

## News on communication channels

We are coming closer and closer to the “magic” year 2018. According to TELEKOM, all old connection lines are supposed to be a thing of the past and shifted to the new NGN by then! This has significant effects on safety engineering. Any alarm devices and emergency call systems that do NOT use internet protocol (IP) are in the balance!

...in our case it affects any lift emergency call systems using DTMF communication. They transmit information on the location by sounds that are received and evaluated by the control centre. Based on the fact that these sounds are actually composed of 2 tones – so-called upper frequencies and lower frequencies – it is essential to transmit these tones with the entire frequency spectrum, otherwise they will no longer be detected correctly by the receiving end. ...but precisely this is the problem of IP! Internet is a network of data, not of analogue tones. It means that sounds will be converted to data. As data in VoIP (Voice over IP) are usually compressed in order to use the bandwidth for as many other connections as possible, the problem of cut upper and lower frequencies in compressed DTMF sounds arises. So to speak, a part of the upper tone and a part of the lower tone is cut off, only then it is sent. The missing frequencies are not that important in the case of voice communication, in order to detect the tones, however, the “integrity” of the entire frequency range is indispensable.

### Alternative: the GSM network

Currently, transmitting these emergency calls via GSM network seems to be the only feasible solution. Even so, the GSM network uses strong compression and will sooner or later only permit data – whether we like it or not (see surrounding European countries). According to Telekom, this is not yet scheduled in Germany, but those who know the providers are aware that the first applications already use the LTE network. At the moment, however, GSM is still an alternative to the NGN landline. A conversion of the GSM network is certainly not to be expected in Germany before 2020.

### IP over GPRS

How integration of IP in the GSM network (mobile telephony IP) can work is shown by the company MS-Mikroprozessor-Systeme AG (MS-AG) with their MS Digifon 4101 and 4104 lift emergency call systems. These establish an IP (data) connection to the control centre via GPRS and transmit any required information safely and quickly in data format. This avoids data transmission in the voice channel, which is fraught with risk due to interference and compression. Then the uncritical voice communication to the control centre is established via voice channel and the trapped person’s emergency call will be handled. This is the most reliable way of data transmission in the GSM network that can currently be used!

### Conclusion

If you want to spare yourself questions like “it did work yesterday, why doesn’t it still work today?”, specialist companies should raise their customers’ awareness for shifting to the new network!