



Berichterstattung CIRED 2013

Session 1

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Christof Electric

Wien, 28.1.2014



Netzkomponenten

- Block 1: **Alterung von Netzkomponenten, Diagnosemethoden und Monitoring**
- Block 2: **Erfahrungen im Feld, Ertüchtigung und Instandhaltungsstrategien**
- Block 3: **Innovative Netzkomponenten für Smart Grids**
- Block 4: **Innovationen bei Netzkomponenten**

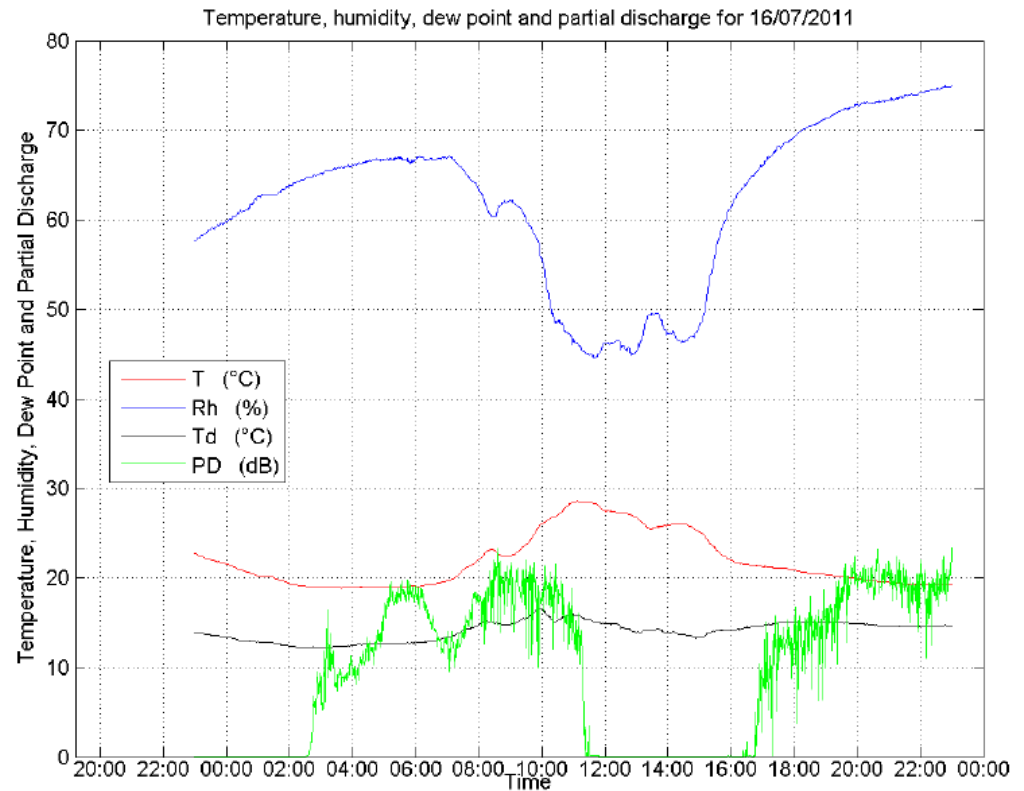
- RT1a: **Neue Komponenten zur Spannungsregelung**
- RT1b: **Intelligente Ortsnetzstationen**
- RT1c: **Teilentladungen und Online-Kabelmonitoring**

- RIF: **Thermosimulation, Blitzschlagphänomene, Fehlerstrombegrenzer und Energieabsorption von Störlichtbogen**



Alterung, Diagnose, Monitoring

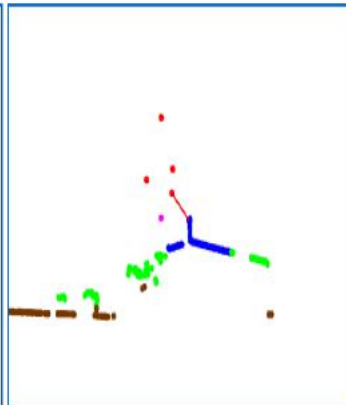
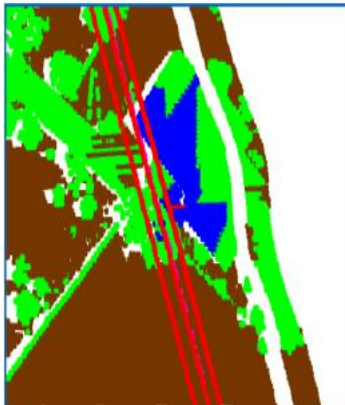
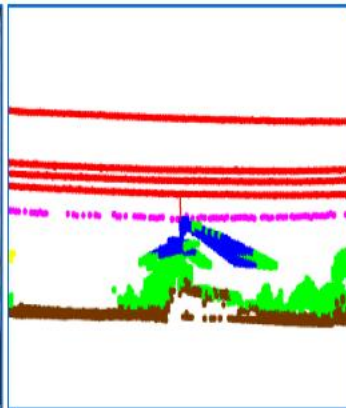
- TE-Messungen bei MS-Schaltanlagen





