G@CO-LIGHT

THE GPON-EXTENDER

Stand: 31.07.2023

DELTA Electronics

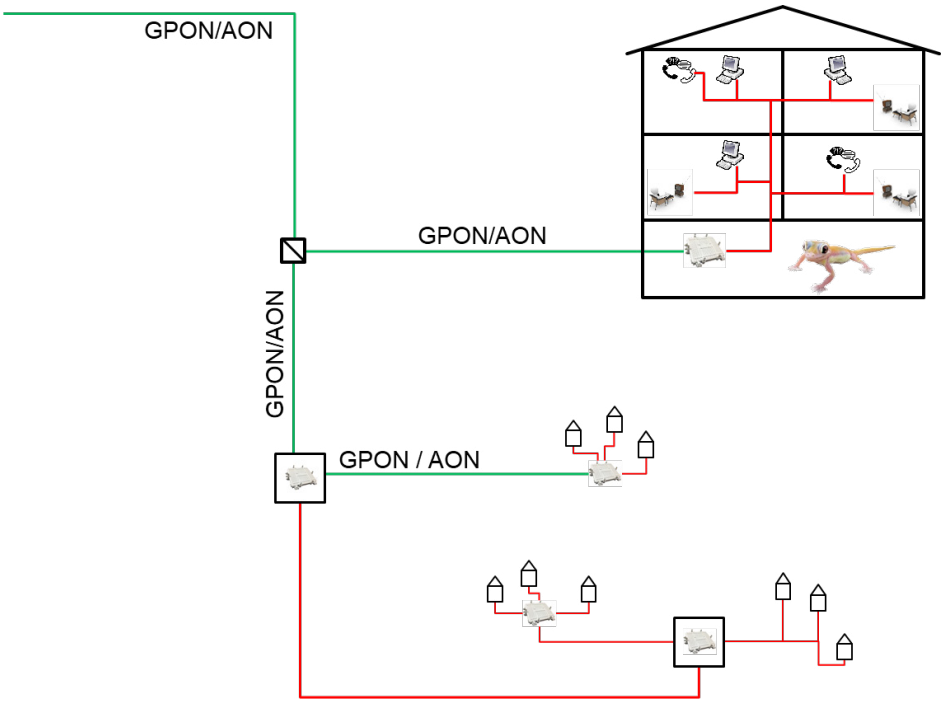
THE CHALLENGE

Network operators have the challenge to supply their customers with higher data rates (1 Gbit/s and more). Fibre optic expansion is essential for this and is continuing to make progress. However, continous fibre to the customer´s living room is very complex and takes lot of time. Especially in the last few meters, ownership structures and interests are very diverse. With the associated financial and organizational expense, mixed infrastructures have had to be used for some time.

THE SOLUTION

The GPON-EXTENDER extends the GPON networks and supports different expansion speeds within a network segment. Until the transitions from FTTB/C to FTTH is fully completed, the GPON-EXTENDER redirect the typical GPON bandwidths (> 1 Gbit/s) with the same quality of service via the existing coax cables up to the appartment of the end customers. For the operator the G@Co-light connection appears in his management systems in exactly the same way as if it were a normal GPON ONU.

- Installation without dust and dirt
- Fast implementation without changes to the foreign infrastucture
- GPON datarates and services to the end customers already today, also via coax cable
- Robustness also via old coax cable structures
- No additional management systen necessary



G@CO LIGHT

G@Co-light is a implementation of the MoCA standard 2.5 as access technology and reachs a data rate of up to 2.5 Gbit/s for up to 31 end customers. Originally MoCA was intended to be invisible and transparent home network technology. At the beginning it was used as a mesh network, now the standard with OFDM modulation has preserved his robustness to older coax cable networks. These technical advantages are fully utilized in access operation mode and are superior to competitive techniques. As access technology the maximum cable distance is limited to 275 meters. Cascading is possible on different ways both optically and via copper. MoCA behaves „virtually transparent“ and the Cable Network Unit (CNU) appears as a optical node (ONU) in the Management system.

