Telstra submission on the draft Telecommunications Legislation Amendment (Universal Outdoor Mobile Obligation) Bill 2025

Public Version

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Executive Summary

Satellite to Mobile services promise an exciting future but are still nascent

Low Earth Orbit (LEO) Satellite to Mobile (STM) services promise an exciting future of ubiquitous outdoor mobile connectivity, albeit more basic than terrestrial mobile. Telstra is already providing commercial LEO STM messaging (SMS, RCS and iMessage) services to the Australian market. We can expect LEO STM voice and then data to become available in time as global standards mature, LEO STM satellite networks develop, suitable spectrum is assigned, STM voice technology is developed, and handsets capable of STM become widely available.

Despite this promising future, it is important to recognise that LEO STM technology is still nascent. The LEO STM ecosystem is currently based on proprietary modifications to network equipment using 4G standards, which can deliver limited LEO STM messaging only at this stage. We expect 5G standards in development to address these shortcomings, with devices capable of LEO STM services starting to become available from late 2027.

In this context Telstra supports the flexibility in the draft legislation on the various elements of the Universal Outdoor Mobile Obligation (UOMO), including the ministerial ability to vary the commencement date, treat different service types separately, add or remove designated providers, and specify practical qualifications to the obligations. It is not possible to determine the right settings for all aspects of the UOMO at this point in time.

UOMO STM SMS and Voice obligations should commence at the same time

We do not support commencement of the SMS UOMO before commencement of the Voice UOMO. We therefore do not support the commencement of any UOMO service before the default commencement date of 1 December 2028.

It is not feasible to run UOMO STM services simultaneously on separate 4G and 5G satellite networks because we do not have enough spectrum, and STM Voice will most likely only be available on 5G. If a UOMO SMS service is designated before 5G STM SMS is available, customers will acquire handsets capable of 4G STM SMS in the expectation that they will have access to the benefits of that Government-mandated service for the lifetime of that handset. However, when STM Voice is later launched on 5G, the handsets already acquired will need to be replaced at customers' cost with handsets capable of 5G STM SMS and Voice, because we will need to switch off 4G STM SMS. This will be a poor customer experience and in our view is not something Government should be driving.

In addition, there is currently no capability to contact emergency services using SMS, and yet the UOMO is justified in part on providing for basic safety. It would be counterproductive to mandate a universal service that does not have this capability, especially as STM messaging is already available commercially for other purposes. If the ability to contact emergency services via SMS is implemented before STM Voice is available this consideration will not apply, but otherwise, the basic safety aspects of the UOMO can be fulfilled only once STM Voice is available.

Standards for UOMO should not be made before the technology has matured

We should avoid making any standards, rules and benchmarks before we have a deeper understanding of the characteristics and limitations of UOMO services in comparison with terrestrial mobile services. UOMO services must be provided in market, at scale, to the point of maturity, before we can reasonably develop this deep understanding.

Moreover, if standards, rules and benchmarks are ever made, they should apply consistently to all UOMO services regardless of the footprint they are delivered to and the technology used to deliver them,

because the UOMO is specifically technology neutral.[1] In practice that means they should be defined by the least capable technology, which will almost certainly be LEO STM.

A national spectrum strategy is needed to support all mobile services, including STM

Spectrum is a scarce and valuable natural resource. To help maximise the benefits of spectrum usage for Australian consumers and businesses we believe a national spectrum strategy is needed to more closely link spectrum management to Australia's policy ambitions in telecommunications, resilience and digital inclusion. A spectrum strategy could also consider how distinct needs such as LEO STM and the arrival of 6G might be supported, recognising that Mobile Network Operators (MNOs) face trade-offs in how they use spectrum as demand for mobile services and expectations for connectivity continue to grow.

For the STM ecosystem to develop as we hope, suitable spectrum must be designated for Mobile Satellite Services (MSS). Spectrum dedicated to national STM coverage is required as it is not possible for STM to reliably target and cover blackspot areas within spectrum used for terrestrial coverage. Today, only the 2 GHz spectrum band is specified for MSS and suitable for use in Australia, but it is not enough to support LEO STM services in the longer term. 1800 MHz spectrum is the leading candidate to augment 2 GHz MSS spectrum and should be reconfigured for this purpose. In parallel the Government could support identification of STM as a secondary use for 1800 MHz at the ITU, an approach supported by the CSIRO to minimise interference with Radio Astronomy Services.

