metricell
Better Connected

AutoMobile

Powerful and Efficient Drive Testing

V5.0

WINNERS GLOTEL AWARDS 2017

ISO 9001

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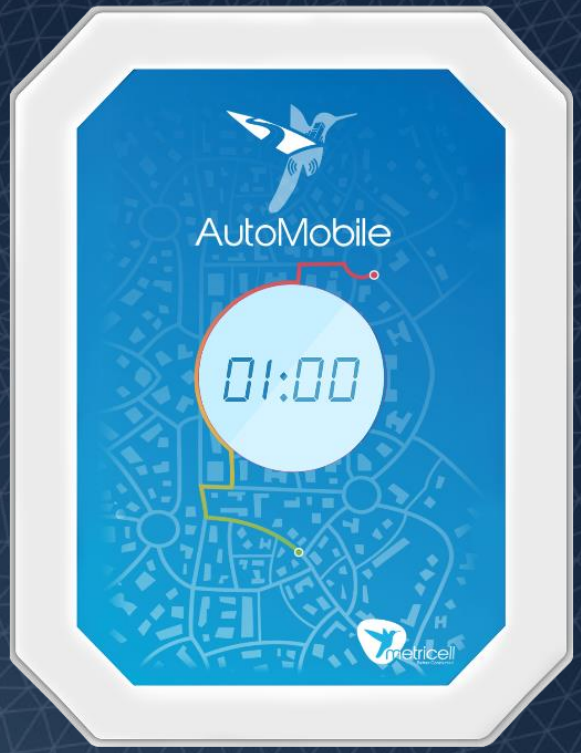
Introducing AutoMobile



