



WEBTRANS WG

IETF 113

Hybrid Meeting

Thursday, March 24, 2022

Session II, Grand Klimt Hall 2

13:30 - 15:30 UTC

09:30 - 11:30 US/Eastern Time

Mailing list: webtransport@ietf.org

Jabber Room: [webtrans@jabber.ietf.org](jabber:webtrans@jabber.ietf.org)

MeetEcho: <https://www.conf.meetecho.com/conference/?group=webtrans>

IETF 113 Meeting Tips

- **Everyone**

- IETF 113 registration and a datatracker login required to attend
- Please state your full name before speaking.
- Join the session Jabber room via IETF Datatracker Meeting Agenda.

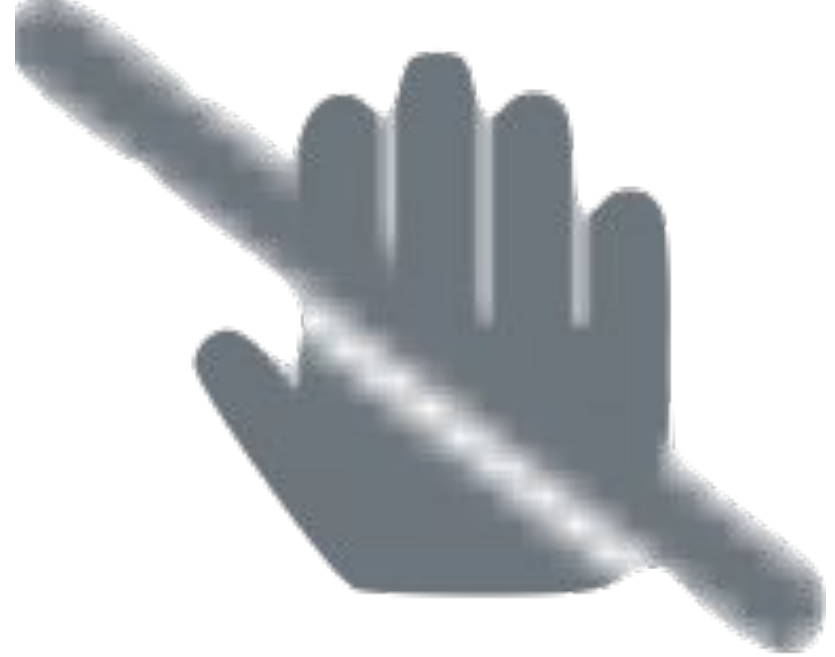



- **In person participants**

- Please sign the (virtual) bluesheets by logging into Meetecho
- **If you want to join the mic queue, you MUST join the session via Meetecho using either the "onsite" version or regular "remote" version**
- *Keep audio and video off if not using the onsite version*

- **Remote participants**

- Make sure your audio and video are off unless it's your turn in the queue
- Use of a headset is strongly recommended
- No need to fill in bluesheets, it's automatic

IETF 113 Remote Meeting Tips

- **Enter the queue with  , leave with **
- **When you are called on, you need to enable your audio to be heard.**
- **Audio is enabled by unmuting  and disabled by muting **
- **Video can also be enabled, but it is separate from audio.**
- **Video is encouraged to help comprehension but not required.**

Resources for IETF 113 Vienna

- General information:

<https://www.ietf.org/how/meetings/113>

- Agenda:

<https://datatracker.ietf.org/meeting/agenda>

- Meetecho and other information:

<https://www.ietf.org/how/meetings/113/preparation>

- For technical assistance, see the Reporting Issues page:

<http://www.ietf.org/how/meetings/issues/>

Note Well



This is a reminder of IETF policies in effect on various topics such as patents or code of conduct. It is only meant to point you in the right direction. Exceptions may apply. The IETF's patent policy and the definition of an IETF "contribution" and "participation" are set forth in BCP 79; please read it carefully.

As a reminder:

- By participating in the IETF, you agree to follow IETF processes and policies.
- If you are aware that any IETF contribution is covered by patents or patent applications that are owned or controlled by you or your sponsor, you must disclose that fact, or not participate in the discussion.
- As a participant in or attendee to any IETF activity you acknowledge that written, audio, video, and photographic records of meetings may be made public.
- Personal information that you provide to IETF will be handled in accordance with the IETF Privacy Statement.
- As a participant or attendee, you agree to work respectfully with other participants; please contact the ombudsteam (<https://www.ietf.org/contact/ombudsteam/>) if you have questions or concerns about this.

Definitive information is in the documents listed below and other IETF BCPs. For advice, please talk to WG chairs or ADs:

- [BCP 9](#) (Internet Standards Process)
- [BCP 25](#) (Working Group processes)
- [BCP 25](#) (Anti-Harassment Procedures)
- [BCP 54](#) (Code of Conduct)
- [BCP 78](#) (Copyright)
- [BCP 79](#) (Patents, Participation)
- <https://www.ietf.org/privacy-policy/>(Privacy Policy)

Note really well

- IETF meetings, virtual meetings, and mailing lists are intended for professional collaboration and networking, as defined in the [IETF Guidelines for Conduct](#) (RFC 7154), the [IETF Anti-Harassment Policy](#), and the [IETF Anti-Harassment Procedures](#) (RFC 7776). If you have any concerns about observed behavior, please talk to the [Ombudsteam](#), who are available if you need to confidentially raise concerns about harassment or other conduct in the IETF.
- The IETF strives to create and maintain an environment in which people of many different backgrounds are treated with dignity, decency, and respect. Those who participate in the IETF are expected to behave according to professional standards and demonstrate appropriate workplace behavior.
- IETF participants must not engage in harassment while at IETF meetings, virtual meetings, social events, or on mailing lists. Harassment is unwelcome hostile or intimidating behavior -- in particular, speech or behavior that is aggressive or intimidates.
- If you believe you have been harassed, notice that someone else is being harassed, or have any other concerns, you are encouraged to raise your concern in confidence with one of the Ombudspersons.

