ETSI GS ARF 008 V1.1.1 (2024-12)

Augmented Reality Framework (ARF); Open APIs for Managing and Querying the World Analysis function

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Foreword

This Group Specification (GS) 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 document specifies the interoperability requirements for Reference Points AR 16 and AR 17 of the reference architecture for AR solutions defined in ETSI GS ARF 003 [1].

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

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1 Scope

The present document provides an overview and an introduction to the interface specification for the reference point "AR 8 - Pose" of the AR framework architecture [1] developed by the ETSI Industry Specification Group (ISG) for an Augmented Reality Framework (ARF). The actual interface specification is provided as OpenAPI™ specification [3] and forms the baseline for the present document.

2 References

2.1 Normative 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.

Referenced documents which are not found to be publicly available in the expected location might be found in the ETSI docbox.

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The following referenced documents are necessary for the application of the present document.

[1] ETSI GS ARF 003 (V1.1.1): "Augmented Reality Framework (ARF); AR framework architecture".

[2] ETSI GS ARF 004-4 (V1.1.1): "Augmented Reality Framework (ARF); Interoperability Requirements for AR components, systems and services; Part 4: World Analysis, World Storage and Scene Management functions".

[3] ETSI GS ARF 005 (V2.1.1): "Augmented Reality Framework (ARF); Open APIs for the Creation, Management and Querying of the World Representation".

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.

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The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

[i.1] IETF RFC 4122: "A Universally Unique IDentifier (UUID) URN Namespace".

[i.2] IETF RFC 2616: "Hypertext Transfer Protocol HTTP/1.1".

[i.3] OpenAPI Specification v3.0.0.

3 Definition of terms, symbols and abbreviations

3.1 Terms

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

AR experience: real time perception of the mixture of the real world and spatially-registered digital content by user senses

AR system: combination of hardware and software that delivers an AR experience

Augmented Reality (AR): ability to mix in real-time spatially-registered digital content with the real world

feature: characteristics of a real world element that can be searched, recognized or tracked

NOTE: Features can be of different nature without being limited to visual patterns, UWB, Wi-Fi®, Infra Red or sounds.

pose: combination of position and orientation

reference point: point located at the interface of two non-overlapping functions of the AR framework architecture and representing interrelated interactions between those functions

trackable: element of the real world of which features are available and/or could be extracted

NOTE: Features can be made available from an analysis of the element itself (fiducial markers, natural images, 3D point cloud) or processed from a representation of the element (3D CAD model).

world anchor: coordinate system related to an element of the real world on which virtual content stays spatially-registered

3.2 Symbols

Void.

3.3 Abbreviations

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

API	Application Programming Interface
AR	Augmented Reality
ARF	Augmented Reality Framework
ISG	Industry Specification Group
JSON	JavaScript Object Notation
REST	REpresentational State Transfer
UI	User Interface
UUID	Universally Unique IDentifier
WA	World Analysis
YAML	YAML Ain't Markup Language