



Commercial In Confidence

Ministry of Business, Innovation and Employment Report:
700 MHz Auction: Final Recommendations

Date Sent:	29 August 2013	Tracker No:	0329 13 47
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Action Sought

	Action Sought	Deadline for Action
Minister for Communications and Information Technology / (Hon Amy Adams)	Confirm your agreement to recommendations in this report Forward to Ministers English and Joyce	
Minister of Finance (Hon Bill English)	Agree to recommendations in this report	
Minister for Economic Development (Hon Steven Joyce)	Agree to recommendations in this report	

Contact for Telephone Discussion (if required)

Name	Position	Telephone	1st Contact
Len Starling	Manager, Radio Spectrum Policy & Planning	04 462 4221 (wk)	<input checked="" type="checkbox"/>
Robin Campbell	Policy Advisor, Radio Spectrum Policy & Planning	04 901 1555 (wk)	<input type="checkbox"/>

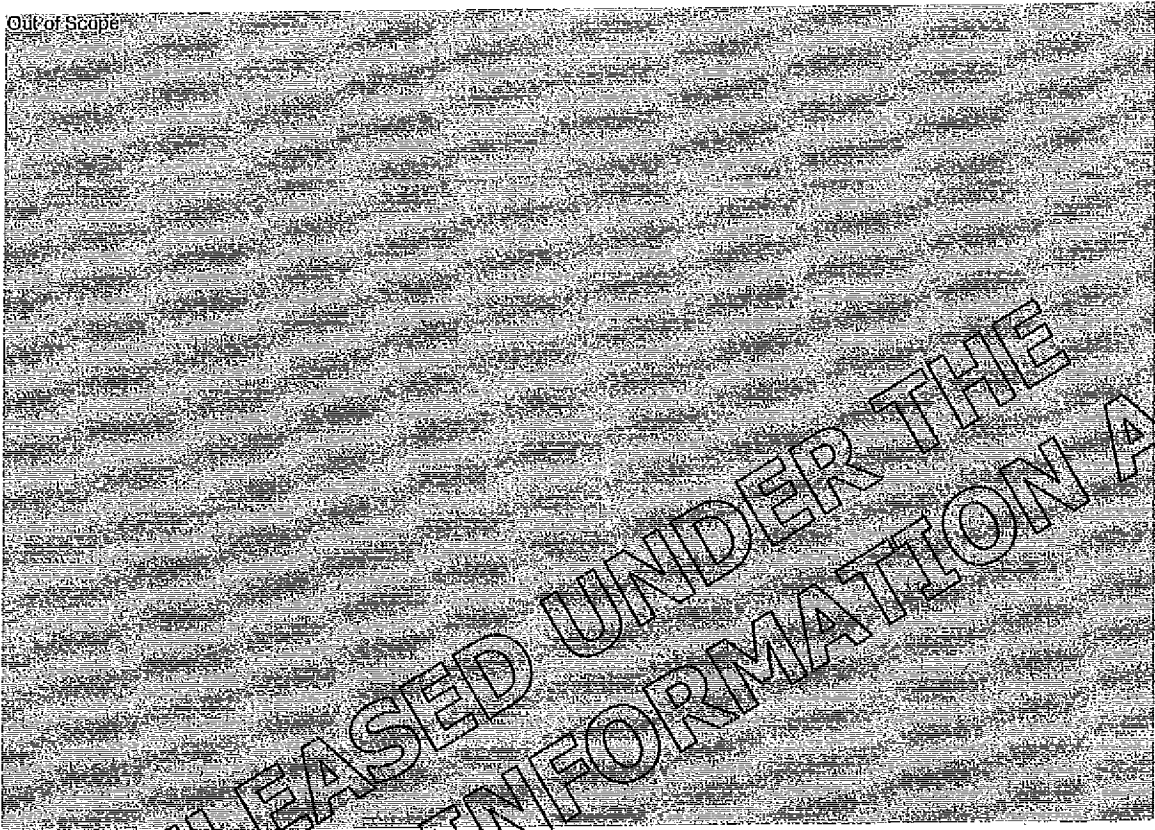
Minister's Office Actions (if required)

Office of Minister for CIT: Forward to Ministers English and Joyce

Minister's Comments

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Out of Scope



Reserve Price

- 14 This Ministry has received reports from Network Strategies that help to inform the reserve price decision. These reports were peer reviewed by IDC and PWC. Three broad approaches were taken to valuing the spectrum.
- 15 First, *benchmarks* were used to provide a guide to prices achieved in other spectrum auctions. International benchmarks may provide useful guides but must be used with care as in practice the value to a New Zealand network operator is subject to a range of local factors. Previous New Zealand spectrum sales also provide relevant benchmarks.
- 16 Second, *commercial modelling* was used to attempt to determine the business case for purchase from the perspective of a New Zealand MNO (i.e. what the spectrum might be worth to a company). In this case the commercial model is highly sensitive to some key assumptions. Network Strategies and the peer reviewers agree that this is the weakest form of information.
- 17 Third, *ability to pay* (i.e. ability of a company to raise the necessary funds) provides a reality check on the amount of revenue that the government might achieve. In this case 2degrees faces significant constraints relative to Vodafone and Telecom.

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- 18 There have been significant changes in the spectrum market in the last 18 months. Technology advances are enabling operators to deploy 4G services using other bands. In particular, the very recent emergence of 1800 MHz as a 4G band⁶ has reduced the value of 700 MHz spectrum since most of the auctions used digital dividend spectrum⁶ as benchmarks. While still desirable, 700 MHz is no longer essential to provide 4G services.
- 19 The government wishes to ensure that all existing operators have the opportunity to purchase 700 MHz spectrum and has announced acquisition limits to help achieve this. These limits imply a preference for each existing network operator to obtain three lots (2x15 MHz), but lesser acquisitions (and indeed greater acquisitions, if there is insufficient demand from three bidders for three lots) are also allowed for in the auction rules. The government also has a preference that all the available spectrum rights are sold in order to achieve the national economic benefits expected to accrue from the use of high speed mobile broadband. Subject to those objectives the government wishes to obtain a fair price for the rights being offered, including recouping the costs it has incurred to clear the spectrum.
- 20 Network Strategies recommended that the reserve price be set within the range of \$3.9 to \$4.6 million per paired MHz (total \$176 million to \$207 million if all spectrum is sold). This range is the lower bound of the valuation estimates, but using the 2007 renewal price for 850/900 MHz spectrum as a minimum.
- 21 Four options for setting the reserve price are shown in the table below.⁷

Option	Reserve price NZ\$ million (per paired MHz)	Estimated fiscal return NZ\$ million
1 Cost of clearing the spectrum	3.49	187
2 Network Strategies recommendation	3.9-4.6	176-207
3 Fair return consistent with small operator participation being unlikely	6	180-240
4 Revenue maximisation	9	270

22 At the meeting on 21 August 2013 Ministers discussed a wide range of options for the reserve price. It is our understanding that the reserve price decision was delegated to the Minister for Communications and Information Technology.

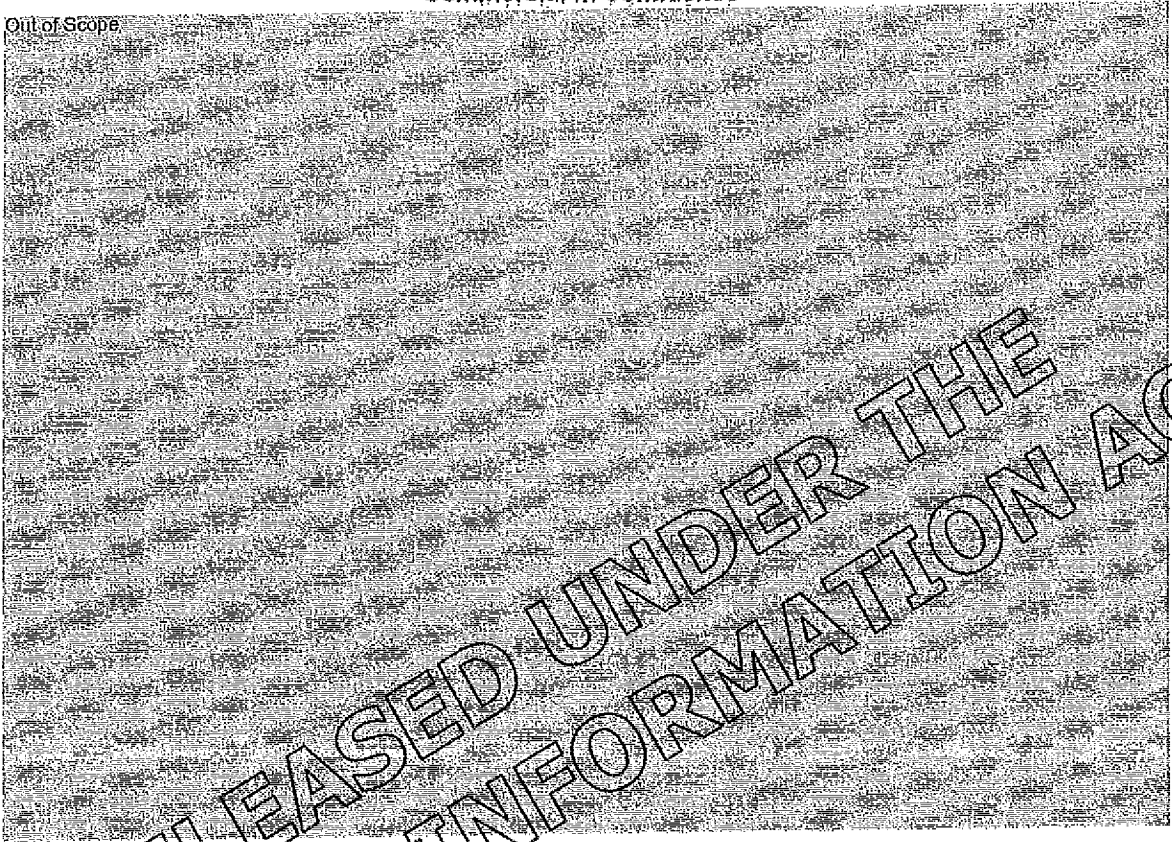
⁵ All existing operators have plans to deploy, or are already providing, 4G services at 1800 MHz. In future they will also be able to deploy 4G at 850/900 MHz and at 2100 MHz if they wish.