ADVANTAGES FOR NETWORK OPERATORS

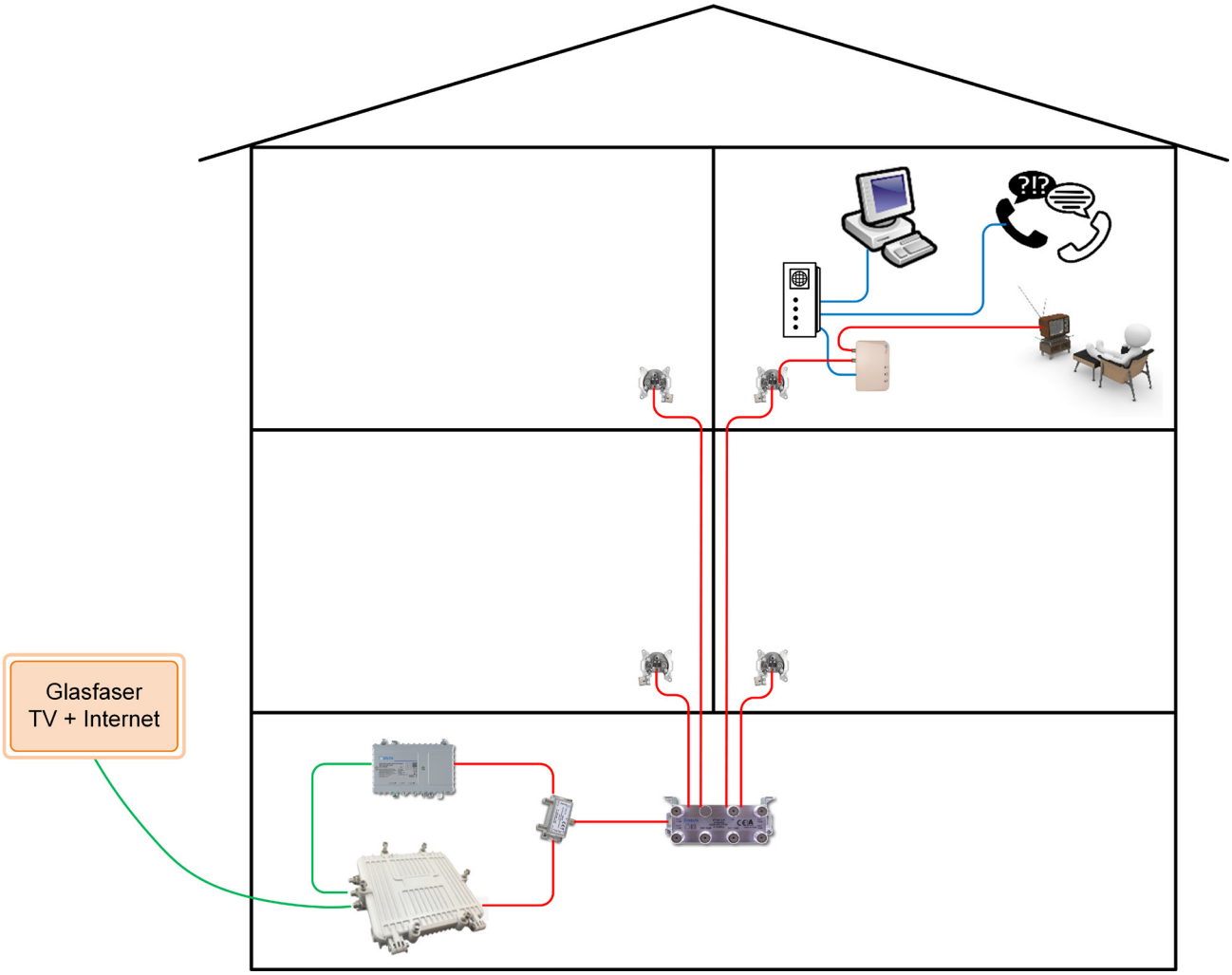
- Instant high data rates and high service quality for the end customer
- Visible and manageable in GPON networks like normal ONU
- No parallel infrastructure neccessary until all customers are reached via FTTH
- Both IPTV and CATV as Overlay possible
- Energy saving by sleepmodedurch
- Various possibilities of power supply

ARCHITECTURE

IP-/ and TV signals are provided via one or two fibre optic lines. The conversion of the TV signals is happening in the fibre node e.G. type ONB, possibly with integrated WDM filter, while the IP signals are terminated with a GPON or P2P SFP+ module in the µNode.

There are 4 coax outputs available at the µNode. Each output supplies up to 31 CNU symmetrical with up to 2.5 Gbit/s. In extreme even a feed of 10 Gbit/s would be used efficiently and completely.

Even at 43 dB attenuation or approx. 270 m cable lengths the full data rate is possible. By separating the frequency ranges for data signals (1125…1675 MHz) and RFoG/RF-Overlay signals (5…1006 MHz) both services can be used parallel.



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