



28 January 2019

Mr Manyapelo Richard Makgotlho
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VIA EMAIL: rmakgotlho@icasa.org.za

**RE: Written Comments of Inmarsat on Draft International Mobile
Telecommunications (IMT) Roadmap for Consultation, Notice 683 of 2018**

Dear Mr. Manyapelo Richard Makgotlho:

Pursuant to the above-referenced Notice, Inmarsat hereby provides a written representation in response to ICASA's Draft International Mobile Telecommunications (IMT) Roadmap for consultation. As a global provider of wireless broadband communications, Inmarsat understands the importance of adopting appropriate policies, and making sufficient spectrum available, to enable the full benefits of 5G/IMT-2020. In the Draft IMT Roadmap, ICASA states that "[t]he Authority's primary objectives are to ensure spectrum efficiency, universal availability of broadband services as well as a vibrant and competitive telecommunications industry and promote investments." Making effective and efficient use of limited spectrum resources is an important policy priority. Inmarsat supports these objectives fully, and therefore appreciates the opportunity to comment on the Draft IMT Roadmap.

5G systems will be different than previous terrestrial broadband networks. 5G will not be any one technology, frequency band, deployment scenario, or business model. Instead, the 5G experience will rely upon a "network of networks" that uses various network technologies, frequency bands, and service providers to provide ubiquitous connectivity across many devices. As numerous international standards organisations and regulators have recognised, IMT-2020 has both terrestrial and satellite components, which will need to work together to deliver on the promise of 5G. ICASA states that one of its assignment objectives for IMT is to "integrate the terrestrial and satellite components of IMT efficiently." This is consistent with the work being done at ITU and elsewhere, including at ITU-T Study Group 13, which leads ITU's standardisation work on IMT-2020. The report of its Focus Group on IMT-2020 noted that "[t]he IMT-2020 network architecture is required to include multiple RAN technologies including satellite," and that "studies should focus on all aspects of the integration of satellite technologies into the IMT-2020 network architecture." (See FG IMT-2020 Chairman's Report 2016 available from:

https://www.itu.int/en/ITU-T/focusgroups/imt-2020/Documents/FG_IMT-2020_Deliverables_2016.zip).

As ICASA develops policies designed to promote IMT-2020 deployment, it is important to consider the roles, significance, and needs of all technologies, and to choose policies that enable all technologies to thrive, while not depriving the public of the benefits of any technology. This includes both identifying steps to enable next generation systems, but also ensuring sufficient protection and opportunities for growth in systems that are already relied upon today across South Africa.

The Draft IMT Roadmap is an impressive document that addresses a number of different frequency bands for potential IMT deployment. Some bands will be available for new IMT use in the near term, while the process of rearranging bands to address incumbency issues will take longer in some cases. And other bands may never see IMT deployment, as the spectrum will continue to be put to productive use in other ways.

One band addressed in Sections 7.4 and 7.5 of the roadmap as a potential home for IMT-2020 is 1.427-1.518 GHz. This is an example of a band in which the entirety of the frequency range may not be feasible for full deployment for IMT for the foreseeable future, because of considerations regarding compatibility between IMT in this band and mobile satellite service (MSS) operations in the adjacent 1.518-1.559 GHz frequency band.

Section 7.5.1 and Appendix B of the Draft IMT Roadmap acknowledge the existence of incumbent fixed wireless licenses in portions of 1.427-1.518 GHz band, and notes that additional studies are required to determine whether the current use of the band would need to be rearranged. However, the Draft IMT Roadmap does not address issues related to compatibility with existing and planned Mobile Satellite Services in the 1.5 GHz band. Inmarsat believes that these compatibility issues may affect the timing and scope of spectrum availability for IMT in the 1.427-1.518 GHz band, and therefore these issues should be considered by ICASA as it evaluates this frequency band.

The 1.427-1.518 GHz band is adjacent to the MSS allocation at 1.518-1.559 GHz. MSS in this frequency band provides critical communications for diverse government and industrial users throughout Africa, fulfilling important public safety goals, and supporting key, growing aspects of African economies. These MSS operations are particularly important in South Africa, where they support many important government functions. For example, land-based MSS terminals are used by the VIP Protection Unit of the South African Police, by the Army, and by the intelligence services for secure and reliable mobile communications. Maritime MSS communications are relied upon by the South African Navy and by the Department of Agriculture, Forestry and Fisheries to support fisheries protection activities. And aeronautical MSS operations are key to flight safety, including supporting the Aeronautical Mobile Satellite (Route) Service (AMS(R)S).

Studies conducted at the ITU, CEPT, and elsewhere have demonstrated that IMT deployment in the 1.427-1.518 GHz band poses a significant risk of harmful interference to these important MSS operations from out-of-band emissions and receiver overload in the MSS terminals. Without appropriate protections, such as frequency separation below 1.518 GHz, power

limits placed on IMT operations, and IMT base station deployment restrictions in critical areas like airports and harbors, introduction of IMT into the 1.492-1.518 GHz band, directly adjacent to MSS operations, could jeopardize the continued reliability of these important satellite communications systems. This new harmful interference could disrupt government operations, prevent the achievement of government objectives, require an untimely and expensive upgrade of government communications equipment, and ultimately cause substantial harm to the South African people and economy.

Given the significant challenges with deploying IMT in the upper portion of the 1.427-1.518 GHz band, and the large number of other frequency bands under consideration by ICASA, Inmarsat respectfully suggests that ICASA prioritise work on other frequency bands before looking to expand IMT use of the 1.427-1.518 GHz band. Additionally, should ICASA choose to turn its attention to this band, it should adopt an approach that will ensure the continued viability and growth of MSS services above 1.518 GHz. In particular, one approach ICASA might consider would be to focus first on deploying IMT in the portion of the band below 1.492 GHz, deferring consideration of the higher frequency ranges for the time being. Indeed, this is similar to an approach recently proposed by the French regulator ARCEP, in its ongoing examination of the same band. *See* ARCEP, Consultation Publique, “Attribution de nouvelles fréquences pour la 5G” (26 Octobre 2018). Inmarsat supported this reasonable proposal in the French consultation, and a similar approach would work in South Africa, as well.

Again, Inmarsat appreciates this opportunity to contribute to ICASA’s consultation on the Draft IMT Roadmap, and it looks forward to continuing to participate in future phases of ICASA’s important spectrum management activities.

Respectfully submitted,

/s/ Gordon McMillan

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