Heavy Duty VoIP Telephones

Application guide:
Educational facilities

This document considers how educational institutions can improve safety by the provision of SOS help point telephone solutions inside University Campuses, in Car Parks or areas where Students may feel vulnerable or unsafe at night. This document also looks at critical issues that needs to be addressed when selecting an effective telephone solution.

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Document Number: E10004

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A challenge for educational facilities
New accountability measures. New performance initiatives. Increased focus on educational achievement. Less budgets. Now more than ever, it is important to find ways of reducing costs, increase efficiencies whilst delivering improved educational services.

Increased focus on security
Over the last few years, there has been several high profile violent attacks inside schools grounds and on university campuses leading to an increased focus on school safety. Educational establishments are now facing mounting pressure to look after students whilst they are on the school grounds.

Deploying security guards and large scale CCTV solutions are often prohibitly expensive and many institutions are therefore searching for alternative efficient ways of providing student safety, whilst decreasing administrative costs.

The answer: reduce incidents and improve emergency response time with SOS telephones
The installation of SOS help point and emergency telephones in schools, universities and campuses is a tried and tested method of improving student welfare. Studies have shown that over 75% of the public think that the SOS telephone act as a deterrent to potential crime, and over 80% of students feel reassured by the presence of SOS telephones.

Aside from providing reassurance to members of the public, there are two key unique benefits with using SOS help point telephones in educational facilities. First, by virtue of using the SOS telephone, the telephone location is immediately known to central control room staff, whilst students calling help-lines via mobile telephone device do not neccessarily know their exact location at the time of the call. This means that control room staff can pinpoint the exact location of the incident and send out a faster emergency response.

Second, the autodial on handset lift feature means that the caller simply have to lift the handset to automatically be connected to the control facility. This means that students do not have to worry about what number to dial in an emergency.

How do SOS help point telephones work?
The SOS help point telephones are typically connected to a 24 hour remote monitoring centre and the telephones can both be used for communication in case of emergency, or for general public information purposes.

Typically SOS emergency or help point telephones are installed:
- Inside University Campuses
- In car parks
- Throughout playing fields and outdoor areas
- In other places where students may feel vulnerable or unsafe at night

In the remaining part this document we shall look at some of the issues that needs to be addressed when selecting your SOS help point telephone solution.

VoIP vs. analogue telephones?
In educational facilities, the telephone of choice will almost always be a VoIP telephone. There are many reasons for this, but mainly, since the VoIP telephone can use IP data networks it has a number of unique features compared to traditional analogue systems.

One feature, found on all Norphonic telephones, is the remote management functionality which allows a central operator to load new telephone software updates remotely, switch the telephone on/off, sense if the hook is in an on/off position and monitor the condition of telephone components.

Another Norphonic feature is the unique automatic self monitoring and fault check function which automatically monitors all telephone components. This greatly reduces maintenance costs for the end user.

What to look for in a Heavy Duty VoIP Telephone solution?
There are many issues that needs to be addressed prior to commissioning a VoIP system for educational facilities, such as evaluating the installation environment, functionality and temperature ranges. Below are some key pointers to look at when choosing your VoIP Telephone:

- Is the telephone weather resistant? SOS help point telephones are often placed outside or in areas with no or little supervision and therefore need to be robust to deal with attempted vandalism as well as exposure to rain, extreme temperatures and dust. An IP rating to IP65 is therefore recommended for outdoor educational applications. See definition of Ingress Protection in the below Glossary for further information.

- Is the telephone based on open SIP standards which will allow connectivity to your existing networks and systems? IF the product is based on open standards, this will also mean that the product installation can be upgraded or changed in the future without having to change the entire system.

- Does the telephone incorporate a self monitoring and fault check function? This means that the status of the telephones can be monitored from a remote location, saving you considerable maintenance costs.

- Does the telephone incorporate VSQ - Voice Sound Quality? This is a standard feature in all Norphonic telephone systems, ensuring loud and clear sound, even in noisy ambience areas.

- Is the telephone condensation proof? –This can otherwise lead to severe problems in operation as water can easily form inside the unit, affecting performance.

- Does the VoIP telephone incorporate a QoS – Quality of Service functionality? This feature, found in all Norphonic telephones, guarantees a certain level of performance in a data flow, ensuring immpeccable delivery of voice communications in an IP Network.

- Is the telephone CE approved? CE marking means that the product is certified to meet EU consumer safety, health or environmental requirements. End users should be aware that some telephones use the intentionally confusing term ”CE” for ”China Export”, and the only way consumers can check this is to closely examine the CE mark/ logo as the two logos are very similar.

