

House cabling the easy way – the trend towards structured wiring in residential buildings

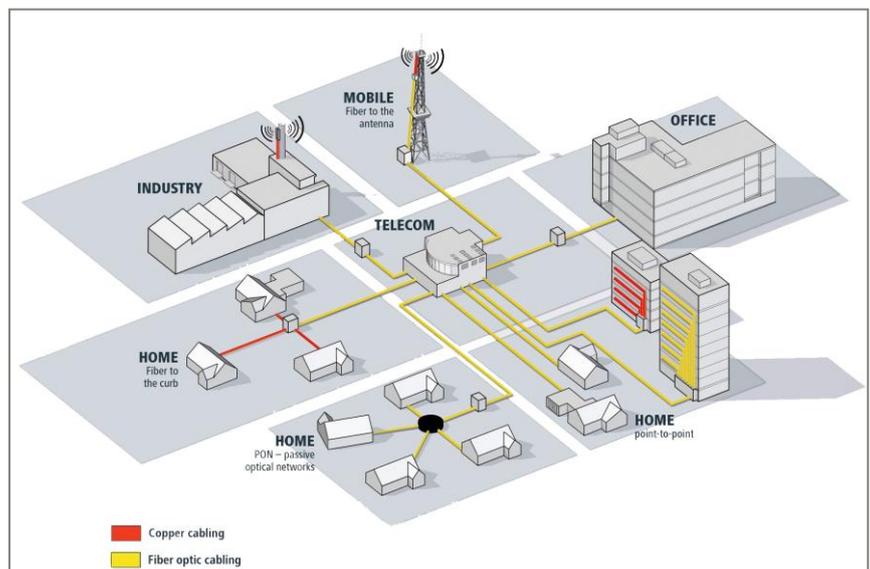
Ethernet and the Internet Protocol (IP) began moving into the home a long time ago. More and more apartments and single and multiple family dwellings are being equipped with IP-capable wiring. The first products were available years ago but the trend towards structured wiring in housing has recently been gaining impetus. It's high time that the installation trade started dealing with the topic. What needs to be considered? What needs to be installed and how?

This series of articles aims to answer these and other questions from a practical point of view. The different articles deal with the necessary groundwork, the basic standards, planning regulations, suitable products, project examples and above all: installation in practice.

High data rates are becoming economical

The idea of the Smart Home is not new. Ideas, concepts and individual products frequently appeared in the press. The idea is now catching on. In 2010 the sales volume for home networks was already 2 billion Euros

(source: VDI News). Successful pilot projects have shown that high data rates are also economically possible for the end user. With FTTH (Fibre to the Home), whole neighbourhoods were connected up with glass fibres right into the individual houses and LTE (Long Term Evolution) enables high data rates in rural and structurally weak regions in which it is not worth



laying glass fibre cables. And the German government plans to bring High-Speed Internet with 50 Mbps to three quarters of all households by 2014.

Applications in the home

The equipment manufacturers support the trend towards IP-capable devices: TVs, game consoles, hard drive recorders and even electricity meters are offered with an IP port. According to an EU resolution, 80% of all households should be equipped with a digital electricity meter (Smart Meter) by 2020 (source: VDI News). These meters save about 5 to 10% of electricity costs. An additional tariff switching device is no longer necessary.

The providers are also joining in: IP-TV sets no longer receive a CATV signal – neither analogue nor digital – but data packets based on Ethernet. And many stations already provide their TV and radio programmes on the Internet.

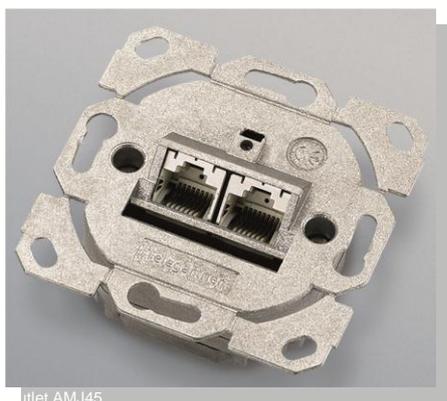
The list of possible IP applications in the home is long and is growing constantly. To name just a few examples:

home cinema, monitors, heating systems, central heating thermostats, electricity meters, water and gas meters (with IP adapters), video surveillance - all these are now being offered with an Ethernet port.

Meaning for the installation trade

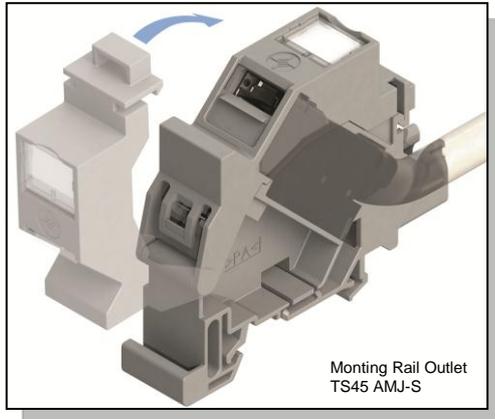
The trend towards IP-based devices and applications in the home will continue to increase

considerably over the next few years. Equipment manufacturers, network operators and providers are all pulling together. It's about time that the installation companies adapted. Structured wiring is no sorcery when you know how to do it. And it offers real added value for the installation trade. The successful tradesman can rise above competitors and "cheap offers" with competent consulting and professional installation. Even in times when DIY stores and supermarket chains offer installation materials at



throwaway prices, there are still customers who know how to appreciate consulting and quality – and who are willing to pay a reasonable price for it if they consider it useful.

Of course, setting up an efficient, future-safe IP infrastructure is more than just connecting a PE socket. There are now eight wires instead of three and the stripping dimensions are much more critical. But exactly that is another advantage for the installation company because many end



users are out of their depth with the professional installation. High data rates separate the weak from the strong. Cables must be laid with the admissible bending radii, wall outlets must be connected professionally and a specialist is a must at the latest when distributor modules have to be installed in sub-distributor boxes. The same applies for acceptance measurements as proof of professional execution and for troubleshooting. The layman lacks the necessary equipment and knowledge.

He can only see that there is something wrong by the result. He needs a professional more than ever to find the cause and fix the fault.

House wiring in reality

House wiring is still neglected in too many residential building projects. This leads to unattractive and expensive retroinstallations which could be avoided if the house wiring were given due consideration from the start. Many builders and installers are still reluctant to approach this topic but it is not really difficult when you know what is important.

The basis is a structured wiring which is similar to that in an office building and is adapted to the special requirements of residential buildings. Cables of category 6_A or 7 are laid in conduits or below the wall surface and connected to attractive, designable wall outlets. The distribution panel and active network components are accommodated in the cellar or in an isolated panel in the electrical distributor or in their own small sub-distributor.

It is important that the individual components are adapted to each other. And a good solution must be both user-friendly and installation-friendly.

Read in the next issue:

Wiring in single and multiple family dwellings