# Emerson's Charms Automation Technology Logs 1 Billion Operating Hours At More Than 300 Customer Sites

## Proven digital automation technology modernises and streamlines 35 years of automation practices

Widely adopted by oil and gas, refining, and chemical industry customers, Emerson Process Management's next-generation DeltaV™ digital automation system, featuring electronic marshalling with CHARMs technology, has provided an engine for the business' strong growth for the past two years. Emerson Process Management, a business of Emerson (NYSE: EMR), achieved $7.9 billion in sales in fiscal 2012, an increase of 13 per cent from fiscal 2011.

Thanks to electronic marshalling with CHARMs (Characterization Modules) technology, the DeltaV system not only offers unprecedented flexibility and cost savings for some of the world's biggest and most complex projects, but also transforms and streamlines automation practices that were developed based on technology limitations that existed more than three decades ago.

CHARMs technology, the heart of electronic marshalling, has already logged 1 billion operating hours at more than 300 sites.

The now-proven technology was developed initially for offshore platforms, which have space and weight limitations and where last-minute automation design changes routinely result in high costs and expensive delays. Instead of implementing the costly and complicated traditional approach of a pre-engineered physical wiring scheme, CHARMs technology provides a flexible approach that reduces the complexity of connecting automation systems with thousands of temperature, pressure, level, flow, and other control and measurement devices in a typical process operation.

"DeltaV's CHARMs technology has overturned 35 years of industry thinking and promised to forever change how automation projects are designed and implemented," said Steve Sonnenberg, president of Emerson Process Management. "Our customers are proving this true – our business has seen a tremendous increase in demand for each of the past two years, and we anticipate continuing this robust performance this year."

The sophisticated technology provides an innovative solution to replace a long-standing industry approach that did not provide the needed flexibility for today's highly complex and challenging projects. The simplicity and enhanced flexibility accommodates late project changes, eliminates hardware, and helps customers reduce field rework, minimising costly schedule delays. This new solution has since been proven to bring similar benefits to automation projects in many process industries.

"We saw a 40 per cent drop in installation costs over traditional approaches," said Bryan Beyer, operations manager, Southern States Chemical, the East Coast's largest sulphuric acid supplier. "The simplicity of CHARMs technology also means fewer failure points, which translates into more reliability and greater up-time for our plant." Southern States Chemical was the first North American facility to install CHARMs technology.

The technology has also proven popular among innovative engineering and procurement contractors like WorleyParsons, which engineers, designs and builds plants and platforms

and works with Emerson to provide the automation systems. Most recently, WorleyParsons has experienced significant cost, space and weight savings from reduced wiring and cabling required for a sophisticated Arctic offshore installation.

“As our customers ask us to take on increasingly large, complex projects – often with fast-track schedules – changes late in the design process are inevitable,” said Robert Armstrong, chief instruments and controls engineer, WorleyParsons. “CHARMs technology streamlines how projects are designed and engineered and as a result, has helped control the cost and schedule impact of last-minute changes.”

The innovative approach of the technology was driven by human centred design principles, which examine total work processes for improvement – not just incremental product features – to eliminate unnecessary work, reduce complexity, and embed knowledge into Emerson’s technologies.