

TimeMap

Anomaly detection su
latenza e jitter per il debug
della rete

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GARR & GN5.1 WP6 T3

TimeMap, cosa è

<https://timemap.geant.org/>



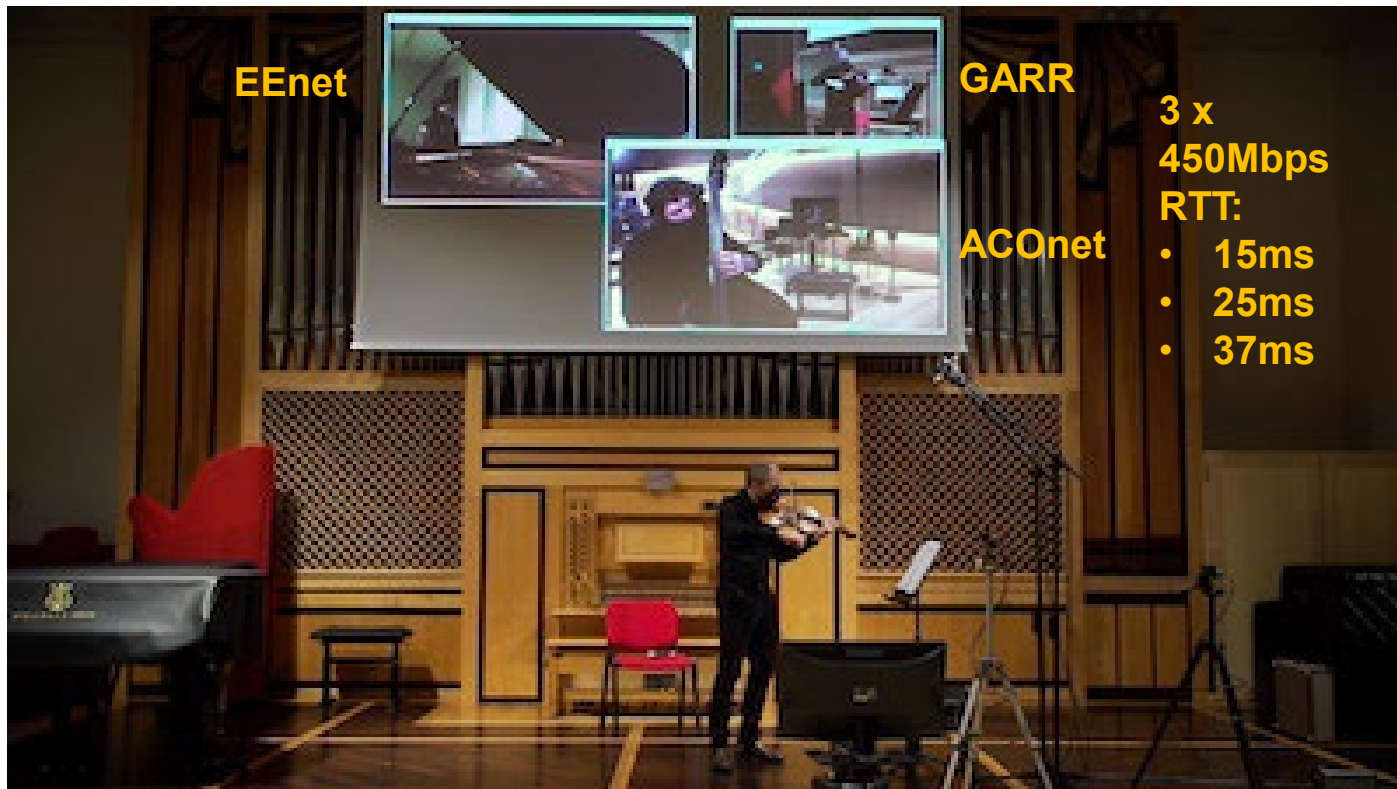
TimeMap

- GN5.1 WP6 T3, Network Development – Monitoring
- Troubleshooting su latenza e jitter per sessioni **LoLa**
 - Storicizzazione delle misurazioni attive, ~1 anno di dati
 - Segmentazione Gèant, NREN, campus
- Soluzione da adattare, non prodotto
- Consenso e competenza su telemetria & analisi streaming

