

EICTA Comments on RSPG Opinion on
"Aspects of a European Approach to Collective Use of Spectrum"

Brussels, 3rd September 2008

EICTA welcomes the opportunity to respond to the public consultation on the draft RSPG Opinion on Collective Use of Spectrum. EICTA generally supports the RSPG views as reflected in the document as they aim to optimize the overall societal and economic value associated with the radio spectrum. There are however a number of comments we would like to make concerning predominantly Short Range Devices as detailed below.

Impact Assessment

With regard to RSPG opinion on CUS section 4.2 it is noted that there is a call for an Impact Assessment when making a decision for a CUS spectrum usage as follows:

A comparison of the benefits, enabling such decisions to be taken, can be informed by undertaking Impact Assessments and cost benefit analysis of the various options. Any such Impact Assessment will need to take into account options for sharing with other users in the band.

On the other hand it is observed the continuation of EU institutions for simplified procedures, for example the European Commission mandated ECC to study and produce a Report on SRDs (i.e. CEPT Report 14) in order to (among others):

(quote)

- *To simplify regulatory procedures leading to the availability of spectrum for SRDs on an EU level.*

First to note is that measuring the benefits of SRDs is of equal importance to measuring the opportunity costs. This has not been brought out clearly in the text. The benefits should be estimated as an estimated service value and therefore include consumer surplus as well as equipment value (comprising in turn an element of producer surplus).

However attention is drawn to the fact that SRDs always operate on designation basis (not allocation) by sharing the spectrum with other radio services (primary or secondary status both) on non-interference, non-exclusive, and non-protected basis.

The evaluation process to date for a possible SRDs' spectrum designation, even being the same as generally used to assess impacts between radio services or systems, is indeed more severe because it must ensure that any radio service is not going to suffer traffic degradation due to harmful interference from SRDs, when sharing the same spectrum.

It is in any case necessary to take account of the special contribution made by devices that share spectrum to a dynamic economy that is one which encourages rapid innovation and diversity in services. This arises from the presumption that SRDs, will co-exist with new, as yet unknown, technologies. Maximisation of frequency sharing is also a requirement (Art 9.3c) of the proposed revision to the Framework Directive.

From the legal point of view it is important to note that in the EU+EFTA countries the EU legislation applies and a possible economic – social - political assessment for spectrum designation and harmonisation process, falls under the Decision No 676/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community (Radio Spectrum Decision).

This may result, from time to time, in an EC Decision through the mechanism of Radio Spectrum Committee of Member States' consultation and assessment procedures as defined in the Radio Spectrum Decision. This is also the case for the EC Decisions establishing a framework for the harmonisation of radio spectrum for use by SRDs in the Community (i.e. 2006/771/EC and 2008/432/EC).

It is worth noting that the EC Decision 2006/771/EC calls for assessments to be carried out at least once every year to review in particular the appropriateness of the choice of frequency bands, in order to take into account the evolution of technologies and market situation. This, under the proportionality principle, as provided in the article 5 of the EC Treaty; the action envisaged will therefore not exceed what is necessary to reach these objectives.

An Economic Impact Assessment (EIA) is indeed a model mostly used at a national level to issue an individual exclusive licence on beauty contest basis or to make preliminary selection to enter into an auction. For the EC Decisions on SRDs an EIA was considered not necessary under the "proportionality principle".

Considering all the foregoing, EICTA do not see a reason for changing the proportionate and pragmatic approach used until now, as stated. Any EIA would be instigated on exceptional and justified basis only, otherwise there is a risk for adding an additional heavy and time consuming process with no-real value added benefit in the already today long process to get a new regulation effective and time to market to satisfying a modern society user's needs.

High spectrum usage i.e. above 40GHz

In many parts of the RSPG Opinion document can be found a "text giving some concerns", in particular two paragraphs are noted as follows.

Section 6.1 item (c):

The part of the spectrum being used: spectrum is not homogeneous and some bands are therefore more suitable for CUS than others. In general, high frequencies are most suitable for CUS as they are less congested. Furthermore, some bands have very poor long range propagation characteristics which makes them ideal for frequency re-use over relatively short distances.

