



## **Response to Consultation and Decision on the Licensing of 4G Mobile Services**

**10 September 2013**

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## Executive Summary

This response to consultation is concerned with the licensing of 4G mobile communications services on the Isle of Man and the spectrum bands that will, in conjunction with Ofcom, be assigned for use for this purpose. The Communications Commission (the Commission) published a consultation setting out its proposals on 1 July 2013 (the July 2013 consultation). The Commission received three responses to the consultation, from Manx Telecom (MT), Sure IOM (Sure), and the Planning and Building Control Division of the Department of Infrastructure, Isle of Man Government. Non-confidential versions of these responses are available on the Commission's website. The Commission thanks all respondents for their comments.

Following consideration of all responses, the Commission has made the following decisions:

1. In order to provide 4G services, a mobile operator in the Isle of Man will require a WTA licence issued by Ofcom on the recommendation of the Commission. An operator which currently holds an appropriate Isle of Man Telecommunications Act licence will be required to accept a new Part inserted into its licence which will include appropriate licence conditions relating to 4G mobile service provision. A new operator will be required to apply for a mobile communications provider licence.
2. Spectrum for 4G services in the Isle of Man will be made available in the 800 MHz, 1800 MHz and 2.6 GHz bands.
3. The Commission will assign up to 2 X 10 MHz per operator in the 800 MHz band; 2 X 20 MHz per operator in the 1800 MHz band; and at least 2 X 20 MHz per operator in the 2.6 GHz band. Spectrum in the 2.6 GHz band (both paired and unpaired allocations) will be reserved for 4G licensees without being formally assigned at this stage.
4. All existing 2G and 3G spectrum bands will be liberalised at the same time as the 4G spectrum is awarded.
5. Up to three licences for the provision of 4G services will be awarded
6. MT and Sure will maintain their current spectrum allocations.
7. 4G operators will be responsible for addressing any Digital Terrestrial Television (DTT) interference in the 800 MHz band, and this will be a condition of the WTA licence issued by Ofcom. Costs of remedial action will be shared equally amongst 4G operators.
8. The Telecommunications licence fee will be £150,000 per licence. In addition, licences granted by Ofcom under the Wireless Telegraphy Act 2006 for the use of radio spectrum are subject to the payment of annual fees. These are set out in the Statutory Instrument Wireless Telegraphy (Licence Charges) Regulations 2011.

9. The 4G licence award process will comprise four Stages, i.e. an Application Stage, a Qualification Stage, a Sealed Bid Stage (only required if four or more valid applications are received) and an Award Stage.
10. The Commission has included a number of service criteria within the 4G licences, which all licensees must meet.

# 1. Introduction

## Background to 4G

- 1.1. This response to consultation is concerned with the licensing of 4G mobile communications services on the Isle of Man and the spectrum bands that will, in conjunction with Ofcom, be assigned for use for this purpose. The Commission published a consultation setting out its proposals on 1 July 2013 (the July 2013 consultation). The Commission received three responses to the consultation, from Manx Telecom (MT), Sure IOM (Sure), and the Planning and Building Control Division of the Department of Infrastructure, Isle of Man Government. Non-confidential versions of these responses are available on the Commission's website. The Commission thanks all respondents for their comments. This response to consultation takes into account all comments made by respondents. Respondents' views are summarised under the heading of each of the Commission's proposals as set out in the July 2013 consultation, and this is followed by the Commission's reasoning and conclusion.

## Legal and Regulatory Background

### Legislative background

- 1.2. The Isle of Man Communications Commission is responsible for issuing licences for telecommunications and broadcasting services on the Island. The Commission's powers include:
- specifying the nature of the telecommunications systems and services which operators are permitted to operate and provide under the licence;<sup>1</sup> and
  - setting conditions on such operation and provision.<sup>2</sup>
- 1.3. Spectrum management is the responsibility of the UK Office of Communications (Ofcom). Ofcom licenses and regulates the use of radio spectrum in the Island, under the Wireless Telegraphy Act 2006 of Parliament, which is extended to the Isle of Man, with Tynwald's consent, by Order in Council. The Commission works closely with Ofcom to ensure that Isle of Man Government policies are taken into account in licensing decisions.
- 1.4. The legislative basis for the proposals to license the provision of 4G mobile communications services in the Isle of Man is provided by the Telecommunications Act 1984. This consultation is undertaken as part of the process leading to such licensing.

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<sup>1</sup> See section 5(1) and 5(4)(b) Telecommunications Act 1984.

<sup>2</sup> See section 5(5) Telecommunications Act 1984.

## Current licensing arrangements for Isle of Man mobile operators

- 1.5. MT and Sure have telecommunications licences granted under section 5 of the Telecommunications Act 1984 (of Tynwald). MT's current licence was granted by Council of Ministers (CoMin) effective from 1 January 2004 and Sure's by the Communications Commission (the 'Commission') effective from 1 June 2006. These licences allow the operators to offer telecommunications services in the Isle of Man. The definition of telecommunications services is broad (e.g. it does not distinguish between fixed and mobile), and there are no schedules attached to the licences covering frequency allocations or technical specifications.
- 1.6. MT and Sure have Public Wireless Network Licences for 2G and 3G mobile services, issued by Ofcom under the Wireless Telegraphy Acts ('WTA') 1949 and 1998.<sup>3</sup> These licences, issued in consultation with the Commission, have a linkage to the operator holding a telecommunications licence in the Isle of Man, in that the licence may be revoked:

*"If there is no longer in force a licence granted to the Licensee by the **Communications Commission, Isle of Man** for the provision of a telecommunications service in that territory;" [Clause3b].*

- 1.7. These WTA licences provide for variation in the licence, and the attached schedule specifies several technical parameters, including which frequency bands are allocated.
- 1.8. At present, then, a mobile operator in the Isle of Man needs to have (a) a Telecommunications Act licence from the Communications Commission, and (b) a WTA licence from Ofcom.

## UK legislation relevant to spectrum allocation in the Isle of Man

- 1.9. The use of spectrum in the Isle of Man is governed by UK legislation that has been extended to the Isle of Man, as well as by international agreements between the UK and other countries on the use to which various bands of radio spectrum can be put and the avoidance of interference across borders. The licensing of the use of spectrum, in the UK and in the Isle of Man, is carried out by Ofcom, by virtue of the powers given to it by the Wireless Telegraphy Act 2006 and the Communications Act 2003, which have been extended to the Isle of Man.
- 1.10. Ofcom's principal and secondary duties are in Section 3 of the Communications Act 2003 ('General duties of Ofcom'), which provides that:

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<sup>3</sup> The Wireless Telegraphy Act 2006 repealed the 1949 and 1998 Acts.

