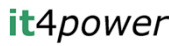


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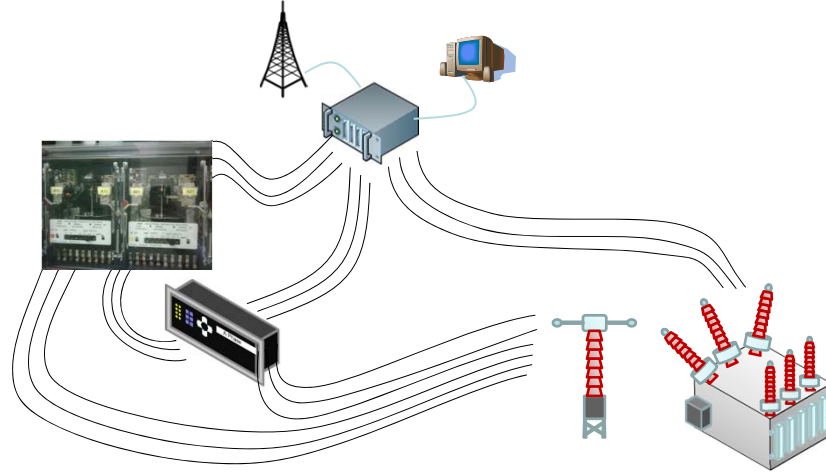
Experiences in organisational development and specifying IEC 61850 systems

