

**Viasat Response to
ACMA Consultation “Review of the 1.5 GHz band”
20 September 2023**

Viasat provides these comments in response to the Australian Communications and Media Authority’s (“ACMA”) *Review of the 1.5 GHz band, extended mobile satellite service (“MSS”) L-band options paper* published August 2023 (the “**Options Paper**”).

Viasat is a leader in the provision of satellite communications services – including global mobile satellite communications, operating more than a dozen satellites that provide communications solutions to customers on Land, in the Air and at Sea. The company has a long track record of operating reliable global mobile satellite communications networks, sustaining business applications and mission-critical safety and operational applications globally.

On 30 May 2023, Viasat completed its acquisition of Inmarsat, a transaction that provides the ability to deliver new innovations at pace and also deliver powerful and compelling services on a global scale. Viasat provides MSS services in Australia through its wholly owned subsidiaries, Inmarsat Leasing (Two) Limited and Inmarsat Solutions BV (“**Inmarsat**”).

As the ACMA is aware, Inmarsat has been deeply engaged in discussions involving the protection of L-band satellite services in the ITU-R and has actively participated in public consultations with the ACMA on this matter over the past years. Viasat looks forward to engaging with the ACMA in more details on the band planning process for the extended MSS L-band.

Introduction and General Comments

Inmarsat launched in December 2021 the “Inmarsat-6” satellite (“**I6F1**”) that will enable use of the extended L-band (1518 – 1525 MHz (space-to-Earth) and 1668 – 1675 MHz (Earth-to-space)) and standard L-band (1525 – 1559 MHz (space-to-Earth) and 1626.5 – 1660.5 MHz (Earth-to-space))- frequencies in Australia and other countries in the Asia Pacific region. I6F1 successfully connected to the new Landsdale and Merredin earth stations in Western Australia in June this year. The satellite has been brought into operational use from September this year.

Since 2013, new MSS terminals operating on the ELERA L-band network have been required to be able to tune over the standard L-band and extended L-band. This has enabled MSS terminals to operate using the extended L-band frequencies when used in Europe, the Middle East and Africa, where extended L-band is already available, through the Inmarsat “Alphasat” satellite. This also means that many MSS terminals currently operating in Australia will be able to access the extended L-band frequencies with no equipment change, as soon as the ACMA authorises the use of those additional frequencies for MSS services.

The ELERA L-band services are used in large numbers for critical industrial, government and military applications across Australia and its territories. This heavy use and growing demand for MSS in Australia is currently in the standard L-band and needed in the extended L-band, as is the case in other countries.

With high reliability and small terminal size, L-band MSS will continue to drive industrial Internet of Things (“**IoT**”) in sectors such as energy, mining and transportation. Furthermore, L-band MSS will continue to support connectivity solutions essential to public safety, disaster response, telemedicine, remote education, and various other applications.

The L-band MSS network also provides unmanned aircraft systems (“**UAS**”) operators with the ability to send and receive data beyond visual line of sight, which is important for safe and efficient air traffic management.

Access to the extended L-band in Australia is therefore important to Inmarsat and supports the ACMA’s proposal to first progress the review of arrangements for MSS in extended MSS L-band.

Question 1: Comment is sought on the proposed desirable planning outcomes for the review of the extended MSS L-band

Viasat supports the introduction of MSS in all the extended MSS L-band, as proposed in the desirable planning outcomes (outcome No.1). The additional 2 x 7 MHz of spectrum bandwidth would provide additional capacity to cater the increasing needs of satellite connectivity and for mission-critical services, and enable us to meet the growth of our extensive Australian user community as well to introduce new L-band solutions and services.

While we recognise that ongoing use of the extended MSS L-band by incumbent licensees (outcome No.2) may be considered desirable, this does retain some compatibility issues that will need to be addressed as soon as possible.

There is a potential contradiction between outcome No.1 and No.2, insofar as ongoing use by incumbent services could prevent the introduction of MSS in the extended MSS L-band. In particular, any limitation on MSS downlink power in the 1518 – 1525 MHz band to facilitate ongoing use by incumbents will constrain and potentially prevent the provision of MSS services.

Regarding outcome No. 3, “*Consider necessary regulatory measures for new MSS use in the extended MSS L-band to enable coexistence with incumbent and possible future in-band and adjacent band services (such as WBB)*”, it is obviously not practical now to implement any measures before deciding on the incumbent or new services which may need coexistence measures, understanding that those incumbent services will be addressed at a later date.

Viasat does not support the consideration of regulatory constraints being applied to MSS operating in the extended L-band that will unduly limit the future use of MSS due to possible future in-band and adjacent band services, including wireless broadband (“**WBB**”).

As indicated in the Options Paper, the ITU-R Working Party 4C and Working Party 5D have completed studies for the assessment of coexistence between WBB and MSS in adjacent 1.5 GHz band. The draft new Recommendation ITU-R M.[REC.MSS & IMT L-band COMPATIBILITY] (Doc. 4/78) is expected to be adopted and approved at SG5’s 25-26 September 2023 meeting.