- (1) *It shall be the principal duty of OFCOM, in carrying out their functions—*
  - (a) *to further the interests of citizens in relation to communications matters;*
  - and*
  - (b) *to further the interests of consumers in relevant markets, where appropriate by promoting competition.*
- (2) *The things which, by virtue of subsection (1), OFCOM are required to secure in the carrying out of their functions include, in particular, each of the following—*
  - (a) *the optimal use for wireless telegraphy of the electro-magnetic spectrum;*
  - (...)

1.11. Moreover, Section 3 of the WTA ('Duties of OFCOM when carrying out functions') further specifies Ofcom's duties as follows:

- (1) *In carrying out their radio spectrum functions, OFCOM must have regard, in particular, to—*
  - (a) *the extent to which the electromagnetic spectrum is available for use, or further use, for wireless telegraphy;*
  - (b) *the demand for use of the spectrum for wireless telegraphy; and*
  - (c) *the demand that is likely to arise in future for the use of the spectrum for wireless telegraphy.*
- (2) *In carrying out those functions, they must also have regard, in particular, to the desirability of promoting—*
  - (a) *the efficient management and use of the part of the electromagnetic spectrum available for wireless telegraphy;*
  - (b) *the economic and other benefits that may arise from the use of wireless telegraphy;*
  - (c) *the development of innovative services; and*
  - (d) *competition in the provision of electronic communications services.*

1.12. For the purposes of the spectrum relevant to this consultation, the respective roles of the Commission and Ofcom in coordinating the award of spectrum licences in the Isle of Man are as follows:

- Ofcom consults the Commission for advice about the level and nature of demand for the spectrum in the specified bands in the Isle of Man. Allocation of spectrum in the Isle of Man is dealt with by way of a call for applications by the Commission. The Commission carries out an open, non-discriminatory and transparent selection process on behalf of Ofcom. In light of responses to the selection process the Commission has carried out (if demand exceeds supply), the Commission makes a recommendation to Ofcom as to how it considers the spectrum in the Isle of Man should be allocated; and
- Ofcom may act on the recommendation and grant licences for spectrum use under the WTA provided it is satisfied the Commission's recommendation is likely to be consistent with its own statutory duties.



## Regulatory framework for the licensing of 4G services

**Proposal 1:** in order to provide 4G services, a mobile operator in the Isle of Man will require a WTA licence issued by Ofcom on the recommendation of the Commission, and the acceptance of a new Part inserted into its Isle of Man Telecommunications Act licence which will include appropriate licence conditions relating to 4G mobile service provision.

### Summary of July 2013 consultation proposals

- 1.13. Mobile operators in the Isle of Man will continue to need both a WTA Licence issued by Ofcom, with the Commission's recommendation, which will allow the use of specific spectrum bands for the provision of 4G mobile services on the Island, and a Telecommunications Act licence issued in the Isle of Man which allows the provision of 4G mobile telecommunications services in the Isle of Man. It is important that both new entrants and existing mobile operators are subject to appropriate regulatory conditions in respect of the provision of 4G services. For the purposes of this consultation, the term '4G licence' is therefore used to mean the combination of (a) either the award to a new entrant of a Telecommunications Act mobile communications licence containing conditions appropriate to the provision of 4G mobile services or the modification of the Telecommunications Act licence held by an existing mobile operator to contain such conditions, in each case together with (b) the relevant WTA licence issued by Ofcom granting usage rights to the relevant spectrum bands.
- 1.14. In the July 2013 consultation, the Commission proposed that, should a new market entrant successfully apply for a 4G licence, the Commission would issue a mobile operator's licence under the Telecommunications Act. A draft of this licence will be made available when the Commission seeks applications for the 4G awards.
- 1.15. In the July 2013 consultation, the Commission considered that successful application by current operators would require a modification in the current Telecommunications Act licences. The Commission proposed to meet the objectives of the 4G process by inserting the new conditions in a new Part of the current Telecommunications Act licences. The new Part would contain licence conditions in relation to 4G service provision, and would formally link the Telecommunications Act licence to the WTA licence issued by Ofcom, as at present the only formal link is from the WTA licence which implies the holding of a Telecommunications Act licence. The Commission noted that there is no mechanism in the current Telecommunications Act licence which connects the permission for an operator to offer telecommunications services with the WTA licence which allows the operator to use particular spectrum bands to offer these services.
- 1.16. Under section 10(1) of the Telecommunications Act 1984, the Commission is empowered to modify a licence, save to the extent that the terms of the licence

specifically provide, in accordance with section 10(2), that the licence should not be modified. The licences of both the current operators provide that there should be no licence modifications prior to the end of the fifth year after the grant of the licence, but, in each case, that period has now expired. Accordingly, the Commission has power to modify the current operators' licences, consistently with section 10 of the Telecommunications Act 1984, and proposes to do so. The Commission's preference would be to modify the licence with the consent of both existing mobile operators, as this is likely to be most practical and time efficient. The Commission attached to the July 2013 Consultation Document a proposed licence variation as Annex 1.

- 1.17. Under the provisions of section 10(3) of the Telecommunications Act 1984, before making modifications to operators' licences, the Commission is required to give notice:

*“(a) stating that it proposes to make the modifications and setting out their effect; (b) stating the reasons why it proposes to make the modifications; and (c) specifying the time (not being less than 28 days from the date of publication of the notice) within which representations or objections with respect to the proposed modifications may be made”,*

- 1.18. The modifications proposed to current mobile operators' licences were set out as an Annex to the July 2013 consultation, which the Commission proposed would be attached as a new Part 7 to the current Telecommunications Act licence held by MT and a new Part 5 to the Telecommunications Act licence of Sure. The purpose of the proposed modifications is to ensure that 4G services will be introduced and operated in the Isle of Man in a manner which will best achieve the objectives set out by the Commission. The time period within which representations or objections may be made was to run concurrently with the consultation, so that representations on the proposed licence modifications were to be made within one month of the publication of the consultation.
- 1.19. For a new market entrant, the Commission proposed to issue an appropriate licence under the Telecommunications Act, which would licence the operator to provide mobile communications services on the Island, and which would contain the same provisions for 4G services as discussed above in the context of existing licences.