GLOSSARY

- **Norphonic** – A leading manufacturer of heavy duty VoIP telephones that are used in a wide variety of industrial applications worldwide, including wind turbines, transport (air, sea, road, rail), industry, mining, public places and other emergency areas.
- **Heavy Duty Telephone** – generic term for industrial type telephones used in challenging environments. For example telephones that that are exposed to high levels of air humidity, dust, vibration, shock, extreme temperatures, rain, seawater or attempted vandalism. Heavy duty telephones is used in many applications including transport, offshore, production floors, chemical processing sites, mines, transit tunnels, university campuses and other public places.
- **VoIP Telephone** – Voice over Internet Protocol is a general term for delivery of voice communications (voice, facsimile and voice-messaging applications) over an IP network, rather than the public switched telephone network (PSTN). Other related terms frequently encountered and synonymous with VoIP are IP telephony, Internet telephony, voice over broadband (VoBB), broadband telephony and broadband telephone.
- **SIP** – Session Initiation Protocol, is the most widely used signaling protocol for controlling multimedia communications sessions (such as voice and video footage) over Internet Protocol (IP).
- **Industrial Telephone** – General term for a telephone used in challenging areas, for example production floors, wind turbines, machinery or other industrial environments.
- **Point to Point Communication Telephone** – used to communicate between two points, often installed in large lifting machinery, cranes, underground mines and wind power systems. Usually, point to point communication telephones are hooked up directly with each other, eliminating the need to go through a private automatic business exchange (PABX) or a common telephone carrier**.**
- **Service Telephone** – used by service engineers and maintenance personnel to communicate with a central control room
- **Seawater Resistant Telephone** is a description of telephones that are resistant to corrosion from seawater, often metal coated with a protective solution paint.
- **Vibration Proof Telephone** – Description of a telephone that is tested and approved to withstand ongoing vibrations, frequently encountered in emergency roadside or railway applications.
- **Shock Proof Telephone** – Description of a heavy duty telephone that has been tested and approved against shock and heavy impact.
- **IP Rating / Ingress Protection Rating / Index Protection** –The IP rating classifies the degrees of protection provided against the intrusion of solid objects, dust, accidental contact, and water in electrical enclosures. The standard aims to provide users more detailed information than vague marketing terms such as "waterproof". The standard consists of the letters IP followed by two digits and an optional letter: for example, the Norphonic Heavy Duty VoIP telephone have been approved to the highest rating against dust *”dust proof”* (6) and can be sprayed with water by a water jet from any direction without any harmful effects (5). Therefore, in this case, the Norphonic Heavy Duty VoIP telephone has a rating of ”IP65”.
- **Weather Resistant Telephone / Weather Rating** – Usually a common descripton of a telephone that is rated according to the IP (Ingress Protection) approval tests, but is sometimes also used to define a telephone which can withstand extreme temperatures. See ”IP Rating / Ingress Protection Rating / Index Protection” for further information.
- **Waterproof Telephone / Water Proof Telephone** - Description of a telephone that is sealed and immune to water, frequently needed in outdoor environments exposed to rain, snow and mist. However, the word ”waterproof” is a common marketing term, and is better defined in the Ingress Protection Rating codes, see also ” IP Rating / Ingress Protection Rating / Index Protection ” for further information.
- **Dust Proof Telephone** – Description of a telephone that is sealed and immune to dust. Such telephones are regularly needed in dirty environments such as inside heavy duty production

environments and utility sites. See also ”IP Rating / Ingress Protection Rating / Index Protection” for further information.

- **RoHS** – product approval code, confirming that the telephone units does not contain lead, mercury, cadmium, hexavalent chromium, poly-brominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE).
- **CE mark** - is a mandatory conformity mark on many products placed on the single market in the European Economic Area (EEA). The CE marking certifies that a product has met EU consumer safety, health or environmental requirements.
- **Electromagnetic compatibility (EMC) tests** - indicates if a product has been tested / approved against unintentional generation, propagation and reception of electromagnetic energy with reference to the unwanted effects (Electromagnetic interference, or EMI) that such energy may induce.
- **QoS** –Quality of service is the ability to provide different priority of voice and data flows, or to guarantee a certain level of performance to a data flow, ensuring immpeccable delivery of voice communications in an IP network.
- **Voice Sound Quality (VSQ)** – is a voice quality feature found in Norphonic telephones, treating the sound so that it is heard extremely clearly even in noisy ambient areas.
- **Noise Reduction** - is the process of reducing noise in a communications signal.
- **Self Monitoring and Fault Check** – is a feature in Norphonic telephones, allowing the telephone to carry out automatic health-check and fault sensing and communicate this, thereby improving uptime and performance whilst reducing maintenance work.
- **PABX hotline / Hot-line** – describes the feature where a hotline is immediately connected when the handset is lifted.
- **Autodial on handset lift** – describes the feature where the telephone will automatically dial a number when the handset is lifted, thereby eliminating the need for the user to remember a telephone number when in distress.
- **Armoured Stainless Steel Cord** – description of a Norphonic telephone cord (vandal proof).
- **Braille** - Braille system is a method that is widely used by blind people to read and write, invented by Luis Braille in 1822 and used on many telephone keypads worldwide.
- **Modbus** – (UDP open protocol) enabling the remote access for status monitoring and control, for example link status, handset on/off and monitoring the condition of telephone components. Comes as standard on all Norphonic telephones.
- **SNMP** - Simple Network Management Protocol, is used in network management systems to monitor network-attached devices for conditions that warrant administrative attention.
- **LAN** – Local Area Network
- **PABX / PBX / EPABX** - A private automatic branch exchange (PABX) is a telephone exchange that serves a particular business or office, as opposed to one that a common carrier or telephone company operates the general public.
- **PSTN** - The Public Switched Telephone Network (PSTN) is the network of the world's public circuit-switched telephone networks, in much the same way that the Internet is the network of the world's public IP-based packet-switched networks. Originally a network of fixed-line analog telephone systems, the PSTN is now almost entirely digital and includes mobile as well as fixed telephones.