Ofcom Consultation - Expanding access to the 6 GHz band for mobile and Wi-Fi services

Ericsson response

About Ericsson
Ericsson is one of the leading providers of Information and Communication Technology (ICT) to service providers. We enable the full value of connectivity by creating game-changing technology and services that are easy to use, adopt, and scale, making our customers successful in a fully connected world.

Question 1:

Do you agree with our proposed set of 88 high density areas for 6 GHz authorisation? If you disagree, please provide your reasoning and evidence.

Ofcom's proposed High Density Areas are based primarily on current mobile deployment patterns and existing 3.4-3.8 GHz sites. While this provides a reasonable indication of where capacity is required today, it does not sufficiently account for the future expansion of mid-band networks over the lifetime of the licences. Ofcom's own analysis indicates that the proposed 6 GHz High Density Areas encompass approximately 77% of existing 3 GHz mobile sites. This means that around one quarter of the current mid-band footprint already sits outside the proposed licensing geography, despite Ofcom recognising that Upper 6 GHz is likely to be deployed from existing 3.4-3.8 GHz macro sites.

Ericsson believes that this figure should be regarded as a minimum starting point rather than an appropriate end state. The licensing framework should accommodate the full existing mid-band footprint, with further expansion to reflect anticipated future network growth. The purpose of Upper 6 GHz is not simply to address current urban capacity constraints, but to provide the spectrum resources needed to support the long-term evolution of mobile communications.

Ericsson does not believe the mmWave High Density Area framework provides an appropriate basis for defining the long-term geography of a mid-band spectrum layer. While both mmWave and Upper 6 GHz may be used to add network capacity, their propagation characteristics are fundamentally different. Upper 6 GHz has propagation characteristics much closer to existing 3.5 GHz spectrum and is expected to operate as an extension of the national macro network capacity layer, supporting wider-area deployments and not just highly localised hotspots. As a result, the geographic footprint of Upper 6 GHz should be materially larger than the footprint defined for mmWave spectrum.

Upper 6 GHz provides the long-term spectrum platform that enables the UK's Advanced Connectivity Technology ambitions, supporting AI-native networks, industrial digitalisation, critical infrastructure connectivity and the future evolution to 6G. The geographic scope of citywide licences should be expanded to include adjacent towns, suburban growth areas and other populated locations that sit at the edge of the proposed licence areas and are functionally part of the same economic regions. This should include surrounding urban areas, industrial estates, ports, airports, logistics hubs, enterprise zones and key transport corridors where future demand for high-capacity mobile connectivity is expected to emerge.

Some examples of nearby areas which could be expanded and merged include:

1. The Greater London area could be expanded to include all areas within the M25, and also combined with nearby outlying areas such as those to the west around Reading, Basingstoke and High Wycombe, creating a contiguous area across the M4, M3 and M40 corridors

2. The areas around Birmingham and Coventry could be combined along the M6.

3. The area around Manchester and Liverpool could be combined to the east with the area around Leeds and Bradford along the M62, and in turn with Sheffield to the south along the M1.

Ericsson therefore recommends that Ofcom revise the proposed High Density Area framework so that it captures the vast majority, if not all, populated areas of the UK over time. Licensing should reflect the future evolution of the UK's mid-band mobile network footprint and the locations where high-capacity services will be required over the next 20 -25 years, rather than being constrained by current traffic concentrations or a geography originally developed for mmWave spectrum.

Question 2:

Do you agree with our proposal to clear fixed links from the Upper 6 GHz band in and around high density areas, and to leave the band open to new fixed link licence applications outside of high density areas, subject to coordination?

Ericsson agrees in principle with Ofcom's proposal to clear fixed links from the Upper 6 GHz band within licensed mobile areas and to leave the band available for new fixed-link applications outside those areas, subject to coordination. We recognise that coexistence between high-power mobile deployments and fixed links in the same frequencies is unlikely to be practical in areas where widespread mobile deployment is expected.

However, this position is dependent on the geographic scope of the licensed mobile areas being appropriately defined. As outlined in our response to Question 1, Ericsson believes that the proposed High Density Areas are too narrowly defined and do not adequately reflect the future role of Upper 6 GHz as a strategic mid-band spectrum asset supporting future mobile communications. The geographic scope of the licensed areas should be expanded to reflect the future evolution of the UK's mid-band network footprint and the Government's ambition for high-quality standalone 5G across all populated areas.

Ericsson therefore supports the principle of clearing fixed links in areas designated for future mobile use, provided the scope of those licensed mobile areas is first established on the basis of long-term mobile network requirements rather than current traffic patterns or a framework derived from mmWave spectrum. Additionally, it is noted that a majority of fixed links have been identified for revocation in any case based on the current proposed areas, while the remaining links are in remote or offshore areas. Therefore the current proposed areas could be expanded to capture a larger range of contiguous areas as indicated in our response to Q1, without any impact on additional fixed links.

Ericsson also supports leaving the Upper 6 GHz band open to new fixed-link applications outside the licensed mobile areas, subject to coordination. This approach promotes efficient spectrum use and provides flexibility for a range of users.

Where fixed-link migration is required, Ericsson believes it is important that affected users are migrated to spectrum bands that provide long-term regulatory certainty. This will minimise the risk of future relocations and provide greater certainty for incumbent users.

Question 3:

Do you agree with the approach we have set out to identify the links which will be affected by the proposed revocation?

For mobile base stations, Ericsson assumes higher EIRP, and mechanical downtilt of 6 degrees, in line with assumptions used in CEPT studies, as indicated in 4.36. However, we agree with Ofcom's assumption that interference risk is not likely to be significantly greater with these parameters.

Question 4:
Do you agree with our proposal to remove access to the frequencies 7110–7125 MHz for PMSE use, but to retain the option of allowing users to "borrow" spectrum from the Upper 6 GHz band for occasional major events?
(no comment)

Question 5:
Do you agree with our proposal to require mobile base stations to protect RAS usage of the band at the levels specified?

Ericsson supports the objective of protecting RAS operations, and the proposed levels appear to be based on the relevant ITU-R thresholds for the telescopes in use in the UK. We note that Ofcom intends to provide further detail on the proposed measures as indicated in 5.22, and we would need to understand these details before being able to provide a more informed response.

Question 6:
Do you have any comments on how we should manage coexistence between mobile and any other users in the Upper 6 GHz band (i.e., RAS, EESS, SRDs, FSS and MOD use)?

Ericsson agrees with Ofcom's assessment that no specific mitigation techniques or restrictions are needed for EESS, SRDs/UWB and MOD use.

For FSS, we agree that the WRC-23 mask will provide adequate protection.

Question 7:
Do you have any comments on our assessment of the impacts of our proposals (to the extent not covered by previous questions)?
(no comment)

Question 8:
Do you have any comments on our Equality impact assessment?
(no comment)

Question 9:
Do you have any comments on our Welsh Language impact assessment?
(no comment)