

A surreal light blue room with various objects. A brown rabbit sits on a light blue ledge. To its left is a snake plant. On the wall is a framed sign that reads "THERE IS NO PLACE LIKE 127.0.0.1". A video game controller hangs from the ceiling. A pair of tan high-heeled shoes sits on the floor in the bottom right corner. There are several circular openings in the wall, some of which are dark.

RIPE87 Multicast BoF

How Init7 is using Multicast
28. November 2023

Init7

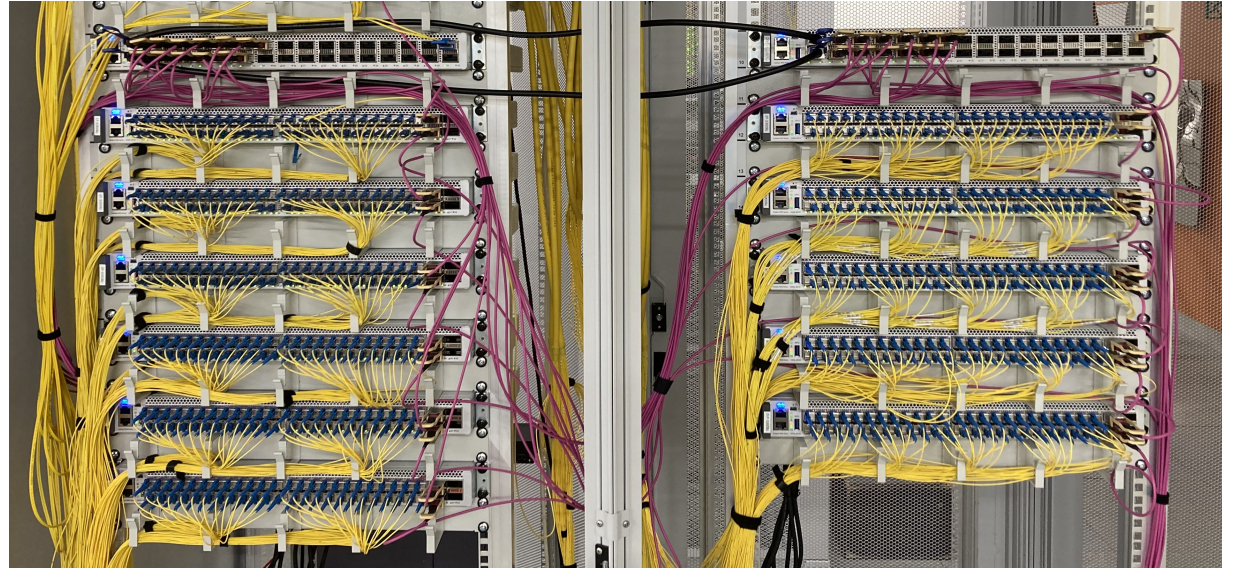


About Init7

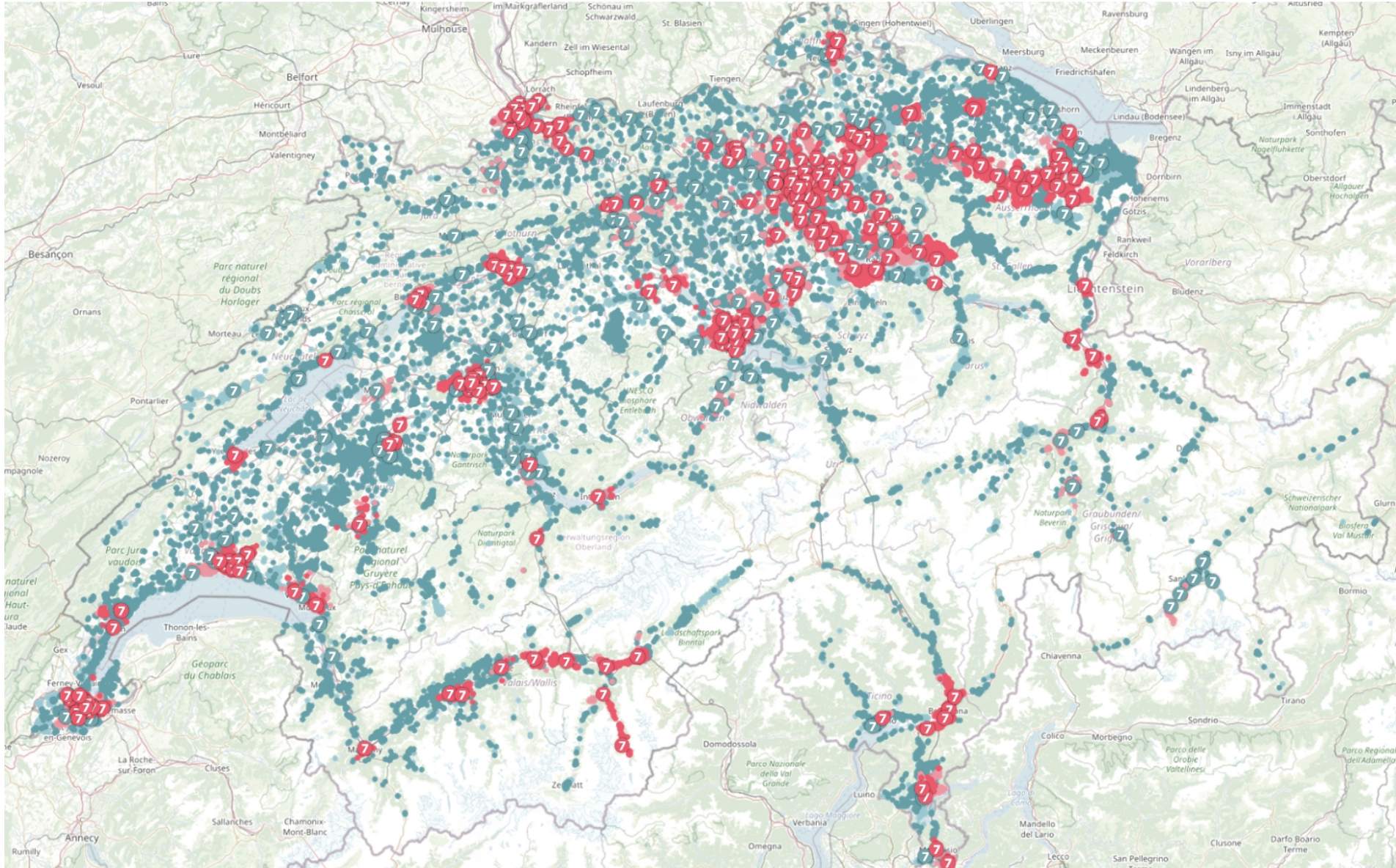
Init7

Init7: Independent FTTH ISP

