

# Spirent Nomad UX

## Umetrix Probe for Voice Experience Evaluation

### Highlights:

- Assess the launch readiness of new voice services like VoWiFi, VoLTE, OTT and more.
- Compare and rank the voice experience of device models for device marketing & 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 Nomad models.
- Accelerate setup, data management and reporting with Umetrix platform integration.

### Voice experience evaluation for VoLTE, VoWiFi, OTT and legacy voice services



Nomad UX evaluates voice experience for any device and any voice service including VoLTE, VoWiFi, OTT and more. Nomad UX is now part of the Umetrix platform which enables management of probe configuration, automatic upload of test results and reporting – all via a centralized, cloud-based web portal.

### Use cases

- 1. Launch readiness assessment for new voice services (VoWiFi, VoLTE, OTT, etc.) and new codecs such as the Enhanced Voice Services (EVS) codec**  
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 & acceptance.
- 3. Pre-testing for carrier device acceptance programs**  
Nomad UX 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.

### Key Metrics



Speech Quality  
MOS (POLQA)



Call Completion  
Success Rate



Audio Delay

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Umetrix Probe for Voice Experience Evaluation

## Features

**New! Automate the Evaluation Process.** Accelerate the entire user experience evaluation process including setup of tests, validation of test results, data aggregation and reporting. Nomad UX is now part of the **Umetrix platform**.

**New! Evaluate Six Devices Simultaneously.** Nomad UX includes 6 channels for evaluating mobile devices vs. 4 channels for previous versions of Nomad. That reduces the time required to complete tests by 30-50% depending on the specific test plan.

**New! Test Call and Speech Simultaneously.** Nomad UX 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%. Previous generations of Nomad supported serial testing of call performance and speech quality.

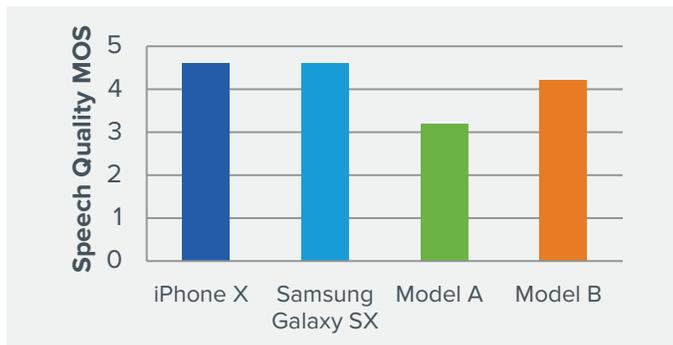
**New! Log with QXDM (No Extra Hardware Needed).** Nomad UX allows simultaneous QXDM and Nomad logging with no extra hardware or setup required. Previous versions of Nomad required 3rd party hardware to avoid interference between QXDM and Nomad.