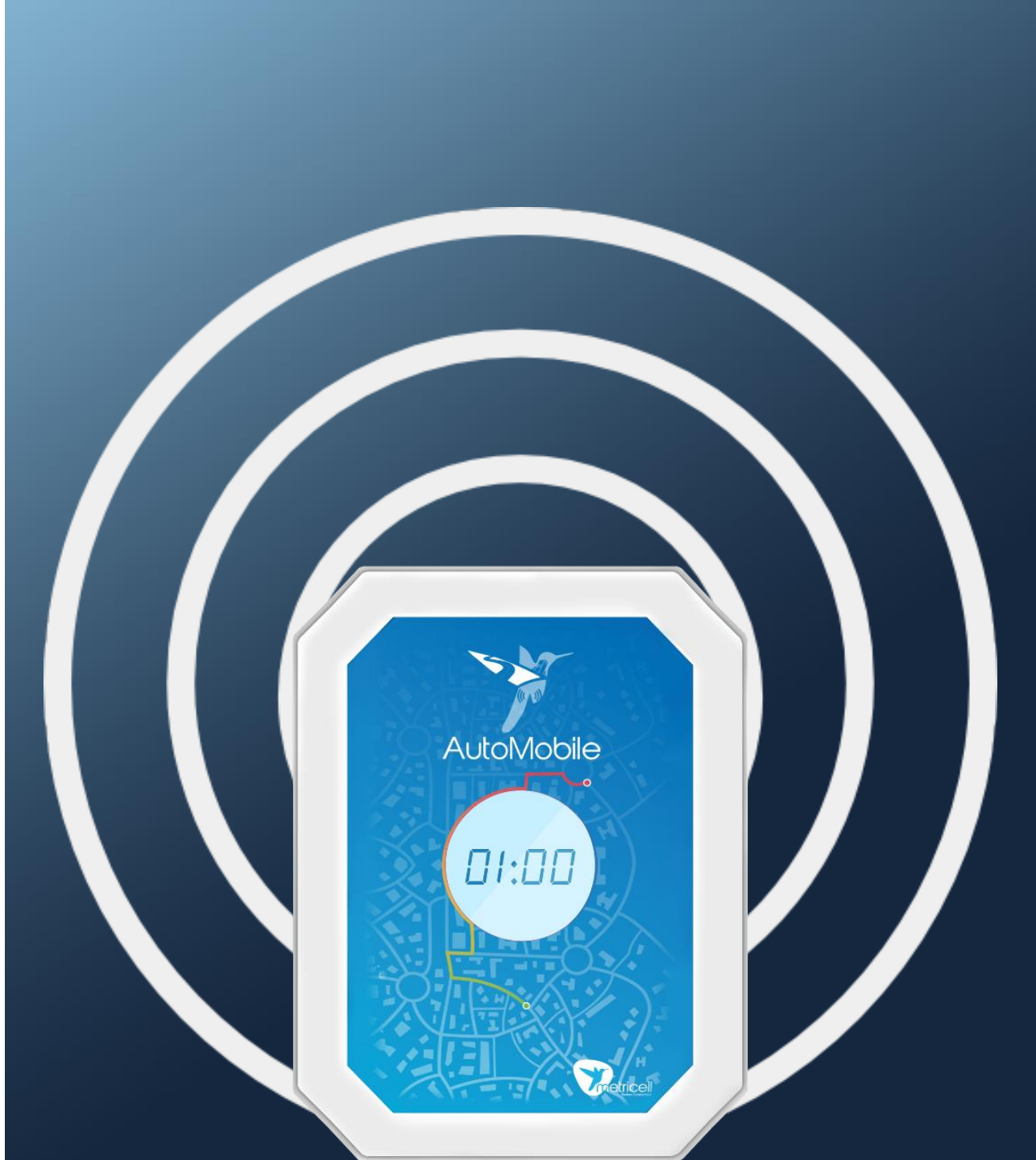
INTRODUCING AUTOMOBILE

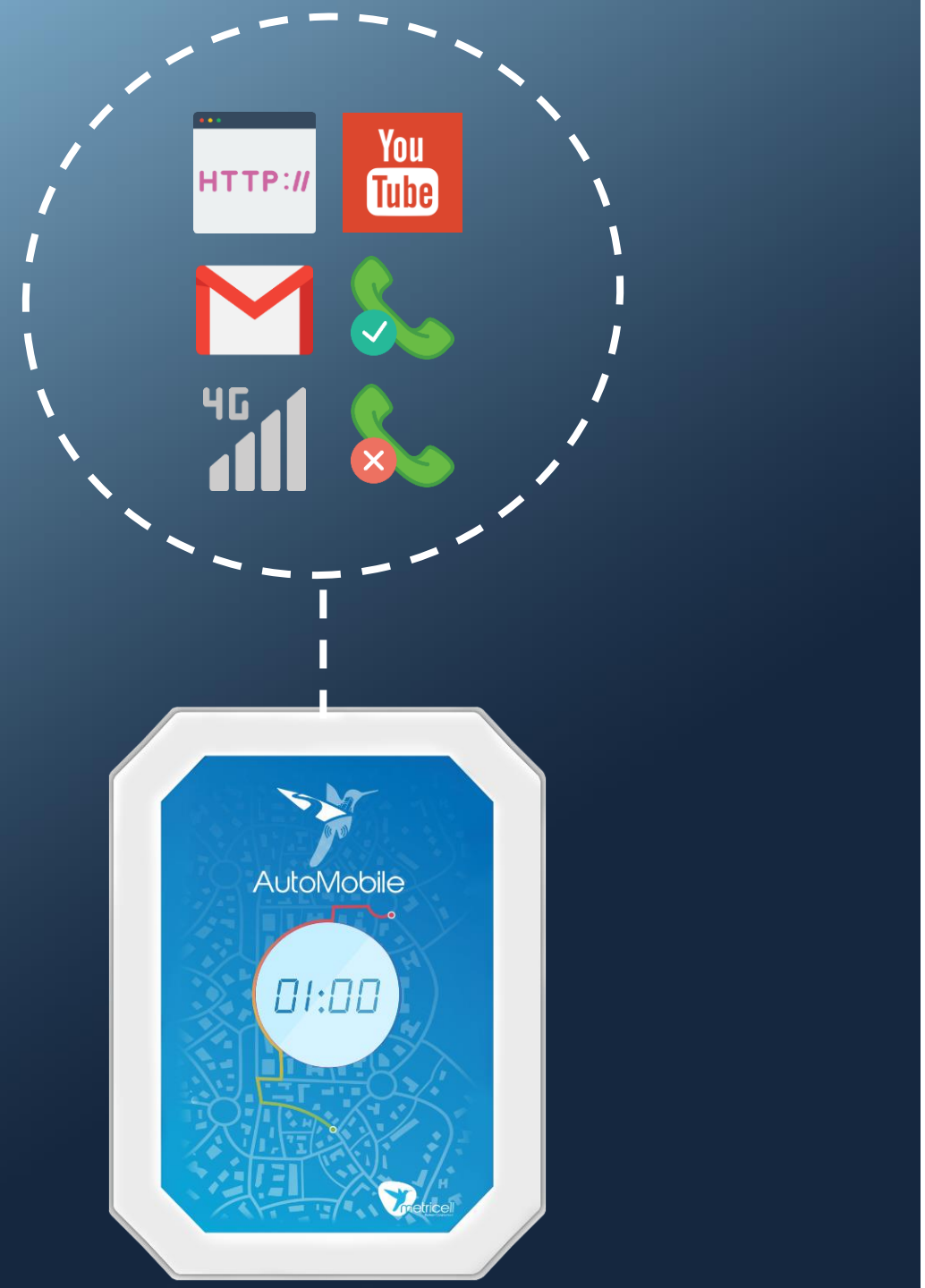
What is AutoMobile?

