

# Submission on the Telecommunications Legislation Amendment (Universal Outdoor Mobile Obligation) Bill 2025

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Publication preference: Name published

## Executive Summary

The *Telecommunications Legislation Amendment (Universal Outdoor Mobile Obligation) Bill 2025* (the Bill) seeks to establish a Universal Outdoor Mobile Obligation (UOMO), requiring baseline mobile voice and Short Message Service (SMS) coverage to be reasonably available outdoors to all people in Australia on an equitable basis (Parliament of Australia 2025a; Parliament of Australia 2025b).

The policy intent is sound. Mobile communications are now foundational to safety, economic participation, and day-to-day social connection, particularly in regional, rural, and remote Australia (Parliament of Australia 2024a; ACCAN 2025).

In its current form, however, the Bill is best understood as a framework rather than a complete delivery model. It establishes a high-level obligation, but leaves the substantive content of that obligation - including standards, benchmarks, rules, and the practical meaning of concepts such as “reasonable availability” and “equitable access” - to future ministerial instruments under ss.125B–125G of the *Telecommunications (Consumer Protection and Service Standards) Act 1999* (Parliament of Australia 2025a; Parliament of Australia 2025b).

This design introduces flexibility, but also creates a material structural risk. In the absence of defined operational, resilience, and assurance parameters, there is a risk that Australia legislates for nominal coverage without establishing the conditions necessary for that coverage to be meaningful in practice.

This submission advances a single proposition: the principal risk presented by the Bill lies not in its objective, but in the absence of a sufficiently developed operational, resilience, and assurance framework to support delivery over time.

The central question is therefore not whether Australia should modernise universal service arrangements to reflect the centrality of mobile communications—it should—but whether the current framework adequately defines the service it seeks to mandate.

In particular, the Bill does not clearly distinguish between:

- baseline availability;
- usable service quality;
- resilience during disruption; and
- last-resort emergency continuity.

These are distinct system properties. Without clear definition, they cannot be consistently measured, enforced, or assured under real-world conditions.

In its current form, the Bill risks creating an obligation that is difficult to measure or enforce; dependent on emerging technologies that remain uneven in maturity and device compatibility; insufficiently aligned with known failure modes during outages and disasters; and highly reliant on ministerial discretion without a commensurate assurance model (Parliament of Australia 2025a; Parliament of Australia 2025b; Parliament of Australia 2025c; ACCAN 2025; TIO 2025).

This submission does not seek to expand the scope of the Bill beyond its intent, but to ensure that its implementation aligns with established principles of resilience, critical infrastructure assurance, and long-term productivity.

The analysis proceeds by:

- outlining mobile connectivity as critical infrastructure;
- analysing the Bill's treatment of ambiguity, technology dependency, resilience, and assurance;
- identifying the absence of an explicit architectural layer in the current policy design;
- drawing lessons from comparable jurisdictions; and
- setting out targeted recommendations addressing definitional clarity, operational realism, resilience, and assurance.

This approach aligns with existing Australian Government policy settings across critical infrastructure, disaster resilience, and productivity frameworks, all of which emphasise continuity of essential services under both normal and disrupted conditions.

Telecommunications should not be treated solely as a commercial service. They are a foundational component of Australia's critical infrastructure system. The Bill represents an important step forward, but does not yet fully reflect this system-level perspective.

## 1. Introduction and Purpose of Submission

This submission responds to the *Telecommunications Legislation Amendment (Universal Outdoor Mobile Obligation) Bill 2025*.

The Bill proposes to amend Australia’s telecommunications framework to establish a Universal Outdoor Mobile Obligation (UOMO), under which designated providers would be required to ensure baseline mobile voice and SMS services are reasonably available outdoors across Australia on an equitable basis (Parliament of Australia 2025a).

This represents a significant policy development. It reflects a broader shift in the nature of universal communications need, where fixed-line services no longer represent the practical centre of service delivery. For many Australians - particularly in regional and remote areas - mobile connectivity is now the primary means of access to safety, economic participation, and social connection (Parliament of Australia 2024a).

The purpose of this submission is to assess whether the Bill’s design is sufficiently complete to support meaningful delivery in practice. The analysis therefore focuses not on the validity of the objective, but on whether the framework is technically, operationally, and institutionally adequate to deliver that objective over time.

Specifically, this submission examines:

- how the Bill defines and operationalises “reasonable availability” and “equitable access”;
- whether the framework supports measurable and enforceable service outcomes;
- the extent to which the proposed model depends on emerging satellite and Direct-to-Device (D2D) technologies;
- whether the Bill adequately distinguishes between coverage, usability, resilience, and emergency continuity;
- how standards, rules, and benchmarks are positioned in relation to ministerial discretion; and
- what a more durable, technically coherent, and assurance-oriented model would require.

This framing reflects a broader principle in critical infrastructure policy: the most significant failures do not typically arise from incorrect objectives, but from insufficiently specified delivery architectures.

In that context, the central question is not whether a Uomo is desirable. It is whether the Bill, in its current form, is sufficiently grounded in the operational realities of telecommunications systems - particularly in a continent-scale environment characterised by recurrent disaster risk and uneven infrastructure economics.

## 2. Context: From Coverage Obligation to Critical Infrastructure Assurance

The Bill operates in a communications environment that has changed materially since the original universal service settings were conceived. Mobile connectivity is now essential infrastructure. It underpins personal safety, social participation, logistics, navigation, work, digital services, and emergency response. The 2024 Regional Telecommunications Review emphasised that weak or unreliable mobile service in regional and remote areas affects safety, tourism, economic participation, business continuity, and emergency response (Parliament of Australia 2024a). In that context, the modernisation impulse behind the Bill is both rational and overdue.

At the same time, the problem to be addressed is often framed too narrowly. The relevant policy question is no longer simply whether coverage exists, but whether connectivity is reliable, usable, resilient, and capable of being assured under real-world conditions, including adverse conditions.

This distinction is material. Telecommunications systems are not binary. A location may register “coverage” while still experiencing poor call completion, weak signal, congestion, limited handset compatibility, constrained backhaul, or failure during extended power outages. Coverage, in this sense, is an incomplete proxy for service availability.

Mobile connectivity is therefore better understood as a layered infrastructure problem rather than a single coverage metric.

This reflects a broader system-of-systems reality. Service availability depends not only on radio infrastructure, but on supporting systems including power supply, backhaul, transmission networks, and restoration capability. Weakness in any one of these layers can result in service failure, even where nominal coverage exists.

The Bill acknowledges elements of this complexity, but does so indirectly. It establishes a flexible framework under which standards, benchmarks, and rules may be developed over time, including in relation to reliability, call quality, SMS performance, congestion, fault rectification, accessibility, and consumer information (Parliament of Australia 2025b).

That flexibility is valuable. However, it also means that the primary legislation currently establishes an obligation with limited defined content.

The policy question is therefore whether sufficient structure has been embedded at the legislative level to ensure that the future development of that obligation remains anchored to a coherent model of service delivery, rather than drifting toward nominal or administratively convenient interpretations.

