

PUBLIC CONSULTATION ON THE DRAFT RSPG OPINION ON STREAMLINING THE REGULATORY ENVIRONMENT FOR THE USE OF SPECTRUM

This public consultation aims at collecting views of interested stakeholders in order to prepare the Opinion of the Radio Spectrum Policy Group (RSPG) in response to the Request for Opinion on streamlining the regulatory environment for the use of spectrum (RSPG07-191).

It should be noted that contents of the draft Opinion should be viewed as work in progress. In particular, the Annexes 2 and 3 of the draft Opinion are of informative nature only and may not be included in the final Opinion.

Comments received from both Member States and other interested parties will be considered in developing the final RSPG Opinion.

Respondent views on the following questions are particularly welcomed:

- What are the strengths and weaknesses of the current regulatory process and where do you think it can be streamlined and improved?
- What aspects of the regulatory environment for the use of spectrum should be subject to spectrum regulation or subject to standardization (Harmonised Standards)?
- To what extent should spectrum decisions specify technical details such as mitigation techniques and do you consider that this could be in contradiction with the principle of technology neutrality?
- What is your assessment of the consistency between the activities of the European Commission, CEPT (European Conference of Postal and Telecommunications Administrations) and ETSI (European Telecommunications Standards Institute) and what are the ways to improve it?
- Do you support the recommendations expressed in section 5?

DRAFT RSPG OPINION ON STREAMLINING THE REGULATORY ENVIRONMENT FOR THE USE OF SPECTRUM”

JULY 2008

1 INTRODUCTION

This Opinion of RSPG has been requested to assist the Commission in identifying solutions to ensure consistency between various regulations affecting spectrum and to improve the cooperation between bodies involved in spectrum policies, in order to facilitate making spectrum available for new applications and improve the efficient use of radio spectrum and the avoidance of harmful interference.

Demand for services which are dependent upon access to the radio spectrum are increasing rapidly and certain parts of the radio spectrum are becoming more and more congested. Innovation, however, is driving the development of radio technologies which are increasingly using more sophisticated mitigation techniques in order to be able to share spectrum in various different ways amongst themselves and/or with other spectrum users. The European regulatory environment shall be able to facilitate the introduction of such innovative technologies and sharing solutions in a way that derives the maximum benefits from the usage of the spectrum.

Several EU regulations are addressing the availability and the efficient use of radio spectrum. Where it concerns the use for electronic communication services, the rights to use spectrum are granted on the basis of the set of Directives on electronic communications networks and services, mainly the Framework Directive (2002/21/EC) and the Authorisation Directive (2002/20/EC). The coordination of policy approaches with regard to the availability and efficient use of the radio spectrum is carried out through the process defined in the Radio Spectrum Decision (676/2002/EC). Furthermore, equipment regulation such as the R&TTE Directive (1999/5/EC) or the EMC Directive (2004/108/EC) have a direct impact on the efficient use of the spectrum since they regulate the requirements that products must meet in order to be placed on the market and be used. They harmonise, in particular, the requirements of radio equipment to effectively use the radio spectrum so as to avoid harmful interference with the objective of ensuring the good functioning of the internal market. R&TTE Directive also addresses the putting into service of apparatus in its Article 7.1 and 7.2.

It results in regulations applying to the authorisation to use spectrum (ECN&S) and to the placing of radio equipment to the market (R&TTE Directive). The R&TTE Directive introduced a more fast track and liberal approach to placing products on the market which is currently unique at worldwide level. In addition the future ECN&S regulatory framework will introduce more flexibility in terms of spectrum use. The revision of the ECN&S regulatory framework currently proposed by the Commission does not significantly change the division between the different instruments covering spectrum regulation (the only change is the inclusion of terminal equipment in the scope of the Framework Directive in line with changes in the Universal Service Directive to improve eAccessibility for disabled end-users). However, the changes proposed related to spectrum management which will imply more technology and service neutrality, general authorisations whenever possible, are taken into

account as an important element for the development of the Opinion. The current and future process involves three organisations: the European Commission, with TCAM (Telecommunication Conformity Assessment and Market Surveillance Committee) and RSCOM (Radio Spectrum Committee) committees and RSPG, CEPT and ETSI.

Due to the different roles and functions of the various involved entities which are not questioned, these liberal approaches in R&TTE, in ECN&S regulatory framework and in spectrum management will bring benefits to all stakeholders and to public interest only if this complex structure (Commission, ETSI, CEPT) can work properly. This means that the role of each organisation and the tasks to be completed need to be clear, well understood, accepted, recognised so as to reduce and avoid conflict of responsibilities.

Overall, the European spectrum management framework should ensure that spectrum use and conditions will continuously meet the various requirements of stakeholders and in particular that innovative applications that are beneficial will have access to spectrum.

In the development of this Opinion, RSPG has discussed the regulatory environment for spectrum use both in case of general authorisation and individual authorisation in the context of increasing flexibility in spectrum use (unlicensed bands, WAPECS¹, flexible bands ...). The elements of this Opinion are mainly focusing on the general authorisation case but also address the framework for introducing more flexibility into individual authorisations.

2 ANALYSIS OF THE RESPECTIVE ROLE OF ECS REGULATORY FRAMEWORK, R&TTE DIRECTIVE AND SPECTRUM DECISION

Directive 1999/5/EC on radio equipment and telecommunications terminal equipment (R&TTE Directive)

Scope: The R&TTE Directive covers the placing on the market and the putting into service of all the radio equipment and telecommunications terminal equipment, with the exception of apparatus used for public safety and State safety (Art. 1.5), as well as radio amateur equipment unless the equipment is available commercially, maritime equipment falling within the scope of Council Directive 96/98/EC of 20 December 1996 on marine equipment, cabling and wiring, radio and TV receivers and products, appliances and components within the meaning of Article 2 of Council Regulation (EEC) No 3922/91 of 16 December 1991 on the harmonisation of technical requirements and administrative procedures in the field of civil aviation, as described in Annex I of the Directive.

Comment: The R&TTE Directive is the legal basis for the creation of the single market for radio and telecommunications terminal products in the EU. It determines the procedures manufacturers must apply to place such products on the EU market based on the fulfilment of essential requirements. The essential requirement relevant for spectrum management is drafted in general terms: “radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communication and orbital resources so as to avoid harmful interference”. As a New Approach Directive it delegates the definition of

¹ Wireless Access Policy for Electronic Communications Services, see RSPG Opinion (RSPG05-102) and Communication from the Commission COM(2007)50.

accepted means of meeting such requirements to standardisation (i.e. ETSI), through the development of Harmonised Standards but also allows for another “route” for demonstrating compliance through a technical file for which the opinion from a notified body is to be sought. Market surveillance is key to ensure that equipment will effectively comply with essential requirements. The revised New Approach framework intends to provide consistency to market surveillance by setting out the requirements for market surveillance.

In accordance with Article 5.1 of the R&TTE Directive any radio equipment which meets the Harmonised Standards is presumed to comply with the essential requirements identified in Article 3 of the Directive. Such radio equipment can be placed on the market (Article 6.1) and also meets one of the preconditions for putting into service (Article 7.1).

