



**RIPE NCC**  
RIPE NETWORK COORDINATION CENTRE

# Supporting Local Communities

Nikolas Pediaditis | 26 May 2017 | 1st GRNOG Workshop

# Early Network Operator Communities



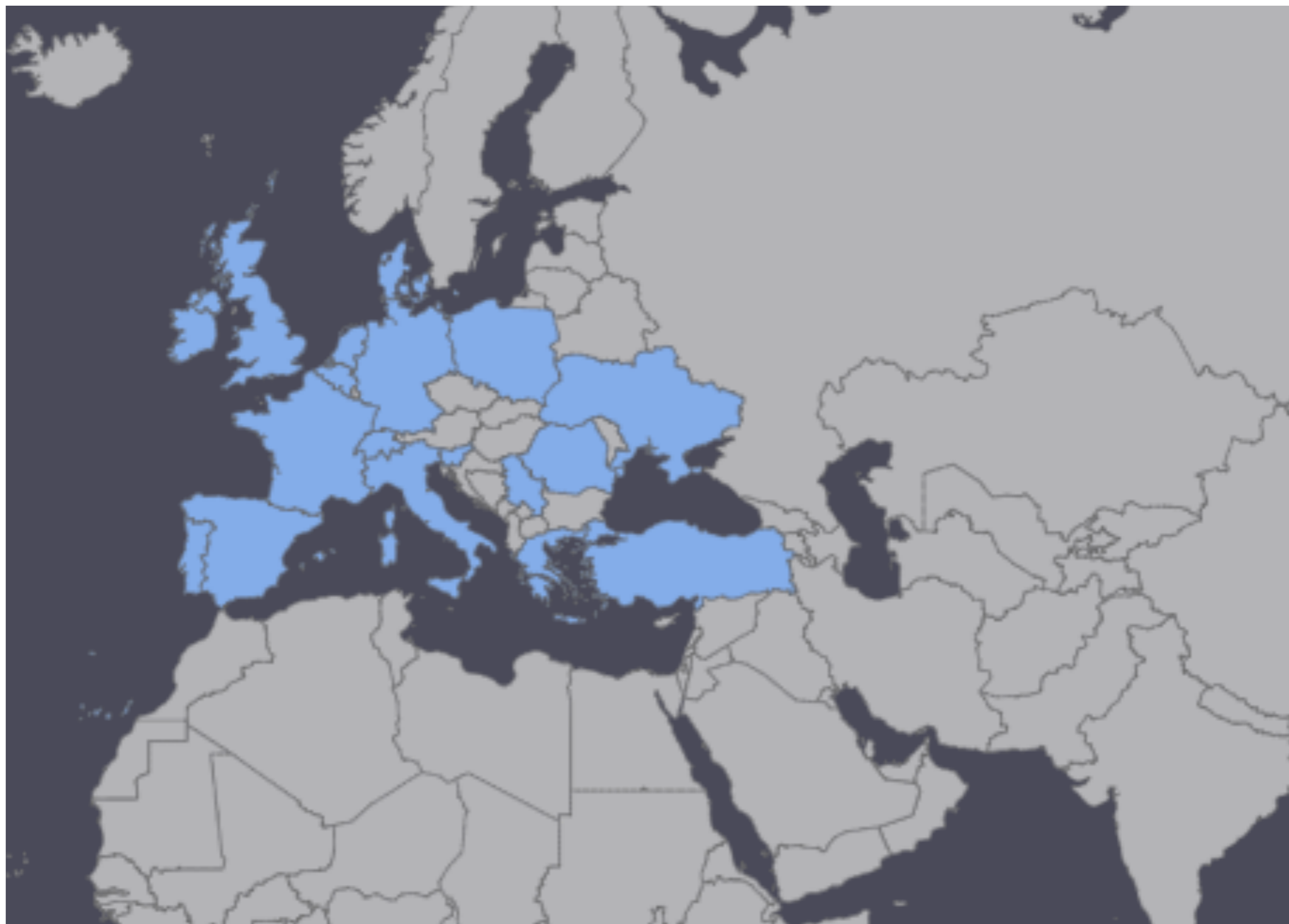
- Many of the early European IXPs were born out of small *communities* of operators
- IXPs grew in both the number of participants and spread across Europe
- Many IXPs ran participant meetings, discussing both IXP business and other related technical topics

# The birth of the NOG



- The number of network operators in cities and countries across our region grew
- IXP meetings were in some countries, no longer enough
  - Topics were IXP centric
  - Meetings were only open for *their* participants
- So NOGs were a great alternative
- Initially in some of the larger countries, but today there are around 20 in our region

# Known Active NOGs



# Why are NOGs important



- Allows participants to discuss and potentially deal with similar local issues
  - Regulation, local technical limitations, planning, etc.
- Discuss these issues in local language!
- A communication channel (Mail or chat clients)
- Bringing locals in contact with other locals, to exchange ideas and to do business
- Discuss the idea of initiating a local IXP or to cooperate other specific objectives

# How does the RIPE NCC help NOGs



- We generally set aside 1,500 EUR per annum per national NOG to assist them in covering some (all) of their meeting costs
- We send our staff to speak at their events
- We help reach out to, or suggest, international speakers for their events
- We offer advice on setting up an association, organising meetings, finding sponsors, setting up wifi networks, and more....

# But do NOGs work everywhere?



- Cultural differences
- Geographic limitations
- Less popular in Middle East and Central Asia
- National Internet Governance Forums (IGF) tend to gain more traction in these regions
- Often we find many operators at these national and regional IGFs around our region



