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| Technical Specification |
| 3rd Generation Partnership Project;Technical Specification Group SA;Media Capabilities for Augmented Reality(Release 18) |
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# Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

x the first digit:

1 presented to TSG for information;

2 presented to TSG for approval;

3 or greater indicates TSG approved document under change control.

y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

z the third digit is incremented when editorial only changes have been incorporated in the document.

In the present document, modal verbs have the following meanings:

**shall** indicates a mandatory requirement to do something

**shall not** indicates an interdiction (prohibition) to do something

The constructions "shall" and "shall not" are confined to the context of normative provisions, and do not appear in Technical Reports.

The constructions "must" and "must not" are not used as substitutes for "shall" and "shall not". Their use is avoided insofar as possible, and they are not used in a normative context except in a direct citation from an external, referenced, non-3GPP document, or so as to maintain continuity of style when extending or modifying the provisions of such a referenced document.

**should** indicates a recommendation to do something

**should not** indicates a recommendation not to do something

**may** indicates permission to do something

**need not** indicates permission not to do something

The construction "may not" is ambiguous and is not used in normative elements. The unambiguous constructions "might not" or "shall not" are used instead, depending upon the meaning intended.

**can** indicates that something is possible

**cannot** indicates that something is impossible

The constructions "can" and "cannot" are not substitutes for "may" and "need not".

**will** indicates that something is certain or expected to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document

**will not** indicates that something is certain or expected not to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document

**might** indicates a likelihood that something will happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

**might not** indicates a likelihood that something will not happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

In addition:

**is** (or any other verb in the indicative mood) indicates a statement of fact

**is not** (or any other negative verb in the indicative mood) indicates a statement of fact

The constructions "is" and "is not" do not indicate requirements.

# Introduction

This clause is optional. If it exists, it shall be the second unnumbered clause.

# 1 Scope

The present document …

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

…

[x] <doctype> <#>[ ([up to and including]{yyyy[-mm]|V<a[.b[.c]]>}[onwards])]: "<Title>".

# 3 Definitions of terms, symbols and abbreviations

## 3.1 Terms

For the purposes of the present document, the terms given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

**example:** text used to clarify abstract rules by applying them literally.

## 3.2 Symbols

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

<symbol> <Explanation>

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

<ABBREVIATION> <Expansion>

# 4 AR device categories

## 4.1 Introduction

*[Editor’s note: Define at least one AR device category that addresses the constraints of an EDGAR-type AR glass]*

## 4.1 AR device type 1

### 4.1.1 Introduction

*[Editor’s note: provide a definition of the device type, potentially referencing 26.998]*

### 4.1.2 Reference terminal architecture

*[Editor’s note: Define a reference terminal architecture regarding media capability aspects for this AR device category, potentially referrencing 26.998]*

# 5 Media formats and capabilities

## 5.1 Introduction

*[Editor’s note: Define media types and formats produced and consumed by the AR device, including basic scene descriptions, audio, graphics and video as well as sensor information and metadata about user and environment.]*

## 5.X [Scene description/Video/Audio/Graphics…]

### 5.X.1 Representation format

### 5.X.2 Encoding capabilities

*[Editor’s note: Define encoding capabilities]*

### 5.X.3 Decoding capabilities

*[Editor’s note: Define decoding capabilities, including support for multiple parallel decoders]*

### 5.X.4 Media encapsulation

### 5.X.5 Sensor information

### 5.X.6 Media-related Metadata

### 5.X.7 Security aspects

*[Editor’s note: Define security aspects related to the media capabilities]*

# 7 QoE metrics

*[ TBD what is the most appropriate place for QoE metrics]*

## 7.1 Introduction

[Editor’s note: Identify which QoE metrics from VR QoE metrics can be reused or enhanced for AR media (e.g., resolution per eye, Field of view (FOV), round-trip interaction delay, etc.) and specify additional simple QoE Metrics for AR media]

# 8 Media capabilities for AR devices

## 8.1 Introduction

*[Editor’s note: Define at least one AR device category that addresses the constraints of an EDGAR-type AR glass]*

## 8.X AR device media capabilities

*[Editor’s note: Define the required, recommended and optional media capabilities for this AR device category…]*

# Annex A (informative/normative):KPIs for AR/MR

# A.1 Introduction

*[Editor’s note: define relevant KPIs that are dedicated to AR/MR and Specify additional relevant KPIs for AR media. Proposed in an informative Annex as a justification/explanation of the selected media capabilities in this specification]*

Annex <X> (informative):
Change history

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| **Change history** |
| **Date** | **Meeting** | **TDoc** | **CR** | **Rev** | **Cat** | **Subject/Comment** | **New version** |
| 2022-04 | SA4#118e | S4-220479 |  |  |  | Draft TS sekeleton from the editor | 0.0.1 |
| 2022-04 | SA4#118e |  |  |  |  |  | 0.1.0 |