



BEACON: An Overview

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About Beacon



Beacon: Introduction

Metricell Beacon is a fixed location monitor which continuously tests mobile service in any location of interest.

It automatically replicates normal user activity, such as calls, video streaming and web browsing, and reports the captured performance data back to a centralised platform.



Beacon: Introduction

Verify and Ensure the Level of Services Provided by the Operator



Beacon

A smart device that monitors, in real time and based on a fixed location, the performance of the mobile network. Its large capabilities allow it to operate in various locations: Corporate buildings, mass shows, small shops, etc.



Aimed at:

- Corporate Clients
- Network Quality Teams
- Retail Stores
- Crowd Events, Sport Events, Concerts, Festivals.



Competitive Advantage

Cost-Efficient Method that provides a complete, real and continuous view of the level of services provided by the different mobile network operators. A highly scalable tool.



Value Proposition

- Proactive method that provides customers with 24/7 control of the level of service obtained in their offices.
- Make sure your retail stores always have the best connection to the network.
- Instant Reporting and Management of Notices / Alarms.
- Detailed Drill Down that helps to understand the cause of the problems.

Where Are They Used?

Beacons are used by network operators, as well as a variety of enterprise businesses, to monitor network performance at key locations around the world.

Examples include...

Venues



Site Monitoring



Corporate Customers



Factories



Offices

Plants/Mining

Civic Buildings

Transport Stations

What Are They Testing?

Beacons are configured to run a predefined test script and are ready to begin testing on arrival at their destination.

Customers can test whatever activity they want, from voice quality to video streaming, and any required changes can be remotely managed and implemented by our team at HQ.

Video quality analysis with YouTube testing. Collect buffering, resolution, setup times and more.



Web browsing analysis for speed, page load, upload, download, ping, and more.



Voice quality analysis including connection time, MOS, and more.



Technology information including site connections, and 3/4/5G technologies.



How Do They Help?

Beacons provide proactive monitoring abilities and also the insight to gain greater understanding of your customer's experience with service.



Gain a deeper understanding of your users experience with roaming partners internationally



Ensure retail locations have required service levels



Real-time performance monitoring at large public events.



Monitoring, improving and reporting on service supplied to key corporate accounts.



Site monitoring – Beacon will monitor new rollouts 24/7/365 to ensure fixes or other improvements are functioning as intended.

Approach Advantages



Multiple Tests That Offer an Integral Vision of Network Performance



Data

- Download
- Upload
- Ping
- Jitter



Voice

- Configuration Failures
- Successful calls
- Lost calls
- Call Quality



Services

- Signal Power
- Antennas in Use
- Technology



Video

- Setup Time
- Buffering
- Performance



Beacon

Key Benefits

The Beacon system has been designed with the user in mind. The units and associated reporting supply a fast route to insight for network performance in any location.



Highly Flexible – Beacons can have new test scripts pushed to them remotely and work in a range of diverse conditions and insulated for a range of temperatures.



User Friendly – The Beacons arrive at their destination ready to go. Simply plug them in and they will automatically begin testing.



Automated Reporting – The data collected by the Beacons are available in real-time via our web-based SmartTools GIS and dashboards.

Operational Benefits

Control Network Performance, Improve Your Connectivity

Value Added Optimization

Correlates network performance KPIs and technical information (POLQA / Layer 3). Visualize the results obtained in real time. Optimize the contracted services.

Cost Reduction

Avoid using highly expensive equipment and / or specialized labor. Save time and money.



Management and Reporting

Continually compare network performance. Easily manage the device. Configure warnings / alarms that will be sent when the established levels are exceeded.

