Monitoring latency and jitter with TimeMap

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On behalf of GN4-3 WP6 T1 Team

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Public

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GÉANT
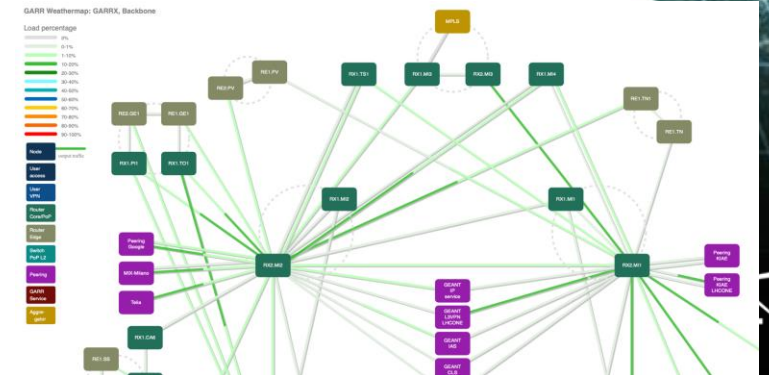Networks · Services · People

Why TimeMap?

- The real time applications are sensitive to jitter within the network

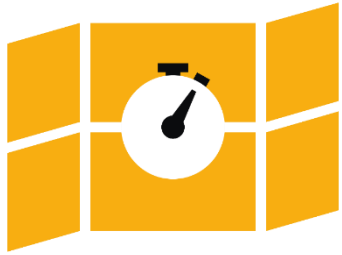## it may be nice…

Or lots of stop & go

- Current weather maps are useful for bulk data transfer

TimeMap

- TimeMap is a free tool (MIT license) to measure latency & jitter
- Measure latency (RTT) & jitter on a per segment basis
- Main users: NOCs operators, Real time applications end users

- You will find
  Rerouting effects
  RTT trends and drift
  Anomalies and others
  etc ...
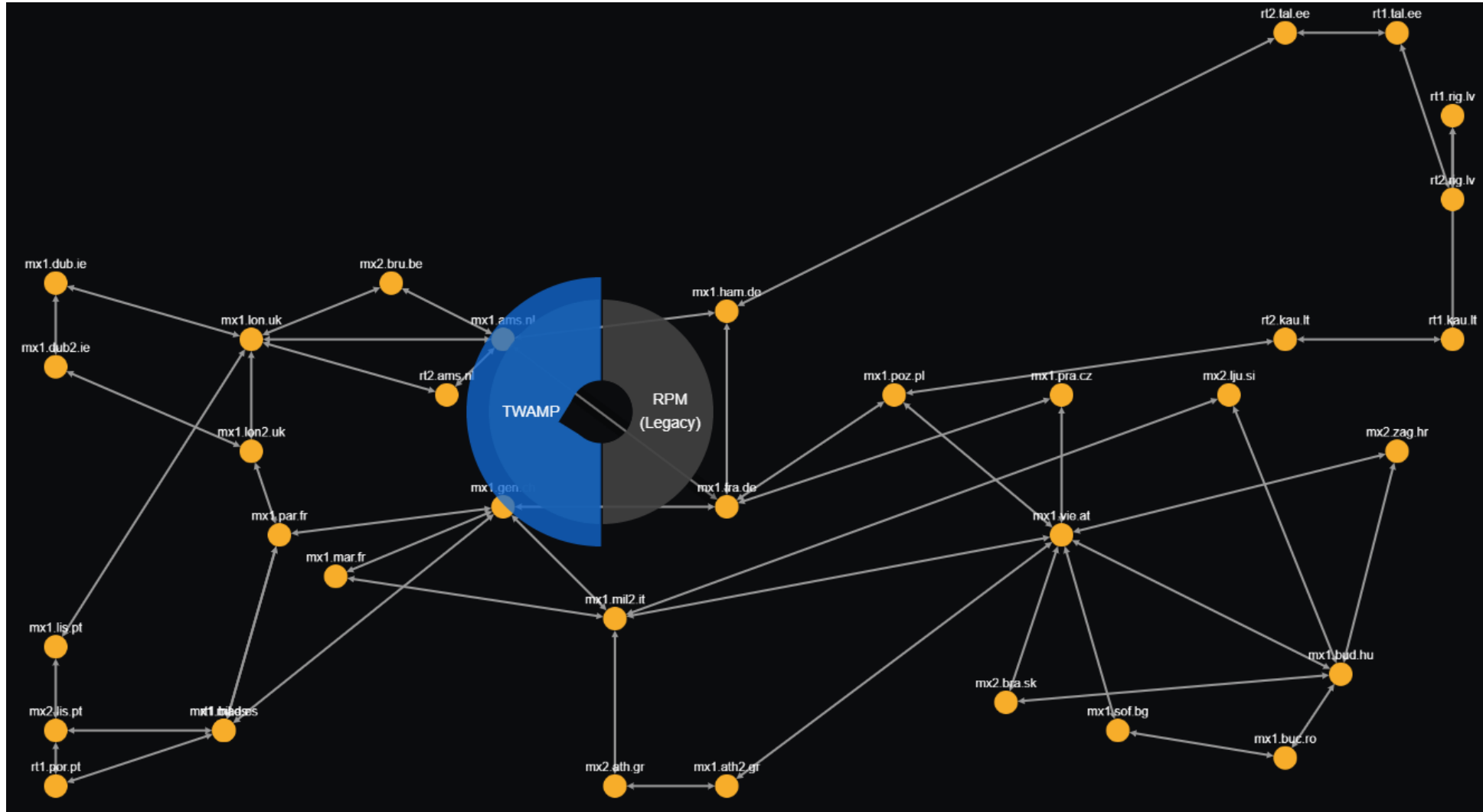
By GN4-3WP6-T1

