RTÉ RESPONSE TO QUESTIONS POSED BY EU RSPG

Introduction

The views contained in this *Response Document* concentrate on digital terrestrial broadcasting, and do not directly address the digital satellite or digital cable delivery platforms, although these latter have a very important role in the commercial viability of digital terrestrial broadcasting in some Member States. Digital terrestrial television is specifically addressed because the 'spectrum dividend' is assumed to refer chiefly to the closure of the analogue television services in the VHF and UHF broadcast bands and the replacement of these services by digital ones. There is a lesser 'spectrum dividend' to be gained from the conversion of analogue radio services to digital ones, because the amount of spectrum occupied by the radio services is much less than that by the television ones. Analogue television services occupy over 450 MHz of spectrum in the VHF and UHF broadcast bands: analogue radio (FM) services occupy about 20 MHz of spectrum in VHF Band II.

In some Member States, digital terrestrial radio and television broadcasting is already established, and these Member States are in a position to benefit from any spectrum dividend that may arise from the closure of their analogue television services. In other Member States, digital terrestrial broadcasting is only at the planning stage, and no commencement date, or switchover date, for these services has been set.

Thus switchover to digital terrestrial broadcasting will, in the absence of an EU-mandated transition time-scale, proceed at different rates in the various EU Member States. The different pace of change may depend on a number of factors, such as:

- The Government of the Member State.
- The population of the Member State.
- The ability of the individual broadcasters in that Member State to fund additional material in order to make the digital terrestrial offering attractive to the public.
- The willingness of the public to invest in new receivers for the digital terrestrial services, given that in some Member States there may not be many additional programmes.
- The cost of the domestic receivers for the digital terrestrial radio and television services.

Question 1

How can co-ordination between Member States on spectrum management, at bilateral and EU level, contribute to a quick and efficient switchover?

Co-ordination between Member States on spectrum management, at bilateral and EU level, is an essential contribution to a quick and efficient switchover.

The switchover from analogue to digital broadcasting concerns not only technical and engineering issues, but also addresses a political process of reviewing the utilisation of the broadcasting spectrum. Different paces of transition across member States, and the necessity for simulcasting will inevitably complicate this process, so it is important to address potential politically sensitive issues, which might affect the switchover timetable. Among those issues to be addressed are: (a) the question of achieving equitable access to the spectrum; (b) the method of protection of the conversion of analogue assignments; and (c) whether limits would need to be set on the power of the digital assignments.

Question 2

In particular, what would be the added value from EU co-ordination ahead of the Regional Radio Conference starting in 2004 and other international negotiations?

EU co-ordination ahead of the Regional Radio Conference starting in 2004, and other international negotiations, would be essential in enabling the EU to establish general policy and guide the European Conference of Postal and Telecommunications Administrations (hereafter CEPT) in its work. It is important for the formulation of cohesive policy framework, to ensure that issues are thoroughly debated and understood in advance of the RRC meeting.

Question 3

Are greater transparency and technological neutrality of spectrum assignment, notably through valuation and market tools, instrumental to switchover?

Greater transparency and technological neutrality of spectrum assignment, notably through valuation and market tools, will contribute significantly to the formulation of policy regarding switchover.

The existing Stockholm Agreement (ST61) that governs the planning and co-ordination of analogue television in the European Broadcasting Area (EBA) will have been in force for over forty-five years by the time it is replaced. It is therefore likely that the new plan for digital television that will be drawn up by the Second Session of the RRC as a replacement for most of ST61 will also have an extended life-time – perhaps at least thirty years.

In the period that the new plan will be in force, there will inevitably be many technological changes in broadcasting (many more than in the time that ST61 has been in force), and the new plan must be sufficiently flexible to cope with these advances.

Valuation and market tools provide valuable information about viewers' preferences. Such information is important for all countries as they prepare for switchover. The value of public service broadcasting cannot only be measured in monetary terms, of course, as free-to-air, universally accessible broadcasting is part of the social and cultural fabric of western democracies.

Question 4

What will be the 'spectrum dividend' from switch-off, and how should this be allocated to specific services?

Convergence between information and communications technologies, media and broadcasting technologies is fast becoming a reality, with, for example, a single mobile device able to provide both connectivity to telecommunications networks and receive digital TV and radio signals. Such applications are becoming very attractive for citizen-consumers, and this paradigm shift will change priorities for the relevant markets. To achieve the 'digital dividend' and establish the much-referenced 'information society', making spectrum free for other purposes could be crucial to the digital strategies of the EU Member States.

Current thinking in those Member States that have commenced digital terrestrial television broadcasting is that picture quality equivalent to that of a good analogue picture is adequate. This allows for four or five digital television programmes to be transmitted in one channel that previously carried one analogue television programme. Up to six channels are transmitted from each transmitting station, giving the viewer the choice of between twenty and thirty digital television programme services

This may not hold true in the indefinite future. Already, large displays are becoming commonplace and within the next five years flat panel displays are likely to outsell the conventional cathode ray tube (CRT) ones. Flat panel displays require higher bit-rate than CRT displays if visible artefacts are to be avoided: at present, DVDs can give better picture quality on flat panel displays than terrestrial transmissions, and the public is fact coming to regard 'DVD quality' as a requirement. This means that broadcasters will have to allocate higher bit-rate to each programme: fewer programmes (perhaps two or three) can thus be accommodated in a channel. If it is required to maintain the same number of programme services, additional channels will have to be made available.

The introduction of High Definition Television (HDTV) is also within the likely life of the new Plan that will be produced by the RRC. HDTV will need an even greater bit-rate per programme service than will flat panel displays; with current compression algorithms, only one HDTV programme can be accommodated in a channel. However, it is likely that improved algorithms will become available – these may allow for two HDTV programmes to be fitted into one channel. There is a viewpoint that HDTV requires too much spectrum to be implemented on the terrestrial platform, and that it should be restricted to the cable and satellite platforms. This is a question of policy and the RSPG is a good forum in which to debate this subject.

If the 'spectrum dividend' is calculated assuming that four or five programme services are fitted into one channel, then it is potentially high. The viewer can be given a much greater choice of terrestrial programmes than at present with analogue television, and considerable spectrum can be released for use by other services.

If, however, the public starts to demand higher picture quality (having experienced it from DVDs), then either:

- the number of terrestrial television programmes will have to be reduced, or
- a more efficient compression algorithm will have to be introduced (giving 'legacy' problems with existing receivers), or
- less spectrum will be available for release.

If HDTV is introduced at some time in the future, the 'legacy' problem will not exist as the HDTV receivers will not be compatible with existing receivers. However, HDTV will always require more spectrum than standard definition television, thus reducing the potential for spectrum release.

Question 5

Does convergence require more flexible allocation mechanisms than traditional ones, which tightly link frequency bands and individual communication services according to ex ante decisions?

Convergence does require more flexible allocation mechanisms than traditional ones, which tightly link frequency bands and individual communication services according to *ex ante* decisions. However, it should be possible to allow for technological developments in the next twenty to thirty years by having suitable mechanisms in the Final Acts of the RRC Agreement.

These mechanisms could be based on the 'Article 4' procedures of ST61 – these have allowed ST61 to cope with the implementation of many thousands of relay stations that were not included in the ST61 Plan, or the introduction of colour television and advances in analogue television transmission technology (e.g. precision offset of carrier frequencies).