

Digital Journey Frequently Asked Questions

ISSUE 3

1. What is happening in 2025?

2025 is the end date by which BT expects to have changed all UK phone lines from analogue signalling to “IP Voice”, which is an IP/digital connection. The full roll out timings are as yet unconfirmed; however, we do know that BT plans to start by the end of 2018 and new analogue lines for business and ISDN lines will no longer be available for sale after 2020. It also proposes to cease selling all analogue phone lines in 2023 with a complete withdrawal by 2025.

At Tunstall, we are preparing for the migration with IP-enabled connected care solutions already situated in a majority of our sites.

2. Is this good news?

Yes. Moving to a digital infrastructure brings many advantages:

- Always on
- Able to handle voice, video and information as data
- Fast
- Data rich
- Future ready

This means the opportunity to:

- Transform how services are provided
- Enable more people to live independently in their community
- Enable more preventative and early intervention services¹

By delivering services that

- Empower and enable
- Safeguard and support
- Improve quality of life
- Bring people closer together
- Give increased control over the way people live their lives

3. What changes can I expect to see in my home?

There are two elements to this answer:

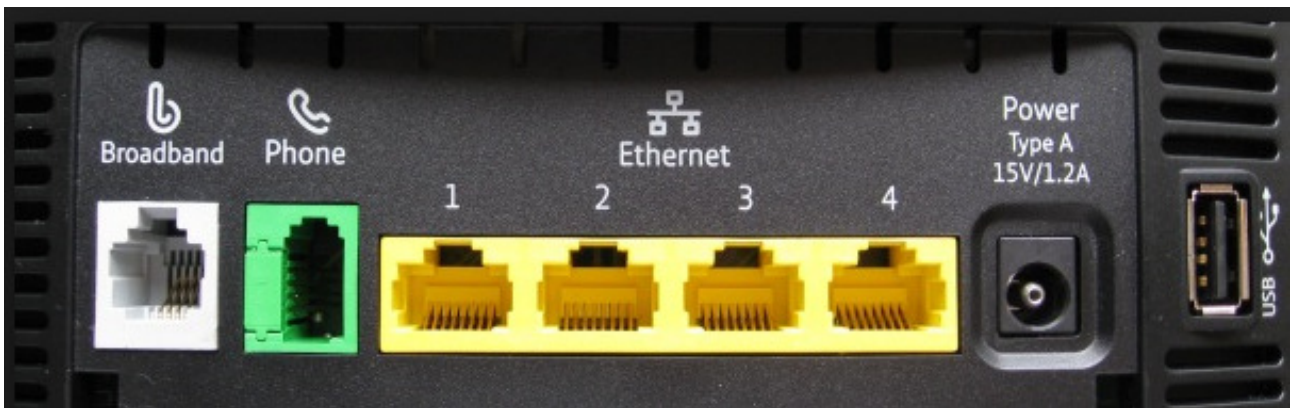
How does the connectivity arrive at my home?

There will be a variety of methods that can be used to provide digital connectivity to the home. These include Fibre to the Cabinet (FTTC) with a copper connection to the home and Fibre to the Premises (FTTP) which delivers a fibre connection to the home.

Many observers are expecting FTTC to be the predominant method although it is worth noting that Open Reach (the infrastructure provider and formerly part of BT) have announced that FTTP can now be delivered for half the formerly expected price.³

What physical device will I connect to at home?

BT has yet to confirm the specification of its devices however, it is likely to be a powered device that includes both ethernet and POTs ports. It is likely to look something like a current router. We anticipate that you will be able to connect existing telephones and computers. It may look as below.



4. Will my existing Lifelines/Scheme equipment continue to work?

Tunstall, in common with other suppliers, have had a number of meetings with BT, Open Reach and Ofcom. Our understanding is that existing analogue alarm signalling methods will continue to work over their new infrastructure. Formal testing with BT is currently taking place to confirm this position. BT have published a list of all providers who have tested their equipment at BT's labs.

<https://btplc.com/DigitalServicesLab/Whostested/index.htm>

We are not able to comment at this stage about other Next Generation Access Telecom Providers. As far as we are aware only BT, to date, is able to provide an end to end network across the UK using their national spine. Other providers will use a variety of different networks from multiple providers to deliver calls which adds an additional level of complexity and uncertainty.

5. How will this affect my PNC?

In the short term, very little will change. By 2025 analogue lines and ISDN will be replaced by IP lines and the expectation is that existing tone based signalling protocols continue to function. Our monitoring centre is fully IP-enabled, which means normal services should not be impacted by the digital migration.

We expect that there will be a growing demand to move to IP enabled monitoring centre, such as PNC8, as the volume of designed for purpose IP signalling equipment in use grows. IP connectivity at the monitoring centre can be provided either via a corporate network or via standalone connectivity.

6. Are there any downsides?

Yes. While there are many advantages in moving to a digital infrastructure two issues relevant to Lifeline and Assisted Living Services have been identified that make the new digital network different to the existing analogue.

