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Identification cards — Transport layer topologies — Configuration for HCI/HCP interchange

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Foreword

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 17, *Cards and security devices for personal identification*.

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Introduction

This document is laid on the ground of ISO/IEC 7816 (all parts) specifying integrated circuit cards and the use of such cards for interchange, and on ETSI TS 102 622 defining the HCI core that is an application independent logical interface.

ETSI TS 102 622 is referenced in this document as a well-known HCI specification, however it should be noted ETSI TS 102 622 describes another host network with the host controller implemented by the CLF/NFC controller and with hosts residing on UICCs/SEs all connected to the host controller. ETSI TS 102 622 allows for other interfaces than SWP for data link layer of HCI, and does not mandate using the SWP but just describes the condition if the SWP is used.

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Identification cards — Transport layer topologies — Configuration for HCI/HCP interchange

1 Scope

This document specifies the requirements for a protocol derived from HCI/HCP (see ETSI TS 102 622) enabling communication for devices regardless of data link and physical layers. This document covers the following:

a) outline of a system comprised of one or more hosts and one controller;

b) extension of connection topology between hosts and host controller (i.e. star topology and additional other topologies);

c) segregation between existing system using ETSI TS 102 613 and new system compliant to this document (this document refers ETSI TS 102 613, but does not change its specification and does not use RFU).

For ETSI TS 102 622, data link layer and physical layer like SWP specified in ETSI TS 102 613 is out of the scope.

Albeit questioned in this document, the duplication of OSI transport layer by e.g. enforcing encapsulation of HCP into T=1 or the reverse, is out of the scope.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 7816-3, *Identification cards — Integrated circuit cards — Part 3: Cards with contacts — Electrical interface and transmission protocols*

ISO/IEC 7816-4, *Identification cards — Integrated circuit cards — Part 4: Organization, security and commands for interchange*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
APDU gate
entry point to a service processing command APDU inside a *host* (3.6) or returning response APDU

3.2
APDU application gate
entry point to a service sending command APDU and retrieving correspondent response APDU

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3.3
gate
entry point to a service that is operated inside a *host* (3.6)

[SOURCE: ETSI TS 102 622]

3.4
HCI network
star-topology network comprised of a *host network* (3.8) where *hosts* (3.6) are interconnected with a *host controller* (3.7) through HCI

3.5
HCP stack
layout comprised of a routing layer, a messaging layer and a collection of *gates* (3.3)

3.6
host
logical entity that operates one or more service(s)

[SOURCE: ETSI TS 102 622]

3.7
host controller
host (3.6) that is also responsible for managing a *host network* (3.8)

[SOURCE: ETSI TS 102 622]

3.8
host network
network of two or more *hosts* (3.6)

[SOURCE: ETSI TS 102 622]

3.9
managing host
host (3.6) which is in charge of resolving conflicts and interoperability issues between different contactless applications provided by different hosts

[SOURCE: ETSI TS 102 622]

3.10
pipe
logical communication channel between two *gates* (3.3) from different *hosts* (3.6)

[SOURCE: ETSI TS 102 622]

3.11
terminal host
host (3.6) allocated a static identifier HID '01'

4 Symbols and abbreviated terms

ADM_x	arbitrary command for administration gate, see ETSI TS 102 622 clause 6.1, e.g. ADM_CREATE_PIPE
APDU	application protocol data unit
API	application programming interface

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