## Summary of responses

- 1.20. Sure agreed with the Commission's proposals, and noted that it is important that all operators who obtain allocations of 4G spectrum should face consistent obligations.
- 1.21. The Department of Infrastructure noted that MT is the only mobile phone operator on the island to have code powers, and that if an operator is not a Telecommunications Code System Operator then it cannot install masts and/or antennas under permitted development rights, as granted under the Town and Country Planning (Permitted Development) (Telecommunications) Order 2012, and would need to apply for planning approval for any new installations. The

Department of Infrastructure expressed a view that this could lead to delay in the provision of 4G services, and could give MT an unfair advantage.

- 1.22. The Department of Infrastructure queried the absence of code powers also with respect to operators' ability to meet the required service characteristics, and this is dealt with in the relevant section below.
- 1.23. MT queried whether it is appropriate to run the 4G consultation in parallel with the consultation on licence modification.
- 1.24. MT proposed that the addition of a new Part to the licence offered the opportunity to extend and align licence terms, and MT suggested that a minimum term of 15 years should apply. In MT's view, certainty over the licence term enables more secure investment in capital infrastructure.

### Commission's analysis

- 1.25. The Commission notes points raised by the Department of Infrastructure, and agrees that the key issue for the 4G consultation is to ensure that access to the necessary planning approval does not constitute a barrier to entry and/or expansion. This does not necessarily require code powers. For example, Sure does not have code powers, but has installed mobile communications infrastructure. In the Commission's view, the issue of code powers is better dealt with within the framework of the new communications legislation.
- 1.26. The Commission has considered MT's query regarding consulting in parallel on possible modification of existing operators' licences alongside the overall 4G consultation. In the Commission's view, this has allowed the 4G award process to progress as quickly as possible, without having any negative consequences for existing or potential operators.
- 1.27. The Commission notes that it has received no objections or representations to its proposed licence modifications, as set out in Section 5 of the July 2013 consultation.
- 1.28. The Commission has considered MT's point regarding licence terms, and notes that existing operators' licences are not time limited.

### Commission's Decision

**DECISION 1:** In order to provide 4G services, a mobile operator in the Isle of Man will require a WTA licence issued by Ofcom on the recommendation of the Commission. An operator which currently holds an appropriate Isle of Man Telecommunications Act licence will be required to accept a new Part inserted into its licence which will include appropriate licence conditions relating to 4G mobile service provision. A new operator will be required to apply for a mobile communications provider's licence, and a sample of the format of this licence will be available with the call for applications

## 2. Spectrum availability for 4G services

### Summary of July 2013 consultation proposals

- 2.1 In the July 2013 consultation, the Commission made a series of proposals regarding the spectrum bands that may be made available for use in the provision of 4G services in the Isle of Man. The analysis covered both the bands that are currently in use for 2G and 3G mobile services as well as the other bands where spectrum may also be made available for 4G.
- 2.2 At the present time, MT and Sure hold WTA licences to provide 2G and 3G mobile services on the Island. The two operators utilise spectrum in the 900 MHz and 1800 MHz bands to support the provision of 2G mobile services and they are also licensed to use 2.1 GHz spectrum for the provision of 3G services.
- 2.3 In addition, Sure holds an allocation of spectrum within the 1800 MHz band for 2G services. In both the 900 MHz and 2.1 GHz bands, there is spare spectrum which is currently unassigned and, aside from Sure's allocation of 2 x 5 MHz, the entire 1800 MHz band remains unassigned at the present time.
- 2.4 4G mobile networks are being deployed across the world using spectrum in a number of different frequency bands. Typically, 4G networks are being deployed so that both coverage and capacity are maximised and, in order to do this, a mix of spectrum bands – which offer different radio propagations – are being used.<sup>4</sup> The bands which are being used to support the provision of 4G services in other European countries are the 800 MHz band (low capacity), the 1800 MHz band (high capacity) and the 2.6 GHz band (high capacity).
- 2.5 The Commission reviewed emerging international practice in the licensing of 4G services. Bearing in mind spectrum availability, the consultation put forward the proposal that the optimum bands for the provision of 4G services in the Isle of Man are the 800 MHz band and the 1800 MHz band, with the 2.6 GHz band also being made available for assignment to support 4G services at a later date, should sufficient demand emerge for high capacity spectrum emerge in the future.

### Consultation proposals

- 2.6 In the July 2013 consultation, the Commission made a series of specific proposals as to what spectrum should be allocated, and as to how this may best be achieved. Under each of the proposals, the Commission has summarised the consultation

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<sup>4</sup> The lower the frequency band, the wider the area that can be covered from a given cell site. Lower frequency bands (i.e. sub- 1GHz) also facilitate greater in-building coverage than higher frequency bands (e.g. 3G services provided over the 2.1 GHz band).

proposals, the views of respondents, the Commission's analysis and finally the Commission's decision.

## Spectrum for 4G services

**Proposal 2:** spectrum for 4G services should be made available in the 800 MHz, 1800 MHz and 2.6 GHz bands.

### Summary of July 2013 consultation proposals

2.7 In the July 2013 consultation, the Commission considered current and potential spectrum assignments, and proposed that the entire 800 MHz and 2.6 GHz bands and all but 5MHz (paired) of the 1800 MHz band be made available for award within the 4G licensing process.

### Summary of responses

2.8 MT agreed with the Commission's proposals.

2.9 Sure agreed that spectrum for 4G services should be made available across a range of frequency bands, and requested confirmation that the intention is that the new 4G licences will not be technology specific, so that a licensed operator holding WTA licences across all spectrum frequencies would be able to provide 4G services (and indeed 2G and 3G services) across any of these frequencies.

### Commission's analysis

2.10 The Commission confirms that the 4G licences will not be technology-specific.

### Commission's Decision

**DECISION 2:** Spectrum for 4G services in the Isle of Man will be made available in the 800 MHz, 1800 MHz and 2.6 GHz bands.