About this meeting



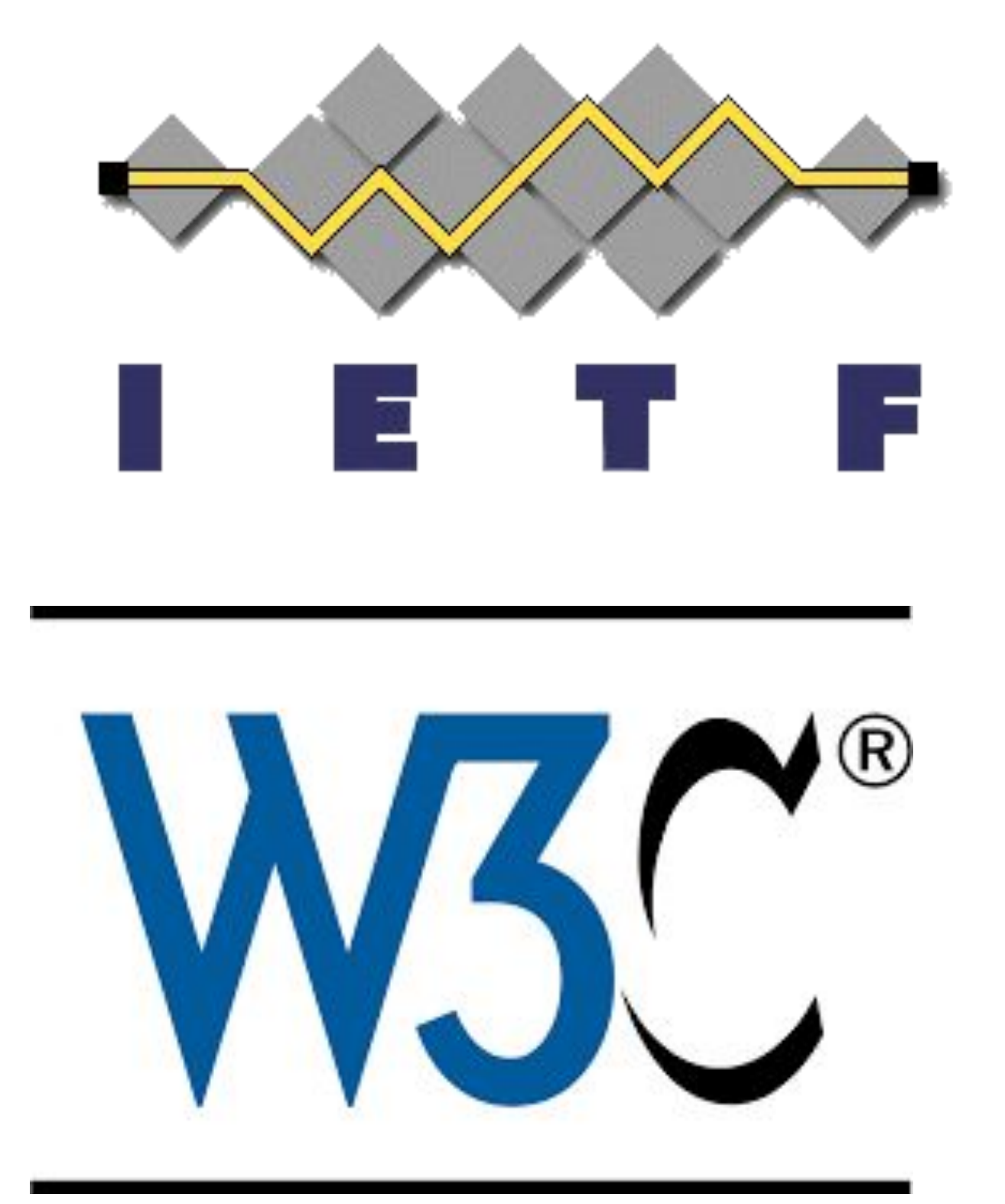
- Agenda: <https://datatracker.ietf.org/doc/agenda-113-webtrans/>
- Notes: <https://notes.ietf.org/notes-ietf113-webtrans>
- Jabber Room: [webtrans@jabber.ietf.org](jabber:webtrans@jabber.ietf.org)
- Secretariat: mtd@jabber.ietf.org
- WG Chairs: Bernard Aboba & David Schinazi
- Jabber Scribe: TBD
- Note Takers: TBD

Agenda



- Preliminaries, Chairs (10 minutes)
 - Note Well, Virtual Bluesheets
 - Jabber Scribe, Note Takers
 - Speaking Queue Manager (David Schinazi)
 - Agenda Bash
- W3C WebTransport Update, Will Law, (5 minutes)
- WebTransport over HTTP/3, Victor Vasiliev (45 minutes)
 - <https://tools.ietf.org/html/draft-ietf-webtrans-http3>
- WebTransport using HTTP/2, Eric Kinnear (45 minutes)
 - <https://tools.ietf.org/html/draft-ietf-webtrans-http2>
- Hums, Wrap up and Summary, Chairs & ADs (15 minutes)

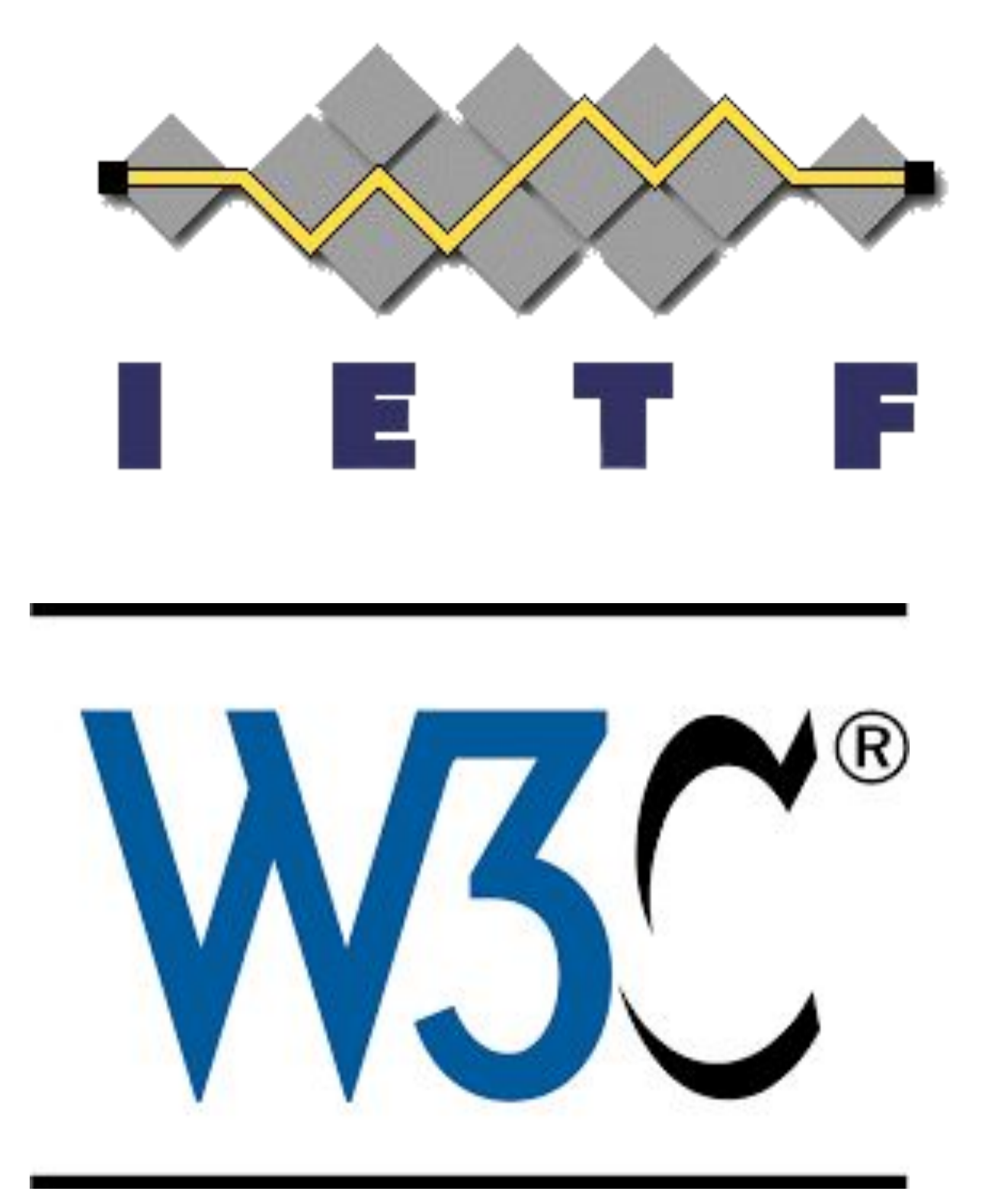
W3C WebTransport Update (1)



