Open Building Interconnection Reference Model

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– lightening talk –

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overview

I. Introduction

II. Orientation

III. Characteristics of elements

IV. Interim results

V. Conclusion

VI. Current work / testing methods (only if time left)

Mai 2014 / Leipzig

I. Introduction

What was the task (from my employer) ?

Build and connect a „branch office network“ based on POF (plastic optical fibre) to the „main network“ of HS-Harz

content of the „branch office network“ (some offices in the brand location):

- computers (connected via LAN, POF),
- Printers,
- WiFi Accesspoints,
- some VoIP Telephones …

Preinformation about the results:

There is no „cool & sexy“ solution to do this !!

II. Orientation

Orientation?

(some Institutes for standardization)

www.tiaonline.org

www.din.de

www.ieee.org

www.ietf.org

www.iso.org

www.itu.int

III. Characteristics of elements

1. construction works (cable structures within a building)
   (e.g. from basement to the office / distance to power cable, heating and water pipes, etc.)

   DIN EN 50173 / 50174 – www.din.de

2. active and passive components
   a. cable and media (Cat (5)(6)(7), POF, SM, MM)
   b. passive components (media converter, Switches)
   c. active components (program. Switch, router, WiFi-AP)

   ANSI/TIA/EIA-568-B.1-2001 – www.tiaonline.org

   OSI-Modell - ISO 7498 – www.iso.org

   RFC 6241 – www.ietf.org

3. Electronic services (Definition of basic-services)
   - Internet-Access
   - VoIP (protocols: Sip, h323, rtp)
   - WLAN/Wi-Fi

   IEEE 802.3 – www.ieee802.org/3

   RFC 3261 – www.ietf.org

   ITU H.323 – www.iitu.int

   IEEE 802.11 – www.ieee802.org/11

   RFC 2544 – www.ietf.org

4. Testing Environments for 1,2,3

   ITU Y.1564– www.itu.int

IV. Interim results

Norms and Standards only regard parts of the environment

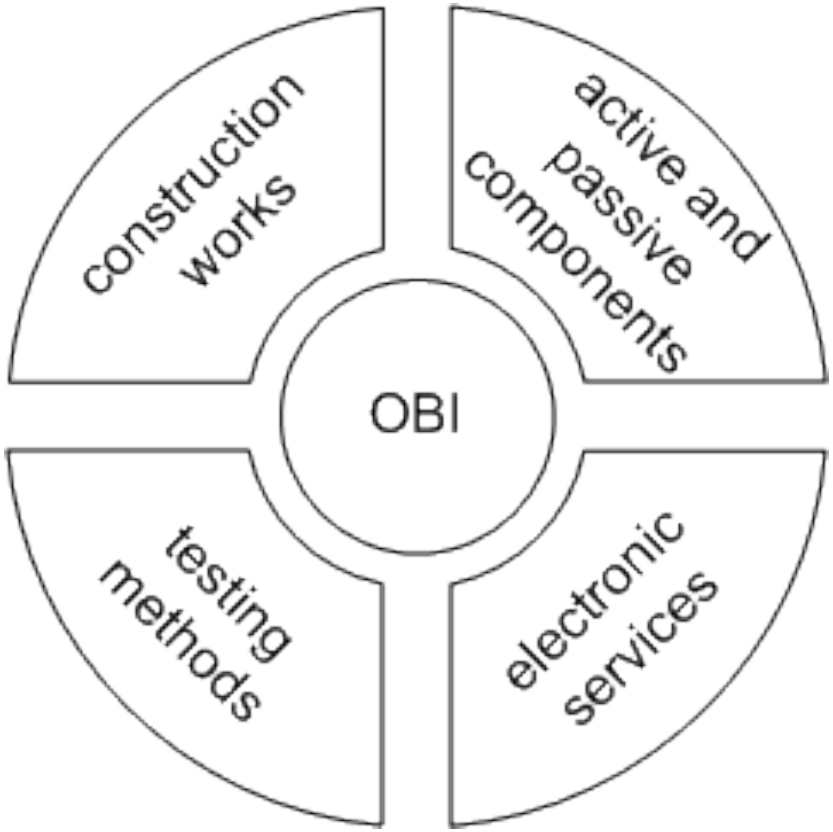
- Construction for Pre–Development (e.g. house and residential network) based on DIN EN 50173
- OSI-Model (Open System Interconnection Reference Model) and IEEE provide basic orientation
- Definition of basic-services (e.g. network access, VoIP, WLAN) by IEEE, ITU
- more (with a focus on SoHo-Networks) Testing Environments are needed

