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The power of focus

IEC 61850 UNIVERSITY
TRAINING • TESTING • CONSULTING
www.iec61850university.com

Dustin Tessier P.Eng, MBA, PMP

EXPERIENCE

Managing Director, Tesco Automation Ltd - 2009 - Present

The Tesco Group of companies is a family owned and operated fleet of companies who have been in operation within North America for the past 30 years. The Tesco Group of companies consists of four business units that are collectively described as an engineering, procurement, and construction (EPC) provider that focus on the heavy industrial, power system and oil and gas sectors. Tesco Electric was the founding company who provides heavy industrial electrical contractor services to our broad range of clientele. Tesco Industries offers this clientele with electric motor and generator rewinding service offerings, while Tesco Mechanical provides heavy-industrial welding and metal fabrication services. Tesco Automation provides engineering and project management supports across all our divisions, including our systems integration services that offers power system design and consultancy services, with a focus on IEC 61850 and other grid modernization technologies.

Tesco Automation is as an EPC provider that offers IEC 61850 training, consulting, design and configuration, including testing support services to the global power system sector. These deliverables includes the development of detailed business cases, functional and technical specifications, design/configuration services, testing/commissioning services, turnkey substations, modular control buildings, and the fabrication of protection and control panels. Tesco is unique in that we are one of few Canadian companies to be active members in various international grid modernization and IEC 61850 standards development organizations, including leadership roles such as the Canadian Chair to both the IEC Technical Committee 57 and to the IEC Smart Energy Systems Committee. Being a member of these IEC communities allows us to keep a finger on the pulse of technology advancements within the power system sector, which ensures we put forward accurate, consistent, and practical solutions pertaining to IEC 61850.

Founder & Owner, IEC 61850 University - 2016 - Present

Founder and owner of IEC 61850 University, which is a global on-line platform that offers IEC 61850 training, testing and consulting services. The IEC 61850 University aims to bring confidence to industry users knowing they are receiving qualified and accurate information on the IEC 61850 standard. These service offerings are provided by IEC 61850 subject matter experts, which helps to ensure a consistent and accurate message is being communicated to the user community. IEC 61850 University.com first and foremost focuses on addressing the user's needs, and provides unbiased information that instills the spirit of the standard. We recognize that a precursor to wide-scale adoption of IEC 61850 is for users to receive accurate and consistent information on the standard, and IEC 61850 University.com is the ideal place to source this information.

Secretary, International IEC 61850 Process Bus User Task Force - 2016 - Present

Founder and Secretary of the 61850 Process Bus User Task Force, which is an ad hoc user group that is composed of ~30 members representing 15 utilities across 7 countries. The User Task Force has regularly scheduled meetings, each one being hosted by a different member where they present on their process bus initiatives.

- The purpose for creating this ad hoc task force is to resolve any actual and/or perceived obstacles that may be inhibiting the adoption of process bus across the world. It will assist in establishing best practices, which will ultimately streamline the specification, design, testing and operational aspects as it pertains to IEC 61850 process bus.
- The objective of this task force is to identify, document, classify, and prioritize the common concerns and recommendation found across International process bus users, so they can be shared with the process bus stakeholders. It aims to establish a consensus among members as it pertains to the business justification, technological challenges, and designing/testing methodologies related to IEC 61850 process bus. The intent of these recommendations is to provide direction to the vendor community, IEC working group, NERC, and other stakeholders in hopes to have these issues/concerns addressed in the development of future products, standards and regulatory requirements.

Project Manager, Siemens Australia - Energy Automation Systems - Australia 2011 - 2013