# NOGs, National IGFs & IXP Meetings





# RIPE NCC Outreach in 2016



- NOGs, IXPs, IGFs, Member Lunches and Training Courses



# GRNOG - Is this a success story?



**1st GRNOG meeting in July 2015**

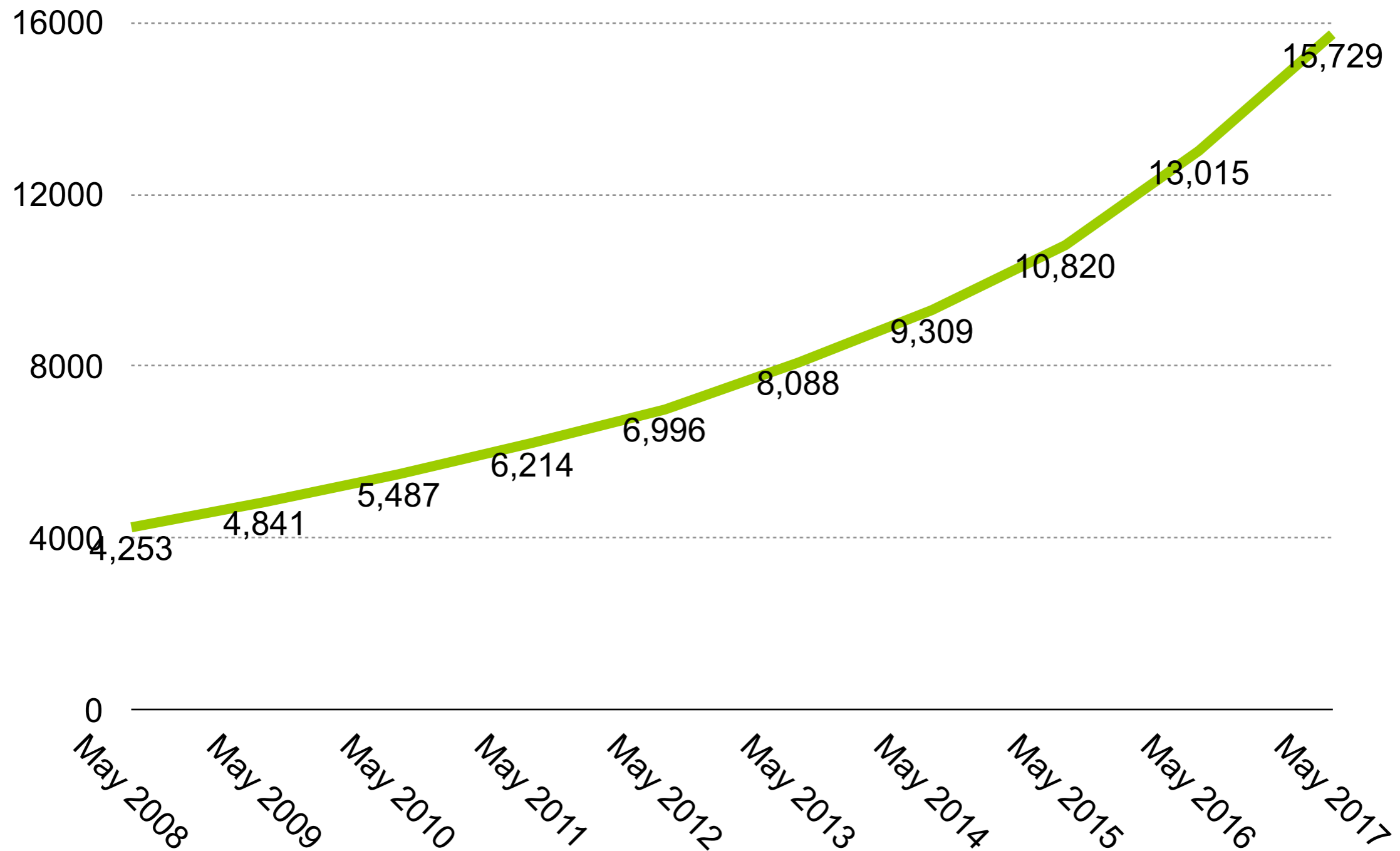
**How many people are here today?**



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# Focus on Greece Statistics and Data

