Ericsson's response to Ofcom's Digital Dividend Review consultation of 6th June 2008

Introduction

Ericsson welcomes the opportunity to respond to this consultation. A short discussion of Ericsson's views on general issues arising from the award of the digital dividend spectrum is set out below, followed by more detailed responses to Ofcom's specific questions.

General aspects

Ericsson appreciates having the opportunity to express its views and concerns on the effective use of the radio frequency spectrum in the digital dividend range released by the switch-off of analogue television broadcasting, for mobile communications and other possible usage.

In the UK, IMT-2000 (3G) subscriber numbers, traffic and coverage are increasing strongly using higher frequency bands; however, some remote areas in the UK still have limited access to these mobile broadband services. Therefore, there is a need for very cost effective IMT-2000 coverage solutions using lower frequency bands. The UK public mobile communication sector is widely acknowledged to contribute strongly to the UK GDP. Therefore, if more radio frequency spectrum in the digital dividend range could be allocated to this communication sector, these contributions will increase. The spectrum released through digital switch-over in the this range will be very beneficial to the UK, potentially supporting a range of new and innovative services of benefit to millions of people through day to day use of services based on IMT-2000, and, in the future, IMT-Advanced. Some of the many technologies provided under the IMT-2000 standards such as the high speed packet access (HSPA) standard and its long term evolution (LTE), are considered to be the most rapid and innovative technologies, available to the general public now and in the near future, having already attracted more than 190 million users worldwide and with mobile broadband (HSPA) networks deployed in more than 70 countries.

Some principal views on spectrum usage in the Digital Dividend range

It is Ericsson's view that the spectrum in this range is an essential and unique national resource. This national resource should in particular be used to provide for the mobile broadband communication needs of the general public, as well as providing for inclusion of those living in remote and less densely populated areas.

Further, the digital dividend range is very suitable for mobile communication usage compared to other "less mobile" uses, and could offer high capacity over large geographical areas with relatively few base stations, providing for affordable service offerings compared to services delivered at higher frequencies. Lower frequency bands offer longer-range radio wave propagation characteristics than higher frequency bands and therefore would allow IMT-2000 coverage with a reduced number of base station sites.

Accordingly, some basic views in regard to band 470 – 862 MHz:

• Spectrum allocated to public mobile broadband communication uses, such as IMT-2000, are subject to demanding subscriber expectations, thereby creating the highest level of incentive to use the spectrum resources efficiently;

- This spectrum represents some of the best bands for IMT-2000 public mobile communications services;
- Harmonisation of a sub-band with other countries for IMT-2000 use across Europe would improve the spectrum efficiency, in terms of administrative, technical and economic efficiency, particularly with regard to usage in border and costal areas.

Ericsson is of the view that some current services such as:

- mobile television and multimedia services;
- fixed wireless access;
- wireless broadband;
- transport and road traffic;
- PMR;
- emergency;
- education and healthcare, and
- defence related communications,

could be provided over public mobile communication networks using standardised IMT-2000 networks. Such usage would reduce the pressure on dedicated spectrum for these services.

In further exploiting the possibilities for the distribution of media content and the current trend of significant high speed data traffic uptake in mobile broadband networks, Ericsson's assessment is that the digital dividend in the UK could, in the longer term, be extended.

Broadcast television could be distributed through wide range methods

Ericsson is of the view that the needs of providing both local and national television program channels could be satisfied with combinations of different distribution methods, including Band III VHF DTV, Band IV UHF DTV, xDSL, fibre, cable systems, satellite, and in addition through public mobile communication networks using IMT-2000 and IMT-Advanced.

Ericsson is convinced that the 3rd Generation Partnership Project (3GPP) specified "Multimedia Broadcast and Multicast Service" (MBMS) for IMT-2000, could satisfy many needs for distribution of broadcasting television content, including local television programs. The IMT networks are expected to deliver mobile television multimedia services, both own-network and in cooperation with other television delivery methods, such as in cooperation with terrestrial digital television networks.

The particular value of spectrum harmonisation

It is widely understood that the particular values of the GSM as well as the IMT-2000 "Core" bands can be referred to the fact that they are internationally harmonised. Harmonisation of the spectrum will lead to optimal allocation of spectrum for service providers and consumers. Ericsson is aware of moves in Europe to harmonise the spectrum allocations for mobile services in the 790MHz - 862MHz range and considers complying with such harmonisation to be essential to deliver maximum value for citizens and consumers.

Responses to specific questions

Question 1: This executive summary sets out our proposals for the Digital Dividend Cleared Award. Do you agree with these proposals?

Ericsson generally supports the release of additional spectrum which can support valuable services such as public mobile communication networks using standardized IMT-2000 and IMT-Advanced technologies.

