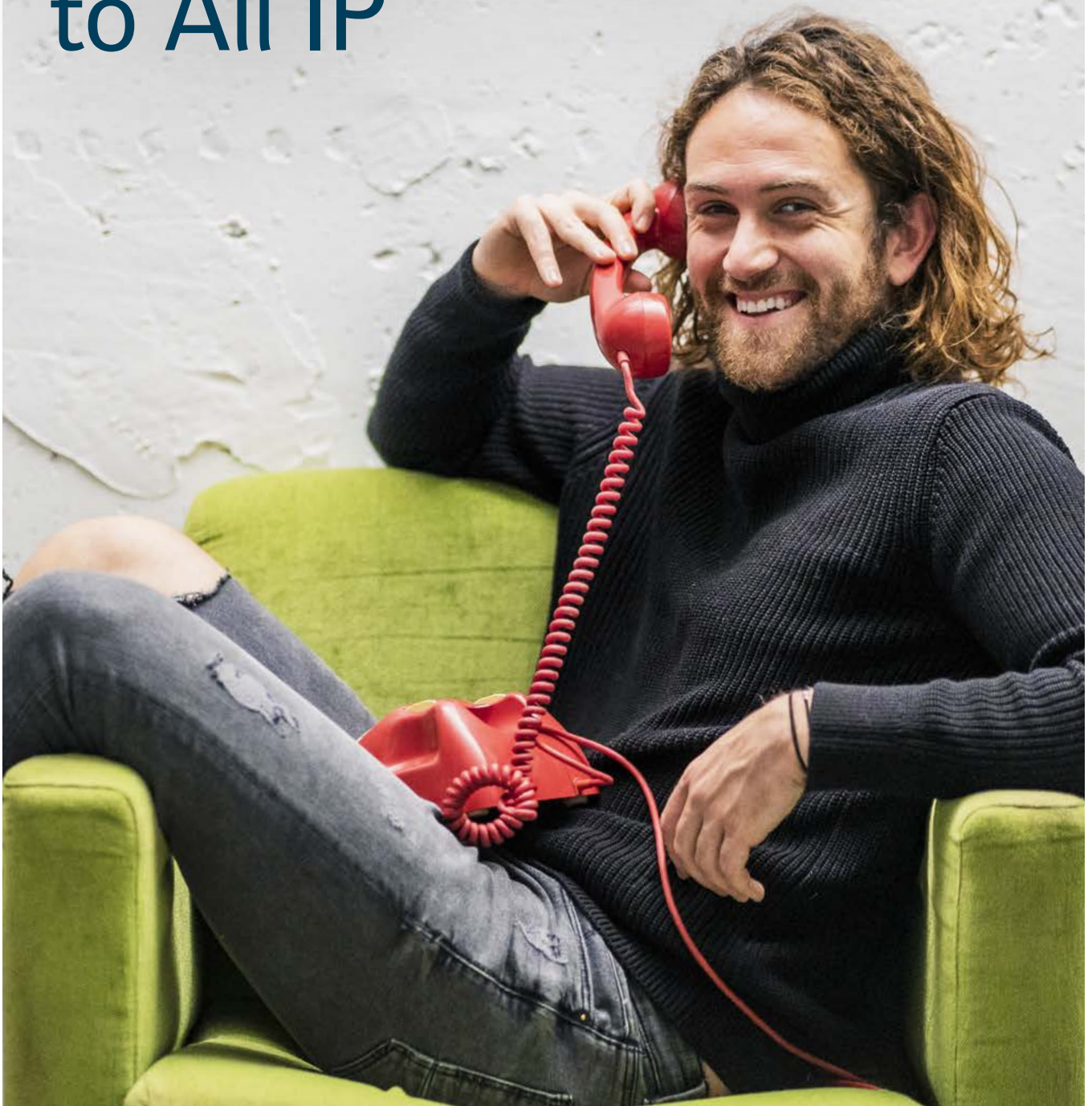openreach

Getting ready for the digital upgrade to All IP

What is the digital upgrade to All IP?

The UK is preparing for a huge technological change. By the end of 2025, the historic analogue network, used to make most phone calls from our landlines and also used for broadband, will have reached the end of its life. And a new digital phone network is taking its place.

