

Bridge Technologies - monitoring služby IPTV/OTT/DTV

Praha, 13.3.2015

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the art of
optical
communication



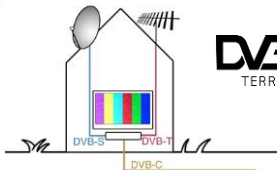
Agenda

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optical
communication

- Digitální TV
- Proč monitoring?
- End-To-End řešení
- Kvalitativní parametry
- Interpretace dat
- Q&A

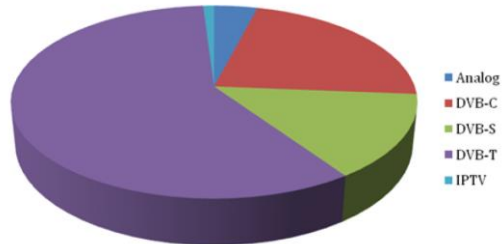
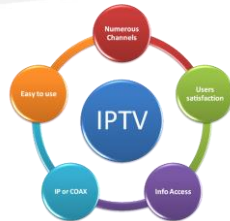


DVB S
SATELLITE



DVB T
TERRESTRIAL

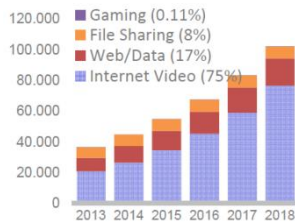
DVB C
CABLE



Graf – zdroj Závěrečná zpráva Národní koordináční skupiny pro digitální

Nároky na síť: šířka pásma + spolehlivost + stabilita

CONSUMER IP TRAFFIC IS INCREASING



| Tip | Přenosová rychlost |
|-----------------|--------------------|
| IP – SD | 1-3 Mbps |
| IP – HD (720p) | 3-6 Mbps |
| IP – HD (1080p) | 6-15 Mbps |
| IP - UHD (4K) | 15-32 Mbps |
| DVB | 4-8 Mbps |

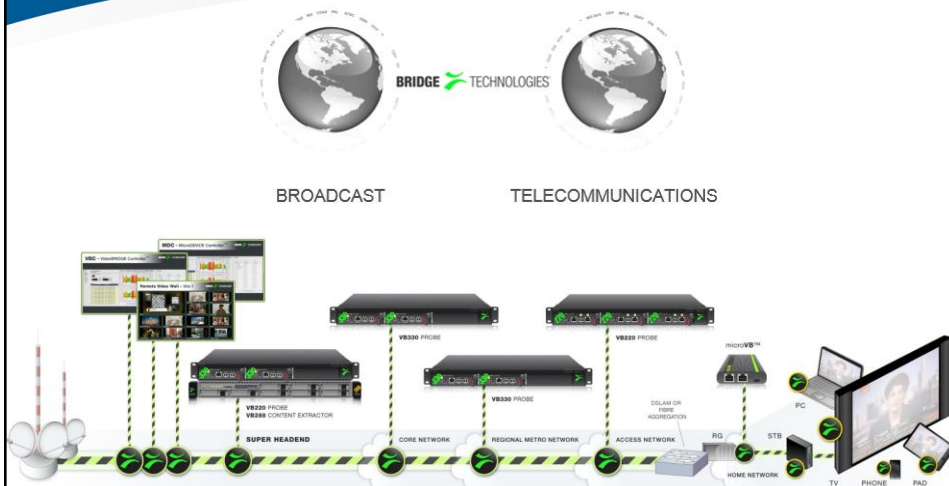
Když dojde na hodnocení kvality TV je tolerance koncového uživatele rovna **NULE**.

Obecné

- Informace o distribuční síti
- Snížení OPEX – lepší zákaznický servis
- Konkurenceschopnost

