SLOVENSKI STANDARD
SIST-TP CWA 16926-61:2023

01-april-2023

Specifikacija vmesnika razširitev za finančne storitve (XFS), izdaja 3.50 - 61. del: Vmesnik za programiranje aplikacij (API) - Vmesnik ponudnika storitev (SPI) - Referenca za programerje - Prehod z različice 3.40 (CWA 16926:2020) na različico 3.50 (ta CWA)

Extensions for Financial Services (XFS) interface specification Release 3.50 - Part 61: Application Programming Interface (API) - Service Provider Interface (SPI) - Programmer's Reference - Migration from Version 3.40 (CWA 16926:2000) to Version 3.50 (this CWA)

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ICS:

35.200	Vmesniška in povezovalna oprema	Interface and interconnection equipment
35.240.15	Identifikacijske kartice. Čipne kartice. Biometrija	Identification cards. Chip cards. Biometrics
35.240.40	Uporabniške rešitve IT v bančništvu	IT applications in banking

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AGREEMENT

CWA 16926-61

January 2023

ICS 35.200; 35.240.15; 35.240.40

English version

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The final text of this CEN Workshop Agreement was provided to CEN for publication on 2022-11-18.

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The CWA is published as a multi-part document, consisting of:

Part 1: Application Programming Interface (API) - Service Provider Interface (SPI) - Programmer's Reference

Part 2: Service Classes Definition - Programmer's Reference

Part 3: Printer and Scanning Device Class Interface - Programmer's Reference

Part 4: Identification Card Device Class Interface - Programmer's Reference

Part 5: Cash Dispenser Device Class Interface - Programmer's Reference

Part 6: PIN Keypad Device Class Interface - Programmer's Reference

Part 7: Check Reader/Scanner Device Class Interface - Programmer's Reference

Part 8: Depository Device Class Interface - Programmer's Reference

Part 9: Text Terminal Unit Device Class Interface - Programmer's Reference

Part 10: Sensors and Indicators Unit Device Class Interface - Programmer's Reference

Part 11: Vendor Dependent Mode Device Class Interface - Programmer's Reference

Part 12: Camera Device Class Interface - Programmer's Reference

Part 13: Alarm Device Class Interface - Programmer's Reference

Part 14: Card Embossing Unit Device Class Interface - Programmer's Reference

Part 15: Cash-In Module Device Class Interface - Programmer's Reference

Part 16: Card Dispenser Class Interface - Programmer's Reference

Part 17: Barcode Reader Device Class Interface - Programmer's Reference

Part 18: Item Processing Module Device Class Interface - Programmer's Reference

Part 19: Biometrics Device Class Interface - Programmer's Reference

Parts 20 - 28: Reserved for future use.

Parts 29 through 47 constitute an optional addendum to this CWA. They define the integration between the SNMP standard and the set of status and statistical information exported by the Service Providers.

Part 29: XFS MIB Architecture and SNMP Extensions - Programmer’s Reference

Part 30: XFS MIB Device Specific Definitions - Printer Device Class

Part 31: XFS MIB Device Specific Definitions - Identification Card Device Class

Part 32: XFS MIB Device Specific Definitions - Cash Dispenser Device Class

Part 33: XFS MIB Device Specific Definitions - PIN Keypad Device Class

Part 34: XFS MIB Device Specific Definitions - Check Reader/Scanner Device Class

Part 35: XFS MIB Device Specific Definitions - Depository Device Class

Part 36: XFS MIB Device Specific Definitions - Text Terminal Unit Device Class

Part 37: XFS MIB Device Specific Definitions - Sensors and Indicators Unit Device Class

Part 38: XFS MIB Device Specific Definitions - Camera Device Class

Part 39: XFS MIB Device Specific Definitions - Alarm Device Class

Part 40: XFS MIB Device Specific Definitions - Card Embossing Unit Class

Part 41: XFS MIB Device Specific Definitions - Cash-In Module Device Class

Part 42: Reserved for future use.

Part 43: XFS MIB Device Specific Definitions - Vendor Dependent Mode Device Class

Part 44: XFS MIB Application Management

Part 45: XFS MIB Device Specific Definitions - Card Dispenser Device Class

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Part 46: XFS MIB Device Specific Definitions - Barcode Reader Device Class

Part 47: XFS MIB Device Specific Definitions - Item Processing Module Device Class

Part 48: XFS MIB Device Specific Definitions - Biometrics Device Class

Parts 49 - 60 are reserved for future use.

