# Conventions used

## CAR 2 CAR Communication Consortium

## About the C2C-CC

Enhancing road safety and traffic efficiency by means of Cooperative Intelligent Transport Systems and Services (C-ITS) is the dedicated goal of the CAR 2 CAR Communication Consortium. The industrial driven, non-commercial association was founded in 2002 by vehicle manufacturers affiliated with the idea of cooperative road traffic based on Vehicle-to-Vehicle Communications (V2V) and supported by Vehicle-to-Infrastructure Communications (V2I). The Consortium members represent worldwide major vehicle manufactures, equipment suppliers and research organisations.

Over the years, the CAR 2 CAR Communication Consortium has evolved to be one of the key players in preparing the initial deployment of C-ITS in Europe and the subsequent innovation phases. CAR 2 CAR members focus on wireless V2V communication applications based on ITS-G5 and concentrate all efforts on creating standards to ensure the interoperability of cooperative systems, spanning all vehicle classes across borders and brands. As a key contributor, the CAR 2 CAR Communication Consortium and its members work in close cooperation with the European and international standardisation organisations.

## Disclaimer

## Document information

| | | | | | |
|---|---|---|---|---|---|
| **Number:** | 2086 | **Version:** | n.a. | **Date:** | 2025-07-11 |
| **Title:** | Conventions used | | | **Document Type:** | TR |
| **Release** | 1.6.8 | | | | |
| **Release Status:** | Public | | | | |
| **Status:** | Final | | | | |

**Table 1: Document information**

## Changes since last release

| Release | Date | Changes | Edited by | Approved |
|---|---|---|---|---|
| 1.6.8 | 2025-07-11 | • Link to ETSI guidelines updated<br>• Extension of tag list for expression of requirement variants | Release Management | Steering Committee |
| 1.6.7 | 2024-12-13 | Introduced marking for requirement variants, e.g., for specific vehicle types or roles, by:<br>• Merging of: TR_ConV_163 into TR_ConV_159<br>• Extending TR_ConV_159 by the new flags (#cycle), (#ptw) and (#aftermarket) of the (newly) supported vehicle type. | Release Management | Steering Committee |
| 1.6.6 | 2024-07-12 | No changes | Release Management | Steering Committee |
| 1.6.5 | 2023-12-15 | Added description for tag (#a) and updated (i) to (#i) | Release Management | Steering Committee |
| 1.6.4 | 2023-07-21 | No changes | Release Management | Steering Committee |
| 1.6.3 | 2022-12-16 | Added description of release numbering schema | Release Management | Steering Committee |
| 1.6.2 | 2022-07-22 | No changes | Release Management | Steering Committee |
| 1.6.1 | 2021-12-17 | • Introduced marking of requirements, indicating relevance for interoperability according to [CPOC]<br>• Clarified that British English is used in C2C-CC documents | Release Management | Steering Committee |
| 1.6.0 | 2021-07-23 | Minor editorial changes | Release Management | Steering Committee |
| 1.5.3 | 2021-03-12 | No changes | Release Management | Steering Committee |
| 1.5.2 | 2020-12-16 | No changes | Release Management | Steering Committee |
| 1.5.1 | 2020-07-31 | Initial release | Release Management | Steering Committee |

**Table 2: Changes since last release**

# Table of contents



# List of tables



# List of figures

# 1 Introduction

**Other (informational)** **TR_ConV_147**

Conventions on documents and their content are essential for a high quality of specification work as done by the CAR 2 CAR Communication Consortium.

# 2 Scope

**Other (informational)** **TR_ConV_146**

This document provides the conventions used for the specification work as done by CAR 2 CAR Communication Consortium. It covers conventions on:

- Release types;
- Documents and
- Document content.

# 3 Conventions on releases

## 3.1 Types

**Other (informational)** **TR_ConV_157**

Release types are closely related to product phase. They support the CAR 2 CAR Communication Consortium product phases schema and allow to deliver appropriate results in each life cycle phase.

C2C-CC applies three release types:

- Major Release:
  - Newly developed from scratch or
  - Major changes compared to previous release
  - Including bug fixing
- Minor release:
  - Introduction of new features, which
  - Shall not break backward compatibility
  - If mitigation is possible by the C2C-CC partner and was agreed exceptions might be made.
  - Including bug fixing
- Revisions
  - Bug fixing
  - Which shall not break backward compatibility

