



Rural Services Network Rural Connectivity Seminar – PSTN and 2G/3G Switch Off

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Public Switched Telephone Network (PSTN) Switch off



The PSTN is being decommissioned with traditional landline phone services being replaced with VoIP

- Not limited to the UK - operators in many countries are looking to modernise their landline phone networks or have already done so.
- Driven by two developments:
 1. The PSTN is at the end of its life and increasingly suffering failures
 2. Traditional telephony does not work over new fibre-to-the-premise (FTTP) networks.
- BT has taken the decision to retire the PSTN by end of 2025, other providers using the same technology as BT are following a broadly similar timescale.



Millions of customers have already made this move and 34% of landlines connections are now delivered via VoIP

Ofcom's role

Ofcom's objective is to ensure consumers, especially the vulnerable are protected from harm
We have regulation and guidance in place to support that objective

Monitor industry's plans



Quarterly meetings with large providers and six-monthly with smaller and business providers.

Compliance monitoring programme to look at how providers are meeting the requirement to provide uninterrupted access to emergency services in a power outage

Set guidance and expectations



Regulation and [guidance](#) (Oct 2018) on obligation to ensure uninterrupted access to emergency services

[Policy statement](#) (Feb 2019) setting out our expectations of CPs

Ofcom rules state that all providers must have policies and procedures in place to make sure vulnerable customers are treated fairly, complemented by July 2020 good practice [guide](#))

Stakeholder engagement and consumer advice



Work with consumer groups, Government (national and local), telecare stakeholders and Critical National Infrastructure

Consumer advice and information pages on Ofcom [website](#) and [social media](#) – including a consumer video

[Research](#) into the consumer experience of migration.

The migration should be straightforward for most, but may be more complex for some people

Landline dependant customers

Calls made over IP will not function in power cut

- Providers must supply a free resilience solution that enables access to 999 services for the minimum of one hour

Landline only customers

VoIP services work on a broadband connection

- Voice-only customers will need to be supplied with a broadband connection when migrating to IP.
- Both BT and VMO2 will provide the new digital voice solution at no additional cost.
- BT is the main provider of landline only services and, for their customers, it is considering a range of options to supply existing customers, as potential alternatives to installing broadband



The migration should be straightforward for most, but may be more complex for some people (2)

Users of telecare devices

About 2m connected safety of live devices, such as telecare pendant alarms, may need to be upgraded/reconfigured to work over IP

- Ofcom expects providers to take sufficient steps to identify telecare users and offer them support.
- Currently telecoms providers are not proactively migrating telecare users and will not start until they are confident they have processes in place to protect these customers.
- Providers, telecare stakeholders and local authorities are working together to address migration issues for telecare users



Vulnerable customers

Some customers may need additional help to reconfigure or install devices

- Providers must have policies and procedures in place to identify and meet the needs of vulnerable customers



As well as other customer groups

Downstream services, including CNI, that use the PSTN for non-voice applications

Some characteristics of the PSTN, including line powering and 'voice-band' data transfer, might not be fully replicated by 'All IP' voice services

- Owners of non-voice equipment (eg alarms, monitoring equipment etc..) need to test and/or replace their equipment.
- Ofcom expects providers to engage with owners of downstream services.



On 14 December, the major providers signed a DSIT charter to protect vulnerable customers



We, as Communications Providers, commit to the following:

1. We will not undertake any non-voluntary migrations to digital landlines, until we have full confidence that we are taking all possible steps to protect vulnerable people through the migration process.
2. No telecare users will be migrated to digital landline services without us, the customer, or the telecare company confirming that they have a compatible and functioning telecare solution in place.
3. Where battery back-up solutions are provided, we will work to provide solutions that go beyond the Ofcom minimum of 1 hour of continued, uninterrupted access to emergency services in the event of a power outage.
4. We will collectively work with Ofcom and Government to create a shared definition of 'vulnerable' customer groups that require greater support, specific to the digital landline migration.
5. We will conduct additional checks on customers who have already been non-voluntarily migrated to ensure they do not have telecare devices we were unaware of, and if they do, ensure suitable support is provided.

What do rural Local Authorities need to do?

This is not an issue communications providers can solve alone

Telecare devices

- Test your equipment to see if it will continue to function over IP and then replace, upgrade or reconfigure it as appropriate.
- Make sure that your customers/residents are aware of the issue and take any necessary steps to maintain their service(s).
- Procure devices that are compatible with VoIP services.
- Work with telecoms providers to help them identify telecare users their areas.
- Inform telecoms providers of any incidents where a telecare device does not function after migration

Non-voice uses of the PSTN

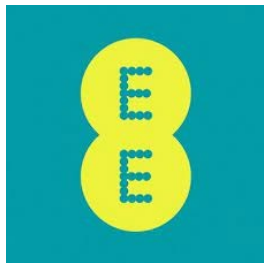
- The migration to IP affects lot of equipment that local authorities may be responsible for e.g. traffic lights, lifts, telemetry, alarm and security systems.
- Carry out a discovery exercise to see how PSTN lines are being used in buildings and sites.
- Engage with your telecoms provider and equipment manufacturers to find appropriate solutions.
- Test equipment that uses the PSTN

2G/3G switch off and power resilience



Background

- All mobile operators have committed to switching off their 3G by end of 2025.....
..... then 2G networks by 2033 at the latest.
- This will result in improved network efficiency and enable more spectrum to be used for faster 4G and 5G services.
- 3G device numbers are falling rapidly.
- Remaining handsets will still be able to use the 2G network for voice calls and texts but access to the internet will be very limited unless the handset can connect to wi-fi.



