CALL FOR PAPERS

IEEE Transactions on Network Science and Engineering
Special Issue on Network Science for High-Confidence Cyber-Physical Systems

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TOPIC SUMMARY:
Cyber-Physical Systems (CPS) refer to the engineered systems that can seamlessly integrate the physical world with the cyber world via advanced computation and communication capabilities. Today’s CPS involve smart devices that bring into CPS ubiquitous intelligence, leading to the innovation and competition within sectors such as agriculture, healthcare, transportation, energy, manufacturing, environment, building design and automation, etc., which can completely transform the ways people interact with the physical world. To enable high-confidence CPS for better benefits realization as well as supporting emerging applications, network science based theories and methodologies are needed to cope with the ever-growing complexity of smart CPS, to predict the system behaviors, and to model the deep inter-dependencies among CPS and the natural world. Nevertheless, current research on network science approaches to investigate the challenges in high-confidence CPS is quite scattered. The major objective of this special issue is to exploit various network science techniques such as modeling, analysis, mining, visualization, and optimization to advance the science of supporting high-confidence CPS for greater assurances of security, safety, scalability, efficiency, and reliability.

The topics of interest for this special issue include, but are not limited to:
- Real-time analytical and modeling methods for high-confidence CPS
- Computing and communication modeling co-design for high-confidence CPS
- Network modeling and analysis for high-confidence CPS
- Network science for transportation CPS
- Network science for smart grids
- Network science for smart city and smart home CPS
- Network science for medical CPS
- Network science for cyber social physical systems
- Architecture support for high-confidence CPS
- Dependability and resilience in high-confidence CPS
- Simulation, emulation, and performance evaluation for high-confidence CPS
- Safety, trust, security, and privacy in high-confidence CPS
- Applications and case studies for high-confidence CPS

IMPORTANT DATES:
- Manuscripts due: 3/01/2018
• Peer reviews to authors: 06/15/2018
• Revised manuscripts due: 07/31/2018
• Second-round reviews to authors: 09/30/2018
• Final accepted manuscript due: 10/30/2018

SUBMISSION GUIDELINES:
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