Integrated IAD vs. ONT

Open Access

Management

Service Monitoring

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Abstract

The ONT is convenient – it has it’s drawback though, especially in open access or wholesale scenarios.

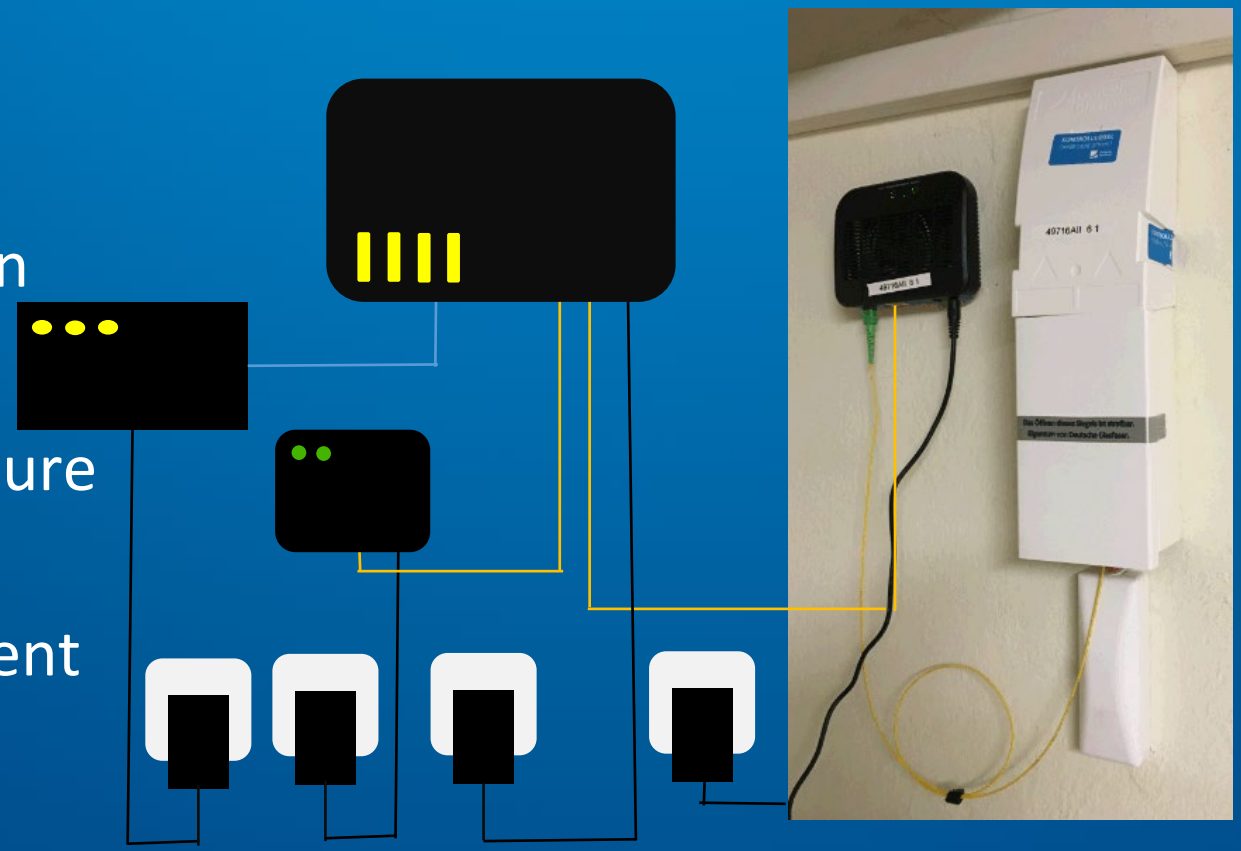
A CPE with integrated Fiber modem has access to a wide range of Fiber line parameters that can be accessed remotely via TR69/USP.

This enables Network Operators and Wholesale Service to monitor the quality of the Fiber line and the experience of Internet users.

