LEVEL UP SKYLIGHT SUMMIT 2023

Insights from a Skylight Super User

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bouygues TELECOM

ACCEDIAN

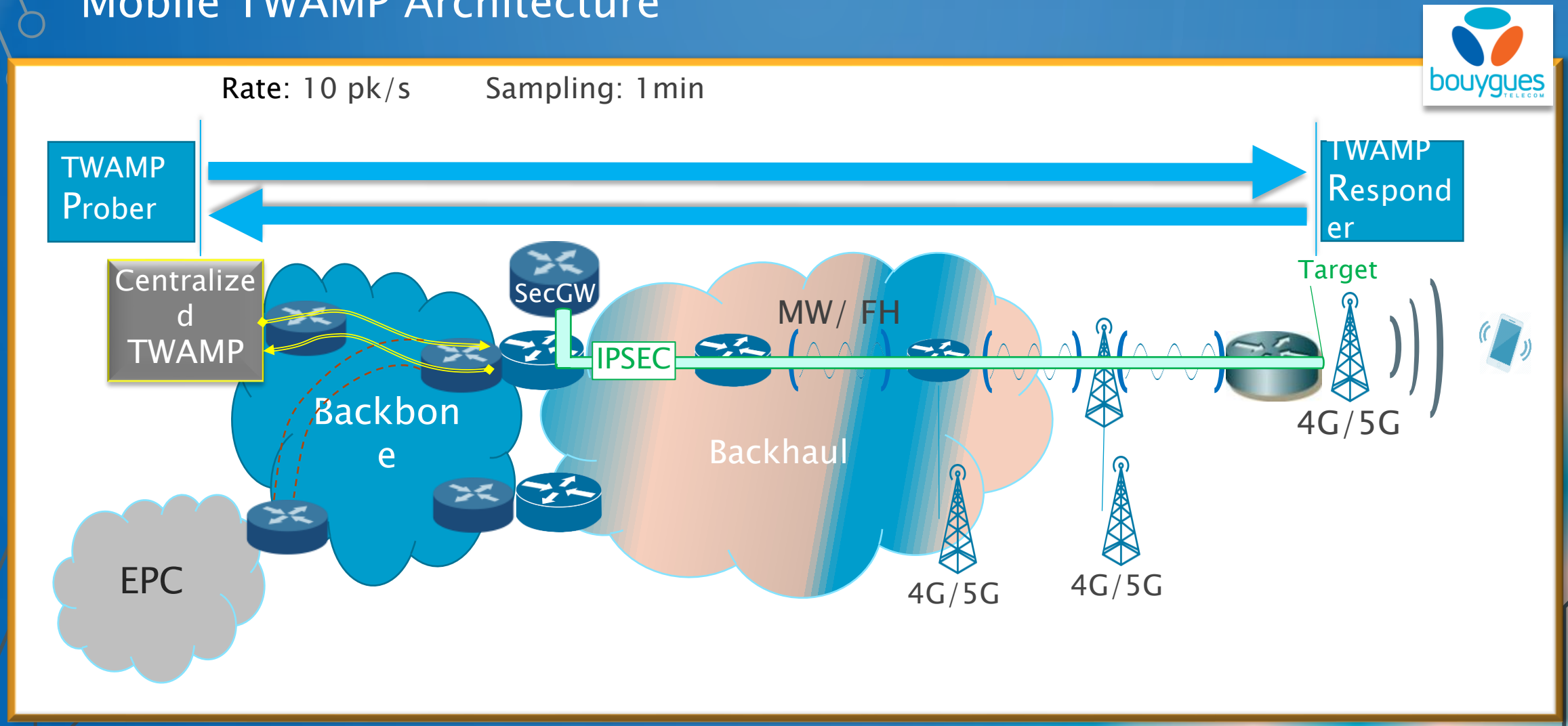
Confidential information of Accedian

SKYLIGHT @ BYTEL – 1/2

- Initial deployment in 2017 – 15k sessions targeting 4G mobile
- Centralized architecture
- Early adoption of Analytics
  - Over 150 active users
  - Enriched with 78 metadata
  - Topology
  - GPS coordinates
- Skylight TWAMP performance monitoring in 2023 targets: Mobile 4G&5G, Fixed Broadband, Mobile Backbone and Enterprise Backbone w/ pt2pt NFV
- Almost 90k TWAMP sessions

SKYLIGHT @ BYTEL – 2/2

Mobile TWAMP Architecture



THE NECESSARY INGREDIENTS :

