

Paris Session 2022



Digital Substation - Benefits

Study Committee B5, PS 2

Q2.02: What are the expected benefits of using digital substation concepts and how to meet these benefits during industrial application?

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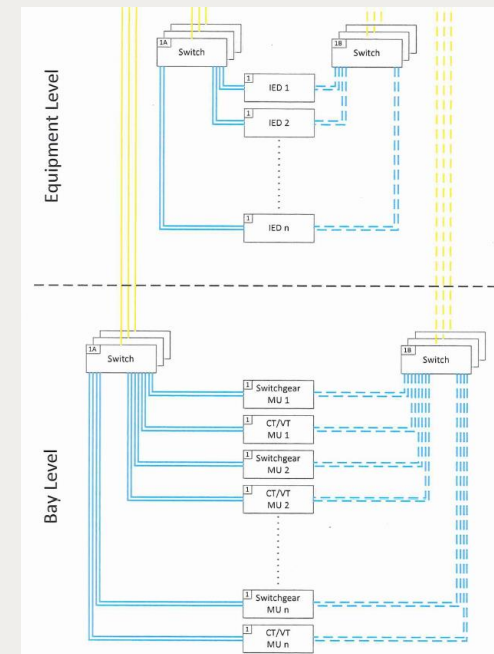
Expected Benefits & How To Deliver Them

- Advantages and potential benefits of digital substations are detailed in industry papers
- Illustration from transmission utility business case

Benefit	Estimated*
Cost	11 %
Cable Trenches	93%
Control Cabinets	47%

* K Hinkley & C Mistry, *First digital substation in TransGrid – Australia: a journey, business case, lessons (DPSP 2018)*

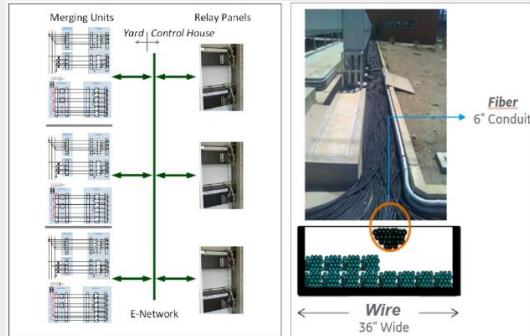
- Deliver Benefits By
 - Standardisation of architecture and bay devices; use device and/or network redundancy to enhance protection availability



Design Standardisation Reduces Engineering and Installation Time

- Deliver Benefits By

- Replacing copper cables with fibre; impacts civil works and trench footprint



- Standardised design : AC & DC wiring
- Standard marshalling kiosk, close to primary eqpt
- Interlocking by configuration, less terminations
- Utilizing flexibility device layout in the Control Room



90% reduction in engineering drawing (Australia)

67% faster installation, built and commissioned 6 Digital Sub-Stations in 2021-2022 successfully despite Covid impact (Vietnam)