Annals of Telecommunications

Call for papers
Special Issue on

Integration of IoT with Cloud Computing for Next Generation Wireless Technology

Guest Editors

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Dr. Thierry Coupaye (Orange Labs, France)
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Topics of interest include, but are not restricted to the following

- IoT Cloud and New Technology

  - ✓ Artificial Intelligence for IoT, Edge Computing
  - ✓ Mobile-Edge Computing, Multi-access Edge Computing
  - ✓ IoT 5G slice management
  - ✓ Wireless sensor networks
  - ✓ Networks for IoT : LoRa, SigFox, NB-IoT, Wi-FI, IEEE 802.11ah.
  - ✓ Green communication and IoT
  - ✓ Radio frequency identification
  - ✓ Trust IoT Cloud

- IoT Cloud and Networking

  - ✓ Cloud Networking for IoT
  - ✓ Network Function Virtualization (NFV) for IoT
  - ✓ Architecture and protocols for IoT and Cloud
  - ✓ Distributed platforms for IoT
  - ✓ Centralized and distributed systems for IoT
  - ✓ IoT management systems
  - ✓ Open Platforms for IoT
  - ✓ Commercial platforms for IoT
  - ✓ Real-time systems for IoT

- IoT Cloud and Applications

  - ✓ Next Generation Infrastructure for IoT
  - ✓ IoT big data and analytics
  - ✓ Wearable Devices for IoT
  - ✓ Participative Internet
  - ✓ IoT Applications and Services
  - ✓ Smart Home, Smart City
  - ✓ Trust Applications

- IoT Cloud and Industry 4.0

  - ✓ Industry 4.0 and Industrial IoT (IIoT)
  - ✓ IoT-based Enterprise Management
  - ✓ IoT-based Business Process Management
  - ✓ Robots and IoT
  - ✓ Testbeds and experimental platforms for IoT and the Cloud
  - ✓ IoT Standards and Application Scenarios
  - ✓ Open topics for future IoT e.g. Digital Twins
  - ✓ Blockchain for IoT
  - ✓ Machine/Deep learning for IoT applications, data management, data processing

The Information and Communication Technology sector's use of IoT, connected devices and cloud computing has been growing at an unsustainable manner; and its management requirements were already a multiple bigger than that of the network industry before the Covid pandemic. Traffic data demand is still growing, driven not only by end-users' usual expectations of ever-higher quality video for conventional video-on-demand and more recent social-networking-driven applications; but also by machine-to-machine traffic and operation of expanding cloud services.

The next generation of telecommunication networks is expected to support a growing number of smart terminals, such as cell phones, sensors and other connected objects, to provide real-time applications and to provide intelligence and trust embedded in network infrastructure. To meet these requirements, the next generation of technology (6G) envisions the use of artificial intelligence, cloud and edge computing. The 6G network will facilitate billions of concurrent flows generated by the connected "things" while taking into account the requested QoS, and the problem of cohabitation of M2M, M2H and H2M flows. Then, the flows will be processed in data centers and applications will exploit the extracted knowledge.

Efficiency is a key issue. Although there have been significant improvements in network and cloud efficiency, these have been more than offset by traffic growth and rebound effects. We need to re-examine the topic, focusing on the ways to approach the problem most likely to make the forseen growth of flows sustainable. This includes still more efficiency improvements, as well as favoring specific uses of low-carbon electricity in data centers and cellular base stations; but also avoiding the rebound effect by taking a holistic view of decreasing the global traffic,

via network management techniques whenever possible, as well as enabling and inciting users to moderate their network usage through other forms of digital sobriety.

The goal of this special issue is thus to gather state-of-the-art research on the challenges of managing Internet of Things applications while considering the whole end-to-end architecture over the sixth generation of mobile networks (6G) and next-generation data center networking from cloud to edge and IoT devices.

Papers must describe original research that advances the state of the art, and must not be simultaneously submitted to another journal or conference with proceedings. Papers must be written in excellent English and should not exceed 20 pages. Previously published or accepted conference papers must contain at least 50 % new material to be considered for the special issue. A cover letter to the Guest Editors clearly describing the extensions made must accompany these types of submissions. All submissions must be made using the instructions available at:

https://www.springer.com/journal/12243/submission-guidelines

The authors can directly submit their papers at: https://www.editorialmanager.com/ante/ and must select "Research Article" in the menu "Choose Article Type", then in the questionnaire on the "Additional Information" section, they will be able to select the item "CfP: Integration of IoT with Cloud Computing for Next Generation Wireless Technology".