The ACMA should also begin progressing the remaining upper 6 GHz spectrum for terrestrial mobile. 6G is expected to arrive in 2030, and if Australia is to continue being a world leader in mobile technology adoption and innovation, remaining 6 GHz spectrum must be allocated and cleared (with certainty) for MNO use at this time. Based on our experiences with other bands, at least three to four years will be required to replan incumbent services and clear the remaining upper 6 GHz spectrum. Given the timeframe for 6G, this work must start now otherwise trade-offs with existing use cases (4G, 5G, STM) may be required.

Work should also begin now on the future of television broadcasting, which currently uses the 600 MHz spectrum band. The Government has recognised that the future spectrum requirements of broadcasters could change due to the availability of alternative delivery mechanisms and shifts in consumer preferences (e.g., growth in on-demand streaming) and announced plans to "explore pathways for the future of television, shaped by the possibility of realising a digital dividend".[2] A digital dividend could free up 600 MHz spectrum to help meet mobile capacity demand growth and the implementation of 6G.

[1] Telecommunications Legislation Amendment (Universal Outdoor Mobile Obligation) Bill 2025
[2] https://minister.infrastructure.gov.au/rowland/speech/radcomms-2024-melbourne

Contents

1 LEO STM services promise an exciting future

In just a few short years we have seen major advances in Low Earth Orbit (LEO) satellite capabilities, and the number of fixed broadband services delivered over LEO satellites in Australia has gone from zero to over 200,000 active.[3] These already impressive advances provide a glimpse of much greater things to come as the technology for direct Satellite to Mobile (STM) matures.

Telstra — as a leading provider of innovative communications technology, and as the leading provider of retail telecommunications services to rural and remote Australia — is excited and proud to be working to bring LEO STM services to Australian residents. We can expect LEO STM voice and then data to become available as 3GPP[4] standards for non-terrestrial networks (NTNs) mature over the next few years, satellite operators develop and launch new constellations capable of supporting STM, and as STM service capability extends beyond messaging.

We appreciate the policy objectives associated with the UOMO. At the same time, it is important to recognise there are still many hurdles to overcome before reliable STM services, capable of voice, are in market at scale. The list of hurdles includes the maturation of global standards, access to suitable spectrum, the next generation of LEO constellations, the next generation of devices with STM capabilities built in and the potential need for new commercial partnerships to be established.

LEO STM services are an exciting prospect for the future delivery of outdoor mobile coverage, and we welcome this opportunity to provide our views to the Department on the UOMO Bill (Draft Bill).

2 The LEO STM ecosystem is maturing, but has a way to go

There have been several developments of a technical nature recently which indicate that the LEO STM ecosystem is starting to mature. This section provides an overview of these developments as they set the scene for developing practical UOMO legislation that can be implemented by MNOs and enforced by Government.

2.1 The current LEO STM ecosystem is limited, driving demand for new spectrum

The LEO STM systems operating around the world today are based on proprietary modifications to network equipment using existing 4G 3GPP standards. When first designed, 4G standards were not envisioned for satellite use and they cannot be retrospectively changed in existing user devices. Using 4G technology, current LEO STM services are limited to messaging capabilities alone. As LEO STM satellite providers seek to extend current 4G based capabilities, they are encountering technical challenges that will prevent, or at least significantly limit, the quality of carrier grade voice services that can be delivered via existing 4G (VoLTE) standards. Thus, the current solution is not a suitable basis for a future Voice UOMO.

3GPP has addressed these shortcomings by developing New Radio (NR, or "5G") Non-Terrestrial Network (NTN) standards, which are expected to deliver acceptable carrier grade voice services over

[3] ABC News article, Elon Musk's Starlink is connecting hundreds of thousands of regional Australians to the internet. 7 Feb 2025. Was "around 200,000" in Feb 2025; assumed to be more in October 2025. Available at: https://www.abc.net.au/news/2025-02-07/government-not-concerned-elon-musk-starlink-australians/104905102

[4] 3GPP is the global standards-setting body for mobile: The 3rd Generation Partnership Project (3GPP).

LEO STM using MSS spectrum bands. NR-NTN capability is being standardised in 3GPP Release 18. We therefore expect devices with NR-NTN capabilities on MSS band(s) (such as the 2 GHz MSS band) starting to appear from late 2027 onwards.

