

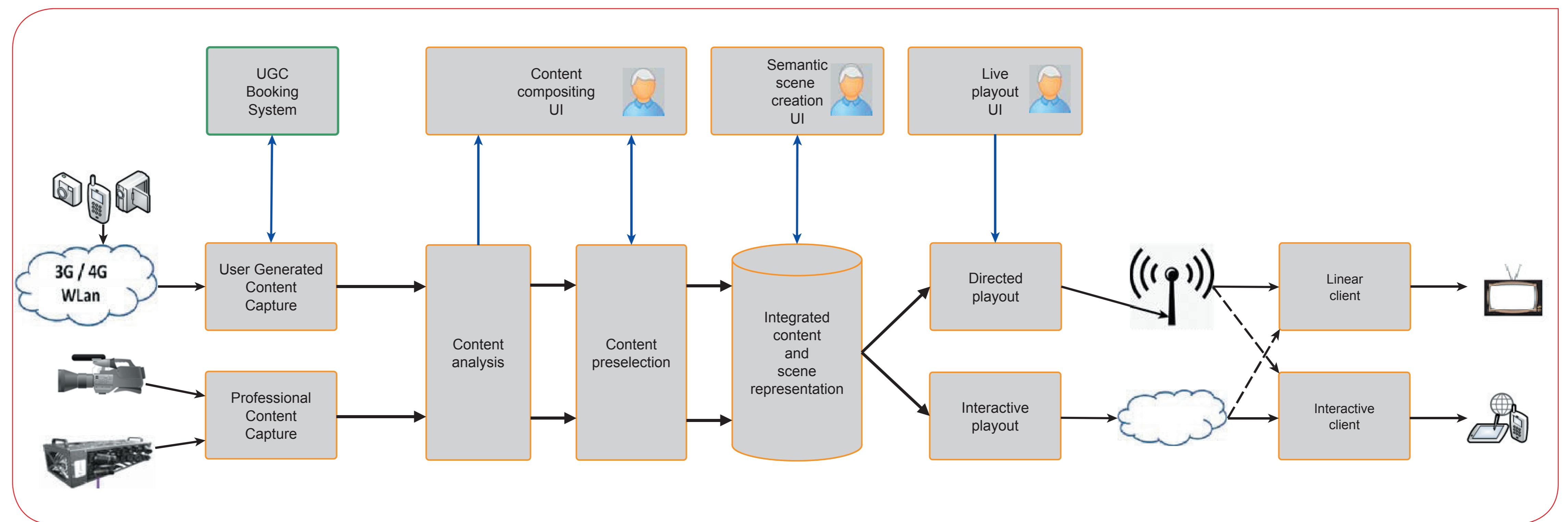
Immersive Coverage of Spatially Outspread Live Events

Motivation

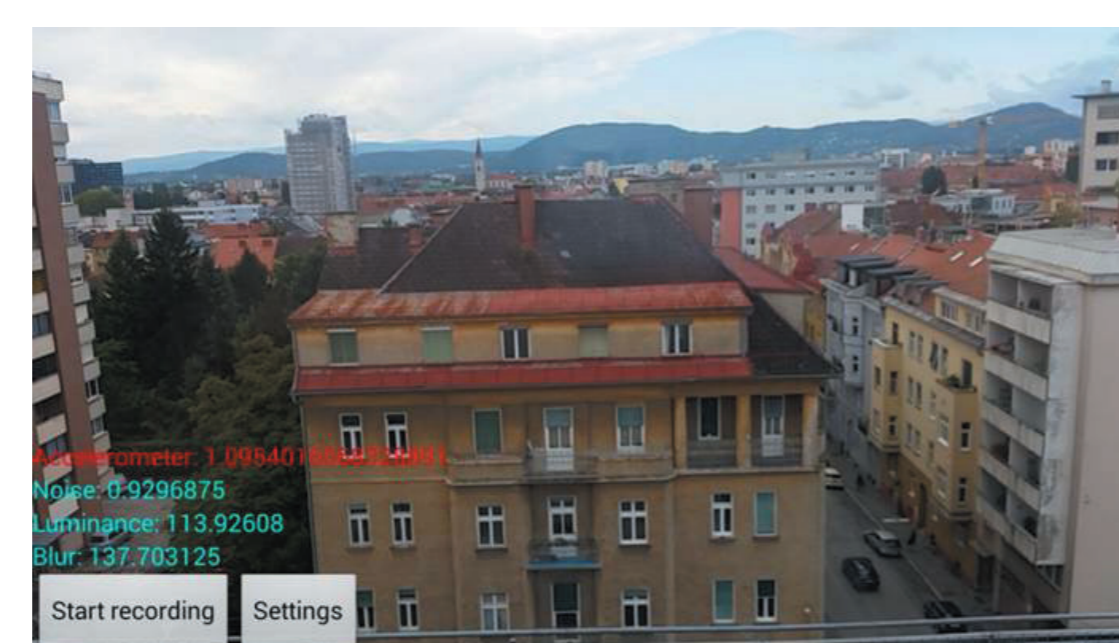
- Enable a more comprehensive and immersive experience of live events
- Provide better coverage for events spread over large areas
- Omnidirectional cameras and microphones capture action on stage and audience
- Users sign up for delivering UGC in return for incentives
- Automatic analysis and filtering of incoming streams
- Users can watch edited live TV stream, content on second screen web
- Entire coverage of the festival is available for later replay