AutoMobile is a “plug & play” drive test unit based on a normal consumer smartphone. They are designed to test within the context of normal subscriber activity to help network analysts understand how to improve network service in-line with customer experience and expectations.

AutoMobile arrives to the customer ready to begin testing and can be plugged into any car or vehicle via the 12v power socket.

It has been used in cars, trucks, trains and can even be used to conduct walk testing with the addition of a simple battery pack.





INTRODUCING AUTOMOBILE

What Does It Test?

AutoMobile autonomously executes a pre-defined test script which is customised to test a range of common subscriber network activities such as:

- YouTube / Video Streaming
- Received Signal
- Web Browsing
- Call Quality
- Download
- Upload
- Ping

INTRODUCING AUTOMOBILE

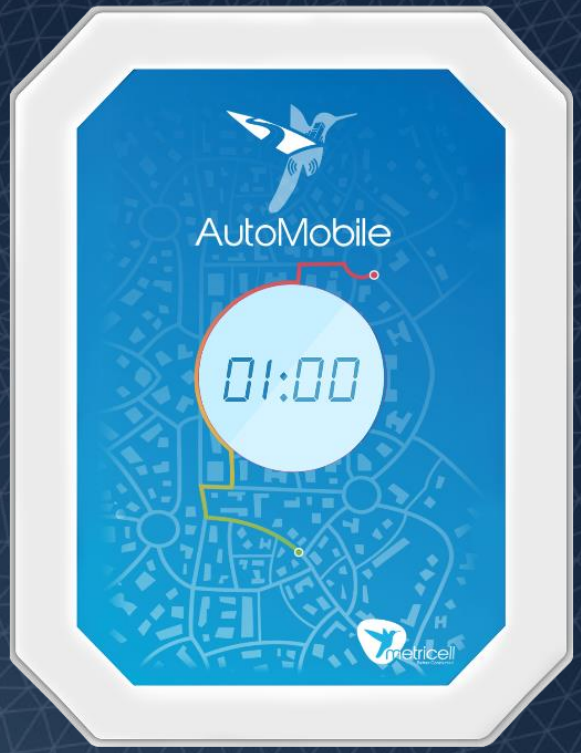
Why AutoMobile?

