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650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
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Introduction

Dynamic and Interactive Multimedia Scenes (DIMS) is a dynamic, interactive, scene-based media system which enables display and interactive control of multimedia data such as audio, video, graphics, images and text. It ranges from a movie enriched with vector graphic overlays and interactivity (possibly enhanced with closed captions), to complex multi-step services with fluid interaction/interactivity and different media types at each step. The demand for such Rich Media service is increasing at a high pace, spurred by the development of the next generation mobile infrastructure and the generalization of TV content to new mobile environments.

In the case of a video portal application, subscribers can watch TV, video and audio enriched with additional data (graphics, text, images) in streaming, progressive download or offline mode. DIMS provides a convenient and natural way to browse rich-media services, a web-like access (content available in less than three clicks, easy discovery, no learning curve), a permanent refresh of content through dynamic updates available on the fly and decreasing latency by allowing the visualization of data as soon as possible.

Content can be synchronized up to a frame-accurate basis (e.g. to ensure content providers and operators that voting will start and stop at a precise time during a vote within an interactive show or to allow karaoke text flows).

1 Scope

DIMS defines a dynamic rich-media system, including a media type, its packaging, delivery, and interaction with the local terminal, user, and other local and remote sub-systems. Enhanced end-user experiences are provided by the coordinated management and synchronization of media and events, combined with end-user interaction.

The DIMS media type can be used as a generic media type, allowing creating dynamic interactive rich-media services and can also benefit, or be used in association with other media types (e.g.: audio codecs, video codecs, XHTML browser, etc.).

2 References

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[1] W3C Candidate Recommendation: "Scalable Vector Graphics (SVG) Tiny 1.2 Specification".

NOTE: Available at: <http://www.w3.org/TR/SVGMobile12/>.

[2] Open Mobile Alliance (July 2004): "ECMAScript Mobile Profile 1.0".

[3] ISO/IEC 14496-20:2006: "Information technology - Coding of audio-visual objects - Part 20: Lightweight Application Scene Representation (LASeR) and Simple Aggregation Format (SAF)", including ISO/IEC 14496-20:2006/COR1, ISO/IEC 14496-20:2006/AMD1.

[4] ISO/IEC 14496-22: "Information technology - Coding of audio-visual objects - Part 22: Open Font Format".

[5] W3C Recommendation (December 2005): "Synchronized Multimedia Integration Language (SMIL 2.1)".

NOTE: Available at: <http://www.w3.org/TR/2005/REC-SMIL2-20051213/>.

[6] 3GPP TS 26.140: "Multimedia Messaging Service (MMS); Media format and codecs".

[7] 3GPP TS 26.234: "Transparent end-to-end Packet-switched Streaming Service (PSS); Protocols and codecs".

[8] 3GPP TS 26.244: "Transparent end-to-end packet switched streaming service (PSS); 3GPP file format (3GP)".

[9] The Unicode Consortium: "The Unicode Standard", Version 5.0, <http://www.unicode.org/>.

[10] ISO/IEC 14496-12: "Information technology - Coding of audio-visual objects - Part 12: ISO base media file format".

[11] IETF RFC 1952 (May 1996): "GZIP file format specification version 4.3", P. Deutsch.

[12] IETF RFC 2616 (June 1999): "Hypertext Transfer Protocol -- HTTP/1.1", R. Fielding, J. Gettys, J. Mogul, H. Frystyk, L. Masinter, P. Leach, T. Berners-Lee.

[13] IETF RFC 4329 (April 2006): "Scripting Media Types", B. Hoehrmann.