

Motorola Response to the EU Commission Radio Spectrum Policy Group's Public Consultation on WAPECS.

15th September 2005.

Motorola is pleased to contribute to the public consultation on wireless access platforms for electronic communications systems.

Due to recent developments in the industry, wireless schemes are now predicted to take a greater than ever role in the provision of a very wide range of new and exciting services to citizens and enterprise users, providing as they do the opportunity for mobile solutions and value for money deployment of higher data rate solutions to locations not otherwise reached by adequate data rate wired connections.

The desired economic and social benefit achieved by ICT in the Community under i2010¹ can only be realised if the citizen-consumers and enterprise users are actually able to access the services they need in a manner that meets both their immediate need and is also convenient and easy to use. Thus Motorola considers that the uptake and use of services is actually predicated on the extent to which ubiquitous seamless access can be provided to the users of the content, applications and services they will need.

In consideration of the objectives for improved economic performance and the equalisation of regional development coupled with the strategies of competition, the ability of a user (and his or her connecting devices) to move easily and smoothly between locations and among technology platforms, facilities and networks, including during the course of a call or a download would appear to be highly desirable. This leads to the development of the concept of seamless access to one of Seamless Mobility which addresses the objective directly.

Motorola believes that Seamless Mobility will be a huge benefit to the Community and that the appropriate deployment of services will be an essential initial step towards the i2010 goals. Without such access arrangements the content and service industries may never consider they have sufficient incentive to create all the services and applications that will drive the economic gain. The provision of adequate spectrum in appropriate bands to support the objectives of i2010 is thus a critical factor in the economic success of the Community.

¹ The i2010 initiative is clearly a critical component in the future economic well-being of the Community. It is founded on the three principles of innovation, inclusion and investment. Innovation can often be assumed to happen in any case once a market is clearly attractive. Inclusion can be significantly enhanced with improvements in the business case as can the level of investment. Thus, schemes having wide and cost-effective applicability and which offer appropriate and sustainable returns are most desirable for the effective implementation of i2010.

Key Points

1. Motorola strongly believes that regulation is needed to harmonise the regulation applied to the band across the entire Community.
2. Motorola is convinced that the ubiquitous deployment of Seamless Mobility solutions will facilitate the greatest creation, uptake and actual use of services, applications and facilities that will underpin the economic and societal benefits sought by the Community through i2010.
3. Motorola believes that exclusions will occur because the total amount of spectrum noted in the consultation is insufficient to support the necessary services to all the citizen-consumers and enterprise users.
4. Motorola is firmly of the belief that the greatest uptake of services will occur when the reliability of the access network is maximised. Thus it is likely that licensed spectrum is to be very much preferred over licence-exempt for applications where a defined service level is essential. Licence-exempt spectrum will nevertheless provide excellent service in other applications.
5. In the event that differing technologies are deployed we urge that credible analyses are conducted in advance of deployment to ensure that harmful interference does not occur. Mechanisms to do the analyses efficiently might be a worthwhile role for specific SDOs
6. Motorola is keen to stress the importance of providing a stable situation to encourage innovators to create the delivery mechanisms that will yield the benefits sought under i2010. Therefore changes to the spectrum arrangements must be done in a manner that removes as much uncertainty as possible and should not undermine commercial confidence.

General Comments

Motorola notes that not all systems are the same. Some technologies (or technology families) have the capability of carrying different content services and applications more efficiently than others; different technologies being targeted at the efficient carriage of different services.

The choice of access mechanism is undoubtedly affected by the availability (or lack thereof) of substitute services² for the citizens or enterprise users. As much of the value-add to the end user comes from the convenience aspect and from the mobility (or at least 'nomadicity'), the applicable substitute service must also be wireless based. The key requirement is therefore on the availability of additional suitable alternative spectrum upon which to support the substitute service and also on the regulatory symmetry between the two services. At this time there is little certainty that alternative spectrum will be available and even if it does become available whether the regulatory asymmetry³ will be problematic. Thus unless action is undertaken at this stage, there may be concerns over competition issues.

² For a comprehensive analysis of Regulatory Asymmetry, Substitute Services and the Implications for Regulatory Policy, with particular reference to the associated costs of such asymmetry and relating to the telecoms industry, see OECD Document DAF/COMP/WP2(2005)3; 9th May 2005.

