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Extensions for Financial Services (XFS) interface specification Release 3.10 - Part 40: XFS MIB Device Specific Definitions - Card Embossing Unit Device Class MIB 3.10

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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

Part 36: XFS MIB Device Specific Definitions - Text Terminal Unit Device Class MIB 3.10

Part 37: XFS MIB Device Specific Definitions - Sensors and Indicators Unit Device Class MIB 3.10

Part 38: XFS MIB Device Specific Definitions - Camera Device Class MIB 3.10

Part 39: XFS MIB Device Specific Definitions - Alarm Device Class MIB 3.10

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.

The formal process followed by the Workshop in the development of the CEN 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 the CEN Workshop Agreement or possible conflict with standards or legislation. This CEN Workshop Agreement can in no way be held as being an official standard developed by CEN and its members.

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 document provides the device specific MIB definition (Management Information Base) variables for the xfsCEU sub-tree version one, as foreseen by the *XFS MIB Architecture and SNMP Extensions Programmer's Reference* document. All the attributes in all the MIBs are Mandatory. In the case where a vendor's device does not support an attribute then a request for this unsupported attribute should return NULL.

The xfsCEU version one sub-tree is identified by:

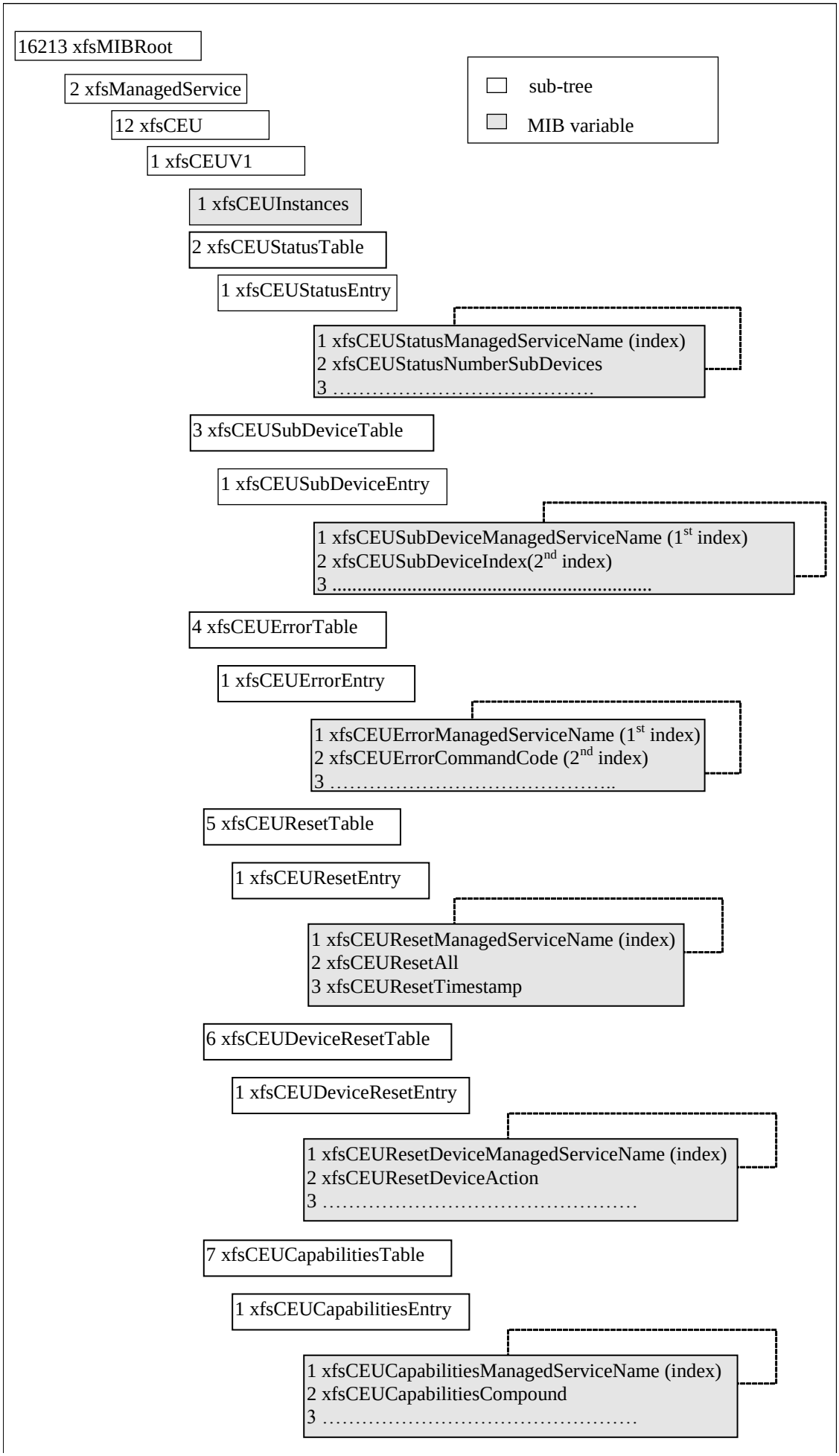
xfsMIBRoot

- xfsManagedService (2)
  - xfsCEU (12)
    - xfsCEUV1 (1)

The xfsCEUV1 sub-tree contains the following variables:

- *xfsCEUInstances(1)* is the number of physical devices for the CEU class installed on the XFS subsystem.
- *xfsCEUStatusTable(2)* identifies the table for the CEU variables.
- *xfsCEUSubDevicesTable(3)* not applicable to the CEU device.
- *xfsCEUErrorTable(4)* identifies the table for the CEU error counters.
- *xfsCEUResetTable(5)* identifies the table for the CEU reset variable.
- *xfsCEUResetDeviceTable(6)* identifies the table for the CEU reset device variables.
