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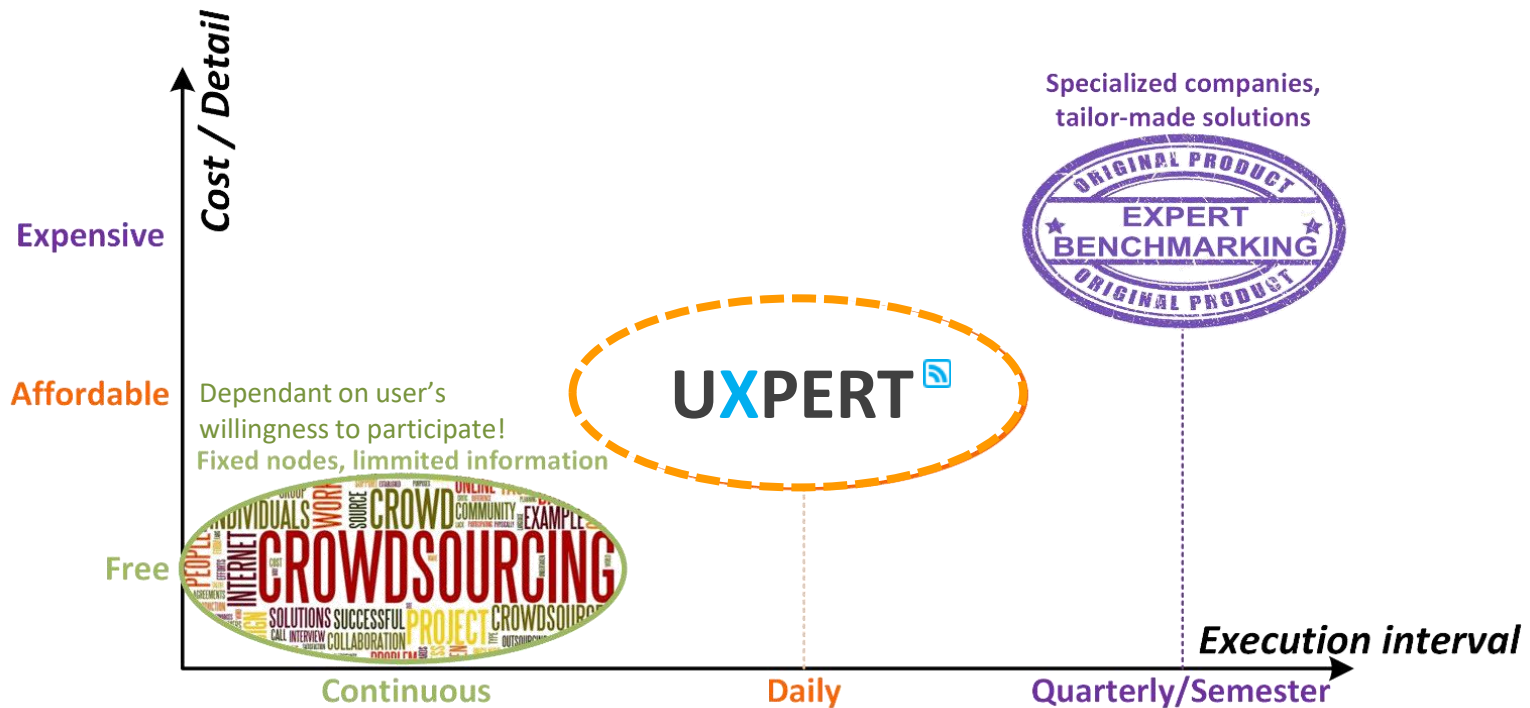
**UXPERT** 

User eXperience benchmarking solution for mobile networks

- Mobile Network Operators do not have control of the great majority of services used by the end user
  - YouTube, Facebook, etc.
  - Most of these services are free of charge and with limited responsibilities
- This creates a notion in the mind of the end user that the sole responsible for the availability and quality of the experience is the carrier, which in fact has no ability to improve or alter any aspect of the service.
- One of the biggest challenges MNOs face is to understand and measure the subscriber's network experience
- QoE can only be measured by physical probes emulating the UE on the field
- With virtual probes and CDRs (Call Detailed Records) is not possible to perform user experience benchmarking among competitors

