RIPE NCC Update

RIPE NCC
RIPE NETWORK COORDINATION CENTRE

Chris Buckridge | 24 January 2017 | Roundtable Meeting

RIPE NCC

- A not-for-profit membership association under Dutch law

- Founded in 1992

- Serving as Regional Internet Registry for 76 countries

- Around 140 staff based in Amsterdam, Dubai, Moscow

Focus Points for 2017

- Maintain a strong, secure and accurate registry

- Play an active role in enhancing RIR stability through good governance and accountability

- Increase efficiency and cost-saving through automation and streamlining of processes

- Increased engagement with members, the RIPE community, governments and regulators
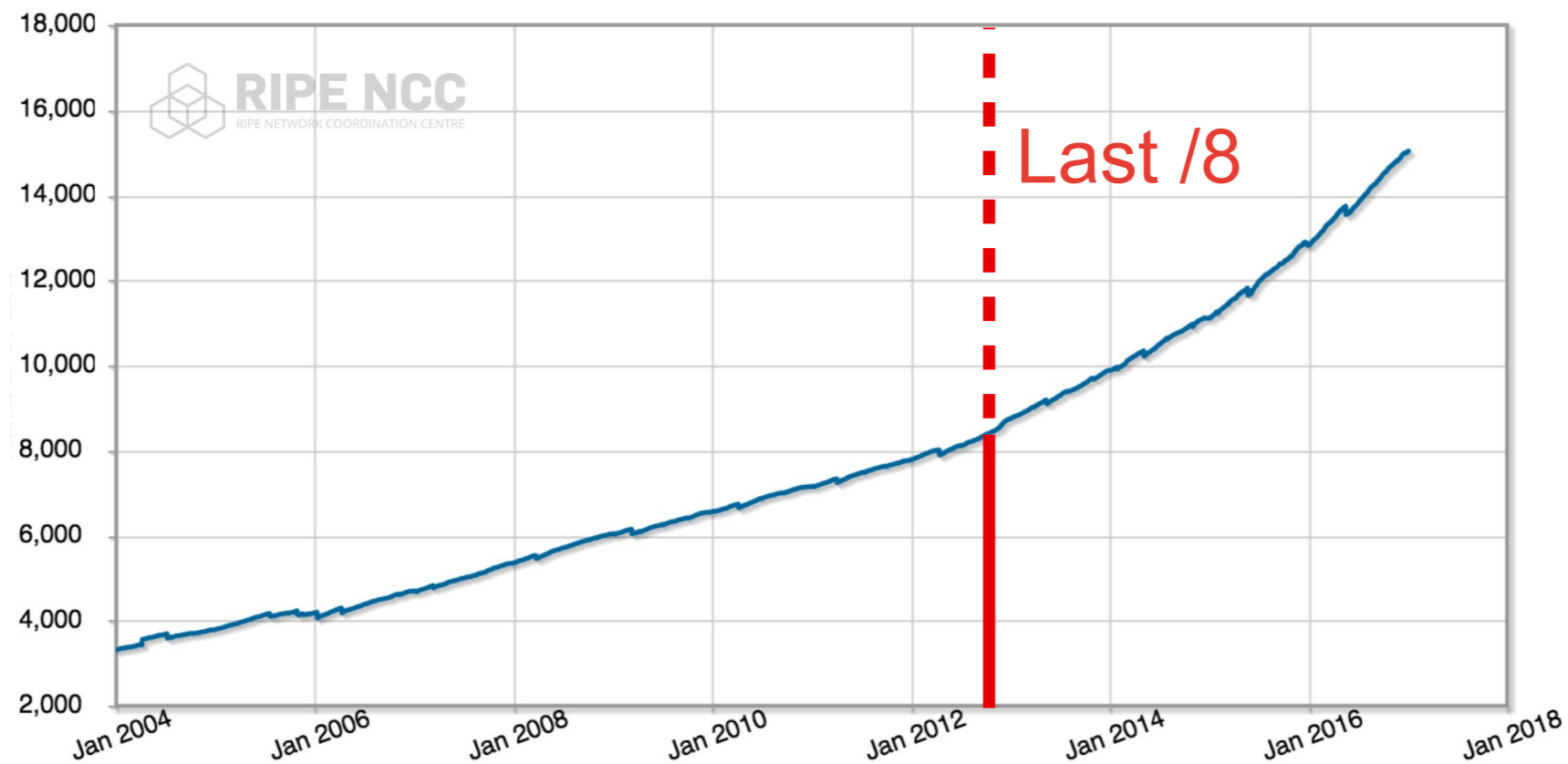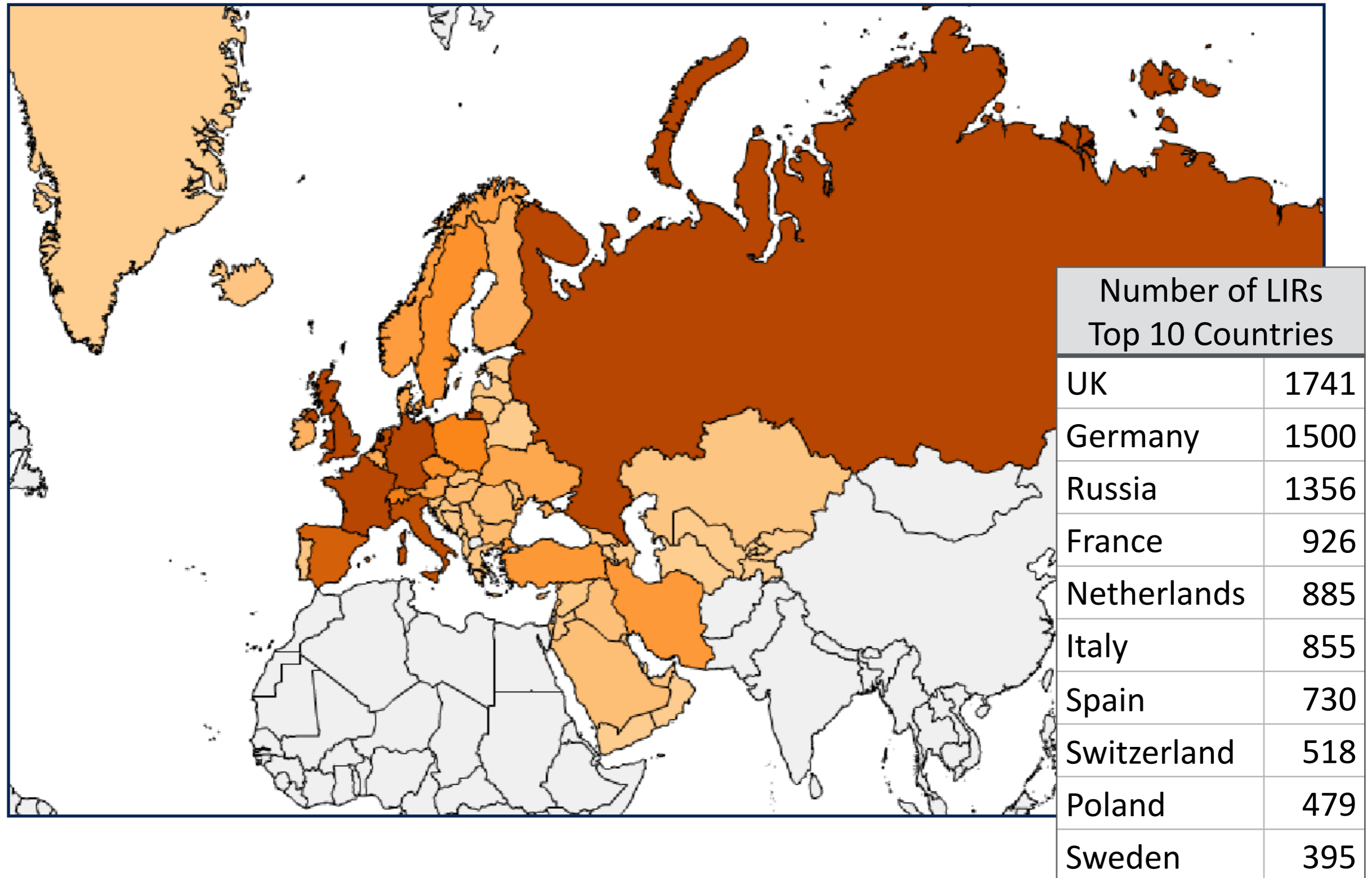
Our Membership

