

# Update from the RIPE NCC

Axel Pawlik  
Managing Director



# We are here to serve you

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- Secretariat for RIPE Community
- Founded in 1992
  - Teenager on verge of adulthood
- Activities to support coordination of Internet operations
  - Service region Europe, Middle East, Parts of Central Asia

# Activities

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- Support for RIPE
  - Policy development Process
- Regional Internet Registry
- Operations of Root Nameserver
- Operations of RIPE Database
- Internet Measurements
- ENUM Tier 0 Registry
- Training
- Outreach

# Future and Strategy

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- IPv4 depletion as Discontinuity
  - How will RIPE NCC be affected?
- Developing Strategies for the Future
  - Focusing on Usefulness for Members and Community
  - “Back to the Roots”
- Focus on
  - Strong Registry
  - Strong Community

# Three Strategic Pillars

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- Resource Lifecycle Management
  - Maintaining the Number Registry
- Reliable Source of Data
  - Develop, use and publish the wealth of data available
- Developing the Role of the RIPE NCC
  - Engage Stakeholders in Internet Governance
  - Prove Utility of RIPE NCC to Public Policy Makers
  - Intensify work with RIPE Community to understand Needs

# Thinking about Improvements

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- Service to Members
  - Relevance? / Quality? / Member Communication!
- Community Engagement
  - RIPE Labs
  - Regional Meetings
- Call for RIPE Meetings from many corners
  - RIPE Days?
- Working with WG Chairmen
- Membership Survey in 2011
  - Your participation is crucial

# We are living in interesting times...

- Looking ahead...
- Focus on “Getting over the Hump”
  - Managing IPv4 runout
  - Responding to community needs
- ... while remaining flexible
  - Staff has doubled since 2000
  - Expect to see shrinkage beyond IPv4 runout and related activities
  - When?

# Registration Services Update

Andrew de la Haye  
Chief Operating Officer





# Registration Data Quality: “RDQ”

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- Two questions for each prefix:
- *Is this RIPE space?*
  - Internal records cleaned up:
  - 1097 prefix inconsistencies fixed
    - 600 related to ERX/Legacy
- *How confident are we about legitimate holder?*
  - Identify areas to improve Registry Data Quality
  - Prevent / Resolve conflicts about address space usage
  - Support Policy Development Process with hard data
    - Impact analysis

# Registration Quality

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- Reclamation
  - Announced IP address space, “pending closure” LIRs
  - Since 2007, 847 non-paying LIRs contacted
  - 238 LIRs re-opened
  - 620 LIRs had Allocations returned to the RIPE NCC (6,123,520 IP addresses)
- LIR Audit Activity
  - From 1996 until 2008 - 343 Audits
  - 2009 - 301 Audits
  - 2010 - 415 Audits (to date)

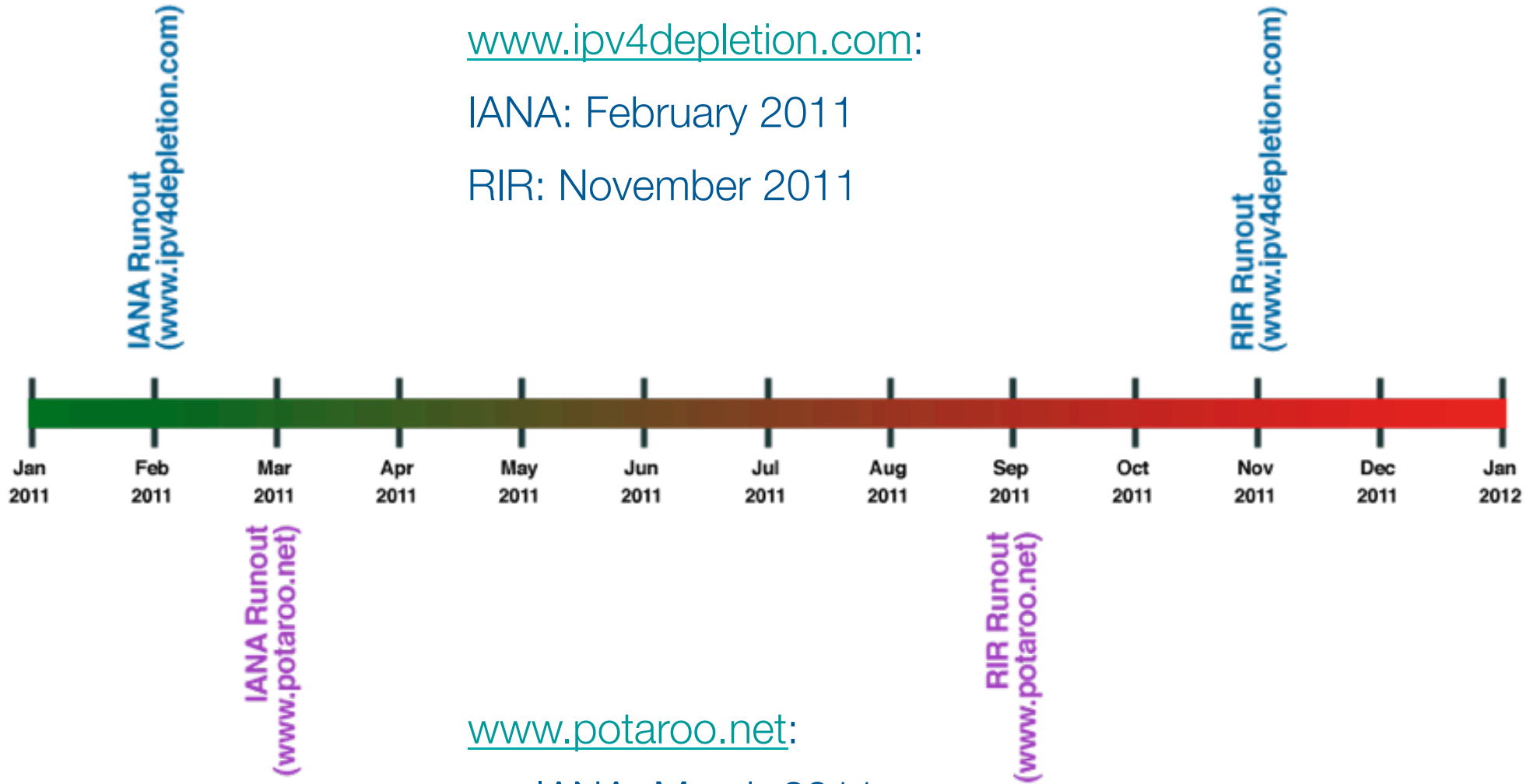
# 2007-01 End User Contracts

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- Details in a separate presentation:
  - Phase 1 (Started 3 March 2009)
    - Set contract for all new independent resources
  - Phase 2 (May 2009 – November 2010)
    - End Users to sign contracts with LIR or RIPE NCC
  - Phase 3 (December 2010 / January 2011)
    - RIPE NCC contacting ‘orphaned’ End Users

# Runout Predictions

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[www.ipv4depletion.com](http://www.ipv4depletion.com):

IANA: February 2011

RIR: November 2011

[www.potaroo.net](http://www.potaroo.net):

