

CEN

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WORKSHOP

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AGREEMENT

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Extensions for Financial Services (XFS) interface specification
Release 3.20 - Part 17: Barcode Reader Device Class Interface
Programmer's Reference

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Table of Contents

Foreword	3
1. Introduction.....	6
1.1 Background to Release 3.20	6
1.2 XFS Service-Specific Programming	6
2. Barcode Readers	7
3. References	8
4. Info Commands	9
4.1 WFS_INF_BCR_STATUS	9
4.2 WFS_INF_BCR_CAPABILITIES.....	12
5. Execute Commands	15
5.1 WFS_CMD_BCR_READ.....	15
5.2 WFS_CMD_BCR_RESET.....	17
5.3 WFS_CMD_BCR_SET_GUIDANCE_LIGHT	18
5.4 WFS_CMD_BCR_POWER_SAVE_CONTROL.....	19
6. Events.....	20
6.1 WFS_SRVE_BCR_DEVICEPOSITION.....	20
6.2 WFS_SRVE_BCR_POWER_SAVE_CHANGE.....	21
7. C - Header file	22

Foreword

This CWA is revision 3.20 of the XFS interface specification.

This CEN Workshop Agreement has been drafted and approved by a Workshop of representatives of interested parties on 2011-06-29, the constitution of which was supported by CEN following the public call for participation made on 1998-06-24. 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 3.20.

A list of the individuals and organizations which supported the technical consensus represented by the CEN Workshop Agreement is available to purchasers from the CEN-CENELEC Management Centre. These organizations were drawn from the banking sector. The CEN/ISSS XFS Workshop gathered suppliers as well as banks and other financial service companies.

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 Module 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: Card Dispenser Device 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

Parts 19 - 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

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

CWA 16374-17:2011 (E)

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 Device 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 Class

Part 44: XFS MIB Application Management

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

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

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

Parts 48 - 60 are reserved for future use.

Part 61: Application Programming Interface (API) - Service Provider Interface (SPI) - Migration from Version 3.10 (see CWA 15748) to Version 3.20 (this CWA) - Programmer's Reference

Part 62: Printer and Scanning Device Class Interface - Migration from Version 3.10 (CWA 15748) to Version 3.20 (this CWA) - Programmer's Reference

Part 63: Identification Card Device Class Interface - Migration from Version 3.10 (see CWA 15748) to Version 3.20 (this CWA) - Programmer's Reference

Part 64: Cash Dispenser Device Class Interface - Migration from Version 3.10 (see CWA 15748) to Version 3.20 (this CWA) - Programmer's Reference

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Part 76: Barcode Reader Device Class Interface - Migration from Version 3.10 (see CWA 15748) to Version 3.20 (this CWA) - Programmer's Reference

Part 77: Item Processing Module Device Class Interface - Migration from Version 3.10 (see CWA 15748) to Version 3.20 (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 <http://www.cen.eu/cen/pages/default.aspx>.

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.

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The final review/endorsement round for this CWA was started on 2011-06-23 and was successfully closed on 2011-07-23. The final text of this CWA was submitted to CEN for publication on 2011-08-26.

This CEN Workshop Agreement is publicly available as a reference document from the National Members of CEN: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Comments or suggestions from the users of the CEN Workshop Agreement are welcome and should be addressed to the CEN-CENELEC Management Centre.

Revision History:

3.10	November 29, 2007	Initial release.
3.20	March 2nd, 2011	For a description of changes from version 3.10 to version 3.20 see the BCR 3.20 Migration document.

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1. Introduction

1.1 Background to Release 3.20

The CEN/ISSS 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/ISSS (European Committee for Standardization/Information Society Standardization System) Workshop environment. CEN/ISSS Workshops aim to arrive at a European consensus on an issue that can be published as a CEN Workshop Agreement (CWA).

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

Release 3.20 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, but does not include any new device classes. Notable major enhancements include Mixed Media processing to allow mixed cash and check accepting, as well as the addition of new commands to the CIM, PTR and IDC to allow better support of the Japanese marketplace.

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 XFS is to standardize function 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 a superset of the 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 defined command set.

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.

2. Barcode Readers

This specification describes the functionality of a Barcode Reader (BCR) Service Provider. It defines the service-specific commands that can be issued to the Service Provider using the **WFSGetInfo**, **WFSAsyncGetInfo**, **WFSExecute** and **WFSAsyncExecute** functions.

Persistent values are maintained through power failures, open sessions, close session and system resets.

This extension to XFS specifications defines the functionality of BCR service.

A Barcode Reader scans barcodes using any scanning technology. The device logic converts light signals or image recognition into application data and transmits it to the host system.

The basic operation of the Barcode Reader is managed using **WFSExecute**/**WFSAsyncExecute** functions.

When an application wants to read a barcode, it issues a WFS_CMD_BCR_READ command to prepare the scanner to read any barcode presented to it. When a document is presented to the BCR and a barcode type is recognized, a completion event is received which contains the barcode data that has been read.

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3. References

1. XFS Application Programming Interface (API)/Service Provider Interface (SPI), Programmer's Reference
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4. Info Commands

4.1 WFS_INF_BCR_STATUS

Description This command is used to request status information for the device.

Input Param None.

Output Param LPWFSBCRSTATUS lpStatus;

```
typedef struct _wfs_bcr_status
{
    WORD fwDevice;
    WORD fwBCRScanner;
    DWORD dwGuidLights[WFS_BCR_GUIDLIGHTS_SIZE];
    LPSTR lpszExtra;
    WORD wDevicePosition;
    USHORT usPowerSaveRecoveryTime;
    WORD wAntiFraudModule;
} WFSBCRSTATUS, *LPWFSBCRSTATUS;
```

fwDevice

Specifies the state of the BCR device as one of the following flags:

Value	Meaning
WFS_BCR_DEVONLINE	The device is online (i.e. powered on and operable).
WFS_BCR_DEVOFFLINE	The device is offline (e.g. the operator has taken the device offline by turning a switch or pulling out the device).
WFS_BCR_DEVPOWEROFF	The device is powered off or physically not connected.
WFS_BCR_DEVNODEVICE	There is no device intended to be there; e.g. this type of self service machine does not contain such a device or it is internally not configured.
WFS_BCR_DEVHWERROR	The device is inoperable due to a hardware error.
WFS_BCR_DEVUSERERROR	The device is present but a person is preventing proper device operation.
WFS_BCR_DEVBUSY	The device is busy and unable to process an execute command at this time.
WFS_BCR_DEVFRAUDATTEMPT	The device is present but is inoperable because it has detected a fraud attempt.
WFS_BCR_DEVPOTENTIALFRAUD	The device has detected a potential fraud attempt and is capable of remaining in service. In this case the application should make the decision as to whether to take the device offline.

fwBCRScanner

Specifies the scanner status (laser, camera or other technology) as one of the following flags:

Value	Meaning
WFS_BCR_SCANNERON	Scanner is enabled for reading.
WFS_BCR_SCANNEROFF	Scanner is disabled.
WFS_BCR_SCANNERINOP	Scanner is inoperative due to a hardware error.
WFS_BCR_SCANNERUNKNOWN	Scanner status cannot be determined.

dwGuidLights [...]

Specifies the state of the guidance light indicators. A number of guidance light types are defined below. Vendor specific guidance lights are defined starting from the end of the array. The maximum guidance light index is WFS_BCR_GUIDLIGHTS_MAX.

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