⁶ Internationally, digital dividend spectrum is generally either the 700 or 800 MHz bands.

⁷ Please note that the estimated fiscal return in options 3 & 4 is based on an assumption that not all of the 2x45 MHz may sell at these prices.

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Ministry of Business, Innovation and Employment Report:
700 MHz Auction: Payment terms – 2degrees

Date Sent:	20 September 2013	Tracker No:	0545 13-14
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Action Sought

	Action Sought	Deadline for Action
Minister for Communications and Information Technology (Hon Amy Adams)	Agree to recommendations in this report Forward to Ministers English and Joyce	24 September 2013
Minister of Finance (Hon Bill English)	Agree to recommendations in this report	
Minister for Economic Development (Hon Steven Joyce)	Agree to recommendations in this report	

Contact for Telephone Discussion (if required)

Name	Position	Telephone	1st Contact
Len Starling	Manager, Radio Spectrum Policy & Planning	04 462 4221 (wk)	✓
Elona Johnson	Senior Policy Advisor, Radio Spectrum Policy & Planning	04 901 1487 (wk)	

Minister's Office Actions (if required)

Office of Minister for CIT: 1. Forward to Ministers English and Joyce

Minister's Comments

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700 MHz Auction: Payment terms – 2degrees

Executive summary

2degrees has written to you and Minister Joyce outlining its concerns around the deferred payment terms for the 700 MHz Auction. In summary, 2degrees is saying that it is unable to participate in the auction without payment terms, but is unable to provide the requested mortgage security.

2degrees is a restricted subsidiary of Trilogy International Partners and is bound by certain limitations under Trilogy's funding arrangements. s.9(2)(ba)(i), 9(2)(b)(i) and 9(2)(b)(ii)

[Redacted text]

[Redacted text]

We have considered a range of alternative mechanisms to protect the Crown's interests as part of the deferred payment scheme and sought legal advice on these. The main options are described in the body of this report. If you wish to amend the deferred payment terms to accommodate 2degrees' situation, we recommend adopting a new arrangement which provides even stronger protection for the Crown than a mortgage, as follows:

- the Crown retain ownership of the early management right until full settlement is made;
- the purchaser be granted rights to create licences subject to set expiry dates under a power of attorney;
- all licences created under the power of attorney would be required to expire on the date of the next payment instalment.

Under all options, GST would be payable at the time of each instalment. s.9(2)(ba)(i), 9(2)(b)(i) and 9(2)(b)(ii)

Risks and mitigations

A deferred payment scheme does commit the Crown to some credit risk. However, retaining the early management rights in Crown ownership and allowing limited duration licences to be issued under a power of attorney protects the Crown's position more strongly than a mortgage.

Recommendations

We recommend that you:

- | | | |
|---|--|--------|
| 1 | Discuss this proposal with the Ministers of Finance and Economic Development | Yes/No |
|---|--|--------|

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- 2 **Agree** to a deferred payment arrangement with security based on option one under which: Yes/No
- the Crown would retain ownership of the early management right until full settlement is made or mortgage security is granted;
 - at each instalment date, the Crown would grant an irrevocable power of attorney (that expires on the date of the next instalment) to create licences during each instalment period on receipt of each scheduled payment; the power of attorney would be available at the request of the purchaser;
 - any licences created under the power of attorney would expire at the time of the next instalment date, until full settlement is received;
 - the early management right would transfer to the purchaser once full settlement is made;
 - GST would be payable at the time of each instalment.
- 3 **Refer** this briefing to Ministers of Finance and Economic Development for their confirmation of the decisions made. Yes/No

Len Starling
 Manager, Radio Spectrum Policy & Planning
 Resources, Energy and Communications
 Branch

Hon Amy Adams
**Minister for Communications and
 Information Technology**

Date: ____/____/____

Decisions as agreed by Minister Adams above confirmed by:

Hon Bill English
Minister of Finance

Hon Steven Joyce
Minister for Economic Development

Date: ____/____/____

Date: ____/____/____

Minister's feedback on quality of report:					1 Not satisfactory; 2 Fell short of expectations in some respects; 3 Met expectations 4 Met and sometimes exceeded expectations; 5 Greatly exceeded expectations
1	2	3	4	5	

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700 MHz Auction: Payment terms -- 2degrees

Purpose

- 1 This report provides advice on issues raised by 2degrees Mobile Ltd with the payment terms for the 700 MHz auction.

Background

- 2 After your announcement on 4 September 2013 of the timing, reserve price and rules for the 700 MHz spectrum auction, officials contacted each known potential bidder to discuss the details of the announcement. Of the three potential bidders, only 2degrees requested further information on the deferred payment terms and conditions.
- 3 The key components for the deferred payment scheme agreed by Ministers for the 700 MHz auction were:
 - an interest rate of 5.8%;
 - settlement made in five instalments over five years with a 24 month moratorium on payment after the initial payment;
 - an additional default interest rate incurred for late payment of any instalment;
 - a first priority mortgage over the management right;
 - all bidders agreeing to the Crown lodging a caveat on the management rights preventing transfer of the rights or creation of licences without Crown agreement.

2degrees

- 4 2degrees wrote to you and Minister Joyce on 9 September 2013 outlining its concerns around the proposed security arrangements for the deferred payment scheme.

[Redacted text block]

- 5 Since the 9 September letter, officials have met with 2degrees to learn the details of the issues raised. 2degrees has provided access to the legal documentation and has provided a statutory declaration (US equivalent) relating to some matters that cannot be readily confirmed by independent means.

[Redacted text block]

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7

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RELEASED UNDER THE

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ss 9(2)(ba)(i), 9(2)(b)(i) and 9(2)(b)(ii)

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Security for deferred payment scheme

15 [redacted] we have considered a range of alternative mechanisms by which the Crown's interests can be protected. Under all scenarios, whether or not a deferred payment plan is adopted by a purchaser, the Crown would:

- lodge a caveat on the early management right which would prevent the purchaser from lodging a mortgage over, transferring, or modifying the management right or

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licence without the consent of the Crown to support enforcement of the acquisition limit;

- obtain from the purchasers a limited term irrevocable power of attorney which would enable transfer of the early management rights and licences to the Crown in the event of a default of the service and implementation requirements;
- require that all licences may only be cancelled solely by the rights holder enabling the Crown (as rights holder / manager) to cancel licences if the management rights are transferred to the Crown under a default scenario; and
- withhold the transfer of the conditional management right in 2020 in the event of default under the management rights agreement.

- 16 The main options to protect the Crown's interest under a deferred payment scheme (in order of decreasing security) include:

Option 1: Limited duration licences

- 17 Under this option,

- the Crown would retain ownership of the early management right until full settlement made or mortgage security granted;
- at each instalment date, the Crown would grant an irrevocable power of attorney (that expires on the date of the next instalment) to create licences during each instalment period on receipt of each scheduled payment, the power of attorney would be available at the request of the purchaser;
- any licences created under the power of attorney would expire at the time of the next instalment date until full settlement is received;
- the early management right would transfer to the purchaser once full settlement is made.

Advantages and disadvantages

- 18 The advantages of this option are that no security over the management right or licences is required. Effectively there is no deferral of full payment for the management right as the purchaser is only purchasing the ability to create licences for the duration of the instalment period until full settlement is made, and the mechanism places the Crown in a stronger position compared to lodging a mortgage if the purchaser defaults on payment or is in liquidation.
- 19 The disadvantage is the need to recreate or extend the expiry date of the licences at each instalment date, increasing the administrative burden on the Registrar, Crown Asset Manager, and purchaser. However, these costs are very minor in relation to the size of the auction and the potential benefits of 4G market competition.

Option 2: First priority mortgage

- 20 The Crown lodges a first priority mortgage over the early management right prior to its transfer to the purchaser (i.e. no change to the terms of the scheme).

Advantages and disadvantages

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- 21 The advantage of a first priority mortgage is that it is a mechanism specifically provided for under the Radiocommunications Act 1989 to protect financial interests in radio spectrum, a first ranking mortgage cannot be defeated by other parties and is readily enforceable. The disadvantage is that it effectively excludes 2degrees from the auction process, potentially limiting competition in the 4G mobile market in future years.

Option 3: Deferred settlement date

- 22 Rather than offer a deferred payment scheme, the Crown could offer a deferred settlement date. Under this option,
- purchasers would provide a [5%] deposit on completion of the auction
 - initial payment would be deferred until [2016/2017]
 - settlement would be made through [four] equal annual payments
 - interest would accrue from the date of the deposit payment.
 - security would be provided by a first priority mortgage over the early management right registered once the option to purchase has been taken up.
- 23 The timeframe for the service and implementation requirements would remain at 31 December 2018. The purchaser would be able to issue licences under the management right once initial payment is made in [2016/17]. Any upgrades or new towers installed between the time the deposit is paid and the initial payment is made would count towards meeting the implementation requirements.