Scenario

- Festival, e.g. Dranouter, Glastonbury – many stages, many parallel performances

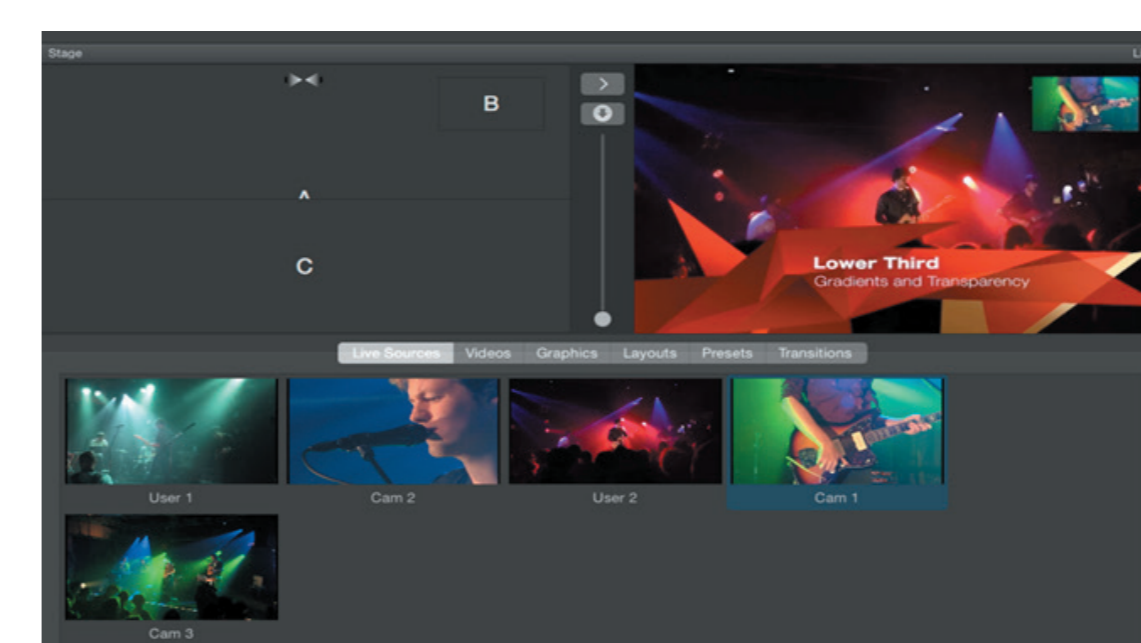


Quality analysis



- Technical quality assurance for UGC
- Noise Level
- Luminance
- Blur

Playout (server)



- GStreamer-based mixing engine running on Linux server
- Cocoa GUI running on OSX client
- Communication via zeroMQ + JSON

3D audio rendering



- Recordings mixed to achieve professional 3D audio
- Render object-based audio in real-time using Web Audio API
- Rendering to loudspeakers and headphones

Object-based binaural rendering



- Upload BWF files with object-based audio metadata
- Using different main microphones and mixing techniques
- Head tracking for binaural mode