Question 2: Do you agree with our proposal to include the interleaved spectrum in channels 61 and 62 in the cleared award?

Yes, although full national availability would be preferred.

Question 3: Do you agree with our proposal not to allow licence-exempt use of channels 61 and 62 by cognitive devices?

Yes.

Question 4: Do you have any comments on our assessment of the most likely uses of the cleared spectrum and the amount of spectrum required for these services? Are there any other potential uses that we should consider?

Ericsson broadly agrees with the assessment of the possible range of uses, but believes that the greatest value would be realised by maximizing the amount of the cleared spectrum that is used for mobile services.

Question 5: Do you agree that we should proceed with our current timetable, with a view to holding the cleared award in summer 2009?

Ericsson supports the earliest practicable release of spectrum that can be used for valuable services such as mobile voice and mobile broadband.

Question 6: Do you have any views on the appropriate notice period for temporary PMSE access to channels 63-68, and/or on whether or not extend temporary access to channels 31-40?

No comment.

Question 7: What are your views on deferring the start date for rights to use cleared spectrum in London to help meet the need for wireless microphones and other audio links for the London 2012 Olympic Games and Paralympic Games?

Question 8: Do you agree with the use of SURs as the approach for defining consistent TLCs for this award?

Ericsson considers that a move away from the current proven approach to interference control based on reference to international standards and agreements, towards the unproven concept of spectrum users' rights, would be misguided.

Control of interference and successful coexistence of different technologies and services is best achieved by reference to standards produced by the appropriate internationally recognised standards bodies and also by references to Recommendations and Decisions of CEPT/ECC and ITU.

This approach ensures that spectrum use is harmonized on both sides of geographic boundaries, and that different systems are standardised and carefully assessed against each other from a coexistence point of view.

Question 9: Do you have any comments on the SUR parameters listed in Tables 5.1 to 5.5 and the assumptions used to derive them?

No comment.

Question 10: Do you agree with our proposals for managing interference between new services in the DDR cleared spectrum?

As we explained at some length in our previous response to the Ofcom consultation "Award of Available spectrum 2500-2690MHz, 2010-2025MHz and 2290-2300MHz" in 2007, we do not believe that the use of limited sized guard bands is sufficient to ensure no interference between adjacent FDD and TDD channels; and certainly the DDR spectrum is not large enough to accommodate both TDD and FDD with necessary guard bands in a national channel arrangement. Ericsson recommends the use of FDD due to the inherent advantages compared to TDD.

Question 11: Do you agree that the most efficient and effective means of preventing interference to the existing DTT services is by the addition of a protection clause to licences in the cleared spectrum? If not, what alternative approach would you suggest?

No comment.

Question 12: Do you agree that the best way to finalise the protection clause approach and to address the practical implementation issues is through direct engagement with interested stakeholders? With which stakeholders should we engage?

It is essential that the mobile wireless industry is engaged.

Question 13: What do you believe would be the implications of protecting indoor/settop antennas? Should a distinction be drawn between set-top antennas and larger antennas designed for external reception of TV signals that are loft-mounted?

No comment.

Question 14: Do you agree with our proposals for managing interference between new and existing users?

No comment.

Question 15: Do you agree with the proposed propagation models and databases to be used for compliance assessment?

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Question 16: Do you have any comments on the transmit masks set out in paras 5.128 to 5.130?

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Question 17: Do you agree that where the cleared spectrum is used for the operation of a DTT multiplex, we should replicate the ownership restrictions from the Broadcasting Act regime relating to (a) local authorities, (b) political bodies, (c) religious bodies and (d) bodies exerting undue influence but not replicate restrictions relating to (e) broadcasting bodies and (f) advertising agencies?

Question 18: Do you agree that we should facilitate interoperability between existing DTT multiplex operators and new operators using cleared spectrum?

No comment.

Question 19: We welcome views on the relative merits of such an approach to information provision; in particular concerning the type of information that may be helpful and any impacts that publication of information might have both on licence holders and the wider spectrum market.

No comment.

Question 20: Do you agree that the cleared award should include both 8 MHz lots for DVB-T and MMS TLCs and 5 MHz lots for FDD and TDD TLCs across the band?

Ericsson agrees with Ofcom's proposal to package spectrum as lots of 5 MHz. Ericsson believes that the value of the digital dividend spectrum would be maximized by using it for mobile services, in particular broadband mobile services. These services can operate in 2x5MHz, 2x10MHz and 2x20MHz spectrum blocks, will require 2x20MHz blocks per operator to achieve the highest transmission rates.

Question 21: Do you agree that the cleared award requires a mixture of frequencyspecific and frequency-generic lots to be offered in the auction?

