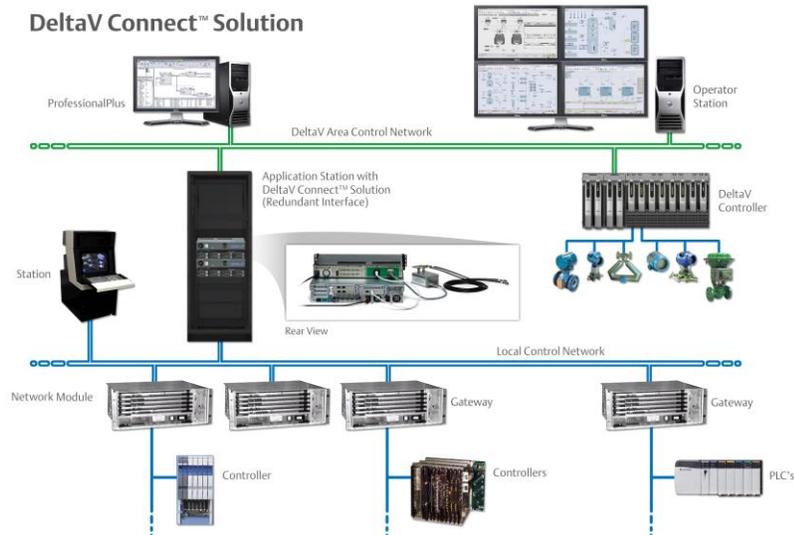
major process automation supplier offers migration solutions that can help ease the transition from competitors' legacy systems. Emerson has been steadily developing its solutions over the past decade.

The company offers several different approaches to migration that allow the end user flexibility to modernize various aspects of their legacy process automation system either gradually over time or all at once, depending on their requirements. ARC refers to these approaches as "phased" versus "wholesale" migration. These solutions include standard hardware such as the new [DeltaV CHARMs I/O](#) and FlexConnect Solutions. ARC spoke with several end users about their respective approaches for migrating from very old legacy systems to the Emerson DeltaV process automation system.



## Multiple Solutions for Maximum Flexibility

Down one of the center aisles in the large Emerson Exchange demonstration area, ARC found a large array of end user [solutions for migrating](#) older systems to the latest DeltaV platform.



### DeltaV Connect Solution for Legacy Systems

From discussions with Emerson clients, we learned that several possible migration paths are available. To support wholesale “rip and replace” migrations, the company has services to manage and engineer the entire project including translating the intellectual property to the new system. Other options also permit end users to employ a phased approach to migration. These options include [DeltaV Connect](#), which provides a data communication direct-connection (similar to OPC) with the legacy system. As we learned during our discussion with Valero Energy Ltd., and Clearwater Paper, this offers advantages over wholesale migration. Customers told ARC this approach allowed the operators to become familiar with the DeltaV system, but still control the process through the legacy hardware. Plant personnel could then work to migrate portions of the legacy system to the new DeltaV system hardware more opportunistically, saving money and reducing risk.

Emerson also offers a solution it calls [FlexConnect Solutions](#). This solution allows end users to leave the field wiring in place and connect the DeltaV system hardware to the termination panels of the legacy system using special cables. Many of these terminal panels lack active components so their failure rate is quite low. As we learned during our discussion with Cytec Industries, this offers the benefit of eliminating the cost and risk associated with lifting wires.

## Emerson Employs Combination of Migration Solutions at Valero Energy Limited

ARC spoke with Valero Energy Ltd. in Pembroke, UK about the plant's migration experience from its Honeywell control system originally installed in the 1980s. Although the site had migrated to a more modern system in the '90s, about 70 percent of the plant was still being controlled by 1980s-era controllers when Valero acquired the site in 2011. When Valero reorganized the plant, it transferred responsibility for the DCS from Maintenance to Engineering. At that point, the team began to pursue migration funding and investigate options.

According to Valero, the system was becoming very expensive to maintain and the architecture no longer met the needs of the site. In addition to the recent management change at the site, additional complications included Operations' desire to avoid migration projects during major turnarounds and a shortage of space in the rack rooms. These are typical problems for end users facing migration projects. It can be very difficult to work something as considerable as a migration project into a regularly scheduled turnaround, and most users are very tight on space.



**CHARMs I/O  
Mounted on  
"Extended"  
Cabinet Door**

### Hot Cutover

With input from the new owners, the site began evaluating options from multiple vendors. The site formulated ranking criteria to evaluate the solutions and chose the Emerson DeltaV process automation system. Interestingly, project cost was not considered in the evaluation.

Emerson executed the project using an "extended" cabinet door configuration that accommodates the new DeltaV system hardware and terminal blocks. This allowed the existing field wiring to be moved to the new CHARMs I/O quickly. The DeltaV Connect solution was also used to communicate directly with the existing network. Most of the project was executed in a hot cutover fashion with no interruption to the process, although a handful of loops were migrated during a turnaround.

The DeltaV Connect solution allowed Valero to operate the unit through the DeltaV operator consoles while still using the old control hardware. Because space was at a premium, a pre-fabricated solution of CHARMs I/O was mounted to the doors of the existing cabinets and the field wiring was moved over. The project was completed on schedule and without incident.

When Emerson first introduced CHARMS, ARC remarked that the small footprint of the technology would make a good solution for migration projects, even though the initial focus of CHARMS was on new projects.

Most of the project was executed in a hot cutover fashion with no interruption to the process.

Space is always at a premium during modernization projects and CHARMS can accommodate late-stage changes in both modernization and migration projects.

## Conclusions

Most end users ARC speak with list migration as one of the key issues they face today. Many legacy systems have reached a point where it is no longer cost-effective to continue to operate using older process control systems. Based on user-shared experiences, ARC believes that Emerson Process Management has developed solid approaches to migration for legacy systems that allows for a step-by-step transition to its DeltaV system and PlantWeb architecture. The solutions, like DeltaV Connect and FlexConnect help address the user sensitivities to downtime, cost, and operator acceptance. Emerson's full set of consulting services can also be deployed at any point in the process to help users with the transition.

A phased, flexible approach to migration is a necessary ingredient for success for any process automation supplier. Emerson's ability to address this provides the company with the flexibility to replace only those assets that make sense, while providing the end user with the advanced functionality required from a modern system. The solutions show a solid grasp of customer concerns with migration. To accomplish this, Emerson supports multiple paths to migration. End users can assess the solution or combination of solutions that best addresses their needs.

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