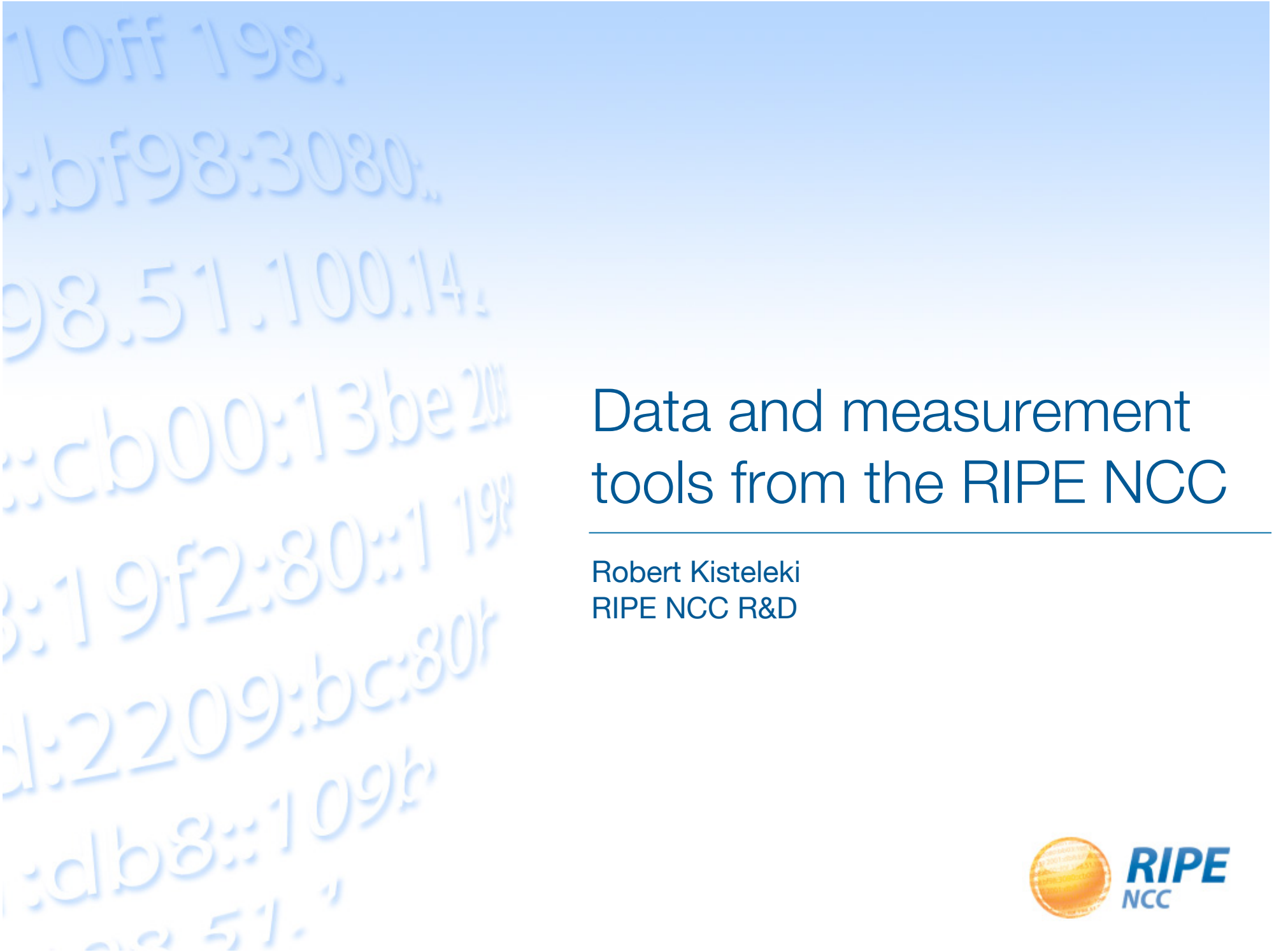
Data and measurement tools from the RIPE NCC

Robert Kisteleki
RIPE NCC R&D



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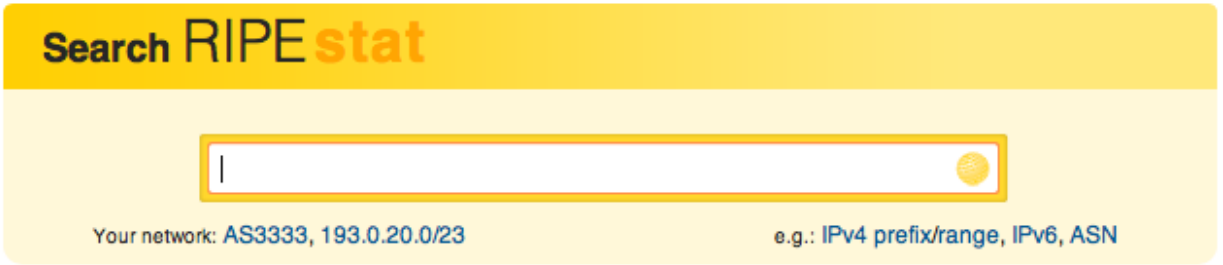
Today's topics:

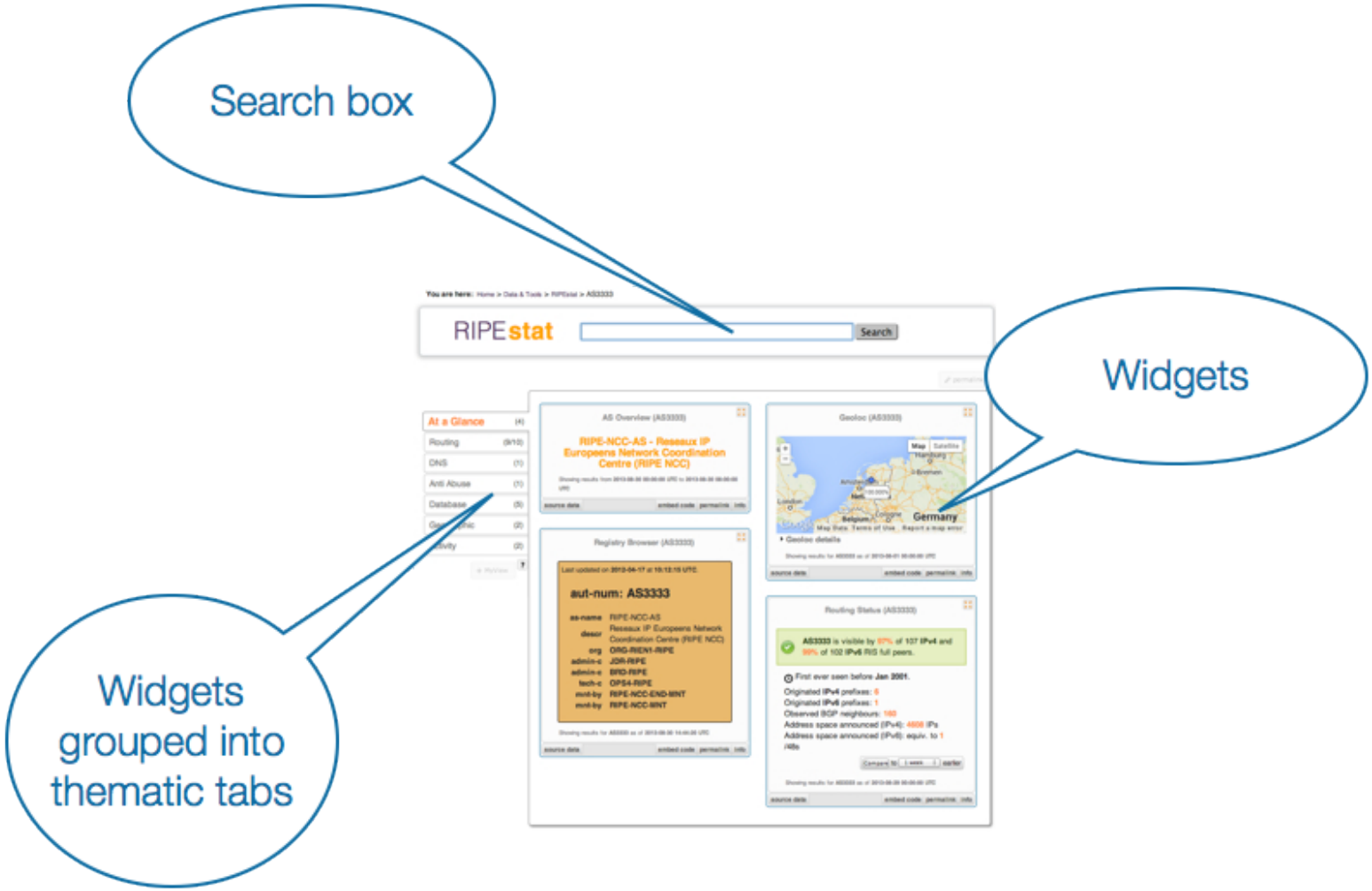
- **RIPEstat** – to know more about resources
- **RIPE Atlas** – to run Internet measurements yourself, and help others measuring
- **GeoRIPE** – to know where your packets have gone before

RIPEstat

- https://stat.ripe.net/ is a “one-stop shop” for all (well, much) info about Internet number resources
- RIPE NCC: registration data and whois, routing (RIS), reverse DNS, RIPE Atlas measurements
- External sources: IRR, RIR stats, geolocation, blacklists, M-Labs network activity, …



