SWAPUGC
Software for Adaptive Playback of Geotagged User-Generated Content

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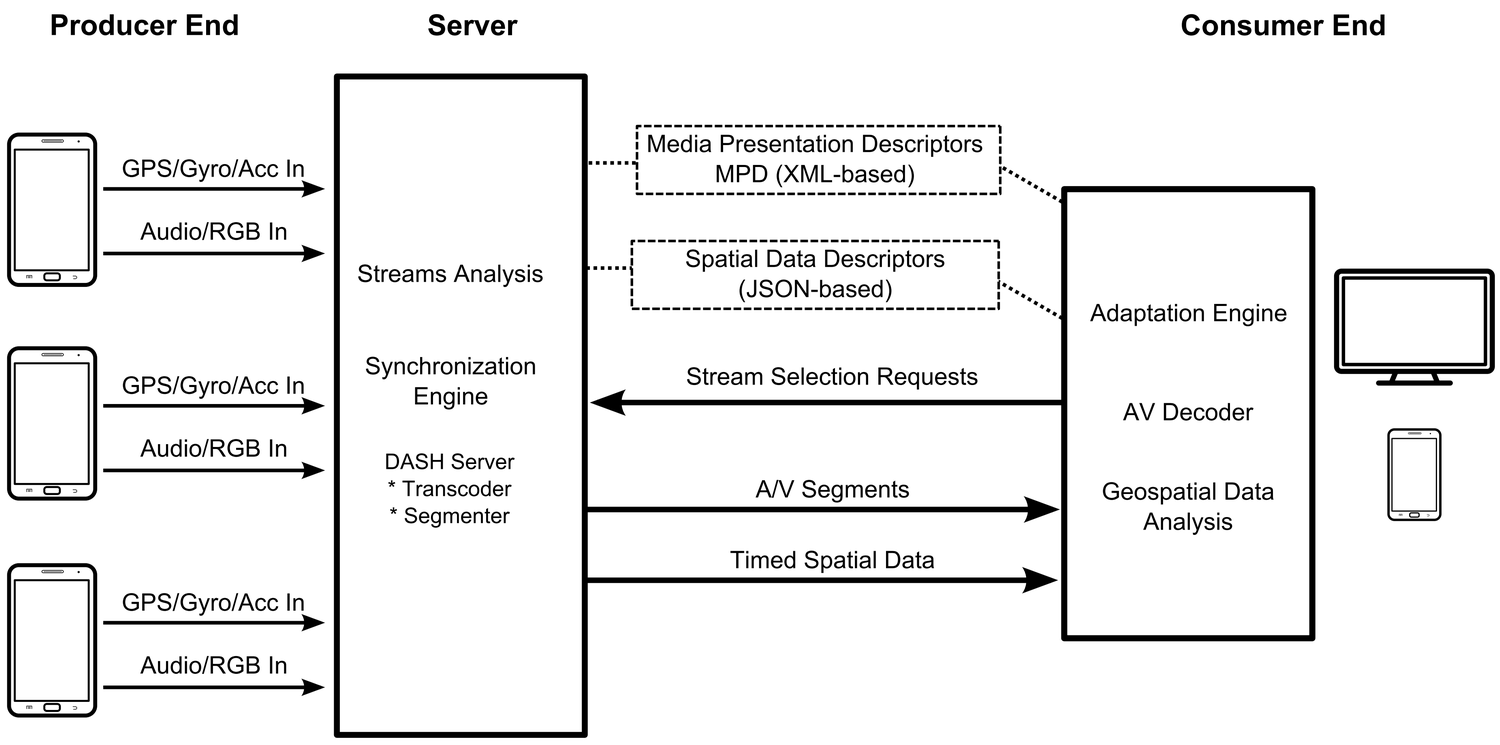
DESCRIPTION

An open-source platform for consuming geotagged videos from within the browser, SWAPUGC can be usefull for the research community to implement and validate adaptation algorithms for stream selection. This includes optimization on ranking and selecting relevant views and/or qualities.

