RIPE Atlas

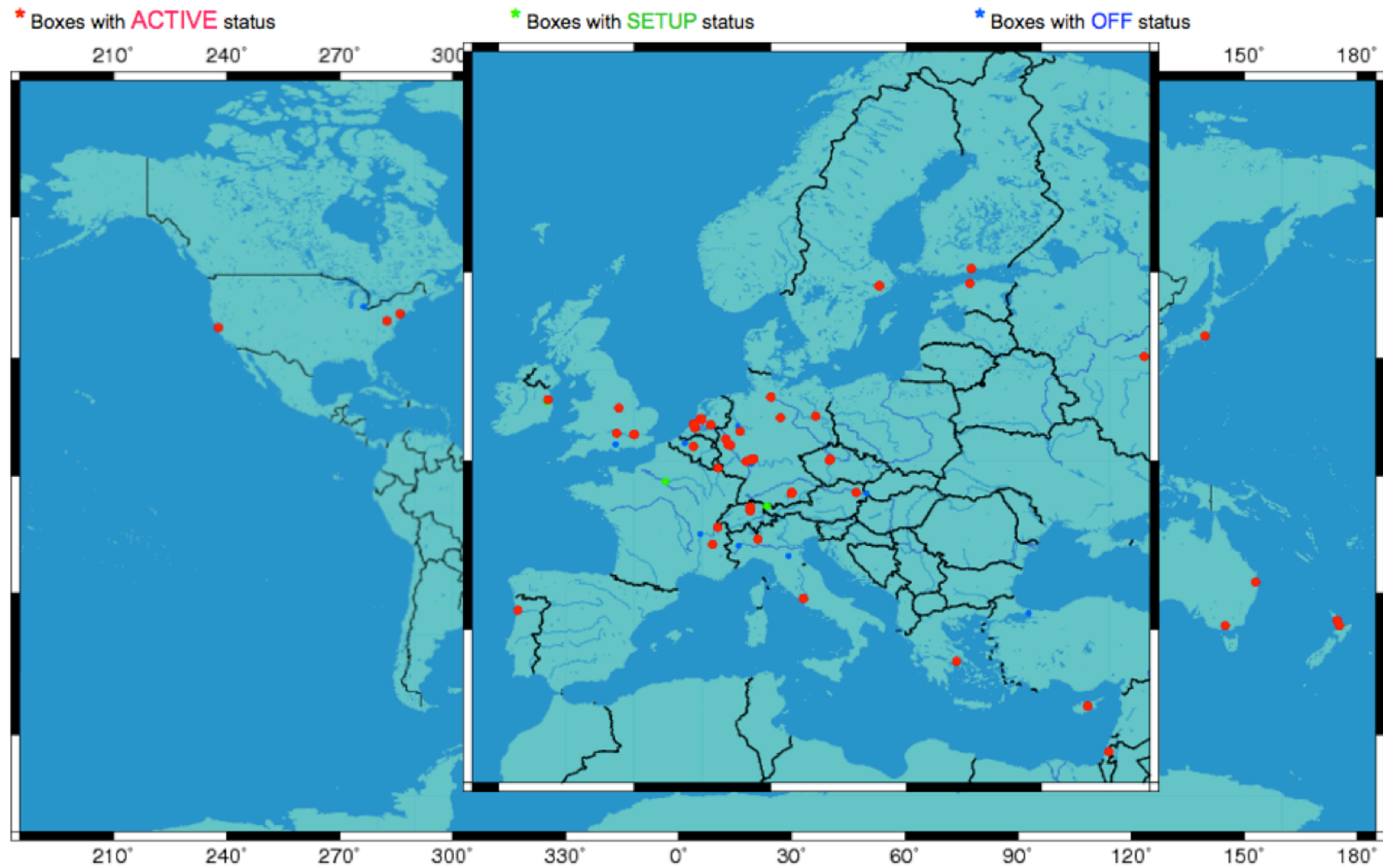## A "Real Big" Measurement Network
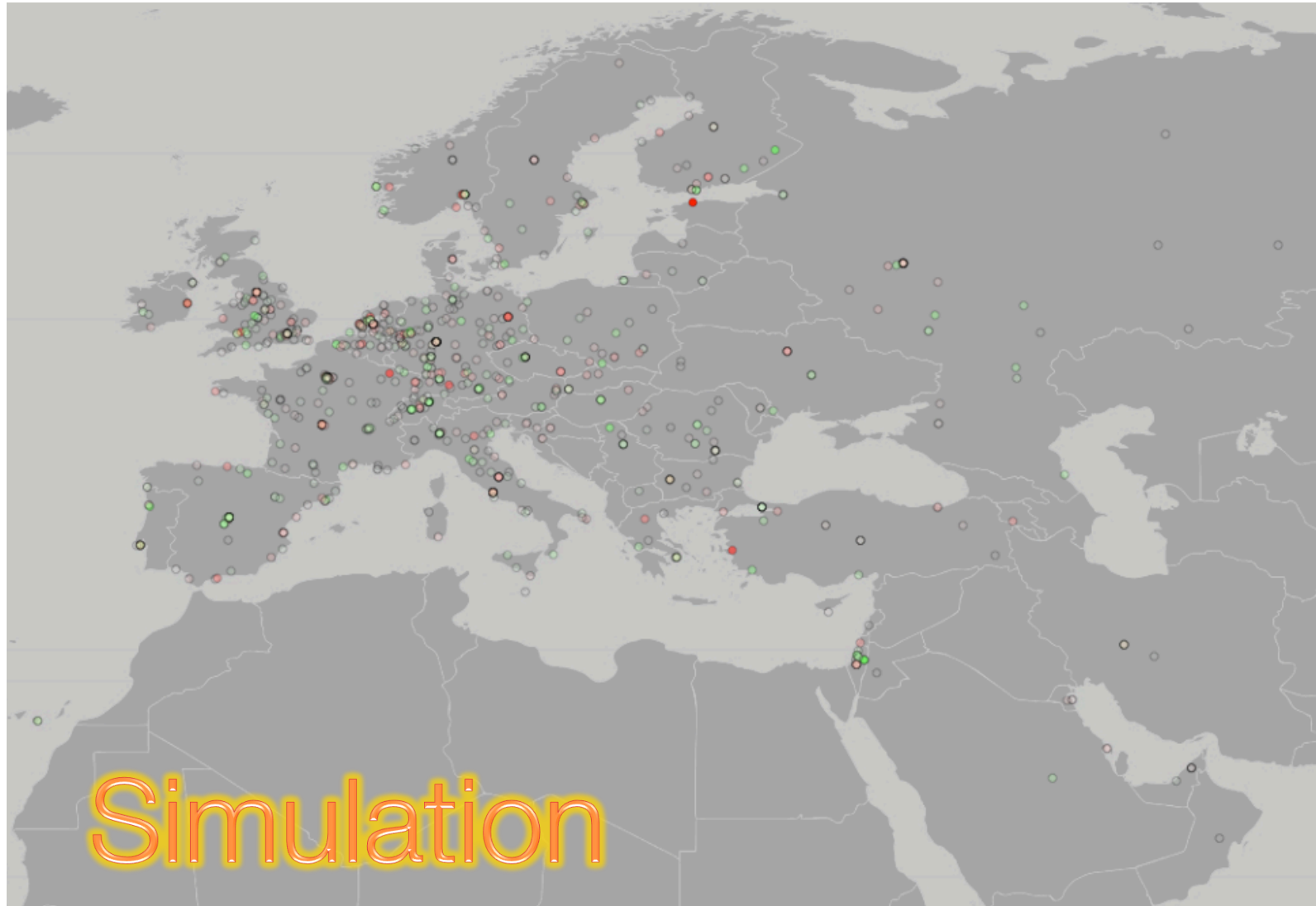
Daniel Karrenberg
Chief Scientist