Article 9.1-4 of the R&TTE directive describes the safeguards clause that can be applied by Member States to withdraw radio equipment from their national market in case of:

1. incorrect application of the Harmonised Standards;
2. shortcomings in the Harmonised Standards;
3. failure to satisfy the essential requirements where the apparatus does not meet the Harmonised Standards.

A Member State that applies the safeguard clause shall notify the Commission of its decision. The Commission shall consult TCAM on the matter and issue an opinion on whether the safeguard measure is justified or not.

Article 9.5 also gives Member States the right to restrict the placing of the market of equipment that may be designed and produced in accordance with Harmonised Standards and comply with the essential requirements of the Directive, when Member States consider that the equipment has caused or will cause harmful interference, including harmful interference with existing or planned services on nationally allocated frequency bands. Member States shall notify such measures to the Commission. As of today, no measure under Article 9.5 has been notified to the Commission.

Electronic Communication Networks and Services (ECN&S) Framework

Scope: The ECN&S Directives cover the electronic communication networks and services, which are defined in Art. 2 of the Framework Directive. They contain provisions on the use of radio frequencies for electronic communications services and the rights of use of frequencies for such services

Comment: The ECN&S Regulatory Framework, on the other hand, is based on granting rights to use frequencies through general or individual authorisations. Conditions which may be attached to such authorisations are listed in the Annex of the Authorisation Directive, with a cross reference to article 7.2 of the R&TTE Directive in the case of general authorisation (Member States may restrict the putting into service of radio equipment only for reasons related to the effective and appropriate use of the radio spectrum and avoidance of harmful interference) and a more general condition relating to the “technical and operational conditions necessary for the avoidance of harmful interference” in the case of individual authorisation.

Decision 676/2002/EC (Radio Spectrum Decision)

Scope: The Radio Spectrum Decision aims at coordinating policy approaches regarding radio spectrum within “Community policy areas such as electronic communications, transport and research and development (R&D)” (Art. 1). The scope of the Decision remains wide but it is to be inferred that any use of radio spectrum may fall within the scope of this Decision, as soon as it is of interest for the European Community (internal market and sector policies).

Comment: The coordination of policy approaches with regard to the availability and efficient use of the radio spectrum is carried out through the process defined in the Radio Spectrum Decision (676/2002/EC). The Spectrum Decision forms the basis, among others objectives, to handle the technical conditions which are attached to the efficient use of spectrum whatever the authorisation regime which is defined under the rules of Authorisation Directive of the ECN&S regulatory framework. A Memorandum of Understanding (MoU) between the Commission and CEPT is in force since 2004. CEPT has already provided various CEPT reports in accordance to objectives of the relevant Commission mandates.

3 COMMISSION, ETSI, CEPT ECC RELATIONSHIP FORMS THE BASIS OF A SUITABLE COOPERATIVE FRAMEWORK

The Commission, ETSI and the Electronic Communications Committee (ECC) of CEPT are involved in the cooperation process dealing with spectrum management decisions by setting standards, the application of which is voluntary, and regulatory decisions.

The Commission is supported by some consultative committees:

- TCAM (R&TTE Directive),
- Cocom (ECN&S Directives),
- RSCOM (Spectrum Decision),
- 98/34 committee (standardisation mandates).

The Commission adopts policy measures, as mandates to European Standardisation Organisations (ESO) and/or CEPT in accordance to the opinion of consultative Committees: TCAM and 98/34 in case of mandates under the R&TTE, RSCOM in case of mandates to CEPT.

ETSI, as an ESO that is formally recognised by the EU, drafts standards according to Commission mandates objectives. Those standards once cited in the Official Journal of the European Union (OJEU) become Harmonised Standards and then give presumption of conformity to the requirements of the R&TTE Directive.

Further to Commission mandates drafted according to RSCOM opinion, CEPT ECC undertakes compatibility studies and establishes under which conditions and parameters the sharing between the different users of the spectrum may take place. ECC deliverables (Decisions, Recommendations or Reports) and CEPT reports serve as the basis for the drafting of Commission Decisions on spectrum use. Once a Commission decision applies to a specific frequency band and application, any modification of the Decision will have to be proposed by the European Commission, with a requirement for a new mandate to the ECC in case of substantial modification.

The MoU between CEPT and ETSI describes the cooperative process applying to the development of Harmonised Standards and of ECC decision (or other ECC deliverables). This process aims to facilitate access to appropriate spectrum for new applications envisaged by ETSI. According to the MoU between CEPT and ETSI, any modification of the Harmonised Standard which would require a modification of ECC deliverables should lead to a coordination process between the two bodies. The same would apply if ECC envisage a change in its regulation which would require a modification of Harmonised Standards.

Harmonised Standards are agreed by a consensus between administrations and industry, and are adopted by a public vote managed via National Standards Organizations. Once adopted the Commission cites them in the OJEU without further intervention, except in exceptional cases.

CEPT/ECC deliverables may be adopted voluntarily by CEPT member Administrations after public consultation, and, when the harmonisation measure is covered by an EC mandate are submitted to the European Commission which proposes harmonisation measures based on the Spectrum Decision process. Implementation of Spectrum Decisions is mandatory for EU Member States.

The relationship between these various organisations and the flow of exchanges between them is summarized on figure 1.

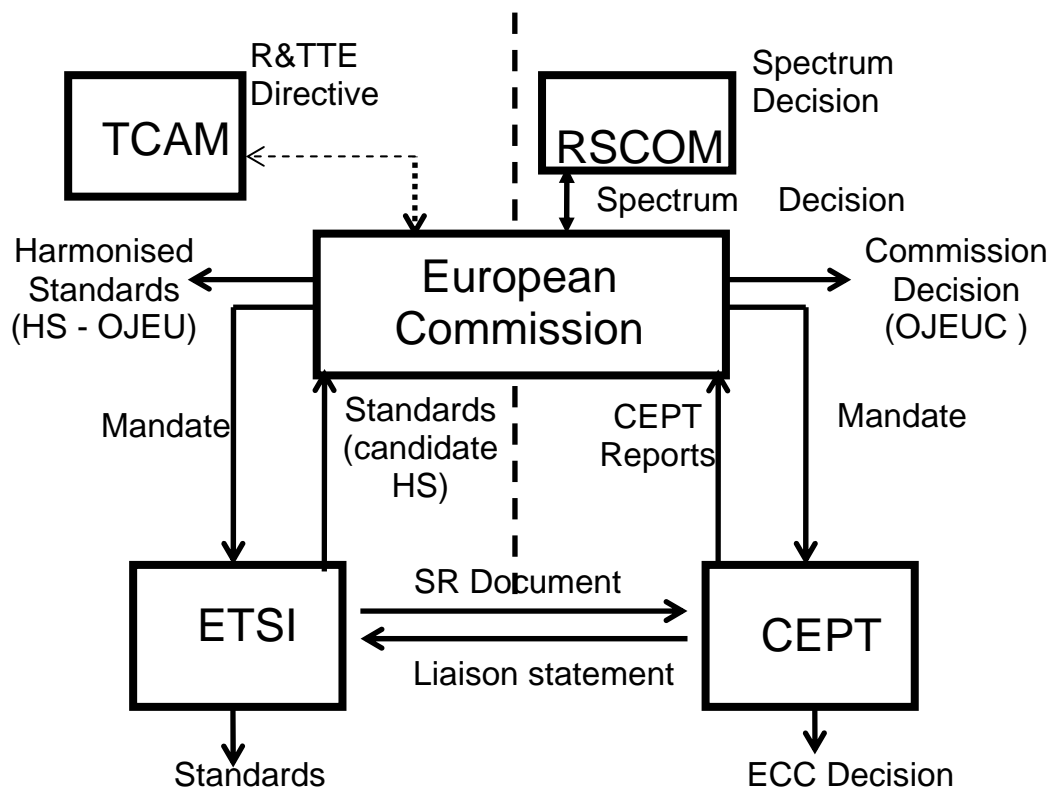


FIGURE 1: Relationship between EC, ETSI and CEPT

Under the R&TTE Directive, compliance with the essential requirements can be demonstrated using other means than a Harmonised Standard. Concerning radio equipment, manufacturer,

in this case, may ask for the opinion of one or more notified body about the conformity of the equipment with the essential requirement before placing it on the market.