Massive Data Collection

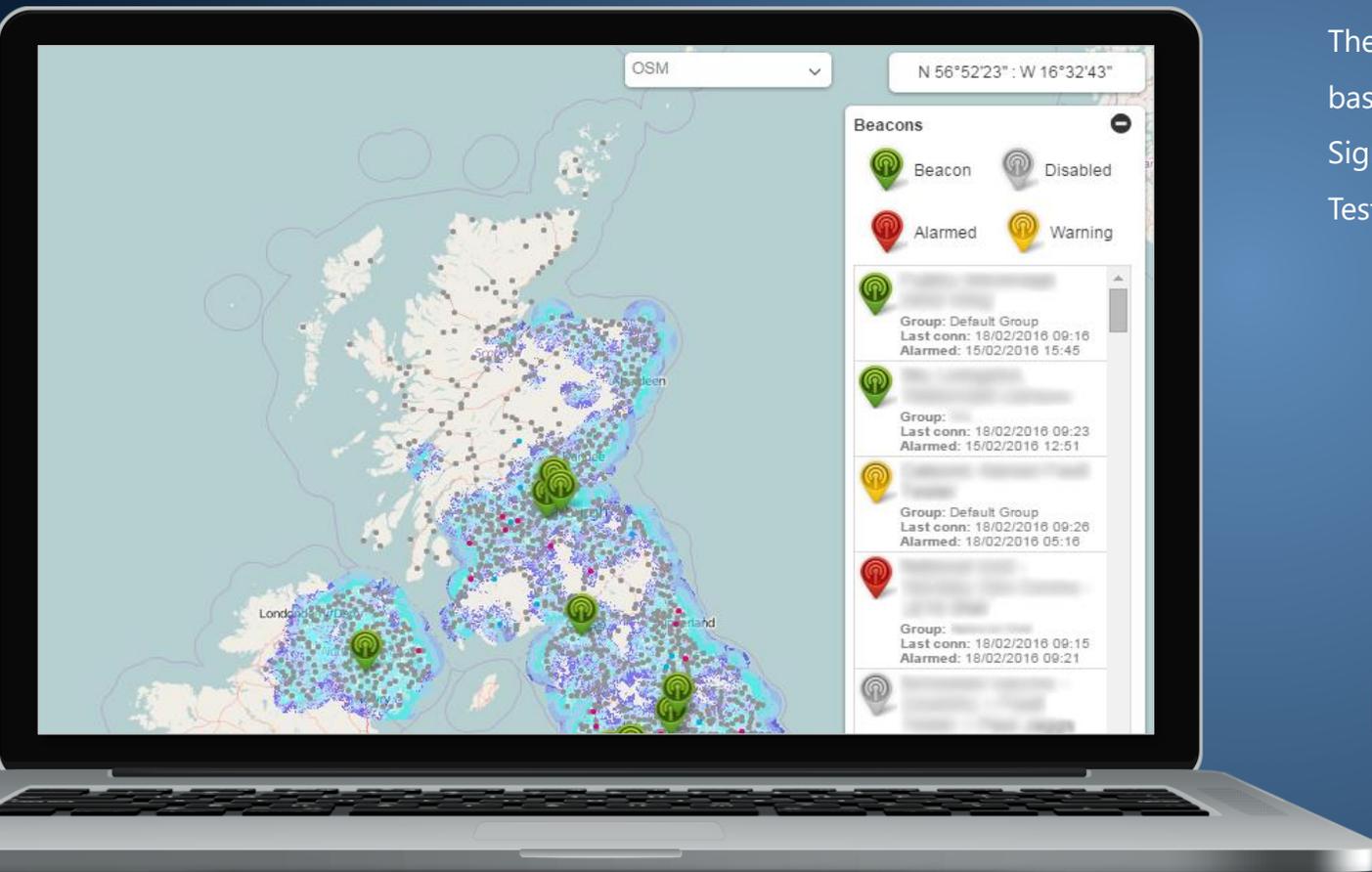
It continuously measures and analyzes robust amounts of data. Anytime; in any location; by anyone

Data & Visualisation



Data and Metrics

Quantify, Manage, Supervise and Visualise



The information is collected and visualized in SmartTools – our web based platform. The data is structured in different types of metrics: Signal, Successful Call Test, Missed Call Test, Call Configuration Failure, Test Download, Test Upload, Ping and Jitter.



Constant and real-time monitoring of the most relevant indicators from the point of view of network users.



Widely used for Marketing work. Operators report, in real time, on the level of services provided and their performance.



