IEEE Transactions on Industrial Informatics
CALL FOR PAPERS
for Special Section on

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Resilience in Energy Industries– Recent Advances, Open Challenges, and Future Directions

Theme: *Resilience* is the capacity of critical infrastructure systems to proactively maintain a safe level of operational normalcy in response to anomalies, including threats of a malicious and unexpected nature. Threats to normal operation are those elements that *destabilize control and communications system* networks. These threats include human error and malicious human attacks, complex latencies and interdependencies. For instance, control systems need to provide greater human in the loop recognition based upon the roles and responsibilities of the individual. This ensures that the human interaction provides the required and most accurate state awareness information for the unique requirements of an individual formulating a judgment. In addition, control system performance indices are not just physics-based, but include event-based cyber security measures, as cyber exploitation can degrade systems and require some human response to mitigate. Ultimately, the control system architecture must engender a holistic design that includes all performance indices affecting the resilience of the infrastructure.

In particular, we look at the aspects that holistically shape resilience in understanding the multi-disciplinary nature of addressing these issues, which clearly require human, control, and cyber systems to address. We seek originally completed and unpublished work not currently under review by any other journal. General topics of interest include (but are not limited to):

- Control Theory: intelligent, reconfigurable, optimal
- Control Framework: supervisory, multi-agent, distributed intelligence
- Sensor Architectures: embedded modeling and analysis, intelligence and agents, wireless control and determinism, multi-parameter integration and diversity
- Monitoring/Control Security: decoys, randomization, diversity, training and cognition, decision making, measurement
- Cyber Architecture: health indicators, defense optimization
- Data Fusion: data reduction, security characterization, data diversity, anomaly detection, response prioritization
- Computational Intelligence: machine learning, neural networks, fuzzy logic, evolutionary computation, Bayesian belief networks
- Cyber-physical power and energy systems: real-time communication, protection, control, resilience, reliability, sustainability, efficiency
- Distributed intelligence: Failure/error tolerance and recovery, adaptable/flexible architectures, multi-level/agent systems, multi-sensor fusion, tele-presence, probabilistic behaviors, performance validation/verification, communications security

Manuscript Preparation and Submission

Follow the guidelines in "Information for Authors" in the IEEE- IES website: **http://www.ieee-ies.org/pubs/transactions on-industrial-informatics** . Please submit your manuscript in electronic form through Manuscript Central web site: https://mc.manuscriptcentral.com/tii . On the submitting page #1 in popup menu of manuscript type, select: SS on **Resilience in Energy Industries– Recent Advances, Open Challenges, and Future Directions.**

Submissions to this Special Section must represent original material that has been neither submitted to, nor published in, any other journal. Regular manuscript length is 8 pages, additional 4 pages may be allowed for a fee.

Note: The recommended papers for the section are subject to final approval by the Editor-in-Chief. Some papers may be published outside the special section, at the EIC discretion.

Timetable:	Manuscript Submission	March 31, 2018
	Expected publication date (tentative)	November, 2018

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