Advantages and disadvantages

- 24 The advantages of a deferred settlement date are that it retains the ability for a staged payment schedule, ss 9(2)(ba)(i), 9(2)(b)(i) and 9(2)(b)(ii)

The disadvantages are the Crown may have unsold spectrum if the purchaser does not take up the option to complete the purchase of the spectrum in [2016/17]; the purchaser would have only [two] years to meet the implementation and service requirements after the settlement date; and the repayment period would be extended by two years.

- 25 ss 9(2)(ba)(i), 9(2)(b)(i) and 9(2)(b)(ii)

Option 4: Extend the power of attorney granted to the Crown

- 26 This option would extend the default scenarios under which the Crown may use the power of attorney described in paragraph 15 above to include default on payment terms, backed by the Crown's ability not to grant the conditional management right from 2020 in the event of any default.

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Advantages and disadvantages

- 27 This is the simplest option from an administrative perspective. Security is less than provided by a first priority mortgage but not substantially so given the other contract provisions enabling the Crown to enforce its rights. External legal advice notes that in *Mirelle Pty Ltd v Attorney General*, the High Court has shown it is prepared to treat decisions made by government departments in dealing with radio spectrum as being of a public nature and therefore may be subject to judicial review. If the management rights holder went into liquidation, a receiver may attempt to injunct the Crown to prevent transfer of the management rights or cancellation of the licences in the event of default by the purchaser.

GST

- 28 Under section 9(3)(a) of the Goods and Services Tax Act 1985, goods or services supplied under any agreement which provides for periodic payments are "deemed to be successively supplied for successive parts of the period of the agreement". This means that any GST payable will be due at the time of each instalment.


Recommendations

- 29 We recommend the provisions of the deferred payment scheme are amended to remove the requirement for a first priority mortgage over the management right and replaced with the provisions outlined in Option 1 above whereby the Crown would retain ownership of the early management right until settlement is made in full; a limited term irrevocable power of attorney be granted to the purchaser to create licences during each instalment period on receipt of each scheduled payment; and all licences created under the power of attorney would expire at the time of the next instalment date until full settlement is received.

Risks

- 30 A deferred payment scheme does commit the Crown to some credit risk. However, retaining the early management rights in Crown ownership, and allowing limited duration licences to be issued under a power of attorney, protects the Crown's position more strongly than a mortgage.

2degrees' views

- 31 Option four is very close to the option proposed by 2degrees in its public submission. Options one, two and four above have been outlined to 2degrees at the meetings with officials last week and during discussions this week. ss 9(2)(ba)(i), 9(2)(b)(i) and 9(2)(b)(ii)
- 

- 32 2degrees understands that you, with Ministers English and Joyce, will make any decision to change the payment terms. A meeting between yourself and 2degrees CEO, Stewart Sherriff is scheduled for Wednesday 25 September 2013 to discuss this further.

Communications

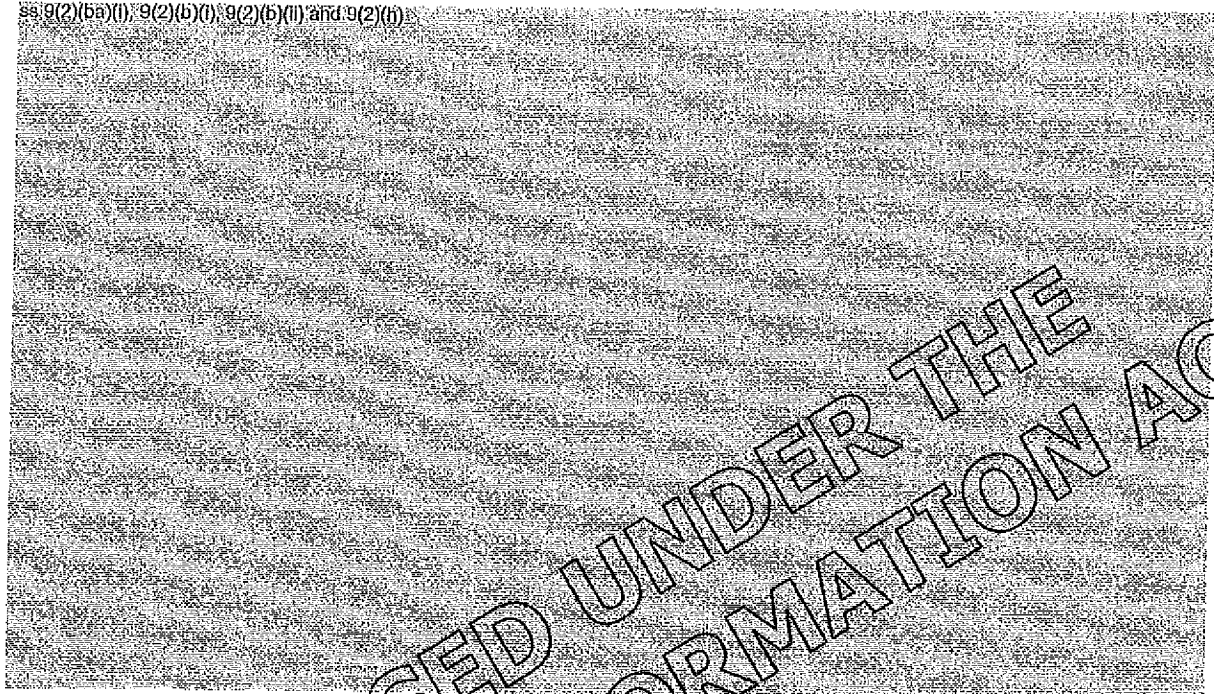
- 33 Once a decision is made, the Ministry will convey details of the payment plan to the parties who have registered an interest in the auction.

Declaration from Trilogy International Partners LLC

55 9(2)(ba)(i), 9(2)(b)(i), 9(2)(b)(ii) and 9(2)(f)

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700 MHz Auction: 3 October 2013 Update

To	Hon Amy Adams	Priority	Medium
Date	3 October 2013	Deadline	9 October 2013

Purpose

- 1 To update you on the 700 MHz auction, particularly with respect to applications for registration as a bidder and the deferred payment scheme.

Recommendation

- 2 We recommend that you **note** the contents of this report.

Registration

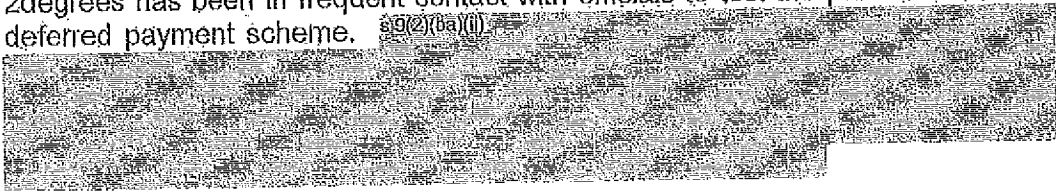
- 3 Registration applications for the auction closed at 4:00 pm today, 3 October. Applications from companies associated with each of the three existing mobile network operators have been received. We have also received a registration application from a company associated with Simon (Lex) Edwards, a minority shareholder in 2degrees. This application did not contain all of the required information and we are now following up with Mr Edwards to determine whether the application is compliant with the auction rules.

Auction preparations

- 4 The preparations for the auction to commence on 29 October are in hand. The auction catalogue, management right agreement and parameters of the purchase plan are all published.
- 5 We are meeting with the existing network operators tomorrow to confirm the exact number of rural cellphone towers corresponding to the 75% requirement for each company.
- 6 BuddleFindlay has been commissioned to integrate the purchase plan parameters into a second version of the management right agreement, on the assumption that at least one participant will elect this option after the auction.
- 7 The auction software is functional, although improvements are being made to screen navigation and layouts prior to further internal testing and a mock auction by registered bidders.

Deferred payment scheme

- 8 2degrees has been in frequent contact with officials to test the parameters of the deferred payment scheme. sg(2)(ba)(i)



9 [REDACTED]

10 [REDACTED]

Auction rules

- 11 Vodafone Mobile New Zealand Ltd has registered for the auction rather than the Vodafone New Zealand Ltd. The later entity is the cellular network operator. We believe that registration of Vodafone Mobile has been done for reasons internal to Vodafone rather than to game the auction rules. Nevertheless, we have modified the auction rules to ensure that bidders face the highest implementation requirements that would be required of any of their associates, rather than see Vodafone Mobile only face the implementation requirements of a new entrant.
- 12 2degrees has presented the Ministry with a number of scenarios for bidding, ownership and operation of the 700 MHz management rights. These result from its on-going negotiations with its various owners and funders as it seeks to find a way to participate in the auction. Some of the scenarios 2degrees has tested with us involve different combinations of parties registering, bidding, holding the power of attorney and (eventually) owning the management rights. We have agreed to these where doing so would not impact on the Crown's objectives or create additional risks for the Crown. A number of minor variations have been made to the auction rules to accommodate novation of contracts and some of the other scenarios suggested by 2degrees.

