


Digitalisation of Television Broadcasting in Estonia

from 1997 until to date

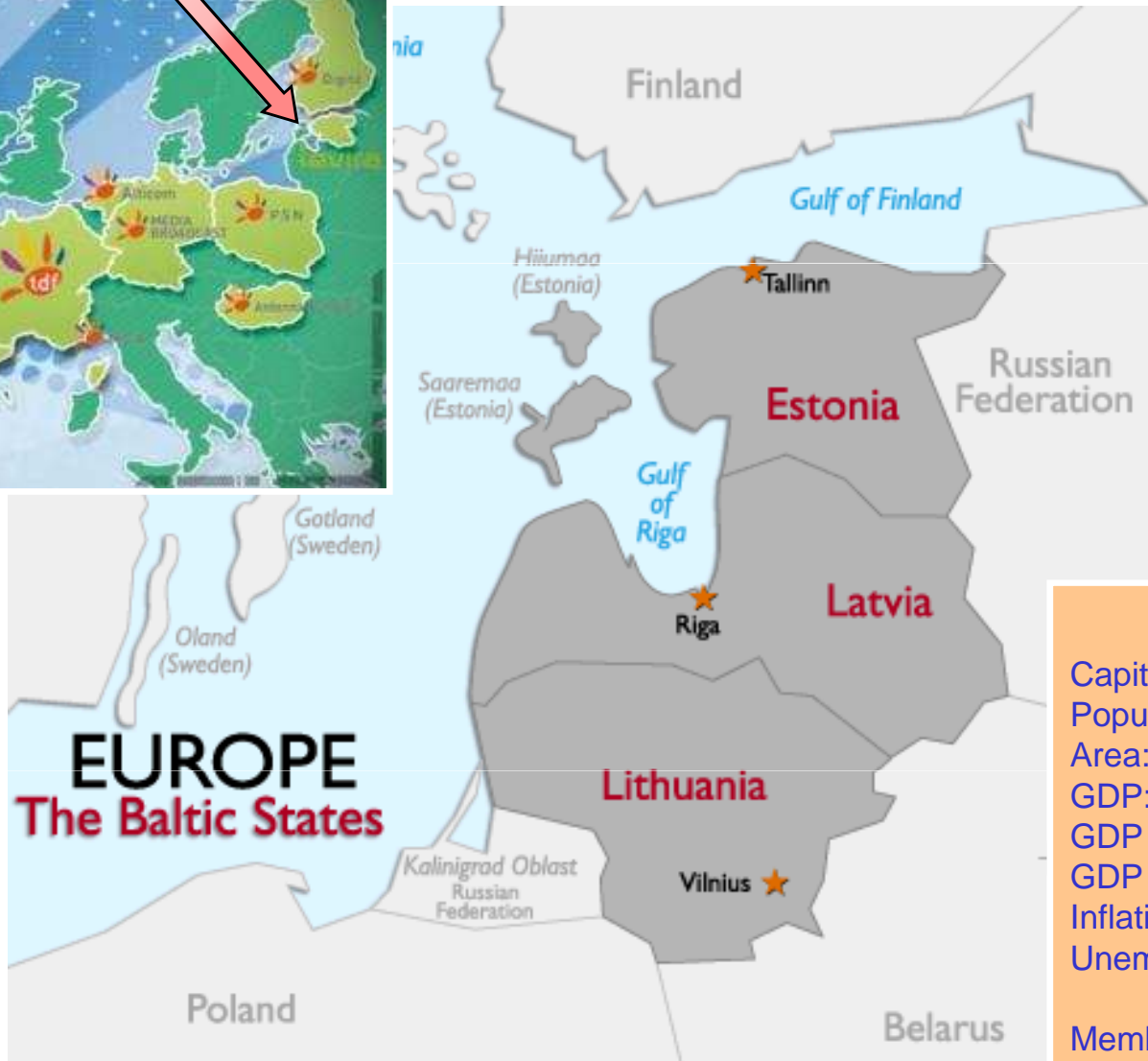


*Mart Einpalu, Indrek Lepp
Levira, Estonia*

In this presentation:

- ✓ Company overview – who is Levira
- ✓ Our main shareholder – TDF
- ✓ Start of digital TV in Estonia 1997-2005
- ✓ New start @ 2005
- ✓ Acceleration in 2007
- ✓ TV offering today
- ✓ ASO coordination
- ✓ Receiver certification
- ✓ Summary: Estonian experience

ESTONIA



Republic of Estonia

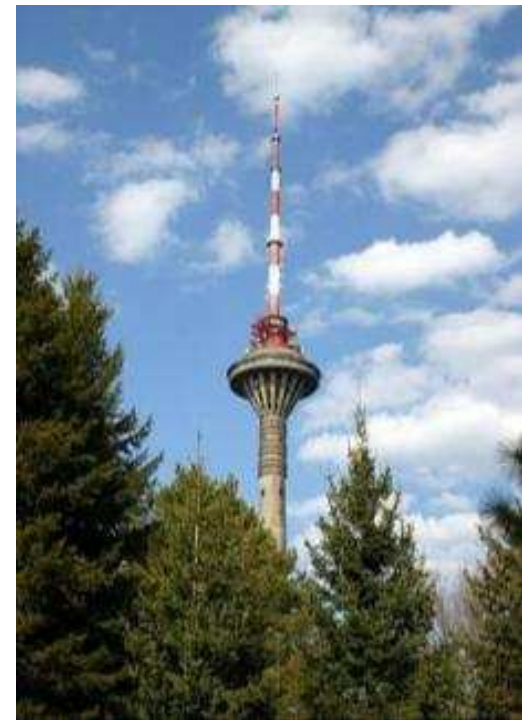
Capital:	Tallinn
Population:	1,35 million
Area:	45 227 km ²
GDP:	15,9 billion EUR ['08]
GDP growth:	+7,1% ['07] -3,6% ['08]
GDP per capita:	11 800 EUR ['08]
Inflation:	10,4 % ['08]
Unemployment:	5,5 % ['08]

Member of EU & NATO since 2004

levira – the National Broadcast Transmission Company

- History dates back to 1924
- Founded in 1997 as Ltd., HQ in Tallinn, Estonia
- 51% of shares owned by Estonian state, 49% by TDF of France
- Total headcount: 75
- Sales: 10,5 M€ (FY 2008)
- CAGR 3y: >20%