RIPEstat


Search box
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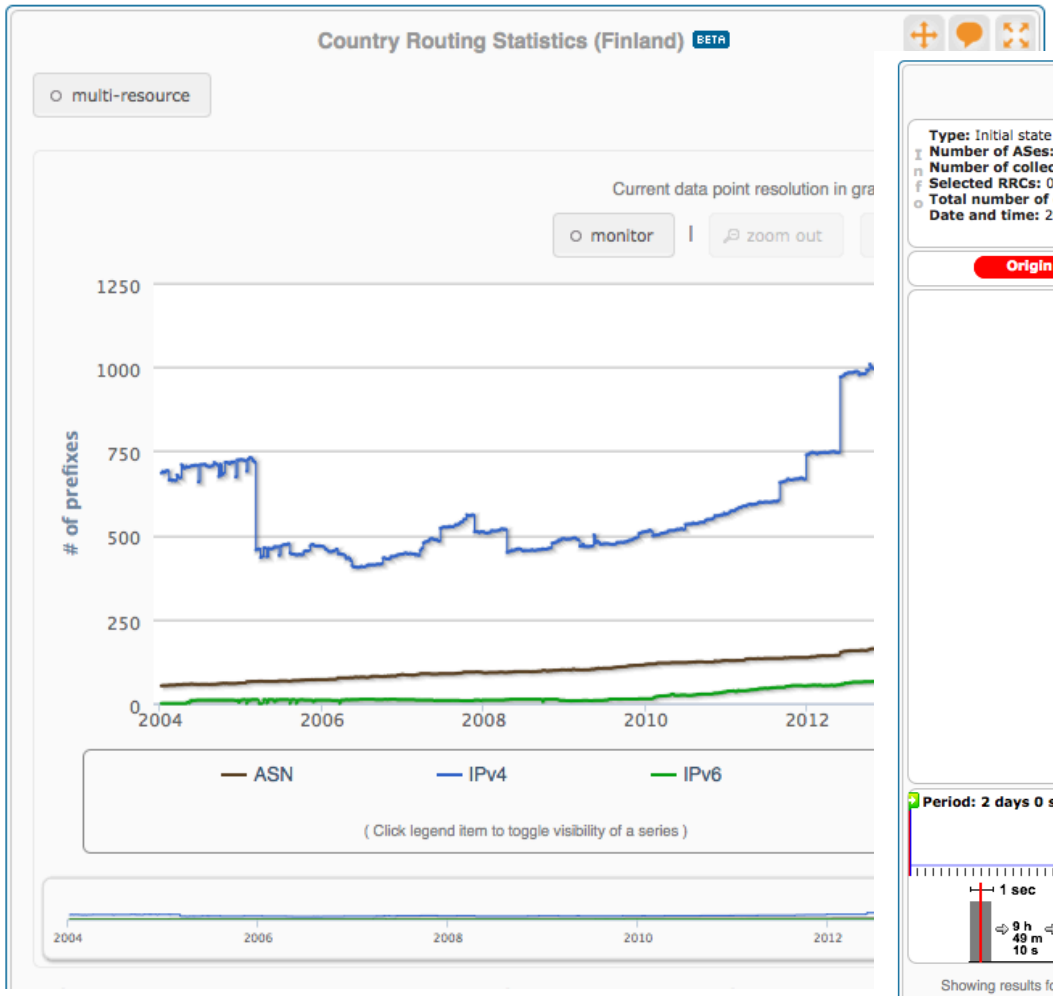
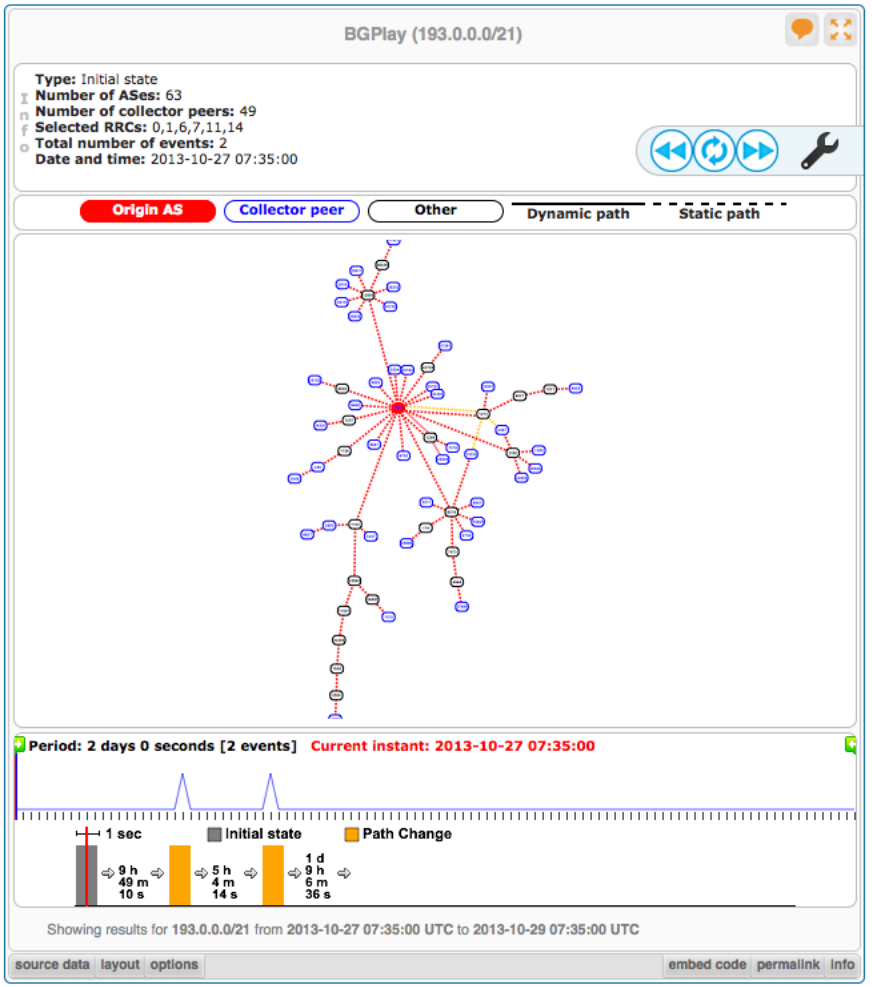
RIPE-NCC-AS - Reseaux IP Europeens Network Coordination Centre (RIPE NCC)
Geoloc (AS3333)
Germany
Registry Browser (AS3333)
aut-num: AS3333
Routing Status (AS3333)

