# Telstra submission to the Senate Environment and Communications Legislation Committee Inquiry into the Telecommunications Legislation Amendment (Universal Outdoor Mobile Obligation) Bill 2025

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# Executive Summary

## Telstra supports the policy intention of the UOMO Bill

We understand and support the Government's objective behind the Universal Outdoor Mobile Obligation (UOMO) Bill to create workable outdoor mobile connectivity across Australia.

Australia's vast geography and exposure to natural disasters make this objective particularly important, and the recent bushfires, floods, and cyclones have demonstrated how critical basic outdoor connectivity is. A workable level of coverage could also support regional industries such as agriculture, transport, and tourism, where workers often operate outside traditional mobile footprints.

Telstra supports the policy intention and is committed to delivering the best possible connectivity outcomes for Australia and recognises the Government's – and many Australians' – desire to establish a consistent, reliable safety-net nationwide.

Satellite to Mobile (STM) technology is an exciting development with significant long-term potential to fulfil this objective. It offers the opportunity to extend coverage into areas that have historically been uneconomic or technically challenging for traditional macro networks. Over time, STM could meaningfully contribute to improved geographic reach and resilience.

However, there are important characteristics of STM including performance variability, device compatibility considerations, capacity constraints, and the current maturity of the ecosystem that mean the technology is not yet able to serve as the primary mechanism for meeting the UOMO objective.

Therefore, we recommend a slightly different implementation approach, as set out more broadly in this submission. This would see a basic level of connectivity delivered in a way that ensures STM can provide the best possible complementary service experience from the outset, with room for it to play a growing role as the technology matures.

## 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 "lite" data then voice 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 voice 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 4G standards which can only deliver limited capability at this stage. We expect 5G standards in development to address these shortcomings, with devices capable of 5G LEO STM voice services starting to become available from 2028.

In this context Telstra supports the flexibility in the Bill on the various elements of the UOMO, including the ministerial ability to 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.

## Default day should be removed and UOMO STM SMS and Voice obligations should commence at the same time

We propose the default commencement date (the 'default day') of 1 December 2027 is removed from the Bill, and instead, the commencement of the UOMO should be based on the availability of the technology

and compatible devices (which will only be known some considerable time after 1 December 2027). This can be achieved by the Minister having powers to determine the default day once these conditions are met. If a 'default day' remains necessary in the Bill, it should be no earlier than 1 January 2030.

We also do not support commencement of the UOMO SMS service before commencement of the UOMO Voice service. The reason for this is because it is not feasible to run UOMO STM (SMS and Voice) simultaneously on separate 4G and new 5G[1] satellite networks because we do not have enough spectrum, and STM Voice will most likely only be available on new 5G technology. If a UOMO SMS service is designated before the new 5G technology 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 new 5G technology, 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 promptly. This will be a poor customer experience and in our view is something to be avoided. UOMO SMS and UOMO Voice should commence at the same time.

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

UOMO is specifically technology neutral,[2] which in practice means any service standards should be defined by the least capable technology, namely, LEO STM delivered services. To this end, the Government 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 a point of reasonable maturity, before we can reasonably develop this deep understanding.

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

## The STM ecosystem should be designed to give the market the best opportunity to manage cost

We note the Government's proposal to use the Public Interest Telecommunications Services Special Account (PITSSA) for contracts or grants for the UOMO.[3] However, rather than initially focusing on identifying funding mechanisms to compensate for potential future loss-making services, Government should focus on creating a competitive service that does not require financial compensation. It is competition, not the creation of a funding mechanism to compensate for loss-making services that fosters choice and drives innovation and improvements in service quality and consumer outcomes.

It is imperative that the Government first seeks to allow the market to deliver competitive services at reasonable cost before considering funding mechanisms to compensate for potential future loss-making services.

