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Attention:

Mr. Davis Kgosimolao Moshweunyane

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**Response to ICASA's Information Memorandum on the licensing of high demand
IMT spectrum**

Dear Mr. Moshweunyane,

Huawei would like to thank ICASA for the opportunity to comment on the Information Memorandum on the licensing of high demand IMT spectrum, published in the Government Gazette #42820 of 1st November 2019.

Huawei is the leading supplier of infrastructure equipment for the telecommunications industry in South Africa and globally, as well as a major manufacturer of mobile handsets and other electronic consumer goods.

Huawei would like to submit the comments below for your consideration. Please do not hesitate to contact us if you have any question.

Yours sincerely,

César Gutiérrez



Comments from Huawei on ICASA's Information Memorandum on the licensing of high demand IMT spectrum

Huawei fully supports ICASA efforts in the regulatory process of enabling further spectrum for access by IMT services. We provide below comments on the assessment of the bands and general recommendations on the assignment proposal.

Assessment of the bands

IMT700

- Role of the band: coverage band for 4G and 5G
- Availability: 4G equipment widely available, 5G equipment in the roadmap
- Recommended assignment size and bandplan: 2x10 MHz, 2x20 MHz, FDD bandplan

IMT800

- Role of the band: coverage band for 4G
- Availability: 4G equipment widely available
- Recommended assignment size and bandplan: 2x10 MHz, 2x20 MHz, FDD bandplan

IMT2300

- Role of the band: Capacity band for 4G
- Availability: 4G equipment widely available
- Recommended assignment size and bandplan: 40 MHz, TDD bandplan

IMT2600

- Role of the band: Capacity band for 4G and 5G
- Availability: 4G equipment widely available, 5G equipment in the roadmap
- Recommended assignment size and bandplan: 40 MHz minimum, 80/100 MHz ideally, TDD bandplan

IMT3500

- Role of the band: Core 5G band
- Availability: Network equipment available from all vendors, more than 100 devices available
- Recommended assignment size and bandplan: 40 MHz minimum, 80/100 MHz ideally, TDD bandplan

General recommendations

- 1) 2600 MHz band should be released with a TDD bandplan (3GPP LTE band 41) and not FDD. We do not support option 1 due to the proposed FDD bandplan. A TDD plan as in option 2 – option 5 results in a more efficient use of the band and allows to manage the uplink/downlink traffic asymmetry.
- 2) We do not think that any spectrum block in the bands under consideration should be held for future assignment. We think that there is a very strong demand for additional spectrum in SA, and that these bands are widely supported by both network and handsets. Therefore, there is an opportunity cost in keeping out of the market available capacity.



- 3) We note the following:
- The 700 MHz band and the 800 MHz band are substitutes in economic terms. These bands can be considered “coverage” bands. Both bands 1) have similar good propagation characteristics (unlike bands higher up in frequency), 2) have an FDD bandplan, and 3) have block sizes of 2x10 MHz or 2x20 MHz per license. Both bands are widely in use worldwide with LTE technology, and 700MHz band is also targeted for 5G.
 - The 2300 MHz, 2600 MHz and 3500 MHz are also substitutes in economic terms. These bands can be considered “capacity” bands. These bands 1) provide similar coverage (less good than bands below 1 GHz), 2) will be available with a TDD bandplan, and 3) the BW per license is likely to be several multiples of 10 MHz. 2300 MHz and 2600 MHz already have LTE deployments in many countries, and 3500 MHz is the main 5G band.
- 4) In order to fully benefit from the characteristics of 5G, we believe that a 80-100 MHz contiguous block is needed per MNO in the capacity bands¹. When this is not possible, the minimum recommended is around 40 MHz per operator.
- 5) We recommend ICASA's option 2. However, we also recommend that the 2*10M spectrum block in 800MHz currently reserved by ICASA for future assignment should, instead, be made available to industry for mobile operators or vertical industry usage e.g. PPDR.
- 6) Considering the TDD assignment (2300MHz, 2600MHz and 3500MHz bands), synchronization at national level is strongly recommended. To define a unified DL and UL transmission frame structure between all networks in the same TDD band can ensure no DL-to-UL interference from each other and save the cost of guard band among different networks.

¹ There is agreement within vendors, operators and European regulators that this is the recommended block size in the 3400-3800 MHz 5G band. See European Commission Implementing Decision 2019/235, whereas (10), and GSA recommendations in <https://gsacom.com/paper/5g-spectrum-awards-april-2019/>