FIBER TO THE ROOM (FTTR)

AT A GLANCE

- A new architecture for fiber-based in-building networks
- Based on passive optical networks (PON) for access networks, but requires smaller split factors (1:4 up to 1:32) compared to access networks
- Data rates of 10Gbps symmetrical
- Ideal for WiFi distribution and coordination: One Wi-Fi access point per room

Features

- When based on XGS-PON data rates of 10Gbps symmetrical can be achieved, 2.5Gbps are also being discussed
- Split ratios of 1:8 and 200m reach proposed for home networks
- For SME/industrial application larger split ratios (1:16, 1:32) and longer reach (1km) foreseen.

Applications

- Next generation of in-building networks
- Densify the wired/wireless infrastructure
- Enable coordination of Wi-Fi
- SME/Small offices/Industrial applications

Technical Background

Fraunhofer HHI is currently working on FTTR networks based on PON technology. Early prototypes use XGS-PON transceiver modules (SFP+).

Fraunhofer HHI is active in ITU-T standardization (G.hn/G.fin/G.vlc)

Main FTTR Unit (MFU) to be integrated with Home router

Sub FTTR Unit (SFU) is either pluggable or dedicated device
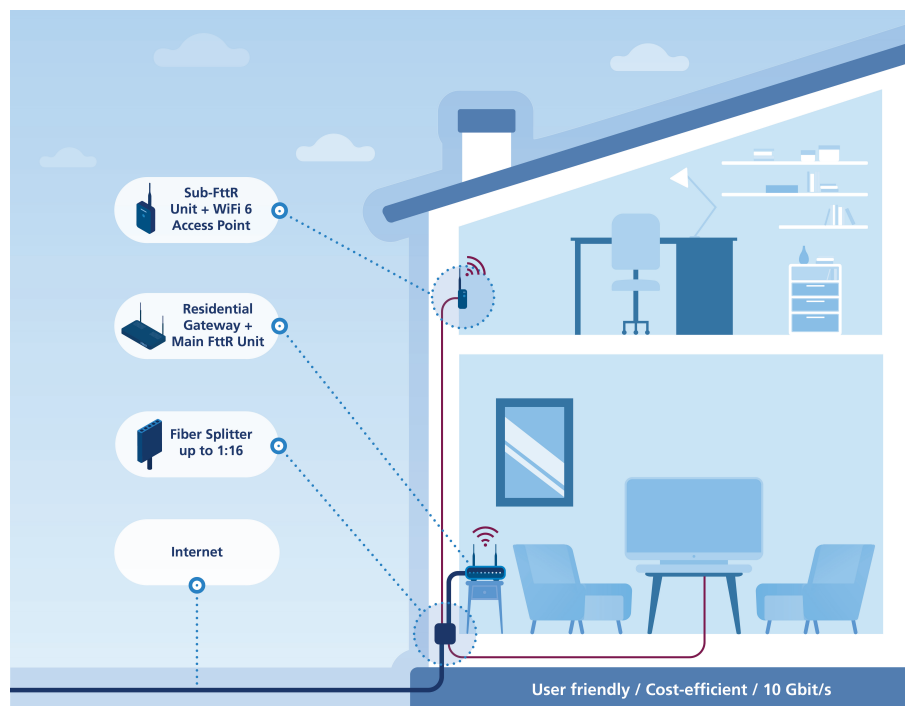
*Fibre to every room (*FTTR*) for WiFi 8 and beyond.*

Prototype

- Usage of XGS-PON pluggables for proof-of-concept prototype with up to 10Gbps

- Ideal to distribute WiFi in home and SME environments

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