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Card and security devices for personal identification — Programming interface for security devices

Part 3: Proxy

bsi.

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Contents

Page

Foreword ... **iv**
Introduction ... **v**
1 Scope ... **1**
2 Normative references ... **1**
3 Terms and definitions ... **1**
4 Symbols and abbreviated terms ... **2**
5 Proxy related requirements ... **2**
5.1 Link between client application and security device ... 2
5.2 Proxy layers ... 3
5.2.1 Proxy layer model ... 3
5.2.2 Resolution layer of ISO/IEC 23465-API calls ... 3
5.2.3 Layer representing/resolving class model ... 4
5.2.4 Administration layer for security devices ... 4
5.2.5 Security related layer ... 4
5.2.6 Translation layer ... 4
5.2.7 Exception handler ... 5
5.2.8 Connectivity related layer ... 5
5.3 Conditional proxy functionality ... 5
5.3.1 Multitasking/Multiplexing ... 5
5.3.2 Crypto functionality ... 5
5.3.3 Discovery functionality ... 6
5.3.4 Registration functionality ... 6
6 Instantiation of class objects ... **6**
6.1 Class model ... 6
6.2 Process of instantiation ... 7
6.3 Life cycle of an instance ... 8
7 Services of the proxy ... **8**
7.1 Security device management ... 8
7.1.1 Identification of security device ... 8
7.1.2 Retrieval of security device information ... 9
7.1.3 Security device related functionality ... 9
7.2 Security related layer ... 10
7.2.1 General ... 10
7.2.2 Security conditions and fulfilment ... 10
7.2.3 Interpretation of ISO/IEC 7816-4 security conditions ... 11
7.2.4 Security attributes for complex multistep authentication ... 12
7.2.5 Security attribute “user verification” ... 12
7.2.6 Security attribute “authentication” ... 12
7.2.7 Security attribute “secure messaging” (SM) ... 12
7.2.8 Implicit fulfilment of security conditions ... 13
7.3 Connectivity layer ... 13
7.4 Multi-client/multi-security device support ... 13
7.4.1 Task management ... 13
7.4.2 Management of security devices ... 13
8 Life cycle model of the proxy ... **14**
8.1 Start-up phase ... 14
8.2 Initialization and administration ... 14
Annex A (informative) **Example of client API call processing with proxy functionality** ... **15**
Bibliography ... **19**

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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*.

A list of all parts in the ISO/IEC 23465 series can be found on the ISO and IEC websites.

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Introduction

Integrated circuit card (ICC) technologies and solutions are widely deployed around the world, but systems for identity tokens and credentials are quickly changing. In this context, the application protocol data unit (APDU) protocol outlined in the ISO/IEC 7816 series is becoming, in some cases, a hindrance to the integration of integrated circuits (ICs) in environments such as mobile phones, handheld devices, connected devices (e.g. M2M, IoT) or other application using security devices.

Stakeholders often request an abstraction layer hiding IC specifics to avoid the complexity of APDU protocols. However, even solutions based on those kinds of middleware are perceived as cumbersome in some systems. The market looks for a middleware memory footprint to be as low as possible. This document aims to overcome or mitigate those issues by proposing a new approach that would preserve ICC functionality and allow for a seamless ICC portability onto new systems.

The ISO/IEC 23465 series focuses on a solution by designing an application programming interface (API) and a system with these characteristics:

— It offers a subset, from the ISO/IEC 7816 series, of mostly used multi-sectorial ICC functions.

— It results in no further middleware or very little middleware memory footprint (i.e. simplified drivers).

— It requires a simplified ICC capability discoverability (i.e. with significantly less complexity than ISO/IEC 24727-1). [3]

The ISO/IEC 23465 series is comprised of three parts, each focusing on a specific topic:

— ISO/IEC 23465-1: provides an introduction to the series and a short overview of the architecture;

— ISO/IEC TS 23465-2: defines the API for client applications allowing incorporation and usage of security devices;

— ISO/IEC TS 23465-3 (this document): describes the software (SW) called "proxy" which provides different services, e.g. to convert the API calls into serialized messages to be sent to the security device.

The ISO/IEC 23465 series is intended to be used by any sector relying on the interchange defined, but not limited to, the ISO/IEC 7816 series.

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Card and security devices for personal identification — Programming interface for security devices —

Part 3: Proxy

1 Scope

This document describes the software (SW) layer called "proxy". It supports the programming interface to security devices and the application using this API to access the application related security devices defined in ISO/IEC TS 23465-2.

This document is applicable to:

— proxy requirements, functionality and layers;

— resolving mechanisms for API functions;

— data structures related to security device handling;

— translation for security device communication;

— serialization/de-serialization syntax and methods.

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 23465-1, *Card and security devices for personal identification — Programming interface for security devices — Part 1: Introduction and architecture description*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 23465-1 and the following apply.

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

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

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

3.1
access rule
data element containing an access mode referring to an action and security conditions to be fulfilled before acting

3.2
client application
implemented application using the ISO/IEC 23465-API requesting services from a security device

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