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Augmented Reality Framework (ARF); AR standards landscape

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Foreword

This Group Report (GR) has been produced by ETSI Industry Specification Group (ISG) Augmented Reality Framework (ARF).

The ISG ARF shares the following understanding for Augmented Reality: Augmented Reality (AR) is the ability to mix in real-time spatially-registered digital content with the real world. The present report provides a snapshot of standardization efforts conducted by various Standards Development Organizations (SDOs) and other fora, as available at the time of publishing. While the goal of the present document is to provide an exhaustive list of relevant standards for AR, this may not be the case with the first version of the present document and updates may be available in future versions.

Modal verbs terminology

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1 Scope

The present document aims to identify the role of existing standards relevant to augmented reality and to contribute to identify any interoperability gaps. The activity summarized in the present document consisted in analysing the standardization work related to augmented reality in various standards setting organizations. While some of these standards under review are directly addressing AR as a whole, others are addressing key technological components that can be useful to increase interoperability of AR applications and services.

2 References

2.1 Normative references

Normative references are not applicable in the present document.

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

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3 Definition of terms, symbols and abbreviations

3.1 Terms

Void.

3.2 Symbols

Void.

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AAC	Advanced Audio Coding
ADAS	Advanced Driver Assistance Systems
AFX	Animation Framework eXtention
API	Application Programming Interface
APM	Augmented Printed Material
AR	Augmented Reality
ARAF	Augmented Reality Applications Format
ARF	Augmented Reality Framework
ARML	Augmented Reality Markup Language
ASCII	American Standard Code for Information Interchange
ASTM	American Society for Testing and Materials
AUI	Advanced User Interface
AVC	Advanced Video Coding
BBA	Bone Based Animation
BIFS	Binary Format for Scenes
bpv	bits per vertex
CAD	Computer Aided Design
CAVE	Cave Automatic Virtual Environment
CCOM	Common Collaborative Object Model
CDVS	Compact Descriptors for Visual Search

CI	Coordinate Interpolator
CIF	Common Industry Format
CMMS	Computerized Maintenance Management System
CNN	Convolutional Neural Network
CPU	Central Processing Unit
CUDA	Compute Unified Device Architecture
DAE	Digital Asset Exchange
DB	Data Base
DIN	Deutsches Institut für Normung
DOM	Document Object Model
EAM	Enterprise Asset Management
ERP	Enterprise Resource Planning
FAMC	Frame-based Animated Mesh Compression
FBA	Face and Body Animation
FBX	FilmBoX - data format
GIS	Geographic Information System
glTF	GL Transmission Format
GML	Geography Markup Language
GPS	Global Positioning System
GR	Group Report
HEVC	High Efficiency Video Coding
HMD	Head Mounted Display
HTML	HyperText Markup Language
HTTP	Hypertext Transfer Protocol
IEC	International Electrotechnical Commission
IETF	Internet Engineering Task Force
IFC	Industry Foundation Classes
IP	Internet Protocol
ISO	International Organization for Standardization
ITU-T	International Telecommunication Union - Telecommunication Standardization Sector
JPEG	Joint Photographic Experts Group
JSON	JavaScript Object Notation
KARML	Keyhole Augmented Reality Application Format
KML	Keyhole Markup Language
LOD	Level of Details
LUT	Lookup Table
MAR	Mixed and Augmented Reality
MAR-RM	Mixed and Augmented Reality Reference Model
MPEG	Motion Picture Expert Group
OGC	Open Geographic Consortium
OI	Orientation Interpolation
OPC	Open Plateforme Communication
PAS	Publicly Available Specification
PCC	Point Cloud Compression
PFS	Progressive Forest Split
PI	Position Interpolation
PM	Progression Mesh
PNG	Portable Network Graphics
PROTO	VRML Prototype
QR	Quick Response
RFC	Requests For Comments
RTCP	Real Time Control Protocol
RTP	Real Time Protocol
RTSP	Real Time Streaming Protocol
SCTP	Stream Control Transmission Protocol
SDK	Software Development Kit
SLAM	Synchronous Location and Mapping
SPEC	Specification
SVG	Scalable Vector Graphics
TCP	Transmission Control Protocol
TFAN	Triangle Fan
TS	Topological Surgery