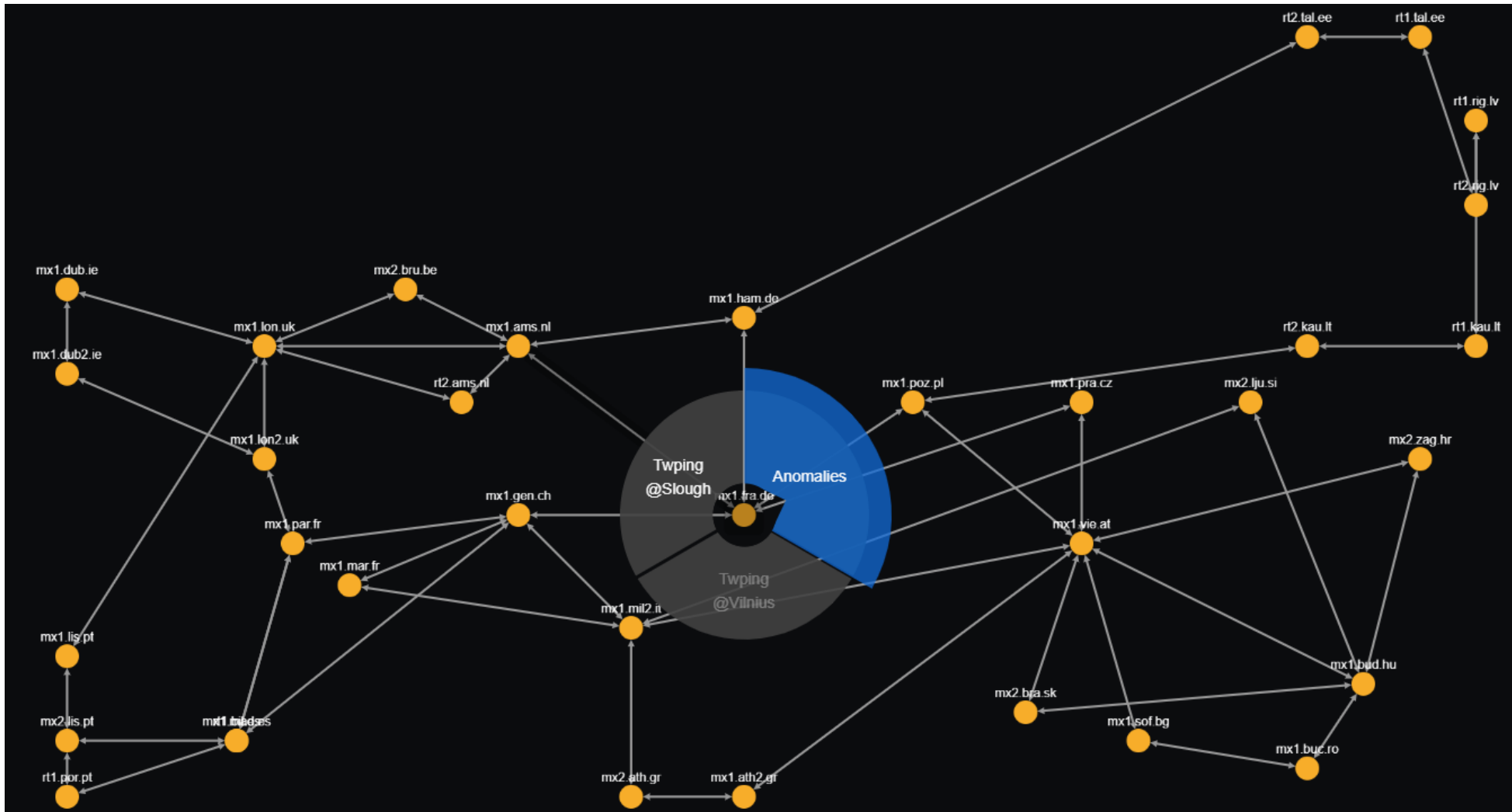**https://gitlab.geant.org/gn4-3-