IANA: March 2011

RIR: September 2011

# Resource Usage in Legacy Space

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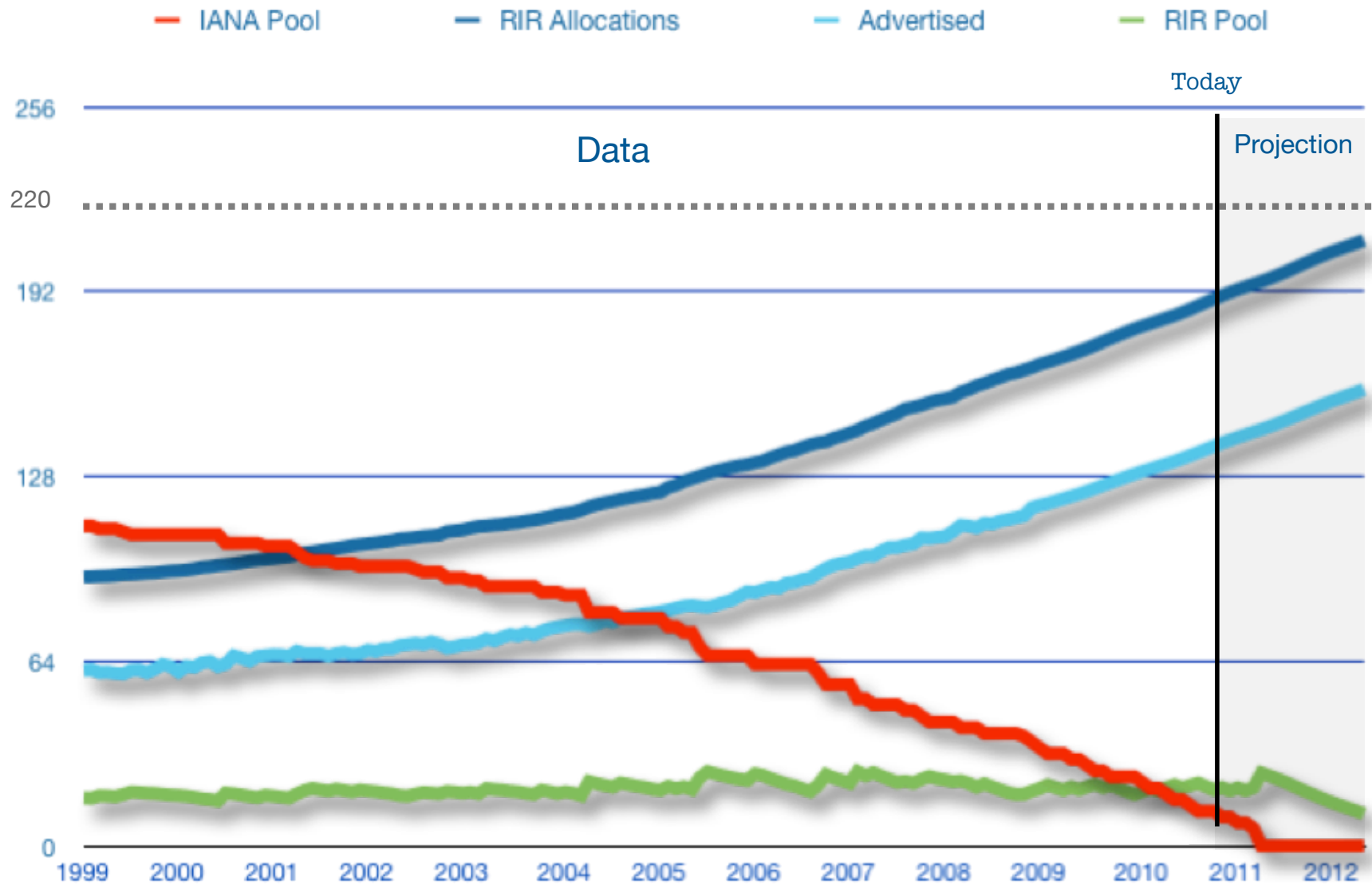
- Unannounced ERX Space:
  - Large part of ERX space registered in RIPE Database
  - But not visible on global routing tables
- Contact the resource holders with question:  
“Are you willing to make resources available for reallocation?”

# IPv6 Sparse Allocation

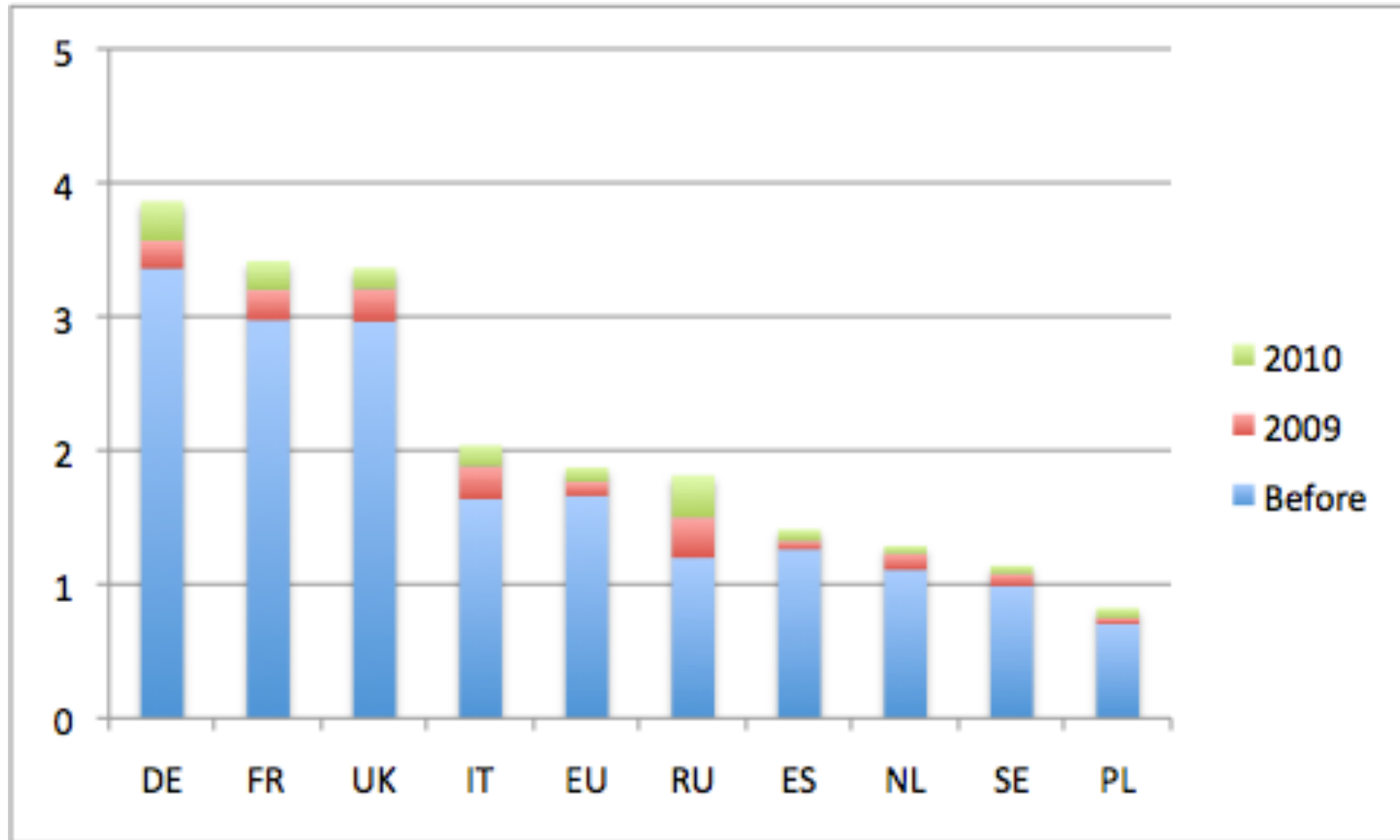
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- Soon:  
RIPE-NCC will implement change in management of IPv6 Address Space.
- We will start allocating according to “Sparse Allocation Algorithm”, as described in RIPE-343