Firstly, network reliability. In the current analogue world calls are connected end to end using copper cabling. The likelihood of call failure and the network being unavailable is very, very low. In the digital system calls are broken up into packets of information that can each be routed in different ways. While on the face of it this makes for a more resilient network it also means that the risks of call failure are higher not least because there is more hardware in use across the network. We can already see some evidence of call loss in Next Generation Networks that use a combination of analogue and digital methods of call transmission. We have procedures in place to help minimise call failures and ensure continuity of service during the transitional period.

Secondly, mains failure. In the current environment, there is power within the analogue network which continues even when there is a local mains failure. This means that battery backed Lifelines and assisted living equipment connected to the analogue network can continue to send alarm calls for up to 24 hours.

In the new digital network, there will be significantly less power available; that means the network may only support 2-4 hours of operation during a mains failure even if the router was battery backed. The precise details are still to be confirmed.

7. What is Tunstall doing to prepare for 2025?

7.1 Lifeline Smart Hub

The Lifeline Smart Hub provides a diverse alarm route which means that should an Ethernet/digital connection become unable to send alarm data then the unit will revert to signalling using an IP protocol over an inbuilt cellular connection with a roaming SIM. In a worst-case scenario, it can signal using STMF or BS8521 using a 2G cellular connection with adequate signal strength.

Reasons for the Ethernet / digital connection becoming unavailable include network reliability issues and mains power failure.

7.2 Assisted Living

In many ways, the same as above that is providing a diverse alarm route, in addition to the Ethernet / digital connection, that is battery backed.

7.3 Monitoring Centre

The issues highlighted around network reliability and power on new digital lines apply equally to monitoring centre providers as those using outfield equipment. Fortunately, a robust Disaster Recovery (DR) procedure or Business Continuity Plan is usually already in place.

It is important to note that it is not possible to divert an IP address in the same way that a telephone number can be. This means that if the DR centre is IP enabled then an additional IP address can be added to the call sequence. Alternatively, if not IP enabled then to use a regular number in the call sequence for an alarm call via STMF or BS8521.

8. What is an IP alarm protocol?

An IP alarm protocol is one designed to be used for IP communications over IP networks and contains alarm data. It transmits each message as packets of data. The data packets may use different routes across the network but they all arrive at the same destination. The data packets contain very similar information to that currently carried via tones used by analogue protocols.

The most popular alarm protocols, IPACS and SCAIP, have both been developed in Scandinavia and are also used across Europe and Australia. These protocols have been developed for use by dispersed alarms. CENELEC, the European Standards body, is also developing a specification for an IP alarm signalling protocol.

9. What new IP protocols will be supported by PNC8?

PNC8 supports IPACS using GSM voice call back. Later this year SCAIP using voice over IP (VOIP) dial back (SIP) will be made available.

The PNC8 roadmap includes additional support for:

- IPACS using voice over IP (VOIP) dial back (SIP)
- NowIP
- New CENELEC IP protocol when details are confirmed.

10. Can Lifeline Smart Hub signal using IP protocols into non-Tunstall monitoring centres?

If your monitoring centre is not supplied by Tunstall please contact your monitoring centre provider or supplier to identify which IP protocols are supported.

In addition to IPACS, Smart Hub supports the use of SCAIP IP protocol using dial back method and analogue BS8521.

11. What does end-to-end IP mean?

End-to-end IP means that the alarm call originating from the Smart Hub and the communication back from the monitoring centre are both signalled using IP.

IP protocols originating in the Nordics typically use a call back mechanism. This means that when the alarm call is received at the monitoring it is the centre that automatically calls back to the Lifeline, which auto answers, to open the speech channel. The call back mechanism can use a variety of means of opening a speech channel ranging from a voice call via the SIM card or IP, using Voice over IP.

PNC8 supports IP alarm delivery and call back using the GSM SIM. Later this year PNC will also support SCAIP with a voice over IP (VOIP) call back.

12. What's an ATA?

ATA stands for Analogue Telephone Adaptor and is a device used for connecting traditional analogue telephones to a digital telephone system or a voice over IP telephony network.

In the context of Lifelines, the term has been used widely to describe something that would enable an analogue Lifeline to connect to the new digital network. It looks very likely that the functions of an ATA like device will be incorporated into the BT router device.

13. Will PNC8 be able to support non-Tunstall IP signalling equipment?

Yes, depending on which IP protocol the equipment is using. At launch PNC8 will support equipment that uses IPACS using GSM voice call back.

The PNC8 roadmap includes additional support for:

- SCAIP using voice over IP (VOIP) dial back (SIP)
- IPACS using voice over IP (VOIP) dial back (SIP)
- NowIP
- New CENELEC IP protocol – details to be agreed

14. What happens if my corporate network's IP connection fails? (Especially if they don't currently provide 24/7 support)

If Smart Hub fails to send an alarm via an IP protocol then it will (depending on call sequence) signal to the monitoring centre using STMF or BS8521 to a monitoring centre phone number (rather than an IP address).

Reference

1. Digital Office Scottish Government

<https://sctt.org.uk/wp-content/uploads/2017/04/Colin-Birchenall-Digital-Office-TAG.pdf>