



COUNTER COMMENTS OF TELESAT

In response to the TRAI consultation paper on
Assignment of Spectrum for Space-based Communication Services
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Telesat notes the impressive number of replies to this consultation and how the overwhelming majority supports administrative assignment of satellite spectrum.

In the few submissions that support auctioning spectrum, Telesat notes, among other things, a general misunderstanding on:

1. how satellite operators, and NGSO in particular, can effectively share spectrum in the same geographical locations and coordinate among each other
2. the differences between satellite services and terrestrial mobile/access services

Telesat attempts to provide some clarifications below.

1. Satellite operators (GSO and NGSO) can effectively share spectrum in the same geographical locations and coordinate among each other

As already included in the Telesat reply to the consultation, Telesat wishes to reiterate that satellite coordination can be left to the operators. GSO operators have been coexisting for decades all over the world and the new NGSO operators are currently carrying out coordination in order to operate in the same frequency ranges. More specifically:

- coexistence between GSO networks is based on either a sufficient angular separation on the GSO arc or on coordination. Furthermore, there is absolutely no evidence that distances may be required between NGSO gateways in order for them to coexist. Overall, coexistence depends on various factors, including the agreed interference criterion and the technical characteristics of the NGSO systems involved. As such, it is better left to the satellite operators as part of the overall system coordination
- coexistence between NGSO systems and GSO networks is ensured either via compliance with Article 22 limits or coordination, depending on the frequency bands
- coexistence between NGSO systems is established by bi-lateral coordination discussions in which analysis are carried out by the different operators, taking into account the relevant provisions of the ITU Radio Regulations

Furthermore, designated exclusion zone for gateways (GSO and NGSO) would make sense only in frequency bands where terrestrial mobile services are being deployed on a co-primary basis. Even in that case, there would be no need for exclusive satellite spectrum allocation, as multiple satellite operators can deploy gateways in the same location.

Needless to say, the ability to share and coordinate among satellite operators allow for efficient spectrum utilization, while terrestrial mobile network can coexist only by splitting the spectrum and having it allocated on an exclusive basis.

Finally, it is important to clarify that "shared spectrum" should not be identified with "de-licensed spectrum". Shared spectrum can be licensed, also with protection/non-interference clauses as applicable/appropriate. As an example, licensed gateways/VSATs of multiple satellite operators operating in the same frequency bands can be coordinated with fixed terrestrial services.

2. Satellite services vs terrestrial mobile services

The assumption that terrestrial mobile services and satellite services are the same is incorrect, especially in the case of satellite services using microwave frequencies (C, Ku, Ka). The purported analogy between terrestrial access spectrum and the satellite one is unfounded, as the two services, while both providing connectivity, are intrinsically different in the physics of the link (i.e. sharing feasibility) and in the economic and societal aspects.

Terrestrial mobile is a service reaching billions of customers with corresponding revenues. Satellite service provision is, in comparison, niche (there are no small handheld satellite devices operating in microwave bands), but indispensable, filling the gaps in terrestrial service provision to guarantee safety, connectivity and equal opportunity.

As such, the idea of equating services and suggesting a fair competition on spectrum pricing is nonsensical. Satellite operators will not be able to compete in auctions with mobile operators, as the overall business model is completely different. An auction would lead to mobile operators winning and becoming the exclusive gatekeepers of satellite usable spectrum in the country. Satellite operators would have to negotiate a private contract agreement in a non-transparent process, in order to be able to use spectrum that could be shared among satellite operators in the first place. This will lead to a monopolistic or semi-monopolistic situation, hampering competitiveness, limiting the amount of spectrum usable, therefore reducing the achievable performances, and, ultimately, detrimental to the users.

Also the aspect of possible "competition" between the two different services needs to be carefully represented. First of all, there is no competition in the air and at sea. On land, satellite services will primarily address areas that terrestrial services cannot or do not wish to reach, even for service provision directly to consumers (there is no basis for buying a satellite terminal if good terrestrial connectivity is available). In this respect, satellites provide an integral service, rather than a competitive one.

Satellite services, on the other hand, can compete with terrestrial services when it comes to backhaul, but, in this case, the competition is with either fiber or microwave point-to-point links, not with mobile/IMT. On the contrary, satellite services can actually support mobile service providers with effective and viable backhaul solutions. Overall, it is clear that there is a need for both satellite and terrestrial mobile services and coexistence should be considered as a synergy rather than a competition.

Furthermore, latest satellite designs are such that the Ka-band in particular is absolutely key, allowing also sharing among multiple satellite operators. On the other hand, terrestrial mobile coverage in Ka-band will be very limited and still require exclusive spectrum assignments. Overall, an optimal synergy between satellite and terrestrial mobile networks can be achieved with terrestrial networks being deployed in other frequency bands already identified for IMT at ITU level.

To conclude, Telesat wishes to thank TRAI very much for the opportunity to comment and remains available for further discussions on the matter, leaving the following question for possible consideration: what would become of satellite services, global or multinational by nature, if every country starts assigning satellite spectrum with an auction mechanism on a "technology neutral" basis?