Section 6.3:

As there are more opportunities in the higher frequency bands, one approach is to make spectrum available in these higher frequencies (for example above 40 GHz where spectrum is more widely available and where flexible approaches are most appropriate) in order to encourage the development of new technologies. This would have the advantage of minimising the risk of spectrum being denied for other uses and could also encourage migration from lower (highly congested) spectrum bands to higher (less congested) frequencies. This would support more efficient spectrum use. However, manufacturers of devices that use spectrum under the CUS model generally develop their application on the basis of existing technologies that be found on the shelf. These manufacturers will often not have the financial power to develop new technologies. The RSPG considers that it might be helpful to explore if the current EU Research programme could provide any possibility to facilitate the development of new radio technologies above 40 GHz for CUS applications.

EICTA certainly welcomes a possible support through an EU Research programme in order to stimulate new technologies, however it seems that RSPG Opinion document do not consider some key factual aspects that were already indicated by industry in the CEPT Report 14, from which a relevant text is copied here:

(Quoted from CEPT Report 14)

Although frequencies above 40 GHz seem on one hand inherently more suitable, some difficult questions arise which are –

a) Is semiconductor technology that can be used at these high frequencies available today? If not, will it be in the future and if so, when? Doubts are serious because today the known semiconductor physical cut-off is 30-35 GHz; it therefore seems unlikely to reach SRD compatibly at a reasonable cost in the foreseeable future.

b) Currently there is no available information on components for these frequencies. It is clear that there are no solutions which can compete with today's single chip transceiver at 865 MHz or 2.45 GHz. However, these chips may be evaluated as the back-end of microwave SRD equipment.

c) The current power consumption may exclude any battery operated equipment; this is contrary to most SRD markets that require long life (>5 years) battery operated devices. Is it possible to overcome this issue?

d) For what SRD applications will these frequencies be suitable?

Above 40 GHz the propagation physics, design and high power requirements may certainly confine applications within extremely short links of few metres, or tens of metres. This is also contrary to the most of SRD markets that require "concrete wall" penetration that cannot be physically overcome; even if studies may positively shows the possibility for a medium gain antenna with horizontal omnidirectional pattern.

The considerations above lead to the conclusion that SRDs operating above 40 GHz are not the sole solution for the future of SRDs. It may be one opportunity covering some SRD market applications. Nevertheless this has to be seen as a possible long-term exploration

that certainly, if launched, will require close Regulators' cooperation with Industry and ETSI.
(Unquote).

The RSPG Opinion promotes a kind of policy addressing the future in the direction of making spectrum available in frequencies higher to 40GHz and also encourages spectrum users to migrate to higher bands where frequencies are less congested.

EICTA wish to reiterate the operational SRDs market needs where the majority of hundreds of different family type applications have in common:

- peer to peer communications (even some time networked) with one or both sides mobile/nomadic;
- typical house/flat/office "single node" deployment = no repeaters or transponders involved (this because operational needs and/or cost implication);
- physical law indoor propagation that results in no-penetration of concrete wall at frequencies above 40GHz;
- more than most of applications are battery operated (one or both sides). Very high frequency (>40 GHz) technologies are high on power consumption, (even the most advanced ones), this makes it impossible to meet the SRD markets requirement for long battery life (>5 years).

EICTA therefore wish to make a clear warning to RSPG that the " > 40GHz" CUS/SRDs policy has to be definitely considered as long term exploratory approach and in any case for a specific market segment.

In the mean time EICTA recommends that the market requirements for more spectrum for SRD is taken into consideration in the CUS opinion of the RSPG.

At the time of considering additional CUS/SRD spectrum, then efficient and sharing conditions should be encouraged through a combination of spectrum access polite techniques & regulations of which some of them are already implemented and others need to be investigated and tested.

For example:

- Listen Before Talk with a dynamic threshold,
- Dynamic Frequency Selection associated to Cognitive Radio, etc. etc.

Two side remarks

On section 3.1 page 6 the sentence of first bullet point: *"- narrow band devices below 1 GHz such as model control, wireless alarms, hearing aids, radio microphones, medical, and biological applications, private mobile radio, industry telemetry, RFIDs."*

This should read "narrow and wide band devices"

Indeed there are a number of application types that are wide band such as radio microphones, audio systems, telemetry applications etc. etc.

On section 6.2 page 10 (third period) there is two times the word "*bandwidths*", it seems a mistyping. This should read: "*bands*".

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