VideoFrame Metadata Registry

- Set of optional data fields attached to the VideoFrame.
- Useful when a frame source knows extra information about the VideoFrame
  - Web camera can report face positions or depth
  - WebRTC can report extra timestamps
- VideoFrame registry entries do not affect behavior of WebCodecs or any other MEDIA WG specification
  - During encoding, registry entries are ignored and are not propagated to encoded*Chunks
  - During decoding, registry entries are not added to VideoFrames
  -
-

RTC timestamps

VideoFrameCallback (<video> event) exposes 3 timestamps from WebRTC

`captureTime`, **of type** DOMHighResTimeStamp
: For video frames coming from a local source, this is the time at which the frame was captured by the camera. For video frames coming from remote source, the capture time is based on the RTP timestamp of the frame and estimated using clock synchronization. This is best effort and can use methods like using RTCP SR as specified in RFC 3550 Section 6.4.1, or by other alternative means if use by RTCP SR isn't feasible.

: SHOULD be present for WebRTC or getUserMedia applications, and absent otherwise.

`receiveTime`, **of type** DOMHighResTimeStamp
: For video frames coming from a remote source, this is the time the encoded frame was received by the platform, i.e., the time at which the last packet belonging to this frame was received over the network.

: SHOULD be present for WebRTC applications that receive data from a remote source, and absent otherwise.

`rtpTimestamp`, **of type** unsigned long
: The RTP timestamp associated with this video frame.

: SHOULD be present for WebRTC applications that receive data from a remote source, and absent otherwise.

https://github.com/w3c/webcodecs/issues/601

Face detection and segmentation in general

Some webcams can detect position of human faces and provide this information via capturing pipeline.

https://w3c.github.io/mediacapture-extensions/#human-face-segmentation

https://github.com/w3c/webcodecs/issues/607

```
dictionary VideoFrameMetadata {
  sequence<Segment> segments;

};
```

```
dictionary Segment {
  required SegmentType type;
  required long        id;
  long                 partOf;
  required float       probability;
  Point2D              centerPoint;
  DOMRectInit          boundingBox;

};
```

Do WebCodecs encoders do anything with this information? No.

VideoFrame Metadata Registry is empty

VideoFrame Metadata Registry has been empty for 2 years now.

MEDIA WG shoulders the burden of reviewing registration requests, even though entries do not affect behavior in MEDIA WG specifications.

What is the purpose of the VideoFrame Metadata Registry?

- To avoid naming conflicts? Could be addressed without a registry.
- To clarify behavior? That is handled in the specs that define the entries.
- To define WebCodecs behavior? WebCodecs behavior not affected by entries, can add text if necessary.

We either need to remove the VideoFrame Metadata registry before WebCodecs CR or figure out why it exists (and how to add entries).