



RIPE NCC

RIPE NETWORK COORDINATION CENTRE

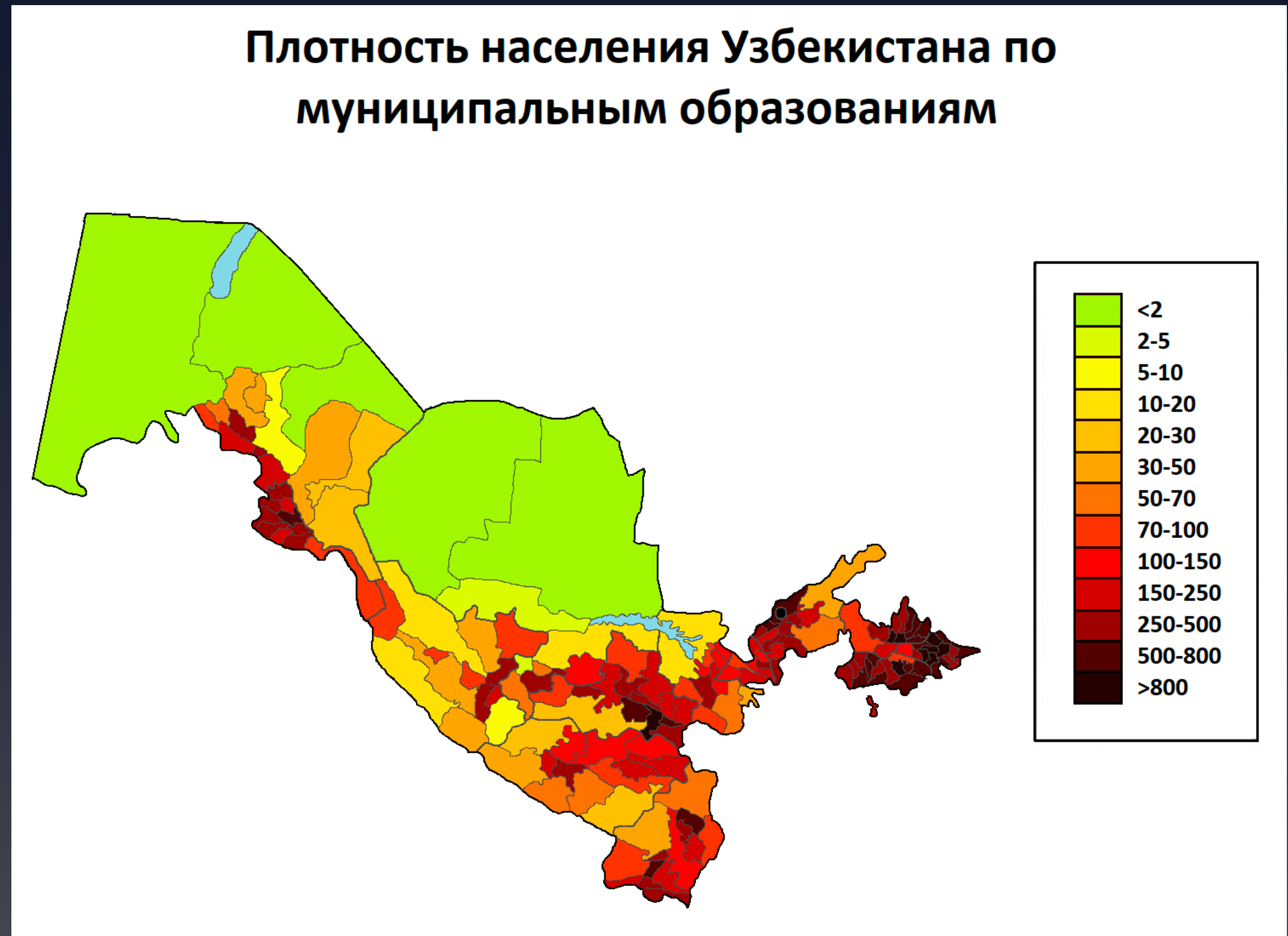
State of the Internet in Uzbekistan

Alex Semenyaka

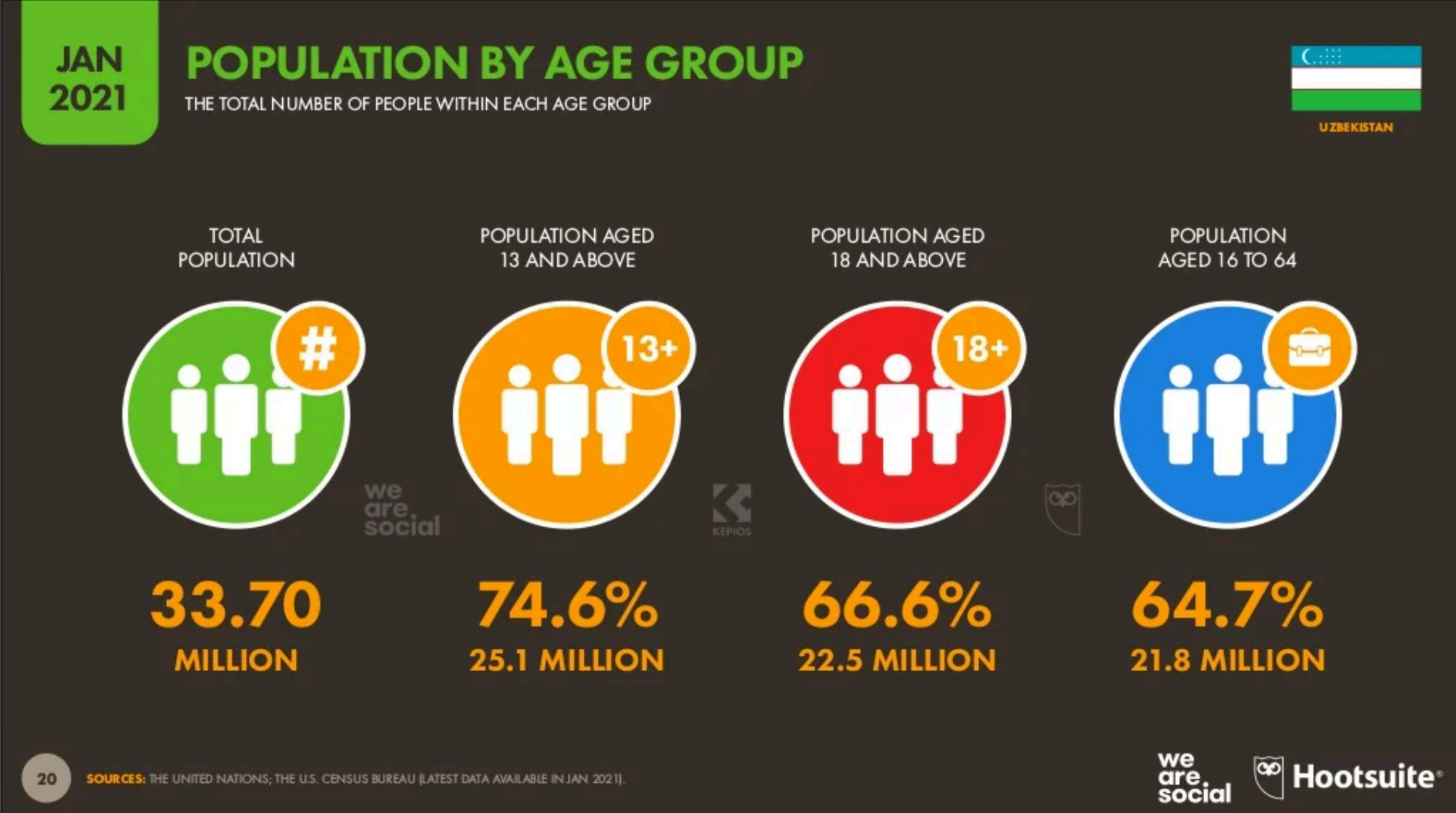


General overview

- **Area: 448,978 km²**
 - Mountains: 21%
 - Deserts: 50-60%
- **Population: 35.3 million**
 - Density of population: 74.1/km²



General overview



<https://datareportal.com/reports/digital-2021-uzbekistan>

Basic telecom statistics (the State Statistics Committee)



- **Number of mobile Internet users in Jan. 2022: 22 million (91.3%)**
 - Jan. 2021: 89.8%
- **Total number of Internet users (Jan. 2022): 22,987,200**

Mobile Internet affordability (<https://www.cable.co.uk>)

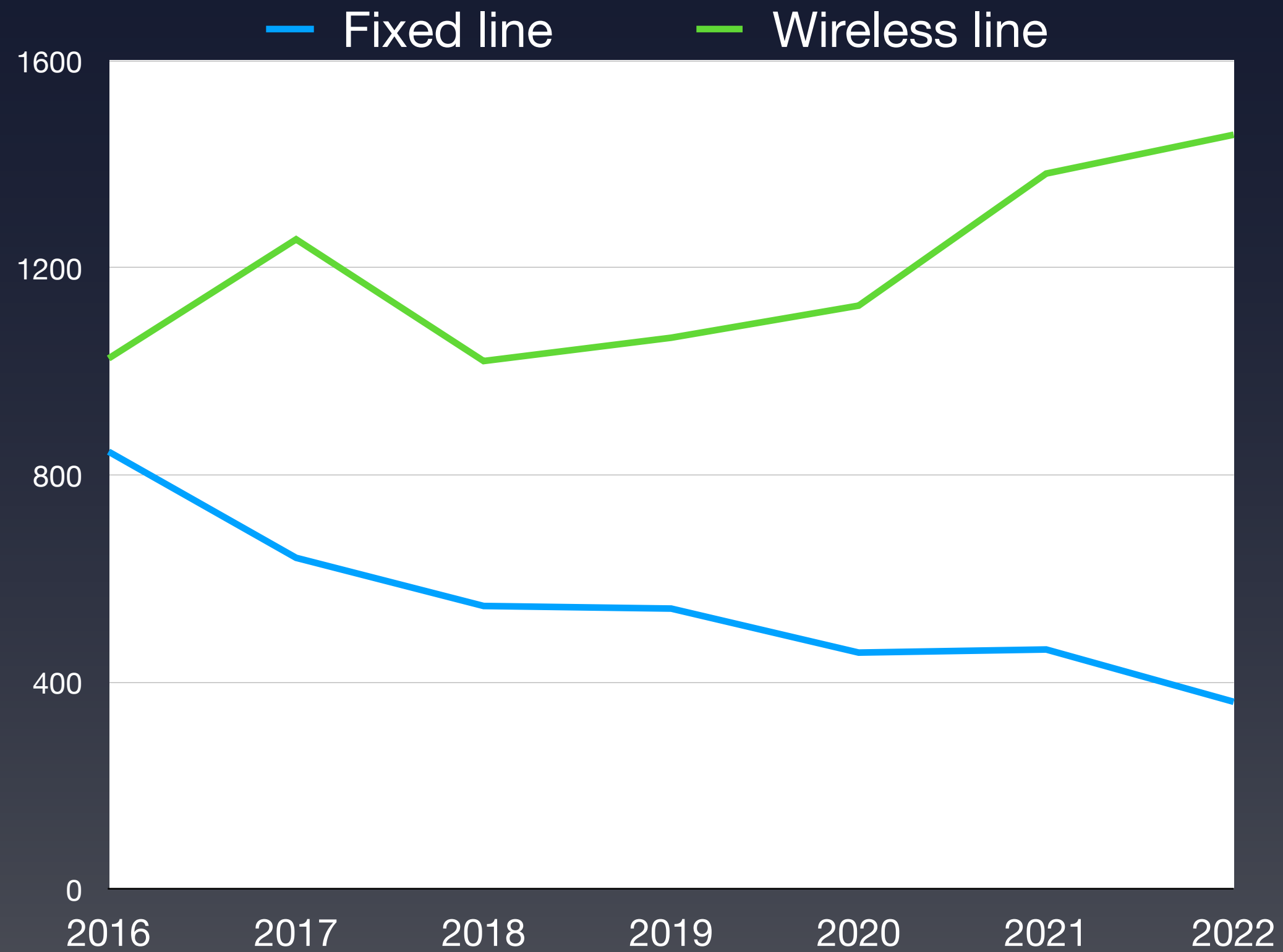


- **Mobile Internet affordability: 15th in the world**
 - Average price of 1 GB:
 - Over the past year: decreased by 40%
 - In the last three years: by almost 9 times
 - Average price: \$0.3712
- **Other countries in the region:**
 - Kyrgyzstan: 6th
 - Kazakhstan: 16th
 - Tajikistan: 131st
 - Turkmenistan: 227th

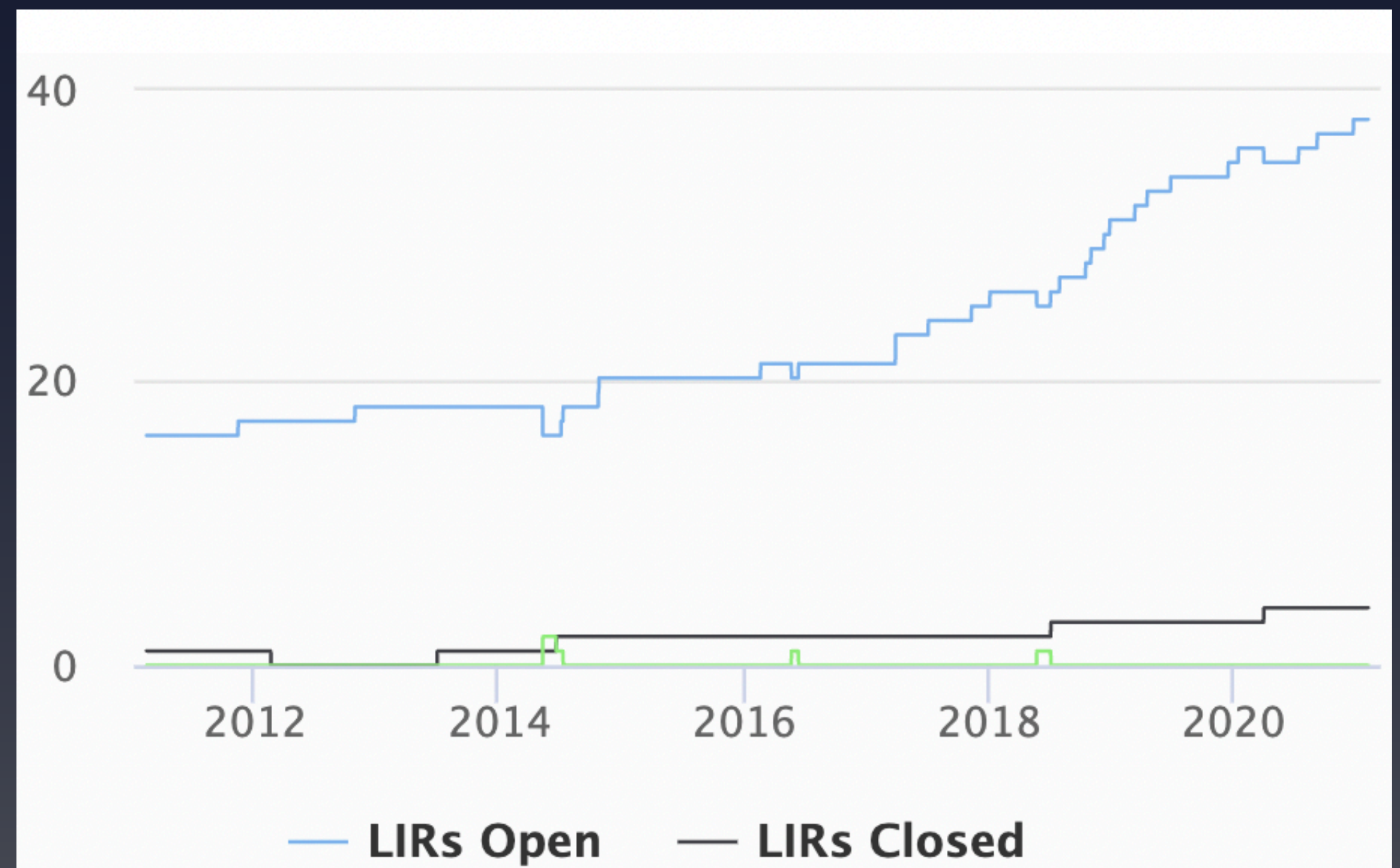
Telco stats



Number of communications companies (gov. data)



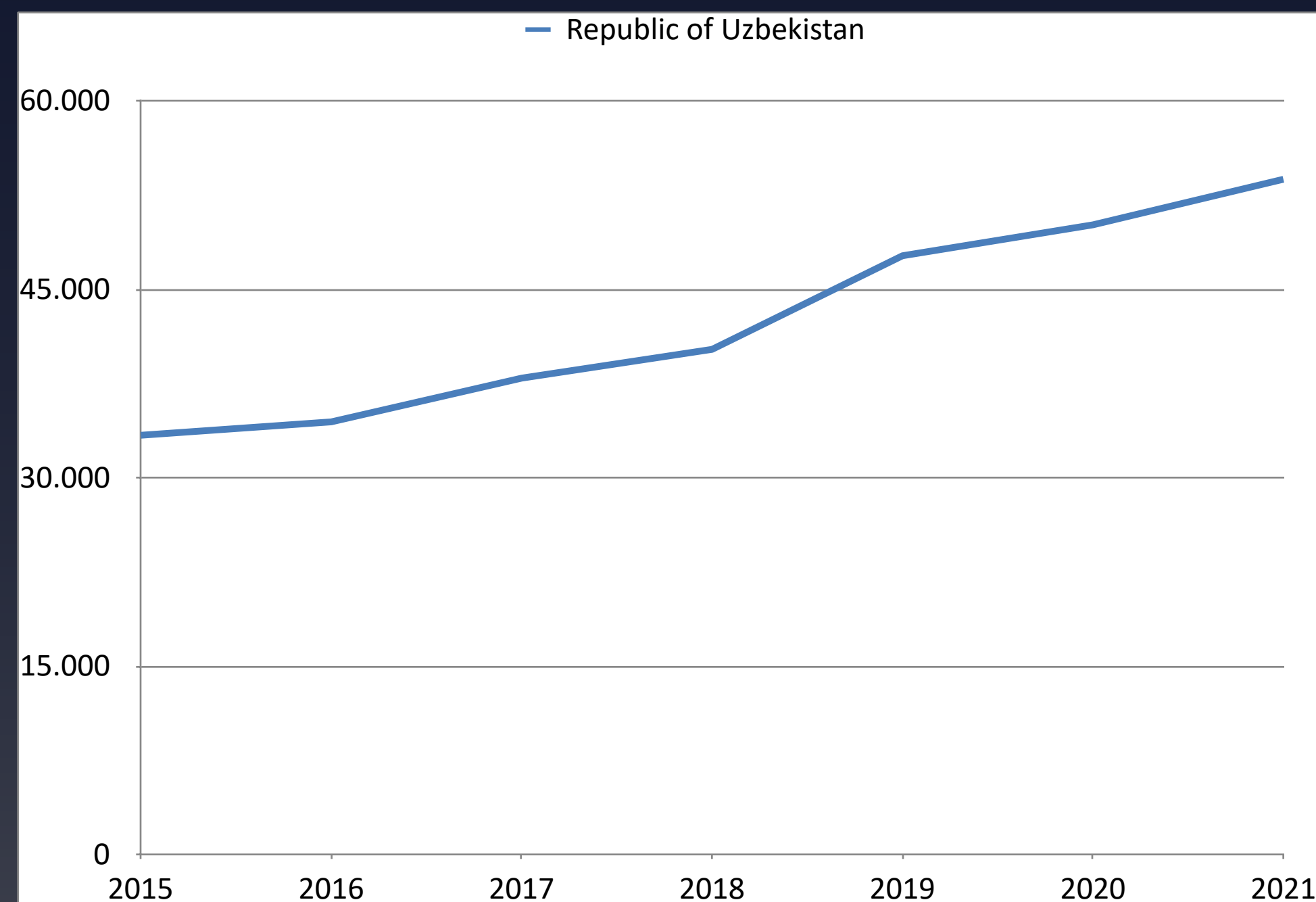
Number of LIRs



Telco stats



Number of employees of communications companies (gov. data)



