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Extensions for Financial Services (XFS) interface specification -
Release 3.0 - Part 7: Check Reader/Scanner Device Class Interface

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Foreword

This CWA is revision 3.0 of the XFS interface specification.

The move from an XFS 2.0 specification (CWA 13449) to a 3.0 specification has been prompted by a series of factors.

Initially, there has been a technical imperative to extend the scope of the existing specification of the XFS Manager to include new devices, such as the Card Embossing Unit.

Similarly, there has also been pressure, through implementation experience and the advance of the Microsoft technology, to extend the functionality and capabilities of the existing devices covered by the specification.

Finally, it is also clear that our customers and the market are asking for an update to a specification, which is now over 2 years old. Increasing market acceptance and the need to meet this demand is driving the Workshop towards this release.

The clear direction of the CEN/ISSS XFS Workshop, therefore, is the delivery of a new Release 3.0 specification based on a C API. It will be delivered with the promise of the protection of technical investment for existing applications and the design to safeguard future developments.

The CEN/ISSS XFS Workshop gathers suppliers as well as banks and other financial service companies. A list of companies participating in this Workshop and in support of this CWA is available from the CEN/ISSS Secretariat.

This CWA was formally approved by the XFS Workshop meeting on 2000-10-18. The specification is continuously reviewed and commented in the CEN/ISSS Workshop on XFS. It is therefore expected that an update of the specification will be published in due time as a CWA, superseding this revision 3.0.

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 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 Class Interface - Programmer's Reference

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

Part 16: Application Programming Interface (API) - Service Provider Interface (SPI) - Migration from Version 2.0 (see CWA 13449) to Version 3.0 (this CWA) - Programmer's Reference

Part 17: Printer Device Class Interface - Migration from Version 2.0 (see CWA 13449) to Version 3.0 (this CWA) - Programmer's Reference

Part 18: Identification Card Device Class Interface - Migration from Version 2.0 (see CWA 13449) to Version 3.0 (this CWA) - Programmer's Reference

Part 19: Cash Dispenser Device Class Interface - Migration from Version 2.0 (see CWA 13449) to Version 3.0 (this CWA) - Programmer's Reference

Part 20: PIN Keypad Device Class Interface - Migration from Version 2.0 (see CWA 13449) to Version 3.0 (this CWA) - Programmer's Reference

Part 21: Depository Device Class Interface - Migration from Version 2.0 (see CWA 13449) to Version 3.0 (this CWA) - Programmer's Reference

Part 22: Text Terminal Unit Device Class Interface - Migration from Version 2.0 (see CWA 13449) to Version 3.0 (this CWA) - Programmer's Reference

Part 23: Sensors and Indicators Unit Device Class Interface - Migration from Version 2.0 (see CWA 13449) to Version 3.0 (this CWA) - Programmer's Reference

Part 24: Camera Device Class Interface - Migration from Version 2.0 (see CWA 13449) to Version 3.0 (this CWA) - Programmer's Reference

Part 25: Identification Card Device Class Interface - PC/SC Integration Guidelines

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 <http://www.cenorm.be/iss/Workshop/XFS>.

The information in this document represents the Workshop's current views on the issues discussed as of the date of publication. It is furnished for informational purposes only and is subject to change without notice. CEN/ISSS makes no warranty, express or implied, with respect to this document.

Revision History:

1.0	May 24, 1993	Initial release of API and SPI specification
1.01	June 11, 1993	Minor updates to BSVC member contact list.
1.1	April 14, 1994	Major updates and additions.
1.11	February 3, 1995	Separation of specification into separate documents for API/SPI and service class definitions; with updates
3.00	October 18, 2000	Update release encompassing: - Reintroduced with a command set targeted at stand alone check readers and scanners - UNICODE support

1. Introduction

1.1 Background to Release 3.0

The CEN XFS Workshop is a continuation of the Banking Solution Vendors Council workshop and maintains a technical commitment to the Win 32 API. However, the XFS Workshop has extended the franchise of multi vendor software by encouraging the participation of both banks and vendors to take part in the deliberations of the creation of an industry standard. This move towards opening the participation beyond the BSVC's original membership has been very successful with a current membership level of more than 20 companies.

