



# Smart Ticketing Alliance - Certification Working Group



## STA Contactless Interface Certification for Public Transport Products Implementation Conformance Statement (ICS) for PCD

Author:

Editor:

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## REVISION LIST

Version	Date	Modifications
V1.0	13/12/2017	First public version for PICC and PCD
V2.1	16/11/2018	Separation in two different documents: one for PICC and this document for PCD Version applicable for PCD testing according to CEN/TS 16794:2017 Version 2.1 to be consistent with the Implementation Conformance Statement (ICS) for PICC document
V2.2	12/06/2019	The ICS data "Transaction supported when more than one PICC in the field" shall be published in the certification letter. A new item is added: The S(PARAMETERS) support.
V2.3	16/06/2020	Editorial update on the item [PCD3.1] The information about a previous certification shall be published in the certification letter. Two new items are added: PCD internal <u>output</u> and <u>input</u> buffer sizes. A note about these new fields is also added.

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## 1 Scope

This document contains the Implementation Conformance Statement (ICS) for PT Readers being submitted for STA Contactless Interface Certification for Public Transport Products and is intended for Vendors submitting a PT reader for certification.

**Please note that ICS data with (\*) will be published in the certification letter issued by the STA Certification body.**

## 2 Certification Stakeholders

### a. Vendor

Vendor identification	
<b>Company name:</b>	Click here to enter text.
Main contact	
<b>Contact name:</b>	Click here to enter text.
<b>Address:</b>	Click here to enter text.
<b>Telephone:</b>	Click here to enter text.
<b>Email address:</b>	Click here to enter text.

### b. Test Laboratory

Test Laboratory identification	
<b>Company name:</b>	Click here to enter text.
Main contact	
<b>Contact name:</b>	Click here to enter text.
<b>Address:</b>	Click here to enter text.
<b>Telephone:</b>	Click here to enter text.
<b>Email address:</b>	Click here to enter text.

### c. Certification Body

Certification Body identification	
<b>Company name:</b>	Click here to enter text.
Main contact	
<b>Contact name:</b>	Click here to enter text.
<b>Address:</b>	Click here to enter text.
<b>Telephone:</b>	Click here to enter text.
<b>Email address:</b>	Click here to enter text.

### 3 ICS for PT readers - PCD

This clause sets out the information that needs to be provided by the PT reader Vendor when filing a product validation request.

In addition to the ICS describing the characteristics of the PT reader to be tested, the Vendor shall also provide the test laboratory with any additional tools required to enable the tests to be executed.

This ICS references the technical characteristics for PCD defined in Clause 9.2.3 of CEN/TS 16794-1:2017.

#### a. PCD Product Description

[PCD1] Administrative data

[PCD1.1] (\*) Brand name: [Click here to enter text.](#)

[PCD1.2] (\*) Trade name: [Click here to enter text.](#)

[PCD1.3a] (\*) PCD Hardware version: [Click here to enter text.](#)

[PCD1.3b] (\*) PCD Software version: [Click here to enter text.](#)

[PCD1.4] (\*) Reference of the contactless reader or antenna module: [Click here to enter text.](#)

[PCD1.4a] (\*) Hardware version of the contactless reader or antenna module: [Click here to enter text.](#)

[PCD1.4b] (\*) Software version of the contactless reader or antenna module: [Click here to enter text.](#)

[PCD1.5] (\*) EMVCo Contactless Approval number (if applicable): [Click here to enter text.](#)

The PCD is based on a STA certified PCD (\*):  Yes  No

If yes STA PCD certificate number (\*): [Click here to enter text.](#)

If yes rationale to justify the delta-certification (\*): [Click here to enter text.](#)

Additional information concerning product description: [Click here to enter text.](#)

## b. PCD General Technical Characteristics

[PCD2] General technical characteristics

[PCD2.1] (\*) PT reader type:

- IFM reader (full range A and B)
- Common reader (limited range A and B)

[PCD2.2] (\*) Transaction supported when more than one PICC in the field:  Yes  No

[PCD2.3] (\*) Operational temperature range supported:

- Class A (Ambient)
- Class D (-25 °C to + 55 °C)

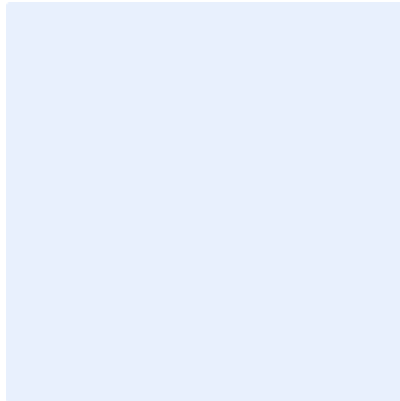
[PCD2.4] List of supported PICC classes according to ISO/IEC 14443:

“Class 1”  “Class 2”  “Class 3”

