IEEE Transactions on Industrial Informatics

CALL FOR PAPERS

for Special Section on

"Applied Cryptography, Security, and Trust Computing for Industrial Internet-of-Things"

The Theme: The Industrial Internet of Things (IIoT) has undoubtedly contributed in the formation of a new era for economic growth and competitiveness while, in parallel, causing a remarkable transformation of countries and organizations. Looking at the future the combination of people, information, and intelligent devices will have far-reaching impact on the productivity, efficiency, and operation of industries around the world. This latest wave of technological changes will generate unprecedented opportunities along with new risks to society, and will combine the global reach of the internet with a new ability to directly control the physical world including devices, factories, and infrastructures that form the modern landscape.

Encryption is often considered as a silver bullet that magically adds security to industrial applications. In fact encryption together with other cryptographic techniques, are considered as key components among many other standard technologies that are recommended in the roadmap to the IIoT. However, encryption by itself can only ensure confidentiality of data exchanges and not overall security. In order to achieve a satisfactory security level an Information Security Management System should be implemented, encryption being only a part of it. Security solutions and applied cryptography for industry is a pivotal reference source for the latest research on the development and use of IIoT. Considering that privacy-sensitive data will be encrypted, several new challenges will be raised, like data expansion, expensive operations on the encrypted data and sophisticated cryptographic protocols that consist of several rounds of communication and heavy computations. It is therefore clear that the privacy-preserving solutions will be extremely expensive in terms of computation, communication, and storage. Furthermore, the trusted computing base of IIoT system includes the complete protection mechanisms, like hardware, firmware, software, the combination of which is responsible for enforcing a system security policy.

This special section solicits high quality and unpublished work on recent advances in applied cryptography, security, and trust computing for IIoT. The IIoT not only provides an excellent opportunity to new gains in flexibility and productivity but also challenges as how to merge existing installations to these new technologies.

Topics include, but are not limited to:

- Lightweight encryption scheme for IIoT systems
- Design and implementation of lightweight cryptographic primitives for Industrial IoT
- Cryptographic algorithm and protocols for Industrial IoT
- Practical attacks against White-box Crypto implementations for IIoT
- System architectures and software management for secure IIoT
- Architecture and protocol design for Industrial IoT
- Data integrity and access control for Industrial IoT
- Secure M2M communications in Industrial IoT
- Secure middleware and cyber physical system for Industrial IoT
- Secure Web-of-Things for Industrial IoT
- Secure connected smart factory based on Industrial IoT
- Secure smart grids / smart metering for Industrial IoT systems
- Secure and trusted IIoT platforms
- Cloud based secure IIoT systems
- Privacy issues in industrial IoT and applications
- Failure detection, prediction and recovery for IIoT systems
- Experimental prototypes, performance evaluation and validation in secure and trusted IIoT system
- Process, Factory, Home and Building Automation for secure and trusted Industrial IoT
- New applications and services: Security and Trust computing for IIoT

Manuscript Preparation and Submission

Follow the guidelines in "Information for Authors" in the IEEE Transaction on Industrial Informatics http://tii.ieee-ies.org/

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Computing for Industrial Internet-of-Things.

Submissions to this Special Section must represent original material that has been neither submitted to, nor published in, any other journal. Extended versions of papers previously published in conference proceedings may be eligible for consideration if conditions listed in http://tii.ieee-ies.org/o/PC.pdf are fulfilled. Before submitting manuscript check the review criteria (http://tii.ieee-ies.org/o/RC.pdf) and other information (http://tii.ieee-ies.org/o/DI.pdf)

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:

Deadline for manuscript submissions **August 31, 2017**
Expected publication date (tentative) **February, 2018**

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