2.2 2 GHz MSS is currently the only band available for 3GPP NR-NTN use in Australia

Today, NR-NTN standards only support MSS spectrum bands rather than IMT terrestrial spectrum bands. The MSS bands currently specified by 3GPP are set out in Table 1 below.

REL	WI	NR band	Uplink (UL) operating band Satellite Access Node receive / UE transmit $F_{UL,low}$ – $F_{UL,high}$	Downlink (DL) operating band Satellite Access Node transmit / UE receive $F_{DL,low}$ – $F_{DL,high}$	Remarks
REL-17	NR_NTN_solutions	n256	1980 – 2010 MHz	2170 – 2200 MHz	FR1, FDD, S-band
REL-17	NR_NTN_solutions	n255	1626.5 – 1660.5MHz	1525 – 1559 MHz	FR1, FDD L-band
REL-18	NR_NTN_LSband	n254	1610 – 1626.5MHz	2483.5 – 2500MHz	FR1, FDD, LS-band
REL-18	NR_NTN_enh	n512*, n511*, n510*	27.5 – 30.0GHz 28.35 – 30.0GHz 27.5 – 28.35GHz	17.3 -20.2GHz 17.3 -20.2GHz 17.3 -20.2GHz	FR2, FDD, Ka-band

Table 1: 3GPP NR NTN bands as per TS 38.101-5[5]

In Australia, the 2 GHz MSS band is currently the only band that will become available for NR-NTN use, because bands n254 and n255 are already allocated and in use (largely to Inmarsat and Globalstar for legacy satellite phone services) and bands n510, n511 and n512 are Ka bands intended for fixed satellite services (FSS). This leaves the n256 band as the only lightly encumbered[6] band suitable for future use with NR-NTN.

As a side note, this explains why the 2 GHz MSS band is so important to the future of LEO STM networks in Australia. That is, if voice services are to be delivered via LEO STM any time by late 2028, MNO access to MSS spectrum is required. At the time of writing this submission, the ACMA's proposed allocation of the 2 GHz MSS band (scheduled for Q2 2026) excludes MNOs from participating independently.

2.3 Developing NR-NTN standards for normal IMT bands will not be enough

Given there are few NR-NTN-capable bands, we have proposed at 3GPP the inclusion of some existing IMT (terrestrial) bands into the NR-NTN standards. We are currently facing strong opposition in 3GPP from some satellite companies seeking to constrain NTN technology to MSS bands. We continue to advocate but it will take time until the new standards are completed and adopted by the device ecosystem, if at all.[7] In the meantime, MSS spectrum bands such as the 2 GHz MSS band are the only bands that support NR-NTN.

Even if NR-NTN is standardised for IMT bands, IMT spectrum will be under increasing demand for terrestrial mobile services, so current terrestrial bands cannot be presumptively relied upon by themselves as long-term pathways for LEO STM services. It is critical that government consider how a long-term spectrum pipeline can be built to support on-going terrestrial demand and the deployment of a broadening set of future LEO STM services in Australia. Access to the 2 GHz MSS band is only the beginning of that journey.

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5 TS 38.101-5, User Equipment (UE) radio transmission and reception; Part 5: Satellite access Radio Frequency (RF) and performance requirements. Ver 18.5.0, May 2024. Available at: https://www.etsi.org/deliver/etsi_ts/138100_138199/13810105/18.05.00_60/ts_13810105v180500p.pdf

6 As of 1 March 2026 onwards, when TV Outside Broadcast (TVOB) services in the band must cease. Excluding the grandfathered point-to-point links and the 2 x 5 MHz shared narrowband MSS allotment.

7 Scheduled for ratification at the 3GPP RAN#109 meeting in Sept 2025 and expected to become available for network implementation in April 2028.

2.4 Radio Astronomy Services must be protected

The Department is no doubt aware that protection must be afforded to Radio Astronomy Services (RAS), given the significant investment into projects such as the Square Kilometre Array (SKA)[8] and numerous important radio telescopes operating on the Australian East Coast. What may not be well understood by the Department is the impact of the use of different spectrum bands, and the distance from telescopes before LEO satellites (at 350 km – 650 km altitude) disappear below the horizon.