Len Starling
Manager, Radio Spectrum Policy &
Planning
Resources Energy and Communications
Branch
[REDACTED]

Hon Amy Adams
Minister for Communications and
Information Technology



BRIEFING

700 MHz Auction: Combinatorial Assignment Round Options

Date:	11 March 2014	Priority:	Routine
Security Classification:	Commercial In Confidence	Tracking number:	1971 13-14

ACTION SOUGHT		
	Action sought	Deadline
Hon Amy Adams Minister for Communications and Information Technology	Agree to the recommendations in this report Forward this report to Ministers English and Joyce	26 March 2014
Hon Bill English Minister of Finance	Agree to the recommendations in this report	28 March 2014
Hon Steven Joyce Minister of Economic Development	Agree to the recommendations in this report	28 March 2014

CONTACT FOR TELEPHONE DISCUSSION (IF REQUIRED)				
Name	Position	Telephone		1st contact
Len Starling	Manager, Policy & Planning, Radio Spectrum Management	04 462 4221	§9(2)(a)	✓
Robin Campbell	Policy Advisor	04 901 1555		

MINISTER'S OFFICE ACTIONS
Office of the Minister for CIT: forward to Ministers English and Joyce

THE FOLLOWING DEPARTMENTS/AGENCIES HAVE BEEN CONSULTED

<input type="checkbox"/> MSD	<input type="checkbox"/> NZTE	<input checked="" type="checkbox"/> Treasury	<input type="checkbox"/> COMU	<input type="checkbox"/> TEC	<input type="checkbox"/> MoE
<input type="checkbox"/> MFAT	<input type="checkbox"/> DOC	<input type="checkbox"/> MfE	<input type="checkbox"/> MoH	<input type="checkbox"/> TPK	<input type="checkbox"/> Other

Minister's Office to Complete:

Approved

Declined

Noted

Needs change

Seen

Overtaken by Events

See Minister's Notes

Withdrawn

COMMENTS

EXECUTIVE SUMMARY

The Combinatorial Assignment Round of the 700 MHz auction is scheduled to be held shortly, following a decision from the Commerce Commission on Telecom's application for clearance to acquire 2x20 MHz (four lots). In the Combinatorial Assignment Round, bidders may tender for particular placements (frequencies) within the 700 MHz band; in prior rounds they bid for generic amounts of spectrum, rather than specific frequencies. The provisional results are that 2degrees has purchased 2x10 MHz (two generic lots), Vodafone 2x15 MHz (three generic lots), and Telecom 2x20 MHz (four generic lots) subject to Commerce Commission clearance. The table below shows placement options.

This briefing assumes that the Commerce Commission will grant Telecom clearance to acquire 2x20 MHz. The Commission has recently advised us that it will extend its expected decision date to mid April. If clearance is not granted, we expect to report to you again on options as the Crown may then have a significant interest in choosing the location of the unsold spectrum block.

Table 1: Full list of placement options given the provisional allocation results

Lower MHz	703-708	708-713	713-718	718-723	723-728	728-733	733-738	738-743	743-748
Upper MHz	758-763	763-768	768-773	773-778	778-783	783-788	788-793	793-798	798-803
Option A	2x20 MHz (TC)				2x15 MHz (VF)			2x10 MHz (2D)	
Option B	2x20 MHz (TC)				2x10 MHz (2D)		2x15 MHz (VF)		
Option C	2x10 MHz (2D)		2x20 MHz (TC)				2x15 MHz (VF)		
Option D	2x15 MHz (VF)			2x20 MHz (TC)				2x10 MHz (2D)	
Option E	2x10 MHz (2D)		2x15 MHz (VF)			2x20 MHz (TC)			
Option F	2x15 MHz (VF)			2x10 MHz (2D)		2x20 MHz (TC)			

We seek a decision on whether to offer all placement options or whether to withhold some options, which is permitted under the auction rules. We recommend that options C and D (with Telecom in the middle of the band) be excluded for the following reasons:

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BRIEFING: 700 MHz AUCTION - COMBINATORIAL ASSIGNMENT ROUND OPTIONS
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1. This will allow the possibility of future secondary market activity, i.e. trading between 2degrees and Vodafone. Telecom is unlikely to have a productive use for more 700 MHz spectrum given that 4G-LTE carriers use a maximum of 2x20 MHz, and is likely face difficulty with the Commerce Commission if it attempts to acquire further spectrum in the 700 MHz band.
2. This will ensure that 2degrees is not prevented from extending its current 2G/3G roaming agreement with Vodafone to cover 4G services. Because of technical issues to do with band planning and handset compatibility, it is possible that some phones may not work across the whole band. 4G roaming partners will therefore need to be placed next to each other in the 700 MHz band. A roaming agreement would be negotiated on commercial terms.
3. This will safeguard the government's future options, should 2degrees not meet the payment terms or implementation requirements within the five-year deadline, and its spectrum returns to Crown ownership/control. The government could then consider selling some spectrum to other parties.
4. If announced before the Commerce Commission has made a decision on Telecom's clearance application, this could assist the Commission in determining the likely competitive landscape over the eighteen-year period of the 700 MHz management rights.

It is possible that competitive bidding will provide an assignment outcome that addresses these issues, without the need to limit placement options. However, it may not. The combinatorial assignment round is structured as a one-shot tender with the outcome decided by the bid combination that achieves the highest revenue to the Crown.

We have consulted with bidders about the options that should be offered. § 9(2)(b)(i)

This briefing also explains the technical issues that we think will influence the bidders' valuations of particular placement options including device availability issues, national roaming, European roaming, and potential (but unlikely) interference issues with other services that neighbour the 700 MHz band. Overall, we think that the top of the band is likely to be the least-preferred placement option. We do not have information about what amounts the bidders are likely to bid for particular placements.

Any limitation on placement options may impact on the price bidders are willing to pay (and need to pay to assure their preferred outcome) and therefore the fiscal return, but this is difficult to quantify and may be offset by the future consumer benefits arising from roaming, secondary trading, and spectrum sharing. Revenue from prior auction rounds (\$259 million) has already exceeded the amount that was forecast in budget baselines.

RECOMMENDED ACTION

The Ministry of Business, Innovation and Employment recommends that you:

- a Discuss the contents of this report with the Ministers of Finance and Economic Development.

Agree/disagree

- b Agree that placement options C and D will be excluded.

Agree/disagree

- c Refer this report to the Ministers of Finance and Economic Development, for their confirmation of the decisions made above.



Agree/disagree

Len Starling
 Manager: Policy & Planning
 Radio Spectrum Management
 Ministry of Business, Innovation and Employment

Hon Minister Amy Adams
 Minister for Communications and
 Information Technology

12 / 3 / 15

/ /

Decisions as noted above by Minister Adams confirmed by

Hon Minister Bill English
 Minister of Finance

Hon Minister Steven Joyce
 Minister of Economic Development

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..... /

Minister's feedback on quality of report:					1 Not satisfactory; 2 Fell short of expectations in some respects; 3 Met expectations; 4 Met and sometimes exceeded expectations; 5 Greatly exceeded expectations
1	2	3	4	5	

Background

1. The Ministry of Business, Innovation and Employment (MBIE) is auctioning management rights to radio spectrum in the 700 MHz band, to be used for the deployment of fourth generation long term evolution (4G-LTE) cellular broadband networks. The initial allocation rounds of the auction have been completed. In those rounds, bidders bid for generic amounts of spectrum in the 700 MHz band, i.e. not specific frequencies. The provisional results, subject to Commerce Commission clearance, are that 2degrees has purchased 2x10 MHz (two generic lots), Vodafone 2x15 MHz (three generic lots), and Telecom 2x20 MHz (four generic lots).
2. A final round, the Combinatorial Assignment Round ("CA round"), is yet to be held. In the CA round, bidders have the opportunity to each submit a single tender for particular placements (frequencies) within the 700 MHz band i.e. the bottom, middle, or top of the band. This round is a one-shot tender. The auction rules state that outcome is decided by the combination of tenders that achieves the highest revenue for the Crown.
3. Telecom's purchase of four lots is subject to Commerce Commission clearance. A decision from the Commission was expected on 14 March 2014, however the Commission has indicated it is likely to extend this to mid April. This briefing assumes that clearance is granted; if it's not, and Vodafone (the next highest bidder) does not reactivate its withdrawn clearance application, there will be an unsold spectrum block and the Crown will have a substantial interest in choosing the location of this block. In this case, we would report to you again before holding the CA round.
4. Assuming Telecom is granted clearance, possible placement options are shown in the table below.

Table 1: Full list of placement options given the provisional allocation results

Lower MHz	703-708	708-713	713-718	718-723	723-728	728-733	733-738	738-743	743-748
Upper MHz	758-763	763-768	768-773	773-778	778-783	783-788	788-793	793-798	798-803
Option A	2x20 MHz (TC)				2x15 MHz (VF)			2x10 MHz (2D)	
Option B	2x20 MHz (TC)				2x10 MHz (2D)		2x15 MHz (VF)		
Option C	2x10 MHz (2D)		2x20 MHz (TC)				2x15 MHz (VF)		
Option D	2x15 MHz (VF)			2x20 MHz (TC)				2x10 MHz (2D)	
Option E	2x10 MHz (2D)		2x15 MHz (VF)			2x20 MHz (TC)			
Option F	2x15 MHz (VF)			2x10 MHz (2D)		2x20 MHz (TC)			

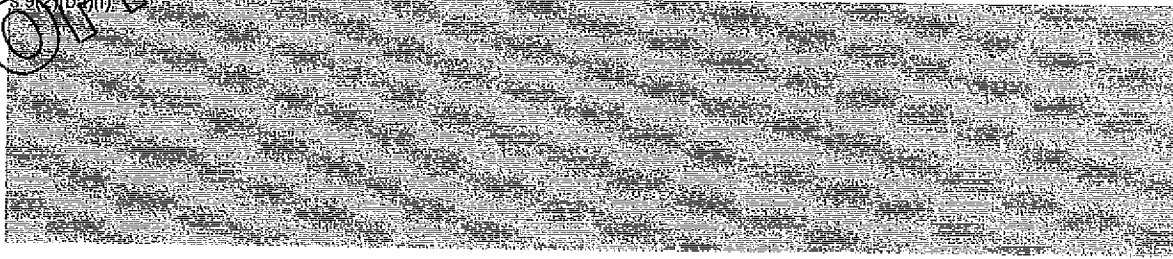

5. The auction rules allow us to exclude one or more options. This rule could now be used to facilitate pro-competitive policy outcomes. We seek a decision from you as to whether to rule out one or more placement options. We recommend that options C and D, which place Telecom in the middle of the band, are ruled out for the following reasons (explained further in the paragraphs below):
 - To allow future secondary market trading between 2degrees and Vodafone, the only parties that could increase their holdings and remain within the current acquisition limit. This could include spectrum sharing.