W3C WebTransport WG progress since Nov 9th

- **Status:** Published a [Working Draft](#) - latest version March 11th 2022
- **Optimistic** timetable for year
 - May 31st : Candidate for Recommendation - requires stability in API
 - July 31st : Proposed Recommendation - requires two independent implementations per our charter.
 - August 31st : Call for Review of a Proposed Recommendation
 - Sept 30 - Publication by W3C as a Recommendation after AC review.
- **Milestone** status
 - [minimum-viable-ship](#) has 3 remaining issues.
 - Opened up a new milestone aligned with W3C release process - [Candidate Recommendation](#).

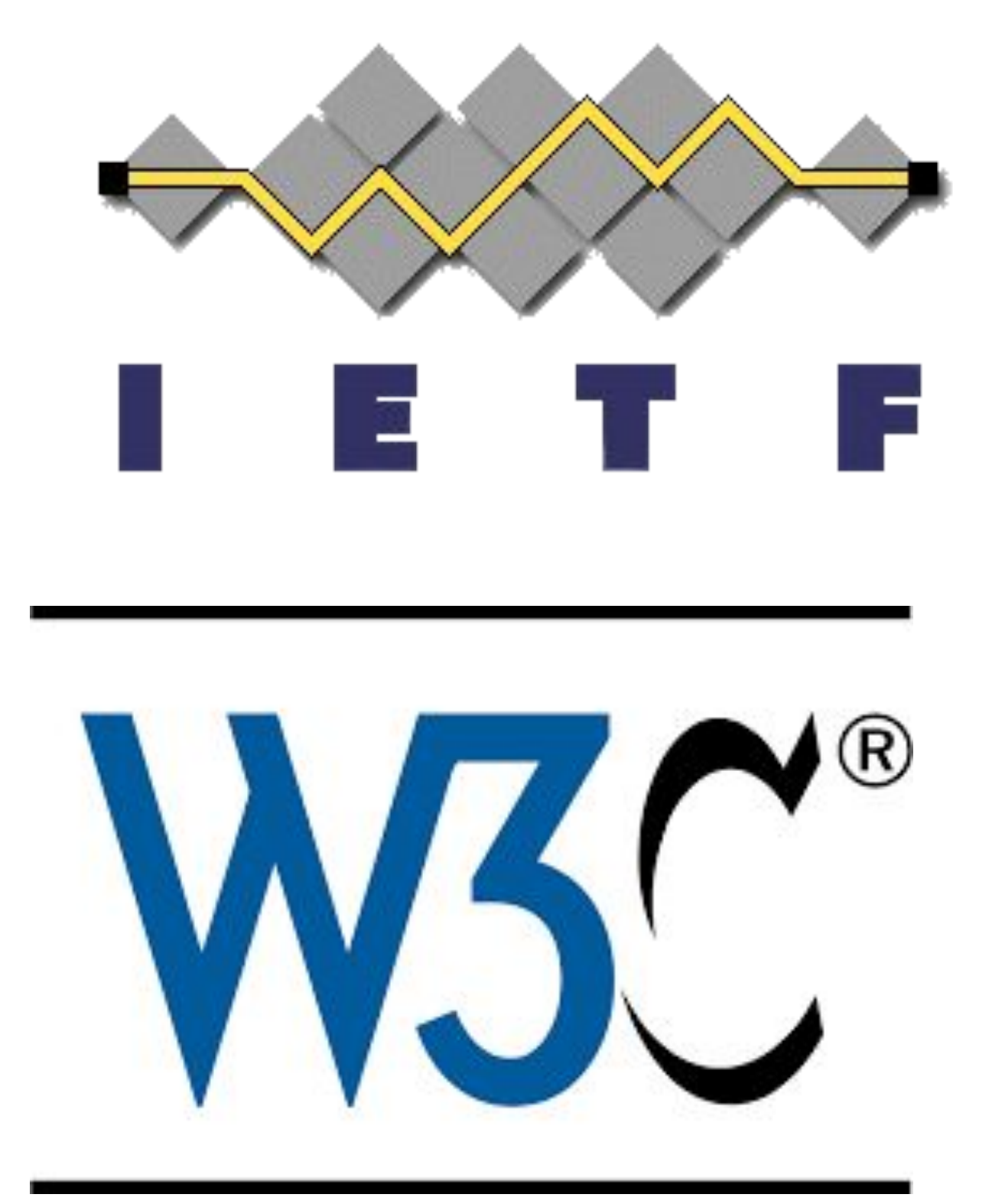
W3C WebTransport Update (2)



- **Decisions and updates:**

- When establishing a session, client must not provide any credentials [#312](#)
- Block ports on fetch's bad ports list [#378](#)
- Add smoothedRtt & rttVariation to WebTransportStats [#386](#) (definitions copied from RFC9002 sect 5.3)
- Add packetsLost to WebTransportStats. [#387](#)
- Add extra requirements on application-provided serverCertificateHashes used by WebTransport connections, as well as a discussion concerning authentication using these certificate hashes - [#375](#)
- wt.getStats() - added datagrams.expiredOutgoing, datagrams.droppedIncoming and datagrams.lost [#392](#)
- Stream stats will be an individual getStats() method on each stream instance

W3C WebTransport Update (3)



- **Debated at length, mostly resolved but not yet merged:**
 - Reliability and fallback - add `wt.reliability` attr and `{requireUnreliable}` constructor option. [#385](#)
 - Content Security Policy (CSP) - whether to break compatibility with `connect-src` 'certificate-hash' initial Chrome implementation. [#59](#)
 - Datagram priority over streams - replace the priority algorithm with normative guidance - *'When determining prioritization, the user agent SHOULD make sure datagrams get out quickly.'* [#394](#)
- **Current issues of debate:**
 - Per stream stats - bikeshedding on names. [#372](#)
 - Connection Pooling - questions re-raised over default on/off [#128](#)
 - Priorities between streams - is this necessary? Is there IETF intent to defined a method of stream prioritization? [#62](#)

WebTransport overview

WebTransport over HTTP/3

(45 minutes)

Victor Vasiliev

<https://datatracker.ietf.org/doc/html/draft-ietf-webtrans-http3>

Issue #5: common operations

- Now that we have two transports, we should have a clear definition of what we expect every individual transport to provide

- PR:

<https://github.com/ietf-wg-webtrans/draft-ietf-webtrans-overview/pull/5>

Issue #26: draining sessions

Need a way for any endpoint or intermediary to signal it's going away.