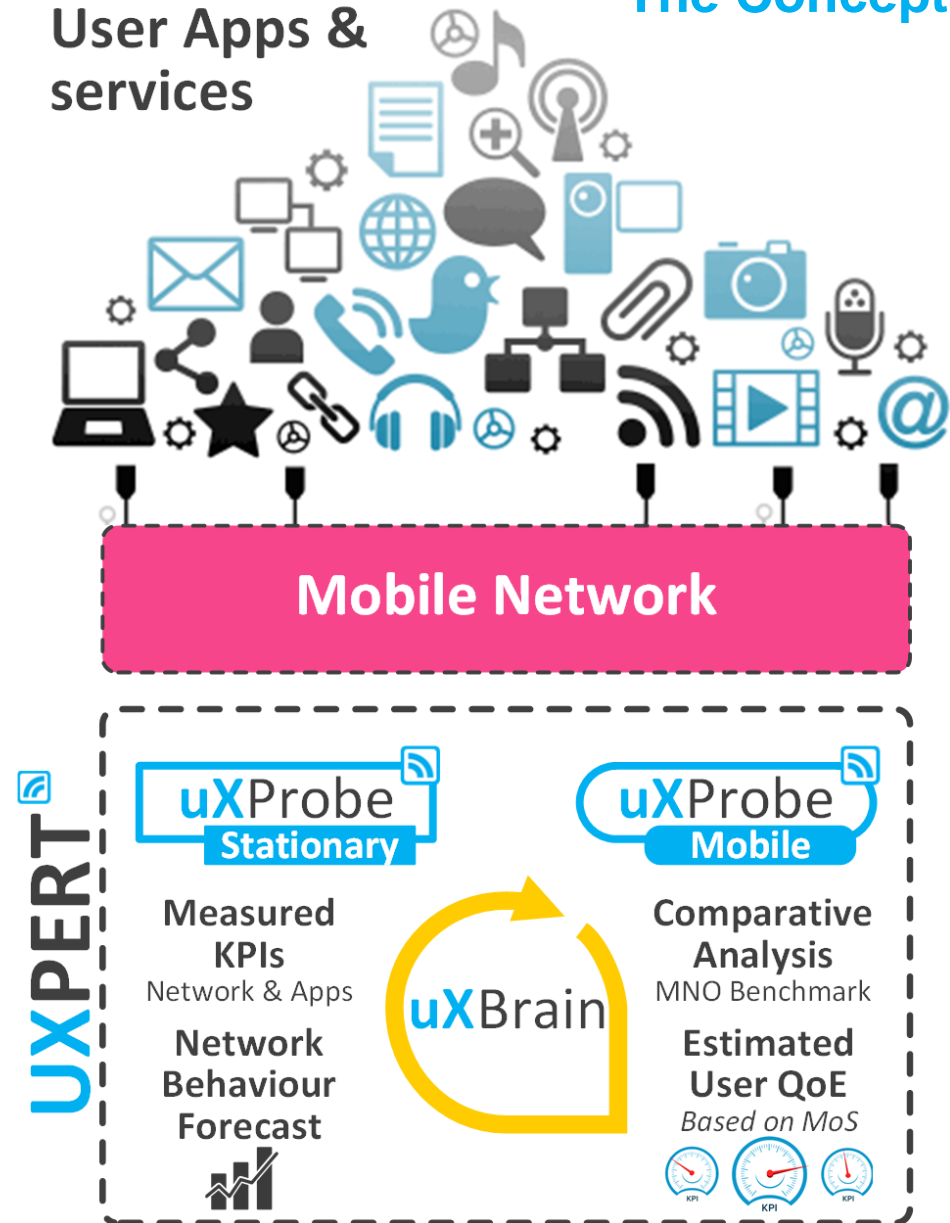
- Fully automated set of network benchmarking tests
- On-the-fly updates and remote configuration of radio probes
- End-to-end QoE measurements based on standards (W3C, IEEE, ITU) and most recent scientific findings
  - Web browsing, audio and video
  - Application specific user experience (Youtube, Facebook, etc)
  - 2G/3G/4G and NB-IoT
- Small form and highly flexible probes (in terms of functionality and theatre of operations)
- Affordable service (probes + subscription fee to the network analytics portal)
- Decrease the costs of drive tests in 70%

