



**BETTER CONNECTIONS. EVERYWHERE. ALWAYS.**

**Pivotel response to  
'Better delivery of universal services'  
discussion paper**

**1st March 2024**

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## PIVOTEL.COM.AU

Pivotel welcomes the opportunity to provide input on ways to better deliver telecommunications universal voice services.

As a previous participant of the Alternative Voice Services Trials (AVST), Regional Connectivity Program (RCP) Rounds 1 and 2, Regional Telecoms Review (2021), Parliamentary Inquiry into Co-investment in Multi-Carrier Regional Mobile Infrastructure (2023) and other Commonwealth and State Based Programs, with a dedicated focus on the digital connectivity needs of regional, rural and remote Australians, Pivotel is well placed to comment on the specific requirements of these users who suffer from limited access to telecommunications infrastructure to support their voice and broadband needs.

### CONTEXTUAL STATEMENT

- Pivotel is an Australian owned and operated company and has been delivering voice services and connectivity solutions to regional and remote Australian customers since 2003.
- Pivotel operates full Carrier Network Infrastructure including 4G / LTE networks and a Tier 1 Voice Core Network used to deliver targeted connectivity solutions in regional Australia and one of only four operating licenced Australian mobile carriers.
- Pivotel has over 100,000 connected mobile satellite services and is the only Australian carrier offering services of all major mobile satellite networks including Iridium, Inmarsat, Thuraya, Globalstar, nbn™ and Intelsat as well as agreements with LEO Sat providers including OneWeb and Starlink.
- Deployed public and private 4G/LTE/WiFi networks across mining, research and agriculture.
- Pivotel employs over 150 staff predominantly in Australia, with Australian offices located on the Gold Coast, Brisbane, Sydney, Melbourne, Dubbo and Perth. In regional Australia, Pivotel supports over 150 dealers and 50 value added resellers.
- As a satellite and mobile operator focussed purely on regional and remote Australia, we have observed that remote community communication needs are constantly evolving. Pivotel works collaboratively with all stakeholders including Commonwealth, State / Territory and local governments, local stakeholders and associations, to deliver digital connectivity to the regional, rural and remote communities in new and innovative ways.

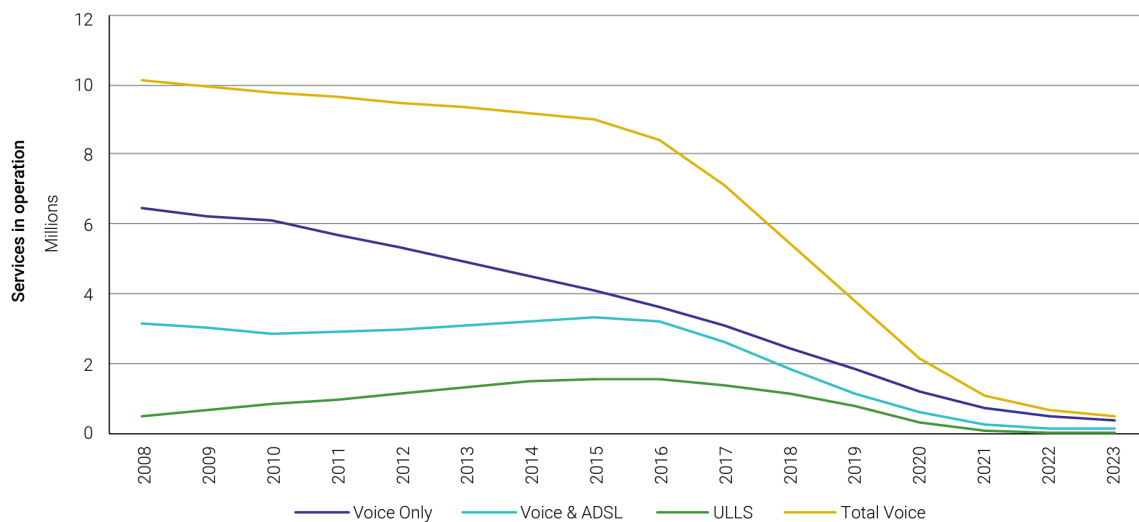
## Pivotel’s comments and feedback

There have been substantial developments and advances in telecommunications technology that have had far-reaching consequences since the original USO scheme was developed. As the ‘Better delivery of universal services’ discussion paper highlights, recent developments including the NBN fixed wireless expansion and launch of LEOSat networks have delivered an improved level of digital connectivity for a large number of users that were previously only able to be reached via NBN Skymuster and/or Telstra’s legacy copper or mobile network solutions. The timing is therefore ripe for considering suitable alternatives likely to deliver a substantially improved service more cost effectively and help narrow the digital divide.

Data has become the dominant service for the delivery of all connectivity needs. With data as the underlying bearer of all forms of communication, including voice, Pivotel believes that the USO review should be broadened to include fixed data services as currently provided under the SIP regime. Almost all retail CSPs provide data as a primary service with voice as an optional extra.

