

W3C

WebRTC/MediaCapture

WG Meeting

January 25, 2017
8 AM PDT

Chairs: Harald Alvestrand
Stefan Hakansson

W3C WG IPR Policy

- This group abides by the W3C patent policy <https://www.w3.org/Consortium/Patent-Policy-20040205>
- Only people and companies listed at <https://www.w3.org/2004/01/pp-impl/47318/status> are allowed to make substantive contributions to the WebRTC specs

Welcome!

- Welcome to the interim meeting of the W3C WebRTC WG!
- During this meeting, we hope to make progress on outstanding issues within both the mediacapture -main and webrtc-pc specifications
- Editor's Draft updates to follow meeting

About this Virtual Meeting

Information on the meeting:

- Meeting info:
 - https://www.w3.org/2011/04/webrtc/wiki/January_25_2017
- Link to latest drafts:
 - <https://rawgit.com/w3c/mediacapture-main/master/getusermedia.html>
 - <https://rawgit.com/w3c/webrtc-pc/master/webrtc.html>
- Link to Slides has been published on [WG wiki](#)
- Scribe? IRC <http://irc.w3.org/> Channel: [#webrtc](#)
- The meeting is being recorded.
- WebEx info [here](#)

For Discussion Today

- **WebRTC-PC**

- **Pull Requests**

- [Issue 979/PR 996](#): When is an RTC SctpTransport created and destroyed? (Taylor)
- [Issue 116/PR 990](#): Add an explicit stats selection algorithm (Harald)
- [PR 988](#): Add RTCOfferOptions.reofferOptions (Peter)
- [Issue 714/PR 1000](#): STUN/TURN auth credential management (OAuth) (Misi)

- **Issues**

- [Issue 709](#): offerToReceiveAudio/offerToReceiveVideo remain in implementations (Harald)
- [Issue 961](#): Effect of a BYE on RTCRtpReceiver.track (Bernard)
- [Issue 962](#): Event when a transceiver is stopped via remote action (Bernard)

For Discussion Today (cont'd)

- **Media Capture Issues**

- [Issue 404](#): Revive createObjectURL? (Stefan)
- [Issue 425](#): Do we update legacy methods to keep up with the spec? (Jan-Ivar)
- [Issue 426](#): Move “advanced” out of constrainable pattern (Harald)

WebRTC PC Pull Requests

- [Issue 979/PR 996](#): When is an RTCScTpTransport created and destroyed? (Taylor)
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- [PR 988](#): Add RTCOfferOptions.reofferOptions (Peter)

Issue 979/PR 996: When is an RTCScTpTransport Created and Destroyed? (Taylor)

- What's in the PR:
 - An RTCScTpTransport represents a unique SCTP association (combination of local/remote SCTP port).
 - Created when applying a local description.
 - Should it be “when applying an answer” instead? Without a remote description, you don't have a remote port or “max-message-size”.
 - Set to null when applying an answer with a rejected data “m=” section.
 - Restored to previous value on rollback.

Issue 116/PR 990: Add an explicit stats selection algorithm (Harald)

- Spec required for making this useful!
- Path taken: Specify explicitly what stats to return
 - RTPMediaStream objects (local and remote)
 - Gives byte counts, codec IDs, frame counts
 - MediaStream objects (what streams a track is in)
 - Why not?
 - Stop there

Issue 116/PR 990: Add an explicit stats selection (2)

Approaches not taken:

- Recurse over all referred-to object
 - Would give all codecs, transports, candidates...?
 - Not clear that it saves anything over “return all”
- Eliminate the selector
 - May be useful for “simple clients”
 - May be useful for performance (emphasis MAY)

PR 988: Add `RTCOfferOptions.reofferCodecs` (Peter)

We've been around the "should we reoffer codecs or not?" discussion so many times now. Why not let the app decide?

- `pc.createOffer({reofferCodecs: true}); // Reoffers`
- `pc.createOffer(); // Doesn't reoffer`

That's it.

The rest is defined in JSEP, which already has a PR for defining the behavior for `reofferCodecs`.

WebRTC PC Issues

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Issue 709: offerToReceiveAudio/ offerToReceiveVideo remain in implementations

- These were removed from the spec when we added AddTrack(null) and AddTransceiver
- New alternatives are not implemented by everyone; offerTo* is implemented by everyone.
- Usage is quite low ([one graph](#) + some subset of [another graph](#))
- Possible actions:
 - Do nothing, leave them out
 - Add them back in as first-order features
 - Add them to the “compatibility” section
- Proposal: Do nothing.

Issue 961: Effect of a BYE on RTCRtpReceiver.track (Bernard)

Questions:

- a. If an RtpReceiver *receiver* receives a BYE from an RtpSender, what happens?
- b. When `transceiver.stopped` is set to true, does `transceiver.sender` send a BYE?
- c. When `transceiver.sender.replaceTrack(null)` is called does `transceiver.sender` send a BYE?
- d. When `transceiver.sender.track.enabled` is set to "false" does `transceiver.sender` send a BYE?
- e. When `transceiver.sender.track.stop()` is called, does `transceiver.sender` send a BYE?

Issue 961: Effect of a BYE on RTCRtpReceiver.track (cont'd)

Proposed Resolution: BYE is sent only if SSRC won't be used again.

