Introduction to “Sync on the Web”

1st July, 2025

Kensaku KOMATSU

NTT docomo Business

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Agenda for Today's talk

つなごう。驚きを。幸せを。
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- Brief introduction to "Sync on the Web"
- Use case study – "Immersive Interactive Live Viewing"

Japanese English !!

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Media Over QUIC (moq)

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Charter for Working Grou

Milestones

WG	**Name**	**Media Over QUIC**
	Acronym	moq
	Area	Web and Internet Transport (wit)
	State	Active
	Charter	charter-ietf-moq-01 **Approved**
	Document dependencies	Show
	Additional resources	GitHub Repository Zulip stream
Personnel	**Chairs**	Magnus Westerlund, Martin Duke
	Area Director	Mike Bishop
	Tech Advisor	Zaheduzzaman Sarker
Mailing list	**Address**	moq@ietf.org
	To subscribe	https://www.ietf.org/mailman/listinfo/moq
	Archive	https://mailarchive.ietf.org/arch/browse/moq/
Chat	**Room address**	https://zulip.ietf.org/#narrow/stream/moq

Charter for Working Group

https://datatracker.ietf.org/group/moq/about/

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moqt – Media over QUIC Transport

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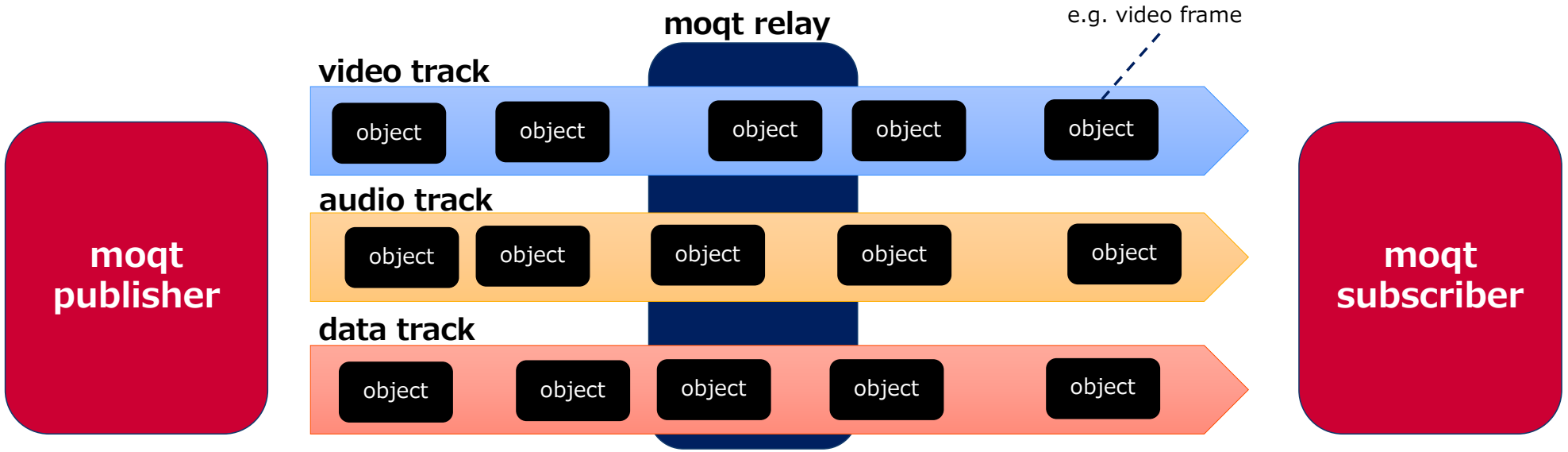
- Track
  - For each media and arbitrary data
  - e.g. hd-video, sd-video, audio, dmx
- Object
  - For short period of data in the track
  - e.g. video frame



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The Idea of “Sync on the Web”