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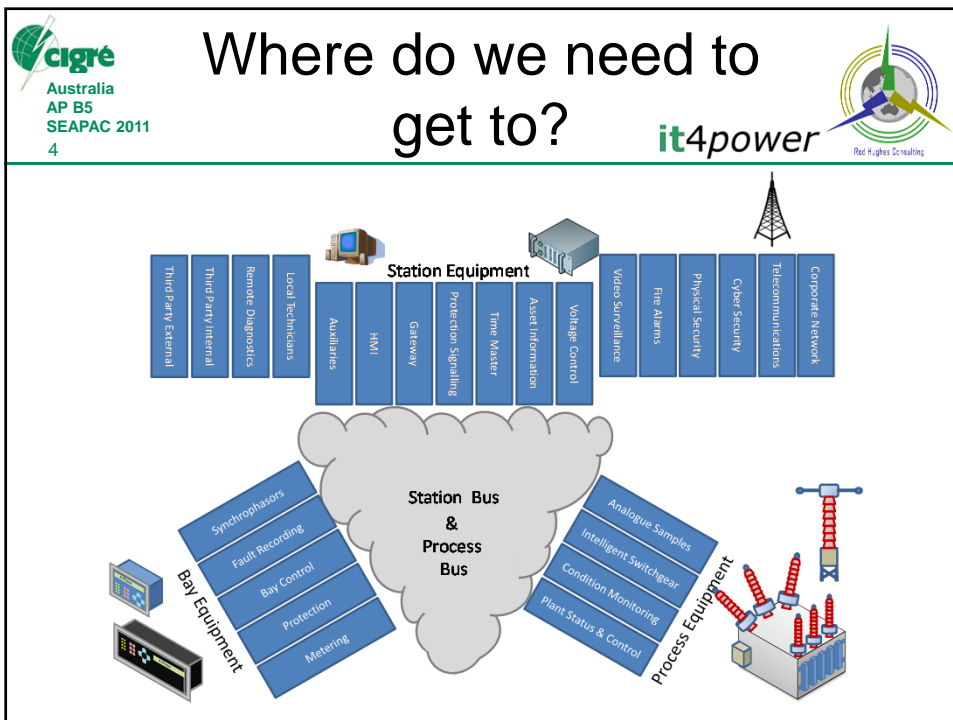
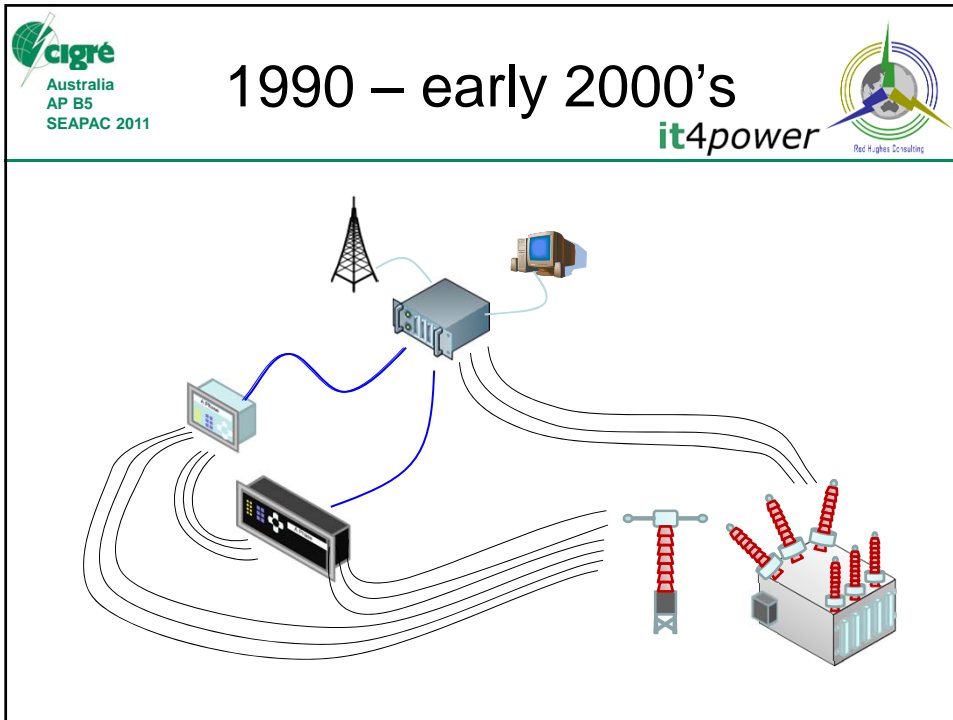
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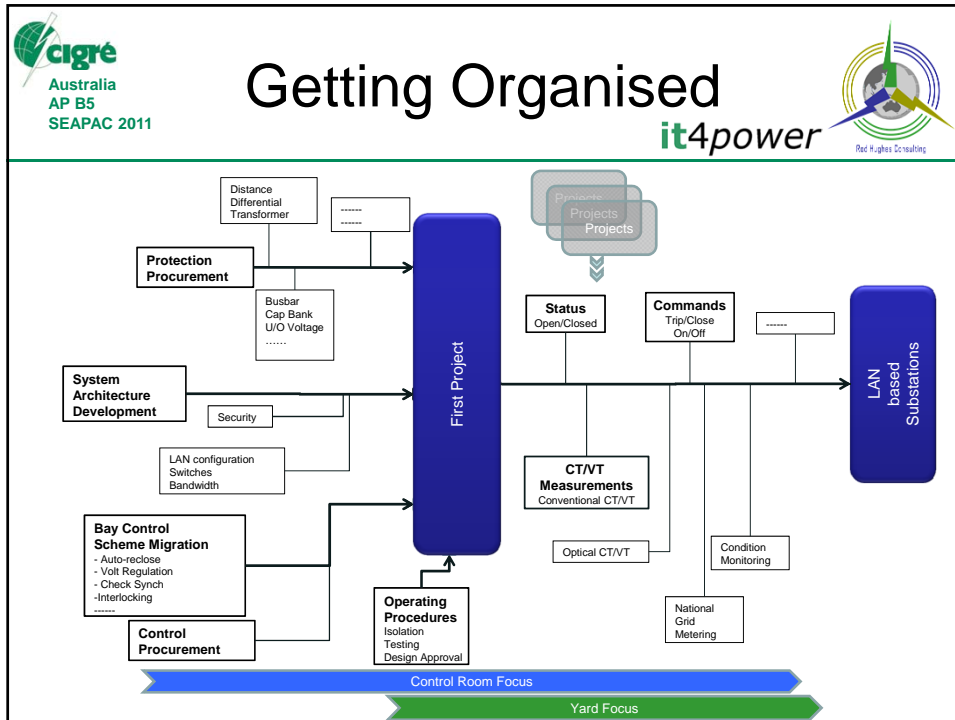
pre-1990's



The diagram illustrates a network architecture from the pre-1990s. A central router is connected to a tower antenna, a desktop computer, a rack of hardware, a server, a transformer, and a substation. The connections are shown as multiple lines, indicating a complex network setup.

