



ERICSSON'S COMMENTS TO THE 3G PUBLIC CONSULTATION PAPER



ALLOCATION OF 3G SPECTRUM IN THE 1900/2100 MHz FREQUENCY BAND



1 **Distribution List**

Receiver

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2 Ericsson's Comments to the 3G Public Consultation Paper: ALLOCATION OF 3G SPECTRUM IN THE 1900/2100 MHz FREQUENCY BAND

2.1 Question 1

IDA invites views and comments on whether IDA should make available the remaining 2 x 15 MHz of paired spectrum in the 3G Band in three separate lots.

Ericsson's Comments:

Ericsson has the understanding that the band 1920 – 1980 MHz paired with the band 2110 – 2170 MHz, where implemented, is without exception used for the deployment of mobile communication systems based on the 3GPP and 3GPP2 (third generation partner projects) specifications for the provision of mobile broadband services in countries. The increase in number of subscriptions, together with a significant traffic growth on the mobile broadband market, is currently presenting a significant challenge to national spectrum managers in any country as well as on the evolutions of the 3GPP technologies, requiring continuous developments towards the very high data rates and advanced services.

Therefore, the key aspect of future spectrum management is to assess and recognize the need for the advanced mobile broadband technologies and services and the associated need for contiguous spectrum lots. Subsequently, it is suggested to consider licensing the spectrum in as large as possible lots. The particular situations in Singapore could perhaps be addressed in the following way, subject to the national situation and interests of the current operators in the band.

The remaining band of 2 x 15 MHz could be divided among and licensed to the current operators in 2 x 5 MHz lots to further stimulate the mobile broadband roll-out in Singapore.

Any applied regulatory condition should not bar the operators on a voluntary basis to consider re-arranging the current allocations towards contiguous 2 x 20 MHz lots per operator, if agreeable, providing improved opportunities for the very high data rate mobile broadband services in the future.

2.2 Question 2

IDA invites views and comments on the technologies that are developed for use for the unpaired spectrum. IDA also invites views on the demand for the unpaired spectrum. In particular, do you agree with IDA's assessment to reserve the unpaired spectrum for experimental, temporary and trial use to facilitate innovation?

Ericsson's Comments:

Ericsson has the understanding that the spectrum is better suited for future IMT services and should so remain; however, Ericsson recognizes the coexistence issues involved, of having the uplink band 1920 – 1980 MHz immediately adjacent to the unpaired band 1900 – 1920 MHz. If an unpaired operation would be licensed a guard band of the order of 10 MHz might be necessary between 1910 – 1920 MHz for uncoordinated operations, but further studies would be required to consider the relevant coexistence situation subject to such usage.

Therefore, a possible new idea that iDA could consider would be to propose to the next APT/AWF meeting, with the aim of seeking international harmonization, to exploit the possibility of pairing the spectrum 1900 – 1920 MHz (uplink) with the band 2090 – 2110 MHz (downlink) to find a longer-term mobile broadband solution for increasing demands and the involved coexistence issues.

The band 1900 -1920 MHz could be considered either for new IMT usages, or a new pairing arrangement with the band 2090 – 2110 MHz, subject to national situations:

- 1) to resolve the coexistence and interference issues involved
- 2) to provide for the future evolutions of mobile broadband services
- 3) international harmonization needed.

Using the band 2090 – 2110 MHz for mobile broadband would remove any need for guard band to protect space operation below the frequency 2110 MHz.

Please refer to Figure 1 (Page 6).

2.3

Question 3

IDA invites views and comments on the proposed auction parameters including the auction format. Do you agree with IDA's proposal to adopt the combinatorial auction format based on a one-time sealed bid submission if the number of potential bidders is small?

Ericsson's Comments:

Ericsson has the view that the price of spectrum payable by operators should be kept to the minimum possible level so that more attractive and affordable services could be provided for consumers.

2.4

Question 4

IDA also invites views and comments on whether any guard band should be provided between the 3 lots of 2 x 5 MHz spectrum and the amount needed to manage potential interference.

Ericsson's Comments:

Please see our response to Question 1.

Guard bands between different paired operations are not necessary.

Ericsson has the view that Singapore could consider moving the usage up and above the frequency 1979.7 MHz and 2169.7 MHz respectively as the Mobile Satellite Service (MSS) above 1980 MHz has no or very limited interest in Singapore according to our understanding. Therefore, it is suggested to consider making available three equally sized lots of 2 x 5 MHz. Please refer to the table below as one possible way of updating Table 1 of the consultation document.

Table 1

Available lots	Lower Band (MHz) uplink	Upper Band (MHz) downlink
A	1964.9-1969.9	2154.9-2159.9
B	1969.9-1974.9	2159.9-2164.9
C	1974.9-1979.9	2164.9-2169.9

The extended channel lot C would provide an equal amount of spectrum for all the 2 x 5 MHz channel lots and an additional 200 kHz of guard band would be necessary to apply above the frequency 1980 MHz. Any need for additional guard band between mobile broadband and MSS could be applied above the frequency 1980 MHz and 2170 MHz respectively as to acquire a lot of 2 x 15 MHz or three lots of 2 x 5 MHz. This is not expected to have a major impact on usages in Singapore if MSS usages are very limited, if any.

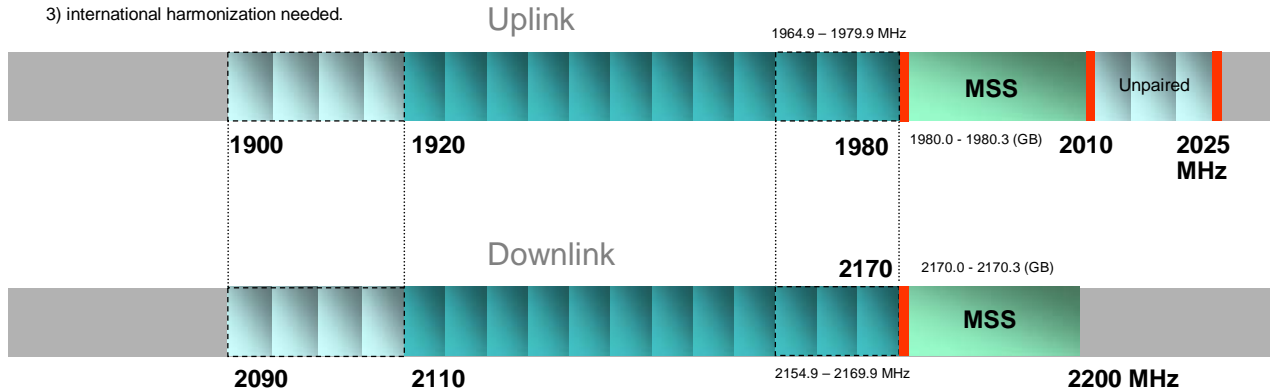
Please refer to Figure 1 (Page 6).

Possible arrangements of the IMT “Core” band in Singapore

The band 1900 -1920 MHz could be considered either for new IMT usages, or a new pairing arrangement with the band 2090 – 2110 MHz, subject to national situations:

- 1) to resolve the coexistence and interference issues involved
- 2) to provide for the future evolutions of mobile broadband services
- 3) international harmonization needed.

Any need for an additional guard band between mobile broadband and MSS could be applied above the frequency 1980 MHz and 2170 MHz respectively as to acquire a lot of 2 x 15 MHz or three lots of 2 x 5 MHz.



Using the band 2090 – 2110 MHz for mobile broadband would remove any need for guard band to protect space operation below the frequency 2110 MHz.

Figure 1