

**PS1 – Q1.04 - What are the enablers and obstacles for the market deployment of interoperable engineering, testing, and monitoring tools?**

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**The Market Deployment Challenges of IEC 61850 Solutions**



## ■ Widespread adoption of IEC 61850 applications:

- Fully digital substations are being deployed worldwide.

## ■ Rapid evolution of PACS in recent years:

- IEC 61850;
- vPACS.

# PS1 – Q1.04

- **Specialized tools;**
- **The main enabler to gain increasing market share in the power sector: growth proportional to the increase in demand;**
- **Other enablers:**
  - **Testing and simulation** conditions defined in **IEC 61850-7-4**;
  - Specific IEC 61850 **Logical Nodes** related to **monitoring**: **LGOS**, **LSVS** and **LTMS**.
- **Potential obstacles:**
  - **Initial costs** of acquisition and training: **can be reduced with a large-scale, long-term strategy**;
  - The inherent conservatism, which brings **hesitation in adopting new technologies**.

# PS1 – Q1.04

- Example of Specialized Tools for Protection Testing, Diagnostics, and IEC 61850 Network Monitoring, according to Brazilian TSO rules.

