ICS 33.060.30, 33.070.40 SLOVENSKÁ TECHNICKÁ NORMA December 2017

STN	**Družicové zemské stanice a systémy (SES) Harmonizovaná norma na pozemné pohyblivé družicové zemské stanice (LMES) a plavebné pohyblivé družicové zemské stanice (MMES), neurčené na núdzovú a bezpečnostnú komunikáciu, pracujúce vo frekvenčných pásmach 1,5 GHz/1,6 GHz s prenosom dát nízkou prenosovou rýchlosťou, vzťahujúca sa na základné požiadavky podľa článku 3.2 smernice 2014/53/EÚ**	**STN EN 301 426 V2.1.2** 87 1426

Satellite Earth Stations and Systems (SES); Harmonised Standard for Low data rate Land Mobile satellite Earth Stations (LMES) and Maritime Mobile satellite Earth Stations (MMES) not intended for distress and safety communications operating in the 1,5 GHz/1,6 GHz frequency bands covering the essential requirements of article 3.2 of the Directive 2014/53/EU

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 11/17

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ETSI EN 301 426 V2.1.2 (2016-11)

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and Maritime Mobile satellite Earth Stations (MMES)
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Contents

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Foreword

This Harmonised European Standard (EN) has been produced by ETSI Technical Committee Satellite Earth Stations and Systems (SES).

The present document has been prepared under the Commission's standardisation request C(2015) 5376 final [i.5] to provide one voluntary means of conforming to the essential requirements of Directive 2014/53/EU on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC [i.8].

Once the present document is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of the present document given in table A.1 confers, within the limits of the scope of the present document, a presumption of conformity with the corresponding essential requirements of that Directive, and associated EFTA regulations.

National transposition dates	
Date of adoption of this EN:	12 September 2016
Date of latest announcement of this EN (doa):	31 December 2016
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 June 2017
Date of withdrawal of any conflicting National Standard (dow):	30 June 2018

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Introduction

The present document is part of a set of standards developed by ETSI and is designed to fit a modular structure to cover all radio equipment under the Directive 2014/53/EU [i.8]. The modular structure is shown in ETSI EG 201 399 [i.4].

Figure 1: Void

These requirements are in three major categories:

- **emission limits:** to protect other radio services from harmful interference generated by the Mobile Earth Station (MES) in normal use;
- **MES Control and Monitoring Functions (CMF):** to protect other radio services from unwanted transmissions from the MES. The CMF in each MES is capable of answering to commands from the Network Control Facilities (NCF) for its MES;
- **Receiver performance specifications:** to enable reception of a wanted signal in the presence of other high power signals in the adjacent channel and/or adjacent band.

The requirements have been selected to ensure an adequate level of compatibility with other radio services. The levels, however, do not cover extreme cases which may occur in any location but with a low probability of occurrence.

The present document may not cover those cases where a potential source of interference which is producing individually repeated transient phenomena or a continuous phenomenon is present, e.g. a radar or broadcast site in the near vicinity. In such a case it may be necessary to use special protection applied to either the source of interference, or the interfered part or both.

The present document does not contain any requirement, recommendation or information about the installation of the MESs.

Following the WRC-03 decision [i.6] to allocate to MSS the bands 1 518 MHz to 1 525 MHz (space to Earth) and 1 668 MHz to 1 675 MHz (Earth to space) and the conclusions of WRC-07 [i.7], a new set of emission requirements for LMESs that are capable of transmitting in the frequency band from 1 668,0 MHz to 1 675,0 MHz is specified.

The two parts of the L-band frequency allocations are treated as two sub-bands which may be used separately or in any combination. The standard L-band allocation is referenced in the present document as "sub-band 1" and the extended L-band is referenced as "sub-band 2".

Table 2c is applicable for LMESs that are capable of transmitting in any combination of either or both of these sub-bands. Table 2c is recommended for all new LMESs including LMES that can only operate in sub-band 1.

The applicant may choose between tables 2b and 2c for new LMESs that are capable of transmitting in only the sub-band 1. The applicant has to declare which alternative is used.

The present document specifies a new set of receiver performance requirements for LMESs under the new Radio Equipment Directive 2014/53/EU [i.8].

The present document was based on ETSI TBR 026 [i.2].

The present document is also based on ETSI ETS 300 740 [i.3] (see annex B) for Maritime Mobile Earth Stations (MMES) not intended for distress and safety communications.

The determination of the parameters of the user earth stations using a given geo-stationary satellite for the protection of the spectrum allocated to that satellite is considered to be under the responsibility of the satellite operator or the satellite network operators.

For MESs operating in satellite networks using satellites which also provide radio navigation service and/or other safety services should note that such satellite network operators or satellite operators may require testing in addition to the present document to prove correct interworking in order to avoid the MES causing harmful interference which endangers the functioning of these services. References to these requirements will be listed in annex A of the present document as they become known.

The present document is therefore intended to cover the provisions of Directive 2014/53/EU [i.8] (RE Directive) article 3.2 which states that "….*radio equipment shall be so constructed that it both effectively uses and supports the efficient use of radio spectrum in order to avoid harmful interference*".

