CLUE protocol Call Flows

draft-even-clue-call-flows-00

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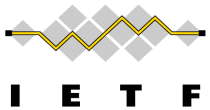

Call flows

- Document provides CLUE call flows examples
  - This is the first version and has only one partial example
- Proposed examples:
  - Symmetric point to point CLUE call both endpoints supporting CLUE
  - Call from an endpoint with CLUE support to an endpoint without CLUE support.
  - Asymmetric point to point CLUE call flow. One endpoint with three cameras/monitors the other with one camera/monitor
  - Other examples – looking for group feedback.

Call flows example (1)

- Point to Point symmetric CLUE Call flow includes
  - SIP Call setup with CLUE feature tag and a CLUE data channel

INVITE sip:bob@biloxi.example.com SIP/2.0
Via: SIP/2.0/TCP client.atlanta.example.com:5060;branch=z9hG4bK74bf9
Max-Forwards: 70
From: Alice <sip:alice@atlanta.example.com>;tag=9fxced76sl
Call-ID: 3848276298220188511@atlanta.example.com
CSeq: 1 INVITE
Contact: sip:alice@client.atlanta.example.com;transport=tcp; sip.clue
Content-Type: application/sdp
Content-Length: xxx
v=0
o=alice 2890844526 2890844526 IN IP4 client.atlanta.example.com
s=-
c=IN IP4 192.0.2.101
t=0 0
A=group:CLUE 2
m=audio 49172 RTP/AVP 0
a=m=video 49174 RTP/AVP 96
a=rtpmap:96 H264/90000
a=fmtp:96 profile-level-id=42e016;max-mbps=108000;max-fs=3600
a=sendrecv
m=application 54111 DTLS/SCTP 54111
a=sctpmap:54111 webrtc-datachannel
A=mid:2

Call flows example (2)

- Establishing the CLUE data channel using the RTCweb data channel specification – SCTP over DTLS.
    - Establish a DTLS connection
    - Create an SCTP association
    - Open webRTC channel PPID 50 is the webRTC Data Channel Establishment Protocol (DCEP) using SCTP DATA message.
    - Send an SCTP DATA_CHANNEL_OPEN message to open a bi-directional channel
        - DATA_CHANNEL_OPEN [message type=3, DATA_CHANNEL_RELIABLE, Label Length = 0, Protocol Length = 4, protocol=CLUE)
        - Get DATA_CHANNEL_ACK
    - The next SCTP DATA messages will use PPID = 51 carrying the CLUE protocol.

Call flows example (3)

- CLUE protocol using SCTP DATA message and SIP/SDP negotiation to establish the media channels
  - Start with CLUE Option message and response
    - Option [sequenceNr=1, media provider=true, media consumer=true].
    - OptionResponse [sequenceNr=4 ResponseCode, ResponseString, media provider=true, media consumer=true].
  - Bi-directional communication
    - CLUE Advertisements inludes mediacaptures, encodinggroups, captureScenesand
    - Configure messages with selected captureEncodings
    - SIP re-invites to add the media streams with the encoding information.

Next steps

- Update the documents with call flows of all examples
  - The call flows will include full XML messages.
  - The examples will not include ICE and SRTP negotiations even though they should be supported.
  - May include BUNDLE support –in one of the examples?
  - Use call logs from an implementation by the University of Naples (Simon and Roberta).