wp6-t1-lola/timemap_public**
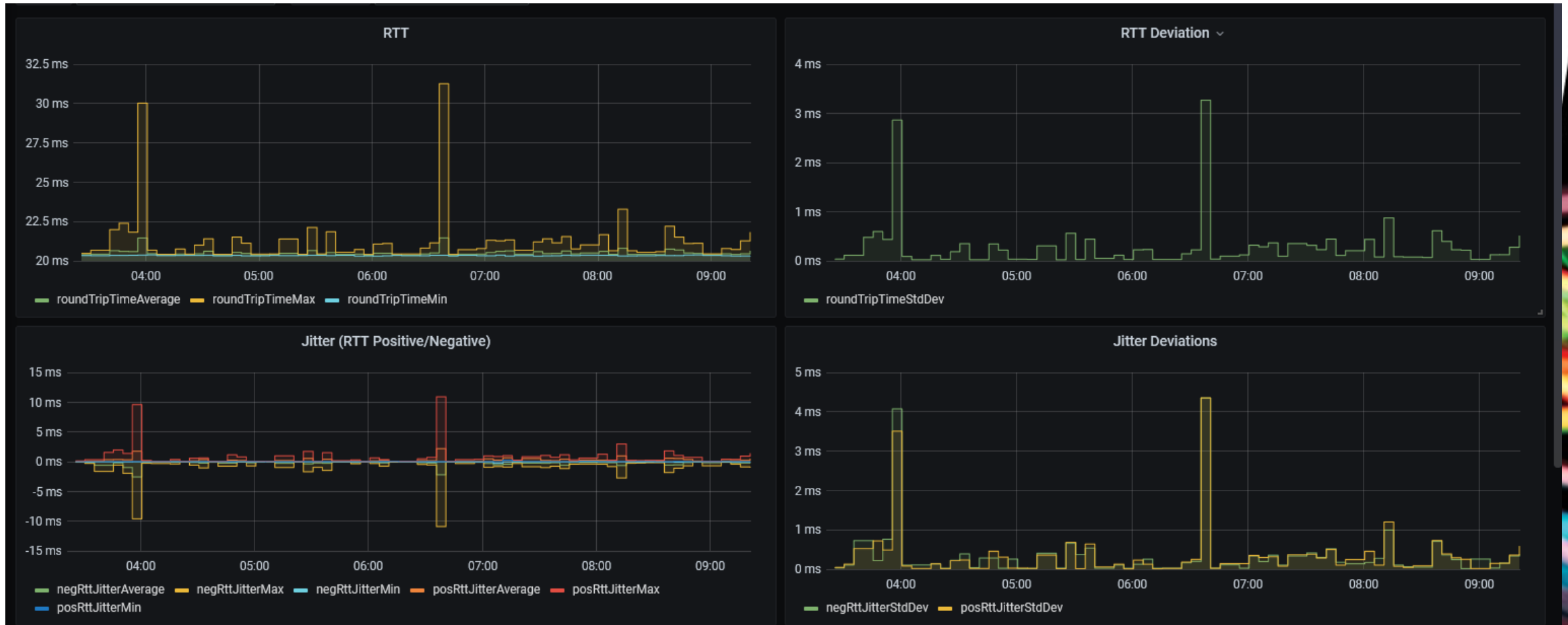
