



MedUX CROWD-SOURCING

# Access to a massive ubiquitous dataset from millions of users all over the world.

Modular & Configurable setup | Mobile and Fixed network testing | Optimized data and battery consumption | Latency, throughput, environmental and device data | Analytics and visualization utilities | Personalized reports and APIs.

## Network Quality of Experience

**+20 Millions of MedUX SDKs deployed worldwide.**

We gather **real world end user experience** through our passive and active measurement technology **all around the globe**. Our solution enables a distributed and scalable approach to performing network measurement reaching a huge number of end users.

### Advanced QoS

Our SDK solution provides download, upload and latency metrics based on CDN testing methodology optimizing data consumption.

### Customized Visuals

MedUX Crowdsourcing is an intuitive tool that allows users to create personalized maps, graphs and tables from billions of end user's data points. Raw data consumption is also available.

### Enriched Data

As the data software runs on different kind of devices, network infrastructures and operators it leverages multidimensional analysis.

## MedUX' massive monitoring for a range of use cases.

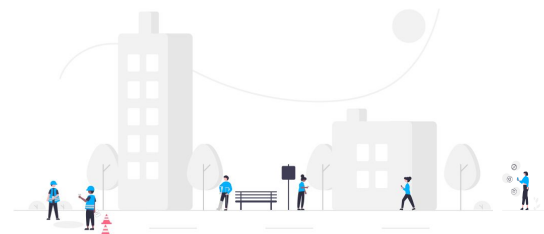
MedUX Crowdsourcing product enables a Massive Field Data Monitoring solution generating a wealth of insights to optimize network performance, enhance customer satisfaction, and stay ahead in the digital era.

Unlock network performance field-data gathered directly from end-users, contrasting QoE KPIs at different geographical levels.

**In a Country such as Colombia**

**More than 7 Million users**

**More than 1 Billion of speed test per year**



- Massive amount of data
- Worry-free deployments
- Foreground and background
- Multi-technology
- QoE and OTT experience
- Fully automated
- Reporting & Analytics
- Radio and network KPIs

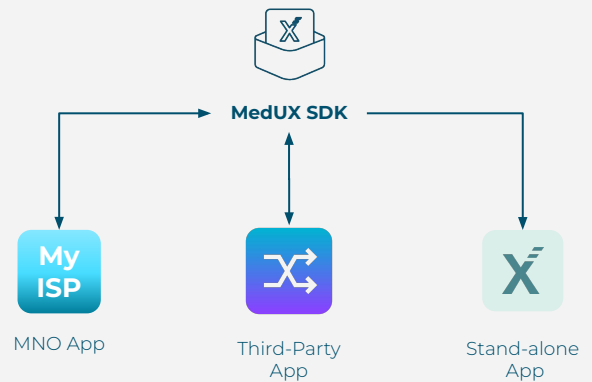
# E2E solution, from data collection, to insights visualization

Our solution is designed to measure the performance of a user's subscription to a **mobile or fixed** network service. The agent will check if the connection was established via **cellular, wireless or cable** and will identify the type of technology (2G, 3G, 4G, 5G or WiFi, Ethernet). These agents can operate at the **request of users or receive remote analysis requests** (scheduled and unattended) from the QoE cloud platform associated with it.



## Transform any app into a comprehensive testing tool with MedUX's easy-to-integrate agent.

The agent is designed to be either integrated into applications available from telecommunications operators or to constitute a specific customer experience measurement application for end users.

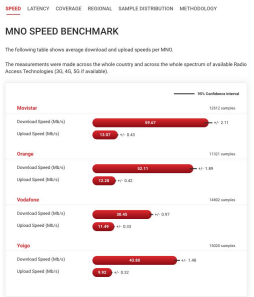


	Radio Parameters	Foreground testing	Background testing	Device data
	✓	✓	✓	✓
	Limited	✓	Limited	Limited
	✓	✓	✓	✓
	✓	✓	✓	✓
	✓	✓	✓	✓

There are **different versions of the SDK** due to differences between the Android, iOS, Harmony, Windows, Linux, MacOS operating systems, security features, and hardware. However, all of them are programmed with a modular schema to make the integration easier.

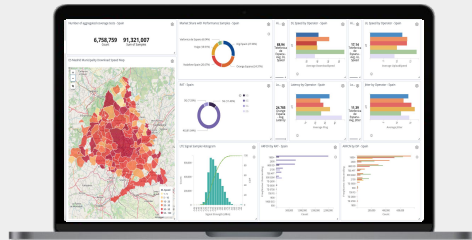
# Data Platform and Deliverables

## Reports



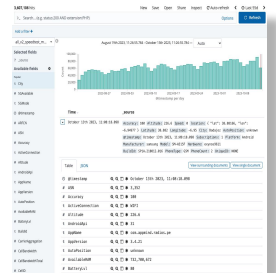
Periodical reports in different formats (CSV, PDF, etc.) adapted to customer's needs.

## Analytics dashboards



Interactive visualizations (maps, graphs, tables) powered by the latest big data and rendering technologies.

## Raw data Access



Direct data access through our analytics portal, via API or FTP exports to your server.

## Over 100 Kpis are collected

Performance data	Cloud DL	Multi Thread download
	Cloud UL	Multi Thread upload
	Latency	Echo request to a specific IP or URL
	Streaming	Video playback based on youtube
	Voice/VoIP	CS and SIP Call
	Social Media	Connection to main SN websites

Connection data	Network	ISP, ASN, MCC, MNC
	Signal	RSRP, RSRQ, SINR, RSSI
	Node	LAC, TAC, CID, Cell, PCI
	Radio	ARFCN, Bandwidth, PSC
	Location	Lat, lon, altitude, speed
	Type	5G, 4G, 3G, Wi-Fi, Eth

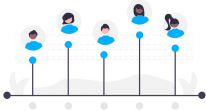
Device data	OS	Android, IOS, etc.
	Manu-facturer	Samsung, Apple, etc.
	Device	Galaxy S23, Iphone 14, etc.
	CPU	CPU Load (%)
	RAM	Available Ram (MB)
	Charge	Phone charge (%)

# Use cases



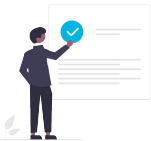
## Massive Coverage Analysis

- Detection of network coverage holes
- Tracking of new cells installations
- Spectrum frequency and Bandwidth usage
- Before/after network changes analysis



## Benchmarking

- Benchmarking reports for positioning and intelligence purposes
- Mobile and Fixed Operators own and competitors' network quality experience
- Subscriber segments performance



## Regulatory compliance

- Network monitoring and auditing
- Consumer-focused utilities and applications
- End-user empowerment with reports based on transparent information



## Network insights

- Network optimization analysis
- Network Planning strategies
- Site prioritization
- Capacity planning
- Customer care and roaming performance tools



## Quality of Experience

- Video streaming experience
- Social media platforms performance
- Website browsing time
- Gaming experience indicators



## Marketing Claims

- Brand awareness as performance leader
- Certifications to accredit service and network quality
- Assessment to become best in class



## Subscriber level insights

- Subscriber-centric QoE data
- Speed test foreground layer
- Background testing
- Contracted service compliance reports
- Metrics enrichments with MNO data



## Used Technology Analysis

- Device performance analysis across dimensions (model, OS, etc)
- Access technology capacity and service quality
- Used technology and coverage correlation
- Wholesale performance insights