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**Generation Company Control Centre IT Support Architecture for  
New Market Dominated Environment**

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**Abstract**

Today electricity industry is characterized with the increased share of DG/RES in the overall generation mix, liberalization of markets for energy and services, typically compounded with new and unexpected power flows, congestions and dynamic phenomena. In parallel, customer expectations regarding reliability and power quality are increasing.

Consequently there is a need for better power (generation) system monitoring and control, what implies, in line with industry unbundling, need for new advanced control center architectures at every key industry actor, either GenCo, TSO/ISO or DSO.

At the TSO/ISO level, CC is traditionally equipped with SCADA/EMS systems, but to interact with the market, MMS were introduced. Many other TSO IT support systems were added in recent years as a result of many smart grid efforts, like DLR, WAMS, etc., that raised the issue of system integration, problem still not solved satisfactorily.

Extensive introduction of the DG/RES sources brought additional requirements both at GenCo/IPP and to TSO that have to be solved.

At the level of the generation company (GenCo) control center until recently only SCADA systems were used, with most of the IT support decentralized and located at the PP level. A need to interact with the markets introduced ETRM systems in these companies and suitable interface between CC and ETRM.

In this presentation, after reviewing current situation new requirements and GenCo IT support architecture will be presented, including control center (GCC) and PP part. Apart from the main IT support system structure definition their functionality will be described. Different data sources at the PP level and a ways of their acquisition will be shortly explored, as well as key integration issues at the GCC level. Importance of interfaces and standard protocols will be shortly outlined. Open questions will be raised.

Then technology issues will be addressed, together with the practical example from the ongoing project of one SEE generation company. At the end open issues will be addressed as well as possible approaches to resolve them.