



The future use of the 169MHz Ex-ERMES Band

High Power Band 169.6125 to 169.8125 MHz

Consultation

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Section 1

Executive Summary

- 1.1 Ofcom is seeking comments on its proposals for the use of the high power¹ section of the ex-ERMES band 169.4 to 169.8125MHz, as it considers its approach to managing the spectrum in the 169 MHz band. This follows the decision by the European Commission to repeal Directive 544/EEC of 9 October 1990 (known as the ERMES Directive) on the frequency band 169.4 to 169.8 MHz in order to adopt and mandate a new harmonised spectrum band 169.4 to 169.8125 MHz under Decision 2005/928/EC for a number of preferred applications. The band had previously been designated for pan-European land based public radio paging in Europe.
- 1.2 In the UK and the EU there has been very little use of the ex-ERMES band for designated ERMES paging systems. The demand for paging systems or radio messaging has been superseded in Europe by the use of other technologies such as short messaging systems (SMS) over GSM . The European Commission therefore decided that this band was not being used efficiently and could be better employed for other purposes. The band is currently used for short term assignments by Private Mobile Radio (PMR) and Programme Making and Special Event (PMSE) systems, typically only for a few days duration.
- 1.3 The new Decision 2005/928/EC divides the ex-ERMES band into low and high power parts. The low power part of the band was addressed in a previous Ofcom consultation in July 2006 entitled, 'Wireless Telegraphy Licence Exemption', which set out our proposals for licence exemption of the low power applications detailed in Decision 2005/928/EC. This consultation only details Ofcom's proposals on the future use of the high power part of the band (169.6125 to 169.8125 MHz).
- 1.4 The EC Decision 2005/928/EC requires that national regulators make this spectrum available to the market for services such as paging and high power asset tracking systems. As this is a mandatory requirement, the paging and asset tracking market within the UK was consulted informally by Ofcom to determine the future demand for these services in this band. The consensus of opinion was that the major paging and asset tracking operators within the UK had mature networks and therefore had no intention of migrating into the ex-ERMES spectrum. The companies in question were also operating mature networks in other parts of Europe in other frequency bands.
- 1.5 This confirmed the findings of a previous consultation conducted by the legacy regulator the Radiocommunications Agency in May 2002, which clearly showed that existing UK paging and asset tracking network operators were not interested in taking up assignments in the ex-ERMES band.
- 1.6 However, in order to comply with the EC Decision 2005/928/EC, Ofcom will make spectrum available in the high power part of the ex ERMES band for operators who want to roll out a national or regional paging or asset tracking service. The licence fees will be in line with the fees applicable to equivalent licences in this frequency band (High Band). The 2005 fees order can be found at:<http://www.opsi.gov.uk/si/si2005/20051378.htm>

¹ <http://www.ero.dk/documentation/docs/docfiles.asp?docid=2039&wd=N>

- 1.7 In the event that, following this consultation period, no organisations indicated a desire to use the spectrum for the designated services outlined in EC Decision 2005/928/EC, we propose to licence this spectrum for PMR and PMSE systems on a secondary basis for periods of up to a maximum of six months. These licences could be repeatedly extended for further periods of six months. In order to comply with the mandate, these PMR systems would be required to vacate their assignments to accommodate the use of the Directive's preferred primary applications (paging or asset tracking services) should they require access to the spectrum. The purpose of this consultation is to seek views on this proposal.
- 1.8 Information obtained from the responses to this consultation, may be used to support any future requests for the EC Decision 2005/928/EC to be amended to allow permanent use in this band on a technology neutral basis.