Current proposal:

DRAIN_WEBTRANSPORT_SESSION that any endpoint or intermediary can send

Issue #33: closing everything when **CONNECT** stream closes

Currently we close all streams and reject all datagrams when the **CONNECT** stream is closed

At IETF 110, we decided to “revisit this once we have more implementation experience”

Issue #67: what happens on GOAWAY



Currently we do not define any interactions between WebTransport and GOAWAY

For regular HTTP/3, “if the client has already sent requests with a Stream ID greater than or equal to the identifier contained in the GOAWAY frame, those requests will not be processed”

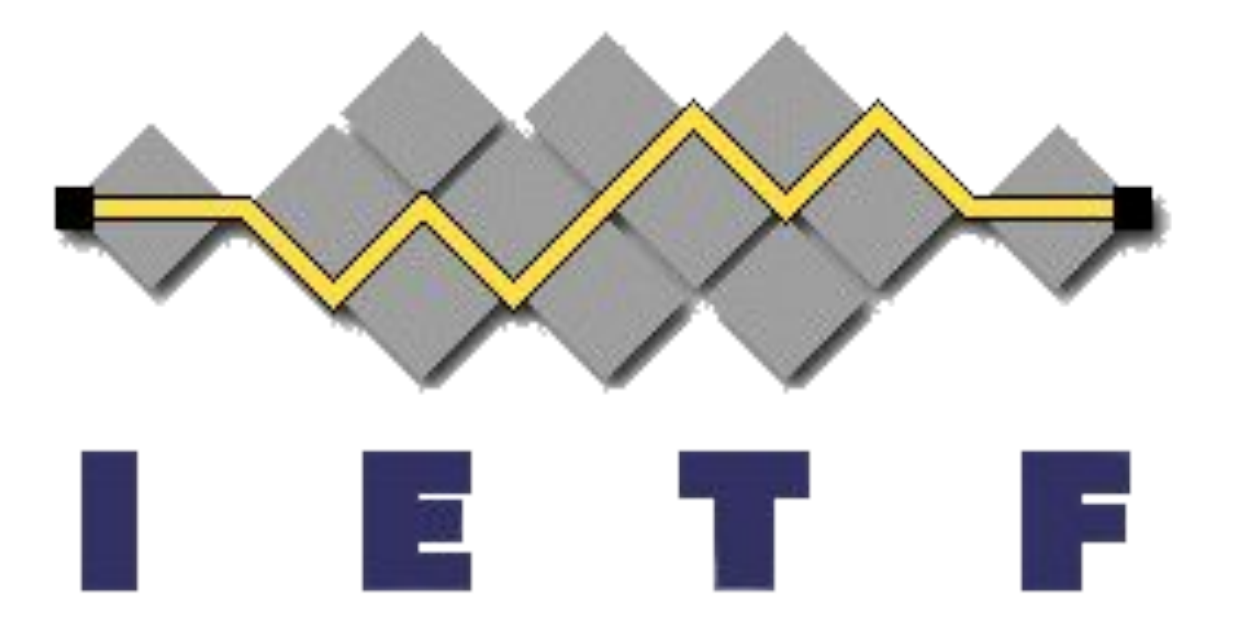
Issue #47: Alt-Svc

Current situation: WebTransport is oblivious to existence of Alt-Svc

