

# e-Health Technical Committee Newsletter

April, 2019

On behalf of the e-Health Technical Committee (TC) of the IEEE Communications Society (ComSoc), we wish all our members a very instructive reading of this letter.

The contribution from this edition is coming from the WWRF WG e/m-Health and Wearables Vertical Industries Platform (VIP) White Paper “A New Generation of e-Health Systems Powered by 5G”. <https://www.wwrf.ch/files/wwrf/content/files/publications/outlook/Outlook17.pdf>

Members of the e-Health community are invited to contact the author for further information or collaborations.

***We also welcome all our members to share their research activities and field experiences through this open newsletter and to open up new opportunities for discussions and collaborations.***

Editor: Dr. Nada Philip (Kingston University London, UK)

## Table of Contents

- 1) A New Generation of e-Health Systems Powered by 5G
- 2) Call for papers – IC-FeH 2019 – International Conference on Future e-Health

---

### A SUMMARY ON THE ‘A NEW GENERATION OF E-HEALTH SYSTEMS POWERED BY 5G’ WHITE PAPER

Christos Politis  
Kingston University London, UK

Standardized 5G systems will be market ready around 2020. What is clear is that 5G will be more than a simple evolution of the current network. Indeed, it will be a catalyst for new products and services by integrating

networking, computing and storage resources into a unified infrastructure, becoming the nervous system of cognitive objects and cyber-physical systems. WWRF has devised a series of vertical industry platform (VIPs) for 5G, where important standardization topics can be seeded and cultivated. This is a summary of the white paper<sup>1</sup> that has as its scope the requirements of providing effective healthcare using 5G technology. The specific objectives of the paper are to develop WWRF as a bridge between the people, organizations and industries involved in healthcare and the 5G standards organizations (such as 3GPP) to gather their requirements and prepare for

<sup>1</sup> WWRF WG e/m-Health and Wearables Vertical Industries Platform (VIP), White Paper, ‘A New Generation of e-Health Systems Powered by 5G’, 2016  
<https://www.wwrf.ch/files/wwrf/content/files/publications/outlook/Outlook17.pdf>

standardization, to create better understanding of the potential and capabilities of 5G and enable those involved to jointly discuss the vision, usage scenarios, requirements and enabling technologies to achieve the targets of future vertical industry communications in 5G.

This will be a springboard for further work, including recruitment and use of a panel of experts to take part in a Delphi study to refine these conclusions, becoming a living document.

A word-cloud analysis (Fig 1) showed that phrases such as IoT, spectrum and infrastructure predominate in industry white papers. Phrases such as QoS or QoE are mentioned infrequently, but 'low latency' and reliability seem more important.

Few real end-users of e-Health and medical applications were consulted in other studies. The small form factor of many medical devices is a significant challenge, particularly for wireless design. Overall 5G requirements are still evolving, as vertical industries become increasingly engaged in the process. Though, one requirement that has not been fully developed is time synchronization.

Health 4.0 is a vision of care delivery that is distributed and patient-centered, and there is already evidence of a shift towards virtualization and individualization of care. With 5G as its foundation, the transition to person-led care can be completed.

Healthcare models are rapidly changing due to demographic and socio-economic changes from a hospital based, specialist focused approach to a distributed patient centric care model. The point of care is shifting from hospitals towards GP surgeries, day-clinics, care homes, patient homes and the Internet.

The empowerment of patients and their formal and informal carers has become a prime target of healthcare strategy development in Europe and elsewhere.

Emerging new network technologies (LTE, 5G) allowing for SDN and NFV will form the backbone of future healthcare, enabling the Internet of Things, Smart Pharmaceuticals and Individualized Medicine. Cloud computing, Big Data and enhanced security will enable virtualization and individualization of care and

allow the application of Industry 4.0 design principles in health care (Health 4.0).

Although working alongside the 5GPPP research programme in Europe, and the ongoing standardization activity in 3GPP SA1, the scope of WWRF's work includes looking beyond current activities to help set a technology roadmap for the future. To this end, the initial release of this WWRF Outlook will be the springboard for further work, including the recruitment and use of a panel of experts to take part in a Delphi Study to refine the conclusions of this release. So the Outlook will become a living document, with version 2.0 to be the results of the Delphi Study, and Version 3.0 reporting on the first implementation scenarios and results of selected projects.

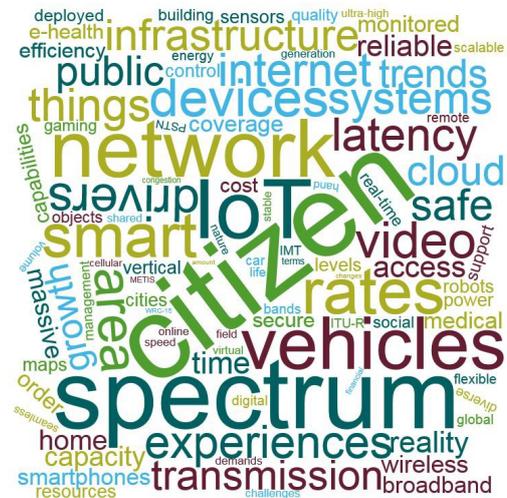


Fig 1. Word-cloud analysis of 5G vertical requirements

## IC-FeH 2019

### International Conference on Future e-Health

Advancing e-Health with innovative research results, the  
future is now

1-3 November 2019, Zhuhai, China

CALL FOR PAPERS



November 1– 3, 2019 | Zhuhai, China | <https://www.icfeh.com>

## Call for Papers

**IC-FeH 2019** is sponsored and hosted by the Zhuhai Institute of Advanced Technology Chinese Academy of Sciences. Technically it is sponsored by the SIG of e-Health of IEEE Communication Society, School of Nursing, Capital Medical University, DACC Lab of University of Macau, ICT Innovative Group of Durban University of Technology, South Africa and Biotechnology Department of Lakehead University, Canada. IC-FeH 2019 aims at gathering researchers from around the world working from interdisciplinary fields contributing and progressing towards the goal of adopting now the future e-Health technologies. Accepted and presented technical papers will be published in the IC-FeH 2019 Conference Proceedings by Communications in Computer and Information Science (CCIS) with Springer. Selected authors of the best articles presented at the conference will be invited to publish in a number of Special Issues of SCIE-indexed journals.

### Important Dates

#### 1st Round of Call

Submission Deadline: **26 April 2019**

Notification Deadline: **31 May 2019**

Camera-ready Deadline: **28 June 2019**

Early-bird Registration: **28 June 2019**

#### 2nd Round of Call

Submission Deadline: **31 May 2019**

Notification Deadline: **28 June 2019**

Camera-ready Deadline: **26 July 2019**

Early-bird Registration: **26 July 2019**

#### 3rd Round of Call

Submission Deadline: **28 June 2019**

Notification Deadline: **26 July 2019**

Camera-ready Deadline: **30 August 2019**

Regular Registration: **30 August 2019**

### Research Tracks

Track 1: Future e-Health Applications

Track 2: Future e-Health Services

Track 3: Future e-Health Informatics and Analytics

Track 4: Future e-Health Devices and Instruments

Track 5: Future e-Health Supporting Technologies and Systems

Track 6: Future e-Health Innovations

#### e-Health Tutorials, Workshops and Demonstrations

During the conference, prototypes of future e-Health applications could be demonstrated in the form of hardware, software, and/or video/posters showcasing new and innovative technology. Interested parties from either industry or academia are welcome to contact the conference secretary:

[icfeh2019@gmail.com](mailto:icfeh2019@gmail.com)