Alterung, Diagnose, Monitoring

- **Befliegung, Datenmanagement**

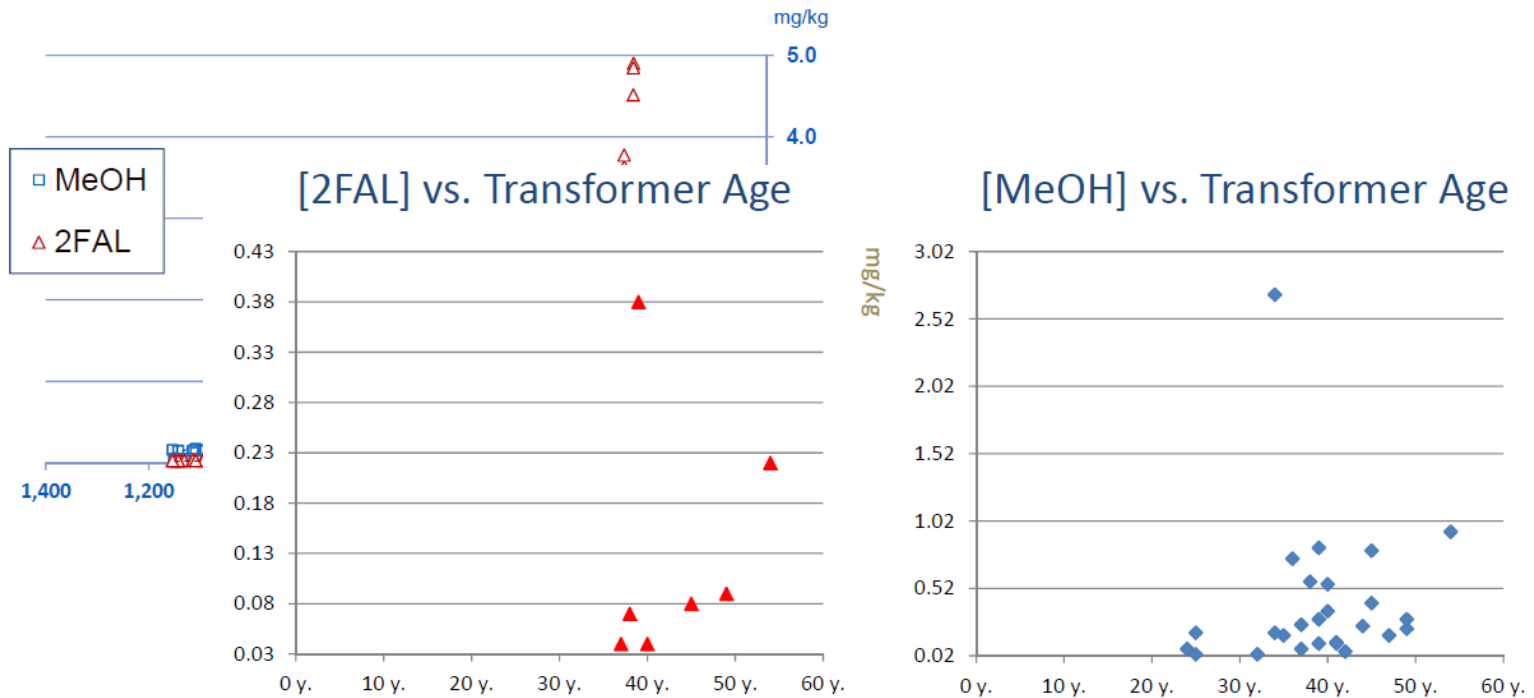




Alterung, Diagnose, Monitoring

- Alterung MS/NS-Transformatoren, chemische Indikatoren