Membership

- ## 15,000+ members, and growing

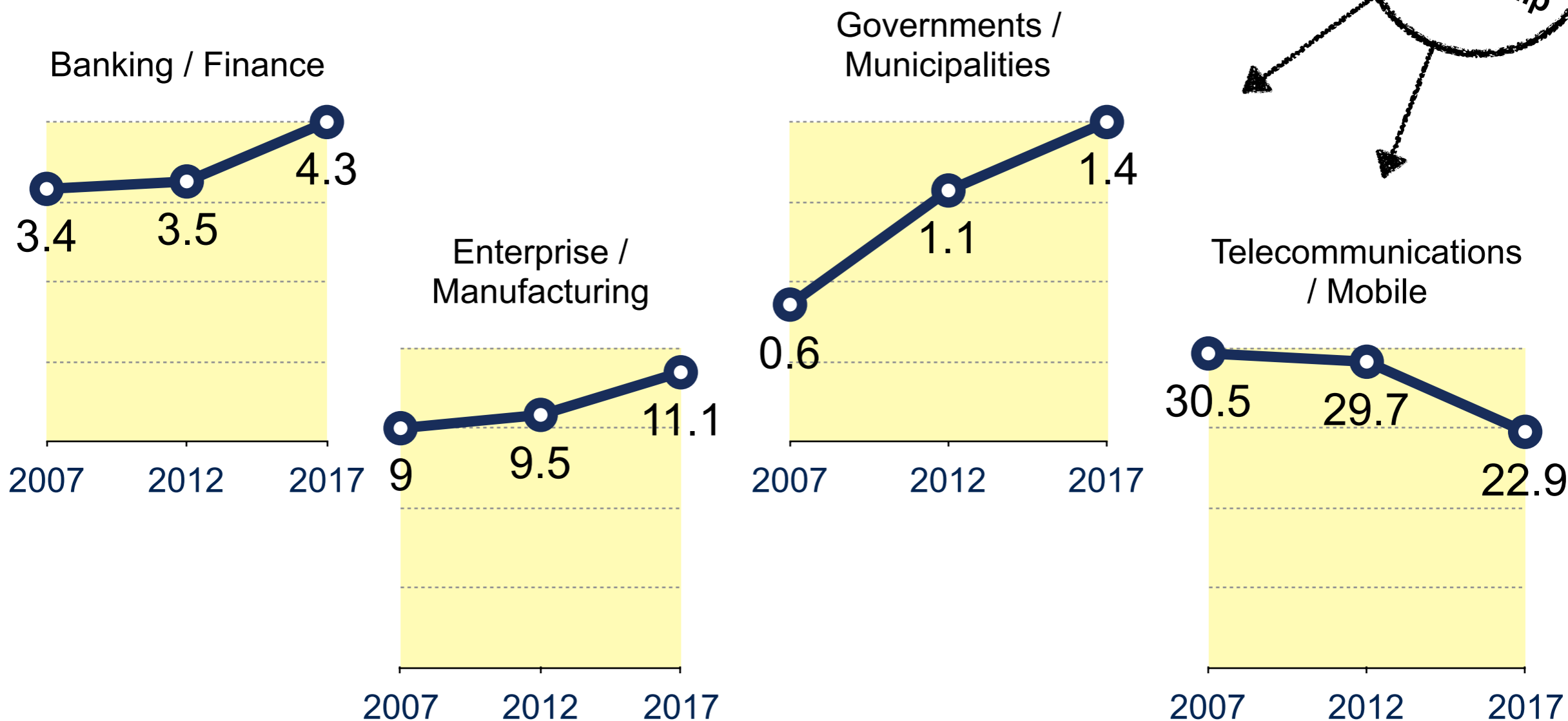
- 53% of current membership joined after 14 September 2012

Membership Distribution

Number of LIRs Top 10 Countries	
UK	1741
Germany	1500
Russia	1356
France	926
Netherlands	885
Italy	855
Spain	730
Switzerland	518
Poland	479
Sweden	395

Changing Membership

- We're not just for ISPs any more…

Percentage of total membership

Banking / Finance

3.4   3.5   4.3

2007   2012   2017

Enterprise / Manufacturing

9   9.5   11.1

2007   2012   2017

Governments / Municipalities

0.6   1.1   1.4

2007   2012   2017

Telecommunications / Mobile

30.5   29.7   22.9

2007   2012   2017

RIPE NCC Survey 2016

Consultations/Interviews

- Survey conducted in Jun 2016

  - Preparations from Nov 2015 to Feb 2016

- Preparation included:

  - In-person group consultations held in five countries

  - Interviews with individuals via Skype during the process and at RIPE 71 in Nov 2015

  - Informed us on important issues while building the survey

- Participants a mix of all types of stakeholders

Survey Responses

- 4,344 participants (highest response rate ever!)

  - 3,841 were RIPE NCC members and 503 were other interested parties

  - 176 responses from governments / regulators (around 4%)

  - Russia, Italy and Germany were countries with the most responses

  - 75 of the 76 countries in the RIPE NCC service region completed the survey; 110 countries represented in total

- Full report and survey responses:

    https://www.ripe.net/survey2016

Summary of Findings

- High satisfaction levels throughout - more positive reactions than in previous surveys

  - Similar findings across regions and industries

- Requests for simplified processes, better documentation and easy-to-use interfaces

