

**Mobile & Auctions Team**

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27<sup>th</sup> May 2011

**NATS**  
**Corporate and**  
**Technical Centre**  
4000 Parkway  
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PO15 7FL

Dear Sir,

**Consultation on assessment of future mobile competition and proposals for the award of 800 MHz and 2.6 GHz spectrum and related issues**

NATS welcomes the opportunity to respond to this consultation and notes that this is intended by Ofcom as the first in a series in relation to the 800 MHz and 2.6 GHz spectrum award.

NATS operates radar systems at airports and elsewhere in the UK. In total NATS is involved in the operation of S Band radar at seventeen UK locations. These radars are essential to the UK's aviation infrastructure and are critical in providing safe and effective surveillance and separation of aircraft in UK airspace. NATS also has interests in the band above 960 MHz, although the 900 MHz adjacent band issues are not directly addressed in this consultation document.

NATS recognises the Government's requirement to release spectrum in the 2.6 GHz band for new mobile communication services. As the consultation document and the wider process recognise, as things stand, new services in the 2.6 GHz band could impact on the effective operation of aviation radar. This would not be acceptable and NATS will continue to work closely with HMG, Ofcom and CAA on the mitigation of the interference into these radar systems through their modification and the appropriate co-ordination mechanisms between mobile systems and radar systems. However at the time of this response, NATS notes that the required modifications are not yet known and so neither is the timetable that might be appropriate for such modifications consistent with the efficient and effective operation of air traffic control, nor the costs involved.

NATS has comments on certain sections of the consultation documentation and has also addressed a small number of the specific questions raised by Ofcom where appropriate; these are provided in the Annex to this letter, which forms part of this response. We have no comment on the remaining questions. All references to section numbers are to those of the consultation document of 22<sup>nd</sup> March 2011, unless noted otherwise.

Yours faithfully,

**Ken Ashton**  
Head of Navigation and Spectrum

## **Annex to NATS response to the Consultation on assessment of future mobile competition and proposals for the award of 800 MHz and 2.6 GHz spectrum and related issues**

### General comments.

§4.35, 4.38 and 4.40 refer to mobile network operator co-ordination with radar / airport operators both in the interim phases of the rollout of the radar modifications and as an ongoing requirement. NATS supports consideration of the ongoing obligation for co-ordination between the 2.6 GHz systems and radar systems particularly given Ofcom's proposals for technology neutrality in the 2.6 GHz band (e.g. §7.39). The exact mechanisms for the interim and ongoing co-ordination need to be developed and it may be that NATS Enroute plc could be approached directly in relation to its radar systems although the situation may need to differ for individual airports. We would note that the current Safeguarding arrangements under The Town and Country Planning (Safeguarded Aerodromes, Technical Sites and Military Explosives Storage Areas) Direction 2002 / DfT/ODPM Circular 1/2003 might provide a model that could be considered.

NATS would also observe that from the wording used in the document, e.g. § 4.40, it may not be clear that there are some potentially affected civil radar systems that are located at locations other than airports.

Annex 12 discusses technical parameters for 800 MHz equipment; NATS is aware of issues in the past from the second harmonics of TV transmissions in certain channels falling into the RNSS band (Galileo E1, GPS L1 etc) at 1559-1610 MHz. There should be specific technical requirements placed upon 800 MHz equipment to avoid such RNSS interference.

NATS would also point out that the radar parameters quoted by Real Wireless (Table 8.2, p155/156 of their report) appear to differ from those given in the cited ITU-R reference material and some of those also differ from parameters of NATS systems, e.g. antenna gains used by Real Wireless are around 6dB lower than the ITU-R figures, some of the towers employed by NERL are up to three times the height used by Real Wireless.

### Specific Ofcom questions.

*Question 4.2: If we were to offer shared access low-power licences in some way, do you have any comments on the appropriate technical licence conditions which would apply for the different options?*

NATS has understood "low power" in the context of this award to be referring to in-fill access points / femtocells etc, rather than to "classic" low power devices of the types that are generally exempted from licensing, although we are aware that note has been taken of the Real Wireless report in the LPD community. Although it is stated in the consultation document that the low power systems would be licensed, this appears to be at a network level and there are some statements in the Real Wireless report that appear to imply that the base station locations would be uncoordinated and that there could be some element of autonomous load sharing / interference (between low power networks) management. We also note the statements in the comments in the Real Wireless document to the effect that in some circumstances the low power system may have relaxed emission limits that could

create noise to radar receivers and that this is recommended to Ofcom for further examination. All of these are of concern to NATS.

NATS notes Ofcom's comments in §4.55 indicating that it is expected that obligations will be placed upon licensees to protect radar use. It isn't clear whether this refers to both "high power" and low power use of the 2.6 GHz band and NATS would support them being placed upon both. NATS would suggest that the emissions levels for low power systems need to be restricted such that their impact on the adjacent radar systems is no worse than the "high power" systems in the 2.6 GHz band. We also believe that the low power systems may require co-ordination with radar systems similar to that referenced in §4.35 *et seq* both through the interim period of radar modifications and in the longer term.

*Question 6.5: Do you have any comments on our proposal not to impose 'use it or sell it' obligations but to consider including an additional power to revoke during the initial term of the licences?*

Noting the implication that some awarded spectrum may lie unused by licensees, NATS would expect that Ofcom would leave itself the option of taking positive action to ensure that efficient use is being made of this newly awarded spectrum. This is particularly the case as HMG is seeking the release of 500 MHz of public sector spectrum by 2020<sup>1</sup>, including from a number of bands within which civil aviation operates critical systems that are in use in some cases on a 24/7 basis, with part of the reasoning for this amount of spectrum being sought being given as an apparent lack of other spectrum being available.

*Question 7.2: Do you have any comments on the proposal to amend the spectrum Trading Regulations to apply to the auctioned licences in the 800 MHz and 2.6 GHz bands, to include a competition check before we consent to a spectrum trade of mobile spectrum and not to allow transfers that would increase the number of 2.6 GHz low-power licensees?*

If trading is to be extended to the 2.6 GHz band, NATS would expect to see that any obligations placed upon the initial licensees in relation to the protection of adjacent band systems, e.g. radar, or ongoing requirements to co-ordinate with radar operators must also apply to any new licensee following a trade / transfer.

*Question 8.7: Which aspects of our packaging proposals for the 2.6 GHz band do you agree with and why?*

NATS agrees with the proposal in §8.93 for the treatment of all blocks as being the same vis-à-vis 2.7 GHz radar (see also our earlier comment about the impact of low power emissions on radar needing to be no worse than those of other systems in the 2.6 GHz band)

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<sup>1</sup> [http://www.culture.gov.uk/news/news\\_stories/8008.aspx](http://www.culture.gov.uk/news/news_stories/8008.aspx)