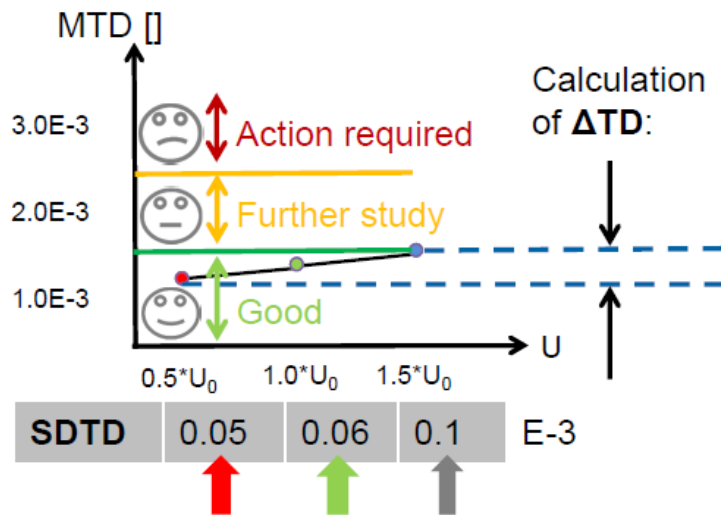
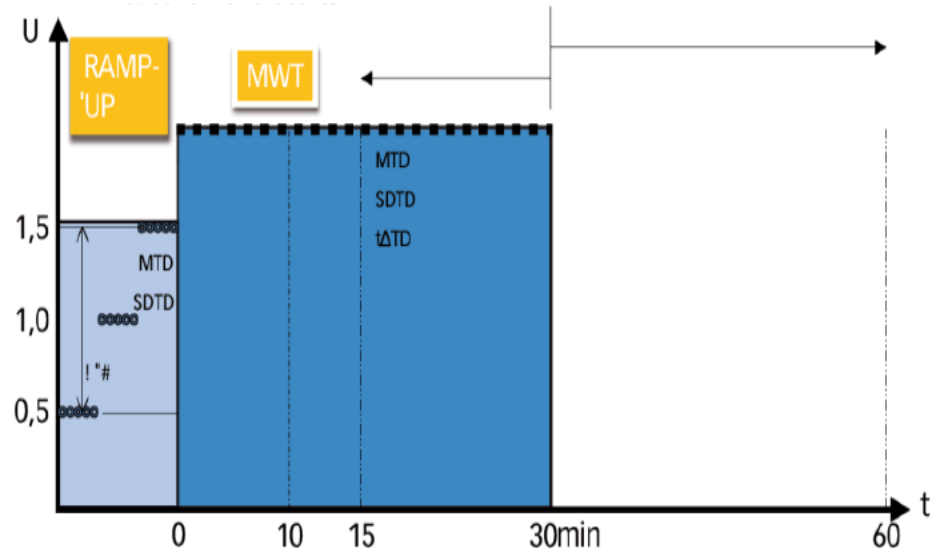
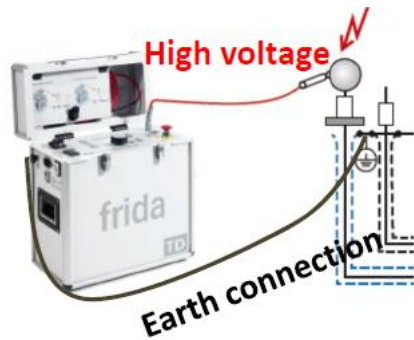
[2FAL] and [MeOH] vs. DPv





