TTM Status Report

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RIPE NCC New Projects Group

RIPE 48, Amsterdam, May 6, 2004

Outline

- Follow-up on RIPE47
- Internal organization
- Statistics
- New features and results since RIPE47
- Conclusions

Follow-up from RIPE 47

- Two talks from last time were made it to publications

- "SCoLE"
  - Michal Szymaniak
  - Published in Proceedings of the 10th International Conference on Parallel and Distributed Systems
- "Reordering of IP Packets in the Internet"
  - Xiaoming Zhao
  - Published in the Proceedings of PAM2004

Should the NCC take action on?

- Polled the mailing lists

- SCoLE
  - Not for the time being
- Delay Tomography
  - Not for the time being
- OWAMP
  - Yes, this would be a useful feature

OWAMP status in the IETF

- Requirements document ready to be published as RFC3763
- Specifications doc needs review
  - There is an open source implementation
  - On top of another RFC2679-2680 implementation
- Specifications RFC
  - Reviews expected July
  - Standard this fall
- Consequences for TTM to be studied
  - September

Packet ID's

- Packet ID's are not consecutive
- Design choice:
  - <src> <dst> <id> should be unique (for a period of a few months)
  - Do not maintain state in send program
  - Need to record estimate send time
  - Access to list of sent and received packets when analyzing
  - Algorithm to calculate packet ID
  - Non consecutive numbers
  - Accept that
- Works fine for current setup
- What about others?

Packet ID's

- Solution #1: Consecutive numbers
  - Will break things
- Solution #2:
  - Publish the code
  - Any application can calculate the numbers itself
  - This depends on the next item
- Want to set QoS bits

CVS Server

- Various requests for source code
- Looked into publish it
- CVS server seems the easiest solution
- Being set up
- Expected 15/5

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Support for NCC services
Current situation

- Historically and organically grown

- Not optimal
  - Developers doing support and maintenance
  - Developed independently for many NCC services
  - Different support procedures for different services
  - Confusing for customers
  - Waste of resources

New situation

- Move operational aspects of TTM (and RIS) to operational groups
  - OPS
  - SED
- NP will focus on
  - Data analysis
  - Prototypes
  - New services
  - Collaborations with research community

Transition

- Planned during the summer (July-Sept)
  - Exact schedule to be decided
- Requirement: service levels should continue to be as they are during the transition
- After that:
  - Better service, faster response to questions
  - Developers will have more time to investigate complicated problems and think about new things

Staff issues

- Michael Swoboda's internship at the NCC is coming to an end
- Master Thesis
  - Tunnel detection
  - IPv4 vs IPv6 performance
  - Percacci numbers
- Graduation date 1/6, thesis on the web soon after that