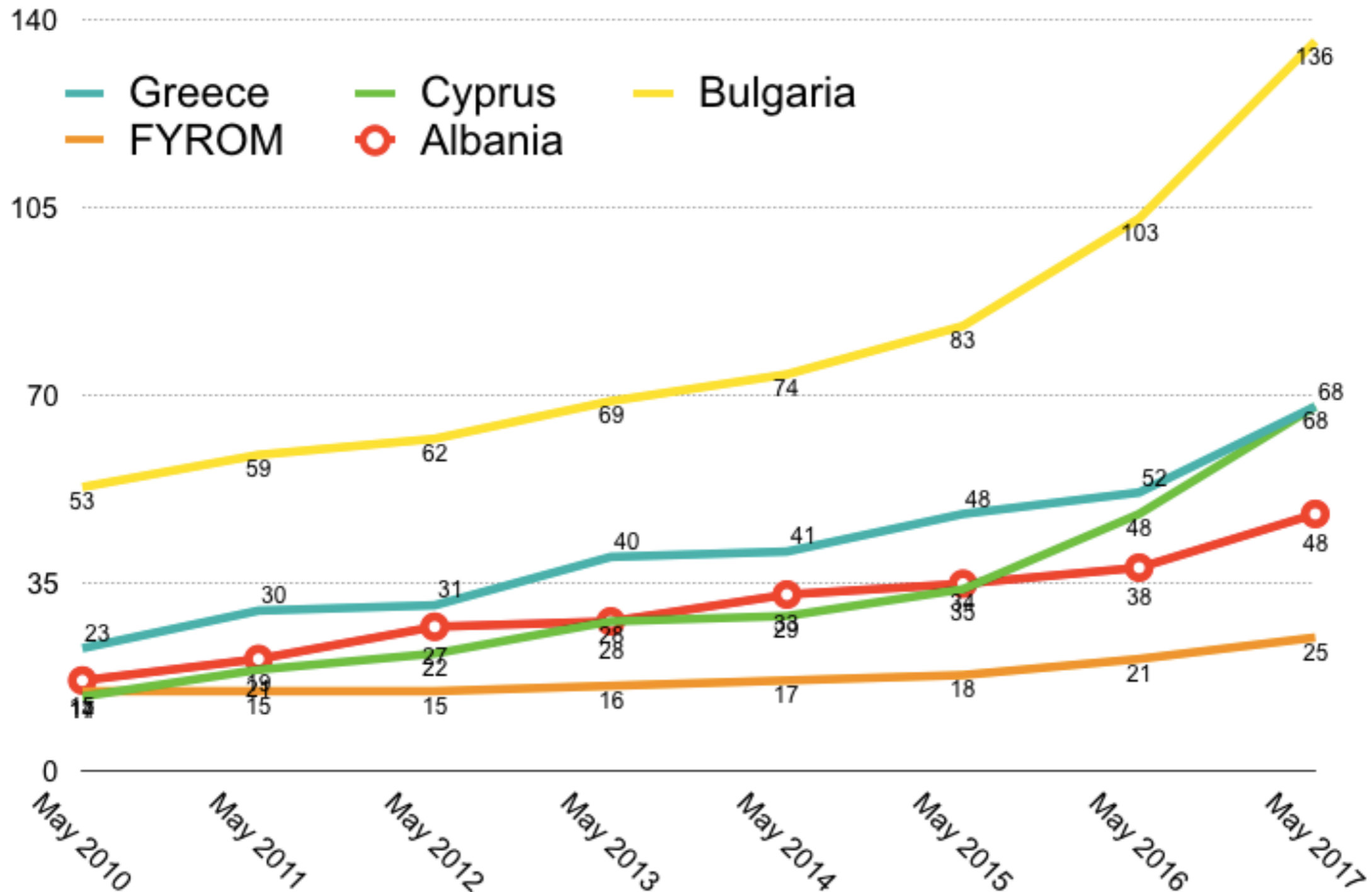
# Membership Growth 2010-2017



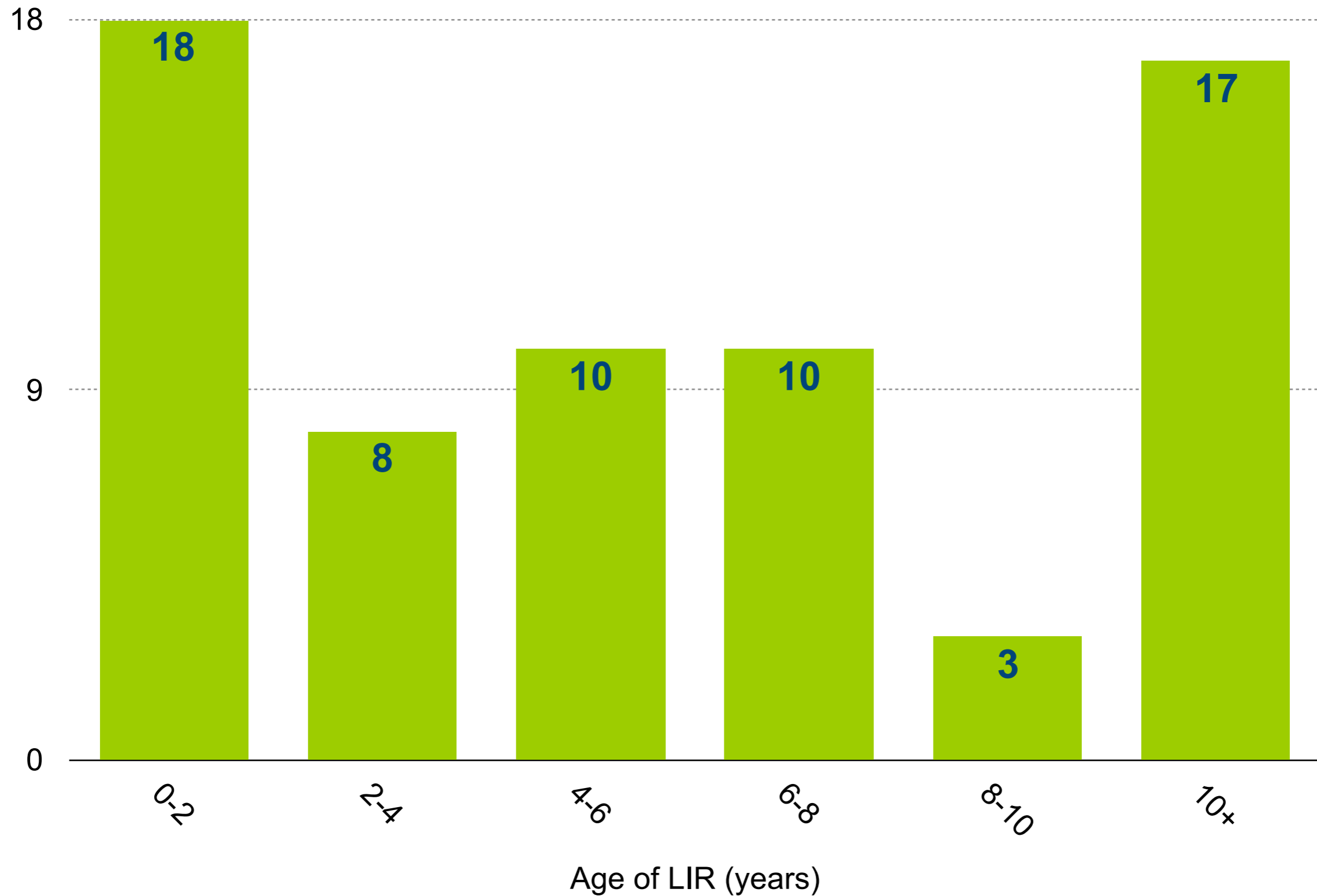
# Membership Growth in the Region



## LIRs 2010-2017



# Greece - LIRs by Age



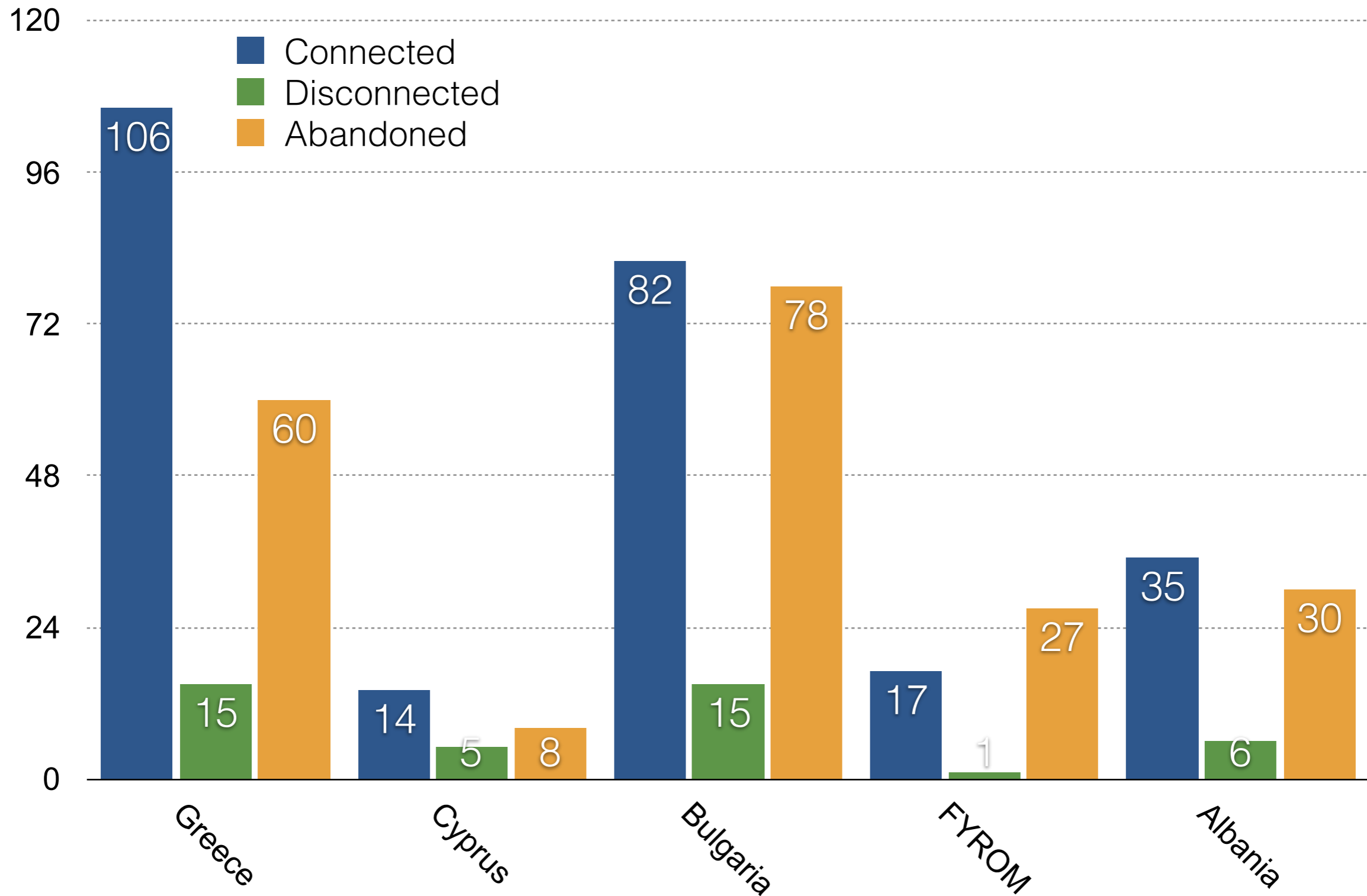


# RIPE Atlas Probes





# RIPE Atlas Probes





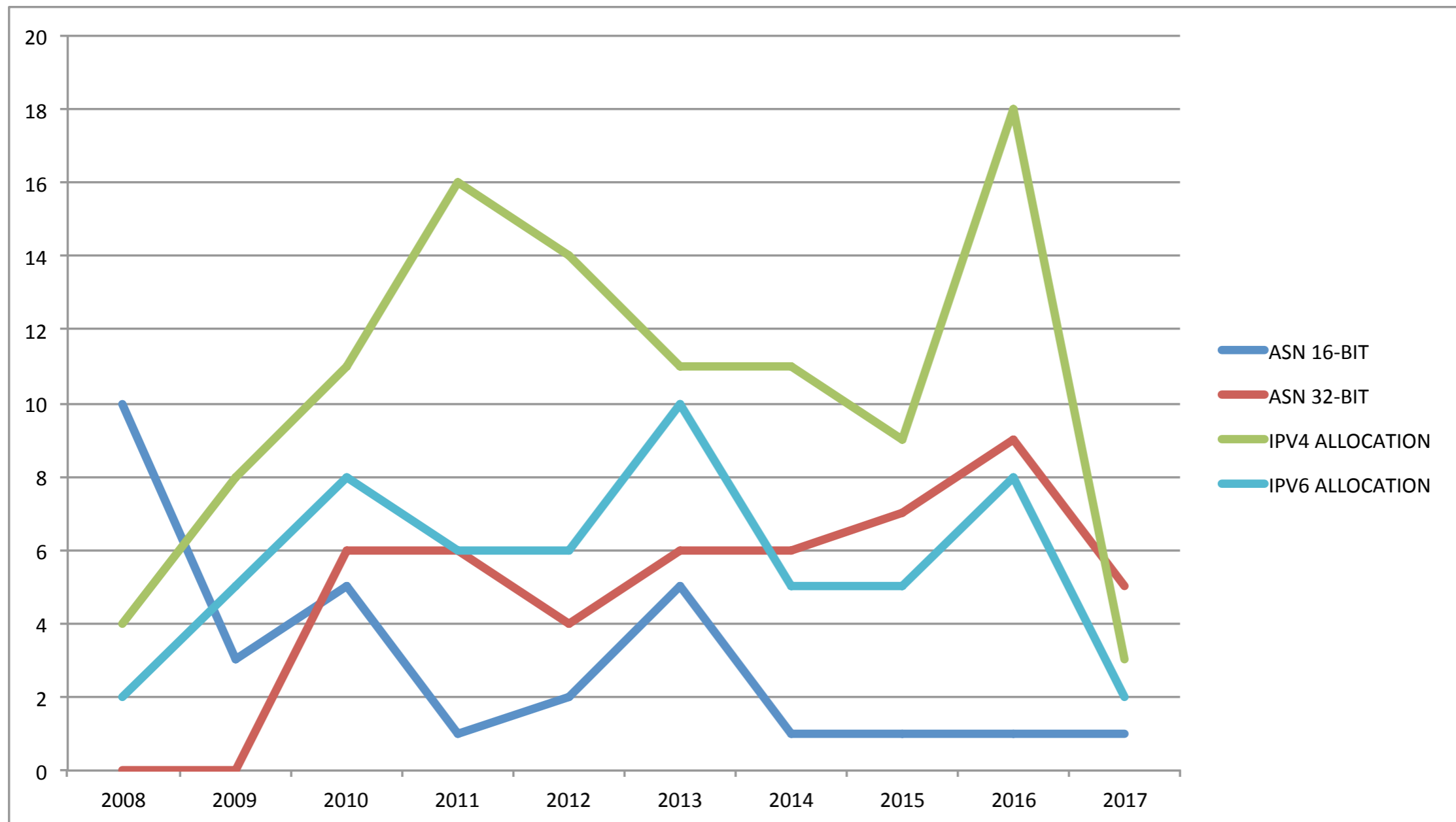
# **Internet Number Resources**

# Countries at a Glance

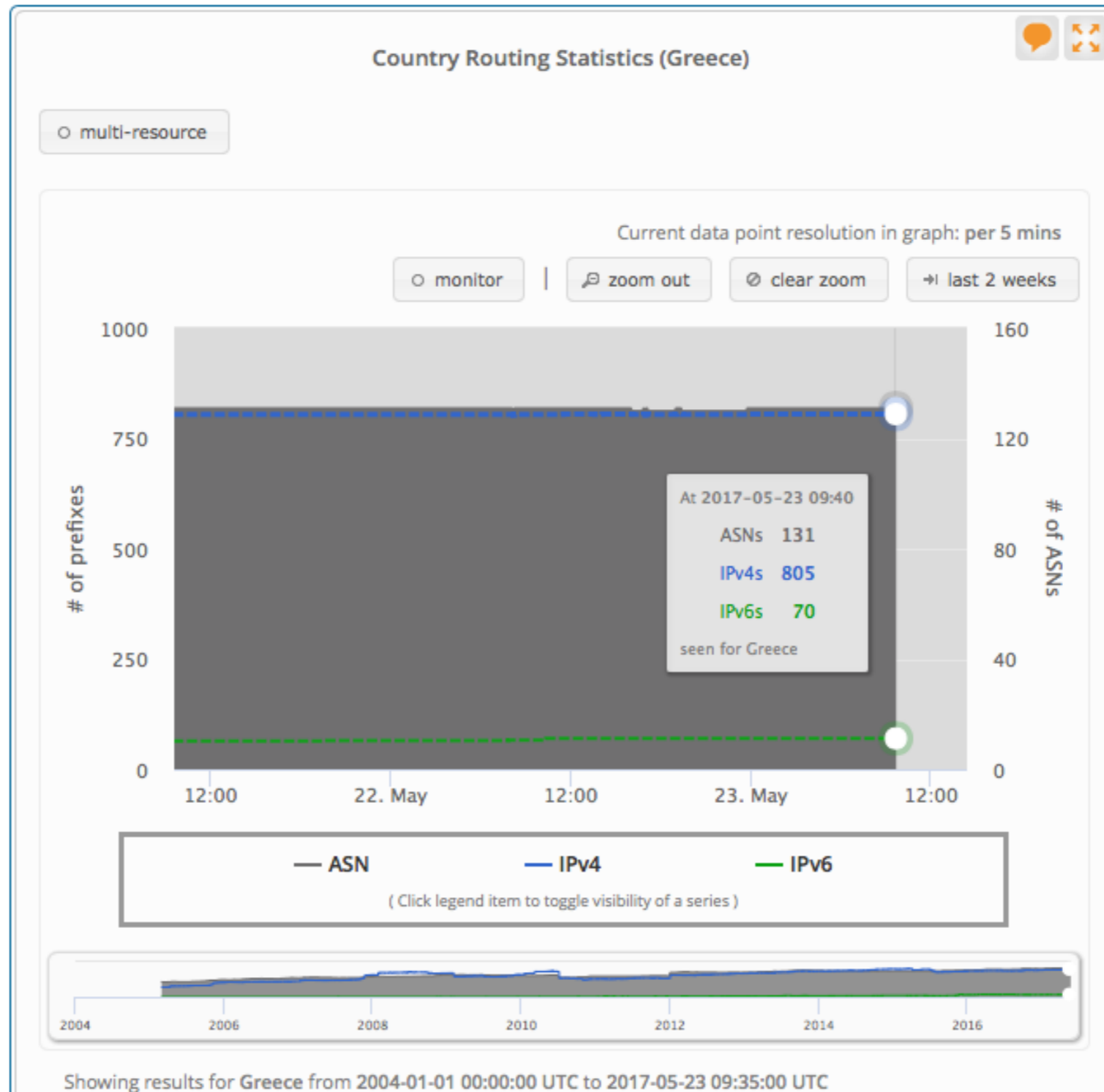


Country	Greece	Cyprus	Bulgaria	FYROM	Albania
Number of ASNs assigned	189	102	704	44	56
Number of Local Internet Registries	68	68	136	25	48
Number of IPv4 allocations	165	111	748	110	85
Number of IPv4 assignments	130	70	243	11	6
Number of IPv4 addresses allocated	4,661,248	1,042,432	4,272,128	681,984	353,280
Number of /22s allocated from the last /8	55	38	122	24	41
Number of IPv6 allocations	54	37	124	23	31
Size of IPv6 allocations (/32s)	232	148	519	103	157
Number of IPv6 assignments	54	37	124	0	31
RPKI with route object authorisation (ROAs)	15	7	29	2	18

