

# Spirent Umetrix<sup>®</sup> Voice

## Solution for Voice Experience Evaluation

### Voice Experience Evaluation for VoLTE, VoWi-Fi, OTT, and Legacy Voice Services



Umetrix Voice (Nomad UX) evaluates voice experience for any device and any voice service including VoLTE, VoWi-Fi, over-the-top (OTT) and more.

## Use Cases

### 1. Launch readiness assessment for new voice services (VoWi-Fi, VoLTE, OTT, etc.) and new voice codecs.

Compare the user experience of new voice services to legacy or competitive services prior to launch. Set launch criteria and evaluate trial, soft launch and commercial networks to determine readiness.

### 2. Comparative analysis and ranking of voice experience across device models.

Compare and rank any device based on live network voice experience criteria such as speech quality, call completion success rate and audio delay. Use the rankings to drive device marketing and acceptance.

### 3. Pre-testing for carrier device acceptance programs.

Umetrix Voice enables device manufacturers to pre-test new device models prior to submission to carrier acceptance programs. By addressing issues proactively, acceptance can proceed without delay.

## Highlights

- Assess the launch readiness of new voice services like VoWi-Fi, VoLTE, OTT, and more.
- Compare and rank the voice experience of device models for device marketing and acceptance.
- Evaluate the user experience of voice services in the live network using actual consumer mobile devices.
- Reduce test time by up to 70% vs. previous Umetrix Voice models.
- Perform OTT voice codec testing with increased confidence with the POLQA V3 algorithm

## Key Metrics

 **Speech Quality  
MOS (POLQA)**

 **Call  
Completion  
Success Rate**

 **Audio Delay**

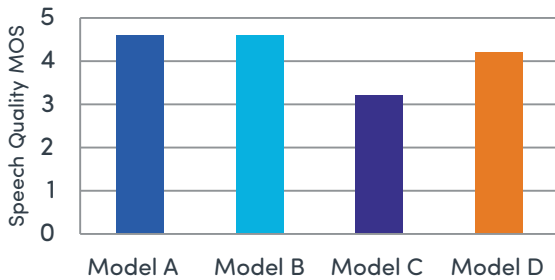
## Features

**Automate the Evaluation Process.** Accelerate the entire user experience evaluation process including setup of tests, validation of test results, data aggregation and reporting.

**Evaluate Six Devices Simultaneously.** Umetrix Voice includes six channels for evaluating mobile devices. That reduces the time required to complete tests by 30-50% over the previous Umetrix Voice instrument, depending on the specific test plan.

**Test Call and Speech Simultaneously.** Umetrix Voice allows call performance and speech quality tests to be performed at the same time. As a result, the time to complete typical test plans is reduced by 10-20%.

**Consistent Metrics on Any Mobile Device.** Umetrix Voice measures the user experience of voice services with a consistent approach across any mobile device platform. Make direct comparisons of voice services including VoLTE, VoWi-Fi, HD, 3G, OTT, and more.



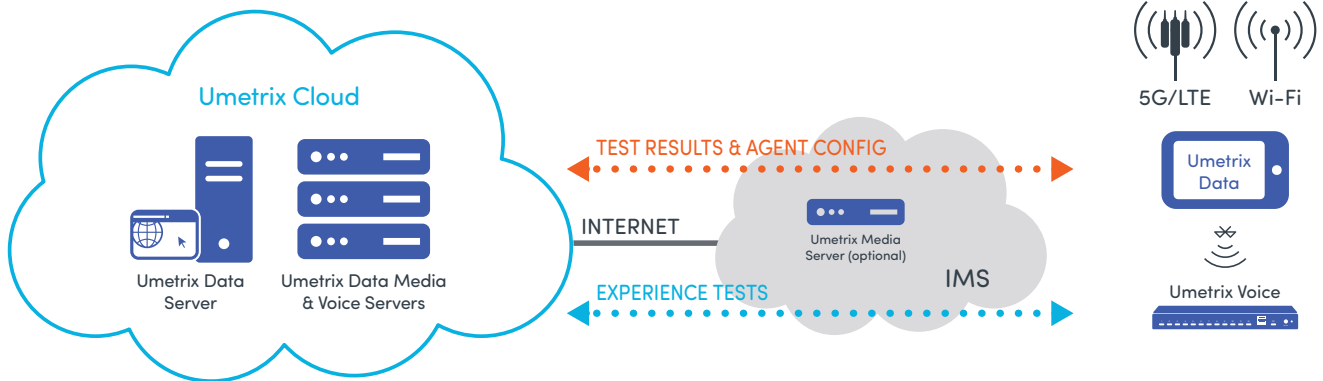
Umetrix Voice produces reports that compare device models, service providers or service types (VoWi-Fi, VoLTE, 3G, OTT, etc.)

