**CEN** 

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WORKSHOP

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### **AGREEMENT**

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#### **English version**

Extensions for Financial Services (XFS) interface specification Release 3.40 - Part 72: Alarm Device Class Interface - Migration from version 3.30 (CWA 16926) to Version 3.40 (this CWA) - Programmer's Reference

This CEN Workshop Agreement has been drafted and approved by a Workshop of representatives of interested parties, the constitution of which is indicated in the foreword of this Workshop Agreement.

The formal process followed by the Workshop in the development of this Workshop Agreement has been endorsed by the National Members of CEN but neither the National Members of CEN nor the CEN-CENELEC Management Centre can be held accountable for the technical content of this CEN Workshop Agreement or possible conflicts with standards or legislation.

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### **European Foreword**

This CEN Workshop Agreement has been developed in accordance with the CEN-CENELEC Guide 29 "CEN/CENELEC Workshop Agreements – The way to rapid consensus" and with the relevant provisions of CEN/CENELEC Internal Regulations - Part 2. It was approved by a Workshop of representatives of interested parties on 2019-10-08, the constitution of which was supported by CEN following several public calls for participation, the first of which was made on 1998-06-24. However, this CEN Workshop Agreement does not necessarily include all relevant stakeholders.

The final text of this CEN Workshop Agreement was provided to CEN for publication on 2019-12-12. The following organizations and individuals developed and approved this CEN Workshop Agreement:

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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 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
- 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

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- 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
- 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 3.30 (CWA 16926) to Version 3.40 (this CWA) Service Provider Interface (SPI) Programmer's Reference
- Part 62: Printer and Scanning Device Class Interface Migration from Version 3.30 (CWA 16926) to Version 3.40 (this CWA) Programmer's Reference
- Part 63: Identification Card Device Class Interface Migration from Version 3.30 (CWA 16926) to Version 3.40 (this CWA) Programmer's Reference
- Part 64: Cash Dispenser Device Class Interface Migration from Version 3.30 (CWA 16926) to Version 3.40 (this CWA) Programmer's Reference
- Part 65: PIN Keypad Device Class Interface Migration from Version 3.30 (CWA 16926) to Version 3.40 (this CWA) Programmer's Reference
- Part 66: Check Reader/Scanner Device Class Interface Migration from Version 3.30 (CWA 16926) to Version 3.40 (this CWA) Programmer's Reference
- Part 67: Depository Device Class Interface Migration from Version 3.30 (CWA 16926) to Version 3.40 (this CWA) Programmer's Reference
- Part 68: Text Terminal Unit Device Class Interface Migration from Version 3.30 (CWA 16926) to Version 3.40 (this CWA) Programmer's Reference
- Part 69: Sensors and Indicators Unit Device Class Interface Migration from Version 3.30 (CWA 16926) to Version 3.40 (this CWA) Programmer's Reference
- Part 70: Vendor Dependent Mode Device Class Interface Migration from Version 3.30 (CWA 16926) to Version 3.40 (this CWA) Programmer's Reference
- Part 71: Camera Device Class Interface Migration from Version 3.30 (CWA 16926) to Version 3.40 (this CWA) Programmer's Reference
- Part 72: Alarm Device Class Interface Migration from Version 3.30 (CWA 16926) to Version 3.40 (this CWA) Programmer's Reference
- Part 73: Card Embossing Unit Device Class Interface Migration from Version 3.30 (CWA 16926) to Version 3.40 (this CWA) Programmer's Reference
- Part 74: Cash-In Module Device Class Interface Migration from Version 3.30 (CWA 16926) to Version 3.40 (this CWA) Programmer's Reference
- Part 75: Card Dispenser Device Class Interface Migration from Version 3.30 (CWA 16926) to Version 3.40 (this CWA) Programmer's Reference

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Part 76: Barcode Reader Device Class Interface - Migration from Version 3.30 (CWA 16926) to Version 3.40 (this CWA) - Programmer's Reference

Part 77: Item Processing Module Device Class Interface - Migration from Version 3.30 (CWA 16926) to Version 3.40 (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: <a href="https://www.cen.eu/work/Sectors/Digital society/Pages/WSXFS.aspx">https://www.cen.eu/work/Sectors/Digital society/Pages/WSXFS.aspx</a>.

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

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# 1. Migration Information

XFS 3.40 has been designed to minimize backwards compatibility issues. This document highlights the changes made to the Alarm (ALM) Specification device class between version 3.30 and 3.40, by highlighting the additions and deletions to the text.