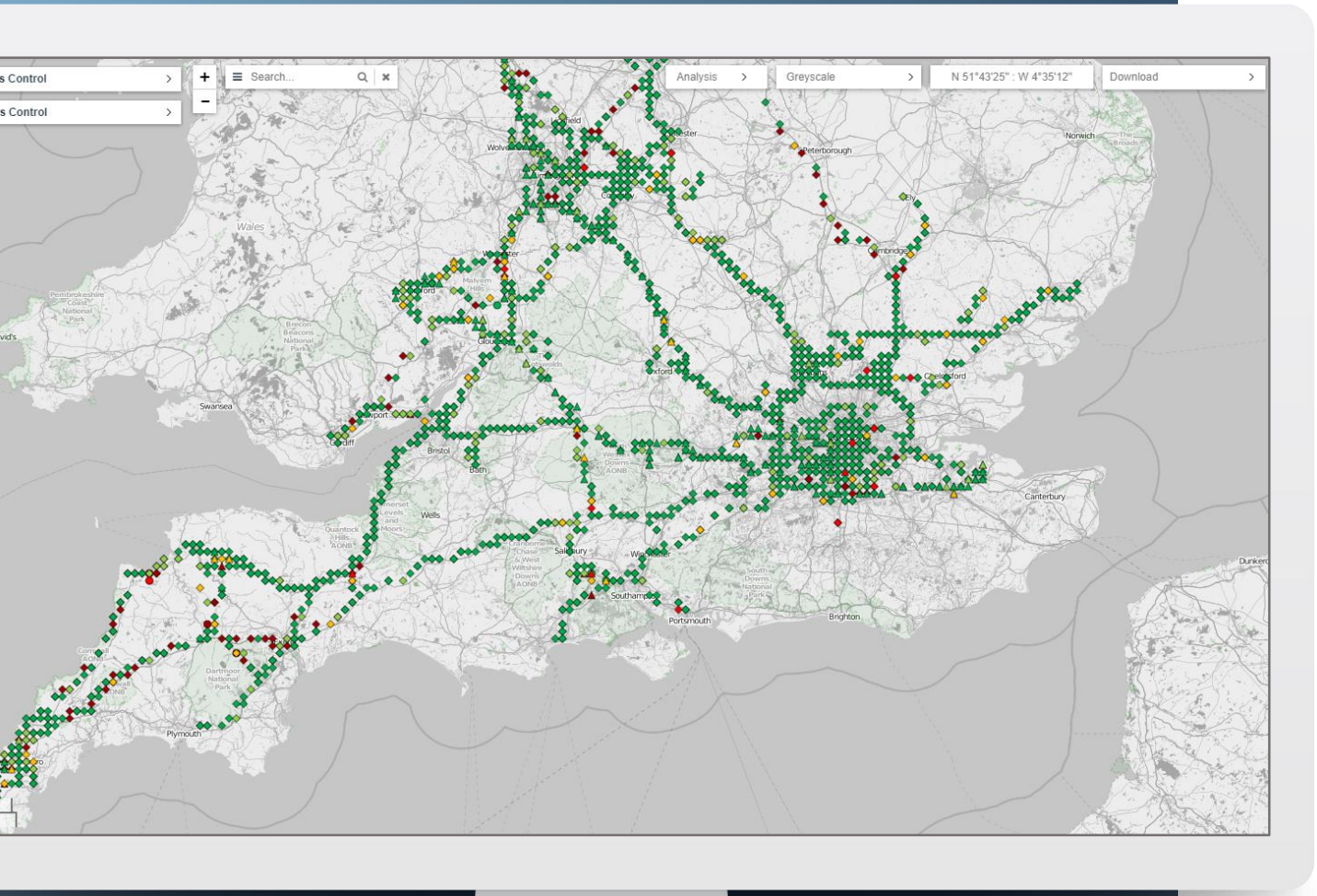
AutoMobile offers a faster and more resource-efficient route to network test and measurement.

We can supply devices quickly, they need no modification by the customer, and any vehicle used to carry them won't require modifications either.