The decline in fixed only voice usage as shown in the ACCC’s Communications market report, 2022–2023, “shows that the number of services in operation for fixed line services over Telstra’s legacy copper network has declined substantially since 2016. While voice only services have declined continuously since 2008, voice and DSL bundled services on the legacy copper network experienced a slight and steady increase between 2010 and 2016 and then decreased sharply until 2021, after which it started to stabilise.”<sup>1</sup>

**Figure 15: Telstra legacy fixed line services 2008–2023**



Source: [Quarterly snapshots of Telstra’s customer access network.](#)

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<sup>1</sup> ACCC, Communications market report, 2022–2023, page 24

<sup>2</sup> ACCC, Communications market report, 2022–2023, page 24

Additionally, the Australian Communications and Media Authority (ACMA) reported in its Trends and Developments in Telecommunications report that around 23% of Australians report using fixed line voice services in 2022 which is down from around 40% in 2020.<sup>3</sup>

This demonstrates the take up of voice-only services is in rapid decline. The provision of fixed voice services via the USO has become a huge economic burden for a more limited number of services that can now be far more cost-effectively serviced via a suitable broadband service (e.g. satellite, fixed wireless, mobile broadband) with a VoIP connection.

Even for the most technologically challenged, the end user experience can be very similar to the service they receive today as demonstrated during the recent AVST trials commissioned by the Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA). VoIP over Wi-Fi can be considered a logical extension of the HCRC capabilities, in many cases using equipment likely to be in situ at the customer's site.

Traditional POTS-style fixed-line telephony services have been in decline as consumers favour the mobility and individuality that come with having a personal phone number as part of mobile phone services. The ageing HCRC infrastructure should be phased out over a predetermined time, allowing for the introduction of more advanced services to end customer(s), rather than simply replacing a fixed line voice service with a more updated version with the same functionality.

As properties transition away from the old copper network for voice and data services, the ability to recover costs from households taking the service will diminish while the cost to the service provider (Telstra) may stay largely unchanged. It will be important to set a sunset date for the copper network so as not to burden the industry with additional expense during any transition period. Savings should be achievable by moving to new and alternative technologies, with those savings reinvested and supplemented by the government to support the transition.

Pivotel's two trial solutions for the AVST trials demonstrated the viability of multiple voice services over satellite as a replacement to the legacy HCRC network. Use of a VoIP application for voice and messaging provided an innovative solution for end users in the HCRC footprint, who typically have no viable mobile coverage at their home and were able to make and receive calls and SMS from a standard Australian number while connected to their Wi-Fi network at home, or any other data bearer away from home.

The following scenarios were trialled as part of Pivotel's AVST trials:

1. Replacement of the fixed HCRC voice service with a standard VoIP landline with a single geographic landline number,
2. Replacement of the fixed HCRC voice service with multiple VoIP services each with a standard Australian mobile number and capability to make and receive calls and SMS within the home Wi-Fi coverage and externally wherever there is a suitable data bearer,
3. Replacement of the fixed HCRC voice service with both a standard VoIP landline with a single geographic landline number and multiple VoIP services each with a standard Australian mobile number and capability to make and receive calls and SMS within the home Wi-Fi coverage and externally wherever there is a suitable data bearer.

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<sup>3</sup> ACMA, <https://www.acma.gov.au/publications/2023-07/report/communications-and-media-australia-trends-and-developments-telecommunications-2021-22>, July 2023.

The solution was fully compliant with Australian regulatory requirements and included a small Uninterruptible Power Supply (UPS) unit to supply power to the satellite Network Termination Device (NTD), router and analogue telephone adapter (ATA), ensuring the equipment remains fully operational during power brownouts or short blackouts. The service fully supported voice traffic interconnected with the PTSN, including 000 emergency dialling, and mobile SMS texting functions.

These trials took place using multiple handsets connected to a single NBN SkyMuster TC1 service, between Jul-21 and Jun-22. Service uptime was typically reported as 99.9% which was mostly impacted by NBN availability, “network uptime was mainly impacted by temporary weather-based outages at NBN Co’s satellite gateways”.<sup>4</sup>

It is well established that NBN Skymuster, as a geostationary satellite constellation, is mostly suitable for non-latency sensitive applications such as video streaming, however, is less suitable for latency sensitive applications such as voice and video conferencing where latency and bandwidth can negatively impact the customer experience. Recent developments in LEOsats negate this problem as these constellations typically deliver speeds and latency at similar rates to terrestrial broadband services with download and upload speeds quoted between 100-200MBpps and 22Mbps respectively and latency of 20-40ms.<sup>5</sup>

Despite the trial being delivered as a VoIP voice service over NBN Skymuster, 69% of trialists rated the service as Excellent or Good. Service quality is likely to substantially improve where a similar VoIP service is delivered over a vastly improved (LEOSat) satellite service that is now commonly available in Australia with ongoing improvements in reliability and service levels as the technology evolves.<sup>6</sup>

Based on the results demonstrated by the AVST trials by all participants, and recent improvements in remote broadband availability, Pivotel believes that the current USO scheme is fast becoming a redundant mechanism and can be replaced by far more suitable technologies (Satellite, Fixed Wireless, Mobile etc) that are more widely available and reaching maturity. Additionally, CSPs should be able to compete for end users via a broadband service bundled with VoIP on a case-by-case basis.