Alterung, Diagnose, Monitoring

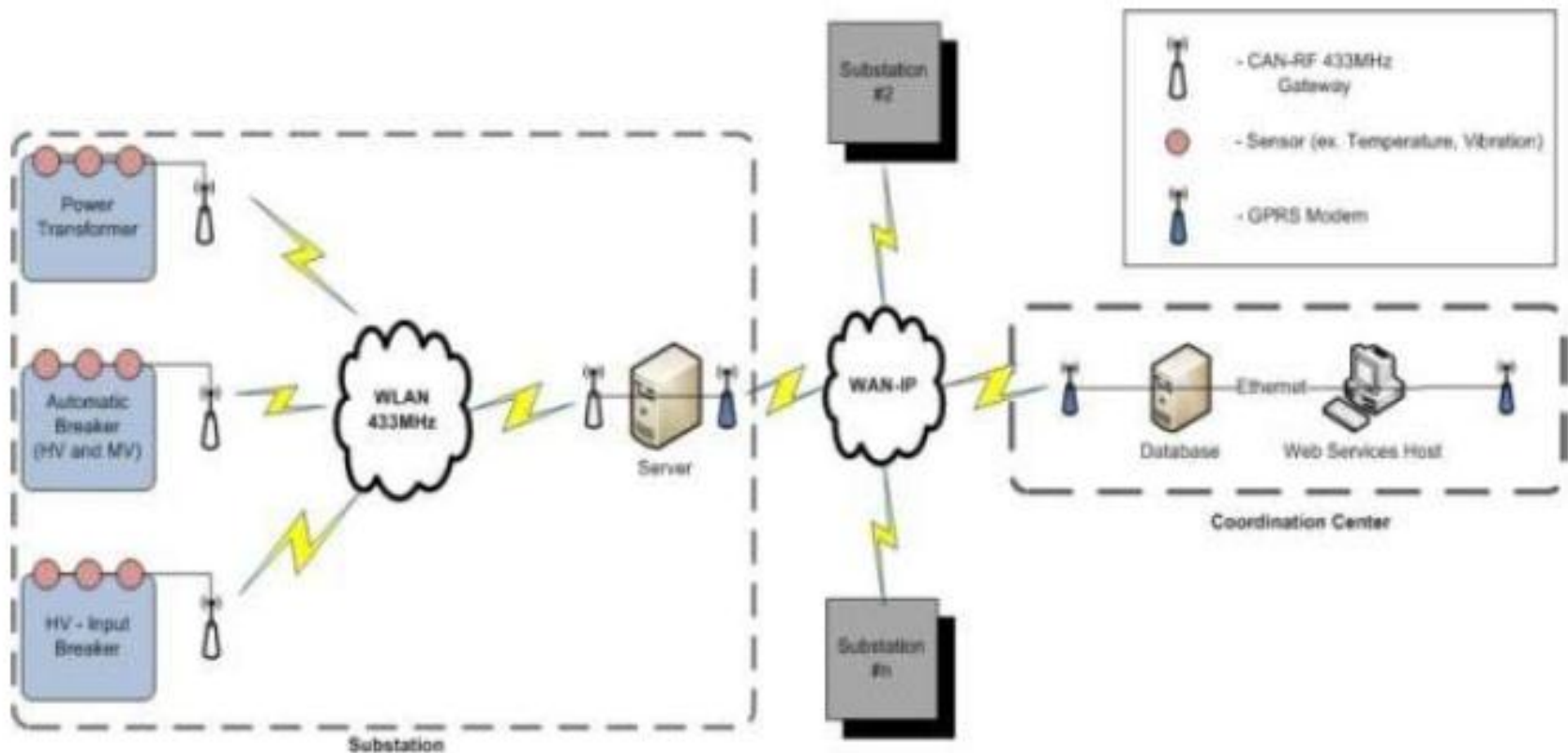
- MS-Kabelprüfung- und Diagnose (AT, Baur)





Innovative Komponenten Smart Grids

- Asset Management in Umspannwerken (Smarte Sensoren)