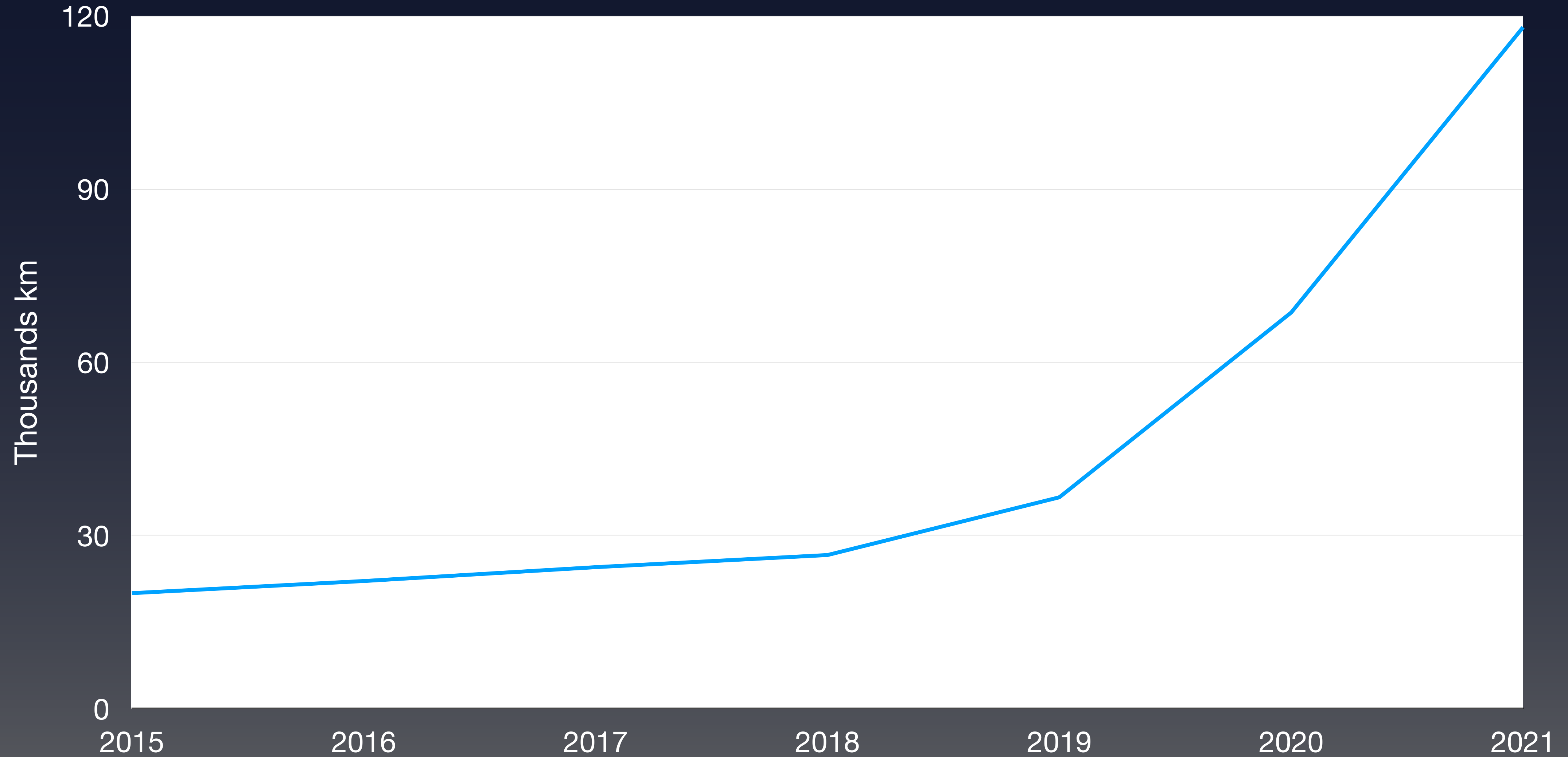
Average number of employees per company in telecommunications



Two trends are struggling:

- **Active market growth**
- **Its consolidation**

Total length of fibre optic in the country



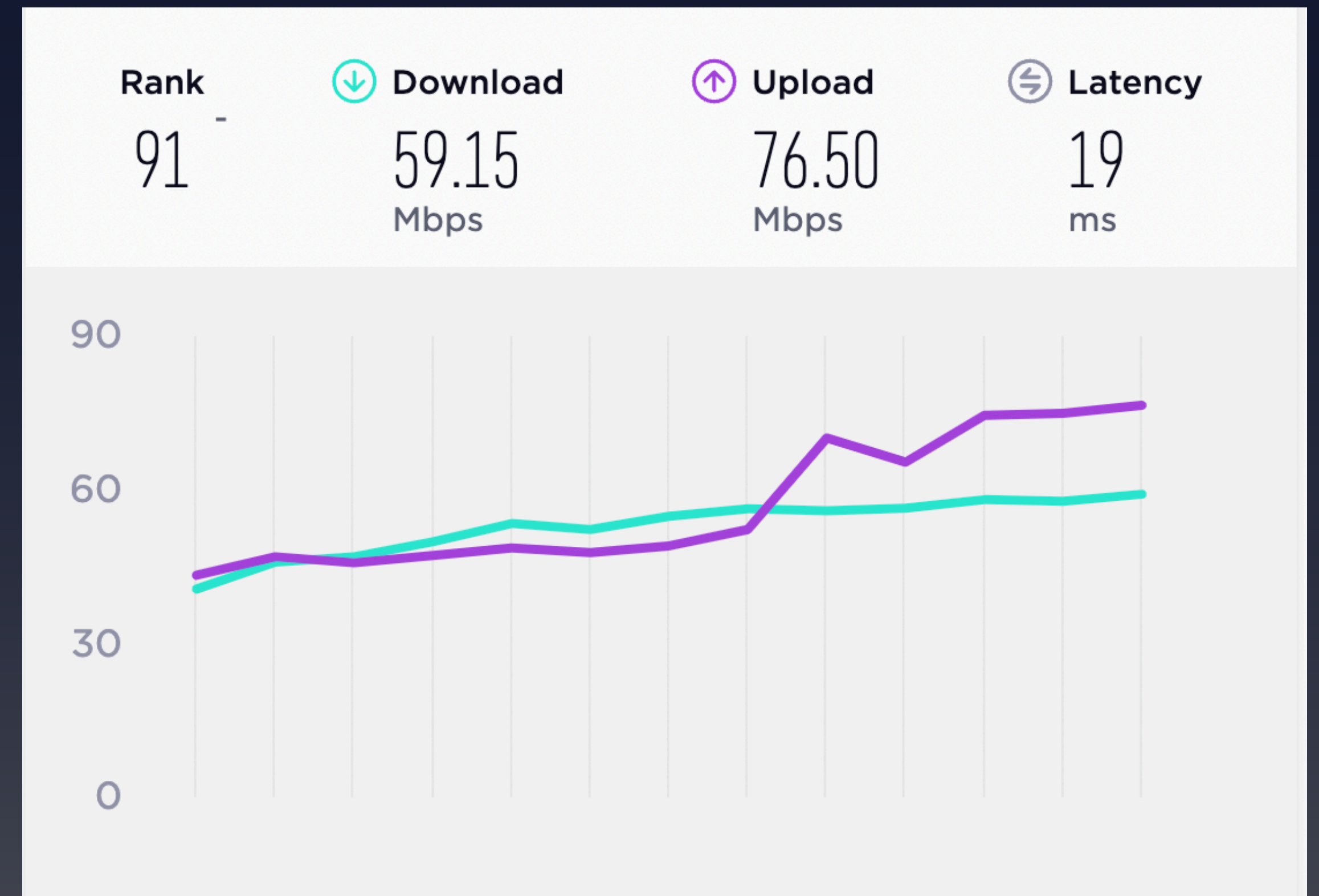
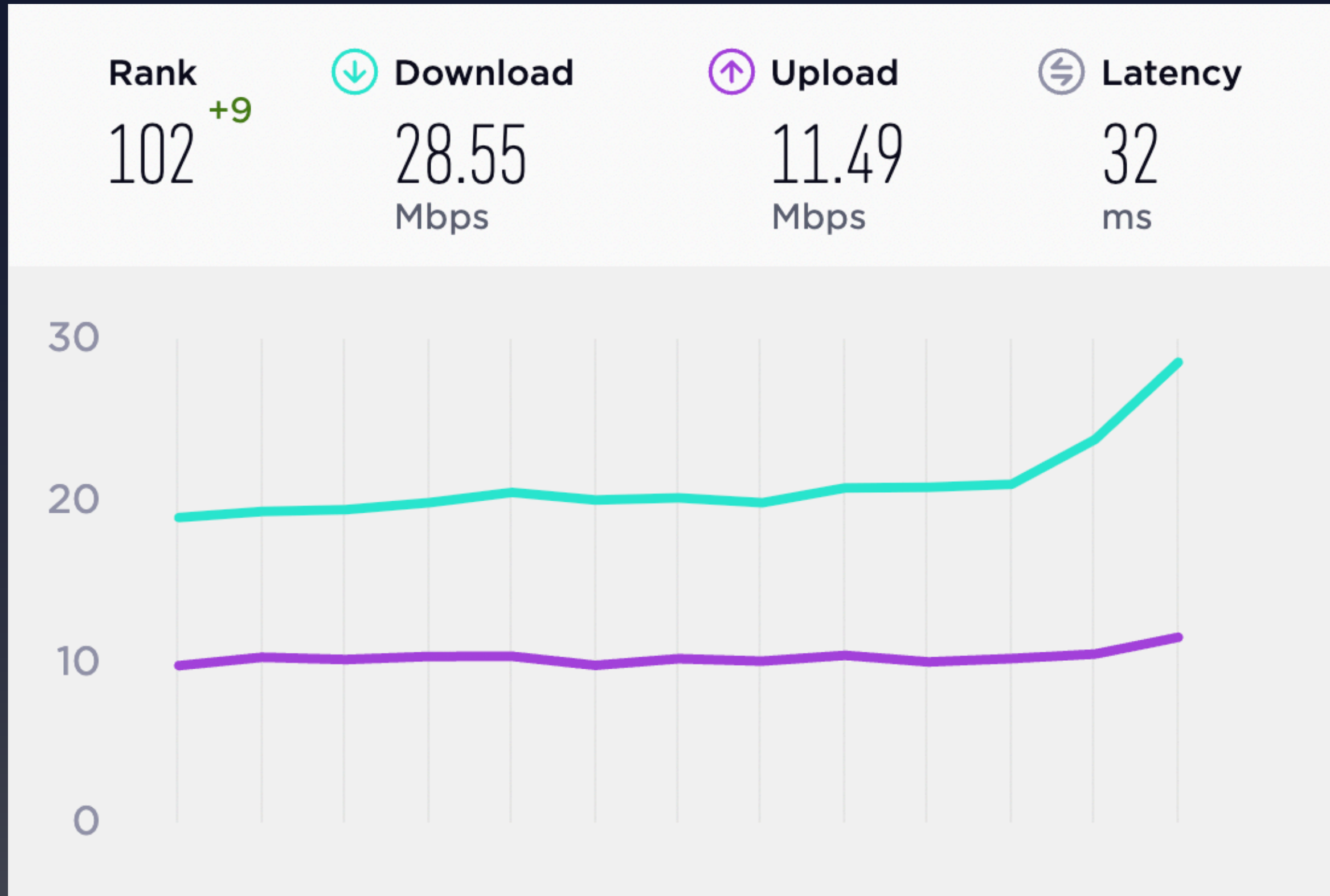
UZ Internet speed measurements (Speedtest)



Mobile

Aug. 2021 - Aug. 2022

Fixed



Internet speed on download (May 2020 - May 2021):

- Fixed: 26.45 ⇒ 40.54 Mbps (+53.2%)
- Mobile: 11.26 ⇒ 18.56 Mbps (+64.8%)



