

## Questions and answers regarding the 2.3GHz and 2.5GHz radio frequency auction

### 1. Why did Government decide to jointly auction spectrum at the 2.3 GHz and 2.5 GHz bands in December?

On 10 April 2007, the Ministry of Economic Development released a discussion paper for industry feedback on options for the design of a 2.3 GHz spectrum auction in late May 2007. After careful consideration of stakeholders' submissions, and to provide early certainty for investment in new broadband wireless access services using this spectrum, Cabinet decided to jointly auction 2.3 GHz and 2.5 GHz spectrum in December 2007, following the World Radio Conference. At the recent world Radio Assembly meeting in Geneva (part of the overall World Radio Conference programme) it was agreed that WiMAX will be part of the 3G IMT cellular standard. This decision is expected to accelerate the development and deployment of WiMAX technology.

### 2. What services will be able to be provided at the 2.3 and 2.5 GHz bands?

The bands being made available are suitable for wireless broadband access type services, which will typically be internet services to individual users. They could also be used in the future for advanced mobile services. The availability of services will ultimately be governed by the availability, performance, and cost of equipment from international manufacturers.

### 3. What services are possible with the actual lots being allocated?

The lot design includes:

- four nationwide lots suitable for WiMAX type services (two in the 2.3 GHz band and two in the 2.5 GHz band);
- four nationwide lots suitable for either TDD Wi-MAX or FDD cellular type services (two sets of 20 MHz pairs or two blocks of 40 MHz contiguous spectrum);
- one 25 MHz nationwide lot reserved for Māori;
- one 45 MHz lot reserved for a "managed spectrum park".

(TDD is time division duplex and requires only one frequency to transmit and receive signals; FDD is frequency division duplex, and requires two separated frequencies to transmit and receive signals)

### 4. How will the lot reserved for a representative Māori group be allocated?

This part of the spectrum will not be auctioned, but an offer will be made to a representative group, which will be able to acquire the lot at a five percent discount on the auction price to be paid on uplift of the spectrum. That group will then need to enter into a legal deed which will include the acquisition limit, association rules and the "use it or lose it" requirements common to all bidders, as well as the settlement process and price. This will then enable all parties bidding to meet the association rule requirements.

### 5. What is a managed spectrum park?

This is a block of spectrum for shared use. It allows local/regional access for a selected number of users, but with requirements to coordinate with other users to enhance the quality of service otherwise achievable. It is a middle ground option between nationwide rights with exclusive access (highest acquisition cost but offering high quality of service) and uncoordinated use in the General Licence "Wi-Fi" bands (easy access with no licence fees, but a greater risk of interference and reduced quality of service). It is intended that a resource fee will be charged to users of the managed spectrum park.

### 6. Why have both FDD and TDD type technologies been allowed for?

The ultimate use of the spectrum long term will be driven by world trends. Despite the enthusiasm for TDD WiMAX-type technology, the long term evolution of cellular services means there is a reasonable probability that cellular networks will also be able to offer broadband access services in the future. The 2.5 GHz band is available in all areas of the world, and is one band where true global services may develop. Both of these technology options have been allowed for in the auction design, but in the end it will be a market decision. The 120 MHz FDD separation in the design is consistent with international frequency plans.

### 7. What is the spectrum worth?

It will be for the market to determine its value by bidding in the auction.

8. What have the radio spectrum bands been used for previously?

In New Zealand, the 2.3 GHz band is owned privately and there are few licences recorded in the register. Ownership to these rights expire in 2010. The 2.5 GHz band is used for itinerant television linking for sports events. An alternative frequency band, 2.7 GHz, has been made available (since 2003) for the linking services and these services will be transitioned out of the 2.5 GHz band over the period up to 2012.

9. Why are there initial acquisition limits and association rules?

The acquisition limit of 40 MHz ensures that one or two parties cannot acquire all of the spectrum, and limit competition in the downstream market. The association rules prevent associated companies from getting around the acquisition limit. These types of rules have been used in the past, for example in the 2 GHz auction in 2000. The acquisition limit will expire in December 2012, with trading thereafter being subject to the requirements of the Commerce Act.

10. What is the intention of the "use it or lose it" rules?"

These rules are intended to ensure that spectrum is not simply "warehoused" without services actually being implemented. These requirements will be implemented by providing an initial set of rights lasting until December 2014, with the further rights only being provided on evidence of satisfactory use. Spectrum owners will have an option to purchase a single two year "extension" to meet the implementation requirement.

11. When will the spectrum being auctioned be available?

The rights at 2.3 GHz will commence after expiry of the existing rights in December 2010. Parties seeking earlier access will be able to negotiate with the existing right holders.

The rights at 2.5 GHz will commence in January 2009, although the various types of existing service in this band will be able to continue until mid 2009, December 2010, or December 2012 depending on the type of use.

12. How will access be provided to the managed spectrum parks?

There will be a further process of consultation in 2008 to determine the rights, obligations, and procedures that are to apply to the managed spectrum park.

13. What consultation has been undertaken?

A consultation on overall spectrum allocation options for broadband wireless access was completed in 2007, followed by a specific consultation on a 2.3 GHz auction proposal earlier this year, and then a further consultation on the combined 2.3 and 2.5 GHz bands auction proposal. The latest consultation had 41 submissions from technology suppliers, existing and potential New Zealand operators, and existing users of the 2.5 GHz band. The submissions are available for viewing on the MED web site.