SLOVENSKI STANDARD
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Satelitska osebna komunikacijska omreģja (S-PCN) - Mobilne zemeljske postaje (MES) vključuļ no z roļ nimi prenosnimi zemeljskimi postajami za satelitska osebna komunikacijska omreģja (S-PCN) v frekvenļ nem pasu 2,0 GHz v okviru mobilne satelitske storitve (MSS) - Osnovne tehniļ ne zahteve za terminale

Satellite Personal Communications Networks (S-PCN); Mobile Earth Stations (MES), including handheld earth stations, for S-PCN in the 2,0 GHz bands under the Mobile Satellite Service (MSS); Terminal essential requirements

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TECHNICAL BASIS for REGULATION

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Satellite Personal Communications Networks (S-PCN); Mobile Earth Stations (MESs), including handheld earth stations, for S-PCN in the 2,0 GHz bands under the Mobile Satellite Service (MSS); Terminal essential requirements

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Foreword

This Technical Basis for Regulation (TBR) has been produced by the Satellite Earth Stations and Systems (SES) Technical Committee of the European Telecommunications Standards Institute (ETSI).

The present document has been produced by ETSI in response to a mandate from the European Commission issued under Council Directive 83/189/EEC (as amended) laying down a procedure for the provision of information in the field of technical standards and regulations.

The present document is intended to become a Harmonized Standard, the reference of which will be published in the Official Journal of the European Communities referencing the Council Directive 93/97/EEC of 29 October 1993 supplementing Directive 91/263/EEC in respect of satellite earth station equipment ("the SES Directive").

A common technical regulation may be established by the European Commission in accordance with the Directive.

Technical specifications relevant to the SES Directive are given in annex F.

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1 Scope

This Technical Basis for Regulation (TBR) specifies those technical requirements under Article 4 of Council Directive 93/97/EEC (SES Directive), supplementing Council Directive 91/263/EEC (TTE Directive), in respect of satellite earth station equipment that apply to Mobile Earth Station (MES) equipment with both transmit and receive capabilities for operation in a Satellite - Personal Communications Network (S-PCN), in the Mobile Satellite Service (MSS) frequency bands given in table 1.

Table 1: Mobile Satellite Service (MSS) frequency bands

	MSS frequency bands
MESs transmit	1 980 to 2 010 MHz
MESs receive	2 170 to 2 200 MHz

An S-PCN MES may be a handheld, portable, vehicle-mounted, host connected, semi-fixed or fixed equipment, or may be an element in a multi-mode terminal; it may consist of a number of modules with associated connections and user interface, or may be a self contained single unit.

If the MES is an element in a multi-mode terminal, unless otherwise stated in this TBR, its requirements apply only to the S-PCN MES element of the terminal operating in the MSS frequency bands given in table 1.

The technical requirements in this TBR are applied under Articles 4.1 and 4.3 of the SES Directive referencing Article 4(e) of the TTE Directive, concerning effective use of the radio frequency spectrum, including the effective use of orbital resources and the avoidance of harmful interference between space-based and terrestrial communications systems and other technical systems. These requirements are in two major categories:

unwanted emissions limits: to protect other radio services from harmful interference generated by the 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 S-PCN.

NOTE: The requirements for Network Control Facilities (NCF) for S-PCN are contained in ETS 300 735 (see annex G).

There are no technical requirements in this TBR under:

- Articles 4.1 and 4.4 of the SES Directive, referencing Article 4(c) of the TTE Directive as there are no EMC requirements specific to the S-PCN MESs, nor under:
  - Article 4.1 of the SES Directive, referencing Article 4(d) of the TTE Directive;
  - Articles 4.1 and 4.5 of the SES Directive, referencing Article 4(f) of the TTE Directive;
  - Articles 4.1 and 4.6 of the SES Directive, referencing Article 4(g) of the TTE Directive;

as, for the purposes of the SES Directive and the TTE Directive, the radio interface between the MES and the S-PCN network is not regarded as a network termination point of a public telecommunications network.

An MES may be subject to additional or alternative requirements in other TBRs depending on its functionality, in particular if it supports a service which is considered a justified case for regulation of terminal equipment interworking via the public telecommunications network.