Our Vision is to be The Preferred Partner for Broadcast & Multimedia Companies



Main Activities

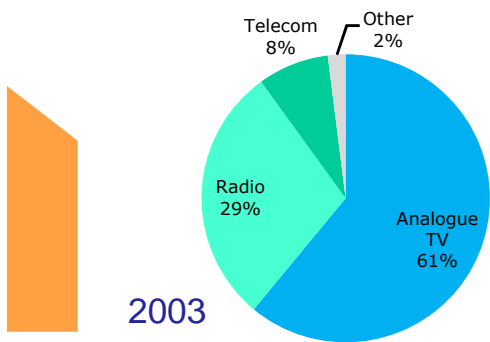
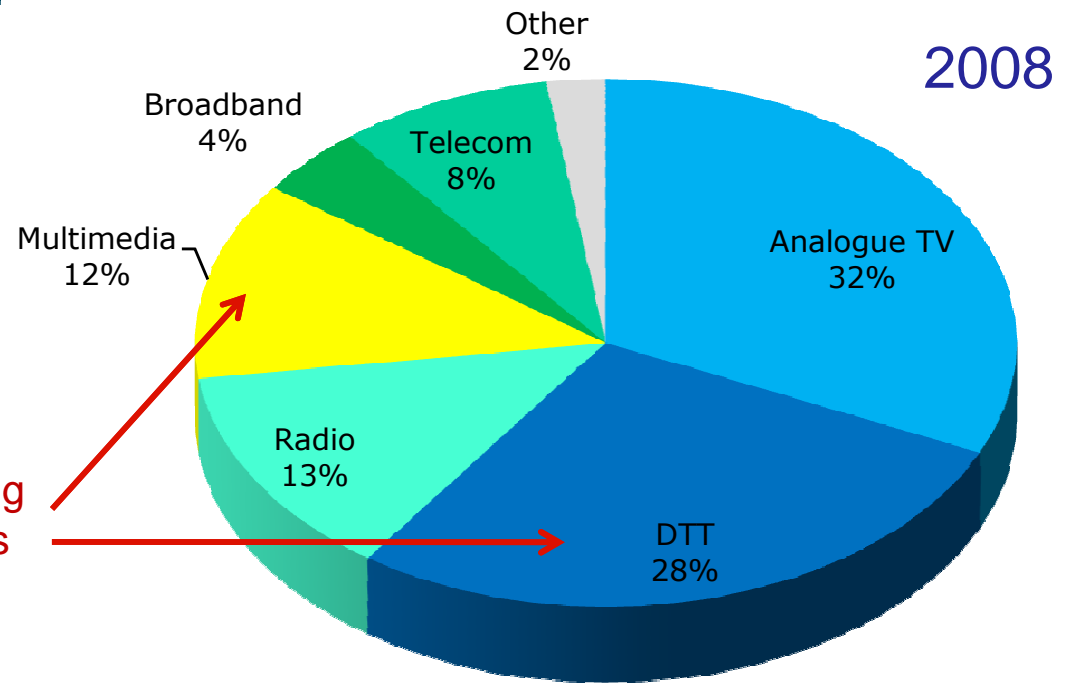
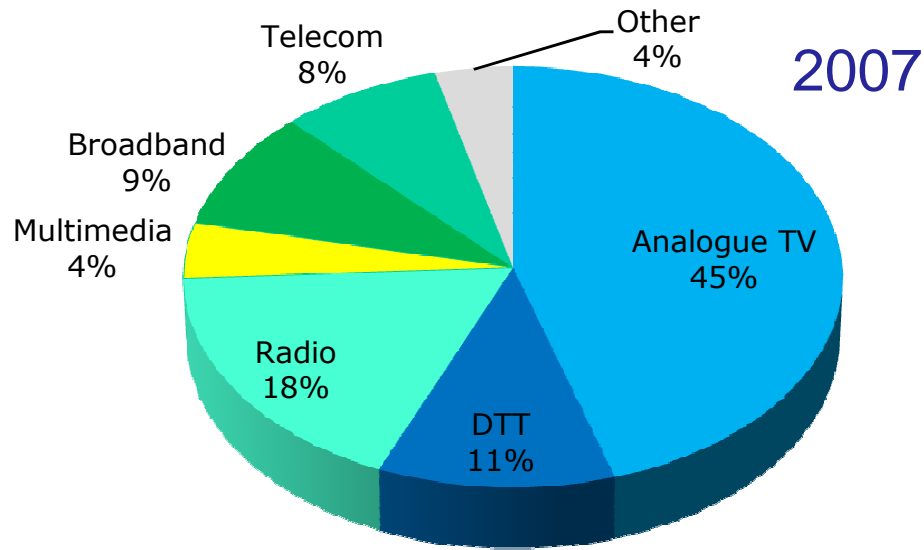
- ⇒ Broadcast transmission Services:
 - Analogue TV
 - FM Radio
 - DVB-T (3 MUX-es)
 - Distribution & Contribution
- ⇒ Audiovisual Services:
 - SNG & OB (SD/HD)
 - Play-Out Services (SD/HD)
- ⇒ Broadband Services:
 - WiMAX @3,5GHz
- ⇒ Services for Wireless Operators:
 - Site Sharing and Development
 - BTS Installation and Riggers



