

Call for Papers

Special Issue on SDN and NFV for a Hyper-Connected World: Challenges, Applications and Major Advancements



In recent years, people are more and more connected to the network, sharing information, collaborating and generating/consuming a huge amount of data. This “hyper-connected world” is driven by the next generation of Internet, where different networks such as the traditional Internet, Internet of things (IoT), smart cities, smart grids, and intelligent transportation systems, are federated under the umbrella of one network called 5G. Indeed, the 5G is gaining momentum as it extends the regular Internet by connecting a diverse range of “things” or physical objects like electronic appliances, cars, thermostats, and other devices. The 5G could provide a large array of services to the society including weather monitoring, medical services, transportation and vehicular services, defense applications, and smart cities applications.

In order to implement such networks and services, several challenges at different levels need to be addressed. These challenges include connectivity management at the different network layers (i.e., from physical to application layers), energy management, service management, data management, and the development of IoT cognitive capabilities.

In this context, Software Defined Networking (SDN) and Network Function Virtualization (NFV) technologies could play a central role to address these challenges. On one hand, SDN offers a more efficient control of the 5G network thanks to the separation of the control plane from the data plane and its centralized management approach. On the other hand, NFV and virtualization technologies allow to efficiently slicing the network depending on the applications’ requirements and promise to provide the flexibility of dynamically provisioning network functions whenever needed. With such benefits, SDN/NFV is becoming the ultimate tool to manage the 5G network in order to handle the high number

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of connected objects and users and to provide high bandwidth traffic and low latency applications.

This special issue focuses on the challenges, applications and major advancements in SDN/NFV technologies for 5G and beyond. We hence encourage original paper submissions, which have not been published or submitted for publication elsewhere, from both academia and industry presenting novel research addressing the aforementioned challenges.

Topics of interest include, but not limited to:

- SDN/NFV architectures and applications;
- Theoretical foundations of SDN/NFV;
- Network slicing for SDN/NFV;
- Service function chaining in SDN/NFV networks;
- Mechanisms to achieve high packet processing in wireless virtualized environment;
- Efficient resource allocation schemes for multiple users in SDN/NFV;
- Optimizing network functionalities with SDN/NFV for Cognitive Radio Networks (CRNs) and Cognitive Radio Sensor Networks (CRSs);
- Energy efficient schemes for SDN/NFV-based networks;
- Performance evaluation of virtual network functions;
- Business and economic aspects of SDN/NFV; and
- Security mechanisms in wireless SDN/NFV.

Submission Format and Review Guidelines

The submitted manuscripts must be written in English and describe original research not published nor currently under review by other journals or conferences. Parallel submissions will not be accepted. All submitted papers, if relevant to the theme and objectives of the special issue, will go through a vigorous peer-review process. Submissions should (i) conform strictly to the Instructions for Authors available on the Journal website and (ii) be submitted through the Editorial Management system available at:

<http://www.editorialmanager.com/jons>

Important Dates

Manuscript due

July 31, 2019

Revision notification

November 13, 2019

Revised paper due

January 29, 2020

Final notification

February 26, 2020

Expected Publication

July 2020