

5G and Wi-Fi 6 Milestones

Editorial

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Abstract: Papers in the March 2020 issue of the *Journal* include discussion on the future of the \$51 billion National Broadband Network (NBN), IoT device and system management and the mobile cellular networks in Indonesia. The Telecommunications Association is hosting public forums on the future of the NBN in 2020 at RMIT University in Melbourne. The Australian mobile network operators continue to rollout 5G and Telstra has announced a 5G milestone. In the U.S., the FCC has announced the allocation of 1,200 MHz in the 6 GHz band for unlicensed use including Wi-Fi 6. The *Journal* welcomes contributions on telecommunications and the digital economy.

In This Issue

In this issue of the *Journal* papers cover public policy related to the National Broadband Network (NBN), IoT, Immersive Virtual Reality, mobile cellular in Indonesia and a historical look at the telephony engineering history of Western Australia from 1887 to 1987.

Novel Display and Control for IoT-Based Home Automation presents a proposed approach for the display and control of IoT-based home automation devices and systems.

Synchronous Reality: Enhancing Sensory Perception in Immersive VR introduces synchronous reality and how it combines sensory, physical and virtual inputs into one environment.

Mobile Cellular Technology Forecast for the Indonesian Telecommunications Industry investigates the growth of mobile cellular networks in Indonesia.

The NBN Futures Forum: Learning from International Experience provides a summary of the talks on international league tables, New Zealand's experience and the requirement for broadband for the global digital economy, at the third NBN futures forum held at RMIT University in Melbourne.

The Telephony Engineering History of Western Australia from 1887 to 1987 provides a historical look at the development of the public telephone system in Western Australia between 1887 and 1987.

5G and Wi-Fi 6 Milestones

The recent announcement by Telstra that it had upgraded part of its mobile network to be “5G standalone ready” is a significant milestone that is expected to be quickly replicated by the other mobile network operators, Optus and Vodafone Hutchison. The promise of 5G as an enabling technology cannot be understated and, as with earlier increments in mobile cellular technologies, the move to 5G promises much for new and improved applications and services.

As Australia struggles to find a way forward for fixed broadband at a time when the global economy is shifting to digital platforms at a faster pace than ever before, it is possible that the telecommunications markets both here and overseas will benefit from the momentum provided by 5G until such time as national rollouts of FTTP are completed.

A key aspect of the move to 5G has been the reallocation and redistribution of spectrum to meet the perceived need for current and future demand. Mobile cellular utilisation of frequencies above 6 GHz is expected to blossom and provide the additional data-carrying capacity needed to meet demand in high density urban areas.

The introduction of a cloud-based 5G core network capability provides Telstra with the flexibility needed to evolve its network to one that is not dependent on existing core infrastructure and systems.

Over coming years, the move to reduce the 3G footprint will lead to the eventual migration of spectrum used by 3G devices to 5G. Fourth Generation (4G) networks are expected to remain in service for more than five years and possibly as long as the next decade in regional and remote areas.

And any expectation that 5G would replace Wi-Fi should now be quietly shelved with the recent decision by the U.S. Federal Communications Commission on 23 April 2020 to increase unlicensed spectrum — from the current 70 MHz in the 2.4 GHz band and 500 MHz in the 5 GHz band — with the addition of 1,200 MHz in the 5.925-7.125 (6 GHz) band. Wi-Fi 6 (not to be confused with Wi-Fi use of the 6 GHz band) is seen to be complimentary to 5G and the additional spectrum should significantly boost the data carrying capacity of Wi-Fi-6-enabled devices over short distances in very high density urban environments.

The *Journal*, Looking Forward

The *Journal* welcomes papers on telecommunications and the digital economy, including, theory, public policy and case studies.

Technological change is happening at a rapid rate and consumers anticipate that governments and industry keep pace to ensure that the benefits can be fully utilised. The *Journal* is calling for papers on how new technologies will affect Australian telecommunications consumers.

The topics of *International Telecommunications Legislation and Regulations* and *International Mobile Cellular Regulation and Competition* are set to continue for some time, as the opportunity to attract papers from around the globe continues. We encourage papers that reflect on where the global telecommunications market is now, how it got to where it is, and what is going to happen next.

Papers are invited for upcoming issues. With your contributions, the *Journal* will continue to provide readers with exciting and informative papers covering a range of local and international topics. The Editorial Advisory Board also values input from our readership, so please let us know what themes you would like to see in the coming year.

All papers related to telecommunications and the digital economy are welcome and will be considered for publication after the double-blind peer-review process.

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