

## Discussion & Overview of next workshop

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- Significant 'research gains' when collaboration(s), in particularly interdisciplinary, are involved:
  - Materials and Semiconductor Devices
  - Applying AI to wireless
  - Test-beds & Trials
  - Academia and industry (supported by UK Gov)

# Mapping of Research Presentation to DCMS/SPF Goals

	Spectrum	Coverage	Seamless	Net-zero	New Services
Efficiency	1.1, 1.4, 2.2			1.1, 1.2, 4.4	
Sharing	5.1, 5.2	5.1			
Higher Bands	4.1, 5.3				
TRX Technology	1.2, 1.3, 4.2, 4.3 4.4			1.2	
Network Architecture	2.2, 2.3	2.3	3.2		3.2
New Materials	4.1, 4.3, 4.4				
Spectrum Sharing	2.4,	5.1			
Applying AI	2.1, 5.1			2.1	2.4
Satellite			3.2		

## Questions/Remarks to be carried forward (1)

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- Energy consumption with increasing use of Fibre Power consumption for a mix of services DAC resolution (Tim Tozer)
- Digital Pre & Post Distortion Importance of Radiated testing of devices
- Careful consideration of Blocker performance in Rx chains
- Technologies for tuneable filters
- Increasing complexity of 4G/5G/6G networks => increased (hugh) overheads and sensitivity to robustness
- Application of autoencoders (AI/ML) in spectrum Sharing

## Questions/Remarks to be carried forward (2)

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- Are we just using increased computing power within next G comms networks – is this sustainable
- Centralised Vs Edge Processing to improve energy efficiency
- Network control traffic must be included in spectrum and energy efficiency calculations
- Will AI make networks more brittle
- CoMP gains in real networks
- Strengthen UK contributions (Academics & SMEs) to standards

## Questions/Remarks to be carried forward (3)

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- Dielectric losses & power limitations in smart materials
- Measuring radiation efficiency of antennas built from novel materials
- Non-LoS for Tera-Hertz communications
- EMF of FR2

Next two events in this series:

### **Radio Access Network Techniques for 6G**

1 July 2021, 09.30 – 16:00, [Workshop](#) Online

This University of Surrey led workshop, supported by DCMS and UK SPF, will focus on energy efficiency, spectrum efficiency and coverage.

### **6G: Software Defined Radio and RF Sampling**

16 September 2021, 09.30 – 16:00, [Workshop](#) Online

This University of Strathclyde led workshop, supported by DCMS and UK SPF, will focus on software defined radio architectures and algorithms and physical layer implementation.

# Thanks to our presenters and supporters

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## Contact details

Jo O'Riordan, UK SPF/techUK  
jo.oriordan@techUK.org

**uk spectrum** policy forum

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