# Resources Issued - Greece



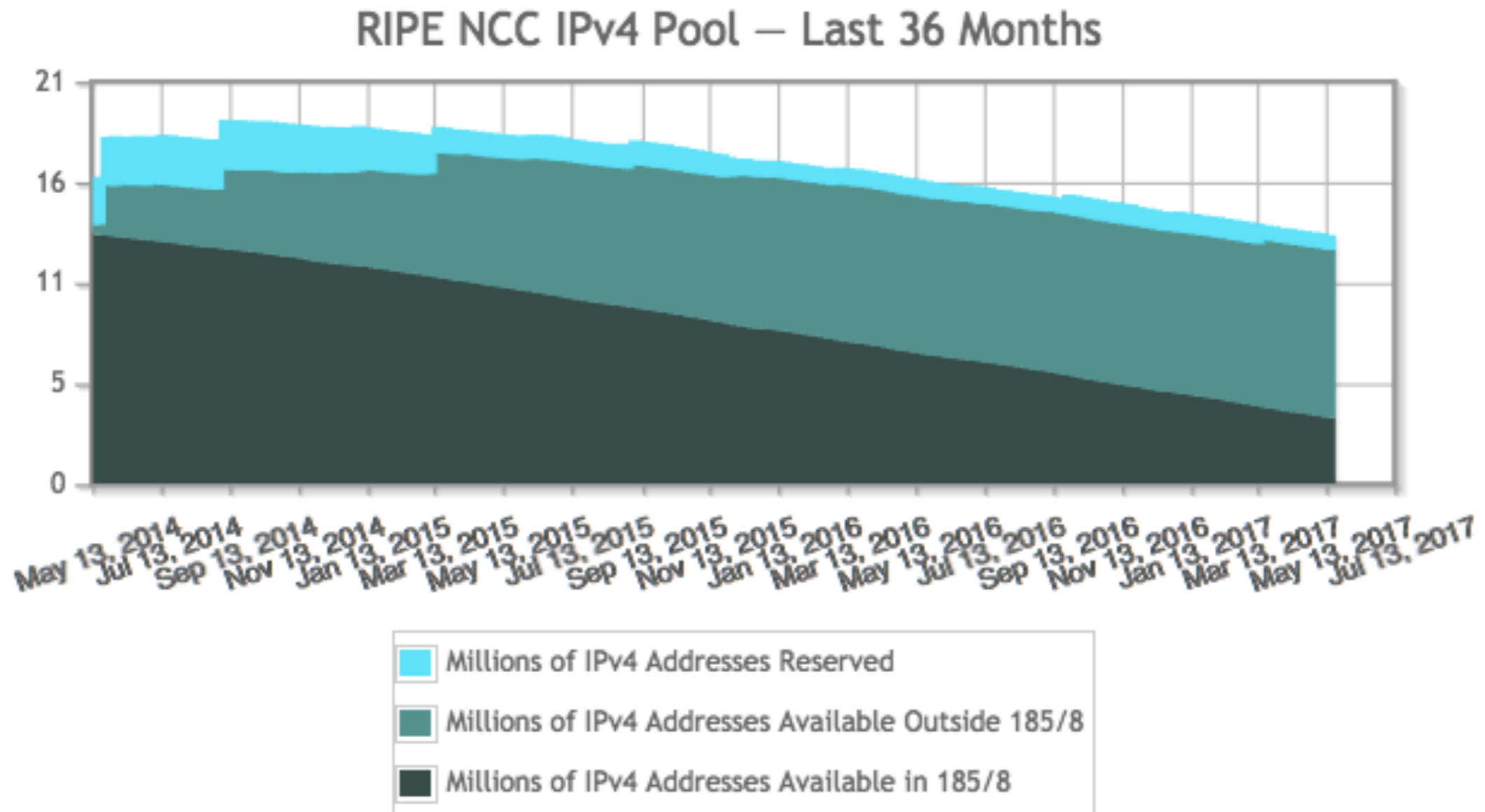
# Country Routing Statistics





# IPv4 Status

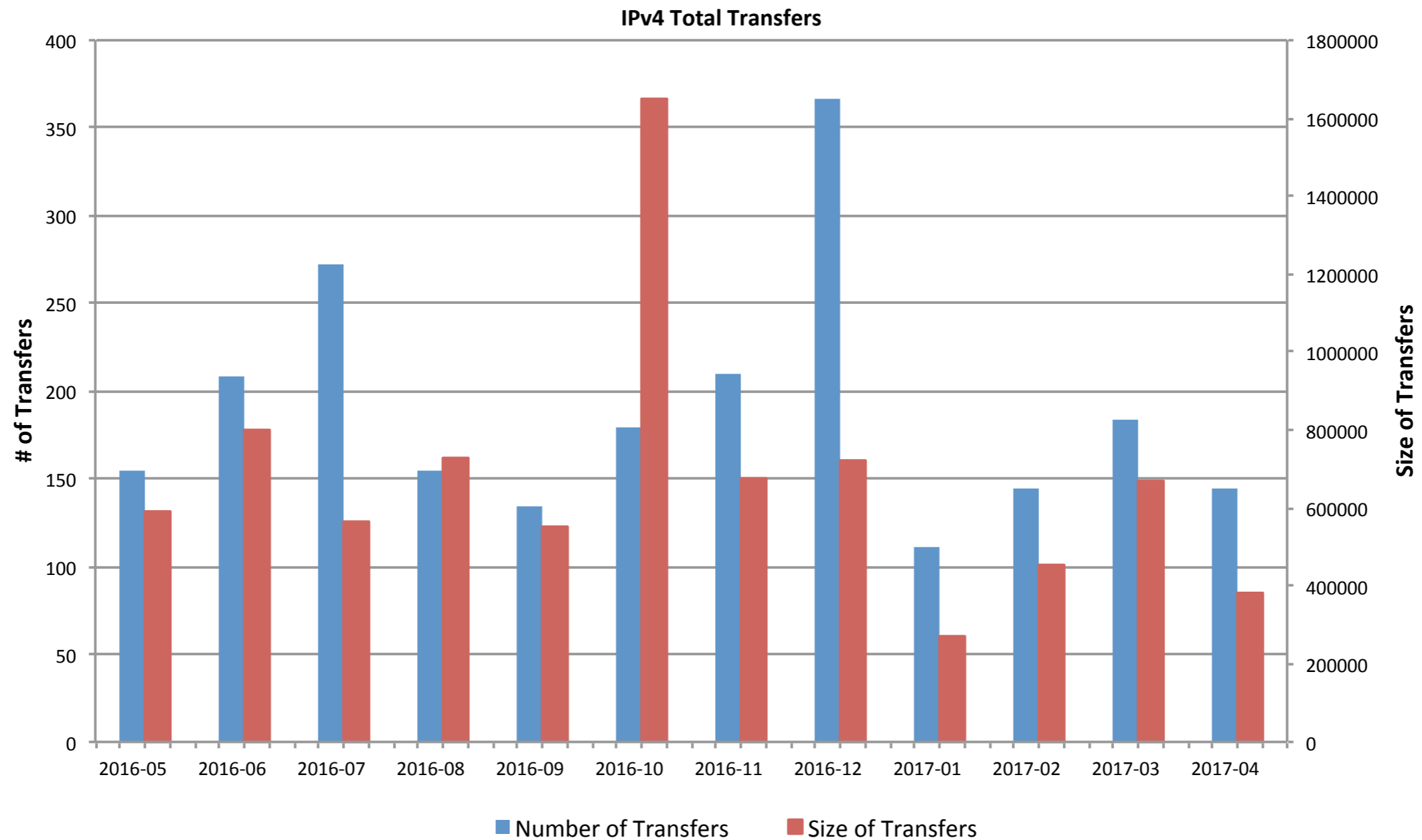
# RIPE NCC Available IPv4 Pool



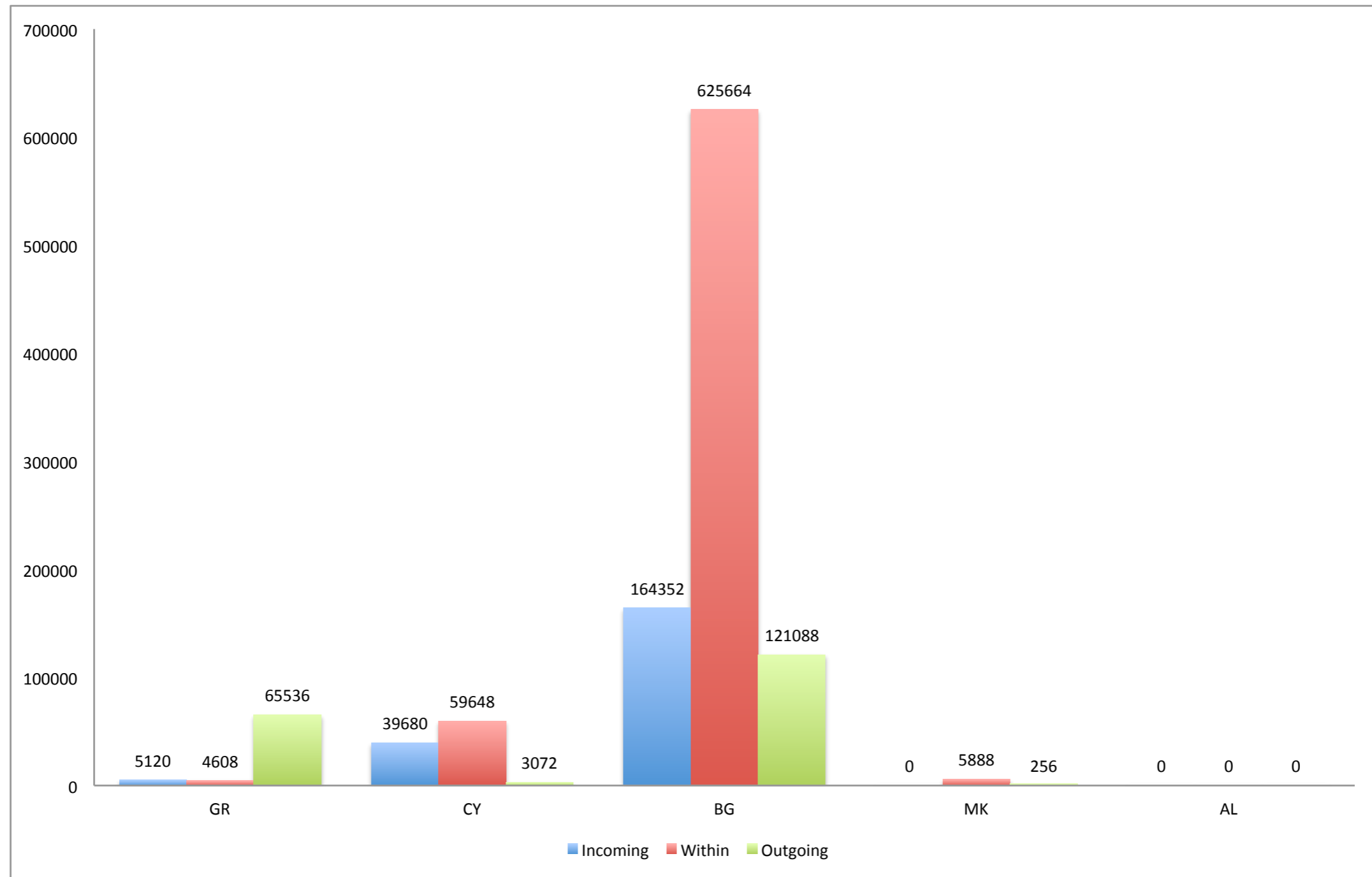
[www.ripe.net/IPv4-graph](http://www.ripe.net/IPv4-graph)