As an example, Figure 1 below shows the point at which Starlink's LEO satellites become visible to the Murchison Observatory as they appear above (or disappear below) the horizon. The different concentric circles are a function of the altitude of the satellite (its "orbital plane"); the higher the altitude, the further away it must be before it is below the horizon. When the satellite is above the horizon, it cannot operate on frequencies that cause harmful interference to RAS. As can be seen, this means that satellites cannot operate on sensitive frequencies from as far away as more than 2,000km from the SKA.

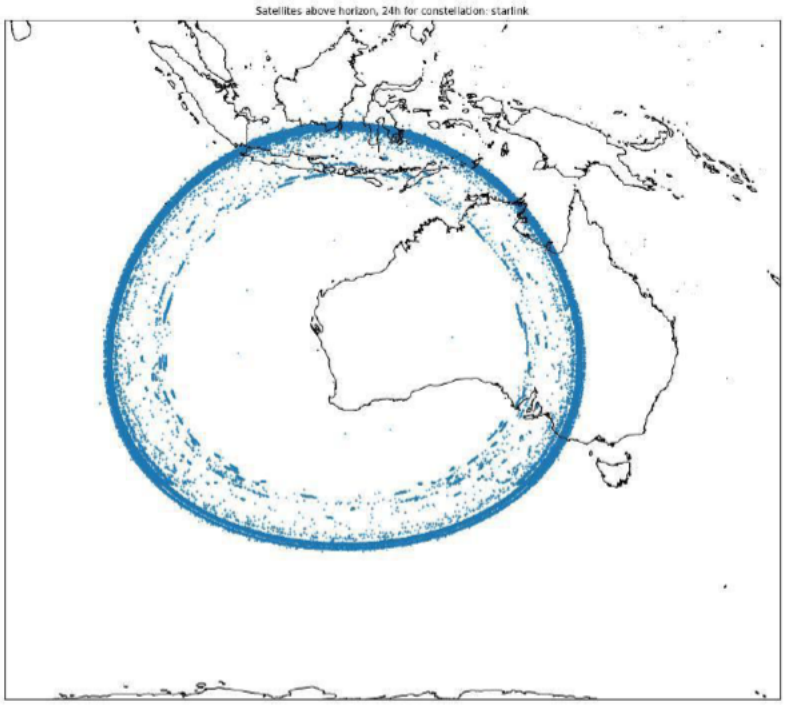

Figure 1: CSIRO Depiction of Starlink Satellites visible to the Murchison Observatory[9]

Both CSIRO's primary and reply submissions to the ACMA's Expiring Spectrum Licences (ESL) Stage 3 consultation highlighted the potential impact of current IMT and MSS bands to RAS in Australia.[10] Of critical importance in the CSIRO's submission is the fact that there are currently only two bands that cause minimal disruption to the RAS, configured for FDD use[11] and accessible under a nationwide ACMA

8 Australian Government, Department of Industry, Science and Resources. Square Kilometre Array. Details at: https://www.industry.gov.au/science-technology-and-innovation/space-and-astronomy/SKA-project-Australia

9 Presented by CSIRO to the ACMA's Spectrum Tune Up on Satellite Direct-to-Mobile Services. Tuesday, 31 October, 2023. See https://www.acma.gov.au/spectrum-tune-satellite-direct-mobile-services for details.

10 ESL Stage 3 submissions are available at: https://www.acma.gov.au/consultations/2025-04/expiring-spectrum-licences-stage-3-preliminary-views

11 FDD stands for Frequency Division Duplexing, and means separate bands are allocated for uplink and downlink transmissions. This duplexing method suits satellite communication systems as it allows for simultaneous transmission and reception, and avoids the synchronisation challenges associated with the alternative duplexing method Time Division Duplexing (TDD), which alternates between uplink and downlink transmissions.

licence. They are (the lower part of) the 2.5 GHz IMT band and the 2 GHz MSS band. There are no other bands that currently meet these three criteria.

It is therefore clear that **spectrum suitable for the delivery of LEO STM services in Australia is extremely scarce**. This scarcity will strongly influence the extent to which domestic MNOs are able to introduce and broaden LEO STM capabilities within Australia over the coming years. This is significant because it limits spectrum options for fulfilling the Government's policy objectives. Apart from already being standardised for NR-NTN, and being seen as compatible with RAS, the primary advantage of the 2 GHz MSS band is its earlier availability compared to other bands, should it be allocated in the second quarter of calendar year 2026.

