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

Part 2: **API definition**

Cartes et dispositifs de sécurité pour l'identification personnelle — L'interface du logiciel pour dispositifs de sécurité —

Partie 2: Definition de API

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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 chip card (ICC) technologies and solutions are widely deployed around the world, but the system for identity tokens and credentials is 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 ICs in environments such as mobile phones, handheld devices, connected devices (e.g. M2M, IoT) or other applications using security devices.

In addition, several stakeholders are not familiar with, or not very fond of the APDU protocol because of its complexity. They would circumvent its constraints by requesting an abstraction layer hiding IC specifics such as data structures and complexity of the security policies.

A common way to reach this goal in the software development is the definition and application of application programming interface (API) functions to access the IC within the devices. Specific knowledge of ADPU protocols and details of the IC implementation is not necessary anymore. Also, the complexity and details of the implementation of the security model and the security policy can be shifted from the pure application development into the system design of the whole ID management.

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 and the acceptance, usage and maintenance of such a system can be simpler.

This document aims to overcome or mitigate those issues by proposing a new approach that preserves ICC functionality and allows a seamless ICC portability onto new systems.

The ISO/IEC 23465 series focuses on a solution by designing an API and a system with the following characteristics:

- It offers a set of API calls related to multi-sectorial ICC functionality, derived from the ISO/IEC 7816 series of other ICC related standards.
- It defines the sub-system to perform the conversion from the API function to the interface of the security device (e.g. APDU-interface), called “proxy”.
- It results in a description of solutions with no middleware or very little middleware memory footprint (i.e. simplified drivers).
- It defines simplified ICC capabilities, description of the discoverability (i.e. with significantly less complexity than ISO/IEC 24727) and provides examples of usages.

The present model is static and future revisions are expected to add live cycle functionality.

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

Part 2: **API definition**

1 Scope

This document describes the following aspects of the programming interface between the client application dealing with the security device and the proxy, based on the framework outlined in ISO/IEC 23465-1:

- the generic API definition;
- state and security models for use cases;
- class and API definitions of functionality, defined in other standards, e.g. the ISO/IEC 7816 series.

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 23465-1:2023, *Card and security devices for personal identification — Programming interface for security devices — Part 1: Introduction and architecture description*