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**oSIST prEN 302 500-2  
V1.1.1:2006**

**PREDSTANDARD**

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**Elektromagnetna združljivost in zadeve v zvezi z radijskim spektrom (ERM) –  
Naprave kratkega dosega (SRD), ki uporabljajo ultra širokopasovno (UWB)  
tehnologijo – Oprema za sledenje, ki deluje v frekvenčnem območju od 6 GHz  
do 9 GHz – 2. del: Harmonizirani EN, ki zajema bistvene zahteve člena 3.2  
direktive R&TTE**

Electromagnetic compatibility and Radio spectrum Matters (ERM) – Short Range  
Devices (SRD) using Ultra WideBand(UWB) technology – Location Tracking  
equipment operating in the frequency range from 6 GHz to 9 GHz – Part 2:  
Harmonized EN covering essential requirements of article 3.2 of the R&TTE  
Directive

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*Candidate Harmonized European Standard (Telecommunications series)*

**Electromagnetic compatibility  
and Radio spectrum Matters (ERM);  
Short Range Devices (SRD) using  
Ultra WideBand(UWB) technology;  
Location Tracking equipment operating in  
the frequency range from 6 GHz to 9 GHz;  
Part 2: Harmonized EN covering essential requirements  
of article 3.2 of the R&TTE Directive**

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Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

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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), and is now submitted for the Public Enquiry phase of the ETSI standards Two-step Approval Procedure.

The present document is part 2 of a multi-part deliverable covering Short Range Devices (SRD) using Ultra WideBand (UWB) technology; Location Tracking equipment operating in the frequency range from 6 GHz to 9 GHz, as identified below:

Part 1: "Technical characteristics and test methods";

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

The present document has been produced by ETSI in response to a mandate from the European Commission issued under Council Directive 98/34/EC [3] 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 [1] 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").

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

<b>Proposed national transposition dates</b>	
Date of latest announcement of this EN (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	6 months after doa
Date of withdrawal of any conflicting National Standard (dow):	18 months after doa

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# 1 Scope

The present document specifies the requirements for Ultra Wide Band Location Tracking equipment operating in all or part of the frequency range from 6 GHz to 9 GHz.

It covers ultra-wideband location tracking tags which are attached to people or objects and are tracked using a fixed infrastructure. Equipment covered by the present document is fitted with an integral or dedicated antenna. Equipment covered by the present document shall not be used aboard an aircraft, aboard a ship, or at a fixed outdoor location.

The present document applies for indoor applications only

The present document is intended to cover the provisions of Article 3.2 of Directive 1999/5/EC [1] (R&TTE Directive), 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".

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# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

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

- [1] 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 (R&TTE Directive).
- [2] ETSI EN 302 500-1 (V1.1.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD) using Ultra-WideBand technology, Location Tracking equipment operating in the frequency range from 6 GHz to 9 GHz; Part 1: Technical characteristics and test methods".
- [3] Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations.
- [4] ETSI TR 100 028 (all parts - V1.4.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics".
- [5] Council Directive 89/336/EEC of 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility (EMC Directive).

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## 3 Definitions, symbols and abbreviations

### 3.1 Definitions

For the purposes of the present document, the terms and definitions given in the R&TTE Directive [1] and EN 302 500-1 [2] apply.

### 3.2 Symbols

For the purposes of the present document, the symbols given in EN 302 500-1 [2] apply.

### 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in EN 302 500-1 [2] apply.

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## 4 Technical requirements specifications

### 4.1 Environmental profile

The technical requirements of the present document apply under the environmental profile for operation of the equipment, which shall be declared by the provider. The equipment shall comply with all the technical requirements of the present document at all times when operating within the boundary limits of the declared operational environmental profile.

### 4.2 Conformance requirements

#### 4.2.1 Transmitter requirements

##### 4.2.1.1 Maximum mean equivalent isotropic radiated power density

The maximum mean equivalent isotropic radiated power density shall not exceed the limits specified in clause 8.1.3 of EN 302 500-1 [2].

##### 4.2.1.2 Frequency of highest emission

The frequency of highest emission shall not lie outside the limits specified in clause 8.2.3 of EN 302 500-1 [2].

##### 4.2.1.3 Maximum peak equivalent isotropic radiated power density

The maximum peak equivalent isotropic radiated power density shall not exceed the limits specified in clause 8.3.3 of EN 302 500-1 [2].