The Radio and Telecommunications Terminal Equipment Compliance Association (RTTE-CA), a group which has been established on a voluntary basis by notified bodies, enables discussions between notified bodies on the application of standards and on the issue of conformity assessment. This association has established contact with CEPT/ECC.

For the market surveillance and enforcement, which are keys in the ex-post regulation which is the basis of R&TTE, coordination of actions of Member States is done in a group named ADCO R&TTE. This group has been established by the market surveillance authorities of the Member States on a voluntary basis and carries among others Pan European market surveillance campaigns. It also liaises with TCAM.

This is illustrated on figure 2.

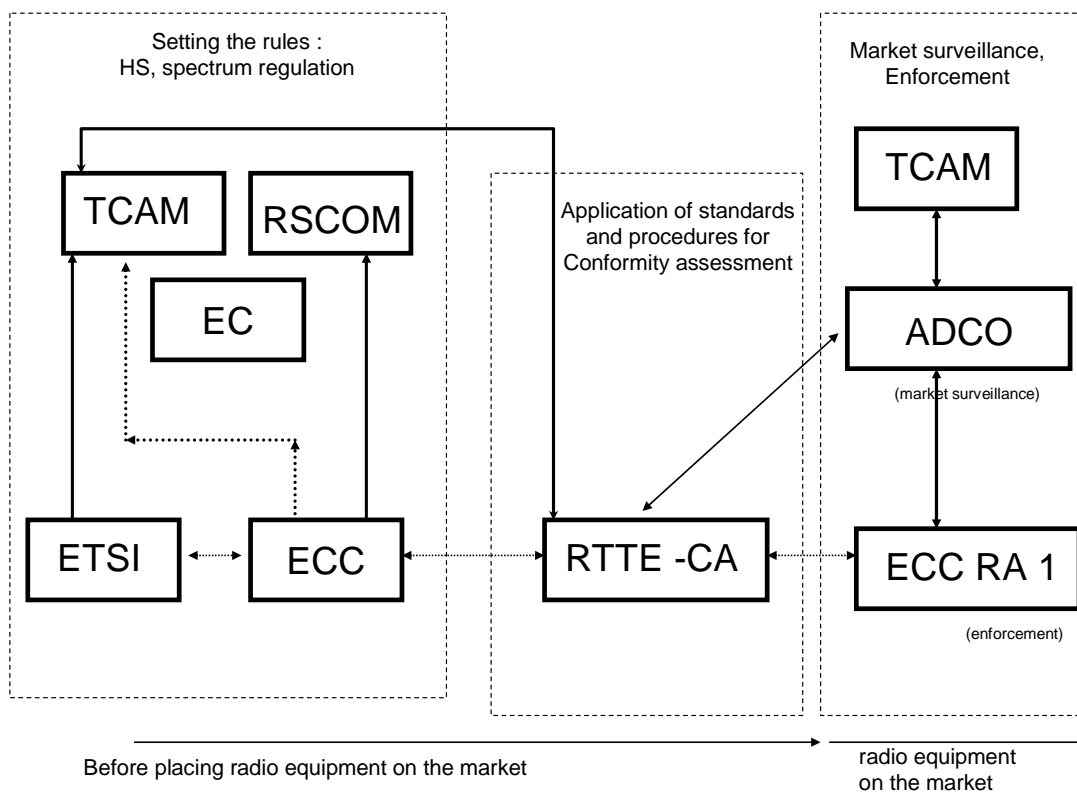


FIGURE 2: Role of various bodies in market surveillance and enforcement

4 IDENTIFICATION OF AREAS WHERE THE CURRENT REGULATORY MECHANISMS SHOULD BE ENHANCED

4.1 Maintaining confidence of spectrum stakeholders

In order to maintain confidence in the regulatory process, it is essential to ensure that:

- Existing spectrum rights holders have a secure basis to maintain existing and develop new services, in particular when asked to share with new spectrum users (possibly with innovative technical sharing solutions).
- Technical regulations for new services are defined at a level appropriate for the protection of existing services (i.e. not made too conservative to compensate for a lack of confidence that the requirements will be respected).
- Technical regulations for new services can be defined and adapted as quickly as possible, to minimise the barriers for new and evolved applications to access spectrum.

Confidence, clarity and certainty regarding the regulatory environment are needed in order to avoid impairment of flexibility and innovation, causing confusion, misunderstanding and delay.

Sharing conditions are developed as a result of detailed negotiations, studies and investigations which have to balance between the protection requirement of existing users and the requirement to facilitate the access to spectrum for new users. In order to achieve the necessary confidence, it is important that all relevant users of spectrum, i.e. governmental and non governmental, and all other stakeholders (industry, operators, users ...) are involved and take an active role in finding solutions to enable sharing where possible. All stakeholders should provide the required information on their spectrum usage and participate in the establishment of sharing solutions in order to maintain confidence that the sharing solution will work effectively and will be effectively implemented.

Two main elements are important to maintain confidence, clarity and certainty in the current regulatory process, the first one relates to the technical regulations applying to the use of spectrum, the second relates to the regulation applying to the placing on the market of radio equipment:

1) Technical regulations applying to the use of spectrum: The current process between the EU, CEPT and ETSI works well for the initial designation of the spectrum for certain applications and under certain technical conditions but the application of the process for modifying such technical conditions is less clear.

The designation is normally based on the results of sharing and/or compatibility studies (generally reported in ECC Reports). These studies establish under which conditions and parameters the sharing between the different users of the spectrum may take place. These studies are based on selected representative technology(ies) for both the existing and proposed new service with an appropriate deployment forecast and their required protection levels.

The Decisions on spectrum use may be considered to be “one shot” option. There are some doubts whether the feedback mechanism in the regulatory process would make possible rapid adjustment of the technical conditions if the evolution of market (applications, density of use, environment etc.) and technologies is not in line with the assumptions made in the studies. In other words, when a frequency band is open to a new application, in particular in the case of mass market devices operating under general authorisation, it is felt extremely difficult to place more stringent requirements on the conditions of use at a later date, even in the case of well identified risk of interference. It is felt that it would be even more difficult to stop access for such devices in the frequency

band affected. These concerns have been reflected in the ongoing debate about the need to allow “large scale experimentation” which has never resulted in any satisfying solutions being proposed. This is mainly because of the difficulty in ensuring a process of ongoing feedback and any resultant adaptation of the original conditions related to enabling use of the spectrum.