Výhody

- Přesná detekce chyby
- Referenční kontrola
- Hlídání obsahu

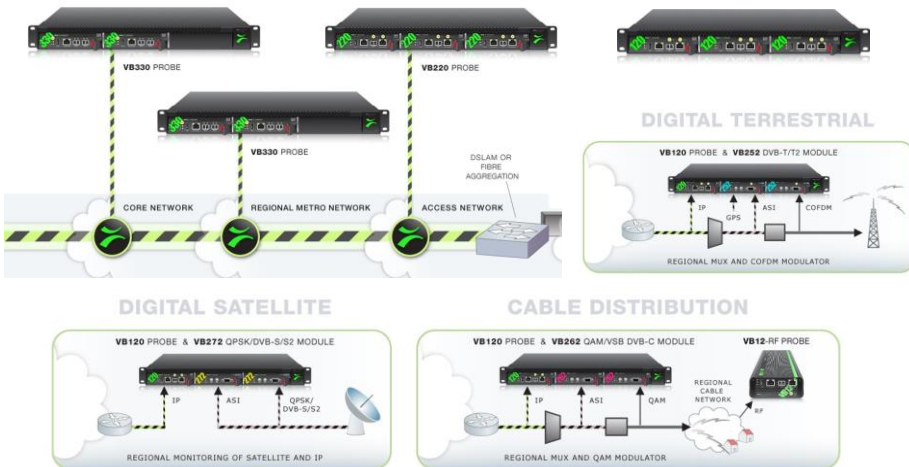




Monitoring IPTV/OTT/DTV

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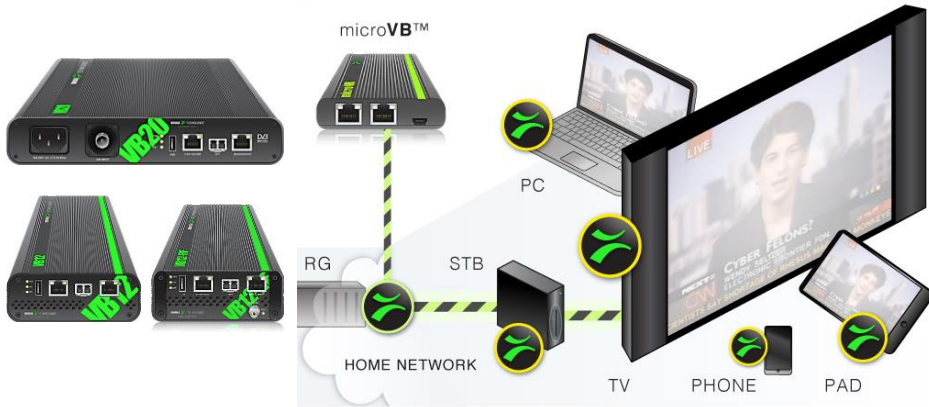
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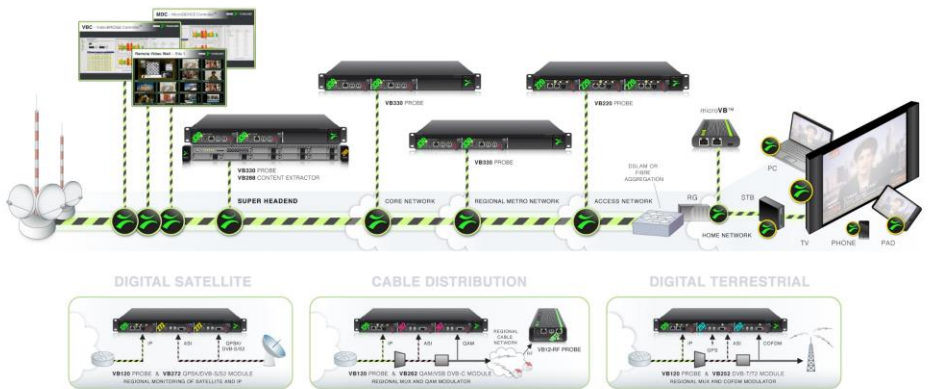
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Realtime
(časová osa/aktuální hodnota)

Po úsecích
(součty)

IP Monitoring

- IAT
- MLR
- RTP loss
- Bandwidth
- IP data

RF

- DVB-T/T2
- DVB-C/C2
- DVB-S/S2

ETSI TR 101 290



IP data

- Bitrate (min,max), CC errs
- CC error, počet PIDů
- IP adresy, TTL
- Jitter

DVB T
TERRESTRIAL

- Info o streamu
- Info o domodulátoru
- Konstalační diagram
- Impulsová odezva
- Úroveň signálu
- SNR, MER, SFN

DVB S
SATELLITE

- Info o streamu
- Info o domodulátoru
- Info o tuneru
- Konstalační diagram
- Úroveň signálu
- SNR, MER

DVB C
CABLE

- Info o streamu
- Info o domodulátoru
- Spektrum
- Impulsová odezva
- Úroveň signálu
- SNR, MER

DVB C
CABLE

Main | Alarms | OTT | Mon | MW | RDP | Ethernet | ETR 290 | ASI | **QAM** | Setup | Data | About