APPLICATION ARCHITECTURE OVERVIEW



INCLUDED TOOLS

MPD Analyzer and DASH player
MPD parsing (live and on-demand) with accompanying DASH player

Data Formatter
Python script to format the geospatial data and generate the descriptor files

Synchronization Engine
Event-based system for multimodal synchronization that support custom triggers (e.g. stream availability update)

Spatial Data Parser
Extracts the timing info and creates the respective triggers for geospatial data updates

ADDITIONAL RESOURCES

Spatiotemporal Navigation Recorder[1]
Capture geotagged videos

MP4Box (GPAC)[2]
Analyze MP4 Files / Generate DASH streams

FFMPEG[3]
Transcode/Segment streams

[1] git.io/SNR [2] gpac.io [3] ffmpeg.org

APPLICATION EXAMPLES

ENABLED SCENARIOS

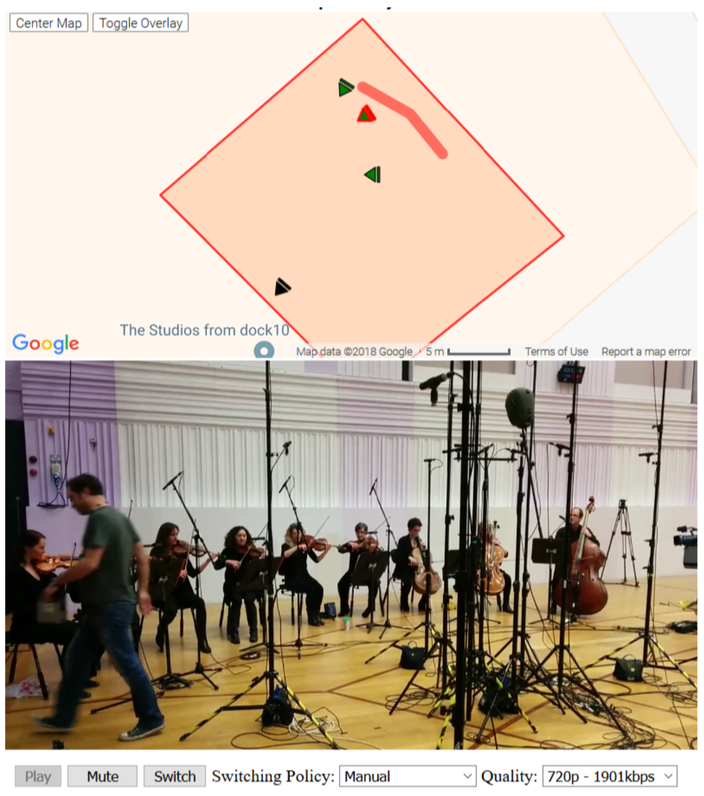
Multiview Adaptive Playback: Watch (live or offline) an event via the available stream(s), with optimal view and quality selection

Spatiotemporal Navigation [2]: Identify parts of recording(s) spatially relevant to a geographical region

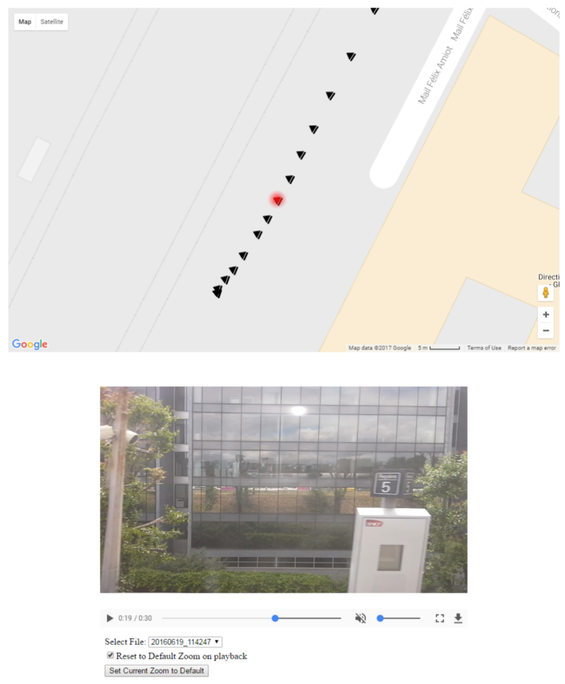
Virtual Tour: Follow a path via relevant recordings

Exhibition [1]: Offer advanced browsing of videos based on spatial features

MULTIVIEW ADAPTIVE PLAYBACK



SPATIOTEMPORAL NAVIGATION [2]



Client-side screenshots

MMSys'18

REFERENCES

[1] Kim, S. H., Lu, Y., Constantinou, G., Shahabi, C., Wang, G., & Zimmermann, R. "Mediaq: Mobile Multimedia Management System". Proceedings of the 5th ACM Multimedia Systems Conference. 2014.
[2] Emmanouil Potetsianakis, Jean Le Feuvre and Cyril Concolato "Extended Video Streams for Spatiotemporal Navigation". The Graphical Web 2016, 1-4 Nov. 2016

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GPAC

www.gpac.io