Section 2

EC Decision on the band 169.4-169.8125MHz

Background

- 2.1 In 1990, spectrum within the 169.4 to 169.8 MHz band was designated within the European Community, through a European Directive 90/544/EEC, for the introduction of the “pan-European land-based public radio paging service” known as “ERMES”.
- 2.2 By 1999, it became apparent that the ERMES frequency band was not being used for these services in most European Conference of Postal and Telecommunications (CEPT) countries. This was confirmed by an independent study which concluded that ERMES was not gaining wide operator acceptance and the system would not be rolled out across Europe.
- 2.3 The Commission mandated CEPT on the 7 July 2003 to identify a list of alternative applications for the use of the 169.4 to 169.8 MHz band, particularly those not related to traditional electronic communications as the spectrum was not being used efficiently, and to collect information on the current and future possible applications for the band. CEPT was asked to evaluate compatibility between the various applications and the possibility of using alternative radio spectrum bands in line with the principles of the Framework Directive.
- 2.4 It was later confirmed through the collective information and research that despite the adoption of Directive 90/544/EEC, the use of the band for ERMES had remained very limited, as the expected increased demand for radio messaging or paging had been overtaken by newer technologies such as short messaging systems (SMS) over GSM .
- 2.5 It was decided that the spectrum band 169.4 to 169.8 MHz for ERMES should be modified in order to ensure more efficient use of the band, while preserving its harmonised structure.
- 2.6 As mandated, CEPT produced a new frequency plan and channel arrangement, for six types of preferred applications to share the radio spectrum band for both the low and high power part, in order to meet several European Community policy needs. The needs for the high power part of the band included asset tracking or tracing devices, which would assist in tracking and recovering stolen goods, and existing paging systems such as ERMES as well as private mobile radio systems (PMR) when employed for temporary use, to assist in the coverage of special events for short periods of time.
- 2.7 This consultation only addresses the high powered part of the ex-ERMES band, and the following are the preferred applications identified in the Decision for the band:
 - a) high power transmitters for tracing and asset tracking systems;
 - b) existing paging systems or paging systems relocating from other channels in the radio spectrum band.

The Decision also allows the implementation of alternative applications into the high powered part of the band providing they do not constrain the harmonised implementation of the preferred applications. They are tracing, paging, temporary use or private mobile radio communications on a national basis.

- 2.8 The European Commission has now reflected CEPT's recommendations for the future use of this band in a Decision -"Commission Decision 2005/928/EC of 20 December 2005 on the harmonisation of the 169.4-169.8125 MHz frequency band in the Community".
- 2.9 The Decision effectively repeals the 1990 Directive on ERMES and mandates member states to make spectrum available in line with the CEPT plan, as reflected in Council Directive 90/544/EEC of 9 October 1990 on the frequency bands designated for the coordinated introduction of pan-European land-based public radio paging in the Community (the ERMES Directive). As the UK communications regulator, Ofcom must implement the Decision which can be found at:http://eurlex.europa.eu/LexUriServ/site/en/oj/2005/l_344/l_34420051227en00470051.pdf
- 2.10 The new band plan 169.4 to 169.8125MHz slightly extends the 169.4 to 169.8MHz band to align with the updated channel plan applied to this frequency range.

Section 3

Ongoing use of the band

- 3.1 Since the early 1990s the ex-ERMES band has been used in the UK to provide services for a variety of diverse users, mainly related to sporting events. A typical example is providing both PMR and PMSE assignments for major sporting events, such as the Lawn Tennis tournament at Wimbledon and the British Grand Prix at Silverstone. The spectrum has also been used at international events hosted in the UK.
- 3.2 The UK also has a number of overseas dignitaries who require access to radio frequencies for security purposes. The 169 MHz band has been used extensively over the last fifteen years to satisfy this demand. It is predicted that this will continue as security systems require instant access communication which currently can only be provided by PMR.
- 3.3 The band has been used by a national operator since September 2005 occupying a 25 kHz channel. This channel is in line with the recommended CEPT band plan. The Decision 2005/928/EC makes provision for legacy users.