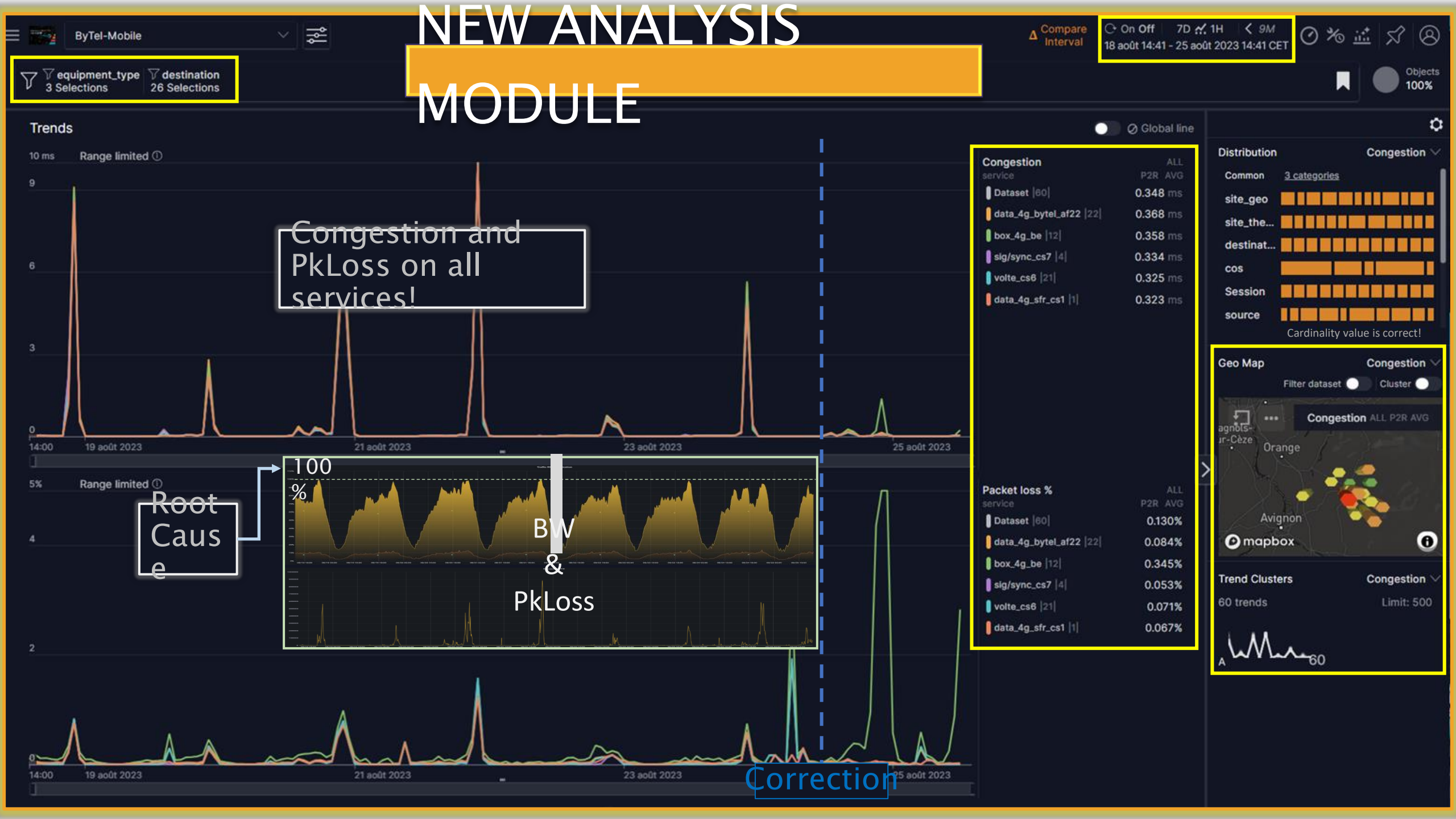
- Scalable launch platform to send TWAMP sessions
- Efficient roll-out of TWAMP Responders (built-in or with SFPs)
- Clear and precise vision of target NEs and which services/QoS need to be tested
- Confidence in the quality and pertinence of the results

