



**SLOVENSKI STANDARD**  
**SIST EN 302 066-2 V1.1.1:2006**

01-marec-2006

9`Y Ifca U[ bYfbUnXfi y`1j cgh]b`nUXYj Y`j `nj Yn]`n`fUX]`g\_ ]a `gdY Ifca `fØFAŁĚ  
BUdfUj Y`fUh\_Y[ UXcgY[ UfGF8ŁĚJfghY`i dcfUVY`fUXUf`U`nUgcbX]fUb`Y`HJ`]b`n]Xcj  
Ě&`XY.`<Ufa cb]n]fUb]9B`j `g\_`UXi `g` `Ybca ``"&X]fY\_Hj YF/ HH9

Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Ground- and Wall- Probing Radar applications; Part 2: Harmonized EN under article 3.2 of the R&TTE Directive

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33.100.01	Elektromagnetna združljivost na splošno	Electromagnetic compatibility in general

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# ETSI EN 302 066-2 V1.1.1 (2005-09)

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*Candidate Harmonized European Standard (Telecommunications series)*

**Electromagnetic compatibility  
and Radio spectrum Matters (ERM);  
Short Range Devices (SRD);  
Ground- and Wall- Probing Radar applications;  
Part 2: Harmonized EN under article 3.2  
of the R&TTE Directive**

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## Foreword

This Candidate Harmonized European Standard (Telecommunications series) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM).

The present document has been produced by ETSI in response to a mandate from the European Commission issued under Council Directive 98/34/EC [6] (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 Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity ("the R&TTE Directive") [1].

The document responds to the EC mandate M/329 for Harmonized Standards covering Ultra-WideBand applications [5].

Technical specifications relevant to Directive 1999/5/EC [1] are given in annex A.

The present document is part 2 of a multi-part deliverable covering the Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Ground- and Wall- Probing Radar applications, as identified below:

Part 1: "Technical characteristics and test methods";

**Part 2: "Harmonized EN under article 3.2 of the R&TTE Directive".**

### National transposition dates

Date of adoption of this EN:	26 August 2005
Date of latest announcement of this EN (doa):	30 November 2005
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 May 2006
Date of withdrawal of any conflicting National Standard (dow):	31 May 2007

## Introduction

The present document is part of a set of standards designed to fit in a modular structure to cover all radio and telecommunications terminal equipment under the R&TTE Directive [1]. Each standard is a module in the structure. The modular structure is shown in figure 1.