- To ensure that the current 2degrees/Vodafone 2G/3G roaming agreement can be extended to cover 4G services.
- To protect the Crown's options in case 2degrees does not meet the five-year payment terms or implementation requirement deadline and its spectrum returns to Crown ownership/control.
- To assist the Commerce Commission in determining the likely competitive landscape over the eighteen-year period of the management rights, and narrow the range of options and variables it must consider in assessing Telecom's clearance application.

Technical issues potentially affecting preferred placements

6. MBIÉ does not have a firm view on exactly which position(s) within the band are likely to be most sought after; however, the lowest demand is likely to be for the very top of the band, for reasons outlined below. Bidders will have done their own commercial and technical analyses, importing detailed information from their preferred handset and network technology manufacturers.

Consumer device availability and national roaming

7. For technical reasons relating to limitations in cellular componentry it is possible that some 700 MHz 4G cellphones will not operate across all of the New Zealand 700 MHz band. In particular, the first 700 MHz phones that come to market may operate in only two thirds of the band (either the top-and-middle or the bottom-and-middle), as this will be easier to manufacture from both a technology perspective and in terms of fitting the necessary components into the physical size/design of the device. Holding the middle of the 700 MHz band would allow a network operator to guarantee that all 700 MHz phones would work on its network.
8. Australia and New Zealand will be among the first countries to deploy 700 MHz networks. Telstra Australia has recently announced that it will start selling 700 MHz devices in May 2014. These devices will only need to work in the bottom-middle of the band because the unsold 700 MHz spectrum in Australia is at the top of the band. However, given that the APT band plan for 700 MHz has been adopted by markets exceeding 2.6 billion people internationally, over time sufficient market demand is likely to develop for more sophisticated handsets that cover the entire band.
9.  § 9(2)(b)(i)
10. A 4G roaming agreement would only be possible if phones of the host network (e.g. Vodafone) and access seeker (e.g. 2degrees) can operate in the same part of the band or if all the access seeker's customers have the more sophisticated phones, which is unlikely in the short term. § 9(2)(b)(i)  Excluding placement options C and D will ensure that the current 2degrees/Vodafone roaming agreement can be extended to cover 4G services, assuming the parties can negotiate a satisfactory agreement on normal commercial terms.

¹ Dongle: a plug-in device providing a cellular broadband connection for a laptop.

International roaming

11. Europe is in the process of switching to digital television broadcasting and freeing up the 800 MHz band for 4G, rather than the 700 MHz band as in the Asia-Pacific region. It is possible that in years to come Europe will create a "second digital dividend" by clearing the lower portion only of the 700 MHz band and allocating it for cellular use (the upper portion has other uses in Europe). If this occurs (there is no guarantee that it will), a New Zealand network operator may have an advantage in holding the lower end of the 700 MHz band as this could allow easier roaming for incoming European consumers.
12. On the other hand, 1800 MHz is steadily becoming the accepted standardised band for 4G international roaming (except for in North America), and is already being used for 4G in Europe, the Middle East, and the Asia-Pacific region including New Zealand.

Coexistence with digital television below 700 MHz

13. We have previously briefed you (and the Minister of Broadcasting) on the concerns that television broadcasters have expressed around possible interference between 4G LTE in the 700 MHz band and digital television below 700 MHz (see Annex Two to the briefing titled "700 MHz Auction: Auction Format", dated 16 August 2013). At that time, we explained why we think their concerns are unfounded and in the unlikely event that interference does occur, there are technical solutions available. If the cellular network operators share the broadcasters' concerns, then they may prefer not to be at the bottom of the 700 MHz band as this borders the digital television spectrum and therefore has the most potential for interference.
14. § 9(2)(ba) considers that the possibility of interference with digital television is greatest if Telecom's 2x20 MHz block is assigned to the bottom of the band (its concerns may be greater than those of a smaller block). We agree that this is theoretically accurate, but we stand by our assertion that interference is extremely unlikely anyway.

Coexistence with fixed links above 800 MHz

15. Fixed radio links use the frequencies directly above the 700 MHz band.³ MBIE released a coexistence study in 2013 that found substantial coexistence issues were unlikely. Of a total of approximately 3200 existing 850/900 MHz cellular base stations (cell towers) nationwide just 35 may require technical solutions, such as additional filtering to avoid interference with fixed links, if they are upgraded to 700 MHz.⁴ The cost of these technical solutions will be minor and will be borne by mobile network operators rather than moment users. This may make the top part of the 700 MHz less attractive for mobile network operators.
16. § 9(2)(ba) agrees that any interference issues that arise at the top of the 700 MHz band will be easily addressed through the installation of filters. § 9(2)(ba)(i) has suggested this cost will be § 9(2)(ba)(i).
17. The middle position has the lowest risk of interference with neighbouring non-cellular services above and below the 700 MHz band, and therefore the lowest associated out-of-band interference mitigation costs.

² In short, New Zealand has a much larger guard band (buffer) between 4G cellular and digital television services. Additionally, while some countries such as the UK have cellular base stations at the bottom of the band New Zealand has them at the top, which further reduces the likelihood of interference between 4G networks and digital television.

³ These provide low speed data transmissions to utilities companies, KiwiRail, and emergency services organisations, for example: between electricity networks' substations.

⁴ 850/900 MHz is the near-nationwide "base layer" lower frequency spectrum used for 2G and 3G, and is therefore most comparable to 700 MHz. We used 850/900 MHz base stations to calculate the 700 MHz rural upgrade requirement applied to successful bidders. Higher frequencies such as 1800 MHz (2G/4G) and 2100 MHz (3G) are generally used in cities for added capacity.

Secondary trading and spectrum sharing

18. As a general radio spectrum management objective, MBIE is supportive of secondary market spectrum transactions as they help to ensure that spectrum is allocated to its highest-value use (or user), which may change over time. With the current acquisition limit in place for at least another three years, Telecom is unable to acquire any more spectrum in the 700 MHz band, and may face considerable difficulty getting Commerce Commission clearance to do so anyway. Telecom is unlikely to have a productive use for more 700 MHz spectrum given that 4G-LTE carriers use a maximum of 2x20 MHz (as standardised by the international cellular standards organisation 3GPP). Telecom is very unlikely to want to divest any 700 MHz spectrum either, for commercial reasons. Any secondary market activity is therefore likely to involve 2degrees and Vodafone, and would be very unlikely if they were not assigned neighbouring placements (i.e. options C and D would need to be ruled out).
19. 2degrees (2x10 MHz) and Vodafone (2x15 MHz) may wish to institute a spectrum sharing arrangement whereby they agree to share their spectrum in order to implement a 20 MHz carrier. This would enable them together to claim network data speeds and capacity equal to Telecom; consumer benefits may result from the provision of more than one network with the ability for the same very high data speeds. It is likely that this would only be technically possible if 2degrees' and Vodafone's spectrum blocks are neighbouring.
20. The auction's non-association rules and the acquisition limit present challenges to spectrum sharing. ss 9(2)(f)(iv), 9(2)(g)(i) and 9(2)(h)
[REDACTED]
21. ss 9(2)(f)(iv), 9(2)(g)(i) and 9(2)(h)
[REDACTED]
22. In conclusion, 4G roaming seems more likely and feasible than spectrum sharing but we do not wish to prevent spectrum sharing in the future if clear consumer benefits would result. Both would require the parties involved to be neighbouring and to reach a satisfactory commercial agreement.

Possible future market developments

23. 2degrees is the weakest market player. ss 9(2)(f)(iv) and 9(2)(g)(i)
[REDACTED]
24. ss 9(2)(ba)(i), 9(2)(b)(i), 9(2)(f)(iv) and 9(2)(g)(i)
[REDACTED]
25. If 2degrees was unable to make payments on the spectrum (assuming it takes up the five-year payment plan) or meet the implementation requirements within the five-year deadline, its management rights would return to Crown control/ownership. The Crown may therefore now wish to consider its future option value including selling 2x5 MHz to Vodafone, which Vodafone could use to upgrade its services. This would require placing 2degrees and Vodafone next to each other (i.e. ruling out options C and D).

26. Placing 2degrees between Telecom and Vodafone would provide 2degrees with more options for roaming, and may appear to provide more options for future spectrum transfers and therefore increase the Crown's option value. However, because the maximum carrier size for 4G-LTE is 20 MHz and Telecom already has 2x20 MHz, Telecom would not be able to easily expand its network capacity if it had access to an additional 2x5 MHz, in the same way that Vodafone could easily expand its carriers from the current 15 MHz to 20 MHz.

Consultation outcomes

27. MBIE has consulted the three bidders on whether any placement options should be ruled out. Their responses are summarised below.