## 2.1. Definitional Ambiguity and Enforceability

The UOMO is framed around the obligation to ensure that mobile coverage is “reasonably available outdoors” to all people in Australia “on an equitable basis” (Parliament of Australia 2025a). These are materially important concepts, but they remain open-textured and under-defined.

The Explanatory Memorandum acknowledges that there may be debate as to when it is reasonable to expect coverage to be available, and provides for ministerial instruments to determine circumstances in which the obligation does not apply, or matters to which regard must, or must not, be had (Parliament of Australia 2025b). This flexibility is understandable in a changing technological environment. However, it also means that the central legal threshold for the obligation is not fully operationalised in the Act itself.

This has direct implications for enforceability and public accountability. Where an obligation is not tied to defined service parameters, it becomes difficult to determine whether it has been met. Compliance risks becoming interpretive rather than measurable. From an assurance perspective, an obligation that cannot be measured cannot be reliably assured.

The Telecommunications Industry Ombudsman (TIO) and consumer bodies have accordingly argued for enforceable standards, rules, and benchmarks to be established early, rather than deferred to later stages of implementation (Parliament of Australia 2025c; ACCAN 2025; TIO 2025).

A related issue arises in the Bill’s treatment of “outdoors”. The Bill excludes buildings, vehicles, aircraft, vessels, and underground or underwater locations, reflecting current limitations in D2D technology (Parliament of Australia 2025c). This may be technically understandable at commencement. However, the Explanatory Memorandum indicates that the definition has been shaped by what D2D technology can currently deliver, rather than by a principled assessment of what connectivity needs to deliver in practice.

This is a consequential design choice. The scope of the obligation is being defined by the limitations of an emerging technology, rather than by a clear articulation of contemporary communications need. As D2D capability matures, this constraint is likely to become increasingly difficult to justify, reinforcing the risk that the practical scope of the obligation is anchored to current technological limitations rather than to enduring service requirements.

A further dimension of definitional risk relates to commencement. The Bill sets a default day of 1 December 2027. However, proposed subsection 12M(3) provides that the Minister may postpone this date by up to 12 months at a time, on up to three occasions, by notifiable instrument. This creates the possibility that the UOMO obligation may be deferred until as late as December 2030 without parliamentary disallowance.

The use of a notifiable instrument for this purpose raises a governance concern. A deferral of up to three years for a Universal Service Obligation (USO), without parliamentary oversight, represents a material departure from established practice.

The submission's recommendation for structured statements of ministerial reasons (Recommendation 6) is particularly relevant in this context. Any exercise of the postponement power should require explicit public justification addressing market readiness, consumer impact, and the adequacy of alternative arrangements during the deferral period.

The existing Act provides a clear point of comparison. Under section 9(2AAA) of the *Telecommunications (Consumer Protection and Service Standards) (TCPSS) Act 1999*, the Minister may vary the existing USO voice obligation through a declaration under section 8J. That declaration is expressly subject to disallowance by either House of Parliament under section 42 of the *Legislation Act 2003*.

The current framework therefore treats material adjustments to USOs as requiring parliamentary oversight. The UOMO postponement power, by contrast, operates by notifiable instrument without disallowance, and is therefore inconsistent with that established standard. Alignment with existing oversight arrangements would strengthen both governance and accountability.

## 2.2. Technology Dependency and Delivery Risk

The Bill is being developed in a context where emerging Low-Earth-Orbit (LEO) satellite and D2D technologies are expected to play a central role in extending baseline coverage beyond terrestrial network footprints (Parliament of Australia 2025b; Parliament of Australia 2025c). The Bill itself does not mandate a particular technology. In form, it is technology-neutral. In substance, however, both the Explanatory Memorandum and the broader policy context indicate that the initial feasibility of the UOMO is closely linked to the capabilities and evolution of D2D satellite services (Parliament of Australia 2025b; ACCAN 2025).

Telecommunications assets are already designated as critical infrastructure under the *Security of Critical Infrastructure Act 2018* (SOCI Act), which establishes expectations around risk management, resilience, and all-hazards preparedness. In this context, a USO that focuses solely on nominal coverage risks creating a disconnect between telecommunications policy and broader critical infrastructure governance settings. A more aligned approach would recognise availability, survivability, and recovery as core system requirements.

This creates a material delivery risk. Emerging D2D systems are important and promising, but remain constrained by service capability, spectrum availability, handset compatibility, contention, and the practical distinction between low-duty-cycle messaging and scalable, everyday communications. The Bills Digest records stakeholder concern that LEO satellite and D2D technologies are not yet fully tested, trialled, or available in Australia at the scale implied by the policy ambition (Parliament of Australia 2025c). It also highlights industry concern regarding spectrum scarcity and the potential for trade-offs between network generations and handset compatibility (Parliament of Australia 2025c).

From a systems perspective, the issue is not whether D2D should form part of the solution, but how it is positioned within the overall architecture. D2D satellite services are well suited to last-

resort continuity, sparse communication, and remote edge cases. They are not well suited to acting as a substitute for terrestrial capacity, resilience, or a broader rural connectivity architecture.

Technical and policy analysis consistently supports this distinction. Satellite-based D2D services are best understood as a last-resort continuity layer rather than a primary connectivity mechanism - the “airbag, not the chassis” of a resilient national connectivity model (Parliament of Australia 2025c). The 2024 Regional Telecommunications Review reached a similar conclusion, noting that current generation direct-to-handset services are capacity constrained, dependent on line-of-sight conditions, and unable to provide the high-bandwidth capabilities associated with terrestrial networks (Parliament of Australia 2024a).

In addition, reliance on satellite-based delivery introduces a degree of dependency on external infrastructure providers that may not align with Australia’s broader approach to sovereign capability in critical infrastructure sectors. While such services are valuable, their role should be clearly bounded within a resilience framework rather than forming the foundation of the obligation.

It is important to be explicit on this point. Treating satellite as a complementary rather than primary delivery layer is not an argument against improved coverage. It is an argument for a more durable and equitable standard of service. A framework that positions satellite as the primary delivery mechanism for First Nation communities effectively accepts a lower standard of service by design - outdoor-only, capacity-constrained, and dependent on external constellation infrastructure.

A technically coherent UOMO should instead reflect a terrestrial-first architecture, supported by satellite as a genuine and reliable safety net. This approach maintains focus on continued investment in terrestrial infrastructure while ensuring that satellite capability is used where it is most effective.

This distinction is also directly relevant to the Government’s Closing the Gap commitments. Multiple Priority Reforms and outcome targets - including those relating to health, education, and economic participation - depend on reliable and usable connectivity in remote First Nation communities. A UOMO that relies primarily on satellite-based outdoor coverage risks undermining these objectives, rather than reinforcing them.

### 2.3. Usability Gap: Coverage vs Practical Access

Submissions from consumer stakeholders consistently emphasise that coverage alone is insufficient. Practical access depends on more than whether a service can be technically reached under ideal conditions. It also depends on affordability, the availability of compatible handsets and service plans, the clarity of information about service limitations, and the ability of users to obtain support when services do not perform as expected (ACCAN 2025; TIO 2025).