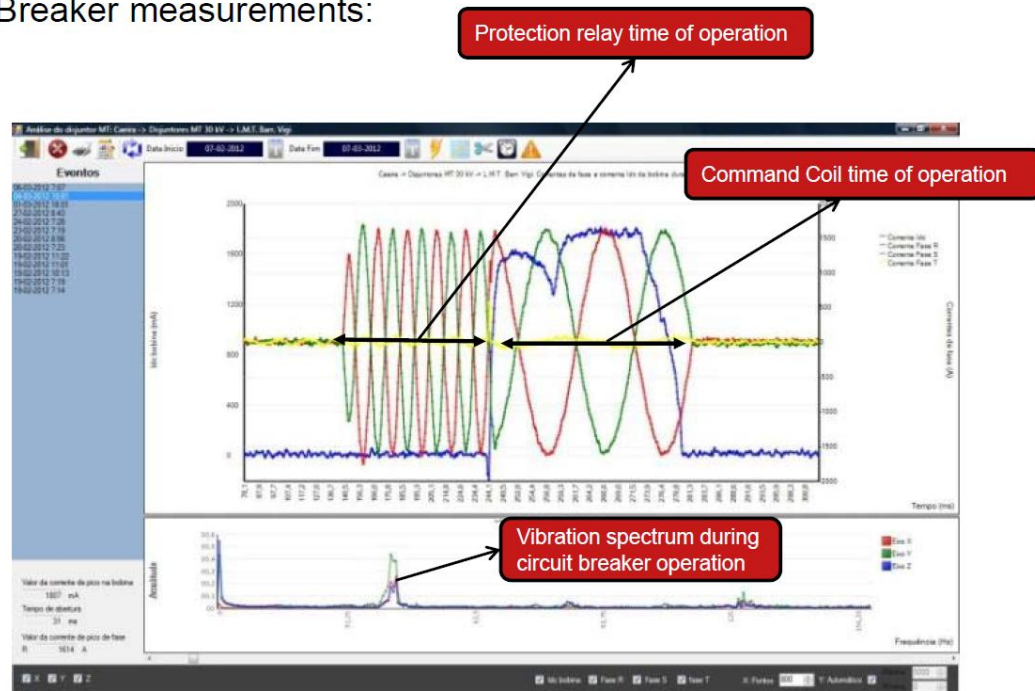
Innovative Komponenten Smart Grids

- Asset Management in Umspannwerken (Smarte Sensoren)



Wireless vibration smart sensor powered by energy harvesting

Circuit Breaker measurements:



Innovative Komponenten Smart Grids

- Retrofit MS-Schaltanlagen, Kabelendverschlüsse mit Strom- und Spannungssensoren



1. Existing
std termination



2. Cable
cutting



3. Cable
preparation



4. Plug and
install

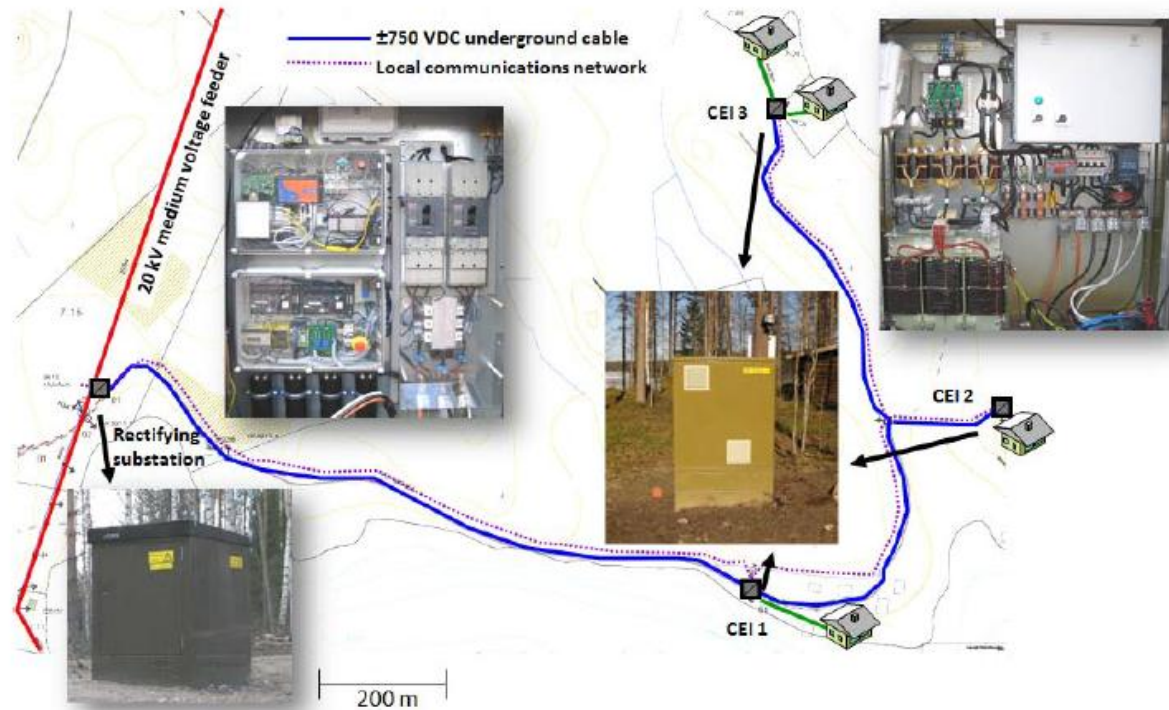




Innovative Komponenten Smart Grids

• LVDC System im Praxistest

- 100 kVA rectifier supplied with double-tier transformer
- 1.7 km long 750 V DC network
- Three 16 kVA three-phase customer-end inverters (CEI) supplying end-users