- RIPE NCC should be focused on increasing awareness and further engagement with all stakeholders
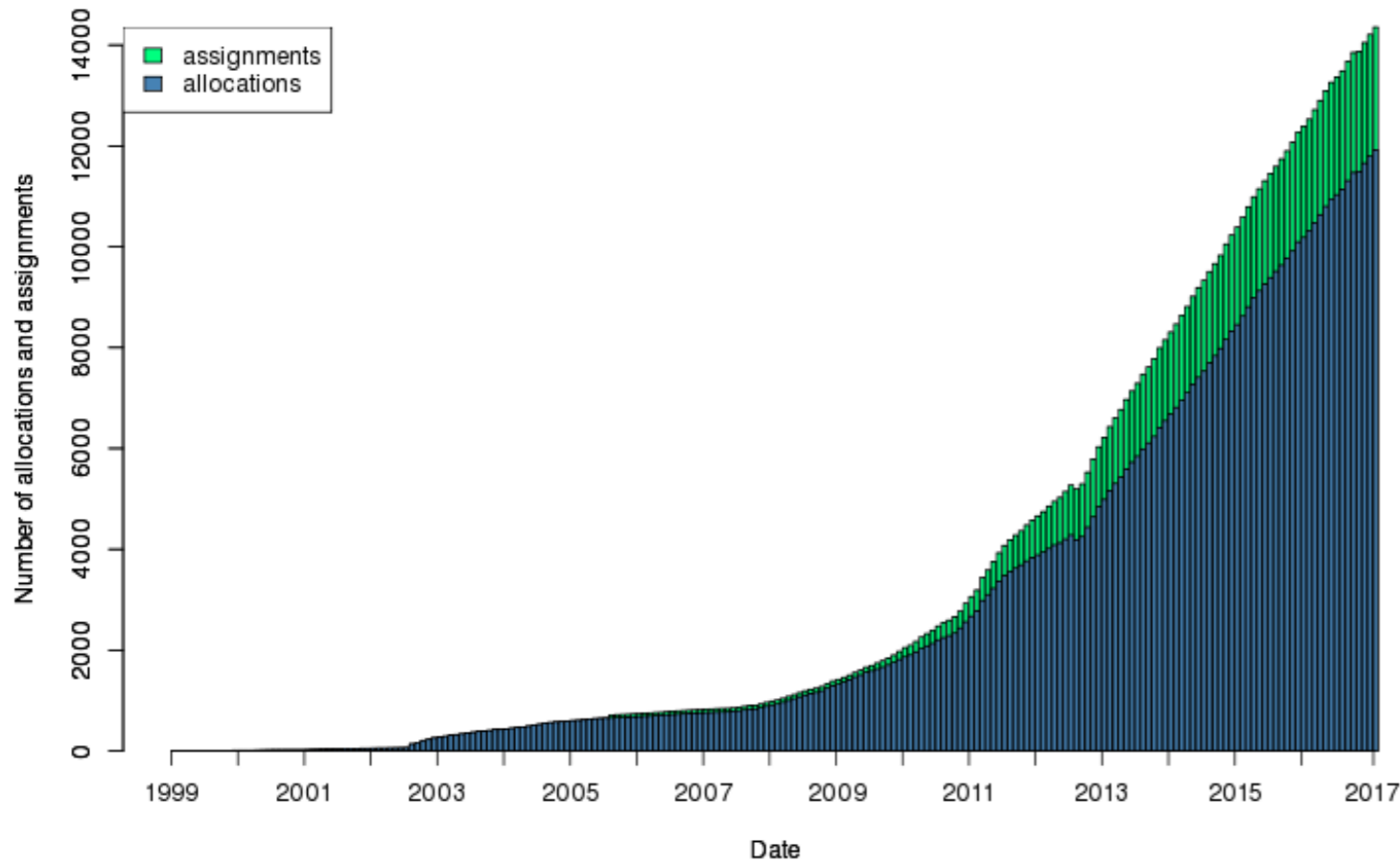
IPv6 (and IPv4)

2016: The Year of IPv6?
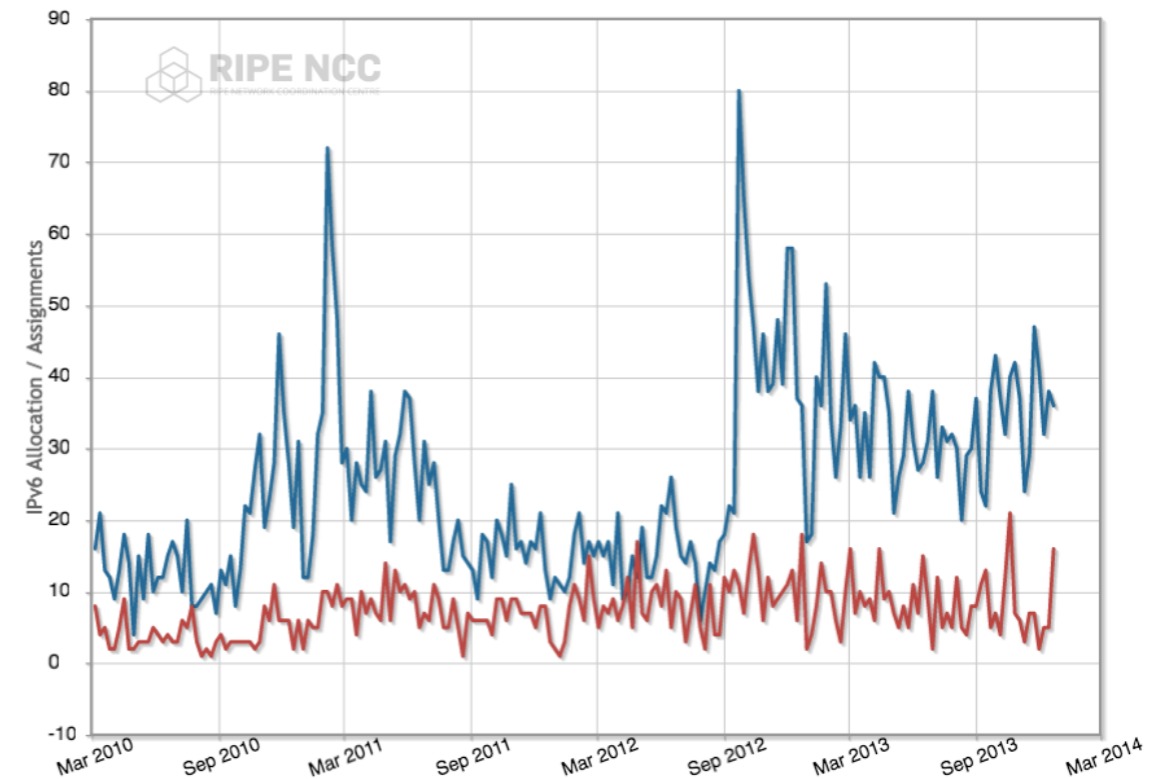
IPv6 Distribution

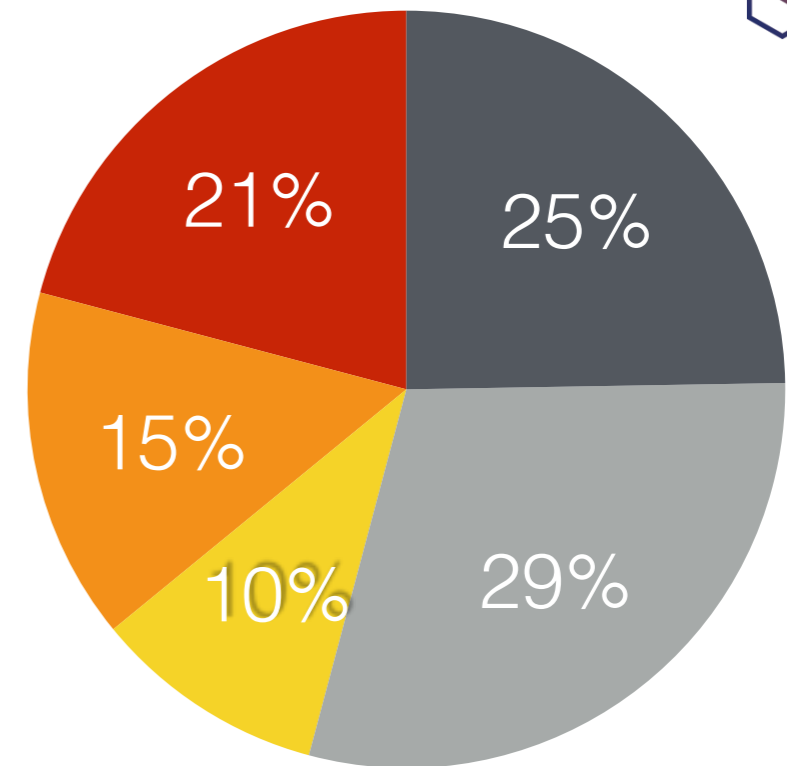**Total RIPE NCC IPv6 allocations and assignments**