Status | Tuning setup | Threshold | Spectrum | RF overview

Status: TS 103
290 MHz, 256 QAM

| Stream info: | | Demod info: | |
|------------------------|------------|--------------------------|------------|
| Packet length: | 204 bytes | Pre FEC bit error rate: | 0.00 |
| Original network ID: | 42499 | Post FEC bit error rate: | 0.00 |
| Network ID: | 42499 | Modulation error ratio: | 40.0 dB |
| Transport stream ID: | 103 | Signal to noise ratio: | 40.9 dB |
| Total bitrate: | 50.87 Mbps | Front end lock: | |
| Min total bitrate: | 50.85 Mbps | AGC lock: | |
| Max total bitrate: | 50.90 Mbps | Carrier lock: | |
| Effective bitrate: | 43.37 Mbps | Level: | 71.9 dBuV |
| Min effective bitrate: | 40.95 Mbps | Frequency offset: | -1.31 kHz |
| Max effective bitrate: | 43.46 Mbps | Symbol rate offset: | -190 sym/s |

| Tuning info: | | ETR thresholds: | | SDT_repetition_PID | |
|--------------|-----------------|---------------------|----------|--------------------|--|
| Name: | TS 103 | PID thresholds: | Unref_33 | | |
| Frequency: | 290.000 MHz | Service thresholds: | Default | | |
| Symbol rate: | 6.900000 Msym/s | RF thresholds: | Default | | |
| Mode: | DVB-C | Spectrum inversion: | Normal | | |
| Modulation: | 256 | | | | |

Constellation diagram:

Main Alarms Compare Mon MW RDP Ethernet **ETR 290** ASI QAM1 QAM2 QAM3 QAM4 FSM Setup

ETR Overview **ETR Details** Services Bitrates Tables PID list PCR Status ETR thresh. PID thresh. Service th

Ethernet1 Ethernet2 Ethernet3 Ethernet4 ASI QAM1 **QAM2** QAM3 QAM4 **Dektec**
676 Mhz, 256 QA

ETR 101 290 checks

Priority 1

- TS sync
- Sync byte
- PAT
- Continuity
- PMT
- Missing PID

Priority 2

- Transport
- CRC
- PCR (0 / 110)
- PCR accur. (0 / 52)
- PTS
- CAT

Priority 3

- NIT
- SI Rep Rate (1 / 26)
- Unref PID
- SDT
- EIT (1 / 26)
- RST
- TDT

Other checks

- CA system (6 / 155)
- PID checks
- Service checks

Interface checks

- Pre FEC BER
- Post FEC BER
- MER
- SNR
- Signal strength (1 / 1)
- Centre frequency
- Symbol rate
- Interface overflow

Show additional measurements

Clear status Show alarm graph

MOS

| MOS | Kvalita |
|-----|---------------------|
| 5 | výborná (excellent) |
| 4 | dobrá (good) |
| 3 | slušná (fair) |
| 2 | špatná (poor) |
| 1 | nehodná (bad) |

Objektivní

- Barva, Obraz
- Zvuk
- Video PID
- SCR

Thumb Overview

| | | | | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NRK1 Service ID: 1 Audio <input checked="" type="checkbox"/> Scr <input checked="" type="checkbox"/> <input type="checkbox"/> Freeze | NRK2 Service ID: 1 Audio <input checked="" type="checkbox"/> Scr <input checked="" type="checkbox"/> <input type="checkbox"/> Freeze | TV 2 (N) Service ID: 1 Audio <input checked="" type="checkbox"/> Scr <input checked="" type="checkbox"/> <input type="checkbox"/> Freeze | TVNorge Service ID: 1 Audio <input checked="" type="checkbox"/> Scr <input checked="" type="checkbox"/> <input type="checkbox"/> Freeze | Star Service ID: 1 Audio <input checked="" type="checkbox"/> Scr <input checked="" type="checkbox"/> <input type="checkbox"/> Freeze | Showtime Service ID: 1 Audio <input checked="" type="checkbox"/> Scr <input checked="" type="checkbox"/> <input type="checkbox"/> Freeze | CNN Internationa Service ID: 1 Audio <input checked="" type="checkbox"/> Scr <input checked="" type="checkbox"/> <input type="checkbox"/> Freeze |
| MTV Service ID: 1 Audio <input checked="" type="checkbox"/> Scr <input checked="" type="checkbox"/> <input type="checkbox"/> Freeze | Discovery World Service ID: 1 Audio <input checked="" type="checkbox"/> Scr <input checked="" type="checkbox"/> <input type="checkbox"/> Freeze | Animal Planet Service ID: 1 Audio <input checked="" type="checkbox"/> Scr <input checked="" type="checkbox"/> <input type="checkbox"/> Freeze | BBC Lifestyle Service ID: 1 Audio <input checked="" type="checkbox"/> Scr <input checked="" type="checkbox"/> <input type="checkbox"/> Freeze | BBC Entertainment Service ID: 1 Audio <input checked="" type="checkbox"/> Scr <input checked="" type="checkbox"/> <input type="checkbox"/> Freeze | Bloomberg Euro Service ID: 1 Audio <input checked="" type="checkbox"/> Scr <input checked="" type="checkbox"/> <input type="checkbox"/> Freeze | BBC World Service ID: 1 Audio <input checked="" type="checkbox"/> Scr <input checked="" type="checkbox"/> <input type="checkbox"/> Freeze |
| CNBC Europe Service ID: 1 Audio <input checked="" type="checkbox"/> Scr <input checked="" type="checkbox"/> <input type="checkbox"/> Freeze | Nat Geo (S/F) Service ID: 1 Audio <input checked="" type="checkbox"/> Scr <input checked="" type="checkbox"/> <input type="checkbox"/> Freeze | Boomerang Service ID: 1 Audio <input checked="" type="checkbox"/> Scr <input checked="" type="checkbox"/> <input type="checkbox"/> Freeze | Nordic TCM Service ID: 1 Audio <input checked="" type="checkbox"/> Scr <input checked="" type="checkbox"/> <input type="checkbox"/> Freeze | Cartoon Network Service ID: 1 Audio <input checked="" type="checkbox"/> Scr <input checked="" type="checkbox"/> <input type="checkbox"/> Freeze | TV 2 Zebra Service ID: 1 Audio <input checked="" type="checkbox"/> Scr <input checked="" type="checkbox"/> <input type="checkbox"/> Freeze | RT Esp Service ID: 1 Audio <input checked="" type="checkbox"/> Scr <input checked="" type="checkbox"/> <input type="checkbox"/> Freeze |