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

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

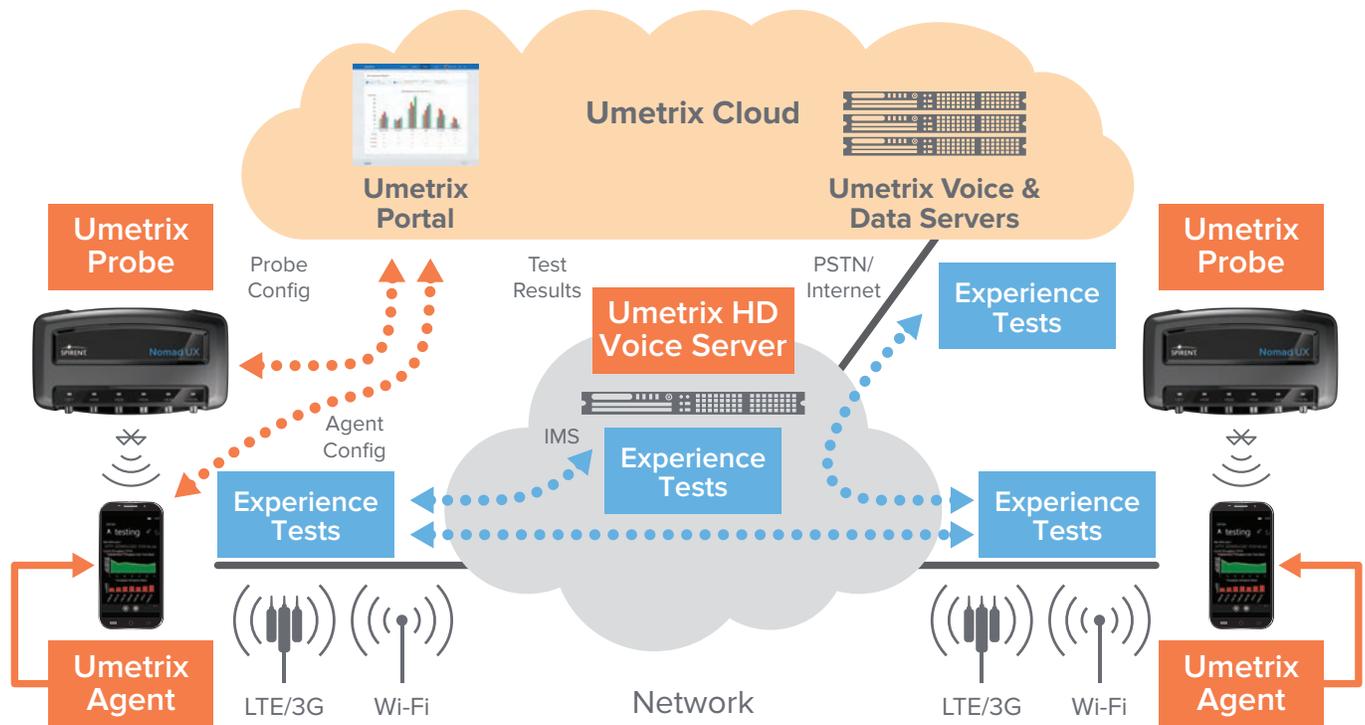
**Measure Experience In the Live Network.** Nomad measures live network voice experience using three approaches: mobile-to-mobile, mobile-to-IMS and mobile-to-PSTN.

Approach	Pros and Cons
Mobile-to-Mobile	<ul style="list-style-type: none"><li>Easy to setup</li><li>Supports HD codecs for VoLTE, VoWiFi and HD voice testing</li><li>No isolation of up/downlink</li></ul>
Mobile-to-IMS	<ul style="list-style-type: none"><li>Requires Nomad HD Call 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>



Nomad UX produces reports which compare device models, service providers or service types (VoWiFi, VoLTE, 3G, OTT, etc.)

## System overview



**Nomad UX: Umetrix Probe.** The Nomad UX Probe consists of a portable hardware unit and PC-based control software. The Probe controls up to six mobile devices simultaneously using a Bluetooth interface to initiate and terminate calls. The Probe performs voice experience tests over a Bluetooth audio link or via the mobile device's audio jack. The Probe performs three types of tests: mobile-to-mobile (between two devices on the same or different Probes), mobile-to-PSTN or mobile-to-IMS. The Probe evaluates the voice experience of end-to-end connections by performing speech quality tests (POLQA / PESQ), call initiation and retention tests and audio delay tests. The Probe may be operated in an offline mode or as a client of the Umetrix Portal.