Regional Internet speed measurements

Download speed in Aug. 2022

- **Kyrgyzstan**

- fixed: 48.46 Mbps
- mobile: 20.23 Mbps

- **Uzbekistan**

- fixed: 40.54 Mbps
- mobile: 18.56 Mbps

- **Kazakhstan**

- fixed: 38.22 Mbps
- mobile: 22.07 Mbps

- **Tajikistan**

- fixed: 31.78 Mbps
- mobile: 7.79 Mbps

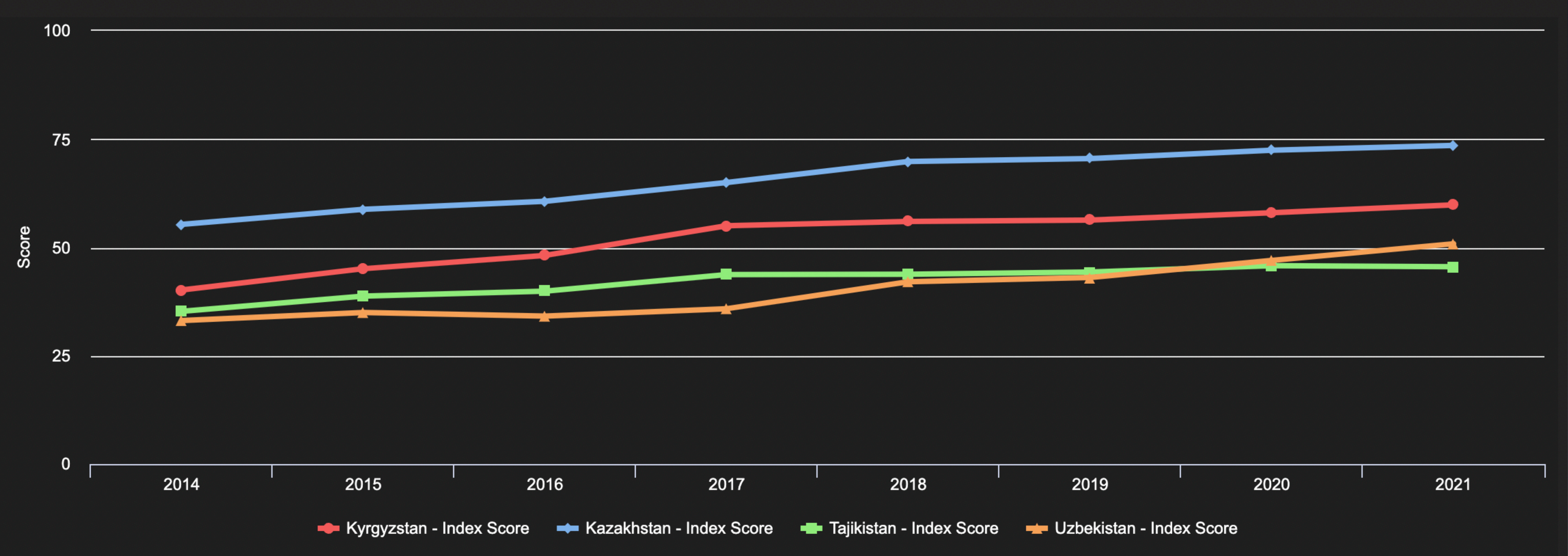
- **Turkmenistan**

- fixed: 2.18

GSMA data: overall index score



Synthetic index of mobile network development in the countries of this region

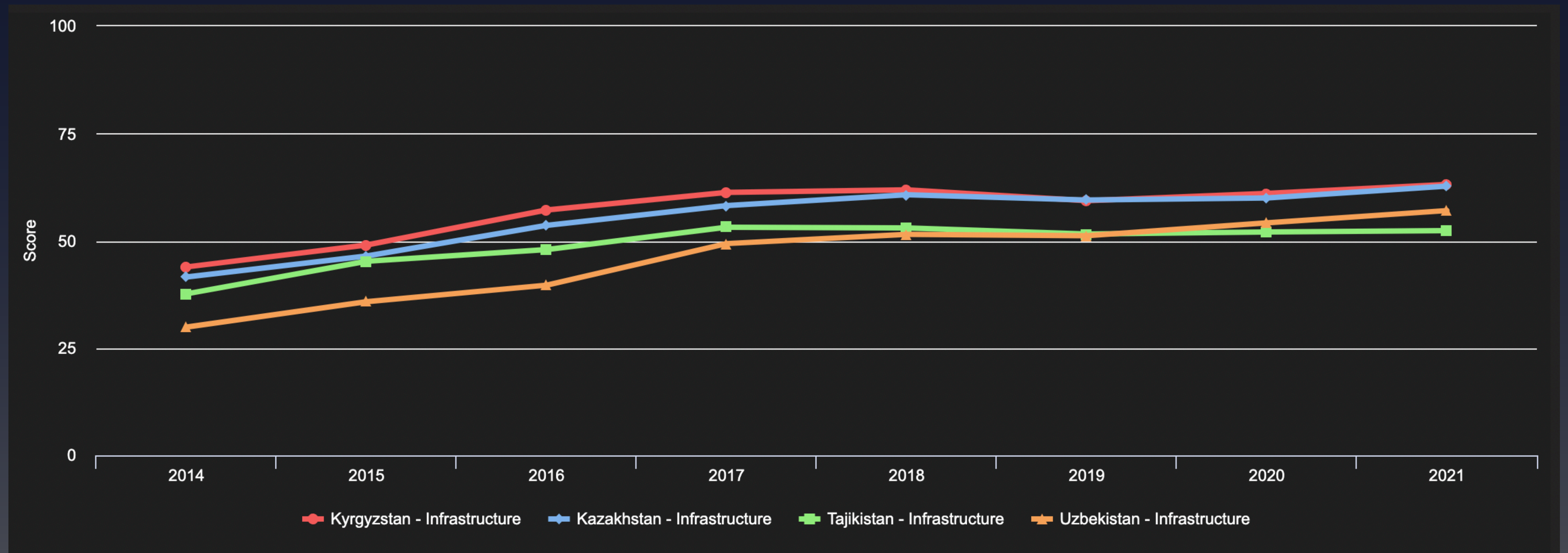


Uzbekistan: the fastest growth in the region

GSMA data: infrastructure



Indicator of mobile infrastructure development in the countries of this region

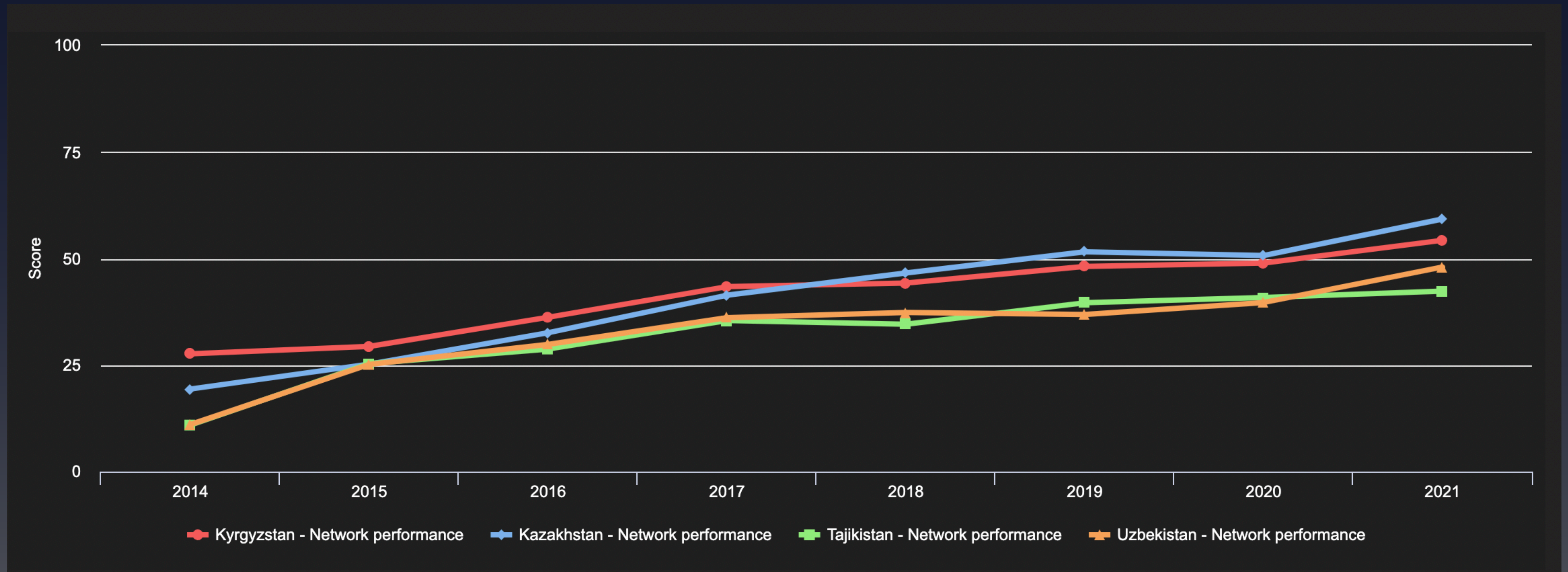


Uzbekistan: still the fastest growth

GSMA data: network performance



Indicator of network performance in the countries of this region

