



MOS2S

MEDIA ORCHESTRATION FROM SENSOR TO SCREEN

MOS2S develops, tests and embeds audiovisual technologies in the Smart Venue Playground. The Playground serves as an experimental platform to support proof-of-concepts and trials, and focuses on extending and enhancing the experience of venue visitors and home viewers. MOS2S helps to accelerate new, unique Smart Venue applications that improve profitability, safety and customer experience.

The proliferation of novel audiovisual sensors, all producing huge amounts of data and video, is an important aspect of the Smart Venue environment. The art is to harvest and combine this wealth of data and video in an orchestrated way, enabling a variety of attractive applications for information, participation, entertainment and security.

MOS2S works with data-driven media technologies that allow us to orchestrate devices, data and video streams, and resources into a rich and coherent media experience on various end-user devices, including virtual environments. Applications include live events, event security and crowd journalism. They build upon advanced sensor, networking and cloud infrastructures, and leverage new media and data analysis, processing and streaming technologies.

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E-mail info@mos2s.eu
Website www.mos2s.eu
Facebook www.facebook.com/ITEA3MOS2S
Twitter [@ITEA_MOS2S](https://twitter.com/ITEA_MOS2S)

DEMONSTRATIONS OF SOLUTIONS

At IBC2017, we showcase cutting-edge technology that enriches the live event fan experience, in the stadium, at the cycling race track and at home. Our demonstrations use high-end footage from official games of the Dutch national football team, as well as from Belgium's professional cycling race: the Tour of Flanders.



COACH ON THE COUCH

We demonstrate a data-integrated interactive video system and mobile application, featuring navigable 360/ultrahigh definition (UHD) video and real-time player and game statistics. We combine tracking data and ultrahigh definition video images in real time in an in-stadium smartphone app that lets fans get more information about the players and match by using augmented reality layers. For example, fans can determine their team's game tactics, follow a specific player, and more. At the same time, the technology provides an innovative TV experience for the viewer at home. The tracking and UHD video data streams can be shown via an app on an IPTV set-top box. This allows home viewers to watch the live sport or music event and also access extra information on their television set, or on streaming apps on second screens, such as smartphones and tablets.



Tracking persons or objects in combination with UHD video can be useful to event management. For example, technology that allows us to follow medical and security personnel during live events will help give the event management team better operational control in complex situations.



ENHANCING THE PRE/POST EXPERIENCE

Coverage of the professional Tour of Flanders is enriched with live content contributed by the crowd watching the race. Curated by a professional editor, these highlights will provide an immersive and multi-perspective race experience. An interactive application enables users to submit content (text, images, audio and video) as well as consume content shared by a broadcaster (e.g. radio, sports or news station). From a broadcaster's perspective, news editors can easily segment and collect user content by a specific topic or location. In effect, end users become reporters in the field. The app's editorial dashboard makes

it easy to reach users for updates and polls. Besides content contribution, the app enables news editors to search and analyze social media. By adapting their current workflow into a set of tools, editors will be able to efficiently collect information, tailored to their news stories. We demonstrate how novel editorial tools and end-user apps can be used to augment traditional professional race coverage with crowd-contributed highlights, curated by a professional (news) editor to provide viewers with an enriching immersive and multi-perspective race experience.

Ultra-wide view capture and rendering

Recently, 360VR displayed on head-mounted sets has presented great opportunities for viewers to experience wide field-of-view videos. Many service providers are experimenting with 360VR, trying to bring the remarkably real impressions of Smart Venue into the home environment. An important aim of developing such immersive technology is to show the feasibility of an 8K-grade 360VR broadcasting service to viewers at home.

The MOS2S consortium aims to provide an end-to-end solution from cameras to players for the 8K-grade 360VR service. Capable of capturing more than 12 million pixels, the solution introduces the most realistic immersive experience with 8K quality and wide field-of-view videos in the Smart Venue. Besides that, state of the art, efficient encoding, decoding and streaming technologies help users to enjoy the immersive service regardless of device or location. One key feature of the solution is its real-time monitoring function in 3D. With this feature, producers can check and imagine the final footage at any look-at point in the 3D domain.



MOS2S CONSORTIUM

The MOS2S project is driven by an international and industry-led consortium of partners. The Dutch companies involved in the project are Amsterdam ArenA, Bosch, GameOn, Inmotio, KPN and TNO. Their contribution is focused on enhancing the fan experience during and around live sport and music events in the stadium and for the viewer at home.

The Belgian companies involved in the project are imec, Kiswe, Nokia and VRT. Their contribution focuses on crowd journalism (for breaking news as well as pre- and post-event reporting), collecting high-quality user-generated content during live events and (social media) content analysis. The ambition is to gain efficiency in news and event coverage production processes, and to engage end users in creating and enriching news content.

The Korean companies involved in the project are ETRI, MOOOVR and Samsung Electronics. Their contribution also focuses on increasing the immersive experience of users during and around live sport and music events. Developing solutions that enhance fan experience is an important service for venue visitors and main tenants such as football clubs and event organizers. At the same time, creating innovative recordings of live events allows viewers at home to experience the match in a new enriched format and is relevant for broadcasters, broadcasting right owners, TV show productions and telecom providers.