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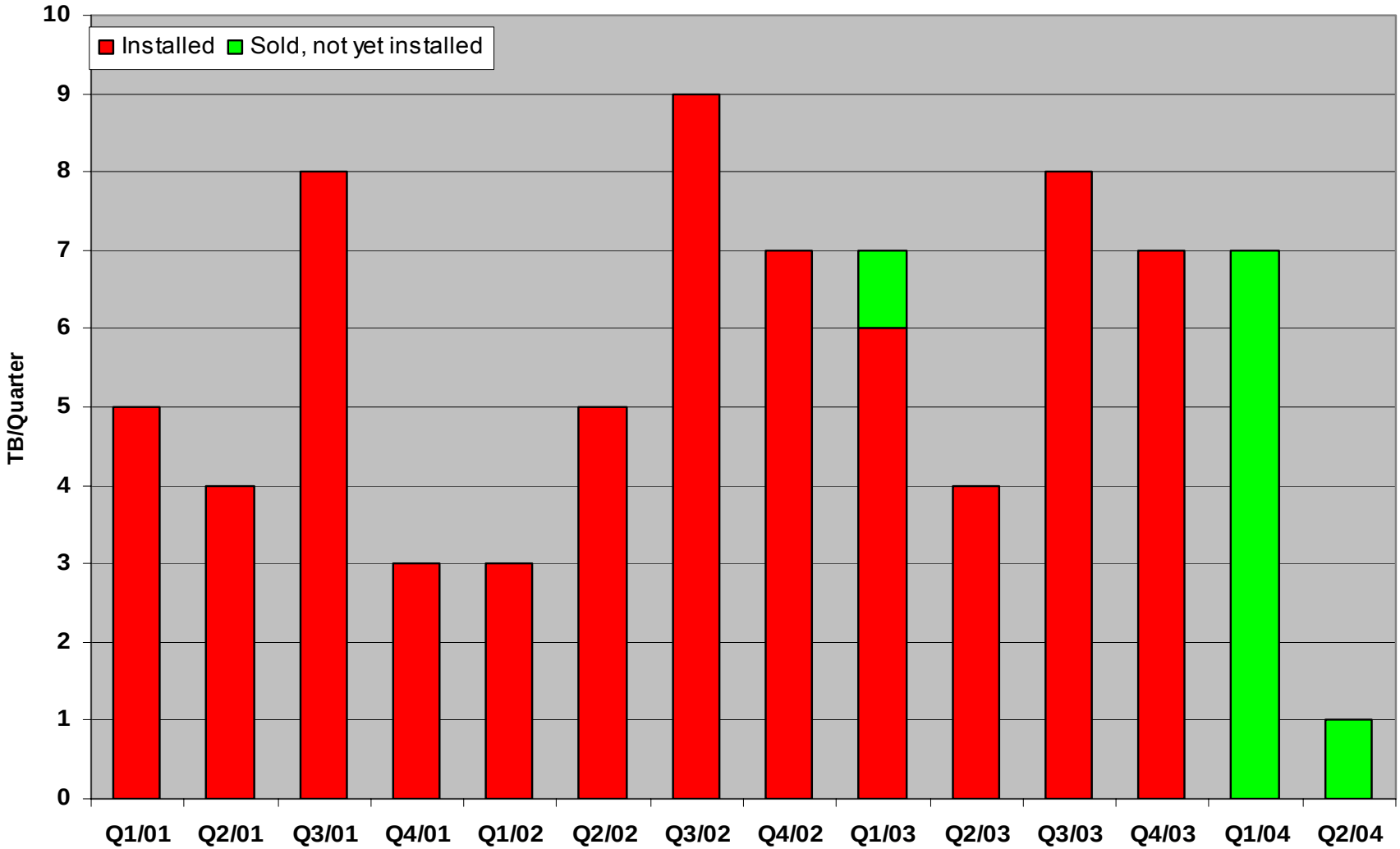