RIPE TTM

Light Map

Intuition: 1000 Probes
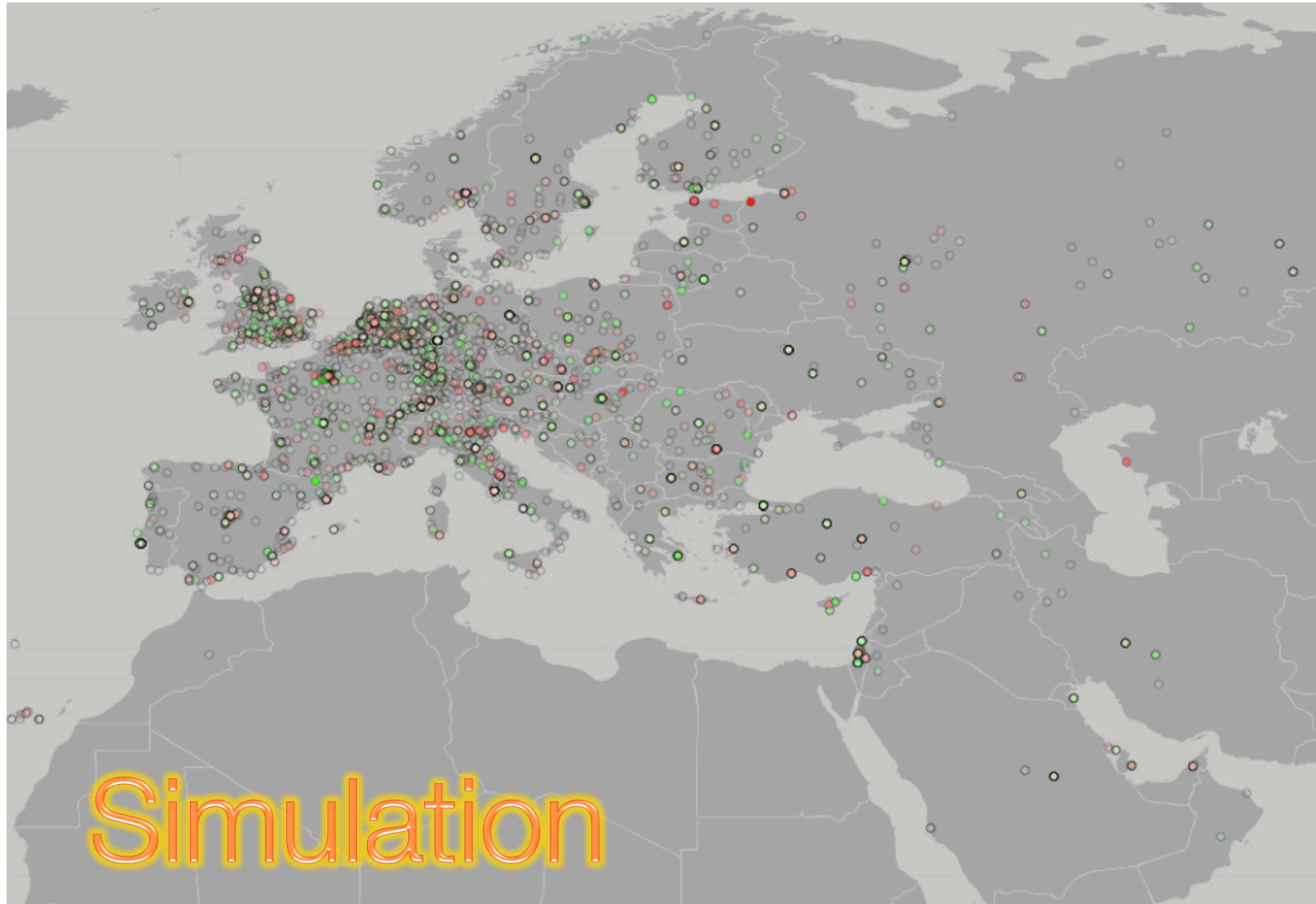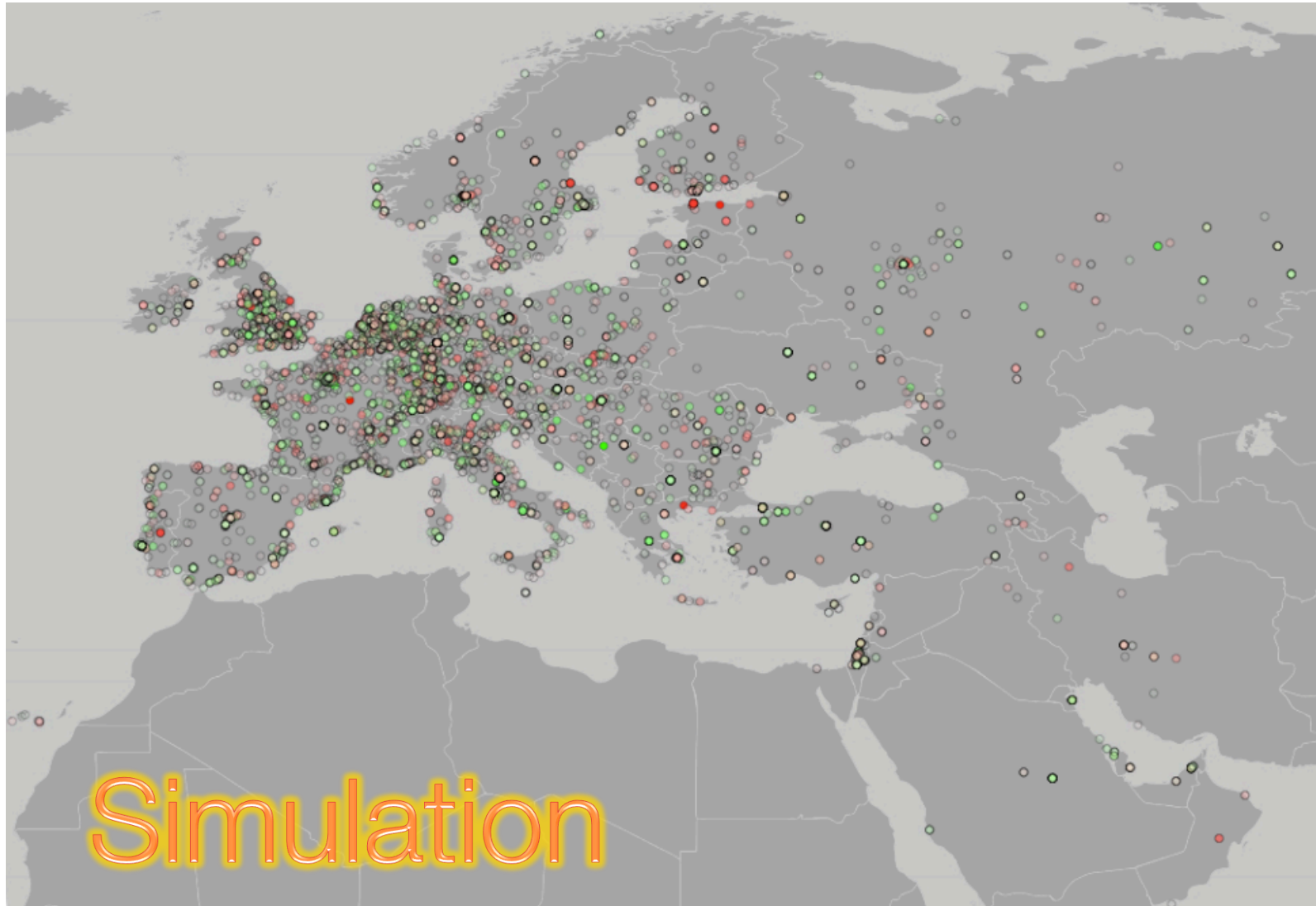
Intuition: 5000 Probes