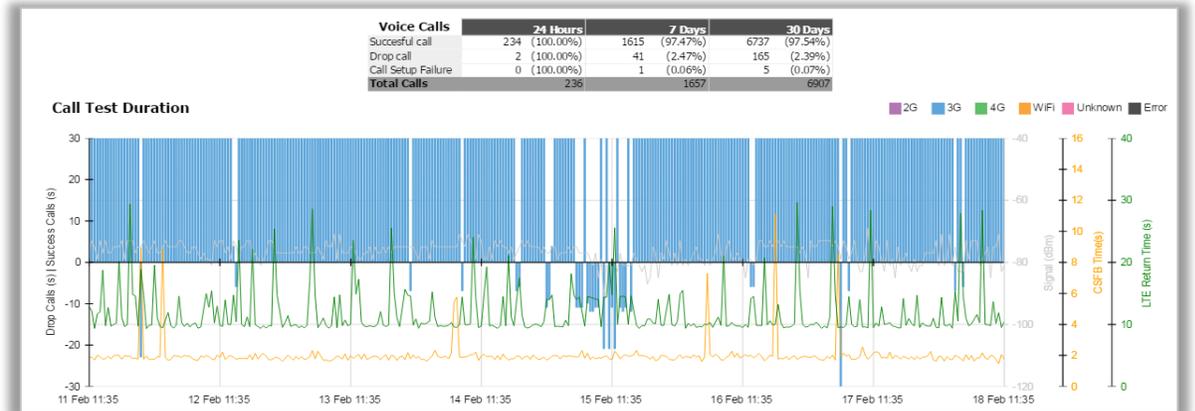
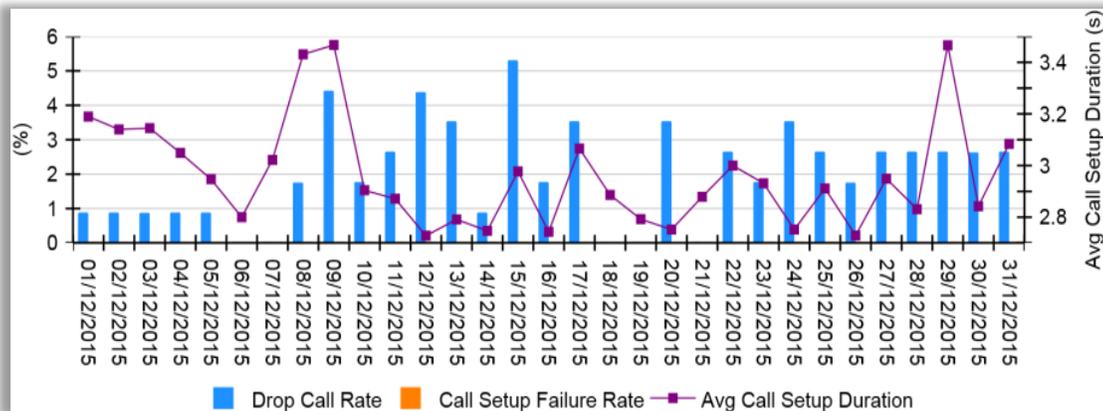
Drill-Down to the most detailed level. Discover which technology Beacon is connected to, compare the quality of the services and analyze the data collected by the device.



Key Features and available KPIs	Beacon
Services	✓
CS-Voice 2G/3G/CSFB	✓
VoLTE	✓
Voice Quality POLQA -NB MOS	✓
Voice Quality POLQA -SWB MS	✓
Estimated Methods MOS ITU-T E	✓
	✓
	✓
Data FTP/HTTP	✓
Data Rate Test (OOKLA Methodology)	✓
Web Browsing	✓
Ping	✓
Messages MMS/SMS	✓
iPerf TCP/UDP/Streaming	✓
Video Streaming	✓
Email	✓
Centralised Test Management	✓
Automated Data Upload	✓
Data Visualization and Web Based Reporting	✓
Custom Dashboard	✓
Automatic Coverage Verification	✓
Static Testing 24/7 with Centralized Alarm Management and alarm thresholds	✓
Collect Third Party Data	✓

Monitor and Capture Relevant Indicators

- ❖ Use the information collected by Beacon to establish margins or minimum service limits between the required values and the measured values. Monitor the Service Level Agreements (SLA).
- ❖ Measure the Call Quality. Integration of voice quality analysis in our tools respecting the POLQA guide.



Beacon Management



Beacon Status Monitoring

Test Any Active Beacon In Your Network

The Beacon Status Monitoring dashboard allows the user to perform a priority test on any active Beacon. When a command is sent, the assigned script is paused whilst the Beacon performs the priority test. When the priority test is completed the results are sent back to the server and the Beacon then resumes its assigned script. The results of the test are then presented in the dashboard.