##### 4.2.1.4 Minimum Pulse Repetition Frequency (PRF)

The Pulse Repetition Frequency shall not exceed the limits specified in clause 8.4.3 of the EN 302 500-1 [2].

##### 4.2.1.5 Receiver spurious emissions

The receiver spurious emissions as defined in EN 302 500-1 [2], clause 9.1.1, shall not exceed the limit specified in EN 302 500-1 [2], clause 9.1.4.



## 4.3 Design requirements

The equipment shall comply with the additional design requirements as defined in annex C of EN 302 500-1 [2].

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# 5 Testing for compliance with technical requirements

## 5.1 Environmental conditions for testing

Tests defined in the present document shall be carried out at representative points within the boundary limits of the declared operational environmental profile.

Where technical performance varies subject to environmental conditions, tests shall be carried out under a sufficient variety of environmental conditions (within the boundary limits of the declared operational environmental profile) to give confidence of compliance for the affected technical requirements.

## 5.2 Essential radio test suites

### 5.2.1 Transmitter test suites

#### 5.2.1.1 Maximum mean e.i.r.p. density

The test defined in clause 8.2.1 of EN 302 500-1 [2] shall be carried out.

#### 5.2.1.2 Frequency of highest emission

The test defined in clause 8.2.2 of EN 302 500-1 [2] shall be carried out.

#### 5.2.1.3 Maximum peak e.i.r.p. density

The test defined in clause 8.3.2 of EN 302 500-1 [2] shall be carried out.

#### 5.2.1.4 Minimum Pulse Repetition Frequency (PRF)

The declaration of clause 8.4.2 of EN 302 500-1 [2] shall be made.

## 5.3 Receiver test suites

### 5.3.1 Receiver spurious emissions

The test defined in clauses 9.1.2 and 9.1.3 of EN 302 500-1 [2], shall be carried out.

## 5.4 Interpretation of measurement results

Clause 7 of EN 302 500-1 [2] shall apply.

## Annex A (normative): HS Requirements & conformance Test specifications Table (HS-RTT)

Notwithstanding the provisions of the copyright clause related to the text of the present document, ETSI grants that users of the present document may freely reproduce the HS-RTSS proforma in this annex so that it can be used for its intended purposes and may further publish the completed HS-RTSS

The HS Requirements & conformance Test specifications Table (HS-RTT) in table A1 below serves a number of purposes, as follows:

- it provides a statement of all the essential requirements in words and by cross reference to a specific clause in the present document or to a specific clause in a specific referenced document;
- it provides a statement of all the test procedure corresponding to those essential requirements by cross reference to specific clause(s) in the present document or to a specific clause(s) in specific referenced document(s);
- it qualifies each requirement to be either:
  - Unconditional - meaning that the requirement applies in all circumstances, or
  - Conditional - meaning that the requirement is dependent on the supplier having chosen to support optional functionality defined within the schedule;
- in the case of Conditional requirements, it associates the requirement with the particular optional service or functionality;
- it qualifies each test procedure to be either:
  - Essential: meaning that it is included with the Essential Radio Test Suite and therefore the requirement shall be demonstrated to be met in accordance with the referenced procedures;
  - Other: meaning that the test procedure is illustrative but other means of demonstrating compliance with the requirement are permitted;
- when the schedule is completed in respect of a particular equipment including the testing outcomes, including a completed version of table A1 it provides a means to assert the 'presumption of conformity' with the HS.

**Table A.1: HS Requirements and conformance Test specifications Table (HS-RTT)**

Harmonized Standard EN 302 500-2							
The following technical requirements and test specifications are relevant to the presumption of conformity under Article 3.2 of the R&TTE Directive							
Technical Requirement reference			Technical Conditionality		Test Specification		
No	Description	Reference: Clause No	U/C	Condition	E/O	Reference: Clause No	Observations
1	Maximum mean e.i.r.p. density	4.2.1.1	U		E	5.2.1.1	
2	Frequency of highest emission	4.2.1.2	U		E	5.2.1.2	
3	Maximum peak e.i.r.p. density	4.2.1.3	U		E	5.2.1.3	
4	Pulse repetition frequency	4.2.1.4	U		X	5.2.1.4	
5	Receiver spurious emissions	5.3.1	U		E	5.3.1	
6	Design requirements	4.3	U		E	-	