Intuition: 10k Probes

Intuition: 20k Probes
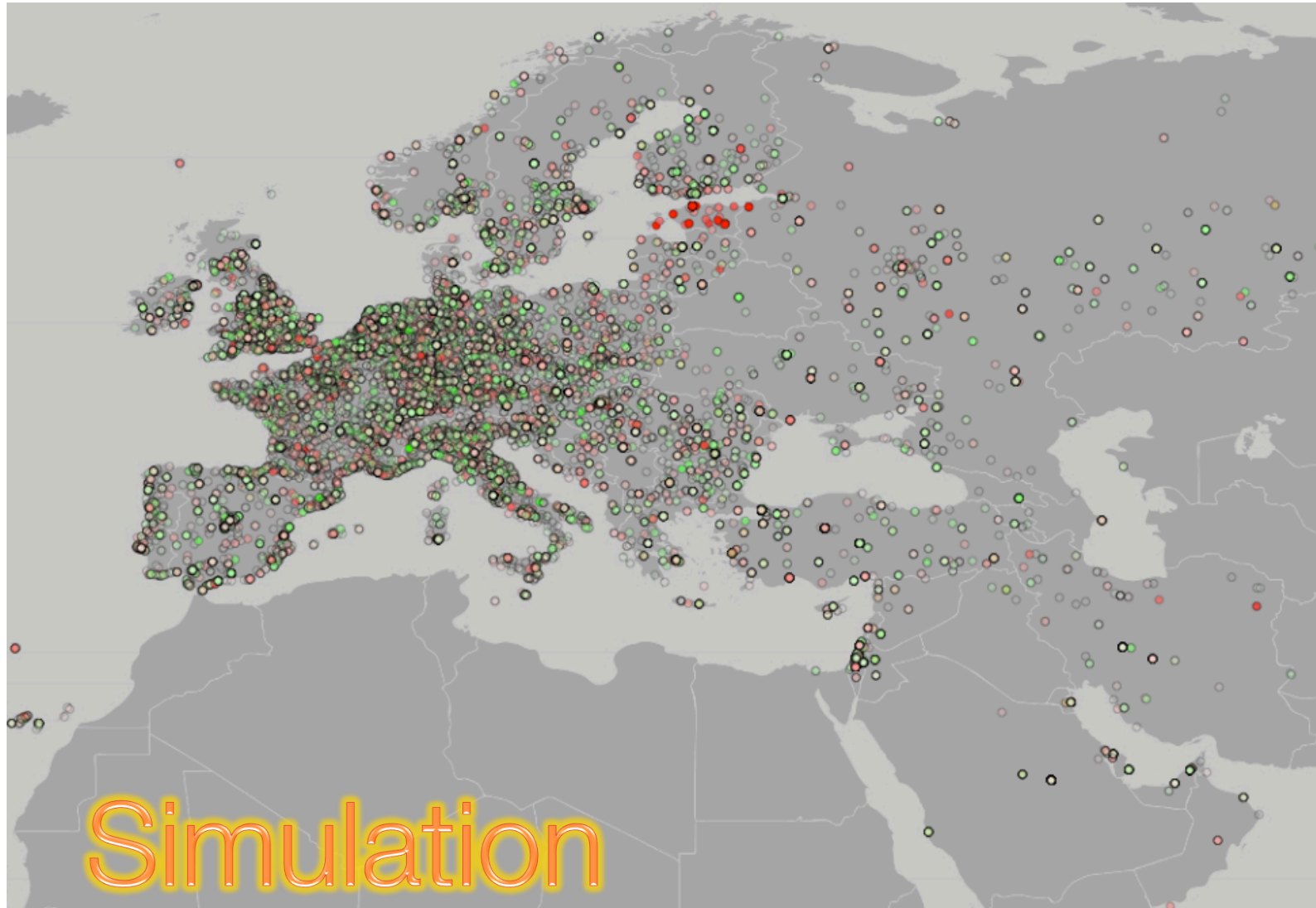

Simulation
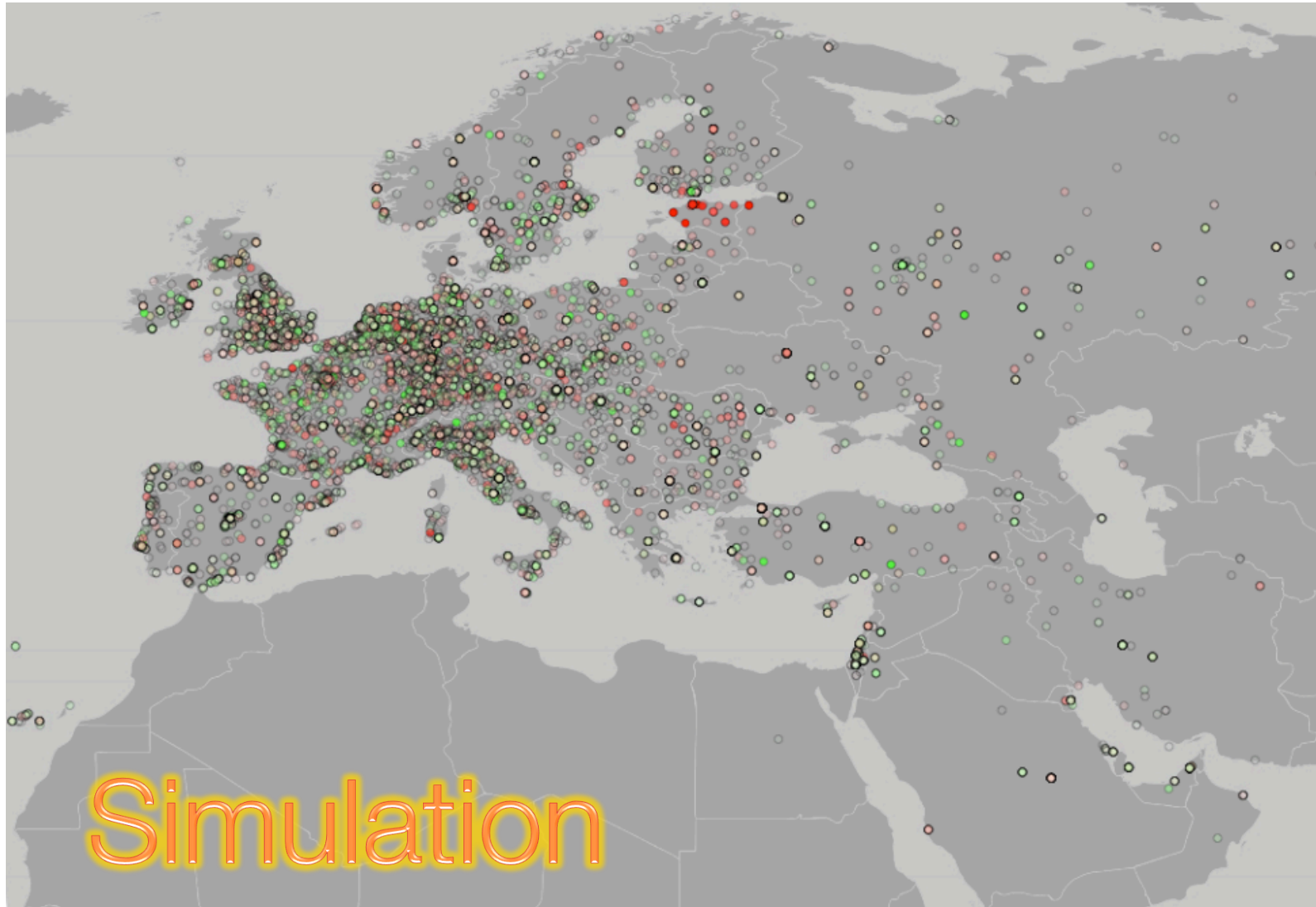