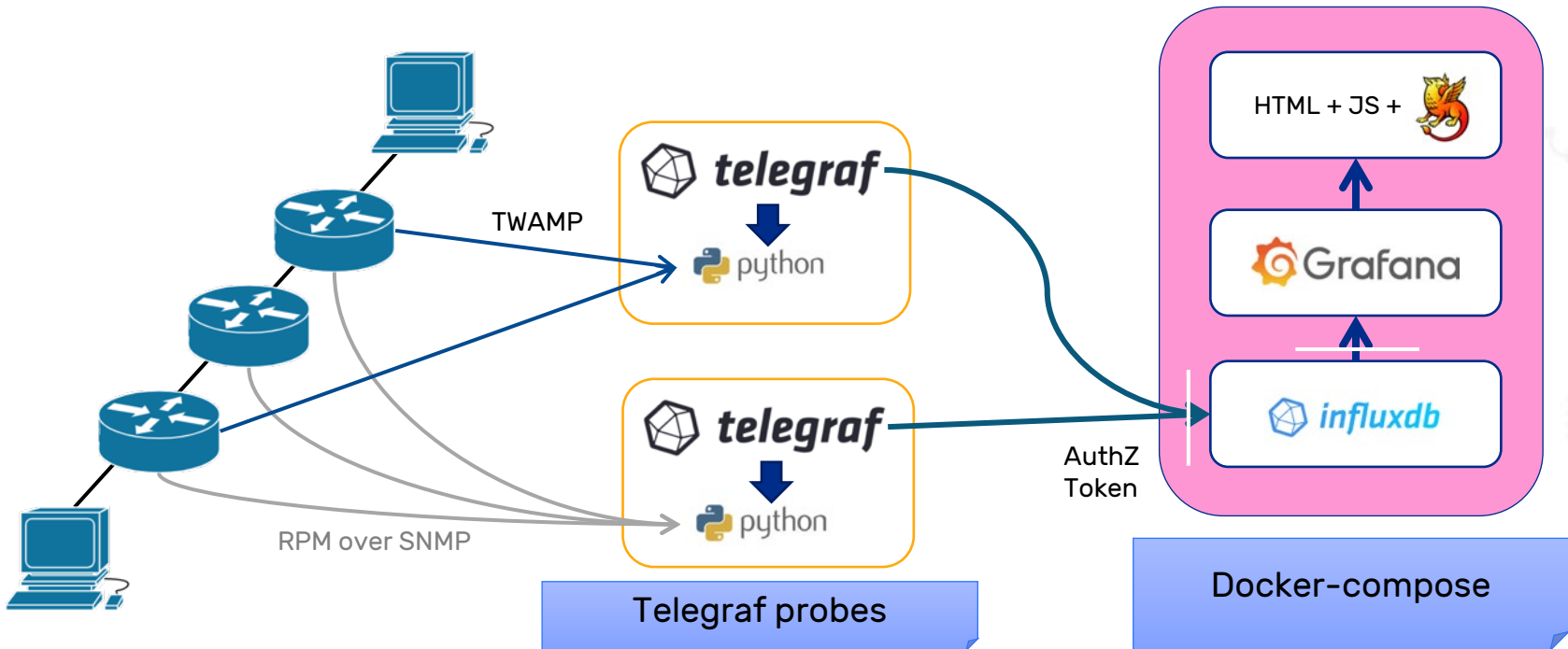
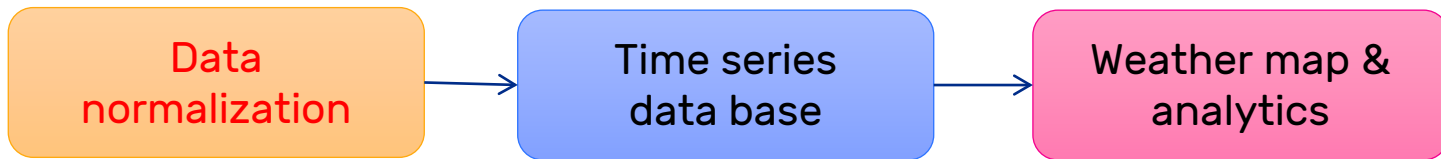
Prevedibilità del setup prerequisito essenziale