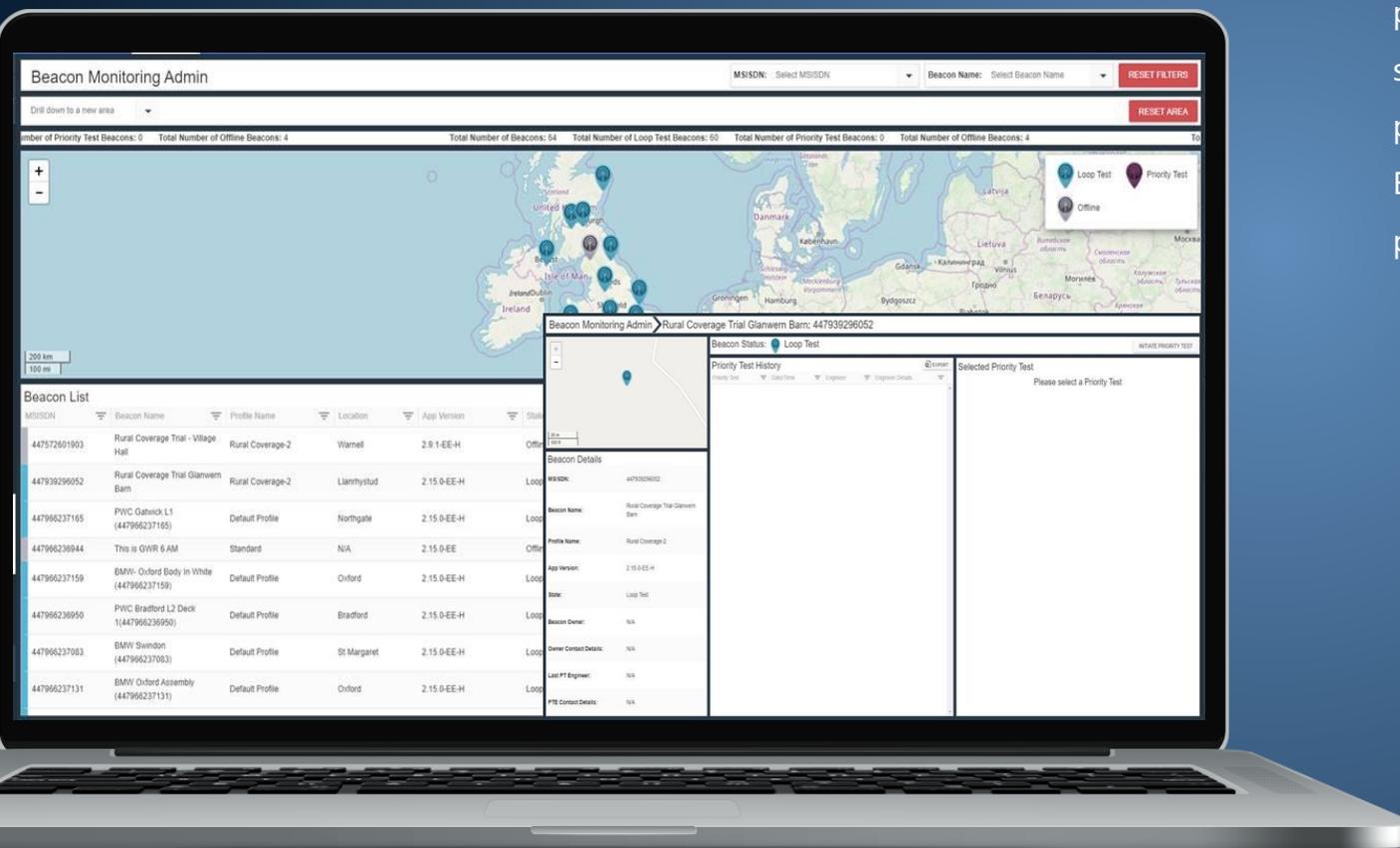
Use Cases Include:



Retail Locations – Test network performance at strategic locations



Corporate Customer Locations – Validate customer complaints based on real, live data



Management Dashboard

Centralising Your Beacon Data

The BAM Management Dashboard collates all the information for Beacons and presents it in a centralised dashboard. This serves to provide new insights into the data through a series of predefined filters. Users can also subscribe to the dashboard to receive updates at a defined interval.

