



Alternative Voice Service Trials

**Request for comments and expressions of
interest**

December 2019

Response by Pivotel

Department of Communications and the Arts

2 Phillip Law Street,
Canberra ACT 2601

By email: usg@communications.gov.au

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1. Background

- 1.1 Pivotel is pleased to provide a response to The Department of Communications and the Arts (the Department) request for comments and expressions of interest (EOI) paper on the Design of Alternative Voice Service Trials (DAVST).
- 1.2 Pivotel is well placed to participate in the DAVST through its experience and focus on the provision of tailored voice, messaging and data solutions to rural and remote communities in Australia through its strategic Satellite holdings and LTE (4G) / NB-IOT Mobile Network.
- 1.3 Pivotel operates a mobile and satellite telecommunications network pursuant to a carrier licence issued by the Australian Communications and Media Authority in accordance with the Telecommunications Act 1997 (Cth) (Telco Act). It has points of interconnect in the Australian major capital cities and points of interconnect internationally in Auckland, Los Angeles, New York and Amsterdam.
- 1.4 Pivotel maintains a mobile carrier license and operates ground infrastructure in Australia, making it the fourth public mobile carrier in the country. It is the only Australian carrier with direct connection to all four major mobile satellite networks: Iridium, Inmarsat, Thuraya and Globalstar.
- 1.5 The company's suite of satellite and mobile technologies enable remote connectivity via satellite phones, satellite data modems, personnel and asset trackers, docking kits, machine to machine data terminals and specialist maritime communication.
- 1.6 Pivotel's 4G mobile network, ecoSphere®, extends its carrier network to deliver complementary terrestrial wireless services to rural and remote Australians. Using innovative small cell technology and a unique network architecture ecoSphere® can cost effectively delivery wide area cellular and IoT coverage to remote communities, mining, agriculture and pastoral properties using satellite or terrestrial backhaul complemented by satellite point to point IOT and high-speed data services.
- 1.7 Pivotel is uniquely positioned to participate in the DAVST trials due to its long-standing experience in servicing remote and rural Australians, having commenced operations in 2003 and with over 125 staff. Its Australian offices are located on the Gold Coast, Sydney, Dubbo and Perth in addition to a number of overseas locations. In regional Australia, Pivotel supports over 160 dealers and 50 value added resellers.

2. Pivotel's General Comments

- 2.1 Pivotel welcomes the Departments DAVST program to trial and assess new ways to deliver telephony services in remote and rural Australia, with a focus on the areas currently serviced by high capacity radio concentrator (HCRC) networks located primarily within NBN's fixed wireless and satellite footprint.
- 2.2 Pivotel's core focus is on providing communications for regional and remote Australia and is unique in its ability to integrate satellite services and 4G / LTE networks to create a unified environment where the most appropriate communications technology is used to service the end user need.
- 2.3 Pivotel's access to alternative network technologies, including satellite and 4G / LTE cellular, enables it to deliver untethered voice services outside of the existing NBN fixed network and commercial mobile coverage footprint which only serves approximately one third of the Australia's landmass.
- 2.4 Pivotel envisages three potential alternatives for the provision of voice telephony services in regional and remote Australia which are:
 - 2.4.1 Analog Telephone Adaptor (ATA): Conversion of analog voice to VoIP via an ATA. This solution effectively connects an existing end user's standard analog telephone to a modem or router allowing the end user to make VoIP calls over the Internet. The main benefit of this solution is the end user gets to keep their old phone system and the service remains broadly similar except for the signal conversion from analog to IP,
 - 2.4.2 Mobile VoIP App: This solution requires an end user to download a VoIP dialler App onto their mobile phone whereby the end users' calls are all made via their mobile phone. This solution removes the need for an existing in-home fixed telephony system as services can rely purely on the mobile device, calling via the VoIP App. Calls can be made wherever a reasonable WiFi signal is available providing some level of mobility but limited to the modem's WiFi coverage,
 - 2.4.3 ecoSphere®: As highlighted above this proprietary solution provides extended mobile coverage via 4G / LTE enabling voice and data coverage well beyond the homestead and potentially the entire property. The calls in and around the property would be provided via a VoIP App similar to 2.3.2 whereby the mobile base station antenna location and configuration would determine the extent of the coverage provided for both voice and data services.
- 2.5 All three solutions above would utilise the NBN fixed wireless or satellite connection for backhaul, reducing the cost of backhaul and leveraging the existing NBN connection. In all cases each individual service and/or user would be provisioned with a standard Australian number. In the case of the Wi-Fi and ecoSphere® solutions, individual members of the household with a personal mobile phone, could receive a personal mobile number for the making and receiving of calls. In the case of Option 1 the existing geographic number could be ported to the VoIP service or a new number allocated. Options 2 & 3 allow for the possibility to allocate mobile numbers to multiple users and these could be existing numbers ported-in from existing services.