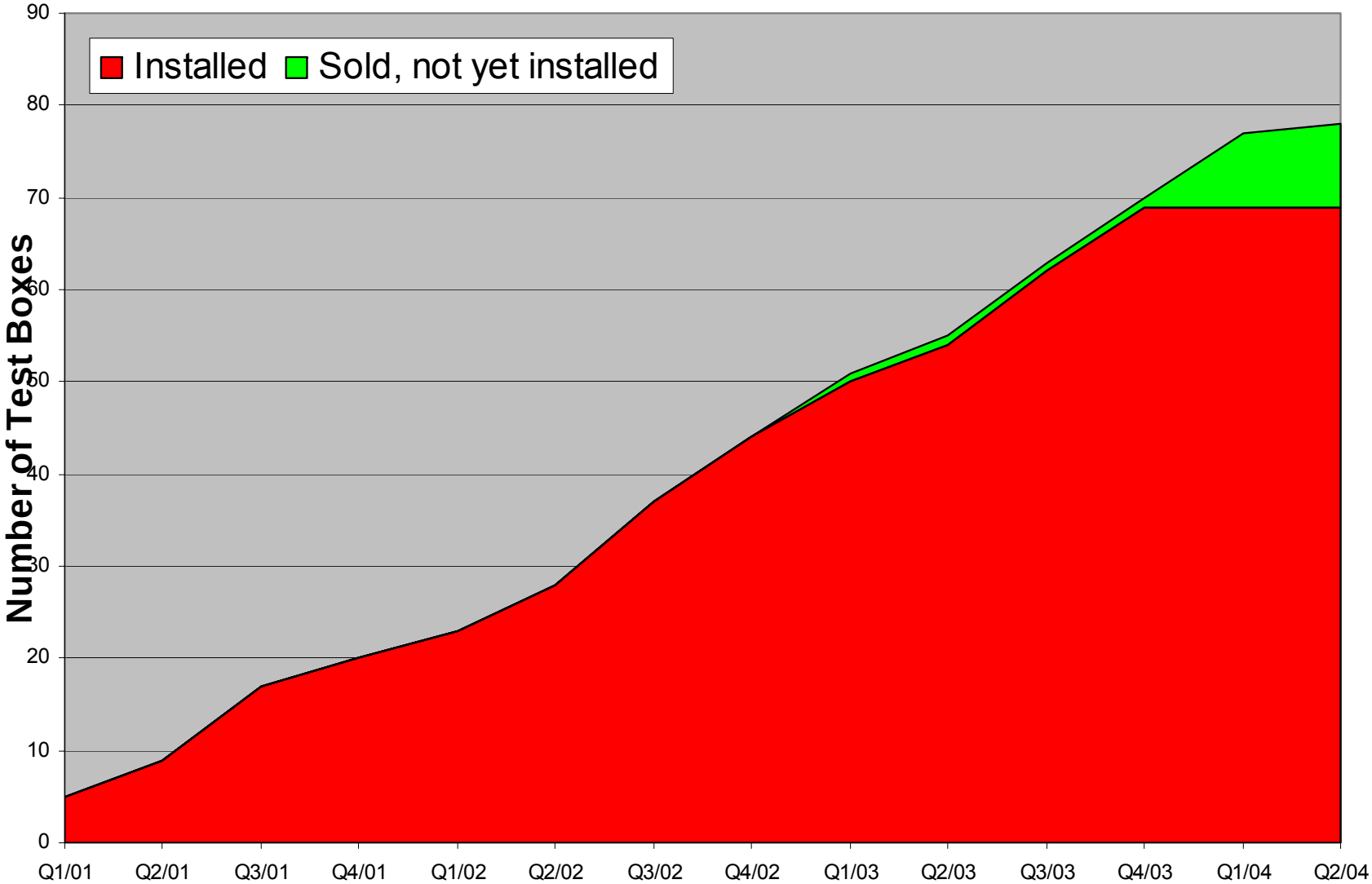
Number of Test Boxes Sold



