RTCWEB Terminology

A Discussion of relation between RTCWEB Media Protocol Terminology and the PeerConnection API

RTP Related Terminology

Multi-Media Session
- A communication session between two or more entities
  Can contain one or more RTP session
  - Can be represented by the
  - Example representations are in a SIP Dialog or RTSP Session
    ›

RTP Session
- One RTP SSRC space shared between 2 or more entities sending zero or more media streams
  - From a single end-points perspective, usually represented by:
    ›
    › A port(s) to receive RTP and RTCP
      - One or more destination types (RTP/WEB and RTCP muxing will have multiple types)
      - Media for a particular purpose and usage in an application context.
  - Media for a particular purpose and usage in an application context.

RTP Related Terminology

- SSRC
  - Identifies a single media source (e.g. camera, microphone, audio mix)
    - Intended to be unique within an RTP session
  - Sender Source identifier also used by receiver only entities to ID its
    - Multi-channel audio is commonly sent as a single SSRC using a media format capable either packetizing multiple channels or encoding

  › Multi-channel audio is commonly sent as a single SSRC using a media format capable either packetizing multiple channels or encoding multiple channels as one bit stream.

- CNAME
  - Canonical Name
  › Identifies a synchronization context
  - Uniques within a multimedia session

    CName

    is applied to the SSRCs in one or more RTP sessions that a receiver may synchronize

  › Payload Type (PT)
    An Identifier representing the encoding and packetization of the media present in the RTP packet body
  - An Identifier representing the encoding and packetization of the media

WEBRTC API Terminology

›
– Based on W3C editors draft dated: 23 Aug 2011:

MediaStream
– Contains zero or more tracks
  object

parent object

MediaStream object be forked to create a child that is equal or a subset of the

–
a sub or super set of tracks of another

MediaStream objects can share tracks so one object contains the same tracks,

MediaStream

object

– Each MediaStream

  › MediaStreamTrack has a Label

– Each media source, full channel audio is a single track

Each track can originate from

› Media device, such as video camera or microphone

File which plays back in real-time

›

  › Media device, such as video camera or microphone
  › Received over network
  › File which plays back in real-time
  › Received over network

WEBRTC API Terminology

MediaStream

- peer – Note: Child objects inherent their parent's label MediaStream is when delivered to the other

  ›

- MediaStream represents association between two peers PeerConnection

  ›

signalling

- Contains ICE, Media Transport, etc. Is configured STUN and TURN server resources at PeerConnection level
- Is configured with STUN and TURN server resources
- Contains ICE, Media Transport, etc.

Discussion: MediaStream and Label

be represented by the CNAME has a synchronization context, that could
MediaStreamTracks
of the same context, e.g. captured in the same room that are part

› A

   MediaStream
   sent by a PeerConnection can be represented
   by a list of RTP
   session:SSRC tuples
› The label has no matching construct
   – The
   The MediaStream can be part of multiple MediaStreams
   possibly several RTP sessions
   – Needs to be specified!
   – Needs to be exchanged between peers
   – The MediaStream Label can't be CNAME:
      › The same track can be part of multiple MediaStreams
   – Needs to be specified!

Current

PeerConnection

definition results

of peers, i.e. AB, AC, and BC

in one Peer Connection between each pair

of peers

WebApp

to both PeerConnections (AB and AC)

in A can bind the same MediaStream object

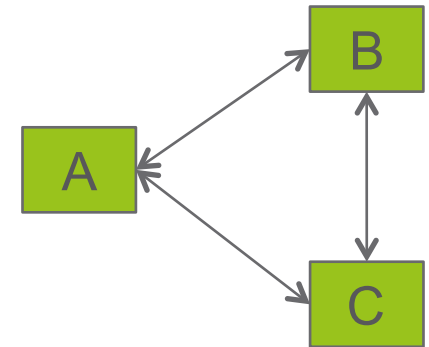– The delivered media configuration for each PeerConnection

may be

desirable to vary

› Different amount of screen estate at peers

›

› Application logic's usage of streams

codecs etc.

Capability negotiation between peers may result in different

› Capability negotiation between peers may result in different codecs etc.

Discussion: RTP sessions

PeerConnections

› Implies same media streams to all participants
  › Allows for RTCP information for legs a peer is not directly involved in.
  ›

    No Use case requiring this structure currently
  –The second alternative is to use individual RTP session(s) for each PeerConnection

› Allows different rates and codecs in each PeerConnection

  › Adaptation modules needs to combine information across multiple PeerConnections
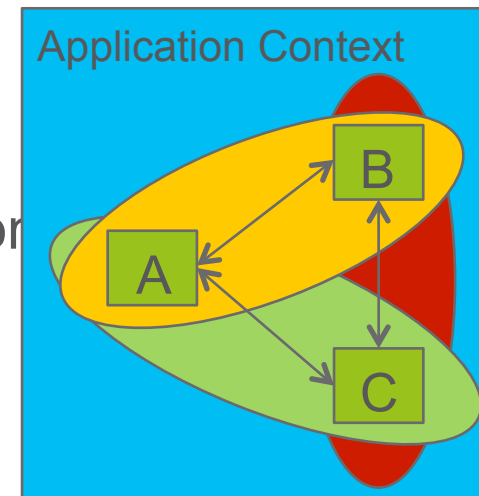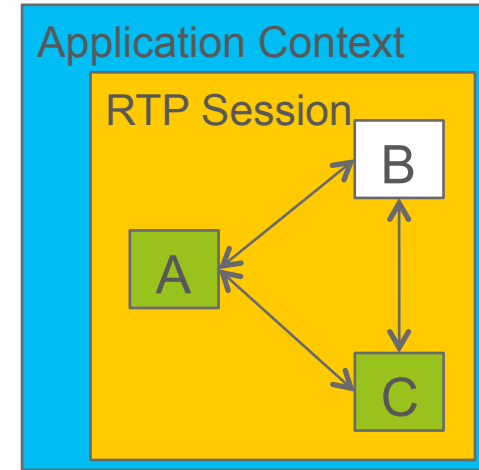
  RTP sessions   and
  › …The application context may need common
information across the peers
  –Identities of streams
information across the peers
  –Synchronization contexts
  –Identities of streams
  –Synchronization contexts

Application Context

RTP Session

B

A

C

Application Context

B

A

C

Discussion: Multi-Party RTP Sessions

view

  – A Mixer has a different view, but is after all a more
advanced RTP entity
– The RTP session still exist in the context of only one
  PeerConnection from the end-point's (A, B, C or D)
  view

– A Mixer has a different view, but is after all a more
  advanced RTP entity

RTP Session

A

Mixer

B   C   D