



UKTI Spectrum Sessions GSM World Congress

Barcelona - Tuesday 3 March 2015
UKTI Conference Area, UKTI Stand Hall 7

Two 'free to attend' technical sessions at this year's GSM World Congress

NETWORK CAPACITY SESSION

START 13:30:00 END 15:00:00 DAY UKTI at Mobile World Congress ROOM Hall 7

'FROM C BAND TO E BAND AND BEYOND' SESSION

START 15:05:00 END 15:40:00 DAY UKTI at Mobile World Congress ROOM Hall 7

<https://www.events.ukti.gov.uk/ukti-at-mobile-world-congress-7/market-clinics/ukti-at-mobile-world-congress--3/>

Network Capacity Session 13.30 - 15.00. Chaired by Geoff Varrall

LTE is promoted as a key economic enabler in developed and developing economies. This is dependent on achieving delivery efficiency gains over and above present network performance benchmarks.

This session explores this challenge by addressing

Network capacity

Improved technical and commercial efficiency in the industry is partly consequent on improving co-existence techniques. This includes intra system co-existence, for example LTE user to user and LTE network to network coexistence and inter system coexistence, for example LTE to TV, LTE to WiFi, LTE to GPS and LTE to mobile satellite. Coexistence can be improved at network level by improved RF filtering at LTE base stations, by resource block scheduling and baseband interference cancellation. Co-existence can also be improved through closer attention to interference management in user devices.

Speaker

Martin Gostling

<http://www.radiodesign.eu/>

Spectrum

The present regulatory focus on high intensity spectral utilisation has resulted in non-ideal spectrum being brought to auction with theoretical efficiency dependent on technical innovation which is as yet unproven. This means that this new spectrum is inherently commercially inefficient and therefore a high risk investment for existing or new operator entities. This is partly consequent on existing FDD and TDD constraints. The implication is that new approaches to the radio physical layer are required including potentially the use of reciprocal channel full duplexing, also known as in band duplexing.

Speaker**Alain Mourad**<http://www.interdigital.com/>**White Space innovation**

While theoretically appealing from a spectral utilisation perspective, White Space adoption has been slowed by an ability to find business models that protect incumbent concerns that their existing spectral holdings will be technically and commercially devalued. The recent acquisition of Neul by Huawei confirms that it presently makes more sense commercially to consider White Space in the context of operator managed unlicensed opportunistic access but even this fails to take into account other spectral users including those served by terrestrial TV and satellite TV and mobile satellite networks. This suggests that White Space requires regulatory rather than technical innovation to succeed and needs to be more closely coupled with the evolving WiFi regulatory environment.

Speaker**Sami Susiaho****BskyB**<https://corporate.sky.com/><https://www.events.ukti.gov.uk/ukti-at-mobile-world-congress-7/registration/>**‘From C Band to E band and beyond’ Session 15.05-15.40****Geoff Varrall CEO RTT Programmes**

This half hour technical presentation follows on directly after the UKTI spectrum session at MWC.

It is hard to see how 5G capacity and data rate, latency and energy efficiency expectations can be met without significant bandwidth allocation above 4 GHz. These are bands which support existing and new generation military high power radar and radio systems including telemetry and telecommand, a combination of terrestrial and sub space wide area systems supported by LEO, MEO and GSO satellite networks. Parallel investment by the automotive industry is similarly enabling RF front end innovation, for example for 77 GHz automotive radar.

In this session we review the technical and commercial challenges (including coexistence challenges) for 5G radio technologies implemented into C band (4-8 GHz), X band (8-12 GHz), the K bands (12-40 GHz), V band and W band (40 to 110 GHz) and the particular opportunities of the E band sub bands at 71-76 GHz, 81-86 GHz and 92-95 GHz. We benchmark the progress being made with RF amplifiers and RF sub systems in defence and civilian radar and radio systems and the associated energy and cost impact on 5G wide area networks deployed into these bands.

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