Use Cases Include:



Centralised view of the Beacon Status and High-level overview of performance



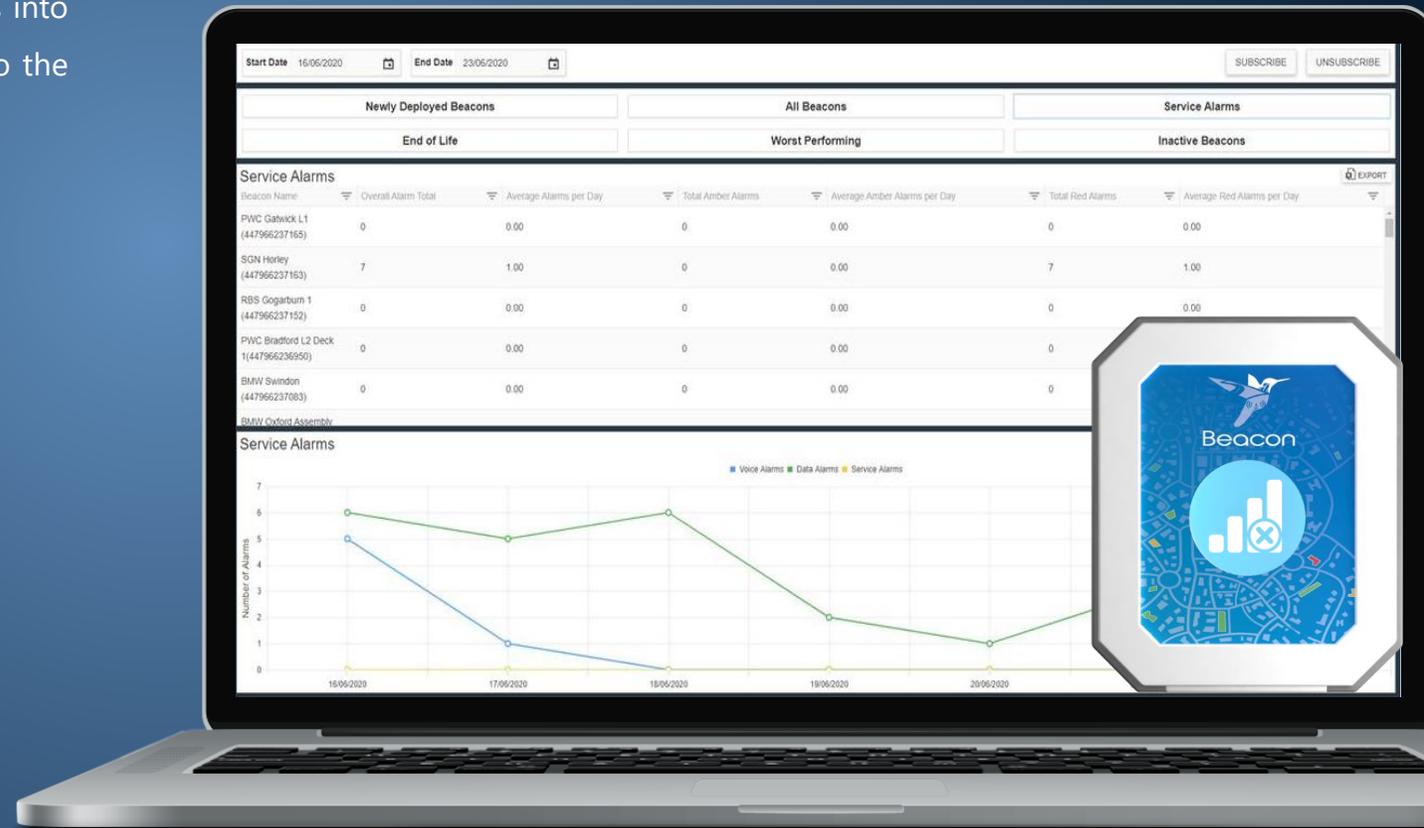
Centralised view of the Status Alarms raised on the network



Identification on the worst performing Beacons based on collected KPIs



Identification of New and Inactive Beacon for troubleshooting purposes



Beacon Operations Centre

Quantify, Manage, Supervise and Visualise



The Beacon Operations Centre acts as the nerve centre for the Beacon deployment in the network. If Beacons are deployed in key locations (Corporate Customer HQ or areas of high traffic) then the data captured from these devices is of a critical nature and require fast action.