- Init7 is one of the last remaining independent Swiss ISPs
- Currently ~215 FTTH pops live, accross Switzerland accessing P2P (AON) fiber
- more than 100 new pops under construction
- pops equipped with Cisco 9532/9548 Switches, 100gig backhaul



Init7 FTTH Availability Map (BETA)



Fiber7: 10/25 Gbps (Ethernet)

- free choice of router
- unthrottled bandwidth
- IPv6 /48 subnet included
- fixed IPv4 / IPv4 subnet / BGP4 optional
- **Multicast TV**

Also available:

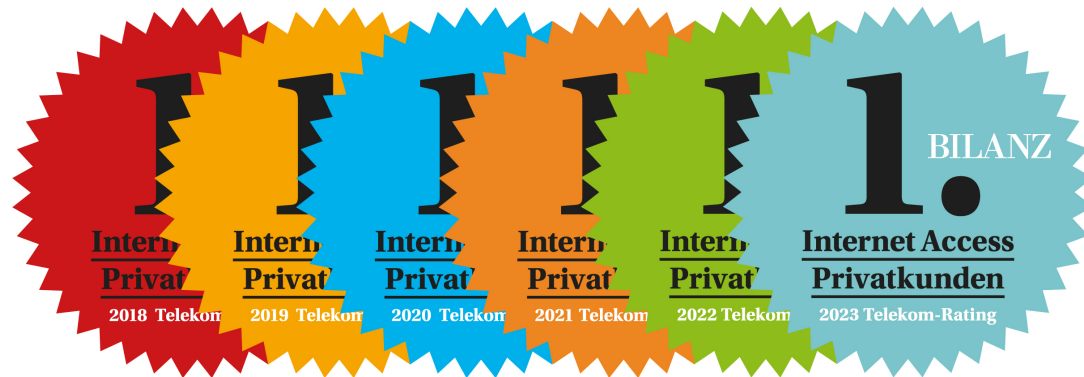
- Easy7: 1gig fully automated service for «noobs»
- several Layer 2 and Layer 3 business and wholesale offerings



