



National Security Inspectorate

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To: All NACOSS Gold, Fire Gold. Systems Silver and Fire Silver approved companies and applicants

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Information relating to approved company preparations for the impact of the National Public Switched Telephone Network (PSTN) to ALL IP communications network migration

This Technical Bulletin provides information concerning the performance expected of NSI NACOSS Gold, Fire Gold, Systems Silver and Fire Silver approved companies relating to preparation of the PSTN to ALL IP communications network migration.

The migration from PSTN to ALL-IP is likely to have a significant impact on users and installers of electronic security and fire alarm systems. To avoid bringing our industry and NSI approval into disrepute, it is important that all approved companies are prepared for the migration. The steps below define the level of preparation that is expected of all approved companies. Compliance with these steps will be checked at each audit visit.

This Technical Bulletin contains mandatory preparatory actions which must be completed by approved companies. These actions are detailed in the last section of this Technical Bulletin.

Background information on the PSTN – ALL IP migration

All public communications providers in the UK will be moving away from its dependency on the PSTN as the network for voice communications and, instead, utilise a fibre optic based network that will use the Internet protocol (IP) for voice and data; this initiative aims to satisfy the demand for faster data transmission speeds which PSTN is not capable of providing. The result of this is that alarm systems transmitting data to an ARC in the traditional way using a PSTN dial up service may fail to work. There is an estimated 4 million data over voice systems in the UK that use this method of communication and many of these will fail.

The clock is ticking

The date planned for completion of the rollout to an ALL IP network is by 2025. However, the migration started in June this year.

Are future communication lines supported by a back-up power source?

The existing copper based infrastructure will be removed and be replaced with a fibre optic solution which will support better communications in terms of both speed and capacity. There will be two iterations for a new All IP connection to the premises during the rollout, one being fibre to the premises (FTTP) and the other is fibre to the cabinet (FTTC). It is probable over time that FTTC will be replaced with FTTP. The significance of this is that FTTC will retain the copper connection from the roadside cabinet to the premises and may include a limited back-up power source, whereas FTTP will have no back-up power for the communications line.

Openreach roadside cabinets are expected to have a one-hour duration for power backup but it is unclear what other communications providers might be planning. Even with limited back-up power provided from the roadside cabinet, power failure to the onsite router will result in the failure of the communications line.

Will the customers' existing alarm systems be disconnected from the communications line?

The traditional in-premises telephone connection point for PSTN is a wall-mounted master telephone socket which has the capability to have extension sockets and block terminals installed for the connection of other telephones and devices or alarm systems, whereas typically an ALL IP connection will have a connection socket for the sole connection of a broadband router. The router will typically include an ATA port - this port is a telephone connection emulator - which is expected to work with most voice telephones in use today but is not designed to support extension wiring. This configuration will mean that any extension wiring will be disconnected from the PSTN resulting in any connected equipment, e.g. an alarm system being disconnected from its communication line on migration to ALL IP.

Will signalling devices installed at customers' premises work on an ALL IP connection?

Due to the protocols used by many alarm signalling devices installed in customers' premises today designed to specifically work on a PSTN, it is likely that a large number of these devices will not be compatible with the ALL IP network leaving customers' sites unprotected.

A traditional digital communicator may not be compatible with the All IP network and might be disconnected on migration to ALL IP. As many digital communicators aren't monitored for transmission path failure at the ARC; the first indication that signalling has failed could be after a break-in where alarm signals were not sent to an ARC and the emergency services were not called to attend site.

Is your customer's signalling equipment compatible with ALL IP?

Some communications providers (e.g. BT and TalkTalk) have provided test centres for manufacturers to test their signalling solutions on the ALL IP network. It might be prudent to enquire if signalling equipment you install has been successfully tested.

Some communications providers (e.g. BT and TalkTalk) will be able to identify that a customer has an alarm system installed, where the alarm system dials the ARC and the ARC has already provided receiver telephone numbers to the communications provider.

This is a simple process where the communications provider monitors their lines for the defined ARC phone numbers being dialled they then add a flag to the account record of the site dialling the number. When that account undergoes ALL IP migration, the communications provider will ask the customer whether they have checked with their alarm maintainer that there will be no impact after migration.

Impact of the ALL IP roll out

- No backup power for the communications line after local mains power failure.
- On migration to ALL IP, the alarm system may be disconnected.
- Current signalling devices may not be compatible with the new ALL IP network.

Mandatory preparatory actions to be completed by approved companies

- Customers with equipment installed utilising the PSTN to communicate to an ARC must be informed of the ALL IP rollout, timeline and the potential impact on their current signalling solution.
- Customers must be offered options to future proof their alarm system against the impact of the all IP migration.
- Consideration must be given to providing alternative local power-backup in the case of local power loss.
- Consideration must be given to the potential impact on service resources during the ALL IP roll out.

Our auditor will expect to see evidence that the above actions have been carried out.

Where there is no evidence relating to the above steps of ALL IP rollout preparation, the audit reports will record findings on the basis of the following escalation:

- Audit note from the present to 30th June 2022.
- Improvement observation from the 1st July 2022 until 31st to December 2023.
- Improvement need from 1st January 2024 onwards.