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| 3GPP TR 22.850 V0.0.0 (2024-09) |
| Technical Report |
| 3rd Generation Partnership Project;Technical Specification Group Services and System Aspects;Study on 3GPP AI/ML Consistency Alignment (Release 20) |
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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 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.

# 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 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 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 Justification (copy/paste from approved SID)

In Rel-18 and Rel-19, most working groups in TSG SA, CT and RAN have already performed SIs and/or have WIs relating to the AI/ML topic. These activities address different usage scenarios and associated specific use cases exploiting AI/ML for the operation of the 3GPP System ranging from radio interface operations (e.g. beam management, positioning), NG-RAN operations (e.g. energy saving, load balancing), to network management & orchestration, media services, and application enablement aspects.

With the complexity of the 3GPP systems and its operations and that of AI/ML, it is vital that the use of AI/ML in the operation of the 3GPP system (incl. related AI/ML model LCM) for any given use case be bound to specific principles, guidelines, design criteria, and requirements to safeguard the operation of the 3GPP System. This includes the capability to, e.g. fallback to non-AI/ML operation (i.e., not relying on inference process) whenever necessary not to negatively affect the NW and E2E performance.

This requires, as a minimum, the introduction of a common set of definitions to prevent any inconsistencies in the definition and use of AI/ML LCM across 3GPP WGs, to identify any misalignments/inconsistencies, and to communicate such inconsistencies to WGs for better alignment within 3GPP across different AI/ML related initiatives.

Note that AI/ML models and associated algorithms are certainly implementation specific and therefore out of scope of this study.

Editor's Note: The study item does not impact ongoing studies and normative work for AI/ML across all SA/RAN/CT WGs for Rel-19.

Editor's Note: The AI/ML related content captured in TR 21.918 ("Release 18 Description; Summary of Rel-18 Work Items") can be considered as a starting point.

# 5 AI/ML related activities in all Working Groups

## 5.1 General

This clause will investigate and identify AI/ML related activities of all working groups of Rel-18 features and Rel-19 studies and work items in TSG CT, TSG RAN and TSG SA Working Groups.

Editor's Note: The AI/ML related content captured in TR 21.918 ("Release 18 Description; Summary of Rel-18 Work Items") can be considered as a starting point.

## 5.2 AI/ML related activities in TSG SA Working Groups

### 5.2.X AI/ML related activities in TSG SA#X

### 5.2.X.1 Description

Editor's Note: This clause will investigate and identify AI/ML related activities of all TSG SA working groups of Rel-18 features and Rel-19.

### 5.2.X.2 Terminology

Editor's Note: This clause describes AI/ML related terminology (i.e. set of definitions, acronyms)

### 5.2.X.3 Activities Summary

Editor's note: This clause describes high-level AI/ML activities e.g. LCM for AI/ML, data collection/storage/exposure, model training/delivery/ (de)-activation/inference emulation, inference/storage/exposure, performance evaluation and accuracy monitoring. Sub-clause(s) may be added to capture details.

## 5.3 AI/ML related activities in TSG CT Working Groups

### 5.3.X AI/ML related activities in TSG CT#X

### 5.3.X.1 Description

Editor's Note: This clause will investigate and identify AI/ML related activities of all TSG CT working groups of Rel-18 features and Rel-19.

### 5.3.X.2 Terminology

Editor's Note: This clause describes AI/ML related terminology (i.e. set of definitions, acronyms)

### 5.3.X.3 Activities Summary

Editor's note: This clause describes high-level AI/ML activities e.g. LCM for AI/ML, data collection/storage/exposure, model training/delivery/ (de)-activation/inference emulation, inference/storage/exposure, performance evaluation and accuracy monitoring. Sub-clause(s) may be added to capture details.

## 5.4 AI/ML related activities in TSG RAN Working Groups

### 5.4.X AI/ML related activities in TSG RAN#X

### 5.4.X.1 Description

Editor's Note: This clause will investigate and identify AI/ML related activities of all TSG RAN working groups of Rel-18 features and Rel-19.

### 5.4.X.2 Terminology

Editor's Note: This clause describes AI/ML related terminology (i.e. set of definitions, acronyms)

### 5.4.X.3 Activities Summary

Editor's note: This clause describes high-level AI/ML activities e.g. LCM for AI/ML, data collection/storage/exposure, model training/delivery/ (de)-activation/inference emulation, inference/storage/exposure, performance evaluation and accuracy monitoring. Sub-clause(s) may be added to capture details.

# 6 Analysis on alignment and consistency across 3GPP

## 6.1 General

This clause will identify any potential misalignments and inconsistencies across 3GPP, based on Clause 5.

NOTE 1: Any RAN related aspects are subject to early coordination and feedback from TSG RAN.

## 6.2 Consistencies on AI/ML related terminology

### 6.2.X Analysis on terminology consistency#X < terminology consistency title >

Editor's Note: This clause will identify any potential inconsistencies (i.e. set of definitions, acronyms) across 3GPP, based on Clause 5. Sub-clause(s) may be added to capture details.

## 6.3 Alignments among existing AI/ML related features

### 6.3.X Analysis on feature alignment#X <alignment title>

Editor's Note: This clause describes AI/ML related terminology features misalignments, including cross-domain (UE, RAN, core network, media, OAM, and application enablement) aspects. Examples of areas to be investigated are LCM for AI/ML, data collection/storage/exposure, model training/delivery/ (de)-activation/inference emulation, inference/storage/exposure, performance evaluation and accuracy monitoring.

# 7 Overall Evaluation

Editor's Note: This clause will provide a general evaluation of potential terminology inconsistency#X and potential feature misalignment#X

# 8 Conclusions

Editor's Note: This clause will potentially provide information on any potential outcome from clause 5, clause 6 and clause 7 to the respective WGs (according to their Terms of Reference (ToR)) to resolve any issues with appropriate SA-level co-ordination as necessary

NOTE 1: The study item does not impact ongoing studies and normative work for AI/ML across all SA/RAN/CT WGs for Rel-19.

Annex <X> (informative):
Change history

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| **Change history** |
| **Date** | **Meeting** | **TDoc** | **CR** | **Rev** | **Cat** | **Subject/Comment** | **New version** |
| 2024-09 | TSG SA#105 | SP-240xxxx | - | - | - | Proposed skeleton agreed for FS\_AIML\_CAL at TSG SA#105 | 0.0.0 |