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| 3GPP TS 24.577 V0.0.0 (2023-04) |
| Technical Specification |
| 3rd Generation Partnership Project;Technical Specification Group Core Network and Terminals;Aircraft-to-Everything (A2X) services in 5G System (5GS);Protocol aspects;Stage 3(Release 18) |
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Contents

Foreword 4

1 Scope 6

2 References 6

3 Definitions of terms, symbols and abbreviations 6

3.1 Terms 6

3.2 Symbols 6

3.3 Abbreviations 6

4 General description 6

5 Provisioning of parameters for A2X configuration 7

5.1 General 7

5.2 Configuration and precedence of A2X configuration parameters 7

5.2.1 General 7

5.2.2 Precedence of A2X configuration parameters 7

5.2.3 Configuration parameters for A2X communication over PC5 7

5.2.4 Configuration parameters for direct detect and avoid (DDAA) 7

5.2.5 Configuration parameters for broadcast remote ID (BRID) 7

5.2.6 Configuration parameters for direct C2 communication 7

5.3 Procedures 7

6 A2X communication 7

6.1 A2X communication over PC5 7

6.1.1 General 7

6.1.2 Unicast mode A2X communication over NR-PC5 7

6.1.3 Broadcast mode A2X communication over PC5 7

7 Broadcast remote ID (BRID) over PC5 7

7.1 General 7

7.2 Procedures 8

8 Direct detect and avoid (DDAA) over PC5 8

8.1 General 8

8.2 Procedures 8

9 Direct C2 communication over PC5 8

9.1 General 8

9.2 Procedures 8

10. Handling of unknown, unforeseen, and erroneous PC5 signalling protocol data 8

10.1 General 8

11. Message functional definition and contents 8

11.1 Overview 8

12. Information elements coding 8

12.1 Overview 8

12.2 General 9

Annex <X> (informative): Change history 10

# 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.

# 1 Scope

Editor’s Note: This clause will provide the scope of the specification.

# 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".

# 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 General description

Editor’s Note: This clause will provide description of A2X services from stage 3 perspective.

# 5 Provisioning of parameters for A2X configuration

## 5.1 General

Editor’s Note: This clause will provide description of provisioning of A2X configuration.

## 5.2 Configuration and precedence of A2X configuration parameters

Editor’s Note: This clause will provide description of A2X configuration precedence and parameters.

### 5.2.1 General

### 5.2.2 Precedence of A2X configuration parameters

### 5.2.3 Configuration parameters for A2X communication over PC5

### 5.2.4 Configuration parameters for broadcast remote ID (BRID)

### 5.2.5 Configuration parameters for direct detect and avoid (DDAA)

### 5.2.6 Configuration parameters for direct C2 communication over PC5

## 5.3 Procedures

Editor’s Note: This clause will provide procedures to provision A2X configuration parameter

# 6 A2X communication

## 6.1 A2X communication over PC5

Editor’s Note: This clause will provide description of A2X communication over PC5.

### 6.1.1 General

### 6.1.2 Unicast mode A2X communication over NR-PC5

### 6.1.3 Broadcast mode A2X communication over PC5

# 7 Broadcast remote ID (BRID) over PC5

## 7.1 General

Editor’s Note: This clause will provide description of BRID over PC5.

## 7.2 Procedures

# 8 Direct detect and avoid (DDAA) over PC5

## 8.1 General

Editor’s Note: This clause will provide description of DDAA over PC5.

## 8.2 Procedures

# 9 Direct C2 communication over PC5

## 9.1 General

Editor’s Note: This clause will provide description of direct C2 communication over PC5.

## 9.2 Procedures

# 10. Handling of unknown, unforeseen, and erroneous PC5 signalling protocol data

## 10.1 General

Editor’s Note: This clause will provide description for handling of unknown, unforeseen, and erroneous PC5 signalling protocol data

# 11. Message functional definition and contents

## 11.1 Overview

Editor’s Note: This clause will provide description of the message functional definition and contents for this specification.

# 12. Information elements coding

## 12.1 Overview

Editor’s Note: This clause will provide information elements coding for A2X communication over PC5 and direct C2 communication over PC5.

## 12.2 General

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# Annex <X> (informative):Change history

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| **Change history** |
| **Date** | **Meeting** | **TDoc** | **CR** | **Rev** | **Cat** | **Subject/Comment** | **New version** |
| 2023-04 | CT1#141e | C1-23xxyyzz |  |  |  | TS skeleton from Rapporteur |  |