



## IEEE, ITEE & IET Evening Lecture with Dr Kandeepan Sithamparanathan, RMIT University

# Cognitive Radio Technology: Embedding Intelligence in Radios

**ABSTRACT:** The new paradigm shift in wireless communications towards cognitive radio technology has attracted many stakeholders of spectrum users around the world. Enabled by software definable radios (SDR), this technology addresses many long standing issues with efficient usage of the radio spectrum in the spatio-temporal domain. In particular, radio regulatory agencies are interested in increasing the efficiency in spectral utilization. Commercial users of the spectrum are also greatly interested since it brings increased revenue for the same allocation of spectrum that they pay for. Dynamic spectrum access therefore has become the prime application of cognitive radio technology leading towards the development of various standards around the world. Moreover, embedding intelligence into radios opens up the space to design efficient radio communications to further suit our needs. In this sense 'energy efficient wireless communications' also known as 'green communications' is also considered as an application of cognitive radio technology. The intelligence embedded in cognitive radios is used in this sense to harvest energy in wireless networks without compromising the QoS. This talk addresses the concepts and fundamentals of cognitive radios and emphasizes the above mentioned two applications, 'dynamic spectrum access' and 'green communications'.

**SPEAKER:** Dr Kandeepan has a PhD from the University of Technology, Sydney and is currently with the School of Electrical and Computer Engineering at RMIT University. He is also a NICTA Researcher at the Victoria Research Laboratory (VRL) and a Research Fellow at the CREATE-NET Research Centre, Italy. Kandeepan is currently one of the Vice Chairs for the IEEE Technical Committee on Cognitive Networks (TCCN) and has published a book together with Dr Andrea Giorgetti from the University of Bologna, Italy, titled 'Cognitive Radio Techniques: Spectrum Sensing, Interference Mitigation and Localization', published by Artech House (Boston). He is a Senior Member of the IEEE and was awarded as one of the best IEEE Reviewers by the IEEE Communications Society in 2011. Kandeepan has published around seventy peer reviewed journal and conference papers. His research interests are in cognitive radios and signal processing techniques for dynamic spectrum access and green communications, he is currently focused on bringing intelligence into LTE technology for wireless and mobile communications.

Note: Engineers Australia members are eligible to claim CPD for attending this event.



### EVENING LECTURE

**Venue: John Connell Auditorium , Engineers Australia Building, 21 Bedford Street, North Melbourne**

**Time: 6:00pm refreshments for 6:30pm start**

**Date: Wednesday, 3 July 2013**

### Register at

<https://www.engineersaustralia.org.au/events/cognitive-radio-technology-embedding-intelligence-radios>

There is no admittance fee for IEEE, IET or Engineers Australia members, or students.

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