dap
powered by commsquare

IMPROVE *SUBSCRIBER'S* SERVICE QUALITY.

Active Testing & Monitoring for Mobile, Wi-Fi and Fixed-Line networks

DAP Industry Leading Features

Easy deployment

- Small form factor / low-cost probes
- Plug 'n play: only needs power
- Light admin & test schedule UI
- Unattended measurements
- Scalability

Reliable Operation

- 24/ 7 testing
- Watchdog functionality on probes
- OTA configuration & SW upgrades

Flexible Management

- Managed GUI & backend servers
- Central remote control
- Different user profiles

Comprehensive Analytics

- Intuitive UI
- Real-time post-processing & reporting
- Alarms & notifications
- Auto e-mail reporting
- Raw data export
- PCAP tracing & TCP/IP analytics (IPPM)
- Error codes & messages

Distributed Active Probing (DAP) at a glance

- Unattended, operating 24/7, real-time active testing and monitoring tool
- Performs controlled data and voice tests over Mobile, Wi-Fi & Fixed-line networks
- QoS network tests from end-user perspective
- Helps CSPs assess network performance and e2e Subscriber experience

Probes are the heart of DAP operation

There are various flavors of probing devices, each with its unique advantages to support the specific needs of our customers.

*NG DAP is also developed to additionally support
Mobile 5G
Wi-Fi 802.11 ax (Wi-Fi 6)
Fixed above 1Gbps (up to 10Gbps)

Mobile:
Embedded Modem
Mobile 5G/4G/3G/2G
Wi-Fi 802.11 a/b/g/n/ac
IoT NB-IoT/LTE-M

Fixed:
4 x 1 Gbps Ethernet ports
To benchmark fixed networks

Smartphone in-a-box
Mobile 5G/4G/3G/2G
WiFi 802.11 a/b/g/n/ac/ax

Samsung Galaxy S23+ 5G/ S22+5G/S21+5G/S20 FE 5G support
(up to Android 13)

DAP supports a rich testing suite across Multiple Networks

DAP offers network optimization and quality teams the capability to obtain real time information and a complete 360° view on the performance of the network, allowing them to ensure and maintain high quality of the services offered to end users.

Data Services and Apps

- HTTP(S)/FTP File Transfer
- Web browsing
- YouTube
- Traceroute
- ICMP Ping
- DNS
- TWAMP
- Speed test
- UDP streaming (iperf3.0)
- TCP streaming (iperf3.0)
- Peer-to-Peer
- SMS
- Fixed IMS VoIP

Voice *(Smartphone DAP)*

- VoLTE
- CSFB
- CS voice
- VoWiFi

DEPLOYMENT SCENARIOS

Permanent Monitoring Grid

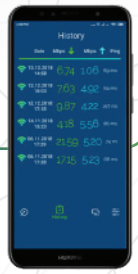
Deploy a grid of DAPs in different locations:

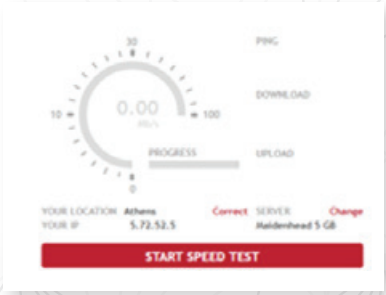
- RAN or Fixed Network Control hubs
- Hotspots: CSP shops, Corporate or VIP premises
- Or even at household level.

Get insights in all network segments, obtain real-time alerting & alarming. Establish a reference basis for historical trending.

SpeedApp

App or embedded SDK, controlled by the CSP, for "mainstream" Crowdsourcing from CSPs own subscribers. Large-scale testing with wide geographical footprint and statistical validity





Nomadic Testing Fleet

Maintain a fleet of DAPs to:

- Quickly assess RAN and Core features
- Troubleshoot Customer Complaints
- Monitor Corporate SLA and Special Events

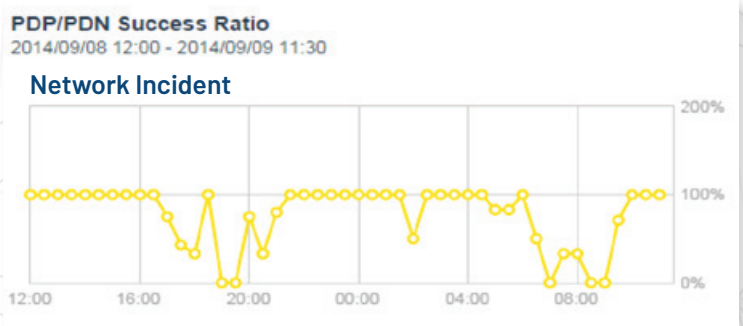
Low-cost/easy to deploy DAP probes are a great alternative to costly Drive Test and on-site works.

