Demo A.3 – Technical factsheet

FARCROSS

Developing Wide Area Protection, Automation and Control (WAMPAC) solutions for the optimal exploitation of Greek HV transmission lines.

This demonstrator investigates the grid stability and security criteria that will act as service requirements for a complete WAMPAC solution. A detailed software architecture is then configured, aiming at improved control and monitoring of the Greek HV Transmission assets while strengthening the system's resilience to transient stability.

Major Impact Factors:

- Greek TSO (IPTO) will utilize the WAMPAC scheme to improve backup protection, monitoring and inter – area oscillation detection for its power transmission assets.
- WAMPAC will strengthen IPTO's regional and cross – border transmission asset operation, effectively detecting malfunctions and unstability indications.
- Steady state and dynamic limits of transmission equipment will be handled in a more active way, based on real time data management.



DEMO LEADER





"This demonstrator implements wide area monitoring and protection solutions that contribute to the secure operation of the cross-border transmission network" - Eduardo Martínez, CIRCE

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 864274



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Technology Types:

WAMPAC system will be able to provide the following services:

- Voltage stability.
- Power oscillation monitoring.
- Dynamic line rating.
- Islanding detection and loss of synchronism.
- Rate of change of active power.
- MPFC for power oscillation damping.
- > Zone IIA protection: Fault detection within protection zone and alarm generation.

Fields of Application:

 Phasor Measurement Units (PMU)s, gathering data for WAMPAC, are proposed for installation in HV Transmission Lines and Substations, as well EHV Centres in Greece's mainland (Meliti, Kardia, Agios Stefanos) and interconnected islands (e.g. Syros).



Components:

Expected Benefits:

- Upgrade the existing Transmission SCADA systems, wider data acquisition and more effective communication.
- Quicker and more reliable detection of active power oscillations within HV Transmission corridors.
- Improved network and energy market readjustment in coordination with the transmission lines' state (e.g. on outage occurrence).
- Safer and more adaptive operation of the regional and cross border connections.

Technology Readiness Level (TRL):

• The locations for the PMUs' installation, as well as the overall system architecture and service distribution has been completed. Thus, a **TRL 7** has been achieved.

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