

# **Orange Group reply comments**

on the responses to the

Memorandum Opinion and Order and  
Further Notice of Proposed Rulemaking

(MO&O and FNPRM /FCC 01-224)

received by

**Federal Communication Commission**

November 5, 2001

The Federal Communication Commission received a number of comments on additional options and their potential to work in conjunction with the previously identified options in the NPRM concerning new advanced terrestrial wireless services.

This round of the US consultation process was also very successful and demonstrates the importance to study deeply a complete set of options before taking the final decision on the possible use of frequency bands below 3GHz to support the introduction of new advanced terrestrial wireless services, including third generation.

We have reviewed the answers made by all responders and we would like to make the following comments :

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| 1 | <p>The majority of responders urges FCC <b>to reallocate the MSS bands for new advanced terrestrial wireless services</b>. The bands 1980-2010 / 2170-2200 MHz are identified world-wide in the RR for Mobile and for Mobile Satellite Services. These bands could complement the existing frequency arrangements in the WARC-92 Bands i.e. 1920-1980 MHz paired with 2110-2170 MHz where initial deployment of IMT-2000 is planned in most countries of Region 1 and Region 3. There are possibilities to achieve a certain degree of harmonisation with the following pairing : <b>the bands 1990-2010 MHz (four blocks of 5 MHz) paired with the band 2180-2200 MHz could be used for short-term introduction of IMT-2000 terrestrial component</b>. The use of duplex separation of 190 MHz would allow easier manufacture and design of terminal equipment which would enable economies of scale and global roaming.</p> |
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#### Cingular Wireless LLC

“Cingular urges the Commission to make 2 GHz MSS spectrum a significant portion of any advanced wireless allocation. (...) The entire 70 MHz allocation should be revisited and reallocated for advanced wireless services (...) Specifically, Cingular proposes that the 1990-2010 MHz band be paired with the 2180-2200 MHz band and reallocated to advanced wireless services.”

#### AT&T WIRELESS SERVICES

“reallocation of all, or at least a portion of, the 2 GHz MSS band to terrestrial services, with licenses distributed to all interested parties through competitive bidding would result in a far more efficient use of scarce spectrum and all the corresponding public interest benefits that would entail.”

#### Verizon Wireless

“ (...) the Commission must identify and make available for use additional spectrum resources that will accommodate 3G and other advanced wireless services. The 1990-2025 MHz and 2165-2200 MHz bands, currently allocated to the Mobile Satellite Service (“MSS”), are ideally suited for such services”.

Ericsson

“Some MSS Spectrum should be reallocated”.

ARRAYCOMM

“The case for retention of 1990-2025 MHz/2165-2200 MHz for MSS is weak for a number of reasons. (...) ArrayComm urges reallocation of at least a portion of the 1990-2025 MHz band to advanced wireless communications, such as terrestrial 3G (...)”

CTIA

“In particular, as much as possible of the 1990-2025 and 2165-2200 MHz bands, which are currently allocated for Mobile Satellite Services (“MSS”), should be reallocated for services with more clearly demonstrated needs. (...) such a reallocation would provide a large block of contiguous spectrum for and promote the global harmonization of advanced wireless services.”

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| 2 | <p>Some responders <b>support possible use of the 1910-1930 MHz in the perspective of worldwide harmonisation</b>. The addition of this band to the studied options gives the USA manufacturers and operators the opportunity to achieve some of the benefits of the global roaming and economies of scale of terminal and infrastructure equipment. Taking care of compatibility issues with existing cellular and UPCS systems, 3G could be deployed in USA with <b>FDD mode in the 1920-1930 / 2110-2120 MHz</b> and with <b>TDD mode in 1910-1920 MHz in a harmonised manner with Region 1 and Region 3 countries</b>. It yields to spectrum block comprising 10 MHz TDD and 2x10 MHz FDD inclusive guard bands.</p> |
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Siemens

“The 1910-1930 MHz frequency band, now allocated for unlicensed PCS, should be used for implementation of 3G systems based on Time Division Duplex (TDD) and Frequency Division Duplex (FDD) technology. This would improve the ability of operators to serve the hot spots and would allow for the assignment of one or two operator licenses in line with global arrangements.”

Ericsson

The bands 1910-1930 MHz and 2390-2400 MHz are currently used for Unlicensed PCS (UPCS) and, to a lesser extent, Amateur Services. Ericsson supports the reallocation of these bands for new advanced wireless services.”