Intuition: 50k Probes

Simulation

Intuition: 10k Probes & 1 AS

Simulation
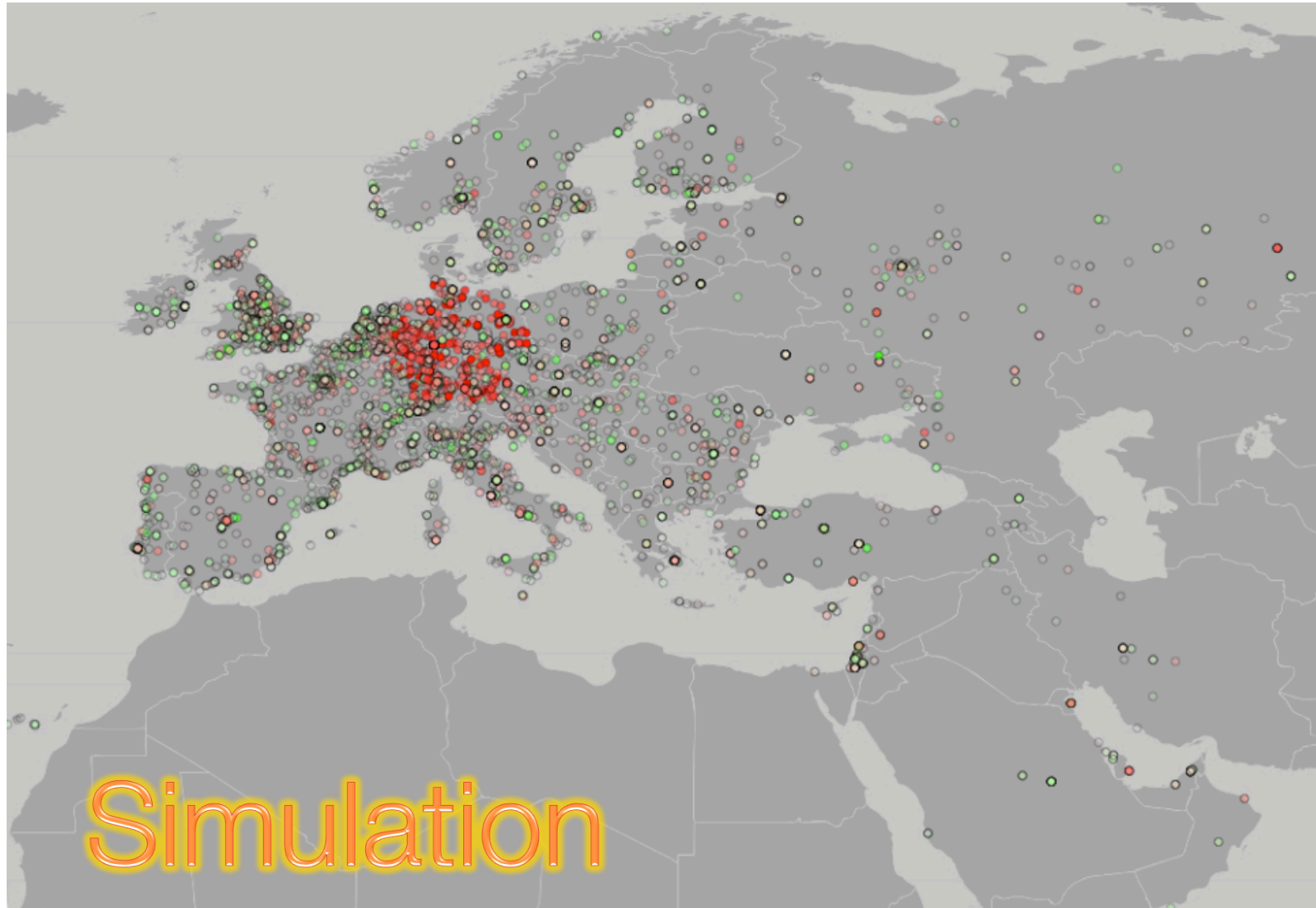
Ambitious Community Effort

