



**TNCHE Asia 2024 Conference**  
**" Decarbonization, AI and Digital Transformation**  
**for Sustainability in Process Industries "**  
**Presenter's Biodata & Abstract**



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**Company/Organization** : Emerson, Asia Pacific  
**Current Position** : Senior Director, Applied Technology  
**Title of Presentation** : Digital Transformation for Sustainability, Safety, and More  
**Presentation Abstract** :

Plant challenges in the areas of safety, sustainability, reliability, and production are often due to many tasks being manual. Like manual data collection and manual data interpretation. Manual data collection with portable testers and reading gauges is too infrequent to predict problems and is very labor intensive. And there may not be sufficient experts to interpret the data. This has negative impacts like incidents, energy overconsumption, flaring, emissions, and therefore carbon footprint as well as surprise equipment failure, process downtime, loss of containment, off-spec product, and production interruption.

Plants have a vision of becoming more situationally aware, more responsive, predictive, and productive. Some even to become autonomous for extended periods of time. Aspirational goals include 'zero incidents', 'zero emissions', 'zero downtime', and 'zero off-spec product'. Automation is a key strategy to achieve these goals with automatic threat monitoring, performance monitoring, condition monitoring, and process monitoring.

Plants enable this by deploying new automation innovations like automating data collection with sensors and automating data interpretation with analytics apps to predict failures and pinpoint inefficiencies. This is "digital" transformation. One of many recommendations shared is that sensors must be wireless and non-intrusive. Another is that analytics apps must be ready-made and use mechanistic AI based on known cause & effect and first principles physics. In total more than a dozen recommendations are shared.

Plants see many benefits thanks to the new automation transforming work. Safety results include fewer injuries and incidents, reduced clean-up cost and fines. Sustainability results include reduced energy consumption and loss, cost, emissions, and thus reduced carbon footprint. Reliability results include reduced downtime, reduced loss of containment, and lower maintenance cost. Production results include reduced off-spec product, greater throughput, improved yield, and fewer site visits. That is, plants operate safer, greener, longer, and faster.



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**Brief Resume**

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Jonas Berge is the Senior Director of Applied Technology at Emerson in Singapore. He is a trusted advisor for plants and EPCs to adopt new technologies moving the industry forward with digital transformation. He has over thirty years of experience in the field of industrial automation. Mr. Berge is a Subject Matter Expert (SME) in Digital Transformation (DX) / Industrie 4.0 including data management, analytics, wireless sensors, and the Industrial Internet of Things (IIoT) with particular emphasis on sustainability and decarbonization. Mr. Berge is the author of two books and has contributed to several others. He is frequently featured in articles and technical papers. He is a well-known speaker and panelist. He has also authored a standard. Holds patents in safety communications. Mr. Berge is an ISA Fellow.