However, the limited offering of only 2x 25 MHz of spectrum in the 2 GHz MSS band will not be sufficient to address all future NTN requirements independently, meaning additional candidate bands must be sought. Two strong candidates for future NTN STM usage in addition to 2 GHz MSS band are the 1800 MHz and 2100 MHz bands. These bands currently have a mix of fragmented, geographically disparate use, including rail communications on the eastern and southern seaboards, mobile, and both private networks and fixed point-to-point links elsewhere. The current licensing of the 1800 MHz and 2100 MHz bands, and the future renewal of these bands, is currently being considered by the ACMA as part of the Expiring Spectrum Licences (ESL) process.

In our view, greater public value could be realised from the 1800 MHz and 2100 MHz bands if they were defragmented and reconfigured. We have previously proposed that the 1800 MHz band be configured with a national spectrum licence, making it suitable for LEO STM, while the 2100 MHz band be prioritised for private network use in rural and remote Australia.[12] These actions are needed for fully realising UOMO policy objectives and the future potential for LEO STM in Australia, but this big picture view has been largely absent from the ESL process to date. This demonstrates the importance of developing a national spectrum strategy to ensure the links between these technical and policy considerations are broadly understood.

3 The UOMO construct provides appropriate flexibility

3.1 Telstra supports the flexibility built into the draft UOMO legislation

As described in Section 2.1, LEO STM services are still nascent. Today, only one Satellite Network Operator (SNO) (Starlink) offers LEO STM messaging, and only one MNO (Telstra) provides LEO STM messaging to customers.[13] LEO STM voice is not available on any satellite network. At this point it is not clear when additional SNOs will enter the LEO STM market in Australia, or when LEO STM Voice will become available.[14] In this context Telstra supports the flexibility in the Draft Bill on:

- the timing of commencement of the obligations;
- separate treatment of obligations for different service types;
- ability to designate additional PUOMPs if necessary;
- ability to remove PUOMP status where the UOMO cannot be fulfilled; and
- application of the UOMO via the qualifier "reasonably available".

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12 Telstra submission to Expiring Spectrum Licences: Stage 3 reply-to-submissions.

13 Apple offers a limited emergency messaging service in Australia via Globalstar, but it cannot be used for general communication.

14 We use the term "STM Voice" to mean a carrier-grade service delivering acceptable, consistent voice quality, minimal interruptions and the ability to make emergency calls – as opposed to the various Over The Top (OTT) voice services available on apps such as WhatsApp, which do not provide consistent quality or the ability to make emergency calls.

The Explanatory Information identifies Christmas Island and the Cocos/Keeling Islands as part of the Australian territory to which the UOMO will apply. Telstra uses 2600 MHz spectrum to deliver its commercial LEO STM messaging service, but our 2600 MHz spectrum licence does not extend to these territories, and we cannot provide LEO STM messaging services there. This is just one illustration of why flexibility is needed in the application of the UOMO, in this case territorially.

The Draft Bill also gives the Minister the ability to determine in advance more specific circumstances in which the UOMO does not apply, and the Explanatory Information states the Government's intention to make this determination before the UOMO takes effect. Telstra strongly supports this intention and agrees that the examples given in the Explanatory Information are cases in which the UOMO should not apply. These include technical limitations beyond the PUOMP's control and when the customer does not have a plan or device that allows access to LEO STM services.

3.2 UOMO STM SMS and Voice obligations should commence at the same time

As explained in Section 2.1, Telstra supports the flexibility in the Draft Bill in respect of the two UOMO services (SMS and Voice), and a UOMO data service that might be designated in future, because they are at different stages of development. However, while flexibility is and will remain important, we do not support commencement of the SMS UOMO before commencement of the Voice UOMO, for the reasons set out below. These considerations are primarily important from a **customer experience** perspective.

Due to constraints on available spectrum for LEO STM, it is unlikely to be feasible to simultaneously run 4G and 5G satellite services, and STM Voice will most likely only be available on 5G. If a UOMO SMS service is designated before NR-NTN STM messaging is available, customers will acquire handsets capable of 4G STM SMS in the expectation that they will have access to the benefits of that Government-mandated service for the lifetime of that handset. However, when STM Voice is later launched on NR-NTN, the handsets already acquired will need to be replaced at customers' cost with handsets capable of NR-NTN STM messaging and voice, because we will need to switch off 4G STM messaging.[15] This will be a poor customer experience and in our view is not something Government should be driving. Commercial STM messaging services will still be available to customers prior to commencement of the UOMO from Telstra and possibly other MNOs, so delaying commencement of the SMS UOMO would not deprive consumers of this service, but it would help to manage their expectations and ensure the Government is not mandating a universal service which is only able to be offered in market for a limited period.