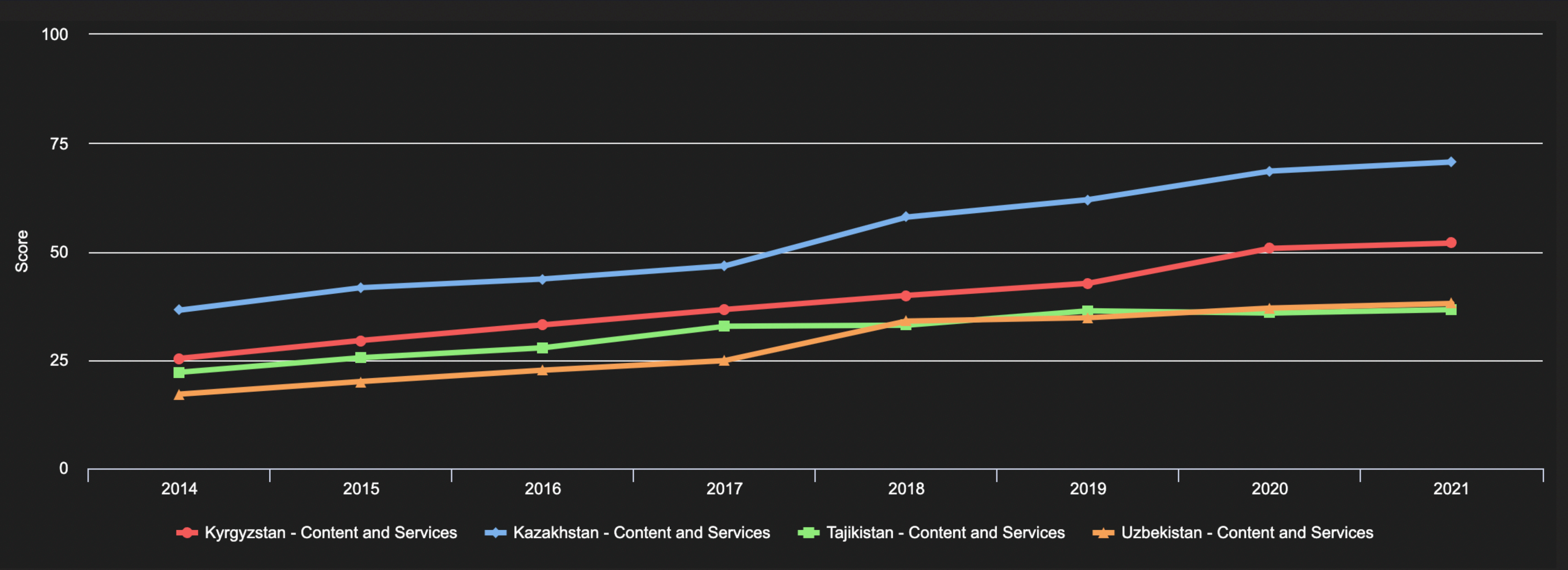


Fastest growth: Uzbekistan and Kazakhstan

GSMA data: content and services

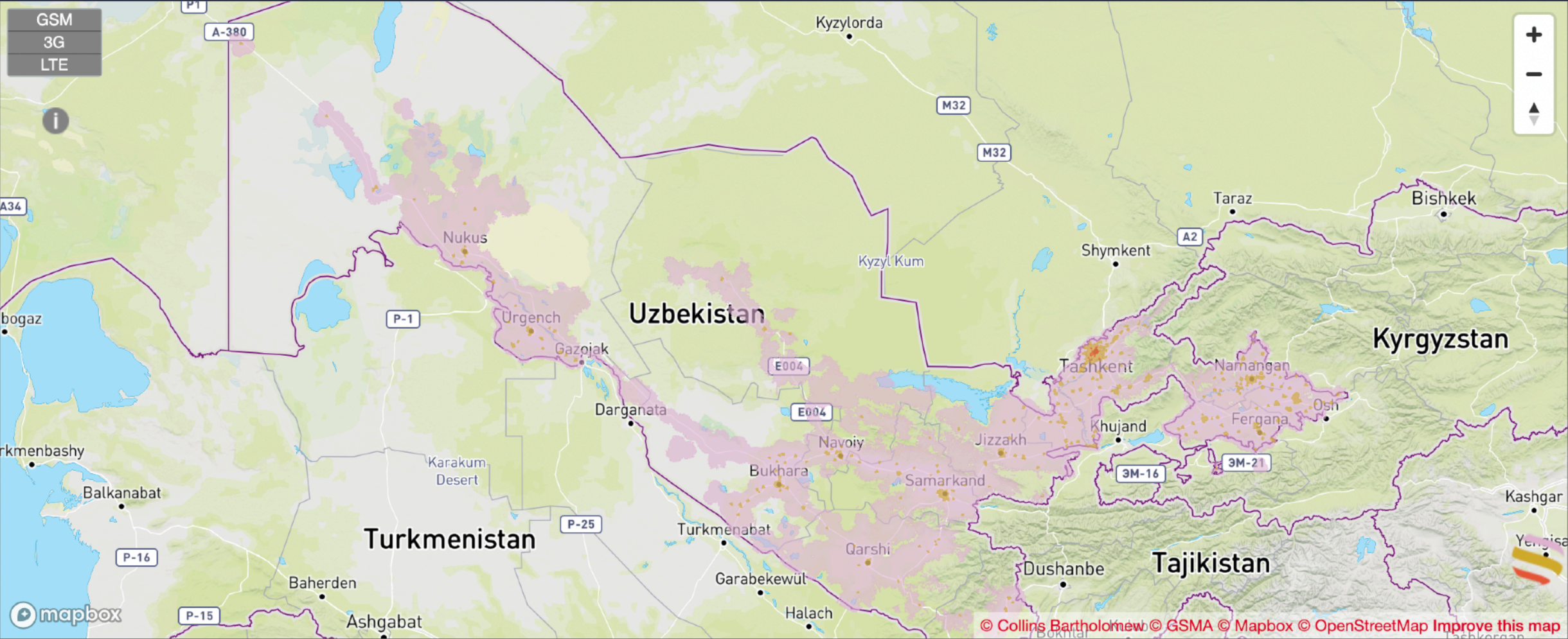


Indicator of content and services maturity in the countries of this region

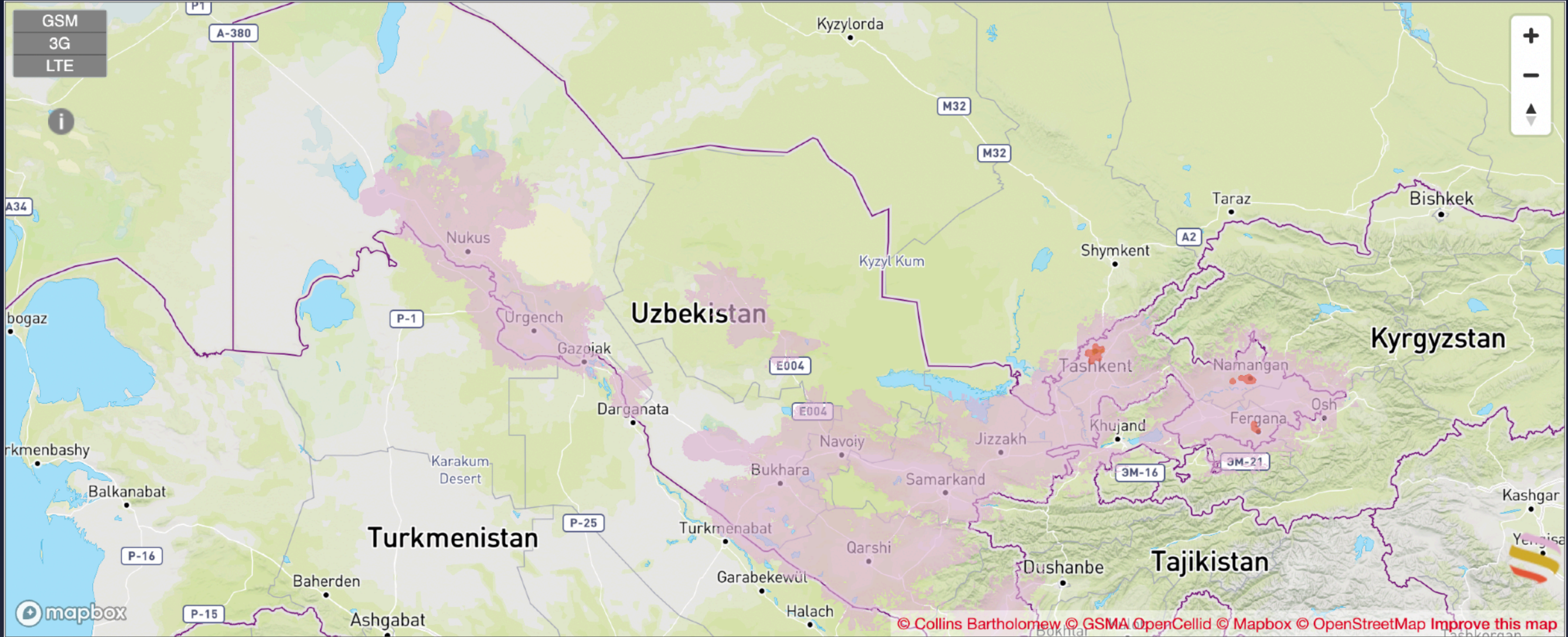


Uzbekistan: not that good here

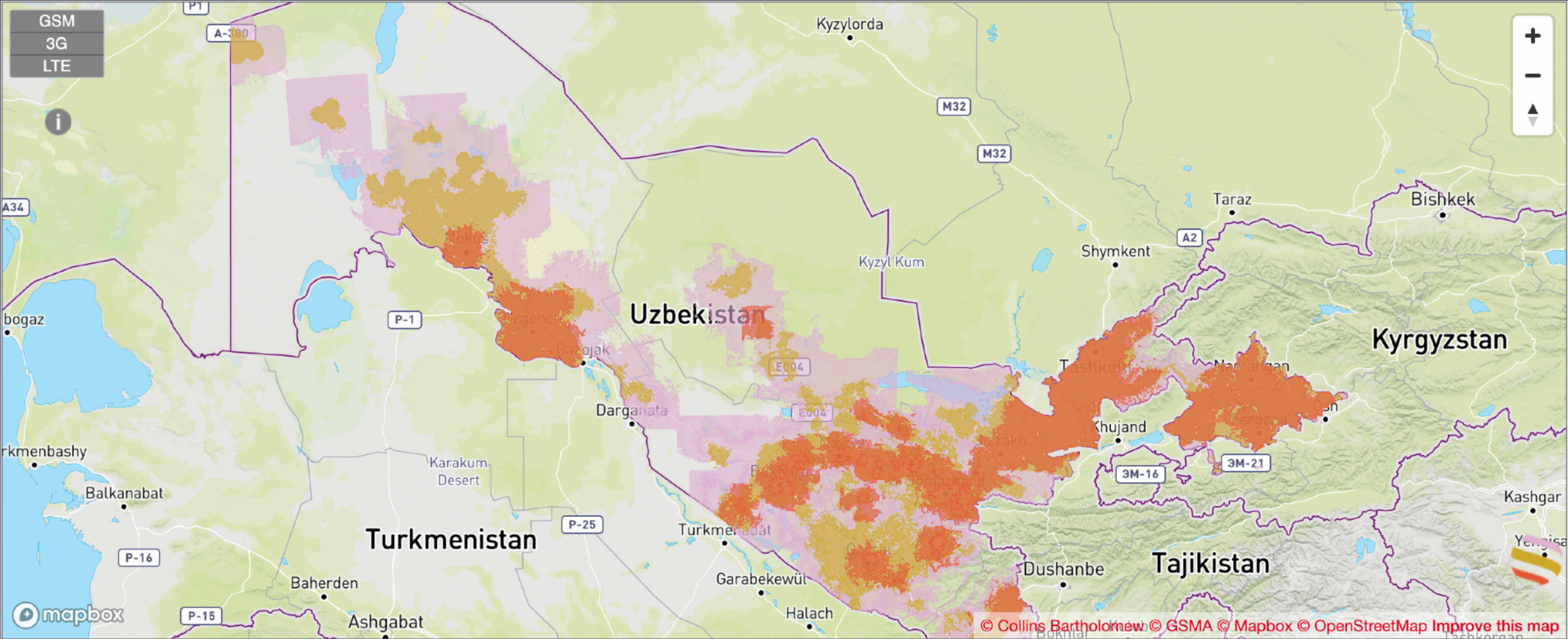
Uzbekistan mobile internet coverage



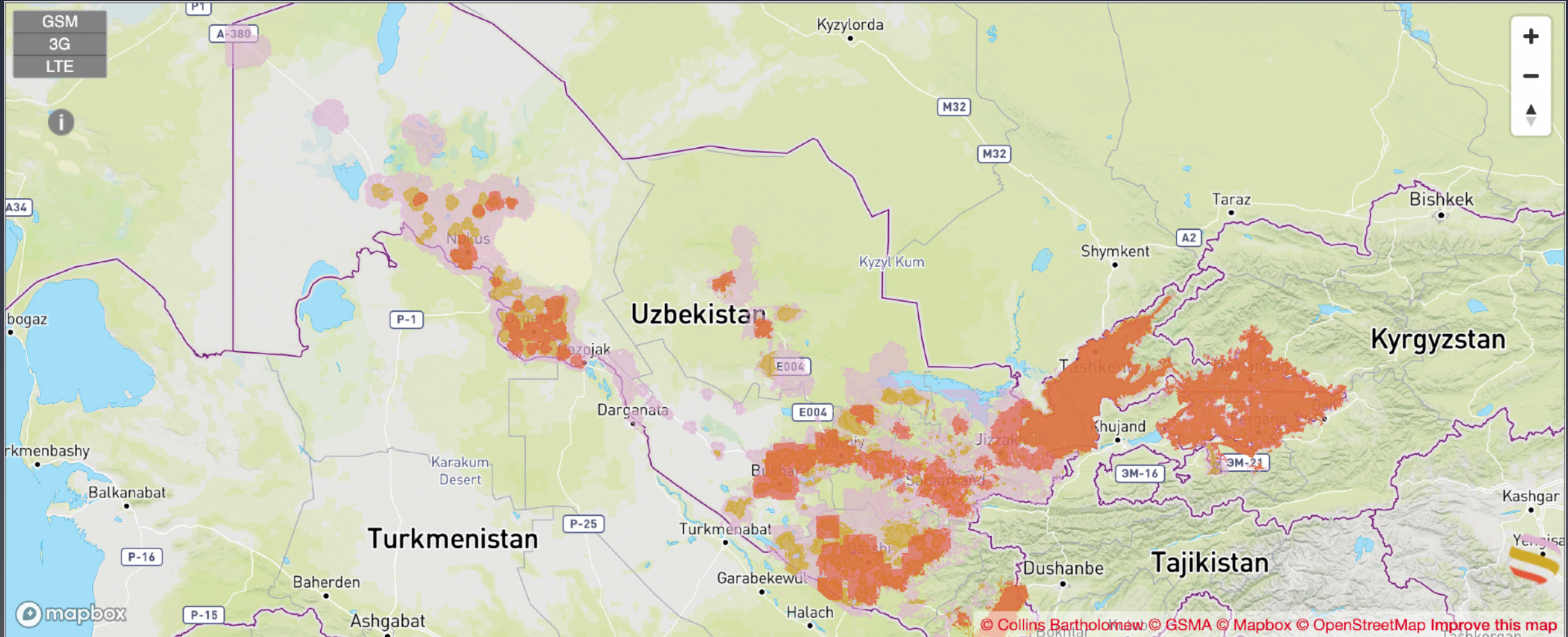
Ucell



Beeline

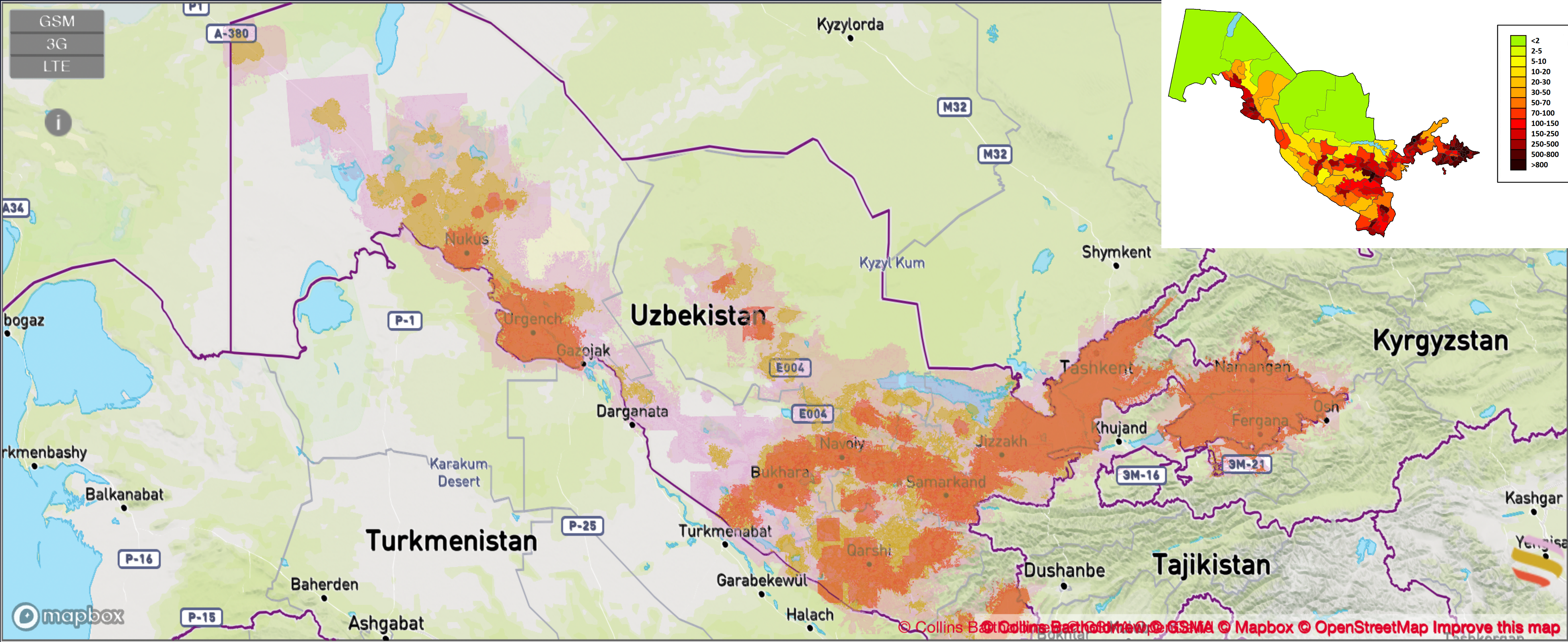


UzMobile



Mobiuz

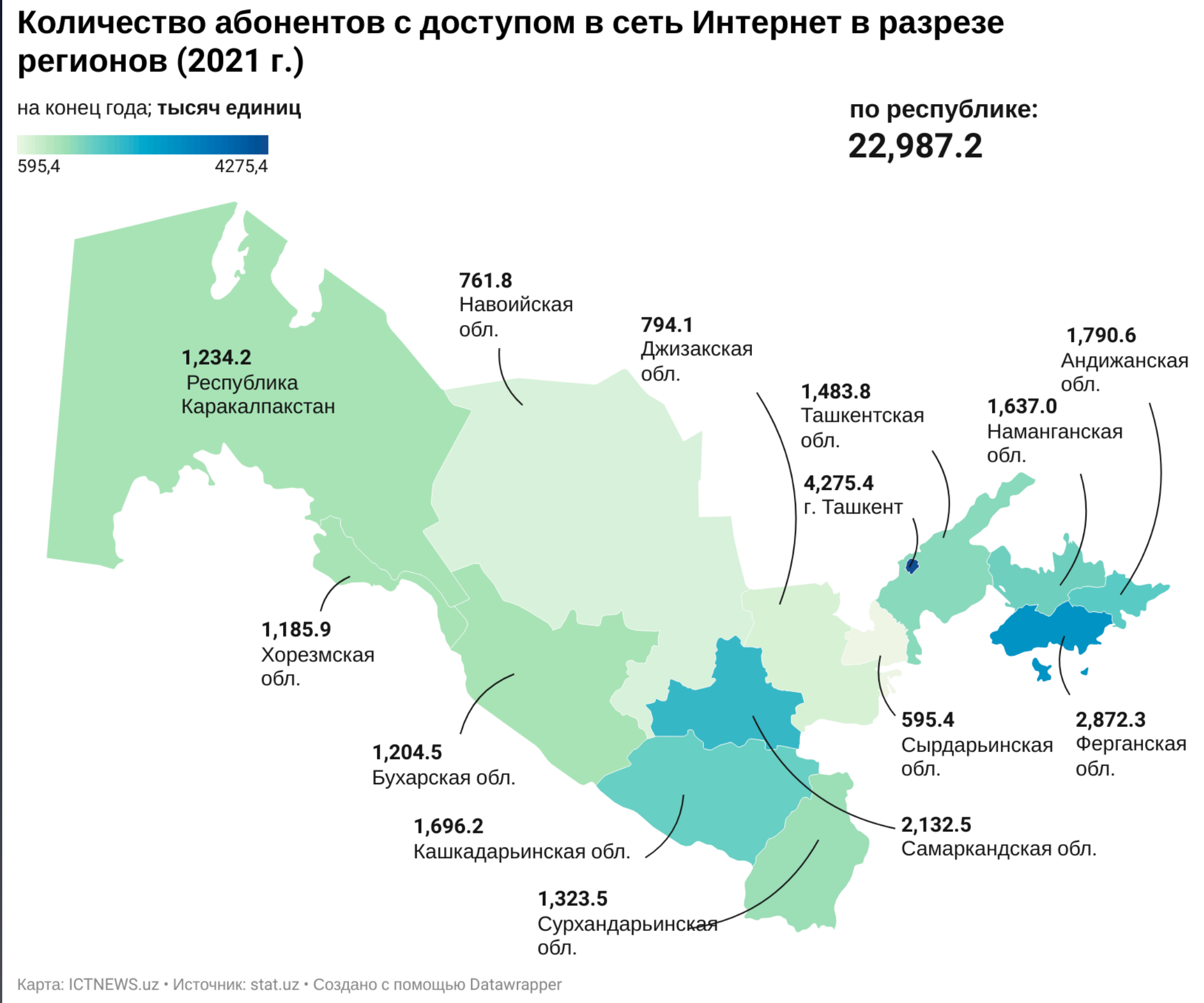
Uzbekistan mobile internet coverage, summarised



Internet subscribers by region (stat.uz)



Absolute number



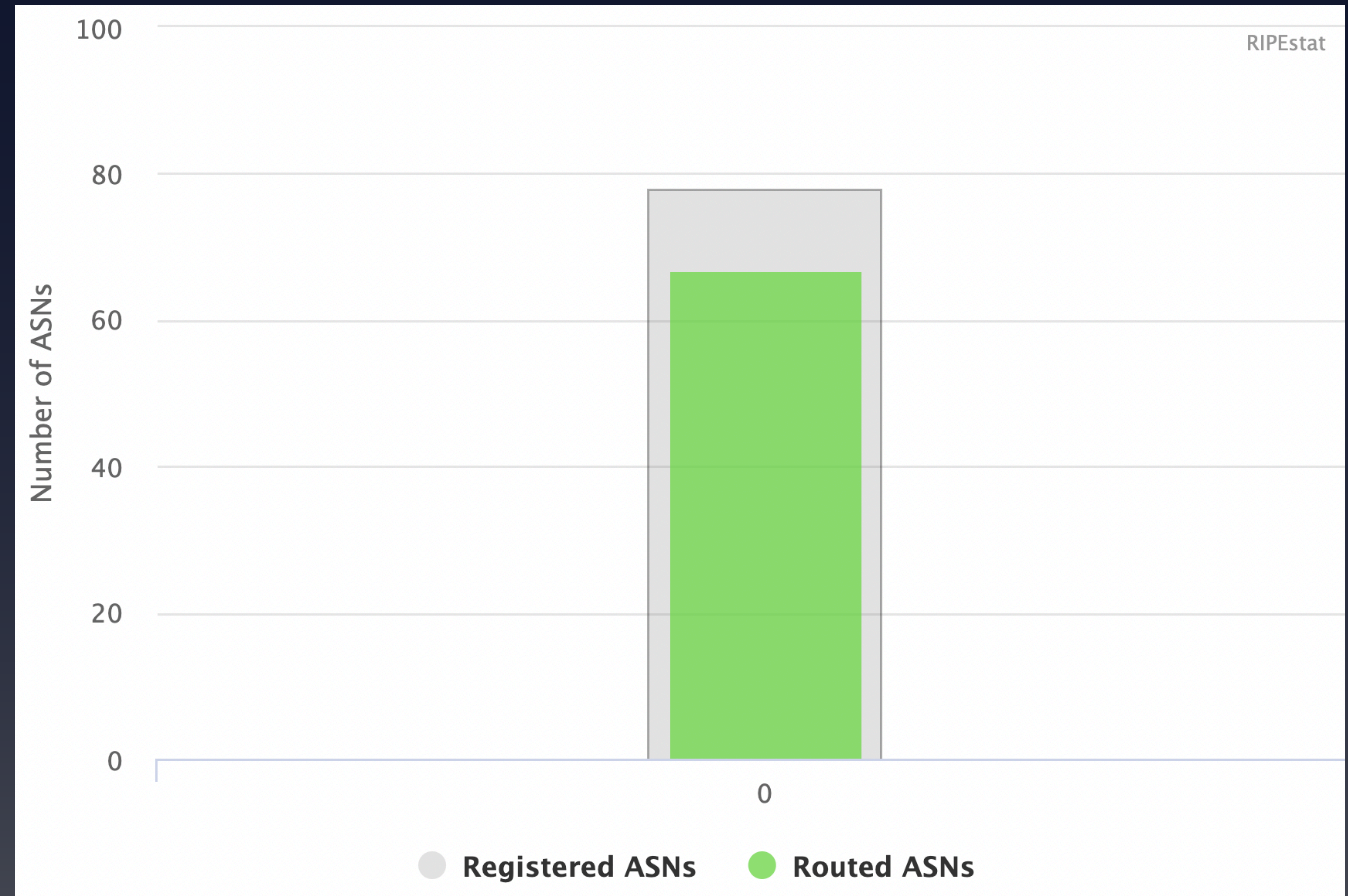
%



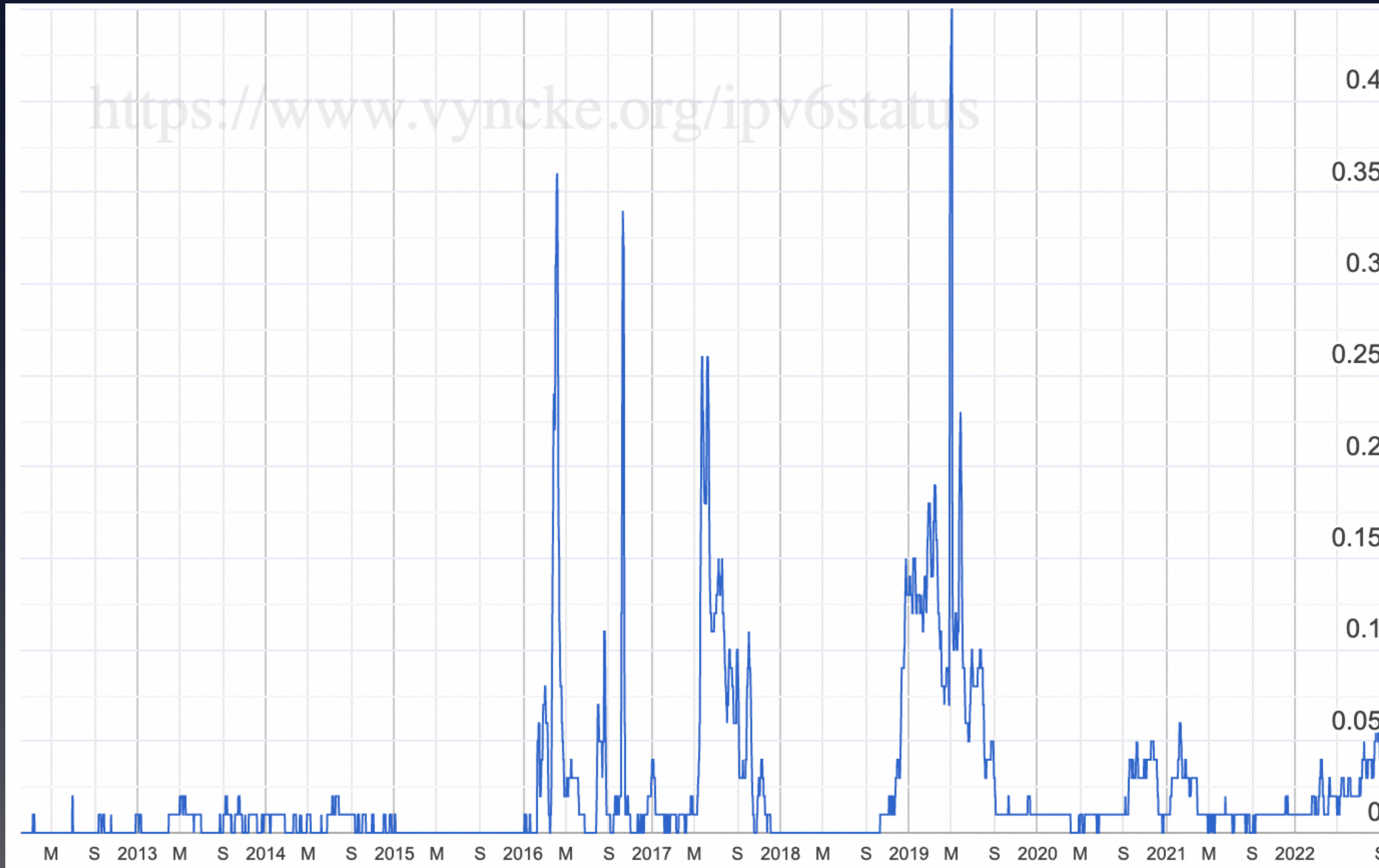


Uzbekistan in the RIPE DB

- **ASNs: 78**
- **IPv4 prefixes: 188**
- **IPv6 prefixes: 34**



IPv6 in Uzbekistan (vyncke.org)