The new network will provide a future proof, more reliable and dependable broadband service, that will support the UK for decades to come.

The upgrade to a digital line supports the next generation of voice calls – higher quality, fewer faults and less maintenance, as well as being better for the environment. Landlines are going digital across the UK.

This means voice calls will soon be over a digital line – in the same way broadband works.

This change will affect almost everything that currently plugs into an analogue telephone wall socket. This includes any equipment that may be provided to clients and customers, or equipment they purchase to utilise the services on offer.

How do we move smoothly onto the digital network?

BT Group announced in 2017 that the PSTN (Public Switched Telephone Network) would be closed down in 2025.

As Wholesale Line Rental (WLR) relies on the PSTN, that means Openreach will no longer offer or support WLR products (that enable own-brand phone service on our network using our copper cables and networking equipment) by the end of 2025, as we move to new digital, internet-based (All IP) services.

We'll stop selling new WLR across the UK from September 2023. And as we continue our full fibre roll out, we're also winding down the range of copper-based services we supply.

This is an exciting challenge and it's vital to understand the impact of the digital upgrade on your business.

The All IP timeline

November 2017

BT Group announced its intention to close the PSTN in 2025

May 2018

Openreach consultation on WLR withdrawal launched

December 2018

Openreach issued formal notification of WLR stop sell

December 2020

5 year reminder that WLR is being withdrawn

Copper stop sell for the Salisbury trial

May 2021

WLR stop sell for the Mildenhall trial

January 2022

Contract termination notices served for trials in Mildenhall and Salisbury

April 2022

Trial managed migrations commence (12 months)

April 2023

WLR assets withdrawn* in Mildenhall and Salisbury

September 2023

Stop selling new supply of WLR in the UK

December 2025

WLR withdrawn, PSTN closure

*excluding exemptions granted by Openreach

Understanding stop sell

To help us prepare for the digital upgrade we'll also stop selling analogue phone lines to new customers in a phased way by September 2023 across the UK which means in some locations where we're building FTTP, we may stop selling WLR before that time.

WLR Withdrawal

As Wholesale Line Rental (WLR) relies on the PSTN, that means Openreach will no longer support WLR products* after this time. Customers will be expected to have migrated their services to alternative products.

A national stop sell was announced for 2023 to support the transition away from WLR, and trials in Mildenhall and Salisbury have been set up to test the process.

*WLR includes WLR3, PSTN, ISDN2, ISDN30, Classic products

Stop sell is our process to encourage use of fibre products. We stop selling copper-based products when 75% of homes and businesses connected to a particular exchange can get full fibre broadband, having given 12 months' notice of our plan to stop selling copper-based services from that exchange.

From September 2023 there will be a stop sell of WLR* across the UK

For communications providers
End customers won't be able to buy old copper products if full fibre is available at their premises, this includes Superfast Fibre and Standard Broadband. This applies to end customers signing up to a new contract, whether they're switching, upgrading or re-grading.

What's the difference between stop sell and withdrawal?

We use the term stop sell to signify stopping the sale of certain copper-based Openreach products. When Openreach is planning to withdraw a product, there is an intermediate stage called stop sell whereby further sales of that particular product are stopped. This ensures that the total number of lines remaining on that product does not increase, so as to facilitate the subsequent withdrawal of the product.

For communications providers
If a product is affected by stop sell, this won't just mean no new supply, but other activities may also be impacted.

*excluding exemptions granted by Openreach

Enhanced solutions

Openreach has developed products that can be used by Communications Providers to deliver service and has created a set of rules to determine which of these products should be used on a case-by-case basis.

FTTP
(Fibre to the Premises)

A pure fibre connection from the exchange to a premises giving speeds up to one gigabit per second. This is our highest speed ultrafast fibre offering and is also called GEA-FTTP (Generic Ethernet Access over FTTP). It's ideal for SME and home customers.

SOGEA
(Single Order Generic Ethernet Access)

With SOGEA, you can offer a standalone hybrid fibre broadband line. And because it uses a standalone line, a landline won't need to be ordered as well.