## 4G spectrum assignments

**Proposal 3:** the Commission will consider assignments of up to 2 X 10 MHz per operator in the 800 MHz band; 2 x 20 MHz per operator in the 1800 MHz band; and 2 x 20 MHz per operator in the 2.6 GHz band, with the option of reserving spectrum in the 2.6 GHz band for later assignment to the 4G licensees.

## Summary of July 2013 consultation proposals

2.11 In terms of possible spectrum assignments within the various bands, the Commission considered the following options:

- **2 x 10 MHz per operator in the 800 MHz band:** such an assignment would be consistent with emerging practice across the EU and elsewhere and it would also mean that the Commission would have the option of licensing a third 4G operator in this band;
- **Up to 2 x 20 MHz per operator in the 1800 MHz band:** given the volume of spectrum in this band and its key importance as the emerging preferred high-capacity 4G band, the Commission could either mirror the assignments made in the 800 MHz band or else could adopt an alternative approach of providing three 4G licensees with additional spectrum within the band. The benefit of this would be that, with each having a contiguous allocation of 2 x 20 MHz bandwidth, each of the operators would be in a position to provide higher data rates over their 4G networks than would otherwise be the case.<sup>5</sup> This would be consistent with the Commission's aim to facilitate the introduction of innovative mobile broadband services on the Island.
- **Up to 2 x 20 MHz per operator in the 2.6 GHz band:** the availability of large volumes of unassigned spectrum in this band opens the way for the Commission to consider providing large individual spectrum assignments to each 4G operator within this band, subject to the band plan adopted by Ofcom which the Commission intends to use for the 2.6 GHz band on the Island. In making provision for the possible licensing of up to three 4G operators, this means that the Commission could consider the allocation of individual assignments of up to 2 x 20 MHz of 2.6 GHz spectrum for FDD<sup>6</sup> use, with the possibility, if required, of assigning additional unpaired spectrum within the band for TDD<sup>7</sup> usage.
- Depending on applicants' requirements for spectrum, 4G spectrum assignments in the 2.6 GHz band could be held back until such time as there is demonstrable operator need for the spectrum. As a result, the Commission is proposing to build into the 4G licensing process a means by which the 4G

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<sup>5</sup> This is because higher data rates can only be achieved by increasing the overall bandwidth that is used and so a 20 MHz carrier can support a far higher data speed than a 5 MHz one can. In addition, the assignment of contiguous spectrum blocks (in, say, 5 MHz carriers) makes the required carrier aggregation process simpler to implement from a radio engineering point of view.

<sup>6</sup> Frequency-division duplexing (FDD) means that the transmitter and receiver operate at different carrier frequencies.

TDD is the application of time-division multiplexing to separate outward and return signals. TDD has a strong advantage in the case where there is asymmetry of the uplink and downlink data rates. As the amount of uplink data increases, more communication capacity can be dynamically allocated, and as the traffic load becomes lighter, capacity can be taken away. The same applies in the downlink direction.

operators would have the automatic right to a specific spectrum allocation within the 2.6 GHz band but that this allocation would not be granted immediately and would instead be granted at a later stage, once there is greater clarity around the need for large carriers to support the provision of higher-speed mobile broadband services.<sup>8</sup>

### Summary of responses

- 2.12 Both MT and Sure agreed with the Commission's proposed assignments, and both were in favour of allocating 2.6 GHz spectrum as and when required, rather than incurring WTA licence fees for spectrum which was not immediately required.
- 2.13 MT and Sure both requested clarification on the Commission's position on 2.6 GHz spectrum. MT proposed that it should be specified that a successful applicant would have access to the 2.6 GHz band when they require it, and that the TDD spectrum in the centre gap also be assigned as an "automatic right" in the same manner as the 2.6 GHz FDD spectrum. MT proposed that if spectrum in the 2.6 GHz band were not to be allocated on an automatic right basis, the Commission should clarify how it will determine if spectrum is required. Sure proposed that the Commission should make absolutely clear that 2.6 GHz spectrum was being held in reserve for 4G licensed operators, and would not be made available to any other operators.

### Commission's analysis

- 2.14 As stated in the July 2013 consultation, 4G licensees will have the automatic right to a specific spectrum allocation within the 2.6 GHz band (which the Commission agrees should include allocations of paired and unpaired spectrum), but this allocation will not be granted immediately. This approach allows 4G licensees the flexibility to develop 4G services without incurring WTA fees for spectrum in the 2.6 GHz band which they may or may not choose to access at a later date.

### Commission's Decision

**DECISION 3:** The Commission will assign up to 2 X 10 MHz per operator in the 800 MHz band; 2 X 20 MHz per operator in the 1800 MHz band; and 2 X 20 MHz per operator in the 2.6 GHz band. Spectrum in the 2.6 GHz band (both paired and unpaired allocations) will be reserved for 4G licensees without being formally assigned at this stage.

### Spectrum liberalisation

**Proposal 4:** *all spectrum bands should be liberalised at the same time as the 4G spectrum is awarded.*

<sup>8</sup> Such an approach would also be advantageous from the operators' point of view as they would not be required to pay annual WT licence fees to Ofcom on their 2.6 GHz spectrum holdings until such time as the spectrum has been formally allocated to them.

## Summary of July 2013 consultation proposals

- 2.15 In the July 2013 consultation, the Commission considered whether it should, in conjunction with Ofcom, liberalise spectrum rights of use in all bands. This would mean that all current 2G and 3G spectrum bands would be freed from service and technology restrictions, leaving operators free to make their own operational choices regarding which services to provide in which bands.
- 2.16 The Commission noted that the liberalisation of current 2G and 3G spectrum allocations would need variation in the current WTA licences, so that they would no longer be technology-specific. Ofcom has consulted on liberalising some spectrum bands in the UK.<sup>9</sup>
- 2.17 The WTA licences, for both 2G and 3G spectrum holdings, currently held by MT and Sure may be varied with the consent of the licence holders.<sup>10</sup> The Commission proposed to proceed with the liberalisation of these spectrum usage rights, with the formal consent of both operators and in conjunction with Ofcom, with the intention that the necessary licence variations will be completed to coincide with the conclusion of the 4G licensing process.
- 2.18 The Commission also proposed that new 4G WTA licences would not be technology-specific. This means that they will specify which frequency bands the licence holder has access to but will not be prescriptive as regards the technologies deployed within the bands.

