

International Energy Systems in Transition
- Perspectives from Science and Industry -
The 15th IERE General Meeting & German Forum
Abstract Format

Title: The Implementation of IEC 61850 Smart Substation in Taiwan

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Keywords: *IEC 61850, Smart Substation*

Abstract

This session presents the development of IEC 61850 Smart Substation in Taiwan. Over the past decade, Taipower have invested a substantial amount of time and money on researching the topic of smart substation. A pilot project was launched three years ago, which can be divided into two major phases, the establishment of an IEC 61850 laboratory, and an actual site implementation located in the central part of Taiwan.

The standard of IEC 61850 has been adopted for substation automation systems all around the world, but most of which only realizes partial functions of the standard. This case is implemented based on the original parts of IEC 61850 standard to research and experiment on conformance certified hardware and software of various vendors. With the process of procurement specification stipulation, discussions and adjustment, and inspection and acceptance, etc., a full implementation of IEC 61850 pilot system is constructed in Shinshe Distribution Substation under limited budget. The system supports the information models, services, and related communicational protocols (including IEC 61850-9-2) provided in the new edition of the standard. The IED functions of measurement, protection, and control are realized, and are accessible with HMI/SCADA built on the control room of the substation, Taichang operation center and TPRI.