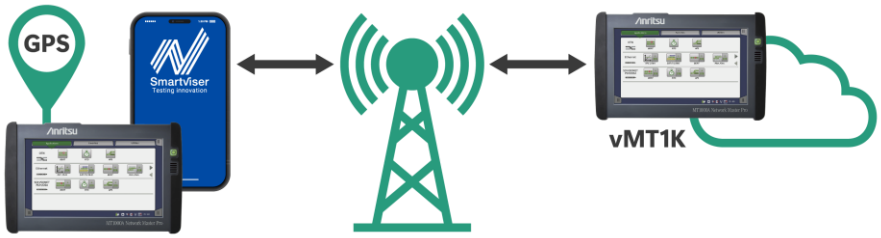
Anritsu Advancing beyond

LTE / 5G Networks QoS Latency / Jitter / Throughput / Packet Loss

Measurement, Analysis and Mappings

Mobile Communications Networks such as 5G need to support time critical applications, where machines talk to machines giving information that must be acted upon immediately. Emerging technologies that use Internet of Things (IoT) mobile connectivity to communicate vital decisions is quickly becoming a norm. The automotive industry is moving rapidly towards automated driving, where electronic systems take complete responsivity safely for the journey. This requires detailed information is gathered 360o around the vehicle from onboard sensors, and information about external conditions, such as road layouts, roadworks, traffic bottlenecks, pedestrians, etc., from roadside video and more, is communicated and acted upon. The speed of data transfer to and from the vehicle is of critical importance.

Up-Link (data transmitted away from a mobile device) and Down-Link (data transmitted towards a mobile device) are rarely symmetrical in performance. The time it takes between sending and receiving a frame of data differs in each direction. It is essential that we measure the one-way delay (Latency) of the Up-Link and Down-link connections and make sure they are within acceptable limits. Round Trip Delay measurement, such as Ping testing, is not suitable since it cannot account for the difference in Up-Link and Down-Link.



This simple solution from Anritsu, uses the Network Master to accurately measure the Up-Link and Down-Link Latencies, simultaneously, with time between two testers synchronised by GPS.

A drive is completed with QoS measures, Network Status Log, and GPS position. Powered by Anritsu and SmartViser results are correlated and analysed. reports are created with metrics such as Up-Link and Down-Link Latency; Jitter; Throughput; Packet Loss; etc., can be overlayed to a map with heat map colouring applied. Statistical analysis of networks (e.g. CDF functions and distribution curves) based on the very accurate and extensive set of data we create in these tests can also be created.

Collaboration with SmartViser

This solution is a collaboration with **SmartViser** for automotive drive test use cases. ViserNeo+ installed on smartphones/tablets enables detailed capture of RF/L1/L3 modem parameters and logs, allowing in depth analysis of be-haviour on the field.

By using real devices to capture the true end-user experience, SmartViser delivers powerful, actionable insights into network performance and quality of service. The advanced analytics with layer three capabilities immediately translate raw performance data into tangible recommendations, enabling providers to optimize connectivity.

https://www.smartviser.com/products/viser

Product Information

10G/100G Ethernet Analyzer MT1000A

- Supports testing from 10 Mbps to 100 Gbps
- Remote control over cloud and automated tests for standalone
- Combinable with OTDR, PTP test modules

- In Development -

Network Tester for Virtual Environment

Deployed in virtual environments on cloud servers like AWS.
Measures end-to-end quality by connecting with MT1000A on terminal side.