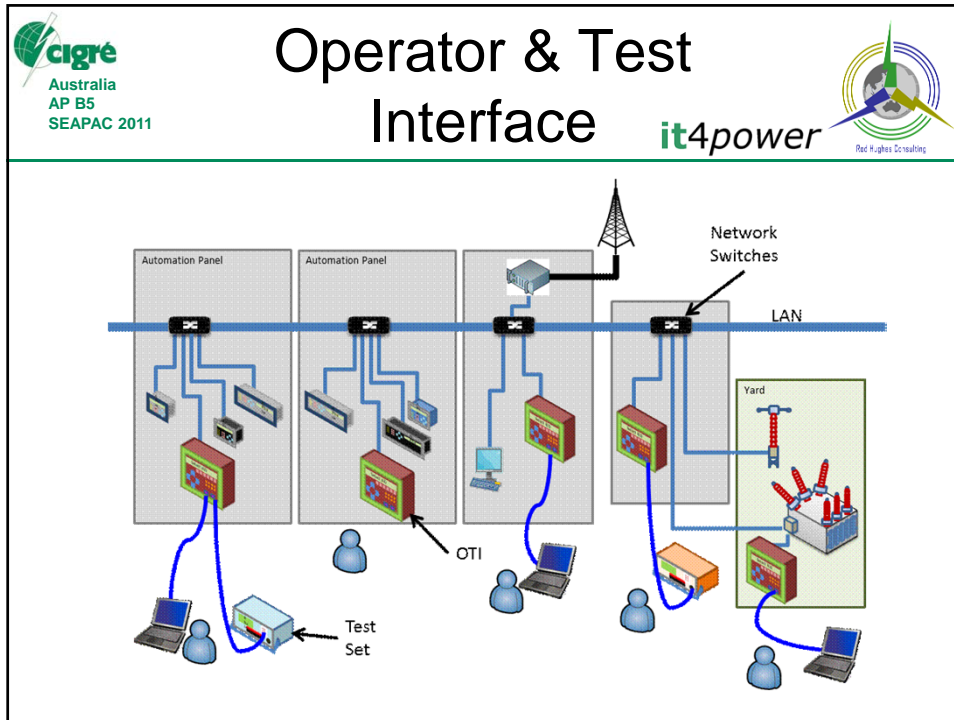


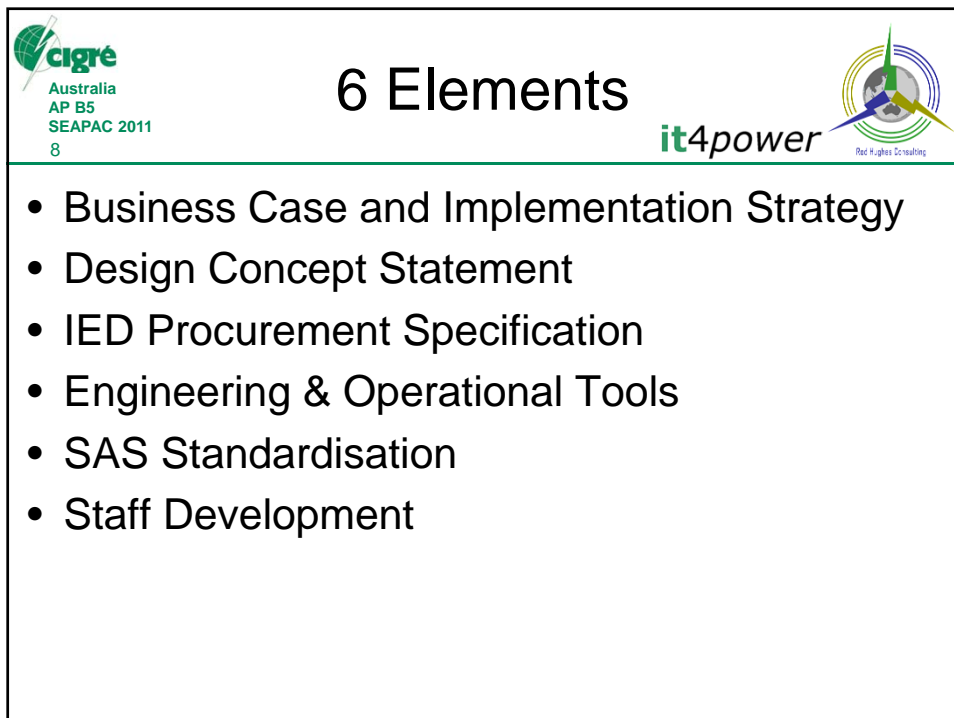


Conventional Operating Facilities

The diagram shows a photograph of a control panel with three red arrows pointing to specific features: "Selector switches", "Indicating lights", and "Isolation and test connection facilities".

- Front access
- No special equipment (screwdriver)
- Clear individual labelling
- Single function control
- Ease of control (avoid menus)
- Direct feedback indicators
- Controls clearly related to specific panel
- Not IED vendor specific
- Same in every panel in every substation



- 
- The diagram lists six key elements of the project. It includes the same logos as the previous slide: 'cigré Australia AP B5 SEAPAC 2011' on the top left and 'it4power Red-Highes Consulting' on the top right.
- ## 6 Elements
- Business Case and Implementation Strategy
 - Design Concept Statement
 - IED Procurement Specification
 - Engineering & Operational Tools
 - SAS Standardisation
 - Staff Development

