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Special Issue:
SDN and NFV based 5G Heterogeneous Networks

Rapid advances in the industry of handheld devices and mobile applications has fuelled the penetration of interactive and ubiquitous web-based services into almost every aspect of our lives. At the same time, users expect almost zero-delay and infinite-capacity experience. However, current 4G technologies reveal their inherent limitations. This is true, for both human-to-human and machine-to-machine (M2M) communications. Both will require radically different architectural design, network protocols, and business models.

To achieve them, researchers are working towards the next-generation 5G cellular networks aiming to offer high-speed and personalized services to both humans and machines, when, where and in whatever format needed. While 5G development and standardization activities are still at their early stage, it is widely acknowledged that 5G systems are going to extensively rely on heterogeneous networking technologies, which would exploit network functions virtualization (NFV) and software defined networking (SDN) paradigms. The adoption of NFV and SDN technologies by next-generation heterogeneous mobile networks introduces new virtual network elements each affecting the logic of the network management and operation, enabling the creation of new generation services with substantially higher data rates and lower delays. On the other hand, new challenges are also introduced in terms of design, operation, management and security of the next-generation mobile networks. The objective of this special issue is to bring together the state-of-the-art research contributions that address design, evaluation, and deployment issues of SDN/NFV-based 5G heterogeneous networks.

Topics of primary interest include, but are not limited to:

- Integration of SDN and NFV in heterogeneous networking environments, problems and challenges
- Performance modelling and evaluation of 5G heterogeneous networks
- Self-x features (self-optimization, self-configuration, and self-healing) of SDN/NFV-based 5G networks
- Methods and tools for modelling of SDN/NFV networks and services
- Efficient network and service monitoring for SDN/NFV-based mobile networks
- Traffic engineering, quality-of-service (QoS) and quality-of-experience (QoE) in SDN/NFV-based 5G heterogeneous networks
- Virtualization of resources, services and functions in SDN and NFV
- Application of SDN and NFV to M2M communications and internet-of things (IoT)
- Orchestration, administration and management of SDN/NFV-based mobile networks
- Security, trust, and privacy challenges and solutions for SDN and NFV infrastructure, interfaces, and protocols in mobile networks
- Socio-economic impact and regulatory implications of SDN/NFV-based 5G networks

All submissions are subject to the journal's peer-review procedures. The authors should follow the journal's Author Guide at **http://digital-library.theiet.org/journals/author-guide** when preparing papers for submission to the Special Issue.

Important dates:

Submission deadline:
Apr 10 2017

Publication Date:
Nov 2017

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