



**RIPE NCC**

RIPE NETWORK COORDINATION CENTRE

# Moldova Country Report

The RIPE NCC View

Alex Semenyaka | MIGF | 27-28.04.2023

# What is RIPE NCC



One of the world's five Regional Internet Registries.





# RIPE NCC Functions



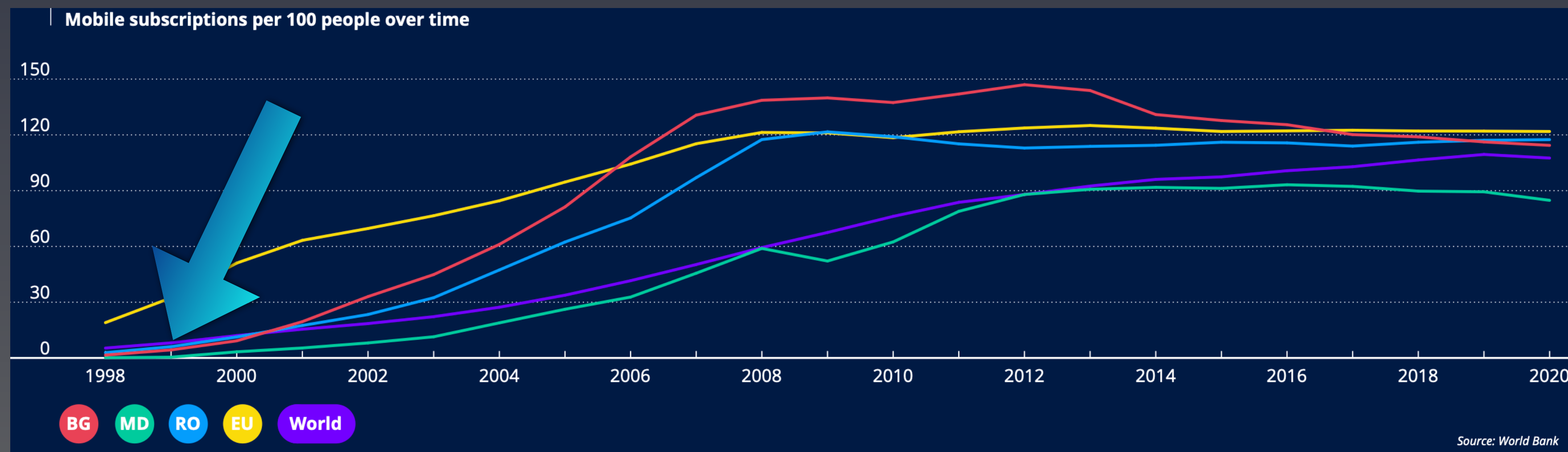
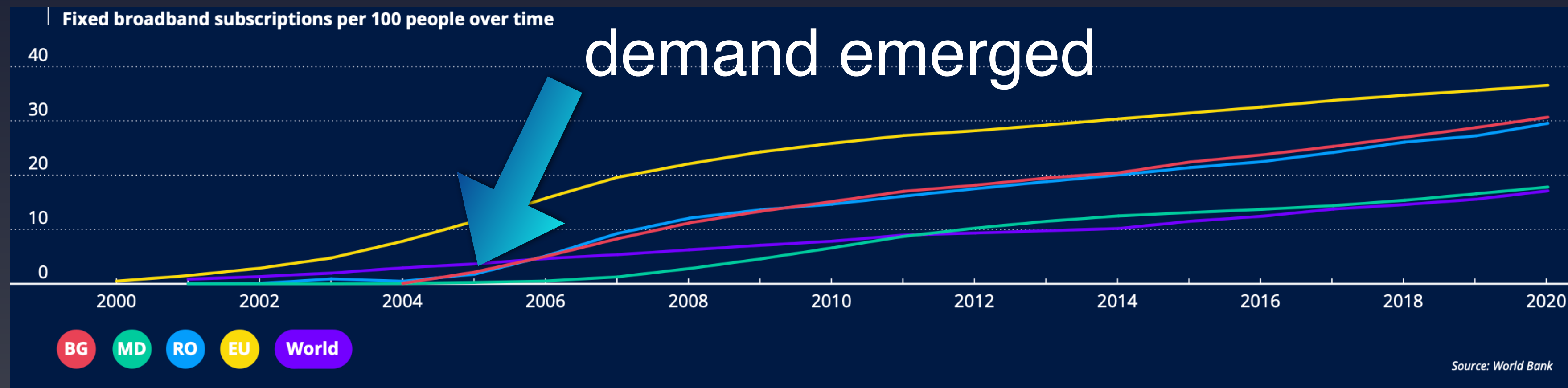
- The Registry
  - Registration of IP Addresses and ASNs, maintaining the RIPE Database, providing the Resource Certification (RPKI)
- Information Services
  - DNS: K-Root Operations, DNS Services
  - Internet measurements: RIPE Atlas, RIPE RIS, RIPEstat
  - Reports: RIPE NCC Internet Country Reports
- External Engagement and Community
  - Events: RIPE Meetings/Regional Meetings, Members Lunches...
  - Publishing platform: RIPE Labs
  - Training Services & RIPE Academy