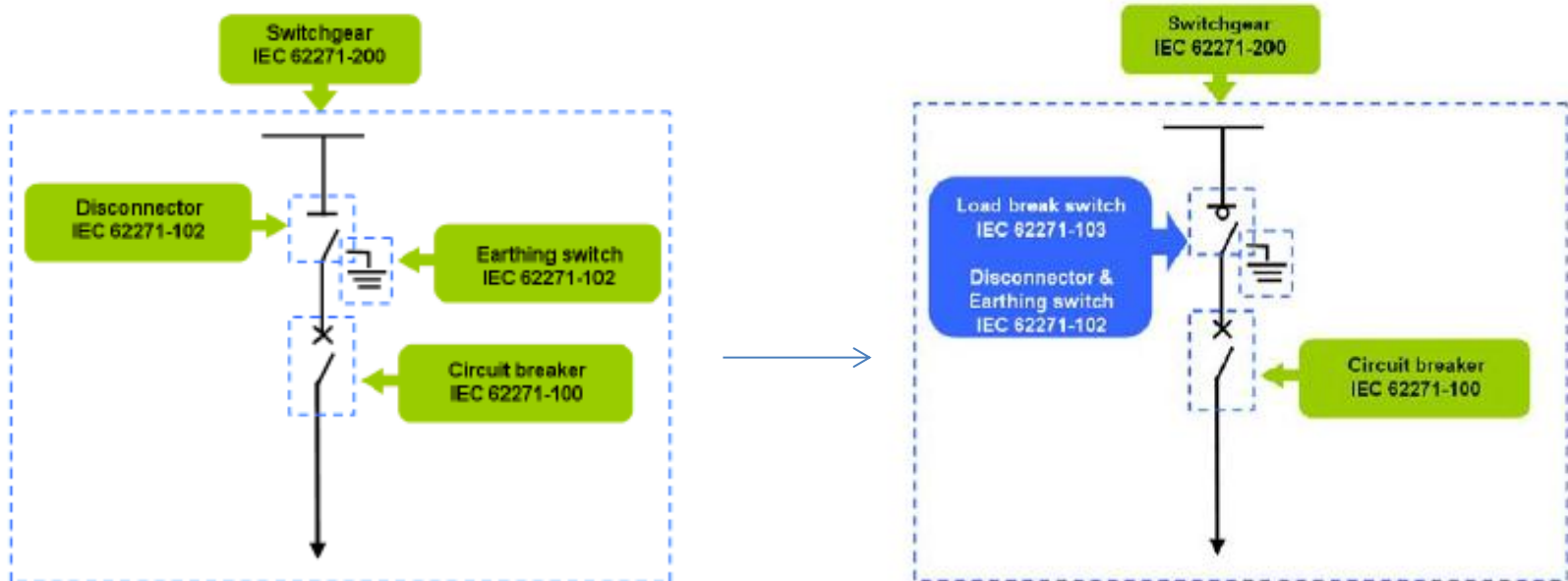
Innovative Komponenten Smart Grids

- Batteriespeicher 1MW, 0,5MWh, 85% Wirkungsgrad



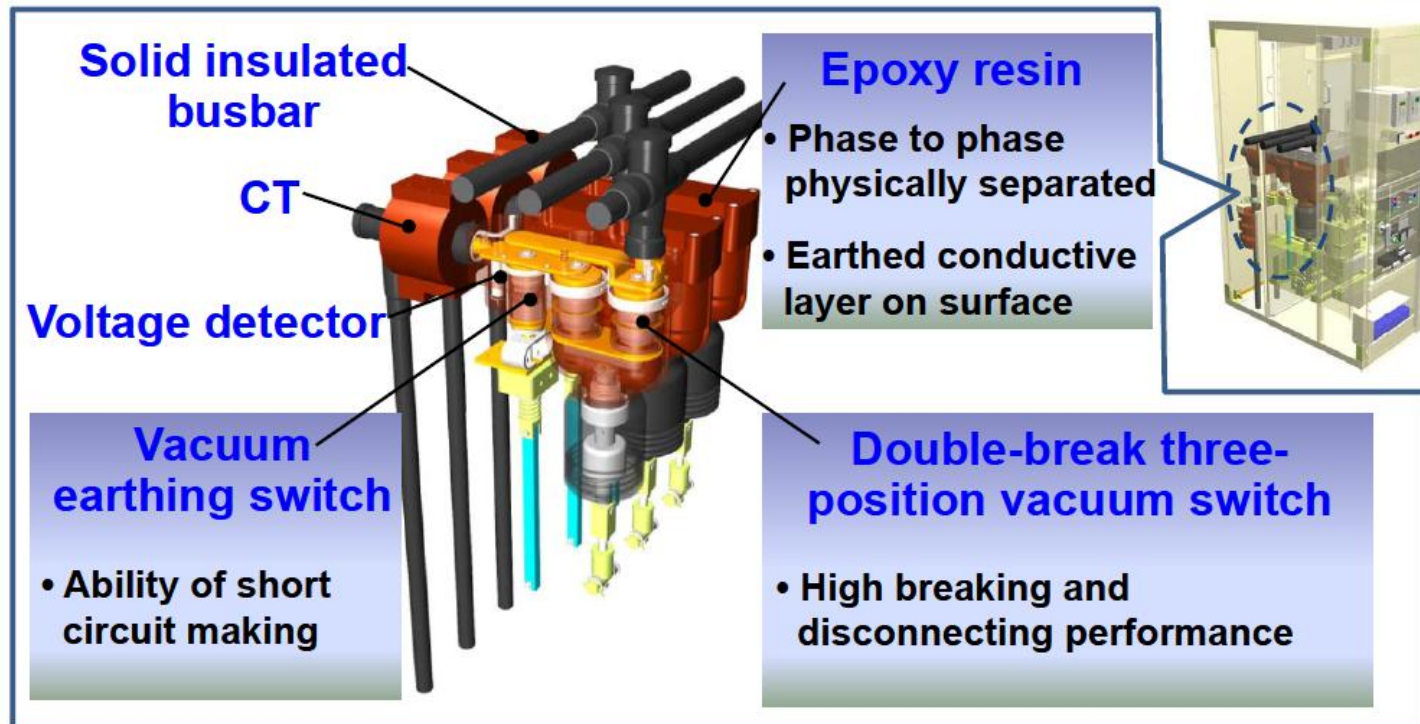
Innovationen bei Komponenten

- MV Schaltanlage Tausch Trenner -> Lasttrenner (Vakuum LS)



