



Lift Owner News

Subject: Analogue telephone line shutdown and migration to VOIP-based services

Summary:

The switchover from (and removal of) traditional telephone lines to fibre lines using voice over internet protocol (VOIP) has the potential to seriously disrupt the operation of lift alarms connected to the Public Switch Telephone Network (“land lines”). It is important to consider the following:

1. When are telecom upgrade works planned in your area? Check with your lift maintenance company if your current lift alarm device is compatible with the new line. In many cases, a new lift alarm device may be needed.
2. The lift alarm system (including any accessories e.g. GSM module), any fibre connection adapter and all stations supporting the system should have a backup battery supply for a minimum of one hour duration, which is able to send an alert if the charge drops below that level.
3. Many lift alarm devices connected to the PSTN use Dual Tone – Multi Frequency (DTMF or “touch tone”) tones to transfer data. Compatibility of these over the VoIP system needs to be checked.
4. Switching to use of the GSM network might avoid many of the issues of switching to fibre and using VOIP.

Background

BT Openreach’s “Fibre First” programme aims to make Fibre to the Premises (FTTP) broadband available to three million UK homes and businesses by the end of 2020. BT’s objective is for all buildings to be on fibre connections and for these to replace the current public switched telephone network (PSTN) lines by 2025. This system would then utilise a Voice over Internet Protocol platform (VoIP), which transfers voice & data over the internet. This upgrade will have implications for both lift owners and the lift industry.

Since 1999, the Lifts Regulations have required all new lifts to be fitted with an alarm device with two way voice communication between the lift car and a rescue service. The harmonised standard for alarm devices is BS EN 81-28. The Lifts Regulations and BS EN 81-28 do not specify the type of communication link to be used but do require the owner/client and lift provider to agree this.

The PSTN has been widely used to connect alarm devices (aka auto-diallers) as it is:

- almost universal availability so provides a standard solution;
- high reliability and availability, even during a power cut in the building;
- line power is used for some older alarm devices so avoiding a backup power supply;
- data can be transmitted over the voice line using DTMF tones.

Other communications links can be used e.g. GSM mobile communication network, VoIP, or

a hard-wired link to a nearby permanently available rescue service. The communication link is typically under the responsibility of the building owner.

Current solutions

A large majority of alarm devices are connected to the PSTN and therefore represent a challenge for the switchover to VoIP.

GSM mobile networks are increasingly used and have a number of benefits:

- lifts can be completed without a PSTN line e.g. in new buildings and where only a fibre connection is available;
- GSM equipment on the lift can be readily battery-backed ensuring its alarm system can still work in the event of a power failure as required by BS EN 81-28;
- concerns with signal strength and availability can be addressed by using a roaming SIM which, rather than being tied to a single provider, can find and use the strongest network available;
- Data can be readily transmitted over the mobile network.

New fibre connections

At some time in the future, VoIP based lift alarm systems are expected to become widely available. In the meantime, where a fibre connection is provided, there are issues which need to be discussed and agreed between the lift owner and the lift provider including:

- Is an interface available which offers a PSTN connection e.g. BT Openreach's Optical Network Terminator (ONT)? If it is intended to use this, has compatibility with the lift alarm been checked e.g. transmission of DTMF tones, line voltages?
- Is the owner's communication link provided with a backup power supply? For example, BT Openreach's ONT can be fitted with a battery backup. If not, in the event of a loss of the power supply (which could cause passengers to be stuck in the lift car), it would not be possible to transmit an alarm call.
- If the owner's equipment is battery-backed, what measures are in place for maintenance of any batteries? New lift alarm systems to BS EN 81-28:2018 now have an indicator if the battery backup has insufficient charge but this would not cover any battery in the telecoms equipment which is the owner's responsibility.

Any replacement system needs to meet the current standards and provide at least an equivalence with the current systems in use.

Considerations with existing alarm systems

If looking to change the type of communication link to the lift alarm device, owners are advised to seek the assistance of their lift maintenance company who would check with the alarm device provider, the compatibility of the device with the type of link proposed and the continued compliance with the standards.

If the alarm device is changed, care should be taken to ensure the new system is at least to an equivalent level of safety. Since alarm systems might also have been installed for the top of car and the pit, these should be retained unless shown through risk assessment that there is no risk of a person being trapped in these areas.