- *xfsCEUCapabilitiesTable(7)* identifies the table for the CEU capabilities variables.

The *XFS MIB Architecture and SNMP Extensions Programmer's Reference* document provides an overview of the MIB structure. The following picture shows the structure of the *xfsCEUV1* sub-tree.


16213 xfsMIBRoot
2 xfsManagedService
12 xfsCEU
1 xfsCEUV1
1 xfsCEUInstances
2 xfsCEUStatusTable
1 xfsCEUStatusEntry
1 xfsCEUStatusManagedServiceName (index)
2 xfsCEUStatusNumberSubDevices
3 ……
3 xfsCEUSubDeviceTable
1 xfsCEUSubDeviceEntry
1 xfsCEUSubDeviceManagedServiceName (1st index)
2 xfsCEUSubDeviceIndex(2nd index)
3 .....
4 xfsCEUErrorTable
1 xfsCEUErrorEntry
1 xfsCEUErrorManagedServiceName (1st index)
2 xfsCEUErrorCommandCode (2nd index)
3 ……..
5 xfsCEUResetTable
1 xfsCEUResetEntry
1 xfsCEUResetManagedServiceName (index)
2 xfsCEUResetAll
3 xfsCEUResetTimestamp
6 xfsCEUDeviceResetTable
1 xfsCEUDeviceResetEntry
1 xfsCEUResetDeviceManagedServiceName (index)
2 xfsCEUResetDeviceAction
3 ……
7 xfsCEUCapabilitiesTable
1 xfsCEUCapabilitiesEntry
1 xfsCEUCapabilitiesManagedServiceName (index)
2 xfsCEUCapabilitiesCompound
3 ……
sub-tree
MIB variable

Section 3 describes how the Status, Sub-Device, Error, Reset, Reset Device and Capabilities tables apply to the CEU device class.

2. XFS CEU MIB variables

This section describes the MIB variables for the tables of the CEU Class. All variables are 32-bit numerical fields. The description of the variables listed below includes, where it is meaningful, a reference to relevant data structures and commands defined inside the *Card Emboss Unit Device Class Interface Programmer's Reference.* The following are some general notes pertaining to the MIB variables:

- All command response counters maintained by the Service Provider are persistent across re-boots.
- One application command may trigger only one command-related counter to be updated.
- One application command may trigger one or multiple status variables to be updated.
- All command response counters are read-writable unless otherwise specified.
- Each managed service has a Reset table that allows all the response counters to be reset.
- Each managed service has a Reset Device table that allows the WFS_CMD_CEU_RESET command to be executed from the management station.

