CEN

WORKSHOP

AGREEMENT

CWA 15748-29

September 2011

English version

Extensions for Financial Services (XFS) interface specification - Release 3.10 - Part 29: XFS MIB Architecture and SNMP Extensions MIB Version 3.10

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.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This CWA is revision 3.10 of the XFS interface specification.

This CEN Workshop Agreement has been drafted and approved by a Workshop of representatives of interested parties on 2007-11-29, 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 3.10.

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 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: 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 MIB Version 3.10

Part 30: XFS MIB Device Specific Definitions - Printer Device Class MIB 3.10

Part 31: XFS MIB Device Specific Definitions - Identification Card Device Class MIB 3.10

Part 32: XFS MIB Device Specific Definitions - Cash Dispenser Device Class MIB 3.10

Part 33: XFS MIB Device Specific Definitions - PIN Keypad Device Class MIB 3.10

Part 34: XFS MIB Device Specific Definitions - Check Reader/Scanner Device Class MIB 3.10

Part 35: XFS MIB Device Specific Definitions - Depository Device Class MIB 3.10

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Part 40: XFS MIB Device Specific Definitions - Card Embossing Unit Device Class MIB 3.10

Part 41: XFS MIB Device Specific Definitions - Cash-In Module Device Class MIB 3.10

Part 42: Reserved for future use.

Part 43: XFS MIB Device Specific Definitions - Vendor Dependent Mode Class MIB 3.10

Part 44: XFS MIB Application Management MIB 3.10

Part 45: XFS MIB Device Specific Definitions - Card Dispenser Device Class MIB 3.10

Part 46: XFS MIB Device Specific Definitions - Barcode Reader Device Class MIB 3.10

Part 47: XFS MIB Device Specific Definitions - Item Processing Module Device Class MIB 3.10

Parts 48 - 60 are reserved for future use.

Part 61: Application Programming Interface (API) - Service Provider Interface (SPI) - Migration from Version 3.0 (see CWA 14050) to Version 3.10 (this CWA) - Programmer's Reference

Part 62: Printer and Scanning Device Class Interface - Migration from Version 3.0 (CWA 14050) to Version 3.10 (this CWA) - Programmer's Reference

Part 63: Identification Card Device Class Interface - Migration from Version 3.02 (see CWA 14050) to Version 3.10 (this CWA) - Programmer's Reference

Part 64: Cash Dispenser Device Class Interface - Migration from Version 3.0 (see CWA 14050) to Version 3.10 (this CWA) - Programmer's Reference

Part 65: PIN Keypad Device Class Interface - Migration from Version 3.03 (see CWA 14050) to Version 3.10 (this CWA) - Programmer's Reference

Part 66: Check Reader/Scanner Device Class Interface - Migration from Version 3.0 (see CWA 14050) to Version 3.10 (this CWA) - Programmer's Reference

Part 67: Depository Device Class Interface - Migration from Version 3.0 (see CWA 14050) to Version 3.10 (this CWA) - Programmer's Reference

Part 68: Text Terminal Unit Device Class Interface - Migration from Version 3.0 (see CWA 14050) to Version 3.10 (this CWA) - Programmer's Reference

Part 69: Sensors and Indicators Unit Device Class Interface - Migration from Version 3.01 (see CWA 14050) to Version 3.10 (this CWA) - Programmer's Reference

Part 70: Vendor Dependent Mode Device Class Interface - Migration from Version 3.0 (see CWA 14050) to Version 3.10 (this CWA) - Programmer's Reference

Part 71: Camera Device Class Interface - Migration from Version 3.0 (see CWA 14050) to Version 3.10 (this CWA) - Programmer's Reference

Part 72: Alarm Device Class Interface - Migration from Version 3.0 (see CWA 14050) to Version 3.10 (this CWA) - Programmer's Reference

Part 73: Card Embossing Unit Device Class Interface - Migration from Version 3.0 (CWA 14050) to Version 3.10 (this CWA) - Programmer's Reference

Part 74: Cash-In Module Device Class Interface - Migration from Version 3.02 (see CWA 14050) to Version 3.10 (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 2010-06-17 and was successfully closed on 2010-12-22.The final text of this CWA was submitted to CEN for publication on 2011-01-27.