In cases covered by Commission Mandates, it is assumed that the relevant technical conditions in ECC deliverables will then be transferred into the appropriate EU regulatory instrument. The technical conditions are assumed to be consistent in EU and in CEPT deliverables but some discussions during the EU regulatory process on where these requirements should be stated (e.g. Commission Spectrum Decision, National Regulatory Interface and/or the Harmonised Standards) has led to confusion. To facilitate the introduction of flexibility and new technologies, it should be made clear where in the EU regulatory instruments the elements proposed by the ECC in their deliverables should be included and how to ensure their consistency. This is related to the development by the joint group between RSCOM and TCAM RIG 2 of the table for national regulatory interface (see section 4.2).

When looking at these issues it should be remembered that the conditions and parameters reflecting the balance resulting from the spectrum management process have to be enforced in a way which would ensure at the same time:

- Confidence for all users of the spectrum (i.e. including governmental) that conditions and parameters required to ensure compatibility will be effectively met and enforced.
- The possibility for technological and market evolution of both new and incumbent applications.
- The possibility for adapting in a timely manner the regulatory parameters to a change in the interference environment.

2) Technical regulation applying to the placing on the market of radio equipment:

The question is whether the current mechanisms under the R&TTE Directive are sufficient by themselves to ensure confidence in regulatory decisions, in particular when dealing with new technologies that enable devices to share the spectrum with existing users under general authorisations :

Enforcement against non-compliant equipment (Safeguard clause)

- There has been one example where it appears that there were shortcomings in the Harmonised Standard. Concerns were raised due to the fact that consensus to implement the safeguard clause could only be reached when interference occurred. In case of mass-market equipment, this could have been too late and the band may have been considered as lost for the incumbent user.
- In case a national market surveillance authority withdraws equipment from its national market, this does not automatically affect other Member States, unless these administrations are taking the same measure. However, other administrations may not face the same interference situation (e.g., the meteorological radars have

not the same characteristics throughout Europe). In a common European market national measures for mass-market equipment may not be adequate to control the situation in all Member States.

Market surveillance

- Due to the different resources available, efforts from national administrations on market surveillance differ widely within the Community. This could lead to different approaches and priorities when dealing with market surveillance. This may mean that some equipment may be widely placed on the market while not complying with the essential requirements.

Conformity assessment

- Harmonised Standards are just one way to demonstrate compliance. In theory a manufacturer may market equipment without referring to a Harmonised Standard, provided that an opinion has been sought from a notified body. In practice, notified bodies are reluctant to take the commercial risk of giving a positive opinion on sharing solutions other than those implemented in the Harmonised standards and this is likely to be even truer in the case of complex sharing solutions based on cognitive radio.

Annexes 2 & 3 describe in detail two examples (UWB and 5 GHz RLAN) of introducing new technologies which show how detailed the negotiations, studies and investigations, involving all relevant users of spectrum (i.e. government and non government, and any other stakeholders), can be. These discussions took place at national level, at European level (CEPT and ETSI under EC mandate) and at worldwide level (ITU). It has to be noted that the difficulty of such negotiation or investigation increases with the trend to increase sharing of spectrum in response to spectrum scarcity. It is also sometimes necessary to ensure discussions at a global level, given the requirement from industry for international harmonisation, which requires a more proactive role from the industry at the earlier stage of the spectrum management process. The results of these discussions have enabled regulators to open a large amount of spectrum for new applications at the European level.

4.2 Coherence between the activities of the organizations Commission, CEPT and ETSI

The current flow of information between the Commission, ETSI and CEPT is described in Annex 1. It should be noted that there are still many situations where Commission Decisions are not considered necessary, e.g. where an EU Member State can voluntarily harmonise with other CEPT members by signing up to an ECC decision.

When the Commission is considering introducing a binding spectrum Commission Decision they would issue two separate mandates to ETSI and CEPT. In order to minimise the timescales and duplication of effort in these investigations, it is essential that the coherence between each mandate is ensured both in terms of scope and timing. This will enable the work between ETSI and CEPT on defining sharing conditions to remain well coordinated. The lack of coherence in the relevant scope of the Commission mandates can destabilize the work of

each of these organisations and may introduce a delay in the process or create misunderstanding for stakeholders. This does not mean that the scope of each mandate should be strictly the same, but only that they enable ETSI and CEPT to produce their separate deliverables with relevant scopes in a co-ordinated time-frame. In particular with new technologies, there is a need for all spectrum stakeholders to discuss and find sharing solutions in a co-operative manner. This may include measurement campaigns to determine the effect of interference.

In order to co-ordinate these mandates there has to be some commonality between the work of TCAM and RSCOM who sometimes address the same issues from either the view point of R&TTE directive or spectrum management activities respectively.

One important difference between the Commission mandates to ETSI and the Commission mandates to CEPT is that the main ETSI deliverables (Harmonised Standards) are directly cited in OJEU, while the result of a mandate to CEPT is generally to be left with separate ECC and Commission Decisions with different levels of technical detail. This has led to recurrent debates between the Commission and Member States who wish to implement ECC Decisions but are concerned with the need to ensure the consistency between the content of ECC and Commission decisions. In this respect, some administrations believe that it would be useful to investigate further how the technical elements in an ECC decision can be enshrined into community law or if an ECC decision can be cited in a similar way to Harmonised Standards.

In this respect, a recent difficulty has been identified due to the fact that CEPT reports are now submitted to a public consultation in order to increase transparency. Such CEPT reports are sent to Commission services after CEPT approval for public consultation. As a result of such consultation, it may be necessary to consider the review of the CEPT report. Therefore, Commission services should avoid finalizing a Commission Decision before the end of CEPT report public consultation.

It is important to highlight the need for consistency between ETSI and ECC activities as both are the recognised areas of technical expertise in their respective duties under the current European regulatory process when looking at technical limits related to spectrum sharing conditions. The objective of the MoU between CEPT and ETSI is precisely to ensure that the essential spectrum sharing conditions are defined, agreed and can be evolved in a consistent manner between the two organizations. This requires in particular that CEPT deliverables can include the appropriate level of technical detail when defining the spectrum sharing conditions.

It should be noted that Harmonised Standards, CEPT/ECC deliverables and Commission decisions are adopted by different mechanisms and have different objectives. This leads to different decisions on the level of technical detail that should be contained in these respective Deliverables. The Commission spectrum Decisions would often contain less technical details than either ETSI or CEPT/ECC deliverables. Overlaps between these various regulatory deliverables tend to be limited to the technical parameters that are considered to be an essential part of the spectrum management decision. Detailed co-ordination is necessary to ensure that the deliverables of ETSI, CEPT/ECC and the Commission contain consistent technical provisions and are implemented in a coordinated manner.

Defining the demarcation between what should be presented as essential (or mandatory) requirements in National Interface requirements, Harmonised Standards, ECC and Commission Decisions is still subject to considerable debate. Some of the most contentious arguments in the past have been over the technical details that should be presented in a Commission Decision and the corresponding National Interface as mandatory requirements. These arguments tend to revolve around what should be covered under the responsibilities of the R&TTE Directive. Going forward especially when dealing with flexible (WAPECS) allocations and new technologies (e.g. cognitive devices) we will need to ensure that there is a consistent and sensible approach to defining where we consider these demarcations to be in order to improve the confidence of industry stakeholders.