³ We are aware of the discussions in progress in relation to the 3.5GHz band. This band may be defined to be for fixed services only and so the regulation will prevent its use for Seamless Mobility.

When deploying a variety of different technologies the need to perform credible interference studies in advance of the deployment becomes critical. We maintain a strong belief in this essential step prior to the deployment of the alternative technology.

Specific Questions

Q.1 Do you agree with this operating definition of WAPECS? Do you consider that the WAPECS concept should include spectrum intended for private, as well as public, applications?

Motorola supports the current wording of the definition of WAPECS under the assumption that the definition of ‘electronic communications services’ is taken from Directive 2002/21/EC Article 2c. This also implies the corresponding understanding of the term ‘public communications network’ to be taken from Article 2d of the same Directive.

In view of the likely future developments in the market regarding the provision of small cells to provide coverage in very constrained localities and that these could well be best deployed in a self-provide model, we strongly believe that private wireless access systems should also be included in the scope of WAPECS. However, we agree that some wireless schemes, although extremely important to the economic well-being of their users, are not arranged for uses such as access⁴ and as such should not be included in the scope.

Q.2 Do you consider that the term “platform” should be more closely defined? If so, what definition do you propose?

The term “platform” should be left as a generally useful term. We see little benefit in adopting it as a term having a regulatory significance. This is because it is likely that being able to provide a substantive definition that would be useful over the next few years would be a very difficult task.

Q.3 What, if any, constraints should there be on the provision of services using spectrum primarily in the broadcast domain?

Spectrum in the broadcast domain should be left as defined for down-link purposes only unless a large amount of it should come available at one time. The amount that should be considered for bi-directional traffic would have to be big enough to allow the efficient provision of the service within the assignment and also provide adequate guard bands.

Q.4 What specific rules should be introduced or maintained to safeguard the delivery of Services of General Economic Interest in

⁴ PMR as an example

the future? Is it most appropriate to deal with these issues through the regulation of spectrum, or through other instruments such as competition law or state aid policy?

This question, together with questions 6 and 8 are the most important in the consultation.

The quality and availability factors of the delivery of Services of General Economic Interest (SGEI) must be as good as possible to encourage uptake and use of services. This is critical for the success of i2010. Whilst these may be addressed through regulation other than spectrum, the spectrum arrangements and quality has itself has a major impact on what can be achieved. What is required is that the spectrum used to deploy services of general economic interest should be as free from interference as possible and have the best propagation characteristics into the desired terrain to maximise the probability of successful data reception with an economically sustainable network.

Thus spectrum regulation must be towards large allocations of licensed spectrum having defined interference characteristics and with sound compatibility controls. The use of licence-exempt or unlicensed spectrum for SGEI services as important to the Community as these will become might well be limited to applications which require lower grades of service, availability or other quality measures. There may in fact be many of such services for short-range applications but for services upon which citizens will come to depend, having a good service level agreement may prove invaluable.

The transition period during which spectrum arrangements are changed will need careful handling and may even be on a case-by-case basis. This appears to represent a very significant body of work for regulators going forward.

Q.5 How do you think changes in spectrum policy will impact on the requirement for standardisation? What policy will best ensure the timely availability of standards?

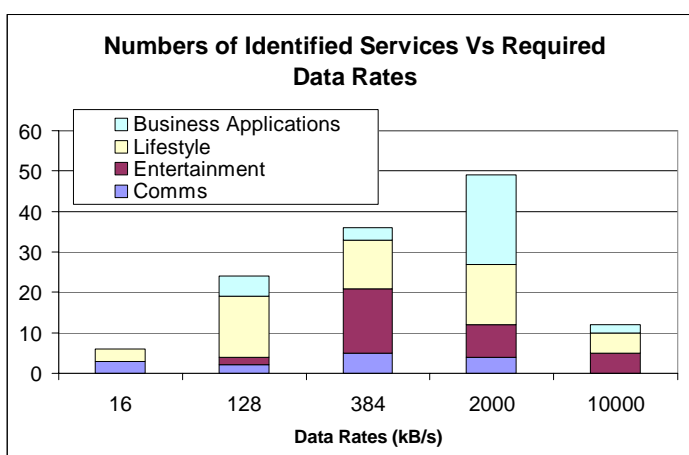
It is noted that once the spectrum arrangements have been defined and the rules set, the regulatory requirement for equipment standardisation will be much diminished. However, it is believed that Standards Bodies may need to increase their focus on creating mechanisms and procedures whereby technical compatibility of new technologies can be more efficiently undertaken. They would in some respects provide a form of arbitration between parties. This would avoid the current position in which despite technical analyses being undertaken (sometimes at great cost), a final resolution is often difficult to achieve due to different criteria and methods being used⁵.