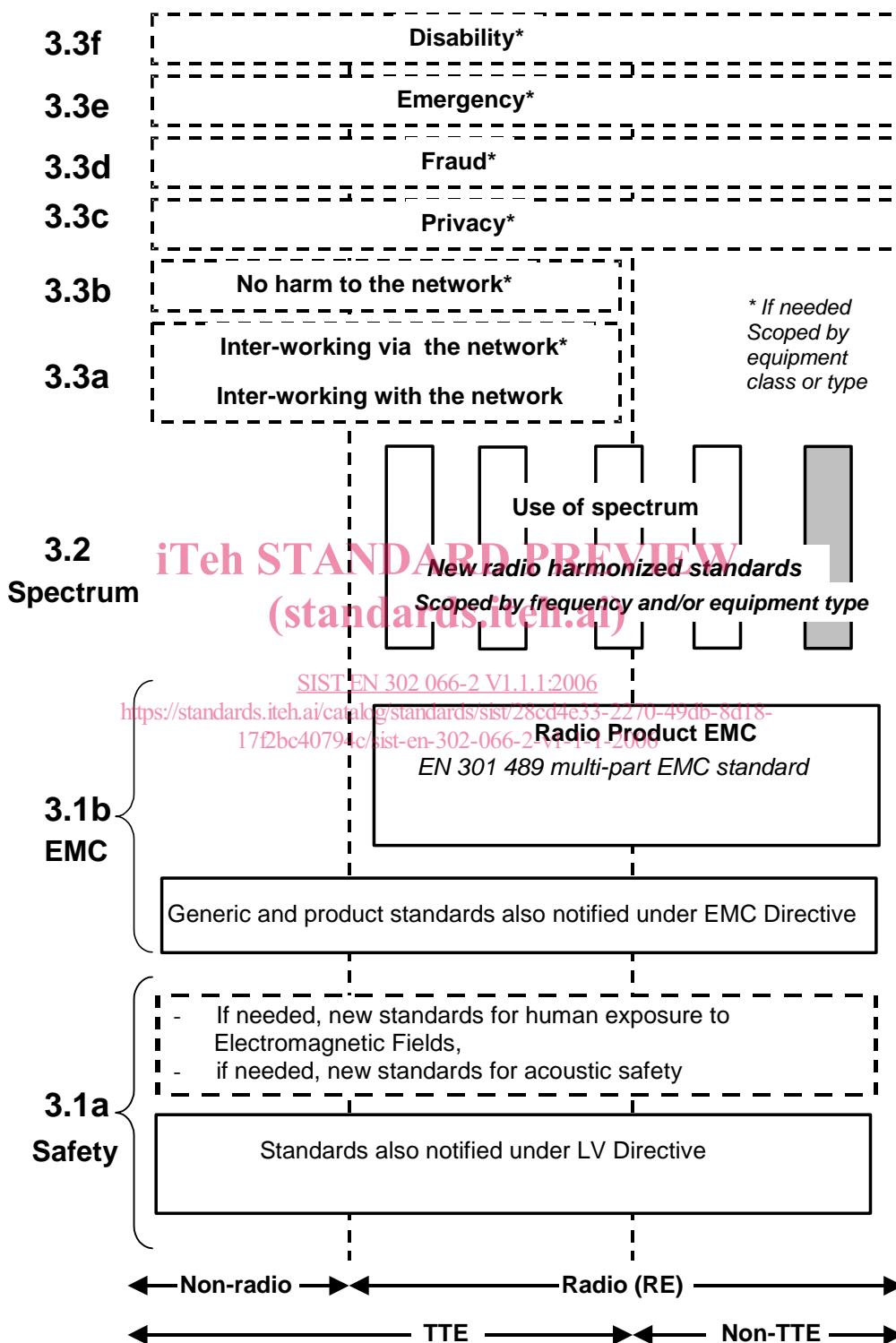


Figure 1: Modular structure for the various standards used under the R&TTE Directive [1]

The left hand edge of the figure 1 shows the different clauses of article 3 of the R&TTE Directive [1].

For article 3.3 various horizontal boxes are shown. Dotted lines indicate that at the time of publication of the present document essential requirements in these areas have to be adopted by the Commission. If such essential requirements are adopted, and as far and as long as they are applicable, they will justify individual standards whose scope is likely to be specified by function or interface type.

The vertical boxes show the standards under article 3.2 for the use of the radio spectrum by radio equipment. The scopes of these standards are specified either by frequency (normally in the case where frequency bands are harmonized) or by radio equipment type.

For article 3.1b the diagram shows EN 301 489, the multi-part product EMC standard for radio used under the EMC Directive [2].

For article 3.1a the diagram shows the existing safety standards currently used under the LV Directive [3] and new standards covering human exposure to electromagnetic fields. New standards covering acoustic safety may also be required.

The bottom of the figure shows the relationship of the standards to radio equipment and telecommunications terminal equipment. Particular equipment may be radio equipment, telecommunications terminal equipment or both. A radio spectrum standard will apply if it is radio equipment. An article 3.3 standard will apply as well only if the relevant essential requirement under the R&TTE Directive [1] is adopted by the Commission and if the equipment in question is covered by the scope of the corresponding standard. Thus, depending on the nature of the equipment, the essential requirements under the R&TTE Directive [1] may be covered in a set of standards.

The modularity principle has been taken because:

- it minimizes the number of standards needed. Because equipment may, in fact, have multiple interfaces and functions it is not practicable to produce a single standard for each possible combination of functions that may occur in an equipment;
- it provides scope for standards to be added:
  - under article 3.2 when new frequency bands are agreed; or
  - under article 3.3 should the Commission take the necessary decisions
 without requiring alteration of standards that are already published;
- it clarifies, simplifies and promotes the usage of Harmonized Standards as the relevant means of conformity assessment.



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# 1 Scope

The present document specifies the requirements for Ground- and Wall- Probing Radar applications operating in all or part of the frequency band from 30 MHz to 12,4 GHz.

Ground Probing Radars (GPR) and Wall Probing Radars (WPR) are used in survey and detection applications.

The scope is limited to radars operated as short range devices (because of their usage and design), in which the system is in close proximity to the materials being investigated. It does not include radars operated from aircraft or spacecraft.

The radar applications in the present document are not intended for communications purposes. Their intended usage excludes radiation into the free space and means shall be taken to keep it to a minimum.

NOTE 1: Equipment using the frequencies typically below 100 MHz may use higher output power for geophysical applications and therefore, may not fulfil the emission requirements set out in the present document.

NOTE 2: Equipment covered by the present document is used by competent professional personnel.

The present document applies to:

- Ground Probing Radars (GPR) operating over approximately one decade in the frequency range 30 MHz to 12,4 GHz radiating directly downwards into the ground. Any horizontal radiation from this equipment is caused by leakage and is considered as undesired emission.
- Wall Probing Radars (WPR) operating in the frequency range 30 MHz to 12,4 GHz radiating directly into a "wall". The "wall" is a building material structure, the side of a bridge, the wall of a mine or another physical structure that absorbs a significant part of the signal transmitted by the radar.
- Equipment fitted with integral antennas and without antenna connector.
- Equipment which uses different imaging heads (antennas) with an antenna connector, to allow operation at different frequencies.

The document does not necessarily include all the characteristics which may be required by a user, nor does it necessarily represent the optimum performance achievable.

The present document contains the technical characteristics and test methods for Ground- and Wall- Probing Radar applications.

The present document is intended to cover the provisions of Directive 1999/5/EC [1] (R&TTE Directive) article 3.2, which states that "... radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communications and orbital resources so as 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 R&TTE Directive [1] will apply to equipment within the scope of the present document.

The document responds to the EC mandate M/329 for Harmonized Standards covering Ultra-WideBand (UWB) applications [5].