A fundamental step forward in order to improve the consistency between the regulatory deliverables was the adoption by TCAM and RSCOM in April 2008 of an adaptation of the set of mandatory and informative technical parameters for the radio interface specification. This model for specifying the radio interface is proposed to be implemented by the Commission, CEPT and ETSI for their deliverables such as national radio interface specifications, equipment class 1 specification, TCAM decisions, Commission and ECC decisions.

Recently, the development of the WAPECS concept in certain specific frequency bands has highlighted a new issue where individual authorizations will look at alternative ways of expressing these technical conditions. The most recent development here is the use of the block edge mask (BEM) principle to determine suitable boundary conditions that can be used in national licensing. It is important to note that the BEM is the regulatory requirement for operators whilst equipment manufacturers will apply the relevant Harmonised Standards which contain equipment spectrum masks. There is a relationship between the BEM and the equipment spectrum mask but they do not have to be identical because of the possibility for an operator to use other means to meet the BEM requirements. Therefore, consistency does not mean in this case alignment of the requirement in the Harmonised Standard with those stated in the Commission Decision or national radio interface specification.

More generally, it is important to remind that the participation of administrations in ETSI activities is important.

4.3 Increasing sharing of spectrum and receiver parameters

The growing demand for spectrum will increase scarcity of spectrum and this will lead to the development of new sharing situations which will have to be addressed by spectrum managers.

In particular, the importance of receiver parameters in the assumptions behind the spectrum management decisions were overlooked too often in the past, leading to situations where the introduction of new application can be hindered by the need to protect badly designed receivers of existing users of the spectrum. From a spectrum management point of view, it is essential to base work on an agreed set of reference receiver parameters in order to identify receivers which can be afforded protection, to plan the spectrum and to make sharing studies to introduce new services and application in spectrum.

It has to be noted that receiver parameters play a fundamental role in the policy framework aiming to make spectrum use more flexible. It is recognized that consideration of these receiver parameters are even more important in this context than in frequency bands used in a more traditional way.

Harmonised standards include in some cases mandatory receiver parameters (see ETSI guide 201 399 “guide to the production of candidate Harmonised Standards for application under R&TTE Directive”). In some other cases, the receiver parameters are included in the product standards. However, there are still too many cases where neither Harmonised Standards nor product standards contain adequate receiver parameters.

5. THE OPINION OF THE RSPG SOLUTIONS TO STREAMLINE DECISION MECHANISMS, COOPERATION OR LEGISLATION

The purpose of this Opinion is to propose solutions to improve decision mechanisms, cooperation or legislation so as to ensure consistency in the different part of the regulatory environment for the spectrum use.

General principles

5.1 The R&TTE Directive has been successful in introducing a liberal approach with the removal of the previous type-approval approach, this is currently unique at worldwide level, and the future ECN&S regulatory framework will introduce more flexibility in terms of spectrum use.

5.2 The RSPG considers that the interplay of spectrum and equipment regulation is a key element in achieving the policy objective that the societal and economic value of spectrum use should be maximised. Furthermore, smooth functioning of spectrum management and standardisation encourages innovation and technological development, and enhances the competitiveness of European industry.

5.3 The RSPG considers that spectrum regulation should be limited to the minimum necessary to avoid harmful interference and to maximize the benefits to society of the use of spectrum, including economic, social and cultural benefits. Radio interfaces should be adopted in accordance with these principles of common, minimal and least restrictive conditions for spectrum use.

5.4 The RSPG considers there is a need to continuously review the use of spectrum. The conditions for the use of spectrum should provide sufficient certainty to the market and spectrum stakeholders. However, they should also adapt to the evolution of radio systems characteristics and sharing situation.

5.5 The RSPG considers that the requirements and views of all stakeholders should be taken into account in a fair and transparent manner through a regulatory process involving both spectrum management and standardisation activities.

5.6 The RSPG notes that the development of wireless applications will increase the demand and therefore the requirement for regulators to review new and innovative method of sharing

between applications. However, the possibility to introduce new innovative applications and to increase spectrum sharing relies on the confidence of all spectrum users that the conditions and parameters required to ensure compatibility will be effectively considered, met and enforced.

Short term recommendations

5.7 The RSPG notes that the more detailed technical issues associated with spectrum sharing conditions and parameters are defined in cooperation between ETSI and CEPT. These spectrum sharing conditions should be clearly identified and reflected in ETSI Harmonised Standard(s) and in appropriate CEPT deliverable(s). Technical overlap between the various regulatory deliverables should be limited to cases where such parameters are an essential part of the spectrum management decision.

5.8 The RSPG recommends that CEPT and ETSI should consider how to quickly adapt sharing conditions and parameters in response to new market development or interference situations.

5.9 The RSPG notes that the TCAM and RSCOM committees are often addressing similar issues of interference from the view point of the R&TTE Directive and spectrum management, respectively. Therefore, the activity of these committees should be even more closely coordinated. In addition, mandates to ETSI and CEPT should complement each other both in content and timing.

5.10 The RSPG recommends that in order to ensure transparency and consistency in spectrum management decisions, the Commission Decision should normally not be adopted before the final adoption of CEPT report after the public consultation process.

5.11 Receiver parameters are important for spectrum management and for facilitating the introduction of new applications in spectrum. Therefore, the RSPG considers that the receiver parameters should be defined by ETSI in the harmonised and/or product standard for all equipment and be used consistently by CEPT in sharing studies as part of the assumptions for the intended use of the band.

5.12 The RSPG urges spectrum managers to specify radio interfaces in accordance with the model laid down by the joint working group RIG-2 of TCAM and RSCOM. The implementation of this model may have to be examined in light of the WAPECS and cognitive radio concepts.

5.13 The RSPG considers that when a certain frequency band is designated for a specific application, this should not prevent the same frequency band to be designated later for another application.

Long term recommendations

5.14 The RSPG considers that enforcement is a key part of the spectrum management process in developing confidence amongst users sharing spectrum. It is recommended that Members States need to review their enforcement and market surveillance approach to improve

confidence. In particular, the RSPG recommends that administrations ensure that sufficient resources are afforded to market surveillance, which is a key element of the ex-post approach of the R&TTE Directive.

5.15 The RSPG recommends that solutions or procedures be identified to increase confidence that the safeguard clause of the R&TTE Directive would be applied effectively in cases of interference situations that need to be addressed urgently. It is also recommended in the context of the revision of the R&TTE Directive to include a provision for a Member State to apply for an enforcement measure to remove equipment from the whole of the EU market if necessary due to national services experiencing harmful interference from equipment operating under general authorisation.

5.16 The RSPG considers that solutions should be identified in order to provide means for notified bodies to determine if any deviation from Harmonised Standard would impact the sharing conditions, in particular by ensuring closer relationship with CEPT/ETSI to give guidance where necessary to notified bodies. This could also be considered in the context of the revision of the R&TTE directive.

5.17 The RSPG recommends that every effort should be made to ensure the consistency of the minimum sharing conditions referred to in Commission and ECC decisions. There is also a need to clarify further the role of detailed technical elements in each of the regulatory deliverables and to investigate the possibility for the Commission to enshrine ECC decision technical elements into community law or to cite ECC decision in a way similar to what is done with Harmonised Standards in the R&TTE process.