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### 2. Alarms

This specification describes the functionality of the services provided by Alarms (ALM) under XFS, by defining the service-specific commands that can be issued, using the **WFSGetInfo**, **WFSAsyncGetInfo**, **WFSExecute** and **WFSAsyncExecute** functions. This section describes the functionality of an Alarm (ALM) service that applies to both attended and unattended (self-service) devices.

The Alarm device class is provided as a separate service due to the need to set or reset an Alarm when one or more logical services associated with an attended CDM or unattended (self-service) device are locked. Because logical services can be locked by the application the Alarm is implemented in a separate device class to ensure that a set (trigger) or reset operation can be performed at any time.

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## 3. References

1. XFS Application Programming Interface (API)/Service Provider Interface (SPI), Programmer's Reference Revision 3.3040

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### 4. Info Commands

### 4.1 WFS\_INF\_ALM\_STATUS

**Description** This command is used to request the Alarm status.

Input Param None.

Output Param LPWFSALMSTATUS lpStatus;

fwDevice

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

Value	Meaning
WFS_ALM_DEVONLINE	The device is present, powered on and online (i.e. operational, not busy processing a request and not in an error state).
WFS_ALM_DEVOFFLINE	The device is offline (e.g. the operator has taken the device offline by turning a switch).
WFS_ALM_DEVPOWEROFF	The device is powered off or physically not connected.
WFS_ALM_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_ALM_DEVUSERERROR	The device is present but a person is preventing proper device operation. The application should suspend the device operation or remove the device from service until the Service Provider generates a device state change event indicating the condition of the device has changed e.g. the error is removed (WFS_ALM_DEVONLINE) or a permanent error condition has occurred (WFS_ALM_DEVHWERROR).
WFS_ALM_DEVHWERROR	The device is present but inoperable due to a hardware fault that prevents it from being used.
WFS_ALM_DEVBUSY	The device is busy and unable to process an execute command at this time.
WFS_ALM_DEVFRAUDATTEMPT	The device is present but is inoperable because it has detected a fraud attempt.
WFS_ALM_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.

bAlarmSei

Specifies the state of the Alarm as either Reset (FALSE) or Set (TRUE).

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#### lpszExtra

Pointer to a list of vendor-specific, or any other extended, information. The information is returned as a series of "key=value" strings so that it is easily extensible by Service Providers. Each string is null-terminated, with the final string terminating with two null characters. An empty list may be indicated by either a NULL pointer or a pointer to two consecutive null characters.

#### wAntiFraudModule

Specifies the state of the anti-fraud module as one of the following values:

Value	Meaning
WFS_ALM_AFMNOTSUPP	No anti-fraud module is available.
WFS_ALM_AFMOK	Anti-fraud module is in a good state and no
	foreign device is detected.
WFS_ALM_AFMINOP	Anti-fraud module is inoperable.
WFS_ALM_AFMDEVICEDETECTED	Anti-fraud module detected the presence of a
	foreign device.
WFS_ALM_AFMUNKNOWN	The state of the anti-fraud module cannot be
	determined.

#### **Error Codes**

Only the generic error codes defined in [Ref. 1] can be generated by this command.

#### Comments

Applications which require or expect specific information to be present in the *lpszExtra* parameter may not be device or vendor-independent.

In the case where communications with the device has been lost, the *fwDevice* field will report WFS\_ALM\_DEVPOWEROFF when the device has been removed or WFS\_ALM\_DEVHWERROR if the communications are unexpectedly lost. All other fields should contain a value based on the following rules and priority:

- 1. Report the value as unknown.
- 2. Report the value as a general h/w error.
- 3. Report the value as the last known value.

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#### 4.2 WFS INF ALM CAPABILITIES

**Description** This command is used to retrieve the capabilities of the Alarm.

Input Param None.

Output Param LPWFSALMCAPS lpCaps;

wClass

Specifies the logical service class as WFS SERVICE CLASS ALM.

#### bProgrammaticallyDeactivate

Specifies whether the Alarm can be programmatically deactivated (TRUE) or can not be programmatically deactivated (FALSE).

#### lpszExtra

Pointer to a list of vendor-specific, or any other extended, information. The information is returned as a series of "key=value" strings so that it is easily extensible by Service Providers. Each string is null-terminated, with the final string terminating with two null characters. An empty list may be indicated by either a NULL pointer or a pointer to two consecutive null characters.

#### bAntiFraudModule

Specifies whether the anti-fraud module is available. This can either be TRUE if available or FALSE if not available.