- UXPERT positioning on mobile network benchmarking solutions



- **UXPERT<sup>®</sup>** is an affordable benchmarking solution for mobile networks
- It is composed by:
  - Radio probes (**uXProbes**)
    - Stationary (buildings)
    - Mobile (vehicles)
  - A complete set of analytic tools and dashboards (**uXBrain**)
    - Heatmaps, evolutions charts, user experience, etc.
  - Application Servers
    - Measurement customization & automation
  - Data Repositories
    - PostgreSQL

## The Concept



## Mobile probe with GPS antenna for drive tests



## Probe configuration – test template

UXBrain Home Cellular Probes Fixed-Line Probes

- FILTERS -

UXProbe ▾

Operator ▾

Key Performance Indicator ▾

2G 3G 4G 5G

21/06/18 00:00 - 28/06/18 23:59

Apply

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Manage Probes Manage Tests Performance Graphics Benchmarking

Create/Modify UxProbe Group Create/Modify Test Template

### Test Template Information

Template Name

### Network Information

OFF Network Information

### GNSS

OFF GNSS

### Round Trip Time

OFF Ookla

OFF Custom List

List of Custom Servers

### Upload Throughput

OFF Ookla

OFF Custom List

List of Custom Servers

### Download Throughput

OFF Fast by Netflix

OFF Ookla

OFF Custom List

List of Custom Servers

### UDP Delay Jitter and Packet Loss

OFF Custom List

List of Custom Servers

### WEB Browsing / SSL / DNS

OFF Custom List

List of Custom Servers

### Video

OFF Netflix

OFF Youtube

### WiFi Scanning

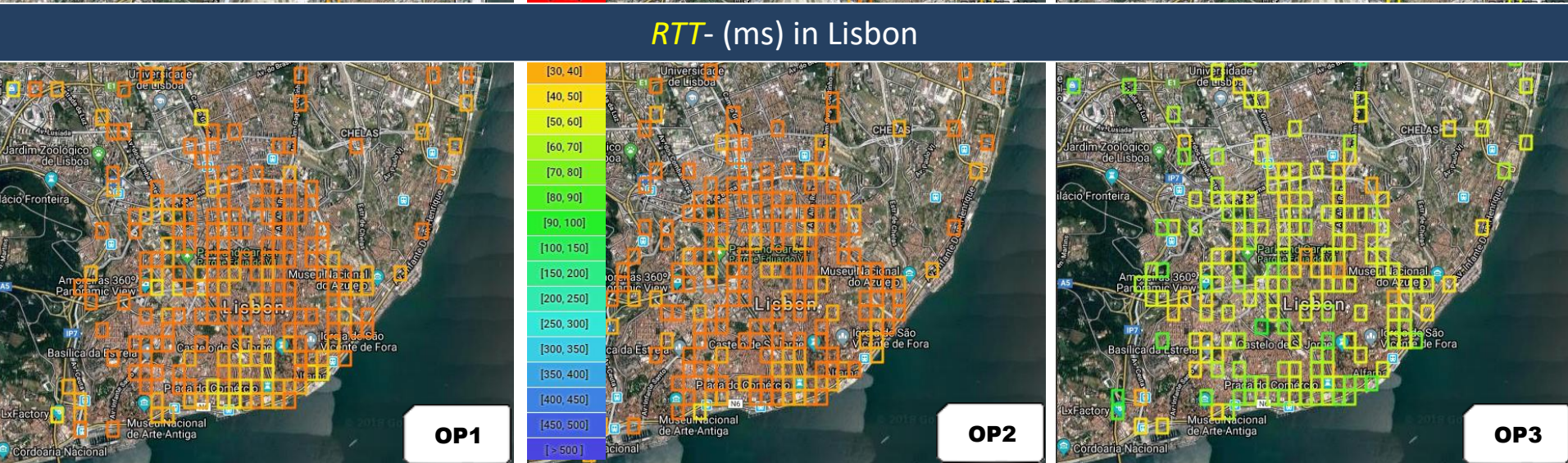
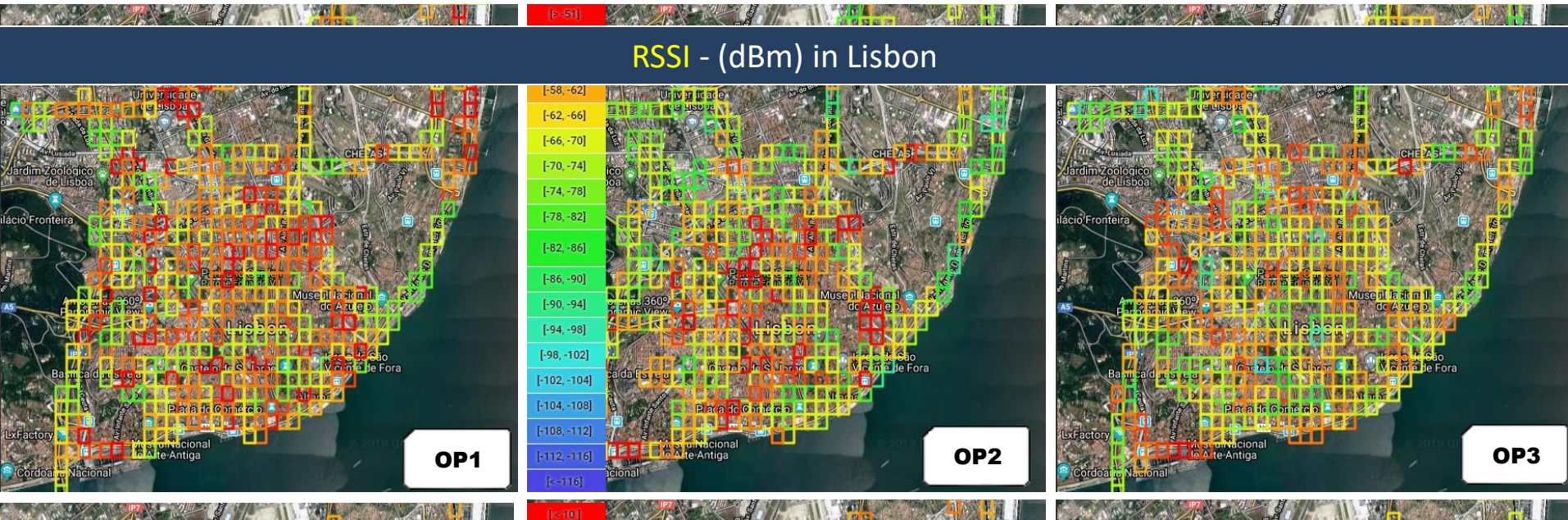
OFF 2.4GHz and 5GHz