SOGEA gives downloads of up to 80Mbps using the same reliable technology as FTTC (fibre to the cabinet).

Your customers can bring their previous phone number with them (in line with OFCOM regulations).

SOGfast
(Single Order Gfast)

SOGfast is simply a faster version of SOGEA. For some customers we can use a special side pod on the street cabinet to boost speeds over short distances. That means you can offer download speeds of up to 330Mbps.

SOTAP
(Single Order Transitional Access Product)

SOTAP is a new product we're developing which will deliver a copper path between network terminating equipment (NTE) at your customers' premises and a main distribution or jumper frame at the exchange.

We're developing SOTAP to help us withdraw WLR. SOTAP can be used to provide broadband and internet protocol (IP) phone services, because it connects to your exchange infrastructure.

It will only be for areas where there aren't any fibre products available. And it won't include a managed phone service, or any associated calling and network features.

Variant solutions
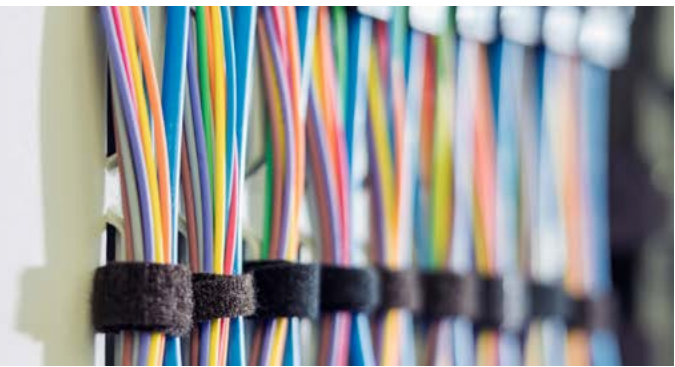
Upgrading millions of lines and moving to an All IP future means different ways of connecting services need to be found.

Non-standard lines (NSL)

These lines require extra work to either provide or cease them. They include, for example:

- Lines in or near electricity power stations or other "hot sites"
- Short Duration Lines – such as a site office portacabin, where we have to physically disconnect the line to prevent injury or damage when it's removed from site.

Non-served premises (NSP)

These lines serve unusual locations that wouldn't be called a standard residential or business premises. Typical NSPs are things like traffic lights, sewage treatment works and street CCTVs.

What's our plan?

Create migration and provision journeys to Single Order Generic Ethernet Access (SOGEA) for the line types mentioned above, wherever SOGEA is available.

Enable SOGEA NSL and NSP orders to be placed at locations where both FTTP and SOGEA are available.

Create provision journeys for FTTP for all of the line types mentioned above.

Possible migration options for WLR lines

	FTTP (where in footprint)*	SOGEA (where in footprint)*	SOTAP (where no FTTP or SOGEA)*	Ethernet
WLR3	✓ (incl. low bandwidth option)	✓ (incl. low bandwidth option)	✓	✗
ISDN2	✓	✓	✓	✗
ISDN30	✓	✓	✗	✓
SMPF	✓	✓	✓	✗
Classic	✓	✓	✓	✗

* Where stop sell is implemented in a given exchange product choice may be limited

How to get ready

We're working closely with communications providers and industry bodies to build an inventory of line connections to determine the impact on end customers and collectively work through any migration challenges.

This is where we really need your help and insight – and that's why we've set up working groups to help gather this knowledge.

By working together we can deliver the best outcomes for industry and end customers.

To receive invites to our working group meetings visit **openreach.co.uk/futureofwlr** to register your details.

Preparing for an All IP world

Many communications providers have a migration plan in place. Have you?

Don't get left behind – start planning, and make sure you understand the impact so you're prepared.

Are your solutions compatible?

As part of your migration planning, are you aware of any compatibility challenges you may face?

Learn | Unlearn | Relearn

There's lots of work being done by industry on educating end customers as well as training agents dealing with end customer queries.

Take dial tones. When end customers move to Voice over Internet Protocol (VOIP) many raise concerns because they either no longer have a dial tone or it sounds different.

Even though this is normal on VOIP and not a fault, some agents will lodge a fault and send out an Openreach engineer, incurring unnecessary costs.

