University and Colleges PME & PowerLogic Users Group

Schneider Electric

April 21, 2022

Webinar

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Agenda

1	Introductions
2	Objectives
3	McMaster – PME upgrade
4	PME reporting and hosting options
5	Case Study: UBC
6	Discussion

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Schneider Electric Team

Multi-discipline Team

- Schneider Electric Canada:
  - Yoann Briant
  - Mauricio Gonzalez
  - Roger LaPierre
  - Lakmini Perera
  - Matthew Puscus
  - Jesus Vargas
  - Tirtho Dutta Gupta
  - Sergio Bertani

- Schneider Local Reps:
  - Adam Campbell
  - Eric Langford

Institutions Represented

Universities and colleges are active energy managers.

- Leading the way for sustainability and power system reliability on campus.

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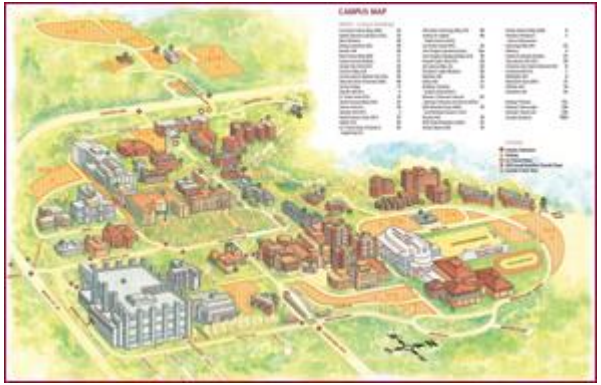
PME Upgrade considerations

- Elliot Jeyaseelan – McMaster University

Case Study – McMaster University

PME2021 upgrade

- System overview:
  - Over 250 electrical and mechanical meters on campus reporting to PME for electrical, water, steam, gas.
  - Meters in every building, on multiple different subnets.
  - Energy management, PQ and cost allocation.
- Requirement:
  - Windows 2019 server upgrade
  - Reviewed PME on cloud for off-site PME hosting.
  - Considering fully-managed PME with remote DB backup.
- Solution
  - PME2021 upgrade with unlimited devices.
  - PME to remain on campus, full-managed by Schneider.
  - VEEM off-site backup.



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PME Reporting and Hosting options

- Jesus Enrique Vargas – Schneider Electric

PME Training

May 11, 12, 13 – Mississauga office

- Hands-on PME training.
- Management console
  - Add devices, user account management, etc.
- Dashboards
  - Diagrams, trends, alarming, displays
- Report development
- Vista diagrams.

There are alternatives to look at the challenges

But you can't manage what you're not monitoring!

CAPEX Limitations

impose untapped efficiencies in the facility and a significant cost of opportunity.

Changing optics is key to break the cycle and benefit from digital technologies without the burden of upfront investment.

Overused Equipment

and lack of visibility put at risk not only efficiency but also the safety of people, the facility and the business.

Emergencies & Downtime

are a heavy cost for any facility plus the downtime that takes to recover.

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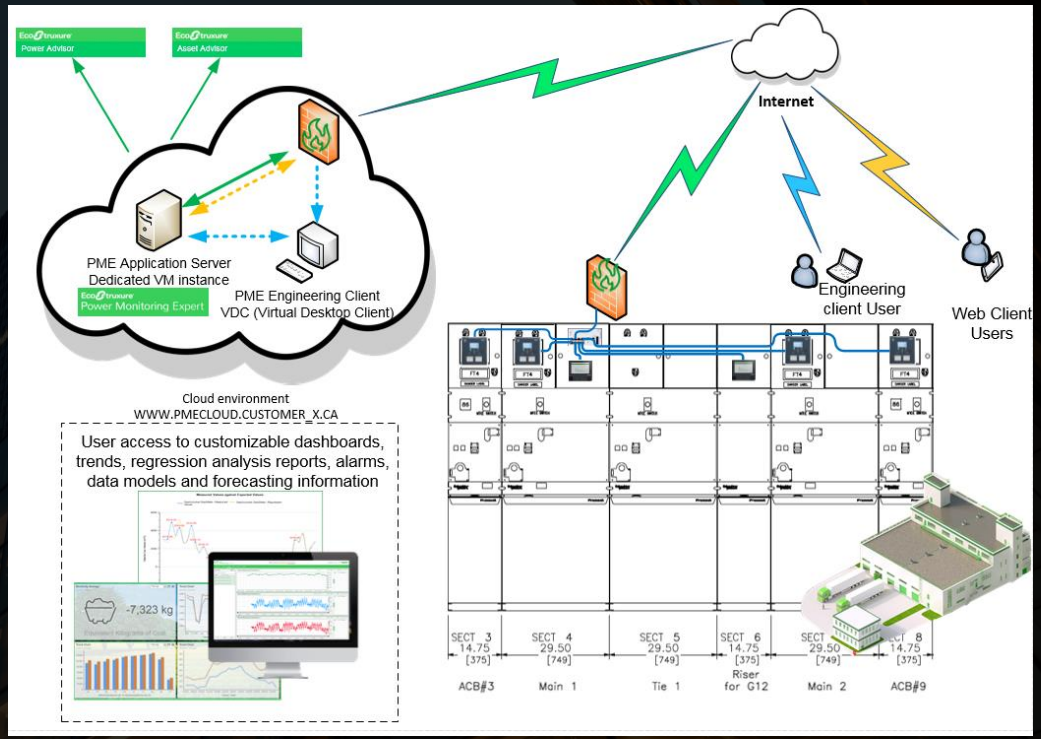
EcoStruxure PME Cloud System Architecture

