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Joint Institution Lecture Series

RF Engineering challenges in mmWave

decision

Hosted by: The ITEE College of Engineers Australia

5G New Radio (5G NR) is more than just a Long Term Evolution of 4G; it is a technological revolution in terms of both hardware and software development. 5G NR is expected to improve our mobile communication experience by dramatically reducing the latency and increasing the bandwidth. To support the 5G NR standard, new frequency bands are being allocated in the range from 24-86 GHz, commonly referred to as Millimetre Wave (mmWave).

The new mmWave bands introduce significant challenges in terms of RF propagation loss. A possible solution would be to increase antenna gain for both the receiver and the transmitter, but this also causes difficulties as the higher gain results in a narrower antenna beam, leading to a need for very large and sophisticated antenna arrays to cover the required segment/coverage area.

One way to fulfil carriers' segment coverage requirements is to use beam-steering, which can be achieved using phase shifting. This talk will cover several methods for phase shifting and some pros and cons of each.

The focus of this talk will be on RF implementation, addressing the challenges that arise when working with frequencies at millimetre scale. Alex will share some of the difficulties we have encountered at NetComm Wireless during our mmWave research and prototyping.

About the Speaker

Alex Cohen, RF Research Engineer, NetComm Wireless

Since his relocation to Sydney in 2016, Alex has been working the Research team at NetComm Wireless as an RF engineer. Prior to joining NetComm Wireless, Alex spent 12 years working in the Israeli defence industry with companies such as Elbit Systems, Aeronautics and Israeli Aerospace Industries. Prior to his professional working career, Alex served as a combat field communication officer in the Israeli Defense Forces C4I corps.

VENUE

Harricks Auditorium
8 Thomas Street
Chatswood NSW 2068

DATE & TIME

Thursday 26 July, 2018
5.30 pm for a 6.00 pm start

Light refreshments will be provided prior to the presentation.

Presented in Cooperation with

 The Institution of
Engineering and Technology



TICKETS (incl. GST)

EA Members & Students: Free
IEE & IET Members: Free
Non-members: \$30

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