Getting the most out of customer conversations

Communications Providers should identify customers who may be classed as vulnerable or have special services to make sure they're fully supported when they're migrated.

Openreach offers options to help end customers be assured with a reliable service. These include Standard Managed Install, Premium Managed Install, Prove IP Voice and Install UPS (see box opposite).

It is recommended that customers who use a device on their home phone lines have additional protection measures in place and have ensured uninterrupted access to emergency organisations during a power outage.

Ofcom has published some guidance which may be helpful.

- **Standard Managed Install:** The engineer will set up a router and connect a device

- **Premium Managed Install:** In addition to standard, the engineer will connect up to two more devices and a install a voice reinjection cable where a Communications Provider has supplied one

- **Prove IP Voice:** The engineer will test inbound and outbound calls on the new VOIP service (Prove IP Voice)

- **Install UPS:** The engineer will unbox, connect and test your supplied uninterrupted power supply equipment
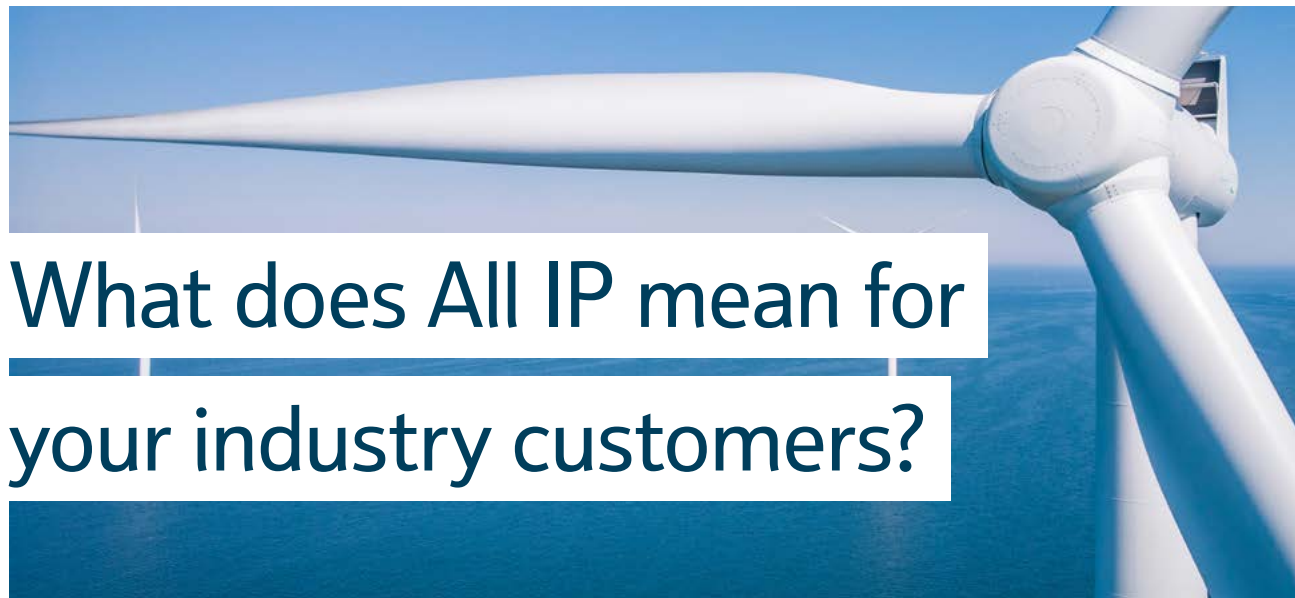
What does All IP mean for your industry customers?

The energy industry

All businesses within the energy industry – whether their area is generation, transmission, or distribution – use the telephone network in some way.

The network connection

Gas and electricity companies use over 43,000 telephone lines to monitor their services, assess network visibility, and operate circuit breakers.

The lines are also used to safely monitor and control the national gas network, and for the remote management of compressors and critical control sites.

The Electricity System Restoration – a vital failsafe in the event of a total or partial shutdown of the National Electricity Transmission System – also relies on the telephone network, as does the visibility and control of Distributed Energy Resources (DERs).