FTTH with ONT

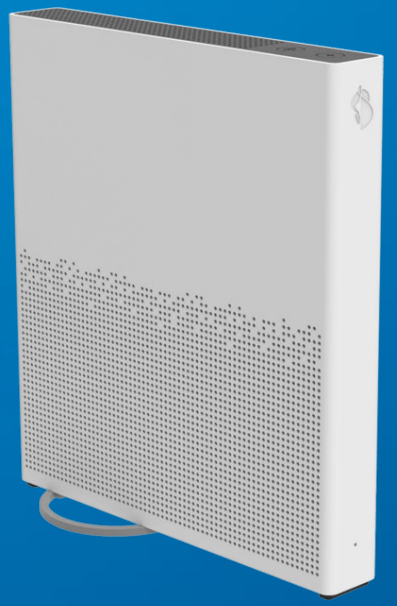
- A lot of stuff on the wall
- Multiple power supplies
- More overall power consumption

- Multiple cables with possible failure points
- Complicated network management systems
- Realtime
- Notifications possible

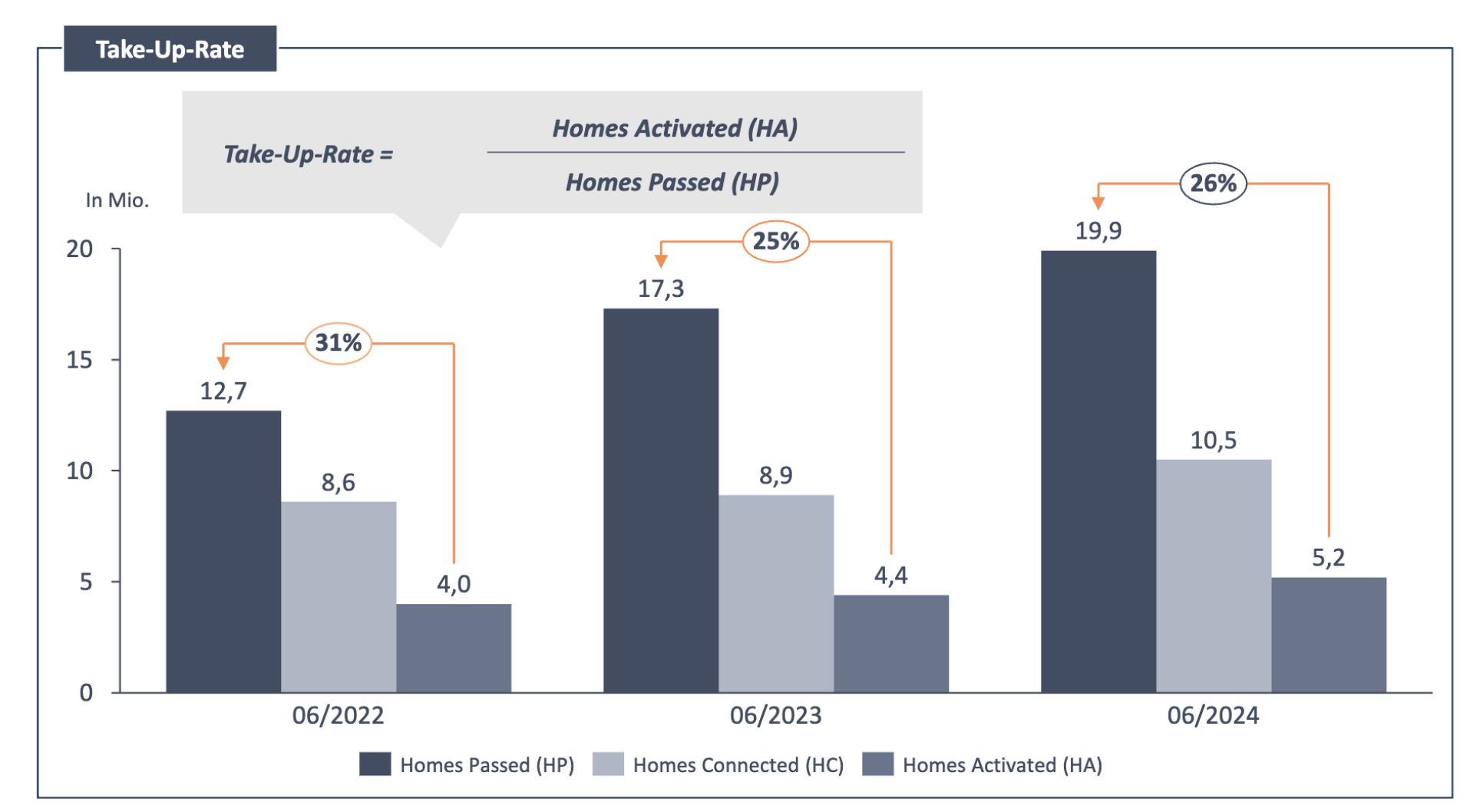


Integrated is the way to go