Recital 10 of Directive 2014/53/EU [i.8] states that "*in order to ensure that radio equipment uses the radio spectrum effectively and supports the efficient use of radio spectrum, radio equipment should be constructed so that: in the case of a transmitter, when the transmitter is properly installed, maintained and used for its intended purpose it generates radio waves emissions that do not create harmful interference, while unwanted radio waves emissions generated by the transmitter (e.g. in adjacent channels) with a potential negative impact on the goals of radio spectrum policy should be limited to such a level that, according to the state of the art, harmful interference is avoided; and, in the case of a receiver, it has a level of performance that allows it to operate as intended and protects it against the risk of harmful interference, in particular from shared or adjacent channels, and, in so doing, supports improvements in the efficient use of shared or adjacent channels*".

Recital 11 of Directive 2014/53/EU [i.8] states that "*although receivers do not themselves cause harmful interference, reception capabilities are an increasingly important factor in ensuring the efficient use of radio spectrum by way of an increased resilience of receivers against harmful interference and unwanted signals on the basis of the relevant essential requirements of Union harmonisation legislation*".

As a consequence, the present document includes both transmitting and receiving parameters aiming to maximize the efficient use of radio spectrum.

1 Scope

The present document applies to the following Mobile Earth Stations (MESs) radio equipment:

- Land Mobile Earth Stations (LMESs) radio equipment; and
- Maritime Mobile Earth Stations (MMESs) radio equipment not providing those distress and safety functions required by the International Maritime Organization (IMO);

which have the following characteristics:

- these LMESs could be either vehicle mounted or portable equipment;
- these MMESs are installable equipment on ships;
- these MESs operate with user bit-rates of up to 9,6 kbits/s;
- these MESs could consist of a number of modules including a keyboard interface to the user;
- these MESs are operating as part of a satellite network used for the distribution and/or exchange of information between users;
- this radio equipment is capable of operating in all or any part of the frequency bands given in table 1a.

Table 1a: Mobile Satellite Service frequency bands

Sub-Band	Direction of transmission	MSS frequency bands
1	Transmit 1 (Earth to space)	1 626,5 MHz to 1 660,5 MHz
	Receive 1 (space to Earth)	1 525,0 MHz to 1 559,0 MHz
2	Transmit 2 (Earth to space)	1 668,0 MHz to 1 675,0 MHz
	Receive 2 (space to Earth)	1 518,0 MHz to 1 525,0 MHz

The present document is intended to cover the provisions of Directive 2014/53/EU [i.8] (RE Directive) article 3.2 which states that "*….radio equipment shall be so constructed that it both effectively uses and supports the efficient use of radio spectrum in order to avoid harmful interference*".

In addition to the present document, other ENs that specify technical requirements in respect of essential requirements under other parts of article 3 of the Directive 2014/53/EU [i.8] may apply to equipment within the scope of the present document.

NOTE 1: A list of such ENs is included on the web site http://www.newapproach.org. The present document applies to the MES operated within the boundary limits of the operational environmental profile declared by the applicant.

NOTE 2: These MES are controlled and monitored by a Network Control Facility (NCF). The NCF is outside the scope of the present document.

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are necessary for the application of the present document.

[1] Void.

[2] CISPR 16-1 (all subparts) (2015): "Specification for radio disturbance and immunity measuring apparatus and methods - Part 1: Radio disturbance and immunity measuring apparatus".

[3] Void.

[4] Void.

[5] ETSI EN 301 426 (V1.2.1) (10-2001): "Satellite Earth Stations and Systems (SES); Harmonized EN for Low data rate Land Mobile satellite Earth Stations (LMES) and Maritime Mobile satellite Earth Stations (MMES) not intended for distress and safety communications operating in the 1,5/1,6 GHz frequency bands covering essential requirements under article 3.2 of the R&TTE Directive".

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

[i.1] Void.

[i.2] ETSI TBR 026: "Satellite Earth Stations and Systems (SES); Low data rate Land Mobile satellite Earth Stations (LMES) operating in the 1,5/1,6 GHz frequency bands".

[i.3] ETSI ETS 300 740 (1997): "Satellite Earth Stations and Systems (SES); Maritime Mobile Earth Stations (MMES) operating in the 1,5/1,6 GHz bands providing Low Bit Rate Data Communications (LBRDC) in the Maritime Mobile Satellite Service (MMSS), not intended for distress and safety communications".

[i.4] ETSI EG 201 399 (V3.1.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); A guide to the production of Harmonized Standards for application under the Radio & Telecommunication Terminal Equipment Directive 1999/5/EC (R&TTE) and a first guide on the impact of the Radio Equipment Directive 2014/53/EU (RED) on Harmonized Standards".

[i.5] Commission Implementing Decision C(2015) 5376 final of 4.8.2015 on a standardisation request to the European Committee for Electrotechnical Standardisation and to the European Telecommunications Standards Institute as regards radio equipment in support of Directive 2014/53/EU of the European Parliament and of the Council.

[i.6] World Radiocommunication Conference 2003 (WRC-03) Final Acts.

[i.7] World Radiocommunication Conference 2007 (WRC-07) Finals Acts.

[i.8] Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC (RE Directive).