Developing Activities

- ⇒ DVB-H
- ⇒ HD over DTT
- ⇒ Head-End Services
- ⇒ Audiovisual Services:
 - Broadcast Content Conversion & Correction
- ⇒ Media Asset Management

Sales Breakdown '07 - '08



Fastest Growing Business Areas

CLIENT REFERENCES

Audiovisual Services:



TDF, a leading player in Europe

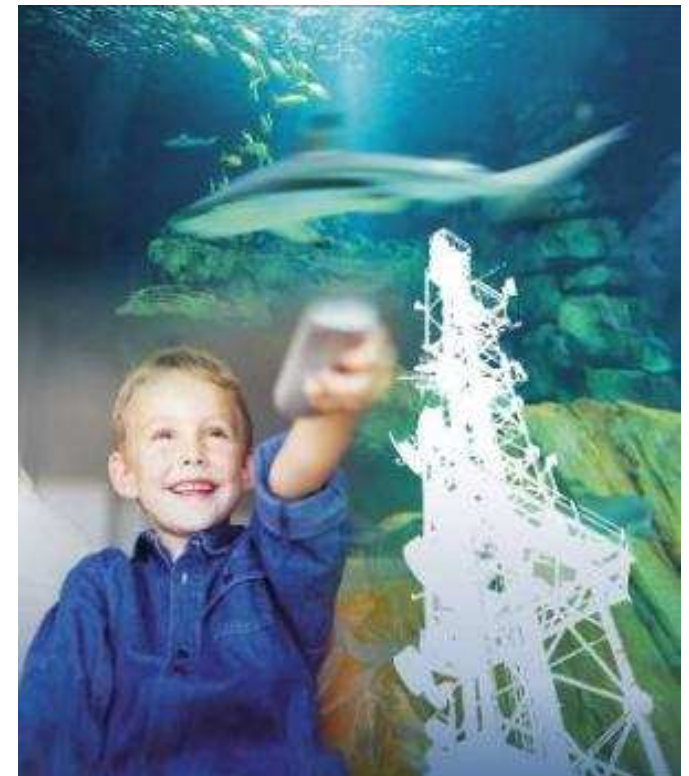
Shareholder in Levira

- **The main operator of shared facilities and terrestrial networks in Europe**

The TDF Group assists its clients, TV networks, radio stations, telecommunications operators, ISP and local authorities across the entire value chain of audiovisual and telecoms networks.
- **A key player in implementing digital technologies across Europe**

A key player in telecommunications and audiovisual convergence.
Digital for everyone: DTT, HD, mobile TV, Broadband, etc.
- **A European group**

France, Germany, Austria, Hungary, Finland, the Netherlands, Estonia, Poland, Monaco and Spain.



TDF Group ID



Group entities

- ★ **France:** TDF SAS, AMP-Visual TV, Antalis TV, Cognacq-Jay Image, Emmetel, Gobé, Mediamobile, SmartJog, Sofratev, TV-Radio.com
- ★ **Germany** MEDIA BROADCAST 100%
- ★ **Finland** Digita 100%
- ★ **Hungary** Antenna Hungária 100%
- ★ **Netherlands** Alticom 100%
- ★ **Poland** PSN 100%
- ★ **Monaco** MCR 83%
- ★ **Spain** Axión 65%
- ★ **Estonia** Levira 49%

Key figures

- ★ **Sales:** 1,6 Eur Billion **Capex:** 20% of sales
- ★ **Staff:** 5.600 **No fo Sites:** 10.100



Start of Digital-TV

- 1997 - First official document describing digitalization of TV-broadcasting: "Main principles of the Estonian digital broadcasting development concept"
- 2000 - Channel 45 was allocated for DTT tests in capital area
- 2001 - Viasat starts digital satellite transmission to Estonia
- May 7th 2004 – Regular transmission over DTT started, ASO plan for February 1st 2012 announced (*unofficial*)
- 2005 - Starman launches digital cable-TV service
- 2005 – Transmission of Public TV (ETV) over DTT was stopped due to lack of financing of ETV.