# Runout Date



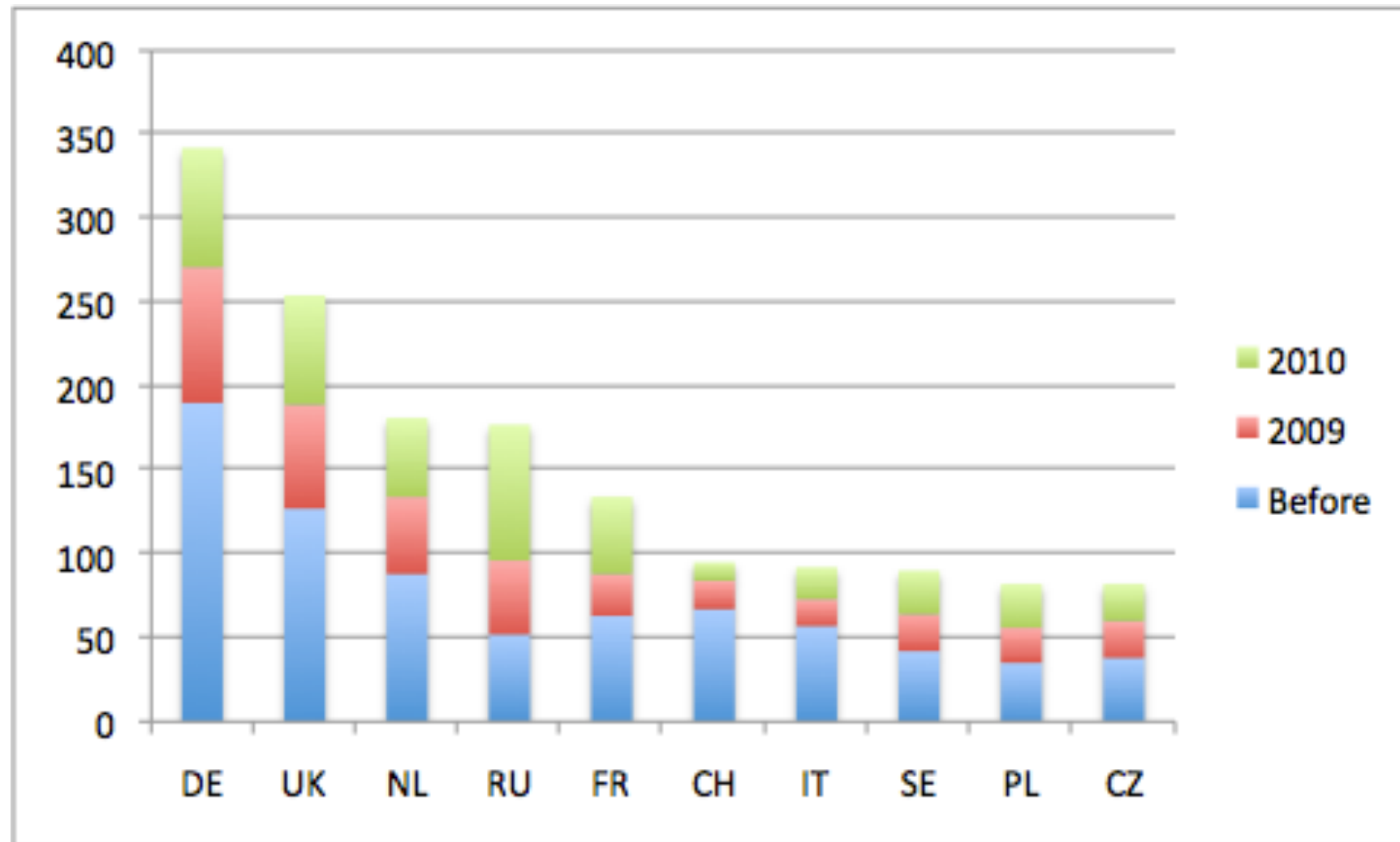
# IPv4 – Statistics



Counted in /8s

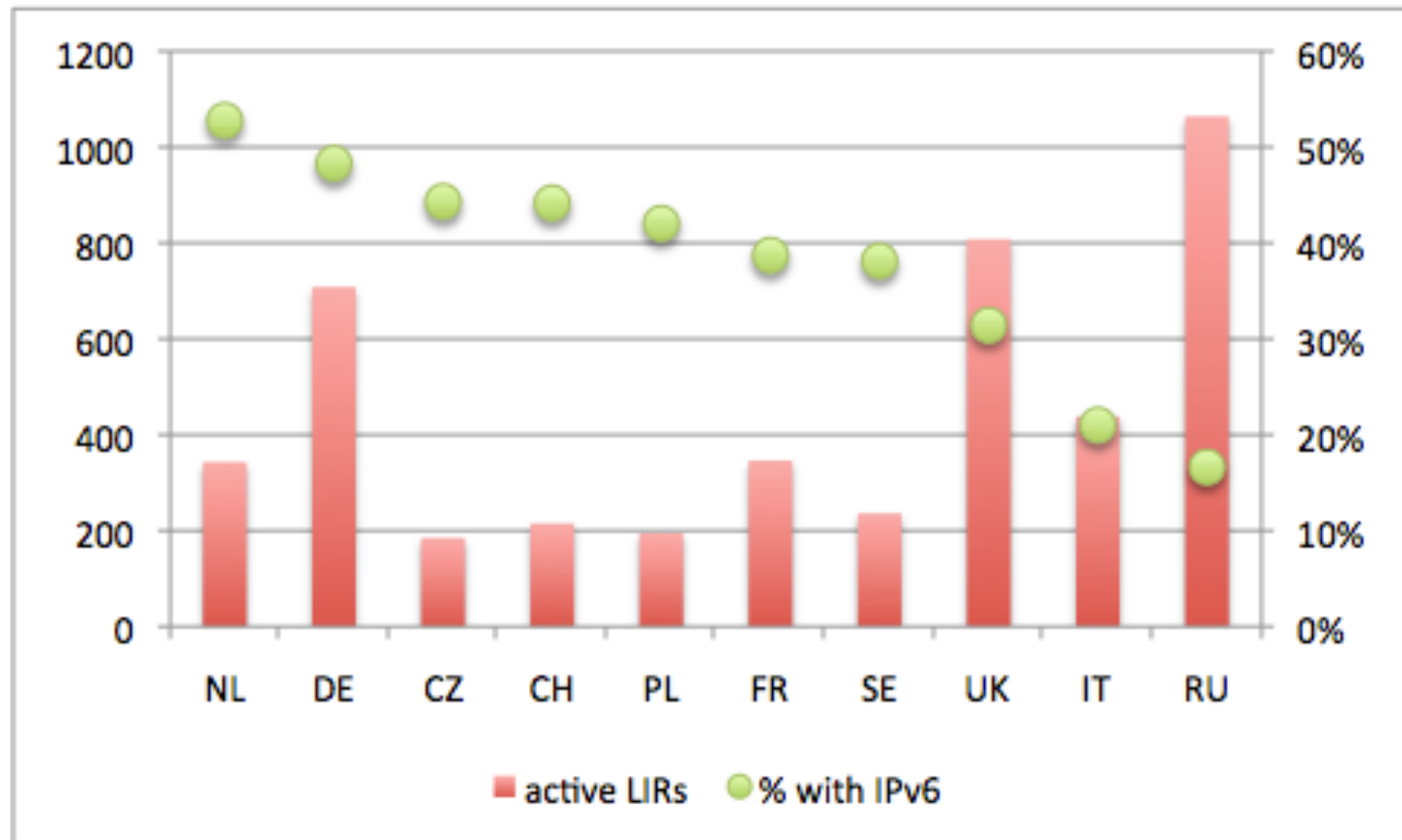


# IPv6 – Statistics



Number of allocations shown

# IPv6 - Statistics



% of LIRs with an IPv6 allocation

# IPv6 Ripeness

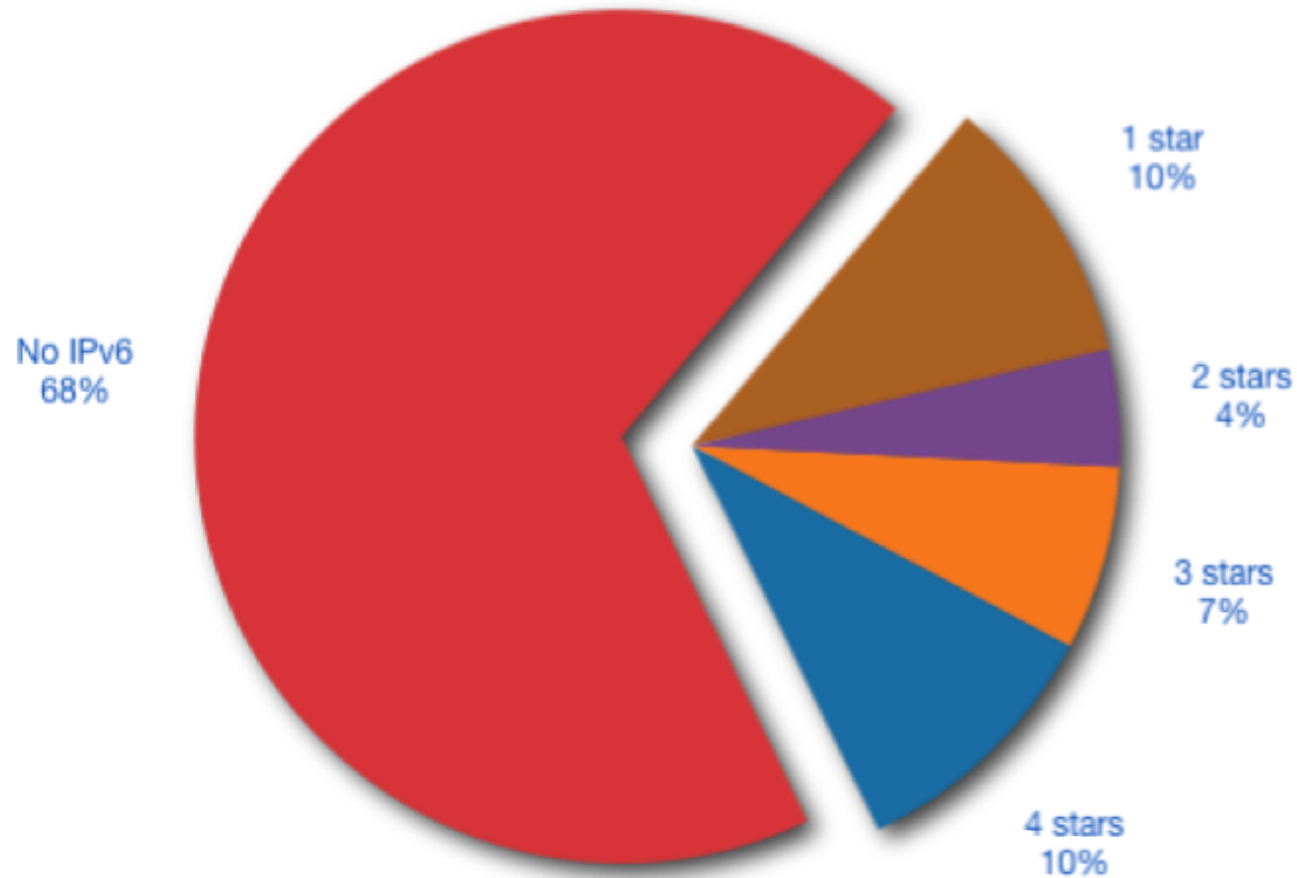
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- Rating system:
  - One star: LIR has IPv6 allocation
  - Two stars: IPv6 Prefix is announced on router
  - Three stars: A route6 object is in the RIPE Database
  - Four stars: Reverse DNS is set up

# IPv6 Ripeness in RIPE region (7187 LIRs)

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● 1 star    ● 2 stars    ● 3 stars    ● 4 stars    ● No IPv6



# Financial & Legal Update

Jochem de Ruig  
Chief Financial Officer



# Finance & admin update 2010

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- Invoicing - Billing
- Budget & Charging Scheme 2011
- New asset management tool
- Document management SW
- Treasury Statute
- Audits
- Automation improvements
  - Financial reporting
  - Financial process efficiency

# Ongoing legal activities

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- Legal support in all RIPE NCC activities
- Legal analysis and framework of new services
- Legal impact analysis on RIPE Policy proposals
- Fortifying authorship rights for RIPE Policies
- 2007-01 support with contractual requirements
- Dealing with information requests by LEAs

# Enhancement of the Legal framework

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- Documenting governance