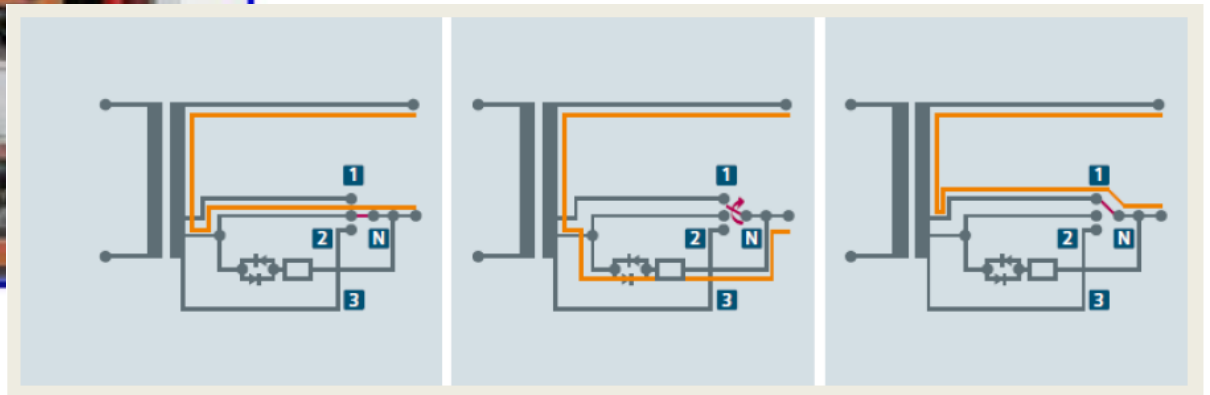
Innovationen bei Komponenten

- **Kompakte SF6-freie MV Schaltanlage**



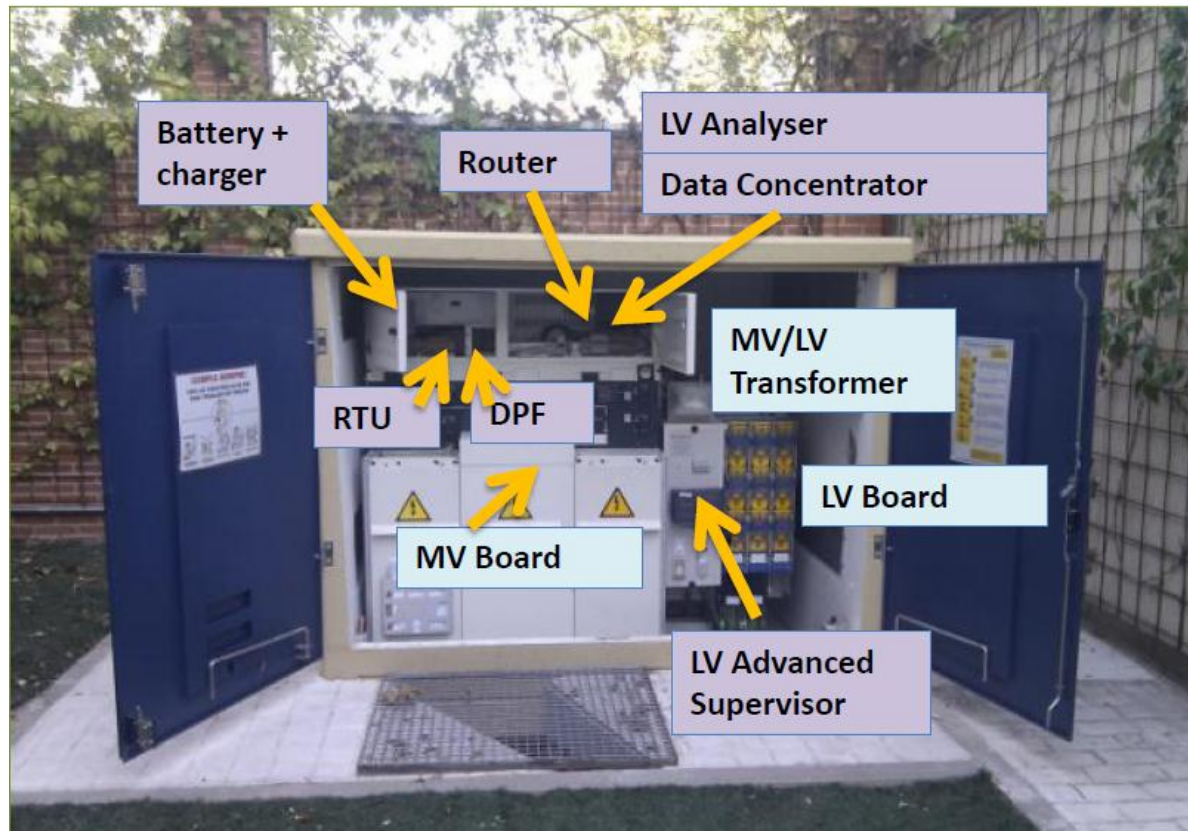
Neue Komponenten Spannungsregelung

- Spannungsregelung bei MS/NS Transformatoren (Thyristor)



Intelligente Ortsnetzstationen

