
Three's response to Ofcom's consultation on “EE's application for licence variations in support of enhanced mobile communications for the emergency services”

Non-confidential

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1. Summary

Hutchison 3G UK Ltd (“Three”) welcomes the opportunity to respond to Ofcom’s consultation on EE’s application for licence variations in support of enhanced mobile communications for the emergency services (‘the consultation’).

Three has no objection to the proposed variations to EE’s licence in principle. Based on its technical consideration, Three considers that the proposed use case, as described in Ofcom’s consultation, is unlikely to impose undue interference:

- The risk of interference into Three’s spectrum from EE’s use of its unpaired 2100 MHz spectrum under the proposed technical conditions is low and unlikely to cause significant issues for Three. The potential for interference is also mitigated by permission to operate ESN gateways being limited to when they are stationary
- Backhaul of traffic using 800 MHz and 1800 MHz spectrum at higher power would only be used to facilitate the operation of ESN gateways at cell edge (usually but not exclusively in rural locations). Consequently, the risk of interference is likely to be low.

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2. Questions & answers

Question 1: Do you agree with our proposal to vary EE's Spectrum Access 2100 MHz licence to allow LTE technology? If not, please explain why you think it would not be appropriate to vary the licence?

Three agrees with Ofcom's proposed licence variation for the purposes set out in its consultation.

Three's broadly agrees with Ofcom's technical assessment and the subsequent proposal to vary EE's unpaired 2100 MHz spectrum access licence permitting LTE to be used in this band, as set out in its relevant consultation published in August 2016 ('the consultation').

Three also welcomes:

- the proposed adoption of a specific TD frame structure and synchronisation techniques similar to those proposed for the 2.3 GHz and 3.4 GHz bands; and
- the additional safeguard against interference that Ofcom proposes to stipulate that ESN gateways mounted on vehicles are not to be used whilst the vehicle is in motion.

The risk of interference into Three's 2100 MHz paired FDD spectrum from EE's use of the band under the proposed technical conditions is low and therefore unlikely to cause Three any significant issues.

CEPT Report 39 is a reasonable starting point for setting technical conditions for this licence variation.

Ofcom draws respondents' attention to Table 1 in the consultation (reproduced from the CEPT Report 39, Table 4.6.1.2), which shows a severe drop off in the permitted maximum in-block power across the band between 1900-1920 MHz.

Table 1: CEPT Report 39 key conditions

Maximum mean in-block e.i.r.p of base stations	1900 to 1905 MHz	43 dBm/5MHz
	1905 to 1910 MHz	30 dBm/5MHz
	1910 to 1920 MHz	20 dBm/5MHz
Maximum mean out-of-block e.i.r.p of base stations	1920-1980 MHz	-50 dBm/5MHz
Other main elements of the base station block-edge-mask	As described in CEPT Report 39	

For EE's lower 5 MHz TDD block between 1900-1905 MHz, it is permissible to transmit up to 43 dBm (or 20W) per 5MHz. The power of EE's next 5 MHz TDD block between 1905-1910 MHz is restricted to a maximum of 30 dBm (or 1W) per 5 MHz. However, the next 10 MHz of TDD spectrum between 1910-1920 MHz covering O2 and Three's blocks are further restricted to a maximum power of just 20 dBm (or 0.1W) per 5 MHz.

There do not appear to be other circumstances that need to be taken into account to assess this variation request; therefore, it seems appropriate to base the technical conditions for this licence variation solely on the basis of CEPT Report 39.

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Question 2: Do you agree with our proposal to authorise the backhaul of ESN Gateway devices at a maximum mean transmit power of 31 dBm e.i.r.p. in the uplink frequencies 837.0 to 842.0 MHz and 1736.7 to 1781.7 MHz in EE's 800 MHz and 1800 MHz licensed spectrum to facilitate the occasional and limited use of higher power uplink transmission? If not, please explain why you think it would not be appropriate to vary the licence?

Three agrees with Ofcom's proposed licence variation for the purposes set out in its consultation

Three broadly agrees with Ofcom's proposal to authorise the backhaul of ESN gateway devices at the higher maximum mean transmit power of 31 dBm EIRP.

Three also welcomes Ofcom's proposal to limit use of 31 dBm EIRP for devices in these bands specifically to the provision of backhaul for ESN gateway devices. This seeks to limit the use of devices at more permissive power limits to those specifically required to enable EE's outlined use case.

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