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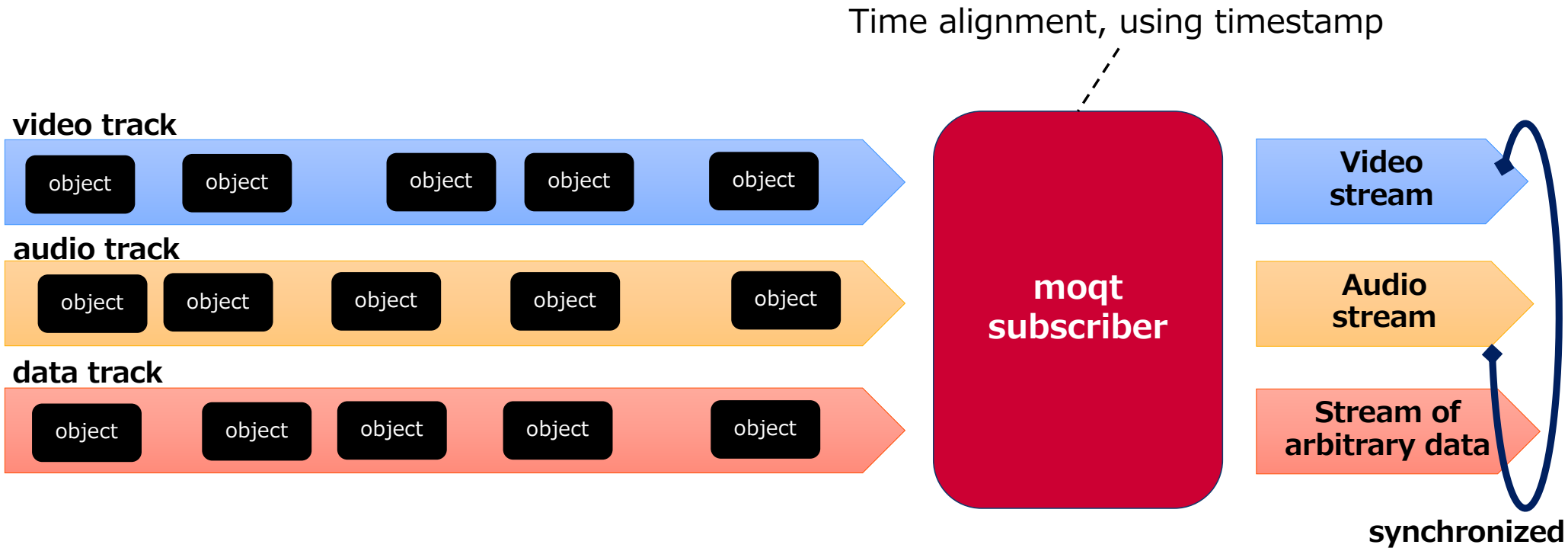
- Each object can contain “meta data”
  - Including captured timestamp
- With timestamp, subscriber can synchronize audio, video and arbitrary data
  - In other words, time-alignment



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Demo – “sync” w/ Media over QUIC