#### lpdwSynchronizableCommands

Pointer to a zero-terminated list of DWORDs which contains the execute command IDs that can be synchronized. If no execute command can be synchronized then this parameter will be NULL.

#### **Error Codes**

Only the generic error codes defined in [Ref. 1] can be generated by this command.

#### Comments

Applications which require or expect specific information to be present in the *lpszExtra* parameter may not be device or vendor-independent.

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### 5. Execute Commands

### 5.1 WFS\_CMD\_ALM\_SET\_ALARM

**Description** This command is used to trigger an Alarm.

Input Param None.Output Param None.

**Error Codes** Only the generic error codes defined in [Ref. 1] can be generated by this command.

**Events** In addition to the generic events defined in [Ref. 1], the following events can be generated as a

result of this command:

Value Meaning

WFS SRVE ALM DEVICE SET

The alarm device has been triggered.

**Comments** None.

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### 5.2 WFS\_CMD\_ALM\_RESET\_ALARM

**Description** This command is used to reset an Alarm.

Input Param None.Output Param None.

**Error Codes** Only the generic error codes defined in [Ref. 1] can be generated by this command.

**Events** In addition to the generic events defined in [Ref. 1], the following events can be generated as a

result of this command:

 Value
 Meaning

 WFS\_SRVE\_ALM\_DEVICE\_RESET
 The alarm device has been reset.

Comments None.

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### 5.3 WFS\_CMD\_ALM\_RESET

**Description** Sends a service reset to the Service Provider.

Input Param None.Output Param None.

**Error Codes** Only the generic error codes defined in [Ref. 1] can be generated by this command.

**Events** Only the generic events defined in [Ref. 1] can be generated by this command.

**Comments** This command is used by an application control program to cause a device to reset itself to a

known good condition.

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#### 5.4 WFS CMD ALM SYNCHRONIZE COMMAND

#### **Description**

This command is used to reduce response time of a command (e.g. for synchronization with display) as well as to synchronize actions of the different device classes. This command is intended to be used only on hardware which is capable of synchronizing functionality within a single device class or with other device classes.

The list of execute commands which this command supports for synchronization is retrieved in the *lpdwSynchronizableCommands* parameter of the WFS INF ALM CAPABILITIES.

This command is optional, i.e. any other command can be called without having to call it in advance. Any preparation that occurs by calling this command will not affect any other subsequent command. However, any subsequent execute command other than the one that was specified in the *dwCommand* input parameter will execute normally and may invalidate the pending synchronization. In this case the application should call the

WFS CMD ALM SYNCHRONIZE COMMAND again in order to start a synchronization.

#### **Input Param**

#### LPWFSALMSYNCHRONIZECOMMAND lpSynchronizeCommand;

#### dwCommand

The command ID of the command to be synchronized and executed next.

#### *lpCmdData*

Pointer to data or a data structure that represents the parameter that is normally associated with the command that is specified in *dwCommand*. This parameter can be NULL if no command input parameter is needed or if this detail is not needed to synchronize for the command.

It will be device-dependent whether the synchronization is effective or not in the case where the application synchronizes for a command with this command specifying a parameter but subsequently executes the synchronized command with a different parameter. This case should not result in an error; however, the preparation effect could be different from what the application expects. The application should, therefore, make sure to use the same parameter between *lpCmdData* of this command and the subsequent corresponding execute command.

### **Output Param**

None

#### **Error Codes**

In addition to the generic error codes defined in [Ref. 1], the following error codes can be generated by this command:

Value	Meaning
WFS_ERR_ALM_COMMANDUNSUPP	The command specified in the dwCommand
	field is not supported by the Service
	Provider.
WFS_ERR_ALM_SYNCHRONIZEUNSUPP	The preparation for the command specified
	in the dwCommand with the parameter
	specified in the <i>lpCmdData</i> is not supported
	by the Service Provider.
	-

#### **Events**

Only the generic events defined in [Ref. 1] can be generated by this command.

#### **Comments**

For sample flows of this synchronization see the [Ref 1] Appendix C.

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### 6. Events

### 6.1 WFS\_SRVE\_ALM\_DEVICE\_SET

**Description** The Alarm has been set (triggered) by an external event or a programmatic request to set (trigger)

the Alarm

Event Param None.Comments None.

