

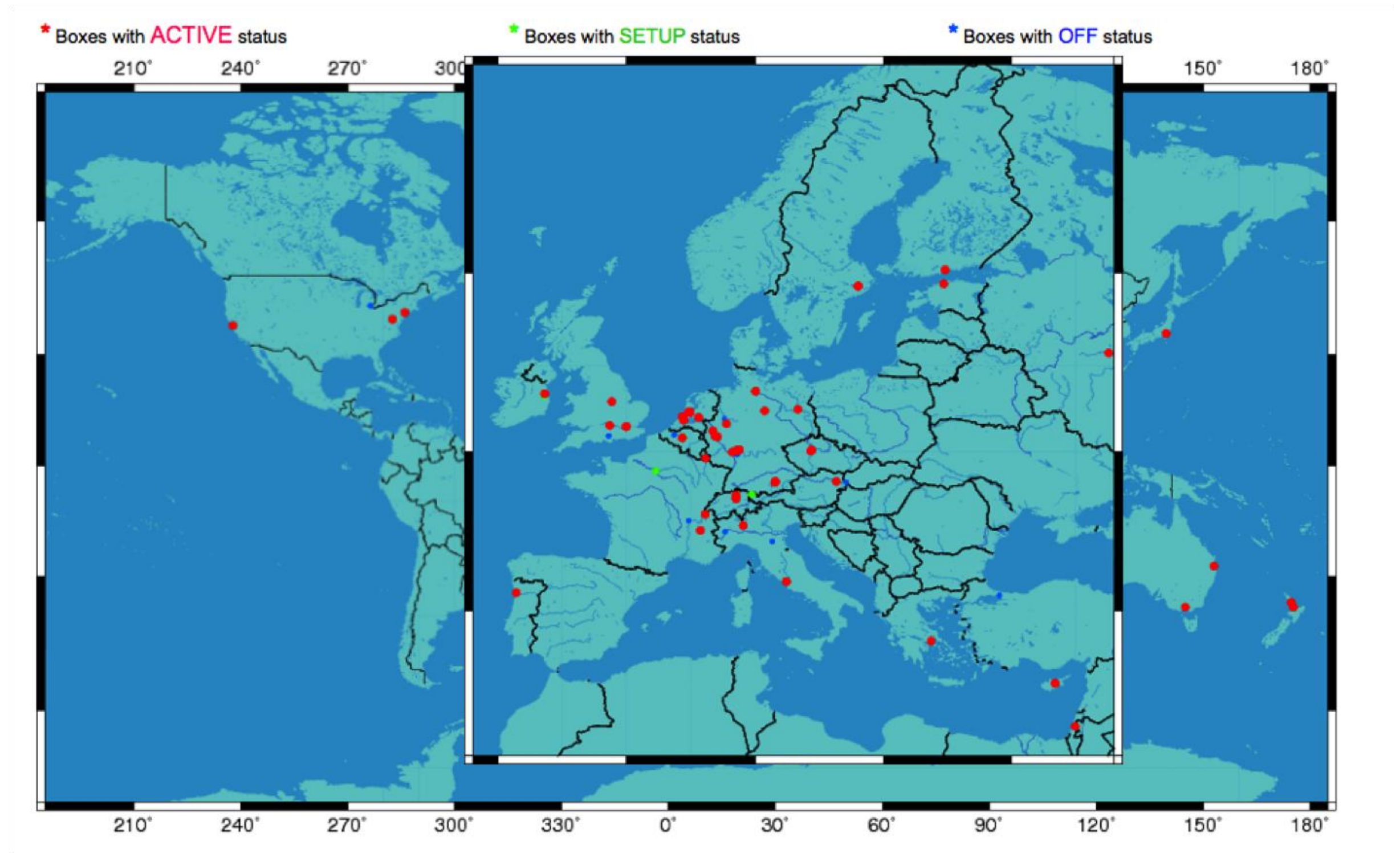
RIPE Atlas

A “Real Big” Measurement
Network

Daniel Karrenberg
Chief Scientist



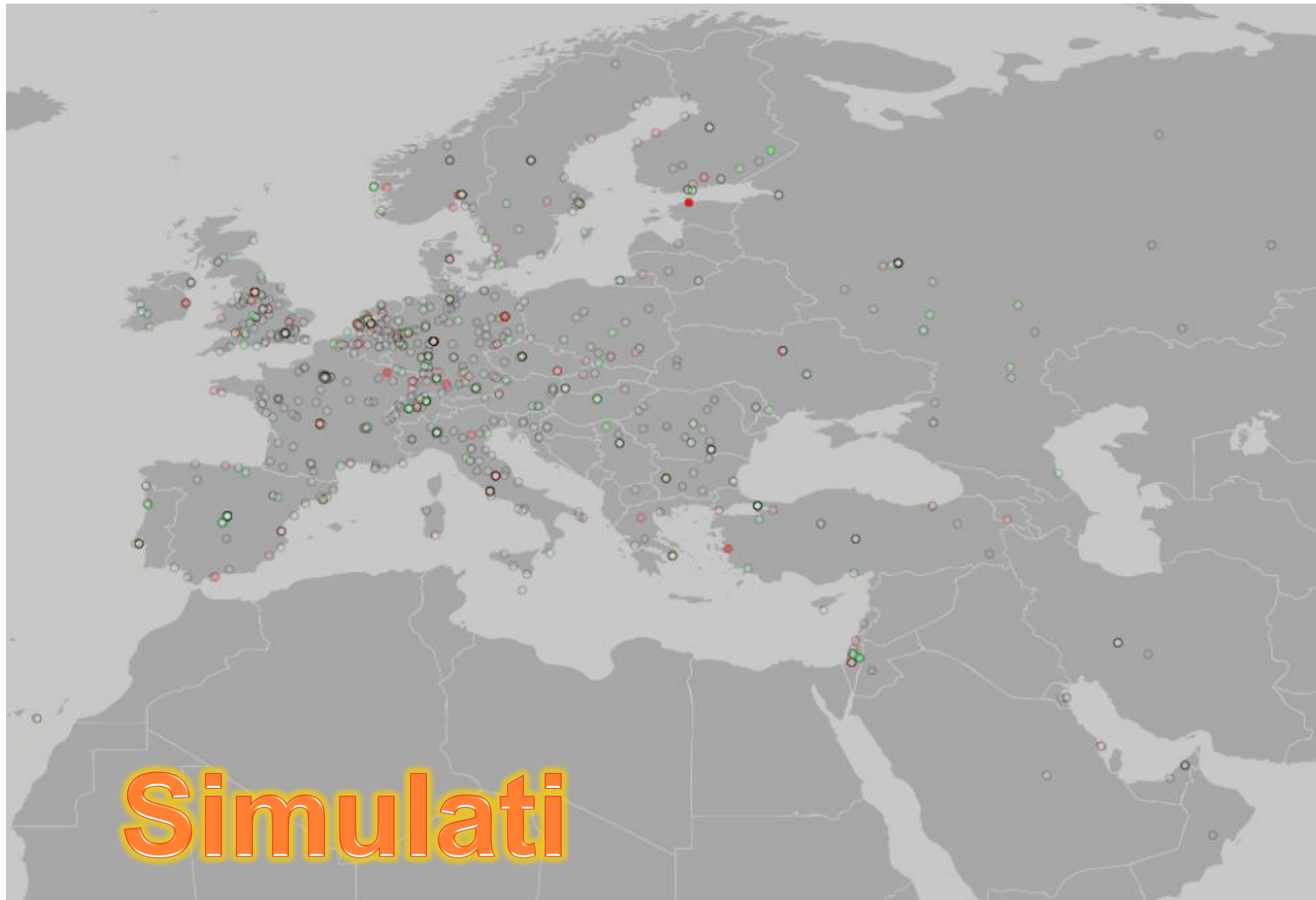
RIPE TTM



Light Map

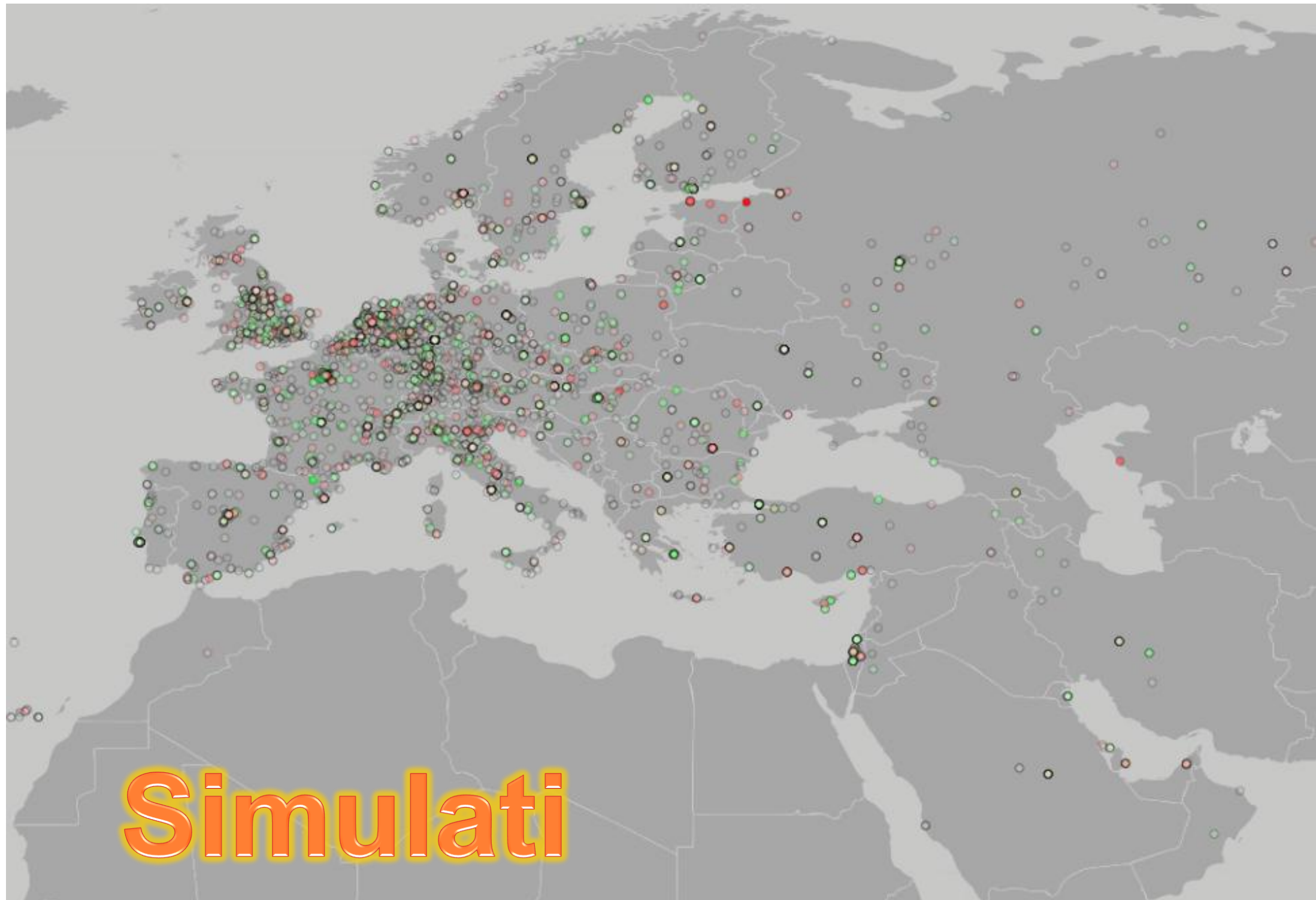


Intuition: 1000 Probes



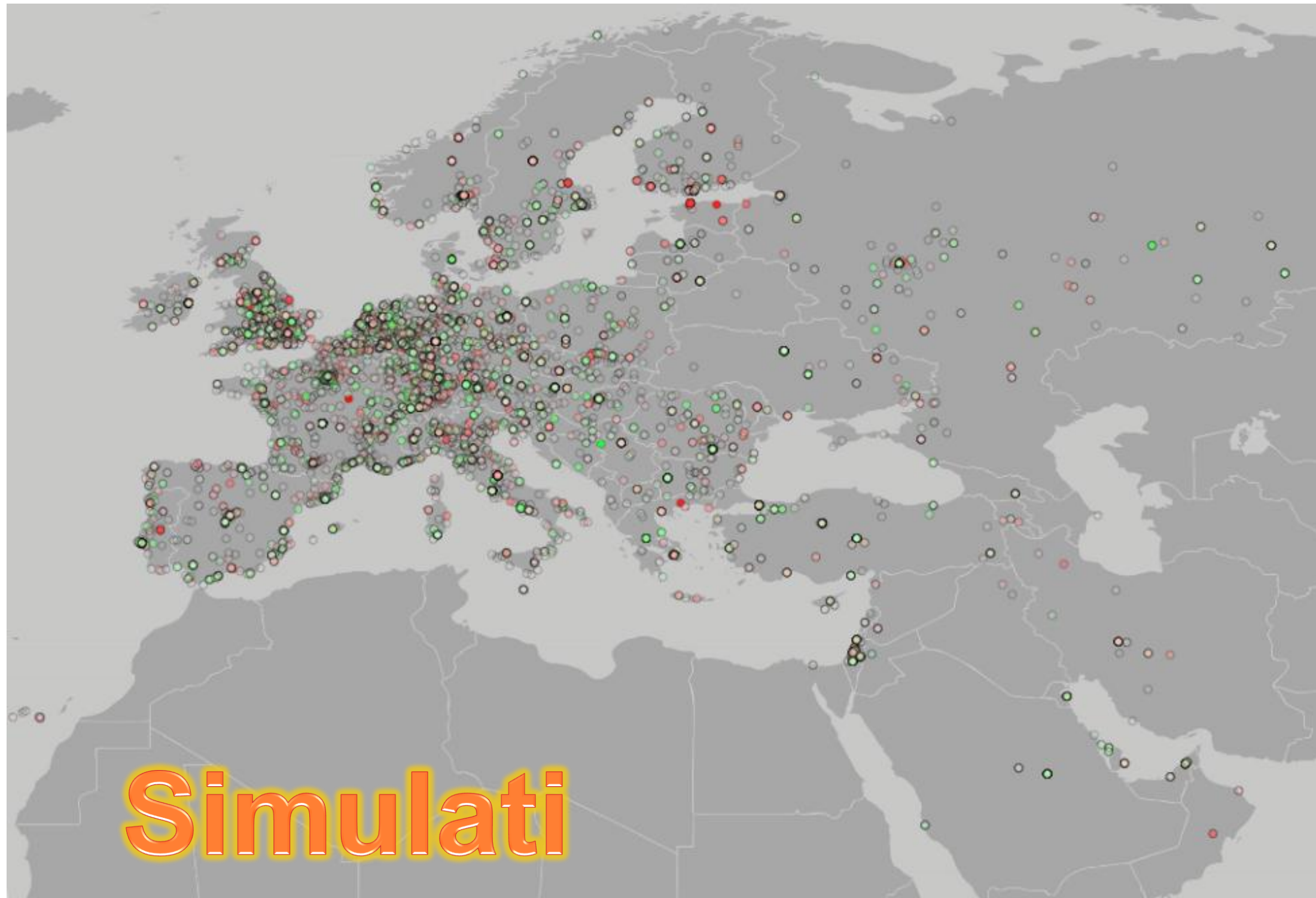
on