Anomaly Detection
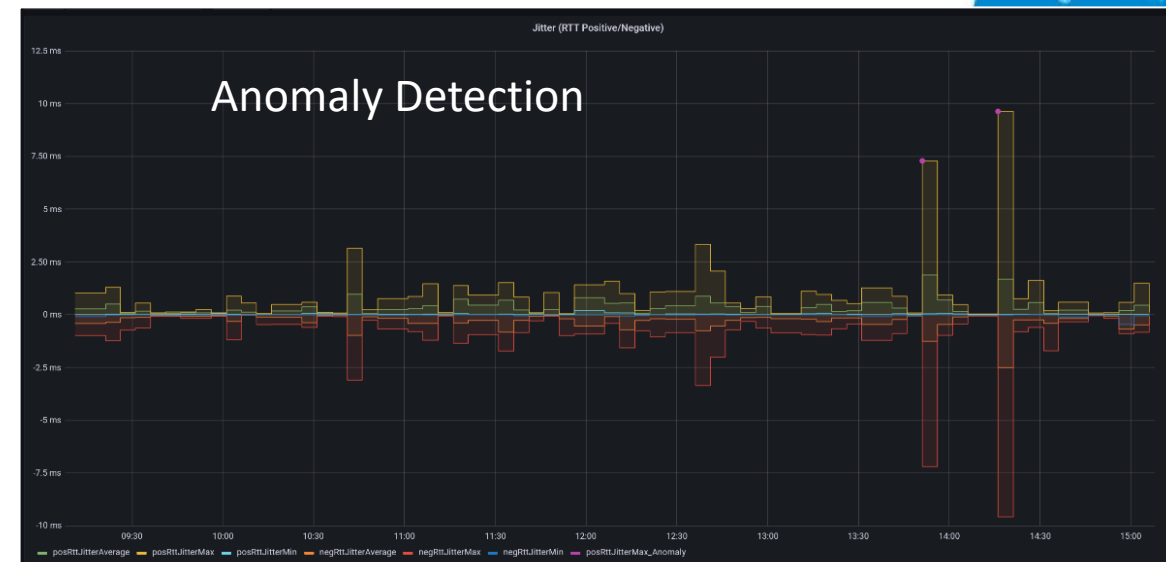