

Components for bidirectional augmented broadcasting services on smart TVs

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Abstract We present the core components to support bidirectional augmented broadcasting services on smart TVs. These components are considered to be very significant for next-generation media services. The key modules used in our proposed system provide users with special functions, allowing them to insert graphic models into common broadcasting contents themselves. Efficiently encoding the tracking information of both the position and orientation of the cameras and the light sources used during an entire video production is the most critical task at the transmitting side. The information is stored in a predefined rendering profile format and is used to render inserted objects photo-realistically and combine them with the original broadcasting contents at the receiving side. We employ cutting-edge techniques developed in the field of computer graphics to display the composed contents seamlessly on smart TVs. This new broadcasting service paradigm will satisfy the needs of high-end users who expect to play the role of content producers.

Keywords Augmented broadcasting · Interactive broadcasting · Smart TVs · Multimedia content services · Real-time computer graphics · Photo-realistic rendering

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