Intuition: 5000 Probes



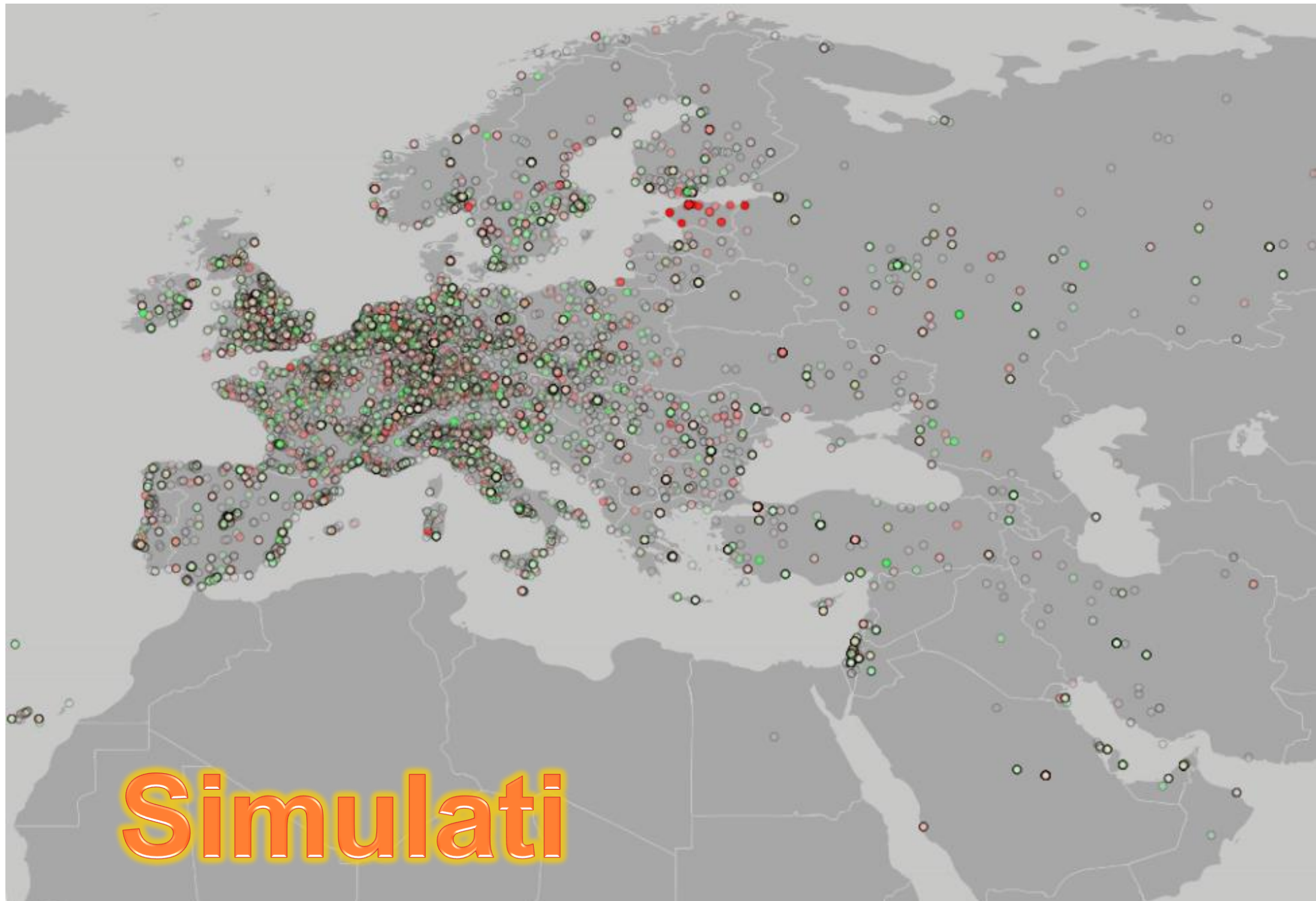
on

Intuition: 10k Probes



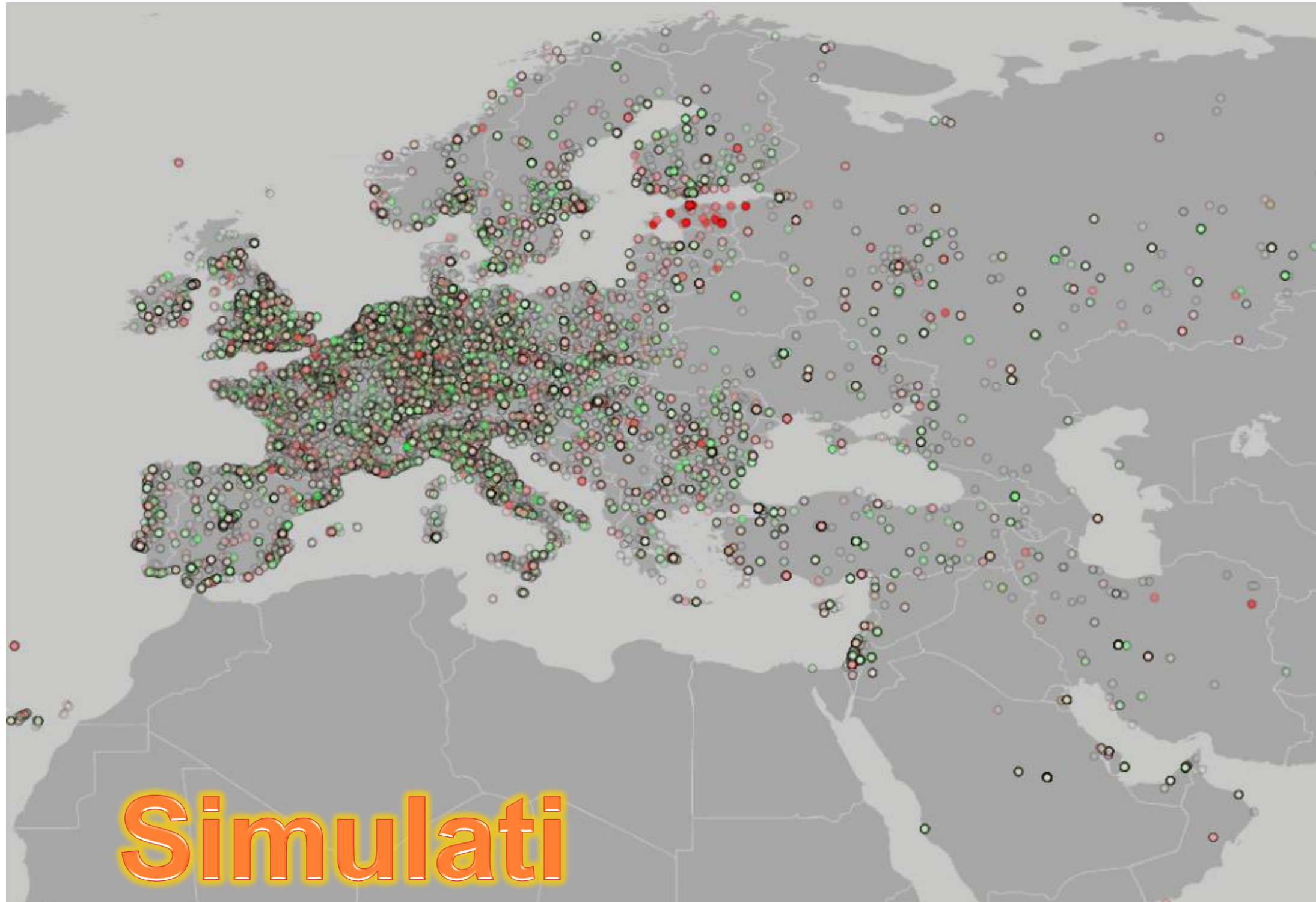
on

Intuition: 20k Probes



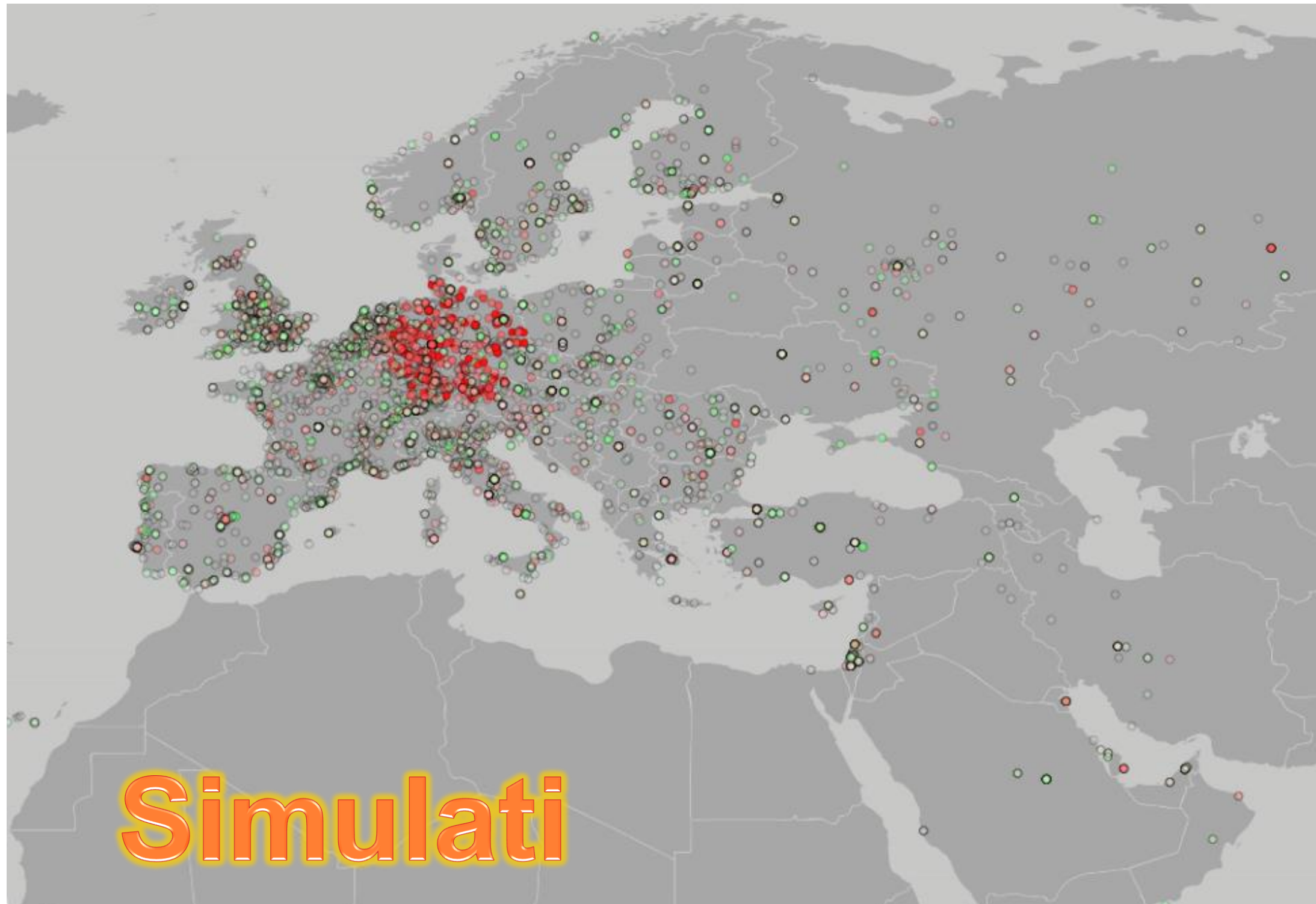
on

Intuition: 50k Probes



on

Intuition: **10k** Probes & **1** AS



on

Ambitious Community Effort