IPv6 allocations and assignments over time
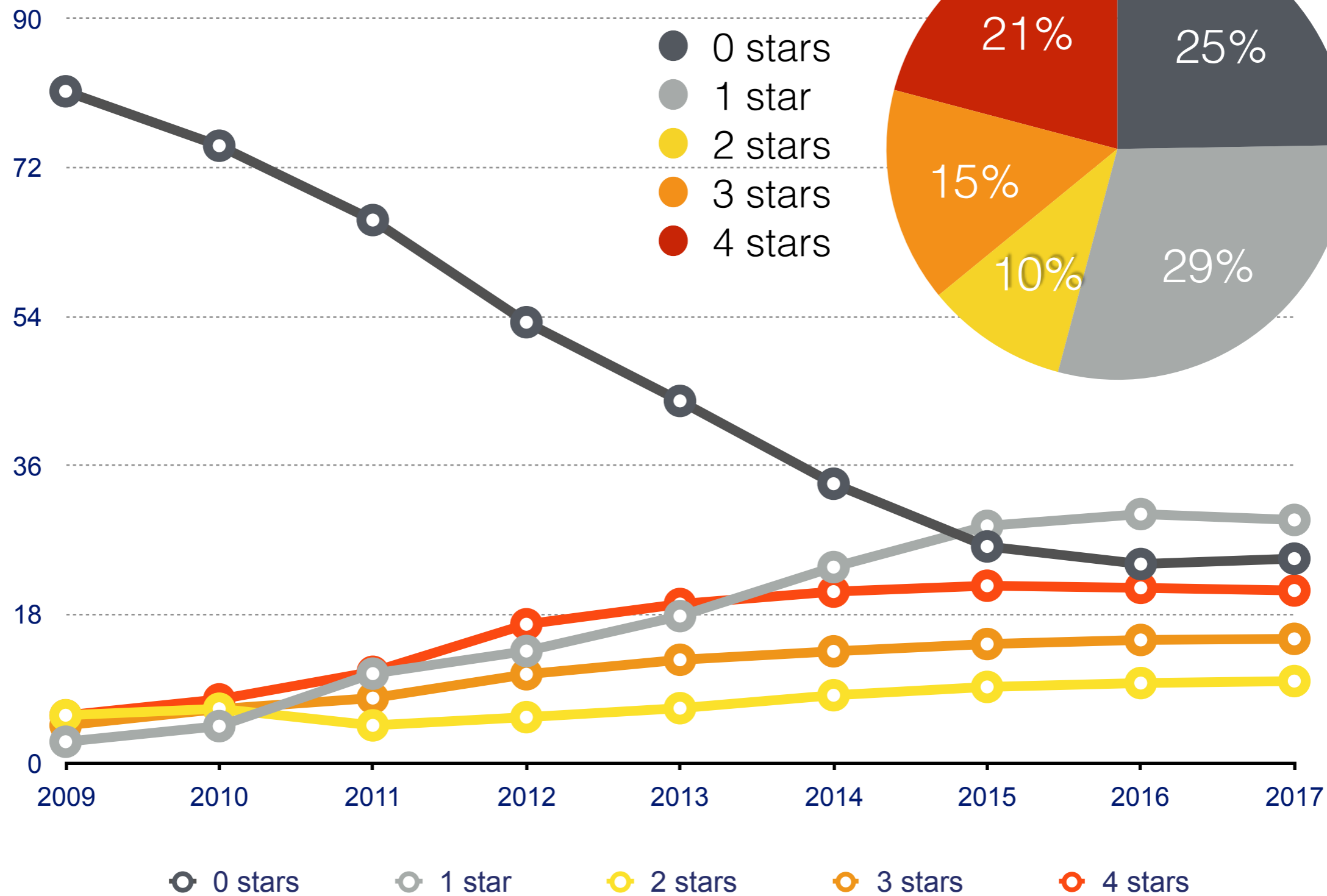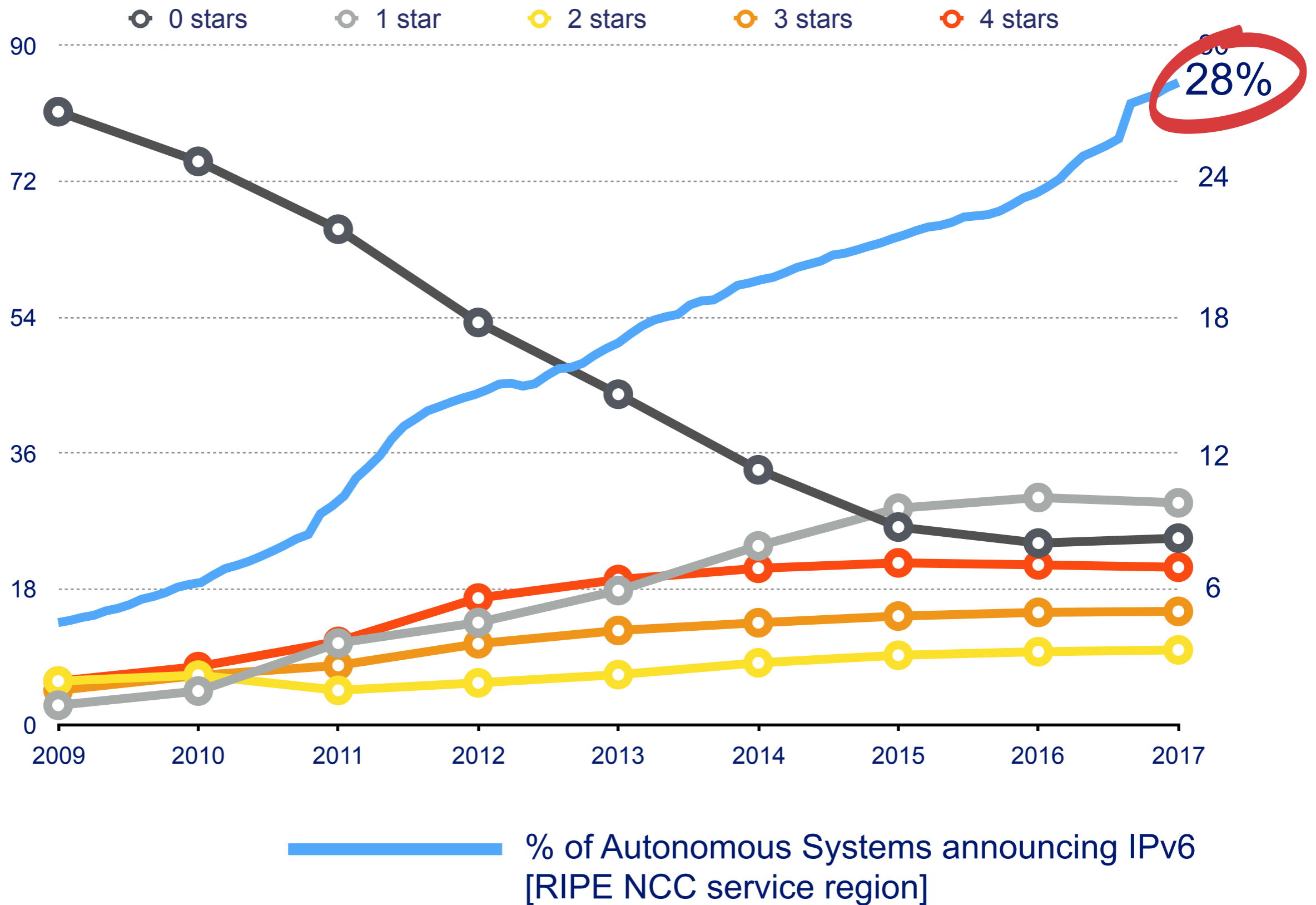
IPv6 allocations and assignments per week