Close Normal Stream Info Small



Interpretace dat

the art of optical communication

VBC Controller

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Monitoring overview

Status for all sites

Streamgroup status

Alarms at sites

Fields: Filter alarms... Clear alarm Page 1 Page -1 Page +5

Je lehké parametry změřit, horší už je interpretace výsledků

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Interpretace dat

the art of optical communication

Last90h Now Service #

| | | | | | | | | |
|---|------------------|---|----|----------------|---|----|------------------|---|
| 1 | 1-2-1 Dating | 1 | 31 | BBC ONE HD | 1 | 01 | C MORE LIVE 2 | 1 |
| 2 | AMusic | 1 | 32 | BBC ONE South | 1 | 02 | C More Live 3 | 1 |
| 3 | ASeven | 1 | 33 | BBC Parliament | 1 | 03 | C More Live 4 | 1 |
| 4 | 5 USA | 1 | 34 | BBC R1X | 1 | 04 | C More Tennis | 2 |
| 5 | Z | | | | | | Canal Algeria | 2 |
| 6 | AIran | | | | | | Capital FM | 1 |
| 7 | Absolute Radio | | | | | | Cartoon Networks | 1 |
| 8 | ADB 2840C loader | | | | | | CBBC | 1 |
| | | | | | | | CBBC HD | 1 |
| | | | | | | | CBeebies | 1 |
| | | | | | | | CBR Action | 1 |
| | | | | | | | CBR Reality | 1 |
| | | | | | | | CCTV | 1 |
| | | | | | | | Challenge | 1 |
| | | | | | | | Channel 4 | 1 |

RAW LOUDNESS DATA

TV3

Test group

| | | | | | | | | |
|----|---------------|---|----|------------|---|----|------------------|---|
| 20 | BBC Asian Net | 1 | 50 | BT Sport 1 | 1 | 85 | Classical Calm | 1 |
| | | | | | | 86 | Classical Creats | 1 |

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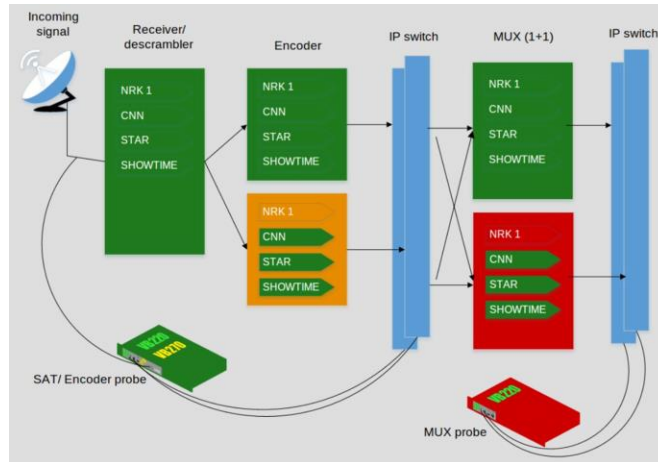
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- Centralizovaný
- Jednoznačný
- Přehledný



- Detailní
- Rozlišení
- Věrohodné výsledky
- Všechny parametry



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