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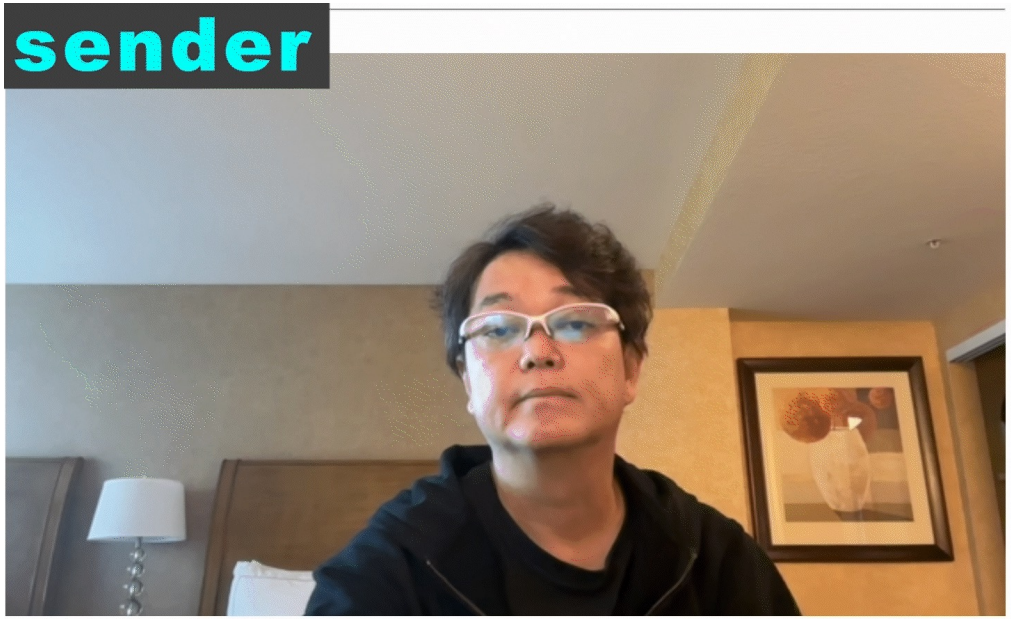
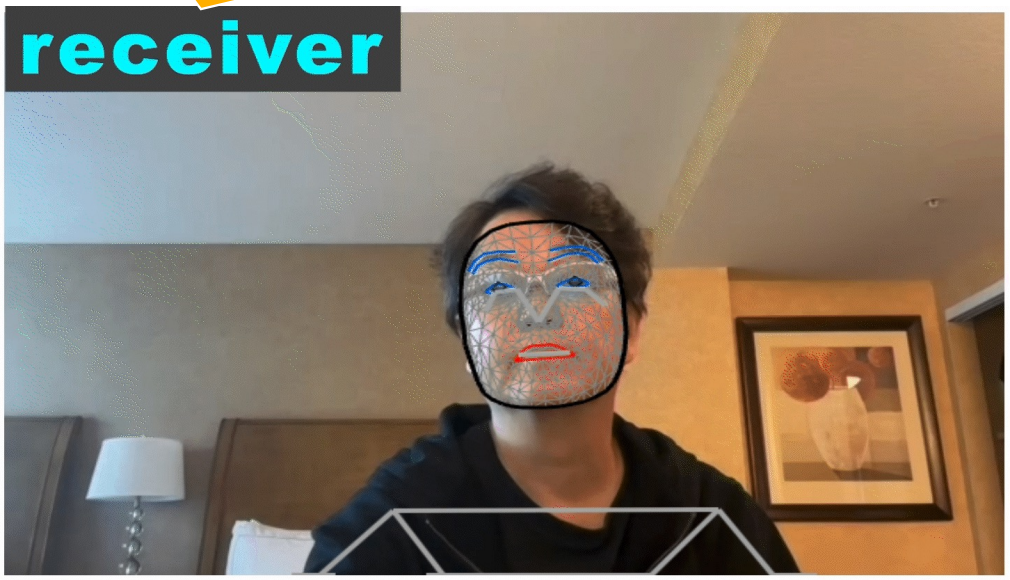
Receiver side avatar rendering by motion data. Playing music and drawing effects by MIDI.