Additional datasets can be integrated into the system from performance and service management tools to provide a holistic view of the network and increase performance monitoring capabilities. Issues can be assigned to a user helping to focus the workflow and minimise the time to resolution.

Use Cases Include:

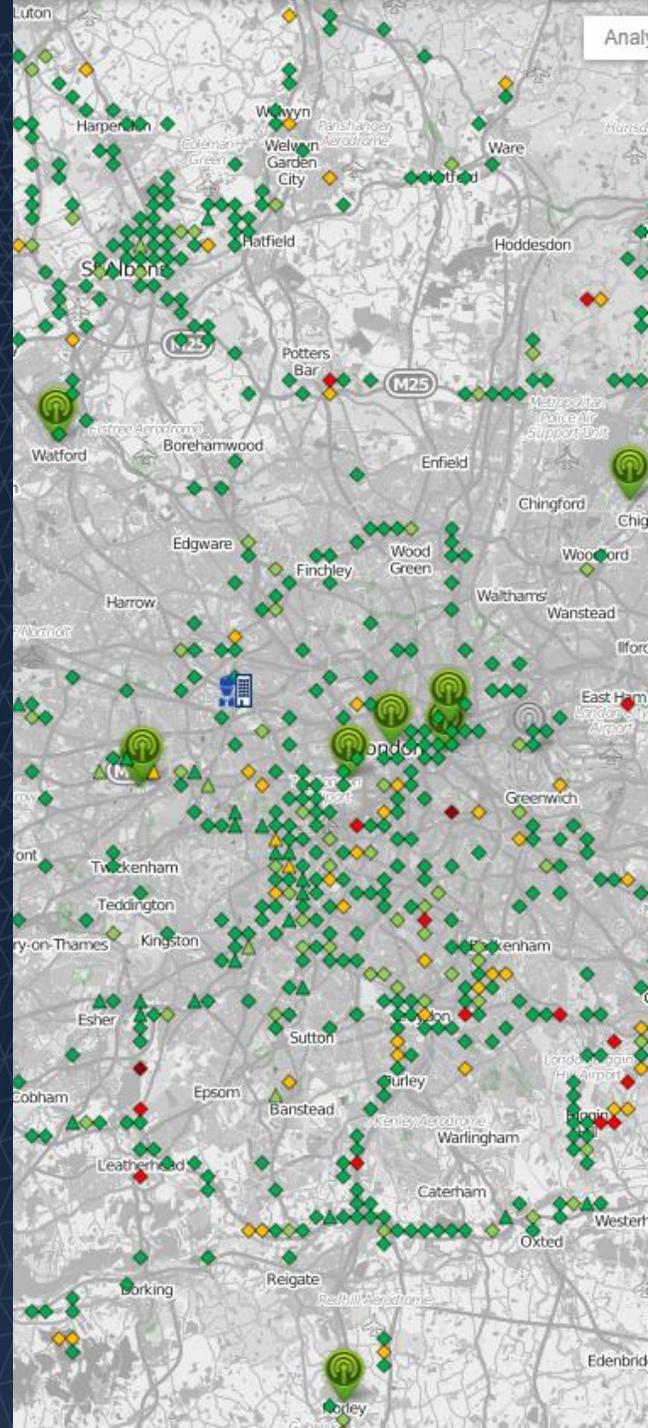


Proactive monitoring of critical locations and alerting capabilities



Live visualisation of issues on a GUI

Customer Success





Use Case 1

Festival de Sanremo (Italy)

An Italian music festival held annually in the city of Sanremo with a duration of three days. Telecom Italia implemented these dynamic speed indicators on digital advertising screens around the city, as well as on the event's website. For commercial purposes, the objective was to visualize the performance of its 4G and 5G network to both current and potential customers.

Use Case 2

Glastonbury Festival (UK)

- We help to supervise the provision of services offered by EE, as well as a benchmarking between EE and its competitors.
- From the moment they were installed, Beacon devices monitored data speed, voice calls, web browsing and streaming capabilities.
- The data collected was sent in real time to our SmartTools Platform, where EE technical staff were able to access instantly to control, analyze and verify the operation of your network.