Section 4

CEPT Channel Plan High Power applications

- 4.1 The CEPT channel plan has been agreed to be used when assigning primary systems in the 169 MHz band. This consultation only addresses the high power section of the band, and the systems permitted as per the EC Decision.
- 4.2 Tracking and tracing systems are permitted on a primary basis and are allocated four 25 kHz channels. These allocations were made to provide access for tracking and tracing vehicles and goods on a pan-European basis.
- 4.3 Paging systems are permitted as a primary service within this band and are allocated four 25 kHz channels. Channel number 15 (in red) in Table 1 below has already been assigned for a national operator in the UK. The three remaining channels are available to be used for paging on a pan-European basis.

The following illustrates the channel plan in the high power part of the ex ERMES band:

Table 1 : Channelling arrangement for the 169.6125 – 169.8125 MHz band

12.5kHz bandwidth		25kHz bandwidth	
Channel number	Centre Frequency	Channel number	Centre Frequency
12.5kHz Guard Band			
9a	169.618750	9	169.62500
9b	169.631250		
10a	169.643750	10	169.6500
10b	169.656250		
11a	169.668750	11	169.67500
11b	169.681250		
12a	169.693750	12	169.70000
12b	169.706250		
13a	169.718750	13	169.72500
13b	169.731250		
14a	169.743750	14	

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14b	169.756250		169.75000
15a	169.768750	15	169.77500
15b	169.781250		
16a	169.793750	16	169.80000
16b	169.806250		

Section 5

Proposed Implementation

- 5.1 The ERMES spectrum has never been used for paging systems in the UK. Several companies took out licences for paging applications but did not roll out networks. The current situation is that one 1 x 25 kHz channel is licensed in the high power section of the band on a national basis in the high power part of the band. Ofcom is seeking views and comments on proposals for use of the high power section of the ex-ERMES band.
- 5.2 The UK's national paging and asset tracking system operators already have mature networks deployed in other frequency bands and have suggested to Ofcom that they would not migrate to the 169 MHz pan-European band. They are already operating systems in other European countries and it would be a huge resource commitment, and would provide no extra coverage or facilities to their customers by migrating into this band. Therefore Ofcom understands that there is no demand for paging or asset tracking access to this block of spectrum.
- 5.3 EC Decision 2005/928/EC only permits either paging or asset tracking as primary users in the high power part of the ex-ERMES band. If new primary users are not forthcoming and existing operators do not want to migrate their systems into this band then Ofcom proposes the following;

Make the band available for short term PMR and PMSE use for a period up to six months, which is permitted within the EC Decision 2005/928/EC under alternative applications. Licences may be repeatedly extended for a further period of up to six months. If a paging or asset tracking operator wants to roll out a network, the PMR or PMSE operators will have to vacate their assignments. Short term use applications have been authorised in this band during the last 15 years.

Question: Do you have any comments on this proposal or on the potential for use of PMR and PMSE systems in the high power part of the ex-ERMES band?

Annex 1

Responding to this consultation

How to respond

- A1.1 Ofcom invites written views and comments on the issues raised in this document, to be made by 5pm on Monday 10th December 2007.
- A1.2 Ofcom strongly prefers to receive responses using the online web form at <http://www.ofcom.org.uk/consult/condocs/169mhz/howtorespond/form>, as this helps us to process the responses quickly and efficiently. We would also be grateful if you could assist us by completing a response cover sheet (see Annex 3), to indicate whether or not there are confidentiality issues. This response coversheet is incorporated into the online web form questionnaire.
- A1.3 For larger consultation responses - particularly those with supporting charts, tables or other data - please email businessradio@ofcom.org.uk attaching your response in Microsoft Word format, together with a consultation response coversheet.
- A1.4 Responses may alternatively be posted or faxed to the address below, marked with the title of the consultation.
- Trevor Allison
2nd Floor
Riverside House
2A Southwark Bridge Road
London SE1 9HA
- Fax: 020 7783 4303
- A1.5 Note that we do not need a hard copy in addition to an electronic version. Ofcom will acknowledge receipt of responses if they are submitted using the online web form but not otherwise.
- A1.6 It would be helpful if your response could include direct answers to the question asked in this document, which is listed at Annex 4. It would also help if you can explain why you hold your views and how Ofcom's proposals would impact on you.