Integrated over time



Prices

- Service fee reduced to € 1000/year
- Sponsor for hardware
  - Academic networks
  - Other restrictions
  - Please contact me offline

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- Follow-up on RIPE47
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  - RISwhois
  - AUP
  - DNSMON
  - IPv6 results, Percacci numbers (Michael's thesis)
  - Alarm program
- Conclusions

RISwhois

- Presented at RIPE47
- New features
  - Web I/F: http://www.ris.ripe.net/cgi-bin/riswhois.cgi
  - Support for prefixes
  - RPSLng compability
  - …
- Project finished (for now)

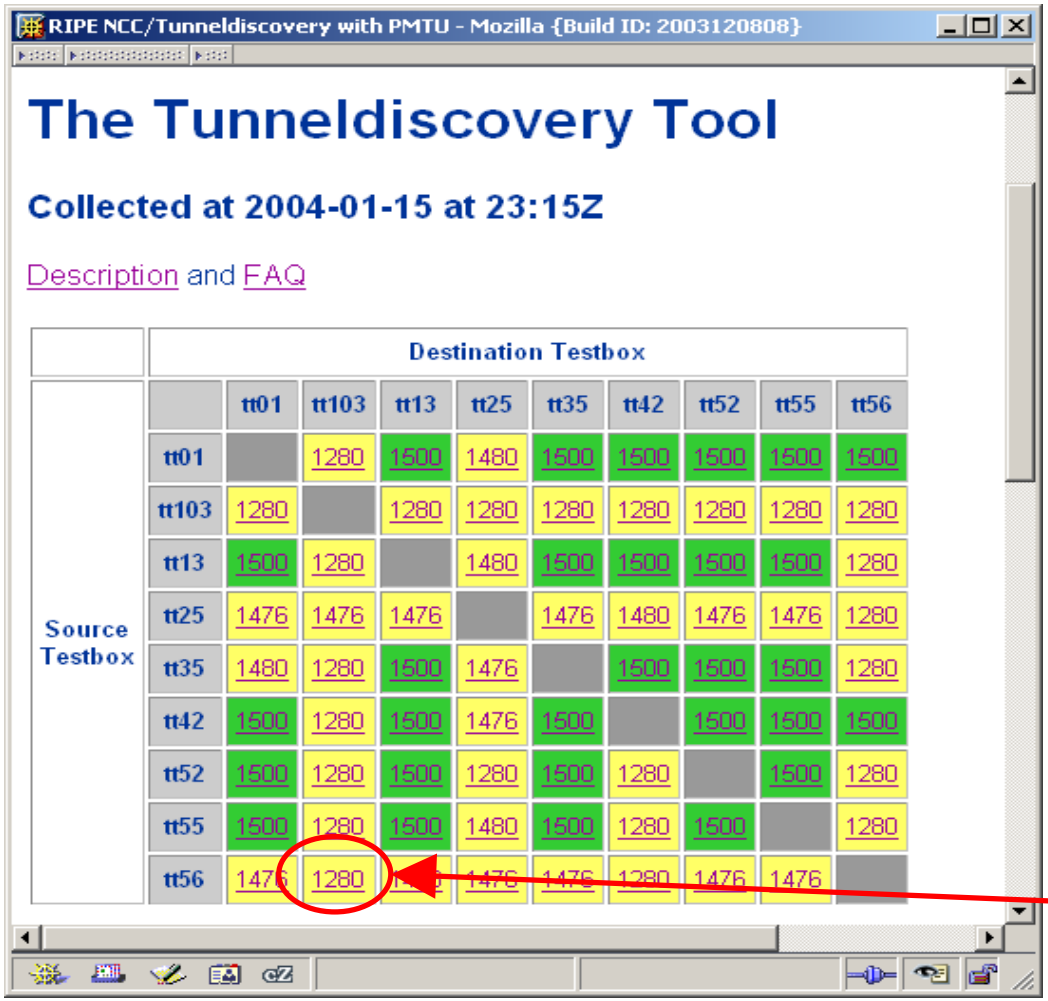
AUP

- RIPE 300 published
- Removed passwords from the site
- People are shown the AUP and asked to confirm if they agree with it

DNSMON

- Turning this into a regular service
  - 90%/10% rule
- Draft service contract available
  - http://www.ripe.net/ripe/drafts-documents
  - DNS Monitoring Service for TLD operators
  - Open for comments: dns-wg@ripe.net
  - Finalize before CENTR meeting in June

IPv6: Tunnel discovery tool



Native

Tunnel

No data

- Buttons to select specific TB's or time
- Link to traceroute
- Finished!