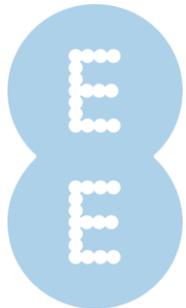
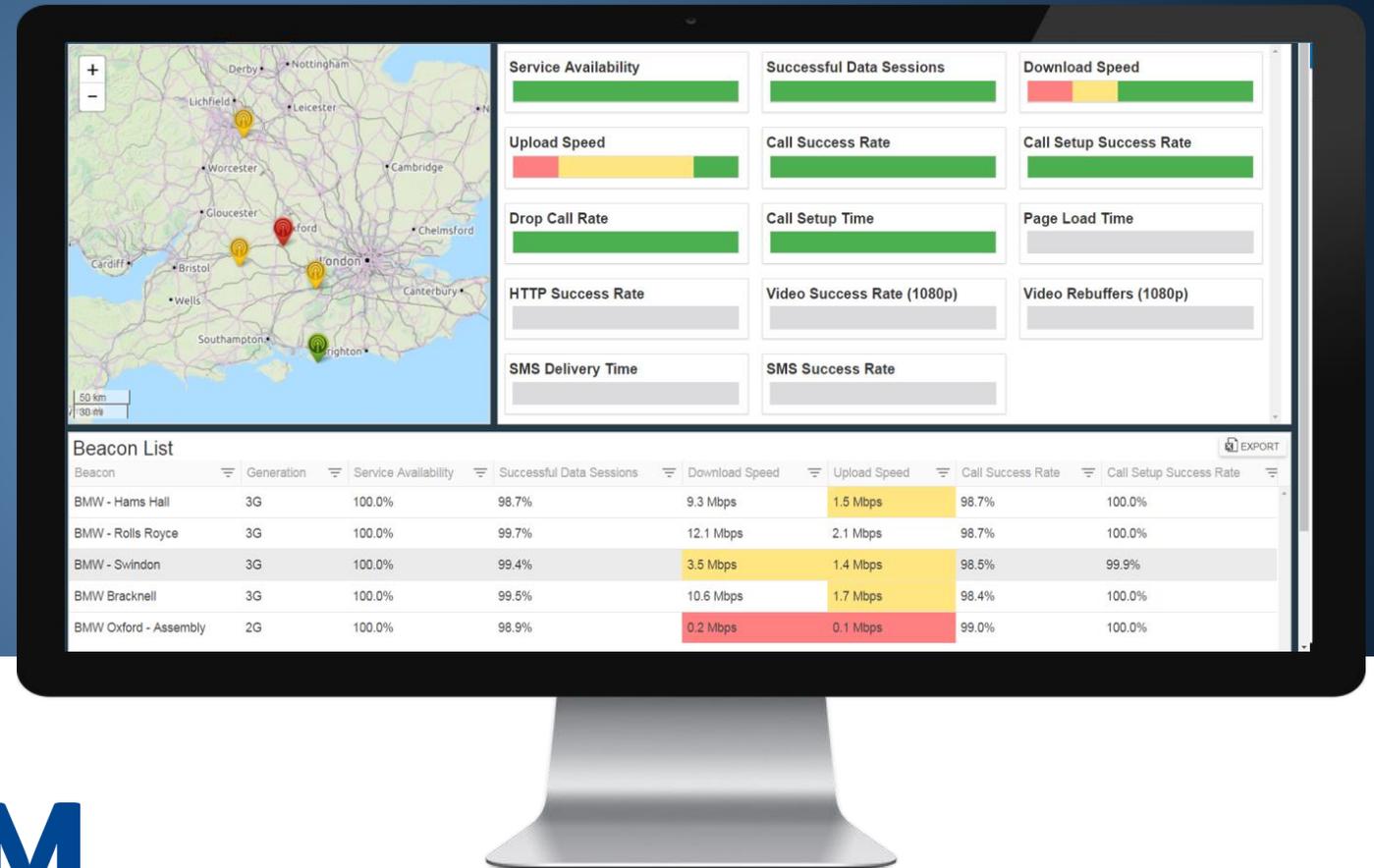


Use Case 3

Customer Corporate Headquarters Management

Our customers deploy Beacon devices in order to monitor the provision of network services at headquarters and stores spread across their territory.

This allows them to get a quick overview of performance in crucial locations, as well as help them accelerate response times in their business with their customers.



Stay in Touch...

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