	AutoMobile	Traditional Drive Testing
Latency (Post-Processing Time)	Real-time	2-4 weeks
Equipment	Consumer smartphone (Android based)	Specialist test device
Metrics	Key Voice, Data and Service indicators. Customer experience focused	Technical engineering data
Solution Architecture	Centralised (test scripts, reporting, analysis)	Distributed – user variation
Processing	Automated, no engineers involved in collection or reporting	Semi-automated or manual
Periodicity	Continuous, 24/7/365	Typically bi-annual, budget constrained
Hierarchy	Cell, site, Radio Network Controller (RNC), Location Area Code (LAC), City, Region, National – any network or geographic basis	Regional
Location	Anywhere	Main roads and highways only
Cost	Huge post-processing cost savings	Expensive

Visualisation & Reporting





INTRODUCING SMARTNETWORK

Data Visualisation

SmartNetwork is a geospatial software tool which displays network information across a map-based interface. The measurement data captured by AutoMobile is automatically uploaded to our live time cloud for post-processing and access via SmartNetwork. SmartNetwork users can access all the measurements captured by the app including service details, speed tests, connected technologies and more.

Our customers can incorporate a wide range of data feeds into the system as per their requirements. This allows for visualisation of their sites & cells, test, maintenance, coverage, planned sites, or any other data source, all from one platform.

INTRODUCING SMARTBOARDS

Realtime Dashboards

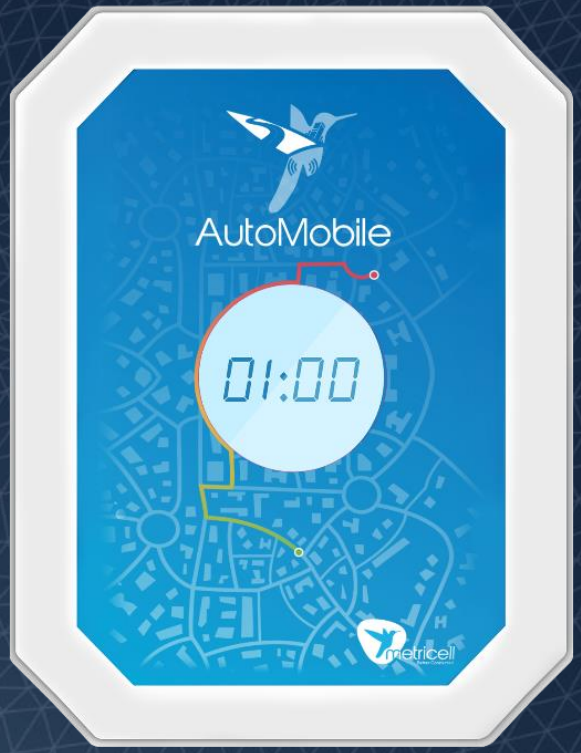
We can also present the AutoMobile data in our visualisation and reporting suite – SmartBoards.

SmartBoards are designed for managers looking for fast information and reporting capabilities. Popular dashboards for AutoMobile data include:

- ***National Network KPIs***
- ***7 Day Data Collection Summary***
- ***Test Event Failures***

By adding more of their data, operators can gain even more reporting capabilities such as predicted coverage results, train route analysis, handset benchmarking, application experience, and more.