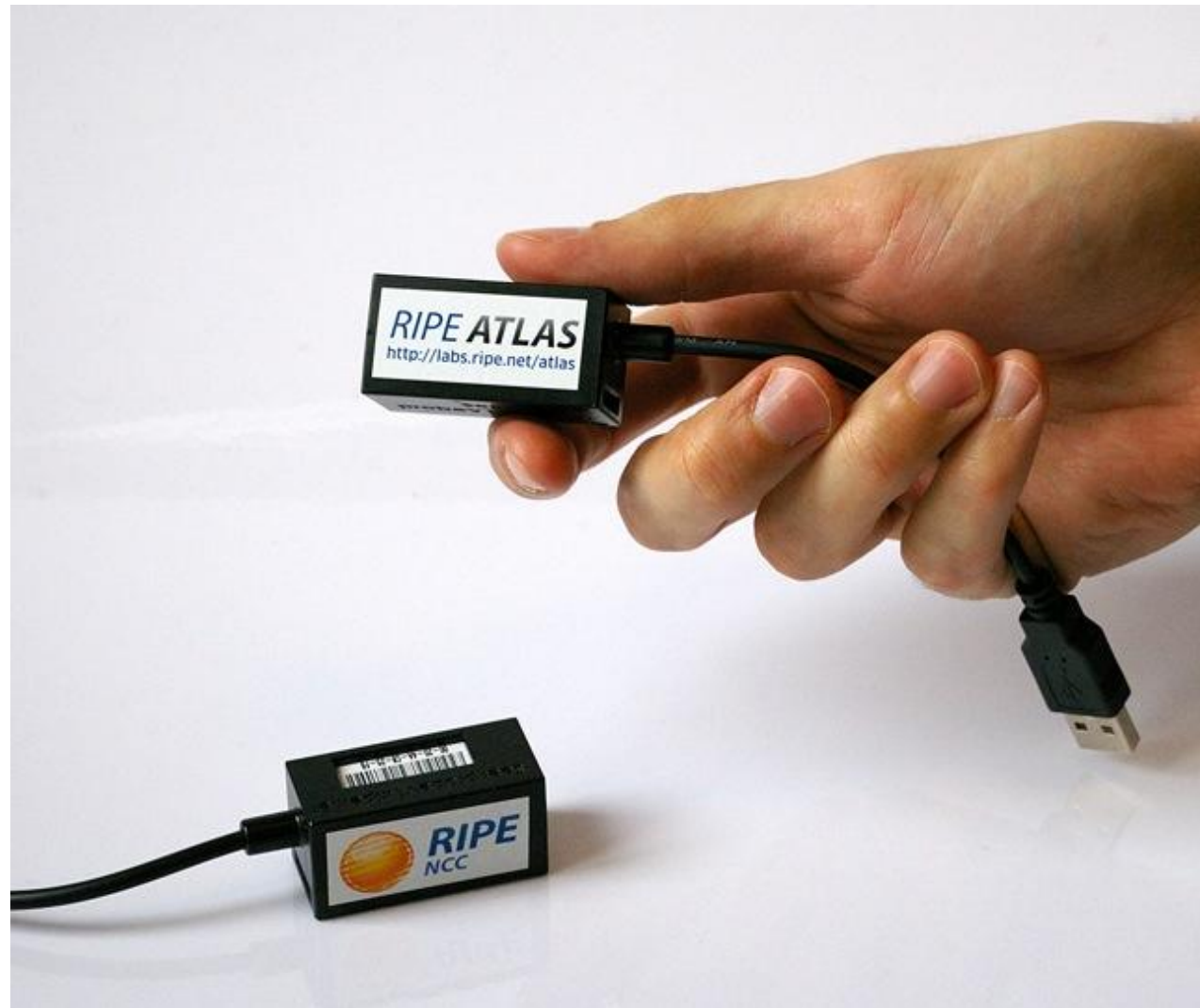
Instead of building small, separate, individual & private infrastructures, build a huge common infrastructure that serves ***both*** the private goals ***and*** the community goals.

Ambitious Community Effort

- Individual Benefits
 - Less expensive than rolling your own
 - More vantage points available
 - More data available
- Community Benefits
 - Unprecedented situational awareness
 - Wealth of data, ...

Intuition -> Plan

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



Probe Deployments



Probe Capabilities

- Version 0
 - Ping to fixed targets (IPv4 & IPv6) ✓
 - Traceroute to 1st two upstream hops ✓
- Version 1
 - Ping & Traceroute to variable targets
 - DNS queries to variable targets
- Version 2
 - Your ideas ?
- Upgrades are automatic

Hosting = Credits = Measurements

- We cannot “be” everywhere without your help

Become a probe host !

