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

Advances and Challenges in Satellite-Based Industrial Internet-of-Things

Theme: The emergence of satellite communications, machine-to-machine communications and internet-of-thing has made revolutionary breakthroughs for meeting the stringent requirements of anytime anywhere industrial applications. Complex industrial controlsystems that integrate high-throughput satellite with long-range industrial internet-of-things (IIoT) devices, through some kind of satellite-terrestrial framework, play a critical role in realizing the potential benefits of broadband access of IIoT through innovative applications that require wide geographic coverage. For example, satellite-based IIoT can acquire field data from industrial operation sites where there is no communication infrastructure, such as far sea, danger zone, mountain zone etc. However, when satellite networks experience overwhelming access from massive number of IIoT terminals, the underlying satellite-terrestrial framework and protocol are required to be highly adaptive to dynamic bandwidth demands. It is envisaged that network caching and edge computing are possible approaches to address the needs of IIoT terminals in the face of long propagation delay of satellite channels. Moreover, traditional satellite channel and beam management schemes have to be revisited in order to cater for the explosive number of IIoT devices in future industrial applications. On the other hand, more efficient power control and coding techniques are essential to guarantee transmission reliability especially for the low-powered IIoT terminals. In addition, security and privacy-preserving capabilities are highly desirable in satellite-based IIoT systems. Such attributes of future industrial systems call for a deep fusion of satellite communications, IoT technology, cloud and edge computing, security and privacy, and dynamic resource management. The proposed special issue solicits original research and practical contributions which advance related technology for satellite-based IIoT, in the areas of but not limited to architecture, technologies and applications. Surveys and state-of-the-art tutorials are both welcome.

This special section will focus on (but not limited to) the following topics:

- Framework, algorithms and protocol design for satellite-based IIoT
- Innovative architecture, infrastructure, techniques and testbeds for satellite-based IIoT
- Privacy-preserving data aggregation and communications for satellite-based IIoT
- Security-protecting data transmission for satellite-based IIoT
- Cognitive satellite networks technology
- Dynamic spectrum access for satellite-based IIoT
- Low power cost and energy efficient resource management for satellite-based IIoT
- Interference suppression for massive IIoT terminals' accessing
- Low-latency and high-reliability communication for satellite-based IIoT
- Hardware design and prototyping for satellite-based IIoT
- On-satellite big data processing technology

Manuscript Preparation and Submission

Follow the guidelines in "Information for Authors" in the IEEE Transaction on Industrial Informatics 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 **Advances and Challenges in Satellite-Based 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. Regular manuscript length is 8 pages.

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   November 30, 2019
Expected publication date (tentative)   May 2020

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