Customer Stories & Use Cases



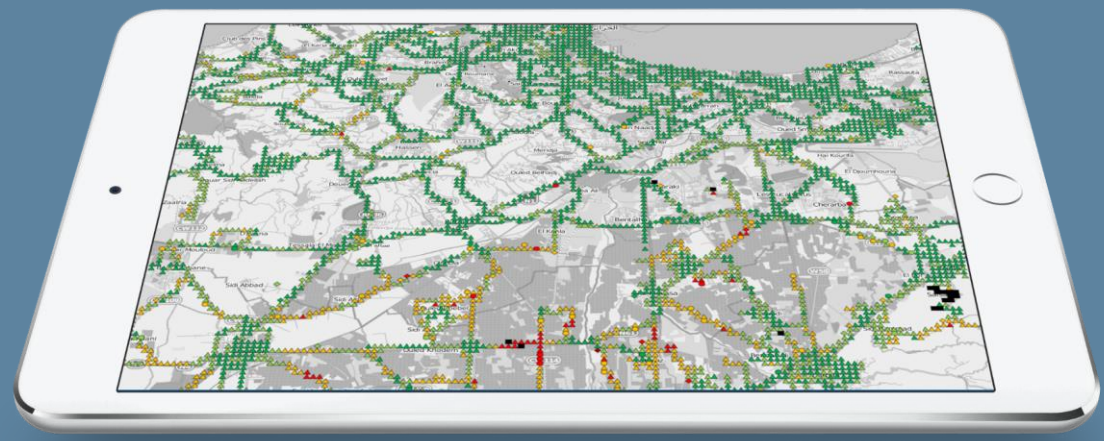
Ooredoo Case Study

1. Key Project Goals

- Collect test data, including Layer 3 data, across roads and indoor locations with Metricell's AutoMobile devices.
- Measure network performance and real-time subscriber experience in key areas of interest.
- Benchmark themselves against their competitors Djezzy and Mobilis.
- Provide engineering reports & dashboards for visualising the data.

2. The project overview

- More than 100 AutoMobile devices provisioned. Equipped with a range of testing capabilities including MOS, POLQA and Layer 3.
- Devices test across 2/3/4G Voice, VoLTE, video streaming, web browsing, application, SMS, Signal and Ping.
- SmartTools visualisation access provided to Ooredoo users with detailed reporting provided.



3. The project outcome

- For anywhere they have drive tested, Ooredoo can load individual or simultaneous layers for their own recorded performance, as well as their competitors.
- Included in the platform is a powerful library of reports which can be automatically generated and communicated to key stakeholder or other recipient groups
- Moving forwards, Ooredoo can utilise their new data (along with any other source) in any subsequent optimisation or rollout works both to plan their activities, and report on improvements in performance.