IPv6 RIPEness

Legend:
- 0 stars
- 1 star
- 2 stars
- 3 stars
- 4 stars

Pie chart values: 25%, 29%, 10%, 15%, 21%

- 75% of members have IPv6 allocations

- 20% of members have actually announced their IPv6 allocations

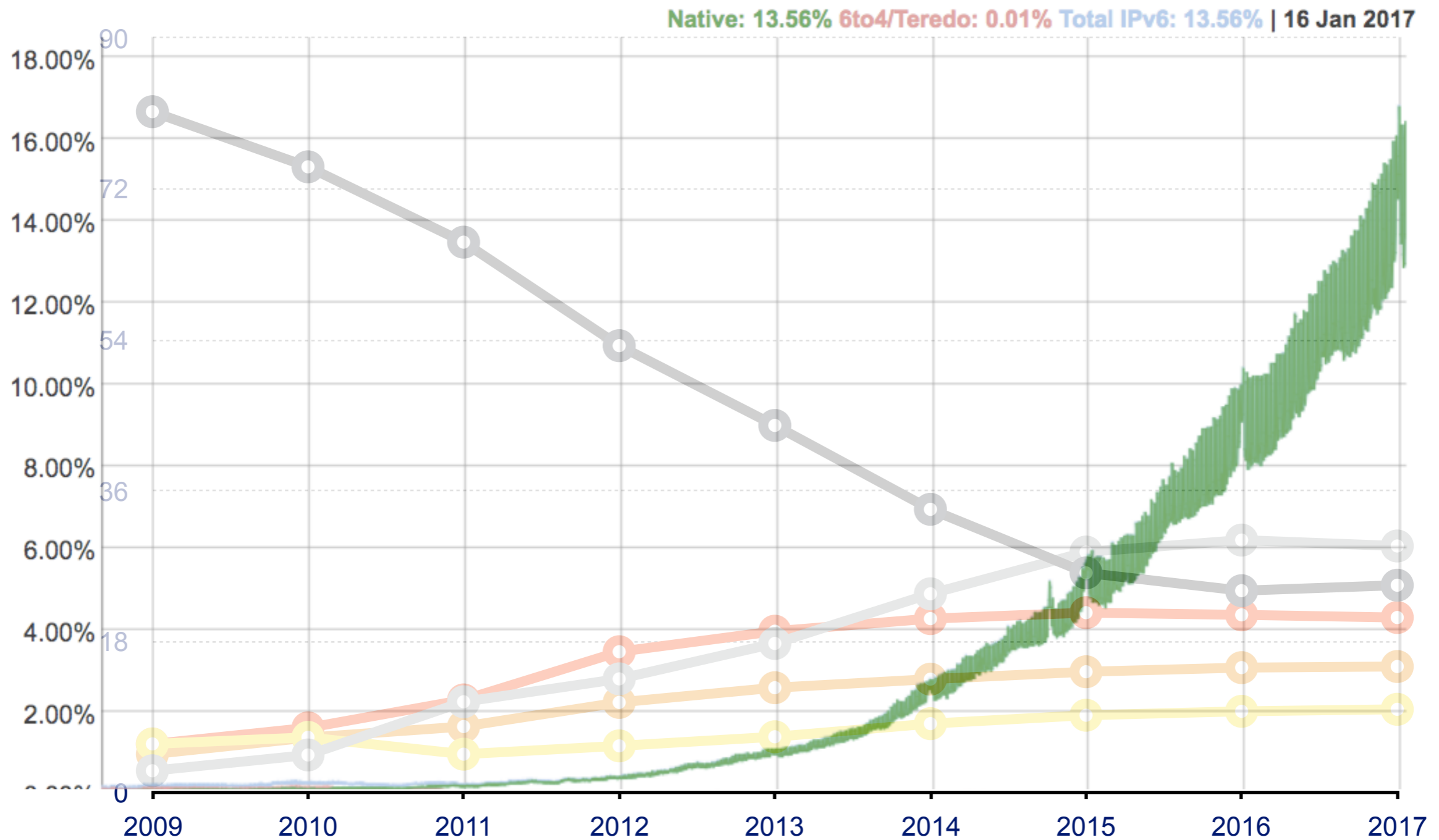# IPv6 RIPEness

IPv6 RIPEness

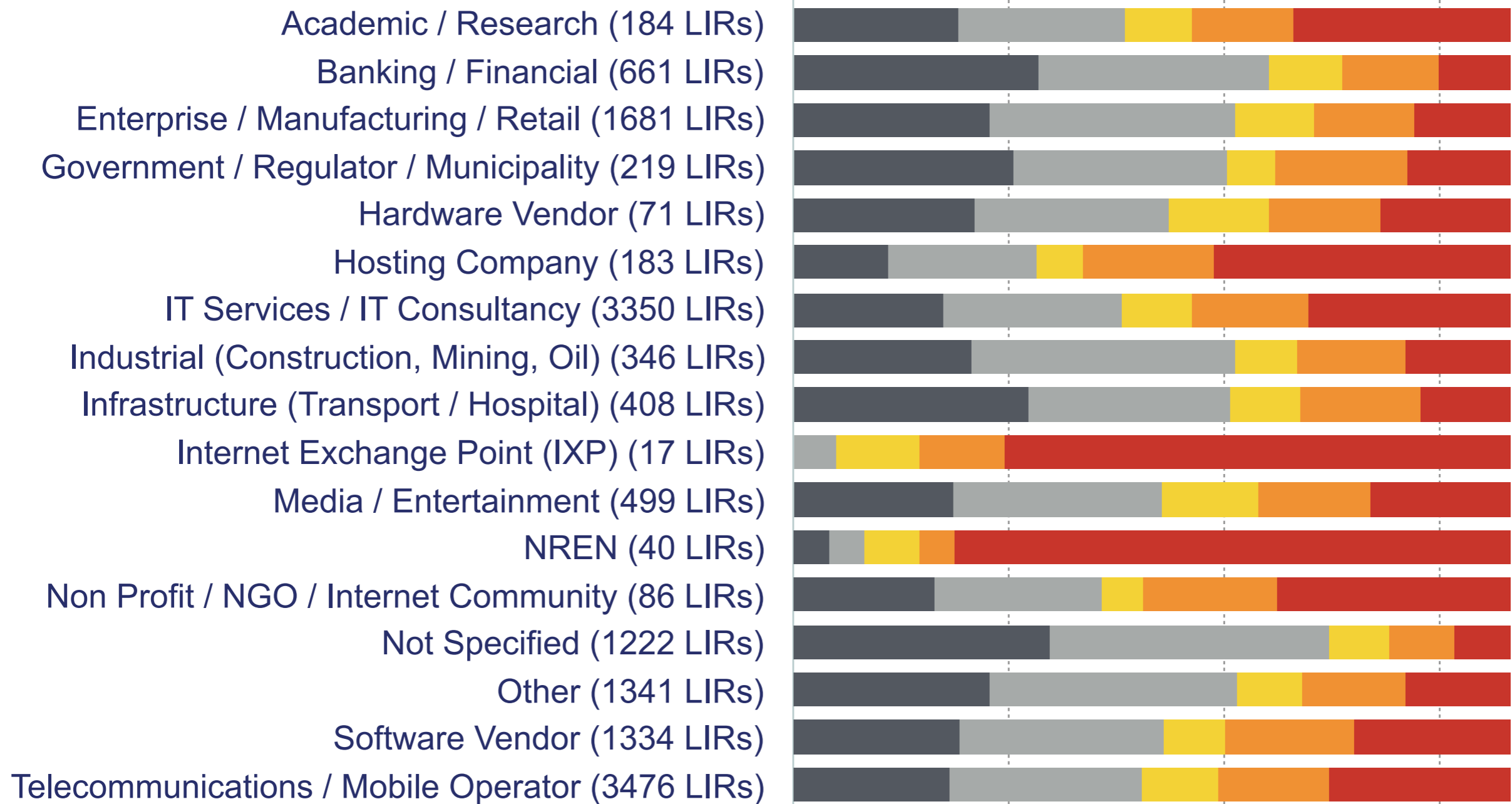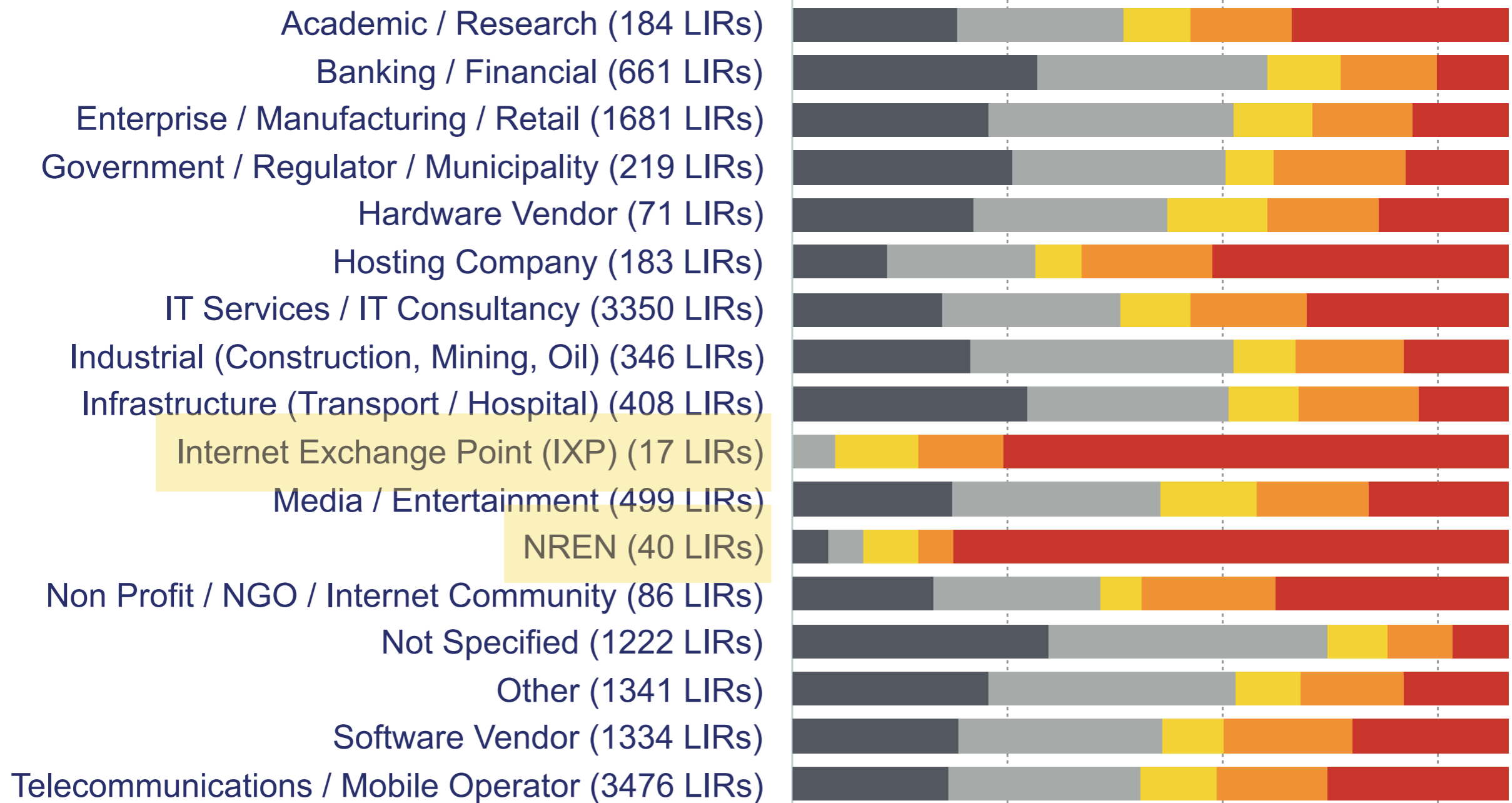Legend: 0 stars, 1 star, 2 stars, 3 stars, 4 stars

28%

% of Autonomous Systems announcing IPv6
[RIPE NCC service region]

IPv6 RIPEness

Native: 13.56% 6to4/Teredo: 0.01% Total IPv6: 13.56% | 16 Jan 2017

Source: https://www.google.com/intl/en/ipv6/statistics.html

IPv6 RIPEness by Sector

Academic / Research (184 LIRs)
Banking / Financial (661 LIRs)
Enterprise / Manufacturing / Retail (1681 LIRs)
Government / Regulator / Municipality (219 LIRs)
Hardware Vendor (71 LIRs)
Hosting Company (183 LIRs)
IT Services / IT Consultancy (3350 LIRs)
Industrial (Construction, Mining, Oil) (346 LIRs)
Infrastructure (Transport / Hospital) (408 LIRs)
Internet Exchange Point (IXP) (17 LIRs)
Media / Entertainment (499 LIRs)
NREN (40 LIRs)
Non Profit / NGO / Internet Community (86 LIRs)
Not Specified (1222 LIRs)
Other (1341 LIRs)
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IPv6 Deployment

IPv6 Capable Rate by country (%)

0 ▬▬▬▬▬▬▬ 55

Source: https://stats.labs.apnic.net/ipv6/

IPv6 Deployment

IPv6 Capable Rate by country (%)

Country	IPv6 Capable	IPv6 Preferred
Belgium	57.33%	55.41%
Switzerland	37.54%	36.26%
Germany	37.22%	35.97%
USA	34.20%	31.65%
Greece	33.30%	32.75%
Luxembourg	32.31%	30.96%
Portugal	26.80%	26.26%
UK	24.48%	23.60%
Peru	19.36%	18.88%
Estonia	18.86%	18.49%

