



## **Integrated Project - EUWB**

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## **Regulation and standardisation plan (initial)**

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### **Abstract**

The present document provides an initial regulation and standardisation plan for the work items on which the different WPs are working on

This plan is structured according to the applications and research areas covered in EUWB and will be provided to all WPs in EUWB.

It will be updated on a regular base and released then again in M18 and M27 based on inputs from the EUWB WPs and external regulatory and standardisation activities. The further activities in regulation and standardisation will be planned based on this living report.

### **Keywords**

UWB, standardisation, regulation, ETSI, CEPT, APT, FCC, ITU

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## Abbreviations

APT	Asian Pacific Telecommunity
CEPT	Committee on European Postal Regulations
DAA	Detect And Avoid
EC	European Commission
ECC	European Communication Committee
EIRP	Equivalent isotropically radiated power
ERO	European Radiocommunication Office
EUWB	CoExisting Short Range Radio by Advanced Ultra-WideBand Radio Technology
FCC	Federal Communication Commission
IDA	Infocomm Development Authority
ITU	International Telecommunication Union
LDC	Low Duty Cycle
LDR	Low Data Rate
MB-OFDM	Multi-Band OFDM
OFDM	Orthogonal Frequency Division Multiplexing
RSC	Radio Spectrum Committee
SRDoc	System Reference Document
UWB	Ultra-Wideband
UWB-RT	Ultra-Wideband Radio Technology
WGFM	Working Group Frequency Management (sub group of CEPT ECC)
WGSE	Working Group Spectrum Engineering (sub group of CEPT ECC)
WiMAX	Worldwide Interoperability for Microwave Access
WiMAX UL	WiMAX Uplink

## 1 Executive summary

This regulation and standardisation plan is created based on the status report (D9.1).

It is structured according to the applications and research areas covered in EUWB and will be provided to all WPs in UWB. It will be updated on a regular base and released then again in M18 and M27 based on inputs from the EUWB WPs and running external regulatory and standardisation activities.

The further activities in regulation and standardisation will be planned based on this living report.

The necessary actions for standardisation and regulation of the four EUWB application platforms and the Cognitive Radio principle as listed below are described:

1. “UWB in the Public transport”, e.g. airborne UWB applications (WP8a). EADS (AIRBUS):
2. “UWB in the automotive Environment”, (WP8b), BOSCH
3. “UWB in the Home Entertainment” (WP8c), PHILIPS:
4. “UWB in Heterogeneous Access Networks” (WP6), TELEFONICA
5. “Cognitive Radio and Coexistence” (WP2), CNET

Further on the status of these already started activities will be stated out.

This is: for all above mentioned items the necessary actions are addressed in the relevant European boards for frequency allocation and or standardisation.

The process is described in Annex I “Description of work” in the grant agreement of the EUWB project (vers. 17+, Fig. 26, page 63).

## 2 Definitions

The use of "shall", "should", "must", "will" and "may" shall observe the following rules:

- The word **SHALL** in the text denotes a mandatory requirement. Departure from such a requirement is not permissible without formal agreement.
- The word **SHOULD** in the text denotes a recommendation or advice on implementing such a requirement of the document. Such recommendations or advices are expected to be followed unless good reasons are stated for not doing so.
- The word **MUST** in the text is used for legislative or regulatory requirements (e.g. Safety) and shall be complied with. It is not used to express a requirement.
- The word **WILL** in the text denotes a provision or service or an intention in connection with a requirement of this document.
- The word **MAY** in the text denotes a permissible practice or action. It does not express a requirement.

### 3 Introduction

The introduction of a new radio technology, especially when it is a wide band technology which has to work as an underlay radio application has to take into account the existing regulatory frame works and frequency allocations in the different regions (ITU Region 1 – 3) of the world.

Inside EUWB the different WPs are working on different aspects leading to deliverables which must fulfil at the end of the project regulatory and standardisation requirements.

With priority the European relevant requirements will be taken into account having in mind the different requirements in other countries outside Europe.

Besides scientific studies which will guide industry partners to gain competitiveness with their UWB applications the results will be four application platforms and one medium access principle which have the request to be regulated and/or standardized:

1. “UWB in the Public transport”, e.g. airborne UWB applications (WP8a). EADS (AIRBUS):
2. “UWB in the automotive Environment”, (WP8b), BOSCH
3. “UWB in the Home Entertainment” (WP8c), PHILIPS:
4. “UWB in Heterogeneous Access Networks” (WP6), TELEFONICA
5. “Cognitive Radio and Coexistence” (WP2), CNET

Beside the application platforms (1-4) which will lead to demonstrators the work package on “Cognitive Radio and Coexistence” (5, WP2) will enable the paradigm shift for UWB communications, supporting the transition from the conventional concept of underlay radio to a context-aware Cognitive Radio (CR) approach. A cognitive UWB-Radio shall be capable of interacting with the surrounding wireless environment, taking autonomous and intelligent decisions and adapting its operating behaviour to coexist with various (heterogeneous) networks, in order to minimise the mutual interference.