The answer may differ depending on whether pooling is used

Also unclear at what layer this should be discussed

Discussion



Pooling

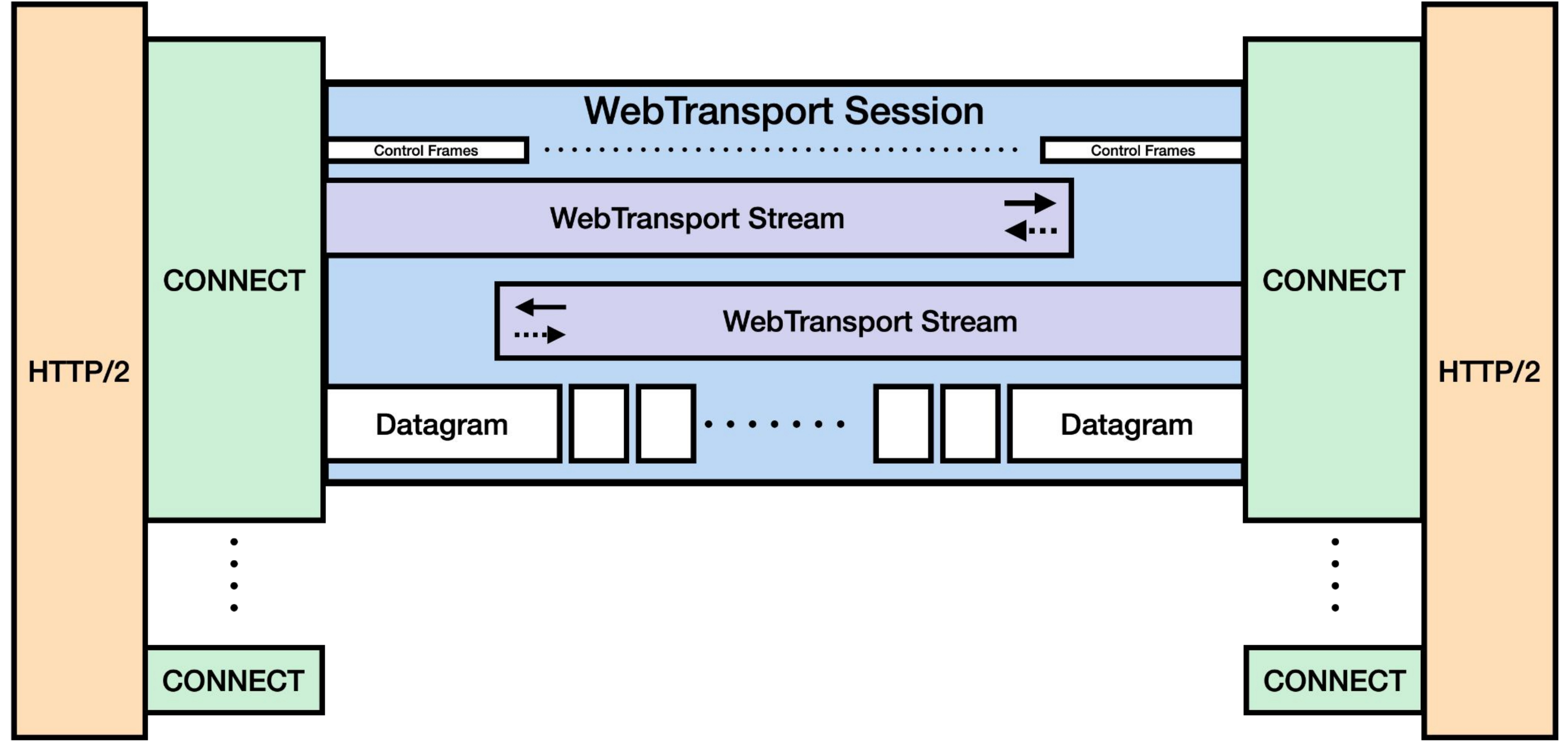
Eric Kinnear

Pooling

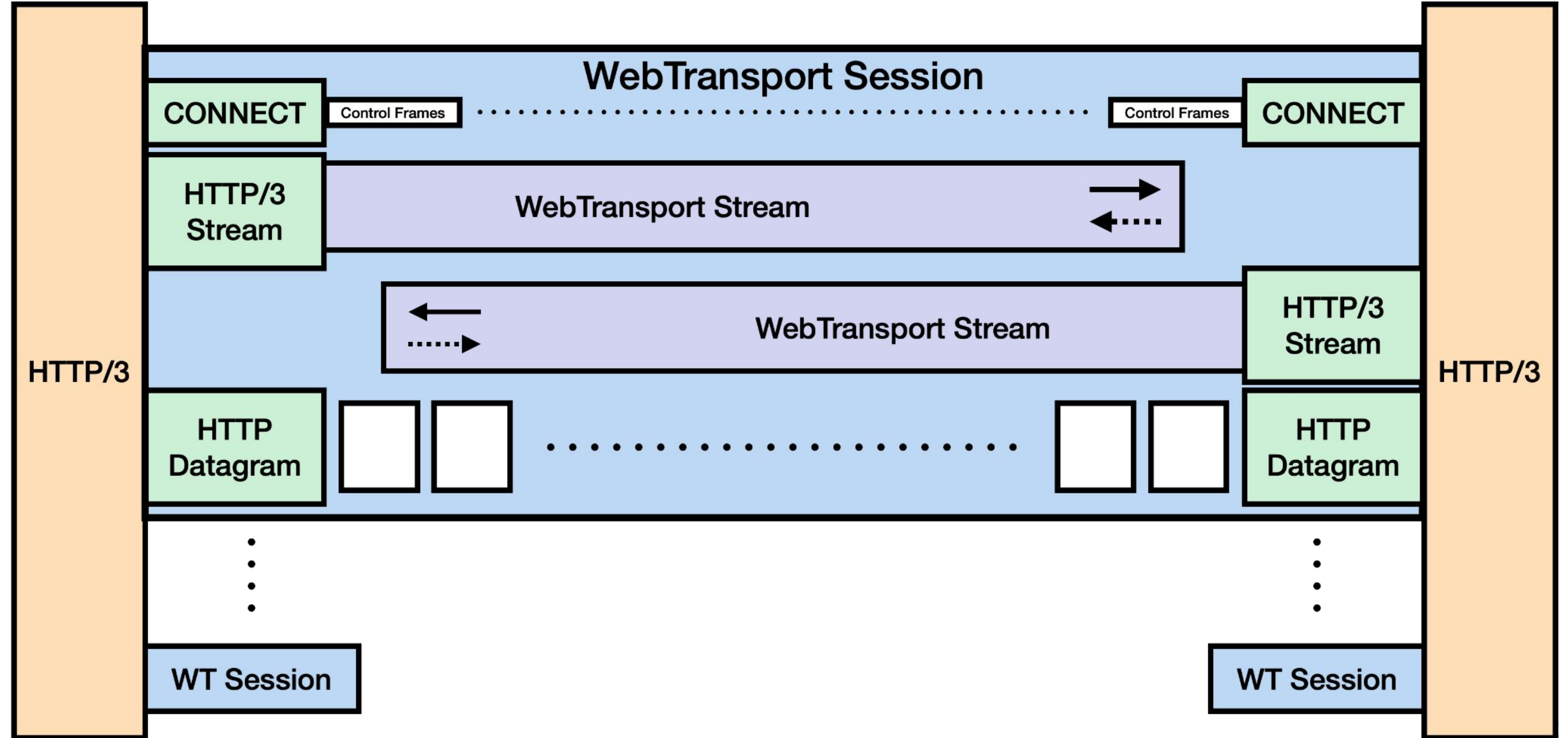
More than one WebTransport Session per HTTP/3 connection

Not as much of an issue for HTTP/2, each session is one connect stream

HTTP/2



HTTP/3



Pooling

Proposal: Provide resource limits and do nothing to preclude future enhancements

Resolves #22, #34, #36, #70

Flow Control

HTTP/3 (QUIC) already has stream and data limits for streams and the connection

Remaining: maximum count of sessions and count of streams for each session

Side Note

WT over H3 says:

HTTP_REQUEST_REJECTED or
429 Too Many Requests

Changing this is optional

Flow Control

Today, we use

`SETTINGS_ENABLE_WEBTRANSPORT`

Instead,

`SETTINGS_WEBTRANSPORT_MAX_SESSIONS`

Set to 1 for no pooling

Flow Control Details

Limit total session count

Limit streams within a session

Limit total data within a session

Limit data within each session's streams

Flow Control Details

Limit total session count

Limit streams within a session

MAX_STREAMS

Limit total data within a session

MAX_DATA

Limit data within each session's streams

MAX_STREAM_DATA

Flow Control Details

Limit total session count

Limit streams within a session

MAX_STREAMS

Limit total data within a session

MAX_DATA

~~Limit data within each session's streams~~

~~MAX_STREAM_DATA~~

Flow Control Details

Limit total session count via SETTINGS

Limit streams within a session

MAX_STREAMS

Limit total data within a session

MAX_DATA

~~Limit data within each session's streams~~

~~MAX_STREAM_DATA~~

Flow Control Details

Limit total session count via SETTINGS

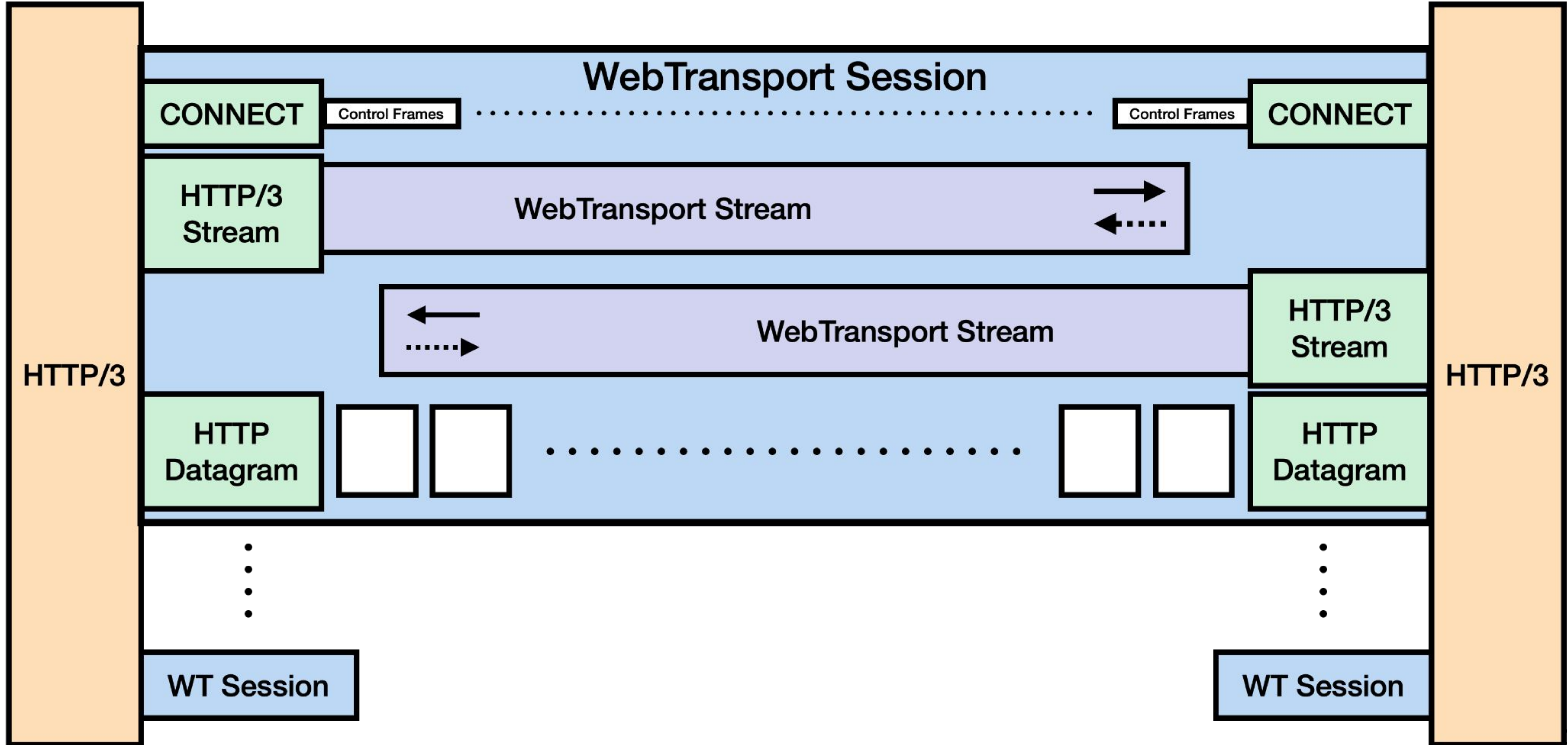
Limit streams within a session

`WT_MAX_STREAMS (BLOCKED)`

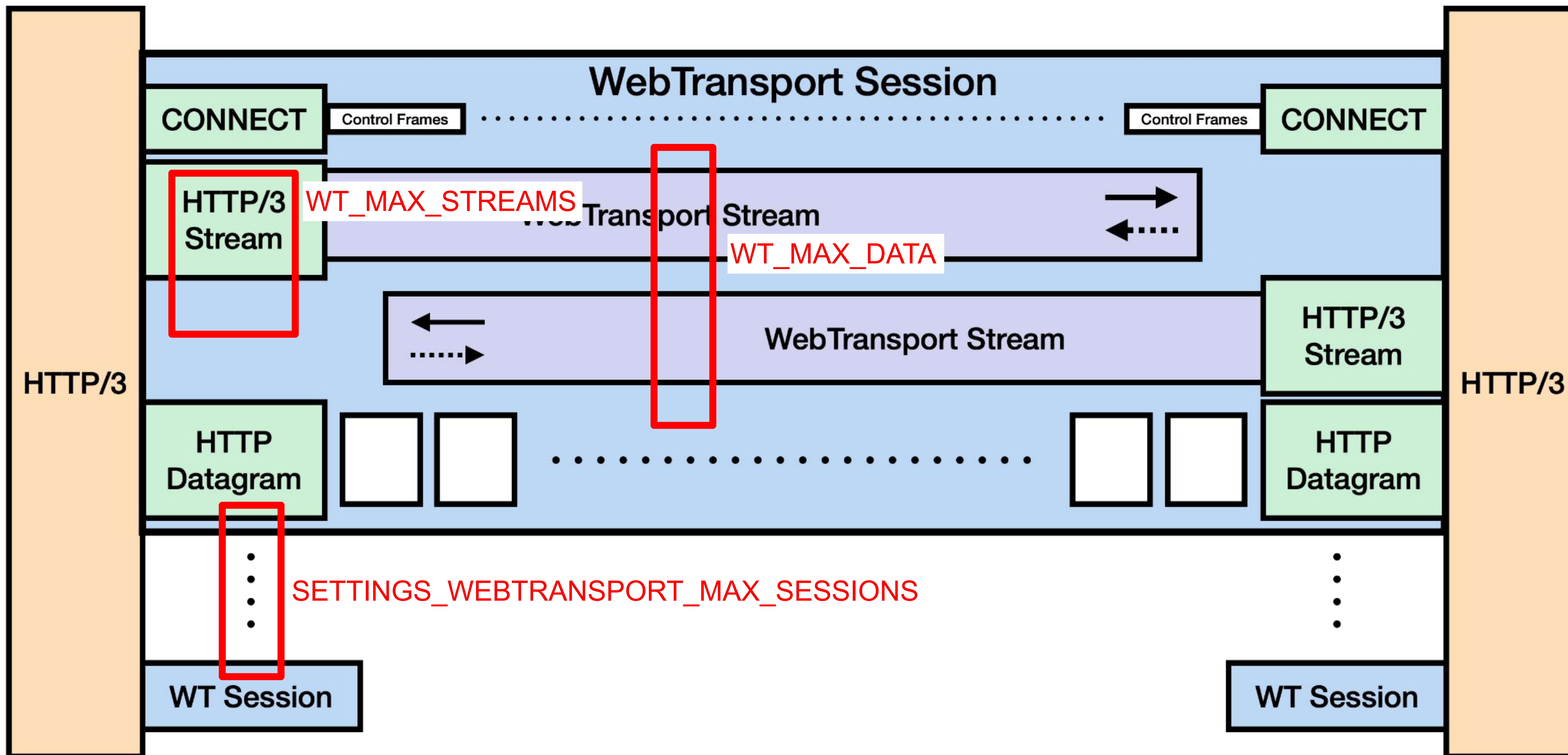
Limit total data within a session

`WT_MAX_DATA (BLOCKED)`

HTTP/3



HTTP/3



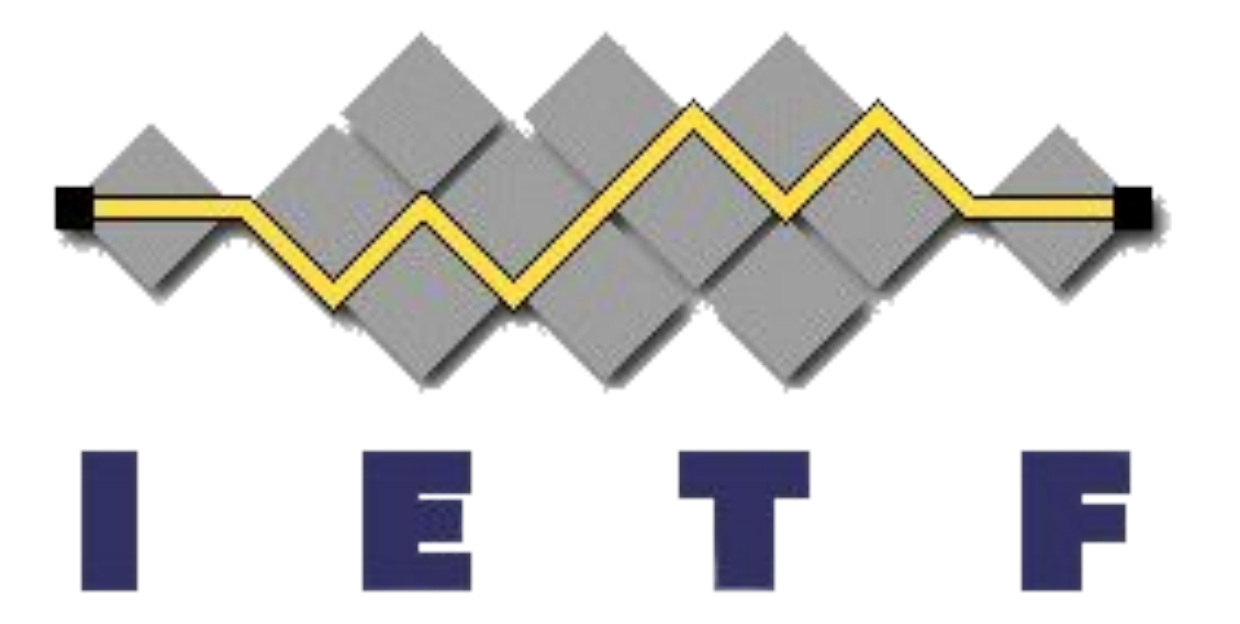
Capsules?

WT_MAX_STREAMS (BLOCKED)

WT_MAX_DATA (BLOCKED)

WT over HTTP/2 might define capsules for these, should we just use those?

Discussion



WebTransport using HTTP/2

Eric Kinnear

<https://datatracker.ietf.org/doc/html/draft-ietf-webtransport-http2>

Since IETF 112

Landed changes, waiting on others

Capsules

Frames before response #38

Today, we prevent any WT frames from being sent before response from server arrives

Non-flow controlled frames would be fine

Proposal: Allow sending any frames allowed by flow control, opens up limits sooner

