Scenario-based approach adopted in the ELECTRA project for deriving innovative control room functionality - DTU Orbit (05/12/2018)

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Here, the authors analyse the operator point of view of the Web-of-Cells concept defined in the EU project ELECTRA, by identifying operator tasks into the supervision of a highly automated power system, and the information requirements to facilitate appropriate operator situation awareness. The study outlines the methodology adopted, which is based on the cognitive work analysis framework, to provide an overview of the most interesting scenarios and to summarise the requirements analysis results. In order to derive required control room functionality, a set of relevant control room scenarios have been identified based on the Web-of-Cells control concept. The authors considered scenarios that challenge traditional control schemes, scenarios that caused major failures (i.e. blackouts), and scenarios that can be expected to appear in the future. For each scenario, information concerning network layout, triggering events, physical constraints, manually/automatic operations, operators' tasks, and relevant analytics have been analysed.

General information
State: Published
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy, Distributed Energy Resources, Energy System Management, University of Strathclyde, TECNALIA Research & Innovation, Ricerca Sistema Energetico SpA
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Number of pages: 4
Pages: 1450-3
Publication date: 2017
Peer-reviewed: Yes

Publication information
Journal: Cired - Open Access Proceedings Journal
Volume: 2017
Issue number: 1
ISSN (Print): 2515-0855
Original language: English
Electronic versions:
OAP_CIRED.2017.0613.pdf
DOIs:
10.1049/oap-cired.2017.0613

Bibliographical note
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Source: FindIt
Source-ID: 2392852623
Research output: Research - peer-review › Conference article – Annual report year: 2017