**3G now
switched off**



**3G switch off will
complete in the next
few weeks**



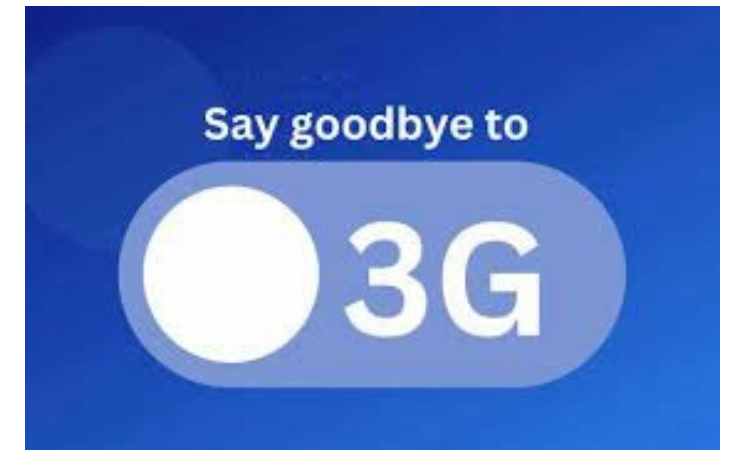
**3G will aim to
complete switch off
by end of 2024**



**3G switched off by
end of 2025**

What does the 3G switch off mean for people?

- The switch-off will affect customers using older mobile devices and services
- MNOs have committed to offering a broadly equivalent level of coverage after the 3G switch-off with areas reliant on 3G being upgraded to 4G ahead of switch-off.
- For any 4G 'not spots' that occur where 3G has been switched off, MNOs are re-using the old 3G spectrum (signals) to provide 4G coverage and capacity.
- Overall coverage for 4G should be at least as good as 3G and should further improve over time as the SRN is rolled out.
- Some customers already using 4G/5G mobile devices may need to update settings or software to ensure that calls use the 4G network
- Even after 3G switch-off, customers with an older device will still be able make voice calls and send text messages, as these rely on the 2G network (other than Three customers).



People will also be able to roam on to any available mobile network to make an emergency call

What is Ofcom's role

- Ofcom does not have a formal role in the switch-off process, but we want to ensure that customers are treated fairly and can continue to access the services they need.
- [Ofcom expectations document](#) sets out how MNOs should approach the switching off, including the relevant regulatory requirements that apply.

Minimising coverage impact:

EE, Three and Vodafone have committed to ensure that they offer a broadly equivalent level of coverage after the 3G and then 2G switch-off. VMO2 has also made a similar public commitment by “upgrading and expanding its 4G and 5G networks” during this switch-off period.

Contractual information about the switch-off of services:

if services purchased will be affected, providers to set it in contract info and summary

Communicating with and providing support to customers:

if handset needs updating or replacing providers to give a minimum of three to six months' notice. Financially vulnerable customers should be given additional support, e.g. discounts on replacement handsets

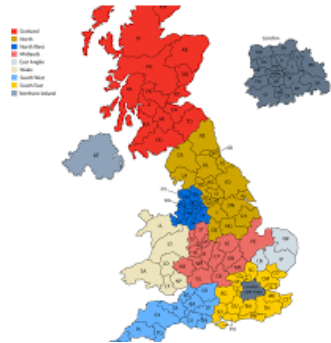
Other services that rely on mobile networks:

e.g. telecare alarms/payment terminals. Mobile providers should identify these services, share knowledge across industry, help raise awareness so suppliers have sufficient time to update their devices and consumers do not lose access to vital services.

Our work so far



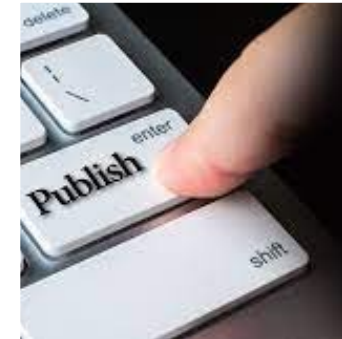
Monitor MNO progress against commitments: impact on coverage, tracking the number of devices that still require upgrading or replacing, their communications to raise awareness, and how they manage vulnerable consumers.



Published a list of postcodes which may be affected once Vodafone, EE and Three switch-off their 3G networks in 2024, when only VMO2 3G will remain.



Written to telecare associations and local government reiterating the need to ensure vulnerable consumers who rely on these devices are protected.



Published advice to support non-mobile handset users of 2G/3G networks setting out their role in ensuring continuity of the services they provide.



Raising awareness through social media campaigns and through consumer groups and industry associations.

Mobile network power resilience

- Increasing reliance on mobile services to stay connected, so it is becoming more important that mobile networks are resilient.
- Availability of UK mains electrical power is a key risk.
- Some degree of existing electrical power backup within the mobile networks, but number of sites and duration of back-up varies.
- This is a complex issue and a cross-sector challenge, so we want to work with industry and Government to address it.



Call for Input to help us build an evidence base and start a discussion about how to improve access to mobile services when mains power is disrupted



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