## Summary of responses

- 2.19 Both MT and Sure supported the liberalisation of all spectrum bands.
- 2.20 MT proposed that, should the 4G award process be delayed, liberalisation should go ahead in any case. MT also proposed that while it is acceptable that licences contain general obligations relating to the provision of a mobile broadband service, it should be clarified that these obligations are not frequency specific. Further, MT proposed that it should be stressed that the spectrum is to be used only for the provision of mobile services.

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<sup>9</sup> Variation of 900 MHz, 1800 MHz and 2100 MHz Mobile Licences, Ofcom, 1<sup>st</sup> February 2013, available at: <http://stakeholders.ofcom.org.uk/binaries/consultations/variation-900-1800-2100/summary/condoc.pdf>

<sup>10</sup> Licence Condition 3(a).



## Commission's analysis

- 2.21 The Commission notes that both MT and Sure support the liberalisation of all spectrum bands. In the Commission's view, liberalisation of spectrum means that licence obligations will not be frequency-specific.
- 2.22 It is the Commission's intention that the way in which spectrum use is liberalised in the Isle of Man will be aligned with spectrum liberalisation policy and practice across the EU and, in particular, within the UK. All of the bands it is proposed to liberalise within the Isle of Man have been identified at EU level for use in the context of its Wireless Access Policy for Electronic Communications Services (WAPECS) to support the deployment of advanced wireless broadband and other services. The Commission anticipates that the liberalised spectrum within these bands will be put to the same use in the Isle of Man as it is elsewhere across Europe.
- 2.23 It is the Commission's intention that the process of liberalising spectrum forms part of the 4G award process. The Commission does not intend to decouple the liberalisation of spectrum from the 4G award process because such a move would undermine the Commission's approach to the licensing of 4G mobile services, in particular the need to define service characteristics which operators will be required to meet.
- 2.24 Should there be unforeseen delays in the 4G process, the Commission may choose to review this decision, but its position remains that liberalisation will be undertaken as part of the 4G award process.

## Commission's Decision

**DECISION 4:** All current 2G and 3G spectrum bands will be liberalised at the same time as the 4G spectrum is awarded.

## Number of 4G licences to be awarded

*Proposal 5: up to three licences for the provision of 4G services should be awarded.*

## Summary of July 2013 consultation proposals

- 2.25 In the July 2013 consultation, the Commission noted that there is sufficient spectrum to licence a third operator, and evidence from elsewhere suggests this option should not be precluded. However, the Commission's aim of facilitating the introduction of innovative services and maximising investment suggests that there should be no more than three licences.

## Summary of responses

- 2.26 Sure agreed in principle that a third licence could be made available, and that a potential third operator could reach its own conclusions on commercial viability.
- 2.27 MT expressed a view that a third licence should not be awarded. In MT's view, new entry would undermine MT investment in the island, and would contravene the Commission's goal of maximising investment and promoting economic growth. MT also proposed that there is insufficient demand to sustain a third operator. Finally, MT questioned whether an additional operator would necessarily result in a positive competitive outcome in the market.

## Commission's analysis

- 2.28 The Commission reiterates its view as expressed in the July 2013 consultation that experience from elsewhere indicates only that a third licence should not be precluded, because there are instances where third operators are successful in small jurisdictions. There are also examples of where a third licence holder has failed, as well as examples where it has been successful, but this will primarily depend on commercial decisions made by a potential new entrant.
- 2.29 The Commission has not commented on whether or not there is sufficient demand for a third operator, and has not commented on the commercial validity of any case. It is the Commission's view that such a judgement should be made by a potential operator. The key role of the Commission in relation to the licensing of 4G services in the Isle of Man is to recommend which spectrum should be made available and to offer this to the market. In the context of the 4G award process, there is, given the significant amount of spectrum that is available, no good reason for the Commission not to seek to licence a third operator, leaving it to the market to decide on whether or not this offer should be taken up.

## Commission's Decision

**DECISION 5:** Up to three licences for the provision of 4G services will be awarded.

## Equalisation of mobile spectrum allocations

*Proposal 6: all mobile operators should hold equal amounts of mobile spectrum upon completion of the 4G licensing process.*

## Summary of July 2013 consultation proposals

- 2.30 Current spectrum holdings are not equal, with MT holding more 900 MHz spectrum than Sure while MT, unlike Sure, holds no spectrum in the 1800 MHz band. The Commission aims to ensure that all mobile spectrum holdings are equalised upon completion of the 4G licensing process and that this process will need to include, if necessary, making spectrum in the 900 MHz and 2.1 GHz bands available to a third operator.

## Summary of responses

- 2.31 Sure proposed that all operators should have the opportunity to hold equal amounts of spectrum, but that an operator should be able to choose to opt for a smaller allocation of frequency if it so wished. Sure questioned whether equalisation would also apply, for example, to Wi-Manx or Domicilium who hold allocations in the 3.6 GHz and (in the case of Domicilium) the 3.5 GHz bands, if they were to bid for new spectrum.
- 2.32 MT proposed that equalisation is unnecessary and would result in additional transition costs. MT expressed a view that it would be the only party required to relinquish spectrum, and in its view, the Commission's proposals would award more spectrum to a potential new entrant.

## Commission's analysis

- 2.33 The Commission agrees with Sure's point that an operator should not be obliged to take more spectrum than it requires, and notes that the consultation proposed an allocation of "up to" a certain level.
- 2.34 The Commission considers that Sure's points on the 3.5 and 3.6 GHz bands are outside the scope of this consultation.
- 2.35 The Commission notes that MT is incorrect in its view that it would be the only party to relinquish spectrum, as the proposal in the consultation applied to both current operators relinquishing spectrum in order to reach an ordered allocation following the 4G awards. However, in the Commission's view, if an operator finds that there are unacceptable additional transition costs associated with relinquishing spectrum, the Commission will withdraw the proposal to equalise spectrum holdings. Current operators will therefore maintain their present spectrum allocations irrespective of the outcome of the 4G awards.