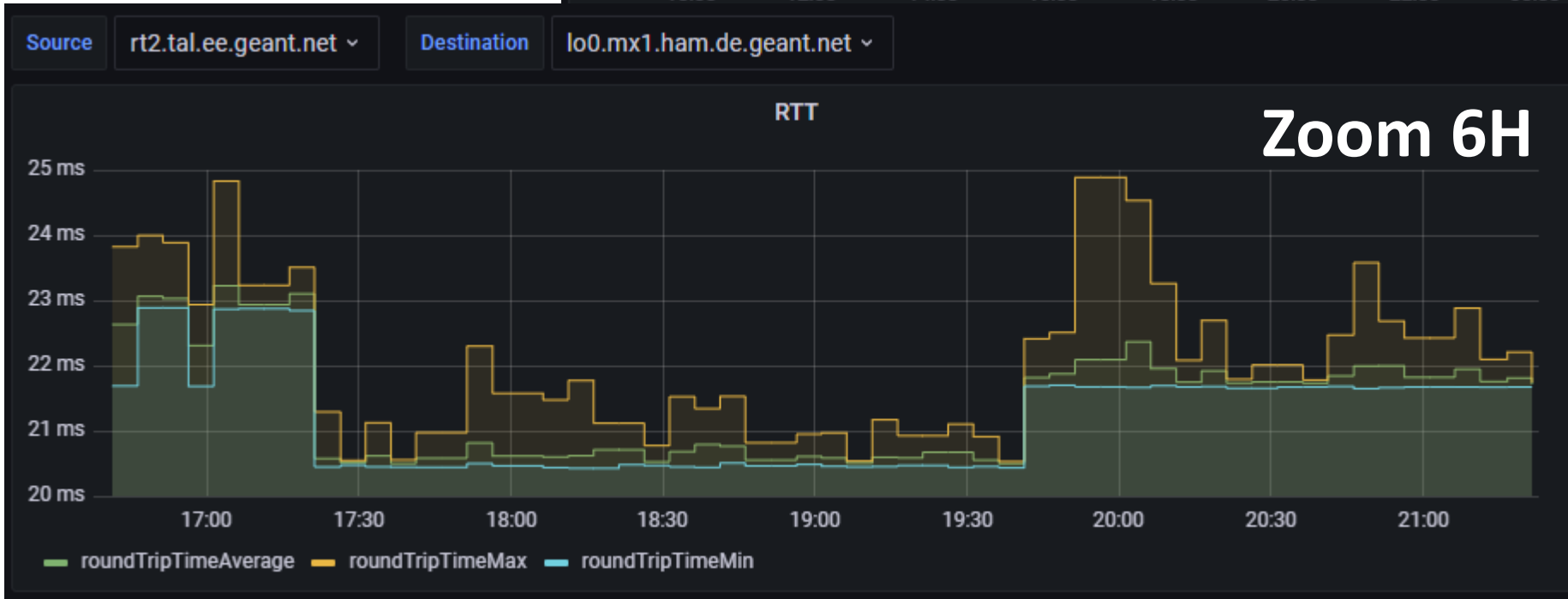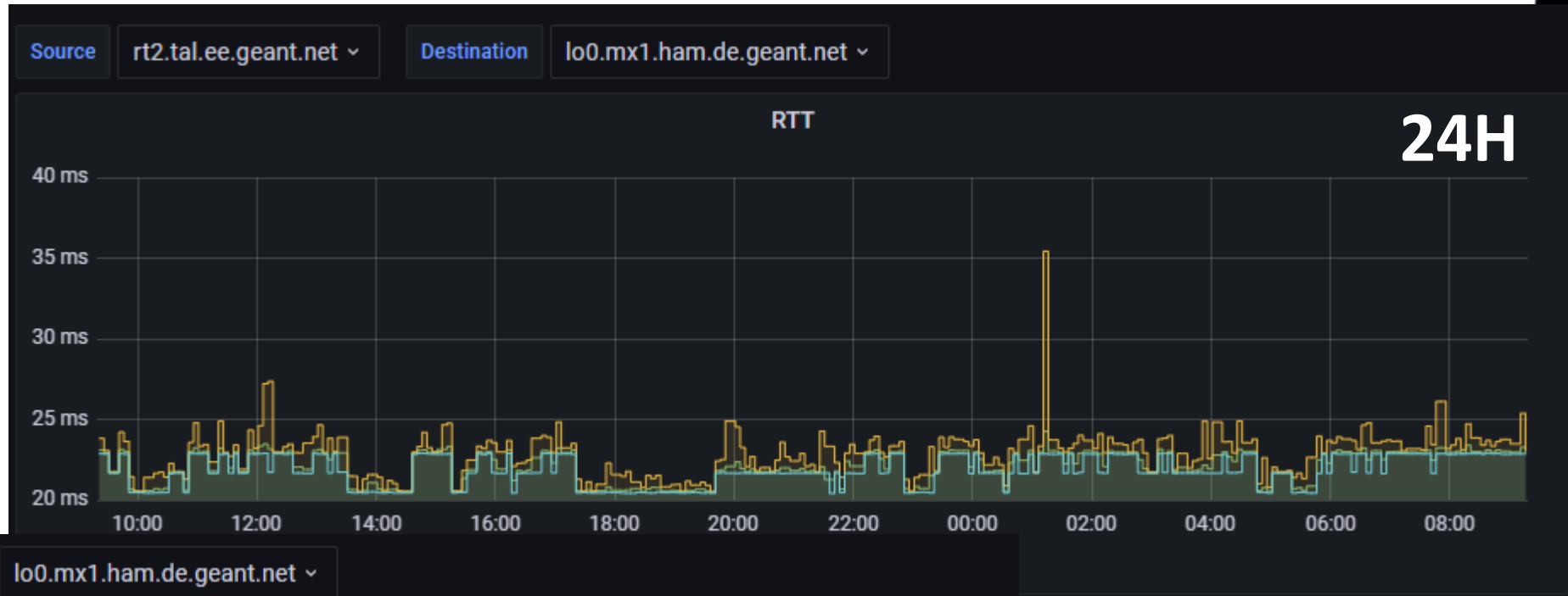
TimeMap