28. [REDACTED]

29. [REDACTED]

30. [REDACTED]

31. [REDACTED]

32. [REDACTED]

33. [REDACTED]

34. [REDACTED]

35. ss 9(2)(ba)(i), 9(2)(i)(v) and 9(2)(g)(i)

36. ss 9(2)(ba)(i)

37.

38.

38. ss 9(2)(ba)(i), 9(2)(i)(v) and 9(2)(g)(i)

Fiscal issues

39. Auction revenues to date have surpassed budget baseline forecasts. Limiting the placement options offered to bidders will have an impact on the amount they need to bid to obtain their preferred placement. Any loss in potential revenue due to limiting the placement options is difficult to quantify, as we do not know the value that bidders place on particular assignment options. For example, Telecom may have an interest in preventing 2degrees and Vodafone from arranging roaming or spectrum sharing, and may therefore be prepared to bid higher for the middle placement. However, under this situation the consumer benefits arising from market competition (through roaming or spectrum sharing) may outweigh any direct loss of revenue to the government.
40. Fierce competition between Telecom and Vodafone during the supplementary allocation rounds suggests that both are prepared to bid aggressively for their preferred outcome. On the other hand, Telecom may have now exhausted much of its "war chest".
41. The Treasury has seen a draft of this report.

Risks

42. If options C and D are allowed and the bidding results in one of these options being the outcome, the current 2degrees/Vodafone 2G/3G roaming agreement could not be extended to cover 4G services. Future opportunities for secondary market trading would also be limited, as would the Crown's options in the event that 2degrees is unable to complete the payment terms or implementation requirements.

BRIEFING

700 MHz Auction: Combinatorial Assignment Round Options – Additional Information and Recommendations

Date:	2 May 2014	Priority:	Urgent
Security Classification:	Commercial In Confidence	Tracking number:	2836 13-14

ACTION SOUGHT		
	Action sought	Deadline
Hon Amy Adams Minister for Communications and Information Technology	Agree to the recommendations in this report Forward this report to Ministers English and Joyce	6 May 2014
Hon Bill English Minister of Finance	Agree to the recommendations in this report	9 May 2014
Hon Steven Joyce Minister of Economic Development	Agree to the recommendations in this report	9 May 2014

CONTACT FOR TELEPHONE DISCUSSION (IF REQUIRED)				
Name	Position	Telephone		1st contact
Len Starling	Manager: Policy & Planning, Radio Spectrum Management	04 462 4221	s.9(2)(a)	✓
Robin Campbell	Policy Advisor	04 901 1555		

MINISTER'S OFFICE ACTIONS
Office of the Minister for CIT: forward to Ministers English and Joyce

THE FOLLOWING DEPARTMENTS/AGENCIES HAVE BEEN CONSULTED

<input type="checkbox"/> MSD	<input type="checkbox"/> NZTE	<input type="checkbox"/> Treasury	<input type="checkbox"/> COMU	<input type="checkbox"/> TEC	<input type="checkbox"/> MoE
<input type="checkbox"/> MFAT	<input type="checkbox"/> DOC	<input type="checkbox"/> MfE	<input type="checkbox"/> MoH	<input type="checkbox"/> TPK	<input type="checkbox"/> Other

Minister's Office to Complete:

- Approved
- Noted
- Seen
- See Minister's Notes

- Declined
- Needs change
- Overtaken by Events
- Withdrawn

COMMENTS

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EXECUTIVE SUMMARY

This report updates and adds to our briefing of 11 March 2014, titled "700 MHz Auction: Combinatorial Assignment Round Options". This new report presents options for the placement location of any unsold spectrum that might result from Telecom's Commerce Commission clearance application being declined, and seeks a decision on the placement of unsold spectrum should this eventuate. A decision on this issue now could assist the Commerce Commission in its thinking about the likely counterfactual in the event that clearance is not granted to Telecom. This report doesn't repeat the detail of the earlier report but, for ease of reference, includes a summary of that material and a consolidated set of recommendations covering both reports.

The Combinatorial Assignment Round of the 700 MHz auction is scheduled to be held shortly, following a decision from the Commerce Commission on Telecom's application for clearance to acquire 2x20 MHz (four lots). In the Combinatorial Assignment Round, bidders may tender for particular placements (frequencies) within the 700 MHz band; in prior rounds they bid for generic amounts of spectrum, rather than specific frequencies. The provisional results are that 2degrees has purchased 2x10 MHz (two generic lots), Vodafone 2x15 MHz (three generic lots) and Telecom 2x20 MHz (four generic lots) subject to Commerce Commission clearance. Table 1 (below) shows placement options if these provisional results are finalised by Telecom being granted clearance.

The Commission has recently advised us that it expects to make a decision on 30 May. We expect to hold the Assignment Round within weeks of the Commission's decision. This briefing covers two scenarios:

1. Clearance is granted to Telecom. In which case, we recommend excluding placement options that separate 2degrees and Vodafone.
2. Clearance is not granted. In which case, we recommend placing the unsold spectrum block between Telecom and Vodafone.

If Telecom's clearance application is granted

We seek a decision on whether to offer all placement options or whether to withhold some options, which is permitted under the auction rules. Placement options are shown in Table 1 (below).

Table 1: Full list of placement options given the provisional allocation results (with clearance granted to Telecom)

Lower MHz	703-708	708-718	718-718	718-723	723-728	728-733	733-738	738-743	743-748
Upper MHz	758-768	763-768	768-773	773-778	778-783	783-788	788-793	793-798	798-803
Option A	2x20 MHz (TC)				2x15 MHz (VF)			2x10 MHz (2D)	
Option B	2x20 MHz (TC)				2x10 MHz (2D)		2x15 MHz (VF)		
Option C	2x10 MHz (2D)		2x20 MHz (TC)				2x15 MHz (VF)		
Option D	2x15 MHz (VF)			2x20 MHz (TC)			2x10 MHz (2D)		
Option E	2x10 MHz (2D)		2x15 MHz (VF)			2x20 MHz (TC)			
Option F	2x15 MHz (VF)			2x10 MHz (2D)		2x20 MHz (TC)			

If clearance is granted to Telecom, we recommend that options C and D (with Telecom in the middle of the band) be excluded for the following reasons:

1. This will allow the possibility of future secondary market activity, i.e. trading between 2degrees and Vodafone.
2. This will ensure that 2degrees is not prevented from extending its current 2G/3G roaming agreement with Vodafone to cover 4G services.
3. This will safeguard the government's future options.

4. If announced before the Commerce Commission has made a decision on Telecom's clearance application, this could assist the Commission in determining the likely competitive landscape over the eighteen-year period of the 700 MHz management rights.

We have consulted with bidders about the options that should be offered if clearance is granted, and 2degrees and Vodafone agree with the options that this briefing recommends.

If Telecom's clearance application is declined

In the event that Telecom's clearance application is declined, there could be lengthy appeal processes. ^{s 9(2)}
[REDACTED] (b)(1)

[REDACTED] This process could take a year. As the next-highest bidder, Vodafone may wish to reactivate its clearance application and seek to acquire the final spectrum block. Alternatively, Vodafone may feel that clearance is unlikely (given the denial of clearance to Telecom) and be satisfied that its main competitor (Telecom) will also be prevented from acquiring 2x20 MHz.

To provide certainty and avoid delaying network operators from commissioning their networks, we would prefer to run the assignment round immediately. This means choosing where the unsold block is placed. Table 2A (below) shows the recommended options. Table 2B on page 11 shows all placement options, not just those recommended by MBIE.

Table 2A: Simplified assignment placement options with unsold spectrum block (recommended options only)

Lower MHz	703-708	708-713	713-718	718-723	723-728	728-733	733-738	738-743	743-748
Upper MHz	758-763	763-768	768-773	773-778	778-783	783-788	788-793	793-798	798-803
Option A1	2x15 MHz (TC)		2x5 MHz (Crown)		2x15 MHz (VF)		2x10 MHz (2D)		
Option C1	2x10 MHz (2D)		2x15 MHz (TC)			2x5 MHz (Crown)	2x15 MHz (VF)		
Option D1	2x15 MHz (VF)		2x5 MHz (Crown)	2x15 MHz (TC)			2x10 MHz (2D)		
Option E1	2x10 MHz (2D)		2x15 MHz (VF)			2x5 MHz (Crown)	2x15 MHz (TC)		

If neither Telecom nor Vodafone acquire 2x20 MHz (4 blocks), the commercial incentives for either Telecom or Vodafone to negotiate a spectrum sharing agreement with 2degrees are greatly reduced as they would not need spectrum sharing to claim network equality with their closest competitor. Technically, 2degrees could share with either Telecom or Vodafone, without the acquisition limit (2x25 MHz) being breached. Our recommendation for the scenario where Telecom's clearance is granted therefore does not apply.

We recommend that the unsold block be placed between Telecom and Vodafone, for the following reasons:

1. Telecom and Vodafone both have a legitimate claim to this spectrum block under the auction rules (until such time as clearance appeal processes are completed, or statutory timeframes for appeal are spent), and not placing it between them would significantly decrease its utility to the party that was not neighbouring the block.
2. If neither Telecom nor Vodafone end up acquiring the final spectrum block, the Crown may revisit the option of assigning it to emergency services. Alignment with Australia is desirable and Australian emergency services have reactivated their attempts to be assigned 700 MHz spectrum after the Australian 700 MHz auction resulted in unsold spectrum. If emergency services was judged to be the best use for the unsold block in New Zealand, placing the block between Telecom and Vodafone would give emergency services organisations options about who to partner with, if they wished to partner with a commercial network operator. The Police currently partner with Vodafone for mobile broadband services. As 2degrees' network does not provide the same level of near-nationwide coverage as Telecom's and Vodafone's networks, it is unlikely that 2degrees would be the best partner for emergency services.

