

BETTER USE OF EXISTING SPECTRUM

This paper summarises potential research study areas which may be relevant to achieving better use of existing spectrum. It is acknowledged that some areas may already be addressed within the RA research programme, or may be more suited to commercial research. The list is not intended to be exhaustive and comments as well as additional suggestions from RRAC colleagues are invited.

Technology

- Adaptive antennas
- Smart antennas
- High performance antenna designs (terrestrial/satellite)
- Efficiency of different coding, multiple access, duplexing schemes
- Benefits and drawbacks of higher order modulation schemes
- Software defined radio

Planning

- Analysis of impact of ATPC
- Evaluation of interference vs thermal noise (C/I vs C/N) criteria for fixed links
- Analysis of impact of performance and availability criteria (fixed / satellite)
- Site shielding modelling
- Improved Propagation modelling (interference and wanted paths)
- Inter-operator guard bands
- Interaction of different systems
- Analysis of frequency re-use and interference modelling for license exempt technologies (e.g various HiPerLAN applications)

Network architectures

- Analysis of relative efficiency of mesh networks, P-MP and P-P networks.
- Adaptive networks (e.g. DCA)

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