- Based on TWAMP (RFC 5357)

TimeMap

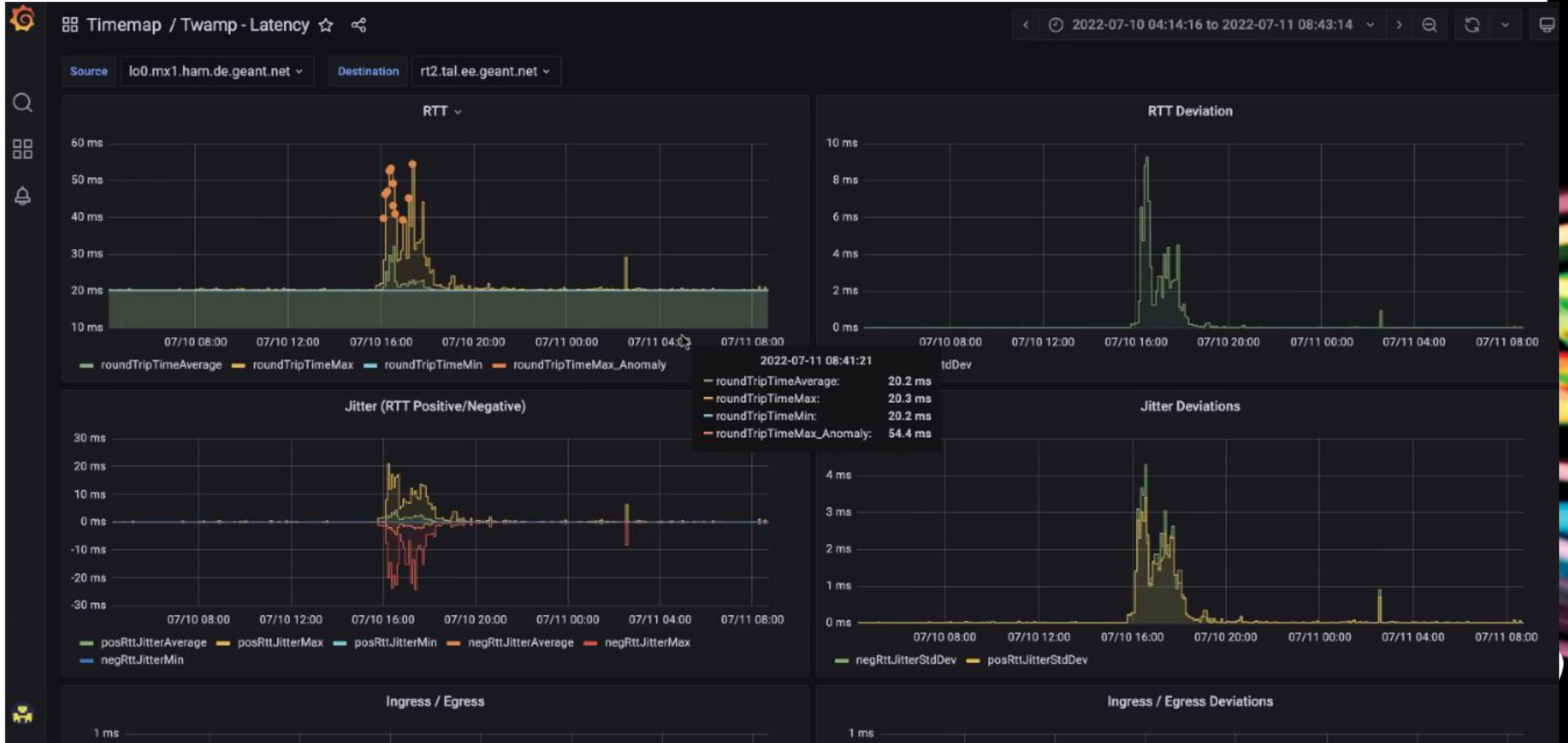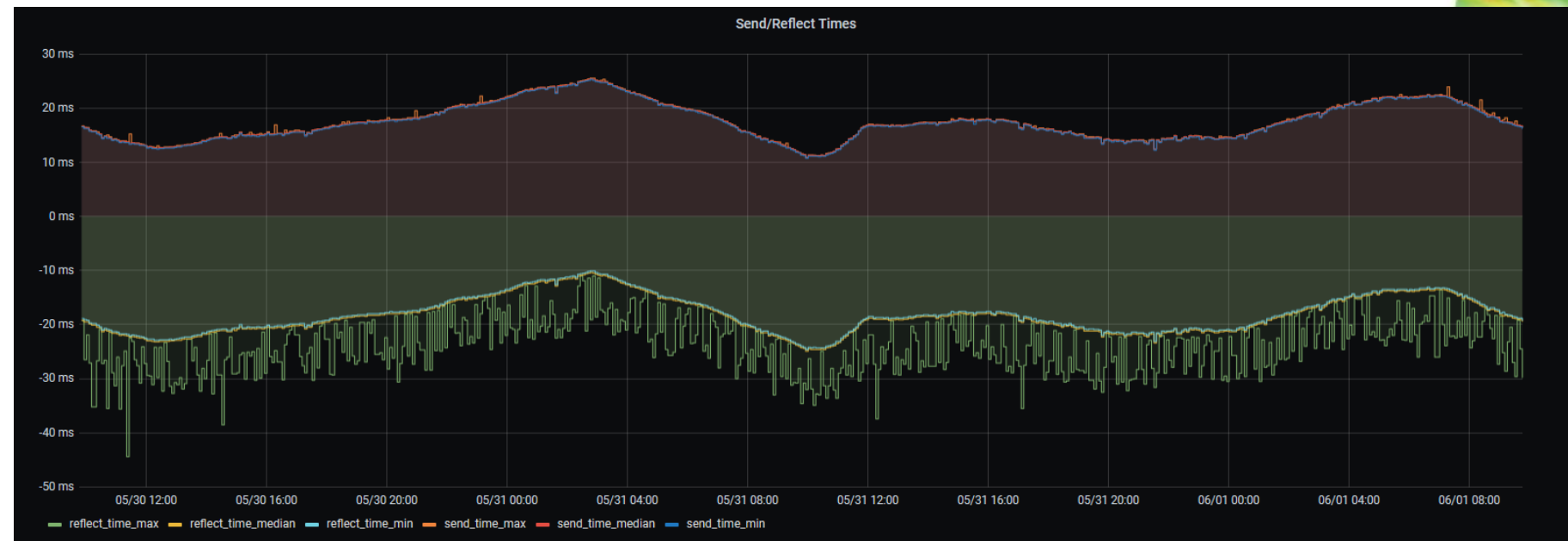