



Award of the band 872-872 MHz paired with 917-921 MHz

Update and next steps

Interim statement

Publication date: 26 February 2010

Contents

Section		Page
1	Introduction	1
2	Overview of consultation responses	2
3	Next steps	5
Annex		Page
1	Glossary of abbreviations	6

Section 1

Introduction

- 1.1 The purpose of this interim statement is to inform stakeholders that we will not make further decisions about the release of the band 872-876 MHz paired with 917-921 MHz (the 872/917 MHz band) until later in 2010.
- 1.2 This reflects our view that we should take account of work under way in Europe on the possibility of co-channel sharing between GSM-R, short-range devices (SRDs) and radio-frequency identification (RFID) before considering further the choice of authorisation approach for releasing the band. The relevance of this work is that it may open up the possibility of a hybrid authorisation approach that combines elements of the full licensing and light regulatory approaches to authorisation. This hybrid approach was not considered in our consultation document of 11 August 2009 on the way forward for the future use of the 872/917 MHz band.
- 1.3 The regulatory and technical work under way in the Electronic Communications Committee (ECC), the European Conference of Postal and Telecommunications Administrations (CEPT) and the European Telecommunications Standards Institute (ETSI) is expected to be completed in the autumn. Our spectrum-awards homepage¹ will be kept up to date to enable stakeholders to keep track of progress in CEPT/ECC and ETSI.
- 1.4 This interim statement also gives an overview of the responses that we received to our consultation. We would like to thank all the respondents for their comments and the information they provided. One of the principal objectives of the consultation was to gather evidence that would allow us to make a more informed decision on the relative merits of releasing the spectrum through a full licensing or light regulatory approach. In the event, we received limited information of this nature. Hence, we remain interested to hear from stakeholders who have additional information and analysis either on technical criteria or that could help to inform an assessment of the potential value that could be created through particular uses of the band.

¹ www.ofcom.org.uk/radiocomms/spectrumawards/.

Section 2

Overview of consultation responses

- 2.1 Our consultation set out two general approaches that might be suitable for releasing the 872/917 MHz band:
- full licensing, under which we would award a limited number of licences (e.g. a single UK licence that would support a wide-area/network application such as mobile broadband) via an auction; and
 - light regulatory, under which individual transmitters (e.g. SRDs and RFID) would be authorised without limitation on their numbers on either a licence-exempt basis or subject to a light licensing regime.
- 2.2 The consultation also set out our initial view that these two approaches would be likely to be mutually exclusive and hence require us to take a decision on which would be more likely to deliver greater benefits for citizens and consumers.
- 2.3 We received 21 responses by the consultation closing date of 3 November 2009. Five were confidential, although two of these included a separate redacted public response. All the non-confidential responses are available on our website at www.ofcom.org.uk/consult/condocs/872_876_mhz/.
- 2.4 Responses came from a wide range of stakeholders:
- a mobile broadband operator;
 - the SRD and RFID industries;
 - the rail industry;
 - a smart-metering company;
 - a broadcasting services provider;
 - a mobile network operator;
 - an equipment manufacturer;
 - an emergency-services spectrum provider;
 - technology trade associations;
 - NATS; and
 - the Government, including the Meteorological Office.

Potential uses

- 2.5 The SRD/RFID and rail industries each advocated that the spectrum should be made available for them as this would most benefit UK consumers and the economy. Reference was made to the potential benefits that this would provide (e.g. greater

choice and lower prices, not least from “global” harmonisation and the resulting economies of scale). Both industries nonetheless noted the studies that are being carried out in Europe to examine the scope for co-channel sharing between SRD/RFID and GSM-R.

- 2.6 The rail industry also noted that, as well as protecting existing GSM-R, the work also needs to look forward to replacement technology, possibly LTE, as well as to the potential need for additional spectrum to support increased automation and control of infrastructure. Under this scenario, the spectrum in the 872/917 MHz band would be aggregated with adjacent spectrum already used for GSM-R in order to create the bandwidth that would be needed to support LTE.
- 2.7 Two responses favoured broadband use of the spectrum. One looked at the potential for mobile applications; the other expressed the view that a fixed solution was possible so long as we maintained our preference for service and technology neutrality.
- 2.8 Other responses requested that the spectrum be made available variously for smart metering, the emergency services and unmanned aerial vehicles (UAVs).
- 2.9 One response requested that we consider assigning the 872/917 MHz band to the emergency services as they could not compete financially with private industry.
- 2.10 One response suggested that 917-921 MHz should be used for wireless retail and office signage (low-bandwidth data applications) but provided no supporting arguments or evidence.