## Commission's Decision

**DECISION 6:** MT and Sure will maintain their current spectrum allocations.

## Possible DTT interference in the 800MHz band

*Proposal 7: 4G operators with usage rights in the 800 MHz band will need to take appropriate steps to deal with possible DTT interference in the band and to implement whatever remedial work is necessary to deal with such possible interference.*

### Summary of July 2013 consultation proposals

- 2.36 4G operators who are granted usage rights to the 800 MHz band need to be aware of the possible need to mitigate interference from mobile services to Digital Terrestrial Television services (Freeview) in the band below 790 MHz. It is the Commission's position that it will be up to the 4G licensees themselves to deal with possible DTT interference and to implement whatever remedial work they see fit, in order to ensure that interference is not an issue. The Commission has discussed options for implementing this requirement with Ofcom, and it is proposed that WTA licences issued by Ofcom will include a condition that licensees will be required to minimise interference with DTT.

### Summary of responses

- 2.37 Sure agreed that it is appropriate for the 4G licensees to deal with any potential interference issues themselves. Sure expressed a view that the UK experience suggests that DTT interference issues have not been as significant in practice as had been feared.
- 2.38 MT required clarification of the wording of an obligation to deal with possible DTT interference. MT proposed that interference is not equal from all 800 MHz sub-blocks, and as a result, obligations to mitigate interference may have different costs for different sub-blocks. MT suggested that greater clarity was required over the assignment of spectrum, and that costs should be shared equally across operators.

### Commission's analysis

- 2.39 The Commission's overall objective with regard to possible DTT interference is to ensure that 4G operators are aware of the issue, and that they accept responsibility for minimising interference. The Commission notes MT's point regarding the unequal nature of potential DTT interference across the 800 MHz band, and Commission has decided that, rather than impute different costs to different sub-blocks in the 800 MHz band, costs will be shared equally amongst operators.

## Commission's Decision

**DECISION 7:** 4G operators will be responsible for addressing any DTT interference in the 800 MHz band, and this will be a condition of the WTA licence issued by Ofcom. Costs of remedial action will be shared equally amongst 4G operators.

## 4G Telecommunications licence fee

**Proposal 8:** *the 4G Telecommunications licence fee should be set at £150,000 per licence.*

### Summary of July 2013 consultation proposals

2.40 In the July 2013 consultation, the Commission proposed a Telecommunications licence fee of £150,000. The fee level took into account international comparators; costs relating to the licensing process; and factors specific to the Isle of Man.

### Summary of responses

- 2.41 Sure agreed with Commission's proposals, and expressed a view that operators will not face a significant additional cost burden from licence fees, which should help ensure that they will be able to provide Isle of Man customers with reasonably priced 4G services.
- 2.42 MT agreed that the proposed fee was acceptable, but reiterated its position that no more than two licences should be awarded.

### Commission's analysis

2.43 The Commission remains of the view that the level of Telecommunications licence fee proposed enables the Commission to address its objectives of maximising investment on the island, while recovering the costs of the licensing process.

## Commission's Decision

**DECISION 8:** The Telecommunications licence fee will be £150,000 per licence.

In addition, licences granted by Ofcom under the Wireless Telegraphy Act 2006 for the use of radio spectrum are subject to the payment of annual fees. These are set out in the Statutory Instrument Wireless Telegraphy (Licence Charges) Regulations 2011.

## 4G licence award process

**Proposal 9:** *the 4G licence award process will comprise four stages, i.e. an Application Stage, Qualification Stage, Sealed Bid Stage and Award Stage. If three or fewer qualified applications are received, the Sealed Bid Stage will not be required and, in this instance, the process will proceed directly to the Awards Stage. The Commission is proposing this award process as the best method to meet its objective of concluding the licence award process as rapidly and efficiently as possible.*

### Summary of July 2013 consultation proposals

2.44 In the July 2013 consultation, the Commission set out its proposed process for awarding 4G licences.

### Summary of responses

- 2.45 Sure expressed concern in relation to the Commission's ability to screen out spurious or unsupportable applications to provide 4G services, given that no fee or deposit would be requested at the application stage. Sure proposed that penalties for non-compliance with licence obligations should be specified in advance of licence award so that all applicants would be aware of the implications should they be awarded a licence and subsequently find they could not meet their obligations. Sure put forward its view that there is a risk of unnecessarily triggering the Sealed Bid stage, which would raise the costs for all operators.
- 2.46 MT also expressed concern about the perceived lack of safeguards against frivolous applications which could delay the overall process. MT suggested that the term "valid applications" had to be clarified. MT supported the Commission's proposed approach regarding not holding a 'beauty contest', but did not accept that there was a valid argument for issuing a third licence. In MT's view, if the process were to progress to the sealed bid stage, existing operators should be granted access to reserved blocks of 4G spectrum. MT requested further detail on implementation of the 4G licensing process, such as the assessment of service criteria, penalties for failing to meet criteria, and timescales.
- 2.47 MT suggested that it should be made explicit what would happen if a licensee failed to meet the criteria for service roll-out. In MT's view, this should lead to the revocation of the licence rather than extension to timescales or reduction in criteria. Other proposals could, in MT's view, include daily penalties to be applied for delays or the putting in place of performance bonds.
- 2.48 MT proposed that there should be an assignment stage in the process, as in its view not all spectrum in all bands may be viewed as equally valuable.

## Commission's analysis

- 2.49 The Commission has taken careful account of views expressed by respondents. The Commission notes that many of the concerns expressed by both operators are to do with ensuring that the 4G licensing process runs as smoothly and efficiently as possible, and the Commission has further developed elements of the process as follows:

### *Application Stage*

- 2.50 The Commission will issue a press release which will announce the availability of an application package, including application forms and application guidance notes.
- 2.51 For the avoidance of doubt, all applicants will need to have, or to be in a position to apply for, an appropriate Isle of Man Telecommunications Act licence. An appropriate licence means a licence authorising the provision of mobile communications systems, which is awarded to a Communications Provider<sup>11</sup>. At present, appropriate licences are held in the Isle of Man by Manx Telecom and Sure. A new entrant would apply for a mobile communications provider's licence, and a sample of this licence and the criteria used to evaluate an application for the licence will be made available as part of the application package.
- 2.52 The Commission will request interested parties to notify the Commission of their intent to apply for a licence, or the modification to an existing licence, within 14 days of the start of the process. A valid application for a mobile communications provider's licence must confirm that the applicant satisfies two unambiguous 'pre-qualification' criteria:
- (i) that the undertaking has previously had significant involvement in the launch and/or operation of mobile telecommunications systems; and
  - (ii) that the undertaking will have access to sufficient capital to launch and operate a new 4G network in the Isle of Man.
- 2.53 Interested parties will confirm to the Commission that they meet the pre-qualification criteria when they notify the Commission of intent to apply, and will be required to provide evidence of this in the application.
- 2.54 The appropriate Telecommunications Act licence will include a Part that specifically deals with service criteria relating to the provision of 4G services. In the case of an operator that currently holds an appropriate licence, this will involve the acceptance of a modification to their licence. In the case of a potential new entrant, the 4G specific Part will form part of their mobile communications provider licence. The terms of the 4G specific part will be included in the application package, and are discussed further below.

