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Sensemaking and robust decision engineering: Synchrophasors and their application for a secure smart grid

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Abstract

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- II. Synchrophasor: a fundamental unit of future smart grids
- III. Main Implementation Issues of the Synchrophasor in the U.S
- IV. A comparison between the implementation of the synchrophasor in the u.s., china, and africa
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Abstract:

The growing complexity of electrical power grids is demanding increasingly innovative solutions to build more stable and secure grids, a trending that is particularly evident across the spectrum of industrialized countries. Such a need is also clear for emerging countries, wherein China has rapidly become a key development player whose technological solutions could have a pivotal impact on other infrastructure-hungry regions of the world (e.g. Sub-Saharan Africa). This paper provides an overview of the smart grid transmogrification, via the state-of-the-practice application of proactive and responsive nodes - synchrophasors - within the U.S. power grid and presents a comparison with the efforts of other actors, such as China and Sub-Saharan African. Specifically, the potential advantages of the application of synchrophasors, as well as the issues challenging their application, are taken into account. As happens in ecological systems, value is created "by making connections," and synchrophasors do indeed enable "collective intelligence," "promote collaboration," and well contribute towards scalability and sustainability - the realm of Digital Ecosystems.

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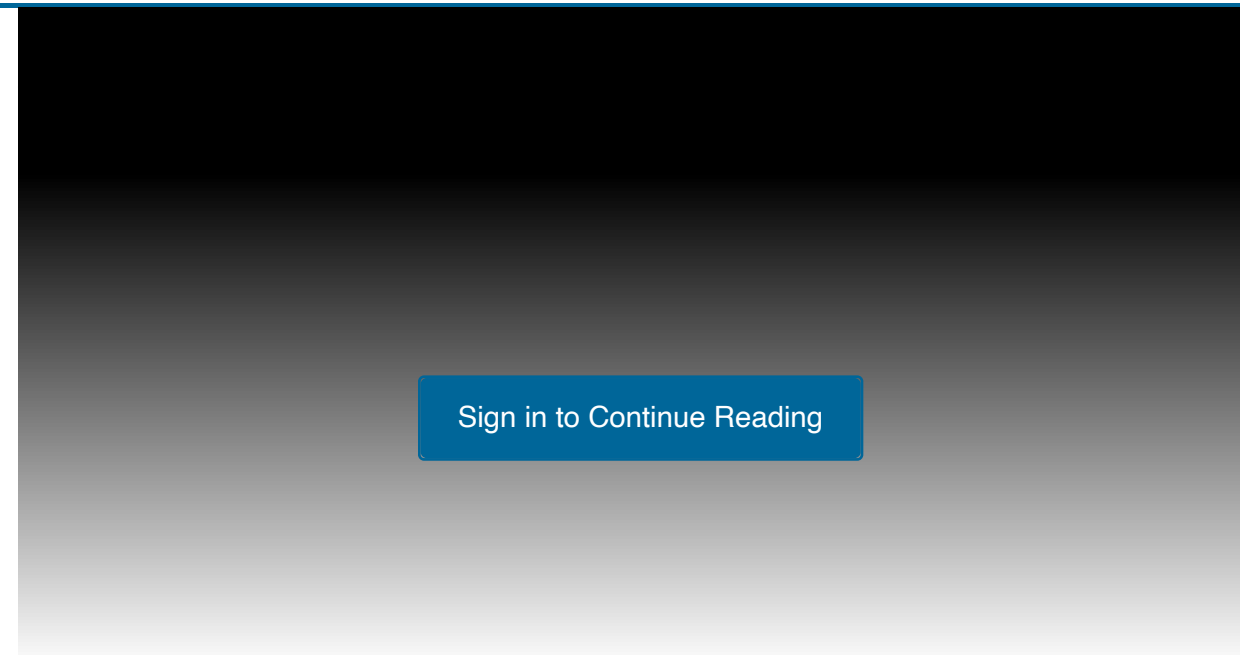
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