- Donate a fraction of your bandwidth
- Donate a very small amount of electricity

You get:

- Recognition
- Access to fixed measurements from probe now
- Credits = Measurements **from any probe**

(Q2/11)

Hosting = Credits = Measurements

The screenshot shows the RIPE Atlas web interface. The browser address bar displays `http://atlas.ripe.net/`. The user is logged in as John, with links for [My Account](#) and [Logout](#). A notification states: "You have 2460 unused measurement credits ([how to add more?](#))". The navigation menu includes [My Probes](#), [My Measurements](#), [My Results](#), and [Maps](#). The main content area displays two measurement cards:

Measurement 1 200 credits/hour [edit](#) [remove](#)

- Measurement type: ping
- To: 1.2.3.4
- From: 10 probes in Europe
- When: every 30 min
- Start time: Mon Sep 06 16:18:21 2010
- Expiration time: Wed Sep 08 14:00:00 2010
- Status: active

[+ More details](#) [view results](#)

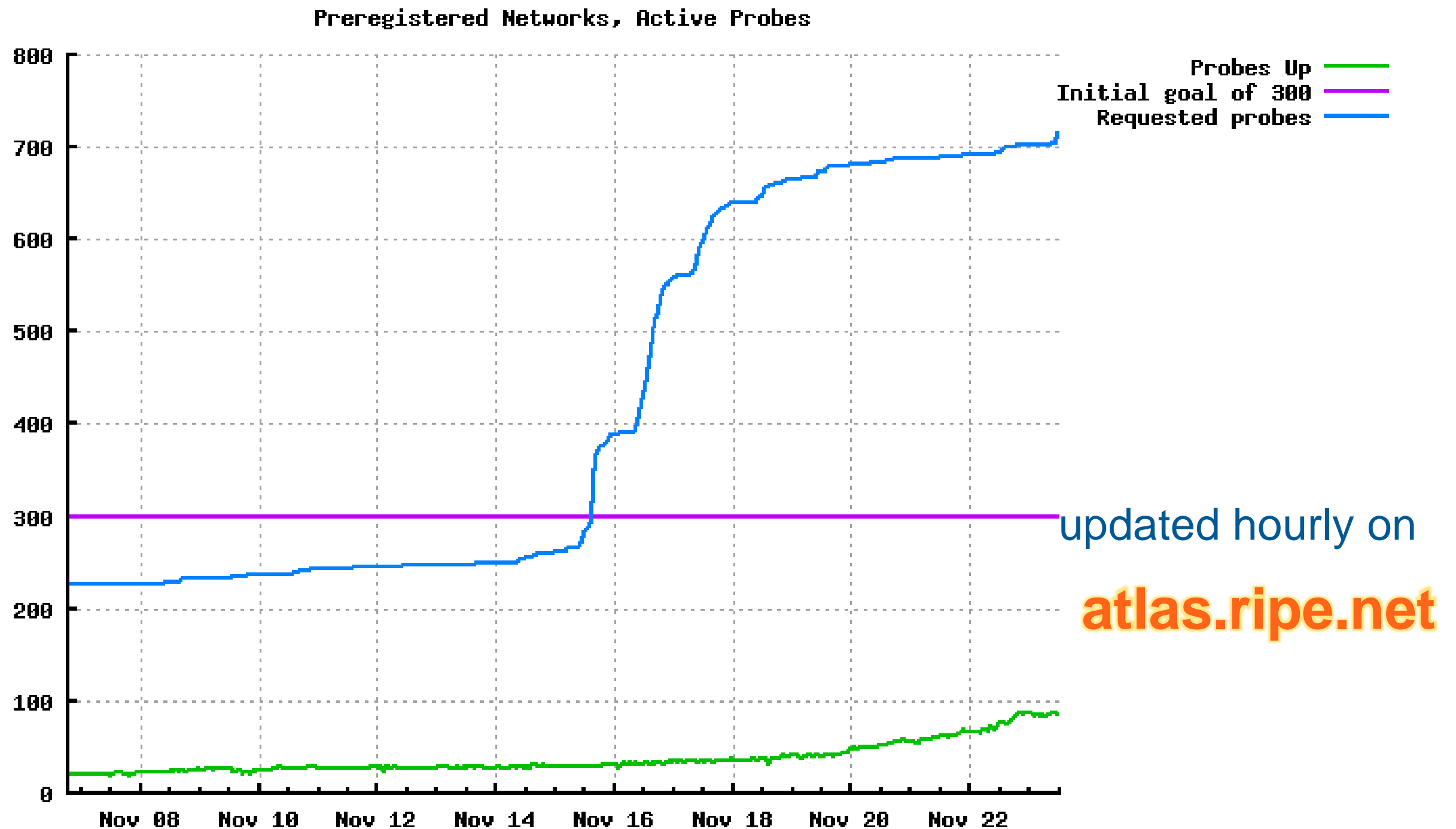
Measurement 2 600 credits/day [edit](#) [remove](#)

- Measurement type: traceroute
- To: www.ripe.net
- From: 30 probes around the world
- When: every day
- Start time: Thu Aug 05 16:18:21 2010
- Expiration time: Never
- Status: inactive

[+ More details](#) [view results](#)

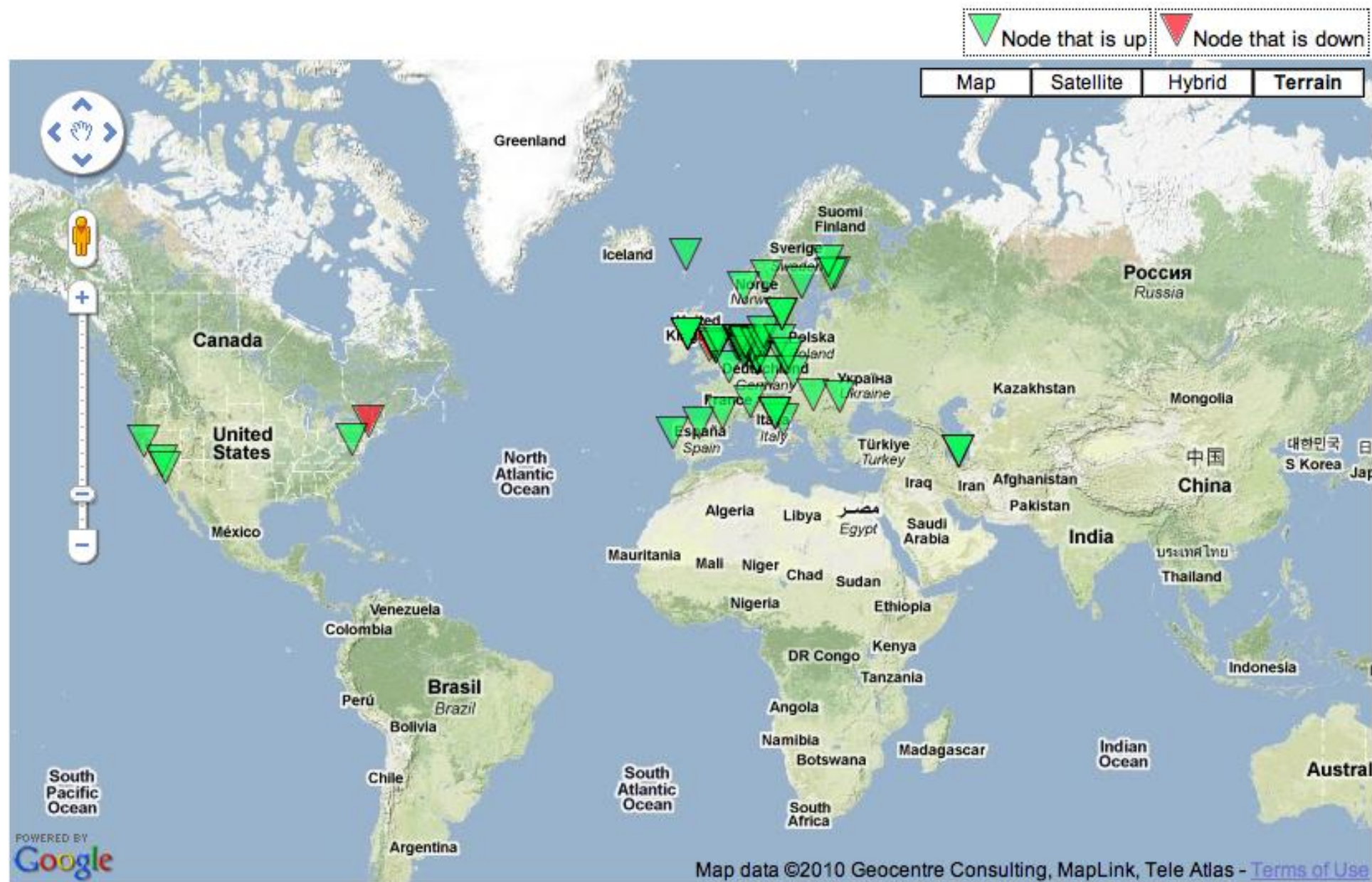
[Add more](#)