**Support for HD Speech.** Perform both Narrowband and HD speech quality analysis with support for 48kHz bandwidth and the wideband-ready POLQA speech quality algorithm. Supports all wideband codecs including the Enhanced Voice Services (EVS) codec.

**Measure Experience in the Live Network.** Umetrix Voice measures live network voice experience using three approaches: mobile-to-mobile, mobile-to-IMS, and mobile-to-PSTN.

Approach	Pros and Cons
Mobile-to-Mobile	<ul style="list-style-type: none"> <li>• Easy to set up</li> <li>• Supports HD codecs for VoLTE, VoWi-Fi and OTT voice testing</li> <li>• No isolation of uplink / downlink</li> </ul>
Mobile-to-IMS	<ul style="list-style-type: none"> <li>• Requires Umetrix HD Voice Server in core network</li> <li>• Isolates uplink and downlink / IMS for faster troubleshooting of issues</li> </ul>
Mobile-to-PSTN	<ul style="list-style-type: none"> <li>• Easy setup (Spirent-hosted)</li> <li>• Isolates uplink and downlink</li> <li>• Narrowband codec only</li> </ul>

## System Overview



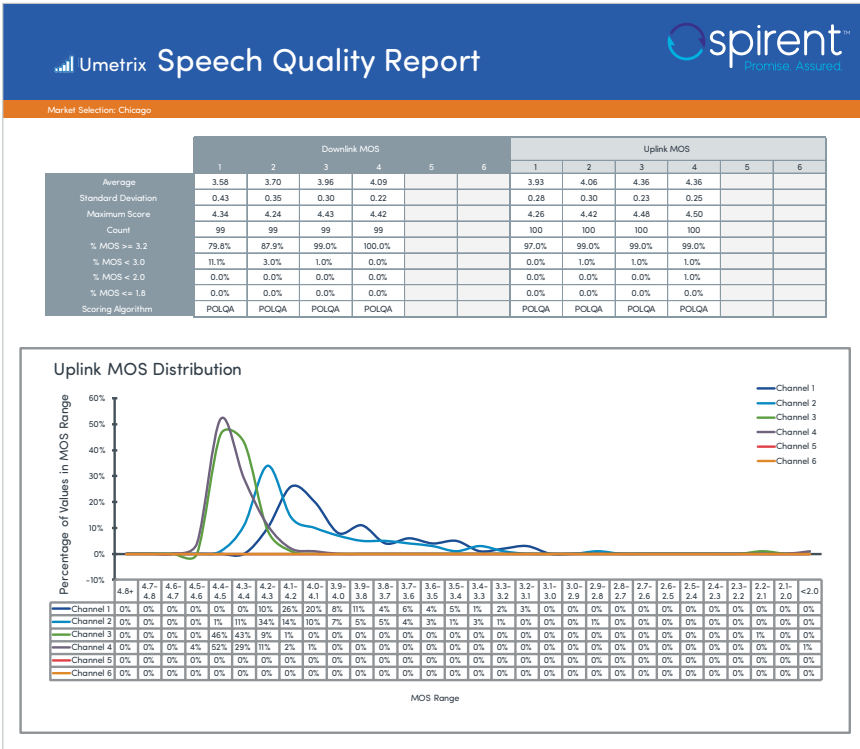
**Umetrix Voice.** The Umetrix Voice UX solution consists of a portable hardware unit and PC-based control software. The unit controls up to six mobile devices simultaneously using a Bluetooth interface to initiate and terminate calls. It performs voice experience tests over a Bluetooth audio link or via the mobile device’s audio jack. The instrument performs three types of tests: mobile-to-mobile (between two devices on the same or different instruments), mobile-to-PSTN or mobile-to-IMS. Umetrix Voice UX evaluates the voice experience of end-to-end connections by performing speech quality tests (POLQA), call initiation and retention tests and audio delay tests.