Further information

- A1.7 If you want to discuss the issues and questions raised in this consultation, or need advice on the appropriate form of response, please contact Trevor Allison on 0207 9813084.

Confidentiality

- A1.8 We believe it is important for everyone interested in an issue to see the views expressed by consultation respondents. We will therefore usually publish all responses on our website, www.ofcom.org.uk, ideally on receipt. If you think your response should be kept confidential, can you please specify what part or whether all of your response should be kept confidential, and specify why. Please also place such parts in a separate annex.

- A1.9 If someone asks us to keep part or all of a response confidential, we will treat this request seriously and will try to respect this. But sometimes we will need to publish all responses, including those that are marked as confidential, in order to meet legal obligations.
- A1.10 Please also note that copyright and all other intellectual property in responses will be assumed to be licensed to Ofcom to use. Ofcom's approach on intellectual property rights is explained further on its website at <http://www.ofcom.org.uk/about/accoun/disclaimer/>

Next steps

- A1.11 Following the end of the consultation period, Ofcom intends to publish a statement in April 2007.
- A1.12 Please note that you can register to receive free mail Updates alerting you to the publications of relevant Ofcom documents. For more details please see: http://www.ofcom.org.uk/static/subscribe/select_list.htm

Ofcom's consultation processes

- A1.13 Ofcom seeks to ensure that responding to a consultation is easy as possible. For more information please see our consultation principles in Annex 2.
- A1.14 If you have any comments or suggestions on how Ofcom conducts its consultations, please call our consultation helpdesk on 020 7981 3003 or e-mail us at consult@ofcom.org.uk . We would particularly welcome thoughts on how Ofcom could more effectively seek the views of those groups or individuals, such as small businesses or particular types of residential consumers, who are less likely to give their opinions through a formal consultation.
- A1.15 If you would like to discuss these issues or Ofcom's consultation processes more generally you can alternatively contact Vicki Nash, Director Scotland, who is Ofcom's consultation champion:

Vicki Nash
Ofcom
Sutherland House
149 St. Vincent Street
Glasgow G2 5NW

Tel: 0141 229 7401
Fax: 0141 229 7433

Email vicki.nash@ofcom.org.uk

Annex 2

Ofcom's consultation principles

A2.1 Ofcom has published the following seven principles that it will follow for each public written consultation:

Before the consultation

A2.2 Where possible, we will hold informal talks with people and organisations before announcing a big consultation to find out whether we are thinking in the right direction. If we do not have enough time to do this, we will hold an open meeting to explain our proposals shortly after announcing the consultation.

During the consultation

A2.3 We will be clear about who we are consulting, why, on what questions and for how long.

A2.4 We will make the consultation document as short and simple as possible with a summary of no more than two pages. We will try to make it as easy as possible to give us a written response. If the consultation is complicated, we may provide a shortened version for smaller organisations or individuals who would otherwise not be able to spare the time to share their views.

A2.5 We will normally allow ten weeks for responses to consultations on issues of general interest.

A2.6 There will be a person within Ofcom who will be in charge of making sure we follow our own guidelines and reach out to the largest number of people and organizations interested in the outcome of our decisions. This individual (who we call the consultation champion) will also be the main person to contact with views on the way we run our consultations.

A2.7 If we are not able to follow one of these principles, we will explain why. This may be because a particular issue is urgent. If we need to reduce the amount of time we have set aside for a consultation, we will let those concerned know beforehand that this is a 'red flag consultation' which needs their urgent attention.

After the consultation

A2.8 We will look at each response carefully and with an open mind. We will give reasons for our decisions and will give an account of how the views of those concerned helped shape those decisions.

