



Jayant Amresh

Project Management Lead for Global
Transmission Asia
Black & Veatch

Emerging Trends in Digital Substations



BLACK & VEATCH

Emerging Trends in Digital Substations

Jayant Amresh
Global Transmission

21 July 2021



What is Digitalization?

**Digital Networks
and
Smart Devices**

Replace

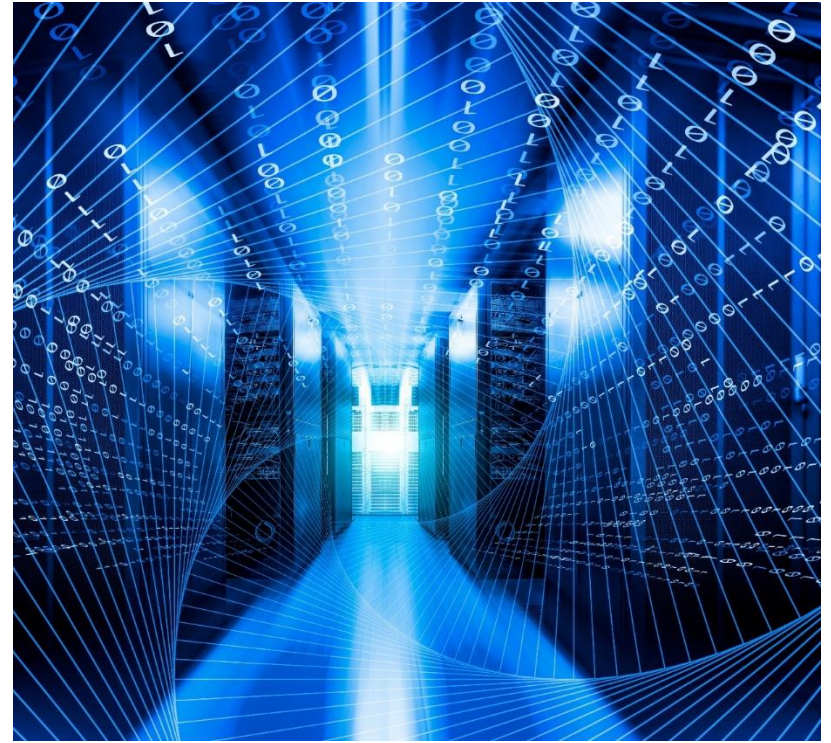
**Analog Signaling
and
Infrastructure**



Advancing from Substation Automation to a Complete Substation Digitalization

Why Digitalization?

- Expansion of Available Information and Analytics
- Streamlined construction deployment
- Increased immunity to EMP (Electromagnetic Pulse)
- Safety Enhanced



Risks and Challenges

- Cyber attacks
- Technician skillset alignment with the new equipment
- Knowledge base to inform reliable designs still minimal
- Hardware evolution cycle accelerates



Future Developments

- Protection Virtualization
- Predictive Analytics
- Digital Twins
- Augmented Reality



**Building
a World of
Difference.®**