**Umetrix HD Voice Server.** The HD Voice Server enables mobile-to-IMS tests using narrowband or wideband / HD codecs. The server is deployed within a carrier’s core network and interfaces directly to the IMS, acting as a virtual SIP/IP device and experience testing end-point. The HD Voice Server helps isolate issues by enabling independent analysis of the uplink and downlink for a specific mobile-to-IMS connection. This helps isolate issues better than mobile-to-mobile tests where the end-to-end connection includes the uplink and downlink of both mobile devices under test.

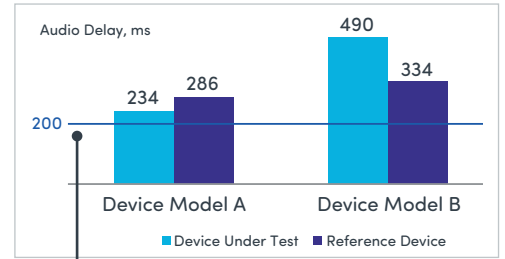
**Umetrix Cloud.** The Umetrix Cloud is a worldwide set of Spirent-hosted cloud endpoints for voice and data test services. The **Umetrix Voice Server** enables mobile-to-PSTN tests using narrowband codecs. With the Voice Server, customers can get uplink MOS delivered to their Umetrix Probe in real-time while conducting field testing. The server is hosted in the Umetrix Cloud and connects to the PSTN via a T1 or E1 interface. The Voice Server acts as virtual landline phone and voice probe for performing end-to-end voice experience evaluation. The Voice Server helps isolate issues by enabling independent analysis of uplink and downlink voice service metrics. In addition, the Voice Server enables evaluation of narrowband codecs and PSTN connectivity for the network, service or device under test. The Umetrix Cloud also contains **Umetrix Data Media Servers**, which act as an endpoint for all data experience tests, hosting various types of media and services required to perform HTTP, FTP and UDP file transfers and ping tests.

## Example Outputs

### Speech Quality by Service or Device Model



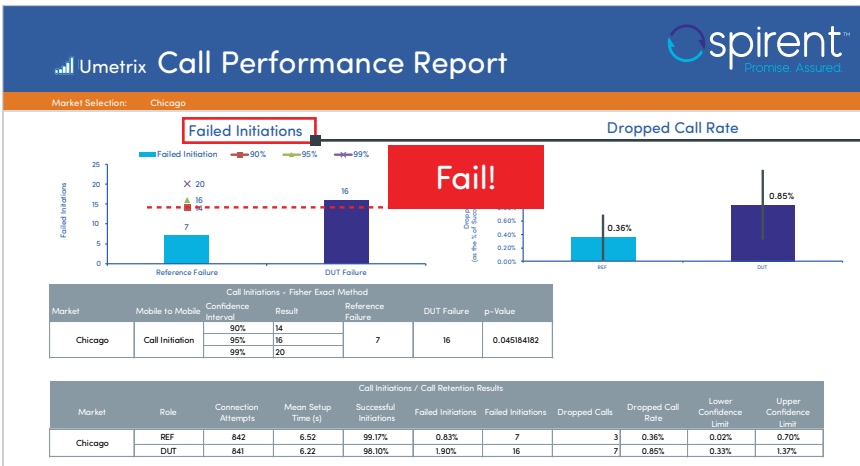
### Audio Delay by Device Model



Determine if the audio delay of new devices and services will meet user expectations

Compare the speech quality of new services like VoWi-Fi and VoLTE to 3G voice and OTT services

### Call Performance by Device Model or Service (VoLTE, VoWi-Fi, OTT, 3G, etc.)



Evaluate call metrics such as failed initiations to determine launch readiness of new services

### About Spirent Communications

Spirent Communications (LSE: SPT) is a global leader with deep expertise and decades of experience in testing, assurance, analytics and security, serving developers, service providers, and enterprise networks. We help bring clarity to increasingly complex technological and business challenges. Spirent's customers have made a promise to their customers to deliver superior performance. Spirent assures that those promises are fulfilled. For more information visit: [www.spirent.com](http://www.spirent.com)

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