IPv4/v6 performance

- Delay and Losses. In theory:
  - Same routing policies, same path
  - Dual stack routers, Same fibers
  - Same results
- In practice
  - Different routing policies, different paths
  - IPv4 is production, IPv6 experimental
- Compare IPv6 and IPv4 performance
  - Ratio to remove geographical effects
  - Assume IPv4 is the baseline

IPv4/v6 performance

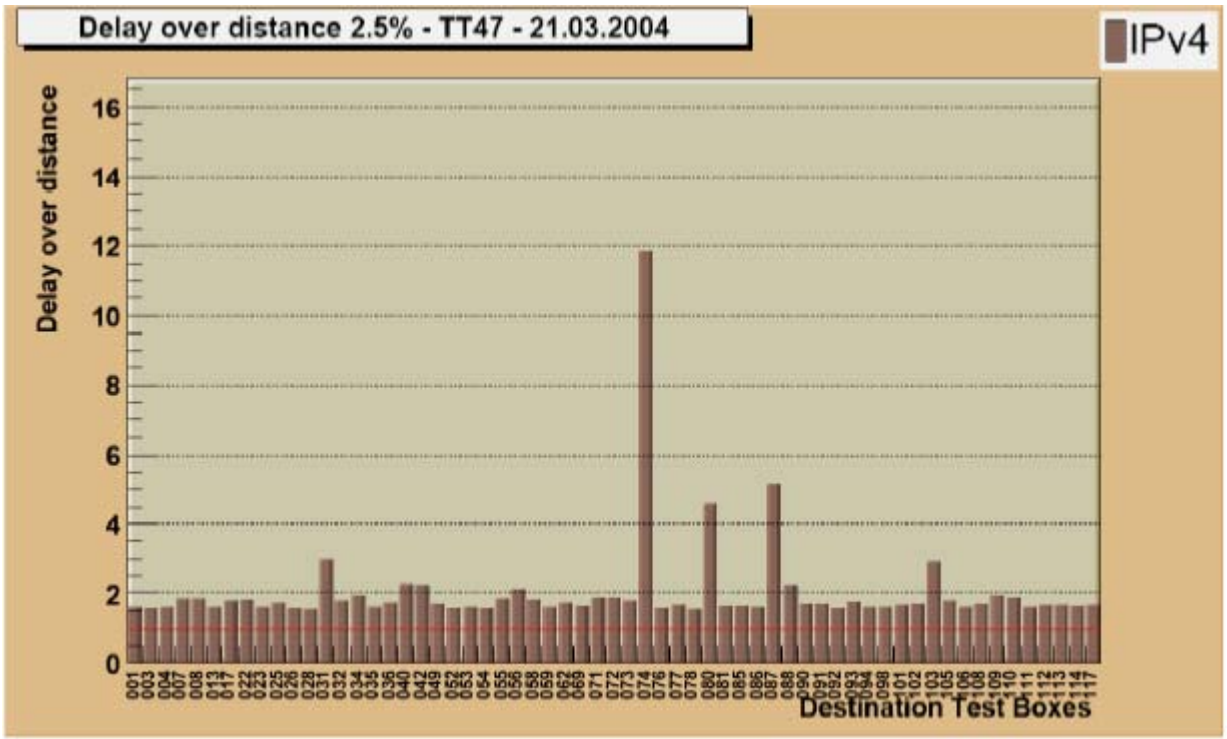
- Ratio v4/v6 delay, average over all boxes

IPv4/v6

- Notice jump in December
- Work backwards:
  - Look at ratios for individual paths
  - Look at delays on individual paths
  - Identify the problem
- Proof of concept for this algorithm in Michael's thesis
- Needs further study

Percacci Numbers

- Minimum Delay/Delay in fibre for shortest path
- Expect value of 1…2
- Plot by source and target



Percacci Numbers

- Look at the 5 peaks plus traceroutes
  - .nz to .au via LAX
  - .nz to .jp via LAX and NY (twice)
  - .nz to .us via Indian and Atlantic Ocean
  - .nz to .ch via Indian Ocean
- Looks promising to detect possible routing improvements
  - Some restrictions apply
- Needs further study

Alarm program

- Program to detect changes in delay and warn users by email
- 1999, no major updates since then
- Rewrite, new features

Alarm program improvements (external)

- Allow user to configure the number of times the program is run per hour
- Allow user to specify which boxes can generate an alarm (both incoming and outgoing).
  - Requires collecting/distribution of configuration, plus store in ttreg.
- Set alarms based on:
  - Median/spread as before.
  - Absolute change.