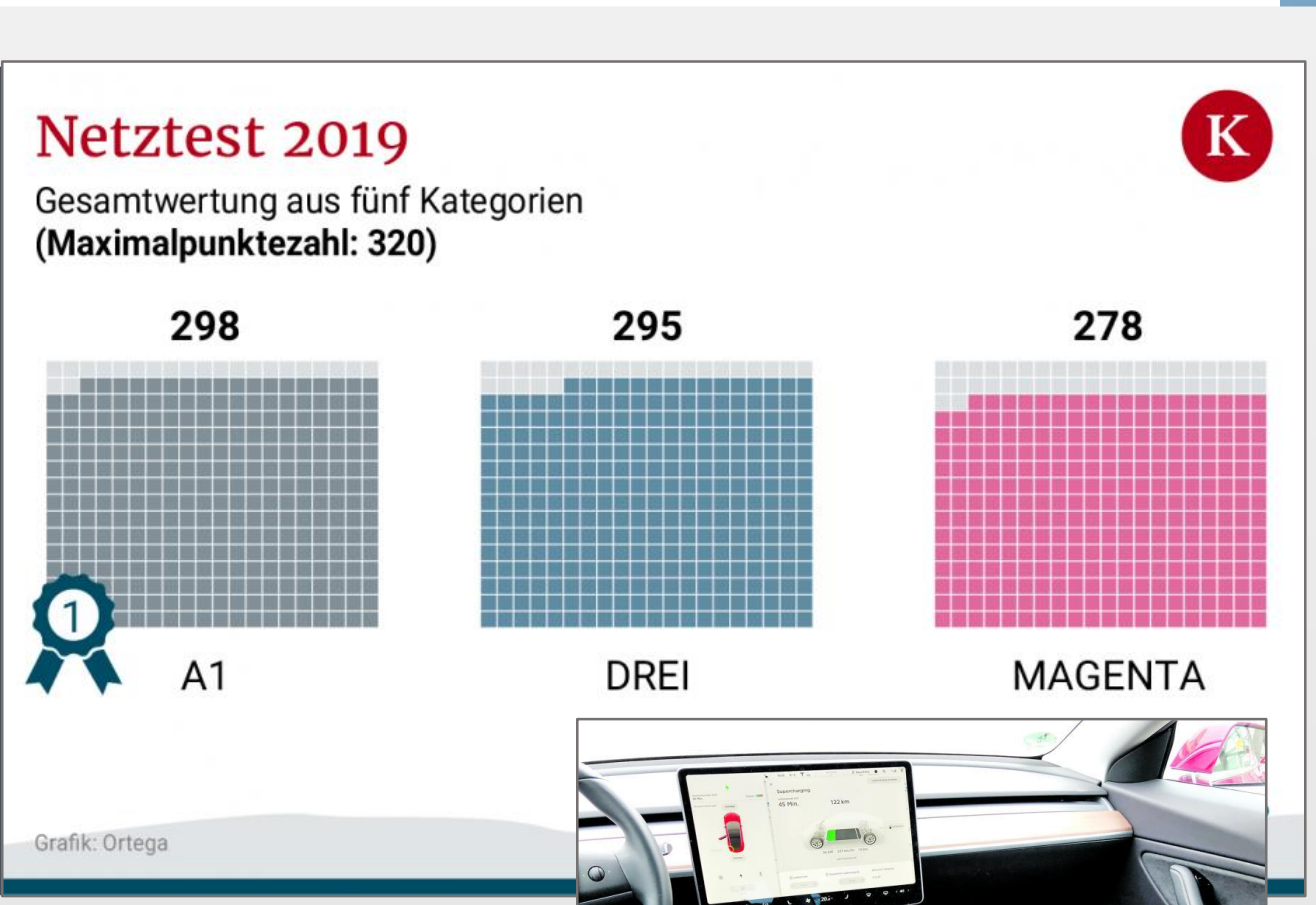
Digicel Case Study

25 Individually configured drive test units were spread across 5 vehicles according to the required testing schedule with full remote management from Metricell HQ. Access to the SmartTools platform was provided to a provisional (20+) number of Digicel personnel across Engineering and Optimisation. More users are continually added as required.

The Results

Metricell's Consulting Division runs in-depth analysis on the data to help Digicel within a number of strategic use cases. Digicel wanted to gain detailed understanding of how their key competitor, Natcom, performed in relation to their own offering. The key findings included:

- Digicel had the greater 3G coverage and a more positive CSSR and Drop Rate
- Pilot Pollution was a problem
- Recommendation to focus on Ec/Io optimisation.