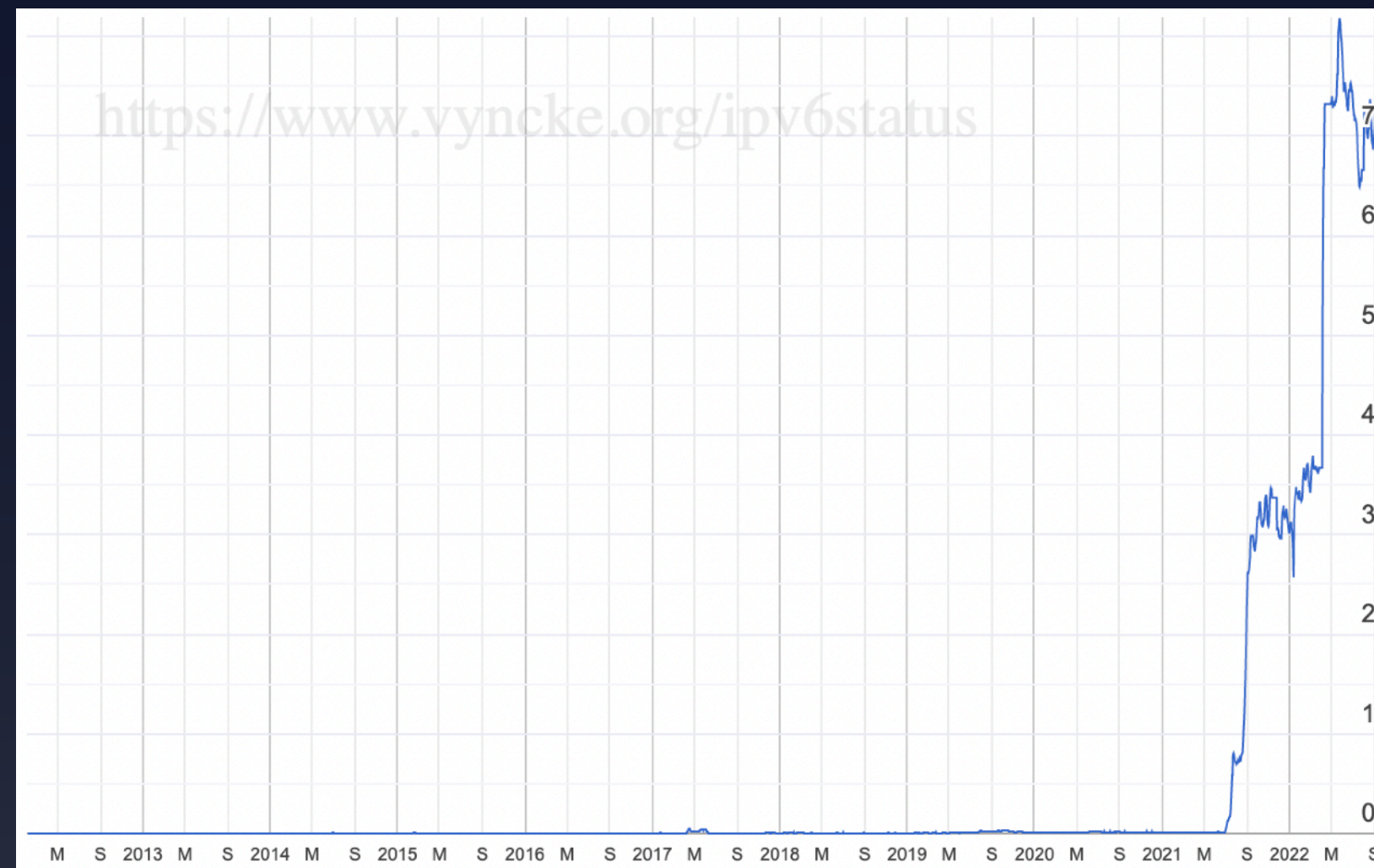


**Basically,
no IPv6** ←

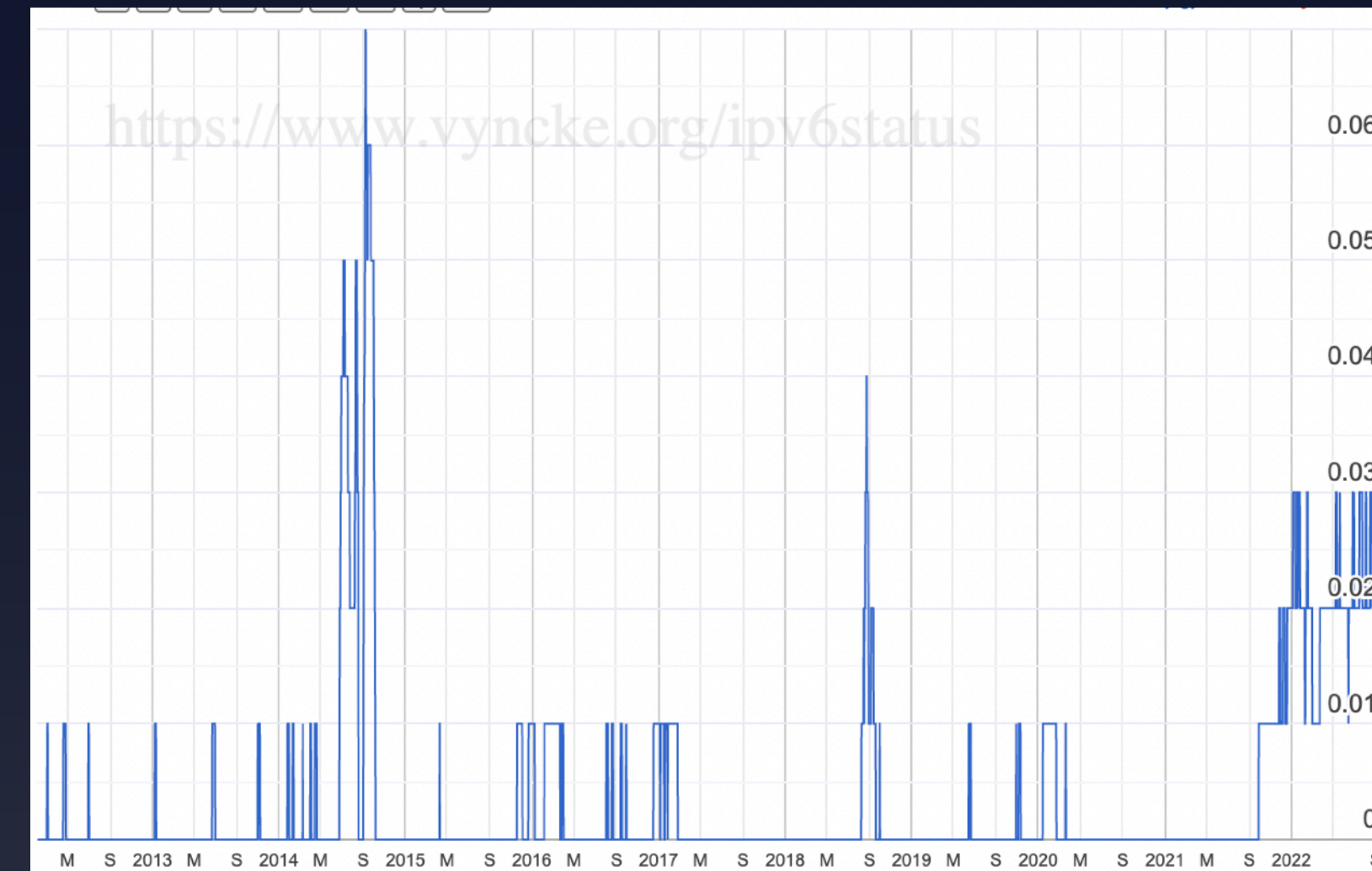
IPv6 in the region (vyncke.org)