Alarm program improvements

- Include a dummy SNMP routine that is called when an alarm is set or reset.
- Make distinction between v4 and v6 network, histogram URL to point to the ipv4 or ipv6 network as appropriate.
- New methods to send alarms:
  - Email
  - syslog to a remote machine (set up by the host)
  - SNMP

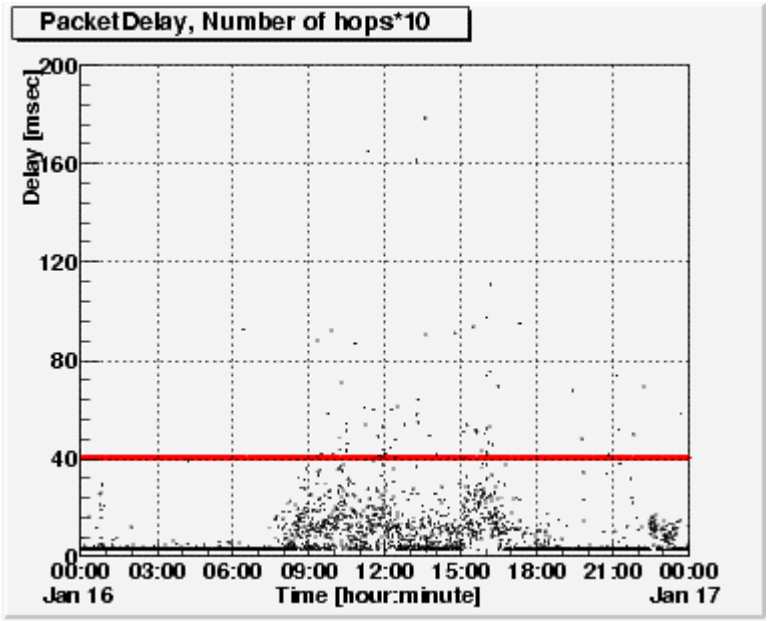
Alarm program

- Active since FILL IN DATE
- No major changes in # of alarms

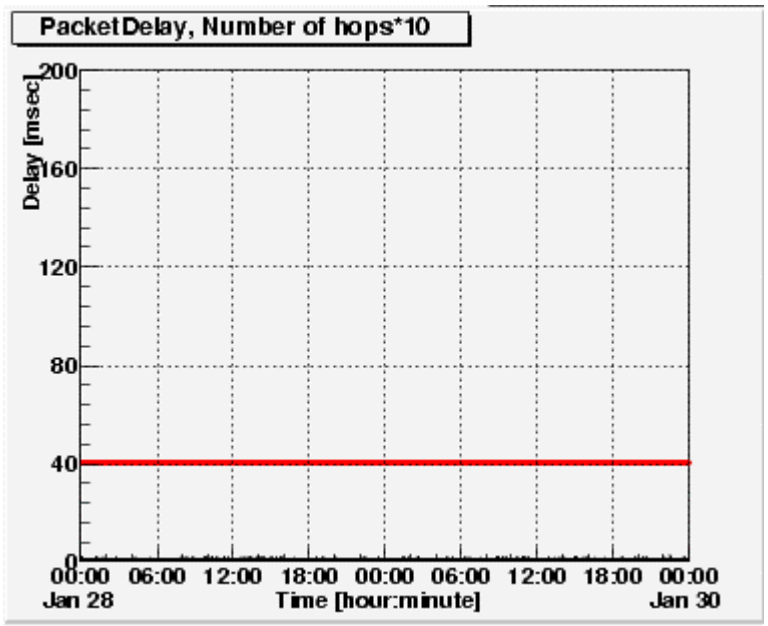
RIPE Meeting Network

- New fiber installed just before RIPE47
- Installed TB in Krasnapolsky
- First results, not yet conclusive
- TB now part of the standard RIPE mtg setup