# Completed IPv4 Transfers



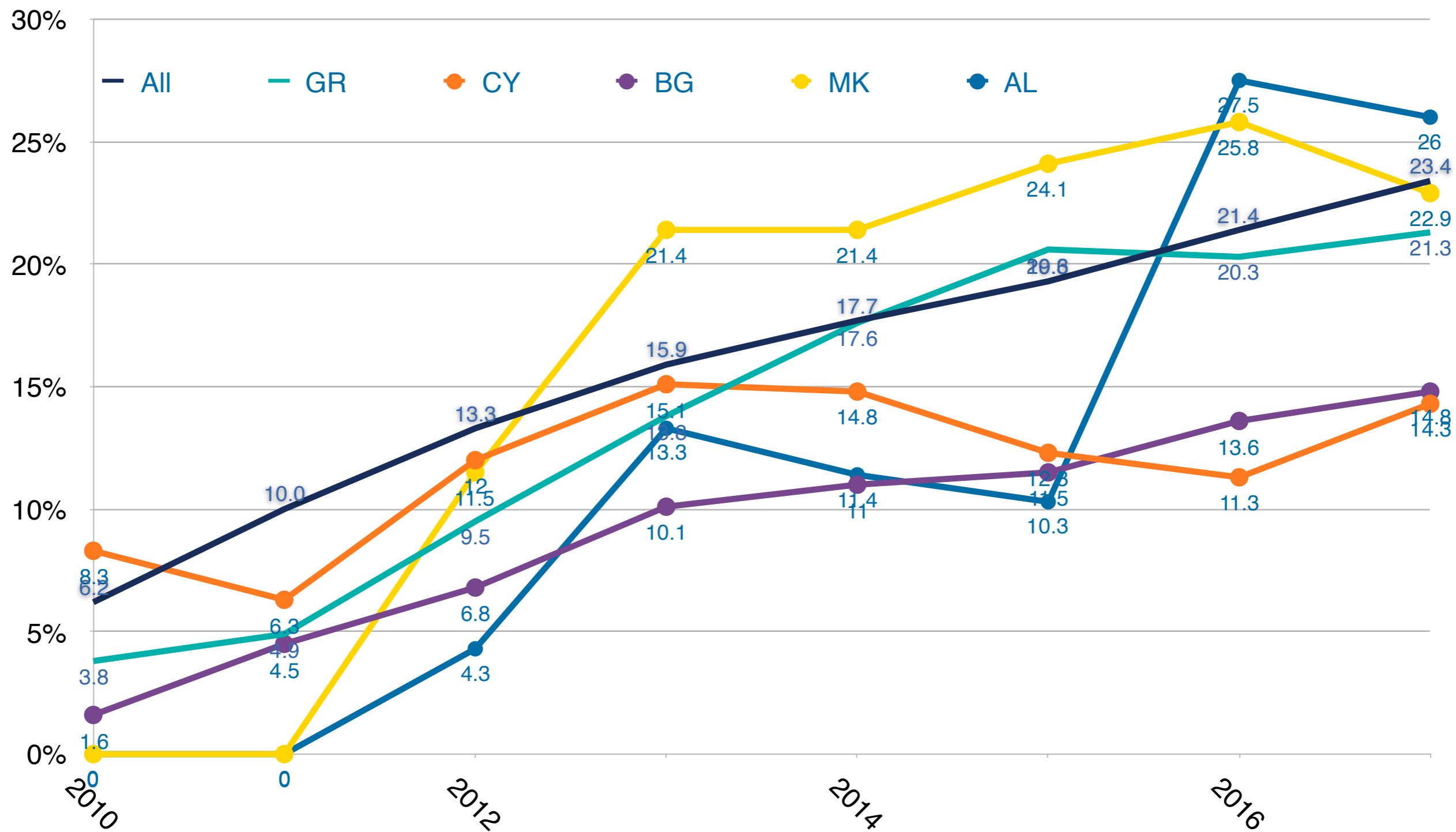
# IPv4 Transfers in the Region



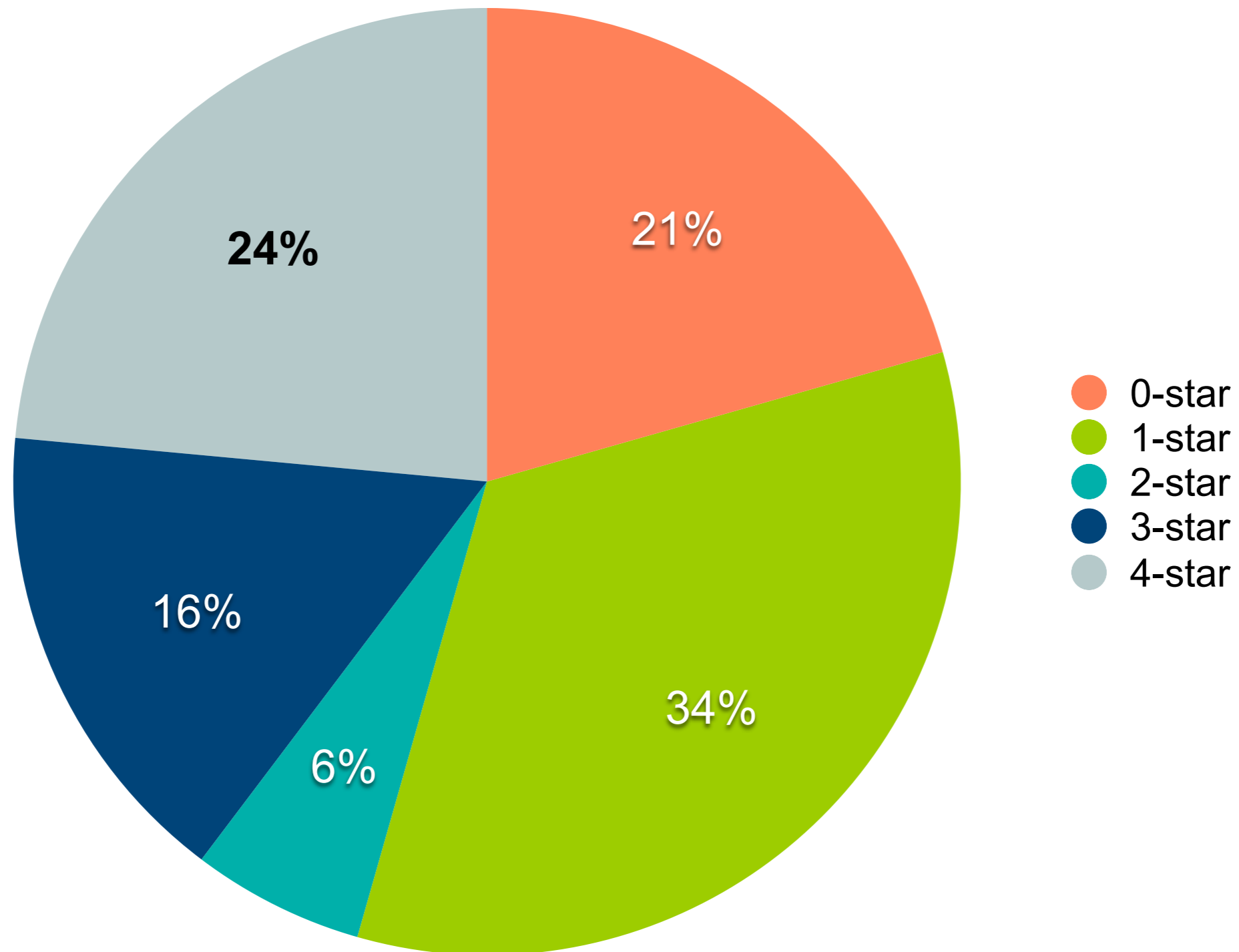


# IPv6 Deployment in Greece

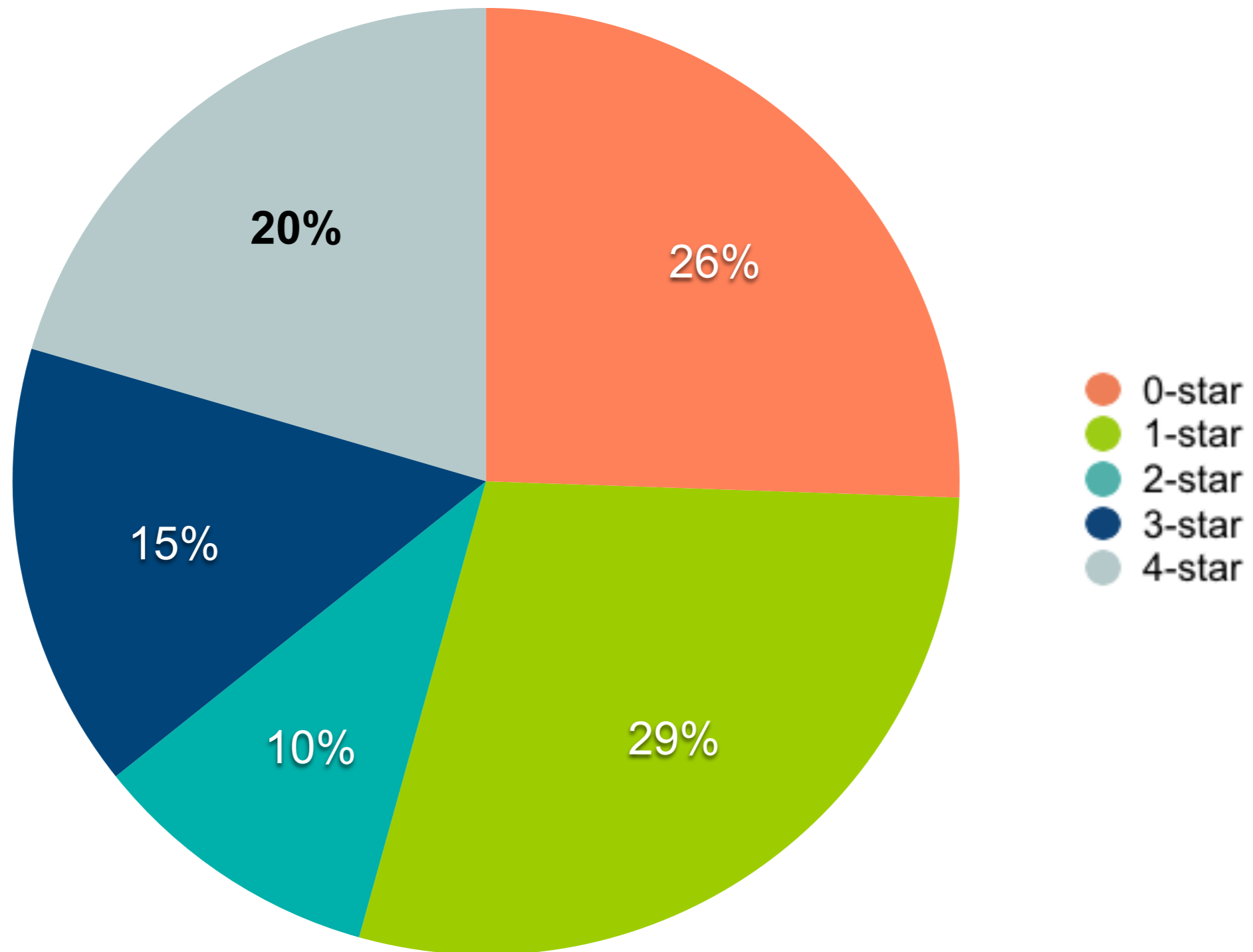
# ASNs announcing IPv6



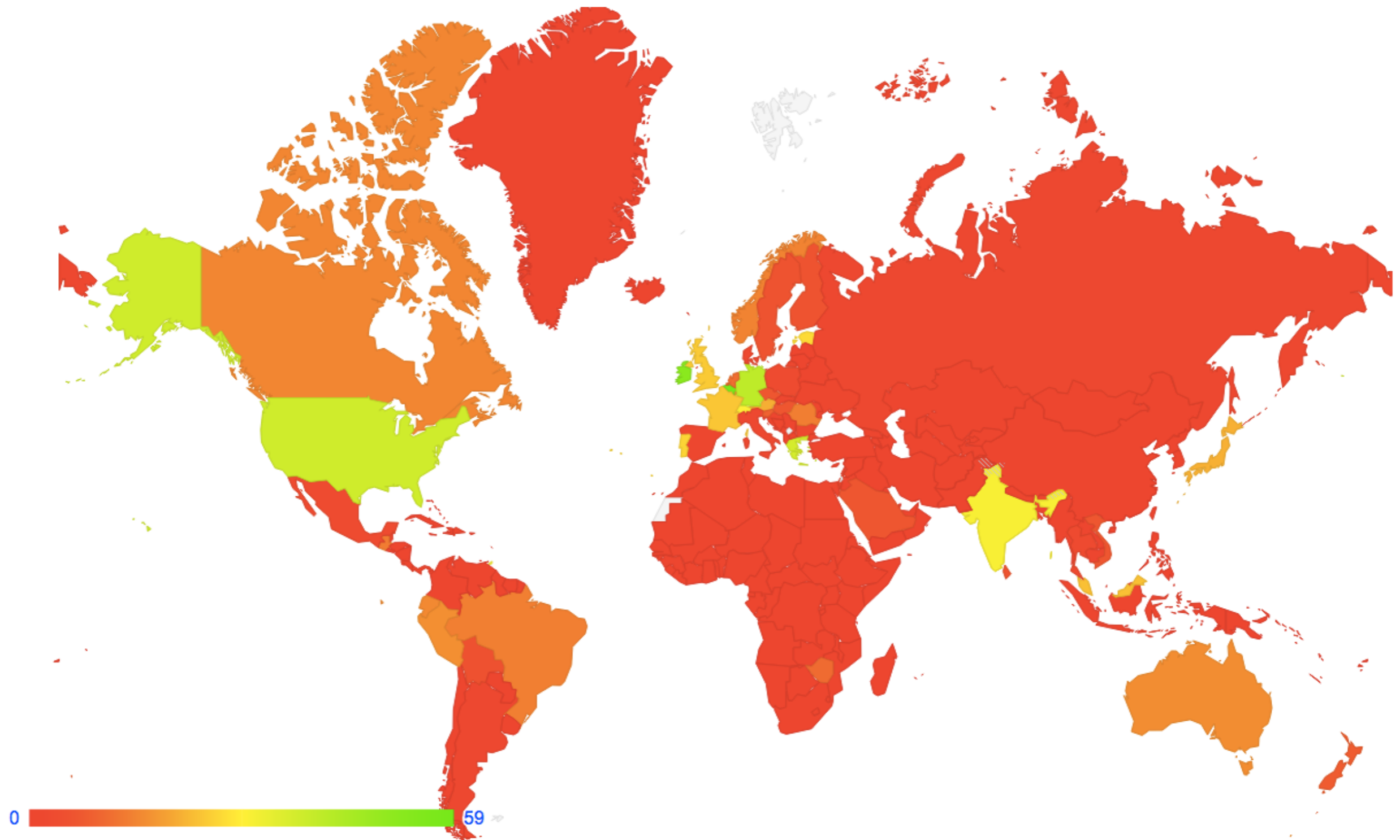
# IPv6 RIPEness - Greece



# IPv6 RIPEness - All LIRs

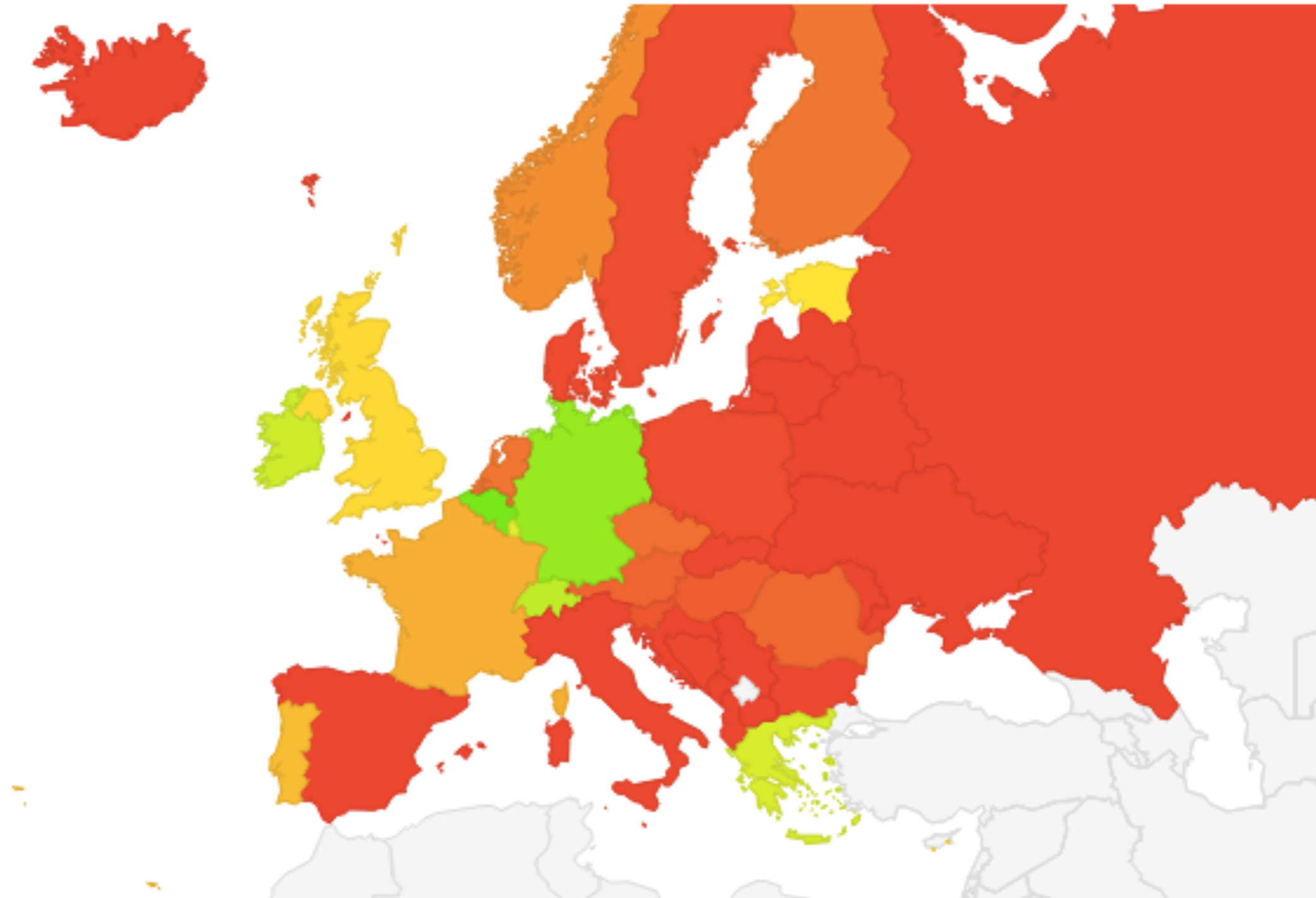


# IPv6 Capable Rate - Global





# IPv6 Capable Rate - Europe



# Use of IPv6 in Europe



Code	Region	IPv6 Capable	IPv6 Preferred	Samples	Weight	Weighted Samples
XA	World	11.40%	10.68%	389,012,901	1	389,012,901