- Mature fibre markets (usually 3rd generation devices)
- Examples: France, Spain, Switzerland
- One device directly connected to the fibre line



Fibre does not sell itself…



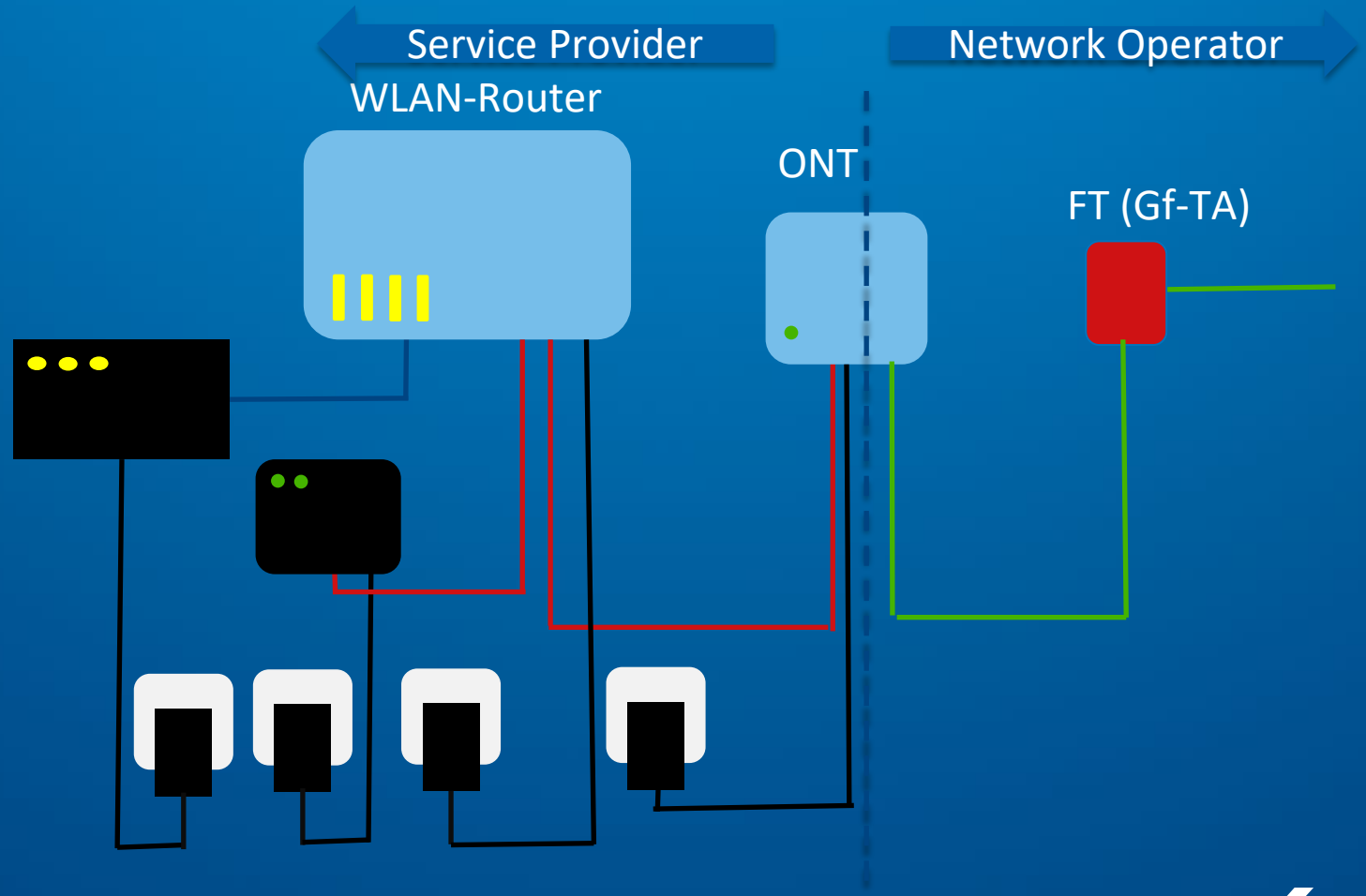
Source: Breko Marktanalyse 2024, https://www.brekoverband.de/schwerpunkte/breko-marktanalyse/