Part 61: Application Programming Interface (API) - Migration from Version 3.40 (CWA 16296:2020) to Version 3.50 (this CWA) - Service Provider Interface (SPI) - Programmer's Reference

Part 62: Printer and Scanning Device Class Interface - Migration from Version 3.40 (CWA 16296:2020) to Version 3.50 (this CWA) - Programmer's Reference

Part 63: Identification Card Device Class Interface - Migration from Version 3.40 (CWA 16296:2020) to Version 3.50 (this CWA) - Programmer's Reference

Part 64: Cash Dispenser Device Class Interface - Migration from Version 3.40 (CWA 16296:2020) to Version 3.50 (this CWA) - Programmer's Reference

Part 65: PIN Keypad Device Class Interface - Migration from Version 3.40 (CWA 16296:2020) to Version 3.50 (this CWA) - Programmer's Reference

Part 66: Check Reader/Scanner Device Class Interface - Migration from Version 3.40 (CWA 16296:2020) to Version 3.50 (this CWA) - Programmer's Reference

Part 67: Depository Device Class Interface - Migration from Version 3.40 (CWA 16296:2020) to Version 3.50 (this CWA) - Programmer's Reference

Part 68: Text Terminal Unit Device Class Interface - Migration from Version 3.40 (CWA 16296:2020) to Version 3.50 (this CWA) - Programmer's Reference

Part 69: Sensors and Indicators Unit Device Class Interface - Migration from Version 3.40 (CWA 16296:2020) to Version 3.50 (this CWA) - Programmer's Reference

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Part 73: Card Embossing Unit Device Class Interface - Migration from Version 3.40 (CWA 16296:2020) to Version 3.50 (this CWA) - Programmer's Reference

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Part 77: Item Processing Module Device Class Interface - Migration from Version 3.40 (CWA 16296:2020) to Version 3.50 (this CWA) - Programmer's Reference

Part 78: Biometric Device Class Interface - Migration from Version 3.40 (CWA 16296:2020) to Version 3.50 (this CWA) - Programmer's Reference

In addition to these Programmer's Reference specifications, the reader of this CWA is also referred to a complementary document, called Release Notes. The Release Notes contain clarifications and explanations on the CWA specifications, which are not requiring functional changes. The current version of the Release Notes is available online from: https://www.cencenelec.eu/areas-of-work/cen-sectors/digital-society-cen/cwa-download-area/.

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Revision History:

3.00	October 18, 2000	Initial Release.
3.10	November 29, 2007	For a description of changes from version 3.00 to version 3.10 see the API 3.10 Migration document.
3.20	March 2, 2011	For a description of changes from version 3.10 to version 3.20 see the API 3.20 Migration document.
3.30	March 19, 2015	For a description of changes from version 3.20 to version 3.30 see the API 3.30 Migration document.
3.40	December 06, 2019	For a description of changes from version 3.30 to version 3.40 see the API 3.40 Migration document.
3.50	November 18, 2022	For a description of changes from version 3.40 to version 3.50 see the API 3.50 Migration document.

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1 Introduction

1.1 Background to Release 3.50

The CEN/XFS Workshop aims to promote a clear and unambiguous specification defining a multi-vendor software interface to financial peripheral devices. The XFS (eXtensions for Financial Services) specifications are developed within the CEN (European Committee for Standardization/Information Society Standardization System) Workshop environment. CEN Workshops aim to arrive at a European consensus on an issue that can be published as a CEN Workshop Agreement (CWA).

The CEN/XFS Workshop encourages the participation of both banks and vendors in the deliberations required to create an industry standard. The CEN/XFS Workshop achieves its goals by focused sub-groups working electronically and meeting quarterly.

Release 3.50 of the XFS specification is based on a C API and is delivered with the continued promise for the protection of technical investment for existing applications. This release of the specification extends the functionality and capabilities of the existing devices covered by the specification:

- Addition of E2E security
- PIN Password Entry

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2 References

~~1. XFS Service Classes Definition, Programmer's Reference Revision 3.40~~

~~2. The Unicode Standard, Version 5.0, released on 9 November 2006. ISBN 0321480910~~

1. XFS Service Classes Definition, Programmer's Reference Revision 3.50

2. The Unicode Standard, Version 5.0, released on 9 November 2006. ISBN 0321480910

3. End-to-End (E2E) for XFS/XFS4IoT Programmer's Reference v1.0, CEN CWA 17852

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3 XFS (eXtensions for Financial Services) Overview

A key element of the Extensions for Financial Services is the definition of a set of APIs, a corresponding set of SPIs, and supporting services, providing access to financial services for Windows-based applications. The definition of the functionality of the services, of the architecture, and of the API and SPI sets, is outlined in this section, and described in detail in Sections 5 through 10.