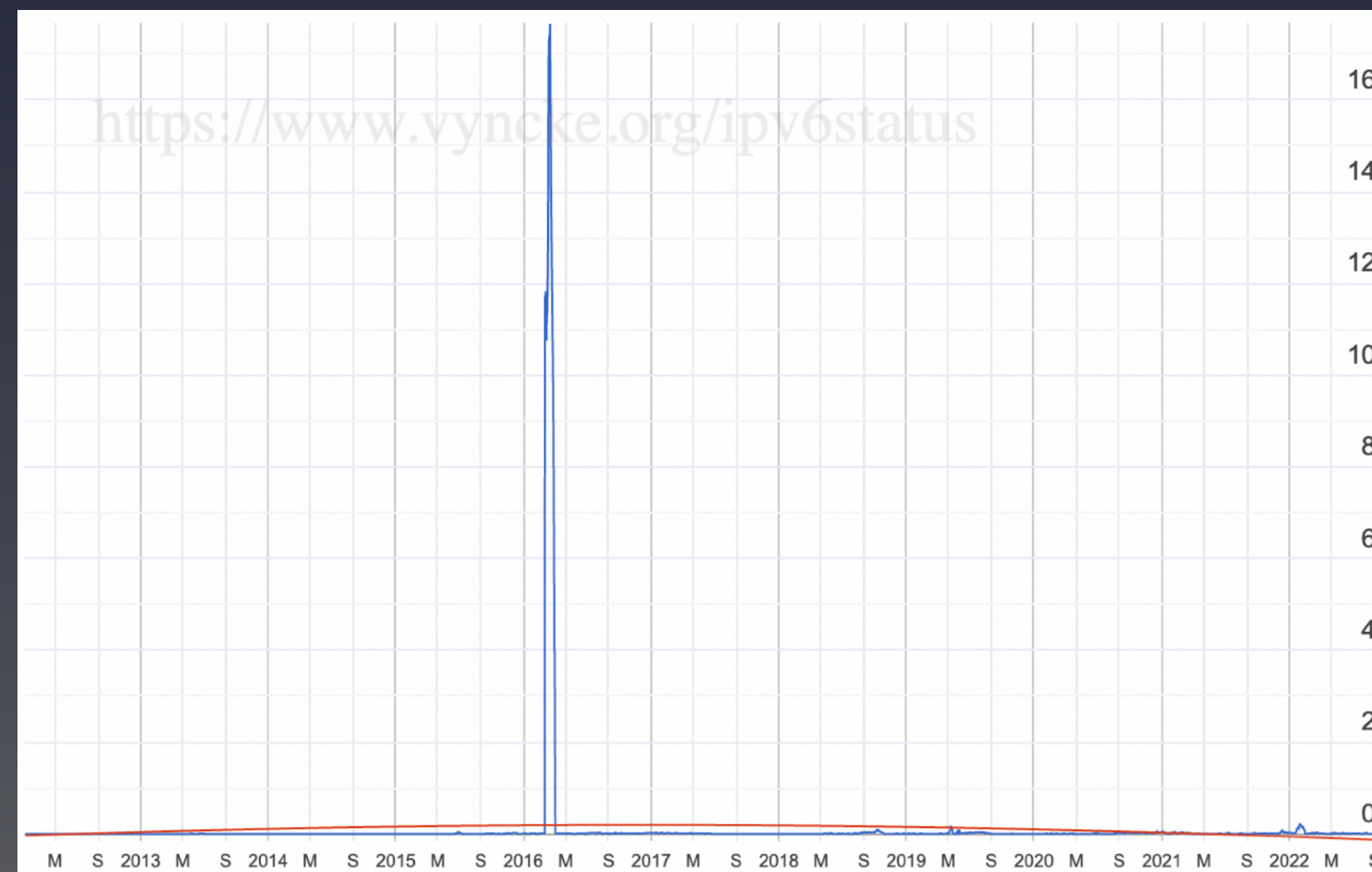
Kazakhstan



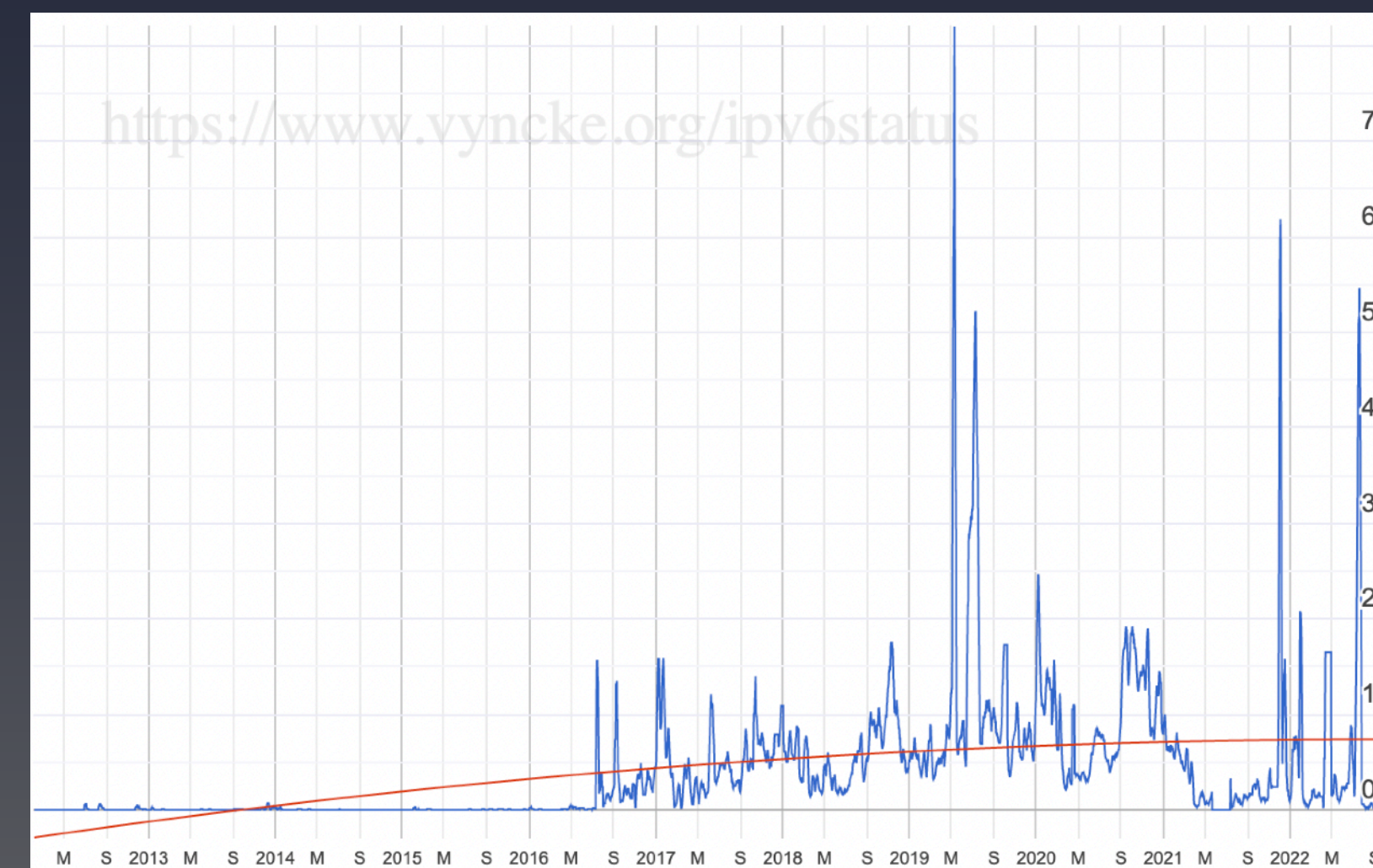
Kyrgyzstan



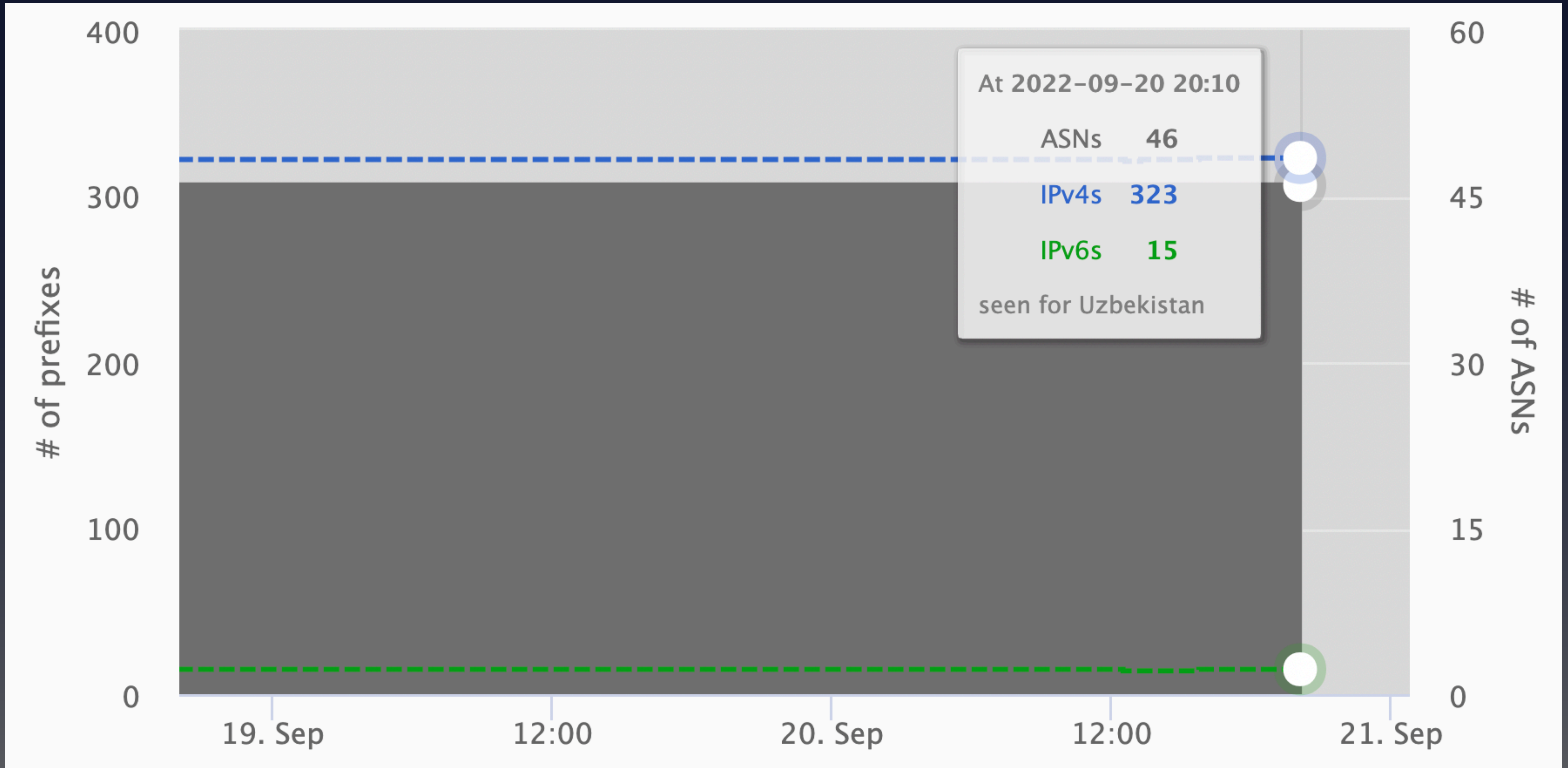
Tajikistan



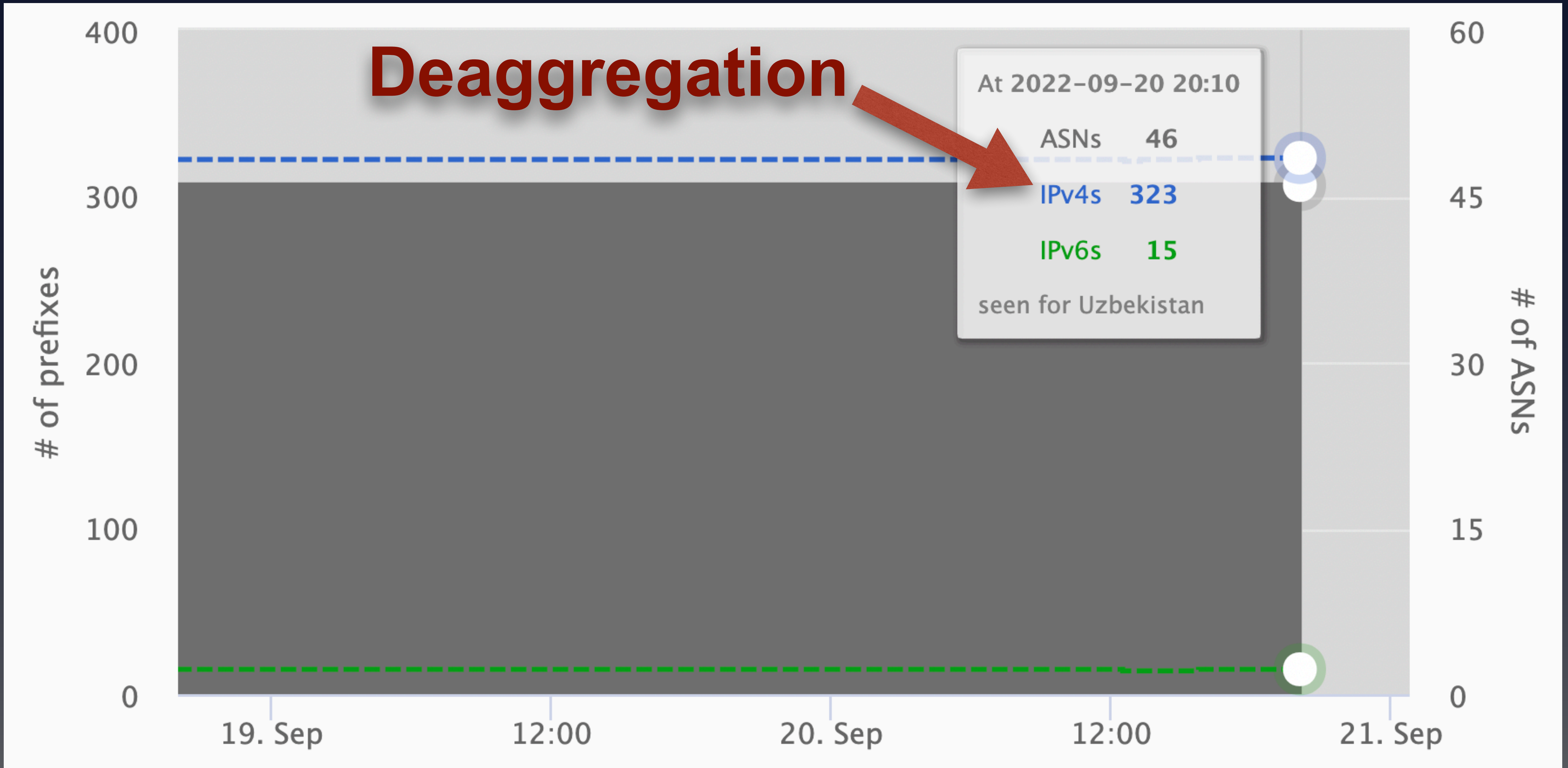
Turkmenistan



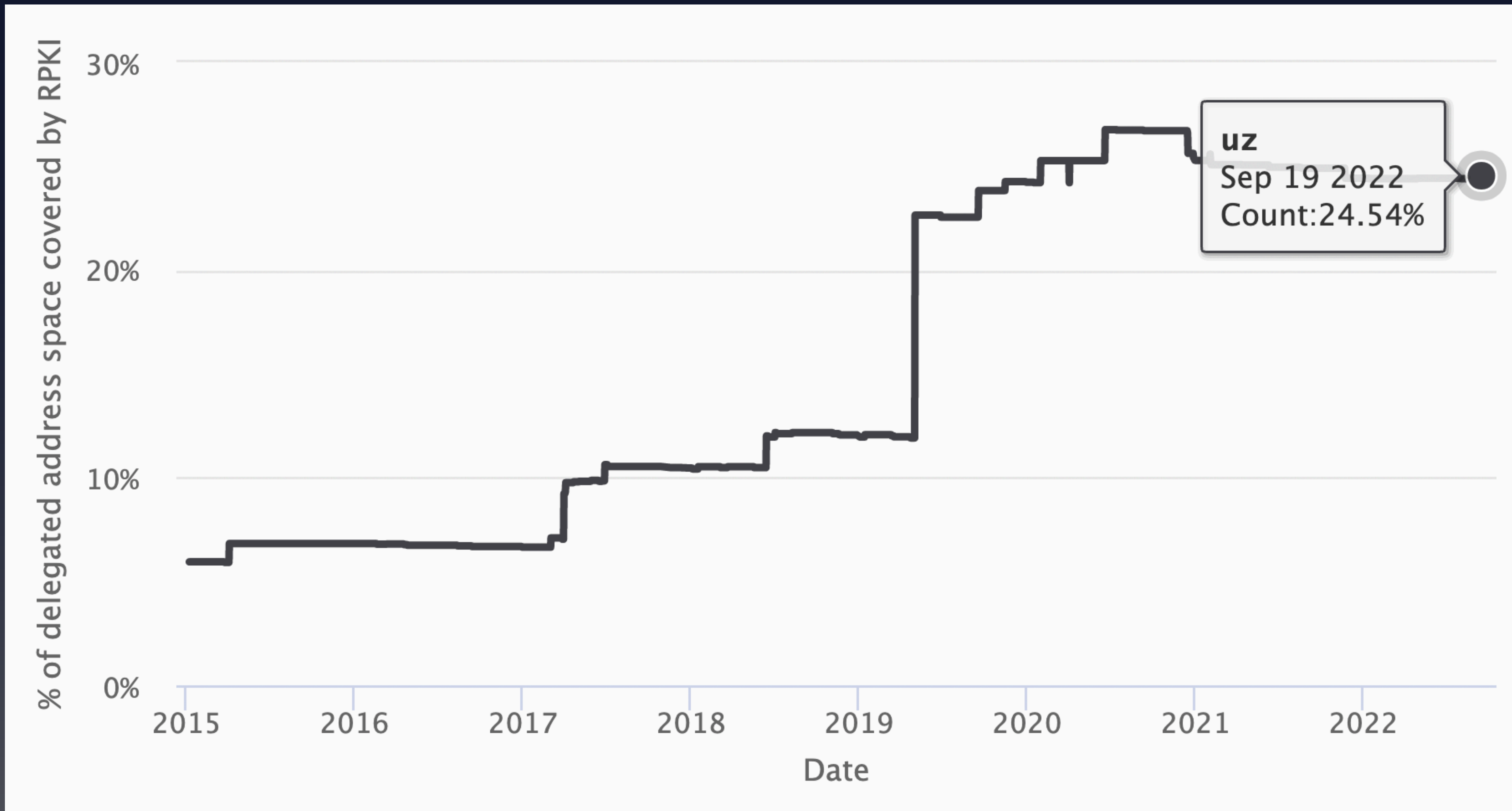
Routing stats (by RIPEstat)



Routing stats (by RIPEstat)