# Country reports: Moldova



- Published in May, 2022
  - [https://labs.ripe.net/documents/292/RIPE\\_NCC\\_Internet\\_Country\\_Report\\_Bulgaria\\_Moldova\\_Romania\\_May\\_2022\\_zpa3pqG.pdf](https://labs.ripe.net/documents/292/RIPE_NCC_Internet_Country_Report_Bulgaria_Moldova_Romania_May_2022_zpa3pqG.pdf) (EN)
  - [https://labs.ripe.net/documents/309/RIPENCC-Country\\_Report\\_2022\\_Bulgaria\\_Moldova\\_Romania-Romanian\\_final.pdf](https://labs.ripe.net/documents/309/RIPENCC-Country_Report_2022_Bulgaria_Moldova_Romania-Romanian_final.pdf) (RO)
- Covers three countries: Moldova, Romania, Bulgaria
- Our own data and instruments were primarily used

# Fixed and mobile subscribers



# Number of LIRs



own infrastructure  
growth started





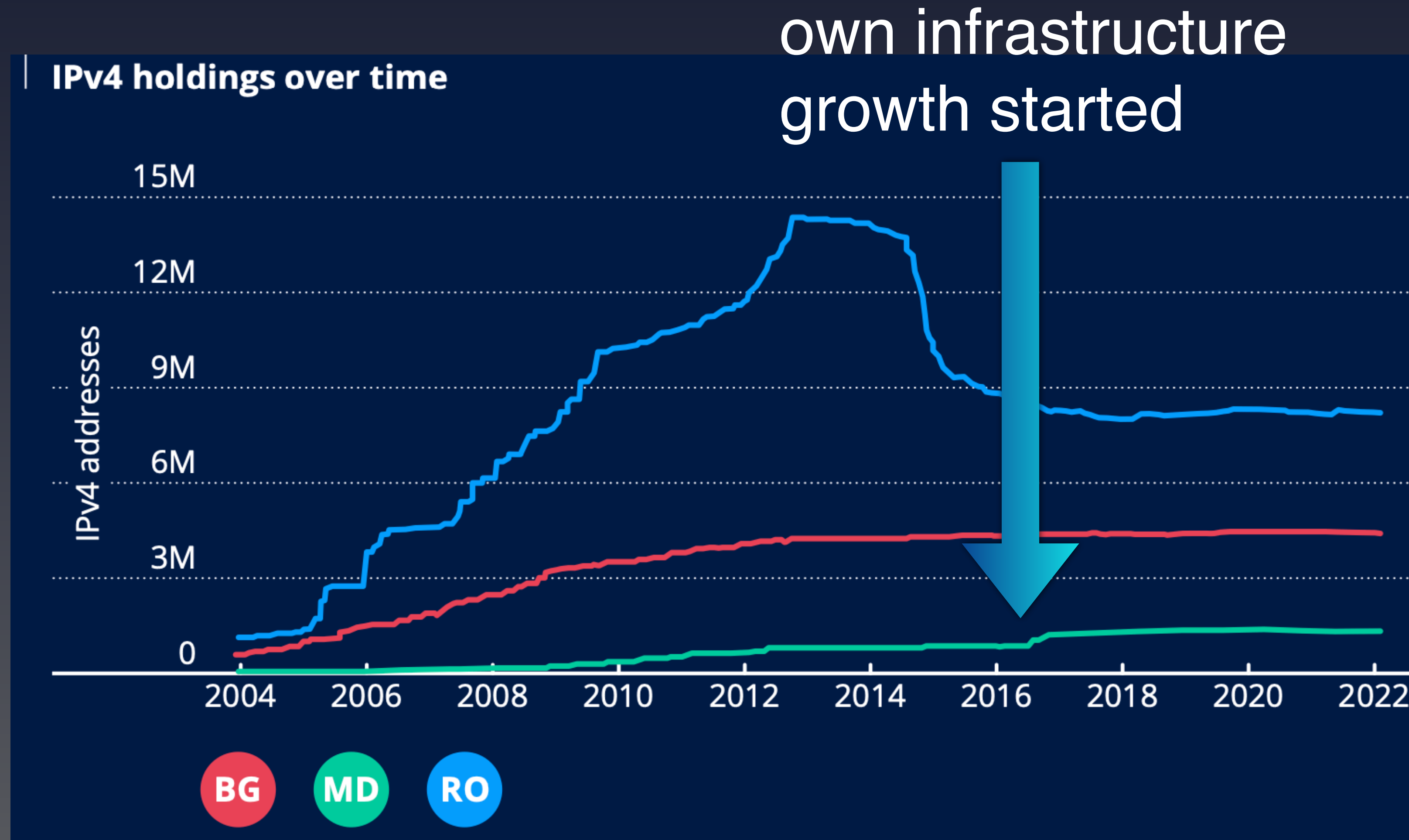
# Autonomous systems evolution



own infrastructure  
growth started

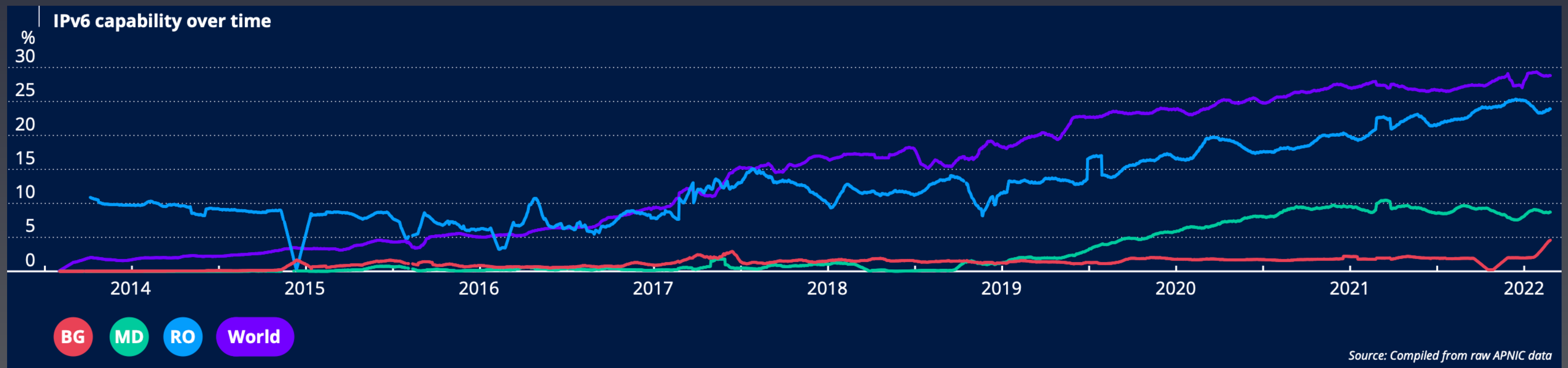