Moreover, a stated reason for the Government to mandate a UOMO service is for basic safety — the ability to contact emergency services. Currently there is no ability to contact emergency services via SMS, and we think it would be counterproductive to mandate a universal service that does not have this capability when such a service is already available commercially for other purposes. No such consideration applies to STM Voice because all public voice services must be able to reach emergency services by law. If the ability to contact emergency services by SMS is implemented before STM Voice is available, then this consideration will not apply.

For the reasons set out above we support the default commencement date for UOMO services of 1 December 2028, and do not support the commencement of a UOMO for any service before that date. Although we cannot be certain, we expect both UOMO SMS on NR-NTN and UOMO Voice on NR-NTN will be available to the market in that timeframe.

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15 The implication here is that "generations" (i.e., 4G, 5G, etc) of STM will be switched off (shut down) far more quickly than terrestrial generations. Like the closure of 3G terrestrially, when we turn off 4G STM messaging, people will need a handset capable of 5G STM (i.e., capable of NR-NTN). For some people, that will mean upgrading their handset, as was the case with (terrestrial) 3G closure.

3.3 Standards for UOMO services should not be made before the technology has matured

The UOMO will be constructed as an extension of the existing universal service framework, including a ministerial ability to make standards, rules and benchmarks to apply to the delivery of UOMO services. The universal service framework is an appropriate legislative location for UOMO to reside, but the Minister should take care not to exercise discretionary power under the framework before we have a deeper understanding of the characteristics and limitations of UOMO services in comparison with terrestrial mobile services. UOMO services must be provided in market, at scale, to the point of maturity, before we can reasonably develop this deep understanding.

Leaving the making of standards, rules and benchmarks until well after LEO UOMO services are in market will not mean that UOMO providers are not incentivised to provide excellent service to their customers. Indeed, we expect the LEO STM market to be highly competitive. In time, the various elements that contribute to the shape of the LEO STM market, and collectively determine how services are provided, will settle into a steady state. That is the appropriate time for the Minister to consider whether—and if so which—standards, rules and benchmarks would be beneficial for customers.

If the Minister ever decides to make standards, rules and benchmarks, they should apply consistently to all UOMO services regardless of the footprint they are delivered to and the technology used to deliver them, because the UOMO is specifically technology-neutral.[16] In practice that means these standards, rules and benchmarks should be defined by the least capable technology, which will almost certainly be LEO STM. The UOMO is rightly conceived as a baseline universal service available on the same basis to all customers everywhere regardless of the technology used to deliver it.

4 Spectrum is key to service delivery

4.1 A national spectrum strategy is needed to ensure the enormous benefits of mobility continue to be realised

Spectrum is a scarce and valuable natural resource. To help maximise the benefits of spectrum usage for Australian consumers and businesses we believe a national spectrum strategy is needed. This strategy would more closely link spectrum management to Australia's policy ambitions in areas such as telecommunications, resilience and digital inclusion. The strategy could also consider how distinct needs such LEO STM and the arrival of 6G might be supported, recognising that MNOs face trade-offs in how they use their spectrum as demand for mobile services and expectations for connectivity continue to grow. By focusing on supporting enablers and dependencies the strategy may usefully identify areas where greater planning or particular focus is required.

The 2 GHz MSS band — spectrum which is suitable for the delivery of NR-NTN voice and messaging services — should support the delivery of UOMO, but by itself it is not of sufficient scale to service the future STM requirements of all three MNOs in Australia. As STM capabilities move beyond messaging to voice and ultimately to higher data loads, the clear inference is that additional spectrum will be required.[17] In order to be used for LEO STM, bands need to be FDD, have national licences[18] and be

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16 Telecommunications Legislation Amendment (Universal Outdoor Mobile Obligation) Bill 2025 – Explanatory information, September 2025, pp. 3-4.

17 Note, initial STM services are 4G-based and utilise terrestrial (IMT) spectrum — these capabilities are not suitable for delivering carrier grade voice, and it may be that spectrum used for delivering initial STM offers is returned to terrestrial networks to manage ongoing terrestrial traffic growth.

