EGS

Enhanced Grid Sensor

Vienna 06.07.2021

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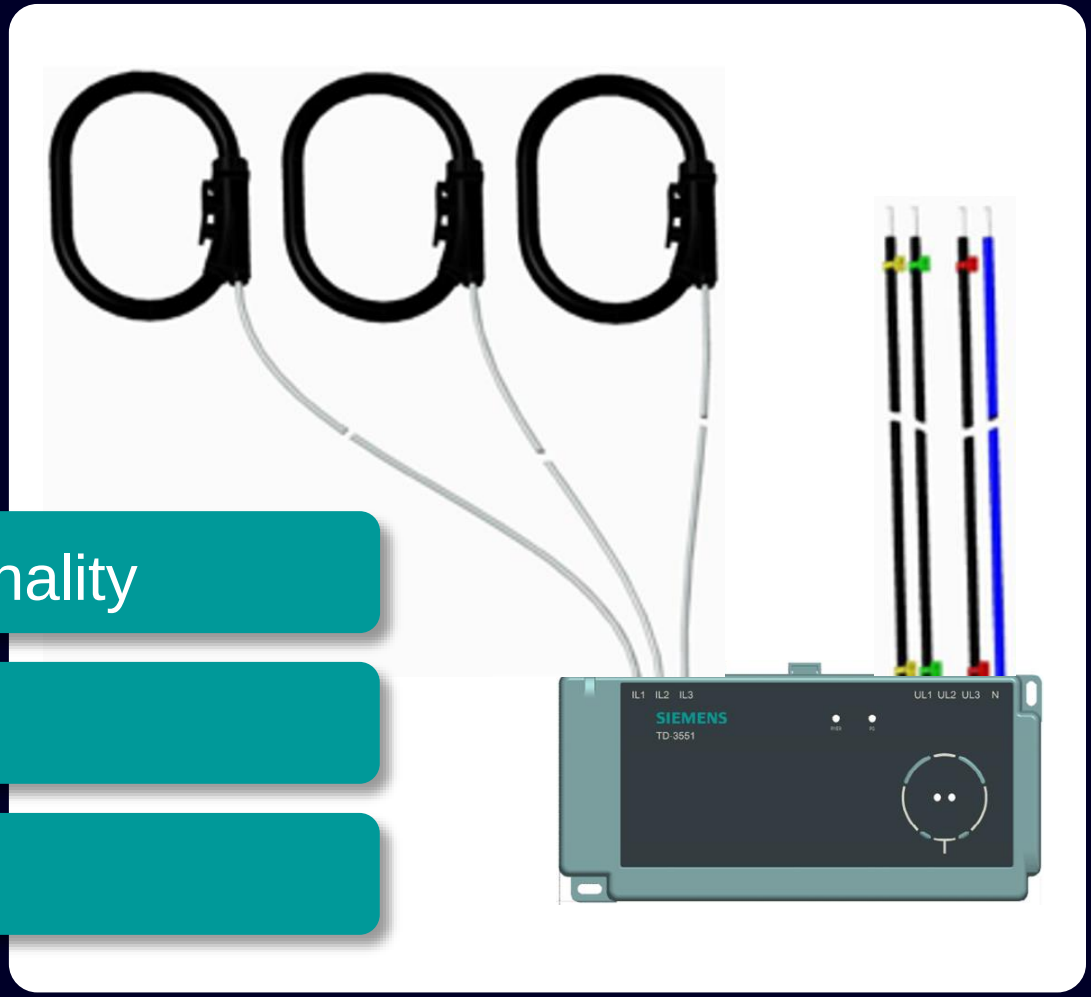
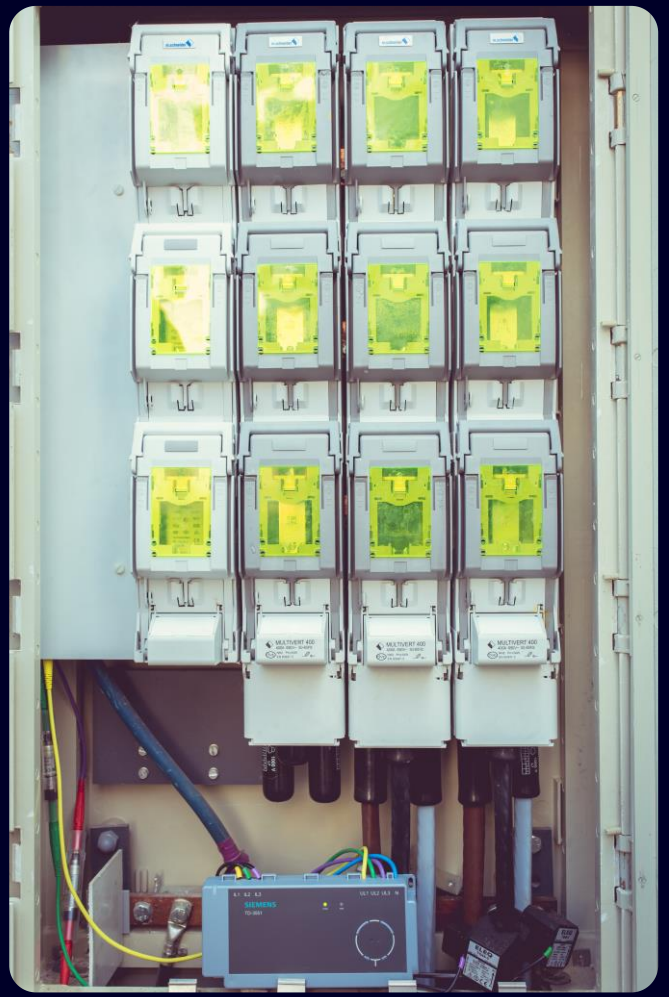
Enhanced Grid Sensor (EGS)
Description