Ability to visualize and analyze PM results =>

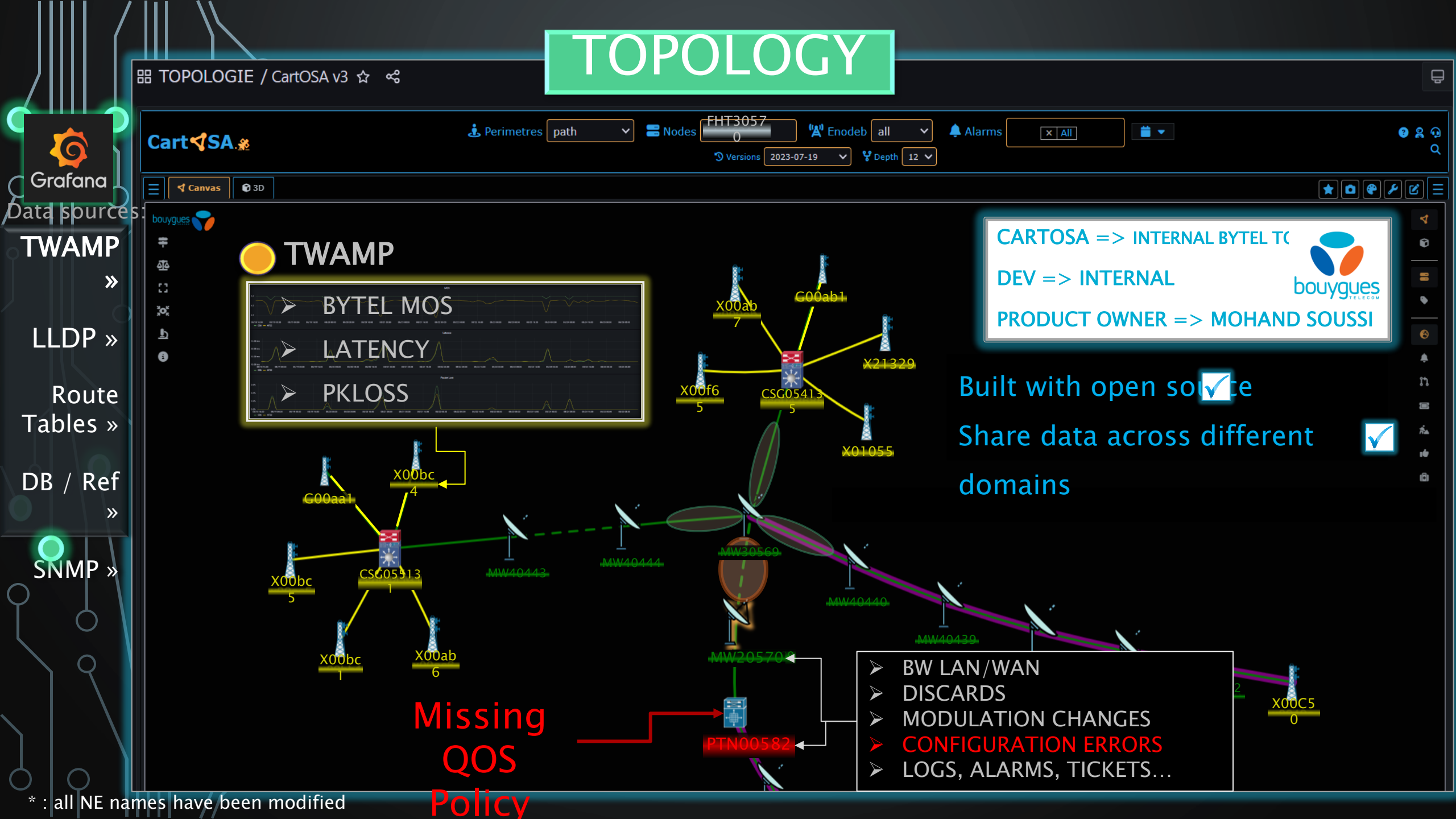
Integrate Skylight into your ecosystem

- Develop API tools and scripting to update target
- Send PM results to other internal tools
- Invest on software development to explore specific data science capabilities