3. Placing the unsold block between Telecom and Vodafone would not significantly affect the viability of any of the Crown's other options for unsold spectrum, which include leaving the spectrum fallow, allocating it for use by "smart" electricity networks, allocating it to a smaller operator (such as TeamTalk, Woosh, CallPlus, or another smaller operator) for private or bespoke networks, or allocating it to Māori (although MBIE continues to believe that if Māori ICT-based economic development is a policy goal, spectrum allocation is not the best way to achieve this).

Placing the unsold block between Telecom and Vodafone is likely to significantly decrease its future utility to 2degrees.

If you agree to this recommendation we propose that we inform the Commerce Commission, in confidence, of that decision as soon as practicable. This may assist the Commission in making a decision on Telecom's clearance application as it should reduce the number of counterfactuals that the Commission needs to consider. We do not intend to inform the bidders of the placement options decision(s) until the Commerce Commission decision has been made.

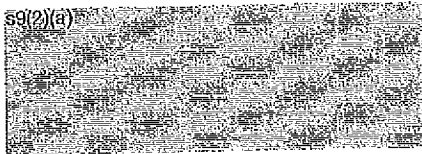
Risks

Consultation on assignment options isn't a part of the formal auction rules. However, in February 2014, when MBIE consulted bidders on placement options under the scenario that clearance was granted to Telecom, we informed bidders that they would be consulted again on placement options if clearance is declined. This briefing now seeks decisions from you, without this consultation having taken place.

RECOMMENDED ACTION

The Ministry of Business, Innovation and Employment recommends that you:

- a Discuss the contents of this report with the Ministers of Finance and Economic Development.
Agree/disagree
- b Agree that in the event that Telecom's Commerce Commission clearance is *granted*, placement options C and D will be excluded.
Agree/disagree
- c Agree that in the event that Telecom's clearance is *declined*, only placements options A1, C1, D1, and E1 will be offered.
Agree/Disagree
- c Refer this report to the Ministers of Finance and Economic Development, for their confirmation of the decisions made above.



Len Starling
 Manager: Policy & Planning
 Radio Spectrum Management
 Ministry of Business, Innovation and Employment

Hon Minister Amy Adams
 Minister for Communications and
 Information Technology

2 / 5 / 14

/ /

Decisions as noted above by Minister Adams confirmed by:

Hon Minister Bill English
Minister of Finance

..... / /

Hon Minister Steven Joyce
Minister of Economic Development

..... / /

Minister's feedback on quality of report:					1 Not satisfactory; 2 Fell short of expectations in some respects; 3 Met expectations; 4 Met and sometimes exceeded expectations; 5 Greatly exceeded expectations
1	2	3	4	5	

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Introduction

1. This report updates and adds to our briefing of 11 March 2014, titled "700 MHz Auction: Combinatorial Assignment Round Options". This new report presents options for the placement location of any unsold spectrum that might result from Telecom's Commerce Commission clearance application being declined, and seeks a decision on the placement of unsold spectrum should this eventuate. A decision on this issue now could assist the Commerce Commission in its thinking about the likely counterfactual. This report doesn't repeat the detail of the earlier report but, for ease of reference, includes a summary of that material and a consolidated set of recommendations covering both reports.
2. The Ministry of Business, Innovation and Employment (MBIE) is auctioning management rights to radio spectrum in the 700 MHz band, to be used for the deployment of fourth generation long term evolution (4G-LTE) cellular broadband networks. The initial allocation rounds of the auction have been completed. In those rounds, bidders bid for generic amounts of spectrum in the 700 MHz band, i.e. not specific frequencies. The provisional results, subject to Commerce Commission clearance, are that 2degrees has purchased 2x10 MHz (two generic lots), Vodafone 2x15 MHz (three generic lots), and Telecom 2x20 MHz (four generic lots).
3. A final round, the Combinatorial Assignment Round ('CA round'), is yet to be held. In the CA round, bidders have the opportunity to each submit a single tender for particular placements (frequencies) within the 700 MHz band i.e. the bottom, middle, or top of the band. This round is a one-shot tender. The auction rules state that outcome is decided by the combination of tenders that achieves the highest revenue for the Crown.
4. Telecom's purchase of four lots is subject to Commerce Commission clearance. A decision from the Commission is expected on 30 May 2014. This first part of this briefing assumes that clearance is granted¹; if it is not, and Vodafone (the next highest bidder) does not reactivate its withdrawn clearance application, there will be an unsold spectrum block and the Crown will have a substantial interest in choosing the location of this block. The second, new, part of this briefing (paragraph 9 onwards) seeks a decision on the placement of any spectrum that might remain unsold because Telecom's clearance application is declined (in either the short term, while the appeal process plays out, or the long term).

Timing of Combinatorial Assignment Round

5. It is our intention to hold the Assignment Round as soon as practicable.
6. If Telecom's clearance is granted, we would expect to hold the round within weeks of the decision.
7. If Telecom's clearance is declined, we would also expect to hold the round within weeks of the decision, only offering options that place the unsold block between Telecom and Vodafone. This would allow for any outcome of the appeals process and/or allocation to Vodafone (the next highest bidder) to be accommodated.

Technical issues potentially affecting preferred placements

8. The 11 March briefing provided detailed information about the technical issues likely to influence bidders' valuations of particular placements. This information is not repeated in detail here. MBIE's view is that the

¹ 2degrees may have the right to appeal clearance if the Commerce Commission holds a conference involving 2degrees to discuss a draft decision prior to the final decision being issued. Any party attending the conference has the right to appeal the final decision.

bottom and middle of the band are likely to be of higher value than the top.

Options if Telecom's clearance is granted

9. If Telecom is granted clearance, possible placement options are shown in the table below.

Table 1: Full list of placement options given the provisional allocation results (with clearance granted to Telecom)

Lower MHz	703-708	708-713	713-718	718-723	723-728	728-733	733-738	738-743	743-748
Upper MHz	758-763	763-768	768-773	773-778	778-783	783-788	788-793	793-798	798-803
Option A	2x20 MHz (TC)			2x15 MHz (VF)			2x10 MHz (2D)		
Option B	2x20 MHz (TC)			2x10 MHz (2D)			2x15 MHz (VF)		
Option C	2x10 MHz (2D)		2x20 MHz (TC)				2x15 MHz (VF)		
Option D	2x15 MHz (VF)			2x20 MHz (TC)			2x10 MHz (2D)		
Option E	2x10 MHz (2D)		2x15 MHz (VF)			2x20 MHz (TC)			
Option F	2x15 MHz (VF)			2x10 MHz (2D)		2x20 MHz (TC)			

10. The auction rules allow us to exclude one or more options. This rule could now be used to facilitate pro-competitive policy outcomes. We seek a decision from you as to whether to rule out one or more placement options. We recommend that options C and D, which place Telecom in the middle of the band, are ruled out for the following reasons:

- To allow future secondary market trading between 2degrees and Vodafone, the only parties that could increase their holdings and remain within the current acquisition limit. This could include spectrum sharing.
- To ensure that the current 2degrees/Vodafone 2G/3G roaming agreement can be extended to cover 4G services.

To protect the Crown's options in case 2degrees does not meet the five-year payment terms or implementation requirement deadline and its spectrum returns to Crown ownership/control,

- To assist the Commerce Commission in determining the likely competitive landscape over the eighteen-year period of the management rights, and narrow the range of options and variables it must consider in assessing Telecom's clearance application.

11. This reasoning is described in more detail in our briefing of 11 March 2014.

Options if Telecom's clearance is declined

12. It is possible that Telecom's clearance application for 2x20 MHz will be declined. This clearance application is effectively for the final spectrum block only – no matter the outcome, Telecom's bid for 2x15 MHz will stand. The decision date is expected to be 30 May 2014. If clearance is declined, Telecom would have a right of appeal. s 9(2)(ba)(i)

Telecom would have 20 working days following release of the Commission's reasoning to appeal. An appeal would be likely take about a year.

