UK Interface Requirement 2053

Ground based distance measuring equipment (DME) at aeronautical stations of the aeronautical radionavigation service.

Publication date: Feb 2006
Date amended: January 2018
Directive 2015/1535/EU Notification number:
2005/491/UK

Contents

Section 1

References

1.1 Annex 10 to the Convention on International Civil Aviation (ICAO), as amended.

1.2 Statutory Instrument 2014 No. 774, The Wireless Telegraphy (Limitation of Number of Licences) Order 2014.

Section 2

Foreword

2.1 The Radio Equipment Directive (Directive 2014/53/EU) was implemented in the United Kingdom (UK) by the Radio Equipment Regulations 2017. In accordance with Articles 8 and 7 of Directive 2014/53/EU, this UK Interface Requirement contains the requirements for the licensing and use of ground based distance measuring equipment (DME) radio equipment in the specified frequency band.

2.2 Nothing in this UK Radio Interface Requirement shall preclude the need for equipment to comply with Directive 2014/53/EU.

2.3 Nothing in this UK Radio Interface Requirement shall preclude the need for equipment to comply with Annex 10 to the convention on International Civil Aviation, where appropriate.

2.4 It is required by the Wireless Telegraphy Act 2006 that no radio equipment is installed or used in the UK except under the authority of a licence granted by or otherwise exempted by regulations made by Ofcom. It is a condition of such a licence or exemption regulations as appropriate that, in order to be installed or used in the UK, the equipment must meet the minimum requirements specified in this UK Interface Requirement for the stated equipment types and for the stated frequency bands. Nothing in this UK Interface Requirement shall preclude equipment from being placed on the market in the UK that complies with the 'essential requirements' specified in Directive 2014/53/EU.

2.5 The requirements given in the main body of this UK Radio Interface Requirement will apply to ground based DME radio equipment in the UK.

2.6 This UK Radio Interface Requirement will be revised as necessary, for example to follow:

i) current technology developments for reasons related to the effective and appropriate use of the spectrum in particular maximising spectrum utilisation; and

ii) changes to the available spectrum allocated for aeronautical radionavigation.

2.7 All UK Radio Interface Requirements notified under Directive Directive 2015/1535/EU will be published and will be made available free of charge from the Ofcom web-site at http://www.ofcom.org.uk

2.8 Further information on this UK Radio Interface Requirement can be obtained from the technical enquiry contact given at the back of this document.

Section 3

Minimum requirements for operation within the UK

3.1 The minimum requirements in this document are made for reasons related to the effective and appropriate use of the radio spectrum, in particular maximising spectrum utilisation.

3.2 This UK Radio Interface Requirement gives a high level description of how the spectrum in the UK is used for ground based DME radio equipment in the aeronautical radionavigation service. It does not prescribe technical interpretation of the ‘essential requirements’ of Directive 2014/53/EU.

3.3 This UK Radio Interface Requirement therefore stipulates the necessary equipment parameters for the licensing of ground based DME aeronautical radionavigation service radio equipment in the UK. Table 3.1 contains the relevant equipment parameters. These taken together with the ‘essential requirements’ detailed in Article 3.2 of Directive 2014/53/EU constitute the minimum requirements for the installation and use of ground based DME aeronautical radionavigation service radio equipment in the aeronautical radionavigation service within the UK. Nothing in this UK Interface Requirement shall preclude equipment from being placed on the market in the UK that complies with the 'essential requirements' specified in Directive 2014/53/EU.

3.4 The technical parameters specified in the UK Radio Interface Requirement are applied to achieve the desired level of compatibility within the aeronautical radionavigation service and with other radiocommunications services, whilst promoting enterprise, innovation and competition.

3.5 This UK Radio Interface requirement provides the necessary technical information which facilitates access to the aeronautical radionavigation spectrum by making clear the assumptions that are made in planning the use of the aeronautical radionavigation spectrum in the UK. It is not the intention of this UK Radio Interface Requirement to duplicate or impose any additional ‘essential requirements’ of the Directive 2014/53/EU on products. Any specified parameters within this document are for the purpose of identifying product options and not as a national de facto product requirement

Table 3.1: Minimum requirements for the use of ground based distance measuring equipment (DME).

Mandatory Elements (1-9)		
1	Frequency band (or bands)	960 – 1215 MHz
2	Radio service	Aeronautical radionavigation
3	Application	Distance measuring equipment
4	Channelling modulation	1M00PONAN. In accordance with ICAO Annex 10 (Ref 1.1), as relevant.
5	Transmit power limit[1]	For each individual licence / frequency assignment, either the maximum and minimum field strength at the limit of DOC[2]. may be specified or the maximum effective radiated power (e.i.r.p.).
6	Channel occupation rules	Transmissions shall be contained within 960 - 1215 MHz. In accordance with ICAO Annex 10 (Ref 1.1), as relevant.
7	Duplex type/separation	63 MHz above or below airborne interrogator frequency depending on pulse spacing.
8	Licensing Regime	Aeronautical navigation aids - Individual, operator's certificate required for some licences, callsigns may also need to be issued[3]. Individual Aeronautical Licence required.
9	Additional essential requirements	N/A
Informative Elements (10-13)		
10	Frequency planning assumptions	Vertical polarization.
11	References	ICAO Annex 10, Vol 1, Chapter 3-3.5. See Ref 1.1
12	Remarks	The DME system shall provide for continuous and accurate indication in the cockpit of the slant range distance of an equipped aircraft from an equipped ground reference point. A more detailed description is contained in Annex 10 to the Convention on International Civil Aviation. - See Ref 1.1
13	Notification Number	2005/491/UK

[1] Radio site clearance considerations may impose restrictions on maximum power use on certain frequency assignments. (Radio site clearance is required for any aeronautical station with an e.r.p. greater than 18dBW (50W) and/or antenna height greater than 30 metres above ground level, or where an existing structure is increased in height by greater than 5 metres.)

[2] DOC - Designated operational coverage (See ITU RR 45.1.1)

[3] See Reference 1.2 Schedule 6 Aeronautical Parts 1, 2 & 3 for limitations on WT Act Licences

Section 4

Additional performance parameters

(informative)

It is suggested that manufacturers refer to the appropriate volumes of Annex 10 to the Convention on International Civil Aviation, aeronautical telecommunications, as amended, for relevant manufacturing standards and guidelines. www.icao.int.

Equipment which complies with this radio interface specification is additionally subject to the putting into service provisions of Article 10.1 of Regulation (EC) No. 552/2004 of 10 March 2004 on the interoperability of the European Air Traffic Management Network (the Interoperability Regulation)

Section 5

Contact details

Ofcom Spectrum Licensing, PO Box 1285 Warrington, WA1 9GL

- Tel: 020 7981 3131
- Fax: 020 7981 3235
- Email: spectrum.licensing@ofcom.org.uk
- Website: http://www.ofcom.org.uk

Section 6

Document history

Version	Date	Changes
Draft	15 Sep 2005	Notified as Draft
1.0	2 Feb 2006	Initial Publication as final text.
1.1	January 2018	Replaced R&TTE Directive 1999/5/EC and Directive 98/34/EC with Radio Equipment Directive 2014/53/EU and Directive (EU) 2015/1535 respectively. Minor editorials