

0969 - Decentralized Earth Fault Compensation in MV-Grids - Challenges and Solutions

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Introduction

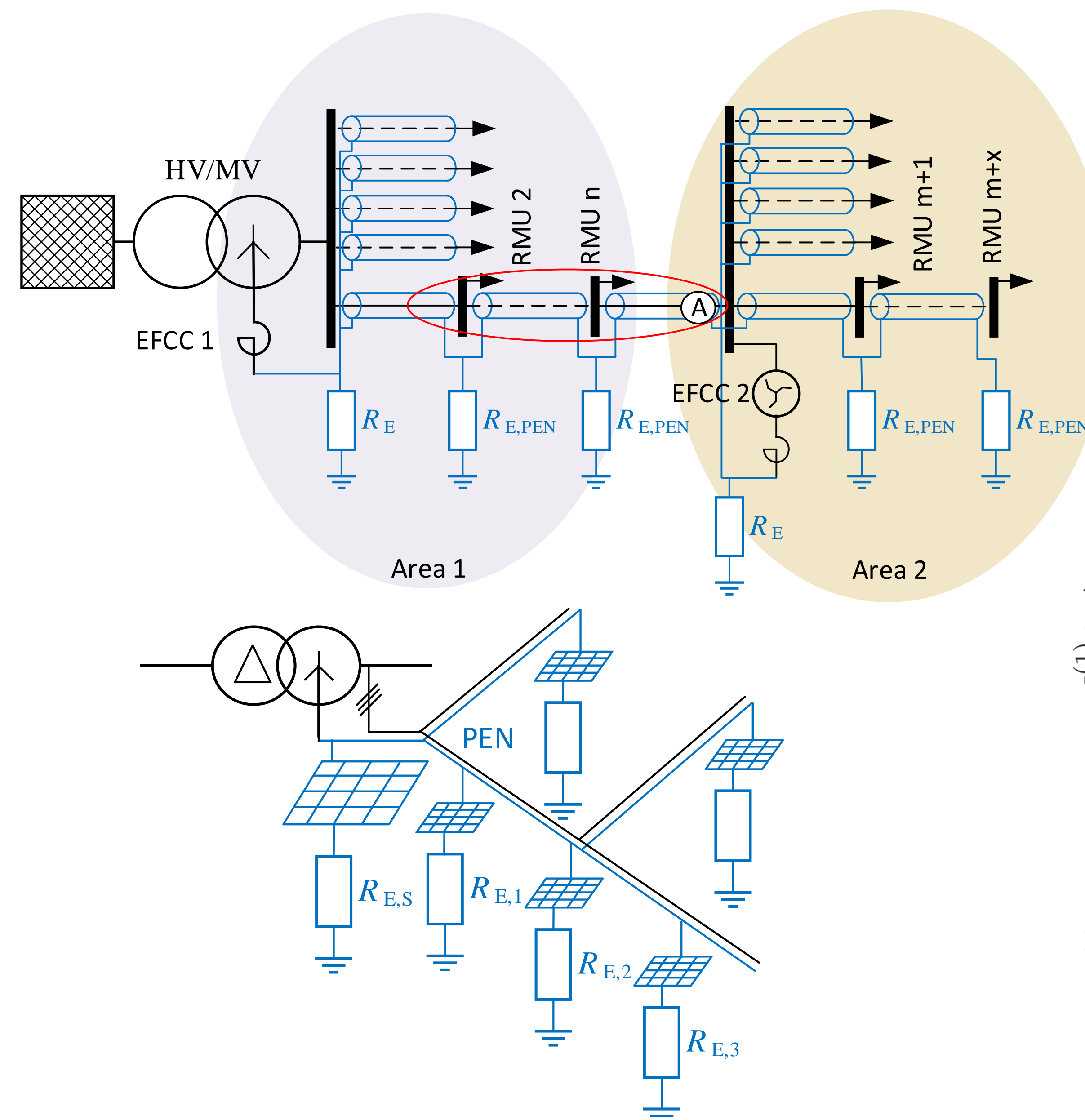
Installation of decentralized earth fault compensation coils (EFCC) in MV-Networks lead to requirements on earthing systems (personal safety) and cable shields (overheating).

Two Network Models

- Urban: cable dominated
- Rural: Overhead Line (OHL) dominated

Analysis:

- Earth potential rise (EPR), touch transferred voltage for interconnected earthing systems for station with EFCC
- zero sequence current distribution and cable shield current in a connection between two network areas



Results

- Connection of MV and LV earthing system dominates the EPR
- Zero Sequence Current in fault case leads to additional cable heating
- Compensation within network areas avoids cable overload in earth fault case.