DTT Summary

Slide from October 2005

- ➔ Digitalisation of TV broadcast in Estonia has started, however take-off has been chaotic and slow.
- ➔ Legislation update not completed and therefore has been a significant obstacle for the DTT take-off.
- ➔ State support low or missing at all, development is expected to be driven by private enterprises.
- ➔ Public Broadcasters financial resources very limited.
- ➔ Commercial Broadcasters interest low.
- ➔ ASO date officially not yet defined.

Slide from October 2005

New Approach for DTT

- ➔ Levira will take an active role in leading the digital transition in Estonia;
- ➔ “Pure business” is the cornerstone of the plan;
- ➔ Levira will start with pay-service in Tallinn area in September 2006;
- ➔ 2007–08: Gradual development to “multicity coverage”;
- ➔ 3 Mux'es, 18 channels, different packages;
- ➔ Subscriber potential: 250 000 terrestrial HHs (46% of total HHs).

New Start

- Oct. 2005:** New approach towards DTT initiated by Levira.
- Spring 2006:** Analogue switch-off date – 01.02.2012 fixed by law.
Frequencies for 3 DTT networks allocated to Levira.
MPEG-4 AVC chosen for video-compression.
A combination of FTA and Pay-TV services, totally 30-36 TV-channels in 3 networks.
- May 2006:** Elion launches IPTV services.
- Sept. 2006:** Levira and Starman established a joint venture to provide Pay-TV services over DTT.
- Dec. 2006:** Launch of Pay DTT services (ZUUMtv),
DTT coverage over 50% of population.
- April 2007:** Public Broadcaster - ETV - joined DTT.
Commercial broadcasters still waiting for faster ASO and/or other incentives.
- June 2007:** DTT coverage reached 95% of population.
- August 2007:** Pilot HD transmission over DTT started.



Further Acceleration

- Sept. 2007: 3 new FTA TV-licences for DTT issued;
Government Digitalization Commission established to coordinate ASO process and promote digitalization.
- Nov. 2007: New FTA channel Kalev Sport on DTT
- March 2008: New DTT channels (both FTA and Pay) launched;
5 FTA + 22 Pay-TV channels available on DTT
- 31.03.08: First region to switch-off analogue transmission
(island Ruhnu)
- May 2008: DVB-H pilot launched, 14 channels covering Tallinn
- June 2008: July 2010 announced as a new target for ASO
- August 2008: ETV-2 starts in DTT; 7 FTA channels on DTT;
Special "Digilevi" sign to describe digital transition, introduced
- Oct. 2008: DTT coverage for FTA MUX to reach
99,9% of the territory of Estonia
- March 2008: ~60 000 DTT HH-s;
Total No of Digital-TV subs in Estonia: ~185 000 (~30%)



TV market in Estonia

2005

- ✓ 650 000 TV-households
- ✓ 3 national TV-channels (FTA)
- ✓ Few foreign channels localised for the Estonian market
- ✓ Few marginal cable channels
- ✓ 49% are terrestrial viewers
- ✓ Cable penetration: 47%,
- ✓ SAT penetration 4%
- ✓ Digital penetration <5%
- ✓ No decision about ASO

2009

- ✓ 650 000 TV-households
- ✓ 3 national analogue FTA channels
- ✓ 7 Free-to-air DTT-channels
- ✓ 24 pay-DTT channels, most local or localized for Estonian market
- ✓ 37% of TVHH are terrestrial viewers
- ✓ DTT: 10% (25% of Terrestrial HHs)
- ✓ Cable TV: 47%
- ✓ IPTV: 11%
- ✓ DTH: 6%
- ✓ Digital penetration: ~30%
- ✓ Analogue Swich-off: 01.07.2010