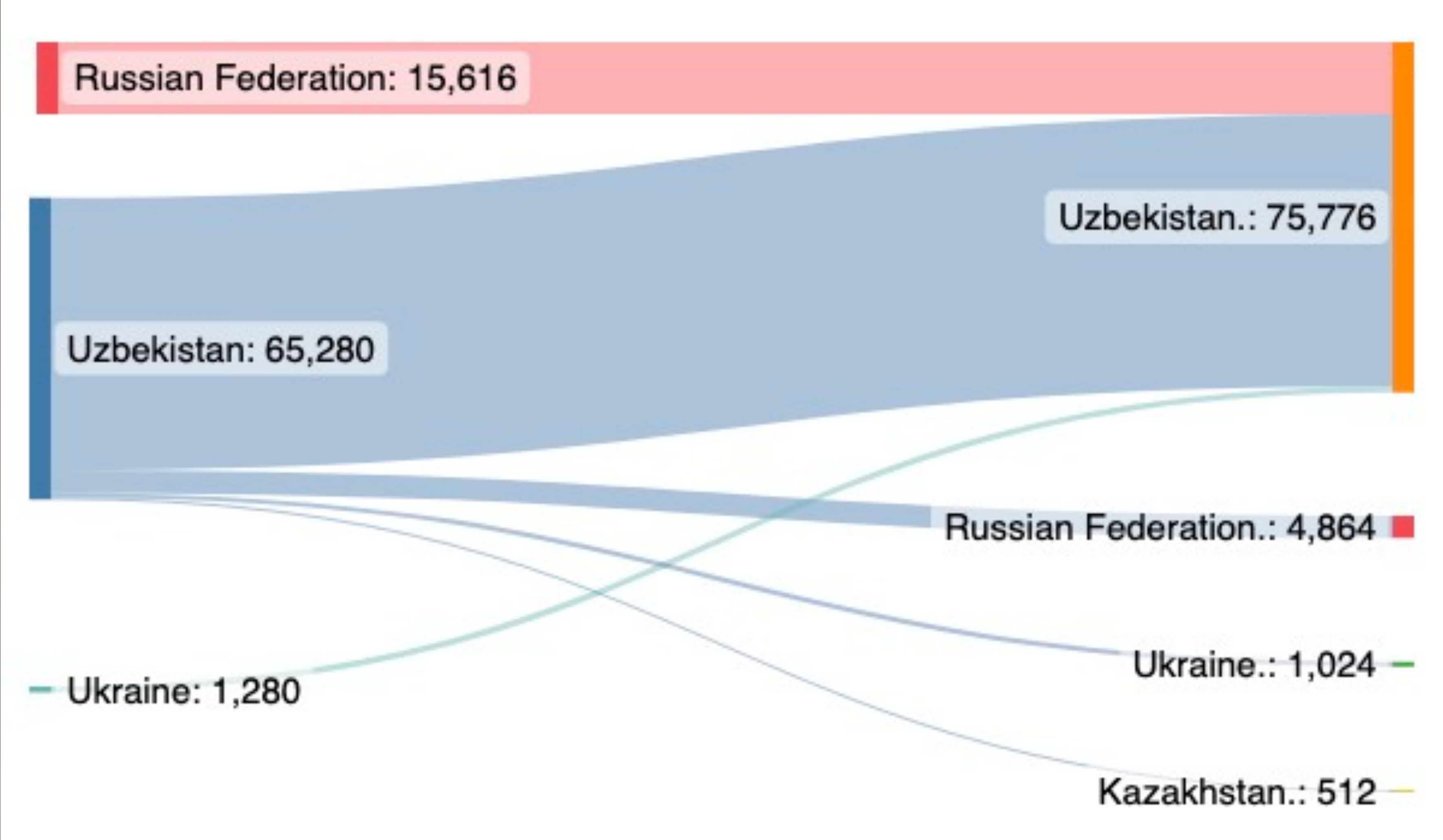


Uzbek networks covered by RPKI



- **TM: 1.18%**
- **TJ: 3.85%**
- **KZ: 7.51%**
- **KG: 81.42%**

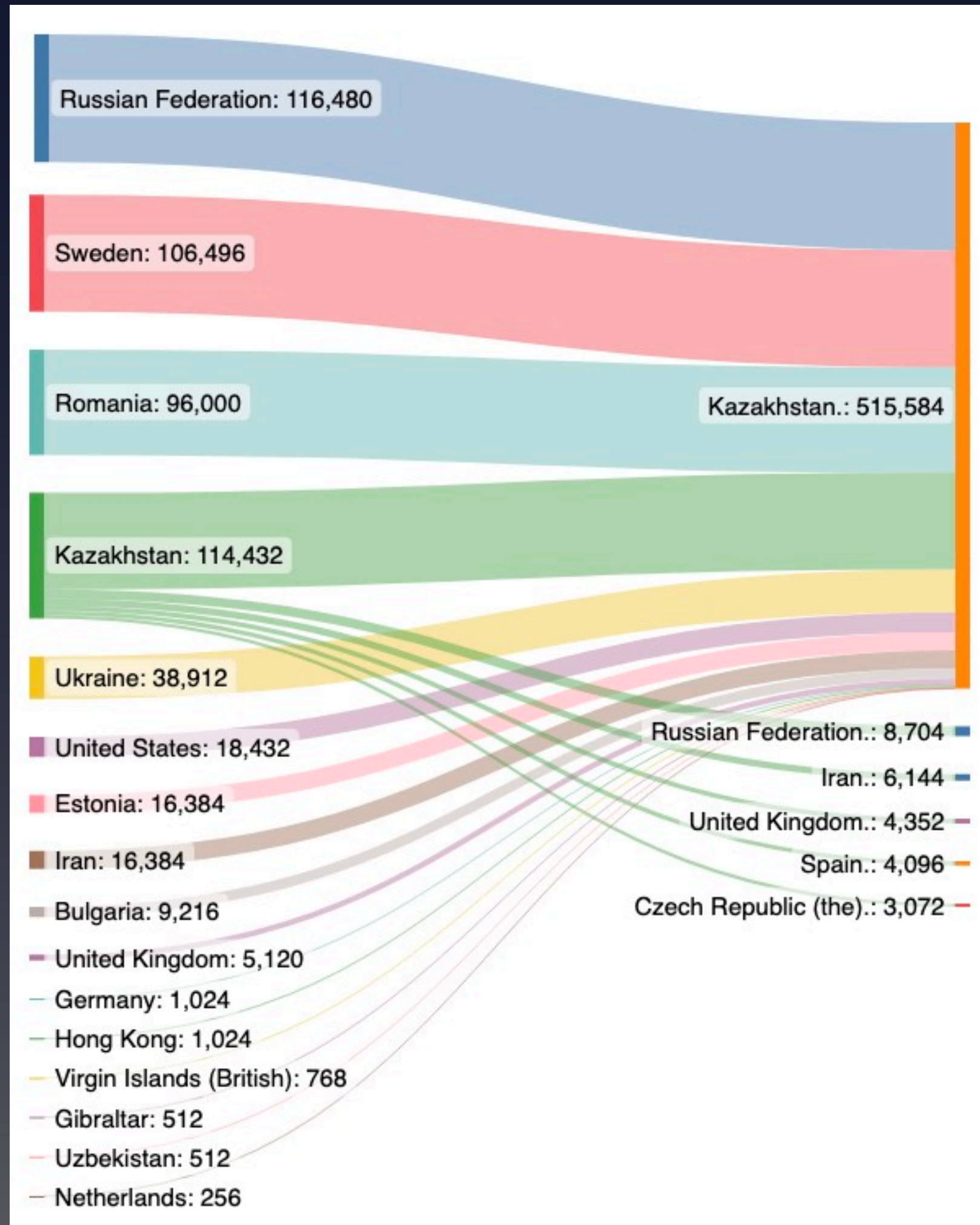
IPv4 transfers



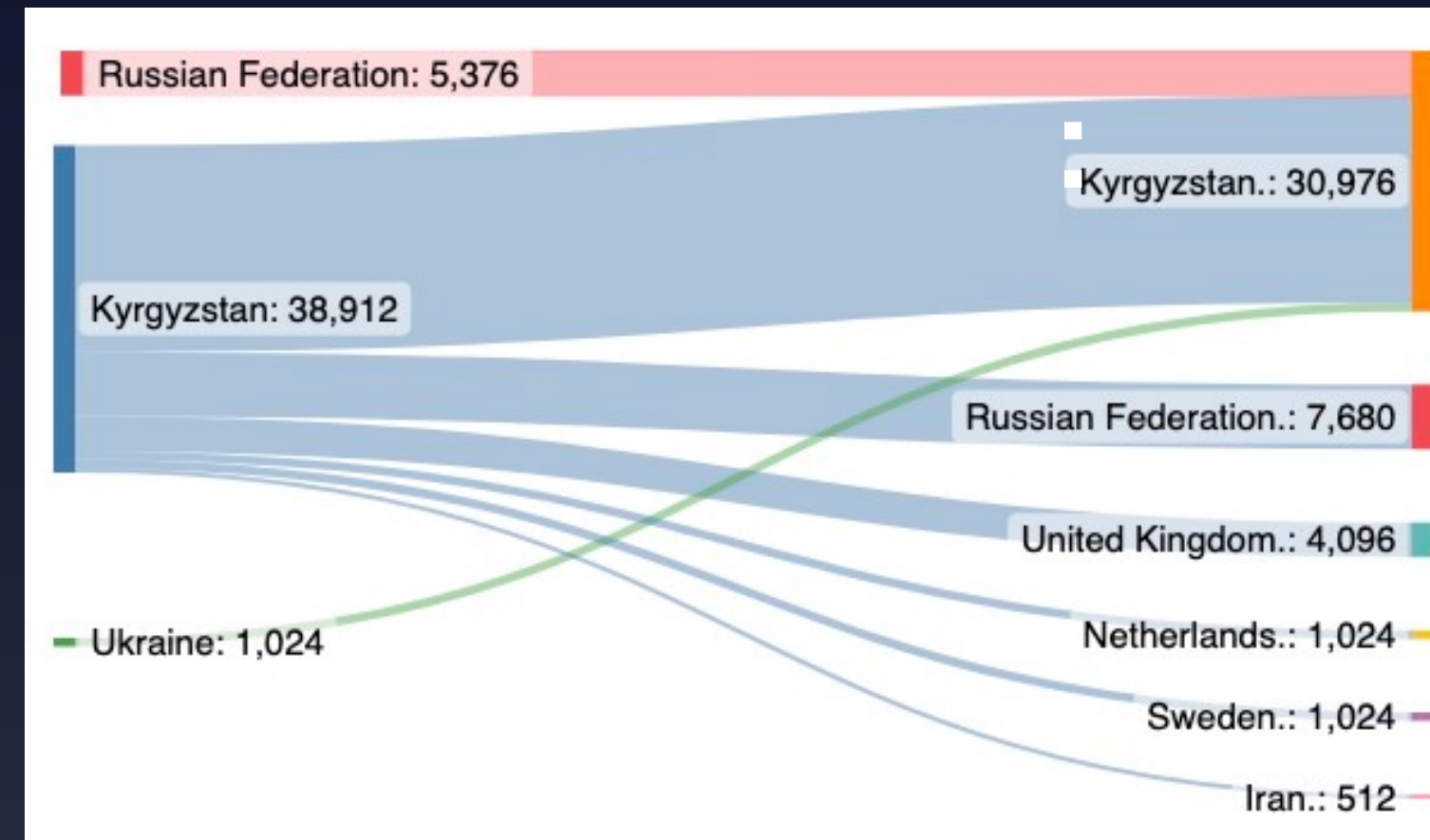
IPv4 transfers



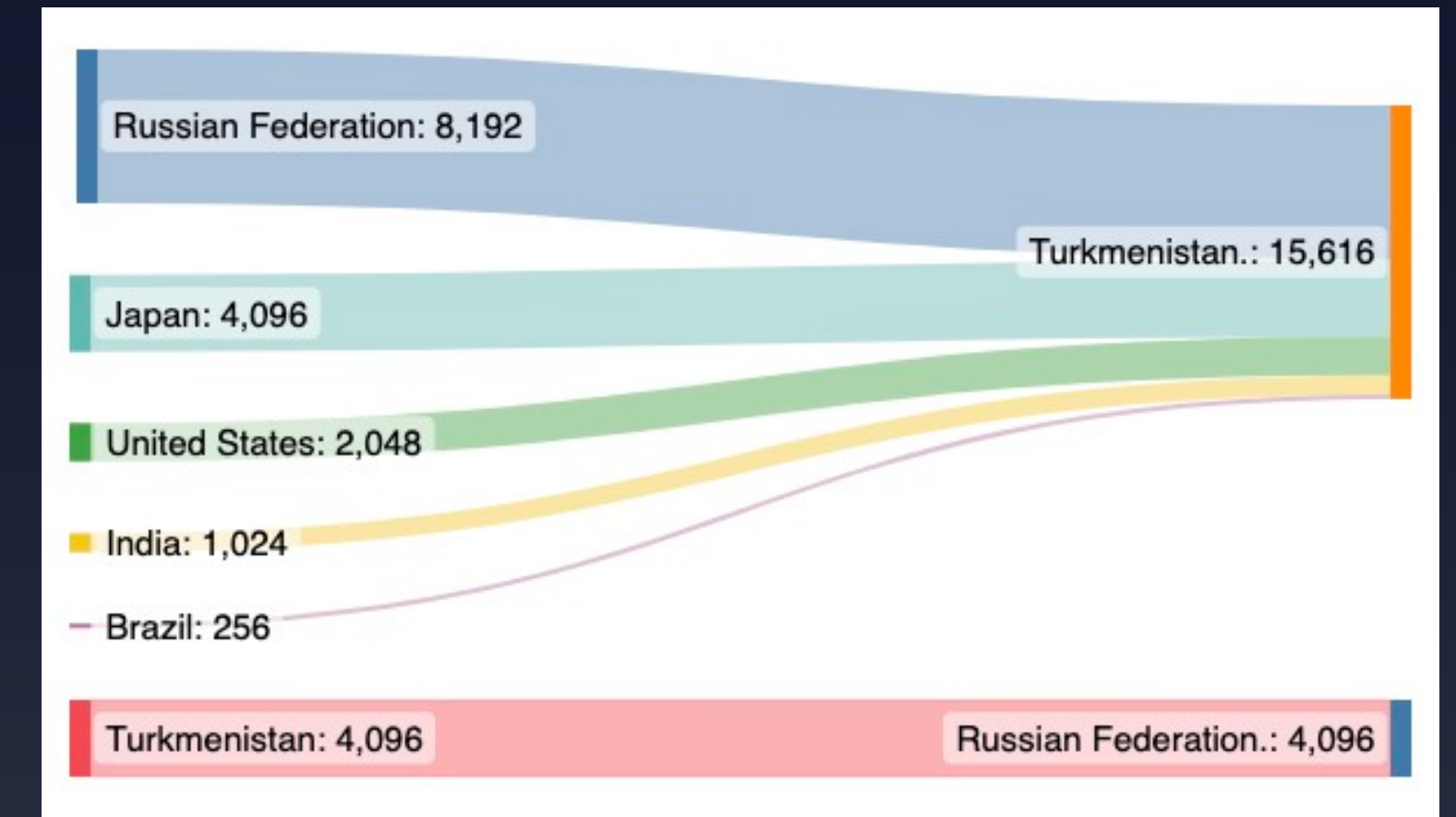
Kazakhstan



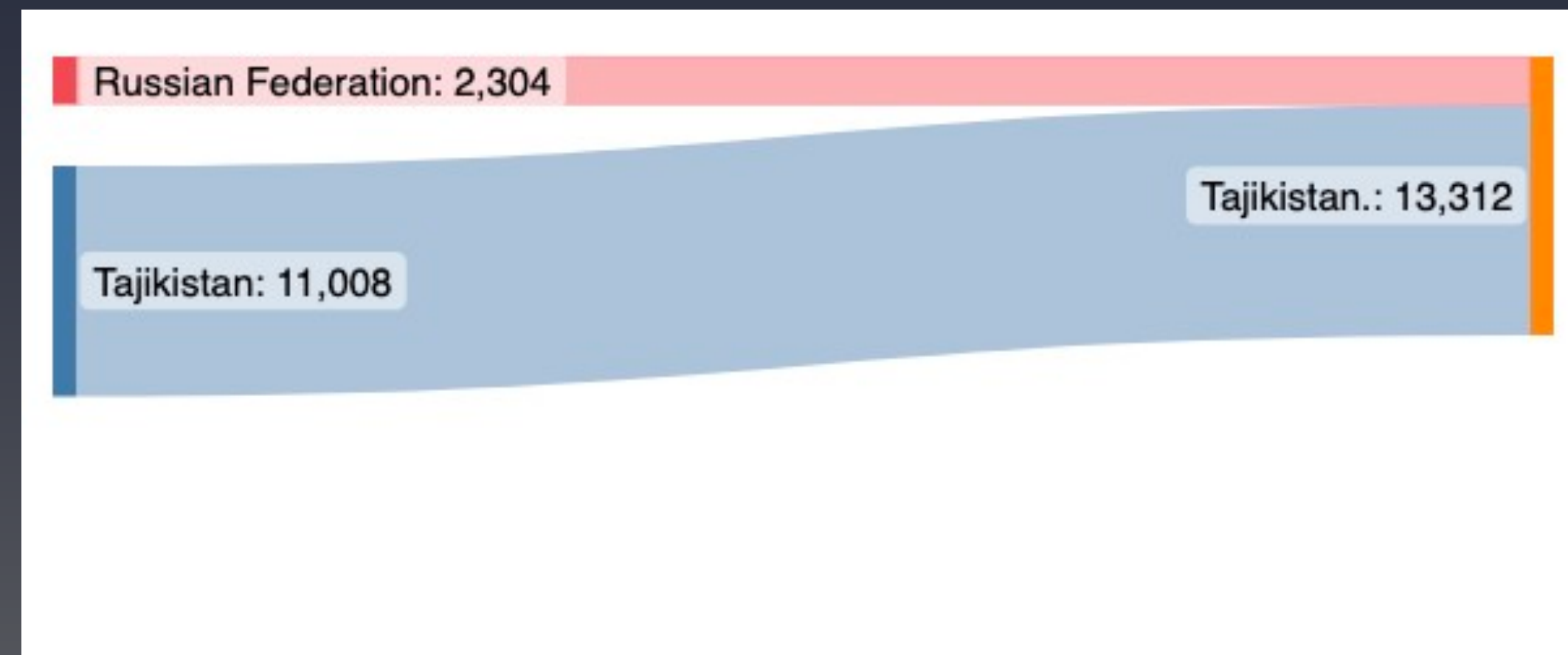
Kyrgyzstan



Turkmenistan



Tajikistan

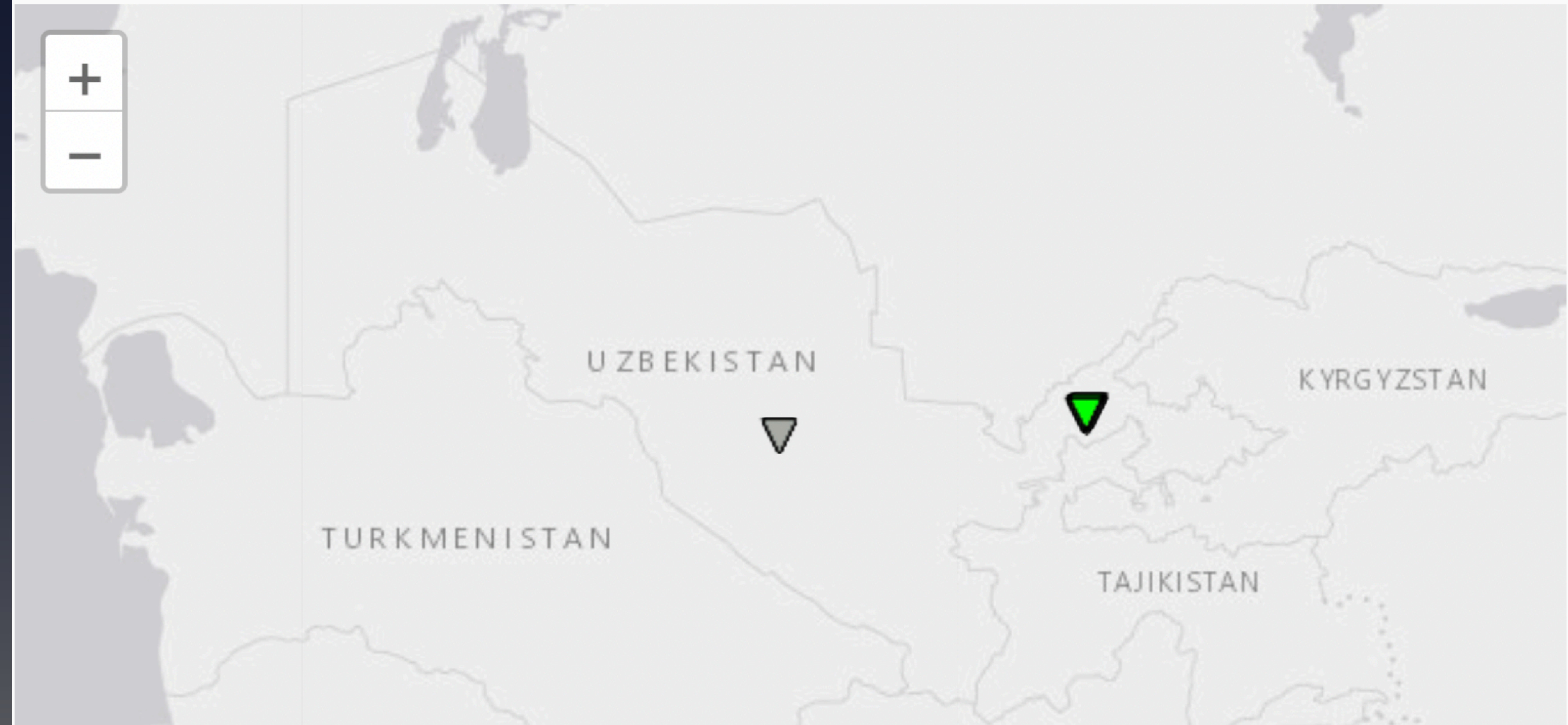


RIPE Atlas probes in Uzbekistan



Found 27 **RIPE Atlas** probes in this network:

▼ Abandoned (20) ▼ Connected (7)

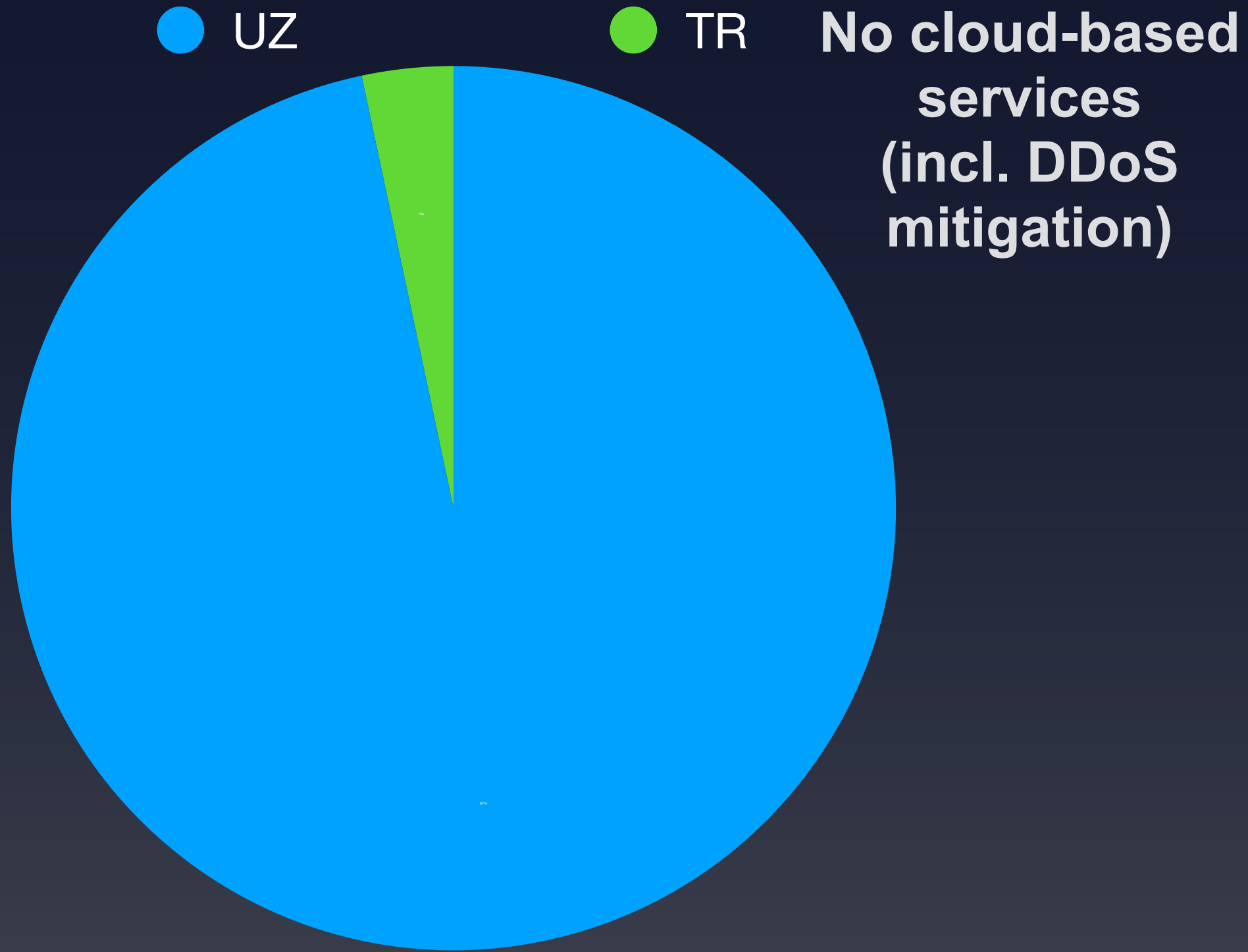


Overview of top websites

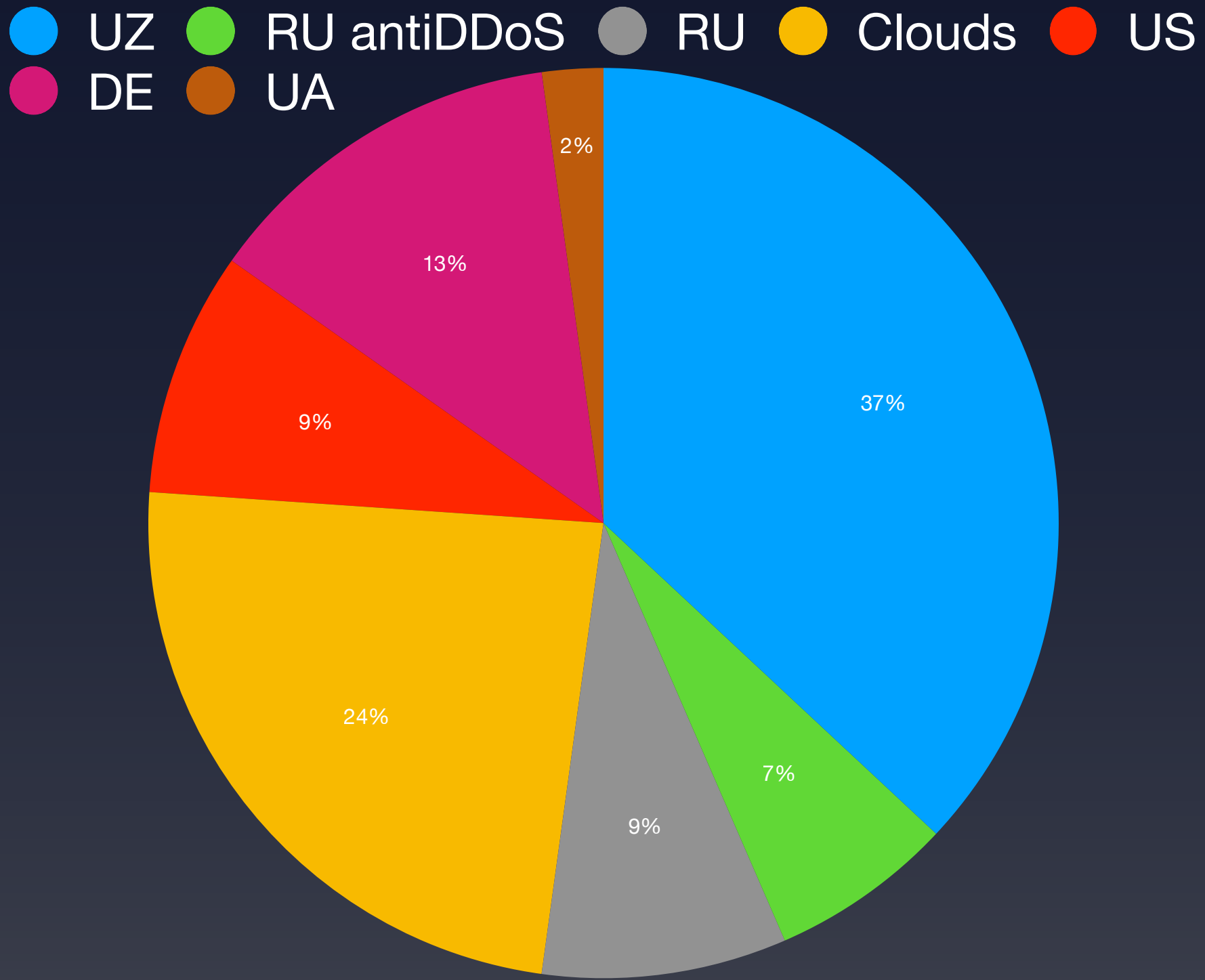


- Only 2 local websites are in foreign DCs:
 - kundalik.uz in Hetzner
 - daryo.uz in DigitalOcean
- No local websites support IPv6

