Streaming on extensions

DESCRIPTION

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TRADEMARKS

1 GENERAL

The purpose of the feature *Streaming on extension* is to allow SIP terminals to get streamed media, like music wav-files or streamed radio or music, played in specific use cases. It can be for example when the terminal is in idle state (when no call is ongoing), *streaming in idle state,* in Parked situation or in queuing situations, *streaming/music on hold/wait.*

This document describes the optional Media Streaming features in MiVoice MX-ONE. The streaming features require some external source(s) of streamed media, preferably located on a server outside the ASP113 system, but can also use media files of appropriate formats (wav).

The Streaming/Music-On-Idle (MOI) feature allows streamed live or pre-recorded announcements (for example music or voice) to be provided to a SIP extension which is in idle state, i.e. not involved in a telephone call. The SIP extension must also have a dedicated key defined for the feature.

The feature Streaming On Idle is supported for Mitel 6800/6900 SIP terminal models and for later models. It allows the user to connect to a music (or other) media stream, without any line being occupied. The phone will be open to inward and outward calls (alerting or dialing) and when returning to idle state after a call, the music can be retrieved either automatically or manually with a single button push.

The other variants of streaming can be used when appropriate in traffic, i.e. in ongoing calls, in specific cases, like when a call is parked or queuing, or in specific traffic cases, like diversion and vocal guidance in call failure cases.

1.1 STREAMING SCENARIOS

A Mitel 6800/6900 SIP terminal (or later model) can support streaming if appropriately configured.

To run the ’Streaming/Music on idle’ (MOI) feature, a media server and specific SW in the MX-ONE Service Node needs to be present. The used SIP terminals must also support the functions. The media server and its interfaces must be initiated and active. The ’streaming on idle’ feature or the other streaming cases do not require any specific license.

This streaming functions are realized by ordering SIP terminals to listen to an existing media stream or to set up a stream, and then order terminals to listen to it. The stream is set up to always go via a ’media server’.

The stream is either dynamic, i.e. set up at terminal button push, or static, terminal is ordered to listen to an already existing stream, normally using Multicast. The connection will be as follows:

---- server input --->| **media server** |----server output ----> (SIP Terminal)

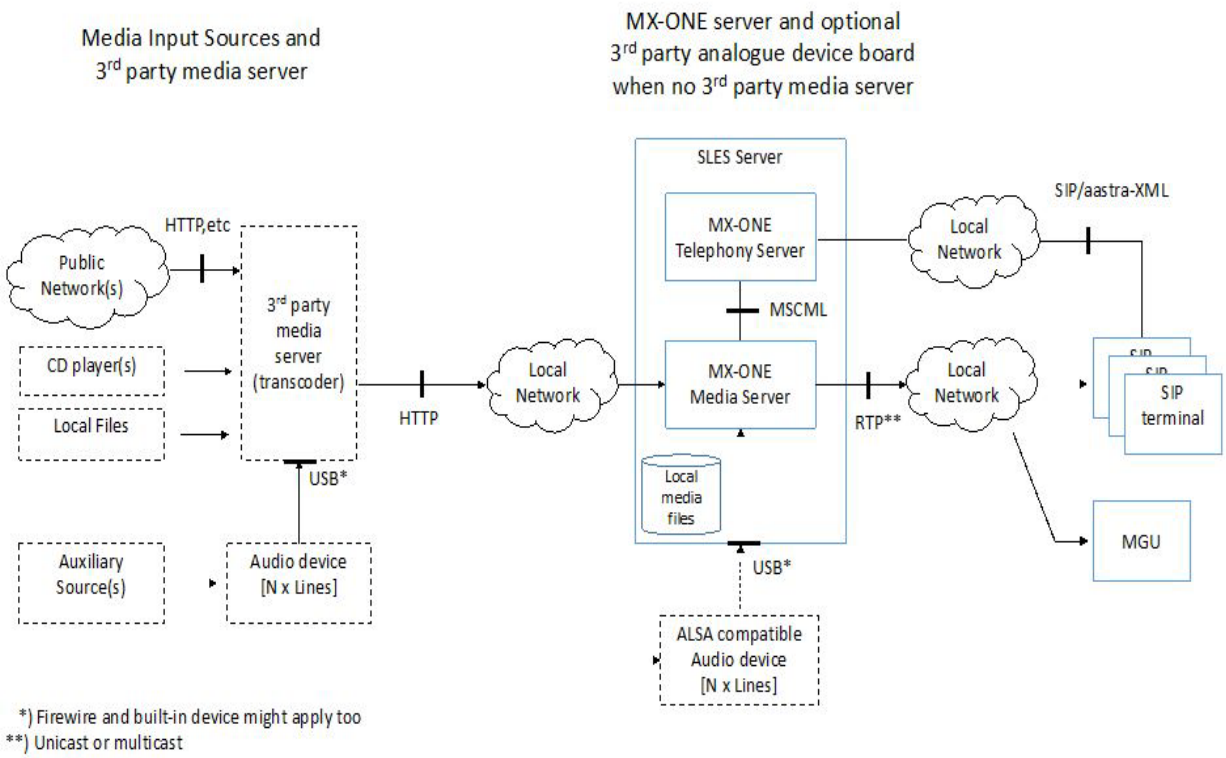

Figure 1: Example scenario, streaming to SIP terminals. The SIP terminals on the right hand side get media streamed via the Media Server.

1.1.1 DYNAMIC CHANNEL

A dynamic channel is a channel that is set up on the media server when ordered from a terminal, and torn down either when the message is finished, or when ordered from the same terminal.