  - Closure document – draft
  - Mergers / takeover document – work in progress
  - Due diligence document – 2011
  - Arbitration - New procedure
- Corporate documents
  - Articles of Association - incorporating e-voting and arbitration procedure
  - Investigating corporate structure – risk analysis
- RPKI - Setting up the legal framework around RPKI



# Legal external activities and LEA

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- EC Data Protection consultation
  - Participation in DP discussions on the new EU legal framework
- European Commission
  - participating in discussion on cybercrime - May 2010
- Council of Europe
  - Cybercrime convention & advisory group on cross border Internet
- IGF participation
- LE roundtable – March 2011, London
- Cybercrime Working Party (CCWP)

# Information Security, DNS and Database Update

Andrei Robachevsky  
Chief Technical Officer



# Information Security

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- Information Security Officer: Ivo Dijkhuis
- Information Security Framework:  
Policies, People, Technology
- Information Assets: Business Impact Analysis &  
Data Classification
- ITSEC Team: coordinate information security  
technical activities

# DNS

- K-root DNSSEC readiness
  - Reply-size tester
  - Increased transit capacity
  - TCP load testing and tuning
  - Continuous data collection



- Reverse DNS
  - New cluster infrastructure with a 32-bit ASN
  - New DNSSEC signing infrastructure
  - Updated DNSSEC Practices Statement (DPS)

