National Broadband Network

Information for Retail Service Providers

Security and Medical Alarms on the NBN

There has been significant discussion and comment lately about security and medical alarms on the NBN. This document has been created to update you, our service providers, on what we are currently doing in this space and highlight some of the things you will need to consider when you encounter these devices in end user premises. It also provides some information on the service requirements that security and medical alarms have, as well as things you might like to take into account when designing products or installation practices within end user premises.

1. What are security and medical alarms?

Security alarms (or burglar alarms) are sometimes installed in a premises and are often monitored 'back to base' by an alarm company. The security system is commonly connected to a copper telephone line in the premises. When a monitored alarm is activated, the alarm dials 'back to base' to inform the alarm company that the alarm has been triggered. Many medical alarms operate in a similar way and are usually triggered by an end user pressing an emergency button. When the alarm is activated, a call is placed to a monitoring centre and a response is provided to the end user.

Monitored security and medical alarms both use telephone tones (also known as DTMF tones) to communicate with the central monitoring centre and rely on a high quality telephone service being available.

Industry peak bodies estimate that there are approximately 1.5 million back to base security alarms and approximately 300,000 medical alarms in operation.

2. Can these services work on the NBN?

Yes, these services can work on the NBN and a number of services have already been successfully deployed. However, NBN Co provides a wholesale product which is just one part of an end to end retail telephone service.

Many of the retail product features and applications supported depend on Service Providers' product packaging and network configuration and it is important to understand how these affect the operation of back to base security and medical alarms.

3. Recommendations for RSPs

A number of retail product aspects need to be considered including the supported network features, the installation practices used by your service technicians and the chosen wholesale products from NBN Co.

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3.1 Choice of NBN Co Product

NBN Co offers multiple ways to deliver a telephone service to support back to base security and medical alarms. An RSP can utilise either the UNI-V or UNI-D ports to deliver a telephone service capable of supporting these alarms.

The diagram below provides an illustration of how either the UNI-V or the UNI-D could be used to deliver a telephone service.

Back to base security and medical alarms are often designed with an internal battery to support their operation in a power outage. Given that end users may rely on alarm services during a blackout it is important that steps are taken to seek to ensure that the telephone service can also remain operational to the extent practical.

NBN Co recommends that RSPs deliver a service that remains as operational as is practical in a power outage. This can be assisted by using the UNI-V and NBN Co's battery backup unit. Although no battery backup solution is inexhaustible, the UNI-V can continue to be powered by the NBN Co battery backup unit for several hours after power is lost.

While it is possible to operate back to base security and medical alarms over a UNI-D based telephone service, the security and medical alarm industry has communicated a preference for security and medical alarm services to be provided over NBN Co's UNI-V port due to support for battery backup.

Figure 1 – Telephone Service via UNI-V

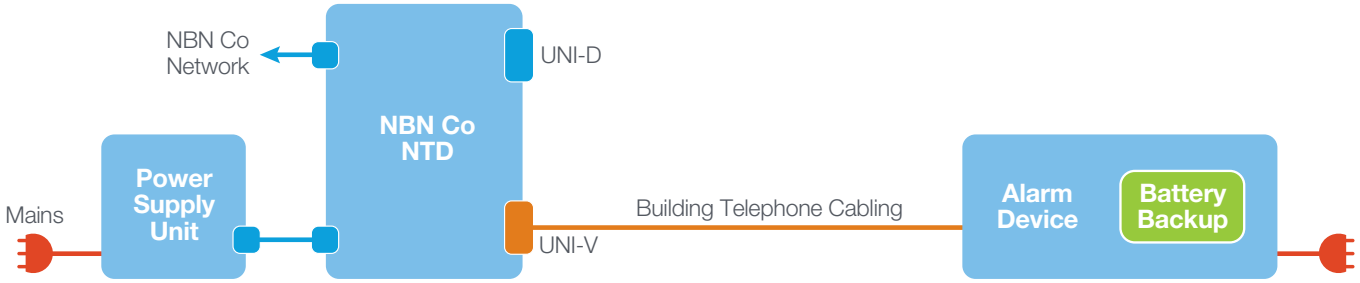
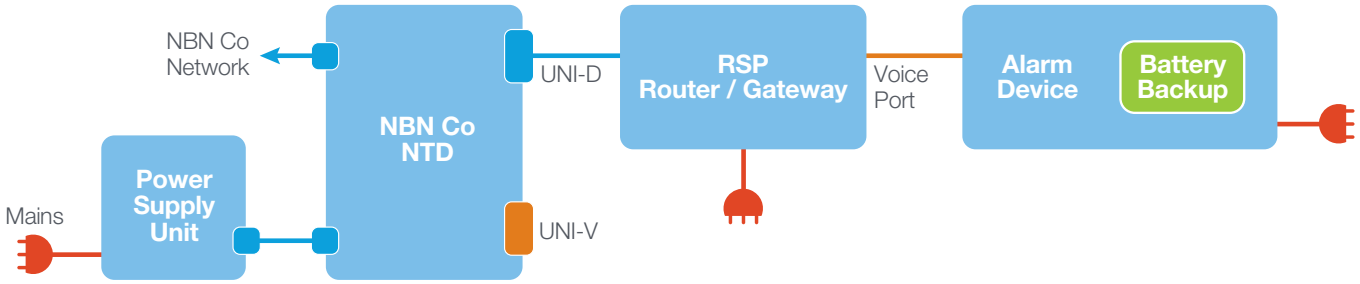