In order to protect end users, consumer safeguards and minimum service standards can be put in place, similar to the CSG. A competitive marketplace should ensure services are delivered and there is the potential for some form of compensation or rebate being made available (in place of USO funding) for qualifying regional and remote services to ensure these users are not commercially disadvantaged relative to their metro-based peers. Any qualifying service must be required to provide voice services with a defined set of criteria covering quality, reliability, redundancy and cost.

For example, a LEOsat service could provide USO/USG services and be eligible to receive funding as a contribution towards a service that meets and exceeds the USO minimum service standard

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<sup>4</sup> Alternative Voice Services Trials, Summary Report to 30 June 2022 (update 2), August 2022, <https://www.infrastructure.gov.au/departments/media/publications/alternative-voice-services-trials-summary-report-30-june-2022-update-2>, page 3

<sup>5</sup> <https://www.ozbroadbandreview.com/blog/starlink-vs-skymuster-satellite/#:~:text=Is%20Starlink%20better%20than%20Sky,on%20how%20you%20use%20it.>

<sup>6</sup> Alternative Voice Services Trials, Summary Report to 30 June 2022 (update 2), August 2022, <https://www.infrastructure.gov.au/departments/media/publications/alternative-voice-services-trials-summary-report-30-june-2022-update-2>, page 11

(currently the minimum 25/5 megabits per second (Mbps) per the SIP. A fully compliant with Australian regulatory requirements VoIP service would be part of the minimum service standard.

Under a broadened USO/USG scheme, NBN would be the fallback broadband provider when no better alternatives are available. Similar to the above proposed compensatory regime, the NBN should receive funding on a competitive basis to provide the USO service to eligible USO recipients. Blanket industry cross-subsidisation of those recipients under the SIP should end, ensuring greater transparency, accountability, and competition around the cost of delivering the USO service.

A mobile service could also be considered as suitable if it can be accessed inside the premises and the carrier can deliver a minimum level of service availability and resiliency.

However, mobile coverage in general should not be part of the USO. Satellite direct-to-handset mobile service will complement terrestrial coverage but will not be a complete alternative to terrestrial mobile service due to the likely limitations around high-speed data for many years to come.

Any changes to the USO must be accompanied with a substantial education campaign in order to ensure end users are well aware and fully informed of their available options.

Pivotel considers VoIP over alternative technologies (NBN fixed, fixed wireless or LEOSat) to be very effective and suitable as a genuine USO replacement, where certain performance and price goal parameters can be met. Much of the end-user equipment required to enable this (e.g. Wi-Fi router, mobile phone(s)) will already be owned by end users. Additionally, improvements in satellite services that bring higher bandwidths, capacities, and lower latencies, combined with IP-based voice calling means that this can be adopted at any time to take advantage of these enhancements without the need to materially change or modify equipment.

First Nations communities could be considered a special group within the USO. Normal USO recipient obligations to pay a standard price for the basic USO service should not apply within Indigenous communities. Due to the often very remote location of First Nations communities, the provision of a limited area mobile service together with high-speed data and voice services could form the USO service package with direct funding provided to the service provider to offer a service at nominal or 'free' access rates, recognising the limited economic activity that often occurs within the communities and the limited capacity to pay for normal commercial services. Where mobile coverage is included, it should be available on a shared RAN, open-access basis. Ideally, there would be domestic roaming between an indigenous community network and a national MNO network, although this could be separately addressed under a targeted 'Indigenous USO' which could be developed by the First Nations Digital Inclusion Advisory Group.

Payphones could also be provided for under a competitive tender process although it makes more sense for this to remain a national USO service.

In summary, Pivotel believes baseline universal telecommunications services can be best served through alternative technologies on a competitive basis. These services are best delivered via one universal technical approach that includes both broadband and voice services as these services have become increasingly intertwined and interdependent.

The focus for a new regime should be on how best to provide the combination of voice and broadband services to the end user where conventional telephony services could be enhanced to a

concept of several devices, or personal devices, being connected at the end user premises for both voice and data services.

This approach brings the use of telephony services in USG regions into line with the services and expectations of urban-based users where the bulk of person-to-person calls and social media interactions are undertaken using mobile devices. The replacement of the HCRC capability should be an opportunity to further 'close the gap' between the telco services available to the urbanised and rural/remote communities in Australia.

Pivotel is looking forward to working collaboratively with the Department and other stakeholders to help deliver better baseline universal telecommunications services designed to help bridge the digital divide for regional and remote users in a more cost effective and efficient manner.

For any questions in relation to this submission please contact:

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