WEB Portal

- On-premise meters installed
- Device integrated via VPN gateway (wired or wireless option available)
- System access via Web portal
- Energy Analysis reporting module only available

Dedicated System

- On-premise meters installed
- Device integrated via VPN gateway (wired or wireless option available)
- Web Client access via URL
- Optional Engineering client
- PME modules optional for dedicated VM instance.



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PME Integration

UBC upgrades PME to improve control

- Sergio Bertani - Schneider Electric

EcoStruxure Power Operation

UBC UNY Substation Replacement

April 2022

Sergio Bertani

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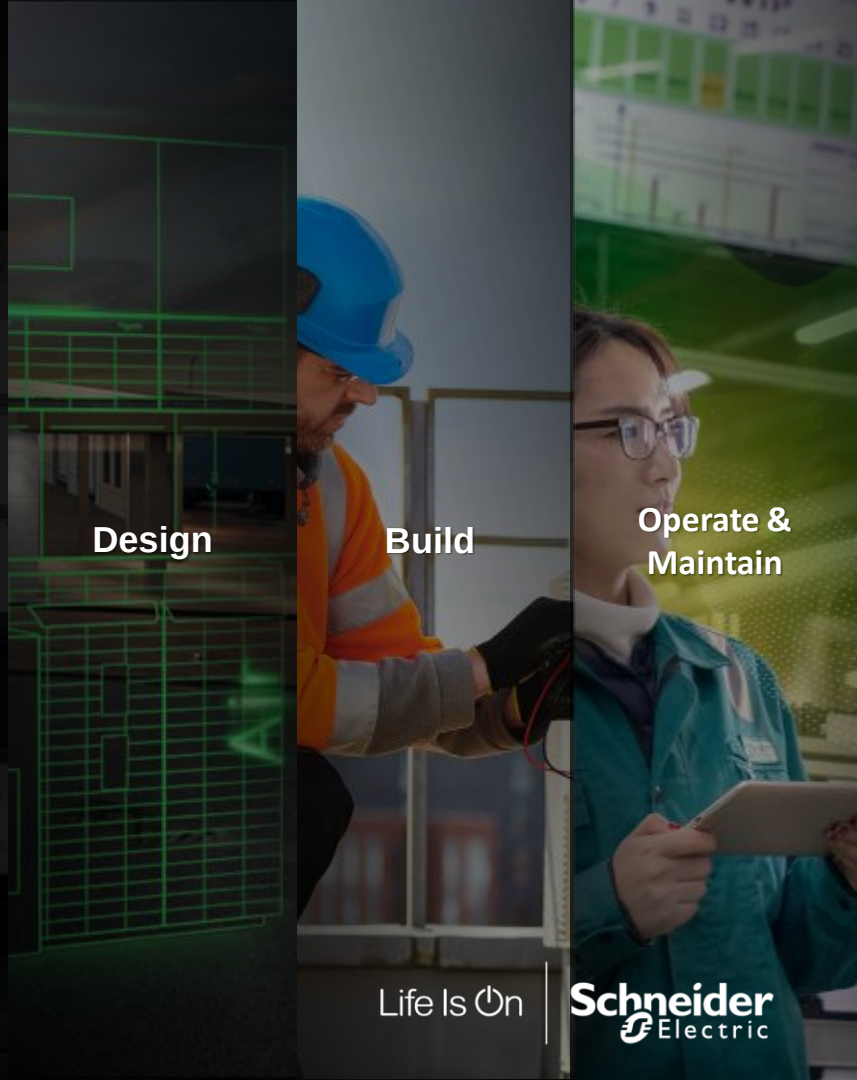
Agenda

