TRANSITION FROM ANALOG TO DIGITAL LINES
IMPACT ON THE LIFT INDUSTRY

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TRANSITION FROM ANALOGUE TO DIGITAL LINES

• Many European countries are experiencing today a transition from networks based on time-division multiplexed (TDM) circuit-switched voice services running on copper loops (analogue lines) to all-Internet Protocol (IP) multi-media networks using copper, co-axial cable, wireless, and or fiber as a physical infrastructure.

• Such a transition has many impacts on our industry.
ELA/EEA TELE-ALARM WG MISSION

• Define the situation for remote alarms, and issues that it raises in Europe.
• Analyze the current interoperability (e.g. in France and in the UK) of remote alarms on lifts.
• Contribute to the revision of EN 81-28.
• Define industry’s position on VOIP.
• Prepare proposals for actions for approval of the Codes & Standards Committee.
A small reminder of how tele-alarms work

• Since the current telecom networks and technologies are intended for voice or data to be transferred over the network, they operate in either voice mode (normal phone call) or data mode. Several technologies are used in the field to transmit data:
  – classical or specific modem modulations,
  – DTMF (the tones generated when pressing the keypad during a phone-call) mixed with single frequencies, pulse sequences, pure frequencies. The DTMF is seen as a manual way to command automated services, such as banking or voice services (“press 2 for order”), where a person interacts with a “machine”.

• Most lift emergency telephones use voice mode (see above) based protocols to inform the rescue service of the origin, localization and reason for the call.
A small reminder of how tele-alarms work

• As VOIP is very fragmented, there is no standardised method of managing protocols in an emerging market. Even though SIP and H323 are the most used protocols, plenty of parameters and CODEC (G711, G729…) can be utilised, creating communications variables beyond the control of emergency telephone manufacturers. This means there is no chance for manufacturers to develop a universal solution which provides the reliability required for emergency telephones. If a VOIP system is utilised by the end user, and elevator emergency phones are to be attached to this system, then the following need to be thoroughly considered:
  – Protocol compatibility between the VOIP system, the network provider, and the emergency telephone being used.
  – An external back-up power supply of all stations supporting the system. The charge of the battery should be controlled to check if the system can provide a minimum of one hour conversation as requested by EN 81-28.
Unstoppable transition to VOIP

• Ongoing transition, from networks based on time-division multiplexed (TDM) circuit-switched voice services running on copper loops to all-Internet Protocol (IP) multi-media networks using copper, co-axial cable, wireless, and or fiber as a physical infrastructure, has been on of the major topics of the Tele-Alarm work group.

• Such transition has begun in various European countries (i.e. Switzerland, Germany), whereas other countries have set discontinuance schedules (France, Belgium). Same applies to the USA.
France case study

• Fédération Française des Télécoms has announced:
  – Discontinuance of sales of analogue lines as of January 1st 2019.
  – Progressive dismantling of analogue lines as of 2021 (delayed to 2022) with an official prior discontinuance notice of 5 years for each concerned “plaque” (ie 150,000 lines).

• Fédération Française des Ascenseurs, together with various federations impacted by this technology transition, is an active member of two working groups set up by Fédération Française des Télécoms:
  – First WG is focused on defining state-of-the-art network settings for future native IP phone systems.
  – Second WG is focused on legacy systems i.e. already installed alarm systems based on analogue systems using mainly DTMF for identification purposes.
France case study

• One of the major issues that appeared during the various meetings of these working groups is the fact that IP-based backbones will discontinue a legacy line-powered service which was the ultimate help in case of total power supply blackout. US FCC has pointed this issue for emergency calls (911) in a document focused on the same subject.

• The other issue is the fact that Telco Operators, despite the fact that they are active members of these Working Groups, tend to propose end-user equipment whereas tailored-made solutions have been asked.
France case study

• According to EN 81-28 the power back-up should allow one hour communication.
• Telco operators in France are arguing today that 48v power supply available in analogue line was not due to an obligation or a norm. Accordingly, they insist on the fact that power back-up is the responsibility of lift companies.
• The main concern is thus where will the back-up and modem be placed, who will access this equipment, who will check the charge of the ups,....?
France case study

• For many lift companies, the alternative solution seems to be the gsm gateway which usually has a controlled back-up power supply.
• But we should keep in mind the fact that in many countries, schedule for transition from 2G technology to 3G, 4G etc is not available yet, keeping in mind that prices of modules can vary a lot from one technology to another.
Lift Industry position on VOIP

• In consideration of all this the Tele-alarms working group has:
  – Made a request for clarification to almost all European telco operators. The only answer was received from Orange, which furthermore has authorized ELA/EEA to translate into English the white paper they have delivered previously to Fédération des Ascenseurs.
  – Issued a Tele-alarm White Paper intended for circulation between members of ELA/EEA.
  – Informed its members, when possible, of what was done by national tele-alarms groups, mainly in France and in Germany.