[PCD2.5] PT reader with a continuous polling cycle:  Yes  No

If no, precise event triggering polling cycle activation: [Click here to enter text.](#)

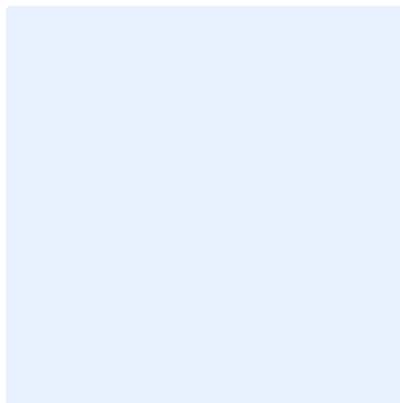
[PCD2.6] Antenna diagram and position on the PT reader under test:



[Click here to enter text.](#)

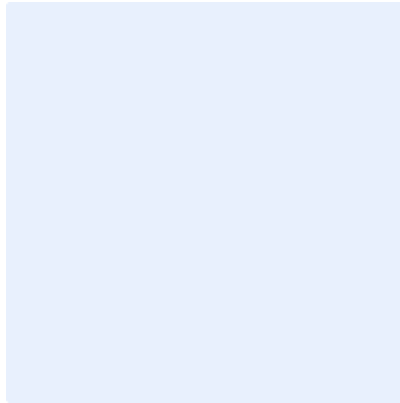
Range A:

[PCD2.7] (\*) Reference of the PCD Zero Point – Range A (target ID marked on sample or photo or diagram):



[Click here to enter text.](#)

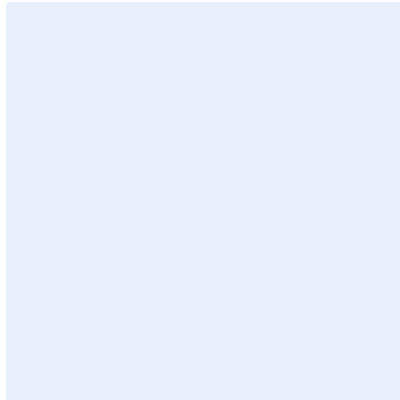
[PCD2.8] Orientation of the Z-axis – Range A (photo or diagram):



[Click here to enter text.](#)

[PCD2.9] Height of the PCD Zero Point – Range A in relation to PT reader surface in the Z-axis – Range A (where applicable): [Click here to enter text.](#) mm

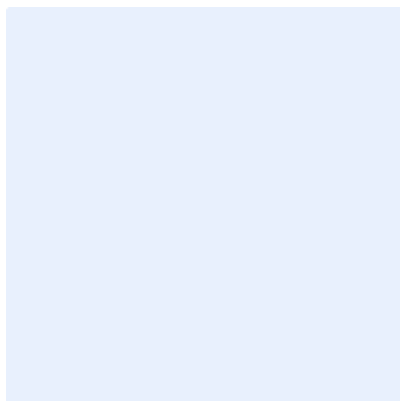
[PCD2.10] Positions of the X-axis and Y-axis of the Reference PICC above PCD Zero Point – Range A (photo or diagram):



[Click here to enter text.](#)

Range B:

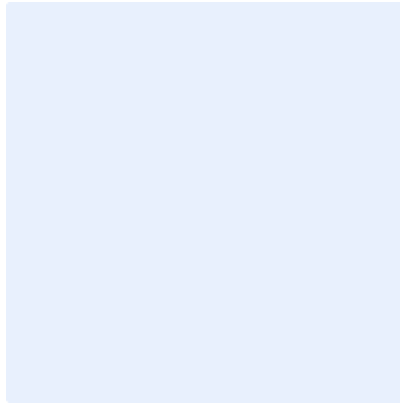
[PCD2.11] (\*) Reference of the PCD Zero Point – Range B (target ID-marked on sample or photo or diagram):



[Click here to enter text.](#)



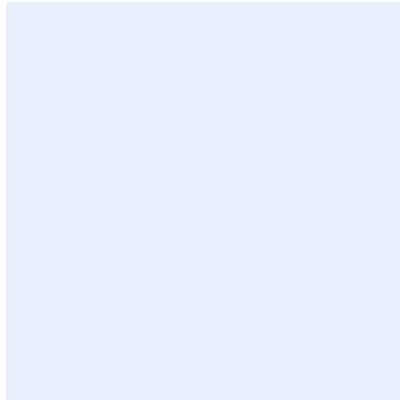
[PCD2.12] Orientation of the Z-axis – Range B (photo or diagram):



[Click here to enter text.](#)

[PCD2.13] Height of the PCD Zero Point – Range B in relation to PT reader surface in the Z-axis – Range B (where applicable): [Click here to enter text.](#) mm

[PCD2.14] Positions of the X-axis and Y-axis of the Reference PICC above PCD Zero Point – Range B (photo or diagram):



[Click here to enter text.](#)

