Transición energética en la 4ta revolución industrial
Visualization Proposal for Power System Control Rooms Based on Situational Awareness

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I. Introduction

Why is it necessary to consider Situational Awareness (SA) in power systems?

- System information excess.
- Inclusion of new technologies.
- Classical schemes of visualization software.

Figure taken from: https://twitter.com/valoraanalitik/status/1116384373903958020
II. SA Concept

III. Visualization interfaces based on SA

Levels

Overview
- Level 1

Control Unit
- Level 2

Detail Unit
- Level 3
- Level 3
- Level 3

Support Unit
- Level 4

Colors

Figure taken from: J. Kennedy (2004), Principles of Information Visualization, Institute for Informatics & Digital Innovation, Edinburg.
Appearance Attributes

Text
The quick brown fox jumps over the lazy dog

Grouping

Tables

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IV. SA for power systems visualization

Maps

Trend plots
V. Case Study: UPB Microgrid Control Room
VI. Discussion and Conclusions

- Quantifying the performance of operators in control rooms is a hard task. Work is being done to tackle this issue, derived from the designs proposed in this work.

- Several public grid operators and private electrical systems in Colombia integrate situational awareness concepts to their control rooms.

- Application cases, like the UPB microgrid supervision and control room interfaces, show a significant improvement in grid monitoring and data processing speed and efficacy.
VII. Questions