The Explanatory Memorandum implicitly recognises this by noting that the absence of an appropriate handset or plan may affect whether a provider is reasonably expected to make

coverage available (Parliament of Australia 2025b). This acknowledgement is significant, but it also exposes a policy tension. If an obligation is satisfied by making a service available in principle, while a substantial proportion of users cannot access it in practice due to device, pricing, or plan constraints, then the obligation may be met in a formal sense without delivering its intended public-interest outcome.

In regional and remote Australia, mobile connectivity functions as a direct input to economic activity rather than a discretionary service. Disruptions to connectivity can affect logistics coordination, agricultural operations, remote workforce participation, and safety-critical communications. They can also interrupt access to telehealth services, which have become a primary mode of healthcare delivery in areas with limited access to in-person care. In this context, connectivity failure carries direct economic and health consequences, not merely inconvenience.

As a result, a universal obligation that ensures nominal coverage without usable and reliable service risks embedding structural productivity constraints in regions and sectors that materially contribute to national output.

This is not a peripheral issue. The 2024 Regional Telecommunications Review highlighted the importance of affordability, transition oversight, and practical support during telecommunications migrations, noting that technology transitions require clearer communication and stronger institutional coordination than has often been achieved in the past (Parliament of Australia 2024a).

The same lesson applies here. Where a universal obligation depends on new device ecosystems, service models, or user behaviours, it requires an explicit usability and transition framework, rather than relying solely on the existence of nominal coverage.

## 2.4. Resilience and Emergency Communications

One of the strongest policy arguments for the UOMO is public safety. The Explanatory Memorandum positions the Bill as improving baseline connectivity, particularly in emergencies, enabling Australians to communicate when needed most (Parliament of Australia 2025b). That intent is sound. However, the Bill currently addresses emergency capability only indirectly.

The framework relies on existing emergency call arrangements, particularly the Telecommunications (Emergency Call Service) Determination 2019 (ECSD), on the basis that UOMO-enabled voice services will fall within its scope. This assumption is reasonable in principle, but incomplete in practice.

During the initial phase of D2D deployment, services are likely to be SMS-capable before they are voice-capable. Where the UOMO is satisfied through SMS-only coverage, no voice service is being supplied, and therefore the ECSD obligations do not apply. This creates a gap in which the obligation is technically met, but emergency voice capability is not available.

Stakeholders have identified this issue directly. ACCAN has recommended that reliable emergency capability - including text-to-000 arrangements - be ensured during the transition period, while the

Bills Digest record calls for emergency roaming or “camp-on” functionality where alternative networks are available (ACCAN 2025; Parliament of Australia 2025c).

More broadly, the ECSD framework itself confirms that current emergency arrangements are designed for traditional voice-capable services. SMS-only D2D services do not meet the definition of an emergency telephone service, and recent amendments explicitly recognise categories of satellite services that fall outside the ECSD’s carriage obligations. The resulting gap is therefore not merely transitional, but structural.

A related issue arises in relation to emergency alerting. The AusAlert cell broadcast system, scheduled for deployment from October 2026, depends on devices being reachable within network coverage areas. However, D2D coverage is inherently limited to outdoor environments with line-of-sight to the sky. Where the UOMO is satisfied by outdoor-only SMS coverage, users may formally have service while remaining unreachable by the emergency alerting system designed to warn them of imminent danger.

These risks are not hypothetical. The 8 November 2023 Optus outage demonstrated how failures in core network access and radio behaviour can disrupt emergency communications at national scale (DITR 2024a). In that event, devices were unable to successfully access alternative networks, highlighting the limitations of camp-on mechanisms when underlying system dependencies fail simultaneously.

More fundamentally, resilience is not equivalent to coverage. Telecommunications systems depend on supporting infrastructure - particularly power and backhaul - which are the primary determinants of network survivability during disasters (ACMA 2024; ACCC 2025b; Parliament of Australia 2024a). The Regional Telecommunications Review found that services often fail prematurely during power outages and supported extended backup power durations, particularly in remote areas (Parliament of Australia 2024a).

Industry evidence reinforces this point. Submissions from infrastructure providers indicate that resilience requirements and operating standards for regional networks are not consistently defined, and that expansion of terrestrial infrastructure in low-density areas is often not commercially viable without co-investment mechanisms.

The Bill establishes a coverage obligation, but does not embed corresponding resilience or recovery requirements. This creates a structural misalignment. A connectivity obligation intended to support safety during emergencies should be explicitly anchored to system survivability and restoration capability, not solely to nominal availability.

Recovery represents a further dimension that is not currently addressed. Restoration outcomes depend on coordinated access to power, transport, and infrastructure, and should be considered a core component of resilience rather than an implicit outcome.

This broader pattern has been consistently observed across Australian disaster reviews, which identify telecommunications fragility during prolonged outages as a recurring systems issue rather

than an isolated failure (Royal Commission into National Natural Disaster Arrangements 2020; Parliament of Australia 2024a).

Existing programs such as the Mobile Network Hardening Program (MNHP) and the Strengthening Telecommunications Against Natural Disasters (STAND) program have improved site-level resilience, but remain discretionary and funding-dependent. They do not establish binding, system-wide standards. The UOMO framework provides an opportunity to embed such expectations at the legislative level, ensuring durable and enforceable resilience outcomes independent of program cycles.

International and domestic experience demonstrates that outages are rarely the result of a single failure, but arise from the interaction of multiple degraded systems. Resilience should therefore be framed in terms of system behaviour under stress, rather than infrastructure presence alone.

## 2.5. Economic and Productivity Significance of Reliable Connectivity

While the UOMO is often framed in terms of safety and equitable access, it also has direct implications for economic productivity, particularly in regional, rural, and remote Australia.

Reliable mobile connectivity is increasingly a prerequisite for economic participation. Variability in service availability therefore translates directly into variability in productivity, access to services, and economic opportunity.

Mobile connectivity should not be understood as a discretionary consumer service. It functions as a foundational input to economic activity, enabling field operations, logistics coordination, tourism services, remote work, digital transactions, and access to government and health services. Where connectivity is unreliable or unavailable, these activities are not merely degraded - they are interrupted.

In this context, telecommunications outages are more appropriately understood as productivity shocks rather than simple service disruptions. Even short-duration outages can result in lost work hours, disrupted supply chains, failed transactions, and reduced capacity for businesses and public services to operate effectively.

This dynamic is particularly pronounced in regional and remote Australia, where mobile connectivity often serves as the primary or only communications medium. In these environments, unreliable connectivity can impose a persistent productivity penalty, limit economic participation, and increase the cost of doing business.

The 2024 Regional Telecommunications Review identified this relationship explicitly, noting that digital connectivity supports agricultural monitoring, real-time decision-making, and direct market access, while also enabling broader economic participation and service delivery in rural and remote communities (Parliament of Australia 2024a).

Accordingly, the design of the UOMO should be assessed not only against coverage metrics, but against its ability to support continuity of economic activity under both normal and disrupted conditions.

## 2.6. Governance and Ministerial Discretion

The Bill places substantial reliance on ministerial instruments. The Minister may designate primary providers, define the structure of the UOMO, set standards and benchmarks, make rules, and specify matters relevant to whether coverage is reasonably available (Parliament of Australia 2025a; Parliament of Australia 2025b). The framework also permits delegation to the Australian Communications and Media Authority (ACMA) and Departmental officials in relation to various powers under Part 2 (Parliament of Australia 2025c).

