Relation between CLUE signaling and SDP offer/answer

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Introduction

• CLUE framework specify attributes needed to support multistream applications.
  • Content of the stream
  • Spatial information relation between streams.
  • Encoding constrains
• SDP provides attributes used to negotiate media streams capabilities.
• Try to avoid duplication of information between SDP and CLUE. The document discuss the relation between SDP and CLUE attributes.
Capture Attributes

• Provide static information on the media capture
  • Content based on the SDP content attribute (RFC4796). Both describe the sent stream. Need to keep consistency if described both in SDP and CLUE.
    • Initial SDP offered may include content attribute, the CLUE advertisement should have the same content description.
    • If there was no SDP content attribute in the first offer and CLUE is used there is no need to have it in a second offer.
  • Spatial information is only carried in CLUE no equivalent functionality in SDP.
  • A second offer/answer exchange may be needed if not multiplexing RTP streams in order to provide the transport connection.
Encoding parameters (1).

- Encoding parameters provide information about the ability of a CLUE provider to send media streams.
  - Include maxBandwidth, MaxH264mbps, maxWidth, maxHeight and maxFramerate.
  - maxH264mbps has similar parameter for H.264 (RFC6184) but in RFC6184 it is receive capability. The
  - maxFramerate has a similar SDP parameter
  - maxBandwidth is similar to SDP “b” attribute but the “b=“ is used for receive capability.
  - The maxWidth and maxHeight have similar attributes using RFC6236 “imageattr”
Encoding parameters (2).

• Relation between SDP and CLUE bandwidth
  • If the SDP provide higher BW value than CLUE, the actual BW limit will be the CLUE value (does this require a second offer answer?)
  • Offer/Answer may be used by the receiver to reduce the maximum BW making it lower than the CLUE value in which case the sender must adapt to the new value.
  • Since BW can be negotiated using both protocols the limitations must be based on all declared values.
  • There is an open issue if we need to have the SDP value not higher than the CLUE value for bandwidth management.
Encoding parameters (3).

• Relation between SDP and CLUE other parameters
  • `maxH264Mbps` and `maxFrameRate` has similar behavior to `maxBandwidth`.
  • CLUE `maxWidth` and `maxHeight` have similar functionality to the RFC6236 `imageattr`. The CLUE value reflects maximum provider capabilities and the consumer selects. The receiver can use `imageattr` to request a specific mode for a stream.
    • Both can be used – do we need to recommend using one and not the other?
Observations.

• Except for maxWidth and maxHeight there is not concern about using both SDP and CLUE as long as CLUIE reflects sender capabilities and SDP the receiver’s.

• Changing SDP values should not require a new advertisement and same for changing CLUE values since these are maximum value and the actual limitation will be based on both values.

• Using RFC6236 may not work when dynamic mapping between RTP stream and Media captures is used.