

industry reports

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Hydropower and IEC 61850



The Swiss Chapter of
IEEE PES is one national
unit of the Power & Energy
Society of IEEE.

THE SWISS CHAPTER OF IEEE PES (<http://pes.ieee.ch>) is performing about 2 – 3 events called workshops as a service for the power system community in Switzerland. According to the mission of the chapter providing the window from Switzerland to the world, dedicated speakers from abroad are always invited.

Hydro power provides about 60% of the Swiss electricity either by hydro power plants fed by artificial lakes (with or without pump storage schemes) or by river hydro plants. With part IEC 61850-7-410 this new standard is also available for the operation of such hydro power plants. Therefore, two workshops organized by the Swiss chapter in September 2008 and April 2009 have been well accepted with about 45 participants each. Topics like hydro mechanical equipment (turbines, generators) were picked up by the engineers in their well known world and allowed them to open the gates towards IEC 61850. For nearly all the engineers in the hydro world, it was their first contact with the new standard.

The first of these two workshops was hosted in Handeck by KWO (generation utility running a big pump storage scheme in the Grimsel area, the heart of the Swiss Alps see Fig.



appropriate to the utility market based upon the needs of the membership.

- Specify, develop and/or accredit product/system-testing programs that facilitate the field interoperability of products and systems based upon these standards.

- Implement educational and promotional activities that increase awareness and deployment of these standards in the utility industry

While UCAIug does not write standards it works closely with those bodies that have primary responsibility for the completion of standards (notably IEC TC 57: Power Systems Management and Associated Information Exchange). The UCAIug is a category "D" liaison organization with IEC TC57 WGs 10, 13, and 14. UCAIug members have access to standards under development and provide grass roots input into the standards development process.

The Users Group is working on many areas of interest for different users where standards' bodies may not yet be active or where the interests of users go beyond the purview of the presently identified standards (such as the completion of users guides, industry education, transfer of technology, marketing support, identification of users needs and industry demonstrations to prove concepts).

UCAIug brings user communities for the IEC TC57 61850 and CIM standards, and Open Smart Grid standards, into one user community

under the umbrella of the UCA International Users Group. Each community includes a cross-section of industry stake holders in the implementation of smart grid technology. Currently there are three user communities encompassing the modeling, communications, and automation of the electric utility from generation to meter. These communities have developed into an active user community for the "Smart Grid" under the umbrella of the UCAIug.

It all began with one user community, twenty nine corporate members from seven countries, and six hundred forum users. In the eight years since incorporation the organization has matured and grown (Figure 1). Today UCAIug includes:

- Three user communities

- Advanced Metering and Distributed Energy Resources (Open SmartGrid)

- Common Information Model (CIM)

- IEC 61850

- 135 utility, vendor, university, integrator corporate members from thirty-nine countries

- Supporting six web sites, with over 2,400 SharePoint user accounts with a sustained growth of four new accounts each day.

- About half of the accounts are guest accounts as part of our 501c3 non-profit status and goal for wide spread support of standards

- A Technical Oversight Committee for very active Sub Committees:

- IEC 61850 Users Community. The Standards Improvement Process

outlined to the right has been implemented for IEC 61850. The TISSUES and their resolution are maintained in a TISSUE Database. This process has proven very useful managing the resolution of technical issues (Figure 2.)

- CIM Users Community. The CIMug has a CIM Model Manager (CMM), and actively supports users and development of models and interoperability testing for the IEC based CIM.

- OpenSmartGrid Users Community. The UCAIug OpenSmartGridug actively supports the development, vetting, and validation of utility requirements, and use cases for OpenSmartGrid activities.

- Harmonization Subcommittee for the standards represented by these User Communities

- Testing Subcommittee develops test scripts and certification procedures for the standards represented by these Users Communities. UCAIug Testing Committee brings together industry stake holders to collect and resolve Technical Issues (TISSUES) for the IEC 61850 Quality Assurance Program. Testing issues are reviewed and addressed by UCAIug Testing Committee members and QAP editors. Independent Accredited Test Laboratories provide feedback to the UCAIug QAP process. As noted in the diagram to the right, a QAP can be difficult to coordinate and a process is needed to ensure feedback. The UCAIug Testing Subcommittee has implemented an industry

Kay Clinard, P.E president of the UCA International Users Group has over 40 years experience in the electric utility industry. His 25 years with Carolina Power and Light Company (CP&L) included engineering and engineering management positions associated with distribution technical operations, relay engineering, rate case support, the development of an Engineering Test Lab, and development and management of CP&L's renowned Distribution Automation Research program. His work was at the forefront of developing domestic and international standards that enable field devices from various manufacturers to interoperate. He is a member of IEC TC57 Working Groups 10 and 19, on the editor team for IEC 61850, and is the US lead for WG 10.



by Kay Clinard, P.E., UCA International Users Group, USA

recognized Quality Assurance Plan for IEC 61850 conformance testing with five accredited independent test labs, and the CIMug is active in interoperability testing

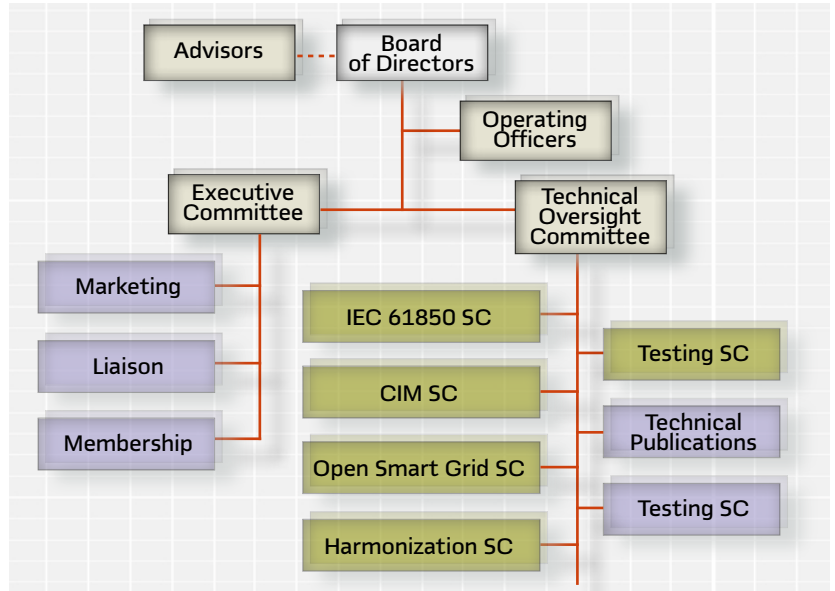
- Focused Help Desks for each User Community
- Collaboration Forums for each User Community
- Hosting Project sites...UCTE, CIM, IEC61850...
- In an effort to support the development of open standards, the UCAIug provides SharePoint hosting for standards working groups, and GoToMeeting/Webinar support for on-line meetings to encourage fast track development for:

- UCAIug User Communities
- IEC TC57 WG's 10, 13, 14, 15, 16, 17 and 19.
- CIGRE WGD2-24 (IECTC57 Site)
- UCAIug WGs are preparing for implementing a server with Subversion to be used as a repository for the management of industry models and use cases for CIM, OpenSmartGrid and IEC 61850 activities

It is our policy to provide neutral support to developing industry standards for the electric utility industry.

We are a 501c3 organization, and strive to provide unbiased support to users and implementers of related industry standards.

1 UCAIug Organization



2 Standards Improvement by UCA International Users Group

Handling of technical issues (TISSUES) is one of the key responsibilities of the UCA International Users Group.