Q.6 Are there any other challenges that the RSPG should consider?

⁵ For example, extreme worst case scenarios are often used as assumptions in technical analyses with the objective of preventing the deployment of competitive systems.

In section 2c of the consultation document a list of mobile spectrum is given that is currently considered as being suitable for WAPECS. We note that there may well be the additional question that even within the bands selected by the questionnaire, the amount of spectrum actually available (even in the long term) could be significantly less than indicated in the list. Furthermore, there are some key bands not included such as bands in the region of 3.5GHz to 5GHz which may be used on a case-by-case basis.

The EU Commission recently published the outcome of research into future needs for services⁶. The report concluded that future the available data rate that will be needed to support services, the sheer number of different services and also the amount of use of services was extremely high. The graph opposite shows a simple analysis of the results for the services that will be demanded going forward. The graph plots the number of services identified by the research against the net data rate advised as being necessary in order to adequately support the delivery of the service. The services are further classified in the groupings of business, lifestyle, entertainment and communications. Motorola does not believe that the bands in the list of section 2c are anywhere near adequate to support this level of demand and so, unless further bands are identified, spectrum will be a limitation on the success of i2010⁷.



Q.7 What is your view on the long term policy goals mentioned above and more specifically on how to achieve the right balance between “minimising and harmonising constraints” presented under point 9?

The stated “challenges for European regulators” (section 3.4 (i) to (iv)) appears to be an excellent approach. We agree that the four subjects are definitely necessary. We would also contribute that an additional challenge related to ensuring the arrangements for assessment of technical compatibility (and even enforcement) so

⁶ Data for this graph has been taken from The Report on Fixed Mobile Communications Markets and Services - Appendix G1. See <http://fms.jrc.es/pages/documents.htm>

⁷ A comprehensive analysis of future spectrum demand has been conducted by the UK Government in association with their Audit of Government Spectrum Holdings. The findings indicate extremely large additional spectrum requirements to support future needs. See <http://www.spectrumaudit.org.uk/010905.htm>

that decisions can be made economically and quickly is equally important going forward.

As noted above, the list of bands in section 2c appears incompatible with i2010 due to the total amount of spectrum being insufficient. This therefore presents a difficulty in actually addressing having adequate amounts of spectrum (challenges (i)). Spectrum bands in the order of hundreds of MHz should be considered for WAPECS.

Motorola is slightly concerned by the emphasis placed on a balance between minimising regulation and harmonisation. At the spectrum level, it is perfectly possible to define spectrum regulations in a manner making it suitable for the carriage of broadband services (say) and not define the technology in any way. The harmonisation would then proceed on the basis of market dynamics relating to the economies of scale. Thus we do not see 'minimising regulation' as being a counter-position to 'harmonisation' in the matter of spectrum. We see we need both.

With regard to other subjects beyond spectrum we do see this being a more serious issue.

Motorola emphasizes that harmonization of spectrum (from a technical standpoint) and exclusive designation of use are different issues and should not be confused.

Q.8 Are there any other long term policy goals that the RSPG should consider?

Motorola takes this opportunity to again stress the importance of the provision of adequate spectrum for the achievement of i2010.

In consideration of this it may be necessary to examine bands in other regions of the spectrum. Perhaps in some cases an examination of the spectrum currently allocated to military users may be beneficial.

Motorola especially supports the statement in the consultation in relation to single market cohesion. In markets where the prime goal relates to the widest possible uptake of services and facilities, this is very important.

Q.9 Do you think that these steps form an adequate basis for achievement of the European objectives in this area? Are there any other steps that are required?

Motorola supports the actions proposed (section 4.11) as being necessary. However we do not agree that they are adequate. The actions appear to be limited entirely to the list of spectrum and as noted above we believe these to be insufficient to support i2010.

Therefore, we propose that the greatest emphasis be placed on actions leading to the identification of additional spectrum sufficient to support the delivery of the services and facilities that will lead to the benefits for the Community foreseen by i2010.

Questions on this response should be addressed (in the first instance) to:

Tim Cull

Motorola Ltd.