Init7

Bilanz Telekom Rating

Winner of the category «Best provider private customers» for 6 times in a row (2018 – 2023) of the Swiss economy magazine «Bilanz» (Public voting).



MARKETS TELEKOM-RATING 2023

Die besten Telekommunikationsanbieter für Privatkunden 2023

Rang 2020	Rang 2019	Anbieter	Total	Qualität	Innovation	Preis	Flexibilität	Support
1	1	Net+	24,3	4,7	4,6	4,8	5,1	5,0
2	2	Digitel Connect	24,1	4,5	4,2	5,4	5,0	4,8
3	3	Quickline	24,0	4,7	4,3	5,2	5,0	4,8
4	4	Wingo	23,1	4,5	4,1	5,1	4,9	4,6
5	5	Coop Mobile	23,0	4,5	3,9	5,1	4,8	4,7
6	6	M-Budget	22,9	4,4	4,0	5,1	4,6	4,7
7	7	Sunrise	22,4	4,4	3,9	5,1	4,6	4,7
8	8	Aldi	21,4	4,4	4,0	5,1	4,6	4,7
9	9	Yallo	21,4	4,4	4,0	5,1	4,6	4,7
10	10	Salt	21,4	4,4	4,0	5,1	4,6	4,7
11	11	UPC	20,8	4,2	3,4	4,6	4,6	4,7
		Swisscom	20,7	4,1	3,6	5,0	4,4	4,6
		Init7	20,0	4,1	3,7	5,0	4,4	4,6
		Telebay	24,8	4,0	3,6	4,6	4,5	4,3
		Green.ch	24,0	5,0	3,6	4,6	4,3	4,2
		Vay	23,9	4,9	4,1	4,1	4,3	4,2
		hand.ch	23,8	4,7	4,3	5,3	5,3	5,1
			23,7	4,7	4,0	5,1	4,9	4,9
			23,6	4,6	4,1	5,0	5,1	4,9
			23,5	4,8	4,3	5,0	5,1	4,9
			23,3	4,6	4,0	5,3	5,0	4,6
			22,9	4,6	4,3	5,1	4,8	4,8
			22,8	4,4	4,2	4,8	4,9	4,8
			22,5	4,3	3,9	4,8	4,8	4,8
			21,0	4,4	4,0	5,0	4,8	4,9
			20,3	4,1	4,0	5,1	4,8	4,7
			4,0	3,8	4,6	4,8	4,8	4,5
			3,6	4,1	4,3	4,4	4,7	4,5
			4,8	4,2	4,3	4,3	4,5	4,5