The Wireless Communications Division (“WCD”) of the Telecommunications Industry Association (“TIA”)

“It is imperative that any new services licensed in the 1910-1930 MHz band not result in harmful interference to/from existing PCS operations, neighbouring services and operators. The WCD supports the 1910-1930 MHz band for use by advanced services consistent with the aforementioned safeguards.”

- 3 It was **re-confirmed** in some responses that the **preferred harmonised scenario in the 1.8 GHz band** for new advanced wireless services success in USA is the following : **2 x 45 MHz at 1710 – 1755 MHz (up-link) paired with 1805 – 1850 MHz (down-link)**. Such a solution would maintain the transmit direction and the duplex spacing of 95 MHz used internationally and would allow economy of scale of terminal equipment. This band is already used in Region 1 and Region 3 countries for 2G applications widely deployed and could become global for IMT-2000, if the USA could take the decision on the scenario in line with the current frequency arrangements in this band. The solution allowing refarming of the 1805 – 1850 MHz band would make feasible the success of 3G in the USA in the global context, thus giving the USA manufacturers and operators the opportunity to achieve some of the benefits of the global roaming and economies of scale of terminal and infrastructure equipment.

#### Nortel Networks

“Nortel Networks continues to support CITELE Draft Recommendation, Spectrum Arrangements for 3G and ITU-R Draft recommendation on Spectrum implementation, which advocates: “Maximize harmonization of IMT-2000 identified bands with existing 2G and 3G bands plan pairings for implementation of 3G services. (...) Nortel Networks continues to support activities that will lead to a harmonized spectrum allocation for global 3G services, particularly in the DCS 1800 band: 1710-1755 MHz and 1805-1850 MHz band.”

#### Siemens

“In an ideal world in which maximum spectrum harmonization is possible, an “extension band at 1710-1785 MHz paired with 1805-1880 MHz would become free. In current circumstances, Siemens recognizes that it may not be possible to achieve this for some time to come, but urges the Commission not to take action that would preclude this as a possibility in the future.”

#### NOKIA

##### “Options 1a

*(The first variation of Option 1 would be to pair 1710-1745 MHz with 1805-1840 MHz. Option 1a has the advantage of providing longer-term global harmonization by aligning with second generation (“2G”) GSM1800 frequency arrangements which should eventually be allowed to evolve to 3G – used in much of Europe and Asia and some countries in the Americas.)*

provides the best long-term harmonization in terms of both frequency bands and pairing”.

#### Verizon Wireless

- 200 MHz of spectrum is required in addition to mobile spectrum already allocated (cellular, PCS, SMR). Most of this spectrum must come from 1710-1850 MHz band.
- 1710/2110 pairing is not consistent with global use of 1710-1850 MHz band”.

- 4 Some responders recommend that FCC considers awarding 3G licenses in the 1710-1770 MHz / 2110-2170 MHz band. This solution appears as the easiest for short-term implementation in the USA however it would lead to a lack of harmonisation and some further isolation of the US mobile market from the rest of the world. As a consequence, both market players and consumers would not benefit from economies of scale for reduced infrastructure and terminal costs. Some responders urged FCC to explore all possibilities of sharing or reallocation before taking their decision on a spectrum allocation for new advanced wireless services in non harmonised manner i.e. using the pairing of 1.8 / 2.1 GHz

#### Nortel Networks

“The proposed new pairing, while identifying 120 MHz and 140 MHz of new frequencies for pairing options, does not maximize potential 3G use of existing worldwide 2G and 3G bands (i.e. DCS1800: 1710-1755 MHz and 1805-1850 MHz bands) to create totally common worldwide 3G spectrum, and thus falls short of this important goal.

Nortel supports continued dialog with U.S. Government elements and industry to work toward sharing spectrum with incumbents in the band 1755-1850 MHz, or relocation of those incumbents to other bands, thus maximizing harmonization of existing worldwide 2G and 3G band plans.”

#### Siemens

“It is important to note at the outset that the implementation of 3G systems solely in the 1710-1755 MHz band paired with the 2110-2150/2160-2165 MHz band would isolate the US mobile market from the rest of the world. Carrier and consumer expenditures for network infrastructure and terminals would unnecessarily rise in the absence of the cost efficiencies associated with globally harmonized spectrum, thus slowing down economic development.”

#### Verizon Wireless

“NTIA also concluded that non-space systems operating in the 1770-1850 MHz band could be relocated given sufficient time and comparable spectrum. The benefits of reallocating this spectrum in an effort to harmonize both commercial and government spectrum use are significant and should not be ignored. Therefore, we recommend that the Commission and NTIA revisit the issue of reallocating the 1770-1850 MHz band as soon as practicable.”