1. EGS functionality
2. Use cases
3. Roadmap





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Enhanced Grid Sensor (EGS)
A new LV sensor – why?

DSOs require transparency on asset loading in low-voltage infrastructure

- Lots of sensors are available, but they need interface converters, communication devices, additional cabinets, current transformers extensive wiring and do not provide IoT capabilities.
- EGS is a “one device solution” for LV transformer stations, cable distribution cabinets and building connection boxes
- Grid sensors are the foundation of distribution grid digitalization solutions

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Enhanced Grid Sensor (EGS)
Functionality and features

Measurement values

- Measures 3 voltages and 3 currents in real time (50Hz fundamental and r.m.s.)
- Frequency measurement
- Calculates P, Q, cos phi
- Adjustable averaging time for measurement values
- Integrated memory supports replacement of trailing pointer devices

Communication

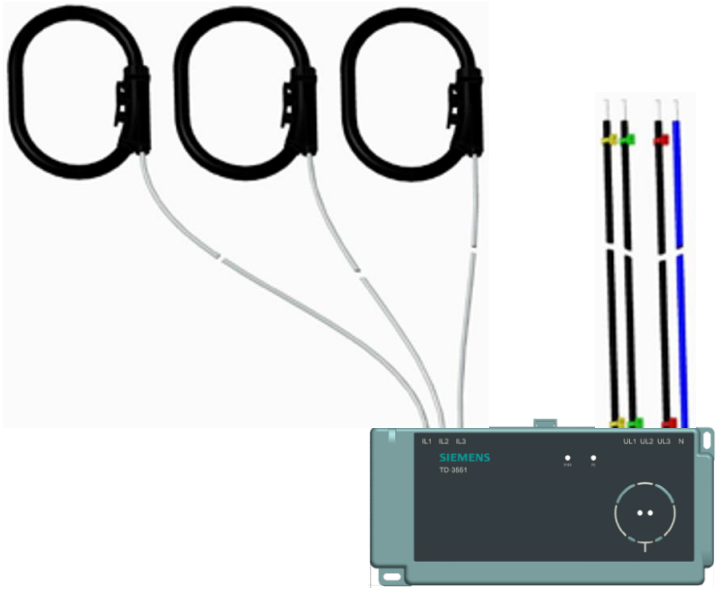
- Two ethernet interfaces (MQTT/OPC-UA, 60870-5-104, 61850, HTTPS)
- Integrated GPRS / LTE Cat M1 communication
- Integrated security functions
- Support for A8000 Containers/Apps (e. g. tap changer control)

