Innovative methods of white spaces identification
Energy and spectral efficient CR networks
Licensed, making 5G both socially beneficial and
Novel applications of CR technology
Signal processing for cognitive applications
Solutions for combined access to diverse spectrum opportunities, including spectrum
aggregation techniques
Spectrum access systems (SAS)
Spectrum regulation and management aspects for cognitive 5G networks
Spectrum sharing in 5G HetNets
Spectrum sharing in mm-wave bands
Spectrum Sharing in Satellite Bands, protection of satellite incumbents
TV white spaces
Underlay wide area coverage networks

There has been a vast increase in the range and proliferation of wireless technologies over recent decades, which has led to the crowding of existing spectrum. Among available solutions to address the resulting congestion and shortage of capacity, cognitive radio (CR) and spectrum sharing concepts have been envisioned. Such concepts will be particularly important in the context of 5G communication systems, where despite the introduction of novel mm-wave “pioneer bands”, there will be evermore increased pressure – especially on lower-frequency spectrum. This is due to the coverage and reliability requirements of 5G, in tandem with vastly increased capacity and throughput. CR and other spectrum sharing paradigms can address such issues through increasing the net spectrum available to each particular user. CR can also serve other benefits, such as enhancing the management, performance and coexistence of heterogeneous networks with diverse radio access technologies. It is widely expected that new emerging technologies applied in 5G networks will enable pioneering services, making 5G both socially beneficial and economically viable. Advanced solutions must be identified in both technical and regulatory domains to realize CR and spectrum sharing for such 5G and other future networks. Towards such ends, this workshop aims to gather and promote discussion among researchers, engineers, practitioners, and end-user groups, with the goal of inspiring the analysis and development of CR and spectrum sharing solutions for future networks. A key focus of this workshop is on the practical implementation of the above concepts, and “shift-to-market” considerations. Moreover, this workshop also focuses on issues, advances and challenges in various research domains related to cognition and wider spectrum sharing schemes in future generation communication systems and networks.

TOPICS
CRAFT is soliciting papers describing original work, unpublished and not currently submitted for publication elsewhere, on topics including, but not limited to, the following:

- 3D spectrum sharing, in particular protection of satellites, drones, etc.
- Cognitive communication security
- Cognitive HetNet, D2D, M2M and V2V networks
- Cognitive MAC protocols
- Cognitive RRM mechanisms,
- Cognitive self-organized networks (SONs)
- Cognitive small cells and heterogeneous networks
- CR for 5G networks,
- Energy and spectral efficient CR networks
- Geo-location/spectrum databases for CR and spectrum sharing
- Innovative methods of white spaces identification
- Licensed-shared access (LSA)
- New wireless communication technologies for rural broadband using white spaces (MIMO, full-duplex radios, hierarchical cells, novel waveform design)
- Novel applications of CR technology
- Regulatory frameworks for spectrum management and dynamic access
- SDN and SDR for CR and spectrum sharing

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