summary:

too expensive in price, knowledge and effort for use in SoHo-Networks

V. Conclusion

OBI-Model (open building interconnection reference Model)



Thank you (1 of 2)

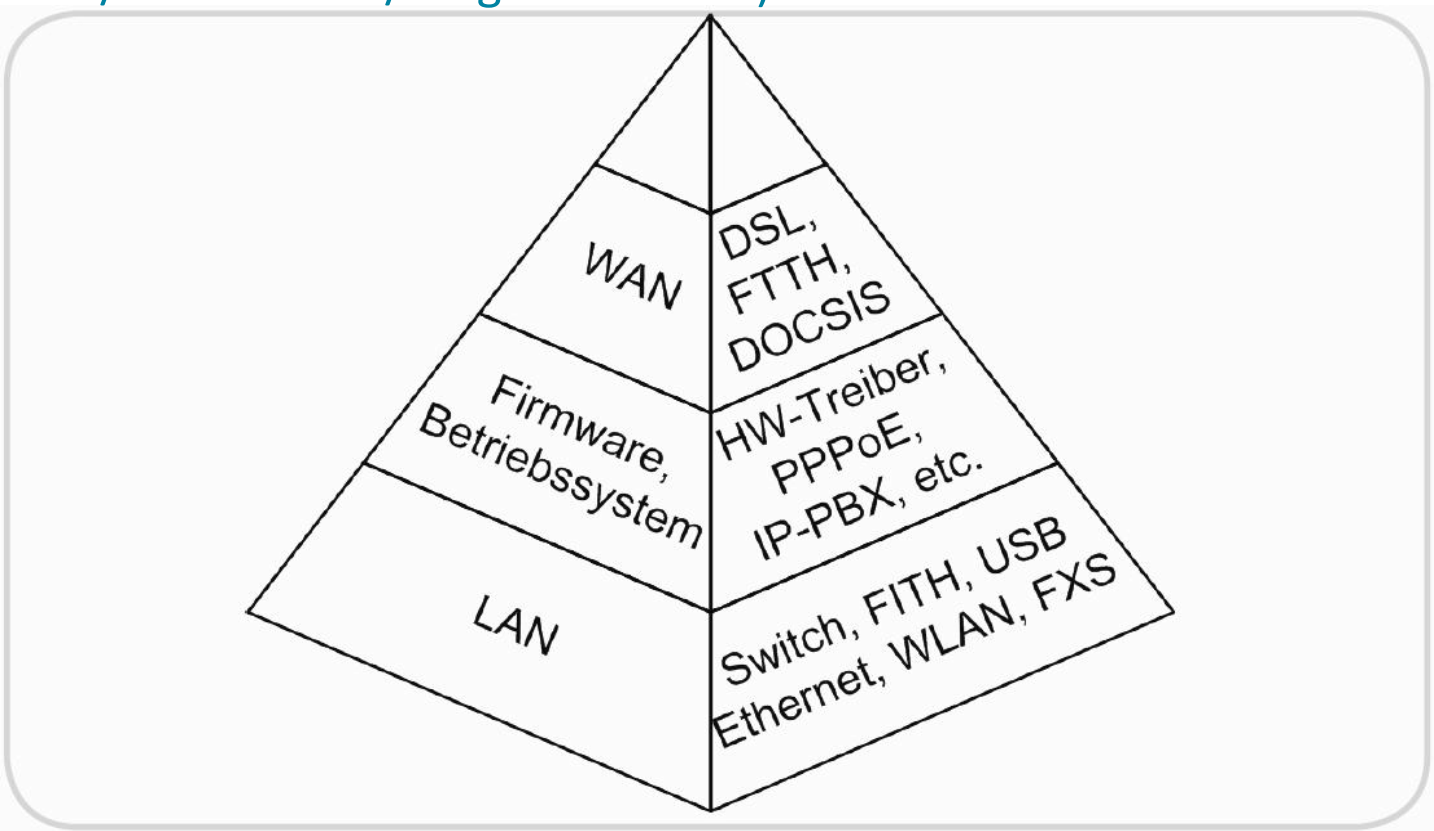
Thank you for attention!