0 — 55

Source: https://stats.labs.apnic.net/ipv6/
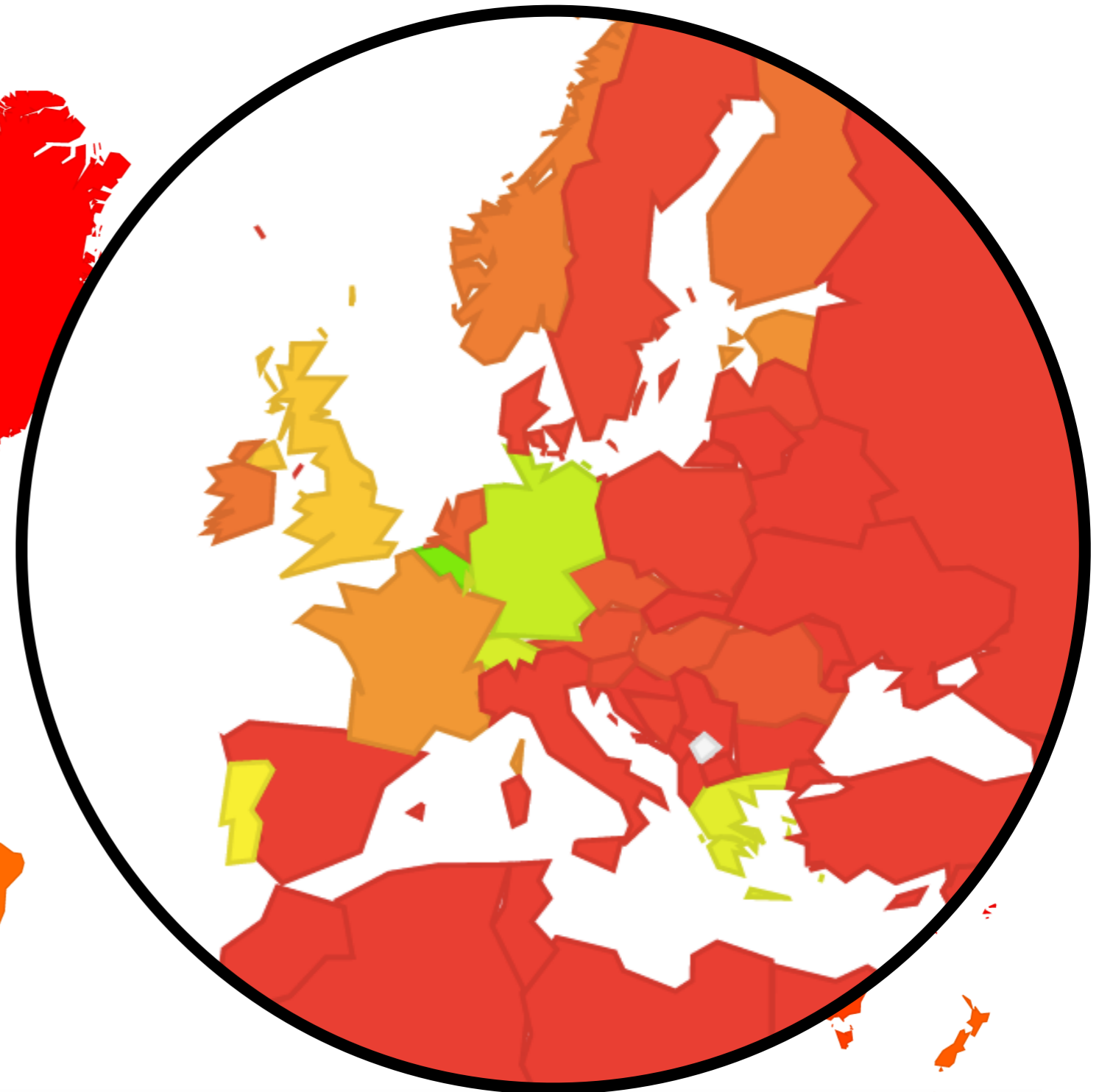
What's Next?

- The survey says:

  - 19% indicated no plans to deploy IPv6

  - Lack of customer demand and technical knowledge are seen as main barriers

  - Training is seen as something RIPE NCC could do to help

- IPv6 Roadshow and training

  - Launched in CIS region in 2016, including Train the Trainer

- Engaging specific sectors on IPv6 deployment

  - Governments, banking and finance

IPv4 Trading

- An IPv4 address market continues to develop
  - But no clear, sustained increase

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Number of transfers per month

Addresses transferred per month
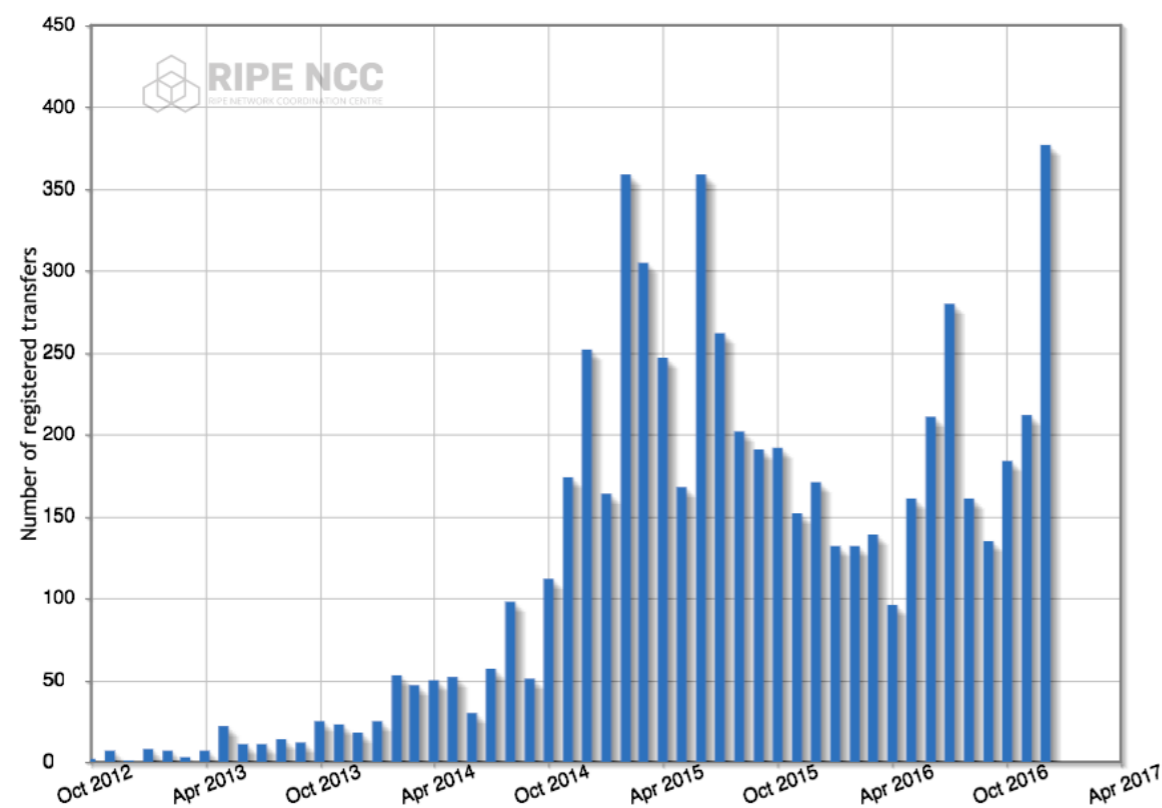
377 transfers in December 2016
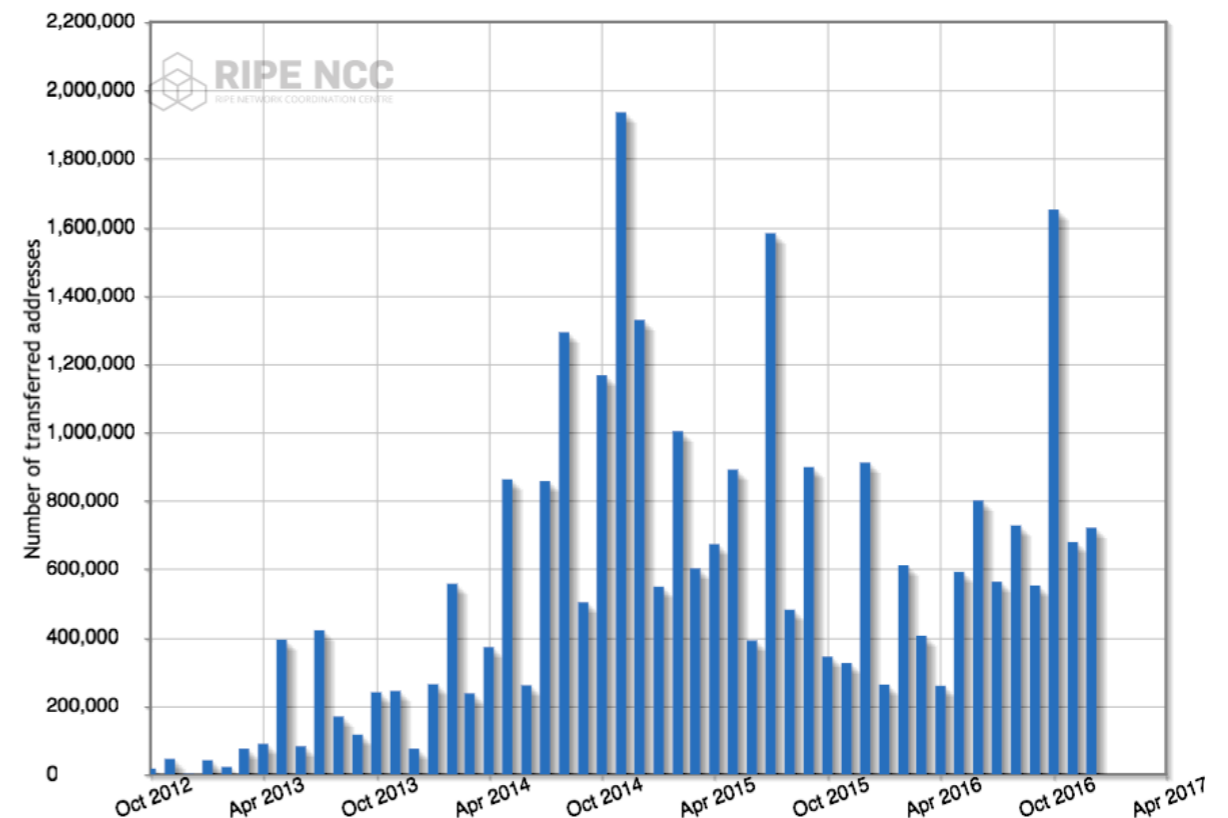
721,920 addresses transferred in December 2016