The fundamental aims of the XFS Workshop are to promote a clear and unambiguous specification for both service providers and application developers. This has been achieved to date by sub groups working electronically and quarterly meetings.

The move from an XFS 2.0 specification to a 3.0 specification has been prompted by a series of factors. Initially, there has been a technical imperative to extend the scope of the existing specification of the XFS Manager to include new devices, such as the Card Embossing Unit.

Similarly, there has also been pressure, through implementation experience and the advance of the Microsoft technology, to extend the functionality and capabilities of the existing devices covered by the specification.

Finally, it is also clear that our customers and the market are asking for an update to a specification, which is now over 2 years old. Increasing market acceptance and the need to meet this demand is driving the Workshop towards this release.

The clear direction of the XFS Workshop, therefore, is the delivery of a new Release 3.0 specification based on a C API. It will be delivered with the promise of the protection of technical investment for existing applications and the design to safeguard future developments.

1.2 XFS Service-Specific Programming

The service classes are defined by their service-specific commands and the associated data structures, error codes, messages, etc. These commands are used to request functions that are specific to one or more classes of service providers, but not all of them, and therefore are not included in the common API for basic or administration functions.

When a service-specific command is common among two or more classes of service providers, the syntax of the command is as similar as possible across all services, since a major objective of the Extensions for Financial Services is to standardize command codes and structures for the broadest variety of services. For example, using the **WFSExecute** function, the commands to read data from various services are as similar as possible to each other in their syntax and data structures.

In general, the specific command set for a service class is defined as the union of the sets of specific capabilities likely to be provided by the developers of the services of that class; thus any particular device will normally support only a subset of the command set defined for the class.

There are three cases in which a service provider may receive a service-specific command that it does not support:

- The requested capability is defined for the class of service providers by the XFS specification, the particular vendor implementation of that service does not support it, and the unsupported capability is *not* considered to be fundamental to the service. In this case, the service provider returns a successful completion, but does no operation. An example would be a request from an application to turn on a control indicator on a passbook printer; the service provider recognizes the command, but since the passbook printer it is managing does not include that indicator, the service provider does no operation and returns a successful completion to the application.

- The requested capability is defined for the class of service providers by the XFS specification, the particular vendor implementation of that service does not support it, and the unsupported capability *is* considered to be fundamental to the service. In this case, a WFS_ERR_UNSUPP_COMMAND error is returned to the calling application. An example would be a request from an application to a cash dispenser to dispense coins; the service provider recognizes the command but, since the cash dispenser it is managing dispenses only notes, returns this error.
- The requested capability is *not* defined for the class of service providers by the XFS specification. In this case, a WFS_ERR_INVALID_COMMAND error is returned to the calling application.

This design allows implementation of applications that can be used with a range of services that provide differing subsets of the functionalities that are defined for their service class. Applications may use the **WFSGetInfo** and **WFSAsyncGetInfo** commands to inquire about the capabilities of the service they are about to use, and modify their behavior accordingly, or they may use functions and then deal with WFS_ERR_UNSUPP_COMMAND error returns to make decisions as to how to use the service.

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2. Check Readers and Scanners

This specification describes the XFS service class of check readers and scanners. Check image scanners are treated as a special case of check readers, i.e., image-enabled instances of the latter. This class includes devices with a range of features, from small hand-held read-only devices through which checks are manually swiped one at a time, to desktop units which automatically feed the check one at a time; recording the MICR data and check image, and endorse or encode the check. The specification of this service class includes definitions of the service-specific commands that can be issued, using the **WFSAsyncExecute**, **WFSExecute**, **WFSGetInfo** and **WFSAsyncGetInfo** functions.

In the U.S., checks are always encoded in magnetic ink for reading by Magnetic Ink Character Recognition (MICR), and a single font is always used. In Europe some countries use MICR and some use Optical Character Recognition (OCR) character sets, with different fonts, for their checks.

In all countries, typical fields found encoded on a check include the bank ID number and the account number. Part of the processing done by the bank is to also encode the amount on the check, usually done by having an operator enter the handwritten or typewritten face amount on a numeric keypad.

This service class is currently defined only for attended branch service

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3. References

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| <ol style="list-style-type: none">1. XFS Application Programming Interface (API)/Service Provider Interface (SPI), Programmer's Reference
Revision 3.00, October 18, 2000 |
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