Ericsson believes that the greatest value would be realised by maximizing the amount of the cleared spectrum that is used for mobile services.

Question 22: Do you agree with the proposed outline definition of lots suitable for MMS, DVB-T, TDD and FDD applications?

No comment.

Question 23: Should the flexibility to bid for lots defined on both fixed and variable frequency rasters be preserved in the auction? If not, which are preferred?

No comment.

Question 24: Do you agree with the proposed basis for awarding Channel 38 as a distinct lot in the auction?

Yes.

Question 25: Do you agree with the proposed structure of frequency rules for allocating different licence types in the auction? Are there any amendments that would improve the efficiency of spectrum allocation via an auction?

No comment.

Question 26: Do you agree with our proposal to proceed on the basis of UK-wide lots?

Yes, Ericsson believes it is essential that spectrum allocation allows the further development of UK-wide mobile broadband services.

Question 27: Do you favour including the available cleared spectrum in (a) Guernsey and (b) Jersey in the geographic coverage of the licences to be awarded? If not, what approach do you favour instead?

Yes.

Question 28: Do you agree that the combinatorial clock auction is the most suitable auction design for the cleared DDR award?

No comment.

Question 29: What potential simplifications, if any, could be made to the proposed lot structure for DVB-T, MMS, TDD and FDD lot categories which would still reflect the most important differences in value between lots?

No comment.

Question 30: Do you have any comments on our proposals for the Application and Qualification Stages of the combinatorial clock auction for the cleared DDR award, including our proposals for initial deposits?

No comment.

Question 31: Do you consider that it is important to distinguish relative weightings in advance between the eligibility points of the different 1 MHz blocks available in this award? If so should this be restricted to channels 36, 38, 61 and 62 and what do you consider these relative weightings should be?

No comment.

Question 32: Do you have any views on whether an ex ante eligibility points activity rule or a revealed preference activity rule should be used in this award?

Question 33: Do you have any views on whether there should be restrictions on bidders' ability to bid on multiple technical licence types within single package bids or between different rounds of the auction and whether bidder association rules should potentially be adjusted to cater for any such restrictions being imposed?

No comment.

Question 34: Do you have any further comments on any aspect of our proposals for the Principal Stage of the combinatorial clock auction for the cleared DDR award?

No further comments.

Question 35: Do you have any comments on any aspect of our proposals for the Assignment Stage or the Grant Stage of the combinatorial clock auction for the cleared DDR award?

No comment.

Question 36: Do you agree with our approach to assessing whether the award of cleared spectrum fully promotes competition and efficiency?

No comment.

Question 37: Do you have particular concerns about possibilities for award outcomes to fail to fully promote competition in downstream markets or to result in inefficient use of spectrum? If so, please explain what these are and provide supporting evidence.

No comment.

Question 38: Do you agree with our view that we should introduce a general safeguard cap aimed at promoting diversity of spectrum holdings? Do you have views concerning the level of such a cap?

Concern over possible outcomes resulting from the use of this spectrum for mobile services should not give rise to constraints that artificially constrain the development of high bit rate mobile broadband services.

Question 39: Do you agree with our proposals to include an information provision licence condition to help facilitate efficient secondary trading?

Question 40: Do you agree with our view that we should not apply any other general remedies in the cleared award?

No comment.

Question 41: Do you agree with our identification of the three areas requiring further attention?

Concern over possible outcomes resulting from the use of this spectrum for mobile services should not give rise to constraints that artificially constrain the development of high bit rate mobile broadband services.

Question 42: Do you agree with our assessment that the limitations on the amount of cleared spectrum available for mobile broadband applications, and the particular advantages of sub 1GHz spectrum, could result in an outcome where there are limits on the level of competition possible in the provision of these services?

Concern over possible outcomes resulting from the use of this spectrum for mobile services should not give rise to constraints that artificially constrain the development of high bit rate mobile broadband services.

Question 43: Do you think that a soft spectrum cap on either (a) the cleared spectrum suitable for mobile broadband applications alone, or (b) the holding of any sub 1GHz spectrum suitable for mobile broadband applications, which would trigger action if a significant competition concern emerges in relation to the market structure in the future mobile broadband market, could be an appropriate approach to these concerns?

The concern over possible outcomes resulting from the use of this spectrum for mobile services should not give rise to constraints that artificially constrain the development of high bit rate mobile broadband services.

Question 44: Do you agree with our assessment that issues in the pay TV market are not at this stage primarily an issue for the cleared award?

No comment.

Question 45: Do you agree with our initial assessment that we should not intervene further in the cleared award to remedy any potential impact on competition resulting from the holding of cleared spectrum by NGW/Arqiva?