18 Spectrum dedicated to national STM coverage is required as it's not possible for STM to reliably target and cover blackspot areas within spectrum used for terrestrial coverage.

capable of coexistence with Australia's RAS. In addition to 2 GHz MSS, a key candidate for future LEO STM use in Australia is the 1800 MHz band. This band is not nationally licensed at present, but it could be. This is something a national spectrum strategy could also consider, as well as the flow-on impact to spectrum requirements for ongoing terrestrial use if the 1800 MHz band is repurposed for MSS.

4.2 ✂Commercial-In-Confidence ✂

4.3 1800 MHz spectrum should be reconfigured

As noted above, spectrum which is suitable for the delivery of LEO STM services in Australia — especially 5G NTN services which will support carrier grade voice — is extremely limited. Given the limited amount of spectrum available for LEO STM in the 2 GHz MSS band, additional spectrum needs to be made available for LEO STM if the UOMO policy objectives and potential for LEO STM services are to be fully realised, and the leading candidate is the 1800 MHz band.

While the 1800 MHz band has a number of uses today, these are fragmented and geographically disparate. We do not believe the current arrangements collectively represent the most beneficial or efficient use for the 1800 MHz band. In contrast there is significant public benefit in national STM services providing connectivity beyond today's terrestrial networks, and this is why we believe the 1800 MHz band needs to be reconfigured for LEO STM.

We have already called for the ACMA to set a timeline for rail communication services to exit the 1800 MHz band,[19] or as a minimum, move solely within the top 2x 5 MHz block of the band as this would enable the majority of the 1800 MHz band to be made available for national spectrum licensing. In addition, as previously proposed,[20] private network use of the 1800 MHz band in remote Australia should be migrated to the 2100 MHz band. If the Government wishes to fully realise its UOMO objectives, it should drive reform of the current 1800 MHz licensing arrangements and look to assist the transition of incumbent users to other solutions as part of a near-term process.

In parallel, the Government could also support efforts by the ITU to identify STM as a secondary use for the 1800 MHz band at World Radio Conference 2027, an approach supported by CSIRO to minimise RAS interference.

4.4 ACMA should begin progressing Upper 6 GHz spectrum for IMT (mobile) usage

The ACMA recently decided to allocate 160 MHz of spectrum in the Upper 6 GHz band for R-LAN (Wi-Fi) use ahead of global standardisation of this band. However, it remains a critically important spectrum band for the delivery of terrestrial mobile services to meet future demand and support the introduction of 6G. As part of an overall spectrum strategy, the importance of these considerations should be recognised by the ACMA, and a forward work program encompassing steps to support a future mobiles allocation should be developed.

Within the remaining upper 6 GHz spectrum yet to be formally allocated (6585-7100 MHz) there are many fixed link services, in both metro and regional areas. Based on our experiences with other bands (for example the 3.4-3.6 GHz band), at least 3 to 4 years will be required to replan these services and clear the remaining upper 6 GHz spectrum. This work must start now.

With the remaining upper 6 GHz spectrum, it will be critical that the ACMA makes decisions which are in step with the rest of the world. We anticipate the key areas for focus including:

- the European Upper 6 GHz decision;

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19 Telstra submission to Expiring Spectrum Licences: Stage 3 reply-to-submissions.

20 Telstra submission to Expiring Spectrum Licences: Stage 3 reply-to-submissions.

- moving television outside broadcast services (TVOB) out of the top end of Upper 6 GHz (and the lower end of the 7 GHz band), noting Australia is a global aberration with this current use; and
- the 7 GHz IMT-2030 spectrum studies agenda item (AI1.7) at World Radio Congress (WRC) 27 (in late 2027), which will yield valuable 6G spectrum adjacent to the upper 6 GHz band.

Once clarity on a future 6 GHz band plan emerges, the ACMA will then need to initiate a Technical Liaison Group (TLG) to advise on the appropriate technical framework for future allocation of the remaining 6 GHz spectrum – this could be from late 2027 to early 2028. In parallel with this activity a new 3GPP band, to guide ecosystem development, will also need to be established — this could take most of 2028 and 2029. And the ACMA will also need to plan an auction.