Annex 1

Flows of information between Commission, ETSI and CEPT

Due to the different roles and functions of the three organizations, Commission (with TCAM and RSCOM committees), CEPT and ETSI involved in spectrum management decisions and in placing radio equipment on the market, the tasks to be completed by each organization and the role of each organisation shall be clear, well understood and accepted so as to avoid conflict of responsibilities and to benefit to all stakeholders and public interest.

Three flows of information need to be carefully studied to ensure their consistency:

- to ESOs (ETSI as a leader)
- between Commission services and CEPT
- between ETSI and CEPT

1. Flows of information between Commission services and ESOs and between Commission services and CEPT

The two flows of information originating from the Commission services and ESOs are linked to mandates from Commission services and relevant deliverables provided by ESOs and CEPT.

- Commission mandates

Currently, mandates are developed by the Commission services based on opinion of the relevant consultative committees:

- 98/34 committee (advised by the sector-specific committee, e.g. TCAM) on Harmonised Standards,
- RSCOM on technical radio requirements.

Further to this consultation process in accordance to the opinion of above consultative committees, commission services adopt policy measures, as mandates to ESOs and/or CEPT. Objectives of such mandates differ:

- Mandates sent to ESOs (ETSI as leader) : production of Harmonised Standards
 - o M/284 : general mandate to reduce bureaucracy;
 - o M/313, M329: example of mandates for specific items;
 - o M 406 to establish a set of Harmonised Standards for equipment operating in flexible bands
- Mandates sent to CEPT on technical conditions to spectrum use, among others:²
 - o Short Range Devices harmonisation,

² See CEPT report provided according to Commission mandates
<http://www.erodocdb.dk/doks/doccategory.aspx?mid=443ABEEC-3A40-4B24-89BE-B0D27760D286&doccatid=16>

- Conditions relative to harmonised introduction of radio applications based on Ultra Wide Bands technology,
- Harmonised radio spectrum use for safety critical applications of Intelligent transport systems (ITS) in the European Union
- Development of least restrictive technical conditions for frequency bands addressed in the context of WAPECS

It is essential that the coherence between the two types of mandate is ensured in order that the work of ETSI and CEPT remain well coordinated. The lack of coherence in the relevant scope and timing of the Commission mandates may destabilize the work of the relevant organisations in charge of developing report and may introduce delay and misunderstanding from various stakeholders. It does not mean that the scope of the mandate should be strictly the same, but only that they enable ETSI and CEPT to produce deliverables with consistent scopes in a co-ordinated time-frame.

There was one example of such situation is the mandate on flexible bands (M 406). In the case of WAPECS bands, there was in parallel the mandate to CEPT so that the work of ETSI and CEPT was well coordinated. But other bands were also mentioned in the mandate M 406, which originated from internal CEPT documents not corresponding to EC mandate, nor to ETSI SRDoc nor to CEPT deliverables concerning these frequency bands. Therefore, ETSI did not have real directions in the development of Harmonised Standards for these bands (what for? which regulation on spectrum use would be applicable? etc ...).

- **Deliverables in response to Commission mandates**

One important difference between the Commission mandates to ETSI and the Commission mandates to CEPT is that the main ETSI deliverables (Harmonised Standards) are directly cited in OJEU, while the result of a mandate to CEPT is generally to be left with separate ECC and Commission Decisions with different levels of technical detail. This has led to recurrent debates between the Commission and Member States who wish to implement ECC Decisions but are concerned with the need to ensure the consistency between the content of ECC and Commission decisions. In this respect, some administrations believe that it would be useful to investigate further how the technical elements in an ECC decision can be enshrined into community law or if an ECC decision can be cited in a similar way to Harmonised Standards.

In this respect, a recent difficulty has been identified due to the fact that CEPT reports are now submitted to a public consultation in order to increase transparency. Such CEPT reports are sent to Commission services after CEPT approval for public consultation. As a result of such consultation, it may be necessary to consider the review of the CEPT report. Therefore, Commission services should avoid finalizing a Commission Decision before the end of CEPT report public consultation.

2 Flow of information between ETSI and CEPT

A 'System Reference Document' (SRDoc) is an ETSI Technical Report created and approved according to the ETSI Technical Working Procedures and which is based on ETSI Guide EG 201 788 'Guidance for drafting an ETSI System Reference Document'. A 'System Reference Document' is usually produced for a new system, service or application requiring a change of

the present frequency designation / utilisation within CEPT or a change in the present regulatory framework for the proposed band(s) regarding either intended or unwanted emissions.

Such ETSI deliverables is sent to CEPT further to an internal ETSI approval process. In order to speed up the process, a draft SRDoc is often sent to CEPT in order to launch a first round of discussion concerning the regulatory parameters before the final approval at ETSI.

CEPT ECC systematically undertakes compatibility and frequency management studies and to establish under which conditions and parameters the sharing between the different users of the spectrum may take place. These studies are based on the technology(ies) of the proposed new service and the deployment forecast (based on the ETSI SRDoc), the technology of the service(s) to be protected and their required protection level. The results of these studies (generally reported in ECC Reports) serve as the basis for the drafting of Commission/ECC decision on spectrum use and the ETSI Harmonised Standard.

However, independently from whether the ECC activity was initiated through a Commission mandate or an ETSI SRDoc in accordance with the CEPT/ETSI MoU, ETSI normally starts the development of Harmonised Standards in parallel with the development of regulation on spectrum use and is the relevant organisation to define parameters and testing method which will ensure the avoidance of harmful interference, in particular to ensure compliance with sharing conditions and parameters.

Today, the result of the compatibility studies from CEPT is sent back to ETSI through a simple liaison statement.

ANNEX 2

Introduction of Dynamic Frequency Selection (DFS) for RLANs at 5 GHz

Background

The idea of developing RLAN systems in the 5 GHz band has been introduced within CEPT as early as 1991, through request from ETSI which had started its standardization for HIPERLAN system. It was a recognition that the 2.45 GHz band already identified for RLAN, with its limited capacity (83 MHz) and the severe sharing environment (ISM, Short Range Device), would create a risk of impairing the development of RLAN, although it was at that time mainly a concept.

After some discussions, CEPT designated, in ERC Recommendation T/R 22-06 approved in 1992, the band 5150-5250 MHz for HIPERLAN. The sharing with other services, i.e. MSS feeder link, was ensured through “classical” constraints such as indoor restriction and limitation to 1 W eirp. An “optional” 50 MHz in the band 5250-5300 MHz, in sharing with radar systems, was also proposed in this recommendation on a national basis.

Later, a concept similar to HIPERLAN was developed in United States under the name “U-NII”. This led to the identification by FCC in 1996 of the band 5150-5350 MHz and 5725-5825 MHz for such applications. It corresponds to 300 MHz of spectrum, significantly more than what was designated by CEPT. Also, 200 MHz of this spectrum was allowed in outdoor environment.

Therefore, ETSI came back to CEPT asking for a similar amount of spectrum, justified by the need for a sufficient number of channels enabling quasi-cellular deployment, and for some spectrum authorized in outdoor environment.