# RIPE Database

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- RIPE Database today
  - 150 q/s, 5,760 updates/day
  - Mirroring other registries in RPSL
  - Several RIPE Labs prototypes
    - <http://labs.ripe.net/ripe-database>
- RIPE Database tomorrow
  - New and easier interfaces to queries and updates
  - Better representation of the registry data and data ownership



# RIPE Database: Labs highlights

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- RIPE Database query API and search clients using REST technology
- RPKI IRR: exposing ROAs as RPSL route[6] objects
- Updated heuristics for the Abuse Finder
- A new free-text service
- Separation of the registry data and data maintained by a resource holder

# Science & Measurements

Daniel Karrenberg  
Chief Scientist



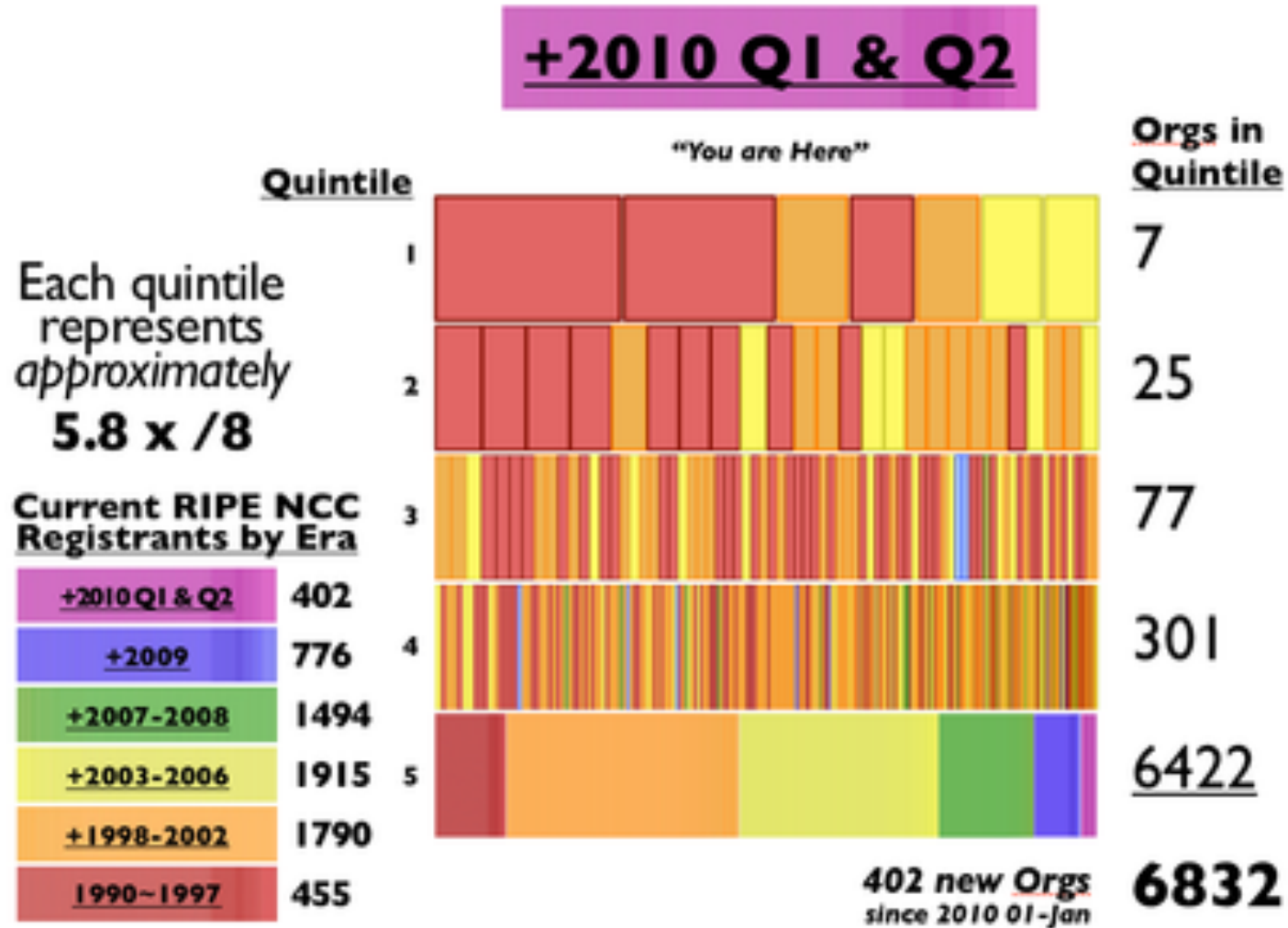
# Ongoing Activities (for Reference)

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- Provided a lot of content for RIPE Labs
- Supported “Registration Data Quality” effort
- Ideas for DB “Data Verification” and “Reputation Services”
- Loads of IPv6 measurements
- REX / INRDB
- New and *nice* UI for DNSMON
- New backend for RIS
- Industry concentration/diffusion study (on Labs)
- ...



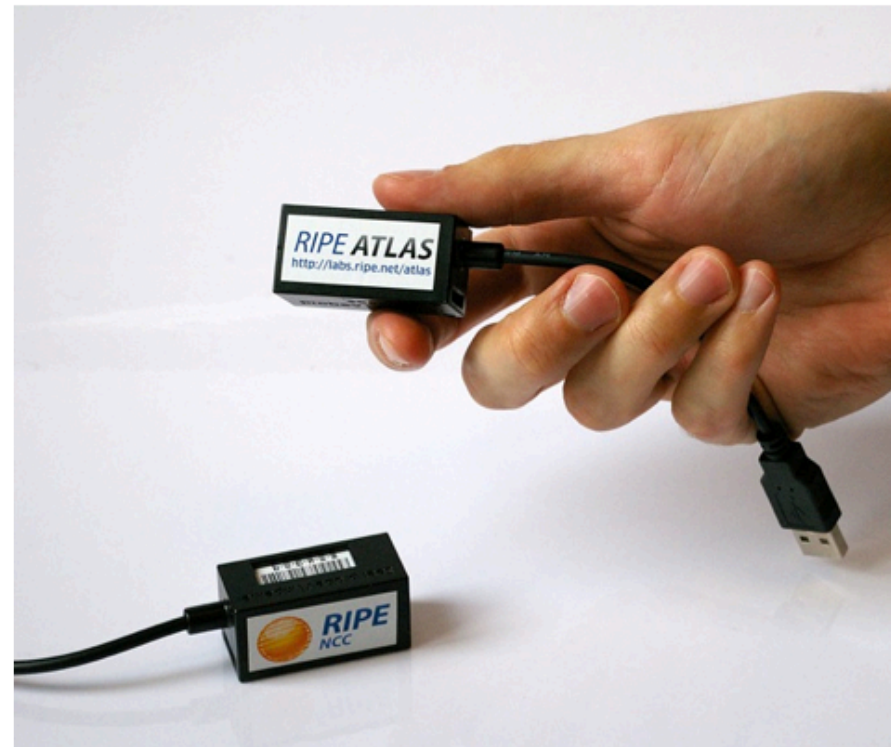
# Concentration / Diffusion



# ***RIPE ATLAS*** Probe (v1)

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- For accurate maps we need more probes
- Deploying many TTM boxes too expensive
- Smaller probes
- Easily deployable
- USB powered
- 24 x 365 capable