1 – Introductions

2 – EPO – Propose System Architecture - Review

3 – EPO & ETAP

As a technology company, we provide **energy and automation** digital solutions for **efficiency and sustainability**



…through lifecycle digitalization in buildings and infrastructure

With our full suite of best in class, end-to-end software

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Scope of the Project

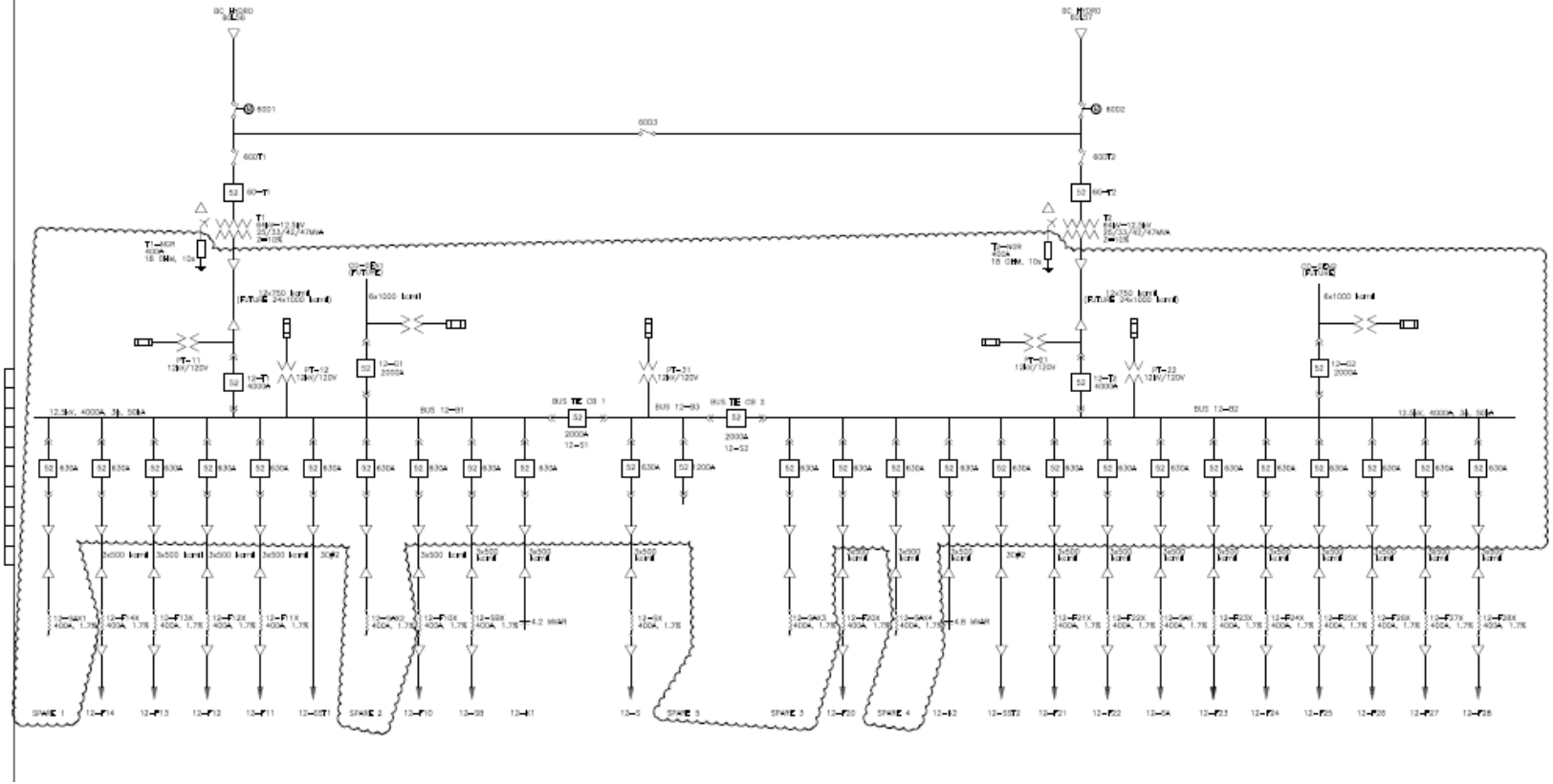
1. Supply of new MV switchgear
    1. Breakers
    2. Protection Relays
    3. ION9000 power meters