Questions?

VI. Current work / testing methods (only if time left)

Core-Question: What are typical SoHo structures ?

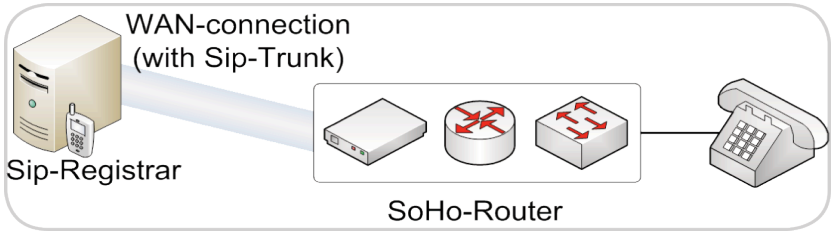
(today: WAN/ISP – Router/MagicBox – LAN)?



VI. Current work / testing methods (2)

Problem:

- RFC 2544 / ITU Y.1564 are unsuitable for SoHo environments,

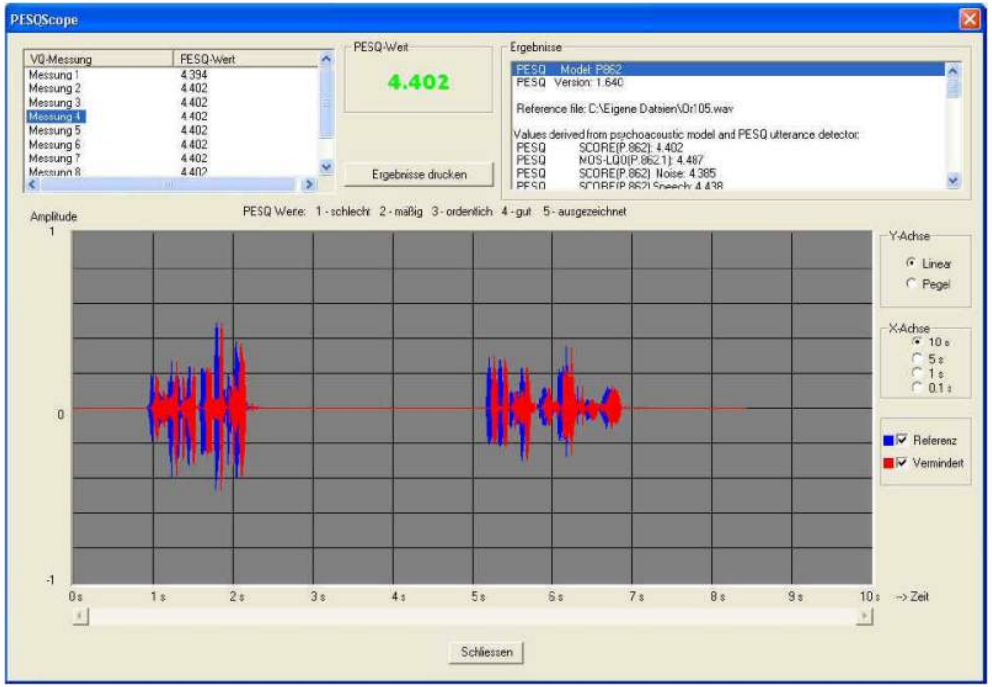


Approach:

- any SOHO router has a PBX or is a VoIP Registrar, Client, etc. ,

Idea: (benchmark the service not the connection)

- ITU P.862 (PESQ) and ITU G.107 (E-Model) for benchmark the VoIP connections transported over the network.



Thank you (2 of 2)

Thank you for attention!

Questions?