Annex 3

Consultation response cover sheet

- A3.1 In the interests of transparency and good regulatory practice, we will publish all consultation responses in full on our website, www.ofcom.org.uk.
- A3.2 We have produced a coversheet for responses (see below) and would be very grateful if you could send one with your response (this is incorporated into the online web form if you respond in this way). This will speed up our processing of responses, and help to maintain confidentiality where appropriate.
- A3.3 The quality of consultation can be enhanced by publishing responses before the consultation period closes. In particular, this can help those individuals and organisations with limited resources or familiarity with the issues to respond in a more informed way. Therefore Ofcom would encourage respondents to complete their coversheet in a way that allows Ofcom to publish their responses upon receipt, rather than waiting until the consultation period has ended.
- A3.4 We strongly prefer to receive responses via the online web form which incorporates the coversheet. If you are responding via email, post or fax you can download an electronic copy of this coversheet in Word or RTF format from the 'Consultations' section of our website at www.ofcom.org.uk/consult/.
- A3.5 Please put any parts of your response you consider should be kept confidential in a separate annex to your response and include your reasons why this part of your response should not be published. This can include information such as your personal background and experience. If you want your name, address, other contact details, or job title to remain confidential, please provide them in your cover sheet only, so that we don't have to edit your response.

Cover sheet for response to an Ofcom consultation

BASIC DETAILS

Consultation title: The Future Use of 169 MHz Ex ERMES Band

To (Ofcom contact):

Name of respondent:

Representing (self or organisation/s):

Address (if not received by email):

CONFIDENTIALITY

Please tick below what part of your response you consider is confidential, giving your reasons why

Nothing	<input type="checkbox"/>	Name/contact details/job title	<input type="checkbox"/>
Whole response	<input type="checkbox"/>	Organisation	<input type="checkbox"/>
Part of the response	<input type="checkbox"/>	If there is no separate annex, which parts?	

If you want part of your response, your name or your organisation not to be published, can Ofcom still publish a reference to the contents of your response (including, for any confidential parts, a general summary that does not disclose the specific information or enable you to be identified)?

DECLARATION

I confirm that the correspondence supplied with this cover sheet is a formal consultation response that Ofcom can publish. However, in supplying this response, I understand that Ofcom may need to publish all responses, including those which are marked as confidential, in order to meet legal obligations. If I have sent my response by email, Ofcom can disregard any standard e-mail text about not disclosing email contents and attachments.

Ofcom seeks to publish responses on receipt. If your response is non-confidential (in whole or in part), and you would prefer us to publish your response only once the consultation has ended, please tick here.

Name

Signed (if hard copy)

Annex 4

Consultation question

Question: Do you have any comments on the proposed alternative uses of PMR and PMSE systems in the high power part of the ex-ERMES band?

Annex 5

Impact Assessment

Introduction

A5.1 Impact assessments (IAs) provide a valuable method of assessing different options for regulation and illustrating why the preferred option was chosen. They form part of best practice policy-making and are commonly used by other regulators. This is reflected in section 7 of the Communications Act 2003, which means that generally we have to carry out impact assessments where our proposals would be likely to have a significant effect on businesses or the general public, or when there is a major change in Ofcom's activities.

Ofcom's legal obligations

A5.2 Ofcom is legally obliged to comply with the EC Decision and failure to do so will breach its statutory obligations. As a result, Ofcom is consulting industry on measures to allocate the high power section of the ex-ERMES band. Given the apparent low interest in the use of the spectrum for paging and asset tracking. Ofcom is proposing that the allocation of spectrum be held on a first come first served basis for temporary PMR and PMSE. This will ensure efficient use of the spectrum. .

A5.3 The decision to reallocate the ex-ERMES band and repeal Directive 90/544/ECC is binding on Member States and so the UK has no flexibility over adopting the new Decision 2005/928/EC. There is currently one legacy user in the band in the UK and the Decision 2005/928/EC makes provision for such users as already discussed in Section 3.3 of this Consultation.