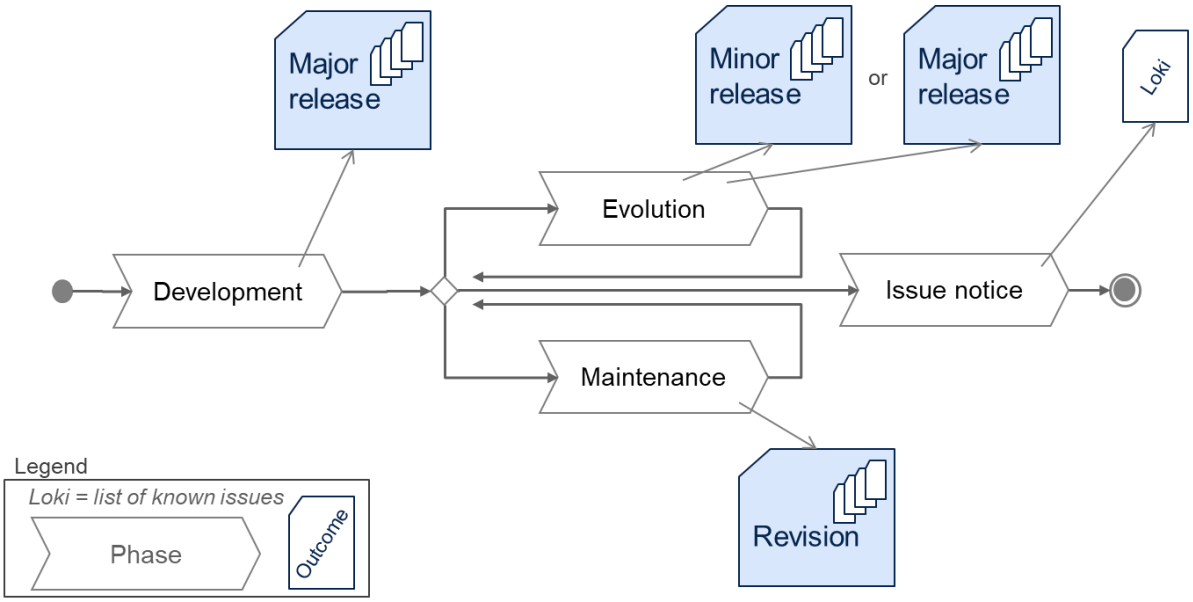


**Figure 1: Release types and mapping to product phases**

## 3.2 Numbering schema

**Other (informational)** **TR_ConV_162**

CAR 2 CAR applies a two-digit numbering scheme to identify releases:

- **Rx.y**
- A third digit is used to identify the current revision

How to start the numbering of a new release:

- Each minor release starts with z = 0
- Each major release starts with y = z = 0
  - Example for a major release: R2.0
    (the revision number is not necessarily shown)
  - Example for a revision: R2.0.2

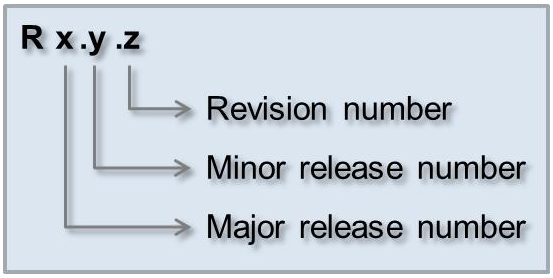


**Figure 2: Release numbering schema**

# 4 Conventions on documents

## 4.1 Life Cycle Status

**Other (informational)** **TR_ConV_160**

Valid live cycles of a released document are the following:

- Final = Valid document with in a release bundle
- Concluded = No further change is planned
- Obsolete = Not maintained. Is planned to be removed (status cancelled) with next release
- Canceled = Not released anymore in active release branch

## 4.2 Document types

**Other (informational)** **TR_ConV_156**

C2C-CC Deliverables shall have one of the following Types:

- DocTyp = 2/3/4 letter abbreviation of:
  - EXP = Explanatory (white paper)
  - TR = Technical Report (position paper)
  - RS = Requirement Specification (TCs and BSP, PP, ....)
  - TS = Test Specification
  - PP = Protection Profile

## 4.3 File names

**Other (informational)** **TR_ConV_155**

File names of C2C-CC deliverables shall follow the following schema:

- C2CCC_<DocType>_<ID>_<name>.pdf
  - <ID> = 4 digits (unordered number)
  - <Name> = document name, provided by Release Management and stored in the MasterDocumentList

# 5 Conventions on document content

## 5.1 Used Language

**Other (informational)** **TR_ConV_161**

The language of documents published by the CAR 2 CAR Communication Consortium shall be British English.

Note: As our work is closely related to ETSI, which is using British English as well.

## 5.2 Modal verbs terminology

**Other (informational)** **TR_ConV_152**

In the C2C-CC requirement specifications verbal forms shall be used as defined in chapter *drafting rules* in the directive:
https://portal.etsi.org/directives/50_ETSI_directives_dec_2024.pdf.