Capsules #25

Capsules

HTTP Datagram design team complete

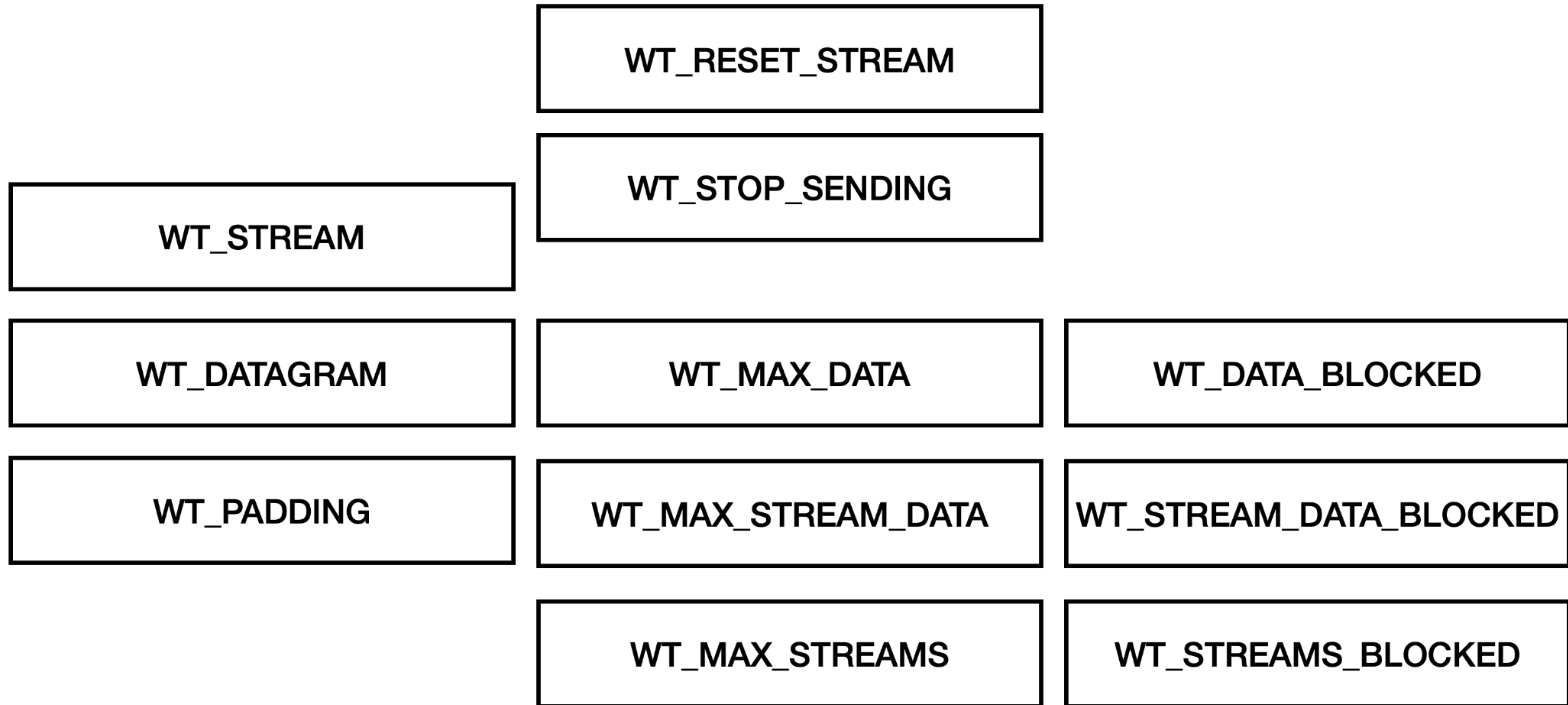
We were defining TLVs for each WT frame

We can register them in a different registry

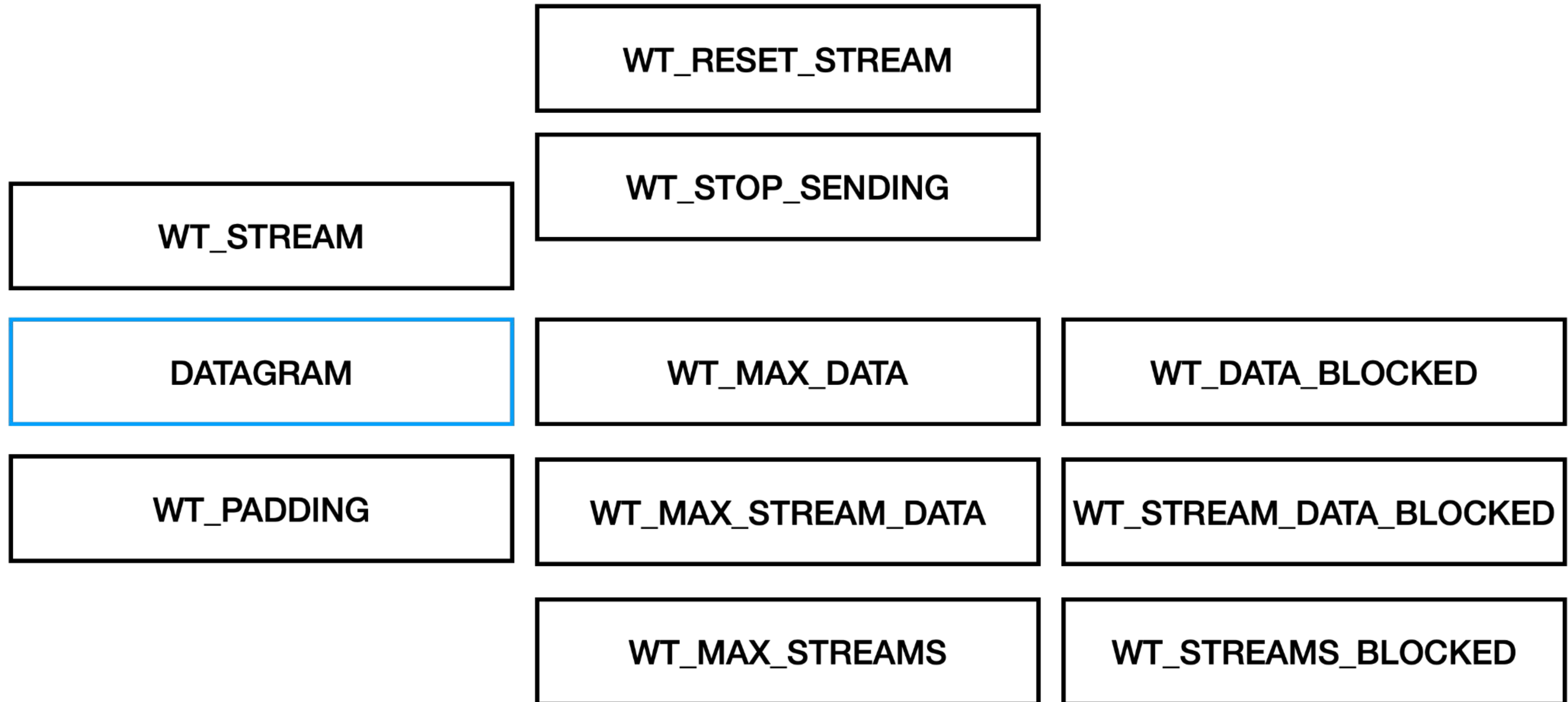
Capsules #25

What do we get from using capsules?

Capsules #25



Capsules #25



Capsules #25

What do we get from using capsules?

Share IANA registry with other TLVs

HTTP/3 can reuse the capsules for

WT_MAX_STREAMS (BLOCKED)

WT_MAX_DATA (BLOCKED)

Capsules #25

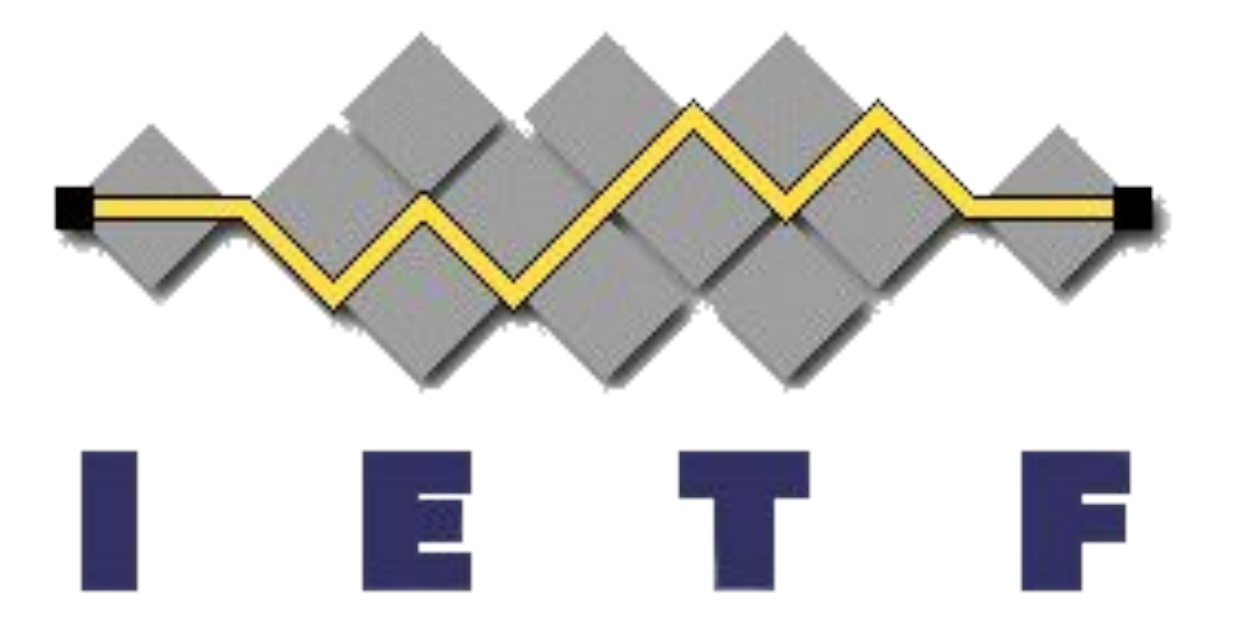
What do we get from using capsules?

Share IANA registry with other TLVs

HTTP/3 can reuse capsules

End-to-end-ianness?

Discussion



Hums, Wrap-up, and Summary (15 minutes)

Bernard Aboba

David Schinazi

Thank you

Special thanks to:

The Secretariat, WG Participants & ADs