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
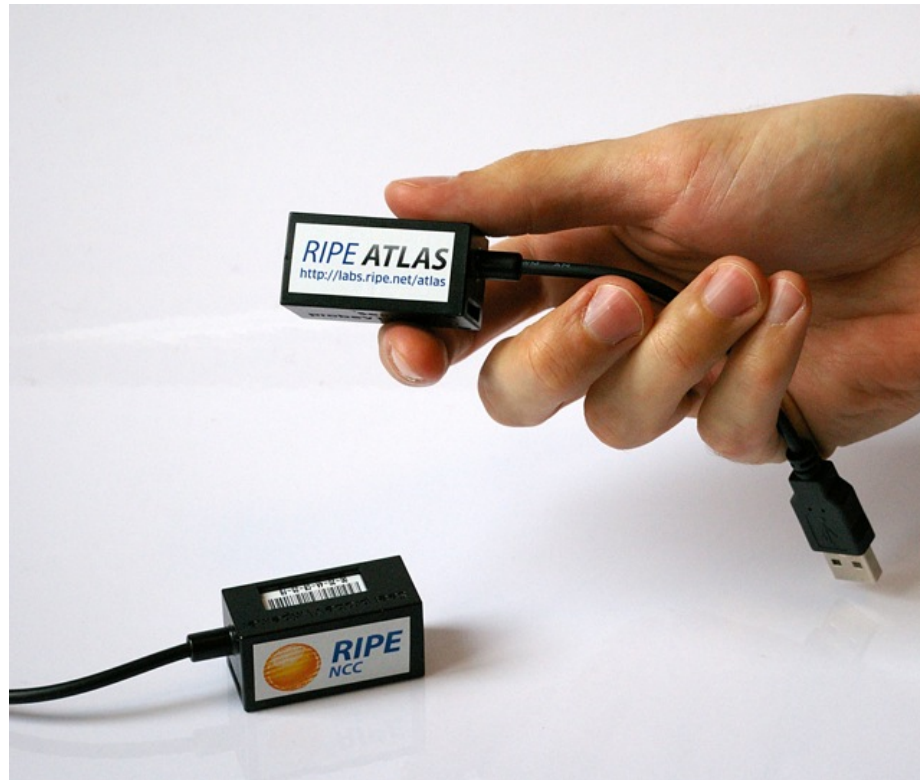
- Deploying very many TTM boxes too expensive