Content pre-caching



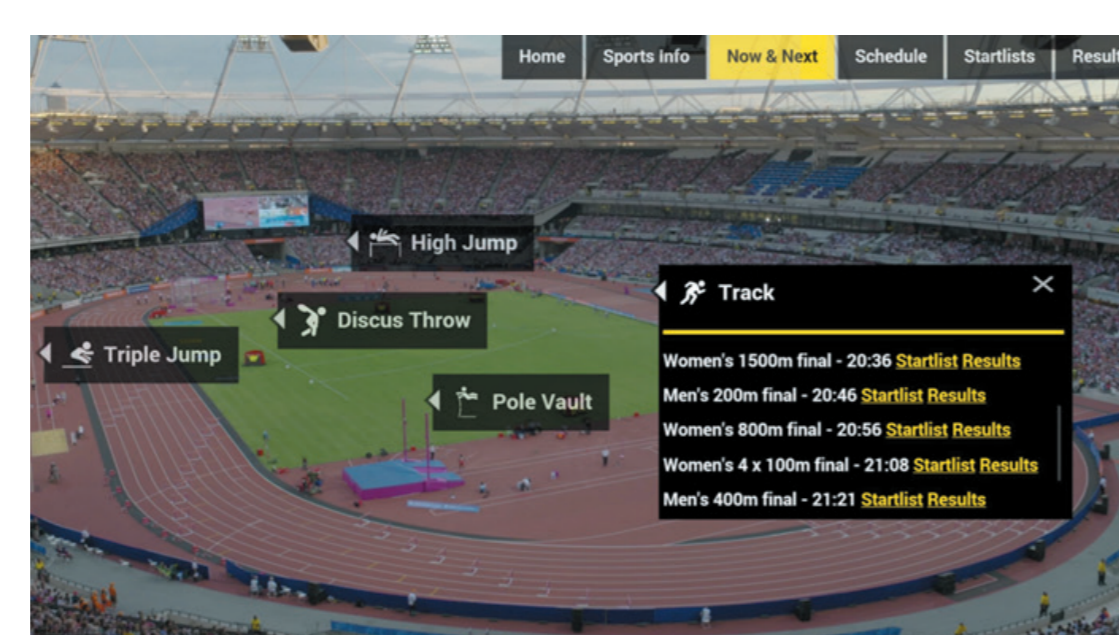
- Mitigate latency issues when zapping in DVB setups
- Optimize time-to-first-picture
- Will be integrated in playout client for live playback on TV

bitdash – HD streaming



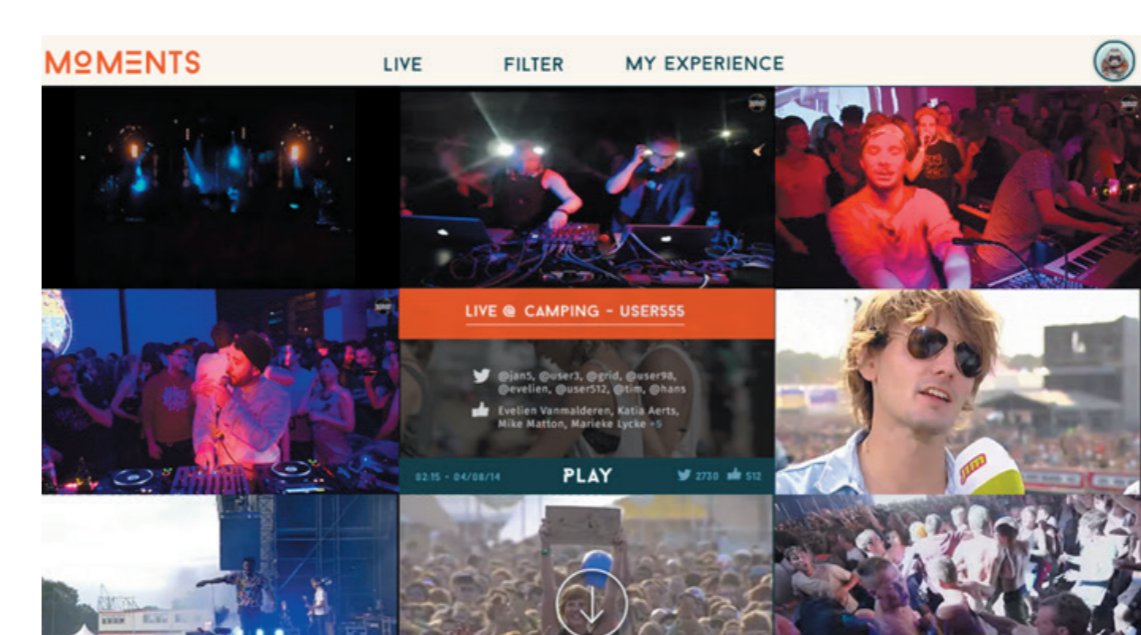
- Platform agnostic MPEG-DASH clients
- Smooth content consumption
- Live/catch-up and on-demand streaming
- HTML5/JS based

Festival Explorer



- Web-based client for interactive scene navigation
- DASH adaptive streaming of video tiles from 4k overview
- Pan & zoom control
- Dynamic audio mix

The Wall of Moments



- Short video fragments captured by users attending the festival
- Deliver unique festival experience for remote users
- Selection based on popularity, friends, music preference etc.