NEW ANALYSIS MODULE



TOPOLOGY



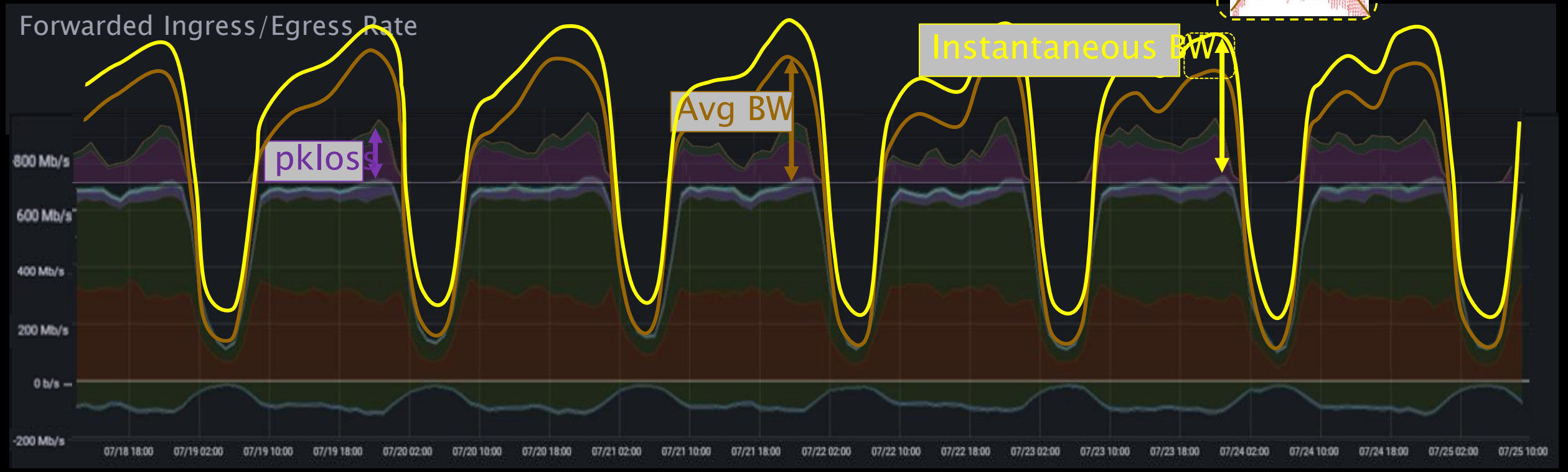
* : all NE names have been modified

BANDWIDTH & PKLOSS

- BW & PkLoss

Available for all interfaces within the backhaul network

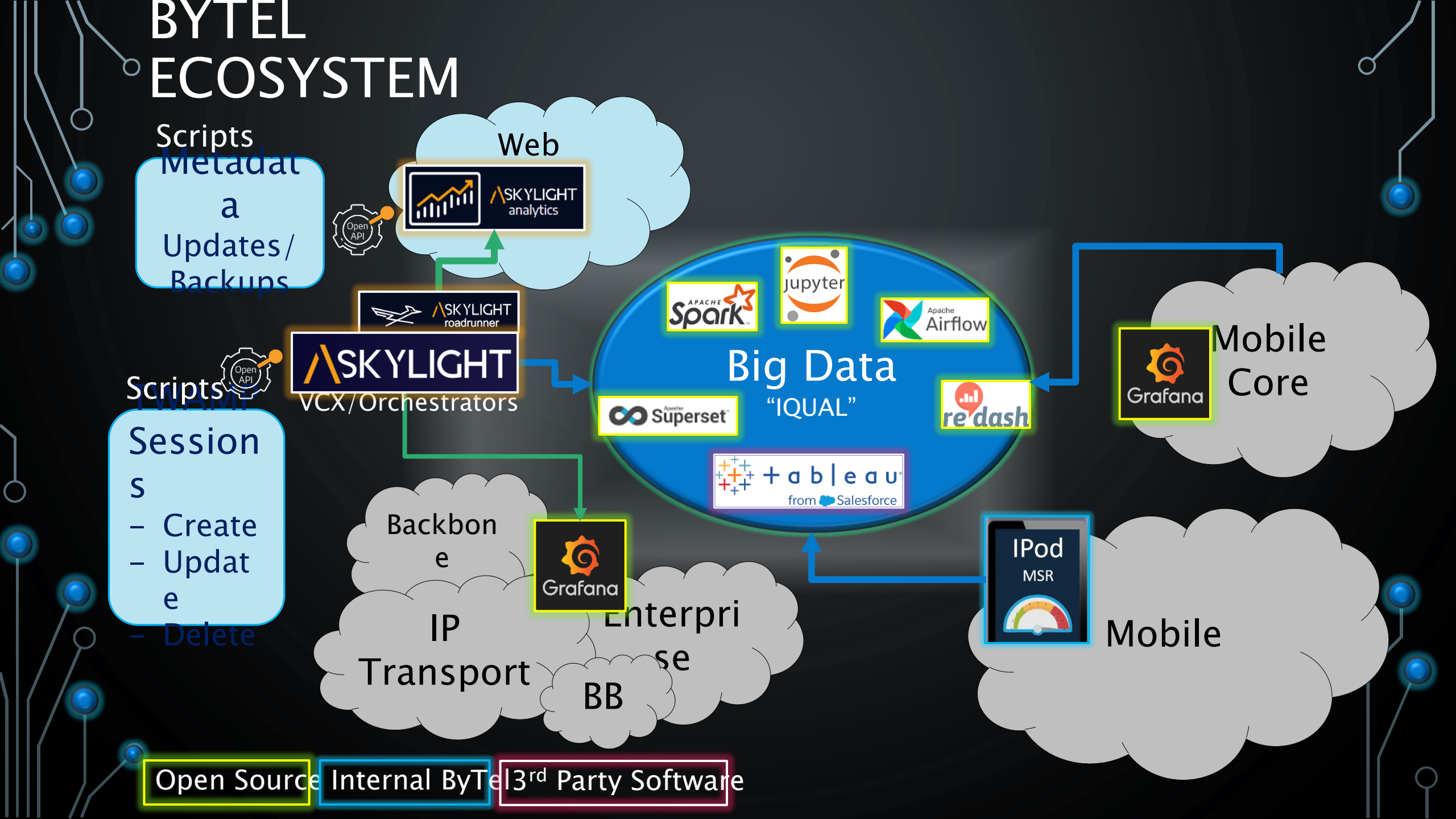
IF YOU SEE PKLOSS IT'S ALREADY TOO LATE!