- 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

Hosting = Credits = Measurements
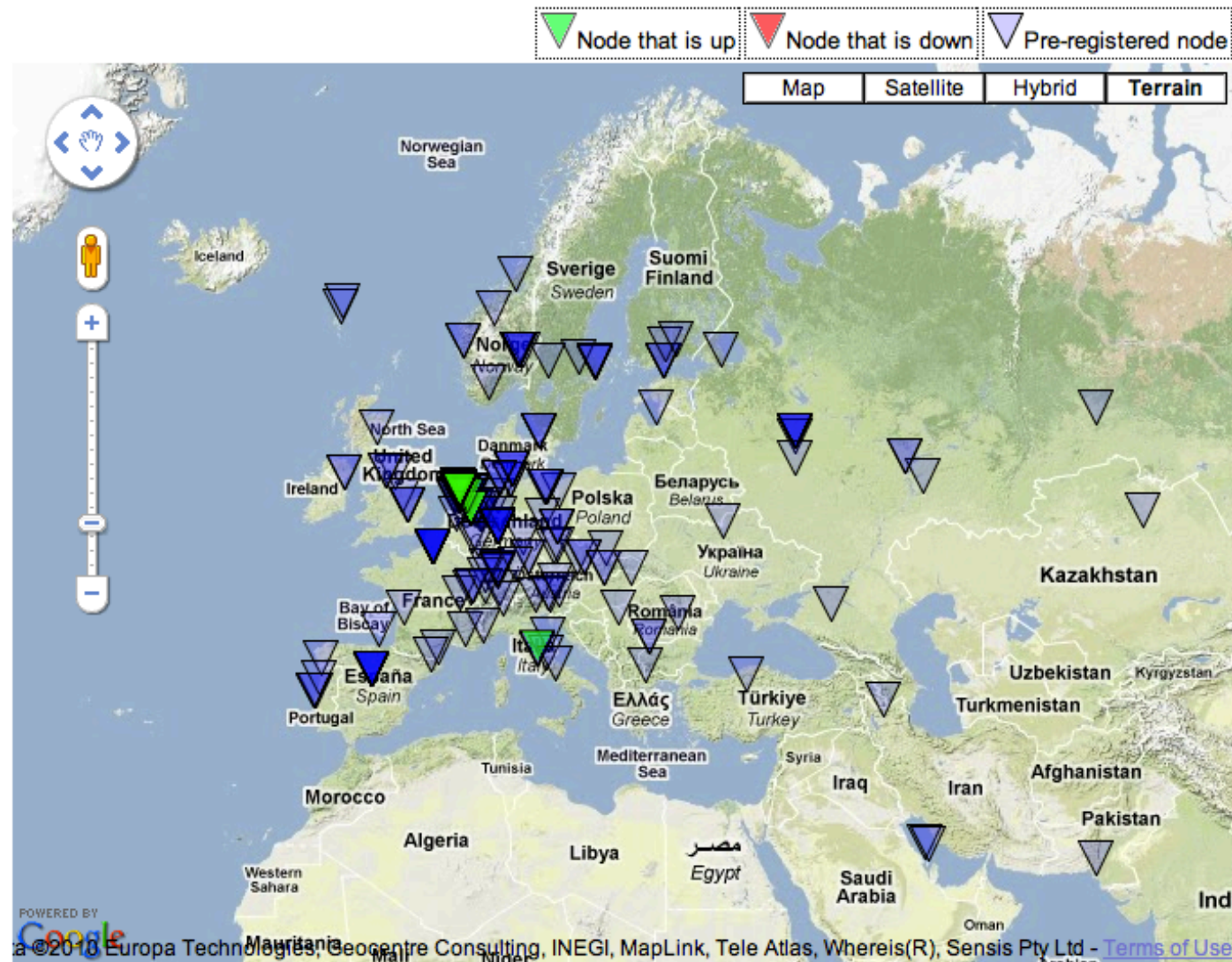

NOT a Simulation

Hosting = Credits = Measurements

Preregistered Networks, Active Probes

Probes Up	
Initial goal of 300	
