

Paris Session 2022



Addressing Challenges of the Digital Substations

Study Committee B5, PS 2

Q2.01: What are the challenges in the development of digital substations and how to address the problems caused by the digitalization?

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Group Discussion Meeting

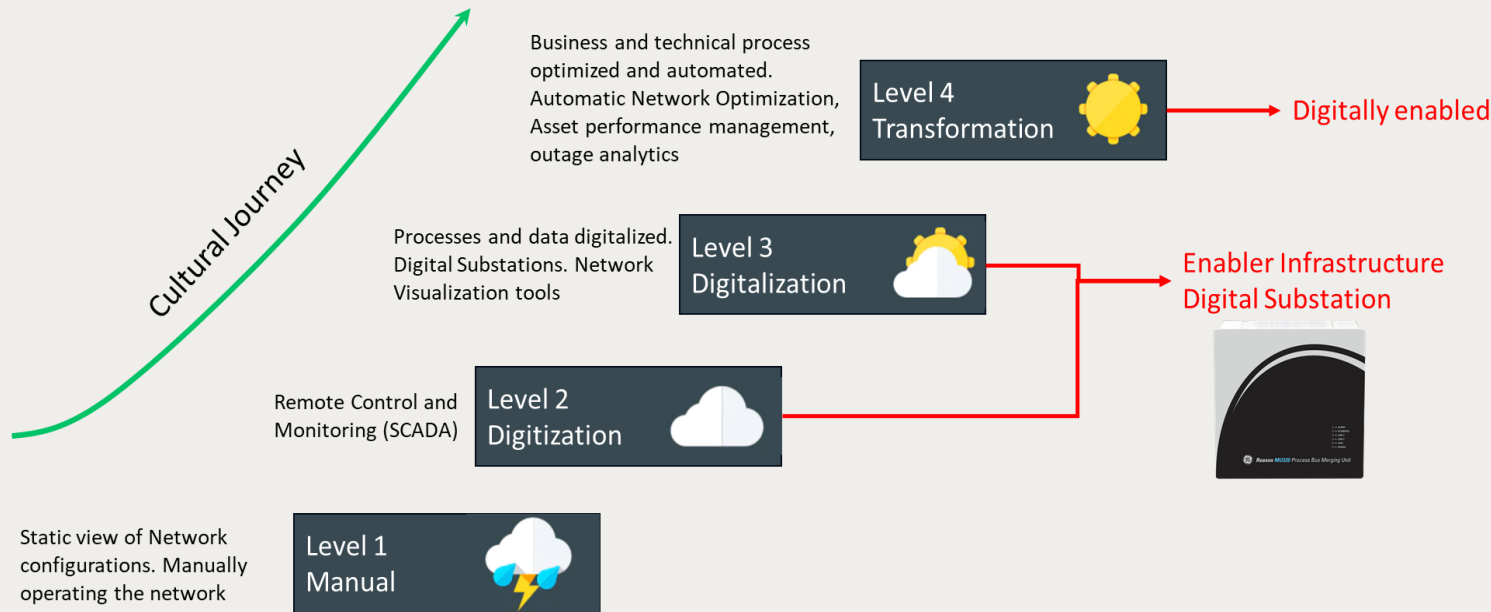
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Challenges of the Digital Substations

- *The path for the digital transformation is a cultural journey*



- The digitalization is the enabling infrastructure for achieving the full Digital Transformation that shall bring the biggest advantages
- The biggest challenge **isn't the technology/solution**, it is about changing conservative **culture** and embracing the new in an environment where reliability is key
- How are companies spreading the **culture**? Are peers being internal advocates?

Group Discussion Meeting

Challenges of the Digital Substations

- *Knowledge gaps*

- OT Network, Programming Languages, Network Tools;
- Concepts and papers are well known, but some companies requires more practical experience;
- Learn new digital Algorithms;

- *Regulatory gaps - Not all regulations are clear with regards Digital Substations Requirements*

- Network topology (PRP? HSR?)
- Cybersecurity standards?
- Segregated PB and SB?

- *Tools & dedicated solutions*

- There are network tools (like wireshark) but there are needs for dedicated tools to bridge the gaps
- Changing from Multimeter to ... ?
- Dedicated Network Monitoring Solutions

Group Discussion Meeting

Addressing the challenges

- *Have a strategic vision*
 - Digital Transformation as part of their long term Strategy
 - Have Digital Substation advocates in different organizational levels
 - Empower maintenance and operation teams with knowledge of digital substations
 - Site safety solution – O&M Increased safety to personnel
- *Partnership & Try for success*
 - Partnership with experienced companies
 - Pilot Projects to understand the needed details
 - Close relationship in between regulators and other players
 - After the success of DSS Lorena (500kV & 230kV grid connected in 2021) Brazil is changing its regulation to accept DSS & LPITs
- *Existing Solutions & Innovation*
 - There are several Solutions in the market with auxiliary tools for commissioning and testing
 - At the same there is still space for more inovative solutions



ISA CTEEP visiting GE DSS laboratory for testing and training