## Price regulation is a last resort, and should be applied to the wholesale input costs

The draft UOMO Bill affords the Minister the power to set retail terms and conditions, including price setting. If price controls are required, we consider they should be applied at the wholesale input cost level (rather than at the retail price level). This is because retail competition will take care of moderating retail prices, whereas at the wholesale level there is a risk of few suppliers (SNOs), especially given limitations on suitable spectrum, which may require price regulation to control the input costs for MNOs

1 Specifically, "non-terrestrial network" (NTN) standards, which we explain in the body of our submission.

2 Explanatory information for the Telecommunications Legislation Amendment (Universal Outdoor Mobile Obligation) Bill 2025. Available at: https://www.infrastructure.gov.au/sites/default/files/documents/telecommunications-legislation-amendment-uomo-bill-2025-explanatory-information.pdf

3 Explanatory statement to the UOMO Bill, Financial Impact Statement on p.7.

reselling the LEO STM service. We also recommend price controls should only be applied as a last resort, and that the preferred approach to creating affordable, quality services is achieved by facilitating competition in the supply chain.

## SMS to Triple Zero

Finally, our submission notes the benefit to consumers that would arise from Australia having an SMS to Triple Zero capability, as it could be accessed by our existing STM SMS service.

Our submission closes with some proposed drafting changes to the UOMO Bill.

# Contents

# 1 LEO STM services promise an exciting future

We understand and support the Government's objective behind the Universal Outdoor Mobile Obligation (UOMO) Bill to create workable outdoor mobile connectivity across Australia. We are committed to delivering the best possible connectivity outcomes for Australia and we recognise the Government's – and many Australians' - desire to establish a consistent, reliable safety-net nationwide.

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 280,000 active services.[4] 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 "lite" data[5] and then voice to become available as 3GPP[6] standards for non-terrestrial network (NTN) capabilities 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.

However, there are important characteristics of STM, including performance variability, device compatibility considerations, capacity constraints, and the current maturity of the ecosystem that suggest it may not yet be best positioned to serve as the primary mechanism for meeting the UOMO objective.

We appreciate and support 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.

Therefore, we recommend a slightly different implementation approach, as set out more broadly in this submission. This would ensure a basic level of connectivity is delivered in a way that provides STM to provide the best possible complementary service experience from the outset, with room for it to play a growing role as the technology matures.

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 Senate Inquiry into the UOMO 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 practical UOMO legislation that can be implemented by MNOs and enforced by Government.

## 2.1 The current LEO STM ecosystem is built on 4G standards…

The LEO STM systems operating around the world today are based on proprietary modifications to existing 4G 3GPP standards. When first designed, 4G standards were not envisioned for satellite use

4 Channel News article, Australia to get big Starlink boost as popular service takes off. 13 Jan, 2026. Available at: https://www.channelnews.com.au/exclusive-australia-to-get-big-starlink-boost-as-popular-service-takes-off/

5 Low bitrate that will be unsuitable for high-bandwidth applications at scale.

6 The 3rd Generation Partnership Project (3GPP) is the global standards-setting body for mobile: https://www.3gpp.org/about-us.

and they cannot be changed retrospectively in existing user devices. Using 4G technology, current LEO STM services have limited capabilities. 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, and limit data speeds. Thus, the current solution is not a suitable basis for a future Voice UOMO, including voice calls to emergency services, and bandwidth-hungry applications.

### 2.2 … but 5G "NR-NTN" is coming

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 LEO STM using MSS spectrum bands. While NR-NTN capability was standardised in 3GPP Release 18 in March 2024,[7] it takes time for a new standard to be designed and implemented in network equipment and consumer devices, and then for network operators (in this case, SNOs) to deploy new satellites with this capability (e.g., Starlink "Gen 2" satellites), and for consumers to replace their devices with newer ones that support these standards. 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.

## 3 The UOMO construct provides appropriate flexibility

### 3.1 Telstra supports the flexibility built into the UOMO Bill

As described in Section 2.1, LEO STM services are still nascent. Today, only one SNO (Starlink) offers LEO STM messaging, and only one MNO (Telstra) provides LEO STM messaging to customers.[8] LEO STM voice is not available on any satellite network. However, it is highly anticipated that additional SNOs will enter the LEO STM market in Australia, offering LEO STM Voice[9] in the near future. In this context, Telstra supports flexibility in the UOMO 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".