Hosting = Credits = Measurements



NOT a

Hosting = Credits = Measurements



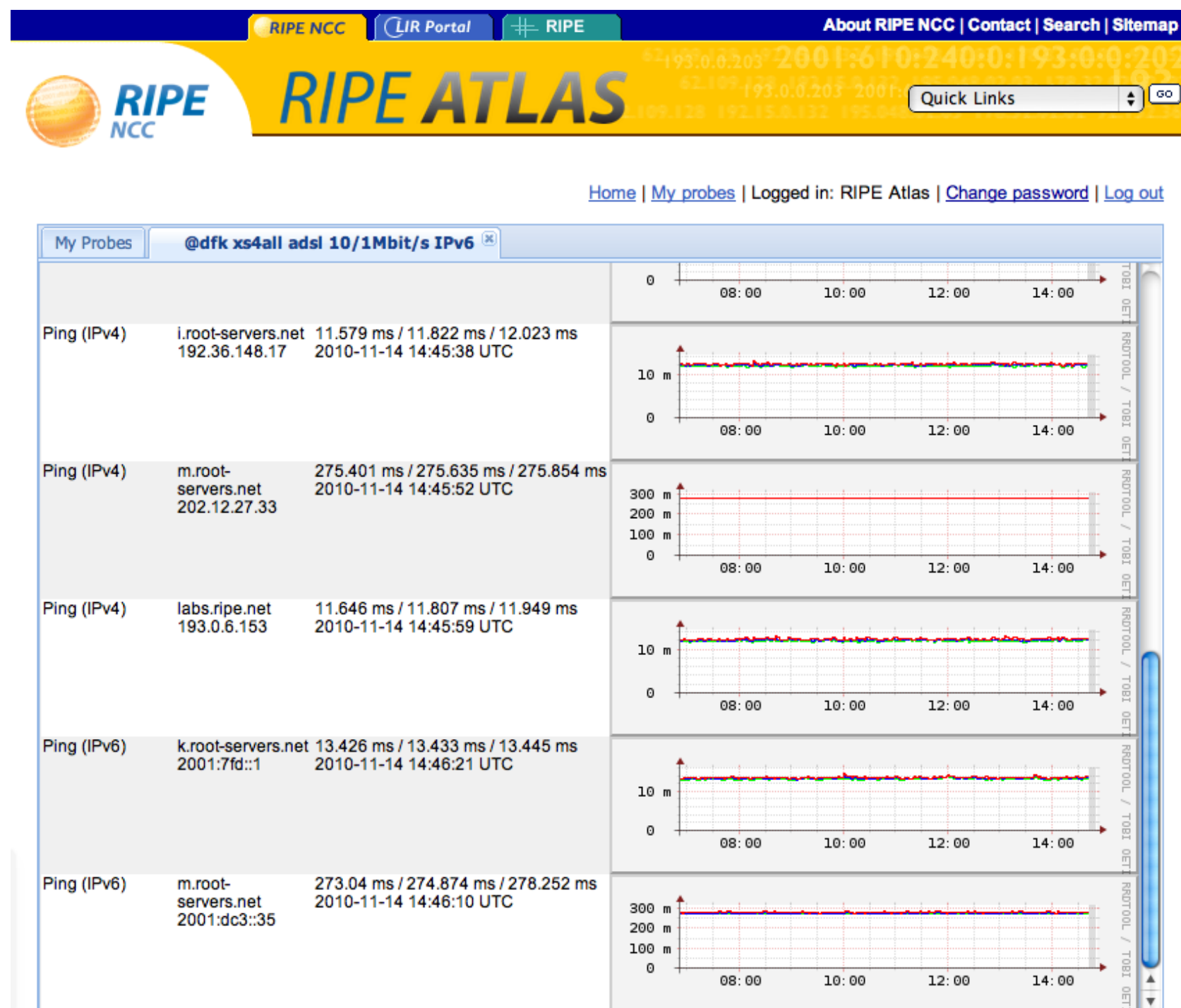
NOT a

Hosting = Credits = Measurements



NOT a

Hosting = Credits = Measurements



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NOT a Simulation

Hosting = Credits = Measurements

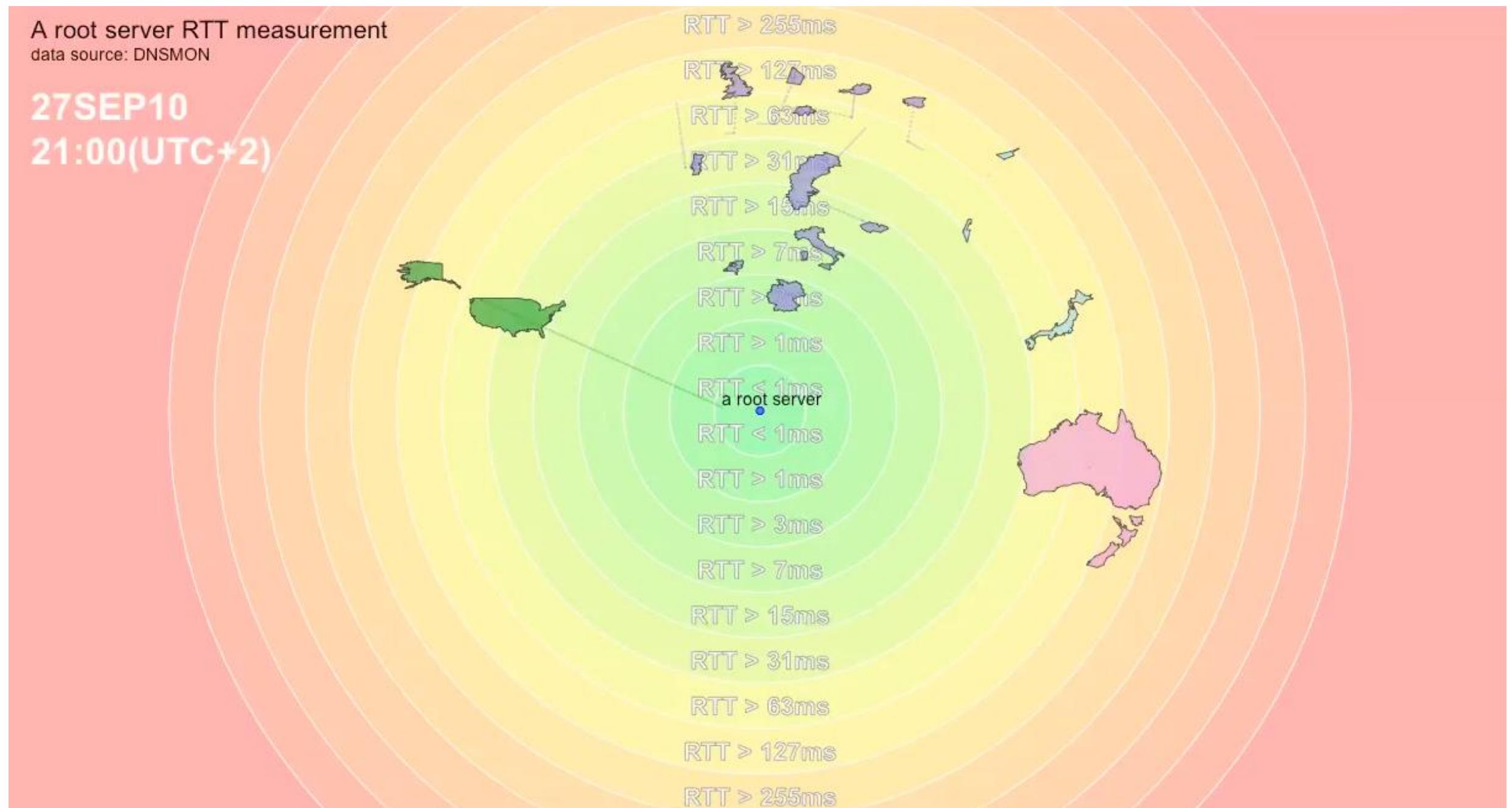
Become a probe host !

First go to **atlas.ripe.net** and register !

Then get your probe at the *RIPE ATLAS* desk.

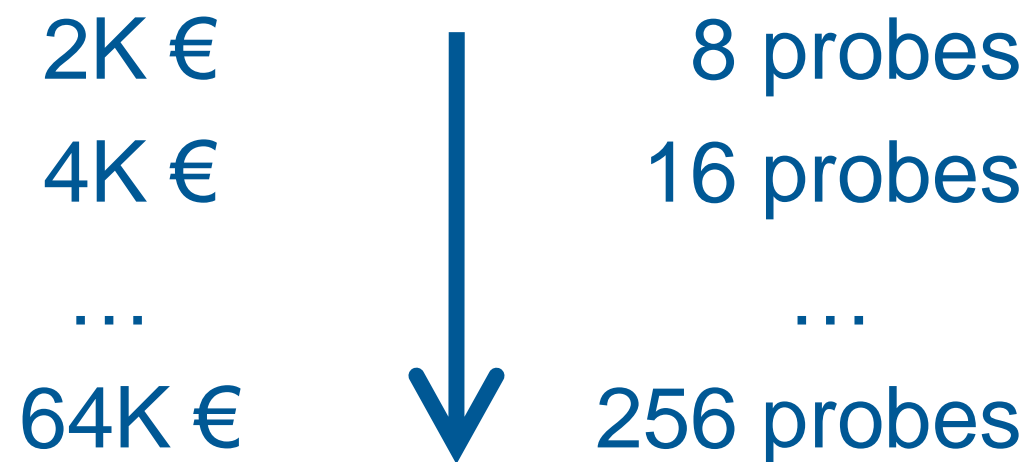
.... And pick one up for your registered friends too

Claudio Movie



Sponsorship = Credits = Measurements

- 50k probes too expensive for RIPE NCC alone
- Sponsorship Plans:



- Recognition and **many more credits**
- Access to fixed measurements from probes **now**
- Credits = Measurements **from any probe**
(Q2/11)

Sponsorship = Credits = Measurements

- 50k probes too expensive for RIPE NCC alone
- Sponsorship Plans:



- Recognition and many more credits
- Access to fixed measurements from probes now
- Credits = Measurements from any probe (Q2/11)

Sponsorship = Credits = Measurements

For sponsorships see me during the meeting,
or contact me: <daniel.karrenberg@ripe.net>

Questions?

atlas.ripe.net



Spare Slides

Why Hardware and not Software Probe?

- Comparable and Reliable Measurements
 - Known and uniform environment
 - Tamper resistant
- 24 x 365
 - Install and Forget
 - Not dependent on host system, needs little power
- Security
 - Not attractive nor easy target for botnet herders
 - Not introducing potential weakness in host systems

Is this the RIPE Botnet ?

- No
- Architecture is security conscious -> MAT WG
- Probes do not offer services, no open ports
- Probes are no interesting targets
 - Very special environment
 - Not really powerful either
- Infrastructure is designed with security in mind
- Measurements will be rate limited

Private Measurements ?

- We are not offering this as a service for private and confidential measurements
- All results should benefit the community, also those of individually configured measurements
 - Modalities to be discussed -> MAT WG
 - Embargo periods
 - Aggregation
 - Anonymisation
- If you want to keep it very secret, run your own.

Relation to Other RIPE NCC Services ?

My **personal** vision, to be discussed in MAT WG and with current users:

- TTM will become part of RIPE ATLAS
 - Powerful class of probes
 - “Beacon” probes (some interest already)
 - RIPE Atlas framework of operation and services
- DNSMON will become a class of RIPE Atlas measurements