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:

1.0	January 20, 2004	Initial release of XFS MIB specification.
1.10	April 15, 2007	Update of the MIB to add support for a Detailed Status Trap, a Device Reset capability and the support of SMIv2.
3.10	December 14, 2010	Update of the MIB to add support for a Capabilities table and to align the MIB with XFS 3.10.

1. Introduction

This specification describes the general MIB definition (Management Information Base) for the XFS environment and some new APIs that allow network management of Service Providers from the application layer.

This specification is mainly focused on the following areas:

- SNMP management architecture
- MIB structure definition
- Trap format definition
- Management extension of the Service Providers Interface

Full implementation of the above features depends on the individual vendor-supplied Service Providers. This specification outlines the functionality and requirements for applications using the XFS network management services, and for the development of those services.

The XFS device specific MIB and the application MIB definitions will be defined in separate documents.

An agent is compliant with the XFS MIB, if it supports the XFS MIB as defined in this specification and the referenced device/application specific XFS MIB specifications. No restrictions are placed on how an agent is implemented.

The MIB feature is an optional addendum to the XFS CWA. In addition, the main focus of this standard is on the standardisation of the MIB specification, not any specific implementation. From a management perspective, the key to multi-vendor management is that the MIB and values are consistent

1.1 Architecture

The architecture and information exported for application management is defined within the XFS MIB Application Management specification. The remainder of this specification defines how devices are managed.

The MIB definition specifies what information a Service Provider (i.e. a Service Provider of a generic XFS class) must export in order to be handled by a management application.

The use of information exported by the Service Providers is up to the Solution Providers. They can provide this information to the network management system via SNMP, using an SNMP agent that answers queries on the XFS MIB. They can also use this information for local management.

The exported information is organized into a set of device status variables and a set of response counters. The device status variables describe the current state of the devices (e.g. for a card reader unit, the number of cards retained). The response counters indicate the number of times each response has been returned to each of the execute commands the Service Provider supports.

The management information is presented in logical view, since this is the view presented by XFS. The logical view is provided through the concept of managed services. There is one managed service for every logical interface offered by a physical device. Each managed service has a unique sub-tree within the XFS MIB. Each managed service provides a mapping from the managed services to the physical devices associated with each managed service. This provides support for simple devices with a single interface or compound devices with multiple interfaces. The managed service MIB entries on compound devices are linked through the *xfsManagedServicePhysicalDeviceName* value which contains the same physical device name.

This is best illustrated by way of example:

a) On a standard card reader, there would be one managed service representing the IDC class interface. The MIB would contain a single branch for the managed service. The *xfsManagedServicePhysicalDeviceName* MIB variable would define the name of the physical IDC device.

b) On a cash recycler, which is a compound device, there would be one managed service for the CDM interface and one managed service for the CIM interface. The MIB would contain two branches, one for each managed service. The *xfsManagedServicePhysicalDeviceName* MIB variable within the two MIB branches would contain the same name, that of the physical recycle device.

c) On a card reader with a single user card IDC interface and 3 permanent chip IDC interfaces (i.e. 3 permanent chips on the device), there would be 4 managed services in total, one for each logical interface. The MIB would contain four branches, one for each managed service. The *xfsManagedServicePhysicalDeviceName* MIB variable within the four MIB branches would contain the same name, that of the physical IDC device.

The managed services are configured through the XFS registry and are fully described in the "Registry Configuration" section.

Devices, which have logical sub-devices, can also report the status of these sub-devices. For example, the Cash Units within the CDM and CIM classes are treated as sub-devices.