- a. When a BYE is forwarded to *receiver*, the *receiver.track.onmute* EventHandler fires
- b. When *transceiver.stopped* is set to true, a BYE is sent for all of *transceiver.sender's* *encodings[].ssrc*, *encodings[].fec.ssrc* and *encodings[].rtx.ssrc*
- c. No BYE for *replaceTrack(null)* because *replaceTrack(anotherTrack)* might cause the SSRC to become active again (though the remote receiver might timeout the SSRC, as described in RFC 3550 Section 6.3.5).
- d. No BYE for *transceiver.sender.track.enabled* set to “false” because it could be set back to “true”, reactivating the SSRC.
- e. No BYE when *transceiver.sender.track.stop()* is called because *transceiver.sender.replaceTrack(anotherTrack)* could subsequently be called.

Issue 962: Event when a transceiver is stopped via remote action (Bernard)

If a re-Offer is received with an m-line having a zero port, when the Answerer calls `setRemoteDescription`, `transceiver.stopped` will be set to true.

Question: Does this cause the `transceiver.receiver.track.onended` EventHandler to fire?

Proposed resolution: Yes. The `transceiver.receiver.track.onended` EventHandler can then check whether `transceiver.stopped` is set to true.

Issue 962: Event when a transceiver is stopped via remote action (Cont'd)

Proposed steps taken when `setRemoteDescription(zeroMline)` is called:

1. Let `transceiver` be the `RTCRtpTransceiver` object corresponding to the zero'd m-line.
2. If `transceiver.stopped` is true, abort these steps.
3. Let `connection` be the `RTCPeerConnection` object corresponding to `transceiver`.
4. If `connection's` `[[isClosed]]` slot is true, abort these steps.
5. Let `sender` be `transceiver.sender`.
6. Let `receiver` be `transceiver.receiver`.
7. Stop sending media with `sender`. Send a BYE on all `encodings[].ssrc`
8. Stop receiving media with `receiver`.
9. Set `receiver.track.readyState` to `ended`. Fire `receiver.track.onended` eventHandler.
10. Set `transceiver.stopped` to true.

Media Capture Issues

- [Issue 404](#): Revive createObjectURL? (Stefan)
- [Issue 425](#): Do we update legacy methods to keep up with the spec? (Jan-Ivar)
- [Issue 426](#): Move “advanced” out of constrainable pattern (Harald)

Issue 404: Revive `createObjectURL`? (Stefan) - background

- In the beginning there was ... `URL.createObjectURL(stream)` as the only way by which a `MediaStream` could be played in a media element.
- Implementations supported this, but where pre-fixed (`webkitCreateObjectURL`, `mozCreateObjectURL`)
- The group decided that this was not a good way and decided to abandon `URL.createObjectURL` in favor of `.srcObject`
 - The last WorkingDraft *with* `URL.createObjectURL` present is dated September 3rd 2013
 - the first WD *without* it is dated February 12th 2015
 - Good reasons for this change!

Issue 404: Revive `createObjectURL`? The Issue

- Fast forward to current situation:
 - Vendor prefixes were removed at some point
 - All implementations (including Edge and WebKit) support `URL.createObjectURL` (even though not in spec)
 - Counters comparing the use of `URL.createObjectURL` with `.srcObject` shows that the former is much more common

Issue 404: Revive `createObjectURL`?

Discussion

- Options:
 - Continue not spec'ing `URL.createObjectURL`, knowing implementations will continue support it - perhaps in slightly different ways
 - Somehow convince implementers to remove support
 - Breaks apps!
 - perhaps mitigated by the new polyfill in `adapter.js` but unclear how many apps use (latest version of) `adapter`
 - Properly spec `URL.createObjectURL` in `mediacapture-main`

Issue 425: Do we update legacy methods to keep up with the spec? (Jan-Ivar)

Are we expected to update the `navigator.getUserMedia` legacy method to spec when it breaks existing usage? Doing so seems to break the reasons for including it.

For example, here are a couple of breaking changes over the past year:

- [#317](#). `s/(PermissionDeniedError|SecurityError)/NotAllowedError/` for gUM.
- [Bug 802326](#): If `gUM({ video: true, audio: true })` can't get both then it should fail with `NotFoundError`! (fixed in FF, but not Chrome if hardware absent)

Probably too late, just fyi for next time...

Issue 426: Move “advanced” out of constrainable pattern (Harald)

- Proposal by Jan-Ivar
- Proposes making “advanced” getUserMedia-only
 - Does not propose deleting it from the spec at this time
- Eases reuse of the “constrainable” pattern elsewhere
 - You don’t have to implement “advanced” handling
- Discuss.

Issue714 / PR 1000 (Misi)

STUN/TURN auth credential management (OAuth)

- New pull request for review for separated option #2
- Final decision is still needed: Separated or Hybrid
 - Do it right (clean, future proof) or it is too late for such a change?

Opinions AFAIU:

- Justin: Sees the #2 separated benefits, but it is too late for such change, and votes still for #3 Hybrid
 - Leave the final consideration on this to the chairs
- Harald: Close it ASAP.
 - Merge the "password is MAC key, new field is token" solution
 - Merge the "when mechanism = oauth, new structured items appear" solution
 - Remove everything but password from the spec and say "relegated to extension".
- Fluffy: I don't want option #1
- My(Misi) opinion if we change it, then do it right, but waiting for the final consensus result.

Thank you

Special thanks to:

W3C/MIT for WebEx

WG Participants, Editors & Chairs