RIPEstat

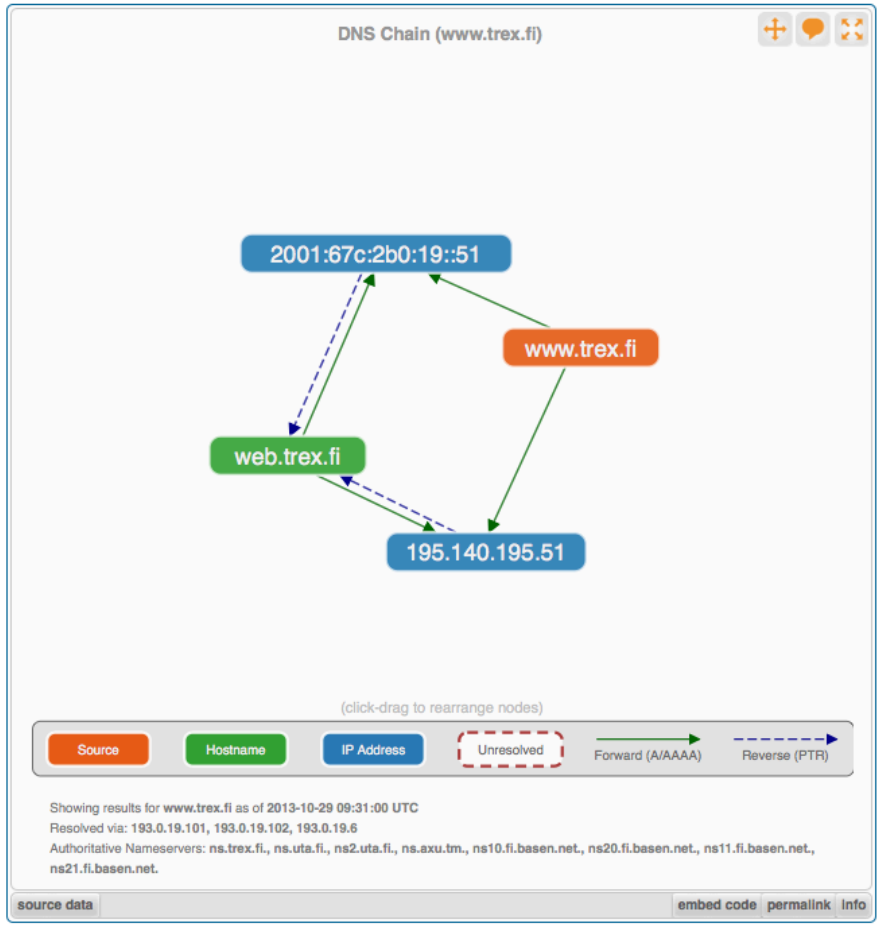
- Search by: IPv4, IPv6 and AS number; hostname, country
- Web, widgets, data API, text service, mobile app
- Other features:
  - BGPlay2
  - Abuse Finder
  - History view for RIPE NCC members / LIRs
  - Embed widgets on your site