The citizen and/or consumer interest

A5.4 The implementation of this proposal will not have a direct impact on citizens or and/or consumers. It will however allow a scarce resource to be better managed and used and this use will result in greater spectrum efficiency. VHF high band is one of the most popular bands for PMR and PMSE assignments. The Decision 2005/928/EC proposes temporary PMR and PMSE systems where the spectrum is not taken up by designated primary users.

Ofcom's policy objective

A5.5 The objective is to release the high power section of the ERMES Band into the market. The 169 MHz spectrum is in a band that has a high demand placed upon it especially in major conurbations. The UK paging and asset tracking industries have so far shown no interest in moving into this pan-European aligned Band. Ofcom is therefore proposing that in order to fully optimise the utilisation of this band it should be used for temporary PMR and PMSE systems in line with Decision 2005/928/EC. Such systems will be assigned in the band on the basis that if a primary user requires access to the spectrum, the secondary user will have to move to other spectrum. If a primary user requires spectrum where in an area a temporary users is assigned, the secondary user will have to migrate to alternative spectrum subject to availability.

- A5.6 This consultation looks at allowing PMR and PMSE systems on a temporary basis to the high powered ex-ERMES band for periods up to six months. If a primary user applies to Ofcom for access to a channel which is assigned to a secondary user, the secondary user may have to move. This will only be necessary if there is insufficient spectrum left to satisfy both systems. In the event that the secondary user is required to vacate the spectrum, then Ofcom will consider paying for the system to be retuned to an alternative assignment in another band subject to availability of spectrum.
- A5.7 The procedures to implement this policy are already in place and could be activated at the end of this consultation process.

Annex 6

Options

Summary of the Options for implementing the ERMES Decision

Option	For	Against
1. Fully implement the EC Decision	Will meet the UK's obligations as the Decision is binding on Member States	Ofcom believes that there is no demand for high power Paging and Asset Tracking in this band. A policy of not permitting other types of permanent assignments could lead to future under utilisation of the band.
2. Not to adopt the Decision	More efficient use of the band is likely to be achievable if a technology neutral approach to applications were permitted	Legal advice is that the Decision is binding on the UK.
3. Partially adopt the Decision i.e. by only allowing the PMR applications permitted in the Decision	This is likely to make more efficient use of the spectrum as there is a demonstrated demand for PMR in this band.	Legal advice is that the Decision is fully binding on the UK.

Annex 7

Frequency Plan

Frequency plan for the high power part of the 169.6125 - 169.8125 MHz radio spectrum band

"Guardband"	High power applications															
	Tracking and tracing system		Paging		Paging		Paging		Tracking and tracing system		Tracking and tracing system		Paging		Tracking and tracing system	
	These channels could be used on a national basis for alternative applications such as paging, tracing, temporary use or PMR															
	12.5															
	9a	9b	10a	10b	11a	11b	12a	12b	13a	13b	14a	14b	15a	15b	16a	16b

Legend:

1st row: category application, high power applications;

2nd row: preferred applications:

– Tracking and tracing system

– Paging system

3rd row: alternative applications

4th and 5th rows: channel raster (in kHz) and channel number.

Annex 8

Glossary

Assignment

Authorisation given by a licensing authority for a radio station to use a specific radio frequency or channel under specified conditions.

Band

A defined range of frequencies that may be allocated for a particular radio service, or shared between radio services.

CEPT

Conference European des Postes et Telecommunications (CEPT).

EEC

European Economic Community (EEC)

ERMES

Enhanced Radio Messaging Systems

EU

European Union.

Framework Directive

Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services.

Ofcom

Office of Communications, responsible for spectrum management in the UK and international representation since 29 December 2003.

Paging

One-way communications between the sender and the receiver using a base station with the mobile as a receiver.

PMR

Private Mobile Radio. Is a land mobile communications service intended for business operations, within a defined user group.

PMSE

Programme Making and Special Events.

VHF

Very High Frequency; the portion of the electromagnetic spectrum between 30 and 300 MHz.