Proposed Schedule

Manuscript submission:	December 29, 2022
Author notification:	March 30, 2023
Revised papers submission:	May 30, 2023
Final acceptance:	June 30, 2023
Online with DOI:	As soon as accepted
Printed issue:	Second half of 2023

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Rachid Saadane received a B.S. (2001), M.S. (2003) from the Mohamed V Univ. and Ph.D. (2007) from the Univ. of Mohamed V jointly with Eurecom Institute. He is currently a full professor at the department of electrical engineering in the Hassania School of Public Works (HSPW or EHTP). From March 2003 through July 2006, he worked for the Eurecom Institute, France, where he developed a framework for UWB channel characterization and modeling as a research engineer. His research interests are 5G and 6G Wireless Communications System (mmWAVE Massive MIMO, SC-FDMA, OFDM, Dynamic Spectrum Detection and Radio Cognitive), Artificial Intelligence, Machine Learning, Deep Learning, Estimation Theory, Smart City and Smart Agriculture Applications. He has also worked on reliability for UWB Communication Systems. He received the SCA'19 Award for the

best paper in the Smart Cities Applications Conference 2019. His profile on Publons shows 109 publications and 258 reviews, and he is a TCP member and editorial member of more than 10 conferences and journals, Elsevier, IEEE, Springer, Inderscience, MDPI, etc…. He is the Head Laboratory for the LaGeSLaboratory at HSWP. He has authored or co-authored over 100 papers.

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Thierry Coupaye is head of research on Cyber-Physical Universe inside Orange, and Orange Senior Expert on Future Networks. He completed his PhD in Computer Science in 1996 and his habilitation (HDR) in 2013 from the University of Grenoble (France). He had several research and teaching positions at Grenoble University, European Bioinformatics Institute and Lion Biosciences (Cambridge, U.K.) and Dassault Systems. He joined Orange in 2000 where he had several research expert, project manager, project and program director positions in the area of distributed systems architecture, autonomics, cloud/fog/edge computing and networking, Internet of Things. He has been an initiator of Orange activities in autonomic computing, server and network virtualization, cloud/fog/edge computing and networking, and digital twins. He is the author of more than 75 refereed articles and has participated in multiple program and organization committees of international conferences in these areas. He has been involved in several collaborative projects and is a regular expert for French and European research agencies. Thierry is member of the steering committee of the Inria and Orange joint laboratory IOLab, member of the board of the *Edge Intelligence* professorship inside the *Multidisciplinary Institute in Artificial Intelligence (MIAI*), and currently contributes to the *Digital Twin Working Group* of the *French Alliance for the Industry of the Future* (AIF). Thierry is one of the creators of the *Fractal software component model* and more recently the *Thing'in digital twin platform*. His current research interests include Digital Twins and Edge Intelligence (AI@Edge) for Cyber-Physical Systems.
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He received his Diploma in Electrical and Computer Engineering from the University of Coimbra, Portugal, in 2000, the Master's Degree in Industrial Control and Maintenance Systems from Beira Interior University, Covilhã, Portugal, in 2010, and the Ph.D. in Electrical and Computer Engineering from the University of Coimbra, Portugal, in 2020. Currently, he is an Assistant Professor at the Polytechnic Institute of Portalegre, Portugal. He is a Researcher at COPELABS - Cognitive and People-centric Computing Research Center, Lusofona University of Humanities and Technologies, Lisbon, Portugal, and VALORIZA - Research Center for Endogenous Resource Valorization, Polytechnic Institute of Portalegre, Portalegre, Portugal, and has worked with several private companies for more than 20 years. He is also a visiting researcher at SpaceLabs (Space Technology Research Laboratory), Federal University of Santa Catarina, Brazil. His current

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Mohamed Lahby is Associate Professor at the Higher Normal School (ENS) University Hassan II of Casablanca, Morocco. He was awarded a PhD in Computer Science from Faculty of Sciences and Technology of Mohammedia, University Hassan II of Casablanca, in 2013. His research interests are wireless communication and network, mobility management, QoS/QoE, Internet of things, Smart cities, Optimization and Machine learning. He has published more than 35 papers (book chapters, international journals, and conferences), 1 edited book, and 1 authored book. He has served and continues to serve on executive and technical program committees of numerous international conferences such as IEEE PIMRC, ICC, NTMS, IWCMC, WINCOM, ISNCC. He also serves as a referee of many prestigious Elsevier journals : Ad Hoc Networks, Applied Computing and Informatics and International journal of disaster risk reduction. He organized and participated in more than 40 conferences and workshops. He is the chair of many international workshops and special sessions such as MLNGSN'19, CSPSC'19, MLNGSN'20, MLNGSN'21, AI2SC '20 and WCTCP'20, CIOT'22. He has also edited many books published in Springer and Taylor.

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