CEPT initiated additional studies but faced two difficulties. First, the band 5725-5825 MHz was allocated in Region 1 to the fixed satellite service, making this band unsuitable for outdoor applications. Second, the whole band 5250-5825 MHz was used for various kind of radars and it was demonstrated that a large population of RLANs would have a high potential of interference into such radars.

In this context, the idea of applying Dynamic Frequency Selection (DFS) to ensure the compatibility with radars was successfully developed in the year 1998 and 1999 within CEPT. In summary, it means that the RLAN equipment has to sense its environment, when switching on or regularly during its operation, in order to detect potential radar signals and to handover onto another channel in order to avoid transmitting within the radar receiver bandwidth. Incidentally, it also enables the RLAN device to avoid the interference from the radar.

As a consequence, the Report ERC 72 (approved in 1999) recommended, amongst various compatibility studies, that HIPERLAN implement DFS in order to enable the protection of radars and the Decision ERC(99)23 designated the range 5150-5350 MHz and 5470-5725 MHz for HIPERLAN with different conditions of use, depending on the sharing situations. This represents 455 MHz of spectrum for RLAN, of which 255 MHz are usable in outdoor environment.

The DFS concept was not really new: “listen before talk” idea was already used to enable coexistence between equipment in the same system (eg, in the DECT system). However, it was the first time that it was used for enabling sharing between systems as different as RLAN and military and meteorological radars.

In practice, the definition of exact DFS characteristics required much more work in close cooperation between CEPT and ETSI, in order to define the level at which a radar signal will be detected and how the RLAN should behave when detecting such signal. One initial difficulty was to persuade industry that the application of a simple “intra-system” DFS would not be sufficient to ensure the “inter-system” compatibility with radars and then to ensure that all category of radars could be adequately protected. It is noted that, in this respect, DFS may not protect frequency agile radars, which have been designed with the objective to be undetectable.

RLANs at WRC-03

In parallel, CEPT had proposed at WRC-2000 that the RLANs in the 5 GHz band should be included in the WRC-03 agenda. The reason for such request was the need to get an additional allocation for the mobile service in order to enable the “recognition” of the RLAN use in this band which was also partly allocated to space services. The absence of such allocation was creating a threat due to space service developments which may become incompatible with RLAN “unrecognized” (ie, under article 4.4) development. In spite of the lack of support, or even hostility from other part of the world, this proposal for WRC-03 agenda item was successful at WRC-2000.

Surprisingly, this agenda item, in conjunction with the real start of the WiFi market led to strong pressure within United States for opening the band 5470-5725 MHz also to RLANs. The discussion with the radar users focused on the merit of the DFS concept as proposed by CEPT. After considerable discussion, they decided to support this concept and United States, in January 2003, officially supported that the band 5470-5725 MHz be allocated to mobile service on a primary basis, limited to WAS (including RLAN) applications and subject to an obligation to use DFS.

It should be noted that this decision was also linked to the fact that radar community in US could rely on DFS to also ensure the protection of the band 5250-5350 MHz which otherwise would have been considered as “lost” for US military, given the likely future widespread deployment of equipment in this band. Therefore the decision of applying DFS was a “win-win” solution for RLAN and radar community in United States. And there was finally not much difficulty during WRC-03 to promote the common CEPT and US views on the implementation of DFS for all systems within the newly allocated mobile service.

One could note in particular that the regulation already considered the specific case of the so-called meteorological radar band (See Annex 1 of ITU-R Recommendation M.1652).

“Additionally, in the band 5 600-5 650 MHz, if a channel has been flagged as containing a radar, a 10 min continuous monitoring of the flagged channel is required prior to use of that channel. Otherwise, other appropriate methods such as channel exclusion would be required.”

Difficulties with the application of the Harmonised Standard

EN 301 893 V1.2.3

Limitations of EN 301 893 V1.2.3 published in August 2003 were shown by tests performed in laboratory both in France and Germany in year 2004. They showed the need to revise the EN 301 893 V1.2.3 in order to provide an efficient protection of fixed frequency radars

CEPT liaised to ETSI in May 2004 pointing out that, as far as radar detection is concerned, the objective of DFS in RLAN is to detect radar signals which have a level above the required detection threshold. There are many set of radar characteristics operating at 5GHz such as those which can be found in ITU-R Recommendation M.1638. It meant that the DFS should not only be able to detect the three radar test signals which were defined in EN 301893 V1.2.3, but also other radars used in the 5 GHz range.

In its liaison back to CEPT, ETSI provided extracts of the draft revised standard highlighting that the main difference with the previous version of the standard was the addition of five variable radar test signals each having a range of values for both the Pulse Width and the Pulse Repetition Frequency (PRF) as well as a modulated radar signal simulating 'chirped' radars.

The active cooperation between ETSI and CEPT enabled to reach a satisfactorily solution for the various stakeholders with the publication August 2005 of ETSI Standard EN 301 893 V1.3.1. However, after difficult negotiation the date of withdrawal of the version 1.2.3 could only be advanced to 1st April 2008.

From EN 301 893 V1.3.1 to EN 301 893 V1.4.1

In the last few years several interference cases to meteorological radars occurred in several European countries.

Certain interference cases were caused by a manual deactivation of the DFS in the software controlling the RLAN. The solution was rapidly identified in terms of additional provision in the Harmonised Standards to prevent the possibility of such a manual deactivation. This clause was included in the ETSI Standard EN 301 893 V1.4.1 published in July 2007 of ETSI Standard EN 301 893 V1.4.1.

This interference cases also led to additional testing and studies in order to verify efficiency of 5 GHz RLAN Dynamic Frequency Selection (DFS) feature to ensure protection of meteorological radars.

Further shortcomings of DFS within EN 301 893 V1.3.1 and V1.4.1

The initial testing performed by the meteorological community and realised with 2 different RLAN equipments, in which DFS is assumed to be based on the last specification defined by ETSI EN 301 893 V 1.3.1, showed that their DFS are not efficient to ensure meteorological radar protection. As a consequence, a campaign was launched in one CEPT country to check

the compliance of 5 GHz RLAN with relevant essential requirements with the objective to initiate safeguard action in case of non compliance.

Such studies and results showed that the Harmonised Standard still did not cover all the range of meteorological radar signals due to the following radar characteristics:

- Staggered PRF and use of various PRF by each radar (v1.3.1 and v.1.4.1 test signal has fixed PRF)
- Pulse width down to 0.5 μ s and lower than the 1 μ s pulse width currently considered in the v.1.3.1 and v.1.4.1
- Use of various rotation speeds
- Noise calibration (ie, the radar does not transmit to “listen” the environment but the received noise information is then used for subsequent measurements)

This was explaining interference cases such as those experienced in France. Some Information from Defence community also demonstrated that their radar could also use staggered PRF.

The solution negotiated in France with the concerned manufacturer was consisting in blacklisting the meteorological spectrum (5600-5650 MHz) from the list of available channel through soft modification for all equipment placed on the market after 1/11/07 and for equipment already placed on the market through an information campaign carried out by the responsible manufacturer. However, actions in relation with the identified shortcomings of the standards were also necessary to ensure long term protection of radars.

This issue was brought to the attention of TCAM which therefore requested ETSI to start a work for further modifying EN 301 893 V 1.4.1 to cover staggered PRF radar signals and short pulse width detection for all radars and a solution for noise calibration. TCAM also took the decision of withdrawing all previous versions (ie, v.1.3.1 and v1.4.1) of the standards by April 2009.