DAP USE CASES

>> DAP benefits on Operations Teams:

01 Real-time monitoring of Network performance

- Quickly detect network incidents leading to service unavailability or underperformance
- Obtain early alerting & alarming: through DAP's UI or via email notifications



02 Network troubleshooting

- Perform targeted tests during resolution of incidents
- Obtain IP traces (.pcap) for quick deep-dive analyses
- Validate QoS provisioning

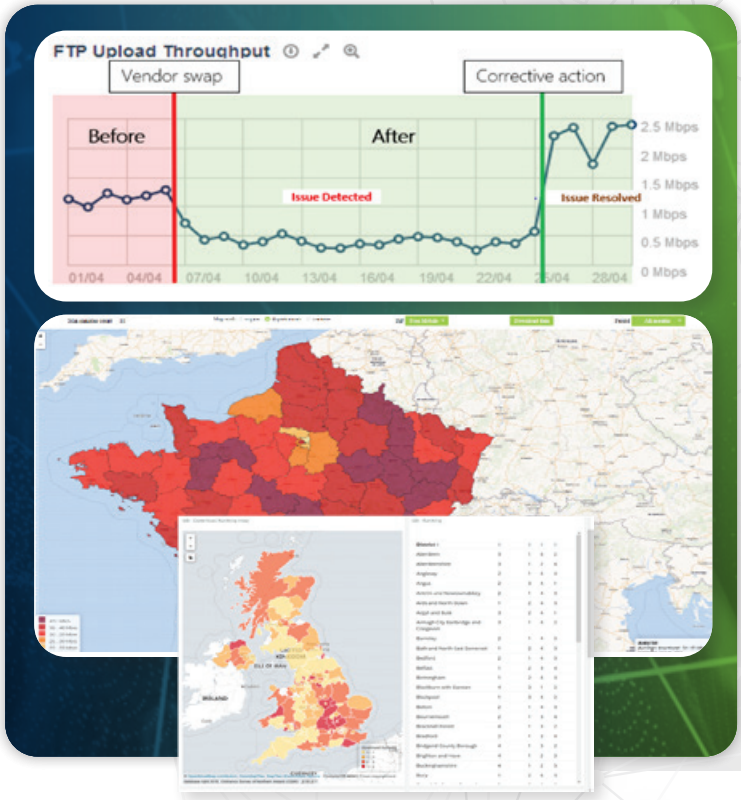
>> DAP benefits on Engineering Teams:

01 Mid/Long-term assessment of Network Performance
- Study trends and evolution over time
- Identify bottlenecks and use as input for troubleshooting & optimization
- Compare: RAN/Core vendors; QoS profiles; Core Routes; IMS Servers; ISPs; CPEs

02 Immediate feedback upon Network Changes
- Quick check after RAN and Core feature activation or parameter change
- "Before-after" analysis for large scale works: RAN Swap, Upgrades & Modernization

03 DAP as complement to Drive Tests
- Reveal issues hidden in periods not caught by drive and walk tests, thanks to DAP 24/7 testing
- E.g. bottleneck detection: non-busy hour vs. busy hour performance

04 Value from analytics on large-scale SpeedApp data
- Coverage and network availability assessment



>> DAP benefits for Customer Experience & Regulatory Assessment

01 Evaluate the service level offered to the subscriber
- With DAP successfully adopting the end-user perspective
- Testing popular Services and Apps
- Testing possibly different CPE types, even at household level

02 Benchmark with Competition
- Compare Mobile and Fixed competitors
- Using the same DAP probe

03 Obtain reports to fulfil obligations towards the Regulator

04 Monitor important events in ad-hoc mode

05 Establish a fairness assessment mechanism
- To compare MVNO vs. Host MNO

>> DAP benefits on Customer Care Teams:

Install dedicated DAPs at customer's premises, as a permanent mechanism for:

- Corporate Customers SLA assurance
- Ensuring high Quality of Experience to VIP Customers

Remote resolution of customer complaints with SpeedApp

- Common reference between the Customer Care agent and the customer
- For both the Fixed and Mobile
- Compliance with EU regulation 2015/2020 for "Open Internet Access"/Network Neutrality

Technical Features

Technologies	Mobile	5G, 4G, 3G, 2G, NB-IoT/LTE-M - all technology evolutions
	Wifi	802.11 a/b/g/n/ac/ax - up to WiFi 6
Service Testing	VoIP, CS voice, VoLTE, VoWiFi, FTP DL/UL, HTTP file DL/UL, HTTP web browsing, Ping, traceroute, DNS, UDP, TCP, YouTube, speedtest, peer to peer, SMS. TWAMP.	
Smartphone Support	Samsung S23+5G, Samsung S22+5G, Samsung S21+ 5G, Samsung S20 5G FE, up to Android 13	
Voice Quality	POLQA MOS , R-Factor MOS (ITU-T G.107)	
Radio Technology Information	NR SS RSRP, RSRQ and SINR RSRP, RSRQ, SINR, Rx Level, RSSI, RSCP, Ec/Io, RF Band, Rx Channel, Cell ID, LAC, RF Bandwidth, PCI, etc.	

HW Characteristics

Watchdog	Embedded (in case of mobile measurements)
Operating Temperature	0 to 70 °C
Dimensions	Fixed/Mobile DAP :168 x 158 x 29 mm Smartphone DAP :215 x 115 x 42 mm
Heat Dissipation	Passive & active cooling
Power Requirements	12-15V DC, 0.7-30W depending on load

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