Incognito distruttivo → Occhio vigile di Timemap

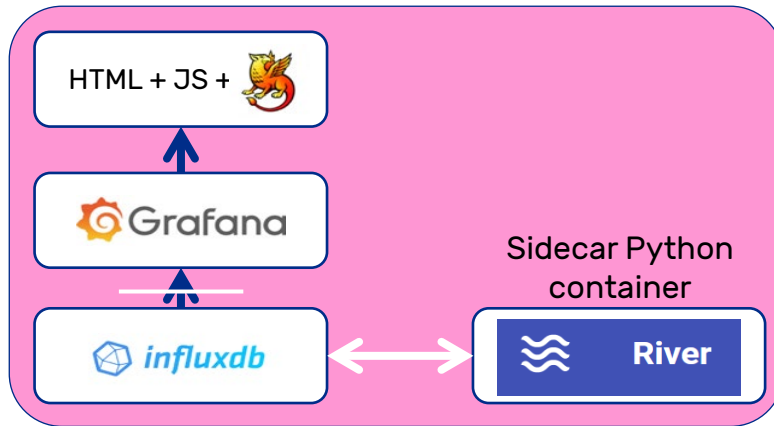


Come è fatta TimeMap



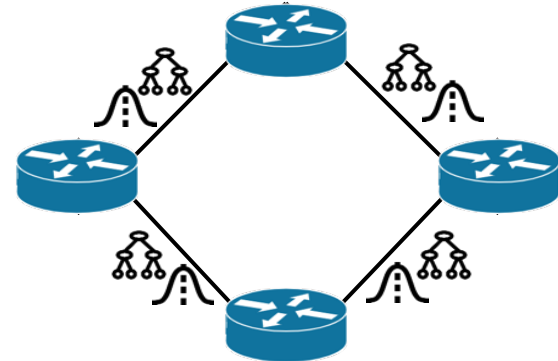
Come è fatta TimeMap: Anomaly Detection

Streaming Machine Learning in Python