XE	Europe	13.97%	13.31%	64,820,826	0.95	61,890,396

CC	Country	IPv6 Capable	IPv6 Preferred	Samples
BE	Belgium, Western Europe, Europe	52.12%	50.88%	1,211,055
DE	Germany, Western Europe, Europe	43.57%	41.87%	3,318,052
CH	Switzerland, Western Europe, Europe	36.74%	34.97%	791,362
US	United States of America, Northern America, Americas	35.24%	32.99%	70,429,825
IE	Ireland, Northern Europe, Europe	33.78%	33.40%	1,123,742
GR	Greece, Southern Europe, Europe	32.32%	31.63%	1,594,564
LU	Luxembourg, Western Europe, Europe	31.07%	29.82%	111,729
IN	India, Southern Asia, Asia	28.23%	26.95%	20,817,342
EE	Estonia, Northern Europe, Europe	24.83%	24.44%	207,739
JP	Japan, Eastern Asia, Asia	24.34%	21.46%	3,667,295
GB	United Kingdom of Great Britain and Northern Ireland, Northern Europe, Europe	23.73%	22.17%	4,056,307
PT	Portugal, Southern Europe, Europe	20.64%	20.00%	1,800,056
CA	Canada, Northern America, Americas	19.08%	17.46%	3,944,171
FR	France, Western Europe, Europe	18.92%	18.58%	10,385,018

<https://stats.labs.apnic.net/ipv6>

# On RIPE Labs



<https://labs.ripe.net/Members/fergalc/focus-on-greece-ripe-ncc-statistics-and-data>



# Questions