As noted in section 4.1 above, all MNOs face trade-offs around their spectrum use decisions — if 6 GHz is not available for mobile use, or only available in insufficient amounts, to facilitate 6G the extension is that trade-offs may be required with regards to existing 4G, 5G and STM services. We will need additional mobile spectrum at this time to minimise the difficult trade-offs required to enable STM adequate to meet the UOMO. 6G is expected to arrive in 2030, and if Australia is to continue being a world leader in mobile technology adoption and innovation, 6 GHz spectrum must be allocated and cleared (with certainty) for MNO use at this time. Given the steps around confirming and progressing usage by IMT (mobiles) are well understood, the ACMA must start on this pathway now.

4.5 Work should begin now on a second digital dividend (600 MHz reform)

The 600 MHz band is currently used by television broadcasters in Australia. The Government has, however, recognised that the future spectrum requirements of broadcasters could change due to the availability of different delivery mechanisms and shifts in consumer preferences around accessing broadcasting content (e.g., growth in on-demand streaming). Indeed, in October 2024, the then Minister for Communications announced that the Government planned to "explore pathways for the future of television, shaped by the possibility of realising a digital dividend".[21]

We believe the Government should commence discussions as soon as possible on the future of broadcasting in Australia, as this could lead to freeing up some or all of the 600 MHz spectrum used by broadcasters today for meeting mobile capacity demand growth and future technology evolution (i.e., 6G) over the medium term — this is the "digital dividend". This is low band spectrum that supports coverage over large distances and therefore is expected to be valuable as a launching pad for 6G in regional and remote areas. Based on earlier experiences with the 700 MHz band we anticipate broadcasting reform discussions extending over many years, as pathways for both efficient and equitable service delivery are identified and implemented. It would be beneficial to start this process now.

5 Price regulation, funding and drafting suggestions

5.1 Questions on the price regulation power and funding

The Draft Bill includes the ability (at 12N) for the Minister to set the price or a method of ascertaining the price at which UOMO services are made available to customers. This is not a concept that applies specifically in the existing USO legislation (for standard telephone services and payphones) and it is not clear why it should apply here, given that LEO STM retail prices will be dependent on upstream (LEO SNO) prices. Any price regulation should be of the upstream inputs, for the reasons set out at below.

[21] https://minister.infrastructure.gov.au/rowland/speech/radcomms-2024-melbourne

Moreover, the TCPSS Act already contains a general Ministerial retail price control power in respect of Telstra at Part 9, which could be used to set prices for UOMO services provided by Telstra. The principle should be to avoid unnecessary duplication, overlap and potential conflict in legislation. For that reason, we propose an addition to 12N which precludes the making of price controls under Part 9 for services for which prices have been set under 12N.

If UOMO retail prices are set by the Minister regardless of upstream prices, there is an inherent risk of LEO STM retail prices being set below cost. In that, case how will UOMO services be funded? Is it the Government's intention that mobile consumers who rarely or never use the LEO STM portion of the UOMO service should subsidise those who use it frequently? Or will the Government make available Commonwealth funding for this purpose?

5.2 Suggested amendments of terms and concepts in the draft legislation

- Clause 12M(6)(c)(i) and (c)(ii) would require handing over the personal information of individual customers to new PUOMPs, which in our view could never be acceptable in a mobility context (as opposed to the fixed USO, which is tethered to premises). We strongly suggest retaining 12M(6)(c) (which excludes personal information from the information to be provided) and remove 12M(6)(c)(i) and (ii), which provide exceptions to this exclusion.
- 12F(4): consider adding an example to illustrate this provision – for example, where a PUOMP does not have an agreement in place with a relevant STM provider, either for the area or for the designated mobile telecommunications service.
- 12H(2): consider adding a specific qualifier to the effect that the service is not available if the mobile handset is not technically capable of LEO STM connectivity.
- 12J(2): consider specifying in the legislation (non-exhaustive) circumstances where an area will be carved out, rather than leaving it to the definition of ***outdoor mobile coverage area***.
- 12K: consider including in the Act non-exhaustive circumstances in which coverage is not "reasonably available", such as where STM service is not available to the PUOMP on reasonable terms.
- 12L(1): consider the benefit of specifically naming the three MNOs as PUOMPs on commencement, given the possibility of changes in structure/ownership between now and then, and the possibility that other entities (including SNOs) might need to be named as PUOMPs.
- 12L(8): consider whether it is appropriate to limit the number of times the commencement date can be postponed, given the circumstances that will apply by 2031 are entirely unknown at this point.
- 12N(1)(e): the legislation should explicitly state that the maximum timeframes for fault rectification should not apply where the fault is beyond the control of the UOMO service provider.