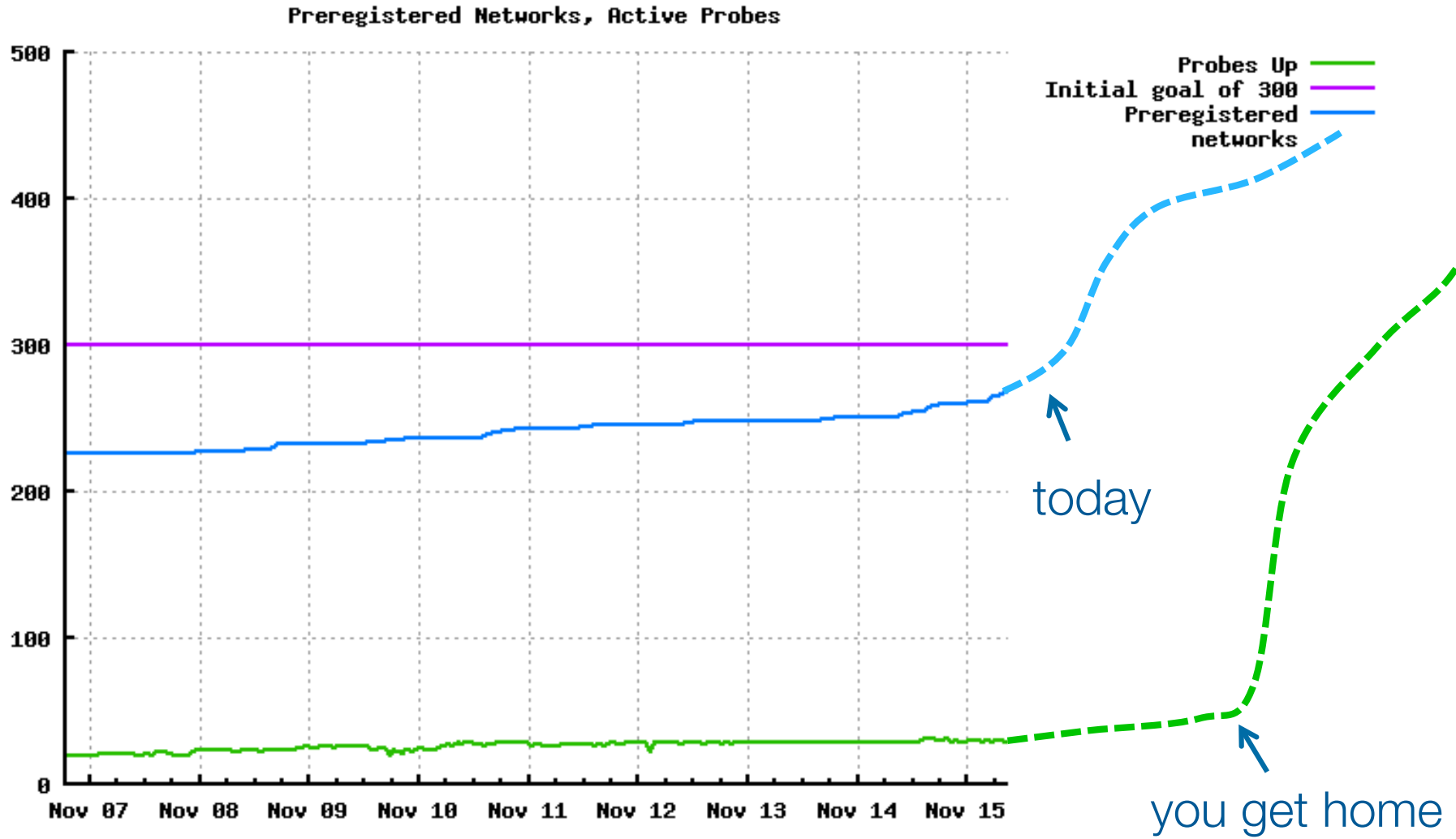


# **RIPE ATLAS** Idea

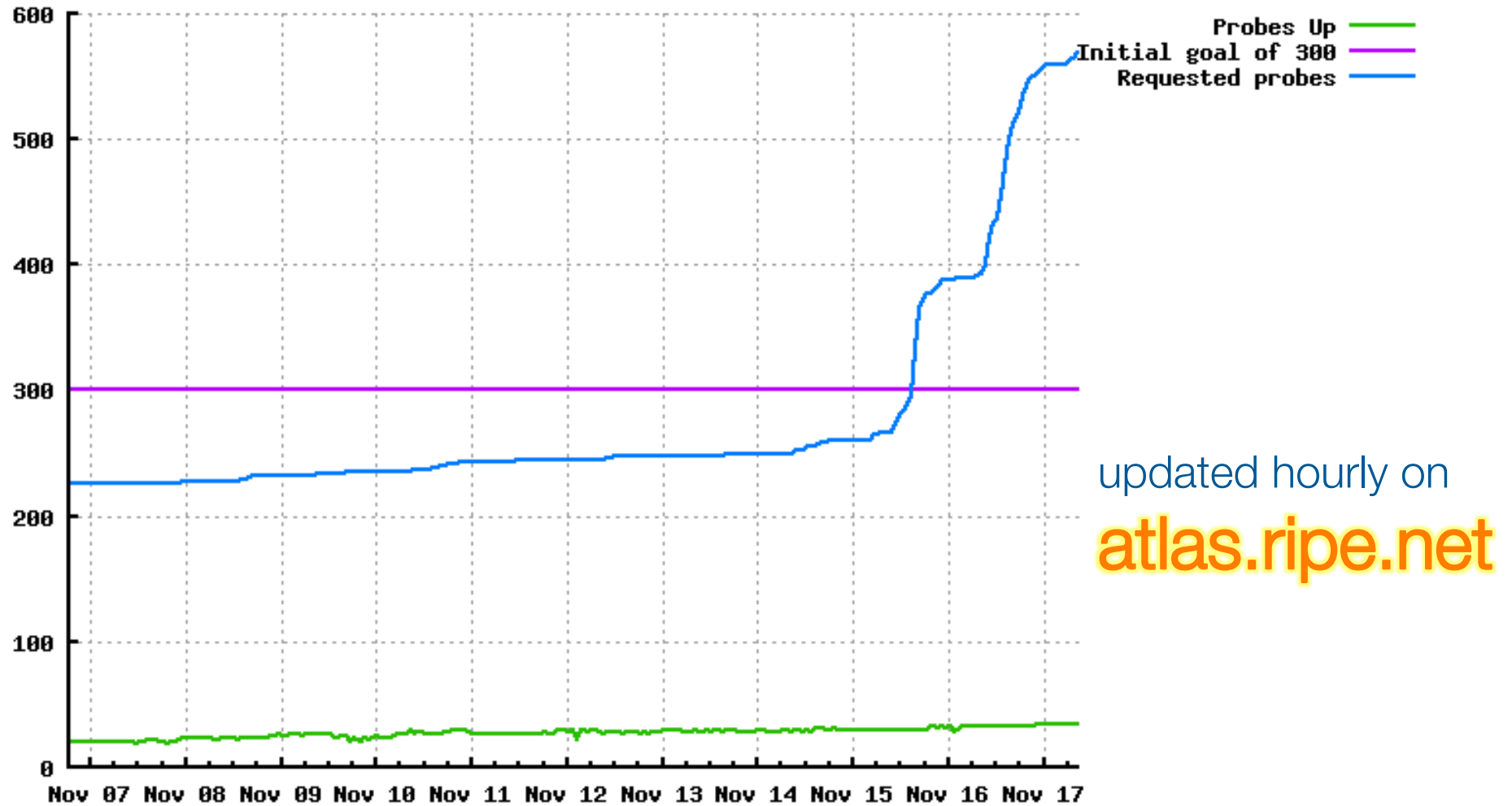
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Instead of building small, separate, individual & private infrastructures, build a huge common infrastructure that serves *both* the private goals *and* the community goals.