UZ content in more detail: banks and news

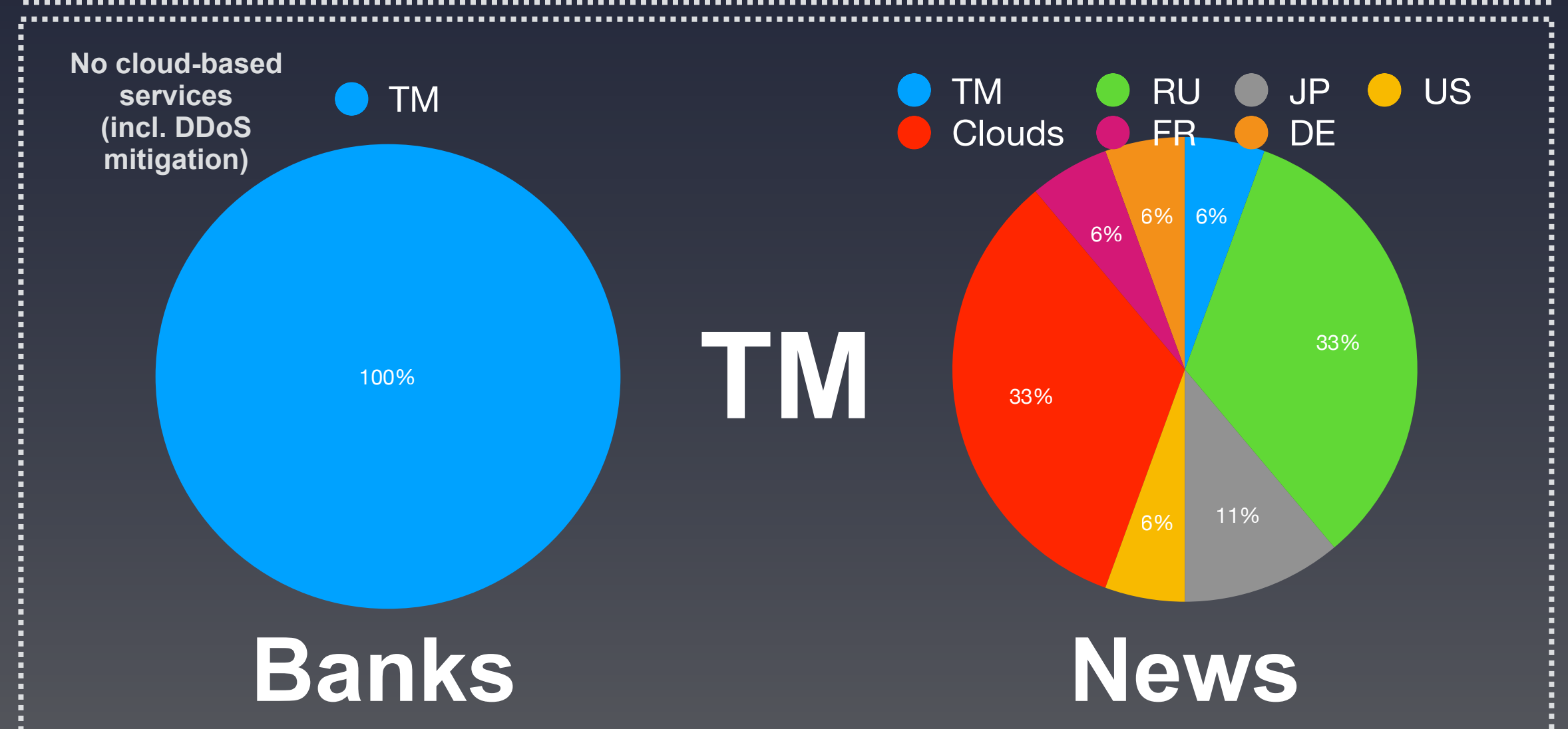
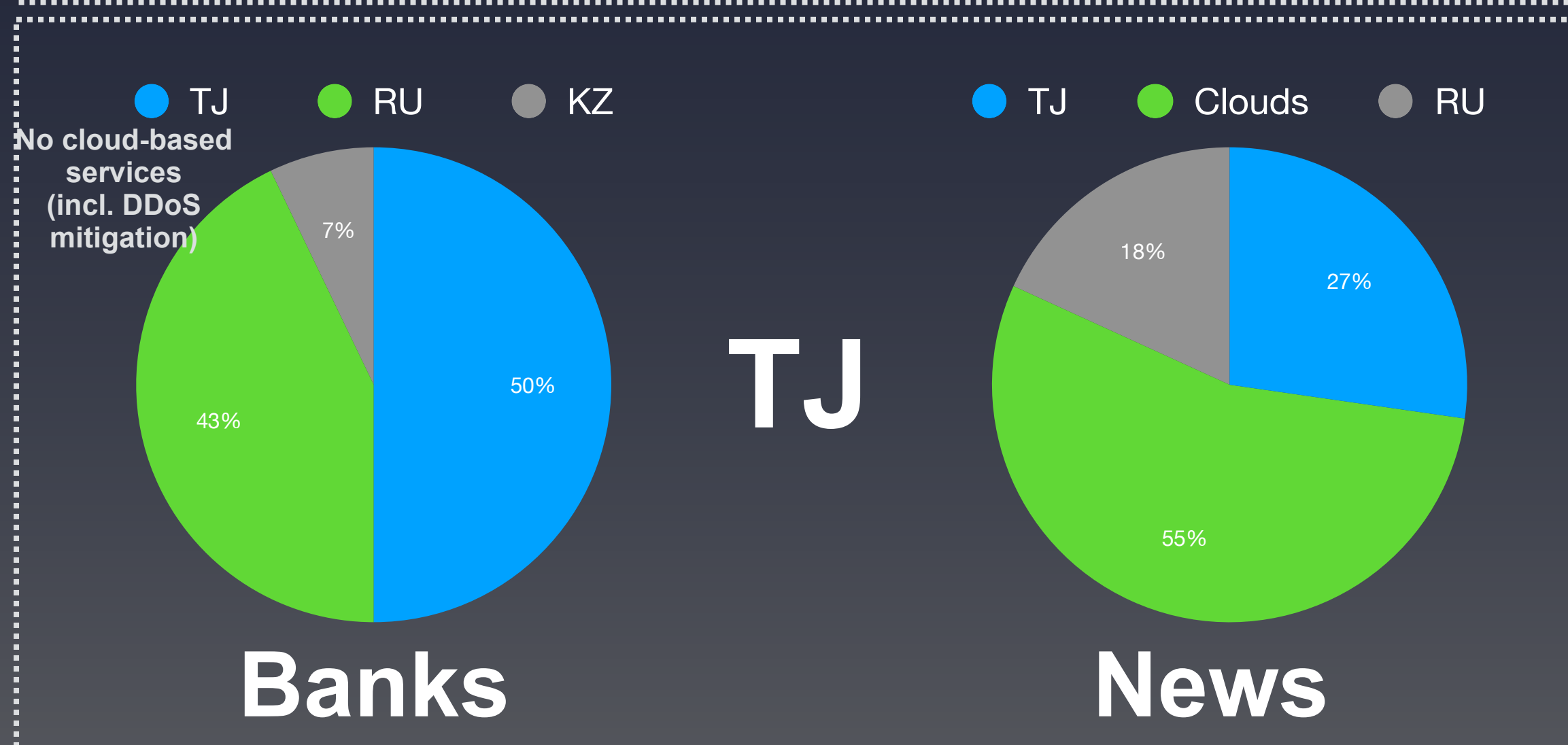
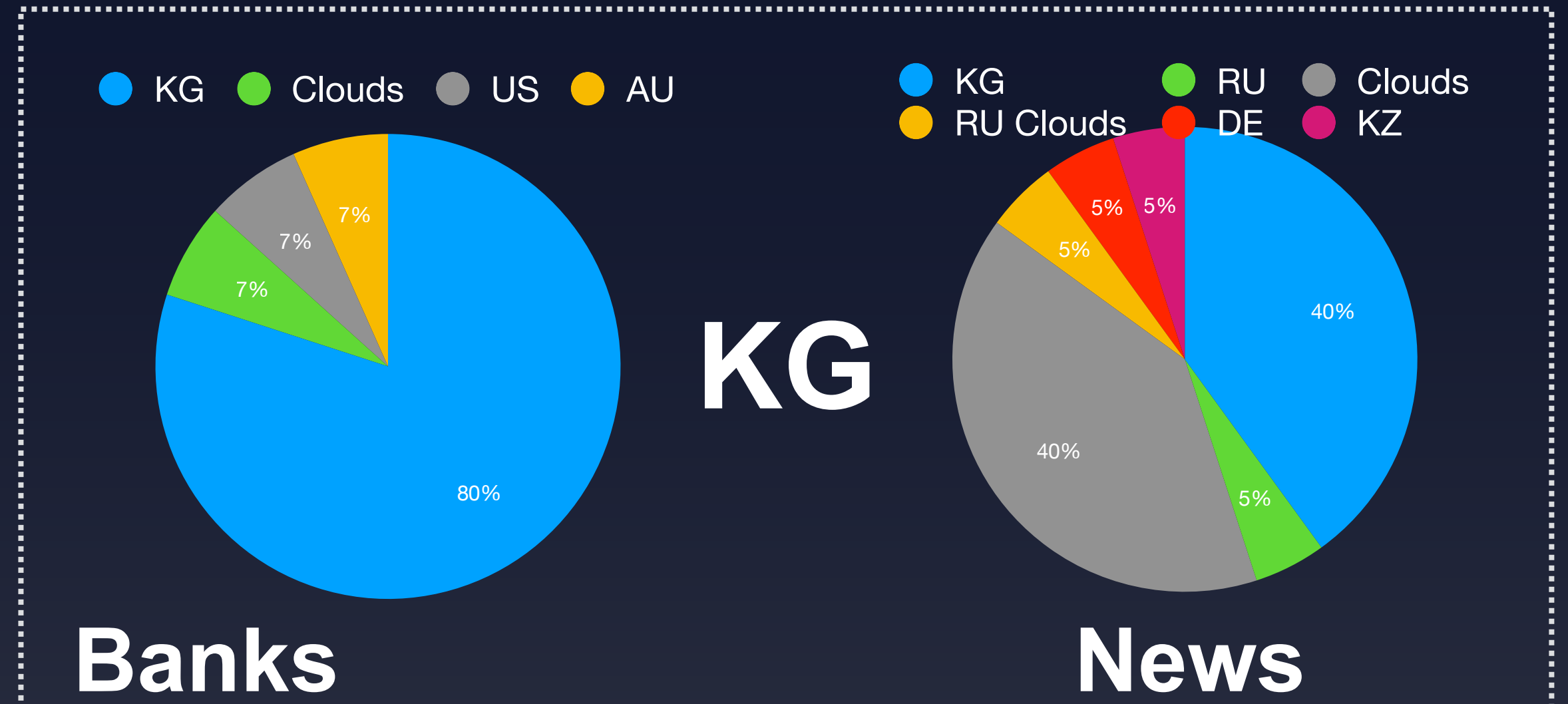
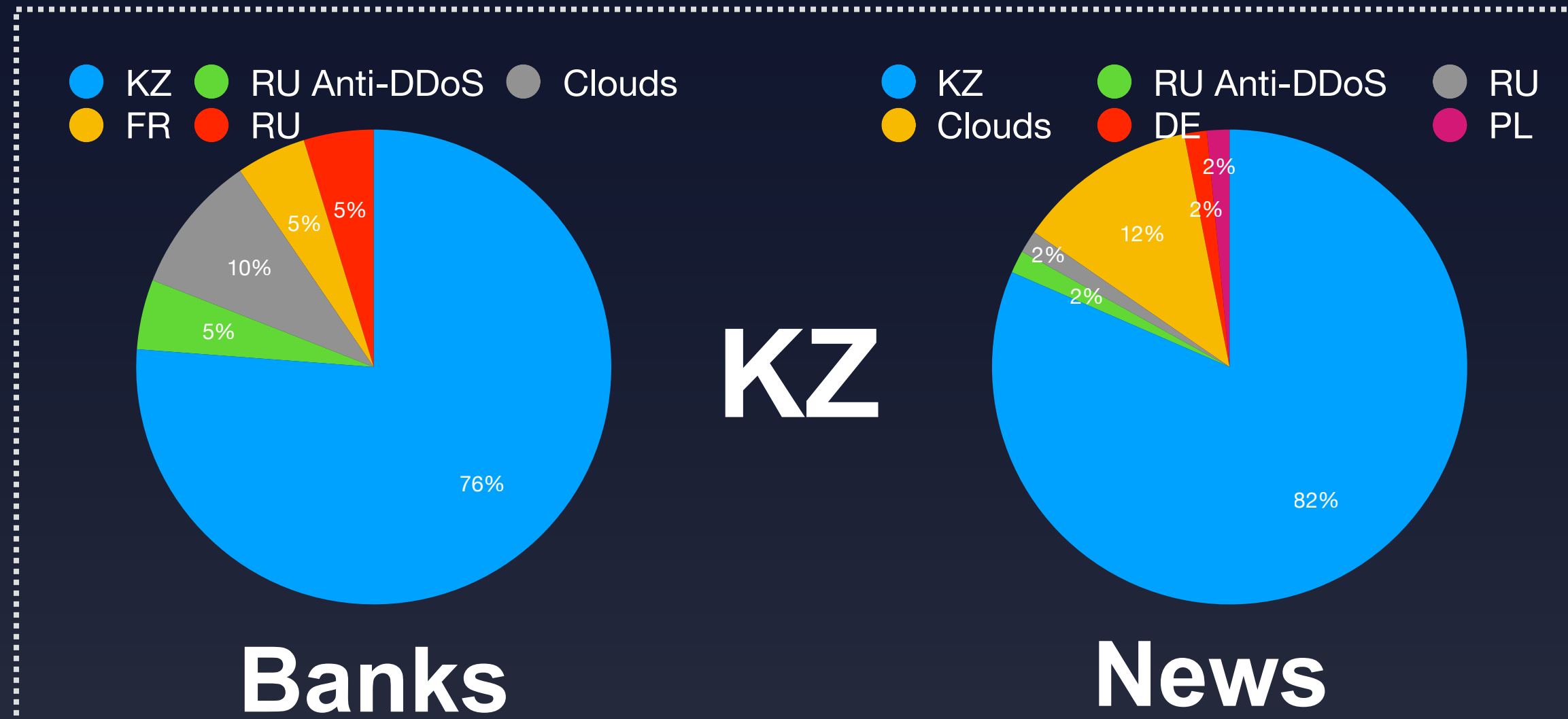


Banks



News

Regional content in more detail: banks and news



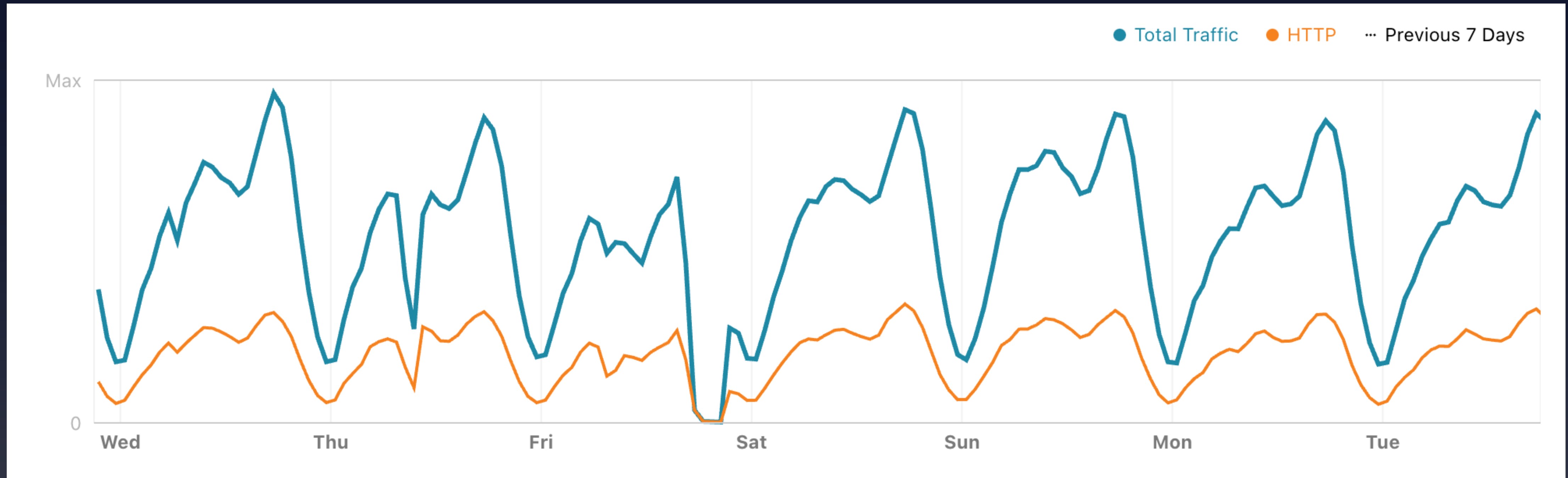
Data collected and analysed by Emile Aben



Some observations

- **Uzbek banks rarely use DDoS protection, as opposed to news websites**
 - Typical situation in the region
 - Apparently, news sites are popular targets for DDoS attacks
- **Most news websites are based out of their country, as opposed to banking websites**
 - Kazakhstan is an exception
- **The utilisation of the resources of another country in the region is almost non-existent**
 - Only one case, in Kyrgyzstan
- **Surprisingly, just a few cases of Russian cloud usage**

Share of the Web in Inet-traffic in Uzbekistan



radar.cloudflare.com, data for 13-20 September 2022

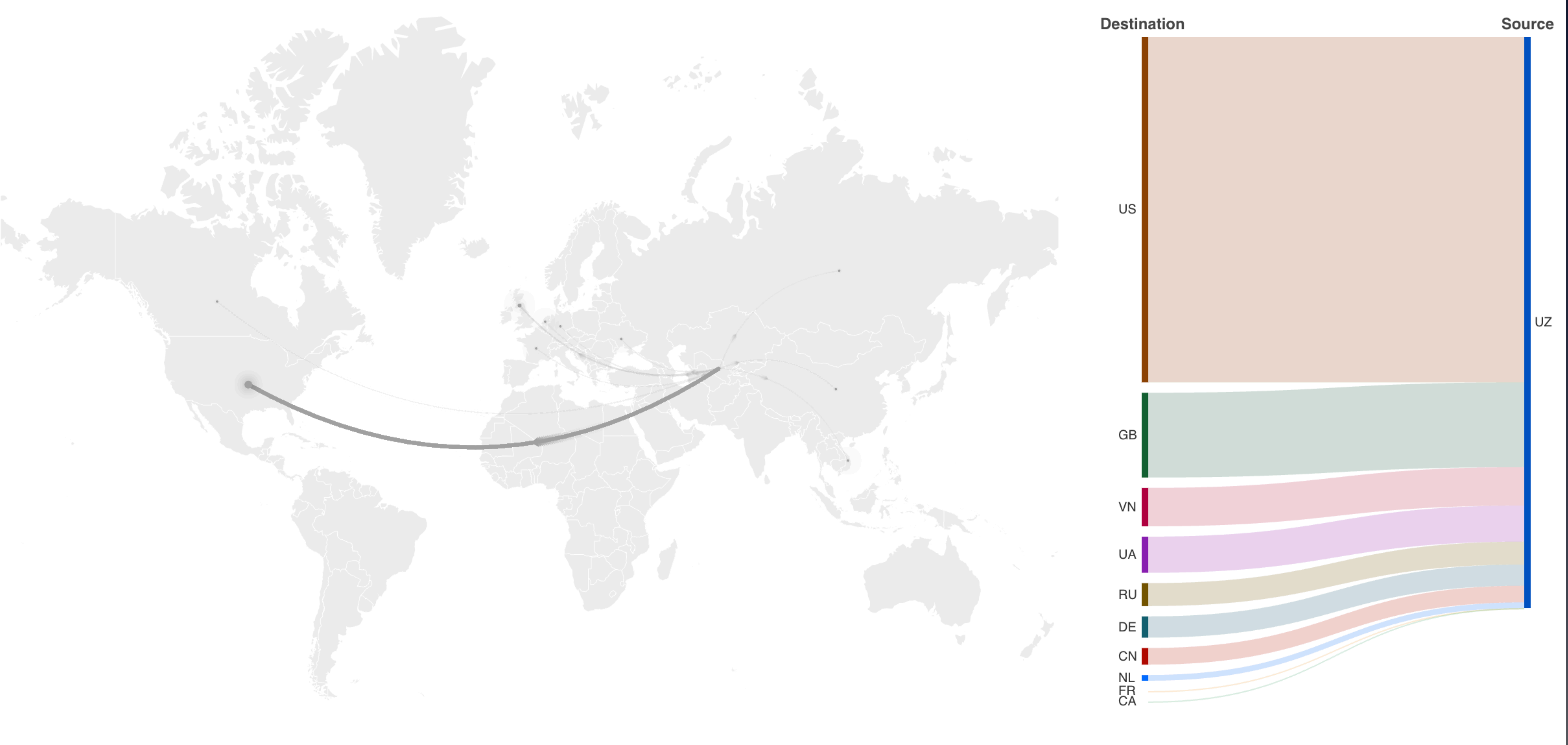
- Share of web traffic: $35 \pm 3\%$ (KZ: $93\% \pm 3\%$, TJ: 100%, KG: 100%, TM: 100%, typical: $85 \pm 5\%$)
- Quite unusual!

DDoS attacks on Uzbekistan (Cloudflare)



<https://radar.cloudflare.com/uz>

DDoS attacks from Uzbekistan (Cloudflare)



<https://radar.cloudflare.com/uz>



Questions



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