RIPEstat - Examples



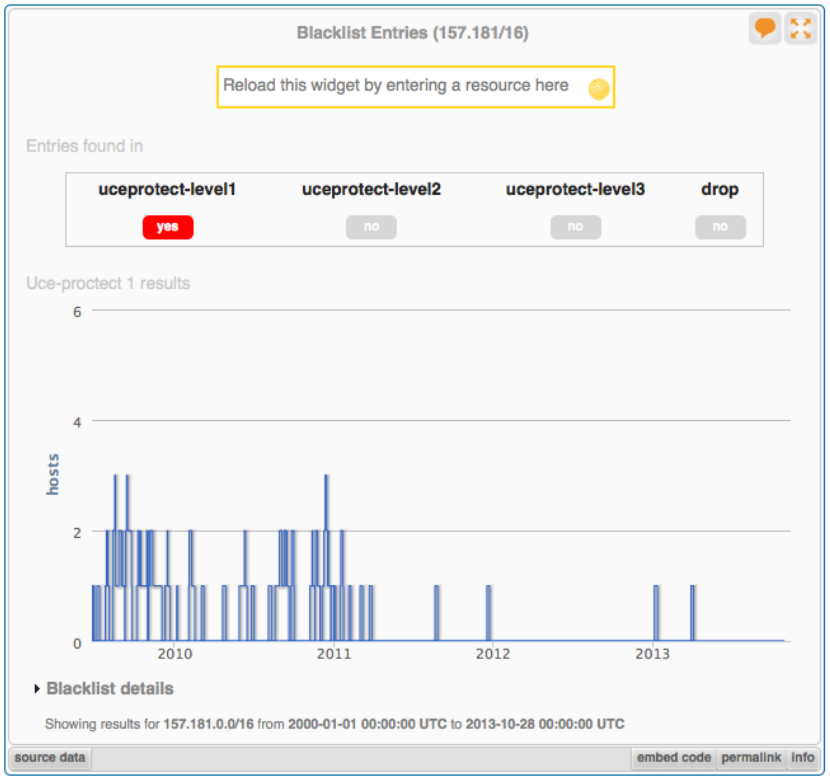


RIPEstat - Examples



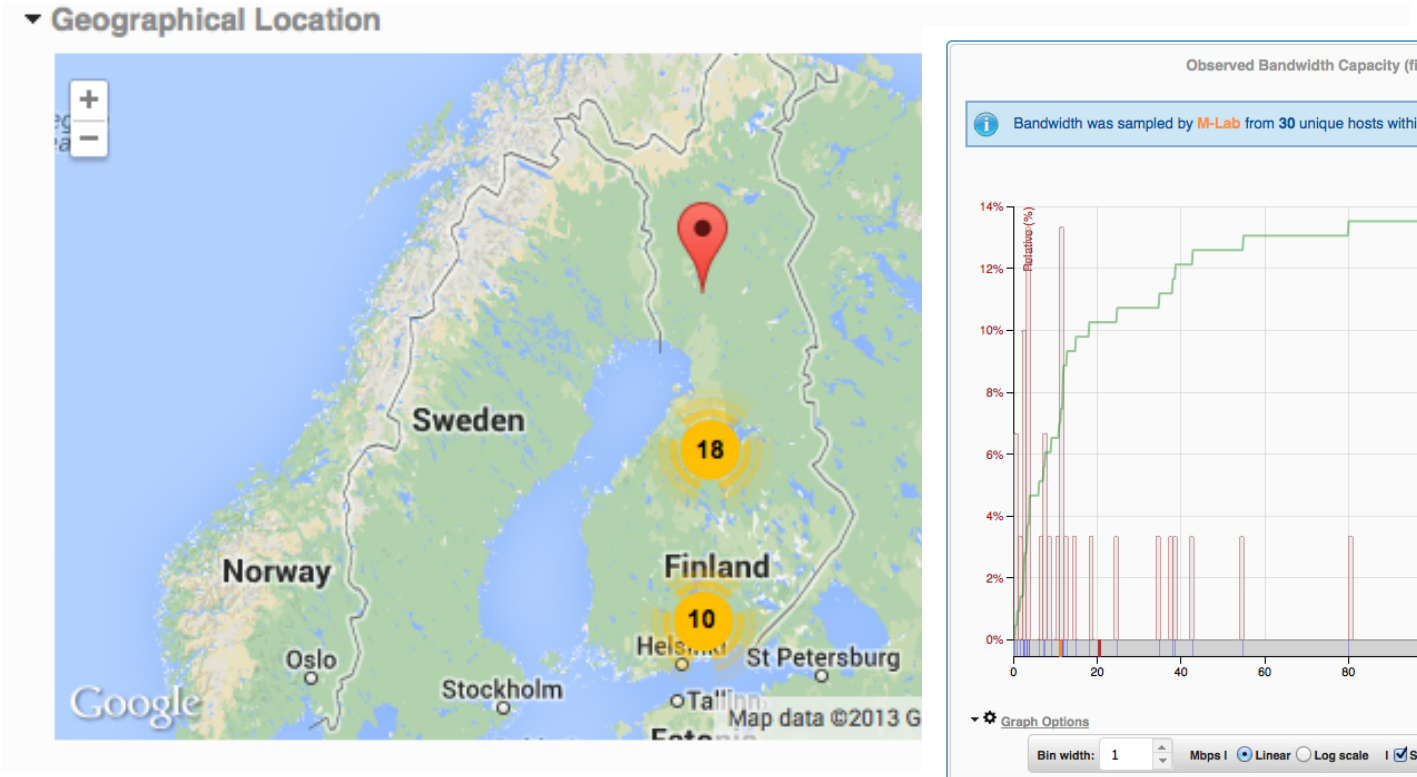
RIPEstat - Examples

RIPEstat - Examples



RIPEstat

M-Lab data for Finland



RIPEstat Future Plans

- Migrating RIS dashboard features to RIPEstat
- Integrating DNSMON to RIPEstat and RIPE Atlas
- Adding notable events to BGPlay2
- Improving backend stability to enable resilience of current services and scaling for future growth
- Increasing data quality and consistency
- More info: http://roadmap.ripe.net/ripe-stat/

RIPE Atlas

A measurement network of 4000+ devices

For the community, by the community

RIPE Atlas

- Anyone can host a RIPE Atlas probe:
  - apply online: https://atlas.ripe.net/apply
  - ... or just come talk with me
- Major benefit: look at your network from the outside!
  - Have at your fingertips 4000+ external vantage points to do pings, traceroutes and DNS queries towards you (or any other target)

RIPE Atlas

The vantage point:

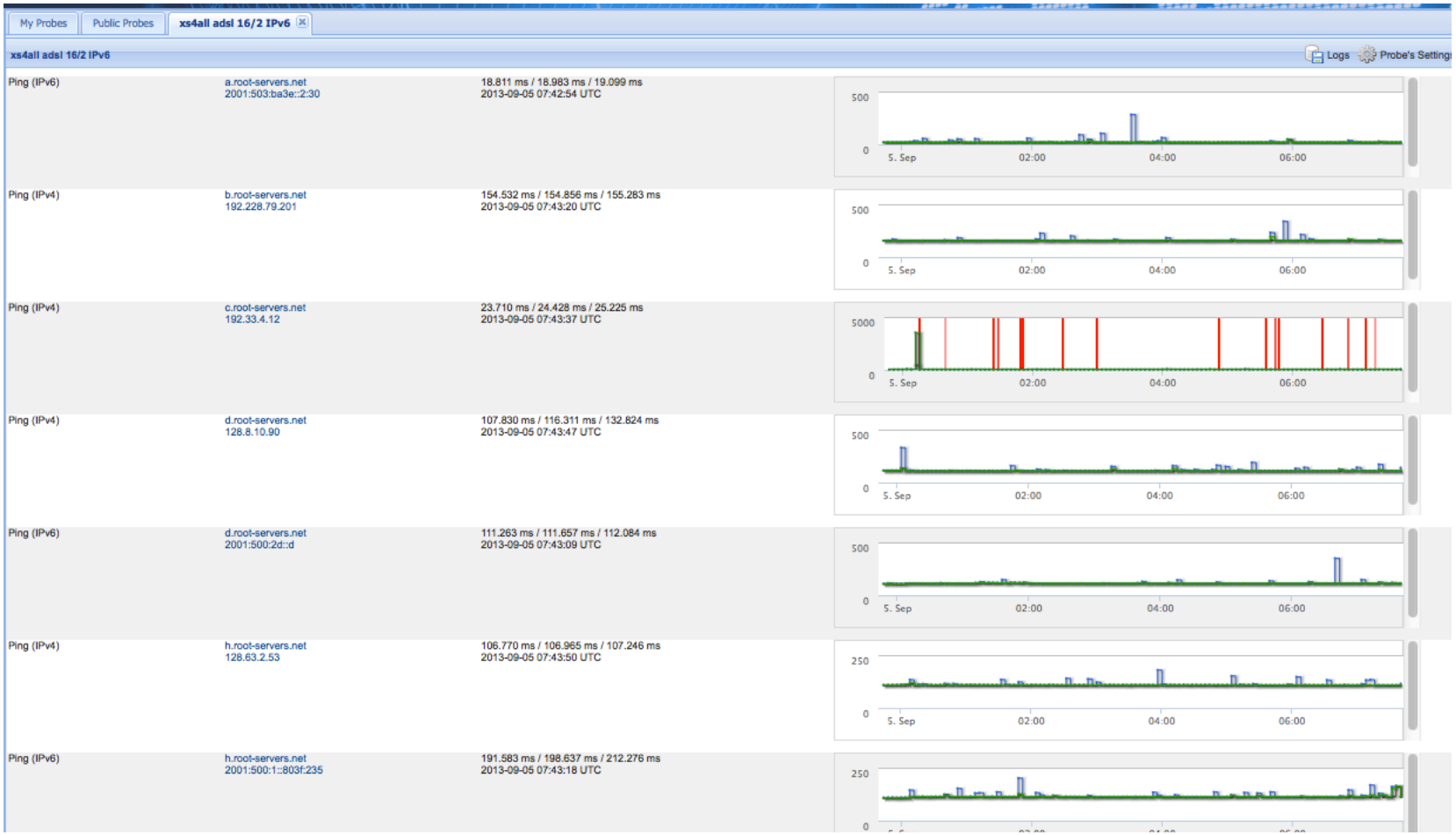
- Install-and-forget, USB powered
- Hosted and sponsored by organisations and end users ISPs, IXPs, individuals ...
- Free of charge if you host individual probes

RIPE Atlas

What is measured:

- “Built-in” measurements from all the probes:
  - root name servers
  - RIPE Atlas infrastructure
  - RIPE Atlas Anchors*
- Pings, traceroutes, SSLcert and DNS queries
- Results available to everyone

RIPE Atlas


My Probes
Public Probes
xs4all adsl 16/2 IPv6
xs4all adsl 16/2 IPv6
Logs
Probe's Settings
Ping (IPv6)
a.root-servers.net
2001:503:ba3e::2:30
18.811 ms / 18.983 ms / 19.099 ms
2013-09-05 07:42:54 UTC
Ping (IPv4)
b.root-servers.net
192.228.79.201
154.532 ms / 154.856 ms / 155.283 ms
2013-09-05 07:43:20 UTC
Ping (IPv4)
c.root-servers.net
192.33.4.12
23.710 ms / 24.428 ms / 25.225 ms
2013-09-05 07:43:37 UTC
Ping (IPv4)
d.root-servers.net
128.8.10.90
107.830 ms / 116.311 ms / 132.824 ms
2013-09-05 07:43:47 UTC
Ping (IPv6)
d.root-servers.net
2001:500:2d::d
111.263 ms / 111.657 ms / 112.084 ms
2013-09-05 07:43:09 UTC
Ping (IPv4)
h.root-servers.net
128.63.2.53
106.770 ms / 106.965 ms / 107.246 ms
2013-09-05 07:43:50 UTC
Ping (IPv6)
h.root-servers.net
2001:500:1::803f:235
191.583 ms / 198.637 ms / 212.276 ms
2013-09-05 07:43:18 UTC
5. Sep
02:00
04:00
06:00

RIPE Atlas

User Defined Measurements (UDM):

- Towards the targets of your choice and desired frequency
- You need “credits” to do this
- Anchoring measurements are coming:
  - Each probe will measure 4-5 “anchors” as a regional baseline
  - RIPE Atlas anchors placed at well-connected locations

RIPE Atlas

Credit system:

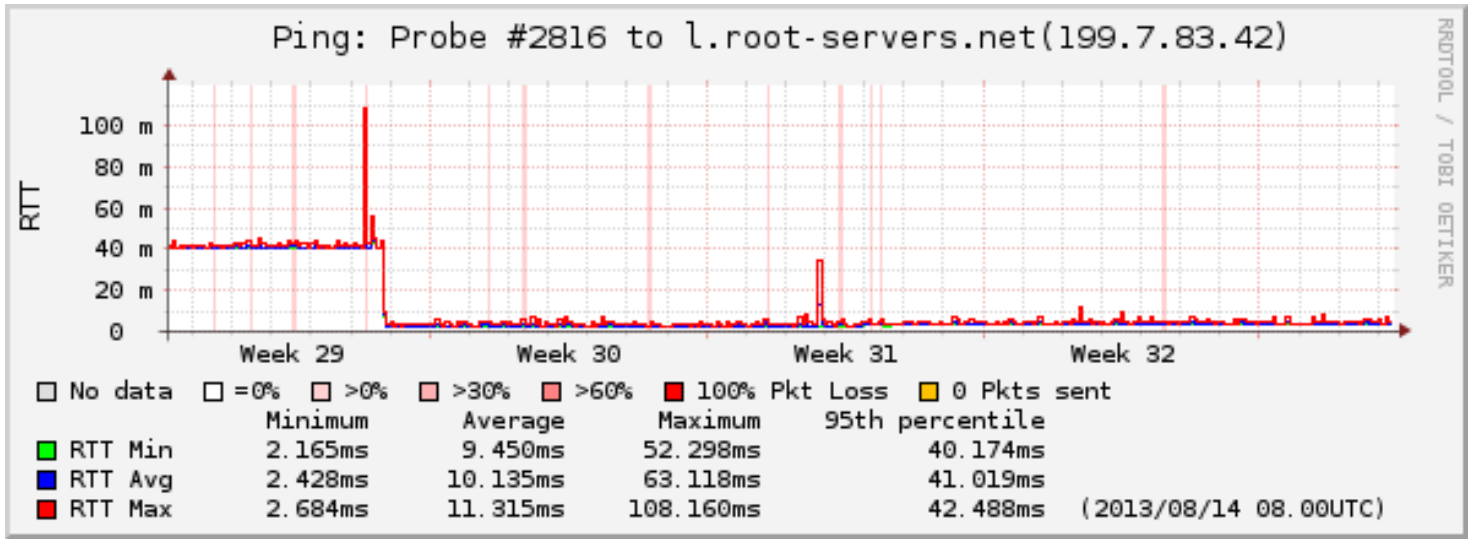
- By hosting a probe, each host earns credits
- As a reward for making probe available to other users, for performing measurements from that probe towards any target
- Credits can be spend on running measurements

