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TECHNICAL REPORT

Alignment of heterogeneous media data streams

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CONTENTS

FOREWORD 3
INTRODUCTION 5
1 Scope 6
2 Normative references 6
3 Terms, definitions, and abbreviated terms 6
3.1 Terms and definitions 6
3.2 Abbreviated terms 6
4 Overview 6
4.1 Purpose 6
4.2 Combination of media data 7
4.2.1 General 7
4.2.2 Photorealistic virtual world 8
4.2.3 Interactive 3D multimedia content 8
4.2.4 Remote collaboration system 9
4.3 Classification of media data 9
4.4 Concept of alignment of heterogeneous media data streams 10
4.4.1 General 10
4.4.2 Input layer 11
4.4.3 Process layer 11
4.4.4 Output layer 12
4.5 Items of standardization 12
4.5.1 Potential items of standardization 12
4.5.2 Standards gap analysis of related technologies 13
4.5.3 Focus items for standardization 15
5 Case study 15
5.1 Photorealistic virtual world 15
5.1.1 Virtual city exploration 15
5.1.2 Virtual tour 15
5.2 Interactive 3D multimedia content - Virtual music events experience 16
5.3 Remote collaboration system 16
5.3.1 Remote guided tours 16
5.3.2 Remote work guidance 16
5.3.3 VR meeting 16
Bibliography 17

Figure 1 – Abstraction of services by heterogeneous media data 7
Figure 2 – Combination of media data 7
Figure 3 – Example of MovieMap 8
Figure 4 – Example of T-Leap 9
Figure 5 – Sequential alignment of video and audio streams in multimedia 10
Figure 6 – Concept of alignment of heterogeneous media data streams 11
Figure 7 – Alignment process 12
Figure 8 – Flexible alignment of multimedia streams 12

Table 1 – Media types 9
Table 2 – Potential items of standardization 13
Table 3 – Mapping of potential standardization items to existing standards 13
Table 4 – Mapping of potential standardization items to emerging standards 14

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Alignment of heterogeneous media data streams

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Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this Technical Report is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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– reconfirmed,
– withdrawn, or
– revised.

INTRODUCTION

Driven by advances in digital technologies, new multimedia services have emerged. These services combine advanced media types-such as sensor signals and haptic data – alongside enhanced versions of video and audio-such as 360° video and 3D audio. While standards exist for combining conventional media data (e.g. video, audio) into "multimedia data", currently there is no standard covering these emerging media data. Consequently, each service independently implements its own approach for combining these media data. This leads to problems such as limited interoperability, reduced reusability, scalability concerns, and data silos. This document clarifies multimedia services that combine emerging heterogeneous media data and the concept of alignment of heterogeneous media streams to address the common challenges these services face. Based on the conceptual model and the analysis of relevant technologies and standards, this document also proposes items for future standardization.

1 Scope

This document describes multimedia services that combine heterogeneous media data and proposes the concept of alignment of heterogeneous media streams to address the common challenges these services face. Based on the conceptual model and the analysis of relevant technologies and standards, this document also proposes items for future standardization.

2 Normative references

There are no normative references in this document.

3 Terms, definitions, and abbreviated terms

3.1 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

– IEC Electropedia: available at https://www.electropedia.org/

– ISO Online browsing platform: available at https://www.iso.org/obp

3.2 Abbreviated terms

For the purposes of this document, the following abbreviated terms apply:

DDL	Data definition language
MPEG	Moving Picture Experts Group
MPEG-DASH	MPEG Dynamic adaptive streaming over HTTP
MP4	MPEG-4 Part 14 file format
RTCP	Real-time control protocol
RTP	Real-time transport protocol
SDO	Standard Development Organization
SQL	Structured Query Language
VR	Virtual reality

4 Overview

4.1 Purpose

Driven by advances in digital technologies, new multimedia services have rapidly emerged. These services combine advanced media types-such as sensor signals and haptic data-alongside enhanced versions of video and audio-such as 360° video and 3D audio. While standards exist for combining conventional media data (e.g. video, audio) into "multimedia data", currently there is no standard covering these emerging media data. This leads to issues such as limited interoperability, reduced reusability, scalability concerns, and data silos.

The purpose of standardization is to establish a standardized framework that can combine heterogeneous media data into multimedia data and facilitate the development and widespread adoption of new multimedia products and services.

See Figure 1 for a diagram of abstraction of services by heterogeneous media data.