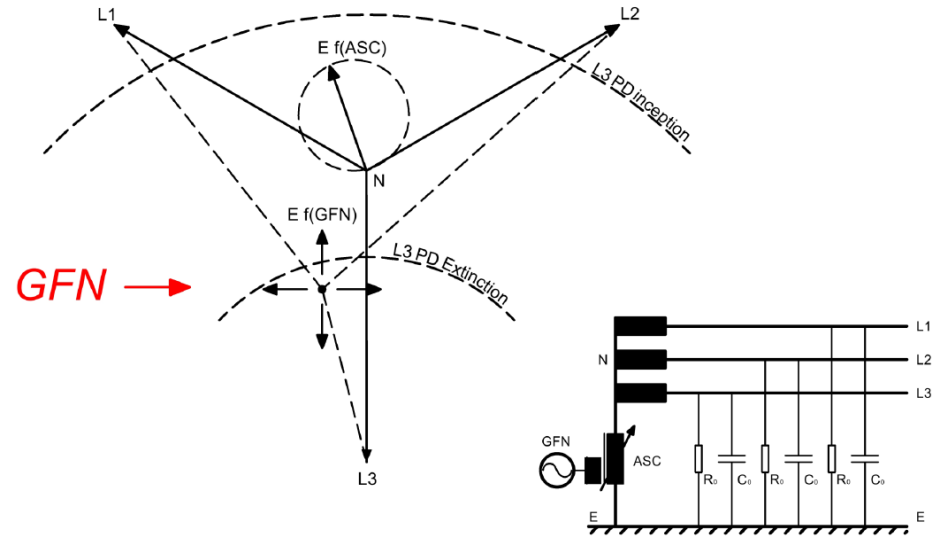
- Modularer Smarter MS/NS-Verteilstationen Manager





TE und Online Kabelmonitoring

- Online TE Detektion und Regelung mit Erdschlusslöschspule



Erdschlusslöschung (ASC)
Reststromkompensation/U₀-Regelung (RCC/GFN)