

# Remote Call/Device Control

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# Background

- A SIP application is a program running on a SIP network element that provides some value-added function to a user.
- Some SIP applications are in the SIP signaling path of the User Agents it's interacting with, while other applications are outside the SIP dialog between the User Agents.
- Some of these applications need a remote control mechanism to allow these applications to invoke or monitor actions on a remote User Agent.

# Use Case 1: Loosely Coupled Devices

- A collection of loosely coupled SIP User Agents which would like to present a coordinated user experience.
- All these devices are under the control of one user.
- These devices might have different capabilities, e.g. audio device and video device.
- The user is interested in using more than one device to participate in a conversation with a remote party.

# Use Case 2: Proxy Applications

- A wide range of third party or proxy applications need to remotely control or influence a SIP User Agent, e.g. Contact Center environment.
- The user might have multiple devices and the proxy application is in the signaling path and aware of the activities on these devices.
- These third party or proxy applications are configured as trusted network elements.

# Existing SIP Mechanism: REFER

- SIP allows for the invocation of actions on a remote User Agent using the REFER method.
- The actions that can be invoked by the REFER method are limited, and there is a need for more actions by some of these SIP applications.

# Existing Actions available with REFER

- Initiate a call (rfc3515)
- Terminate an active call (rfc5850)
- Drop a user from a conference (rfc4579)
- Terminate an outgoing ringing call
- Send a SUBSCRIBE to a remote UA
- Send a REFER to a remote UA
- And much more

# Needed Call Control Actions

- Answer a call
- Decline a call
- Send a call to voicemail
- Hold a call
- Un-hold a call
- Conference
  - Add
  - Remove

# Needed Device Control Actions

- Use a specific transducer when initiating or answering a call
- Mute an active call
- Un-mute an active call
- Ignore a call



# Possible Solutions

- A SIP-based mechanism for both Call and Device control
  - E.g., REFER, INVOKE
- A SIP-Tunneling approach for both Call and Device control
  - E.g., TR87
- A SIP-based mechanism for Call control and non-SIP-based protocol for Device control
  - E.g., REFER or INVOKE for Call control
  - E.g., BFCP-based protocol for Device control
- A non-SIP-based mechanism for both Call and Device control
  - E.g., BFCP-based protocol for both Call and Device control

# Purpose of the WG

- Evaluate the existing and proposed mechanisms
- Clearly define Call Control and Device Control
- Choose or define a mechanism to address the Call Control and Device Control needs
- Define a model for the actions
- Define a scope for the actions
- Define an initial set of actions
- The new mechanism(s) must allow for new actions to be define later on

# Charter Proposal

The Session Initiation Protocol (SIP) [RFC3261] provides users with the ability to initiate, manage, and terminate multimedia sessions.

A SIP application is a program running on a SIP network element that provides some value-added function to a user. Many deployments have SIP applications in the SIP signaling path that get involved in the setup and management of these multimedia sessions. Third-Party Application might also be interested in interacting with User Agents and the setup of multimedia sessions.

Some of these applications need a mechanism to remotely invoke some actions or/and monitor the invocation of actions on a SIP User Agent. SIP allows for the invocation of actions on a remote User Agent using the REFER method. The actions that can be invoked by the REFER method are limited, and there is a need for more actions by some SIP applications. The purpose of this WG is to evaluate the various available mechanisms or proposed mechanism and recommend one or more of them, or define a new mechanism if none of the available are good enough to address this need.

The work group will need to address the following:

Clearly answer the following questions:

- a. What is "call control"?
  - b. What is "device control"?
- \* Will the new mechanism address "call control", "device control" or both?
  - \* Will the new mechanism be a SIP or a non-SIP based mechanism?
  - \* If a non-SIP mechanism is used, how to deal with the fact that some of these actions already covered by the SIP REFER method and widely used in the industry
  - \* Define a model for the actions
  - \* Define a scope for the actions
  - \* Define a set of initial actions that can be later extended, if needed.
  - \* Others?