Response to Ofcom Discussion Paper on "Meeting future demand for mobile data"

Cognizant of the need to address the rapid growth in the usage of mobile data, Access Partnership supports the initiative of the Ofcom in proactively devising a strategy on how to effectively meet future demand taking into account the evolving needs of consumers and businesses. Streams of new technologies are constantly being introduced in the market which puts a strain in the capacity of mobile networks to handle data traffic. This may constrain the adaptability of these technologies, thus depriving the public of their immense benefit.

In the *Discussion Paper*, the Ofcom identified that one way through which mobile networks can cope with the increased demand in mobile data is for MNOs to boost capacity in their networks through spectrum. We agree with this policy direction, as effective spectrum management can help forestall concerns on increased demand for mobile data. A fair, efficient, and equitable way of managing scarce spectrum resources will ensure that the benefits to be derived from new technological innovations are unlocked to their full potential.

However, we note that caution should be exercised in allocating more spectrum resources for mobile services to the detriment of other equally important communication tools which utilise radio frequency. As stated in the *Discussion Paper*, "any release of more spectrum for mobile for high power outdoor use would likely require [Ofcom] to clear some further frequencies of current users."[1] One example cited was the trend in Europe for the 6425-7125 MHz band (the upper 6 GHz band), which is being used for a number of sectors including satellite, to be used as a means of enabling additional capacity for 5G usage.[2] This would require the regulator to clear the band of its existing users, or impose technical constraints to allow the band to be shared.

While we agree with the need to avert demand constraints in mobile data, the corresponding demands and growth of other technologies should likewise be considered, including the increasing utilisation of satellite-based technology.

Complementarity of spectrum needs of mobile and satellite networks

As noted in the *Discussion Paper*, satellites are evolving to be a tool that could mobile networks in addressing the demand for data. This is especially reflected in the emergence of non-geostationary satellites (NGSOs), which has enabled providers to offer low latency broadband services to consumers operating in remote locations using satellite technology.[3]

[1] Ofcom "Mobile networks and spectrum" Discussion Paper (February 2022), para. 5.22
[2] *Discussion Paper,* para 5.24.
[3] *Discussion Paper*, para. 3.33.

NGSOs can be used as backhaul to extend the reach of mobile and fibre networks or direct-to-home broadband services for consumers.

Satellite communications has already been a key enabler in the last decades when terrestrial systems were not capable to reach remote places or cannot operate under dire circumstances. However, the promise of satellite communications has become more apparent in the next few years. Satellites can provide ubiquitous connectivity to all, bring broadband to places where fiber is not possible or feasible, and contribute to social and economic growth of communities that know how to benefit from this technology. Research suggests that huge traffic demand and service continuity of 6G can be met by high capacity communication satellites,[4] thus providing the catalyst for their continued development. Currently, there is already industry interest and standardization works on capitulating such potential of satellite communications are ongoing.[5]

Notably, the Ofcom also recognised the existing development work being undertaken to determine whether satellites could connect directly to non-modified mobile handsets, thus providing emergency connectivity and/or extending the coverage of mobile networks.[6] True enough, the past years have seen a rise not just in the use of mobile services, but also in the increasingly more prominent role of satellite-enabled technology to provide a wide array of services that are not possible with other modes of telecommunications. As the looming threat of climate-related emergencies are brought to the fore, the technology industry has realised the value that satellites bring in enhancing relief services—which save lives and reduce costs during emergencies—particularly in areas where traditional cellular networks cannot reach.

We bring your attention to a study we conducted and has been published under umbrella of the Fair Tech Institute regarding the "Role of Satellite Communications in Disaster Management."[7] satellite services and next-generation satellite-enabled connectivity can help address the limitations faced by our present terrestrial telecommunication network. As satellite-based technologies are not as susceptible to disruption during natural disasters, satellite applications have been long recognized as an essential component of any country's disaster communications management strategy. The adoption of new strategies and technological solutions – as a crucial component of disaster preparedness – would allow the less connected to communicate during emergency situations, ensuring that emergency communications are more accessible for better rescue responses.

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[4] Satellite Communication at Millimeter Waves: a Key Enabler of the 6G Era, Marco Giordani; Michele Zorzi, IEEE, 2020, https://ieeexplore.ieee.org/document/9049651

[5] 5G Evolution and 6G White Paper, NTT Docomo, https://www.nttdocomo.co.jp/english/binary/pdf/corporate/technology/whitepaper_6g/DOCOMO_6G_White_PaperEN_v4.0.pdf

[6] *Discussion Paper*, para. 3.33.

[7] Fair Tech Institute, The Role of Satellite Communications in Disaster Management, https://www.access-partnership.com/access-partnership-releases-the-role-of-satellite-communications-in-disaster-management-whitepaper-under-the-fair-techinstitute/

This illustrates that satellite technology is instrumental not just in providing traditional communications tools, but also in life-saving connectivity. As such, spectrum resources must be allocated equitably for this specific type of communication, lest the development of critical satellite-enabled emergency communication tools be adversely affected. Spectrum usage and allocation should also take into account the needs of satellite communications, as this will impact how communications technology respond to the threat of climate emergencies and natural disasters. It is important to have an optimal and equitable allocation between various communication needs, lest one segment be foreclosed from pursuing the development of critical life-saving technologies.

We recognise that the Ofcom is likewise conducting consultations on its space spectrum strategy. We intend to participate in the consultations and endeavour a more detailed response thereto, highlighting the increasing role of satellite-enabled connectivity in bridging the gaps in emergency communications.

In sum, we acknowledge the need to address the impending supply constraints in mobile spectrum, as it is important to meet the daily connectivity needs of households and businesses. However, there should also be a recognition of the complementarity that satellite communications have over access to these finite spectrum resources. As the Ofcom continues to develop its strategy for mobile and space spectrum alike, it is essential to achieve a proper balance in fulfilling the connectivity needs between these two equally critical communication tools as this could save lives and protect communities.