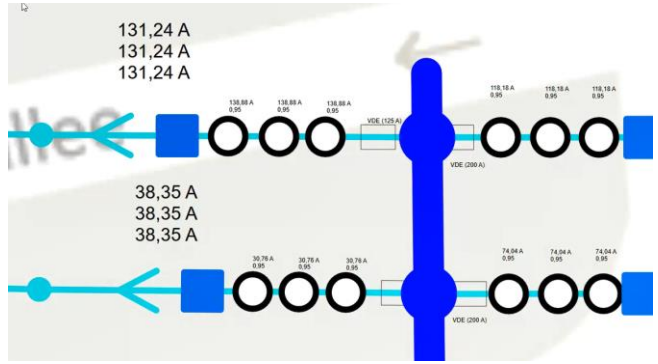
Mechanics

- Current measurements performed with Rogowski Coils
- Ruggedized design (IP54) for direct installation in cable distribution cabinets, building connection boxes and LV-transformer stations

Planned further developments

- Low cost 3-phase current sensor (measurement of additional feeders)
- Integration of Low Power Bluetooth communication to connect temperature Sensors





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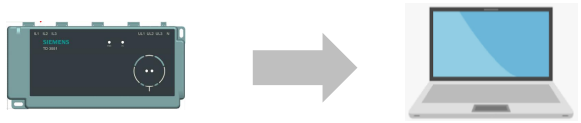
Enhanced Grid Sensor (EGS)
Use Cases

EGS as replacement for analogue trailing pointer (= Data logger)

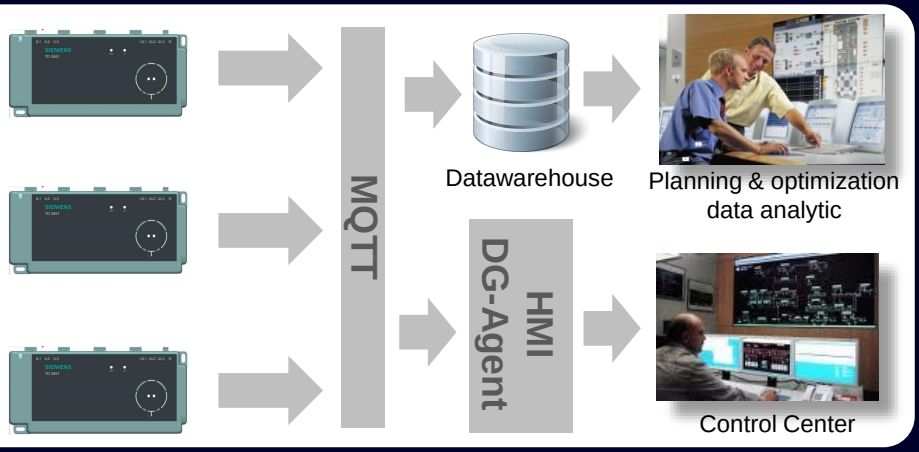


Backend-IT

- Monitoring of grid asset utilization and operational limits
- Data base for trend forecast
- Generation of load profiles for typical customer groups / transformers