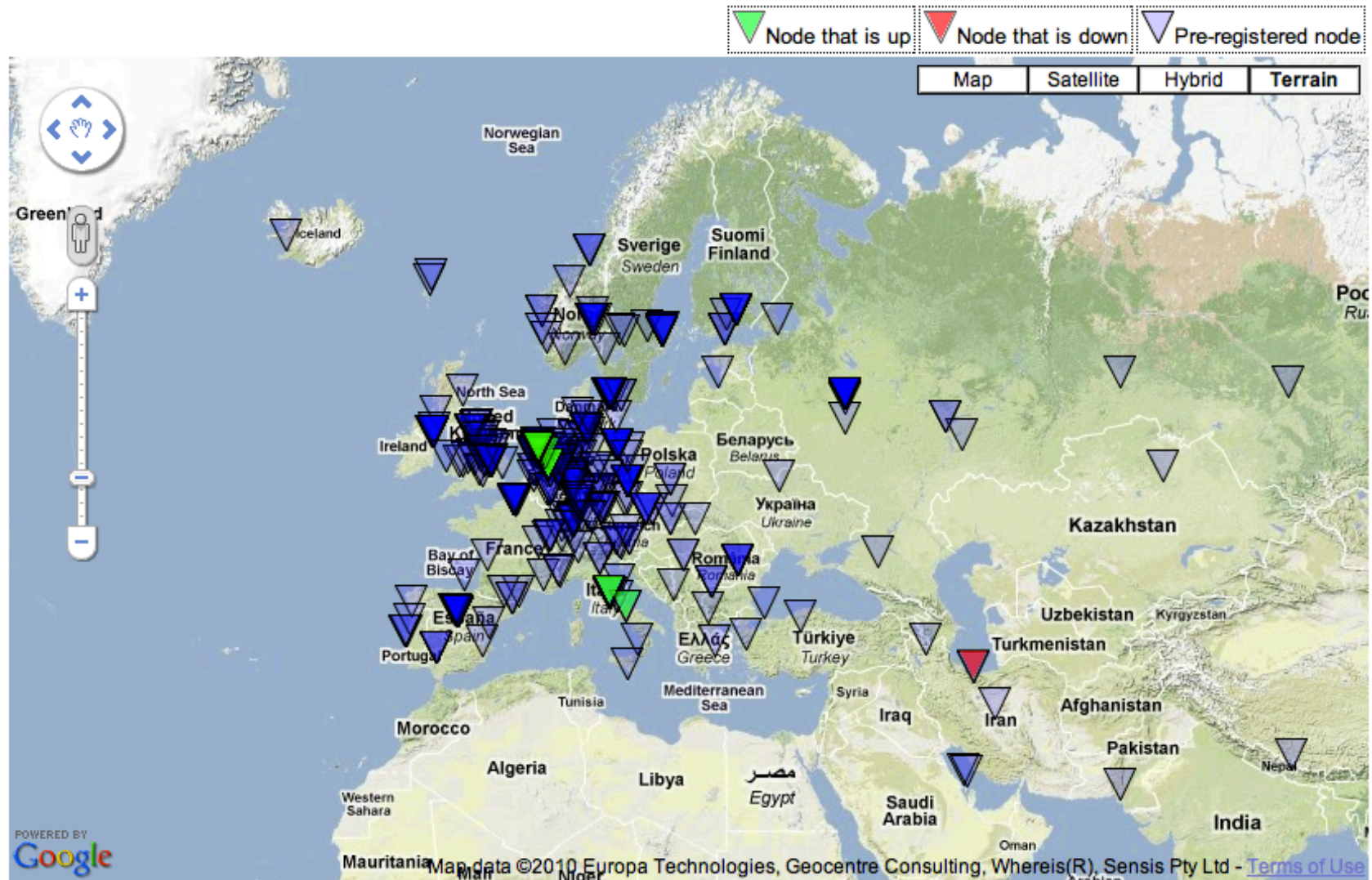
# Monday's Expectations



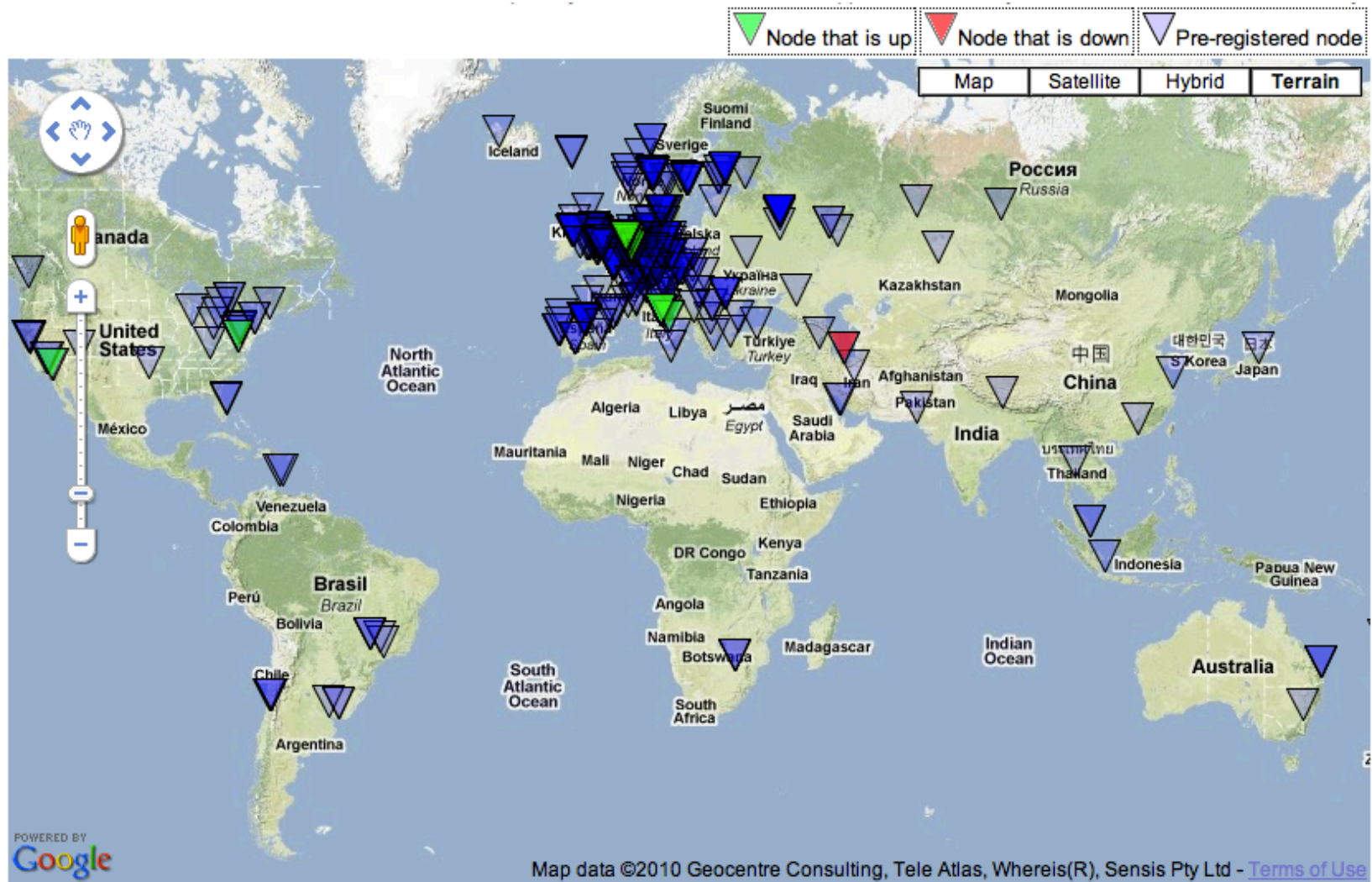
# Status Today



# RIPE ATLAS



# RIPE ATLAS



# ***RIPE ATLAS*** Status

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- Very encouraging interest from probe hosts
- Slow interest from sponsors (so far)
  - There is interest but little commitments
    - Firm commitments for 104 probes so far
  - Early days
  - We need to explain the benefits better
  - I expect improvement after the pioneering stage
- Having a RIPE NCC to start these things is good



# Netsense Community

The screenshot shows the RIPE NCC NetSense web application. The browser address bar displays <http://netsense.ripe.net>. The main navigation menu includes **Overview**, **Routing**, **Connectivity**, and **DNS**. The **Overview** page is active, showing a central map of Europe with various data points. To the left, there are settings panels for 'What' (Resource, Region), 'When' (Date, Time), and 'Source' (Probe(s), IP version). Below these is a 'Happening now' section with a timeline of charts. To the right of the map, there are checkboxes for 'Global Connectivity', 'Traceroute', and 'BGP Table Growth', along with a 'Choose format' dropdown (CSV, XML, Plain Text, PDF) and an 'Export Data' button. Further right, there is a 'Share' section with social media links and a 'Hot Topics' section listing recent articles like 'Middle-east Cable Cut', 'Hijackable ASes', 'Routing table growth', 'DNS flood', and 'Bla bladibla'. At the bottom right, there is a 'Tagcloud' with terms like 'DNS', 'routing', 'ip', 'rpki', 'alert', 'traceroute', 'domain', 'lameness', 'hijack', 'alarm', and 'monitor'.

# Way Ahead for Measurements

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- Discussion in MAT WG tomorrow!
- Building community web environment
  - More than just a toolbox
  - Export, Comment, Annotate, Re-broadcast
  - Incrementally roll existing services into it
  - Incremental deployment, no big-bang
  - Listen to your requirements and current customers
- Firmly establish **RIPE ATLAS** and show results
- Involve community much more frequently

# Outreach and Communications

Paul Rendek

Head of Communications and External Relations



# RIPE NCC Regional Meetings / NOGs

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- Russian Regional Meeting (ENOG)
  - 29 September - 1 October 2010 in Moscow
  - More than 370 attendees from 9 countries
- Middle East Regional Meeting (MENOG)
  - 10-14 April 2010, Riyadh, Saudi Arabia (MENOG 6)
    - 140 attendees from 19 countries
  - 21 - 29 October 2010, Istanbul, Turkey (MENOG 7)
    - 240 attendees from 34 countries - Biggest meeting so far!
  - Upcoming Meetings – MENOG 8 – Syria / MENOG 9 – Oman / MENOG 10 – Iran

# RIPE NCC Regional Meetings / NOGs

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- South East Europe Regional Meeting - Dubrovnik  
- June 2011
- Enhance our presence in regional / country NOGs  
& NOFs

# MENOG IPv6 Roadshow

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- Standalone workshop hosted by a government or enterprise organisation
  - Hands-on training for operators – 3 or 5 days
  - Opportunity for governments to show leadership in IPv6 deployment
  - Planned 2011 events
    - Syria, Dubai, Jordan, Iran
- [ipv6-roadshow@ripe.net](mailto:ipv6-roadshow@ripe.net)



