

Small communities in a big way

With Remote-PHY to fast and cost-effective Internet

In Switzerland, Internet reception is guaranteed down to the smallest community. Nevertheless, there is a need for action: customers want ever higher surfing speeds, while network operators strive to optimize costs. The telecommunications company R. Geissmann AG, the provider ImproWare AG and the equipment manufacturer DELTA Electronics can cover both needs, thanks to a straightforward collaboration.

By Andreas Bartels, R. Geissmann, and Renato Cathry, DCT DELTA-Swiss AG

Cable networks of e.g. cooperatives or municipalities with a few 100 to several 1.000 subscribers usually have their own fiber optic networks within their service area, but require an external connection to a provider. This requires the leasing of long feed lines and, depending on the number of fibers, is associated with considerable expenses. Another challenge is that, despite considerable time pressure, there is often no budget for extensive building activities. In addition, it should be possible to continue using the available space in a rack or even in an outdoor cabinet in the interests of maximum efficiency.

The search for the ideal solution

Municipalities that are currently dealing with the above-mentioned questions usually bring a specialist on board. Such a

specialist in Switzerland is R. Geissmann AG, which has a lot of experience in the construction, operation and maintenance of multimedia networks. In the course of a careful evaluation, it could be solved by a classic processing with analog DS laser and analog US receiver via CWDM or DWDM, which – however – would be even more expensive. In addition to more power consumption and space, it would also require more fiber optics. "To get around this, we use Remote-PHY," says Andreas Bartels, the head of technology at R. Geissmann AG. "This allows us to handle virtually everything via a single fiber."

A powerful provider and the right manufacturer

ImproWare AG acts as a swiss provider for Internet, telephony, linear TV, video on demand and mobile by coupling



About DCT DELTA AG

DCT DELTA AG is one of the leading manufacturers of system solutions in the field of broadband transmission for cable, satellite, and fiber infrastructures. From hardware to software, we offer intelligent and high-quality solutions "Made in Germany". Our customers include major cable network operators and satellite operators around the world. The DELTA Electronics brand stands for perfect connections.

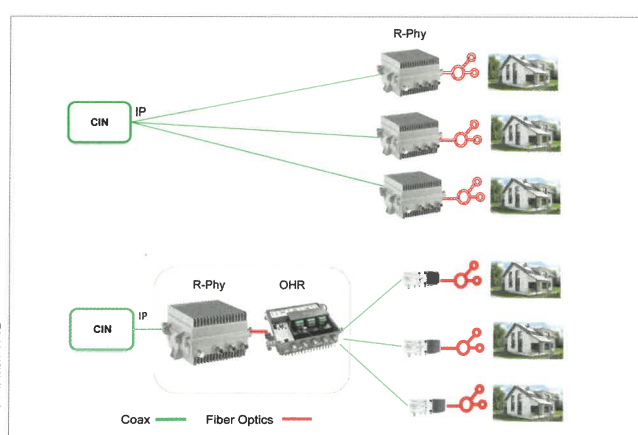
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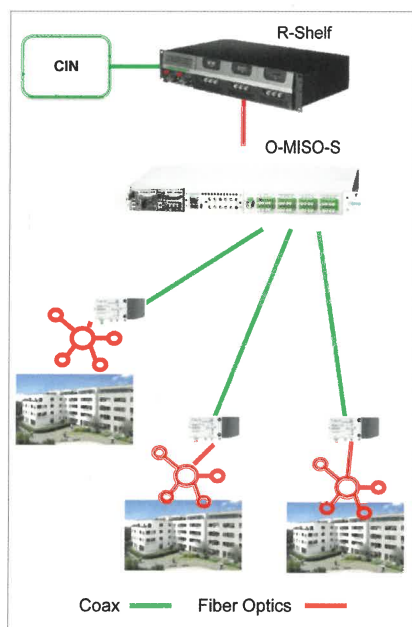
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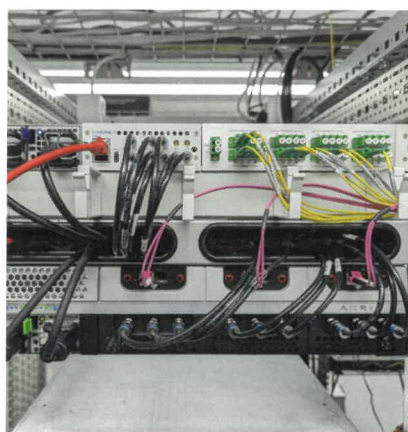
Thanks to their compact design, DELTA's Remote-PHY nodes can be easily accommodated in an outdoor cabinet. Low costs and fast deployment are further advantages of the solution.



The combination of a Remote-PHY node and an inverted node (OHR) is ideal when only a small number of modems need to be supplied



If, on the other hand, many users need to be connected, a large Remote-PHY shelf wired to an O-MISO-S chassis from DELTA is preferable.



Here, too, the space requirement is small, so that the scalable solution can be housed in a rack. In addition, there is no need for electrical interconnection and no US lasers and DS receivers. That lowers the costs.

traffic aggregator using the Remote-PHY and the ideal cost-benefit ratio. The speed at which the expansion can be achieved is also almost unrivaled.

For communities or areas with a lot of users, on the other hand, a large Remote-PHY shelf is used, which is wired to a DELTA Electronic O-MISO-S chassis. In this case the subscribers can be connected over a long distance (up to 7 km) with maximum performance and the space in a rack is completely sufficient for this. On top of that, this solution requires no electrical interconnection, no DS lasers and no US receivers, which massively reduces the price and power consumption. This can be easily set up, expanded and scaled up to several thousand subscribers. The necessary upstream and downstream segments can be defined by the DELTA chassis via the configuration interface and can be changed at any time. No time-consuming cabling and leveling work is required. "Move the light and not the cable". ■

the Remote-PHY node or a Remote-PHY shelf to an Arris E6000 CMTS. R. Geissmann AG transmits the signal for TV and radio from its own processing to the ImproWare infrastructure. But that's not all – the choice of the right material is also crucial to the success of the project. And that's where DELTA Electronics comes in. The equipment manufacturer impresses with excellent support services and products that are attractively priced and require little space and energy.

Compact design, low power consumption, reduced costs per modem

As long as a Remote-PHY node is coupled to about 100 to 200 modems, its cost-benefit ratio is optimal. It is connected via a fiber with a 10 Gbps link and can generate one downstream segment and two upstream segments. However, if the density of the modems is lower, more affordable concepts are required. A combination of a Remote-PHY node and an inverted node from DELTA Electronics is the ideal solution. This has the advantage that everything can be accommodated in one cabinet and the combination acts as a



About R. Geissmann AG

R. Geissmann AG is a telecommunications company based in northwestern Switzerland with a company history spanning more than 50 years. Its customers include municipalities, power companies and other organizations that own multimedia networks. It supports them in their construction, maintenance, and operation, as well as in planning or consulting issues.



ImproWare

About ImproWare AG

ImproWare AG has been a successful IT company in the telecommunications sector for 30 years and is based in Pratteln. Under the brand Breitband.ch ImproWare AG offers end customers in around 80 communities in northwestern Switzerland modern communication services via cable network. Its many years of experience, combined with innovative technology in the areas of Internet and network services, consulting and trading, provide a solid basis for meeting information processing and communications requirements.



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