

## Call for Papers, Workshop on 5G Cloud Native Design

In conjunction with IEEE 5G World Forum (5GWF'18),  
9-11 July 2018, Santa-Clara, California, USA

### Scope and motivation:

While bare metal deployment of applications seems fraught with problems and risk, the virtualization revolution, i.e. a layer of abstraction on top of the hardware, is transforming 5G software in “everything is a service”, that leads the Telco industry to cloud-native architectures. Cloudification refers to Platform as a Service (PaaS) on top of Infrastructure as a Service (IaaS). PaaS is a platform that hides infrastructure details – typically IaaS details – from application development, build, ship, and deployment. PaaS promises to deliver network services and applications with higher agility and performance through “ancillary services” – scalability, high availability, state management, controllers, orchestrator... – provided once by the PaaS. Developers and service providers can therefore concentrate on their applications and businesses and improve time to market. An ideal 5G PaaS should not only facilitate building, shipping and running virtual network functions (VNF) with “telco-grade” quality, it should also combine those VNF with all sorts of third-party applications (from start-ups, FOSS, Verticals...) for creating new more versatile and powerful cloud objects breaking silos between connectivity and computing.

As 5G should be designed and implemented to run on public and/or private IaaS installations, the term “cloud-native 5G” describes the technology transformation that will essentially make 5G a platform. Suggested topics include but are not limited to:

- Telco-grade PaaS: Design, Framework
- Intent based programming
- RAN microservices design
- Platform abstraction and API
- Open-source software and tools experimentation in cloud-native 5G
- Cloud-RAN Architecture, functional aspects, design issues and protocols
- Analysis, modelling and characterization of Cloud-RAN systems
- 5G testbed implementation and deployment
- Software defined hardware accelerators (FPGA, GPU)
- New DevOps models with performance and quality enhancements
- Virtualization technologies for cloud-native platforms
- Distributed management system e.g. decentralized OSS
- Multi-service and multi-tenancy and network slicing
- Design principles and best practices for 5G application development
- High availability (resiliency, self-healing, redundancy)
- Analytics based policy
- Automation

The workshop is organized by the NGPaaS project (<http://ngpaas.eu>), a H2020 5G-PPP phase 2 project and endorsed by 5G-PPP Software Network working group (<https://5g-ppp.eu/5g-ppp-work-groups/>).

Do not miss the keynote speech on Platform transformation by George Glass (BT, UK).

### Important Dates:

Paper Submission Deadline: **1 May 2018 (Firm due date)**

Notification of Acceptance: **20 May 2018**

Camera Ready Paper: **31 May 2018**

### EDAS Link:

<https://edas.info/newPaper.php?c=23875&track=89983>

### Chairs:

- Bessem Sayadi, Nokia Bell-Labs, FR
- Jose Soler, DTU Fotonik, DK
- Paul Veitch, BT, UK
- Bela Berde, Nokia Bell-Labs, FR

### Program Committee Members:

- Marcus Brunner, Swisscom, Switzerland
- Rahim Tafazolli, University of Surrey, UK
- David Hutchison, Lancaster University, UK

- Luis Tomas Bolivar, Redhat, Spain
- Michael MacGrath, Intel Labs, Ireland
- Chih-Lin I, China Mobile Research Institute, China
- Andreas Kessler, Karlstad University, Sweden
- Danny Ras, Technion, Israel
- Latré Steven, Antwerp University-IMEC, Belgium
- Imran Latif, Nokia Bell-Labs, France
- Kurt Tutschku, Blekinge Institute of Technology, Sweden
- Vasilis Friderikos, Kings College London, UK
- Robert Piechocki, University of Bristol, UK
- Ning Wang, University of Surrey, UK
- Rufael Mekuria, Unified streaming, Netherland
- Michail Flouris, OnApp, UK
- Leonardo Mariani, University of Milano-Bicocca, Italy
- Erez Biton, Nokia, Israel

### Contact person:

- Bessem Sayadi, [bessem.sayadi@nokia-bell-labs.com](mailto:bessem.sayadi@nokia-bell-labs.com)

<http://ngpaas.eu/events/ieee-5g-wf/>