    * Value added:
        1. Thermal Monitoring
        2. Contact – Camera recording

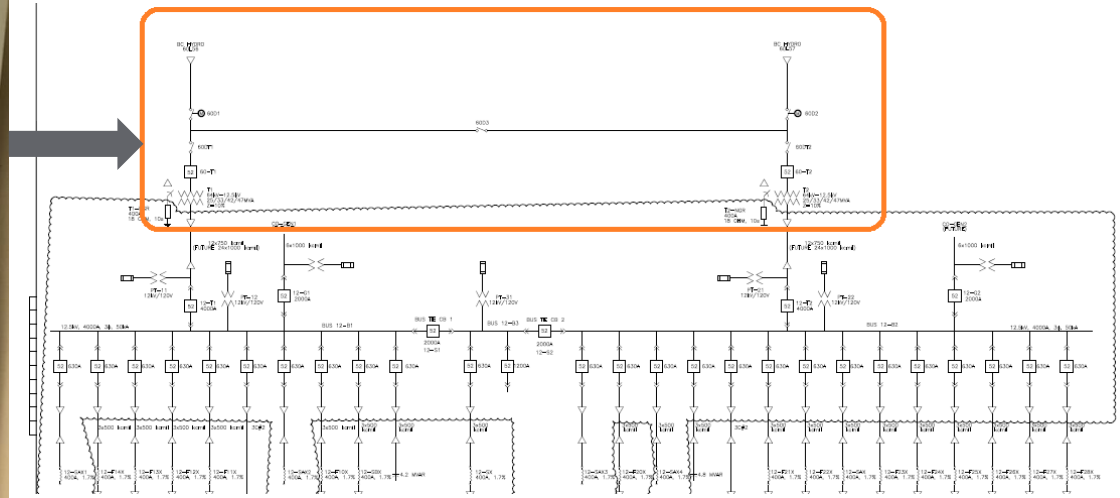
2. Connect equipment to existing Scada Panel