## 5.3 Requirement schema

**Other (informational)** **TR_ConV_154**

C2C-CC requirements shall follow the following schema:

[<requirement id>]
<requirement text>
<trace to other requirements>
<trace to related tests>

**Other (informational)** **TR_ConV_158**

C2C-CC requirement IDs shall follow the following schema:

| | | |
|---|---|---|
| <requirement id> | = | <DocType>_<DocAbbreviation>_<number> |
| <DocType> | = | see above |
| <DocAbreviations> | = | 2-6 letter abbreviation of document name (managed in the MasterDocumentList) |
| <number> | = | up to 5 digit and unique number within a document |

Note: Requirements in Protection Profiles have in addition a “CC reference”, which stands for Common Criteria reference and shall increase the usability of the C2C-CC documents for security experts.

**Other (informational)** **TR_ConV_159**

In the C2C-CC documents, flags are used in the top line of a requirement or an informational item to indicate whether they are relevant for this topic. Please find below the valid flags and their meaning:

| Flag | Meaning | Notes | Tag<br>Can be used within a specification idem to mark certain parts as relevant |
|---|---|---|---|

| | | | |
|---|---|---|---|
| **(#a)** | This specification item is relevant to allow for a communication technology agnostic implementation | | |
| **(#i)** | This specification item is relevant for interoperability according to [CPOC], Annex VIII: EU CCMS Levels & Requirements; chapter 19. | • It is assumed that a self-certification, based on these requirements, to the EA operator occurs before the vehicle C-ITS station is enrolled under the ECTL Level 1 or Level 2 access criteria.<br>• Independently from the markings, all the requirements are applicable to comply with the [C2CCC BSP]. It is still the responsibility of the C-ITS station operator to comply to all the requirements of the [C2CCC BSP]. Especially privacy and security requirements (transmitting and receiving side). | |
| Flags to indicate a specific property of the C-ITS subsystem, where the C-ITS station is equipped to, like vehicle types, roles etc. | | | |
| *(#aftermarket)* | C-ITS station which is operating in/on a vehicle *after its production* | | <*aftermarket*> … </*aftermarket*> |
| *(#agri)* | C-ITS station which is operating in/on an *agricultural machine* | | <*agri*> … </*agri*> |
| *(#car)* | C-ITS station which is operating in/on a car | | <car> … </car> |
| *(#cycle)* | C-ITS station which is operating in/on a *cycle* | See also: RS_BSP_581 | <cycle> … </cycle> |
| *(#ptw)* | C-ITS station which is operating in/on a *powered two wheelers* | | <ptw> … </ptw> |
| *(#supervised)* | C-ITS station which is operating in/on a vehicle and the correct assignment of the C-ITS stations to the correct vehicle is | | <supervised> … </supervised> |

| | | | |
|---|---|---|---|
| | supervised by a registered organization | | |

### 5.3.1 Referencing of documents

**Other (informational)** **TR_ConV_425**

Reference to other documents shall follow the following syntax:

<reference> = see clause <x> of <y> | see <y>

<x> = <clause number> '<clause title>'

*'<clause title>' is optional*

<y> = <reference to document as given in the reference list> '<document short title>'

*'<document short title>' is optional*

Note: Versions of referenced documents or standards are given in C2C-CC's References document.

## 5.4 Provisions from referenced documents

**Other (informational)** **TR_ConV_153**

Unless otherwise specified in the present document, the normative requirements included in the referenced documents supporting the required functionality of the vehicle C-ITS station profile shall apply. The verbal forms for the definition of provisions of referenced documents are defined either inside the document, or generally by the SDO (standardization organization) or the organization providing them. For example, normative requirements in ETSI documents are indicated by the verbal form 'shall'.

In case of more than one option in the standard, this document specifies which one is the recommended choice to ensure interoperability and/or sufficient performance. The C2C-CC specifications supplement the standards in case where standards are open for interpretation or believed not to contain all necessary requirements to ensure interoperability and/or sufficient performance.

The C2C-CC specifications might also supplement standards in cases where it is believed that more stringent requirements than the minimum requirements in the standard shall be applied to ensure sufficient performance.

## 5.5 Requirements quality

**Other (informational)** **TR_ConV_424**

All Requirements shall have the following properties:

- **redundancy:** Requirements shall not be repeated within one requirement or in other requirements
- **clearness:** All requirements shall allow one possibility of interpretation only. Only technical terms of the glossary may be used. Furthermore, it must be clear from the requirement, what object the statement is a requirement on. Examples:
  - The <...> module shall/should/may ...
  - The <...> module's environment shall ...
  - The <...> configuration shall...
  - The function <...> shall ...
  - The hardware shall ...
- **atomicity:** Each Requirement shall only contain one requirement. A Requirement is atomic if it cannot be split up in further requirements.

- **testability:** Requirements shall be testable by analysis, review or test.
- **traceability:** The source and status of a requirement shall be visible at all times.
- **formulation:** All requirements shall be formulated so that they can be interpreted without the surrounding context (for example: ‘the function Xyz... ’ instead of ‘this function... ’).