2.1 XFS CEU Status Table

The *xfsCEUStatusTable(2)* groups the variables identifying device status information, statistics and additional variables. It is indexed through a single parameter, *xfsCEUStatusManagedServiceName*. All device status variables are read-only.

Additional variables can be used to contain vendor-dependent variables. These variables do not start immediately after the standard variables in order to allow for expansion of the standard variables, the first additional variable can be added at position 1000.

xfsCEUStatusManagedServiceName is the instance identifier of the managed service and uniquely identifies one instance of the CEU class.

As an example, the identifier for the device status value of *xfsCEUStatusMedia(4)* for a device with managed service name equal to "CardEmbosser1" is as follows:

Character	C	a	r	d	E	m	b	o	s	s	e	r	1
ASCII Hex	43	61	72	64	45	6D	62	6F	73	73	65	72	31
ASCII Dec	67	97	114	100	69	109	98	111	115	115	101	114	49

NOTE SNMP OID representation of strings consists of a length field specifying the number of characters in the string followed by the ASCII code in decimal for each character in the string. Therefore the OID of the above example is:

xfsMIBRoot.2.12.1.2.1.4.13.67.97.114.100.69.109.98.111.115.115.101.114.49

2.1.1 xfsCEUStatusTable: States

The first three status variables are common across all device classes, the other variables are device class specific.

xfsCEUStatusManagedServiceName (1)
Uniquely identifies the managed service.

xfsCEUStatusNumberSubDevices (2)
Defines how many sub-devices the service has. This is always 0 (zero) in the CEU device class.

xfsCEUStatusDevice (3)
It contains the device state. It is a numeric type field. Allowed values are:

Value	Meaning
xfsDevOnline(1)	The device is present, powered on and online (i.e., operational, not busy processing a request and not in an error state).
xfsDevOffline(2)	The device is offline (e.g., the operator has taken the device offline by turning a switch or pulling out the device).
xfsDevPowerOff(3)	The device is powered off or physically not connected.

xfsDevNoDevice(4)	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.
xfsDevHWError(5)	The device is present but inoperable due to a hardware fault that prevents it from being used.
xfsDevUserError(6)	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_CEU_DEVONLINE) or a permanent error condition has occurred (WFS_CEU_DEVHWERROR).
xfsDevBusy(7)	The device is busy and unable to process an execute command at this time
xfsDevFraudAttempt(8)	The device is present but has detected a fraud attempt.

xfsCEUStatusMedia (4)

It contains the media state. It is a numeric type field. Allowed values are as follows:

Value	Meaning
xfsCEUMediaPresent(2)	Media is present in the device, not in the entering position and not jammed.
xfsCEUMediaNotPresent(3)	Media is not present in the device and not at the entering position.
xfsCEUMediaJammed(4)	Media is jammed in the device; operator intervention is required.
xfsCEUMediaNotSupported(5)	Capability to report media position is not supported by the device.
xfsCEUMediaUnknown(6)	The media state cannot be determined with the device in its current state (e.g., the value of *fwDevice* is WFS_CEU_DEVNODEVICE, WFS_CEU_DEVPOWEROFF, WFS_CEU_DEVOFFLINE, or WFS_CEU_DEVHWERROR).
xfsCEUMediaEntering(7)	Media is at the entry/exit slot.
xfsCEUMediaTopper(8)	Topper failure.
xfsCEUMediaInHopper(9)	Card is positioned in input bin.
xfsCEUMediaOutHopper(10)	Card is positioned in output bin.
xfsCEUMediaMsre(11)	Encoding failure.
xfsCEUMediaRetained(12)	Card is positioned in retain bin.
xfsCEUMediaRemoved(13)	Media has been removed.

xfsCEUStatusRetainBin (5)

It contains the state of the card embosser device retain bin. It is a numeric type field. Allowed values are as follows:

Value	Meaning
xfsCEURetainBinOK(2)	The retain bin is not full.
xfsCEURetainBinFull(3)	The retain bin is full.
xfsCEURetainBinHigh(4)	The retain bin is nearly full.
xfsCEURetainBinNotSupported(5)	The retain bin state cannot be reported.