- Gained experienced as a manager and leader with tasks in strategic planning, growth and acquisition strategies, and business process improvement, whilst providing technical support for the SIPROTEC and SICAM product offerings.
- EA Project Manager for the APLNG Project and the KGP Project, both of which were deemed to be "at-risk" projects. Successfully turned around both projects - which had negative GM's at the handover - and delivered a positive, double-digit GM within 12 months of being involved. Also was involved with the national launch of the highly anticipated SIPROTEC 5 relay;
- Consulted and provided technical support services to various Australian/New Zealand utilities, system integrators, value-added resellers, among others. Developed technical reports, including ElectraNet's IEC 61850 Standard Design Guidelines, SICAM PAS & PAScc Standard Design Manuals, SICAM PAS & PAScc Project Template Files, Substation Automation System Troubleshooting/Investigation Reports, IEC 61850 Development Lab Processes, Functional Design Specifications, Operation & Maintenance Manuals, Inspection and Test Plans/Reports, to name a few;
- Contributed towards the customer awareness initiative by providing technically in-depth presentations to utility and industrial clients, on the fundamentals of IEC 61850 and the capabilities of the Siemens product line. Furthermore, we managed product promotional activities, customer seminars and promotional material in conjunction with the sales team. I had been responsible for developing and maintaining a number of these training programs, including the SICAM PAS & PAScc training modules. This position had me interfacing with a number of Siemen's business units, including the HV/MV/LV teams, the commercial team, and the supply chain teams.
- Formulated the technical response to a vast number of queries, including Power Production clients, T&D clients, LNG clients, and desalination plants, among other client sites. These tender submittals typically included the executive summary, protection, control, automation philosophy, hardware/software allocation, communication architecture, pricing schedules, etc.

Protection Engineer, Power System Design Group, Australia 2010 - 2011

- Preparation of detailed designs for Integrated Control and Protection applications in both transmission and distribution substations, with end-to-end experience in the design, installation, testing and commissioning of medium and high-voltage applications, including protective relays, substation automation systems, switchboards, instrument transformers, etc;
- Performed fault analysis and the development of protection settings reports, which included the configuration and development of numerous types of vendors IEDs;
- Developed specifications and other technical deliverables, such as functional design specifications, FAT inspection & test plans, CT adequacy reports, DC sizing reports, along with other substation automation, protection and control specifications.

Substation Design Engineer, SaskPower Corporation, Saskatchewan, Canada 2005 - 2010

- Program and project management experience in construction and technology projects utilizing stipulated-price, cost-plus, design-build and construction-management methodologies. Completed exhaustive evaluation of data concentrators, HMI hardware/software, bay controllers, PLCs, and numerous other IEDs that have been considered/implemented within SPC's substation automation system;
- Led a 2008/2009 initiative which was to address SPC's implementation of IEC 61850. Throughout developing the business case/proof of concept for the development lab, I have gained a number of valuable contacts and experiences from end users on their implementations, including IEC 61850 editors, utilities & vendors;
- Completed the detailed secondary designs required to support the company's CAPEX/OPEX expenditures; be it greenfield or brownfield sites. Prepared standards and designs, along with having provided project construction management for various transmission switching stations (230/138kV, 230/72kV & 138/72kV) and distribution substations (138/72/25kV);
- Provided maintenance support to the various T&D line and apparatus crew, including technical studies related to asset management and condition based monitoring, all of which contributed to maximizing the life of SPC facilities; Network Management Engineer, SaskPower Corporation, Saskatchewan 2004 - 2005
- Performed technical studies and assisted in the development of network operating guidelines to ensure the SPC network was being operated in a safe, reliable, and efficient manner. This included running multiple simulations & studies which were used to determine import/export capabilities, generation and AVR set points, etc;
- Involved in the real-time security analysis of SPC's network, which included running steady state load flow studies and contingency analysis using the PSS/E software;
- Advised other departments on system security requirements that needed to be satisfied with modifications/upgrades to the SPC network, such as special protection scheme requirements, etc;

Network Management Engineer, SaskPower Corporation, Saskatchewan, Canada 2004 - 2005

- Performed technical studies and assisted in the development of network operating guidelines to ensure the SPC network was being operated in a safe, reliable, and efficient manner. This included running multiple simulations & studies which were used to determine import/export capabilities, generation set points, etc
- Involved in the real-time security analysis of SPC's network, which included running steady state load flow studies and contingency analysis using the PSS/E software
- Advised other departments on system security requirements that needed to be satisfied with modifications/upgrades to the SPC network, such as special protection scheme requirements, etc

Electrical Engineering Technologist (Apprentice), Magna Electric Corporation, Manitoba 2003

- Participated in electrical acceptance testing and commissioning of new & retrofit substation projects within varying applications, such as oil refineries, steel plants & other industrial sites;
- Assisted in the construction & modification of power system equipment and devices. This includes calibration, repair, cleaning and lubricating of various types of electronic and electro-mechanical equipment;
- Wired and commissioned various multifunction IEDs, along with the numerous other ancillary circuits, such as battery bank monitors, transient data fault recorders, auto-reclosing circuits, etc;