3. EPO + ETAP (Digital Twin)

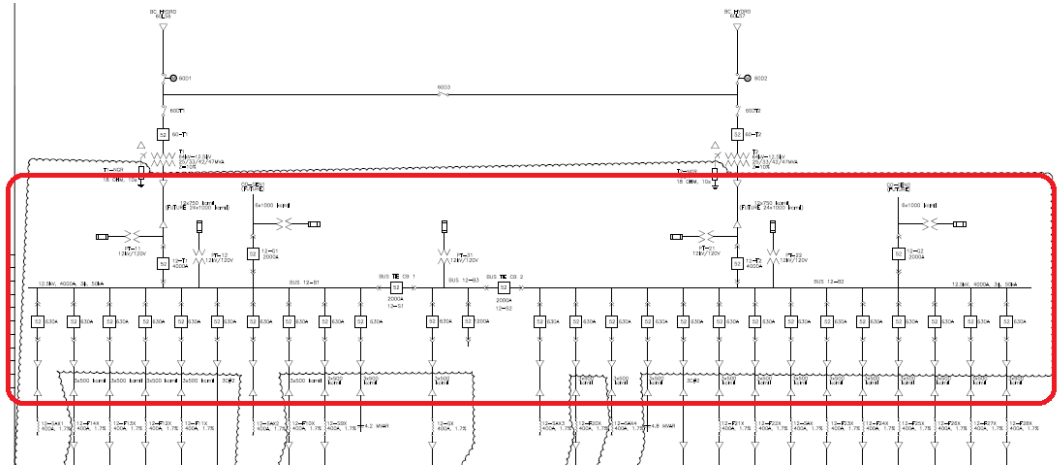
- # UBC – UNY Substation – Existing SLD



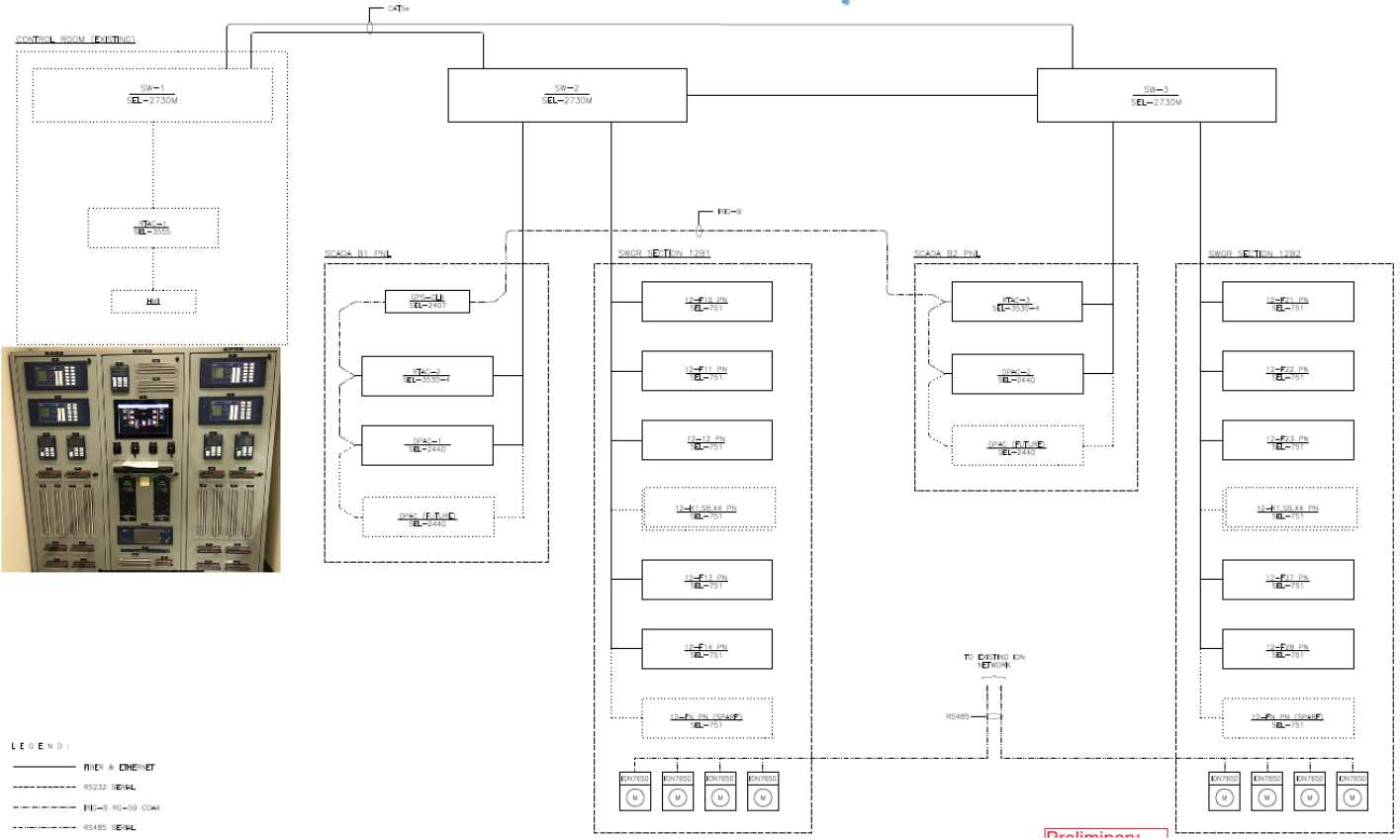
Existing Scada Panel & Switchgear - HV



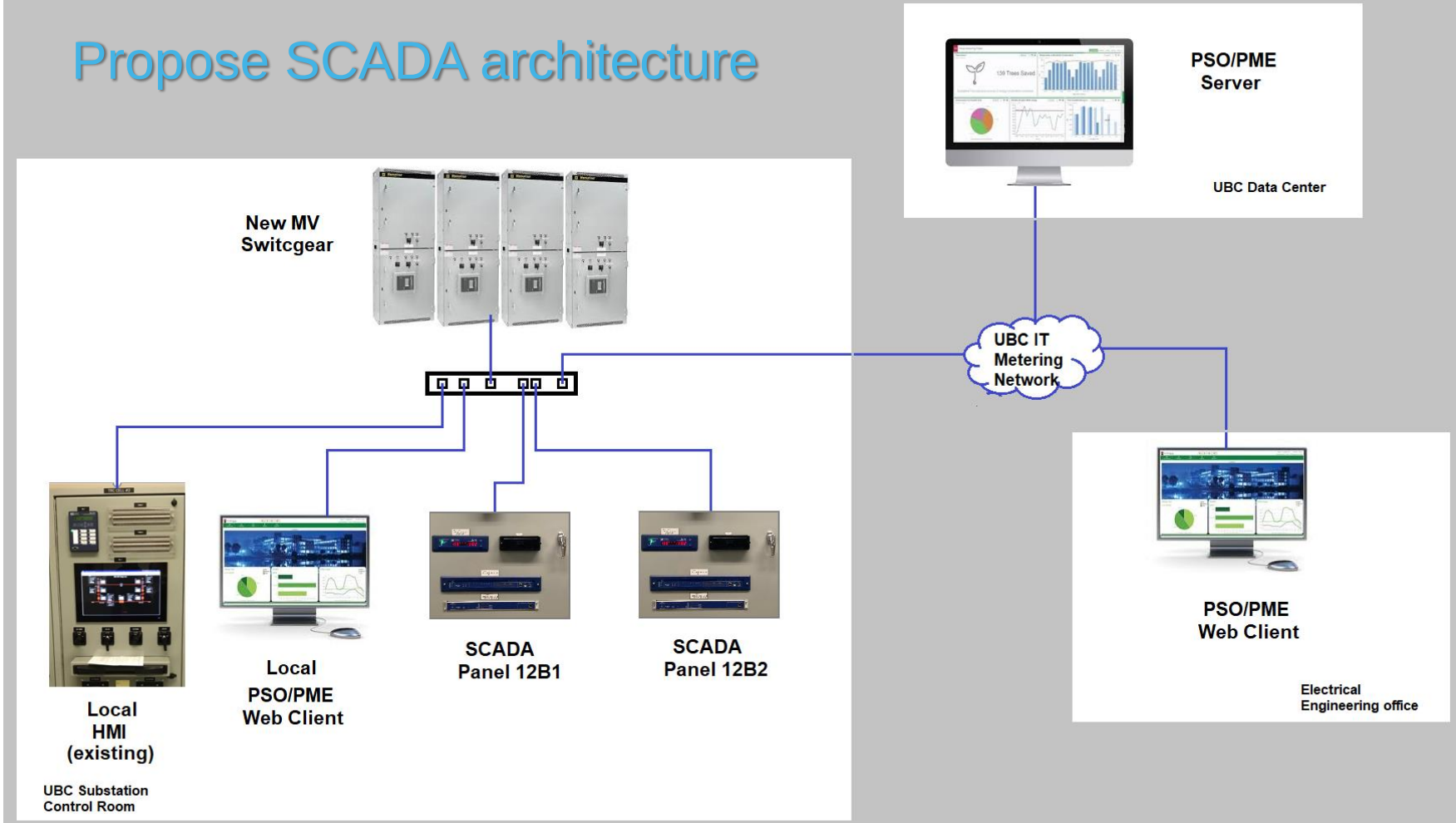
Existing Scada Panel & Switchgear - MV

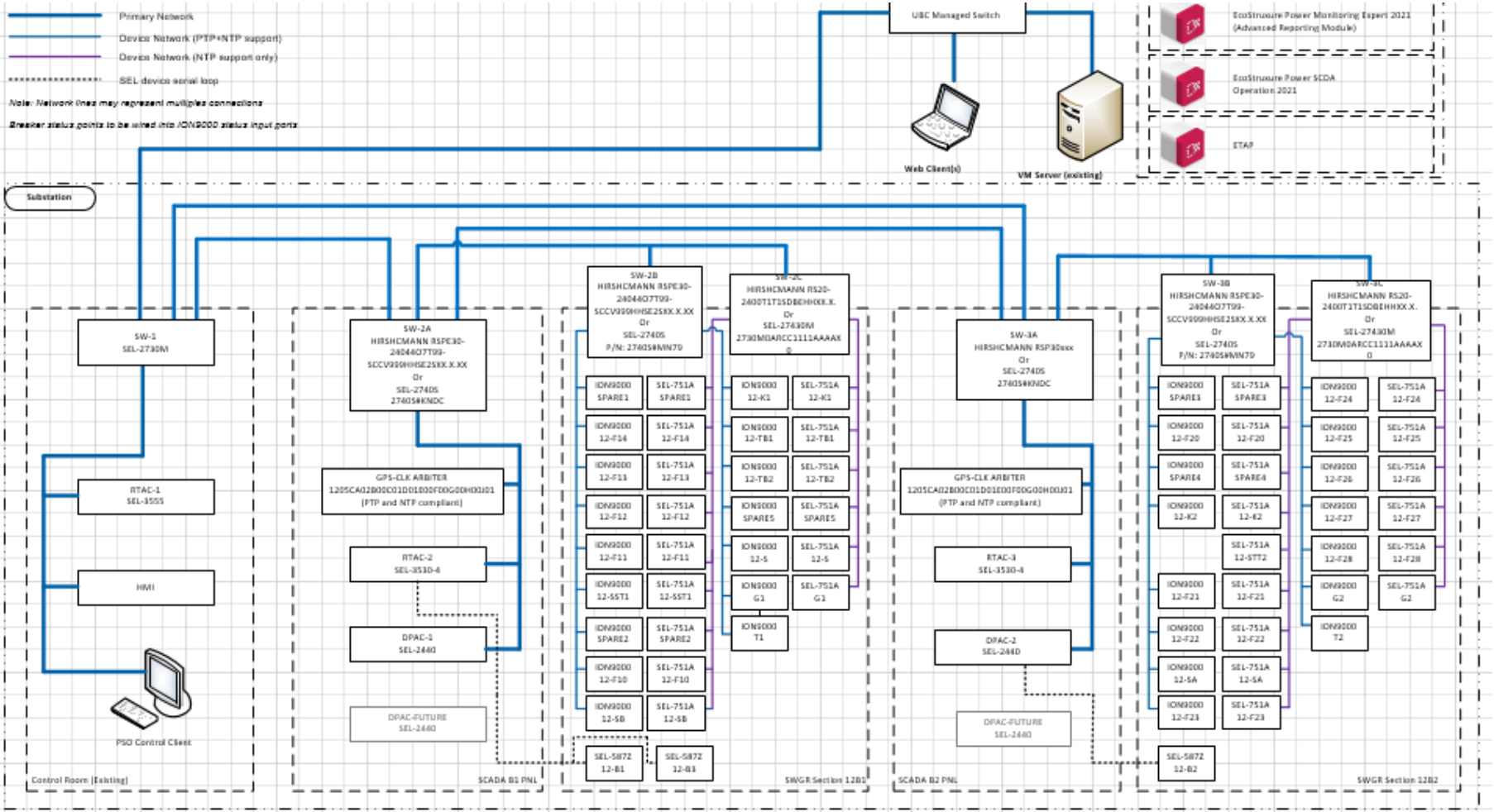


UBC UNY New Substation - SCADA Specifications



Propose SCADA architecture




Primary Network
Device Network (PTP+NTP support)
Device Network (NTP support only)
SEL device serial loop
Note: Network lines may represent multiples connections
Breaker status points to be wired into ION9000 status input ports
UBC Managed Switch
Web Client(s)
VM Server (existing)
EcoStruxure Power Monitoring Expert 2021 (Advanced Reporting Module)
EcoStruxure Power SCDA Operation 2021
ETAP
Substation
SW-1 SEL-2730M
RTAC-1 SEL-3555
HMI
PSO Control Client
Control Room (Existing)
SW-2A HIRSCHMANN RSPE30-24044O7T99-SCCV999HHSE2S9X.X.XX Or SEL-2740S 2740S#KNDC
