Paris Session 2022

EGAT's experience on integration between conventional substation and IEC 61850 control and protection system applied for grid scale energy storage

Study Committee B3

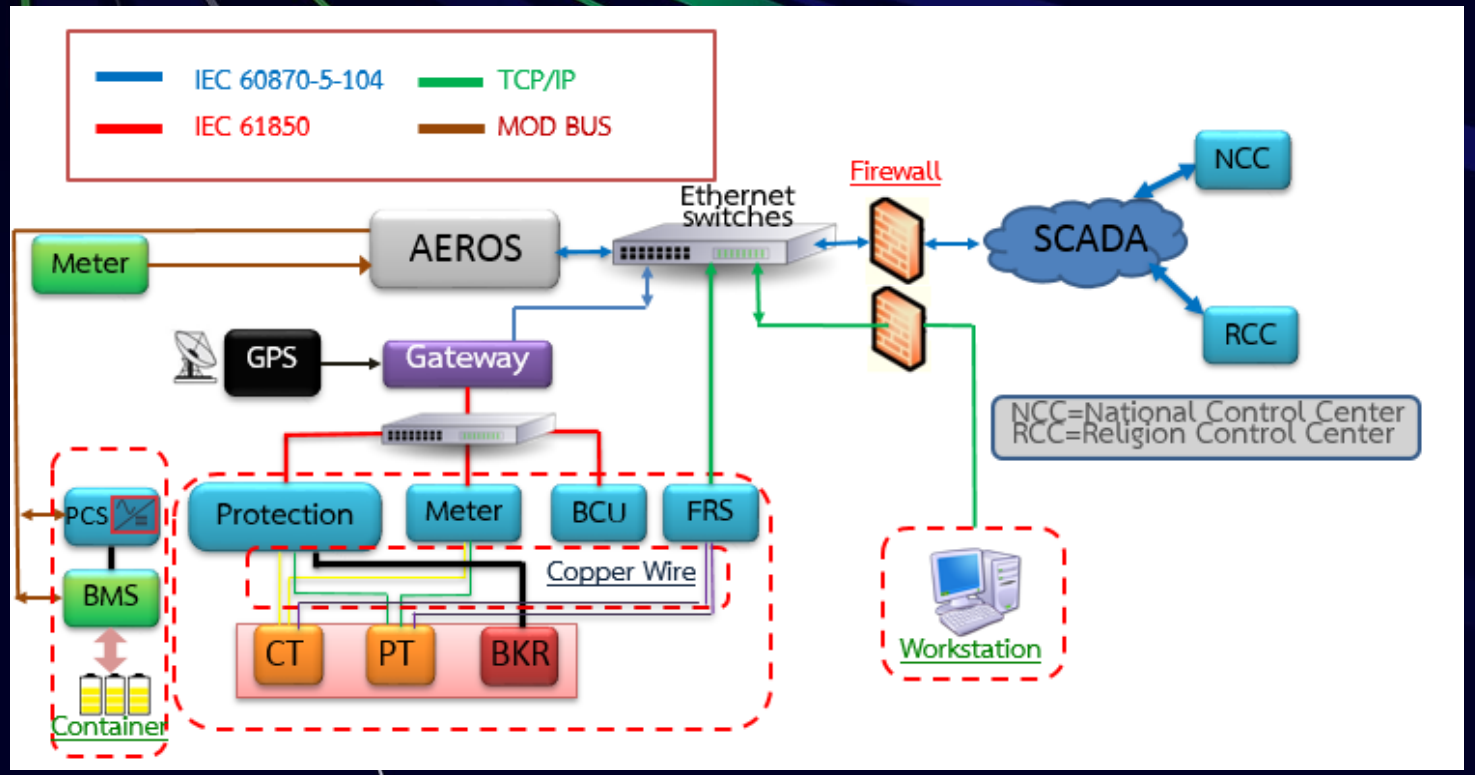
Experiences and Benefits of digital substations

What are your expected benefits of using digital substation concepts and how to measure if the benefits can be realized ?

PS 3.5

Anek Wuthayavanich, Thailand

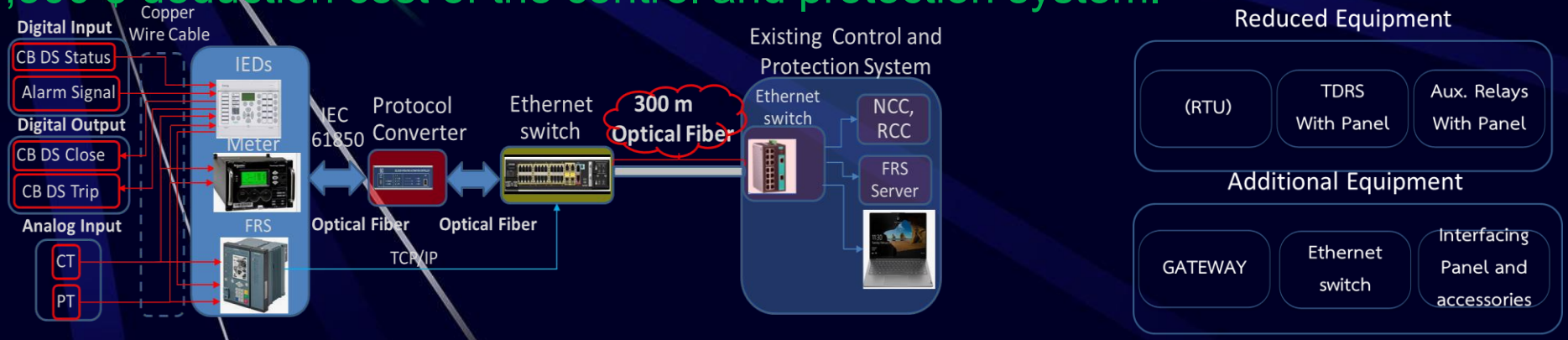
What are your expected benefits of using digital substation?



- Cost reduction
  - Decrease of materials eg. Copper cables, RTU system, Auxiliary Relays,TDRs and panels.
  - Decrease of installation area.
  - Decrease of cost of Installation & maintenance.
- Time saving for engineering design maintenance, installation of control and protection system
- Offer the idea of integration conventional substations with additional new feeders for energy storage systems or normal case

How to measure if the benefits can be realized ?

- Estimate the deduction price of materials : Copper cables, associated devices, panels etc.
  - In this project copper cables can be decreased from 63,000 $ to 3,500 or up to 94.4 % for the one (1) incoming feeder and the seven (7) outgoing to energy storage feeders.
  - 24,500 $ deduction cost of the control and protection system.



- Compare the time of engineering design, installation, maintenance. The approximately 70 man-hours saving of engineering design is evaluated in this project.
- Analyze the installation cost, maintenance cost, including installation area.