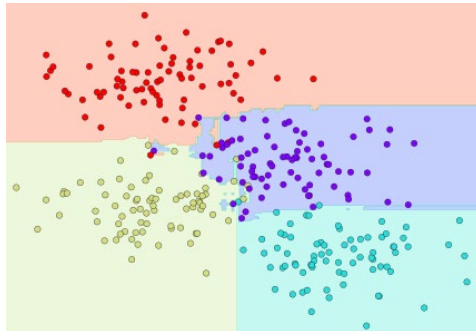


<https://riverml.xyz>

Network topology and ML models



Half-space Random Trees



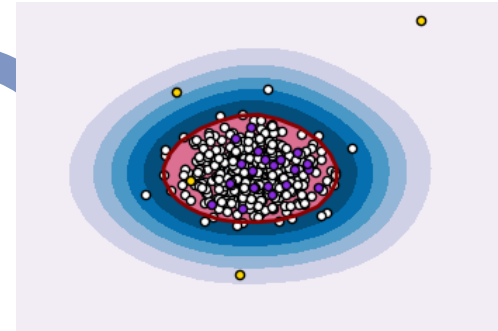
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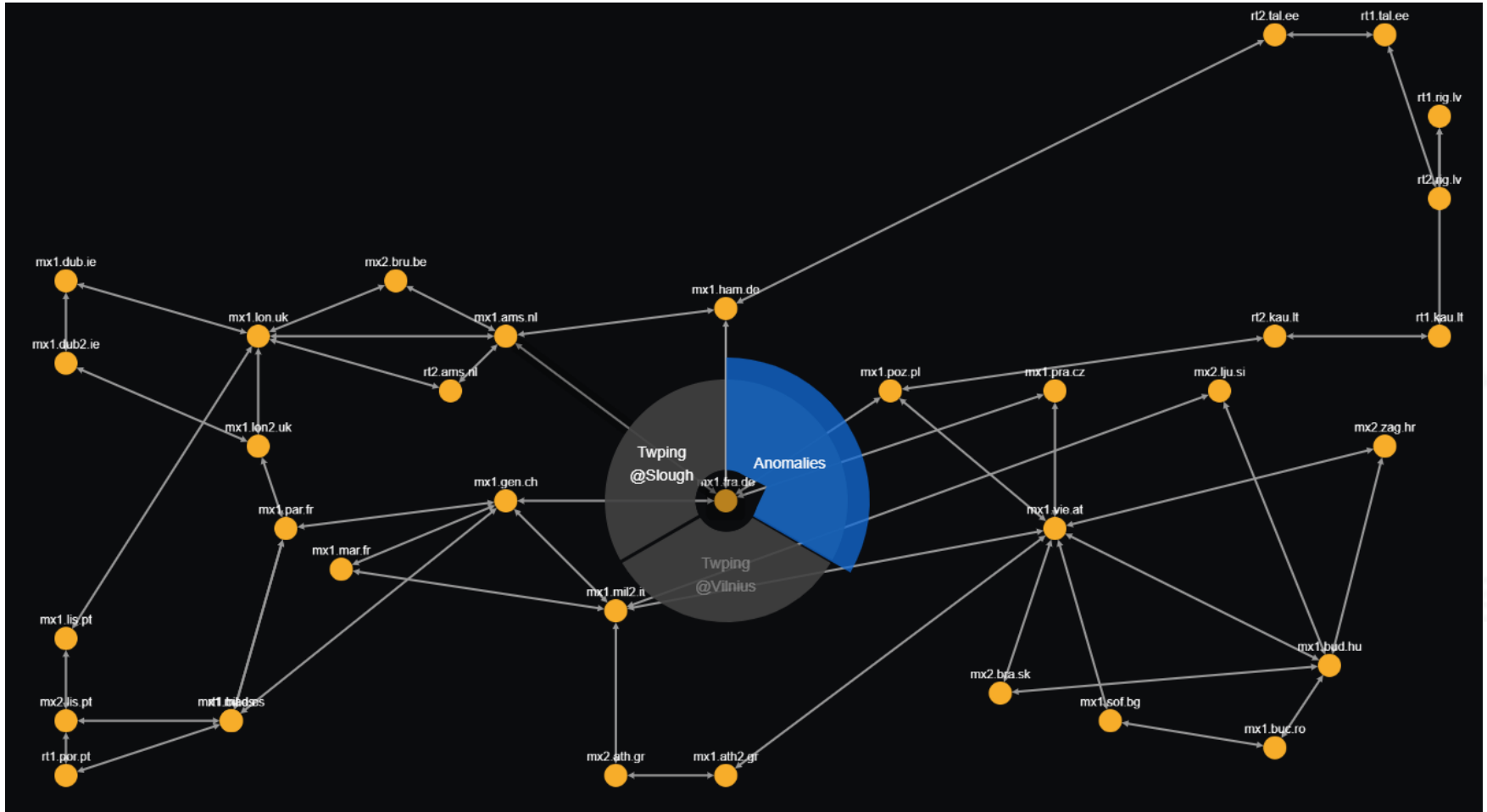