GPS-CLK ARBITER 1205CA02B00C01D01E00F0DG00H00J01 (PTP and NTP compliant)
RTAC-2 SEL-3530-4
DPAC-1 SEL-2440
DPAC-FUTURE SEL-2440
SCADA B1 PNL
SW-2B HIRSCHMANN RSPE30-24044O7T99-SCCV999HHSE2S9X.X.XX Or SEL-2740S P/N: 2740S#MN79
SW-2C HIRSCHMANN RS20-2400T1T1SDBEHHXX.X. Or SEL-2743OM 2730M0ARCC1111AAAAX 0
ION9000 SPARE1
SEL-751A SPARE1
ION9000 12-F14
SEL-751A 12-F14
ION9000 12-F13
SEL-751A 12-F13
ION9000 12-F12
SEL-751A 12-F12
ION9000 12-F11
SEL-751A 12-F11
ION9000 12-SST1
SEL-751A 12-SST1
ION9000 SPARE2
SEL-751A SPARE2
ION9000 12-F10
SEL-751A 12-F10
ION9000 12-SB
SEL-751A 12-SB
SEL-5872 12-B1
SEL-5872 12-B3
ION9000 12-K1
SEL-751A 12-K1
ION9000 12-TB1
SEL-751A 12-TB1
ION9000 12-TB2
SEL-751A 12-TB2
ION9000 SPARE5
SEL-751A SPARE5
ION9000 12-S
SEL-751A 12-S
ION9000 G1
SEL-751A G1
ION9000 T1
SWGR Section 12B1
SW-3A HIRSCHMANN RSP30xxx Or SEL-2740S 2740S#KNDC
GPS-CLK ARBITER 1205CA02B00C01D01E00F0DG00H00J01 (PTP and NTP compliant)
RTAC-3 SEL-3530-4