1.1.2 STATIC CHANNEL (FOR STREAMING ON IDLE)

A static channel is a channel which is intended to be active all the time and serve many users. To do this it shall preferably be a multicast channel. This channel is then matched with a dynamic channel that only contains the order to the terminal.

2 STREAMING FUNCTIONS

2.1 ACTIVATION AND DEACTIVATION OF STREAMING

Provisioning of the streaming functions for SIP devices, is done via management functions. At least one Media Server must be initiated to act as streaming server, collecting media streams from external (or internal) sources, and forwarding them to the SIP terminal end-points.

2.2 STREAMING IN IDLE STATE

Action URI is a function in the SIP terminal, and is supported by the Mitel 6800/6900*) SIP phones. The function requires a dedicated key for Streaming in idle state/Music On Idle, MOI, but the streaming connections do not use SIP messages or calls. This could be an advantage if there are many thousand phones that shall have this function.

Note: *) Low-end models, like the 6863 do not have any free key resource, so they are not suitable.

There are two streaming configurations supported; multi-cast or unicast. An Administrator or User of the 6800/6900 phones can configure a specific key (soft-key, programmable key, or expansion module key, here called streaming/MOI key) on the phone, that allows you to send/receive a Real Time Transport Protocol (RTP) stream to/from pre-configured multi-cast addresses without involving SIP signaling. This is called Paging on the Mitel 6800/6900 SIP phones. You can specify many listening multi-cast addresses. Note that a specific “Off/Stop” menu entry should be initiated.

After pressing a configured “Streaming/MOI” key on the phone, the phone receives an RTP stream from a pre-configured multi-cast address (IP port). Any phone in the local network then listens for the RTP stream on the pre-configured multi-cast address (IP port). For both sending and receiving of the multi-cast RTP there is no SIP signaling involved. When the phone sends or receives a multi-cast RTP.

The 6800/6900 SIP telephones currently use a pre-configured G.711 mu-Law CODEC only.

The unicast configuration works in a similar way, except that the key pressing will start the streaming to that specific extension, while for multi-cast, the streaming will be active all the time.

A proprietary XML protocol is used for the key and display handling. The SIP phone’s Paging function will be utilized.

Note: Streaming is supported for Mitel 6800 SIP telephones, and later models. The Action URI functions must be supported and active, and a specific soft-key defined for the MOI function.

2.3 STREAMING IN A CALL ON HOLD

An active call which is put on hold, parked, can optionally get a voice announcement, if that it configured. The announcement can be streamed.

2.4 STREAMING IN A CALL IN QUEUE

An active call which is put in queue, for example towards a group or attendant, can optionally get voice announcements, both welcome, queue, repeated queue and continuous announcements, if configured.

These announcement can be streamed, but preferably only the continuous announcement should be streamed from an “eternal” source. The other should be short and have a defined length.

2.5 OTHER STREAMING CASES

There are various other use cases where recorded voice announcements can be played, e.g. RVA welcome message, Diversion services, and Vocal guidance (mainly in call failure cases). See the Recorded Voice Announcement description for details.

For those cases streaming is probably not so relevant, since these announcements shall be short and limited in time. Pre-defined files are a better option.

2.6 END USER INTERFACE FOR STREAMING

The Mitel 6800/6900 SIP terminal users that want to have the MOI feature, will have a dedicated ’Streaming/Music on idle’ soft-key, and a menu associated with that key. The key’s LED or display indication will be lit when a MOI session is active, otherwise turned off. In the menu the user can choose between several streaming sources, and an ’off’ option.

The MOI function will use the loud-speaker/headset or equivalent of the phone to play voice media when the phone is idle, i.e. not involved in any call.

2.7 INTERACTIONS WITH OTHER FEATURES

2.7.1 BASIC CALL (SUPERVISION AND DISCONNECTION)

A call either made or received when Streaming-on-idle is active will disconnect/terminate the streaming/music-on-idle. If the extension user starts dialing to make a call, or initiates a call from a directory or Name-and-number-log function, or is alerted by an incoming call, the streaming is disconnected.

The streaming-on-idle will be re-activated when the extension becomes idle after a call, either automatically or by a new manual pressing of the streaming key. The behavior can vary, and depends on the terminal state and model.

2.7.2 MULTI-PARTY CALLS (CONFERENCE, INTRUSION, EMERGENCY EXTENSION, ETC.)

If a SIP extension is included in a multi-party call, the MOI function will always have been turned off.

If MOI was on/active before the conference, MOI will be turned on when the conference call is finished, and the extension returns to idle state.

2.7.3 CSTA FUNCTIONS

A CSTA Make Call request will, similar to a basic call, stop the Streaming/Music On Idle (MOI) feature for SIP terminals, if active for the served device. Also CSTA controlled calls will disconnect the MOI resources when alerting or register states are entered.

2.8 CAPACITY AND LIMITATIONS FOR STREAMING

Streaming/Music On Idle is supported for logged-on SIP terminals. For Streaming/Music On Idle a dedicated key must be configured.

All Mitel 6800/6900 SIP terminals with appropriate key can have the MOI functions.

Streaming in active calls (RVA, MoH, MoW, Vocal Guidance) is supported, but for some cases it is not recommended.

For more information about capacity and limitations, refer to section *MEDIA STREAMING in MEDIA SERVER* Description.

The number of different streamed announcements and streaming sources that can be initiated, is not limited, other than by the network bandwidth, the maximum number of SIP extensions and dedicated feature keys.

Only IPv4 is supported (due to the used terminals not supporting IPv6).

There is a timer which limits a Streaming/Music on Idle session to 2 hours.

3 HARDWARE

There is no extra hardware for these facilities.