

BEEHD client framework for Public Safety over LTE

In the past decade, LTE mobile networks have evolved to a point that they are becoming the next generation technology for Public Safety communication infrastructure, substituting legacy technologies based on narrowband, such as the P25 and TETRA, which supports mainly audio services.

The technology and the standards utilize the benefits embedded within wideband networks by offering stronger usage of live mobile video and audio, multicasting and broadcasting capabilities, location, situation aware, dispatching and others.

Spirent's BEEHD is a cross-platform client SDK, designed for chipset vendors, device manufacturers, system integrators, application developers and service providers looking to accelerate development of IP-based voice and video over LTE (VoLTE and ViLTE) for mission-critical applications.

The BEEHD has intuitive and flexible APIs that developers can easily use to quickly implement applications and meet the requirements of Public-Safety critical communications, focusing on first responders like remote medical assistance, search and

rescue, firefighting, law enforcement and any other authority that can benefit from real-time situational awareness.

Advanced PS-LTE capabilities:

- **Voice and Video:** Calls over IP and LTE
- **Push-to-Talk (PTT):** Broadcasting live audio to members of a chosen group according to MCPTT
- **Push-to-Video (PTV):** Instant sharing of first responder video stream to members of a chosen group
- **High Quality Audio and Video:** Ensuring emergency response members' ability to clearly see the scene and understand the speaker in real-time
- **Instant Messaging and Chat:** Group messages to recipients
- **Presence:** Providing online data of the first responder group members availability
- **Emergency Alerting:** Prioritized- urgent access to the network

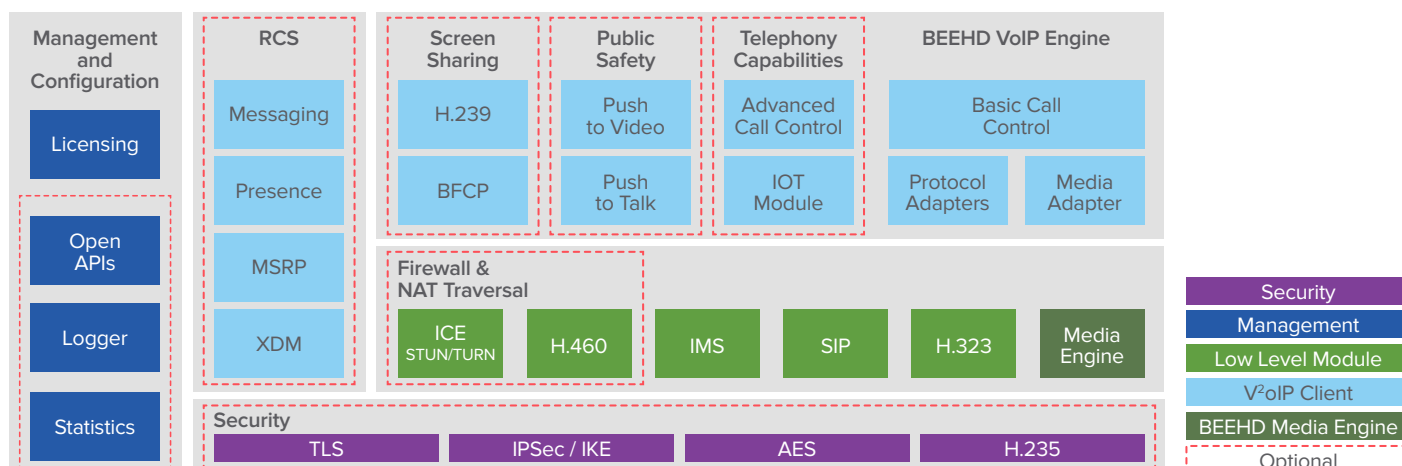
Spirent's BEEHD developer solution for Public Safety includes: Compliancy with 3GPP and IETF Standards, GSMA's VoLTE support, interworking with IP Multimedia Subsystems (IMS), scalability and security features required by mission-critical standardization.

