

A) General Information



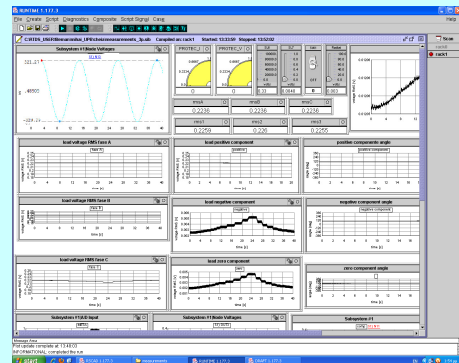
Acronym:	EnergyMAD
Title of the User-Project: TA Call:	Energy Transfer Models for Active Distribution Grids
Host Research Infrastructure:	ICCSNTUA Athens, Greece
Starting Date:	04.09.2012
End Date:	28.09.2012
Lead User :	Mihaela ALBU
Organization:	University POLITEHNICAof Bucharest
Additional Users:	Mihai CALIN

B) Summary of the User-Project

The proposed project aims at performing an accurate network *analysis* by taking into consideration: **uncertainties associated with measurement systems; new quantities to be monitored** in distribution networks beyond the steady state paradigm based on data aggregation (rate of change of frequency, voltage and current phasors); **new numerical models** for the elements of active distribution networks, including power electronics interfaced DG and storage. The topics above represent **the three dimensions of the project** and include advanced data processing associated to monitoring. When related to classical fields of study in power engineering, the project encompasses power quality studies, microgrids, and measurement techniques. The main test was the simulation of a **three**phase network that exists in Romania. Power hardware in the loop tests were performed to monitor and study the behavior of this network in cases of asymmetric consumption and power insertion from PV.

C) Main Achievements (Expected Results)

Main achievement of the project were the evaluation of power quality issues in a distribution network for different scenarios, for example: PV connected on one phase and a variable load connected on another phase in a weak grid. Three phase models with sequence decomposition were considered. As a second expected result, the assessment of the combined uncertainty in the measurement chain of the power hardware in the loop will be performed and its impact on the overall performance of the PHIL setup will be highlighted.



D) Dissemination of the Results (Planned)

The integration and dissemination of the results will be achieved through presentations at international conferences and to the electric utilities, technical papers in international journals, and a project webpage developed and maintained under www.microderlab.pub.ro

E) Use of the Resources (Expected)

Nr. of Users involved:	2
Access Days:	24
Stay Days:	33