ONT vs. IAD in open access scenarios

- ✚ ONT for a lot of operators easy to integrate and deploy
- ✚ ONT in wholesale scenarios easier to negotiate with ISPs
- ✚ Defined access regardless of network (Ethernet)
- ✖ Complicated in multi-vendor networks
- ✖ Logistics problematic
- ✖ Creates possible bottleneck for Next Gen Fibre
- ✖ Service Providers can’t “see” anything

Fiber Deployments
Situation today – Wholesale with ONT

- # of Fiber infrastructure (network) operators increasing
- ISP (DT, Vodafone, 1&1, OTE, KPN……)
- Complicated & complex Wholesale and wholebuy matrix

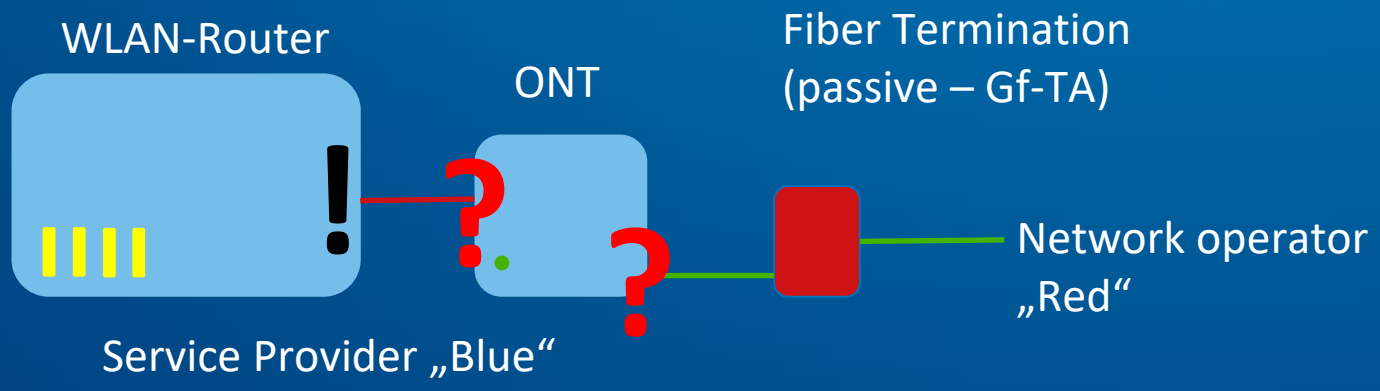


Wholesale with ONT – Blind on Layer 1

Service Provider „Blue“ provides router and manages it

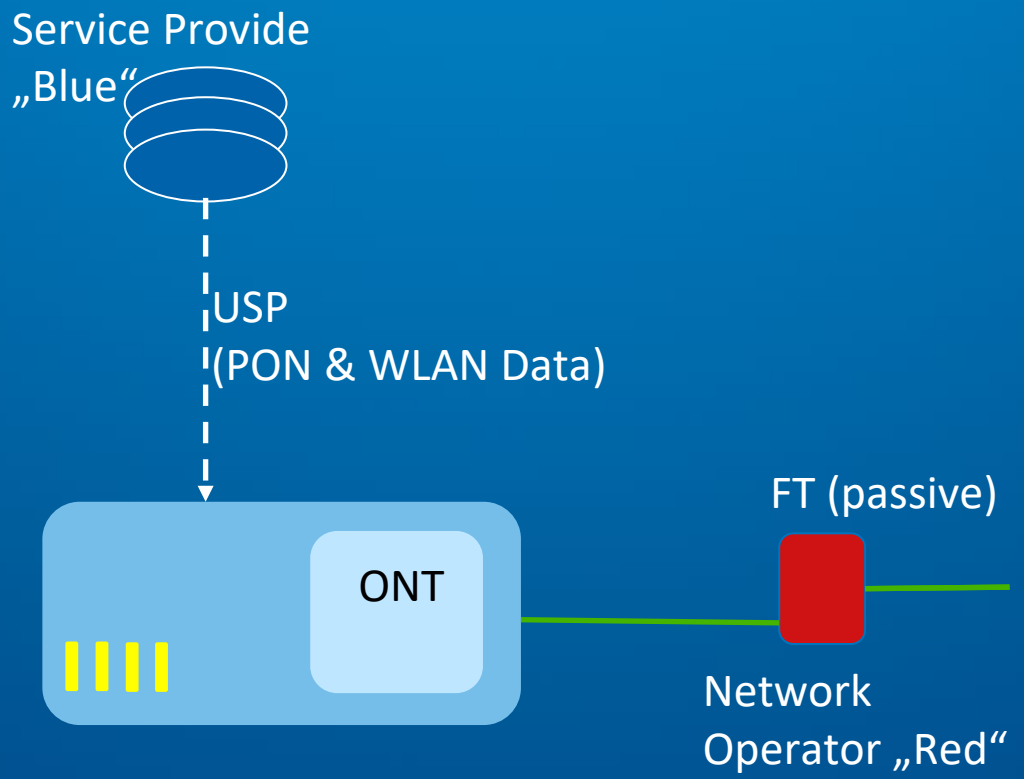
Service Provider „Blue“ provides ONT,
ONT Management via Network Operator „Red“
Challenge:

- i/f between Router and ONT not defined/specified by standard
- Visibility on layer 1 (PON) for Service Provider zero