DPAC-2 SEL-2440
DPAC-FUTURE SEL-2440
SCADA B2 PNL
SW-3B HIRSCHMANN RSPE30-24044O7T99-SCCV999HHSE2S9X.X.XX Or SEL-2740S P/N: 2740S#MN79
SW-3C HIRSCHMANN RS20-2400T1T1SDBEHHXX.X. Or SEL-2743OM 2730M0ARCC1111AAAAX 0
ION9000 SPARE3
SEL-751A SPARE3
ION9000 12-F20
SEL-751A 12-F20
ION9000 SPARE4
SEL-751A SPARE4
ION9000 12-K2
SEL-751A 12-K2
SEL-751A 12-STT2
ION9000 12-F21
SEL-751A 12-F21
ION9000 12-F22
SEL-751A 12-F22
ION9000 12-SA
SEL-751A 12-SA
ION9000 12-F23
SEL-751A 12-F23
SEL-5872 12-B2
ION9000 12-F24
SEL-751A 12-F24
ION9000 12-F25
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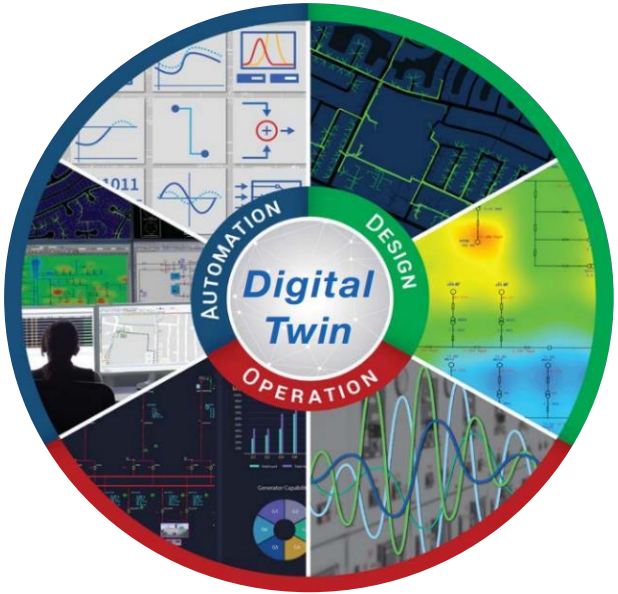
ION9000 12-F26
SEL-751A 12-F26
ION9000 12-F27
SEL-751A 12-F27
ION9000 12-F28
SEL-751A 12-F28
ION9000 G2
SEL-751A G2
ION9000 T2
SWGR Section 12B2

ETAP offers a complete solution portfolio

An evolutive solution to connect electrical engineering to operations & maintain



DESIGN

- Model
  - Field Data Collection & **Intelligent Modeling** tool
  - Cloud based **Collaborative** tool
  - Verified & Validate **Brand Agnostic** Libraries
- Simulate & Analyze
  - From **HV to LV → AC & DC** Network Analysis
  - From steady state to dynamic simulations
  - From Industrial to T&D segment incl. GridCompliance

OPERATION

- Predict & Control
  - Load Management
  - Predictive simulation "ETAP PSMS"
- Operate & Manage
  - Operator Training Simulator "ETAP OTS"
  - Protection & Asset Management " ETAP Eprotect"

AUTOMATION

- Optimize
  - Energy & Power Management
  - Transmission & Distribution Management "ADMS"
  - Grid Code compliance monitoring
- Controllers
  - Microgrid
  - Power Plant (conventional and renewables)
  - Storage

UNIQUE DATABASE

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Follow up

Other topics.

- PME Training May 11, 12, 13 in Mississauga.
- PLUG Tuesday November 8, 2022
- Presentation is posted at:
  http://know-your-power.com/archive/ucug