This design is understandable. Telecommunications technologies evolve rapidly, and highly prescriptive primary legislation risks becoming outdated. However, reliance on ministerial instruments creates a governance challenge if not matched by an adequate model of explanation, scrutiny, and assurance. In effect, the Bill establishes a framework in which much of the substantive content of the obligation will emerge over time through executive action.

This is not inherently inappropriate. However, it places greater weight on the quality of the governance architecture supporting those decisions.

In its current form, the framework relies significantly on provider interpretation of obligations. While this offers flexibility, it also introduces variability in outcomes. In critical infrastructure contexts, this is typically addressed through clearer linkage between obligations and measurable performance expectations.

From an assurance perspective, the current model risks becoming one of trust without verification. Where standards and benchmarks are largely contingent on future discretion, without strong statutory expectations for explanation, public reporting, and independent validation, the obligation may remain formally in place while its practical effectiveness varies over time.

The delegation structure is also more layered than it may initially appear. While the Minister may establish standards, rules, and benchmarks by legislative instrument, those instruments may in turn confer authority on the ACMA to define detailed technical requirements, such as geospatial standards, fault rectification metrics, and network management processes. This creates a multi-tier delegation model between the primary obligation and any enforceable technical standard. Each layer introduces additional discretion, timing uncertainty, and potential dilution of accountability.

This has implications not only for implementation, but for precedent. A USO enacted without minimum service parameters at the legislative level establishes a model for future obligations in adjacent domains. If a framework-first, standards-later approach becomes the norm, it risks weakening the broader regulatory architecture for digital access, emergency communications, and other critical connectivity requirements.

## 2.7. The Missing Layer: Assurance and Verification

Across the Bill, the Explanatory Memorandum, consumer submissions, industry commentary, and the Regional Telecommunications Review, a consistent pattern emerges. Consumer groups emphasise usability and standards. Industry emphasises realism and flexibility. Public-interest stakeholders emphasise resilience, transparency, and emergency capability. These are not separate issues. They are different expressions of the same underlying problem.

The Bill defines an obligation, but does not yet define how that obligation is measured, verified, or assured. In effect, it establishes a policy-intent layer without fully articulating the corresponding control layer (what must be delivered) and assurance layer (how performance is validated over time).

If this gap is not addressed, the risk is not merely implementation uncertainty. The risk is that the UOMO becomes a nominal coverage construct rather than a durable and credible infrastructure framework.

This risk can be illustrated through a plausible delivery scenario. A designated provider may satisfy the UOMO across large geographic areas using D2D satellite services that provide outdoor SMS capability only, limited handset compatibility, no voice capability during early deployment phases, and no indoor coverage.

The technical characteristics of such systems are well understood. Satellite beams cover large geographic areas, with shared and constrained capacity distributed across all users within that footprint. Performance is therefore highly dependent on contention, spectrum availability, and constellation scale. Indoor usage - which accounts for the majority of mobile activity - is significantly degraded due to signal attenuation.

Under the current drafting, such a service may satisfy the definition of availability, provided an end-user outdoors with a compatible device can access the service. However, this would represent a materially lower standard of service than the public-safety and economic objectives underpinning the UOMO.

In this scenario, the obligation is met in a formal sense, but not in a functional sense.

This is the core issue. Without an explicit assurance framework - including defined service parameters, measurable performance thresholds, and validation mechanisms - there is no reliable way to distinguish between nominal compliance and effective service delivery.

The recommendations in this submission are directed at closing that gap, by ensuring that compliance with the obligation requires delivery of services that are usable, resilient, and capable of supporting emergency communications in practice, rather than satisfying a minimal coverage threshold in principle.

## 2.8. Lessons from Prior National Infrastructure Programs

Australian and international experience with large-scale telecommunications infrastructure programs demonstrates a consistent structural pattern: it is possible to achieve nominal coverage targets while embedding service quality and resilience limitations that persist over time.

This outcome is not driven by any particular technology choice, but by the absence of clearly defined performance, resilience, and assurance expectations at the point of obligation design. Where these elements are deferred, coverage metrics tend to become the primary measure of success, while service consistency, survivability, and user experience remain variable and difficult to correct retrospectively.

In practical terms, this means that nominal service objectives can be met while structural limitations are locked in for extended periods.

In the context of the UOMO, this reinforces the importance of defining performance, resilience, and recovery expectations at the outset, rather than relying on later adjustment. The Committee may wish to consider whether similar risks arise in the present Bill, particularly where emerging or fallback technologies may be relied upon to satisfy baseline obligations in the absence of clearly defined requirements.

The central lesson is therefore not that technology diversity is problematic, but that diversity without a clearly defined architectural model and assurance framework can produce outcomes that are technically compliant yet operationally inconsistent.

## 2.9. Technical Architecture Gap in the Current Framework

### 2.9.1. Framing the Issue

The central issue is not the absence of mechanisms to improve mobile coverage, but the absence of a coherent technical architecture within which those mechanisms operate. Current policy settings risk conflating coverage expansion with connectivity resilience. Emergency roaming, D2D satellite, and future standards powers each have value, but none of them, in isolation, constitute a system-level design for resilient national connectivity.

Australia's geographic scale, highly uneven settlement pattern, and exposure to natural disasters make this distinction particularly important. A continental-scale telecommunications system cannot be designed on the assumption that a single technical layer can perform all roles equally well. This principle is well understood in other infrastructure domains. A transport network, for example, distinguishes between highways, local roads, emergency access routes, and aerial fallback. It would be a category error to design the system around the helicopter. The same applies here. D2D satellite has an important role, but it is best understood as a survival layer, not the primary load-bearing layer.

This system-level perspective is reinforced by existing telecommunications analysis. Backhaul infrastructure in regional Australia often lacks sufficient path diversity, increasing vulnerability to disruption during physical infrastructure failure or disaster events (ACCC 2025b; Parliament of Australia 2024a). The Australian Competition and Consumer Commission (ACCC) has made this more explicit, noting that many regional, rural, and remote areas are served by a single backhaul provider, and that fibre rollout remains concentrated near major population centres (ACCC RTR 2024). In these environments, failure of a single backhaul pathway can disrupt connectivity across all carriers, regardless of how many towers remain operational. A framework that measures coverage through tower presence alone cannot ensure continuity of service without corresponding requirements for backhaul resilience.

The November 2023 Optus outage further demonstrated that network management infrastructure is itself a critical resilience layer, capable of failing independently of the radio access network. One of the root causes of Triple Zero failure identified by the Bean Review was the inability to remotely manage the network during the outage, preventing the activation of failover mechanisms such as camp-on (DITR 2024a). In response, the Review recommended - and the Government accepted - that carriers must maintain resilient access to network management systems, including the ability to operate them during core network failures (DITR 2024b).

The implication for the UOMO is clear. Coverage and service continuity are properties of the full system - including radio access, backhaul, core network, and management infrastructure - not of the radio layer alone.

## 2.9.2. Structural Gap in the Proposed Framework

The Bill does not clearly distinguish between:

- primary everyday connectivity;
- rural baseline connectivity;
- degraded connectivity during disruption; and
- last-resort continuity.