Here the mechanisms and parameter have to be defined, confirmed by the regulatory bodies (CEPT) and standardized in a harmonized standard by ETSI.

These 5 items are based on inputs coming from other work packages and are the major areas on which regulatory and standardisation activities have to be applied.

## **4 Planning for the application platforms**

### **4.1 Global planning considering**

All UWB applications in Europe which have a need for standardisation are handled in ETSI ERM TG31A and TG31C.

The chairman of TG31C, in which most of the UWB applications are handled, is coming from the EUWB member Bosch. It is under discussion in ETSI to concentrate the UWB standardisation activities in only one technical body and the chairman should be the one from TG31C. This could lead to a situation where all relevant UWB application standardisation is controlled by the EUWB partner BOSCH.

Furthermore BOSCH is constantly present in the relevant CEPT panels like WGSE with its subgroups and WGFW with its subgroups to promote these work items coming from EUWB and other stakeholders.

This offers a certain influence capability of the overall planning inside and between the European gremiums responsible for the standardisation and regulation.



#### 4.1.1 “UWB in the automotive Environment”, (WP8b), BOSCH and “UWB in the Home Entertainment” (WP8c), PHILIPS

Both applications are summarized and described in one System Reference Document (SRDoc). ETSI TR 102 495-7.

*“Locations tracking and sensor applications for automotive and transportation environments operating in the frequency bands from 3.1 GHz to 4.8 GHz and 6 GHz to 8.5 GHz”.*

Planning milestones for this SRDoc:

- Start of activities in ETSI: November 2007
- Amended with the inputs from EUWB and release for publication in Dec2008 **done**.
- New WI for standardization in TG31C: Februar 2009
- Approval of requested WI and beginning of work on HS in ETSI ERM#37 in March 2009
- Approval of preliminary draft standard in technical body (TG31C) depends on frequency allocation done by WGFW and ECC expected in 3<sup>rd</sup> Q 2009
- approval for Public Enquiry (PE) expected for Nov 2009
- Resolution meeting out of PE in TG31c in 2<sup>nd</sup> Q 2010
- Depending on 1 step (or 2 step) approach for harmonization start national vote in Europe in 3<sup>rd</sup> Q 2010
- Depending on the national vote result: publication of the HS in the Official Journal (OJ) of the European commission end of 2010, which is the allowance for selling products.

#### 4.1.2 UWB in the Public transport, e.g. airborne UWB applications (WP8a). EADS (AIRBUS)

Compared to the EUWB applications in 4.1.1 these applications may need additional effort for acceptance by CEPT.

The existing generic regulation framework on UWB applications excludes explicitly the usage of UWB devices on board aircrafts (ECC/DEC (06)04).

It is likely that additional compatibility studies or an ECC report will be required by CEPT.

This may be done by WGSE and the support of WP8a is strongly recommended.

A planning based on the already existing experience with a similar situation with UWB devices in rail and road vehicles, which have been excluded before too, may look like the following.

- New work item (WI) generated by ETSI TG31A December 2008. **done**
- Preliminary draft SRDoc generated by TG31A December 2008  
ETSI TR 102 834 V0.0.4 (2008-12) **done**
- In parallel SRDoc to CEPT WGSE January 2009 and WGFW February 2009  
for information
- Approval of the WI in the technical committee ETSI ERM March 2009
- Approval of the draft SRDoc for publication in ETSI ERM 2 Q 2009
- Decision of WGFM for an impact study (to be done in WGSE) May 2009
- First results of the impact study for WGFM September 2009
- Start of work on harmonized Standard September 2009
- Decision of WGFM for frequency allocation 4 Q 2009
- Draft harmonized Standard approval for publication 1 Q 2010

Depending on the duration and outcome of the impact study it can be expected that a harmonized standard for these applications is available in 2010.

That means the usage of UWB devices on board aircraft is from the regulatory and standardisation point of view at the end of 2010 possible.

In parallel EUROCAE, responsible for “Environmental Conditions and Test Procedures for Airborne Equipment” has to be involved for their related investigations.

These activities should be triggered in the 2 Q of 2009.

### **4.1.3 “UWB in Heterogeneous Access Networks” (WP6), TELEFONICA**

These applications are similar to the already regulated generic applications in Europe and it is unlikely that besides an application standardisation a regulation by CEPT is necessary.

Anyway CEPT WGFM has to be informed following the established process between ETSI and CEPT and has to confirm the assumption from ETSI TG31A.

