

18 February 2016

FACT SHEET: IDA’S DECISION ON FRAMEWORK FOR THE ALLOCATION OF SPECTRUM FOR INTERNATIONAL MOBILE TELECOMMUNICATIONS (“IMT”) AND IMT-ADVANCED SERVICES AND FOR THE ENHANCEMENT OF COMPETITION IN THE MOBILE MARKET

1. IDA has decided to allocate 235 MHz of spectrum in the upcoming spectrum allocation exercise (hereinafter referred to as the “**2016 Spectrum Auction**”). Details of the spectrum bands are provided in the following table:

Table 1: Overview of spectrum to be allocated

| Spectrum band | Frequency range | Amount ¹ | Availability |
|--|---------------------------------|---------------------|----------------|
| 700 MHz ² | 703 – 748 MHz/ 758 – 803 MHz | 2 x 45 MHz | 1 January 2018 |
| 900 MHz (including Extended GSM) | 885 – 915 MHz/ 930 – 960 MHz | 2 x 30 MHz | 1 April 2017 |
| 2.3 GHz TDD | 2300 – 2340 MHz | 40 MHz | |
| 2.5 GHz TDD | 2570 – 2615 MHz | 45 MHz | |

2. This spectrum allocation exercise seeks to enhance innovation and competition in the mobile market by facilitating the entry of a fourth new mobile network operator (“**MNO**”), while ensuring there is sufficient spectrum for the incumbent MNOs to continue to provide quality mobile services.

3. IDA will structure the 2016 Spectrum Auction in two stages: (i) the New Entrant Spectrum Auction, which is only open to qualified³ bidders who are currently not MNOs and not an associate of any MNO and/or of another qualified potential bidder; and (ii) the General Spectrum Auction which is open to the incumbent MNOs and the successful bidder from the New Entrant Spectrum Auction, if any. An overview of the key auction parameters are provided on the following page.

¹ The amount includes the spectrum allocated for the New Entrant Spectrum Auction.

² The availability of the 700 MHz band is subject to the completion of the Analogue Switch Off (“**ASO**”), and may become available later than 1 January 2018 should there be any changes to the ASO timeline.

³ Potential new MNOs who are interested in participating in the New Entrant Spectrum Auction are required to participate in a pre-qualification exercise before they are allowed to participate in the New Entrant Spectrum Auction.

Table 2: Overview of key spectrum auction parameters

| Spectrum band | Lot size | Spectrum right duration | Reserve price |
|---|---|-------------------------|--|
| 700 MHz | 2 x 5 MHz | 15 years | S\$20 million per lot |
| 900 MHz (including Extended GSM) | | 16 years | |
| 2.3 GHz TDD | 5 MHz | | S\$3 million per lot |
| 2.5 GHz TDD | | | |
| Spectrum for New Entrant Spectrum Auction | 2 x 10 MHz in 900 MHz band and 40 MHz in 2.3 GHz TDD band | | S\$35 million for spectrum allocated for New Entrant Spectrum Auction |

4. Specifically, 60 MHz of the spectrum will be made available for one new MNO in the New Entrant Spectrum Auction. IDA will adopt an ascending round auction and a 'Clock Plus' auction format for the New Entrant Spectrum Auction and General Spectrum Auction respectively. In the event that there is no qualified prospective bidder for the New Entrant Spectrum Auction, IDA will instead allocate the spectrum in the General Spectrum Auction based on the reserve prices of the respective spectrum bands.

5. The starting price of the spectrum for the New Entrant Spectrum Auction has been adjusted to reflect the starting bid price for a different combination of spectrum with greater potential to deliver higher speed broadband services. The final price of the spectrum will depend on the bidding in the auction among the prospective bidders. Incumbent MNOs will each be allowed to obtain at least 2 x 5 MHz of spectrum in the 900 MHz band in the General Spectrum Auction to ensure continuity of 3G services.

6. The successful bidders of the 2016 Spectrum Auction will have to comply with IDA's regulatory frameworks and requirements governing mobile networks and services. While IDA will not impose regulatory obligations on the incumbent MNOs to provide roaming access to the new MNO under the 2016 Spectrum Auction, the incumbent MNOs will be required to provide interconnection and mobile number

portability to the new MNO within a reasonable timeframe. They will also be required to negotiate in good faith with the new MNO to provide access to Common Antenna Systems (“CAS”) and to share mobile deployment space where applicable.

7. An overview of the key regulatory obligations that are applicable to both the new and incumbent MNOs is provided below:

Table 3: Overview of key regulatory obligations

| Regulatory obligations | New MNO | Incumbent MNOs |
|--|---|--|
| Nationwide rollout timelines (4G and/or IMT-Advanced service coverage) | <ul style="list-style-type: none"> • Nationwide outdoor service coverage by 30 September 2018 • Road tunnel and in-building service coverage by 30 September 2019 • Underground MRT stations/lines coverage by 30 September 2021 | Successful bidders of the 700 MHz and/or TDD bands are required to use these spectrum bands to augment their existing networks to provide nationwide 4G and/or IMT-Advanced services by 31 December 2018 |
| Network and service resilience, and consumer protection | <ul style="list-style-type: none"> • Outage Reporting Code to be effected once the new MNO commences service • Resiliency Code to be effected after the new MNO attains a 5% market share • Requirements of Mobile Audit Framework to come into effect no earlier than 1 October 2019 • Specific consumer protection measures to be effected once the new MNO commences service | Existing frameworks continue to apply |
| Negotiation with Mobile Virtual Network Operators (“MVNOs”) | All MNOs will be required to negotiate in good faith with MVNOs who request for wholesale access | |
| Quality of Service (“QoS”) | Successful bidders will be required to comply with the relevant QoS standards where applicable, as well as the 4G QoS framework once it is issued. In the meantime, successful bidders can refer to the ‘3G Public Cellular Mobile Telephone Service QoS Standards’ for an overview of the possible QoS | |

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| | performance indicators that IDA may adopt for the 4G QoS framework |
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8. Aside from the above regulatory obligations, IDA will publish a list of negotiating principles to aid negotiations between MVNOs and MNOs, and IDA may mediate between the MNOs and MVNOs using the negotiation principles as a point of reference.

9. For more details on IDA's decision, please refer to Explanatory Memorandum on the 'Framework for the allocation of spectrum for IMT and IMT-Advanced services and for the enhancement of competition in the mobile market'. The specific details pertaining to the 2016 Spectrum Auction will be provided in the auction documents that IDA will issue subsequently. In addition to these auction documents, IDA will prepare an information package for prospective new MNOs, which may be collected from IDA's premises 10 business days after the issuance of this decision. Prospective new MNOs who would like to collect the information package are invited to do so by writing to IDA_ILO@ida.gov.sg with the email header "Information package for prospective new MNOs".