This distinction matters because each of these states has different technical requirements, economic characteristics, and failure modes. Without clear separation, there is a risk that fallback mechanisms - such as D2D satellite or emergency roaming - are treated as substitutes for core infrastructure, rather than as constrained safety nets.

This structural issue is reflected in the current configuration of Australia's mobile infrastructure market. The ACCC has identified that infrastructure ownership and access in regional Australia is uneven, with a significant proportion of sites remaining inaccessible to other operators. In practical terms, this means that publicly supported infrastructure expansion has not consistently translated into shared network capability or improved competitive access.

The consequence is that coverage expansion alone does not necessarily deliver resilient or contestable service outcomes. Where infrastructure is not shared, and where backhaul and access

dependencies remain concentrated, service continuity remains vulnerable to single points of failure and limited competitive pressure.

The ACCC has explicitly recognised this dynamic, noting that existing market structures in regional areas may create barriers to further network expansion and reduce incentives for competing investment. This reinforces the limitation of a framework that assumes competitive dynamics will, on their own, address regional coverage and resilience gaps.

A more coherent long-term model is a layered architecture comprising: terrestrial macro networks as the primary layer; shared or neutral-host rural infrastructure as the extension layer; resilience mechanisms such as backhaul diversity, power hardening, and emergency roaming; and D2D satellite as a final continuity layer.

International experience supports this approach. Shared rural infrastructure models, supported by public co-investment, have demonstrated that coordinated deployment can improve coverage while maintaining economic viability. The key mechanism in these cases is not mandated roaming, but structured co-funding arrangements that enable shared infrastructure to be built and accessed on reasonable terms (ACCC 2017).

This conclusion is also consistent with broader telecommunications analysis. Evidence from industry and policy reviews indicates that D2D satellite services are best understood as a complementary layer for remote and last-resort connectivity, rather than as a substitute for terrestrial networks.

The implication for the UOMO is that a coverage obligation, without an accompanying architectural model, risks embedding structural limitations rather than resolving them. A framework that does not explicitly recognise the distinct roles of different connectivity layers may achieve nominal coverage outcomes while leaving resilience, performance, and competitive access uneven.

There is also an opportunity to better align UOMO obligations with existing national infrastructure investments, including regional transmission and backbone networks. Improved integration between access and transport layers would reduce single points of failure and strengthen restoration capability during outages.

More broadly, Australian and international experience demonstrates that service continuity is shaped by the interaction of multiple infrastructure layers: including access networks, transmission paths, power systems, and recovery arrangements. Treating telecommunications as a layered system, rather than a single coverage problem, is therefore essential to achieving durable and resilient outcomes.

## 2.10. Spectrum Lever

A practical consideration for implementation is the role of spectrum licensing. Spectrum allocation and renewal processes represent one of the most effective mechanisms available to Government

to embed coverage, performance, and resilience obligations within enforceable regulatory frameworks.

In the context of the UOMO, spectrum policy provides a direct pathway to operationalise obligations that may otherwise remain high-level or dependent on evolving ministerial instruments. Conditions attached to spectrum licences can define measurable service requirements, including coverage performance, resilience standards, and service availability under specified conditions.

This approach aligns with established regulatory practice, where spectrum access is contingent on public-interest obligations. It also provides a mechanism for ensuring that obligations are both durable and enforceable over time, without requiring continual legislative amendment.

Importantly, spectrum-based obligations can complement - rather than replace - the UOMO framework. While the UOMO defines the policy objective, spectrum licensing can provide one of the primary enforcement mechanisms through which that objective is delivered in practice.

The Committee may wish to consider the extent to which future spectrum allocation and renewal processes could be explicitly aligned with UOMO requirements, particularly in relation to performance, resilience, and service continuity outcomes.

## **2.11. International Benchmarking: Universal Service and Telecommunications Resilience**

International benchmarking does not provide a direct template for Australia, given its geographic scale and population distribution. However, comparable jurisdictions demonstrate consistent design patterns in how USOs are structured and implemented.

In the United Kingdom (UK), broadband universal service is framed around a legal right to request a defined minimum service level, with specified speed thresholds and structured cost parameters (Ofcom 2023a; Ofcom 2023b). While not a mobile model, it is notable for anchoring the obligation to explicit and enforceable service standards.

In Canada, the Canadian Radio-television and Telecommunications Commission (CRTC) defines baseline connectivity through measurable performance thresholds - including minimum download and upload speeds and data allowances - while also tracking coverage across rural communities and transport corridors (CRTC 2026). This reflects a model where universal service is tied to quantifiable service outcomes rather than qualitative expectations.

In the United States of America (USA), universal service mechanisms for high-cost areas are supported through structured funding models linked to defined service requirements, including access to modern voice and broadband services at reasonably comparable rates (FCC 2025a). Although implementation has faced challenges in some programs, the model illustrates the importance of aligning obligations with financing mechanisms and measurable delivery outcomes.

New Zealand (NZ) provides a more directly relevant example in the mobile context. The Rural Connectivity Group (RCG) operates a shared rural network supported by public co-investment, with infrastructure used by multiple operators. This model distinguishes between competitive service provision in commercially viable areas and shared infrastructure deployment where duplication is inefficient or uneconomic (RCG 2025a; RCG 2025b).

These examples are not directly transferable to Australia in all respects. However, they demonstrate a consistent principle: where governments seek to achieve universal or near-universal connectivity outcomes, they typically combine measurable service standards, defined delivery mechanisms, and structured accountability frameworks.

The absence of these elements increases the likelihood that obligations remain formally in place while service outcomes vary in practice.

## 2.12. Summary: From Obligation to Assurance

Read as a whole, the current framework is strongest in articulating policy intent and weakest in specifying the delivery and assurance architecture required to give that intent operational credibility.

The analysis above indicates that the central issue is not whether the Bill should proceed, but how it should be strengthened so that it:

- defines the obligation with sufficient clarity to be intelligible and enforceable;
- positions emerging satellite capability appropriately within a layered architecture;
- embeds resilience as a core requirement, rather than treating it as an adjunct; and
- establishes an assurance model capable of providing Parliament, regulators, and the public with confidence that the obligation is being met in a meaningful and verifiable sense.

The recommendations that follow are not discrete or independent measures. They form a coherent package intended to move the framework from policy aspiration to operational credibility.

### 3. Recommendations

The following recommendations are intended to strengthen the practical effectiveness of the proposed framework while remaining consistent with its underlying intent and scope.

While the recommendations are designed to operate as a coherent package, a subset is particularly consequential for long-term delivery credibility. In particular, **Recommendations 1** (minimum service parameters), **4** (emergency communications), **9** (layered architecture), and **12** (power resilience) represent the minimum structural elements required for the obligation to be credible, resilient, and enforceable in practice. The remaining recommendations are complementary and reinforce the coherence and durability of the framework as a whole.

For each recommendation, Type indicates the nature of the change proposed:

- **Legislative amendment:** changes requiring amendment to primary legislation;
- **Governance mechanism:** measures strengthening transparency, accountability, or institutional oversight; and
- **Implementation and practice:** administrative, reporting, or programmatic measures capable of implementation within the existing framework or through subordinate instruments.