Required BW = Current BW + PkLoss + Surpressed BW + Bursts

Waiting to confirm that BW curves have flattened or reached 100% is no way to guarantee network QoS.

BYTEL ECOSYSTEM



INNOVATE! – WHAT WORKED FOR US

CORRELATING TWAMP RESULTS WITH RADIO ALARMS & CLUSTERING

3 types of alerts calculated:

Daily Saturation Alert

Threshold : >2H with PkLoss > 0.5% and DelVarP25 > 2ms

- DBSCAN applied on **DelVarP25**, **signature** is unique which avoids fal s

Daily Packet Loss

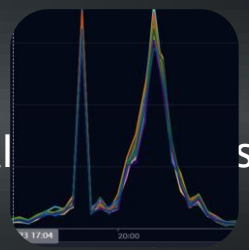
Threshold : >17Min with PkLoss > 5%

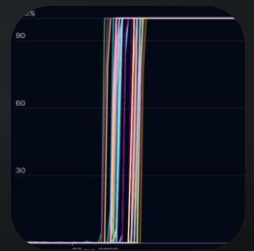
- DBSCAN applied on **PkLoss**, relatively effective but geographical data is used as an additional verification, to make sure cluster is coherent

Daily Unreachable

Threshold : >40Min with PkLoss > 50%

- DBSCAN applied on PkLoss, relatively effective but geographical data is used as an additional verification, to make sure cluster is coherent





SKYLIGHT Analytics

Analytics was instrumental in defining thresholds, optimizing DBSCAN sensitivity and making sure clusters were coherent and caused by a unique root cause.