Electrician (Apprentice), Tesco Electric Ltd., Saskatchewan 1997, 1999-2000, 2002

- Installed, maintained, diagnosed, calibrated, repaired and replaced electric distribution systems and related equipment, including but not limited to switch-gear, circuit breakers, relays, substation equipment, solid state control systems, power and distribution class transformers, power generators, capacitor banks, cranes, PLCs, field protection and monitoring systems, cabling and conduit;

EDUCATION

INSTITUTION	COLLEGE	COMPLETION
TROUBLESHOOTING WITH WIRESHARK	WIRESHARK UNIVERSITY	2015
MACQUARIE GRADUATE SCHOOL OF MANAGEMENT, AUSTRALIA (RANKED #1 BUSINESS SCHOOL IN AUSTRALIA & #49 IN THE WORLD)	MBA	2013
UNIVERSITY OF REGINA, CANADA	EXECUTIVE MBA	2012
PROJECT MANAGEMENT INSTITUTE	PMP	2008
UNIVERSITY OF REGINA, CANADA	CERTIFICATE OF PROJECT MANAGEMENT	2007
UNIVERSITY OF SASKATCHEWAN, CANADA	B.SC.EE	2004
ANDERSON AVIATION, CANADA	LICENSED PRIVATE PILOT	2003
SIAST PALLISER, CANADA	APPRENTICE ELECTRICIAN	2002
IMAGINIT TECHNOLOGIES, CANADA	ADVANCED AUTOCAD USER	2002

PROGRAMMING SKILLS

APPLICATION	LEVEL	FREQUENCY
IEC 61850 SYSTEM CONFIGURATION TOOLS (SIEMENS, SCHNEIDER, HELINKS)	INTERMEDIATE	WEEKLY
IEC 61850 IED CONFIGURATION TOOLS (SIEMENS, SCHNEIDER, ABB, SEL, GE/ALSTOM)	INTERMEDIATE	WEEKLY
IEC 61850 TESTING TOOLS (OMICRON, DOBLE, WIRESHARK)	INTERMEDIATE	WEEKLY
AUTOCAD	ADVANCED	DAILY
ELECDES - (INTELLIGENT DESIGN SOFTWARE)	ADVANCED	DAILY

APPLICATION	LEVEL	FREQUENCY
MICROSTATION - (INTELLIGENT DESIGN SOFTWARE)	INTERMEDIATE	DAILY
MICROSOFT PROJECT	ADVANCED	DAILY
VISUAL BASIC & C SCRIPTING	INTERMEDIATE	MONTHLY

STANDARDS DEVELOPMENT ACTIVITIES

- **Successful Proponent - 2017 Global IECEE Young Professional Competition**
  - Tesco is pleased and honoured to have been awarded the Canadian Innovative Pilot Project, which is a federal program that is managed under the Standards Council of Canada. This Innovative Pilot Project was only awarded to three companies across Canada, and it is geared towards creating new international standards, whereby Tesco's proposal was framed around extending the IEC 61850 standard to include Human Machine Interface (HMI) applications.
  - We are pleased that Tesco's IEC 61850 based HMI New Work Item Proposal (NWIP) has been approved as part of the official IEC Technical Committee 57 work plan. Tesco is pleased to have been appointed as the Task Force Leader, who will be managing this global team over the next 5 years when creating this new international standard. With a global approval rating of ~ 93%, this is clear indication for the need to standardize on the "building blocks" used to compose an IEC 61850 based HMI application.
- **Successful Proponent - 2016 Canadian Innovative Initiative Pilot Project**
  - Fortunate to have been selected as one of two successful recipients across the world to be awarded the 2017 IEC Young Professional Competition, which was seeking candidates who have displayed leadership capabilities within the IEC System of Conformity Assessment Schemes Equipment and Components (IECEE). The IECEE sought outstanding candidates who are involved with conformity assessment from a technical or managerial perspective and who have demonstrated great ongoing promise. We will attend the International IECEE 2017 Certification Management Committee (CMC) Meeting in Yokohama, Japan, and have benefited from crucial networking opportunities, which are fundamental to help Tesco increase our involvement, and learn more about conformity assessment and the IECEE operations and strategies.
- **Successful Proponent - Canadian 2015 IEC Young Professional of the Year**
  - Fortunate to have the opportunity to represent Canada at the 2015 IEC Annual General Meeting in Minsk, Belarus, and we took full advantage of the opportunity to exchange contacts/ideas with other international IEC delegates. Canada's IEC Young Professional Programme has allowed Dustin to pursue his passion in an attempt to gain visibility and participate on a global scale. For Canadian entrepreneurs looking to compete and participate in global initiatives, these opportunities are unique, and this programme was vital in breaking down these barriers.
- **Canadian Chair - IEC Technical Committee 57**
  - Scope: To prepare international standards for power systems control equipment and systems including EMS (Energy Management Systems), SCADA (Supervisory Control And Data Acquisition), distribution automation, tele-protection, and associated information exchange for real-time and non-real-time information, used in the planning, operation and maintenance of power systems.
  - As the Canadian Chair, Dustin is tasked with the following:
    - Act in a neutral capacity, divesting him or herself of a national position;
    - Guide the Vice-Chair or designated alternate of that committee in carrying out his or her duty;
    - Conduct meetings with a view to reaching agreement on committee drafts
    - Provide consensus recommendations and vote recommendations of the committee to SCC
    - Ensure at meetings that all points of view expressed are adequately summed up so that they are understood by all present;
    - Ensure at meetings that all decisions are clearly formulated and made available for confirmation during the meeting;
    - Prepare and submit to SCC proposals on new work items, hosting of an international meeting in Canada, or acceptance of secretariats or working groups convenorships;
    - Comply with Standard Council of Canada's Code of Conduct.