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 2.5 GHz (3GPP Band 7) spectrum to deliver its commercial LEO STM messaging service, but our 2.5 GHz 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 UOMO Bill also gives the Minister the ability to determine in advance more specific circumstances in which the UOMO does not apply. 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 device that allows access to LEO STM services.

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7 3GPP Release 18 was "frozen" in March 2024. See https://www.3gpp.org/technologies/ran1-rel18 for details. Scroll down to topic 7 on NTN Enhancements for details of the changes in Release 18 for Non-Terrestrial Networks.

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

9 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.

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

As explained in Section 2.1 of our submission, Telstra supports the flexibility in the UOMO 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.[10] 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 also do not support the Bill containing a default commencement date for UOMO services. Instead, we propose the default commencement date (the 'default day') of 1 December 2027 is removed from the Bill, and instead, the commencement of the UOMO should be based on the availability of the technology and compatible devices (which will only be known some considerable time after 1 December 2027). This can be achieved, for example, by the Minister having powers to determine the default day once these conditions are met. If a 'default day' remains necessary in the Bill, it should be no earlier than 1 January 2030.

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

The UOMO Bill has been substantially amended to introduce a new part, "*Part 5A - Mobile telecommunications service standards, benchmarks and rules*." This new Part 5A gives the Minister power to determine standards, set benchmarks and make rules to be complied with by carriers and carriage service providers in relation to mobile telecommunications services.

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

[10] 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.

deeper understanding of the characteristics and limitations of STM services in comparison with terrestrial mobile services. UOMO services, which by their very definition are technology agnostic, must be provided in market, at scale, across the whole Australian landmass,[11] to the point of maturity, before we can reasonably develop this deep understanding.

Setting service quality standards for LEO STM services ahead of the technology's maturation risks imposing unrealistic or unattainable requirements on providers, particularly given the evolving nature of NR-NTN capabilities. While the 3GPP NR-NTN standards are complete, the real-world implementation practicalities, including coverage, latency and throughput are yet to be observed. Premature regulation may inadvertently stifle innovation or force operators to deliver services that are not yet technically feasible. Furthermore, early imposition of standards may create unnecessary compliance burdens and could discourage investment in emerging satellite technologies.

NR-NTN capabilities are expected to unlock significant advances[12] in connectivity for regional and remote areas, but their full potential will only be realised as the technology matures, and real-world performance data becomes available. By waiting until NR-NTN and LEO STM services are better established, the Government could, in the fullness of time, develop standards that reflect true operational capabilities rather than hypothetical targets, fostering sustainable growth and equitable service delivery across Australia.

Waiting until well after LEO STM services are in market to make standards, rules and benchmarks does not mean UOMO providers do not have incentives to provide excellent service to their customers. All telecommunications service providers have strong incentives to provide high-quality services to their customers, and these incentives extend to LEO STM services. 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 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.[13] 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[14] regardless of the technology used to deliver it.

11 Except the Radio Quiet Zone (RQZ). See also our comments in section 3.1 about Christmas Island and the Cocos/Keeling Islands.

12 For example, existing STM systems do not support active handover during a call. This would be essential in a scenario where a customer is making an emergency call and walks into their home. STM won't work reliably indoors so the calls need to handover to voice over Wi-Fi or terrestrial mobile.

13 Telecommunications Legislation Amendment (Universal Outdoor Mobile Obligation) Bill 2025 – Explanatory information, September 2025, pp. 3-4. Available at: https://www.infrastructure.gov.au/sites/default/files/documents/telecommunications-legislation-amendment-uomo-bill-2025-explanatory-information.pdf

14 Except the Radio Quiet Zone (RQZ) - see footnote 11.

# 4 Competition, funding and price regulation

## 4.1 Models that facilitate competition must be encouraged before conceding to funding

We note the Government's proposal to use the Public Interest Telecommunications Services Special Account (PITSSA) for "… *contracts or grants for the UOMO*".[15] We consider this to be a misstep at this nascent stage of the development of a competitive market for the supply of STM services to Australia. Signalling to SNOs that funding should be made available will drive perverse outcomes in the wholesale supply of STM services to MNOs and on to consumers.