xfsCEUStatusOutputBin (6)

It contains the state of the card embosser device output bin. It is a numeric type field. Allowed values are as follows:

Value	Meaning
xfsCEUOutputBinOK(2)	The output bin is not full.
xfsCEUOutputBinFull(3)	The output bin is full.
xfsCEUOutputBinHigh(4)	The output bin is nearly full.
xfsCEUOutputBinNotSupported(5)	The output bin state cannot be reported.

xfsCEUStatusInputBin (7)

It contains the state of the card embosser device input bin. It is a numeric type field. Allowed values are as follows:

Value	Meaning

xfsCEUInputBinOK(2)	The input bin is not full.
xfsCEUInputBinEmpty(3)	The input bin is empty.
xfsCEUInputBinLow(4)	The input bin is nearly empty.
xfsCEUInputBinNotSupported(5)	The input bin state cannot be reported.

xfsCEUStatusTotalCards (8)
It contains the total number of cards retained. It is a numeric type field. The total number of cards retained includes those in the retain bin, output bin and input bin.

xfsCEUStatusOutputCards (9)
It contains the total number of cards in the Ouput Bin. It is a numeric type field.

xfsCEUStatusRetainCards (10)
It contains the total number of cards in the Retain Bin. It is a numeric type field.

xfsCEUStatusDevicePosition (11)
It contains the device position. It is a numeric type field. Allowed values are as follows:

Value	Meaning
xfsCEUDeviceInPosition (1)	The device is in its normal operating position, or is fixed in place and cannot be moved.
xfsCEUDeviceNotInPosition (2)	The device has been removed from its normal operating position.
xfsCEUDevicePosUnknown (3)	Due to a hardware error or other condition, the position of the device cannot be determined.
xfsCEUDevicePosNotSupported (4)	The physical device does not have the capability of detecting the position.

xfsCEUStatusPowerSaveRecoveryTime (12)
It contains the actual number of seconds required by the device to resume its normal operational state from the current power saving mode. This value is zero if either the power saving mode has not been activated or no power save control is supported. It is a numeric type field.

xfsCEUStatusExtraStatus (100)
It contains vendor dependent additional device status information as an OCTET STRING. The information is returned as a series of "*key=value"* strings. Each string is null-terminated, with the final string terminating with two null characters. An empty list is indicated by two consecutive null characters.

2.2 XFS CEU Sub Device Table

The CEU service class does not support any sub-devices, therefore the *xfsCEUStatusNumberSubDevices* will be reported as zero. Sub-device tables are usually used to report sub-device status for Cash Units within a CDM or CIM device class.

2.3 XFS CEU Error Table

The *xfsCEUErrorTable(4)* provides access to all command response counters supported by a device class. The error table contains the set of counters for every combination of executable command and associated response that the Service Provider supports. The counters report the number of times that a response has been returned from a particular command since the counts were last reset. Selection of the required counter is made by specifying the managed service name, command code and response code through the following parameters:

xfsCEUErrorManagedServiceName
xfsCEUErrorCommandCode
xfsCEUErrorResponseCode

The *xfsCEUErrorTable* is defined as:

- *xfsCEUErrorManagedServiceName(1)* which provides the primary index to the service in question. It is Display String field. The *xfsCEUErrorManagedServiceName* parameter corresponds to the value of

xfsMIBRoot.xfsGeneral.xfsMIBV1.xfsManagedServiceTable.xfsManagedServiceEntry.xfsManagedServiceName in the general table. E.g. "CardEmbossingUnit1".

- *xfsCEUErrorCommandCode(2)* is an index which identifies the command code that that response code is related to. It is a 32 bit numerical field.
- *xfsCEUErrorResponseCode(3*) is an index which identifies the response code that the count is required for. It is the absolute value of the error code. It is a 32 bit numerical field.
- *xfsCEUErrorCount(4*) is the count of the number of times that a particular response code has been generated while executing a specific command, since they were last reset. It is a 32 bit numerical field.

All counter variables are read-write. Issue of a Set command on a specific counter with value *x* will result in the individual counter being set to value *x*.