Highlights

- **Ready-to-use, Multi-platform Client Engine:** Consolidated framework for signaling, call control and media handling.
- **Shortest Time to Market:** Reduces development, integration, and testing efforts.
- **Guaranteed High Quality of Experience:** Utilizes advanced algorithms to ensure superb video quality even in harsh network conditions.
- **Interoperability:** Standard based and tested.
- **Integration with Hardware:** Provides an optimized solution for many chipsets and seamless integration with peripherals.
- **Operating Systems:** Supporting Android, iOS, Windows and Mac OS X.



Modular architecture:



Comprehensive standards and features support:

Product specifications			
Public Safety	<ul style="list-style-type: none"> VoLTE IR.92 and IR.94 Push-to-Video 	<ul style="list-style-type: none"> Push-to-Talk One-to-many Audio and Video 	<ul style="list-style-type: none"> Many-to-one Audio mixing
Signaling Protocols	<ul style="list-style-type: none"> SIP (RFC 3261) IMS/VoLTE SIP 	<ul style="list-style-type: none"> H.323 V6 Presence and IM: SIMPLE 	<ul style="list-style-type: none"> FW/NAT Traversal: H.460, ICE, STUN TURN
Operating Systems	<ul style="list-style-type: none"> Windows Mac OS/X 	<ul style="list-style-type: none"> Android (software codecs) iOS (software codecs) 	
Hardware Codec Acceleration	<ul style="list-style-type: none"> Qualcomm Snapdragon Samsung Exynos 	<ul style="list-style-type: none"> Intel Atom Texas Instruments 	<ul style="list-style-type: none"> Nvidia Mediatek
Management	<ul style="list-style-type: none"> Configuration and provisioning logger Open APIs 	<ul style="list-style-type: none"> Call history Web launcher supporting: Internet Explorer, Chrome, Firefox and Safari 	<ul style="list-style-type: none"> Contact list management (in application)
Security	<ul style="list-style-type: none"> AES128 and AES 256 TLS 	<ul style="list-style-type: none"> IPSec SRTP 	<ul style="list-style-type: none"> H.235 IKE
Supplementary Services	<ul style="list-style-type: none"> Hold Mute 	<ul style="list-style-type: none"> Transfer Forward 	<ul style="list-style-type: none"> Multi-parties (using MCU) Inband DTMF (RFC 2833)
Quality	<ul style="list-style-type: none"> Reed Solomon FEC (Forward Error Correction) 	<ul style="list-style-type: none"> NetSense™ bandwidth estimation and adaptation technology 	
Collaboration	<ul style="list-style-type: none"> For SIP: BFCP For H.323: H.239 	<ul style="list-style-type: none"> Ancillary data channel for user custom data communication 	
Audio	<ul style="list-style-type: none"> G.711 G.722 G.722.1 G.729 	<ul style="list-style-type: none"> AMR WB, AMR NB Automatic Gain Control (AGC) Audio Echo Cancellation (AEC) Noise Suppression (NS) 	<ul style="list-style-type: none"> Audio Packet Loss Concealment (PLC) Audio Recording
Video	<ul style="list-style-type: none"> H.264 H.263 Frame rate: up to 30fps 	<ul style="list-style-type: none"> Resolution: CIF/VGA/SVGA/720p/1080p Supports H.264 cameras Capture snapshot to JPEG file 	<ul style="list-style-type: none"> Text overlay Video recording
Interoperability	<ul style="list-style-type: none"> Interoperable with all leading vendors and any standard video calling systems 		
RCS – Rich Communication Suite	<ul style="list-style-type: none"> Option based Capability exchange Stand Alone Messaging CPM, CPIM based Instant Messaging IM large message mode (MSRP) 	<ul style="list-style-type: none"> Multiple recipients (multi 1-1 IM) Store & Forward HTTP/HTTPS Provisioning Integrated messaging Inbox, including SMS 	<ul style="list-style-type: none"> Voice and Video Calls Simple presence File Transfer XDM