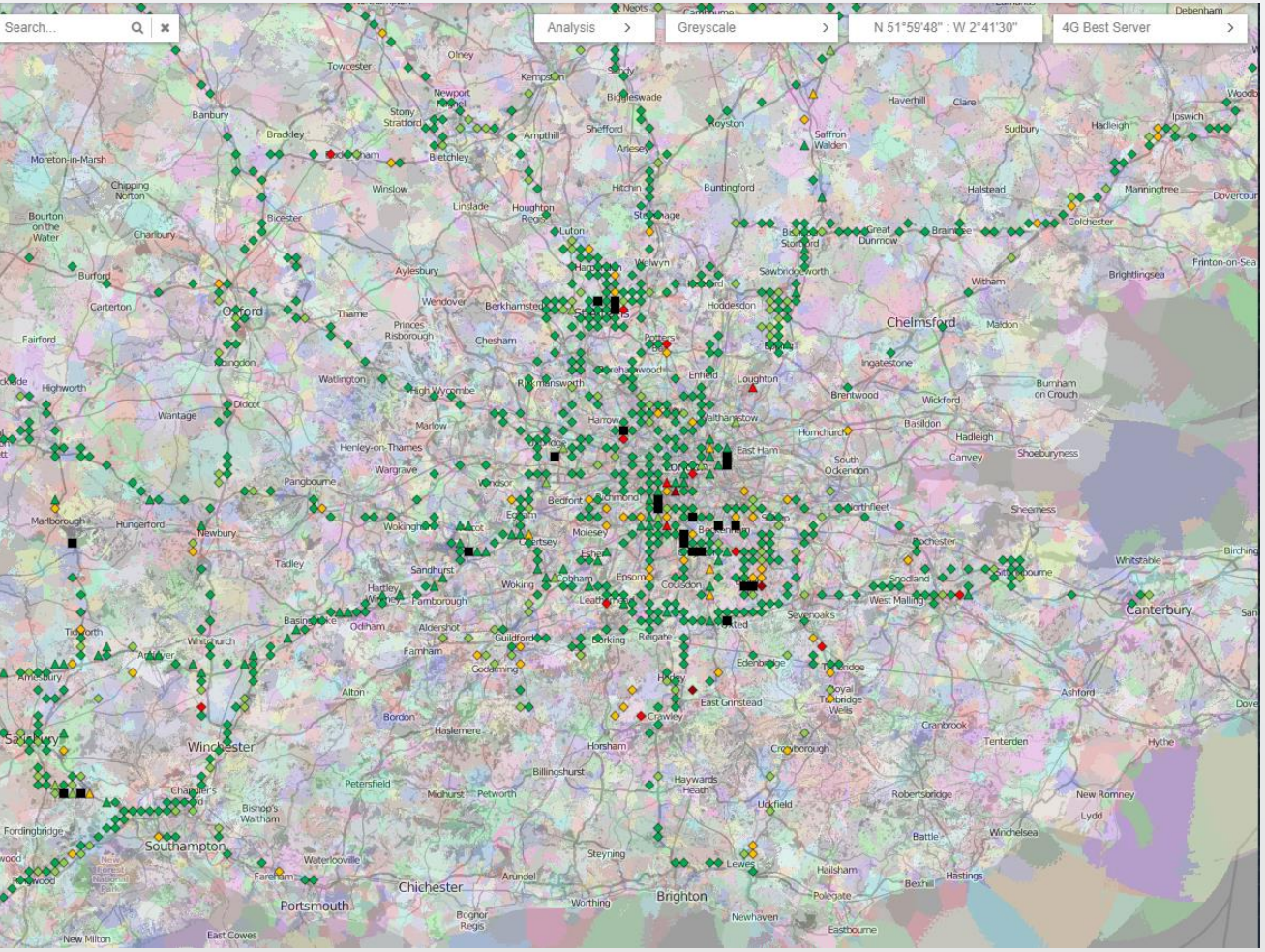


Futurezone Case Study

Futurezone carried out their network test for the seventh year in a row to rank the performance of domestic mobile operators. The test used standard mobile phones to determine how fast and stable one can browse the web and make calls. The two test vehicles covered a total of 8,500 kilometres and carried out 300,000 measurements.

The Results

A1 was the overall winner. The provider scored 298 points out of a possible 320 points. However, the gap to the runner-up has shrunk compared to the previous year. Drei (Three) were only 3 points short of first place.



**Generic AutoMobile data shown due to project sensitivity*

Emergency Services

The UK is currently engaged in a project to replace the existing Tetra-based emergency services network with a dedicated 4G service.

This will provide the UK emergency services with a more powerful network capable of next generation use cases such as streaming from body cams.

The Results

This is an ongoing test project designed to continually test the network up to and beyond the point of the switchover.

AutoMobiles are installed in a number of emergency services vehicles which test the network 24/7/365 as they drive around the UK's road network. The data gathered is being used to understand where the network is failing to provide coverage and optimising it accordingly.

Additional AutoMobile Use Cases

Site Validation

Engineers use AutoMobile to test new sites, neighbour relations and ensure new rollouts are operating as intended.

Road Optimisation

AutoMobile can be used to identify optimisation issues such as any crossed sectors and misaligned antenna. Reports of issues along routes are produced as they are driven.

Assessing Predictions

AutoMobile can be used as a fast method of gaining real-world coverage measurements to compare against predicted radio data.

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