# Amount of IPv4 held

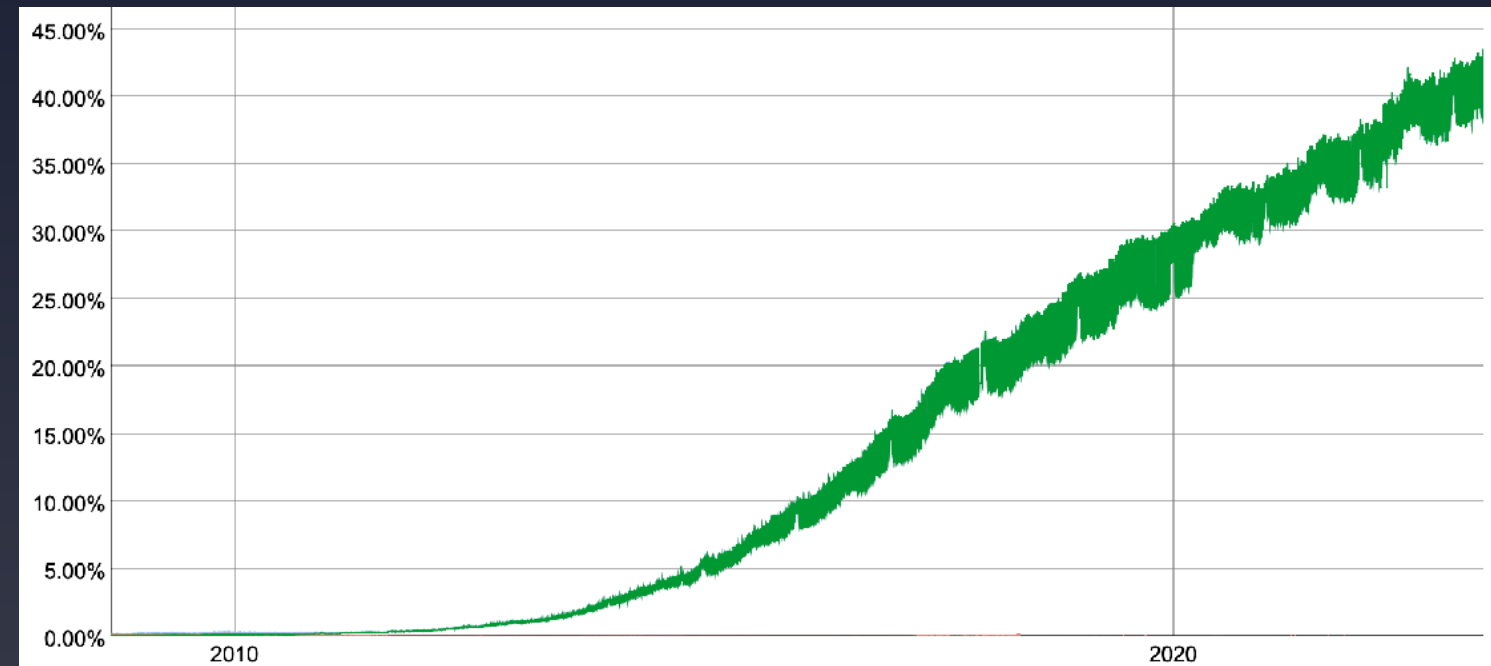




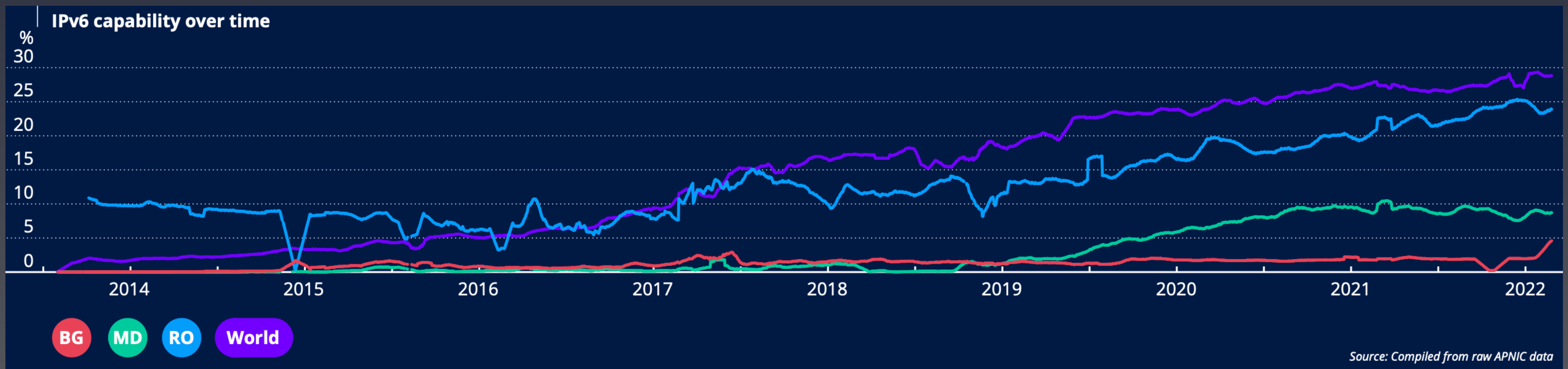
# IPv6 deployment



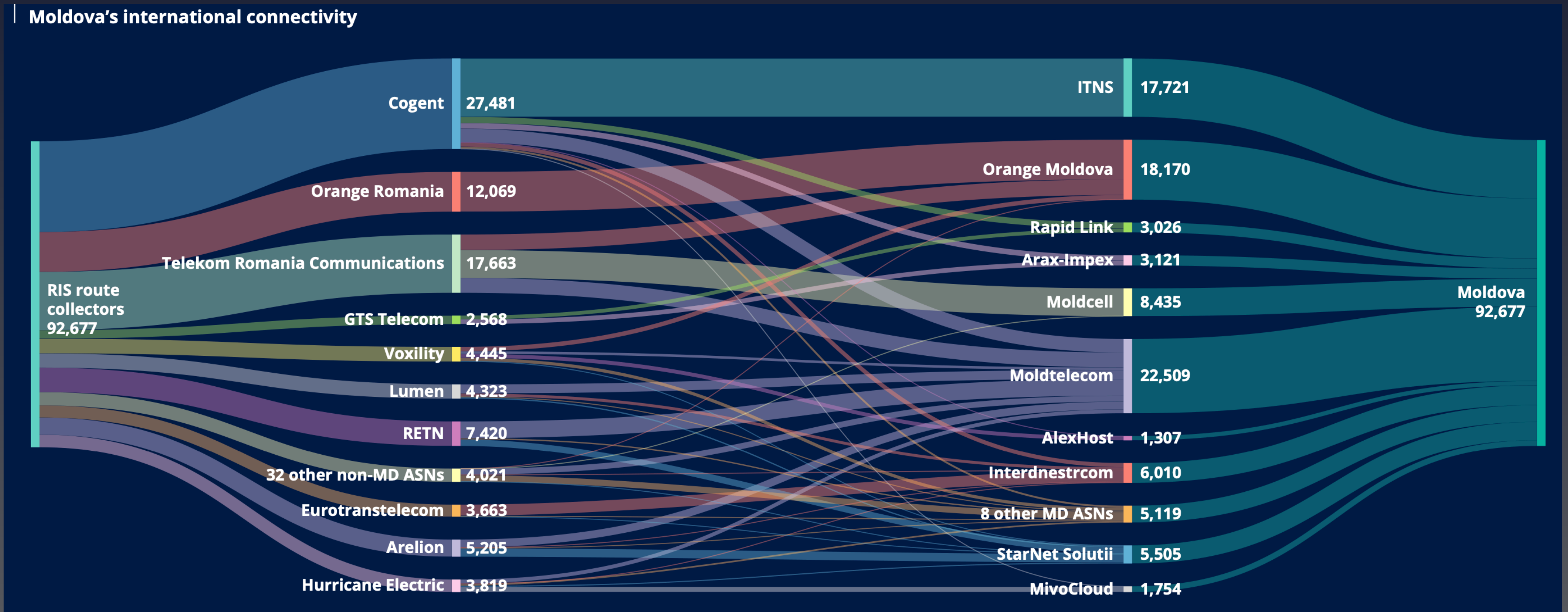
# IPv6 deployment



- Early adoption stage
  - Typical for xSU countries
  - Lower than the world avg