Additional information concerning technical characteristics: [Click here to enter text.](#)

### c. PCD Supported Options

#### [PCD3] Protocol characteristics

[PCD3.1] (\*) Other supported communication signal interface(s) or protocol(s): [Click here to enter text.](#)

[PCD3.2] CID support:  Yes  No

[PCD3.3] NAD support:  Yes  No

#### [PCD4] Type A

[PCD4.1] (\*) PCD -> PICC bit rates supported:  fc/128 (~106 kbit/s)

Other: [Click here to enter text.](#)

[PCD4.2] (\*) PICC -> PCD bit rates supported:  fc/128 (~106 kbit/s)

Other: [Click here to enter text.](#)

[PCD4.3] FSDI: [Click here to enter text.](#)

#### [PCD5] Type B

[PCD5.1] (\*) PCD -> PICC bit rates supported:  fc/128 (~106 kbit/s)

Other: [Click here to enter text.](#)

[PCD5.2] (\*) PICC -> PCD bit rates supported:  fc/128 (~106 kbit/s)

Other: [Click here to enter text.](#)

[PCD5.3] Maximum Frame Size Code in ATTRIB: [Click here to enter text.](#)

[PCD5.4] Extended ATQB support:  Yes  No

[PCD5.5] "Minimum TR0" field of Param1 (2 bits) in ATTRIB: [Click here to enter text.](#)

[PCD5.6] "Minimum TR1" field of Param1 (2 bits) in ATTRIB: [Click here to enter text.](#)

[PCD5.7] "EOF/SOF" field of Param1 (2 bits) in ATTRIB: [Click here to enter text.](#)

[PCD5.8] S(PARAMETERS) support:  Yes  No

Additional information concerning supported options: [Click here to enter text.](#)

## d. PCD Test Parameters

### [PCD6] Test parameters

- [PCD6.1a] UT\_TEST\_COMMAND1 APDU definition (hexadecimal value): [Click here to enter text.](#)
- [PCD6.1b] UT\_TEST\_COMMAND1 Answer to ADPU definition (hexadecimal value): [Click here to enter text.](#)
- [PCD6.2a] UT\_TEST\_COMMAND2 APDU definition (hexadecimal value): [Click here to enter text.](#)
- [PCD6.2b] UT\_TEST\_COMMAND2 Answer to ADPU definition (hexadecimal value): [Click here to enter text.](#)
- [PCD6.2c] (\*) PCD internal output buffer size (used for Maximum size of UT\_APDU): [Click here to enter text.](#)
- [PCD6.2d] (\*) PCD internal input buffer size (used for Maximum size of response UT\_APDU): [Click here to enter text.](#)

NOTE UT\_TEST\_COMMAND2 is set in accordance to [PCD6.2c] in order to test all the supported FSC / Maximum Frame Size values. Additionally, if loopback interface for PT reader testing is used, UT\_TEST\_COMMAND2 is also set in accordance to [PCD6.2d].

### [PCD7] Proprietary test parameters

- [PCD7.1] PROPRIETARY\_COMMAND APDU(s) definition(s) (hexadecimal value): [Click here to enter text.](#)
- [PCD7.2] PROPRIETARY\_COMMAND Answer to ADPU(s) definition(s) (hexadecimal value): [Click here to enter text.](#)

Additional information concerning test parameters: [Click here to enter text.](#)

NOTE Usages of UT\_TEST\_COMMAND1 and UT\_TEST\_COMMAND2 for PCD tests are defined in ISO/IEC 10373-6.

When the support of proprietary protocol(s) initiated by ISO/IEC 14443-3 polling commands is indicated in [PCD3.1] and when the PT reader may give priority to applications using such proprietary protocol compared to applications using Type A or Type B, in order to perform the testing of [Rdr8], the Vendor shall describe:

- in [PCD7.1], the proprietary command(s) used to select an application using a proprietary protocol initiated by ISO/IEC 14443-3 polling commands:
  - a) for ISO/IEC 14443-3 fully compliant products, the command(s) following the anticollision procedure;
  - b) for ISO/IEC 14443-3 partially compliant products, the command(s) following the request command;
- in [PCD7.2], the expected response(s) to these commands:
  - a) compliant with the proprietary protocol;
  - b) indicating that no suitable application is available.

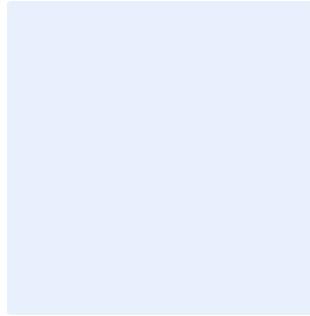
## 4 Status of the ICS

<b>Status:</b>	To be validated
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ICS number<sup>1</sup>: [Click here to enter text.](#)

Date of validation by the Certification Body: [Click here to select a date.](#)

Signature of the Certification Body's representative:



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<sup>1</sup> For Certification Body use