



 ELECTRIFICATION – DISTRIBUTION SOLUTIONS BUSINESS LINE, NOVEMBER 2019

ABB Ability™ Condition Monitoring for switchgear

SWICOM with PDCOM

Reliable Asset Management



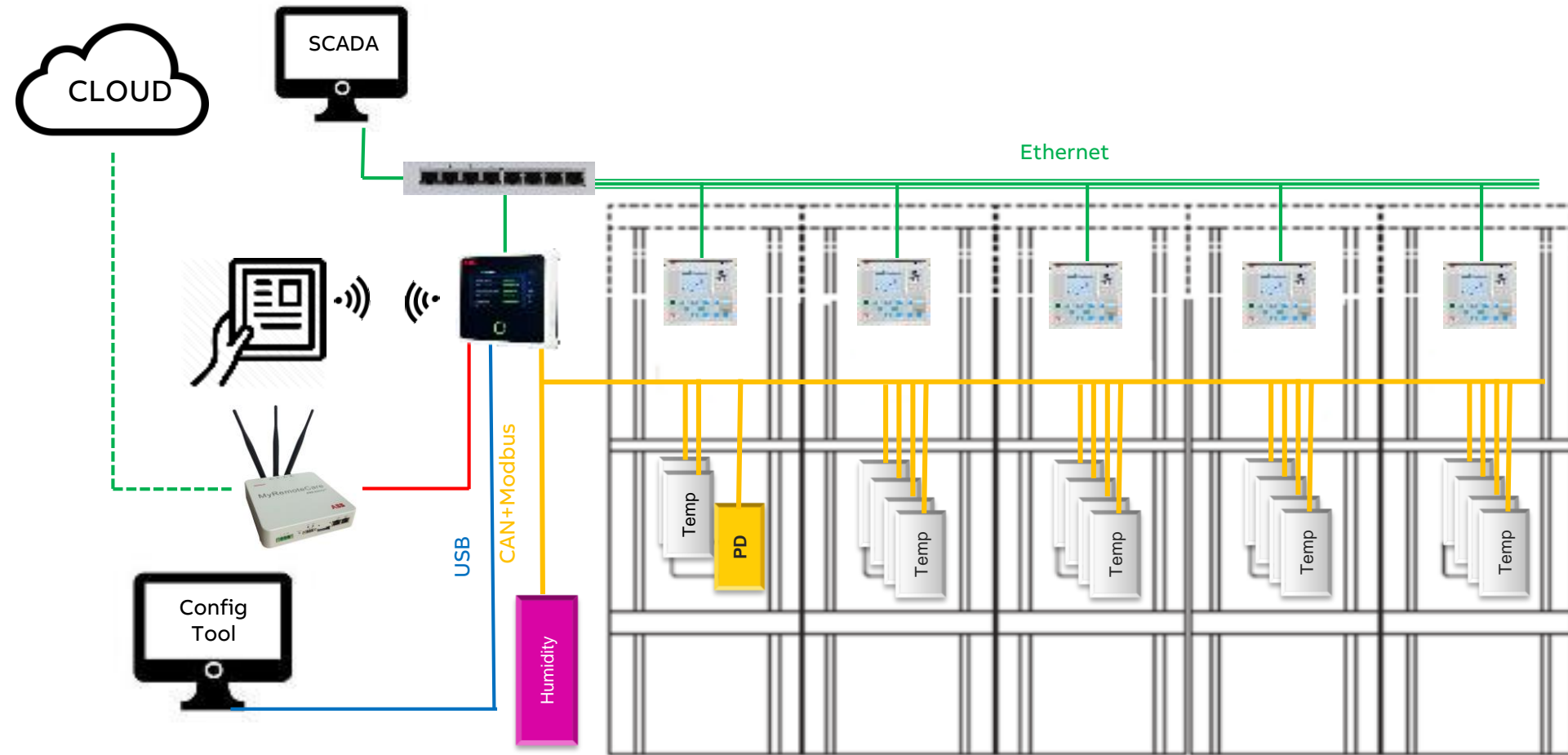


PDCOM

Partial discharge sensor

SWICOM

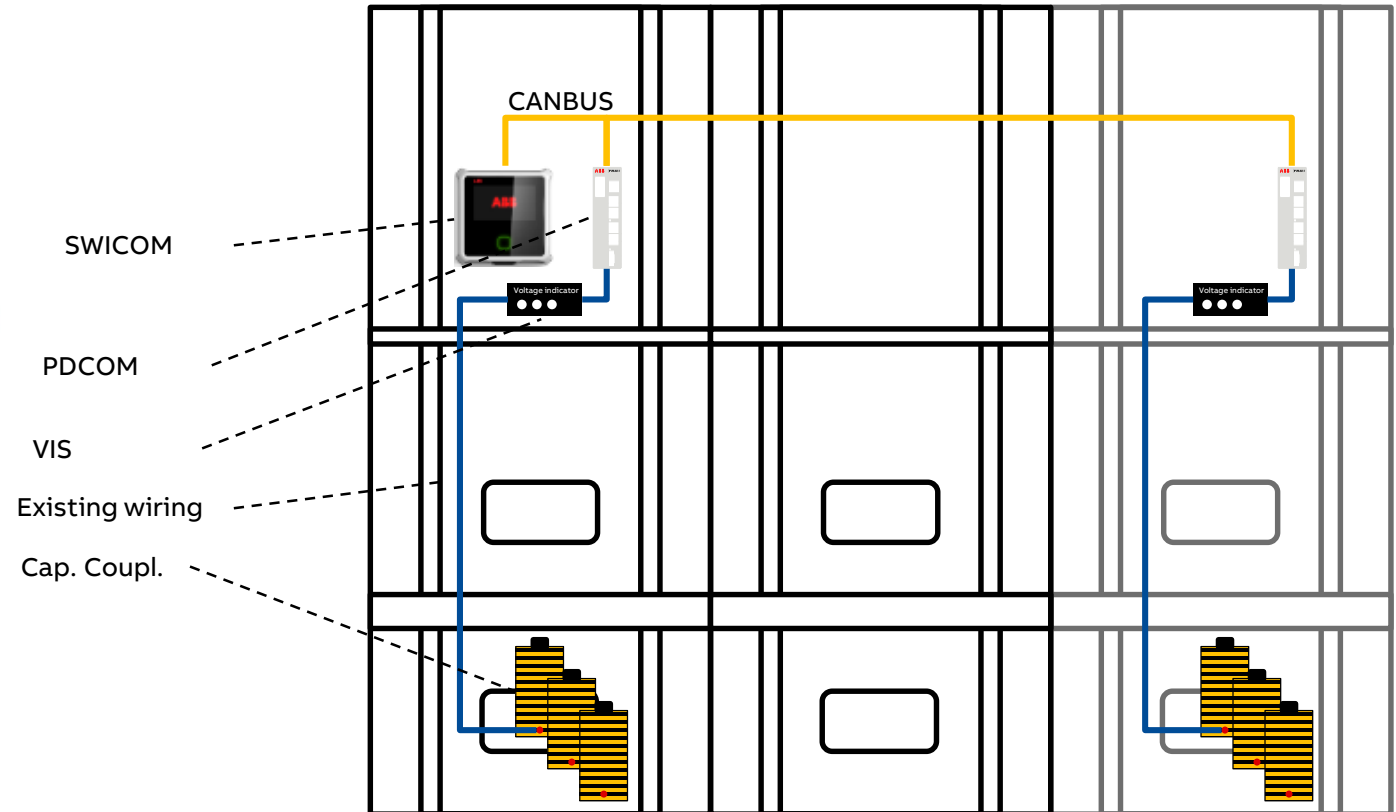
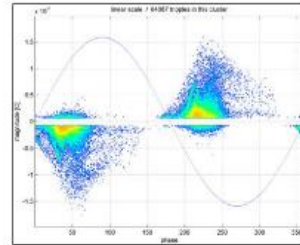
On-premises solution with scalability to cloud