Authorisation approaches

- 2.11 The majority of responses supported a single UK assignment. Two believed that the band could be split between Great Britain and Northern Ireland, and it was felt that the spectrum could be subdivided geographically for particular applications such as smart metering.
- 2.12 Not surprisingly, different sectors supported the type of authorisation approach that would support their particular service, as summarised in the table below.

	Full licensing	Light regulatory
Emergency-service applications	Yes	No
GSM-R	Yes	No
Mobile broadband	Yes	No
RFID	No	Yes
Smart metering	No	Yes
SRDs	No	Yes
UAVs	No	Yes

- 2.13 Some respondents suggested that we consider the ongoing European work in both CEPT/ECC and ETSI, part of which is looking at the potential for co-channel sharing by GSM-R and SRD/RFID technologies. This work raises the possibility of a hybrid authorisation approach that would combine full licensing (which would support the GSM-R component) and a light regulatory approach (which would support deployment of SRDs, RFID and possibly other low-power applications). The rationale behind a hybrid approach of this nature would be that a GSM-R network would be licensed for a limited and well defined coverage area (alongside railway lines),

leaving large areas where SRDs and RFID could be deployed without risk of interference. The same hybrid approach may not be feasible with other mobile broadband applications, since these would not have the well defined and limited coverage characteristics of a GSM-R network.

- 2.14 Our challenge is that we will have to make a choice between these different authorisation options (full licensing, light regulatory and hybrid) on the basis of which we believe is most likely to deliver the greatest benefits to citizens and consumers. Our assessment of citizen and consumer benefit will need to consider the potential value that could be created by the kinds of spectrum use that each authorisation approach could enable.
- 2.15 Our consultation asked stakeholders to provide information that would help generate a better understanding of the potential value that could be created by different uses. However, in practice, the responses provided very little information or analysis of this type. Accordingly, while we await the completion of the technical work in Europe referred to above, we remain open to the submission of additional material that will help inform our assessment of the potential value that could be created through particular uses of this spectrum.

Technical conditions

- 2.16 Users of adjacent spectrum said that their existing (and future) services needed protection from any new uses of the 872/917 MHz band.
- 2.17 Concerns were raised about the technical assumptions and mitigation techniques that were proposed to protect wideband mobile services such as UMTS in the band 880-915 MHz paired with 925-960 MHz previously reserved for GSM services. A number of responses argued that further analysis was required to assess the potential interference/coexistence/coordination problems and how these translated into real-life scenarios, the technical assumptions in relation to power limits (views were polarised between being too prohibitive to not prescriptive enough) and separation distances, and the varying mitigation techniques that could be employed to reduce separation distances further.
- 2.18 NATS queried the relevance of the associated filter report to this consultation.
- 2.19 Various concerns were raised about who should pay for filtering given the “uncertain” future of whether UMTS would be deployed in adjacent bands. Some responses either implied or stated that future UMTS operators should bear these costs.

Section 3

Next steps

- 3.1 The issues raised in the consultation responses indicate that further analysis would be beneficial before a decision is made on the choice of authorisation approach to release the 872/917 MHz band. Key to this is the work ongoing in CEPT/ECC (FM38, PT1 and SE7) and ETSI (TG28 and TG34) on coexistence between SRD/RFID and GSM-R. This is scheduled to finish in autumn 2010. This work will inform the feasibility of adopting a hybrid authorisation approach. We will continue to contribute to the work in CEPT/ECC and ETSI as appropriate and take stock of its implications for the release of the band.
- 3.2 Other areas for further work are likely to include:
- the assessment of the potential value that could be created through different uses of the band;
 - potential interference/coexistence problems;
 - the technical assumptions in relation to power levels, propagation methodology, separation distances and mitigation techniques that could be employed;
 - the extent to which filtering will be required to protect existing and future mobile services in adjacent spectrum and how this should be implemented; and
 - the benefits of harmonisation for those applications where this is potentially relevant.
- 3.3 Given other priorities that we need to resource, we are unlikely to recommence work on the release of the 872/917 MHz band until the direction of the European work is clearer. In the meantime, we remain interested to hear from stakeholders where they have additional information and analysis either on technical criteria, or that could help to inform an assessment of the potential value that could be created through particular uses of the band.

Annex 1

Glossary of abbreviations

CEPT	European Conference of Postal and Telecommunications Administrations
ECC	Electronic Communications Committee
ETSI	European Telecommunications Standards Institute
FM	Frequency Management
GSM	Global System for Mobile Communications
GSM-R	Global System for Mobile Communications—Railway
LTE	Long Term Evolution
MHz	Megahertz
PT	Project Team
RFID	Radio-frequency identification
SE	Spectrum Engineering
SRD	Short-range device
TG	Technical Group
UAV	Unmanned aerial vehicle
UMTS	Universal Mobile Telecommunications System