Error::info::no subscriber found



Received messages

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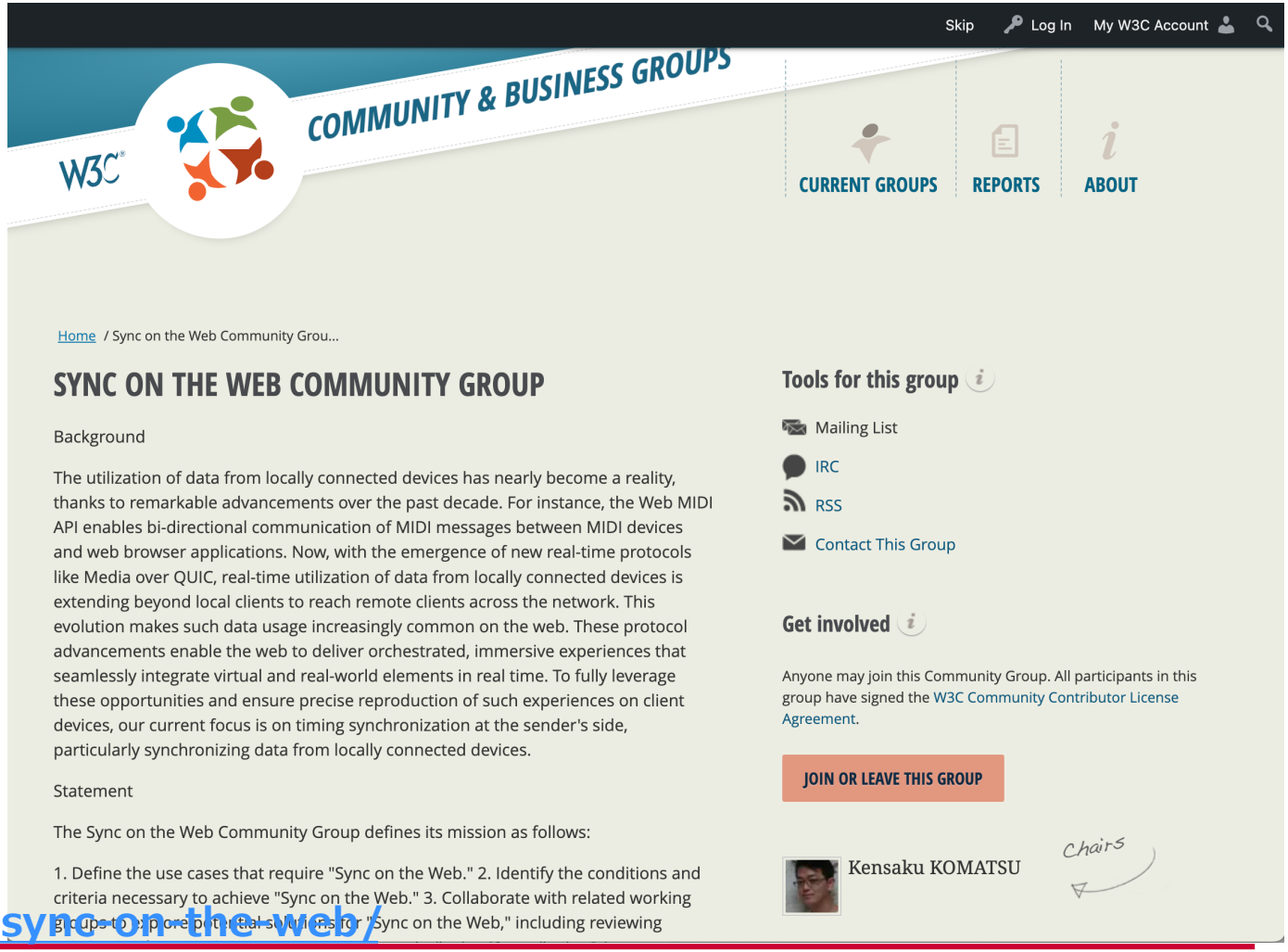
Sync on the Web CG

Believing that, for real-time web, “Sync” is one of the important topic.

Current work.

- Use case study
- Gap analytics
- Collaborate w/ related groups.



https://www.w3.org/community/sync-on-the-web/

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What's Live Viewing?

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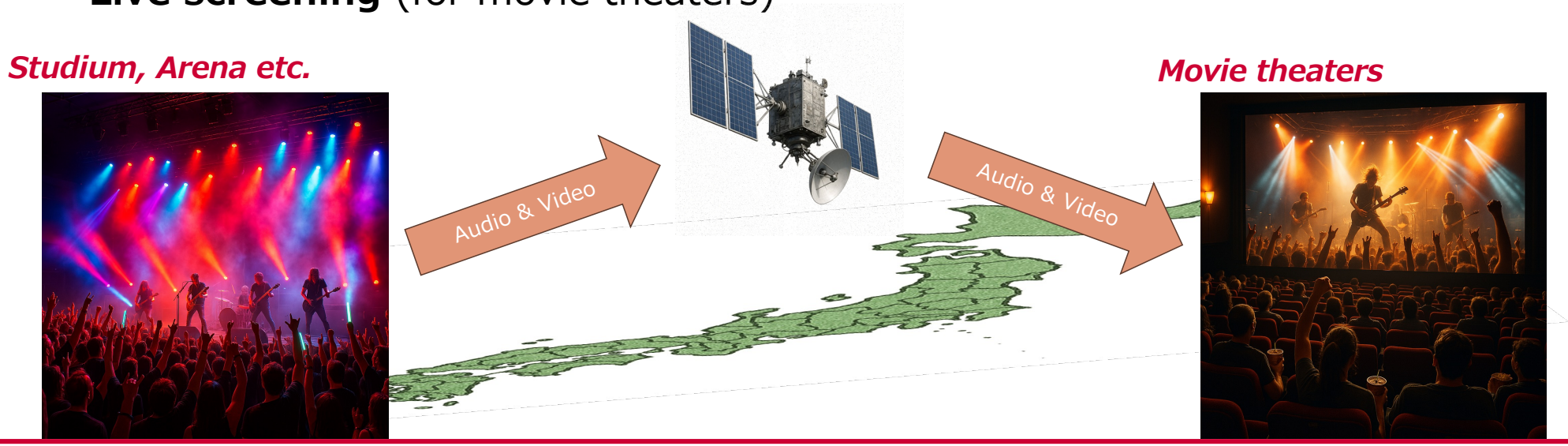
I asked to "ChatGPT" ;)

