

# Spirent Elevate®

## Video Quality and Services Testing

Delivering higher quality of experience for next-generation wireless services

Video currently exceeds half of internet traffic and is expected to grow to three-fourths (75 percent) of the world's mobile data traffic by 2020\*. Yet ensuring a high quality user experience with smartphones on mobile networks is very challenging.

Video services require comprehensive functional, interoperability, and quality assessment testing that includes Key Performance Indicators (KPIs) such as Mean Opinion Score (MOS) to guarantee a high Quality of Experience (QoE).

### Applications

Spirent has been working with leading chipset/device manufacturers and carriers to understand device characteristics and develop test plans for the functional and video quality performance requirements for video services.

- Video streaming services
- Live event multicast: e.g., 3GPP, eMBMS
- Video telephony: IR.94 & RCS, VoLTE video call, OTT services
- Video playback: recorded video, on-device video
- Video codec evaluation: H.264, H.265

\* Source: Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2015–2020

Spirent's video experts designed and developed a comprehensive video services test solution that addresses the critical functional and interoperability issues inherent with complex video codecs and video telephony services, as well as evaluating the required QoE for the many increasingly popular video applications.

**Spirent Elevate** provides a robust platform to execute a wide range of video-specific *functional test scenarios* spanning LTE, Wi-Fi, and 3G while supporting various mobility, cellular offloading and end-to-end interoperability scenarios.

- Video profile simulation (SD to Full HD)
- Encoder simulation
- Video adaptive bit rates
- Video codec H.264 and H.265
- Video channel impairment
- Video conferencing

**Spirent's Video Analyzer** extends the video test solution to uniquely enable extensive *QoE performance evaluation* of numerous KPIs and various impairment scenarios to understand the effect on the user experience.

- Key KPIs – PEVQ VMOS, POLQA MOS, latency, A/V sync, frame rate
- Quality of Experience (QoE) with good/bad channel, high/low bit rate
- Camera capture, MHL, and Miracast support



WTS - RF Simulation

Camera Capture

Testing architecture

### Benefits

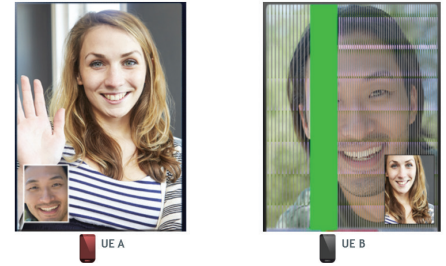
- Reduced expenses: low-cost, small footprint platform tests devices across multiple network technologies
- Flexible and robust: wide range of test scenarios to test interoperability (e.g. multi-device for end-to-end video chat) and service performance scenarios (e.g. full control of IMS core for video telephony)
- Trusted results: industry-leading expertise spanning both lab and field test solutions for video services

## Spirent services

Spirent Global Services provides a variety of professional services, support services and education services—all focused on helping customers meet their complex testing and service assurance requirements. For more information, visit the Global Services website at [www.spirent.com](http://www.spirent.com) or contact your Spirent sales representative.

## Use case: Video telephony

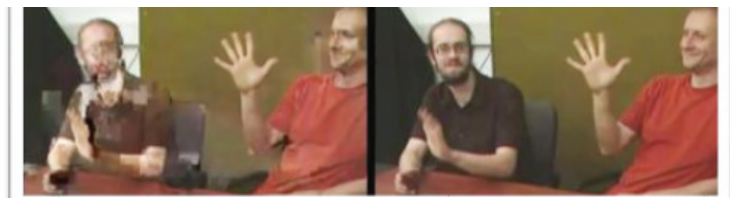
- Device to simulated agent: isolate performance of Device Under Test
- Device-to-device: evaluate end-to-end interoperability and video quality performance



VoLTE video call between UE A and UE B

## Use case: Video streaming

- Delivers interactive control for performance analysis including impaired channels, adaptive bit rates and analyzes effects on video streaming apps and user experience



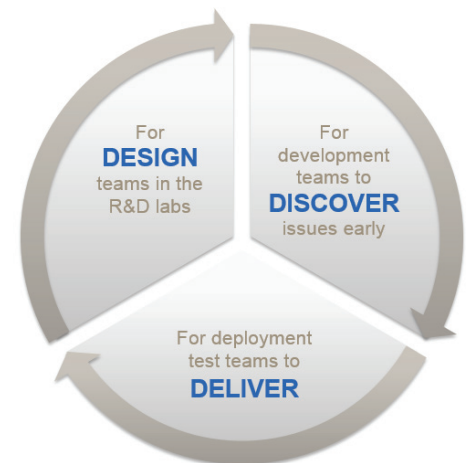
## Why Spirent?

- Camera capture methodology works for all devices and better represents human experience [also supports MHL (Direct HDMI) and Miracast]
- PIP handling provides software correction for picture-in-picture screen layouts
- On-screen UI event detection enables more options for test automation and pass/fail criteria
- Objective and subjective video performance assessment, which take into consideration inherent video images in addition to network parameters
- Embedded IP impairments replicate real network scenarios (such as streaming pixelization) on the uplink and downlink
- State-machine-driven core adapts to call process flow, which more closely resembles live network behavior versus script-driven alternatives

Spirent Elevate provides access to an end-to-end network in a compact and flexible solution to support device testing of multiple emerging wireless needs:

- **Audio Quality** for voice services, such as VoLTE and VoWi-Fi
- **Video Quality** for rich media experiences; streaming, chat
- **Battery Life** for testing drain and power consumption
- **Inter-carrier Traffic** to ensure QoE for device interoperability
- **Cellular Off-Load** to ensure QoE for LTE/3G to Wi-Fi mobility
- **Location Services** for testing emergency call scenarios over LTE and Wi-Fi
- **Internet of Things (IoT)**: to address new types of devices with unique challenges and testing needs

Spirent Elevate integrates the Wireless Test Station, ProLab IMS Testing Suite and User Experience measurement systems, along with other key components, to deliver unparalleled device-to-device testing capabilities.



*Spirent Elevate provides a comprehensive all-in-one approach throughout the mobile device lifecycle*

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