

Open RAN transport monitoring

Meet 4G and 5G low-latency targets,
and detect issues before they impact customers



In the age of 5G, insight into user experience is critical



Minimize
latency

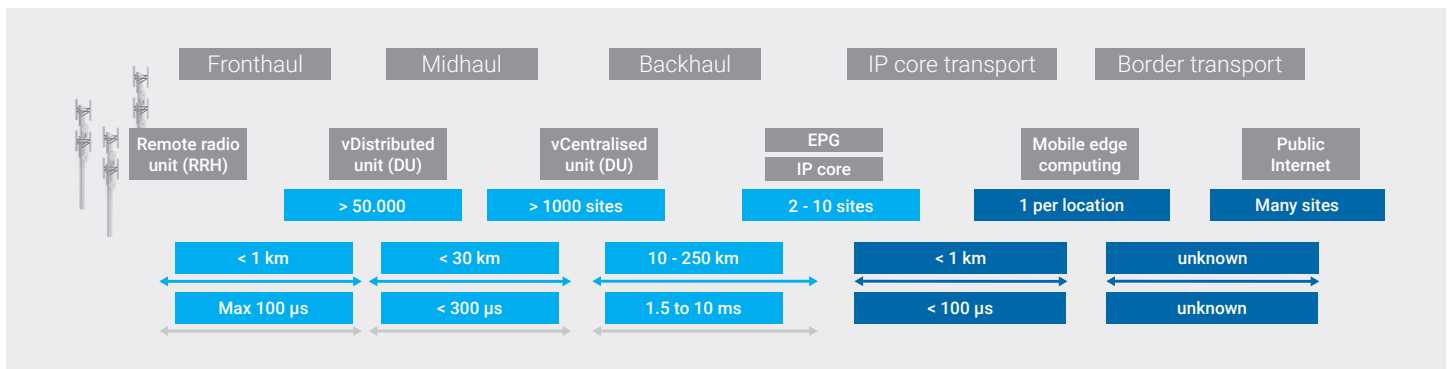


Meet latency
budget



Identify impact
of issues

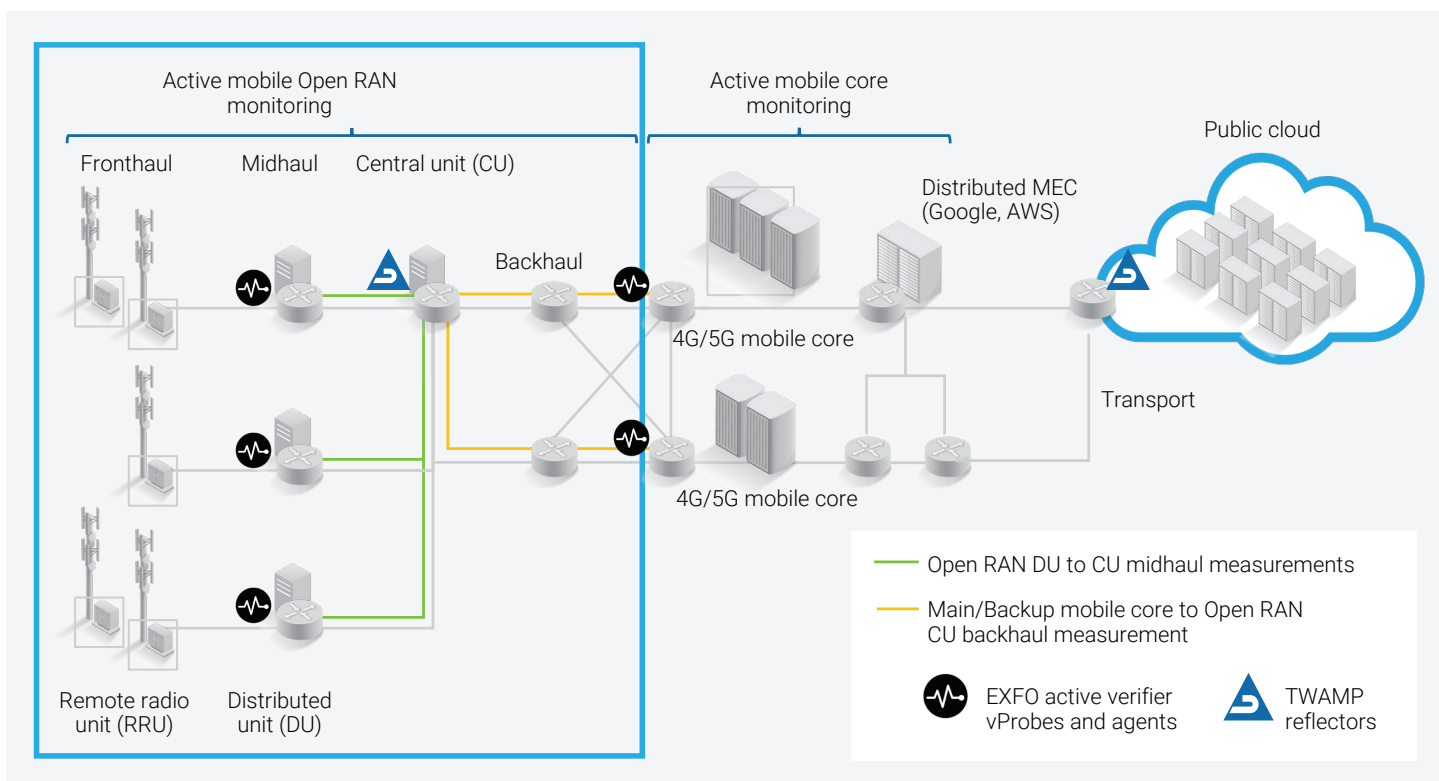
To meet demanding latency budgets for latency-sensitive 4G and 5G services, mobile operators need to minimize latency in the mobile access and backhaul network. Otherwise, customers rapidly experience issues, leading to churn and impacting Net Promoter Scores (NPS). With Open RAN, demands on the transport network increase with the disaggregation of the central unit (CU), the distributed unit (DU) and the remote radio unit (RRU). The fronthaul, midhaul and backhaul networks connecting these units have strict latency requirements.