Developments in RIPE Policy in 2016

Policy Development Involvement

- Anyone can get involved in policy discussions and proposals

- Discussion takes place on relevant RIPE Working Group mailing lists

- Seven policy proposals under discussion in 2016
  - Five news proposals, two continuing discussions

- 170 active participants from 30 countries
  - Second-highest number ever after 175 people from 29 countries in 2015

Policy

- The survey says:

  - Improve PDP webpages to increase participation

  - More social media activity, regional outreach and RIPE Labs articles

- The RIPE Forum is a new, web-based interface for reading and sending emails on RIPE mailing lists

  https://ripe.net/participate/mail/forum/

Policies on IPv6

- A shift in community's policy focus to IPv6 matters:

  - 2016-04, "IPv6 PI Sub-assignment Clarification"

  - 2016-05, "Synchronising the Initial and Subsequent IPv6 Allocation Policies

    - Discussion included active government participation

- Both policies are still under discussion

Policies on IPv4

- Community reached stalemate between using up or preserving the remaining RIPE NCC pool, failing to reach consensus on:

  - 2015-05, "Last /8 Allocation Criteria Revision"
  - 2016-03, "Locking Down the Final /8 Policy"

- 2015-04, "RIPE Resource Transfer Policies"

  - Create a single transfer policy for the transfer of all types of Internet number resources, introduces a 24-month holding period for IPv4 addresses and 16-bit ASNs after change of holdership
  - Still under discussion…

Capacity Building

…and Good of the Internet

Capacity Building

- Support local communities

  - Engage throughout our service region

  - Successful Regional Meetings in Tirana, Istanbul, Moscow and Yerevan

  - Support and participate in national Network Operator Groups

  - Member Lunches in 2016:

    Manama / Tel Aviv / Helsinki / Kuwait / Riga / Vilnius / Doha / Dushanbe /

    Milan / Muscat / Luxembourg / Frankfurt / Zagreb / Kiev / Almaty / Baku / Minsk

  - IPv6 Roadshow program, including Train the Trainer

Working for the Good of the Internet

- The RIPE NCC has a proud tradition of working for the good of the Internet

  - K-root, RIPE Labs, RIPE Atlas

- Mission:

  Support projects to improve services and tools for RIPE NCC members, the RIPE community, network operators and Internet users everywhere

Good of the Internet Initiative

RIPE NCC Community Projects Fund	Projects that benefit the Internet
Rob Blokzijl Foundation	Recognition of individuals
IETF support	Ensure the long-term sustainability of the IETF

Internet Governance in 2016

Internet Governance

- IANA Stewardship Transition Process

  - Transition completed on 1 October 2016

  - Five RIRs have a Service Level Agreement (SLA) in place with IANA

  - RIRs will conduct periodic reviews of IANA's services

  - Positive demonstration of our open, inclusive, transparent and bottom-up approach

  - In general, our operations are not affected

- Ramifications of this process continue…

  - CCWG, accountability discussions

The Internet Governance Landscape

- Political action increasingly has the potential to impact the technical operation of the Internet

  - In the ITU:

    ▸ WTSA-16 highlighted political differences about ITU role

    ▸ Study Group 20 (IoT) reflecting these differences

    ▸ PP-18 preparations already underway

  - UN CSTD Working Group on Enhanced Cooperation:

    ▸ Continuing WSIS debates

- IGF has its 10-year mandate… now what?

Internet Governance and RIPE

- The survey says:

  - The RIPE NCC should be a neutral, trusted advisor for governments rather than a lobbying party

  - The RIPE NCC should be giving governments insight on the technical environment of the Internet community and explaining related technical issues

  - Education is an important function of the RIPE NCC in this area

Next Steps

- **Improving RIPE NCC capacity to engage**

  - Respond where relevant to calls for input of expertise

  - Working with RIPE community to facilitate wider participation in Internet governance processes

- **Developing our educational capacity**

  - Support for regional IG schools

  - Engagement with academic institutions ("Academic Days")

Country Reports

Country Reports

- The RIPE NCC has a lot of data:

    - Address space allocations

    - IPv4 transfers

    - IPv6 deployment

    - Internet connectivity and reachability

    - And more…

Country Reports

- Country-based information is of interest to many stakeholders:

  - Governments and intergovernmental organisations

  - Regulators

  - LEAs

  - Network operators

  - Researchers

  - RIPE NCC membership and RIPE community

Country Reports

- Currently, the data is scattered

- Goal is to make it easily available in once place

- Country Reports is the solution

- New initiative; work will continue through 2017

Goals

- **Aggregated data** for individual countries/ regions

- **Comparisons** with other countries/regions

- **Correlation** between datasets

- Comprehensive view including external data

- Intuitive and accessible user interface

- Ability to export/share data

Implementation

Implementation

Datasets

- Examples of datasets:

  - IPv4/IPv6 allocations, growth, transfers

  - RIPE NCC membership (growth, industry, age, etc.)

  - Policy development involvement across service region

  - RIPE Atlas data: global connectivity and reachability

  - Bandwidth capacity

  - Routing data (outages)

Feedback

- Please let us know what would be most useful to you

Strengthening Relationships

External Agreements

- RIPE NCC works with a diverse range of organisations
  - Technical coordination organisations
  - Industry groups
  - Public regulators
  - Law enforcement agencies
  - Academic institutions

- Formalising our existing relationships with these organisations

Current Agreements

Reciprocal Agreements (MoU or LoU)
- NRO (Numbers Resource Organisation)
- ICANN ASO (Address Supporting Organisation)
- APNIC
- EuroDIG
- CEPT Com-ITU
- Euro-IX
- Europol

Service Level Agreements
- IANA (Internet Assigned Numbers Authority)

Membership Agreements
- AIOTI (Alliance for Internet of Things Innovation)
- ITU-T (ITU Telecommunication Standardisation Sector)
- ITU-D (ITU Telecommunication Development Sector)

Goals

- Establish more durable institutional relationships

- Develop and identify cooperative activities for the benefit of our community, membership and the organisation

- Provide clarity on the nature of RIPE NCC's institutional relationships for our members and community

Questions

chrisb@ripe.net