RIPE41



RIPE47



- Absolute delays lower
- No saturation during the day
- Some unexplained packet losses
- Routing to academic sites not optimal due to late insertion of route object

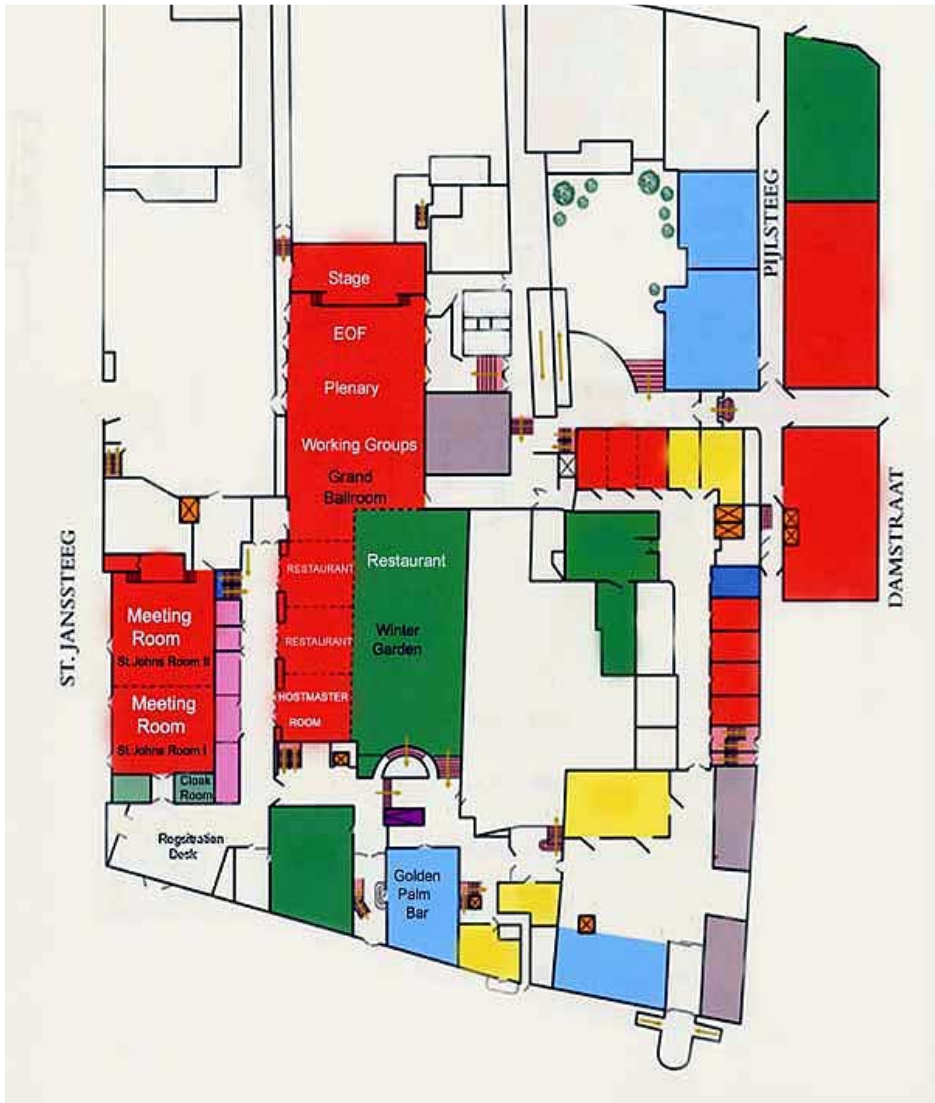
Plans (now – RIPE49)

- Internal restructuring

- Update website
- OWAMP
- Percacci numbers
- IPv4/IPv6 performance
- Bandwidth

Demo

- Test Drive
  - TTM
  - DNSMON
- Help available:
  - Wednesday May 5
    - 14:00-18:00
  - Thursday May 6
    - 9:00-11:00



Questions