- **Canadian Chair - IEC Smart Energy Systems Technical Committee**
  - Scope: Standardization in the field of Smart Energy in order to provide systems level standardization, coordination and guidance in the areas of Smart Grid and Smart Energy, including interaction in the areas of Heat and Gas. To widely consult within the IEC community and the broader stakeholder community to provide overall systems level value, support and guidance to the TCs and other standard development groups, both inside and outside the IEC. To liaise and cooperate with the Smart Cities Systems Technical Committee.
  - As the Canadian Chair, Dustin is tasked with the overall management of the national committee, including its subcommittees, working groups, and ad-hoc groups. This "systems" focused committee is responsible for piecing together the various standards and technologies, which are collectively used to build Smart Grid and Smart Energy solutions. Dustin actively contributes towards the standardization in the field of Smart Energy, and provides systems level standardization, coordination and consulting in the areas of Smart Grid, Smart Energy, and IEC 61850.

- **Member - IEC Technical Committee 57 Working Group 10 (Responsible for IEC 61850)**
  - Scope: To prepare international standards for power systems control equipment and systems including EMS (Energy Management Systems), SCADA (Supervisory Control And Data Acquisition), distribution automation, tele-protection, and associated information exchange for real-time and non-real-time information, used in the planning, operation and maintenance of power systems. Power systems management comprises control within control centres, substations and individual pieces of primary equipment including tele-control and interfaces to equipment, systems and databases, which may be outside the scope of TC 57.
    - IEC 61850-6-2 - HMI Applications (Global Task Force Leader)
    - IEC 61850-600 - SCL Function Modelling Task Force
    - IEC 61850-7-6 - Guidelines for Basic Application Profiles
    - IEC 61850-7-500 Task Force - SCL Modelling of Functions & Sub-functions
    - IEC 61850-10-3 Task Force - Functional Testing of IEC 61850 Based Systems
    - IEC 61850-90-19 - Role Based Access Control

- **Member - IEC Technical Committee 57 Working Group 15 (Responsible for Cyber Security)**
  - Scope: To prepare international standards for power systems control equipment and systems including EMS (Energy Management Systems), SCADA (Supervisory Control And Data Acquisition), distribution automation, tele-protection, and associated information exchange for real-time and non-real-time information, used in the planning, operation and maintenance of power systems. Power systems management comprises control within control centres, substations and individual pieces of primary equipment including tele-control and interfaces to equipment, systems and databases, which may be outside the scope of TC 57.

- **Member - IEC Technical Committee 38 Working Group 37 (Responsible for Digital Instr. Transformers)**
  - Scope: Standardization in the field of AC and/or DC current and/or voltage instrument transformers, including their subparts like sensing devices, signal treatment, data conversion and analog or digital interfacing, which are essential in developing any Digital Substation.

- **Member - UCA International User Group (UCAIug) & IEC 61850 Testing Committee**
  - Scope: The UCA Users Group is a focus group to assist users and vendors in the deployment of standards for real-time applications for several industries with related requirements. The Users Group does not write standards and shall, where appropriate, work closely with those bodies that have primary responsibility for the completion of standards (notably IEC TC 57: Power Systems Management and Associated Information Exchange).
  - Witness Tester at the 2015 IEC 61850 Interoperability Demonstration In Brussels, Belgium

- **Member - CIGRE B5.56 "Optimization of Protection, Automation and Control Systems**
  - Scope: A method for a multi-criteria approach for PACS optimization shall be proposed on this base. This approach includes, for instance, considerations for:
    - Overall PACS Architecture for voltage levels
    - Functional Integration (less bay segregation, reduction of the number of devices)

- Other Memberships
  - Standards Council of Canada - Technical Management Coordination Committee
  - Professional Engineer (P.Eng) - Association of Professional Engineers & Geoscientists (APEGS/APEGA)
  - IEC Young Professional Advisory Group
  - UCA International IEC 61850 Testing Committee & IEC 61850 User's Group
  - DNP User Group Member (DNP)
  - Saskatchewan Young Professionals & Entrepreneurs (SYPE)
  - Project Management Professional (PMP) - Project Management Institution (PMI)
  - Association of Consulting Engineering Companies - Saskatchewan

CONDUCTED PAST TRAINING COURSES AND TECHNICAL PAPERS

- "Increasing the Interoperability and Usability of IEC 61850 Via Basic Application Profiles" - PACWorld 2017
- "Setting the Stage For a Successful IEC 61850 Deployment" - CEATI 2017
- "IEC 61850 for your Smart Grid Initiative: Benefits, Challenges and Practical IEC 61850 Use Cases Behind Your Grid Modernization Strategy" - DistribuTech 2017 - Utility University Course
- "Deployment of IEC 61850 in a Nutshell - Step By Step Guidance to Realize an IEC 61850 System" - DistribuTech 2017 - Utility University Course
- "IEC 61850 Naming Nomenclature - Making Sense of the Semantics" - DistribuTech 2017
- "Hybrid IEC 61850 Systems - Engineering an Ed.1 and Ed.2 System" - PACWorld 2016
- "Standardizing the Building Blocks of the HMI Application via IEC 61850 – From Concept, To Reality, To Standards" PACWorld 2016
- "Hybrid IEC 61850 Systems - Engineering an Ed.1 and Ed.2 System" - PEAC 2016
- "A Pragmatic Primer of IEC 61850" - PEAC 2016
- "IEC 61850 Basic Application Profiles - What Does Your Profile Look Like?" - PEAC 2016
- "IEC 61850 System Design for End Users: An Introduction to the Standard With Feedback From Practical Experience" - DistribuTech 2016 - Utility University Course
- "IEC 61850 Naming Nomenclatures: Making Sense of the Semantics" DistribuTech 2016
- "IEC 61850 For Industrial & Utility Applications" IEEE Electric Power & Energy Automation Conference
- "Setting the Stage for a Successful IEC 61850 Deployment" PACWorld Conference
- "The Dual-Domains of IEC 61850" Australian Protection Symposium
- "How to Get IEC 61850 Across the Line and What to do Once You Get There" PEAC 2014
- "IEC 61850 Based MicroGrid Applications For Remote Aboriginal Communities"
- "Canadian Centre For Smart Grid Innovation - Powering Saskatchewan Today – Using Tomorrow's Technologies"

CERTIFICATES

- "Introduction to XML Training", Webucator
- "ISO 9001:2008 Internal Quality Systems Auditor" BSI
- "SICAM PAS & PAScc Advanced Training" SIEMENS
- "SIPROTEC4 7UT Transformer Protection Training" SIEMENS
- "Using the Cybectec SMP Gateway & Visual T&D Training" Cooper Power Systems
- "DNP Protocol Training" Cooper Power Systems
- "How To Procure & Successfully Implement a Smart Grid Plan" Utility University Course
- "DNP In the Real World" Utility University Course
- "High Voltage Circuit Breaker Application, Specification, Selection Certificate" ZE Power Engineering
- "Power Electronics in Transmission Systems and Wind Power Certificate" Siemens Power Technologies
- "Analytical Methods for Voltage Control & Reactive Power Planning Certificate" Shaw Power Technologies