Is "Live Viewing" Japanese English?

Yes, **"Live Viewing" is considered Japanese English (和製英語)** — a term that sounds like English but is mainly used in Japan with a specific meaning not commonly understood the same way by native English speakers.

In natural English:

- **Live screening** (for movie theaters)



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“GPAP over MoQ”

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To realize “Immersive Interactive Live Viewing”

- **GPAP (General Purpose Audio Protocol)**
  - Handle all live stage data. Audio, Lighting (DMX), … , into .wav data
  - Relies on Dante. Developed by YAMAHA.
- **GPAP over MoQ**
  - Transport GPAP data using MoQ (minimum latency: about 0.1sec).
  - Assign tracks for each GPAP data.
  - Developed by NTT docomo Business

GPAP : Gneral Purpose Audio Protocol
https://youtu.be/ZjByd7BeOXY?si=h7EuGQMpv4xC8bYy

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Diagram of “GPAP over MoQ”

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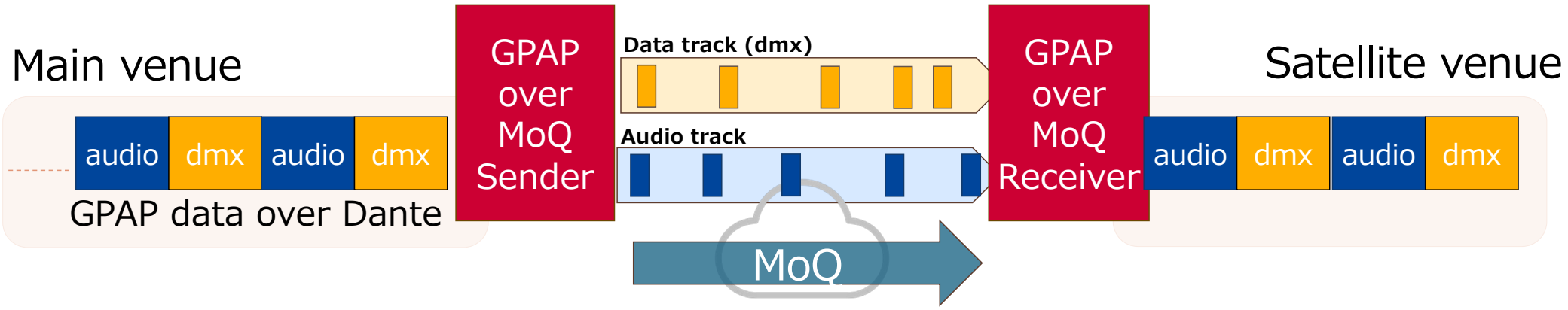
Time alignment for each track data.
Regenerate GPAP data in Dante format



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For more detail (article in English):
https://www.tvbeurope.com/media-delivery/ntt-com-partners-with-yamaha-to-trial-interactive-live-viewing-technology

Digest video (Youtube in Japanese) :
https://youtu.be/2T4kg8VlhOU?si=54bFi_BjEfzlF3M7

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Gaps for “Sync on the Web”

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- Dante from browser
  - In windows : cannot handle (due to ASIO)
  - In Mac : handle 2 channels only

Dante®

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Additional Announcement :

- Planning to held meetup at Kobe w/ local community on 9th Nov (Day before TPAC!!)

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Thank you!

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