Rather than initially focusing on identifying funding mechanisms to compensate for potential future loss-making services, we strongly recommend Government focus on creating the environment for competitive service delivery that does not require financial compensation.

It is competition, not the creation of a funding mechanism to compensate for loss-making services that will foster choice and drive innovation and improvements in service quality and consumer outcomes. It is imperative the Government first seeks to allow the market to deliver competitive services at reasonable cost before considering funding mechanisms to compensate for potential future loss-making services.

## 4.2 Price regulation is a last resort, and should be applied to wholesale inputs

The UOMO Bill includes the ability (at 12Q) for the Minister to set the price or a method of ascertaining the price at which UOMO services are made available to customers. Given that LEO STM retail prices will be dependent on upstream (LEO SNO) wholesale prices, it is not clear why price regulation should apply at the retail level. If price regulation is ever required, and it should not be assumed that it will be, then the regulation should be applied only to the upstream inputs, not at the retail price level. This is because retail competition will take care of moderating retail prices based on the wholesale input cost (hence, no need to apply price regulation unless there is demonstrable evidence of market failure), whereas at the wholesale level, due to limited spectrum options, there is a risk of very few suppliers (monopolistic or duopolistic supply market), which may require price regulation to control the input costs for MNOs reselling the LEO STM service.

We strongly recommend that the Government focus on facilitating a competitive ecosystem, which will drive better consumer outcomes, as we set out below. For that reason, we propose an amendment to 12Q(1)(a) which is to remove the making of price terms and conditions.

# 5 SMS to Triple Zero would lift the benefits of the STM SMS service

While not explicitly part of the UOMO Bill, we take this opportunity to reiterate our support for an SMS to Triple Zero capability. We currently offer an STM SMS service, which is helpful for people wanting to stay in contact while outside the coverage of terrestrial networks, however, because there is no SMS to Triple Zero capability, the only course of action for someone using our STM SMS service in an emergency is to SMS to family or friends to obtain assistance.

We encourage the Government to proceed with the introduction of an SMS to Triple Zero capability, as we consider there would be benefit to consumers in having that ability.

[15] Explanatory statement to the UOMO Bill, Financial Impact Statement on p.7.

# 6 Drafting suggestions for the UOMO Bill

This final section of our submission contains specific comments on the UOMO Bill.

## 6.1 Amendments to the UOMO Bill that Telstra supports

- 8BB(3): we support the addition of this subsection to consult with PUOMPs before adding (i.e., designating) new kinds of mobile telecommunications service. LEO STM services operate at the very edge of technical capabilities, and it is important the Government consult with the technology operators to understand these capabilities in relation to possible new kinds of mobile telecommunications services.

## 6.2 Suggested amendments of terms and concepts in the UOMO Bill

- 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.
- 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): question 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.
- 12M(2): we strongly disagree with bringing the ***default day*** forward by one year to 1 December 2027, due to the nascent nature of LEO STM technology, especially in relation to a voice service. We propose the default commencement date is removed from the Bill, and instead, the commencement of the UOMO should be based on the availability of the technology and compatible devices (which will only be known some considerable time after 1 December 2027). This can be achieved by the Minister having powers to determine the default day once these conditions are met. If a 'default day' remains necessary in the Bill, it should be no earlier than 1 January 2030.
- 12M(3): consider increasing the limit to the number of times the commencement date can be postponed, given the circumstances that will apply by 2031 are entirely unknown at this point.
- 12Q(1)(a): the legislation should be amended to remove the ability to set retail price. As we set out in section 4 of our submission: 1) if price regulation is required, it should be at the input cost level, not the retail price level; and 2) a superior approach is to facilitate an ecosystem that drives competition and fosters innovation, as that will deliver better outcomes for consumers.
- 12Q(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.