The corresponding new work item towards the development of a new version 1.5.1 of EN 301893 was discussed in ETSI (TC BRAN) in December 2007 but could not be accepted by consensus, leading to a formal vote procedure. This WI has finally been adopted March 2008.

It has also to be stressed that the solutions to solve this issue not only involved the RLAN industry but also the meteorological community that took a number of commitments with regard to the future radar design, such as, transmitting time by time detectable signals by RLAN as well as moving all meteorological radars in the 5600-5650 MHz band in which specific detection features will be applied by RLAN.

One can see that, should a similar problem would have occurred with other types of radars that are deployed in the whole RLAN band, it could have led to an impasse in which no possible technical solutions could have been found to solve the initial shortcomings.

Conclusion

This illustrates the fact that CEPT, in the framework of the CEPT-ETSI MoU, was able to identify and implement successfully a new sharing technique enabling the designation of a very large spectrum (455 MHz) for RLANs in the 5 GHz band. This technique was

subsequently generalized to other part of the world through WRC-2003 decisions. The detailed specification of DFS is still subject to discussions involving ETSI, CEPT and TCAM as well as the weather radar community

However, such process demonstrates the following:

- It is essential that all stakeholders, including governmental users of spectrum, are involved in the discussion to ensure that all relevant elements are taken into account in the definition of the sharing scheme, eg the issue of staggered PRF radars was overlooked in the initial DFS specification
- The definition of such sharing scheme is extremely complex and usually requires an iterative process involving all stakeholders
- The definition and specification of advanced sharing conditions is not always trivial and could also not be transparent for incumbent services, with potential impact on their current and more likely future design.
- Careful follow up of ETSI progress in Harmonised Standard development is necessary through CEPT MoU and TCAM.

ANNEX 3

Definition of technical conditions applicable to UWB

Initial compatibility studies

ETSI SRDoc for UWB communication applications (TR 101 994-1) was developed throughout 2003 and published January 2004.

The development of a regulation for UWB had been identified early as major challenge for spectrum managers given the wide range of radio services and applications that are likely to be impacted. Regulatory and compatibility issues have been studied in depth within CEPT.

ECC Report 64 on the protection requirements of radiocommunication systems below 10.6 GHz from Generic Ultra-wide Band (UWB) applications was adopted February 2005. Its development has involved all relevant users of spectrum, ie, governmental and non governmental, and all other stakeholders (industry, operators, users ...). It includes detailed studies on the impact of UWB on the following services and applications:

- Fixed Service (FS)
- Mobile Satellite Services (MSS)
- Earth Exploration Satellite Service (EESS)
- Radio Astronomy Service (RAS)
- DVB-T
- T-DAB
- Bluetooth
- RLAN in the 5 GHz range (RLAN)
- IMT-2000
- Radio Navigation Satellite Service (RNSS)
- Fixed Satellite Service (FSS)
- Amateur/Amateur Satellite Services (Amateur)
- Maritime mobile service including Global Maritime Distress and Safety System (Maritime)
- Aeronautical mobile service and radio determination service (Aeronautical)
- Meteorological Radar

General conditions for the use of the radio spectrum by equipment using ultra-wideband technology

Further intense discussions on assumptions for deployment scenarios and propagation models, complementary technical studies (Fixed Satellite Services, outdoor Fixed Services, FWA systems, aeronautical radars...) have enabled to reach a final consensus on “UWB spectrum mask” and confirm adequate frequency bands for UWB operation in Europe:

- 3.1 – 4.8 GHz, subject to the implementation of efficient mitigation techniques
- 6 – 8.5 GHz, identified for long-term UWB operation in Europe

The regulatory framework for equipment using ultra-wideband technology in Europe that has been established consists actually of two main components:

- Spectrum mask for generic UWB devices without the requirement for additional mitigation.

- Complementary provisions allowing typically higher power spectral densities subject to the implementation of efficient mitigation techniques (LDC, DAA...)

Detailed specifications for mitigation techniques

Commission Decision of 21 February 2007 (2007/131/EC) already includes a regulatory provision allowing UWB devices implementing Low Duty Cycle (LDC) mitigation technique to operate with a higher spectral power density in the frequency band 3.4 – 4.8 GHz. This provision is based on the results of ECC Report 94 on the technical requirements for UWB LDC devices to ensure the protection of FWA systems.

CEPT has developed draft ECC Report 120 on technical requirements for UWB Detect And Avoid (DAA) technique. to ensure the protection of radiolocation in the frequency bands 3.1 – 3.4 GHz and 8.5 – 9 GHz, and BWA terminals in the band 3.4 – 4.2 GHz.

These parameters are based on compatibility studies performed with WiMAX systems operating in the frequency band 3.4 – 3.8 GHz and radiolocation systems operating in the frequency bands 3.1 – 3.4 GHz and 8.5 – 9 GHz.

The overall process and time schedule for validation of DAA mitigation technique is well coordinated between CEPT and ETSI. In this overall process, three deliverables are to be developed:

- ECC Report, including *DAA technical parameters* available for reference for the development of the related ETSI standard
- Decision ECC/DEC/(06)12 to be amended in order to include regulatory provision allowing UWB DAA devices to operate with a higher spectral power density in the frequency bands 3.1/3.4 – 4.8 GHz and 8.5 – 9 GHz
- ETSI revised EN 302 065 standard, including *DAA measurement procedures*. ETSI has for this purpose also established a Specialist Task Force dealing with DAA measurement procedures.

Due to the specificity of “detection mechanism” associated with DAA mitigation technique, it has however to be emphasized that the *DAA technical parameters* alone (included the ECC Report 120) do not ensure protection of radio services by themselves. This has to be completed with adequate *DAA measurement procedures* in the related ETSI standard. The first implementation/use of ETSI DAA measurement procedures by market players should ensure confidence to the various spectrum users and confirm the relevance of the DAA technical parameters.

As part of necessary cooperation to ensure confidence to the various spectrum users, the draft amended Decision ECC/DEC/(06)12 was adopted by the ECC meeting June 2008 for public consultation, subject to consideration of provisional *DAA measurement procedures* from ETSI.

Such example raises a fruitful cooperation mechanism between CEPT and ETSI. Due to the increasing complexity of mitigation techniques, such cooperation between ETSI and CEPT will be more and more needed.

On the other hand, the issue of “specific” UWB applications is also to be considered since, by the adoption of the “generic” ECC Decision ECC/DEC/(06)12, a number of different SRDocs were received by CEPT that open corresponding work items to cope with the request for different sharing conditions (mainly higher power limits) for the specific UWB applications such as GPR/WPR, BMA and ODC.

CEPT defined or is in its way to define these specific regulations (different power limits, different mitigation techniques (BMA and ODC), licencing regime (GPR/WPR),...) that present a potential for creating confusion or increasing the regulatory difficulty to apply these regulations and the related market surveillance for national administrations. One could also stress the case of UWB SRR 24 GHz for which a limited market penetration was decided to ensure coexistence with EESS (passive).

This highlights the fact that, even facing a single technology (UWB), different technical and regulatory solutions are necessary that could likely not be covered by single and simple ECC or EC regulation.