The smooth running of the nationwide energy system relies on the connection between network operators, the hardware within the network, control rooms, and field sites, many of which are in remote areas with no mobile coverage. It's the telephone network which allows them to send and receive data back and forth.

> Energy companies buy hardware and then plug directly into Openreach master sockets on-site.

This is largely for telemetric monitoring and control of things like gas pressure, electricity supply, and network resilience processes, except at substations where it's also used for operational purposes.

For more information, visit

- www.energynetworks.org
- www.energy-uk.org.uk
- www.ofgem.gov.uk
- www.gov.uk/government/ organisations/department-for-business-energy-and-industrial-strategy

The telecare industry

The service provided by the telecare industry – sometimes called a careline or a telehealth pendant – offers security, peace of mind, and, in many cases, saves lives.

The network connection

Through devices called 'dispersed alarms', the telecare industry allows elderly and vulnerable people to immediately contact someone for help in case of an emergency.

The devices connect directly to the phone socket and the customer's phone is plugged into the device. A pendant, usually worn around the customer's neck or wrist, communicates with the device using radio frequency (RF) signals.

This means that in an emergency, the customer can press the button on their pendant and the device automatically connects them to an Alarm Receiving Centre. Once connected, they can speak to the operator, who'll then alert either a carer or the emergency services, depending on the situation.

These 'dispersed alarms' are also used by over 500,000 care home residents, in what are called 'Schemes'. In these cases, each individual device in a facility is routed through a central communications room, which will in turn connect them to an Alarm Receiving Centre.

These devices are invaluable to care home residents, especially during night-time, when there are fewer members of staff available.
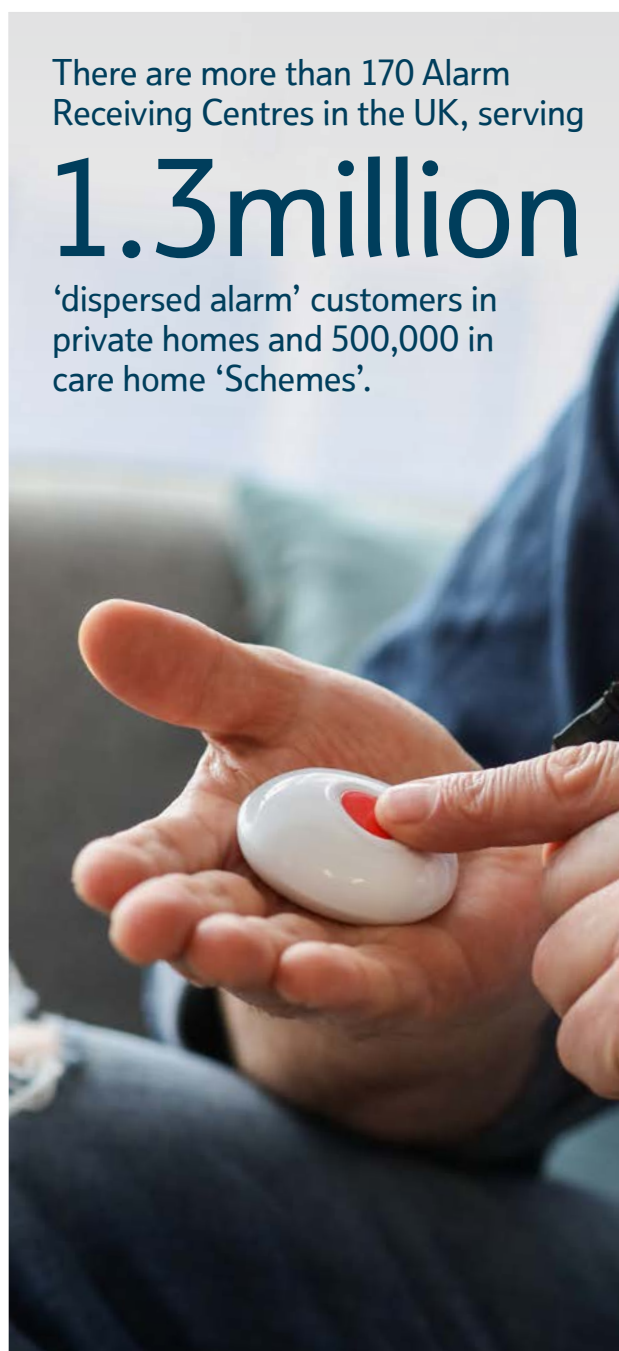
For more information, visit

- www.tsa-voice.org.uk
- www.uktelehealthcare.com

There are more than 170 Alarm Receiving Centres in the UK, serving

1.3million

'dispersed alarm' customers in private homes and 500,000 in care home 'Schemes'.