Question 2: Comment is sought on the options identified. Do you have any alternative options to propose?

Viasat opposes Option 1 – to have no change to the existing planning arrangements for the extended MSS L-band, since that will not enable the introduction of new MSS services, to address the spectrum demand to support such new MSS services in Australia.

Option 3 – to enable MSS use of the entire extended MSS L-band with possible incumbents to be considered for relocation, provides a more complete solution by addressing the compatibility issues and possible re-location of incumbent services. Recognising that this option may take more time to analyse and implement, Viasat accepts that this is not the preferred option at this time.

Viasat supports in principle the ACMA preferred Option 2, related to MSS user terminals operating in the bands 1518 – 1525 MHz and 1668 – 1675 MHz using the same licensing mechanism with amendment to the CSO class licence to include the extended MSS L-band and adopting the current business operating procedure for the submission and processing of applications for space and space receive apparatus licences. Class licences by design are issued on a non-interference and non-protection basis. MSS, due to the applications it supports, needs to operate without harmful interference from incumbent and future services in the extended band and adjacent bands including international mobile telecommunications (“**IMT**”)/WBB services. This protection should be ensured through regulatory measures being applied to these other services. Also, the interference environment will be improved when Telstra relocates most of their roughly 870 PTP licences in the 1427–1535 MHz frequency range to non-MSS/fixed satellite service (“**FSS**”) bands within the next 3 to 5 years.

The ACMA notes that the ITU satellite coordination process is sufficient to resolve any compatibility matters. One of the issues addressed by the ITU coordination process is the potential impact of downlink interference to terrestrial services in the band 1518 – 1525 MHz, for which the provisions of RR No. 9.14 apply. It is important to ensure that MSS downlinks are not unduly constrained by ongoing use by the incumbents in Australia.

In regard to future services in adjacent bands, for example WBB, Viasat accepts that this can be addressed later, considering that the demand for WBB in this band remains sketchy. As noted in previous submissions from Inmarsat, Viasat recommends that WBB is limited to the band below 1492 MHz, in line with decisions taken by several other countries, which effectively eliminates the need to consider compatibility measures for WBB or for MSS. It would clearly be premature at this time to implement mandatory requirements for MSS receivers with respect to interference from WBB systems.

Under Option 2, the ACMA proposes a list of constraints on MSS operations to protect incumbent services in the same and adjacent bands, which are generally acceptable, although they will impose constraints on MSS operations in Australia.

Question 3: Comment is sought on the ACMA's assessment of options

Viasat concurs with the ACMA that Option 1 does not meet the broad objective of enabling MSS operations in the extended MSS L-band, and should not be considered further.

Option 2, while opening the extended MSS L-band to new MSS services, the proposed arrangement places those MSS services on a secondary basis with respect to numerous incumbent services, some of which may no longer be needed. However, this does not provide an equal primary allocation to the MSS and may result in non-feasible MSS operations in the future. On the other hand, the proposed next stage of review, taking into account the potential effect on MSS receivers in the extended L-band and adjacent bands, to reduce interference on MSS, this provides equal spectrum access rights to MSS with other services and allow MSS user terminals to operate on equal protection basis. Viasat is of the view that the future systems in the same and adjacent bands should not have a higher priority over MSS and require protection from MSS. Such an approach would place MSS users, especially for safety of life communications and mission-critical services in Australia would be at risk of suddenly needing to terminate services from new stations deployed in the incumbent services. This aspect should be examined as part of the broader review of the 1427 – 1535 MHz band, planned for Q3 2024.

Question 4: Comment is sought on the ACMA's preliminary preferred approach, including the proposed draft amendments to the Radiocommunications (Communication with Space Object) Class Licence 2015 and associated licence application and allocation process.

In addition to the amendments to the Radiocommunications (Communication with Space Object) Class Licence 2015 to include the extended L-band frequencies for user terminals, Viasat seeks to access to complementary space and space receive apparatus licences in the extended MSS L-band as is done for the standard L-band for the space stations.

The proposal to include a note regarding the possible date for implementation (or assumption for interference management purposes) of better performing MSS receivers seems premature and unbalanced, while plans for introduction of WBB in the 1427 – 1518 MHz band remain unclear. Currently, we are not aware of any country that has implemented mandatory requirements for MSS receiver performance in national authorisation conditions. The potential need for better performing MSS receivers may in any case be addressed as part of the next stage of the 1.5 GHz band review.

Noting Telstra's intention to relocate most of their roughly 870 PTP licences in the 1427 – 1535 MHz frequency range to other bands within the next 3 to 5 years, Viasat proposes that the ACMA expands the current Embargo 70, to introduce an embargo on new terrestrial (that is non-satellite) licences in the 1427 – 1535 MHz band in all parts of Australia, in order to ensure that it does not worsen in a way that would impede future use by MSS operators in the 1518 – 1535 MHz band. A situation where the embargo applies only to the band 1427 – 1518 MHz may have the unfortunate effect of encouraging the introduction of new fixed links in the band 1518 – 1535 MHz, shared with the MSS.