### Resolution

Multiple Run 300

Save

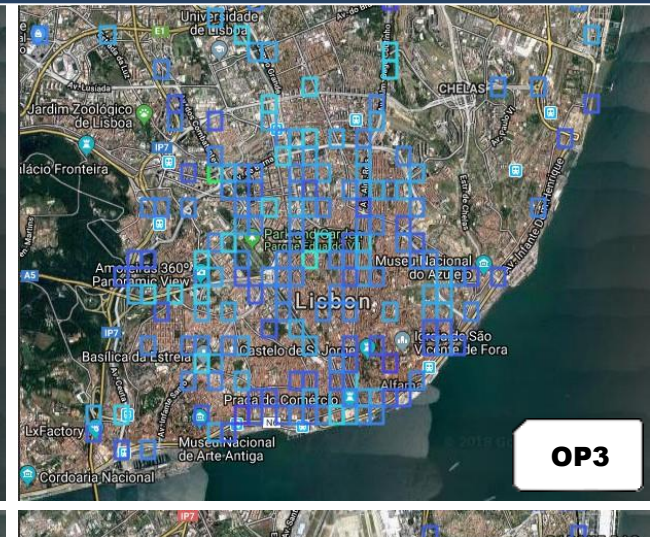
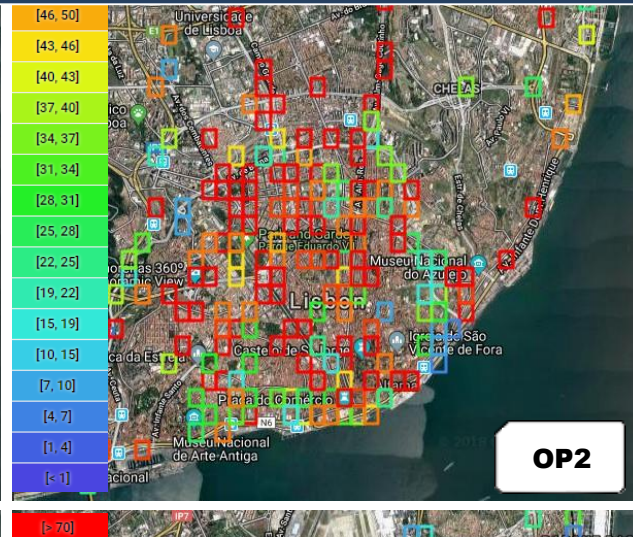
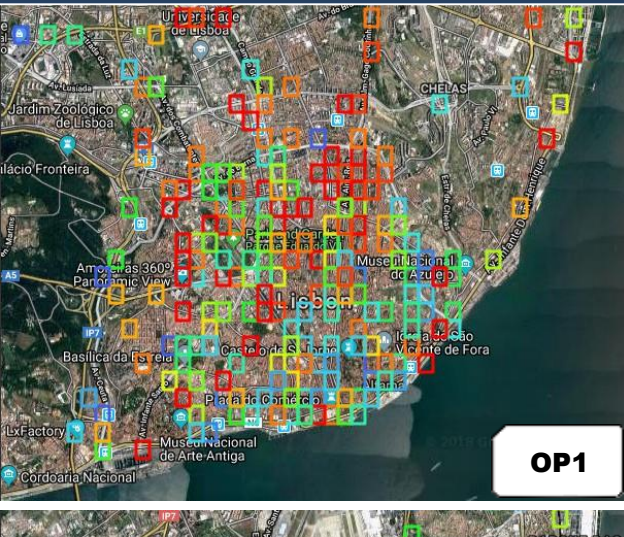
# Showcase of a drive test in Lisbon - RSSI and RTT heatmaps