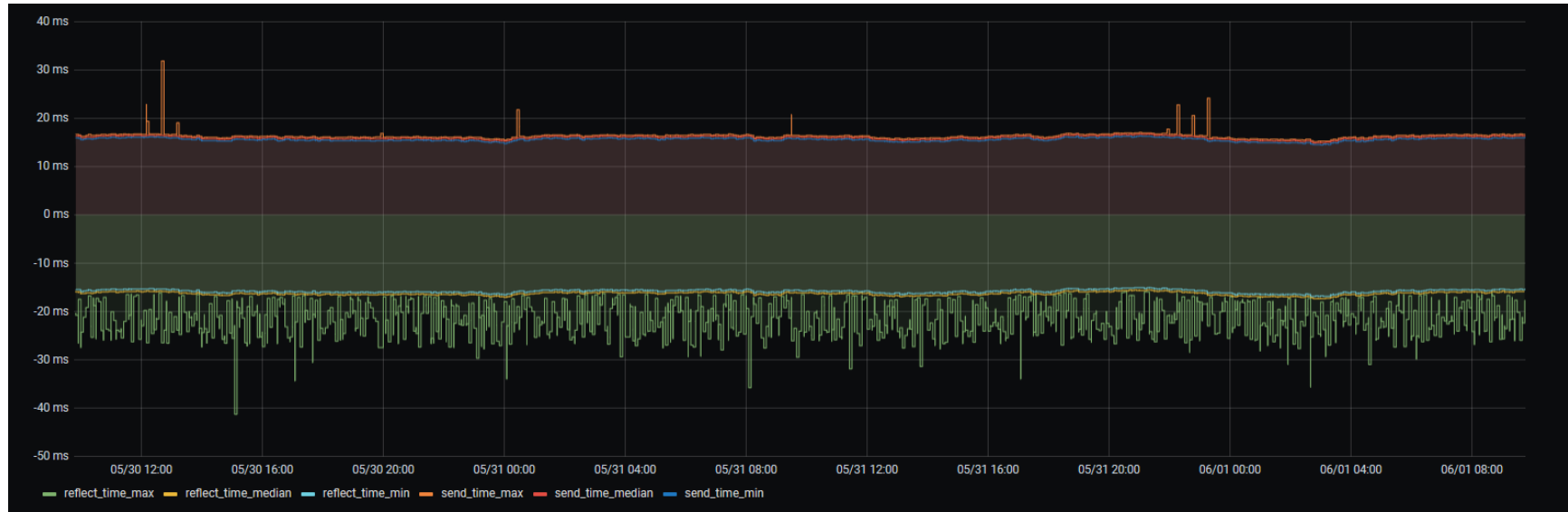# TimeMap useful examples: periodic events

