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| 3GPP TR 26.927 V0.1.0 (2022-04) | |
| Technical Report | |
| 3rd Generation Partnership Project;  Technical Specification Group Services and System Aspects;  Study on Artificial Intelligence and Machine Learning in 5G media services;  (Release 18) | |
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| ***3GPP***  Postal address  3GPP support office address  650 Route des Lucioles - Sophia Antipolis  Valbonne - FRANCE  Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16  Internet  http://www.3gpp.org |
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# Foreword

This Technical Report 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 drafting the TS/TR, pay particular attention to the use of modal auxiliary verbs! TRs shall not contain any normative provisions.

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

This clause and its three subclauses are mandatory. The contents shall be shown as "void" if the TS/TR does not define any terms, symbols, or 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].

Definition format (Normal)

**<defined term>:** <definition>.

**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 format (EW)

<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 format (EW)

<ABBREVIATION> <Expansion>

# 4 Introduction to AI/ML for media

## 4.1 General

[Editor’s note: Introduction to the concepts of artificial intelligence and machine learning].

## 4.2 Media-based AI/ML use cases and scenarios

[Editor’s note: list or reference to the media-based use cases and scenarios from TR 22.847].

## 4.3 Related work

[Editor’s note: list the AI/ML-related activities in 3GPP and elsewhere, e.g. MPEG…].

# 5 Media service architecture for AI/ML

## 5.1 General

[Editor’s note: Start from basic architectures for the 3 main AI/ML scenarios listed, using 5GMS as a starting point.].

## 5.2 Architectures and service flows

### 5.2.1 Complete/basic AI/ML model distribution

### 5.2.2 Split AI/ML operation

### 5.2.3 Distributed/federated learning

# 6 Data components for AI/ML-based media services

## 6.1 General

[Editor’s note: Identify and document the data types and possible data formats for the different data components listed.].

## 6.2 Model data

## 6.3 Intermediate data

## 6.4 Media data

[Editor’s note: referring to the media data streaming formats and profiles in 26.512.]

## 6.5 Metadata

[Editor’s note: Metadata may include metadata to describe AI/ML model types, metadata for split operation configurations, AI/ML operation endpoint capability metadata etc.]

# 7 Traffic characteristics

## 7.1 General

[Editor’s note: Based on the architectures, identify for the relevant data components for each of the scenarios, the corresponding traffic characteristics (burst size, delay/bandwidth/reliability requirements etc.)]

## 7.2 Complete/Basic AI/ML model distribution

## 7.3 Split AI/ML operation

## 7.4 Distributed/federated learning

# 8 KPIs

## 8.1 General

## 8.2 List of KPIs

[Editor’s note: E.g. Latency, data rate, reliability, accuracy…]

# 9 Potential Normative Work

# 10 Conclusion

Annex <A>:  
<Informative annex title for a Technical Report>

Informative annexes in Technical Reports do not use "(informative") in the title, since all annexes in TRs are informative. Use style "Heading 9" in TRs.

Annex <X>:  
Change history

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| **Change history** | | | | | | | |
| **Date** | **Meeting** | **TDoc** | **CR** | **Rev** | **Cat** | **Subject/Comment** | **New version** |
| 2022-01 | SA4#118e | S4-220498 |  |  |  | Agreements after SA4#118e (S4-220391: TR skeleton) | 0.1.0 |