# External connectivity of Moldova

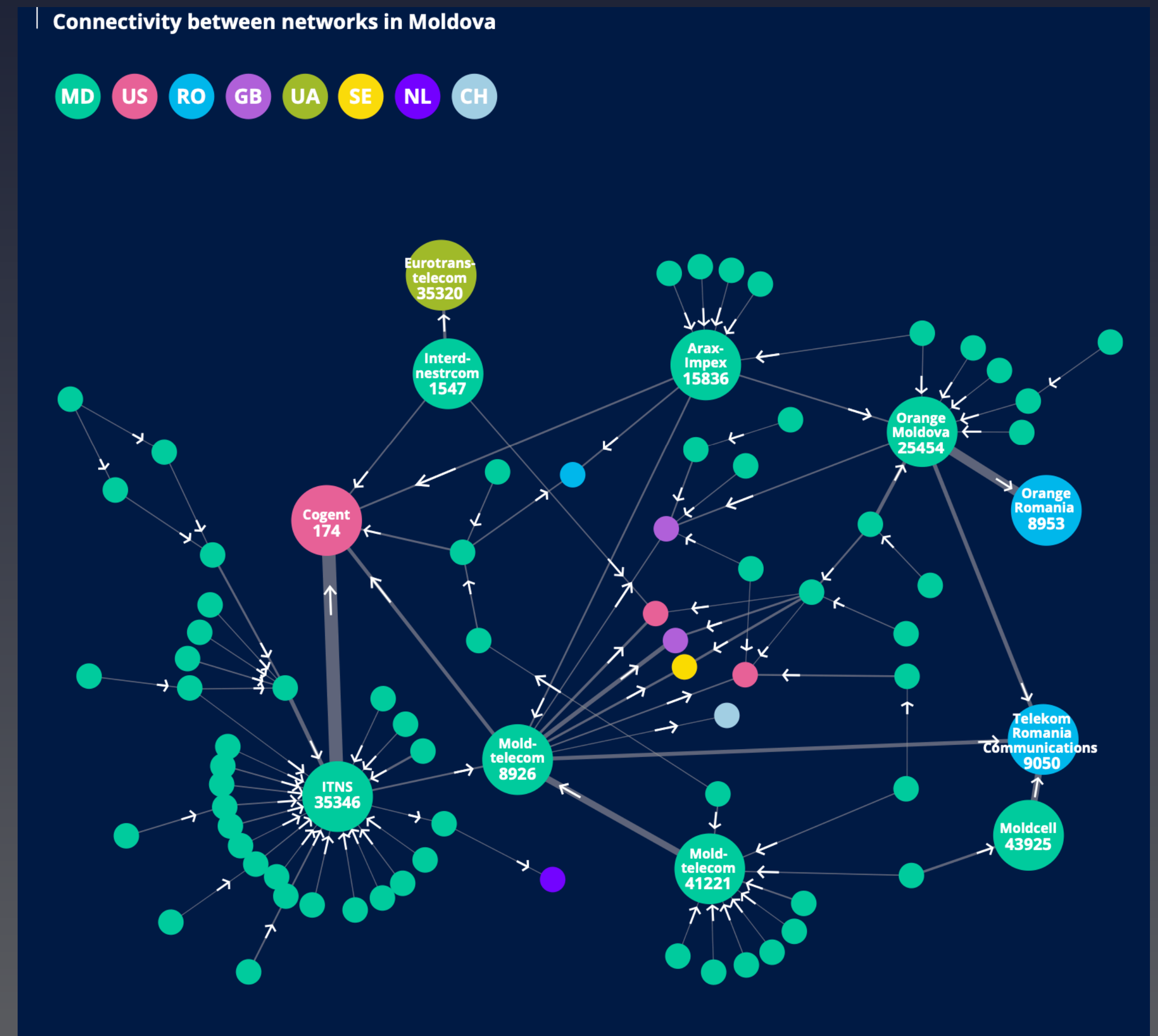




# Connectivity in Moldova



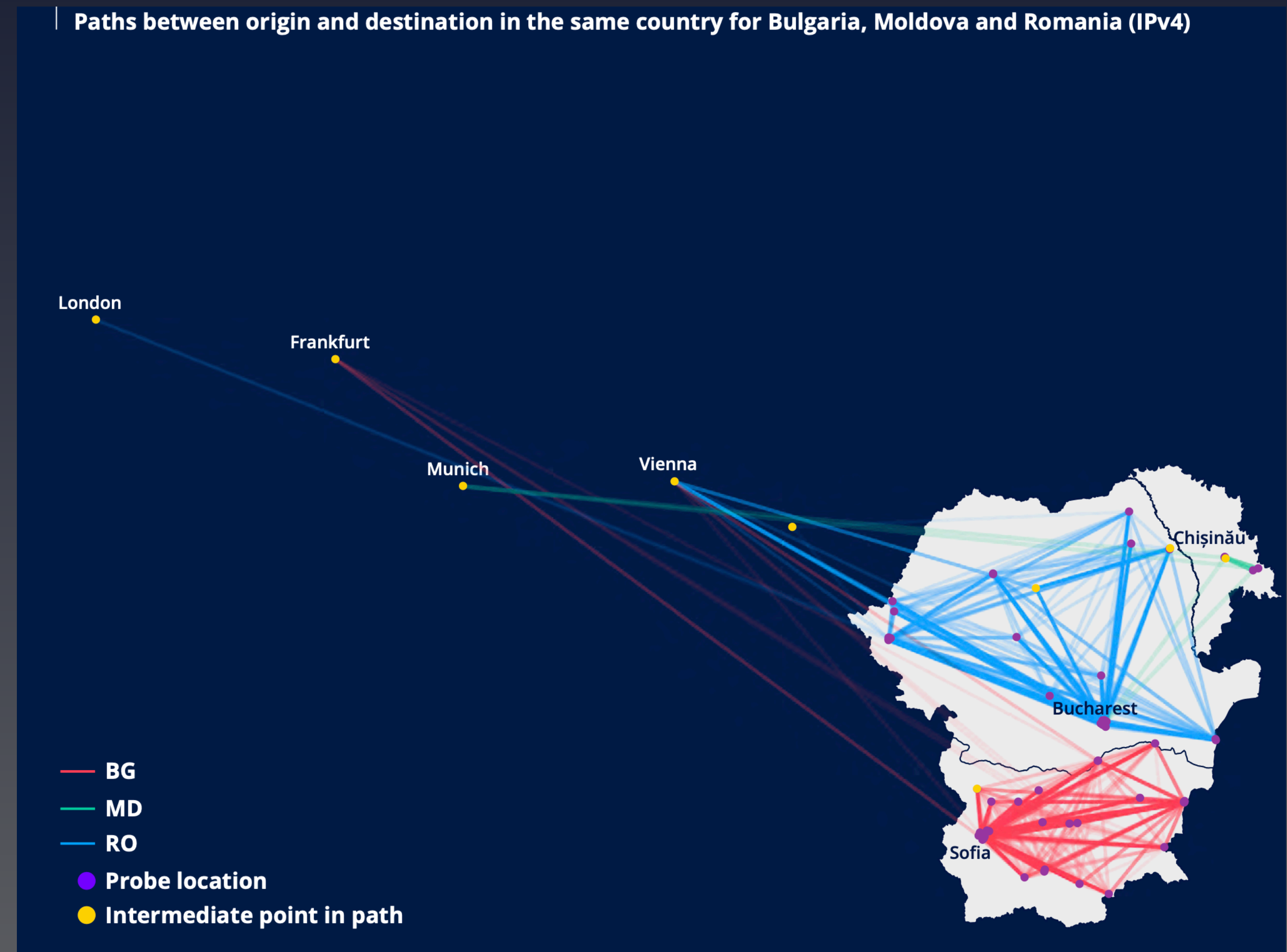
- ITNS (AS35346)
  - Strongly depends on Cogent (AS174)
- Moldtelecom (AS41221 and AS8926)
  - Depends on Cogent (AS174) and Orange Romania Communications (AS9050)
- Orange Moldova (AS25454)
  - Strongly depends on Orange Romania (AS8953)
- Arax-Impex (AS15836)
  - Depends on Cogent (AS174)



# Paths of the domestic traffic



- Most of the domestic traffic stays inside the country
- Some paths take a detour via Munich (IXP)
- Some of the traffic goes through Bucharest
  - While not ideal, the distance is much shorter than diverting traffic to major IXPs in Western Europe