As an example, the identifier for the error count value for the WFS_ERR_INTERNAL_ERROR (-15) error returned from the WFS_CMD_CEU_EMBOSS_CARD (1201) command for a device with managed service name equal to "CardEmbosser1" is as follows:

xfsMIBRoot.2.12.1.4.1.4.13.67.97.114.100.69.109.98.111.115.115.101.114.49.1201.15

2.4 XFS CEU Reset Table

The *xfsCEUResetTable(5)* contains the *xfsCEUResetAll* and *xfsCEUResetTimestamp* variables and is indexed by the single variable, *xfsCEUResetManagedServiceName*. When the *xfsCEUResetAll* variable is set to 0 (zero), all the counters in the error table for the managed service are reset to 0 (zero), all other values are ignored.

The *xfsCEUResetTable* is defined as:

- *xfsCEUResetManagedServiceName(1)* which provides the index to the service in question. It is Display String field. The *xfsCEUResetManagedServiceName* parameter corresponds to the value of *xfsMIBRoot.xfsGeneral.xfsMIBV1.xfsManagedServiceTable.xfsManagedServiceEntry.xfsManagedServiceName* in the general table. E.g. "CardEmbossingUnit1".
- *xfsCEUResetAll(2)* is a read-write variable. Issue of a Set command on the *xfsCEUResetAll* variable with value 0 (zero) will result in all counters for the managed service being reset to value 0 (zero). Any other value will be ignored. A query of the *xfsCEUResetAll* variable will return 0 (zero).
- *xfsCEUResetTimestamp(3)* is a read-only variable which represents the UTC date and time when the counters in the error table was reset, it is a Display String field. The data is formatted in the following way: "DD/MM/YYYY HH:MM:SS +ZZZ" where DD/MM/YYYY HH:MM:SS is the local date and time. ZZZ is the bias, which is the difference, in minutes, between Co-ordinated Universal Time (UTC) and local time.

As an example, all the error counts can be reset for a device with managed service name equal to "CardEmbosser1" by setting the value zero in the *xfsCEUResetAll* variable represented by:

xfsMIBRoot.2.12.1.5.1.2.13.67.97.114.100.69.109.98.111.115.115.101.114.49

2.5 XFS CEU Reset Device Table

The *xfsCEUResetDeviceTable(6)* is indexed by the single variable, *xfsCEUResetDeviceManagedServiceName*. This table contains variables which monitor and control the execution of the reset request.

The *xfsCEUResetDeviceAction* variable is used to initiate a reset. Setting this variable will cause the following to happen:

1. The SNMP agent will determine if a Device Reset is allowed by checking the *RemoteDeviceResetAllowed* configuration flag (see XFS Common Management Configuration section, within the *XFS MIB Architecture and SNMP Extensions Programmer's Reference* document). If it is not allowed then the flow continues with step 5, otherwise the flow continues with step 2.
2. Exclusive access to the device will be obtained.
3. A WFS_CMD_CEU_RESET command will be issued.

4. Exclusive access to the device will be relinquished when the WFS_CMD_CEU_RESET command completes.

   NOTE Exclusive access must be relinquished as soon as possible and implemented in such a way that deadlocks are avoided.

5. A *xfsCEUResetDeviceCompleteTrap* trap will be generated to report the result of the Device Reset request.

The *xfsCEUResetDeviceTable* is defined as:

- *xfsCEUResetDeviceManagedServiceName(1)* which provides the index to the service in question. It is a Display String field. The *xfsCEUResetDeviceManagedServiceName* parameter corresponds to the value of *xfsMIBRoot.xfsGeneral.xfsMIBV1.xfsManagedServiceTable.xfsManagedServiceEntry.xfsManagedServiceName* in the general table. E.g. "CardEmbosser1".
- *xfsCEUResetDeviceAction(2)* is a read-write variable. Issue of a Set command on the *xfsCEUResetDeviceAction* variable with value *executeReset(1)* will result in the device being reset as described above.
- *xfsCEUResetDeviceMediaControl(3)* is a read-only variable. This variable reports how media detected found in the device is handled. The value of the *xfsCEUResetDeviceMediaControl* variable is configured through the *ResetDeviceMediaControl* configuration setting (see Managed Service Configuration section, within the *XFS MIB Architecture and SNMP Extensions Programmer's Reference* document). If this value is not configured then the variable defaults to the *mediaDefault* value that indicates that the Service Provider is responsible for media control. The detailed device specific media control information, if any, (i.e.CEU bin to retract media to) is configured through local SNMP Agent configuration.
- *.xfsCEUResetDeviceStatus(4)* is a read only variable This variable can be used to check if a reset operation is still in progress. It is set when the reset is initiated and cleared when the reset command completes.