#### 3.1. Recommendation 1: Structured Standards and Minimum Service Parameters

**Type:** Legislative amendment

**Aim:** To ensure that the UOMO delivers measurable and enforceable service outcomes rather than nominal coverage.

**Recommendation:** The Committee may wish to consider requiring the framework to establish minimum, technology-neutral service parameters for baseline UOMO services. These parameters should include measurable benchmarks such as signal strength, call completion rates, latency tolerances, service availability, and fault rectification timeframes.

**Justification:** The current framework relies on qualitative concepts such as “reasonable availability” without establishing minimum service outcomes in primary legislation. While the Government’s rationale - that detailed standards may become outdated - is valid in relation to technical specifications, it does not apply to outcome-based parameters.

Benchmarks such as minimum outdoor signal availability, maximum fault rectification timeframes, and minimum call completion rates are sufficiently stable to be defined at the legislative level without creating obsolescence risk. The relevant distinction is between what must be achieved (appropriately set in the Act) and how it is achieved (appropriately left to subordinate instruments).

The pre-UOMO powers in sections 125B–125G are discretionary. While the Minister may make standards prior to the default day, there is no requirement to do so. This recommendation addresses the absence of a legislative obligation to exercise that power, rather than any deficiency in the power itself.

The practical implications of this gap have already been observed. In its 2024 submission to the Regional Telecommunications Review, the TIO noted that, in the absence of minimum standards, consumers experiencing inadequate coverage have “no resolution to their issue” - with the TIO limited to contract release rather than remediation of the underlying service deficiency (TIO 2024).

## 3.2. Recommendation 2: Clarification of Core Obligation Concepts

**Type:** Legislative amendment

**Aim:** To reduce ambiguity and reliance on implied interpretation in key statutory concepts.

**Recommendation:** The Committee may wish to consider incorporating non-exhaustive, principles-based clarification of “reasonable availability” and “equitable access” within the legislative framework, or alternatively requiring these concepts to be expressly addressed in any ministerial standards, benchmarks, or accompanying explanatory instruments.

**Justification:** The Bill’s central obligation is framed through open-textured concepts, and the Explanatory Memorandum explicitly anticipates ongoing interpretation of what constitutes “reasonable”. While this approach provides flexibility, it also introduces interpretive uncertainty at the point where clarity is most critical to consistent implementation and enforcement.

Principles-based clarification would preserve adaptability while improving predictability and consistency across providers, regulators, and consumers. It would also respond to repeated stakeholder concern that the current terminology is insufficiently defined to support a nationally significant obligation of this kind without further interpretive guidance.

## 3.3. Recommendation 3: Practical Usability Requirements

**Type:** Legislative amendment

**Aim:** To ensure that UOMO coverage is usable in practice, not merely reachable in theory.

**Recommendation:** The Committee may wish to consider requiring standards and benchmarks to address practical usability, including affordability, device compatibility, accessibility, and clear consumer information regarding service capability and limitations.

**Justification:** The Explanatory Memorandum recognises that handset choice and plan selection may affect whether coverage is reasonably available. Consumer stakeholders have similarly emphasised that baseline connectivity must be defined in terms of what end users can realistically access and use, including for emergency communication and digital participation.

Where service availability is contingent on device compatibility or specific service configurations, there is a risk that nominal coverage does not translate into functional access. In the absence of explicit usability requirements, the obligation may be satisfied in a technical sense while remaining inaccessible or impractical for a portion of the population.

Incorporating usability considerations within standards and benchmarks ensures that the UOMO operates as public-interest infrastructure, rather than as a purely technical measure of coverage.

### 3.4. Recommendation 4: Explicit Emergency Communications Requirements

**Type:** Legislative amendment

**Aim:** To align the UOMO more clearly with its stated public-safety purpose.

**Recommendation:** The Committee may wish to consider requiring the framework to address emergency communications explicitly, including reliable access to Triple Zero, consideration of text-to-000 capability while D2D voice services mature, and fit-for-purpose camp-on or emergency roaming arrangements where technically feasible.

**Justification:** The Bill places significant emphasis on public safety, yet emergency communication capability is not expressly embedded within the UOMO obligation itself. This creates a structural gap between the stated policy objective and the enforceable elements of the framework.

Emerging D2D services are likely to support SMS prior to voice, creating a period in which the UOMO may be operational while direct voice access to Triple Zero via D2D remains unavailable. This gap has been identified by ACCAN and other stakeholders as a material limitation in the current approach (ACCAN 2025; Parliament of Australia 2025c).

Existing legislative frameworks provide a clear point of comparison. Section 13(1)(c) of the TCPSS Act treats emergency call access as a distinct and explicit policy objective, separate from general USOs. The UOMO framework contains no equivalent provision, resulting in a comparatively weaker articulation of emergency access requirements within the same legislative context.

The ECSD reinforces this principle. It already requires explicit consumer disclosure where a satellite service cannot support emergency calls. A comparable approach should apply to D2D services during any SMS-only phase, ensuring that limitations in emergency capability are both transparent and appropriately mitigated.

### 3.5. Recommendation 5: Establish an Assurance and Verification Framework

**Type:** Governance mechanism

**Aim:** To ensure that compliance under the UOMO is capable of independent verification and ongoing scrutiny.

**Recommendation:** The Committee may wish to consider establishing a structured assurance framework requiring regular reporting, independent validation of coverage and performance claims, and public disclosure of compliance metrics in a standardised and comparable form.

**Justification:** The UOMO establishes an obligation, but does not define a corresponding assurance model. In the absence of such a framework, compliance risks being assessed through indirect or unreliable proxies rather than verified performance outcomes.

Coverage maps are a known limitation in this regard. The Regional Telecommunications Review Committee found that coverage maps “do not accurately reflect actual coverage experienced by customers” and that reported coverage is consistently overstated (Parliament of Australia 2024a). The ACCC has similarly discontinued geographic coverage analysis in its reporting due to the absence of a standardised methodology, noting its continued concern regarding industry reluctance to adopt comparable mapping approaches (ACCC RTR 2024; ACCC 2025b).

This gap extends beyond representation to verification. The Bean Review identified that carriers do not systematically test camp-on functionality across networks. In response, the 2025 amendment to the ECSD introduced section 75 to address this deficiency. The UOMO framework contains no equivalent mechanism, creating a risk that compliance may be reported without corresponding validation of real-world performance (DITR 2024a).

Incorporating a formal assurance framework would align the UOMO with established practices in other critical infrastructure domains, where obligations are supported by independent validation, consistent measurement methodologies, and transparent reporting.

### 3.6. Recommendation 6: Structured Statements of Ministerial Reasons

**Type:** Governance mechanism

**Aim:** To improve transparency and accountability in the exercise of ministerial discretion.

**Recommendation:** The Committee may wish to consider requiring ministerial instruments or determinations under the UOMO framework to be accompanied by structured statements of reasons addressing the policy objective, underlying technical assumptions, expected user impact, and anticipated trade-offs.

**Justification:** The Bill delegates substantial content-setting authority to the Minister. While this flexibility is appropriate in a rapidly evolving technological environment, it increases the importance of transparency in how key decisions are made.