# K-Root DNS servers used in Moldova

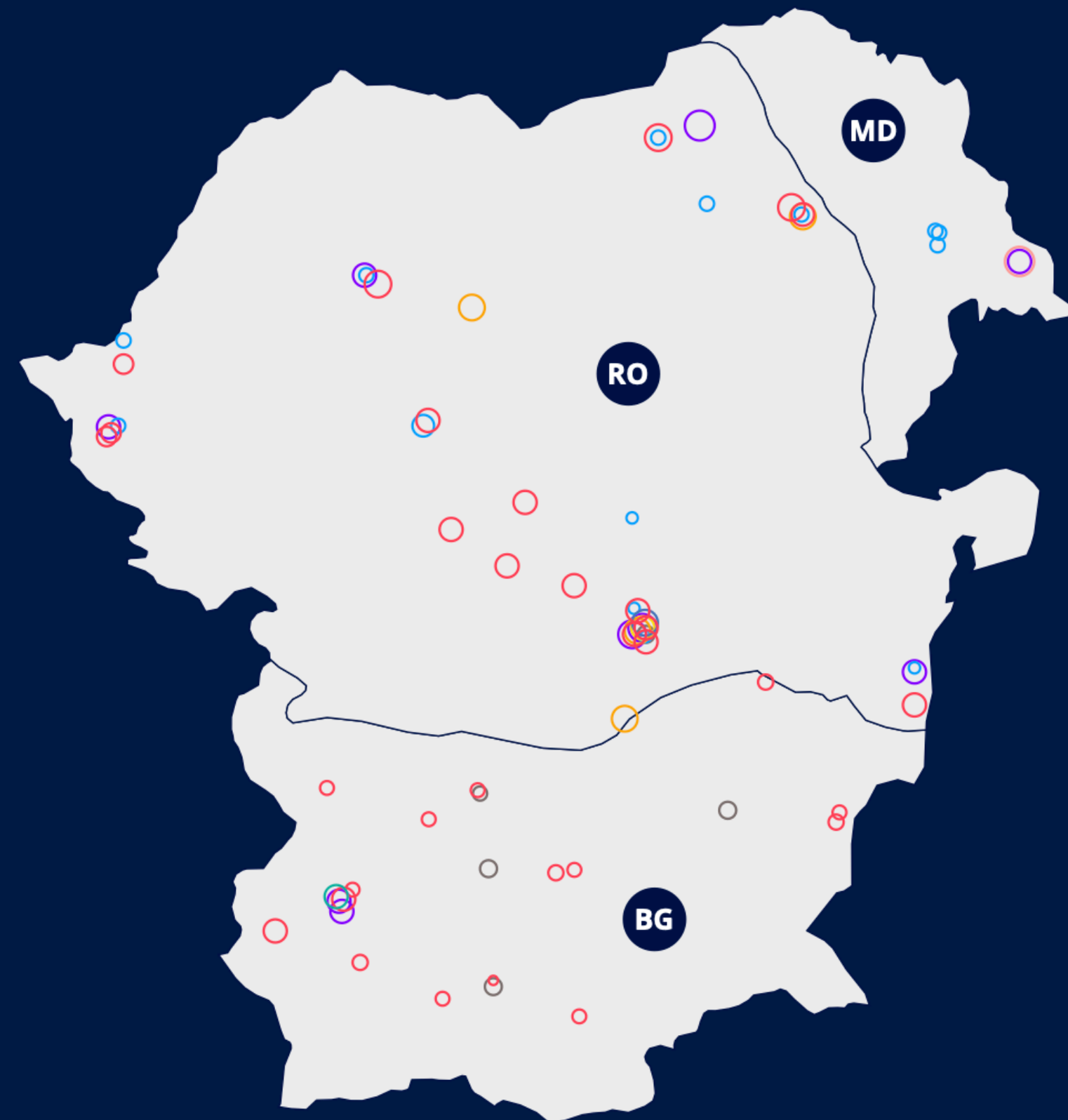


K-root locations reached from vantage points in Bulgaria, Moldova and Romania

- Sofia/BG
- Bucharest/RO
- Frankfurt/DE
- Belgrade/RS
- Geneva/CH
- Amsterdam/NL
- Milan/IT
- Saint Petersburg/RU
- Vienna/AT

Minimum round-trip time (ms)

- 10
- 20
- 30
- 40
- 50



- Moldova DOES NOT host own K-root DNS servers
- Most preferable ones are in Bucharest
  - However, RTT is good enough





# Questions



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