Model bagging

One-class Support Vector Machine

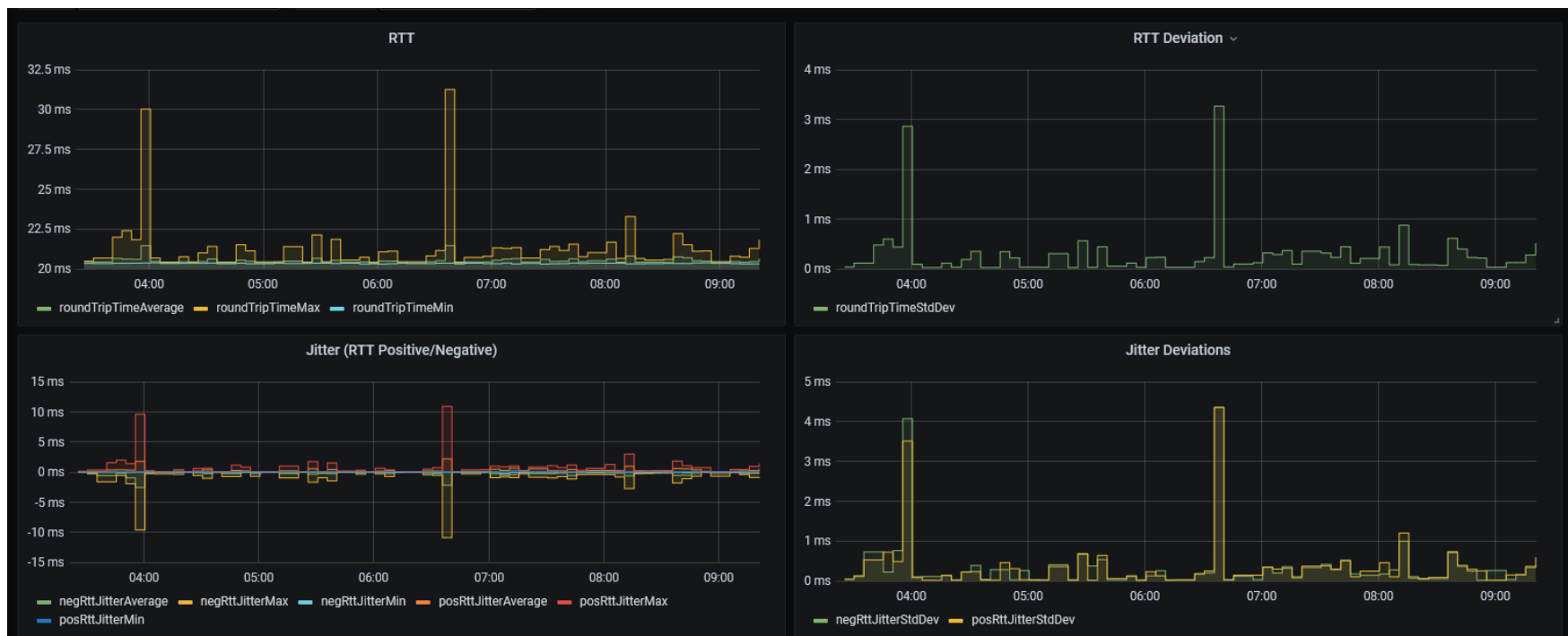


Web GUI minimale



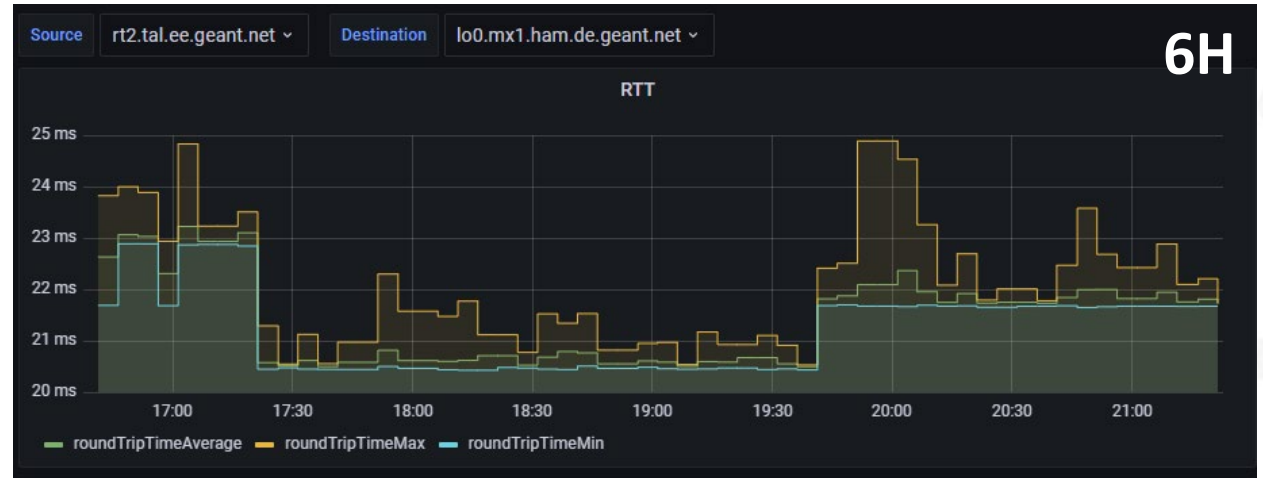
Cosa si è scoperto con TimeMap su Géant

- Eventi periodici

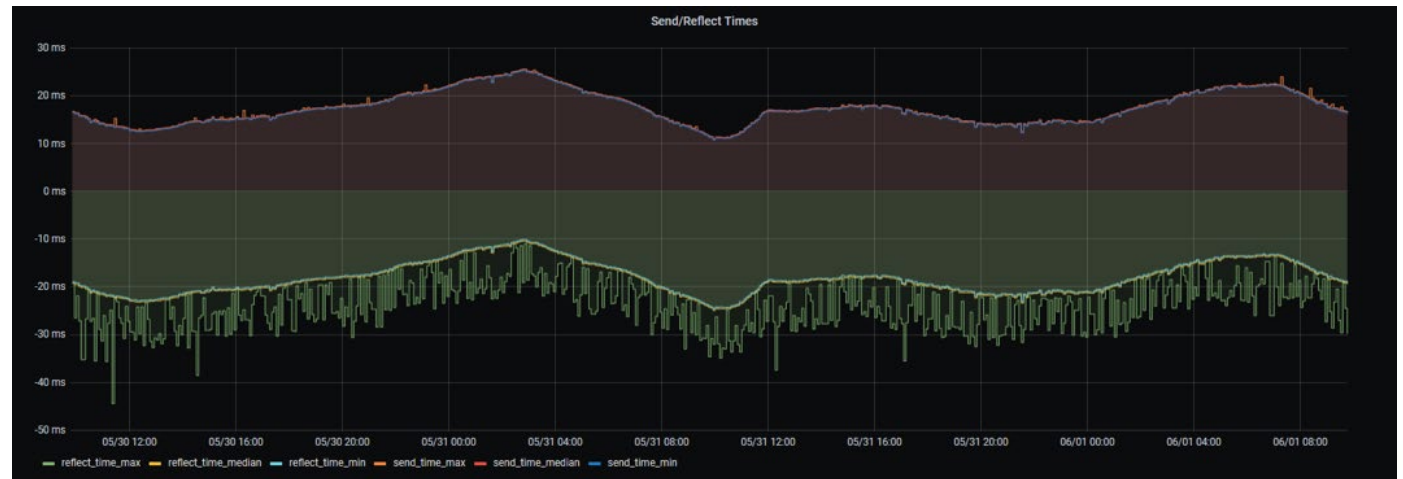


Cosa si è scoperto con TimeMap su Géant

- Scalini re-routing

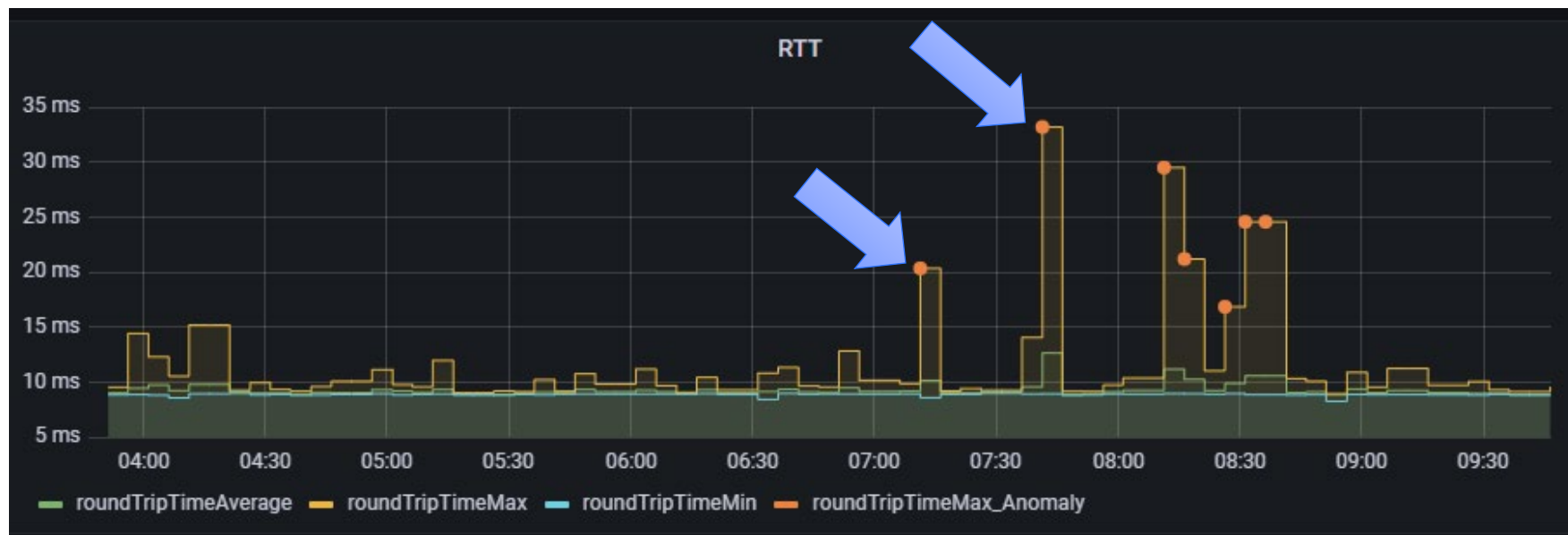


- Clock drift



Cosa si è scoperto con TimeMap su Géant

- Anomalie identificate automaticamente



TimeMap e GARR-T

- Monitoring GARR-T **compatibile** con TimeMap
- Primo uso avanzato dei dati
 - Anomaly Detection open source e davvero vendor neutral
 - Complessità accettabile, ~200 linee di Python
 - Oltre gli Alert Grafana base, **analisi predittiva**
- Possibile terreno per innovazione e **collaborazione**

https://gitlab.software.geant.org/gn4-3-wp6-t1-lola/timemap_public

WORK
SHOP
GARR
2023

**NET
MAKERS**

Grazie

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