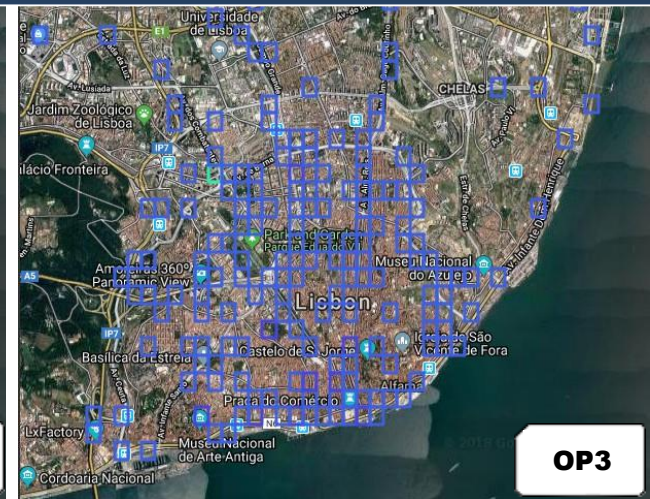
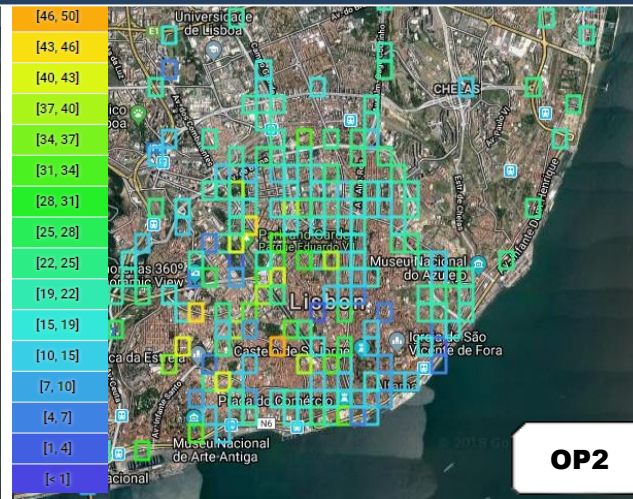
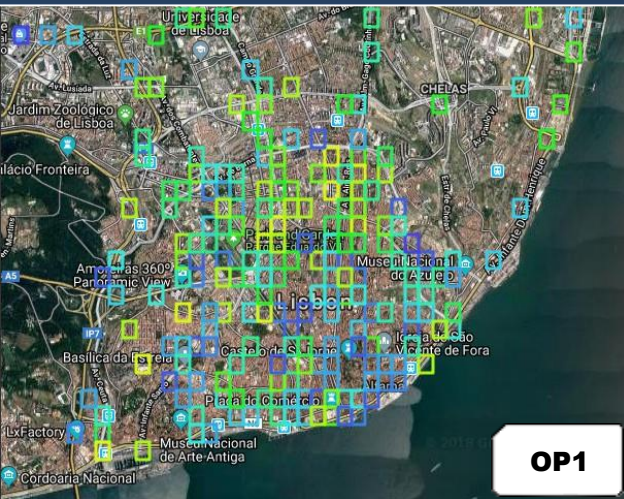
## DL/UL speed heatmap



Average *download* (Mbps) speed in Lisbon

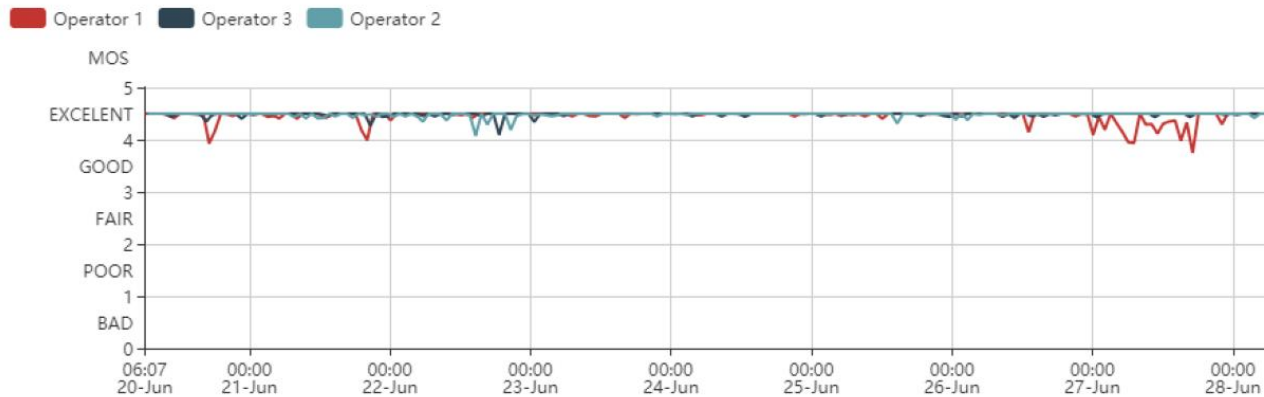
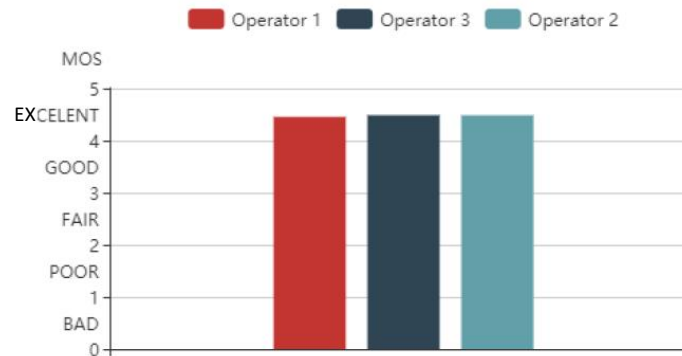