RIPE Atlas - Example

Latency towards b-root:

RIPE Atlas - Example

Deployment of an I-root instance at Serbian Open eXchange:



RIPE Atlas Anchors

Anchors: well-known targets and powerful probes

- Regional baseline & “future history”
- 15 anchors installed
- Anchoring measurements
  - Full-mesh between anchors deployed
  - Coming up: each probe will measure 4-5 anchors
  - Production service launched at RIPE67 today!
- TTM to be decommissioned

RIPE Atlas News

- Seismograph
  - Multiple ping measurements in one view
  - Stacked chart and an interaction control panel
  - Based on RIPEstat widget framework
- Zoomable ping graphs
  - Replacing multiple RRDs graphs: zoom-in, zoom-out in time, in the same graph, without loss of detail
  - Easier visualisation of details of an event
  - Selection of RTT class (max, min, average)

RIPE Atlas News

RIPE Atlas Future Plans

- Integrating DNSMON in RIPE Atlas and RIPEstat
- Implementing alerts / health checks
- Introducing “My Favorite” probe and measurements selection and viewing
- Improving traceroute visualization: T-play
- Increasing distribution via RIR cooperation
- More info: http://roadmap.ripe.net/ripe-atlas/

GeoRIPE

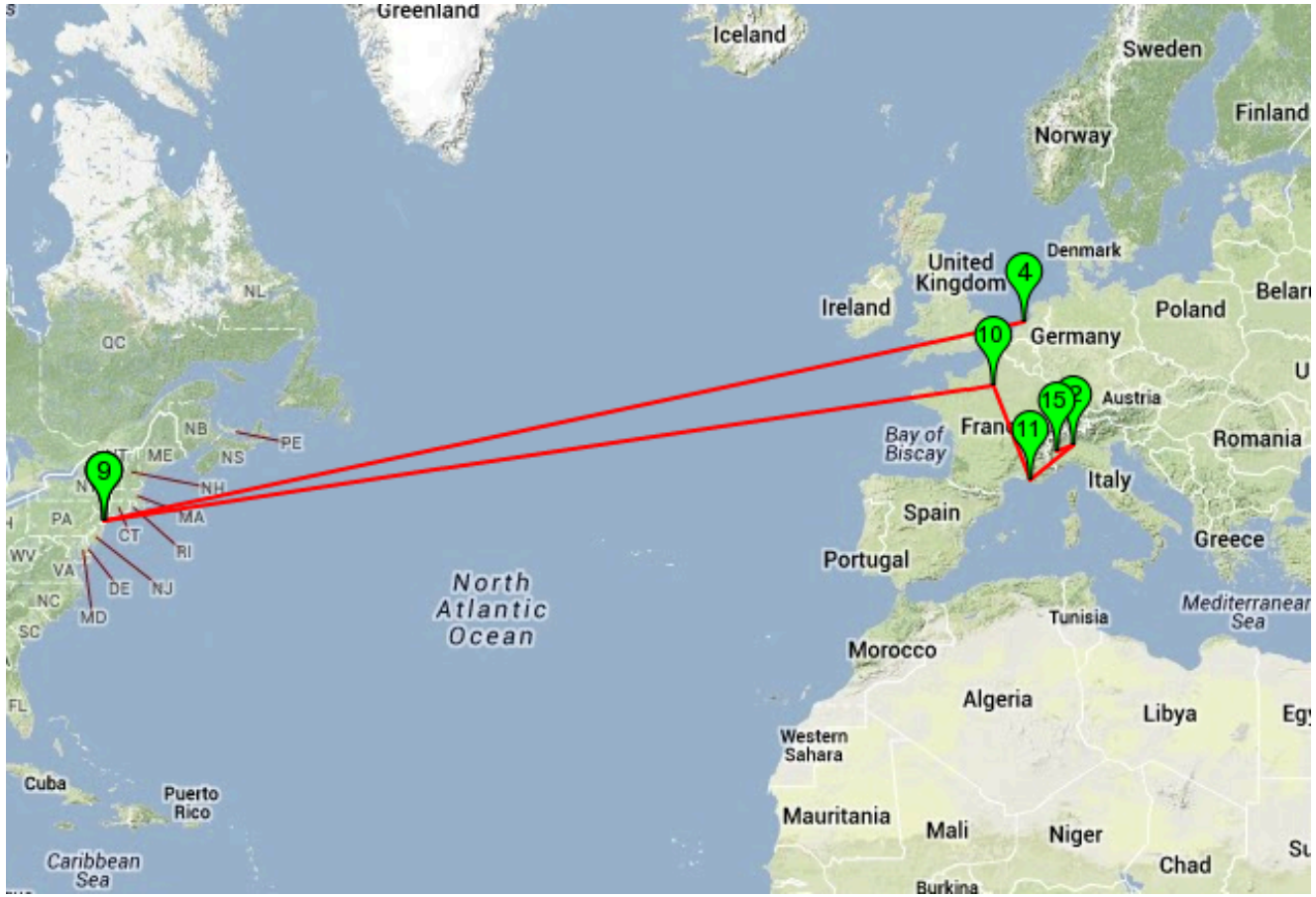
- It's a prototype idea for a new service
- Let's geolocate the Internet **infrastructure**
- Make a framework that can combine different sources of information
  - RIR databases, DNS info, known locations (eg. IXPs), triangulation,
  - Add a crowdsourcing element: users can contribute
- Make the resulting data publicly available