MUX Plan Today

		CONTENT	CHANNELS	COVERAGE
				Q4 2008
MUX-1	COMMERCIAL	FTA only	7 Channels	100% of Territory
MUX-2		Pay-TV (ZUUMtv)	24 Channels	~97% of population
MUX-3				
MUX-4	TEST	HD Pilot	2 channels	~50% of population
MUX-5		DVB-H Pilot	6 channels Clear-to-Air	Capital (Tallinn) area only

DTT Offering Today



ZUUMtv:

6 EUR/month
 No connection fee, 2 months free of charge

Extra package

6 EUR/month

STB:

3 EUR/month
 or 127 EUR

MUX 1 (Free-to-air)

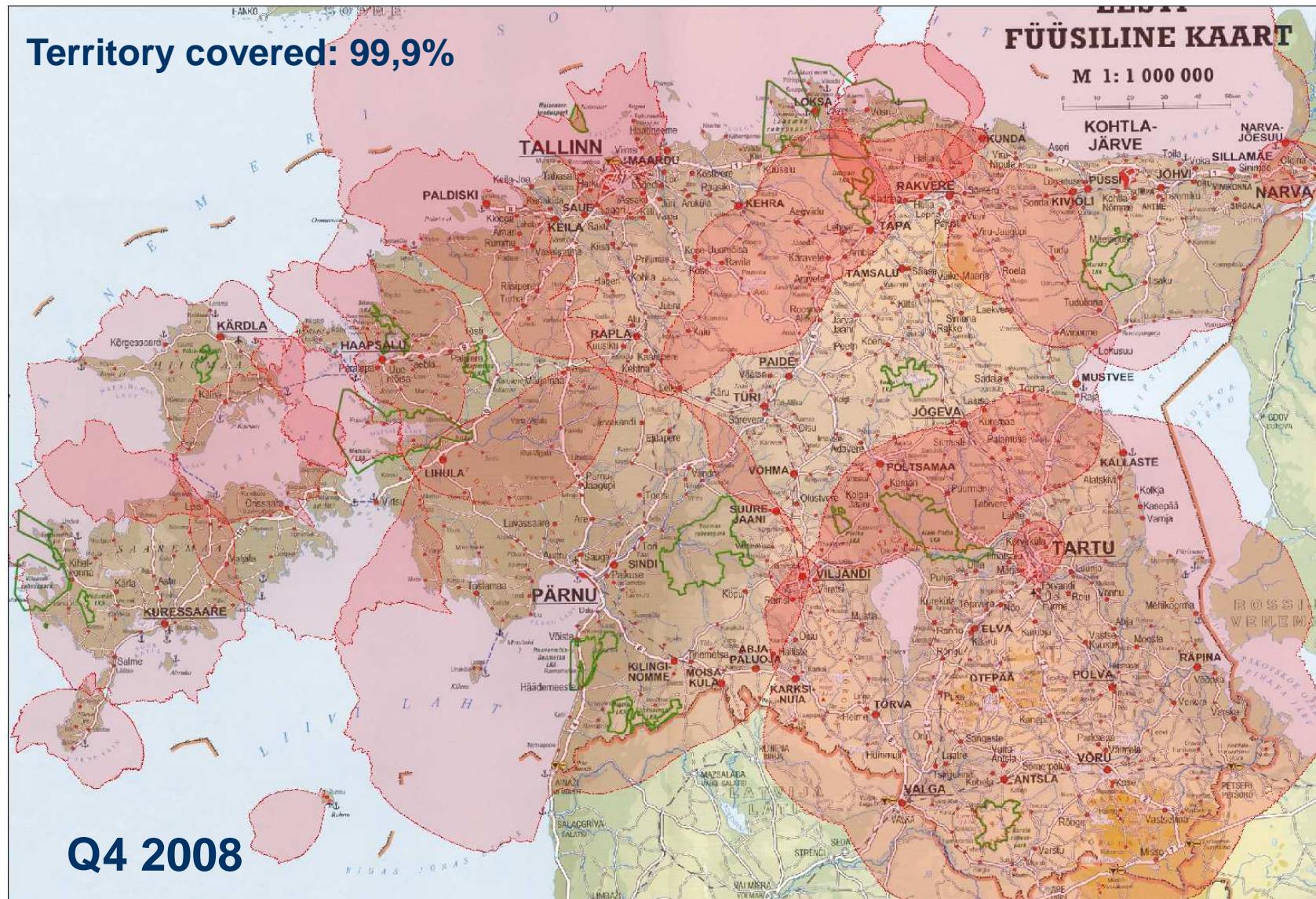
MUX 2

ZUUMtv Basic package

MUX 3

Extra package

MUX 1 (FTA) coverage



ASO Coordination

- ❖ ASO shall influence almost half of the population
- ❖ Governmental Digitalization Commission established in Sept. 2007 with permanent/dedicated personnel with a main purpose to secure successful transition to Digital Terrestrial TV-broadcasting in 2010



- ❖ “Digilevi” sign introduced. It is used in connection with all marketing etc. activities related to ASO and also for tested receivers.
- ❖ Main message of “Digilevi”:
 - All Estonian TV channels available for everybody free of charge:
 - in digital quality, everywhere in Estonia, with a single rooftop antenna already today.
 - in addition one can subscribe for 24 pay-tv channels
 - even more channels and HDTV after ASO in 2010
- ❖ Digilevi website (www.digilevi.ee) and free Digilevi info telephone

Information and Propaganda

2008: ALL CHANNELS AVAILABLE IN DTT!

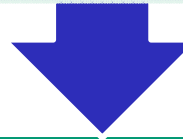
ASO Starts

All channels available

Unique content (olympics)

Whole country covered

Advices & explanations



2009: DO SWITCH OVER ALREADY TODAY!

Informational campaigns

Explanational campaigns

Events all over the country

Volunteers movement



2010: 6 MONTHS & COUNTING

ASO Date Countdown

Explanations and Support

Most Important Message



Certification of Receivers