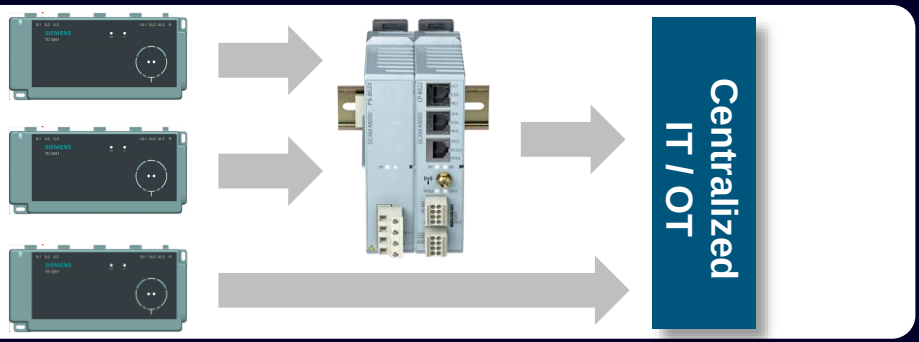
Operational IT

- Detection of critical grid states and failures
  (in case of active grid management, assuming today's grid operating principles)



Support for SICAM A8000 grid management applications:

- Grid watch dog
- Micro grid control
- Tap changer control
- Coordinated e-car charging



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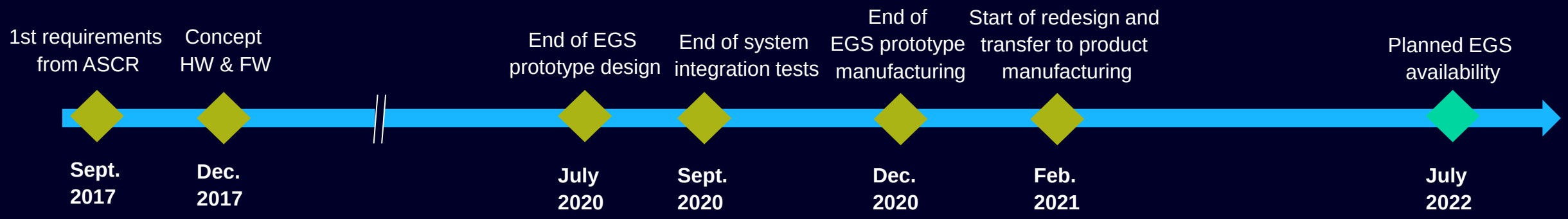
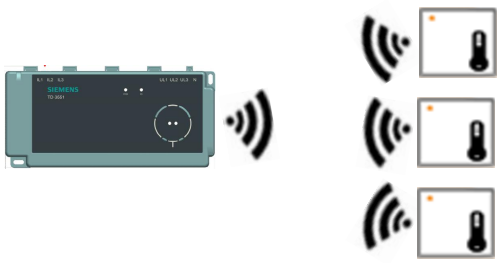
Enhanced Grid Sensor (EGS)
Roadmap

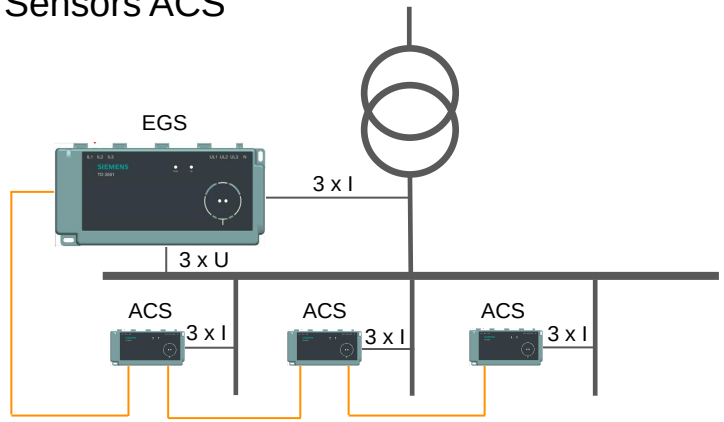


Planned Extensions

Integration of Low Power Bluetooth to connect temperature- and other sensors



Low Cost Current Sensors ACS



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Contact

Published by Siemens SI DG

Alexander Schenk
Principal Key Expert
Siemens Austria
RC-AT SI DG
Siemensstraße 90
1210 Vienna
Austria

Mobile +43 664 615 4744

E-mail alexander.schenk@siemens.com

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