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<sup>11</sup> For the avoidance of doubt, this does not include ISP licences.

2.55 Parties will have 30 days to complete their submission. If, by the end of 14 days, the Commission has received all applications that correspond to any received intent to apply, the application submission period may end at this point. However, if an interested party has notified the Commission of intent to apply within the 14 day period, that party will have until the end of the 30 day period to submit an application.

### ***Qualification Stage***

2.56 The Commission will evaluate applications received in order to determine their validity. A valid application will be one where the applicant either already holds a Telecommunications Act communications provider licence, or satisfies the criteria<sup>12</sup> required for the issuing of a Telecommunications Act communications provider licence, and accepts the 4G specific criteria described below. If three or fewer valid applications are received, the Commission will require applicants to confirm that they wish to be awarded a licence, and the process will proceed to the Award Stage. If four or more valid applications are received, this will trigger the Sealed Bid Stage.

### ***Sealed Bid Stage***

2.57 If four or more valid applications are received, the Commission will invite all valid applicants to submit a financial offer for a 4G licence. The financial offer will be of a specific value. The sealed bid amount will be in addition to the £150,000 Telecommunications licence fee. The three highest ranking applicants will be successful.

2.58 The Sealed Bid Stage (if required) will operate on the basis that the three licences on offer will be awarded to the three operators that submit the highest monetary value in their sealed bids. However, all three successful applicants will only each be required to pay an additional amount equal to the financial offer submitted by the highest losing applicant in the Sealed Bid Stage.<sup>13</sup>

### ***Award Stage***

2.59 A 4G Telecommunications licence will be awarded to successful applicants. The award of 4G Telecommunications licences to existing mobile operators will entail a modification to the Telecommunications Act licence in the form of a new part. Modification of the Telecommunications Act licences will be carried out as prescribed in section 10 of the Telecommunications Act 1984. A draft modification was attached as Annex 1 in the July 2013 consultation. No objections or representations were received on this proposal.

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<sup>12</sup> These criteria will be set out in full in the Applications Package

<sup>13</sup> This method is a variant of a *Vickery auction*, which is a type of sealed bid auction that gives bidders an incentive to bid their true value. By using such a method, the Commission can ensure that the award process results in an economically efficient outcome (in that the spectrum is awarded to those bidders who place the highest value on it) while at the same time avoiding imposing any kind of “winner’s curse” on the successful bidders relating to the financial offers they submit.



- 2.60 The award of a 4G Telecommunications licence to a new entrant will entail the award of an Isle of Man Telecommunications Act mobile communications provider licence, which will include a specific 4G Part.
- 2.61 At this stage, the Commission will recommend to Ofcom that it awards Wireless Telegraphy licences relating to usage of spectrum within the 800 MHz and 1800 MHz bands, with provision also being made at this stage for access by the 4G licensees to spectrum in the 2.6GHz band as and when the Commission is satisfied that this is required. On award, successful applicants will furnish the Commission with payment in respect of the 4G Telecommunications fee, i.e. £150,000. If the process has included a Sealed Bid Stage, the additional amount will also be payable at this time.
- 2.62 Both respondents commented on the need to ensure compliance with licence conditions, and this is discussed in the following section.

### Commission's Decision

**DECISION 9:** The 4G licence award process will comprise four Stages, i.e. an Application Stage, a Qualification Stage, a Sealed Bid Stage (only required if four or more valid applications are received) and an Award Stage, which will be run in the manner described in Paras. 2.50 to 2.61 above.

### 4G service criteria

*Proposal 10: the Commission proposes to include a number of service criteria in the areas outlined above within the 4G licences. Respondents are invited to provide views on the proposed characteristics, including what parameters they believe would be appropriate for each.*

### Summary of July 2013 consultation proposals

- 2.63 In the July 2013 consultation, the Commission proposed to include the following service characteristics within each of the 4G licences:
- **Launch date:** 4G operators will be obliged to launch commercial services within nine months of licence award;
  - **Coverage at launch:** 4G operators will be obliged to provide at least 33% population coverage at launch;
  - **Population coverage to be achieved:** 4G operators will be obliged to provide at least 95% population coverage within two years of service launch;

- **Minimum mobile broadband data speed provided:** 4G operators will be obliged to offer minimum download speeds of at least 5 Mbps over their networks.

## Summary of responses

- 2.64 Sure supported the Commission's intention to include service criteria within the 4G licences, and expressed a view that overall the proposed conditions are reasonable and fair. Sure expressed concern about the minimum download speed of 5 Mbps, and proposed adding that the obligation applies when the network is lightly loaded. Sure requested further clarification of the process whereby the Commission intends to ensure compliance with the roll-out conditions.
- 2.65 MT requested clarification as to whether the coverage numbers refer to indoor or outdoor, and also proposed that there should be a definition of "lightly loaded". MT indicated that, in its view, the process for assessing or auditing the service criteria needs to be more robust.
- 2.66 The Department of Infrastructure expressed a view that Sure and/or a potential new entrant may find it difficult to secure planning approval for new infrastructure, and so may not be able to fulfil the proposed population coverage obligations.

## Commission's analysis

- 2.67 The Commission can clarify that its population coverage targets refer to outdoor coverage in a lightly loaded cell. The Commission's definition of "lightly loaded" is in accord with Ofcom's definition<sup>14</sup>, such that a network which is lightly loaded assumes a single user demanding service within the serving cell, and the surrounding cells of the network are loaded to a light level, meaning the common channels only are transmitting at 22% of the maximum cell power.
- 2.68 In order to reflect this clarification, the Commission has included a definition in the 4G conditions.
- 2.69 The Commission's intention to liberalise existing spectrum use as part of the 4G awards process will allow 4G operators the flexibility to optimise their delivery of services to customers using all spectrum bands in which they hold licences.
- 2.70 With respect to the issue raised by Sure regarding the minimum 5Mbps download, the Commission considers that it is acceptable to clarify that there may be factors outside the immediate control of the operator which prevent this being achieved, including (but not limited to) inappropriate device selection by the customer. This will be included in the 4G conditions.