Therefore the following planning can be established:

- New work item (WI) to be generated by ETSI TG31A February 2009
- Approval of the WI in the technical committee ETSI ERM March 2009
- Start of work on the SRDoc March 2009
- Approval of the draft SRDoc for publication in ETSI ERM 2 Q 2009
- Start of work on harmonized standard 2 Q 2009
- Input of the SRDoc in CEPT WGFM 3 Q 2009
- Draft harmonized Standard approval for publication 4 Q 2009
- Approval of finalized standard 1 Q 2010

#### **4.1.4 Cognitive Radio and Coexistence**

These standardisation activities are not directly under the responsibility of EUWB partners.

EUWB is involved and contributes in ETSI technical committee RRS which deals with Reconfigurable Radio Systems.

Activities in ETSI RRS have started in 3 Q of 2008 and a detailed planning is not available yet.

## References

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## Acknowledgement

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# Annex 1

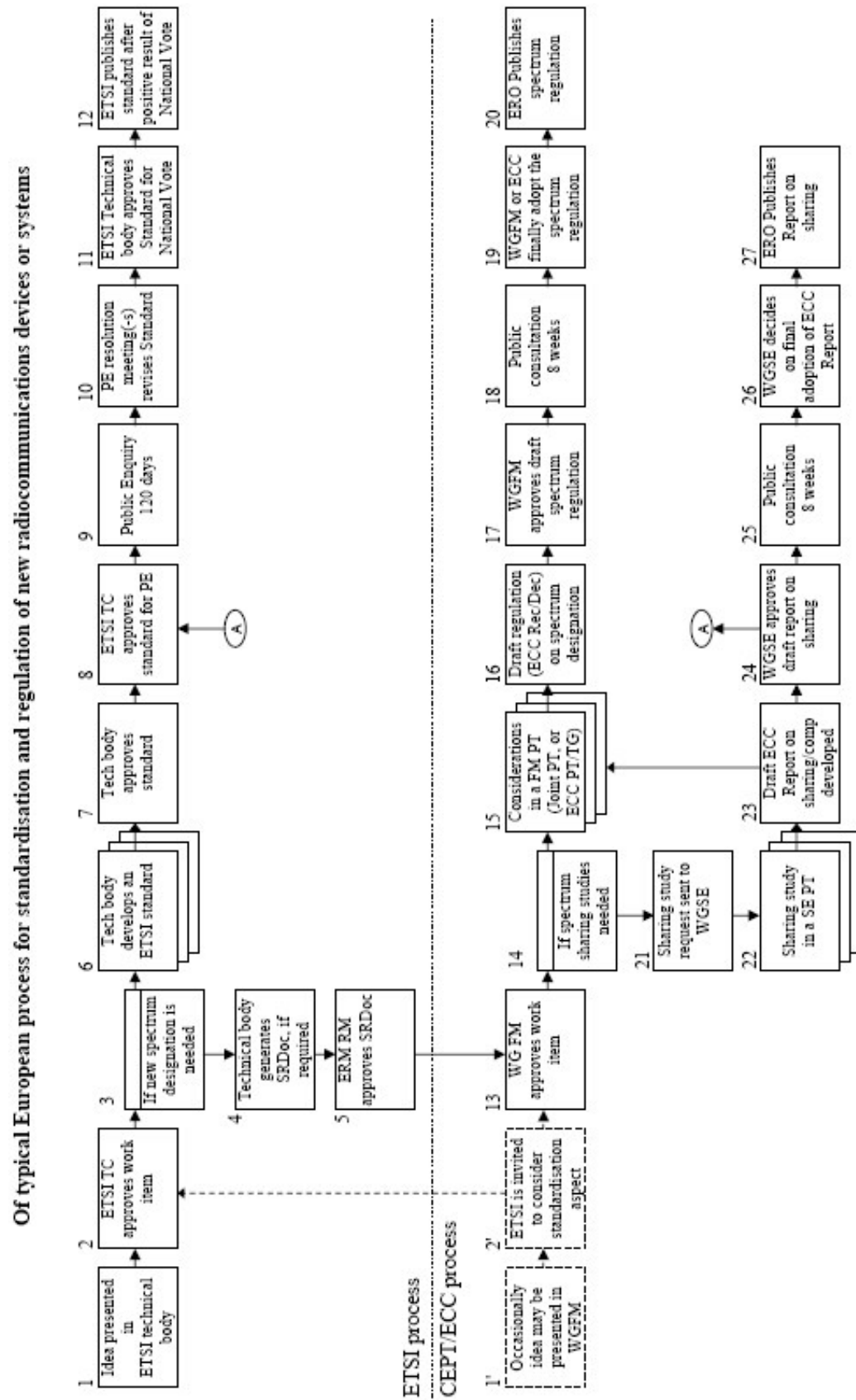


Figure 1-1: European standardisation process