Course 605

Online Dynamic Security Assessment Using DSATools

Course objectives	To provide the necessary background and technical skills for online dynamic security assessment (DSA) of power systems
Material covered	• The basic concept of online DSA • Analysis methods • Performance and model/data requirements • Software and hardware architecture • Data assembly and conditioning • Using online DSA systems • Result analysis and handling
Who should attend	Engineers involved in the implementation, commission, operation, maintenance, and applications of online DSA systems
Background required	• Knowledge of power system modelling, dynamics, and stability analysis • Familiarity with EMS (particularly the state estimation application) an asset • Recommended prerequisite: ▪ Course 602 – Voltage Security Assessment Using VSAT ▪ Course 603 – Transient Security Assessment Using TSAT
Duration	2 days (extendable upon request)

Part 1: Basic concept of online DSA

1. Dynamic security assessment (DSA) of power systems
2. Performing online DSA using real-time data
3. Analysis methods
4. Performance requirements
5. Model and data requirements
6. Unique issues to be considered for online DSA, such as
    - Building robust models for varying system conditions
    - Defining practical transfers with varying available resources
    - Result processing for large-scale computation tasks
7. Potential applications

Part 2: Implementation, configuration, maintenance, and application of online DSA systems

1. General approach of implementing online DSA using DSATools
2. Software and hardware architecture
3. Data assembly and conditioning
4. Configuring an online DSA system

5. Using an online DSA system
6. Result analysis and handling

Part 3: Case study – a typical online DSA system

1. Software and hardware description
2. Data and computational task description
3. System operation and result visualization

Note: the actual contents of the course may be customized based on user requests; please refer to the course announcement for details.