- 2.6 One important point to note is that any VoIP solution leveraging the NBN network is dependent on power and as such the ability to make voice calls would be suspended during a power or NBN outage. Power backup solutions such as generators and/or batteries should therefore be considered in extremely remote situations to deal with power outages.
- 2.7 Pivotal would be interested in trialling all three scenarios as they service quite different needs and purposes. These VoIP solutions are designed to provide clear and reliable voice services delivered over digital networks which is a far more efficient and effective way to deliver voice services compared with the current outdated and costly HCRC, and also copper, technologies.
- 2.8 Pivotal had 28 LTE base stations in build or operation at the end of 2019. It is anticipated that a further 50 base stations will have been added to the networks by end 2020.
- 2.9 To date deployments have been mainly in Western Australia with a small network in NSW and Pivotal is currently in discussions regarding new networks in NSW, QLD, WA and NT. The WA network deployments include a major mining corporation and two agricultural networks co-funded by the WA Department of Primary Industry and Regional Development (DPIRD).

3. Questions from RCP – discussion paper

Question 1

Should the department be seeking to achieve other objectives through the trials? If so, how would this affect the design?

The objective of the trial is to “demonstrate and assess the effectiveness of new ways to deliver voice services given concerns about existing voice solutions and the potential for alternative technologies to provide better services and functionality”.

This appears to be a reasonable broad-based objective given the existing HCRC based technology used to deliver a large proportion of voice services is now considered outdated and nearing end of life with limited reliability and support.

Given the relatively recent roll out of NBN which necessitates the retirement of copper and moving to an all IP network it is extremely timely to look at alternative VoIP technologies.

As mentioned in the general comments section above, Pivotal can provide a number of alternative solutions utilising the NBN service as backhaul with VoIP as the technology solution. The optimum solution required will differ depending upon the needs of the end user. As a result, it makes sense not to pre-define or limit the solutions to be trialled. For example, the benefits of an ecoSphere® solution may well outweigh the incremental cost of a micro base station and antenna as the broader, ‘local’ community could potentially access the mobile coverage if they too are Pivotal customers with single or dual SIM handsets

To this end it will be important to consider how to best deliver voice services to remote and regional Australia in an economically viable manner. Traditionally these services have been delivered by Telstra as a subsidised service via the USO levy.

Pivotal has noted that the trial funding “may involve some upfront establishment payments, but the majority of funding would be paid on a per service basis for the services supplied by the CSP under the trials, paid monthly in arrears”. Further the “department would expect the monthly payment per customer would be reflective of the CSP’s usual retail prices for the product concerned”. This would appear to indicate that the department is not considering subsidising regional voice services despite the higher costs required in delivering alternative technologies and connectivity to reach regional areas.

It appears the trial is solely targeting the provision of voice services from an end user’s Fixed Wireless or Satellite NBN connection. This service would typically replace a traditional fixed voice service where the service is limited to calls being made from the end user’s premise or in range of the, predominantly DECT, base station. This coverage is suitable for calls made from within, or very near the home itself, but does not consider the potential opportunity to provide enhanced mobile voice (and data) services covering the entire property.

Whilst it may be the case that this trial is not intended to cover this enhanced service capability Pivotal firmly believes for a relatively small incremental cost, coverage can be extended to most, if not all, of the property in question, which is likely to be a major benefit to the end users being targeted as part of this trial as well as the broader community. As an example, remote health or

social workers visiting the property could be given access to the wireless network and be capable of making or receiving VoIP calls on and near the property.

Pivotel would be interested in the departments view regarding the potential for inclusion of the use of “mobile cells” like ecoSphere® using NBN connectivity as the backhaul mechanism in addition to the potential for the subsidisation of these types of services. Ultimately it would be up to end users to determine if they require a simple voice service via their NBN / WiFi modem at a lower cost to provide, or if they prefer an enhanced solution that provides mobility and coverage to the entire property, for an incremental cost, delivering substantial additional safety, convenience and flexibility to the service.