What's happening in the switchgear

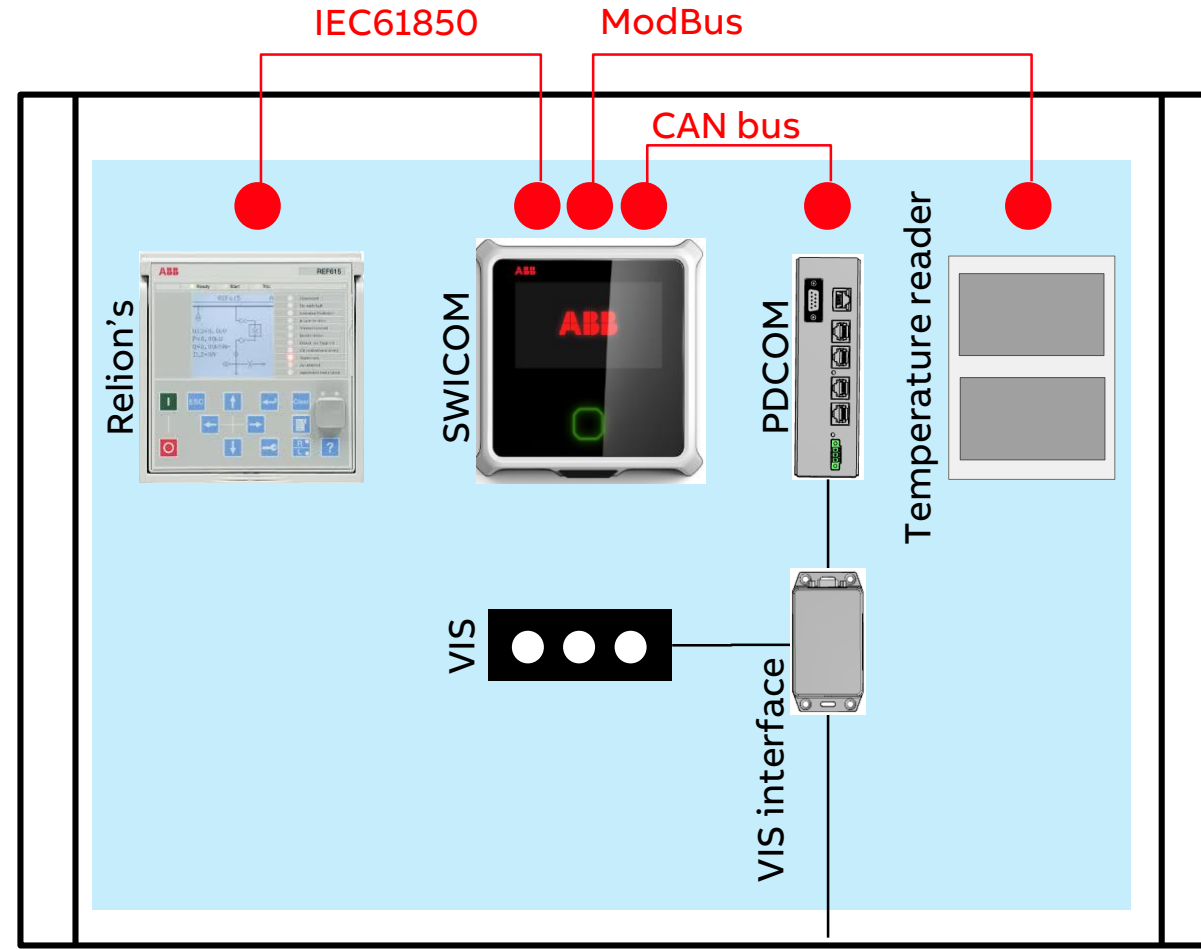
PDCOM

- One sensors per line-up (or one every 10 panels)
- Measurement is based on capacitive coupling principle
- It is easily installed and connected in parallel to the capacitive coupler of VIS (Voltage Indication System), and can detect any PD (not just the surface, but also internal ones)
- The output is used to drive maintenance on condition



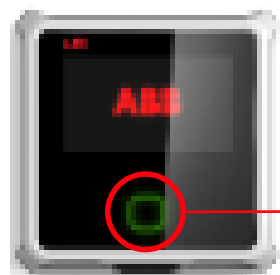
MV Switchgear monitoring & diagnostic

Different sensor connection



What's happening in the switchgear

PDCOM – KPIs and measurements



-  Free
-  Warning
-  Alarm

PD status

Proprietary analytic
output processing the
measurements

Additional KPIs

- PD warning free time (0...100%)
Warning (Y) free time over the last 7days
- PD warning free time (0...100%)
Warning (Y) free time over the last 28days
- PD alarm free time (0...100%)
Alarm (R) free time over the last 7days
- PD alarm free time (0...100%)
Alarm (R) free time over the 28days