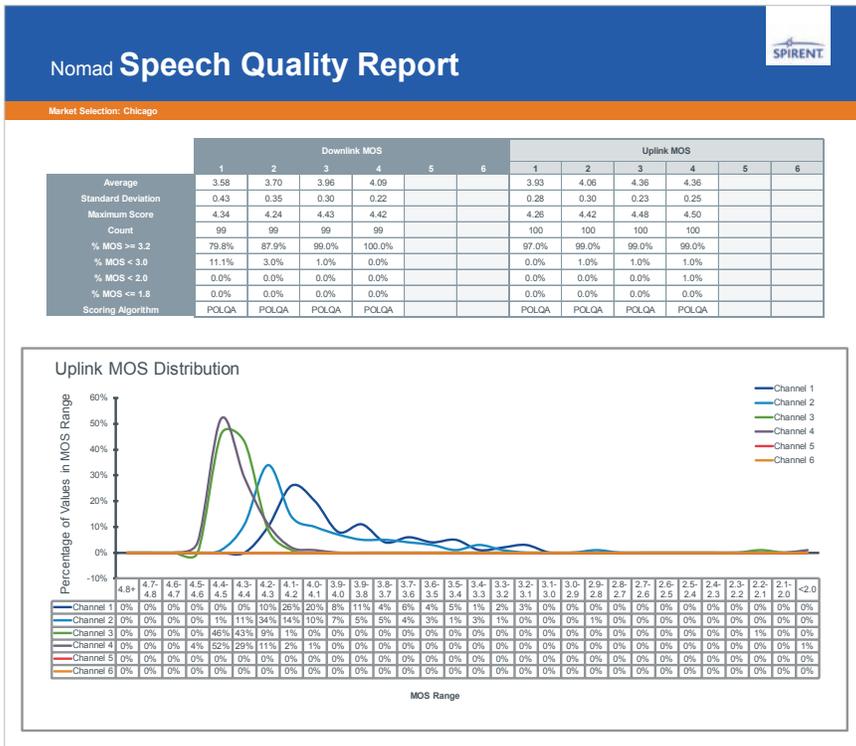
**Umetrix HD Voice Server.** The HD Voice Server enables mobile-to-IMS tests using narrowband or wideband / HD codecs. The Server is deployed within a carrier's core network and interfaces directly to the IMS, acting as a virtual SIP/IP device and experience testing end-point. The HD Voice Server helps 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 mobiles under test.

**Umetrix Portal.** Umetrix Portal is a web-application hosted in the Umetrix Cloud. The Portal's web interface accelerates evaluation of user experience for large and/or distributed teams. Project managers use Umetrix Portal to specify the correct Probe configuration for a specific project. When field engineers begin testing, they first login to the Umetrix Portal via the Probe's PC control software and select the appropriate pre-defined Umetrix project. The Probe then downloads and applies configuration settings in the project. As the engineer performs experience tests, all results are uploaded to the relevant project in Umetrix Portal, allowing the project manager to monitor test status and validate results. Once all tests are completed and the data are validated, reports may be generated in a matter of minutes. Umetrix Portal is an optional feature.

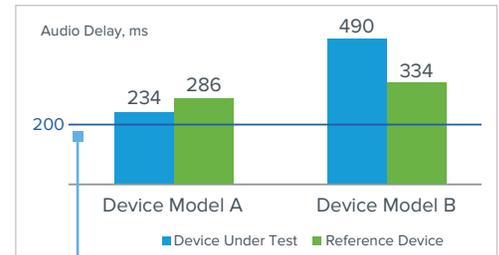
**Umetrix Voice Server.** The Umetrix Voice Server enables mobile-to-PSTN tests using narrowband codecs. The server is hosted in the Umetrix Cloud and connects to the PSTN via a T1 or E1 interface. The Voice Server acts as virtual landline phone and voice probe for performing end-to-end voice experience 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.

## Example outputs

### Speech quality by service or device model



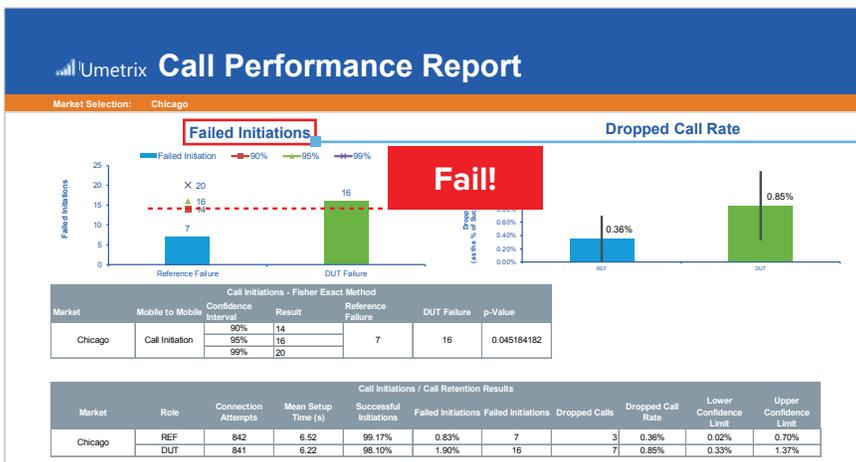
### Audio delay by device model



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

Compare the speech quality of new services like VoWiFi and VoLTE to 2G/3G voice and OTT services

### Call performance by device model or service (VoLTE, VoWiFi, OTT, 3G etc.)



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