

Spirent **Fit4Launch**

User Experience Analytics Program

Highlights

- Rank the user experience of all devices on your network with a turnkey service managed by Spirent
- Implement more effective marketing campaigns and customer retention initiatives by understanding which devices deliver the best experience on your network
- Improve user experience by working with device manufacturers to improve the worst performing device models
- Negotiate based on the user experience rank of device manufacturers vs. competitors

All devices aren't created equal

Live network file download speed

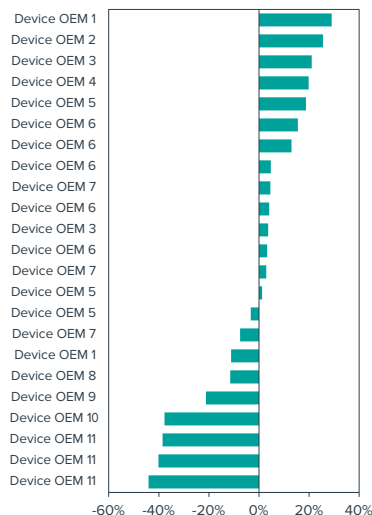


Figure 1: A comparison of live network file download speeds for 23 device models from 11 device manufacturers. Each device was compared to the same reference device.

Device performance relative to reference			Average MOS relative to F4L database			
Voice quality metrics - VoLTE network			Downlink		Uplink	
	Downlink	Uplink				
Market drives - MOS average	●	●	100%	Higher	100%	Higher
Market drives - standard deviation	●	●	75%		75%	
Market drives - % MOS < 2.8	●	●	50%	Evaluated Device	50%	Evaluated Device
Market drives - % MOS < 2.0	●	●	25%	Lower	25%	Lower

Fit4Launch analytics include pass/fail ratings and comparative rankings of devices.

The best experience wins: The device uniquely shapes the experience

Device + network = experience. The device and its interaction with the network shape all aspects of the user's experience of services. However, the device is the lens through which the customer perceives both the network and the service. In this sense, the device IS the experience. As competition to attract and retain subscribers becomes even more intense, understanding which devices deliver the best experience is more important than ever.

All devices are not created equal. Spirent has evaluated the user experience of thousands of device models over the past 14 years. In a study of smartphones for a leading operator, we found that the best devices were 60% faster at downloading files than the worst devices (using the same class of chipsets—see Figure 1). In fact, we've found that the best devices significantly outperform the worst devices across all user experience categories.

Which devices deliver the best experience? Devices perform differently depending on a complex set of factors including radio environment and band, specific network and device configuration settings, chipsets and other components and the overall device design. The bottom line: the only way to know which device models deliver a superior user experience is to evaluate the device in the actual live network or in lab conditions which emulate the live network.

Identifying the best and worst devices. Based on our work with leading operators and device manufacturers over the years, we've developed a set of best practices for evaluating and comparing user experience across devices. These best practices work for any device and any network technology from 3G to VoLTE to Wi-Fi. Most importantly, the best practices include a robust statistical approach that ensures the best and worst performing devices are reliably identified.



Fit4Launch: Turnkey service to evaluate and rank the user experience of devices

Rank all your devices. Fit4Launch is a turnkey service provided by Spirent to evaluate and rank the user experience of all your mobile devices. Fit4Launch is customized to each operator’s specific needs, delivering user experience scorecards for each device as well as overall device portfolio rankings.

Measure what matters. Fit4Launch evaluates the key factors that impact the user experience of voice, video, and data for 3G, LTE (VoLTE, ViLTE), 5G and Wi-Fi (VoWi-Fi) services. Our experience metrics include call setup time, call setup success and retention, speech quality, conversational speech delay, video smoothness, web browsing speed, file download speed and more.

On the live network (and/or in the lab). Fit4Launch evaluates user experience in both the live network and the lab. In the live network, Fit4Launch evaluates experience in the locations where your subscribers use their devices, including both mobile and stationary environments. In the lab, Fit4Launch evaluates aspects of experience only possible in the lab, such as speech quality for various types of noise.

Get results in days. We know how critical time to market is. That’s why we provide results for each device we evaluate in a matter of days. Depending on the specific evaluation program, results are available 5-15 days after receipt of devices.

Answer “why.” We don’t just measure the experience—we also provide critical data for triaging the root causes of poor user experience. Our VoLTE analytics use RTP and RF data to help isolate root causes to the device, network or device-network interaction. Our lab-based tests use emulated network nodes to isolate device-specific issues related to RF performance, codec or noise-cancelling algorithms.

