Industry Session– IEEE ISGT EUROPE 2016

Challenges and Opportunities of Big Data in Power Quality Analysis

Monday, 10th October, 11:00 – 12:30
Room: E1,2
Chair: Jan Meyer, Technische Universitaet Dresden, Germany

Abstract:
Developments in enabling technology (monitoring equipment, communication technology, data storage and processing) have made it possible to monitor Power Quality on a large scale. Introduction of new load types like Electric Vehicles, the proliferation of storage applications and the continuous increase of inverter-based generation place additional pressure on network operators to monitor, report and control various aspects of network performance. Consequently the number of installed Power Quality monitors and the amount of available Power Quality data is growing vastly. These data contain a lot of valuable information about the behaviour of Power Quality, but at the same time the management and analysis of these big data becomes a more and more complex challenge for the network operators. Particular due to the lack of sophisticated and automatic analysis tools up to now only a very limited amount of the available information is used. This panel provides an overview of the major challenges of big data in Power Quality analysis applications. It addresses general aspects of designing larger Power Quality measurement campaigns and the basic requirements on instruments and sensors. Beside real experiences of a distribution network operator, novel ideas on indices for Power Quality benchmarking and the use of the data for including Power Quality aspects in network planning are discussed.

Speakers (15 minutes per presentation):

Jan Meyer, Technische Universitaet Dresden, Germany
"Design aspects for large PQ measurement campaigns"

Ivo Novakovic, TECTRA d.o.o. Zagreb, Croatia
"Requirements on PQ instruments and measurement sensors"

Jovica Milanovic, The University of Manchester, UK
"Advanced PQ observability and benchmarking in distribution networks"

Peter Bergant, Elektro Ljubljana, Slovenia
"Experiences in data analysis and reporting by a DSO"

Adnan Bosovic, JP Elektroprivreda BiH, Bosnia and Herzegovina
"Opportunities for PQ monitoring using Smart Meters and enhanced data analytics"