2 Normative references

This TBR incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to, or revisions of any of these publications apply to this TBR only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

[1] CCITT Recommendation O.153 (1988): "Characteristics of distortion and error-rate measuring apparatus for data transmission".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of this TBR, the following definitions apply:

applicant: A party seeking an approval, or to place an S-PCN MES on the European market, i.e. the manufacturer of the equipment, or his authorized representative, or an equipment supplier to the European market.

carrier-on state (allocated a channel): An MES is in this state when it is transmitting a signal in a continuous or non-continuous mode.

carrier-off state (idle mode): An MES is in this state when it is powered-on but not transmitting a signal, i.e. not in carrier-on state.

conducted measurement: A measurement of emissions from an antenna port of the MES made by direct wired connection to the port.

Equivalent Isotropically Radiated Power (EIRP): The product of transmitter power and maximum antenna gain, equivalent to an isotropic source radiating uniformly in all directions.

handheld: Indicates a PE MES which is self-contained and is small enough and light enough to be carried and used during a call with one hand.

host-connected: Indicates an MES for which connection to or integration with host equipment is necessary to offer functionality.

host equipment: Is any equipment which has a complete user functionality when not connected to the MES, and to which the MES provides additional functionality, and to which connection is necessary for the MES to offer functionality.

Installable Equipment (IE), Internally Mounted Equipment (IME) and Externally Mounted Equipment (EME): An Installable Equipment (IE) is an equipment which is intended to be installed in a vehicle. An IE may consist of one or several interconnected modules. The IE is composed of modules intended to be externally mounted as declared by the applicant, and defined as Externally Mounted Equipment (EME) and the remaining modules(s) as Internally Mounted Equipment (IME).

Laboratory Test Equipment (LTE): A logical grouping that contains the standard test equipment provided by a test laboratory.

MSS band: A continuous range of frequencies allocated by the ITU to the MSS.

multi-mode: Indicates equipment that accommodates radio stations of different radio networks.

narrow-band system: A narrow band system is one in which the nominal carrier frequency spacing for MESs in the earth-to-space direction is less than 300 kHz.

network control channel: A channel by which an MES receives general control information from the NCF of its S-PCN.

NCF control message: A message, normally originating from a network, to a specified terminal or set of terminals of the network which indicates to the terminal or set of terminals that it/they should carry out some specific action or should enter or maintain some specific state. For test purposes NCF control messages may originate from Special Test Equipment (STE).

nominated bandwidth (B_n): The B_n of the Mobile Earth Station (MES) radio frequency transmission is wide enough to encompass all spectral elements of the transmission which have a level greater than the specified levels of unwanted emissions. The B_n is defined relative to the MES actual carrier frequency f_c.

B_n is the width of the frequency interval (f_c -a, f_c +b), where a and b, which shall be specified by the applicant, may vary with f_c.

The frequency interval (f_c -a, f_c +b) shall not encompass more than either:

i) when a = b, 4 nominal carrier frequencies for narrow-band systems;
ii) when a ≠ b, 1 nominal carrier frequency for narrow-band systems, or
iii) 1 nominal carrier frequency for wide-band systems.

The frequency interval (f_c -a, f_c +b) shall be within the operational band of the MES.

operational band: The sub-portion of the band 1 980 to 2 010 MHz which has been assigned in the earth-to-space direction to the MSS network, within which the MES is operating.

Portable Equipment (PE): A Portable Equipment (PE) is generally intended to be self-contained, free standing and portable. A PE would normally consist of a single module, but may consist of several interconnected modules.

radiated measurement: A measurement of an actual radiated field.

Special Test Equipment (STE): An equipment which allows a test laboratory to control the MES so that the tests required by this TBR can be performed.

test laboratory: A laboratory authorized by an accreditation body, which performs conformance testing in accordance with the SES and TTE directives.

test load: The test load is a substantially non-reactive, non-radiating power attenuator which is capable of safely dissipating the power from the transmitter(s).

unwanted emissions: Unwanted emissions are those falling outside the nominated bandwidth in the carrier-on state and those generated in the carrier-off state.

wide-band system: A wide-band system is one in which the nominal carrier frequency spacing for MESs in the earth-to-space direction is equal or greater than 300 kHz.

3.2 Abbreviations

For the purposes of this TBR, the following abbreviations apply:

B_n	nominated Bandwidth
CCITT	Comité Consultatif International Télégraphique et Téléphonique (now ITU-T)
CDMA	Code Division Multiple Access
CMF	Control and Monitoring Functions
dBW	deciBels relative to 1 Watt
EIRP	Equivalent Isotropically Radiated Power
EMC	Electro-Magnetic Compatibility
EME	Externally Mounted Equipment
IE	Installable Equipment
IEC	International Electrotechnical Commission/Committee
IME	Internally Mounted Equipment
ITU	International Telecommunications Union
LTE	Laboratory Test Equipment
MES	Mobile Earth Station