- 5 The main industry players **encourage and support the global harmonisation of spectrum usage** for third generation systems and applications which will enable third generation services to be deployed with significant economies of scale on terminal and infrastructure equipment benefiting not only manufacturers and operators but also the consumer.

#### AT&T WIRELESS SERVICES

« supports the allocation of sufficient paired spectrum for 3G use, which should be, to the extent feasible, (i) harmonized with spectrum use globally, and (ii) coordinated to ensure a smooth 3G transition.»

Ericsson

“In light of the projected demand for existing and emerging services, it is imperative that the Commission stays proactive in its approach to spectrum management (...) Reallocation of spectrum now, to create spectrum allocations with common global characteristics which address the increasing demand for wireless services, will ensure that the industry is able to keep pace with market needs.”

QUALCOMM

“QUALCOMM appreciates the Commission’s efforts to support the growth of advanced wireless services in the United States. QUALCOMM also recognizes the important role that the Commission has played by allowing existing cellular and PCS operators to offer advanced wireless services, such as 3G, in their current frequency allocations. (...) QUALCOMM also supports the Commission’s efforts to meet the anticipated demand for advanced wireless services by making additional spectrum available in a timely and practical manner, while ensuring efficient use of a scarce resource, such as suitable spectrum for mobile wireless services.”

Siemens

“To the extent that the FCC can craft 3G spectrum allocations with global harmonization in mind, the United States economy, and American consumers, will obtain real and concrete benefits.”

NOKIA

“Options 1a<sup>1</sup> provides the best long-term harmonization in terms of both frequency bands and pairing, while Options 1b<sup>2</sup>, 2a<sup>3</sup> and 2b<sup>4</sup> provide the next best level of long-term harmonization and immediate near-term harmonization by using the one globally common 3G downlink band at 2110-2170 MHz. Nokia recommends that the ability of these options to meet all three goals should be weighed carefully in deciding on a spectrum allocation for new advanced wireless services.”

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<sup>1</sup> The first variation of Option 1 would be to pair 1710-1745 MHz with 1805-1840 MHz. Option 1a has the advantage of providing longer-term global harmonization by aligning with second generation (“2G”) GSM1800 frequency arrangements which should eventually be allowed to evolve to 3G--used in much of Europe and Asia and some countries in the Americas.

<sup>2</sup> The second variation of Option 1 would be to pair 1710-1745 MHz with 1805-1840 MHz and 1755-1795 MHz with 2110-2150 MHz. Like Option 1a, this option would provide some longer-term harmonization with 2G GSM 1800 MHz pairings globally. Moreover, this option uses the portions of the globally allocated and licensed downlink spectrum for 3G at 2110-2170 MHz, the one band that is globally available for 3G.

<sup>3</sup> The first variation of Option 2 would be to pair 1710-1770 MHz with 2110-2170 MHz. In terms of longer-term global spectrum harmonization, this option is the « next best » to the Option 1 variations.

<sup>4</sup> The second variation of Option 2 would be to pair 1710-1780 MHz with 2110-2180 MHz. This option shares the same advantages and disadvantages as Option 2a, but has the additional advantage of providing 2x70 MHz, to better meet demand for 3G services. Realizing the full benefit of this additional 2x10 MHz of spectrum, however, requires meeting additional challenges, as the upper portion of these bands is not currently globally allocated for terrestrial mobile use.

## Conclusion

### Based on the foregoing, Orange Group proposes FCC:

- 1 To reallocate bands 1980-2010 / 2170-2200 MHz for terrestrial wireless systems.
- 2 To allow use of the 1910-1930 MHz band for 3G in the perspective of worldwide harmonisation i.e. 1920-1930 / 2110-2120 MHz with FDD mode and 1910-1920 MHz with TDD mode.
- 3 To consider all possible solutions for the refarming of the existing systems in the band 1755-1850 MHz to permit the introduction in the USA of the solution allowing global harmonisation of spectrum usage for 3G i.e. pairing of 1710-1755 MHz with 1805-1850 MHz.
- 4 In case these systems could not be removed from the band 1805-1850 MHz within an adequate time schedule the spectrum arrangement pairing the bands 1755-1805 MHz and 2120 - 2170 MHz (including guard bands) would be preferable allowing in future the full usage of the 1.8 GHz band identified for IMT-2000 with part of it harmonised world-wide in longer term.

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