Structured statements of reasons would provide a consistent and intelligible basis for understanding how obligations, standards, and benchmarks are determined. This would support scrutiny by Parliament, regulators, and stakeholders, and improve the traceability of decisions over time as technologies and policy settings evolve.

Importantly, this approach enhances accountability without constraining discretion. It does not prescribe outcomes, but requires that decisions be clearly explained, including the trade-offs and assumptions that underpin them.

### 3.7. Recommendation 7: Technology Readiness and Transition Oversight

**Type:** Implementation and practice

**Aim:** To reduce delivery risk associated with immature or evolving technologies.

**Recommendation:** The Committee may wish to consider requiring periodic public reporting on the maturity, availability, performance, and limitations of technologies relied upon to meet UOMO obligations, together with transition plans for affected consumers where capability assumptions change.

**Justification:** The Regional Telecommunications Review recommended comprehensive independent monitoring during large-scale telecommunications transitions, explicitly identifying technology switch-offs and universal service migrations as key risk points (Parliament of Australia 2024a). While the UOMO represents the first legislative measure arising from the Government's response to that Review, it does not incorporate a comparable transition oversight mechanism. The Government response indicates an intention to consider such lessons, but does not implement them (Parliament of Australia 2024b).

This gap is material given the current state of technology readiness. The designated Primary Universal Outdoor Mobile Providers (PUOMPs) are at different stages of D2D capability: Telstra commenced satellite-to-device SMS services in June 2025, TPG completed initial trials in May 2025, and Optus had no confirmed deployment timeline as at December 2025 following regulatory delays in the United States (ACCC 2025c). A framework that depends on technologies not yet uniformly available introduces transition risk that requires active governance.

Existing emergency communications regulation provides a clear precedent. Section 80 of the ECSD requires carriers to submit management plans in advance of network changes that may fundamentally and adversely affect emergency call capability, including technology transitions. A comparable expectation within the UOMO framework would ensure that changes in underlying technology do not result in unanticipated degradation of service or consumer impact.

### 3.8. Recommendation 8: Cost Transparency and Delivery Sustainability

**Type:** Governance mechanism

**Aim:** To improve visibility of the economic assumptions underpinning the UOMO and support long-term delivery sustainability.

**Recommendation:** The Committee may wish to consider the publication of high-level cost models, funding assumptions, and long-term sustainability considerations associated with meeting the obligation, including the expected allocation of costs between providers, government, and consumers.

**Justification:** The Bill does not specify a financial impact, yet the Explanatory Memorandum indicates that funding mechanisms may be utilised, including the Public Interest Telecommunications Services Special Account (PITSSA), for activities such as standards development and testing relating to Designated Mobile Telecommunications Services outdoor availability (Item 18).

While a funding pathway exists, there is no defined timeline, process, or accountability mechanism to ensure that these resources are deployed in advance of the default day. This creates a risk that the obligation may commence without the supporting standards, testing, and delivery architecture required for effective implementation.

Greater transparency regarding cost structures, funding pathways, and sustainability assumptions would support informed scrutiny and enable more realistic assessment of delivery feasibility. It would also align the UOMO with established practice in other infrastructure domains, where funding models and delivery expectations are considered together rather than in isolation.

### 3.9. Recommendation 9: Adopt a Layered Connectivity Architecture Model

**Type:** Legislative amendment

**Aim:** To ensure that the UOMO is grounded in a coherent system-level model rather than a collection of disconnected mechanisms.

**Recommendation:** The Committee may wish to consider explicitly recognising, within the legislative framework or its supporting instruments, a layered connectivity model that distinguishes between primary everyday connectivity, rural baseline connectivity, degraded connectivity during disruption, and last-resort survival connectivity.

**Justification:** The current framework does not distinguish between primary connectivity, degraded service during disruption, and last-resort emergency continuity. Each of these states imposes different functional requirements and is supported by different technologies. In the absence of an

explicit architectural model, there is a risk that these distinct roles are conflated, leading to inconsistent expectations and suboptimal implementation outcomes.

Independent technical analysis reinforces this distinction. GSMA Intelligence (February 2026) concludes that D2D satellite services “can never replace terrestrial mobile networks” and are most appropriately deployed in remote or uninhabited areas where terrestrial coverage is not available (GSMA 2026). Even under optimistic assumptions, D2D capability is constrained in scale and throughput, and is not suited to functioning as a primary connectivity layer.

A layered architecture is therefore not a design preference, but a technical requirement. Recognising this explicitly within the framework would provide a coherent basis for the development of standards, benchmarks, and ministerial instruments, ensuring that each connectivity layer is matched to its appropriate role.

This recommendation does not seek to prescribe specific technologies or implementation approaches in primary legislation. Rather, it proposes that the framework acknowledge distinct connectivity states, so that policy and regulatory decisions are made within a consistent system model rather than in isolation.

### 3.10. Recommendation 10: Backhaul Resilience Standards

**Type:** Legislative amendment

**Aim:** To ensure that service continuity is supported by network transport architecture, rather than by radio presence alone.

**Recommendation:** The Committee may wish to consider requiring standards and benchmarks to address backhaul resilience, including multi-path backhaul where practicable, defined failover pathways, and explicit consideration of the respective roles of fibre, microwave, and satellite transport.

**Justification:** The Regional Telecommunications Review consistently identified power and infrastructure design, including backhaul dependencies, as primary drivers of service failure in regional and remote areas. This finding is supported by ACCC and ACMA reporting, as well as disaster-related evidence demonstrating that loss of backhaul can render otherwise operational radio sites functionally unavailable.

In this context, coverage and service continuity are not properties of the radio access layer alone, but of the end-to-end network, including transport infrastructure. A coverage obligation that does not account for backhaul resilience risks producing outcomes where sites exist nominally, but fail under conditions of stress or disruption.

This reflects a broader and consistent finding in Australian telecommunications analysis: transmission infrastructure represents both a critical dependency and a potential systemic point of failure in network resilience. Incorporating backhaul resilience into standards and benchmarks

would ensure that continuity expectations are aligned with the underlying network architecture required to support them.

### 3.11. Recommendation 11: Support for Shared and Neutral-Host Rural Infrastructure

**Type:** Governance mechanism

**Aim:** To improve economic efficiency and resilience in low-density coverage areas.

**Recommendation:** The Committee may wish to consider establishing policy settings, funding conditions, or regulatory incentives that favour shared infrastructure or neutral-host models in areas where duplicative competitive deployment is economically inefficient.

**Justification:** Shared infrastructure models are already operating effectively at scale in Australia. The Optus–TPG Mobile Network Sharing (MOCN) arrangement, launched in January 2025, expanded TPG’s accessible network footprint by 34 per cent - from 5,712 to 7,650 sites - across 2,443 predominantly regional and remote locations, without requiring new physical infrastructure build (ACCC 2025b).

Current co-funding outcomes indicate that this approach has not been systematically encouraged. Only 9 per cent of Mobile Black Spot Program (MBSP) active sites are served by more than one operator, and the ACCC’s Regional Mobile Infrastructure Inquiry found that “government funding has had limited success in encouraging sharing of publicly subsidised infrastructure” (ACCC 2023b, Finding 15). In practice, public investment has often resulted in the expansion of privately exclusive network assets.