Average *upload* (Mbps) speed in Lisbon

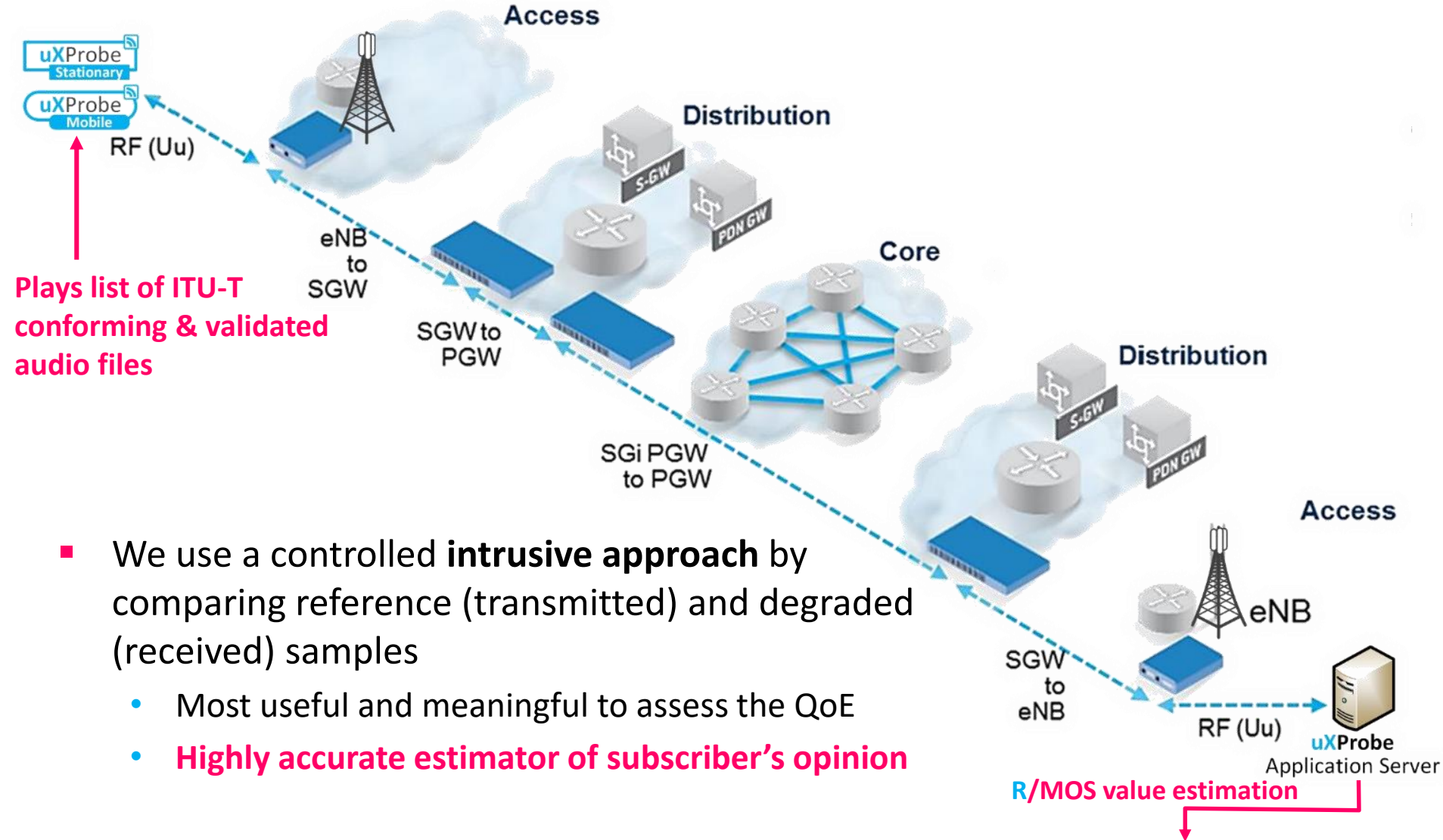


## Operators benchmarking with a stationary probe in Camo Pequeno (Lisbon)





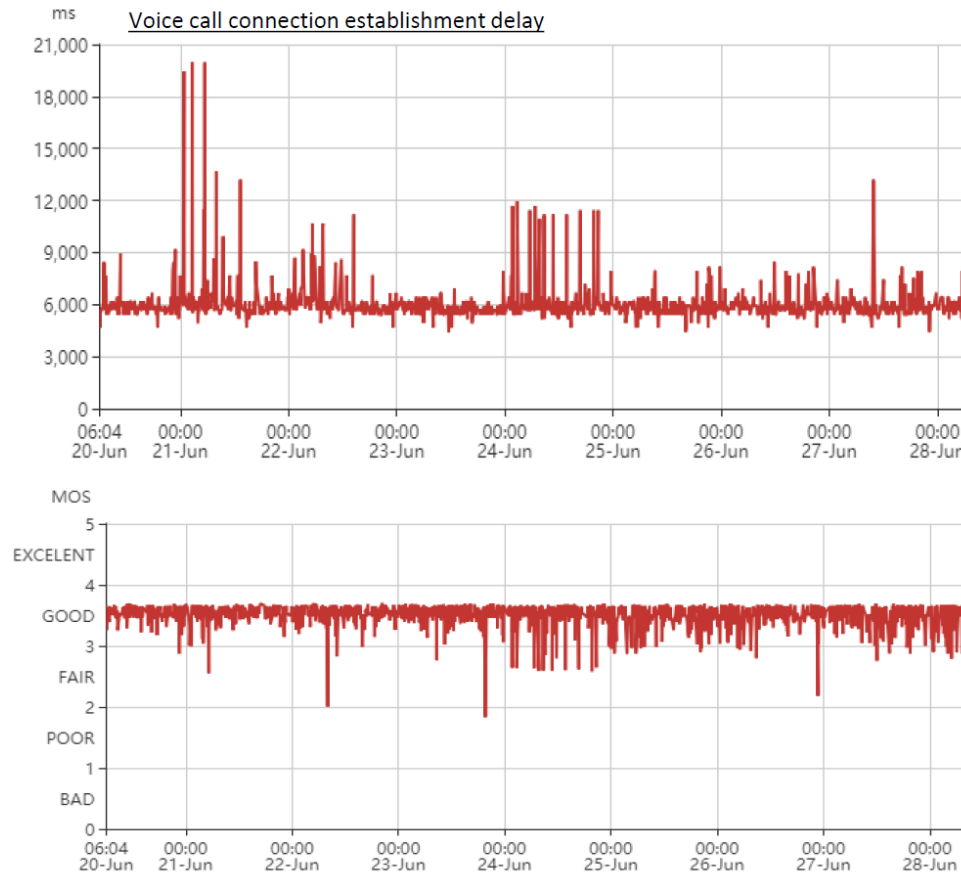
## Measuring end-to-end Audio User Experience



Uses Recommendation ITU-T P.862/P.862.1 (PESQ) for audio quality assessment

## Voice call user experience (ITU-PESQ)

- Stationary probe in Campo Pequeno (Lisbon)



- **REQUEST A DEMO**

To learn more about the power and capabilities of our **UXPERT** network analytics framework.

- **REQUEST A QUOTATION**

Do you have a specific project for which you would like to receive a quotation or do you want more information on the possibilities?

Please tell us more about your project and send us your request.

- **Contact:** [geral@allbesmart.pt](mailto:geral@allbesmart.pt)

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