The solution provider vendors or third parties, using both the SNMP standard interface and the API defined in this document, can develop management applications for the XFS environment.
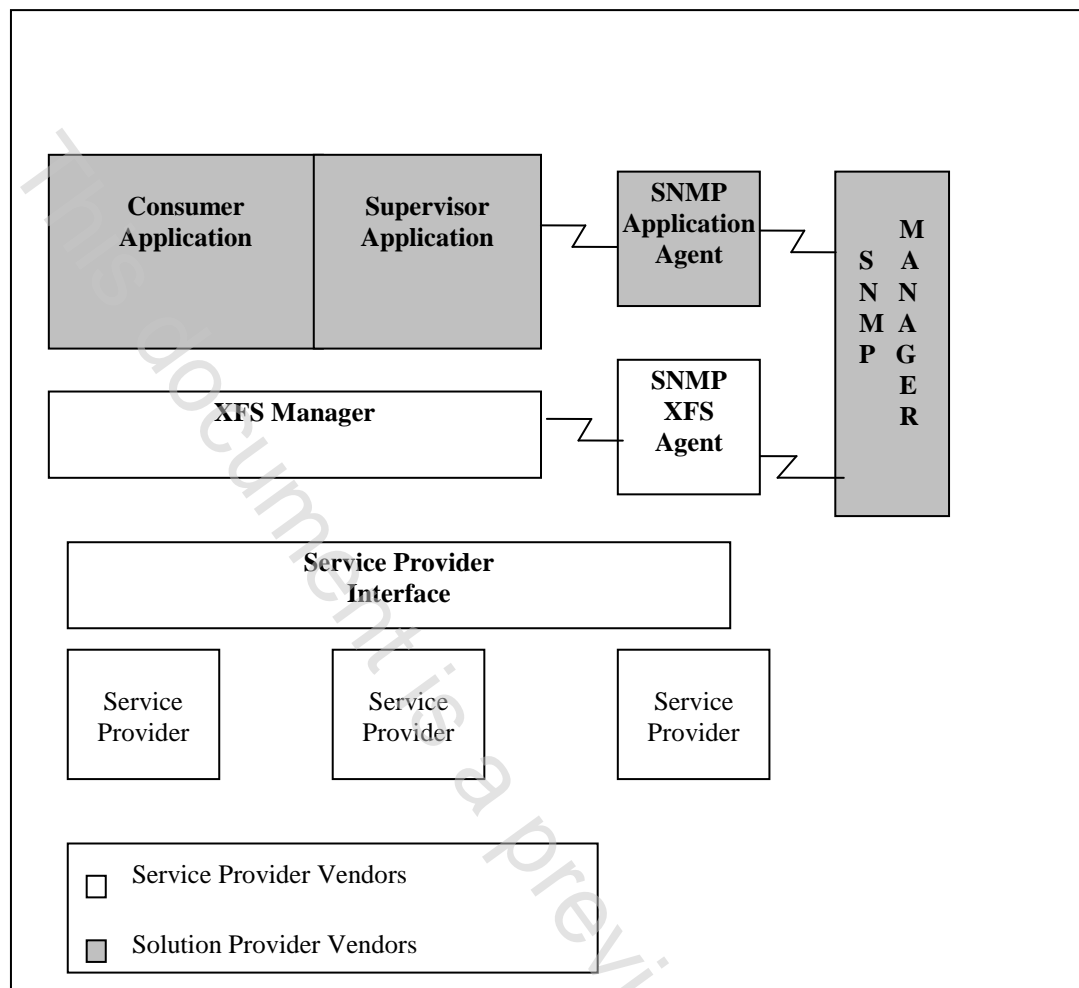
Management information is divided into general information and device class specific information. General information allows a management application to know the configuration of the installed managed services and associated physical devices. This information is stored in the XFS configuration registry using registry keys as described in the "Registry Configuration" section.

The XFS SNMP agent directly accesses general management information. Device specific information storage is vendor dependent.

The XFS SNMP agent can access device management information through the Service Provider Interface.

A basic feature of the SNMP agent is to be able to notify the remote manager application when an alarm condition occurs (traps). In order to generate traps, the SNMP agent should register for receiving all error and threshold condition notifications from all devices installed on a system. Devices notify error conditions, by the WFS_SYSE_DEVICE_STATUS, the WFS_SYSE_HARDWARE_ERROR and the WFS_SYSE_SOFTWARE_ERROR system events. Devices notify threshold conditions by the WFS_USRE_XXX_THRESHOLD user events. When the agent receives one of the above events, then a trap is generated. On version 1.0 of the MIB only the summary Device Status Change Trap is generated. On version 1.1 of the MIB and higher, both the summary and detailed Device Status change traps will be generated.