Measurements

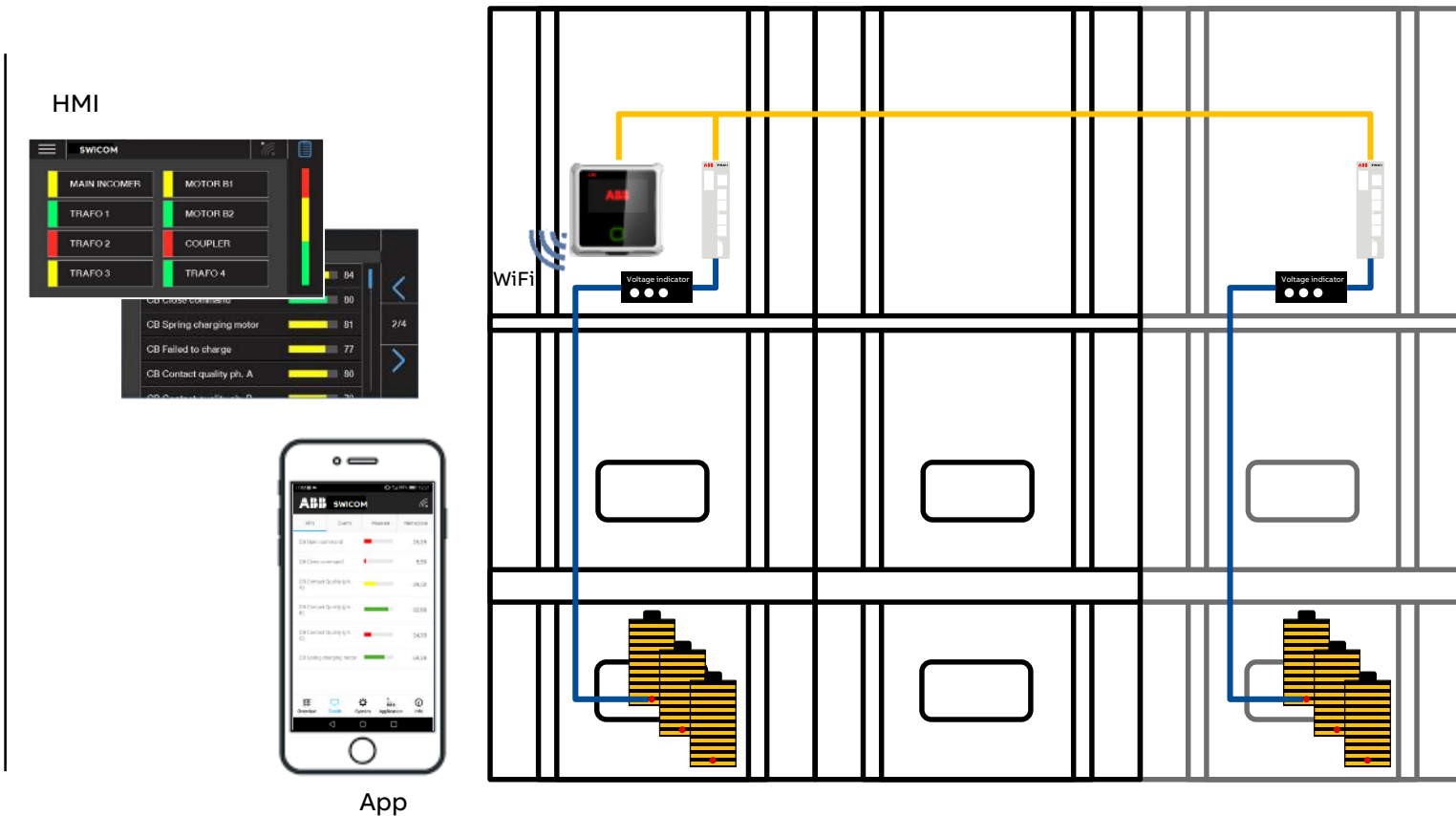
- PD presence indicator (0/1)
The switchgear is affected by any “PD like” phenomena
- PD strength (0...100)
PD phenomena intensity after noise removal
- PD pulse rate (Hz)
Amount of PD events above noise level over the time
- PD strength variation (0...100%)
Intensity variation over the last 24hours (rate of change)
- PD strength increase (0...100%)
Today intensity vs last 28days trend (speed of change)
- PD warning persistence (Hours)
Duration of “PD status” KPI in warning status
- PD alarm persistence (Hours)
Duration of “PD status” KPI in alarm status

SWICOM

Overview

SWICOM system

- On premises solution with Local HMI with touch screen
- Read circuit breaker operations from relays (IEC61850) without extra sensors
- Scalable condition monitoring with additional sensors: environmental, thermal sensors and partial discharges
- PDCOM provides PD indication to a switchgear level



ABB