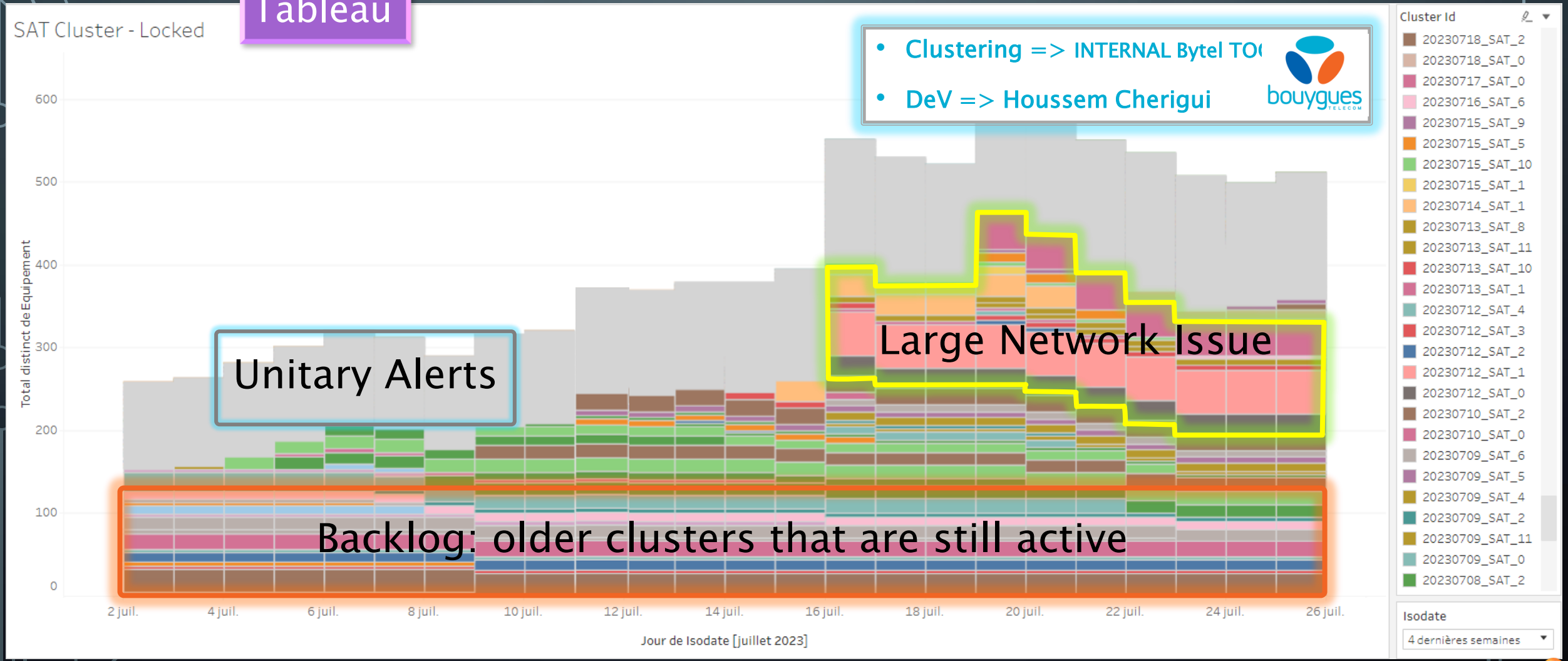
Bottom Line

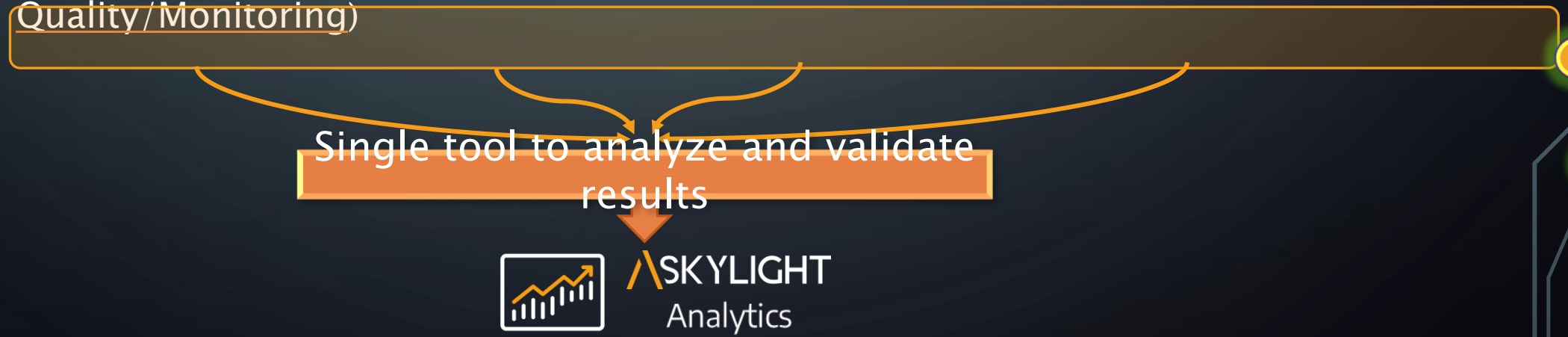
30-40% correlation => alert suppression => Cost Benefits (€)
Avoids investigating issues on radio nodes, caused by IP backhaul and under investigation.

INOVATE! – WHAT WORKED FOR US

VISUALIZING NETWORK SATURATIONS AS CLUSTERS

Tableau



MOVING FORWARD

- Keep Skylight integrated into the ByTel IT ecosystem
- Invest in Big Data, Data Mining and Data Science
- Key Objectives:
  - Reduce unnecessary investigations
  - Improve and rationalize our tool ecosystem
  - Let different business units integrate and develop new applications with Skylight results
- Keep Skylight Performance Analytics as our default tool to analyze PM results
  - (Network Engineering, Technical Support, Network Operations, Network Quality/Monitoring)