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Lifecycle Tools

- 5 Phases requiring different tools
- Pre-design/Library
- Design
- Implementation
- Operation
- Maintenance

Enterprise Engineering

IEC 61850

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Engineering Tools

- Substation Topology
- Communication network
- IED template & configuration
- Test & Operating
- Documentation
- Naming Conventions
- Asset system interface
 - Setting database
 - Cable schedules
 - I/O list
 - HMI configuration

System Configuration Language

IEC 61850 Part 6

Systems Integration


- SSD
- SCD
- ICD
- IID
- SED

Commissioning & Test

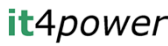

- LAN
- Simulation
- Browsers
- Functions
- Performance
- Injection

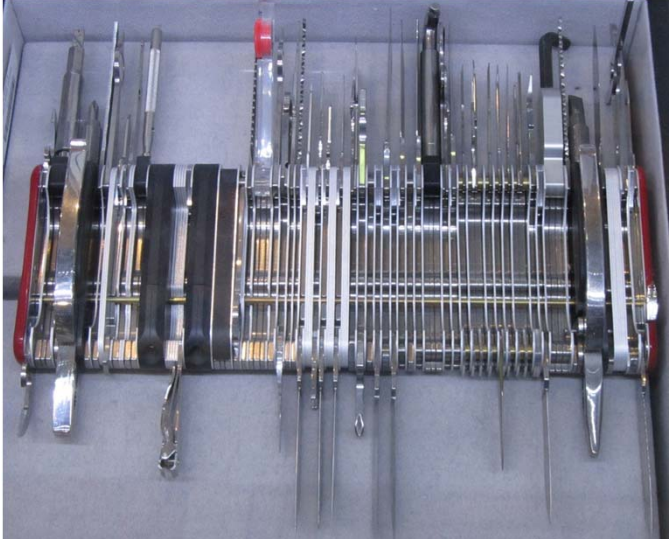
Operation Tools


- Settings
- Isolation
- Maintenance
- Function control

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The Single Tool?



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Thank You