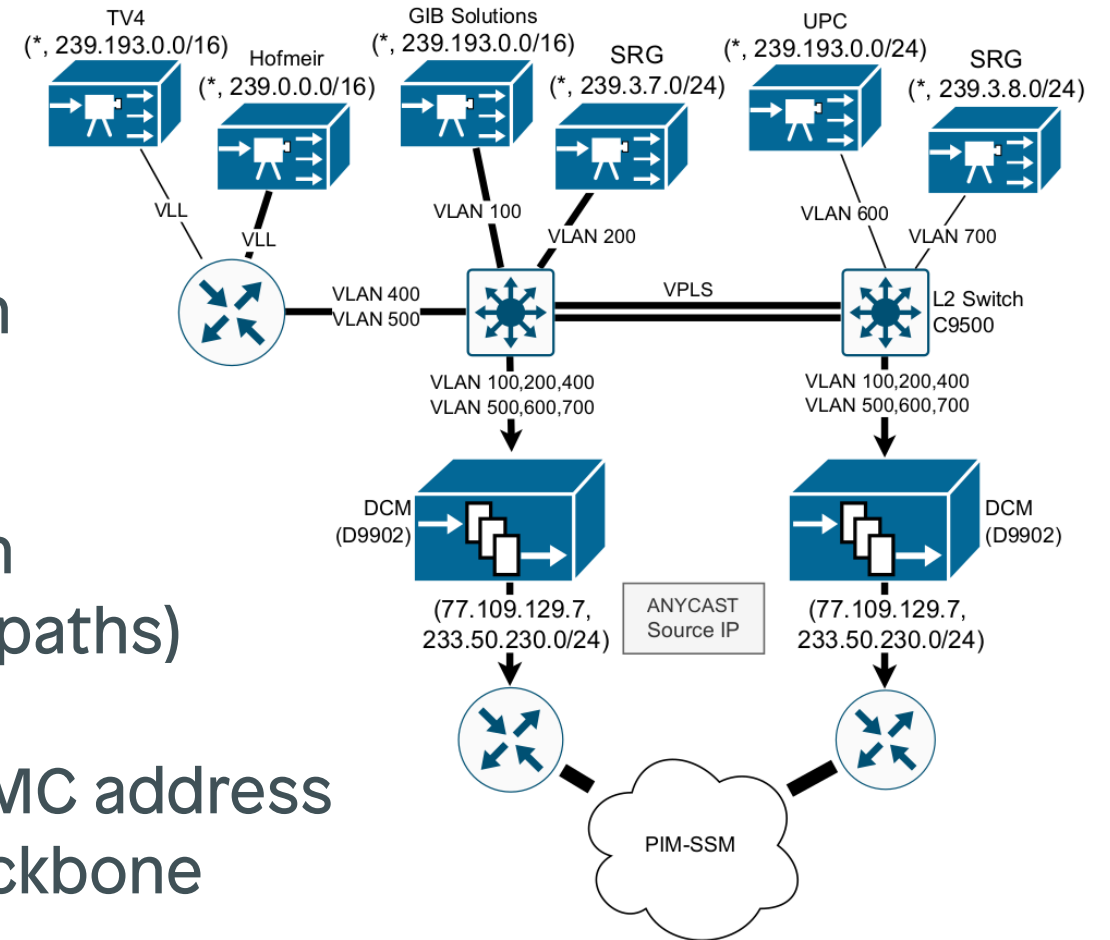


Multicast TV by Init7

Init7

Multicast Ingest Network

- separate Multicast Ingest Network
- two locations: Equinix ZUR 2/4 Zurich and Interxion (DRT) Zurich
- two Cisco 9548, interconnected with two passive 10gig DWDM (redundant paths)
- two redundant Cisco DCM 9902 for MC address translation, handover to main Init7 backbone



Customer Multicast Access

- Multicast Channel Playlist available for download
- TV Apps for Apple TV and Google TV



```
#EXTM3U
```

```
#EXTINF:0 tvg-logo="https://api.tv.init7.net/media/logos/SRF_1_HD_CZXBts2.png"
```

```
tvg-name="SRF1.ch" group-title="chde", SRF1 HD udp://@239.77.0.77:5000
```

```
#EXTINF:0 tvg-logo="https://api.tv.init7.net/media/logos/SRF_zwei_HD_O8Lwpu3.png"
```

```
tvg-name="SRF2.ch" group-title="chde", SRFzwei HD udp://@239.77.0.78:5000
```

```
#EXTINF:0 tvg-logo="https://api.tv.init7.net/media/logos/SRF_info_HD_1M4uLJ5.png"
```

```
tvg-name="SRFInfo.ch" group-title="chde", SRF Info HD udp://@239.77.0.5:5000
```

```
...
```



Multicast Stream Encryption

Init7

Open Source DRM



Zürcher Hochschule für Angewandte
Wissenschaften

School of Engineering

- Two commercial DRM (Digital Rights Management) Systems (FairPlay, Widevine)
- No Open Source DRM available, no Multicast support
- Bachelor Thesis ZHAW was addressing the question in 2021 (Zürcher Hochschule für Angewandte Wissenschaften in Winterthur; Init7 was the industry partner)
- Concept available on GitHub, for question please contact Nicolas da Mutten





Contact

Init7

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Questions?

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