GeoRIPE

- Why?
  - To know where the traffic “actually flows”
    - Does it leave the region, country?
  - To understand where the traffic should **not** have gone
  - To know who is/was affected in a geographically constrained network event (think of hurricane Sandy)
  - To detect “hairpinning”

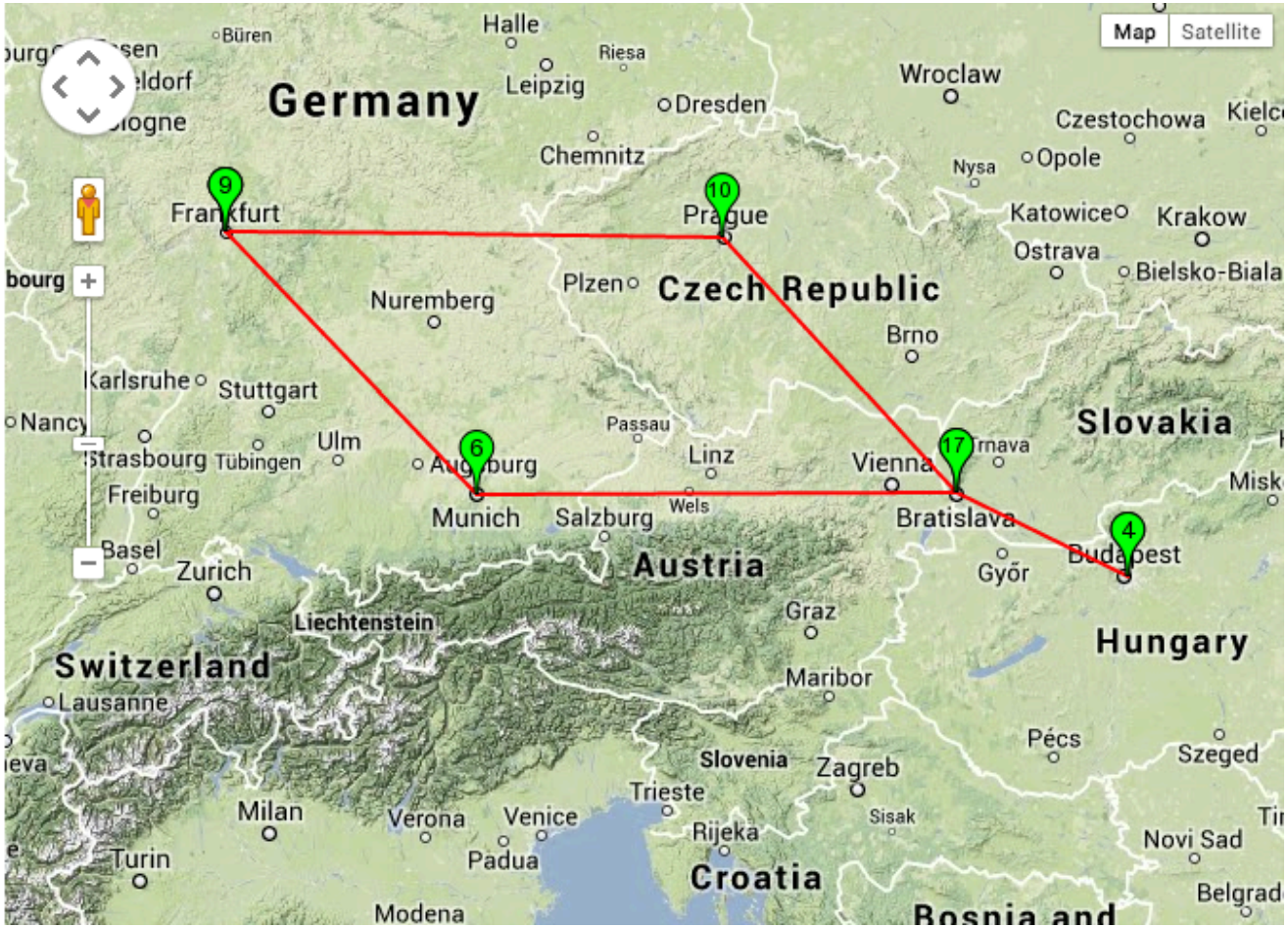
GeoRIPE

- To identify this:



GeoRIPE

- And this:



GeoRIPE

- If you have thoughts about this idea: let's talk!
- Otherwise: stay tuned ☺

Questions?

RIPE NCC