The water industry

The water industry relies on 25,000 PSTN lines for real-time monitoring and control of water storage, treatment works, flood defence networks, and pumping and booster stations.

The network connection

In remote areas, where there's no other power source available, the Remote Telemetry Units (RTUs) are driven solely by the power coming through the PSTN lines.

The analogue phone lines also allow companies to use broadband services to manage Industrial Control Systems (ICS) in real-time.

Because of these factors, the analogue switch-off raises some challenges, especially as there'll be no like-for-like replacement for traditional phone lines. While new connectivity products like ultrafast full fibre broadband will be available for much of the UK, that may not be the case in remote areas – which are often the site of water industry equipment, such as pumping stations.

The water companies buy the hardware and then plug it into an Openreach master socket. In many cases they'll use the 50 Volts from the analogue phone line as their power source.

For more information, visit

- www.ofwat.gov.uk
- www.tauwi.co.uk
- www.water.org.uk
- www.britishwater.co.uk

The lift industry

In the UK there are over 300,000 lifts – everywhere from train stations and hospitals to shopping centres, flats, and airports – of which around 250,000 use PSTN lines.
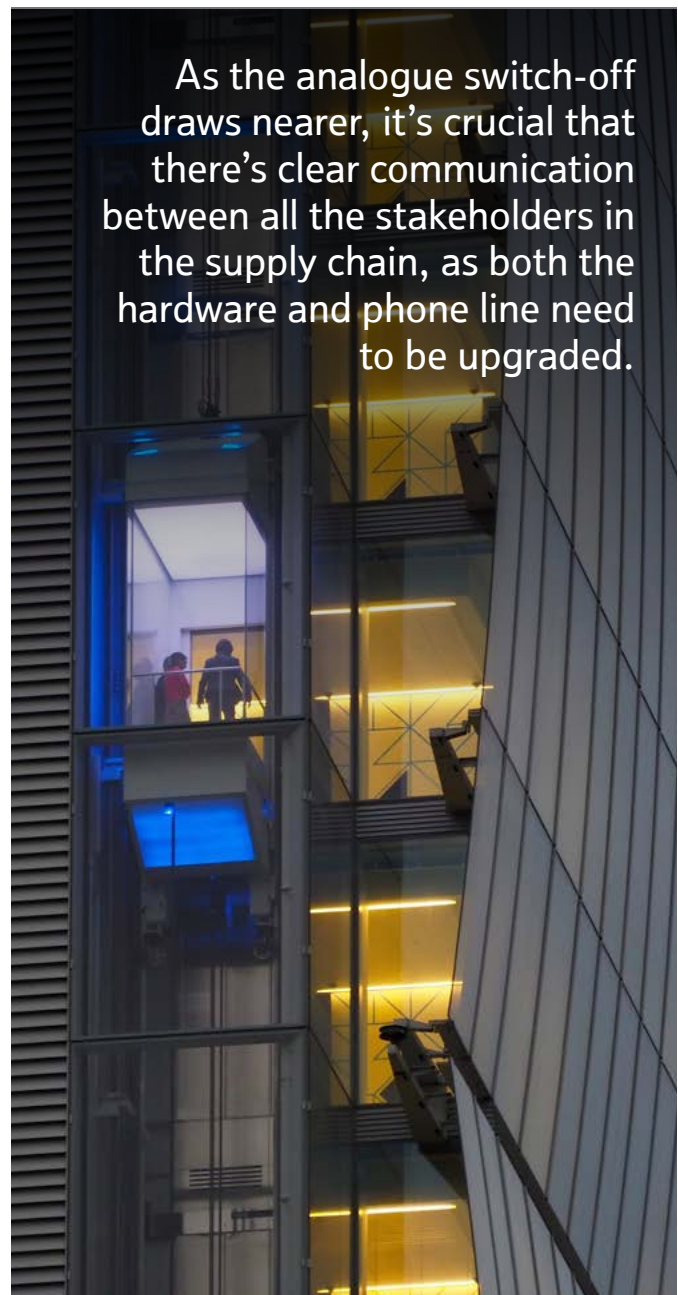
The network connection

