
LEVERAGING FAULT DETECTION AND VOLTAGE CONTROL IN LOW VOLTAGE GRIDS BASED ON DISTRIBUTED MONITORING

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ABSTRACT

Monitor BT project's main goal is to develop and deploy advanced functionalities for fault management and voltage control on Low Voltage (LV) grids, potentiated by the information of distributed sensors. These operational parameters collected along the feeders by wireless meshed sensors enable fault detection and localization, fuse-blow detection in cabinets and secondary substations, leading to a reduction on the interruption time, improving Quality of Service (QoS). Furthermore, last-gasp alarms from sensors allow maintenance teams to react faster, supported by geo-referenced outage data provided by the Outage Management System (OMS).

Monitoring LV feeders by deploying distributed sensors assures that the increasing micro-generation penetration is monitored, leveraging dynamic voltage control through the active management of Photovoltaic (PV) production by controlling their inverters with set-points calculated locally at the secondary substation.

The developed equipment and functionalities will be integrated in a pilot grid area of EDP Distribuição (EDP Group), Portugal (Portuguese DSO), whose infrastructure will provide a realistic scenario for validation of the solution.