The specification defines a standard set of interfaces such that, for example, an application that uses the API set to communicate with a particular Service Provider can work with a Service Provider of another conformant vendor, without any changes.

Although the Extensions for Financial Services define a general architecture for access to Service Providers from Windows-based applications, the initial focus of the CEN/XFS Workshop has been on providing access to peripheral devices that are unique to financial institutions. Since these devices are often complex, difficult to manage and proprietary, the development of a standardized interface to them from Windows-based applications and Windows operating systems can offer financial institutions and their solution providers immediate enhancements to productivity and flexibility.

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3.1 Architecture

The architecture of the Extensions for Financial Services (XFS) system is shown below.

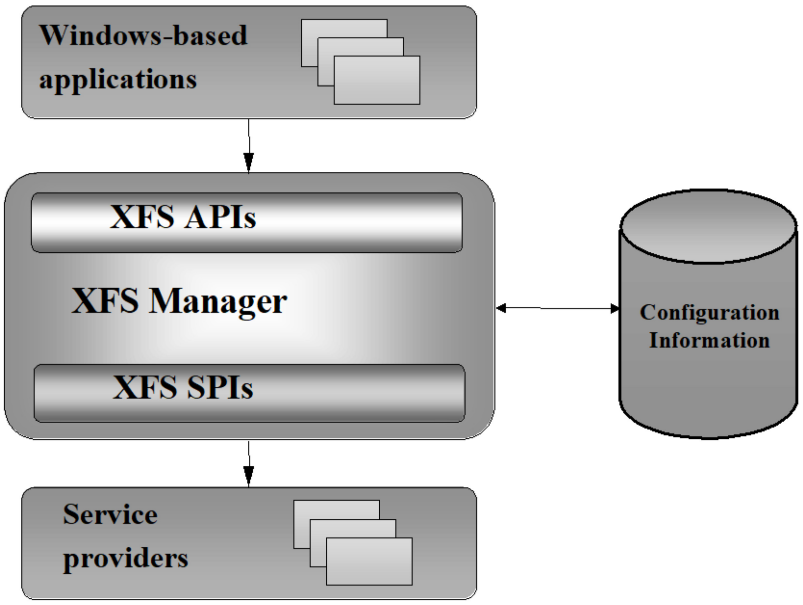

Figure 2.1 - Extensions for Financial Services Architecture

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The applications communicate with Service Providers, via the Extensions for Financial Services Manager, using the API set. Most of these APIs can be invoked either "synchronously" (the Manager causes the application to wait until the API's function is completed) or "asynchronously" (the application regains control immediately, while the function is performed in parallel).

The common deliverable in all implementations of this Extensions for Financial Services specification is the Extensions for Financial Services Manager, which maps the specified API to the corresponding SPI, then routes this request to the appropriate Service Provider. Multiple implementations of the XFS Manager exist from different vendors. For the definition of the binary interface, see section 4.16.

The Manager uses the configuration information to route the API call (made to a "logical service" or a "logical device") to the proper Service Provider entry point (which is always local, even though the device or service that is the final target may be remote). Note that even though the API calls may be either synchronous or asynchronous, the SPI calls are always asynchronous.

The developers of financial services to be used via XFS and the manufacturers of financial peripherals will be responsible for the development and distribution of Service Providers for their services and devices. A setup routine for each device or service will also be necessary to define the appropriate configuration information. This information will allow an application to request capability and status information about the devices and services available at any point in time.

The primary functions of the Service Providers are to:

- Translate generic (e.g. forms-based) service requests to service-specific commands.
- Route the requests to either a local service or device, or to one on a remote system, effectively defining a peer-to-peer interface among Service Providers.
- Arbitrate access by multiple applications to a single service or device, providing exclusive access when requested.
- Manage the hardware interfaces to services or devices.
- Manage the asynchronous nature of the services and devices in an appropriate manner, always presenting this capability to the XFS Manager and the applications via Windows messages.

The system design supports solution of complex problems, often not addressed by current systems, by providing for maximum flexibility in all its capabilities: