

Vodafone consultation response

Application for a variation to 3G licences (and consequent proposal to vary draft 2GHz MSS/CGC Base station licences)

Introduction

Vodafone welcomes Ofcom's publication of its consultation on the proposal to vary the conditions of the 3G licences for mobile network operators and the opportunity to provide comments.

Vodafone concurs with the analysis and rationale as explained in the consultation document and supports Ofcom's preferred option to grant the variation to mobile operators' 3G licences as soon as practicable.

It should be noted that this response addresses only the proposal to vary 3G mobile operators' licences in the 2.1GHz band and not to any aspect of varying the future licences applicable to the 2GHz MSS/CGC base stations which Ofcom is also consulting on within this consultation document.

In expanding upon some of the points mentioned in the Ofcom consultation document, Vodafone seeks to allay any concerns about the affect of allowing the variation in 3G licence powers.

Response to consultation question

Question – Are there any reasonable grounds why Ofcom should not grant the request to vary the five Wireless Telegraphy Third Generation Mobile Licences by increasing the permitted maximum in-band EIRP to 68dBm as soon as practicable?

Vodafone is firmly of the opinion that the licence variation we proposed in 2008, and supported by the other mobile operators, will ultimately be to the benefit of consumers and the industry at large.

Vodafone believes that there are no reasonable grounds why Ofcom should deny the request by mobile operators to vary the maximum permissible in-band EIRP to 68dBm as soon as practicable.

Background

Since the award of the 3G licences in 2000, all the infrastructure suppliers have constantly evolved the capabilities of their product ranges to provide more innovative and technically advanced base station hardware. Yet during the intervening period, the technical parameters in a 3G licence which govern the power limitations of 3G base stations have remained unchanged since the licences were originally issued.

As Ofcom points out, Section 2.2.11 of the Information Memorandum for the 3G licence auction contained the following statement:

“In the light of operational experience and in line with further developments in the 3G standards, it may subsequently be found that one or more of the emissions limits stipulated in the WT Act Licences are too stringent. ... If it is subsequently felt by the RA and licensees that the limits may be relaxed, they will be.”



It is clear from this that the emissions limits defined in the 3G licences could change at some point in the future so that 3G licensing conditions kept pace with developments in the industry thereby ensuring the needs of operators and interests of consumers were not unduly inhibited by overly restrictive constraints in the licensing regime.

Vodafone's request

Vodafone originally proposed to Ofcom that it and the other cellular operators be allowed to increase the maximum output power permitted by their licence. The proposal was to have the discretion to increase the nominal maximum permissible EIRP from its current ceiling of +62dBm up to +65dBm on some of its sites.

In simple terms, any variation in 3G licences allows Vodafone and other mobile operators the opportunity to realise advances made in the capabilities of vendors' base station hardware whilst having the opportunity to provide improved levels of in-building coverage, higher data throughputs and, where possible, improvements to the coverage footprint of our 3G network. All of which will benefit the customer experience when using mobile services.

There is also the potential realisation of a reduced number of radio base stations required to provide rural coverage should the power variation be granted. This would allow Vodafone and other operators the flexibility to provide coverage and services more cost effectively.

It will also be an enabler for the deployment of mobile broadband over a wider geographical area; access to which is a key feature of the Government's Digital Britain strategy to provide universal broadband speed of 2Mbps by 2012.

Comparisons to other countries

From enquiries made by Vodafone UK and Ofcom themselves, it became apparent that other European countries (eg Germany, France and Spain) do not have a specific EIRP per cell carrier limit stated in their 3G licences – to our knowledge, they have not in practice experienced any adjacent channel interference or out of band emissions issues.

It is worth noting that in the early days of operating UMTS networks, there was a lot of concern amongst network operators that issues of adjacent channel interference would be a major technical hindrance. However, subsequent experience successfully operating UMTS networks has shown that this issue in practice was not at all significant as theoretically postulated at the time.

The power variation will therefore align the UK more closely to mobile operators in other countries and support the Ofcom requirement for continuous innovation in mobile communications provision.

Deployment and benefit of any power variation

It is not envisaged that any power variation granted in the 3G licence would be deployed to all Vodafone's 3G base stations. Implementation is likely to be a gradual process and deployed selectively on a site by site basis according to operational requirements. In the majority of cases, new amplifiers would be necessary to increase the power transmitted by a base station and the process would be managed through equipment replacement at hardware end of life.



As Ofcom highlights in paragraph 7.3 of the consultation document; in 3G networks, particularly for customers using High Speed (HS) data services, the actual data rate delivered to an individual device is highly dependent on the signal quality and strength seen by the mobile device itself.

Vodafone sees the benefits of raising the limits on EIRP as just one of many ways of improving our ability to adapt to the changing needs of our customers.

Our customers will increasingly migrate and adopt a variety of smarter 3G handsets and devices that have ever faster HS data capabilities. This enables them to fully embrace mobile working.

It is also clear that Vodafone, like the other UK mobile operators, will see the trend towards the adoption of smart phone devices (such as the iPhone) continue and the use of data hungry applications such as music and video downloading increase.

Impact of Proposed increase in 3G EIRP on ICNIRP Compliance

This is an important topic to Vodafone and one which Vodafone takes very seriously.

Irrespective of any power variation Ofcom grants the mobile operators in their 3G licences, all Vodafone's Radio Base Stations (RBSs) will still remain fully compliant with the ICNIRP (International Commission on Non-Ionizing Radiation Protection) recommendations for limiting human exposure to RF energy.

All Vodafone's RBSs are carefully designed in such a way that is not possible for members of the public or personnel to get sufficiently close to an antenna that their exposure level could be in excess of the ICNIRP guidelines.

ICNIRP compliance will not be compromised by any increase in 3G power on any Vodafone site.

ICNIRP has defined frequency dependant reference levels for human exposure to RF energy. The permissible exposure level at 2100MHz is approximately twice the permissible level for GSM 900MHz. Thus, when determining ICNIRP compliance for an operator such as Vodafone who have GSM 900MHz, GSM 1800MHz and UMTS at 2100MHz frequency bands, the greatest contribution towards the antenna exclusion zone for a site will generally come from the GSM 900MHz band.

Adjacent channel interference between UMTS and PMSE bands

Vodafone has reviewed the study by Ofcom with regard to the interference of the top of the PMSE band caused by 3G downlink interference, which is contained in Annex 7 of the consultation document.

Vodafone agrees with the analysis and conclusions that Ofcom has reached regarding the likely changes to the interference currently experienced by PMSE users in adjacent channels to the UMTS band.

Vodafone therefore believes that the conclusions Ofcom has reached in paragraphs A7.60 to A7.62 are reasonable and that the impact on the existing PMSE band can be mitigated by the use of filters.