Preregistered networks	

updated hourly on

atlas.ripe.net

NOT a Simulation

Hosting = Credits = Measurements

Preregistered Networks, Active Probes

today

you get home
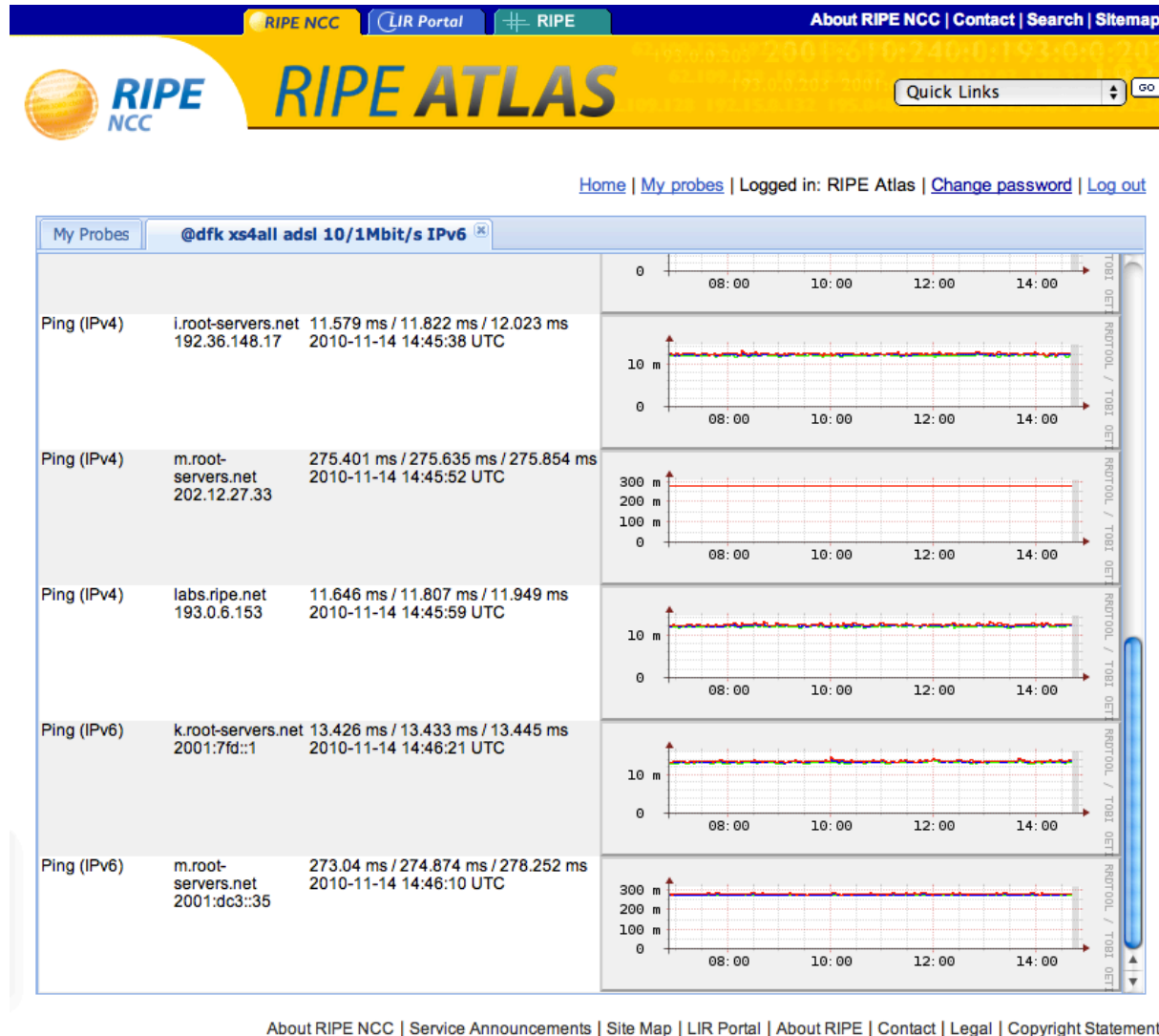
Hosting = Credits = Measurements