Pivotel would also envision that these LTE ‘private’ networks would be built as “open” and / or “meshed” networks providing enhanced mobility and coverage beyond one property, effectively providing extended voice and data coverage solutions for adjoining properties and across communities. The higher capital and ongoing support costs associated with these networks is likely to have limited financial viability for CSPs and end users unless they are subsidised in a manner similar to the USO levy currently applied to the provision of remote services by Telstra.

Question 2:

In terms of the deliverables for customers, do you have any concerns about the proposed design of the trials or suggestions to improve it, for example, locations for the trials, how best to recruit consumers to take part, requirements on CSPs, and service requirements?

The overall design of the trials appears to be appropriate including the areas targeted for the trials i.e. NBN Fixed Wireless and Satellite. These areas fall largely outside the areas served by existing fixed fibre / copper and cellular networks and will require a reliable and cost effective alternative as copper is phased out and HCRC becomes obsolete.

There are a few areas where Pivotel has potential concerns as follows:

- The trial has a hard start and stop being 1 July 2020 and 30 June 2021 respectively. This inherently assumes all services commence on 1 July 2020 in order for the service to be provided over a 12 month period. It is understood that the department would seek to limit its exposure by limiting the timeframe so perhaps a better alternative would be to allow services to be connected progressively during the first quarter of the trial period ie 1 July 2020 to 30 September 2020 with a 12 month subsidy from the activation date.
- Pivotel also notes that the department would cease funding after the initial 12 month period and for CSPs to determine “whether they continued to offer the alternative voice services and for customers whether they continued to use the services. This would be on a purely commercial basis.” The seems to imply there would be no ongoing subsidy provided for the provision of voice services in regional areas, a service that is currently subsidised via the USO levy. A consequence of this may be the ruling out of potential solutions that could be extremely cost effective in comparison to the existing subsidised service but may not be commercially viable without some level of subsidy beyond the trial.
- Pivotel notes the comment in the document stating “Telstra would remain obliged to provide a voice service under the USO component of the USG” irrespective of the outcome of the trial. This may indeed be an opportune time to reassess the USG and

USO policy framework. There appears to be some potential for service overlap and lack of a balanced playing field if Telstra continues to receive payments under the USO levy, whereas successful trialists would appear to have no such subsidy mechanism and are forced to provide a commercial service without any government assistance to provide similar services in remote and regional Australia which is ultimately more costly to serve. As such Pivotal would respectfully request the department to consider the re-allocation of USO funds where appropriate.

- Whether Pivotal and other CSPs are able to deliver voice services in an economically viable manner to regional areas is yet to be determined and should be tested as part of this trial. There are a number of RSP's offering voice calls as part of a higher value bundle or as a bolt on for a fixed fee i.e. \$5 - \$20 for unlimited calls to Australian fixed and mobile calls. Whilst it may be viable to provide a (VoIP) service over an end users WiFi coverage area at a cost-effective price on a stand-alone basis, it appears some RSPs may cross subsidise voice services as part of a bundled broadband offering.
- Pivotal expects to target specific (still to be determined) geographic areas for the trial. It would make sense to ensure there is not a large degree of overlap of RSPs targeting the same areas so some co-ordination would be beneficial.
- Early visibility of a detailed customer listing, with contact details, of those customers currently receiving the HCRC service will help CSPs identify regions and customers, and we note the department's comments in the paper referencing that this relevant information will be made available. Pivotal intends to target groups of customers with different characteristics for each of the three methods proposed. For example, where there is a cluster of HCRC customers within a local geographic region, this may represent a better target group for the ecoSphere trial.

Question 3

In terms of the needs of CSPs, do you have any concerns about the proposed design of the trials or suggestions to improve it, for example, information required, capping of customer numbers, timeframes, level of funding available, and the approach to payment?

Concerns regarding proposed design of the trials:

- Pivotal would expect the department to provide some level of governance and co-ordination during the trial process. This could include ensuring there are not substantial areas of overlap in terms of technical solution or regions covered during the trial.
- It would also be beneficial for the department to promote the upcoming trials and canvass potential interest from end users. Interested parties could be captured on an "Opt in" basis allowing their information to be shared with the trialling CSPs. This exercise could be extended to provide potential end users with CSP details and technology options available so the end user can state its preference up front and limit the potential for overlap and contact by CSPs.
- The department is requesting CSPs to provide information throughout the trial period and at the end of the trial. It would be good to understand the level of detail expected as this should not place an unreasonable burden on the CSP providing this information. A consistent format and a reasonable level of reporting is appropriate however this should be commensurate with the level and type of service being offered, particularly as the

department is only considering covering the cost of the service, not the provision of enhanced reporting.