Figure 2 – Telephone Service via UNI-D



3.2 Technical considerations

Since security and medical alarms rely on the transmission of tones through the telephone service, it is critical that tones are reliably transmitted and with minimal delay.

NBN Co offers the following deployment recommendations to maximise the quality of the telephone service.

- **Codec choice –** VoIP networks offer a range of codecs ranging from G.711 ('toll' quality) to a number of compressed codecs to save network bandwidth. The only supported codec on the NBN Co UNI-V is G.711 which is designed to provide a call quality equivalent to the PSTN. NBN Co recommends that G.711 is used for all calls and that transcoding to lower quality codecs is not implemented anywhere in the network.

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- **Quality of Service –** telephone traffic can currently be carried on the NBN as either 'best effort' (Traffic Class 4) or in a dedicated traffic stream (Traffic Class 1). NBN recommends that all telephone traffic is carried using Traffic Class 1 within the NBN Co network (chosen by the RSP at order time) and in an at least equivalent quality traffic class within the RSP's network.
- **DTMF Tone Transmission –** back to base security and medical alarms rely on the successful transmission of DTMF tones through the telephone service. NBN Co recommends, where possible, DTMF tones are carried 'in-band' to minimise potential transmission delays.

3.3 In-home wiring (Mode 3 connection)

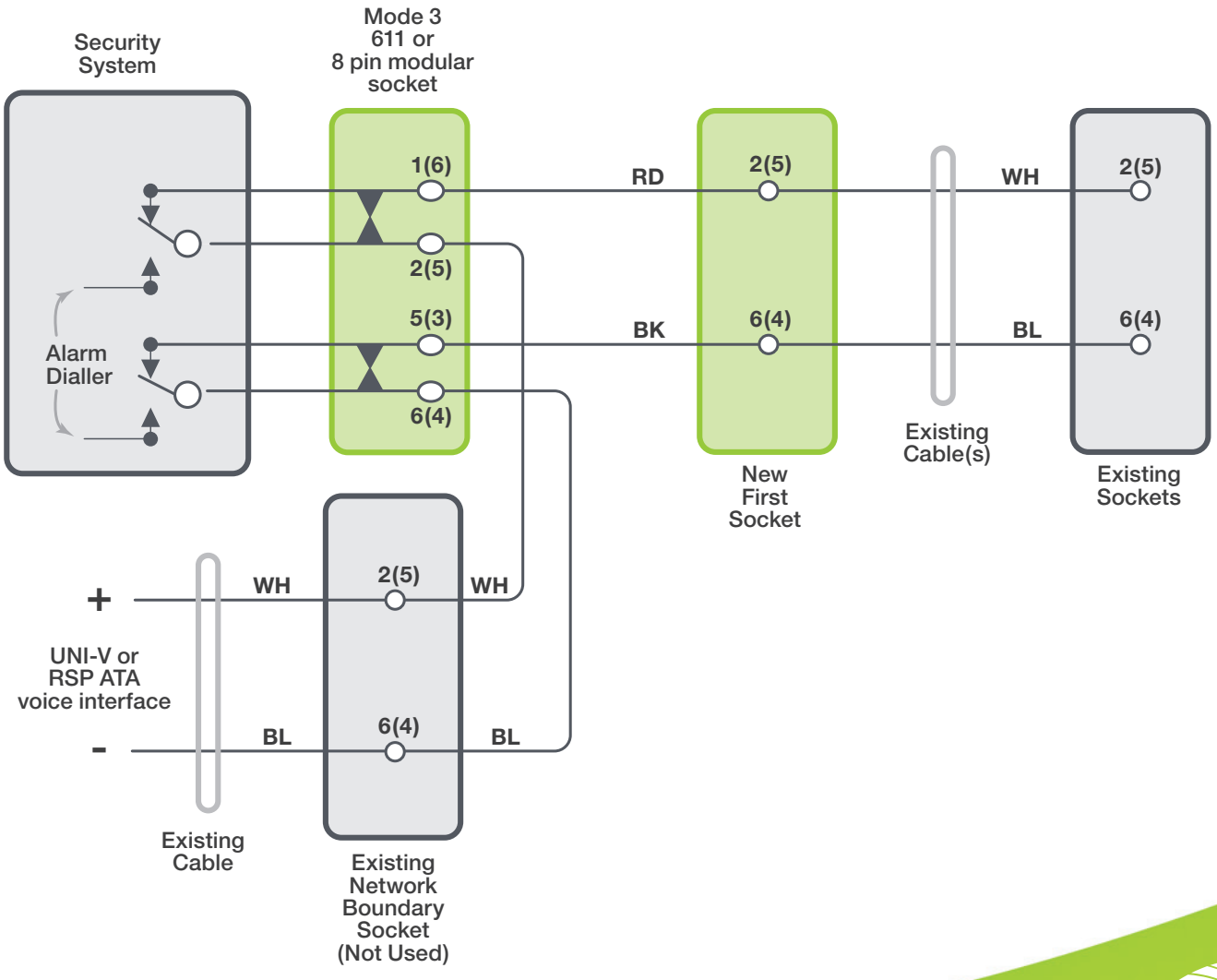
Medical and security alarms are typically connected to a specific type of telephone socket in the end user's premises called a "mode 3" socket. This allows the alarm to communicate with the monitoring centre even when other devices in the home are off hook. The alarm does this by disconnecting all other devices when it needs to make a call and effectively takes priority over all other devices sharing the line.