TimeMap useful examples: rerouting

This clue must be corroborated by other elements
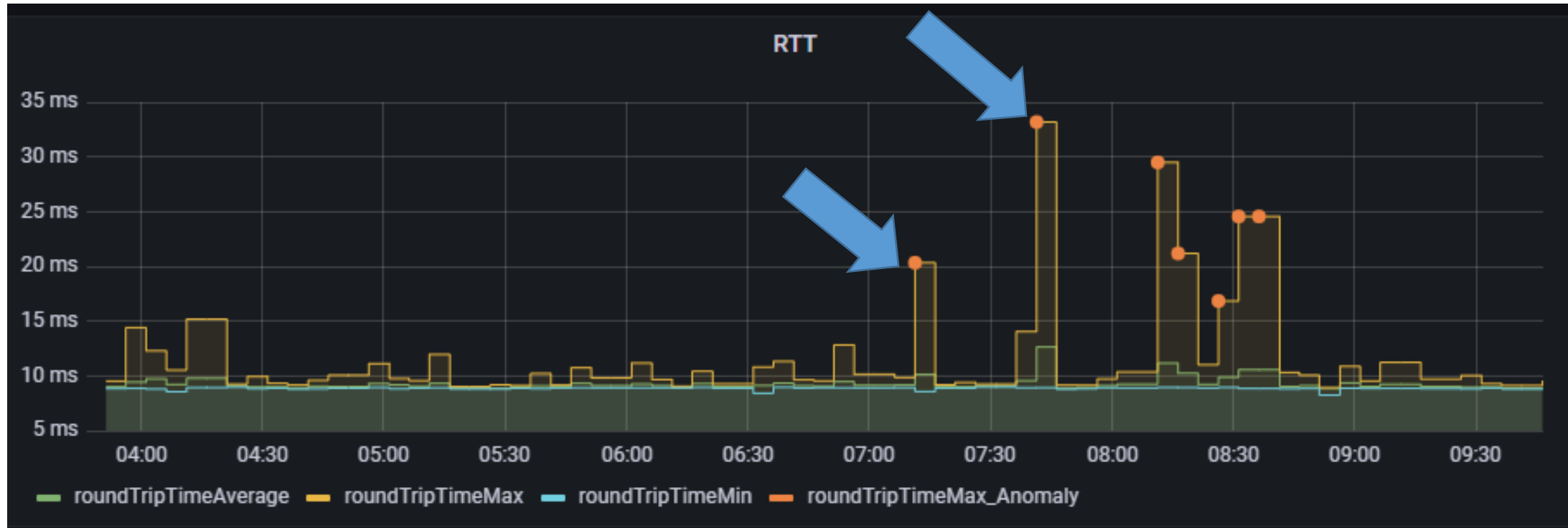(incident ticket, etc.)

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TimeMap useful examples: «non-identified event»

TimeMap useful examples: trends

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Anomaly Detection (AD) in TimeMap

Conclusions

- Easy and quick installation (modular)
  - https://gitlab.geant.org/gn4-3-wp6-t1-lola/timemap_public
  - https://wiki.geant.org/display/gn43wp6/TimeMap+Service
  - Contact the team by email: timemap@lists.geant.org

- TimeMap is officially a new service in production
  - GN5-1

- Already installed by GÉANT operation and collecting data from GÉANT backbone
  - https://timemap.geant.org

Next steps

- More deployments @NRENs
  - TimeMap @ GARR
  - DeIC is assessing TimeMap
- Alerting & Events correlation
- New usage
  - Inter-Domain
  - Measure not only 1 segment (a path or a part of path)
  - Improve anomaly detection for rerouting, clock drifting, …
  - Characterize the behavior model for a link thanks to AI (ambitious)