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
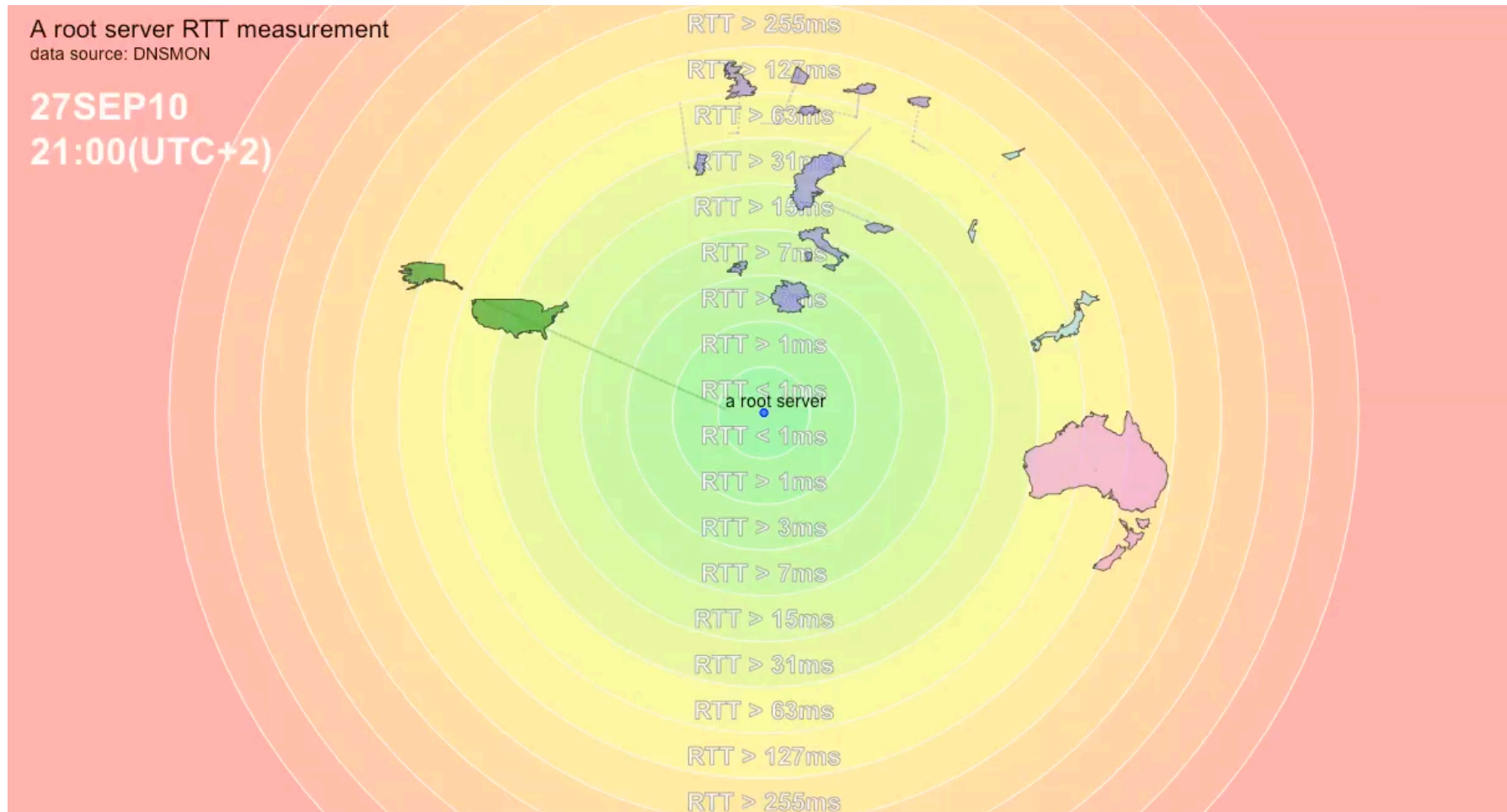
A root server RTT measurement
data source: DNSMON

27SEP10
21:00(UTC+2)

RTT > 255ms
RTT > 127ms
RTT > 63ms
RTT > 31ms
RTT > 15ms
RTT > 7ms
RTT > 3ms
RTT > 1ms
RTT < 1ms
a root server
RTT < 1ms
RTT > 1ms
RTT > 3ms
RTT > 7ms
RTT > 15ms
RTT > 31ms
RTT > 63ms
RTT > 127ms
RTT > 255ms

Sponsorship = Credits = Measurements

- 50k probes too expensive for RIPE NCC alone

- Sponsorship Plans:

2K €	8 probes
4K €	16 probes
…	…
64K €	256 probes
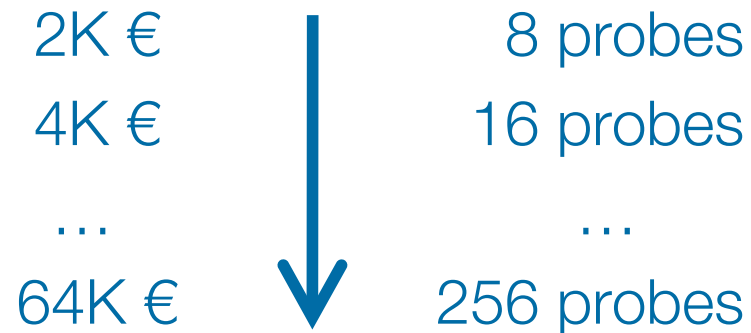
- Recognition and many more credits

- 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:

that is 2048€	2K €	8 probes
	4K €	16 probes
geek compatible pricing℠		…
	64K €	256 probes

- 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>

More Information

RIPE ATLAS Desk

RIPE Labs
Innovative Internet
tools & ideas

People with *RIPE ATLAS* badge stickers

MAT Working Group: 16:00 on Thursday

Questions?

atlas.ripe.net

RIPE
NCC

Spare Slides / Anticipated Questions

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