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<sup>14</sup> Ofcom, "4G Coverage Obligation: notice of compliance verification methodology LTE", 24 July 2012

- 2.71 The Commission notes points raised by the Department of Infrastructure, and agrees that the need for planning approval will need to be taken into account by all operators. In the Commission's view, it is likely that both MT and Sure will use existing masts, and a potential new entrant would need to consider the planning implications of any new infrastructure when preparing its commercial proposal.
- 2.72 Both operators requested further detail on the monitoring of 4G licence rollout and service conditions, in particular, of means of ensuring compliance with licence conditions. The Commission proposes to work with successful applicants to define a set of parameters on which they will report progress. The parameters will be linked to the 4G service criteria, and the Commission will expect monthly reporting until targets are met. The Commission will reserve the right to audit data provided.
- 2.73 Both operators raised issues around a licensee failing to meet the outlined service criteria. The Commission notes that Schedule 2 paragraph 1 (c) of the Telecommunications Act licences states that the Commission may at any time revoke the Licence with 30 days' notice in writing:

*"if the Communications Provider fails to comply with an order made by the Commission under section 11 of the Act and that order is not subject to proceedings for review and such failure is not rectified within 30 days, or such longer period as the Commission may determine, after the Commission has given notice in writing of such failure to the Communications Provider;"*

- 2.74 This is underpinned by section 11 of the Telecommunications Act, which lays out the procedure for securing compliance with licence conditions.

### Commission's Decision

**DECISION 10:** the following 4G service criteria will be included as part of the 4G Telecommunications licence:

- (i) The Communications Provider shall ensure that at all times after the Launch Date that it provides and maintains an electronic communications network that is capable of providing, with 90% confidence, a mobile telecommunications service with a sustained downlink speed of not less than five megabits per second (5Mbps) when that network is lightly loaded, to users in an area within which at least 33% of the population of the Isle of Man lives;
- (ii) The Communications Provider shall ensure that at all times after the Coverage Date that it provides and maintains an electronic communications network that is capable of providing, with 90% confidence, a mobile telecommunications service with a sustained downlink speed of not less than five megabits per second (5Mbps) when that network is lightly loaded, to users in an area within which at least 95% of the population of the Isle of Man lives;

(iii) The Communications Provider shall not be in breach of this condition by reason of temporary interruptions to service, provided that it has taken reasonable precautions to minimise such temporary interruptions. In addition, the Communications Provider shall not be in breach of this condition due to factors outside its immediate control, including (but not limited to) inappropriate device selection by the customer.

For the purposes of this Condition:

1. the "Launch Date" is nine months following 4G licence award;
2. the "Coverage Date" is two years following Launch Date;
3. "Coverage" means outdoor coverage.

## Commission Decisions

**DECISION 1:** In order to provide 4G services, a mobile operator in the Isle of Man will require a WTA licence issued by Ofcom on the recommendation of the Commission. An operator which currently holds an appropriate Isle of Man Telecommunications Act licence will be required to accept a new Part inserted into its licence which will include appropriate licence conditions relating to 4G mobile service provision. A new operator will be required to apply for a mobile communications provider's licence, and a sample of the format of this licence will be available with the call for applications

**DECISION 2:** Spectrum for 4G services in the Isle of Man will be made available in the 800 MHz, 1800 MHz and 2.6 GHz bands.

**DECISION 3:** The Commission will assign up to 2 X 10MHz per operator in the 800 MHz band; 2 X 20 MHz per operator in the 1800 MHz band; and 2 X 20 MHz per operator in the 2.6 GHz band. Spectrum in the 2.6 GHz band (both paired and unpaired allocations) will be reserved for 4G licensees without being formally assigned at this stage.

**DECISION 4:** All current 2G and 3G spectrum bands will be liberalised at the same time as the 4G spectrum is awarded.

**DECISION 5:** Up to three licences for the provision of 4G services will be awarded.

**DECISION 6:** MT and Sure will maintain their current spectrum allocations.

**DECISION 7:** 4G operators will be responsible for addressing any DTT interference in the 800 MHz band, and this will be a condition of the WTA licence issued by Ofcom. Costs of remedial action will be shared equally amongst 4G operators.

**DECISION 8:** The Telecommunications licence fee will be £150,000 per licence.

In addition, licences granted by Ofcom under the Wireless Telegraphy Act 2006 for the use of radio spectrum are subject to the payment of annual fees. These are set out in the Statutory Instrument Wireless Telegraphy (Licence Charges) Regulations 2011.

**DECISION 9:** The 4G licence award process will comprise four Stages, i.e. an Application Stage, a Qualification Stage, a Sealed Bid Stage (only required if four or more valid applications are received) and an Award Stage, which will be run in the manner described in Paras. 2.50-2.61 above.

**DECISION 10:** the following 4G service criteria will be included as part of the 4G Telecommunications licence:

- (i) The Communications Provider shall ensure that at all times after the Launch Date that it provides and maintains an electronic communications network that is capable of providing, with 90% confidence, a mobile telecommunications service with a sustained downlink speed of not less than five megabits per second (5Mbps) when that network is lightly loaded, to users in an area within which at least 33% of the population of the Isle of Man lives;
- (ii) The Communications Provider shall ensure that at all times after the Coverage Date that it provides and maintains an electronic communications network that is capable of providing, with 90% confidence, a mobile telecommunications service with a sustained downlink speed of not less than five megabits per second (5Mbps) when that network is lightly loaded, to users in an area within which at least 95% of the population of the Isle of Man lives;
- (iii) The Communications Provider shall not be in breach of this condition by reason of temporary interruptions to service, provided that it has taken reasonable precautions to minimise such temporary interruptions. In addition, the Communications Provider shall not be in breach of this condition due to factors outside its immediate control, including (but not limited to) inappropriate device selection by the customer.

For the purposes of this Condition:

1. the "Launch Date" is nine months following 4G licence award;
2. the "Coverage Date" is two years following Launch Date;
3. "Coverage" means outdoor coverage.