- Timeframes - See above comments regarding flexibility of timeframes ie have the flexibility to connect end users over the period of 3 months and a maximum period of 12 months.
- Funding – At this stage it is difficult to comment on the overall amount of funding available. In order to obtain a suitable number of triallists there should be sufficient funding made available to assess suitable volumes, various regions and alternative solutions e.g. on premise only or extended range covering entire property.

Question 4

Do you have suggestions on what should happen at the end of the trials, noting that Government funding will cease?

See note above re subsidised services and USO levy. Whilst Pivotel may be in a position to provide a relatively low cost fixed voice service replacement in the form of unlimited VoIP calling over an existing NBN connection, this solution merely provides a replacement service and does not consider the potential for enhanced mobility and data services, that could be provided via a more mobile network centric approach such as Private LTE networks covering remote properties and communities. Whilst Pivotel acknowledges this approach would incur increased costs, it would provide far greater individual and community benefit than a like-for-like fixed voice replacement service.

Trial funding will to some extent assist in proving the benefits and end user satisfaction, however ongoing funding post trial should not be ruled out for the provision of services due to the potential ongoing lack of economic viability for both end user and CSP.

Question 5

Do you have any comments on the stakeholder reference group? What stakeholders should be represented on the groups? Would you like to nominate anyone as a possible member?

Pivotel supports the idea of a stakeholder reference group. The provision of voice services, and connectivity in general, should be a collaborative approach across industry, community and government that helps bridge the digital divide between metropolitan and regional users. Stakeholder groups such as the Regional, Rural and Remote Communications Coalition (RRRCC), ACCAN and the NFF would also be useful additions to this group.

Pivotel's nominee will be:

Gary Bhomer

Government and Industry liaison

gary.bhomer@pivotel.com.au

Question 6

Do you have any comments regarding the criteria for assessing proposals and contracting CSPs?

The four criteria outlined in the paper, listed below, appear to be appropriate. i.e. (1) the proposed approach and expected outcomes, (2) capability and capacity to deliver the outcomes, (3) costs to the Commonwealth and (4) overall value for money.

Question 7

Do you think regular surveys of trial customers would be useful? Do you consider there are any particular matters that should be monitored and evaluated during the trials in addition to those identified (e.g. service outages, quality issues and customer turnover)?

Pivotal supports the use of surveys of trial customers as this provides a regular feedback loop on various aspects of the service. This survey should be on a semi-regular basis e.g. quarterly and be in a simple and consistent format ensuring a limited burden on the end user for completion.

Apart from service quality issues it would be beneficial to understand customer experience such as ease of use, functionality and flexibility of product offered, particularly in comparison to their existing service.

The survey results should be shared between the department and CSP as the information gleaned will be relevant to both parties and to avoid potential duplication of effort and frustration by end users if there were too many surveys. It would be useful to agree the format and timing prior to issuing of the first survey. This could be a task performed by the stakeholder reference group.

Question 8

How would the trials be best promoted to rural and remote customers by both the department and CSPs? How would the results of the trials be best communicated once they are complete?

It would be beneficial for the trial program to be promoted by the department and relevant industry groups in various industry and community publications and via Direct Mail (DM) and Electronic Direct Mail (eDM) regarding trial specifics and process. This could be targeted to specific end users or regions in order to limit costs and could be a similar process to the NBN rollout whereby there was generic information provided by the NBN, followed by targeted and specific end user information on alternatives available via CSPs.

At the end of the trial it would be beneficial if the department would publish a report or brochure on solutions and learnings. Specific mention of the CSP trial participants and their solutions should be mentioned given the level of investment and support provided over the trial period.

This final report or brochure should be distributed via DM and eDM targeting all rural and remote areas where alternative voice services would apply as a way of informing end users of potential alternatives available in addition to guidance as to how to access the new technology solutions proven during the trial period.

4. Expression of Interest (Provide separately to comments to keep confidential)

Pivotel would like to confirm its interest in participating in the Alternative Voice Service Trials. We note this expression of interest will be treated confidentiality and is non-binding.

The contact officer for this purpose is:

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Government and Industry Liaison

Email: gary.bhomer@pivotel.com.au

5. Closing remarks

Pivotel appreciates the opportunity to provide input to the Department of Communications and the Arts, Design of Alternative Voice Service Trials and looks forward to participation in the program when finalised and playing an active role in improving voice and digital connectivity for regional Australia.

Yours sincerely

Pivotel Group Pty Limited