13. If Telecom did not successfully appeal, Vodafone would, as the next highest bidder, have the option to reactivate its clearance application and seek to acquire the final spectrum block. This process could also take many months.
14. Given the prospect of lengthy delays, we now seek decisions from you about the placement of any unsold spectrum. If Telecom's clearance application is declined, so that we can hold the Assignment Round and the network operators are not delayed in the commissioning of their 700 MHz networks.
15. We also propose that we inform the Commerce Commission, in confidence, of your decisions arising from this briefing as soon as practicable, to assist them in making a decision on Telecom's clearance application. Advising the Commerce Commission of this decision may assist the Commission as it should reduce the number of counterfactuals that the Commission has to consider. We do not intend to inform the bidders of the placement options decision(s) until the Commerce Commission decision has been made.
16. Our recommendation is that the unsold block should be placed between Telecom and Vodafone. The reasons for this are outlined below. In practice, this means only offering options A1, C1, D1, and E1 (see table on page 11). We have not consulted bidders on the placement of any unsold spectrum, and are not required to under the auction rules. Bidders may prefer the opportunity to provide input into this decision, but ultimately it is the Crown's decision as the vendor and, given an opportunity, bidders are likely to simply express their own commercial preferences.
17. Telecom and Vodafone, as parties that have submitted legitimate bids for the final spectrum block in the auction, both have a potential claim to the spectrum block. Their claims depend on how the Commerce Commission decision goes, whether appeal processes are instigated, and what the appeal outcome(s) are. The Crown should not foreclose on the possibility of allocating the final block to Telecom or Vodafone while the issue is still live.
18. §§ 9(2)(ba)(i) and 9(2)(b)(ii)
[REDACTED]
2degrees has yet to deploy 4G using any of the 2x25 MHz of spectrum it owns in the 1800 MHz band and acquiring more spectrum is only one of several ways to increase network capacity. 2degrees had the opportunity to bid for the unsold 700 MHz block in late 2013, at a reasonable price and with favourable payment terms. It has turned down this option, whereas Telecom and Vodafone have both shown that they are prepared to pay at least \$82 million for the block. Placing the unsold block between Telecom and Vodafone protects the potential for fiscal return to the Crown.
19. [REDACTED]
Neither Telecom nor Vodafone acquire 2x20 MHz (4 blocks), because Commerce Commission clearance is declined, the commercial incentives for either Telecom or Vodafone to negotiate a spectrum sharing agreement with 2degrees are greatly reduced. In this scenario, Telecom and Vodafone will have equal 4G spectrum holdings in all bands, so will not be able to use their greater spectrum holdings to claim a better network than their closest competitor. Technically, 2degrees could share with either Telecom or Vodafone, without the acquisition limit (2x25 MHz) being breached. Our recommendation for the scenario where Telecom's clearance is granted therefore does not apply.
20. However, for technical reasons 2degrees may still only have one option for 4G roaming: whichever network operator it is placed next to.
21. If neither Telecom nor Vodafone end up acquiring the final spectrum block, the Government may wish to reconsider other allocation options, such as allocating the spectrum for use by emergency services or electricity networks. There may be both commercial demand and economic and social benefits from such an allocation, however we have not yet done the analysis necessary to confirm this. Our initial analysis at the beginning of the 700 MHz allocation process concluded that commercial mobile networks were likely to be the highest value users of this spectrum band (resulting in economy-wide benefits of up to \$2.4 billion). However, if the three network operators are either unwilling to purchase all the spectrum (2degrees) or unable to get Commerce Commission clearance (Telecom and Vodafone), then it may be beneficial to reconsider other high value uses.

Should read:
2x20

22. At the time of the initial Cabinet decisions on 700 MHz allocation, we argued that the 800 MHz band was more appropriate for emergency services use, particularly as this would align with Australia. Since then, the Australian 700 MHz auction has resulted in unsold spectrum (Vodafone-Hutchison/VHA, the third-place market operator, did not bid) and Australian emergency services organisations have reignited their efforts to acquire 700 MHz spectrum. There is considerable uncertainty about what band(s) Australian emergency services may end up with.
23. If it was deemed appropriate in the future to allocate 700 MHz spectrum to emergency services in New Zealand, one option is that emergency services may seek to share some network infrastructure with a commercial operator. Placing the emergency services' spectrum between Vodafone and Telecom would mean that emergency services could negotiate with both network operators to reach a satisfactory arrangement (it would give emergency services more options and greater negotiating power). The Policy currently partners with Vodafone for broadband services. It seems likely that emergency services would prefer to partner with Telecom or Vodafone as their networks cover significantly more population and geography than 2degrees' network.
24. Placement between Telecom and Vodafone would not foreclose other commercial allocation options, such as to electricity networks (for "smart grids") or to niche operator(s) seeking to build private or bespoke 4G-LTE cellular or fixed wireless networks.
25. However, placement between Telecom and Vodafone is likely to result in less demand from 2degrees for the final spectrum block in the future. While carrier aggregation technology is being developed that would allow the efficient use of non-neighbouring spectrum by the same network, commercial deployment in New Zealand is likely some years away and may be costly. ~~§ 9(2)(b)(i) and 9(2)(b)(ii)~~
~~MBIE's longstanding position is that, as a general rule, acquiring more spectrum is not the only way that network operators can increase the capacity on their networks (building more cell towers is another good option to increase capacity).~~
26. The Government has maintained a clear and consistent position that Māori groups will not be allocated any 700 MHz spectrum on special terms. It remains MBIE's opinion that if Māori ICT-based economic development is a policy goal, spectrum allocation is not the best way to achieve this. The placement of the unsold spectrum block is unlikely to have a significant effect if the government, in the future, revisits the decision not to allocate Māori 700 MHz spectrum. While it is the case that Te Huarahi Tika Trust (THTT) and its commercial arm Hautaki Ltd were established to hold spectrum for Māori and now have commercial arrangements with 2degrees, any future allocation of cellular spectrum to Māori would not necessarily have to go to THTT or Hautaki Ltd. Even if it was allocated to THTT or Hautaki Ltd, these organisations would be free to seek future commercial arrangements with any and all commercial network operators that they so choose.
27. Table 2B (next page) shows the full range of placement options with an unsold spectrum block.

Table 2B: Assignment placement options with unsold spectrum block

Lower MHz	703-708	708-713	713-718	718-723	723-728	728-733	733-738	738-743	743-748
Upper MHz	758-763	763-768	768-773	773-778	778-783	783-788	788-793	793-798	798-803
Option A1 (recommended)	2x15 MHz (TC)			2x5 MHz (Crown)	2x15 MHz (VF)			2x10 MHz (2D)	
Option A2	2x5 MHz (Crown)	2x15 MHz (TC)			2x15 MHz (VF)			2x10 MHz (2D)	
Option B1	2x15 MHz (TC)			2x5 MHz (Crown)	2x10 MHz (2D)		2x15 MHz (VF)		
Option B2	2x5 MHz (Crown)	2x15 MHz (TC)			2x10 MHz (2D)		2x15 MHz (VF)		
Option C1	2x10 MHz (2D)		2x5 MHz (Crown)	2x15 MHz (TC)			2x15 MHz (VF)		
Option C2 (recommended)	2x10 MHz (2D)		2x15 MHz (TC)			2x5 MHz (Crown)	2x15 MHz (VF)		
Option D1 (recommended)	2x15 MHz (VF)			2x5 MHz (Crown)	2x15 MHz (TC)			2x10 MHz (2D)	
Option D2	2x15 MHz (VF)			2x15 MHz (TC)			2x5 MHz (Crown)	2x10 MHz (2D)	
Option E1 (recommended)	2x10 MHz (2D)		2x15 MHz (VF)			2x5 MHz (Crown)	2x15 MHz (TC)		
Option E2	2x10 MHz (2D)		2x15 MHz (VF)			2x15 MHz (TC)		2x5 MHz (Crown)	
Option F1	2x15 MHz (VF)			2x10 MHz (2D)		2x5 MHz (Crown)	2x15 MHz (TC)		
Option F2	2x15 MHz (VF)			2x10 MHz (2D)		2x15 MHz (TC)		2x5 MHz (Crown)	

Fiscal issues – If clearance is granted to Telecom

28. Auction revenues to date have surpassed budget baseline forecasts. Limiting the placement options offered to bidders will have an impact on the amount they need to bid to obtain their preferred placement. Any loss in revenue due to limiting the placement options is difficult to quantify, as we do not know the value that bidders place on particular assignment options. For example, Telecom may have an interest in preventing 2degrees and Vodafone from arranging roaming or spectrum sharing, and may therefore be prepared to bid higher for the middle placement. However, under this situation the consumer benefits arising from market competition (through roaming or spectrum sharing) may outweigh any direct loss of revenue to the government.
29. Fierce competition between Telecom and Vodafone during the supplementary allocation rounds suggests that both are prepared to bid aggressively for their preferred outcome. On the other hand, Telecom may have now exhausted much of its "war chest".

Fiscal Issues – if clearance is declined

30. In a situation where clearance is not granted, it is not clear to us the value that Telecom and Vodafone might place on bordering the unsold block. Bidders may believe that there is value being next to the unsold block because they may seek to acquire it in the future. They may also see value in the option to cooperate or partner with emergency services, should the unsold block be allocated to emergency services in the future.
31. 2degrees is theoretically likely to value being placed next to the unsold block very highly (to protect an option of future purchase), and/or being placed next to Vodafone so that its current 2G/3G roaming agreement can be extended to cover 4G services. However, 2degrees may not have the ability to bid at the level of its theoretical value.
32. If clearance is not granted to Telecom and Vodafone either does not seek or is declined clearance, the final spectrum block would remain unsold and the total auction revenues from the Allocation Round would be \$176 million rather than \$259 million. Some additional revenue can be expected from the final Combinatorial Assignment Round.

Risks – If clearance is granted to Telecom

33. If options C and D are allowed and the bidding results in one of these options being the outcome, it may be difficult to extend the current 2degrees/Vodafone 2G and 3G roaming agreement to cover 4G services, because of issues to do with handset compatibility.
34. If options C and D are allowed and the bidding results in one of these options being the outcome, future opportunities for secondary market trading would also be limited, as would the Crown's options in the event that 2degrees is unable to complete the payment terms or implementation requirements.

Risks – if clearance is declined

35. If the government decides on placement options now, bidders (particularly 2degrees) are likely to complain that they were not consulted on the placement of the unsold block. In February 2014, when MBIE consulted bidders on placement options under the scenario that clearance was granted to Telecom, we informed bidders that they would be consulted again on placement options if clearance is declined. However, consultation is not required under the auction rules.
36. If 2degrees is not assigned a placement next to Vodafone, it is likely to complain that its current roaming agreement cannot be extended to cover 4G services. However, there may be technical solutions, and it may be able to negotiate 4G roaming with Telecom instead.