One of the issues raised by LEIA (the Lift and Escalator Industry Association) is lift alarms. Every lift has an alarm, usually a button that connects to a rescue service via a pre-programmed phone number.

It works by using an auto-dialler – a piece of analogue hardware that sits on top of the lift car and is plugged into the phone line using an Openreach master socket. The rescue service is often run by the lift company – although not always – and both the lift company and the lift owner have different responsibilities.

Lift maintenance companies buy hardware, like the auto-dialler, from a manufacturer and install it on top of the lift car. At this point things change – the lift owner now becomes the owner of the hardware and is usually responsible for the phone line too.

For more information, visit

• www.leia.co.uk

As the analogue switch-off draws nearer, it's crucial that there's clear communication between all the stakeholders in the supply chain, as both the hardware and phone line need to be upgraded.

The alarm industry

There are two main types of alarm – Intruder and Fire – and each of these types can be further divided into either 'monitored' or 'unmonitored'.

The network connection

'Monitored' alarms are connected to, and monitored by, Alarm Receiver Centres (ARCs). ARCs are responsible for responding to activations from alarm systems. In the case of Intruder alarms, they'll also contact a keyholder and the police, where a police response is part of the agreed service.

The monitoring technology usually works in one of two ways. Either it's provided by a third party managed signalling provider, like BT Redcare or CSL, or sent directly to the ARC by a Digital Communicator as part of an on-site alarm system.

Historically, the industry has relied upon analogue phone technology as a primary path. Managed services tend to use SIM technology as their primary path with the secondary path being dial-up broadband. These will be affected by the move to All-IP Lines.

> There are reportedly over 1 million alarm systems in the UK using the analogue network, with an estimated 800,000 being Digital Communicators.

For more information, visit

- www.bsia.co.uk
- www.nsi.org.uk
- www.ssaib.org
- www.csl-group.com/uk
- www.redcare.bt.com

Supply chain

Hardware is manufactured by suppliers who sell to alarm installers, either directly or through distributors. Installers then contract the monitoring to ARCs, who either monitor the alarm directly or buy a managed service from signalling providers.

Key stakeholders

There are about 2,000 Alarm installers and 75+ different companies that run ARCs, with the primary signalling providers being BT Redcare and CSL.

There's also an industry body, the BSIA, and two accredited industry certification bodies – NSI and SSAIB.

Industry insight

The information on pages 9 to 13 has been developed by the various industries to highlight the key things for CPs to consider when migrating customers.

The Digital Services Test Lab

Openreach has a **Digital Services Test Lab** in its London head office, where manufacturers and suppliers can find out if their kit, such as telecare, lifts or alarm systems, will work with the new All IP network, or if it'll need updating.

The lab emulates the conditions found when an analogue line migrates to a digital line and gives vendors of hardware devices the opportunity to test their equipment in an All IP environment.

By working with some of its biggest CP customers, including Sky, TalkTalk, Vodafone, BT and Zen, Openreach has a variety of lines and routers in place in the lab to test hardware on.

In the lab, there are a variety of types of Openreach lines for testing including:

- ✓ **WLR** (Wholesale Line Rental – PSTN, ISDN2)

- ✓ **FTTP** (FTTP Fibre to the Premises)

- ✓ **SOGEA** (Single Order Generic Ethernet Access)

- ✓ **SOGfast** (Single Order Gfast)

Hardware manufacturers, vendors and suppliers can book an appointment to test their equipment

www.openreach.com/upgrading-the-UK-to-digital-phone-lines/industry/digital-services-test-lab

Are you ready for the digital upgrade to All IP?

openreach