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### 6.2 WFS\_SRVE\_ALM\_DEVICE\_RESET

**Description** The Alarm has been manually or programmatically reset.

**Event Param** None. **Comments** None.

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### 7. C - Header file

```
* xfsalm.h
               XFS - Alarm (ALM) definitions
                Version 3.<del>30 (March 19 2015) 40 (December 6 2019)</del>
**************************
#ifndef __INC_XFSALM__H
#define INC XFSALM H
#ifdef __cplu
extern "C" {
        cplusplus
#endif
#include <xfsapi.h>
/* be aware of alignment */
#pragma pack (push, 1)
/* values of WFSALMCAPS.wClass */
            WFS SERVICE CLASS ALM
#define
                                                  (11)
           WFS SERVICE CLASS VERSION ALM
#define
                                                   <del>0x1E03</del>(0x2803) /*Version 3.<del>30</del>40 */
           WFS SERVICE CLASS NAME ALM
#define
          ALM SERVICE OFFSET
                                                   (WFS SERVICE CLASS ALM * 100)
#define
/* ALM Info Commands */
#define
           WFS INF ALM STATUS
                                                  (ALM SERVICE OFFSET + 1)
           WFS INF ALM CAPABILITIES
                                                   (ALM SERVICE OFFSET + 2)
#define
/* ALM Execute Commands */
           WFS CMD ALM SET ALARM
                                                  (ALM SERVICE OFFSET + 1)
#define
          WFS CMD ALM RESET ALARM
                                                 (ALM SERVICE OFFSET + 2)
#define
            WFS_CMD_ALM_RESET
                                                  (ALM_SERVICE_OFFSET + 3)
          WFS_CMD_ALM_SYNCHRONIZE_COMMAND
#define
                                                  (ALM SERVICE OFFSET + 4)
/* ALM Messages */
                                                (ALM_SERVICE_OFFSET + 1)
#define
            WFS SRVE ALM DEVICE SET
#define
            WFS SRVE ALM DEVICE RESET
                                                   (ALM SERVICE OFFSET + 2)
/* values of WFSALMSTATUS.fwDevice */
#define WFS_ALM_DEVONLINE #define WFS_ALM_DEVOFFLINE #define WFS_ALM_DEVPOWEROFF #define WFS_ALM_DEVNODEVICE
                                                 WFS STAT DEVONLINE
                                                 WFS_STAT_DEVOFFLINE
WFS_STAT_DEVPOWEROFF
WFS_STAT_DEVNODEVICE
#define WFS ALM DEVHWERROR
                                                 WFS STAT DEVHWERROR
#define WFS_ALM_DEVUSERERROR
                                                 WFS STAT DEVUSERERROR
#define WFS_ALM_DEVBUSY
#define WFS_ALM_DEVFRAUDATTEMPT
#define WFS_ALM_DEVPOTENTIALFRAUD
                                                 WFS_STAT_DEVBUSY
                                                  WFS_STAT_DEVFRAUDATTEMPT
WFS_STAT_DEVPOTENTIALFRAUD
/* values of WFSALMSTATUS.wAntiFraudModule */
          WFS_ALM_AFMNOTSUPP
WFS_ALM_AFMOK
WFS_ALM_AFMINOP
#define
                                                   (0)
#define
                                                   (1)
#define
                                                   (2)
           WFS ALM AFMDEVICEDETECTED
                                                  (3)
#define
           WFS ALM AFMUNKNOWN
                                                   (4)
/* XFS ALM Errors */
```

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```
#define WFS_ERR_ALM_COMMANDUNSUPP
#define WFS_ERR_ALM_SYNCHRONIZEUNSUPP
                                        (-(ALM_SERVICE_OFFSET + 0))
                                         (-(ALM SERVICE OFFSET + 1))
/*========*/
/* ALM Info Command Structures */
/*----*/
typedef struct _wfs_alm_status
   WORD
                      fwDevice:
   BOOL
                      bAlarmSet;
   LPSTR
                      lpszExtra;
   WORD
                      wAntiFraudModule;
} WFSALMSTATUS, *LPWFSALMSTATUS;
typedef struct _wfs_alm_caps
   WORD
                      wClass;
   BOOL
                      bProgrammaticallyDeactivate;
                      lpszExtra;
   LPSTR
   BOOL
                      bAntiFraudModule;
   LPDWORD
                      lpdwSynchronizableCommands;
} WFSALMCAPS, *LPWFSALMCAPS;
typedef struct wfs alm synchronize command
   DWORD
                     dwCommand;
                      lpCmdData;
} WFSALMSYNCHRONIZECOMMAND, *LPWFSALMSYNCHRONIZECOMMAND;
/* restore alignment */
#pragma pack(pop)
#ifdef __cplusplus
} /*extern "C"*/
#endif
#endif /* INC XFSALM H */
```