IEC 61850 Panel Discussion:
What it means to you and where is it on the Utility’s roadmap

Joel Greene, VP, SISCO
Tom Arthur, VP, Dianomic
Panel agenda

• The what and why: IEC 61850 overview – SISCO
• A Utility’s perspective video
• Audience questions
• The how: The use of FogLAMP as base platform for transmission – Dianomic
• Open conversation – Q&A session
About SISCO

• Founded in 1983

• **Focus:**
  • Providing integration solutions based on knowledge, experience, and open interoperable standards

• **Standards:**
  • IEC 61850
  • CIM (IEC 61970/61968)
  • COMTRADE (IEEE C37.111)
  • ICCP-TASE.2 (IEC 60870-6)
About Joel

• Vice President, SISCO
• Editor of 61850-7-1, -7-2, -8-1
• Lead TISSUE Task Force (61850 Maintenance Process)
• Chair, 61850 Conformance Test Procedures WG
• US Technical Advisor for IEC TC57
61850 Fundamentals
Communications

• IEC 61850 was designed to abstract the physical communications layer
• MMS is the client/server transport. Wireline transport is somewhat analogous to DNP or modbus
• GOOSE/SV
  • Multicast technologies that allow one publisher to send to many subscribers
Semantic dataModel

• Bay1Control/QA1XCBR1.Pos.stVal
Engineering Process - files

- System Configuration Language
  - XML
    - Describes the entire 61850 system
  - File types defined
    - SSD – System Specification Description
    - SCD – System Configuration Description
    - SED – System Exchange Description
    - ICD – IED Capabilities Description
    - IID – Instantiated IED Description
    - CID – Configured IED Description
Benefits of Digital Substation

• Size/Weight
  • Real Estate
  • Shipping

• Safety

• Training and Hiring

• Machine Processable Configuration
  • Documentation is maintained as part of process
  • Design reuse
  • Rigorous testing

• Data Accessibility
What is FledgePower?

Operational Deployments

FogLAMP → Ubuntu

Red Hat Enterprise Linux

Open Source Development

LFENERGY

FLEDGE POWER

Linux

DIANOMIC CONFIDENTIAL
Hear from the Utilities - Video

Record a 4 minute Fledge presentation

2023-10-13 14:51 UTC

Recorded by
Sander Jansen

Organized by
Sander Jansen

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The Fourth Industrial Revolution Changes Manufacturing Forever

We Deliver
Intelligent Industrial Data Pipelines and Edge ML
Insights and Actions for Bottom Line Results
We Believe

Intelligent Automation Starts at the Edge

INNOVATION
Digital transformations from machine to cloud. The heart of tomorrow’s better yields, quality, safety and efficiencies.

SUSTAINABILITY
For generations to come. These innovations should be at the core of every manufacturer’s mission.

COMMUNITY
Cooperation between companies, departments, and specialists solving the problems we share.

Dianomic
Edge insights and actions that deliver bottom line results.
Data Management vs Data Collecting

Legacy
Data Collecting

Industry 4.0 Infrastructure
Data Management

Data Science
Edge MLOps
Data Sharing

Connector
A Protocol
A Cloud
A Database

Many

Any
Multiple

Intelligence

Any
Multiple

Data Management vs Data Collecting - Simplify IoT Data
Intelligent Data Pipelines

FogLAMP

Settings/Controls
- 61850
- DNP3
- Modbus
- 104
- TASE-2
- Condition Monitor/Maint

Transactions/Alerts
- ICD File
- OPC-UA
- MQTT
- OMF
- SCL File
- TASE-2

EMS/HMIs
- AVEVA
- GE Power
- Hitachi Energy

SCT
- SCL Files
FogLAMP IEC61850 Features and Benefits

• Integrate 61850 device data with the PI System
• Use 61850 semantic models to automate PI AF
• Use 61850 semantic models on non-61850 devices
• Use 61850 control signals on non-61850 devices
• Multiprotocol gateways between 61850, 104, Modbus, DNP3, and TASE-2
• Manage and secure intelligent data pipelines at scale from any sensor/actuator to all operational systems
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Questions?
Please wait for the microphone.
State your name and company.

Please remember to...
Navigate to this session in the mobile app to complete the survey.

Thank you!
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