In low-density areas, where commercial returns are constrained, duplicative infrastructure deployment is frequently inefficient and may reduce overall network resilience by fragmenting investment. Encouraging shared or neutral-host models would improve utilisation of infrastructure, support broader coverage outcomes, and enhance redundancy where multiple operators rely on common assets.

The UOMO provides an opportunity to address this structurally by aligning funding and regulatory settings with shared delivery models, rather than reinforcing duplication through existing mechanisms.

### 3.12. Recommendation 12: Power Resilience for Critical and Remote Sites

**Type:** Legislative amendment

**Aim:** To ensure continuity of service during power disruption, particularly in disaster-prone regions.

**Recommendation:** The Committee may wish to consider requiring the framework to support tiered backup power expectations, with higher resilience requirements for critical, remote, and high-consequence sites, including extended battery duration and deployable or fixed generation capability.

**Justification:** Power loss, rather than physical infrastructure damage, is the primary driver of mobile service outages during disaster events. ACMA analysis of the 2019-20 bushfires found that direct fire damage accounted for only 1 per cent of outage incidents, with the majority attributable to power loss and an average outage duration of 3.5 days (ACMA 2020).

Existing programs already recognise the importance of power resilience. The MBSP and Peri-Urban Mobile Program require a minimum of 12 hours of auxiliary backup power at funded sites, demonstrating that power endurance is an established and accepted policy lever. However, a 12-hour backup duration would be exhausted well before the average outage period identified in bushfire events, and significantly earlier than longer-duration disruptions.

The Regional Telecommunications Review recommended mandated minimum backup power periods for new critical telecommunications infrastructure in regional, rural and remote areas, with existing assets to be incorporated over time (Parliament of Australia 2024a). Incorporating a tiered approach within the UOMO framework would give effect to this recommendation in a manner aligned with risk and consequence.

Without explicit consideration of power resilience, a coverage-based obligation risks reproducing a well-documented failure pattern: sites remain physically present, but services are unavailable during the conditions in which they are most needed.

### 3.13. Recommendation 13: Define Satellite as a Complementary, Not Primary, Layer

**Type:** Legislative amendment

**Aim:** To prevent over-reliance on constrained technologies for primary service delivery.

**Recommendation:** The Committee may wish to consider explicitly positioning D2D satellite and satellite backhaul as complementary or last-resort layers within the UOMO architecture, rather than as substitutes for terrestrial infrastructure where terrestrial delivery is operationally or economically viable.

**Justification:** The Bills Digest and industry submissions reflect both optimism and caution regarding D2D satellite capability. While these technologies provide important coverage extensions, their underlying constraints - including shared beam capacity, spectrum limitations, and predominantly outdoor availability - limit their suitability for delivering primary, everyday mobile services at scale (Parliament of Australia 2025c; ACCC 2025b; GSMA 2026).

D2D satellite is therefore best understood as a continuity and survival layer, rather than a primary load-bearing layer within the connectivity architecture.

There is also an associated delivery risk. The ACCC noted in its submission to the 2024 Regional Telecommunications Review that Starlink “has not yet reached a point of being sustainably profitable” and should not yet be assumed to support long-term service provision in rural and remote areas (ACCC RTR 2024). An obligation that depends on a technology delivered by a provider without established commercial sustainability introduces uncertainty that is not currently addressed in the framework.

International comparator frameworks generally treat satellite and remote-access technologies as complements to terrestrial infrastructure, rather than direct substitutes for primary service delivery. This approach is consistent with the 2024 Regional Telecommunications Review, which recommended prioritising investment in existing terrestrial network capacity, service quality, and resilience (Recommendation 2).

Clarifying the role of satellite within the UOMO framework would improve technical coherence, align expectations with capability, and reduce the risk of over-reliance on technologies that are not designed to support primary service delivery at scale.

### 3.14. Recommendation 14: Emergency Roaming as a Continuity Mechanism, not a Substitute

**Type:** Governance mechanism

**Aim:** To preserve the value of emergency roaming while ensuring it does not substitute for underlying resilience investment.

**Recommendation:** The Committee may wish to consider defining emergency roaming or camp-on arrangements as temporary continuity mechanisms, with clear activation conditions and operational boundaries, rather than as substitutes for underlying infrastructure resilience.

**Justification:** Emergency roaming provides clear public benefit. The Regional Telecommunications Review recommended that it be mandated during disasters at the earliest opportunity (Recommendation 2), a position this submission supports. The UOMO framework provides an appropriate statutory foundation for implementing such a requirement (Parliament of Australia 2024a).

However, the effectiveness of roaming is inherently conditional. It relies on the availability of an alternative functioning network. Evidence provided by Mobile Network Operators to the ACCC’s Regional Mobile Infrastructure Inquiry indicates that the likelihood of one network remaining operational while others fail during a disaster is low - the circumstances in which roaming is most needed are also those in which it is least likely to be effective (ACCC 2023b). The ACCC therefore concluded that multiple resilience mechanisms are required, rather than reliance on any single approach.

The ECSD reflects this limitation in operational terms. Camp-on obligations under section 74 are triggered only under defined outage conditions, and require another carrier's network to be within range. In remote and low-density environments, this assumption cannot be relied upon.

Emergency roaming should therefore be treated as one component of a broader resilience framework, rather than as a substitute for investment in underlying infrastructure, power continuity, and backhaul resilience.

## 4. Conclusion

The *Telecommunications Legislation Amendment (Universal Outdoor Mobile Obligation) Bill 2025* represents an important and necessary step in modernising Australia's universal communications framework. It reflects the practical reality that mobile services - rather than legacy fixed-line infrastructure - now sit at the centre of everyday communication needs, particularly in regional, rural, and remote Australia.

The Bill's central policy objective is therefore sound. The question is not whether Australia should establish a modern mobile universal service framework, but whether the current Bill is sufficiently specified, assured, and architecturally coherent to deliver that objective in a credible and durable way.

This submission has argued that the Bill is strongest as an expression of policy intent and weakest as an articulation of delivery architecture. In particular, it remains under-specified in relation to definitional clarity, service assurance, usability, resilience, and the distinction between primary connectivity and fallback continuity. This does not undermine the intent of the Bill, but it does create a material risk that the framework could evolve toward symbolic coverage rather than trusted connectivity.

The recommendations set out above are designed to address that risk in a targeted and proportionate manner. They do not seek to replace the Bill or prescribe specific technologies. Rather, they aim to ensure that the UOMO develops as a credible critical infrastructure framework - one that is measurable, usable, resilient, transparent, and technically coherent.

The central reform principle is straightforward. Universal outdoor mobile coverage should not be treated as a single-layer coverage problem. It should be approached as a layered critical infrastructure system, in which assurance, resilience, and user reality are embedded from the outset.

A framework that delivers nominal coverage but cannot sustain continuity of communication risks embedding avoidable economic and social costs across regional and national systems. With appropriate refinement, the Bill has the potential to provide a credible and durable foundation for modernising Australia's universal service arrangements.

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