Government has appointed network operator (Levira) to test and certify DTT receivers.

- All receivers fulfilling basic requirements shall have a right to use "Digilevi" sign together with the product for its promotional activities.
- Samples of all tested devices to remain in Levira test-lab for constant control. Network operator obliges to secure that all certified receivers shall be operational also after any network upgrade or parameter change.
- List of tested receivers openly available at all times.
- Currently "Digilevi" sign is issued for 8 types of iDTV-s and 2 STB-s
We estimate that there are over 200 types of iDTV-s and over 20 types of STBs available on the market.

There is a huge difference between Mpeg-4 AVC & Mpeg-4 AVC !!

- Some manufacturers & distributors are cooperative, but... some are very non-cooperative.
- Consumer protection is an important issue.

➔ Regulation:

- Legal framework for DTT in place (ASO date fixed, percentage, strategy, licenses, simulcast, rebroadcast etc)
- Tenders for new content licenses: FTA and rebroadcast
- Incentives for analogue broadcasters to **join and** lead
- Consider competition as inter-platform, not inside DTT

➔ Frequencies:

- Planning and coordination in time
- Combined frequency and mux tenders
- Quick rollout of nationwide networks

➔ Technical basis:

- ETSI, EBU standards
- MPEG-4 AVC, **SD/HD**
- STBs preferably HD-ready, **type approval/certification**
- Compliance of reception antennas and antenna systems for DTT **(NB!)**

➔ Coordination and information

- ASO coordination and information commission to be set up
- Government to strongly back-up PSB digital initiatives
- All main channels are **MUST** from the beginning

15 months to go...

Digital switchover target remains challenging

Aitäh
Thank You

www.levira.ee

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