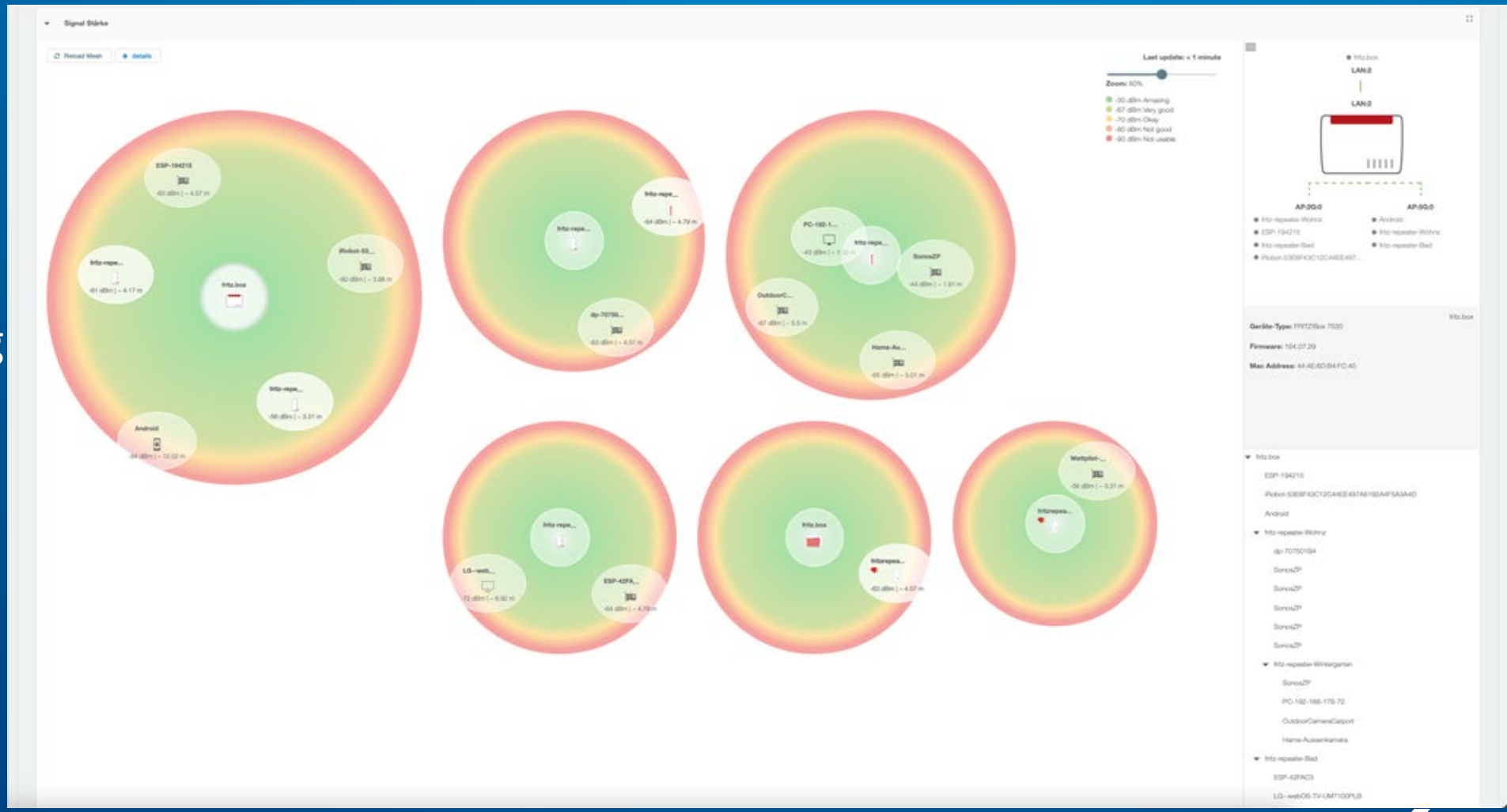
Can USP help? – Yes!

- USP (TR-369) well establish for CPE remote management
- TR-181 already defines objects for PON WAN i/f
- **Service provider has access PON layer data when WLAN router offers ONT functionality (ONT are „merged“ into router)**
- Current trend (similar in DSL & DOCSIS)



Benefits of USP

- USP standardized (based on TR69 frame work & TR-181 data model)
- Eco System established allowing Internet Service providers trouble shooting Wifi issues
- Example: WLAN Mesh
- Similar Analysis possible for PON



Summary

- Network Operator and Service Provide can monitor PON layer parameter remotely
- „Integrated CPE“ with Fiber modem required
- TR-181 (data model for TR69 & USP) already defined KPI for PON layer
- Monitoring & Trouble Shooting for PON layer based on USP infrastructure possible
- No compromises on layer1 OAM when switching to Fiber network
- Further KPI parameter in preparation (i.e. packet counter at different layers of PON layer, training state,…)

Σας ευχαριστώ πολύ

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