# RIPE NCC Government Roundtables

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- Opportunity to speak to governments and Regulators, LEAs about Internet issues
- Last event in Amsterdam on 22 February 2010
  - 38 attendees from 12 different countries
- Provisional 2011 dates
  - Amsterdam: February
  - Beirut: Thursday, 3 March
    - **First Middle East Government Roundtable!**

# Internet Governance Forum (IGF)

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- Participating since WSIS (2003) and first IGF (2006)
- Co-organised IPv6 workshops in 2009 and 2010
- Organised workshop on “Enhancing Transparency in Internet Governance” with Swedish Government in 2010
  - Follow-up events in 2011
- Currently taking part in United Nations discussions on future of IGF events



# International Telecommunications Union

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- RIPE NCC is a T-Sector and D-Sector member
  - Working in the IPv6 Group since March 2010
  - Represented by the NRO at Plenipotentiary 2010
- The ITU continues to:  
*“study and monitor current [IP address] allocation mechanisms, identify any flaws and communicate proposals for changes to existing policies, if appropriate”*
- The RIPE NCC and other RIRs will continue to work with the ITU and its Member States

# Outreach

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- OECD
  - Founded Internet Technical Advisory Committee (ITAC) with industry partners (NRO, ISOC, ICANN, W3C etc.)
  - Advising on a range of technical issues, including IPv6 adoption
- European Commission
  - IPv6 Deployment Monitoring Survey 2009, 2010
  - IPv6 Workshops
    - “IPv6... The way forward”, 14 Dec 2010, Ghent
- Council of Europe
  - Advising in the ongoing development of a code of good practice on information, participation and transparency in Internet governance
  - Ad-hoc Advisory Group on Cross-border Internet issues

# Websites

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- A platform and tool for the community



- New projects, tools, prototypes and analyses

<http://labs.ripe.net/>

- One-stop shop for IPv6 information



- Aimed at business, government and technical communities

<http://www.ipv6actnow.org>

- *New* [www.ripe.net](http://www.ripe.net) - *coming soon...*

# Working With the NRO

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- Worked closely with colleagues from all five RIRs on areas such as:
  - Internet Governance Forum (and other Internet governance activities)
  - ITU engagement
  - IPv4 run-out communication
    - Press releases issued in 2010 when IANA pool reached 10% (January) and 5% (October)
  - Resource certification communication

# RIPE NCC in the Press – 2010 to date

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- Total pieces of coverage: 961 (615 in 2009)
- Pieces of tier one coverage: 191
- Number of by-lined articles secured: 15
- Circle ID partnership - [www.circleid.com](http://www.circleid.com)
  - 8 articles posted by Daniel Karrenberg, Mirjam Kühne and Paul Rendek
- Number of press briefings: 23
- Number of press releases issued: 9
- Social Media – Enhancing our presence

# Some URLs

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- RIPE NCC Regional Meetings  
<http://www.ripe.net/meetings/regional/>
- RIPE NCC Government Roundtable Meetings  
<http://www.ripe.net/meetings/roundtable/>
- RIPE NCC and Internet Governance  
<http://www.ripe.net/info/>

Questions?

