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Test specification for the
Single Wire Protocol (SWP) interface;
Part 2: UICC features
(Release 10)

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Smart Card Platform (SCP).

The contents of the present document are subject to continuing work within TC SCP and may change following formal TC SCP approval. If TC SCP modifies the contents of the present document, it will then be republished by ETSI with an identifying change of release date and an increase in version number as follows:

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y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

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The present document is part 2 of a multi-part deliverable covering the Test specification for the Single Wire Protocol (SWP) interface, as identified below:

Part 1: "Terminal features";

Part 2: "UICC features".

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Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Introduction

The present document defines test cases for the UICC relating to Single Wire Protocol (SWP). SWP is the communication interface between the UICC and a contactless frontend (CLF) as specified in ETSI TS 102 613 [1].

The aim of the present document is to ensure interoperability between the terminal and the UICC independently of the respective manufacturer, card issuer or operator.

1 Scope

The present document covers the minimum characteristics which are considered necessary for the UICC in order to provide compliance to ETSI TS 102 613 [1].

The present document specifies the test cases for:

- the physical layer of the interface CLF - UICC;
- the electrical interface of the UICC;
- the initial communication establishment CLF - UICC;
- the data link layer.

Test cases for the terminal relating to ETSI TS 102 613 [1] and test cases for the host controller interface (HCI) covering both terminal and UICC are out of scope of the present document.

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

- In the case of a reference to a TC SCP document, a non specific reference implicitly refers to the latest version of that document in the same Release as the present document.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are necessary for the application of the present document.

[1] ETSI TS 102 613: "Smart Cards; UICC - Contactless Front-end (CLF) Interface; Part 1: Physical and data link layer characteristics".

[2] ETSI TS 102 221: "Smart Cards; UICC-Terminal interface; Physical and logical characteristics".

[3] ETSI TS 102 600: "Smart Cards; UICC-Terminal interface; Characteristics of the USB interface".

[4] ETSI TS 102 622: "Smart Cards; UICC - Contactless Front-end (CLF) Interface; Host Controller Interface (HCI)".

[5] ISO/IEC 9646-7: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".

[6] ISO/IEC 14443-3: "Identification cards - Contactless integrated circuit cards - Proximity cards - Part 3: Initialization and anticollision".

[7] Void.

[8] ISO/IEC 18092: "Information technology - Telecommunications and information exchange between systems - Near Field Communication - Interface and Protocol (NFCIP-1)".

[9] ISO/IEC 13239: "Information technology - Telecommunications and information exchange between systems - High-level data link control (HDLC) procedures".

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2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

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The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

Not applicable.

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in ETSI TS 102 613 [1] and the following apply:

corrupted frame: SWP frame which is well-formed with respect to the MAC layer, with the exception that the CRC16 in the frame does not match with the CRC16 result calculated over the payload

NOTE: This frame has at least 1 byte payload. Used by the TE to represent the situation where the DUT receives a corrupted frame (unless otherwise specified).

non-occurrence RQ: RQ which has been extracted from ETSI TS 102 613 [1], but which indicates a situation which should never occur

NOTE: The consequence is that such RQs cannot be explicitly tested.

nomenclature used for tests involving SHDLC LLC:

For SHDLC link establishment, following definitions apply:

- Terminal simulator transmits RSET:
  - RSET(): RSET frame without payload.
  - RSET(Ws=w): RSET frame with one byte payload.
  - RSET(Ws=w, SREJ=S): RSET frame with two bytes payload. For the endpoint capabilities byte, SREJ=0 represents the value 0x00, SREJ=1 represents the value 0x01.
- UICC transmits RSET:
  - RSET: RSET frame with any valid payload.
  - RSET(): RSET frame without payload.
  - RSET(Ws=w): RSET frame with one byte payload.
  - RSET(Ws=w, SREJ=S): RSET frame with two bytes payload. For the endpoint capabilities byte, SREJ=0 represents the value 0x00, SREJ=1 represents the value 0x01.

For every calculation on NS0_T, NS0_S or NR in the test procedures use modulo 8.

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