Mode 3 sockets are usually installed as part of the initial security or medical alarm installation and to ensure that these alarms continue to work on NBN, in home wiring will need to be configured as in the diagram below.

The following link to the ACMA website provides a technical guide for establishing Mode 3 connections: **http://www.acma.gov.au/Industry/Telco/Infrastructure/Cabling-rules/installing-a-mode-3-socket**

The diagram below depicts the recommended Mode 3 wiring implementation.

Figure 3 – Mode 3 wiring example



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3.4 Product selection for RSP sales staff

Security and medical alarms that currently operate on the copper network are generally 'invisible' to service providers because they simply connect to a telephone line and operate in a similar way to a telephone.

In order to seek to ensure end users are provided with an appropriate service on the NBN, it is important that when signing up an end user for an NBN service, sufficient enquiries are made to identify those end users who have security and medical alarms.

Once an alarm device is identified, you may decide to offer a particular product (for example, a telephone service based on an appropriately configured UNI-V) that supports that type of alarm.

3.5 Contact Centre Information

It is likely that end users who have security and medical alarms will be contacting your front of house staff to enquire about device support on the NBN. It is important that you have clear information both in contact centres and product collateral that explains your level of support for security and medical alarms.

Your NBN Co account team can assist you in developing comprehensive information on how best to support security and medical alarms.

4. What action is NBN Co taking?

Legacy Services Migration Project

NBN Co has established a project team to develop migration options for legacy services such as security and medical alarms. The options will be developed with input from the broader telecommunications industry including RSPs and industry peak bodies including the Communications Alliance.

The scope of the project initially covers services such as back to base security and medical alarms, EFTPOS/payment systems, elevator phones and building fire alarm systems.

NBN Co and industry bodies

NBN Co is actively engaged with the medical and security alarm peak bodies in their development of best practice guidelines and communications to end users and alarm installers.

There have already been a number of significant and wide-ranging workshops (in July 2011, November 2012, and December 2012) with representatives of both the alarm and telecommunications industries to assist with the understanding of technical and operational requirements. NBN Co will continue to facilitate industry workshops and encourages all RSPs to attend and participate.

A collaborative effort is needed to ensure successful migration of alarm services to the NBN with participation from alarm and telecommunications industry groups, RSPs, regulators and NBN Co. NBN Co is also working to develop material including technical whitepapers, installation guides and end user communications to support the migration.

The Communications Alliance has recently formed an Over the top Services Transition working group, called NOST, chaired by NBN Co, to discuss and maximise communications and plans between RSPs, over the top service providers, NBN Co and other interested bodies. NBN Co would like to encourage RSPs to get involved in the Communications Alliance working group which has its primary focus on fostering greater communications and sharing of experiences between RSPs, alarm providers and NBN Co to ensure these services continue to work post switchover to NBN.

Field Trials

NBN Co has facilitated a number of field trials between RSPs and alarm companies. Undertaking a field trial provides a way to test alarms on your network in advance of full scale support. NBN Co is regularly engaged to conduct field trials and can provide an introduction to alarm companies to participate in trials.

5. Where to get further information?

Please contact your NBN Co account team for further information or to discuss strategies to support legacy services. A dedicated email address has also been established for legacy service migration enquiries: **service-transition@nbnco.com.au**

This document was last updated 12 April 2013.

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