Open RAN requires adapting the existing approach to transport monitoring. A high-performance virtual verifier and active layer-3 TWAMP testing in the service path between the mobile core and the central unit (CU) can easily emulate user experience and pinpoint where performance issues are occurring on QoS classes. This helps transport planning and mobile backhaul teams to simulate actual end user experience by gaining visibility into the service path and service slices.

Midhaul transport network monitoring is recommended between the distributed unit (DU) and the central unit (CU) to test and validate latency targets in the access network for time sync and Open RAN functionalities.

Open RAN transport: putting things into perspective



EXFO optimizes Open RAN transport of the gNodeB mobile midhaul and backhaul by proactively injecting traffic into an active service path on a second interval.

How it works

EXFO active verifier probes test user experience in the Open RAN backhaul and fronthaul service path.

Mobile core – CU

- Each EXFO active verifier can perform up to 25,000 TWAMP simultaneous tests to reach a high number of nodes.
- Per-second test and report intervals, supports testing for up to 16 QoS classes.
- Highly accurate uplink and downlink measurements, TWAMP and QUIC test capabilities.
- Easy to orchestrate and configure via API.
- IPv4 and IPv6 supported.

DU to CU

- Virtual active verifier is optimized to run on the DU data center.
- Supports outer tunnel test between the DU and CU using TWAMP, QUIC and trace routes.
- Two physical and four virtual paths between the CU and DU.
- Easy to orchestrate and configure via API.

The virtual test probe can be instantiated at either the security gateway or the DU to inject synthetic test traffic on a per-second basis to each CU in the network. This provides granular visibility on the service path and service slice.

The test instance can be located close to the packet core where thousands of CUs can be measured in parallel without overloading the network. The performance quality of the fronthaul transport network can also be validated on thousands of DUs.

Benefits



Deploy disaggregated Open RAN successfully with precise monitoring of QoS KPIs between nodes.

Prevent outages by gaining early warning on degradations and anomalies in EXFO's adaptive service assurance platform.



Identify and detect issues impacting the Open RAN transport network performance in the fronthaul, midhaul and backhaul networks.

- Latency, packet loss identification due to wrong traffic shaper, overload, misconfiguration.
- Data center degradation, low-capacity link upload/download packet loss identification.
- Main and backup routing issue identification.
- Virtualized security gateway overload or configuration issue.



Provide meaningful SLA reporting to Open RAN deployment and cloud infrastructure data center teams.

Highly accurate performance data to support zero-touch operations and automation.



EXFO adaptive service assurance

The EXFO adaptive service assurance platform combines performance data from networks, services, devices and users with machine learning-enabled analytics to deliver unique insight and diagnostics into networks and services. Open integration and third-party data analysis—including network topology—adds context to enrich troubleshooting and minimize latency.

Learn more about Open RAN transport monitoring at [EXFO.com](https://www.exfo.com)