Turnkey service. We start by sharing our best practices for evaluating the user experience of new devices and understanding your specific needs. Then we develop an evaluation criteria and testing workflow tailored to those specific needs. Finally, we manage all aspects of the testing workflow, so you can focus on your core business.

Reliable and proven. With thousands of device models evaluated across all major device manufacturers, our best practices for evaluating user experience are based on years of experience. Furthermore, our evaluation criteria include robust statistical controls to ensure results are reliable and repeatable.


Device ranking balanced scorecard


Device Model	Weighted overall rank	Voice experience	Video experience	Data experience	Location experience
Model A	1	1	2	2	3
Model B	2	3	1	1	2
Model C	3	2	4	5	1
Model D	4	2	3	4	5
Model E	5	5	5	3	4


Fit4Launch enables all your devices to be ranked based on User Experience.


User experience analytics by Spirent


Fit4Launch is part of a suite of services and systems that provide an unmatched range of user experience analytics including:


-  Speech

-  Call

-  Web browsing

-  File transfer

-  Video

-  Location

Fit4Launch Test Library

Voice experience (3G, VoLTE, VoWi-Fi)

Live network

- Speech quality in stationary & mobile environments
- Call initiation & retention in stationary & mobile environments
- Network edge retention
- Speech & calling during handover
- Speech and calling during simultaneous voice & data service usage

Lab (emulated network/channel)

- Speech quality in degraded channel
- Speech quality by codec
- Speech quality in noise (p.835, PESQ, g.160)
- Handset & speakerphone acoustic speech quality and loudness
- Bluetooth speech quality
- Echo cancellation & double talk

Data experience (LTE, 5G)

Live network

- File transfer speed (HTTP/FTP) in stationary & mobile environments
- Streaming data speed (UDP) in stationary & mobile environments
- Web browsing speed in stationary & mobile environments
- File transfer during simultaneous voice & data service usage

Lab (emulated network)

- File transfer speed in degraded channel
- MiFi throughput
- Tethered file transfer speed
- LTE file transfer speed

Video experience

Live network

- Video calling in stationary & mobile environments
- Video streaming for OTT applications

Lab (emulated network)

- Video streaming on emulated network

Location experience

Live network

- Control and user plane location accuracy, time to fix and yield



Fit4Launch is a turnkey service for evaluating the user experience of devices in the live network and lab.

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.

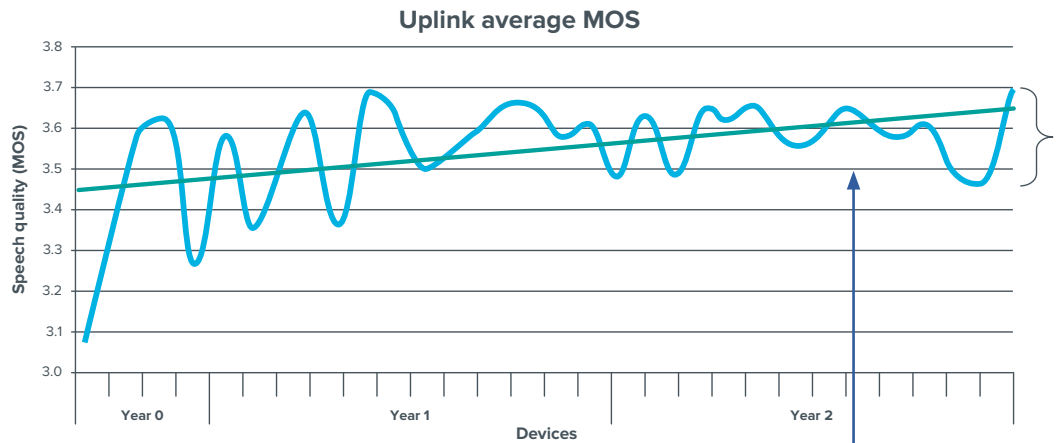
For more information, visit: www.spirent.com

Example Outputs



Detailed analyses are provided for each category of user experience measured. Analyses include overall scorecards by experience category and detailed results.

Case Study: Effect of Fit4Launch on portfolio speech quality over two years



Fit4Launch programs for evaluating user experience of pre-launch devices are deployed at several U.S. operators	Over 2 years, the F4L program led to decreased variance between devices and more consistent speech quality	F4L program also led to better average speech quality across portfolio
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Contact Us

For more information, call your Spirent sales representative or visit us on the Web at www.spirent.com/ContactSpirent.

www.spirent.com

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