

Cross-technology sensing alternatives and the impact of a phased approach

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Cross technology sensing flavors

	3GPP SSB	IEEE 802.11bc	On-off keying
Enables full power mobile.	✓	✓	✓
Detect and vacate by Wi-Fi.	✓	✓	✓
Prob. of detecting mobile (best:1, worst: 3), ECC Report 366.	1 (~98%)	3 (49-71%)	2
Technology neutral.	✗	✗	✓
Prioritizes Wi-Fi over others unlicensed technologies.	✗	✓	✗
Requires channel alignment.	✓	✓	✗
Requires standardization.	✓	✓	✓

IEEE is the least effective solution, prioritizes specific license-exempt technologies and puts all implementation burden on mobile.

Phased approach vs. alternative approach – impact on a shared approach

OFCOM proposals:

- **A phased approach**
 - Phase 1: authorising low power indoor Wi-Fi in the whole of the Upper 6 GHz as quickly as possible.
 - Phase 2: authorising mobile once the outcome of European harmonisation is clearer.
- **Alternative approach: Wait for European harmonisation** before authorising Wi-Fi and before authorising spectrum for mobile.

- An early deployment of one technology discourages an agreement on a potential shared approach by the prioritized technology.
- An early deployment of Wi-Fi based on L6 GHz ETSI EN, risks equipment on the field not fulfilling the requirements in case of a band split/shared approach.
- A phased approach includes interference as a baseline when mobile starts operation considering the life cycle of Wi-Fi products.

The “alternative approach” to wait for European harmonization is recommended.

Phased approach vs. alternative approach – inequity between technologies

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- The EC Mandate to CEPT includes that “terrestrial systems capable of providing WBB ECS and WAS/RLANs should be treated equally and without any prior constraints or order of preference “
- OFCOM indicates the aim to “provide both industries with as much certainty as possible about their future access to this spectrum”
- A phased approach prioritizes Wi-Fi over mobile and causes large uncertainty for mobile.

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Harmonization is crucial

- Baseline for any shared approach and/or band split: existing standards and products for both technologies (Wi-Fi and mobile).
 - Mobile 3GPP n104
 - WiFi6E/Wi-Fi7
- The UK needs to harmonize with CEPT (and larger markets) on the Upper 6 GHz approach.
- Any shared approach needs to be well defined and specified in standards before deployments.
 - Any specific country solution is not likely to be introduced.

Key take aways

- OFCOM's "alternative approach" to wait for European harmonization is most suitable to further consider a potential shared solution.
- Principles for a potential shared solution:
 - it enables full power for mobile,
 - RLAN efficiently detects mobile,
 - RLAN vacates the band after detection,
 - it is regulated and standardized.
- Additional considerations are required to understand:
 - the usefulness of co-channel sharing between mobile and RLAN,
 - how to ensure commitment from both mobile and RLAN industries to implement the solution if regulated and standardized.



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