As an example, the device with managed service name equal to "CardEmbosser1" is reset by setting the *xfsCEUResetDeviceAction* variable represented by:

xfsMIBRoot.2.12.1.6.1.2.13.67.97.114.100.69.109.98.111.115.115.101.114.49

2.6 XFS CEU Capabilities Table

The *xfsCEUCapabilitiesTable(7)* groups the variables identifying device capabilities information and auxiliary variables. It is indexed through a single parameter, *xfsCEUCapabilitiesManagedServiceName*. All device capabilities variables are read-only.

Additional variables can be used to contain vendor-dependent variables. These variables do not start immediately after the standard variables in order to allow for expansion of the standard variables, the first additional variable can be added at position 1000.

xfsCEUCapabilitiesManagedServiceName is the instance identifier of the managed service and uniquely identifies one instance of the CEU class.
As an example, the identifier for the device capabilities value of *xfsCEUCapabilitiesCompound* (2) for a device with managed service name equal to "CardEmbosser1" is as follows:

Character	C	a	r	d	E	m	b	o	s	s	e	r	1
ASCII Hex	43	61	72	64	45	6D	62	6F	73	73	65	72	31
ASCII Dec	67	97	114	100	69	109	98	111	115	115	101	114	49

NOTE SNMP OID representation of strings consists of a length field specifying the number of characters in the string followed by the ASCII code in decimal for each character in the string. Therefore the OID of the above example is:

xfsMIBRoot.2.12.1.7.1.2.13.67.97.114.100.69.109.98.111.115.115.101.114.49

2.6.1 xfsCEUCapabilitiesTable: Capabilities

The first variable is common across all device classes, the other variables are device class specific.

xfsCEUCapabilitiesManagedServiceName (1)

Uniquely identifies the managed service.

xfsCEUCapabilitiesCompound (2)

Specifies if the logical device is part of a compound device in a TruthValue variable as follows:

Value	Meaning
True(1)	The device is a compound device.
False(2)	The device is not a compound device.

xfsCEUCapabilitiesCompareMagneticStripe (3)

Specifies whether the CEU has the capability of comparing magnetic stripe contents as a prerequisite for an encoding or embossing operation in a TruthValue variable as follows:

Value	Meaning
True(1)	The device can compare the contents of a magnetic stripe as a prerequisite for an encoding or embossing operation.
False(2)	The device cannot compare the contents of a magnetic stripe as a prerequisite for an encoding or embossing operation.

xfsCEUCapabilitiesMagneticStripeRead (4)

Specifies whether the CEU has magnetic stripe reading capability in a TruthValue variable as follows:

Value	Meaning
True(1)	The device can read magnetic stripes.
False(2)	The device cannot read magnetic stripes.

xfsCEUCapabilitiesMagneticStripeWrite (5)

Specifies whether the CEU has magnetic stripe writing capability in a TruthValue variable as follows:

Value	Meaning
True(1)	The device can write magnetic stripes.
False(2)	The device cannot write magnetic stripes.

xfsCEUCapabilitiesChipIO (6)

Specifies whether the CEU has smart card updating capability in a TruthValue variable as follows:

Value	Meaning
True(1)	The device can update smart cards.
False(2)	The device cannot update smart cards.

xfsCEUCapabilitiesChipProtocols (7)

Specifies the chip card protocols that are supported by the Service Provider. This field will be set to a combination of hex values according to the values in the following table (zero if none of the choices is supported):

Value	XFS Name	Meaning
0x0001	WFS_CEU_CHIPT0	The CEU card unit can handle the T=0 protocol.
0x0002	WFS_CEU_CHIPT1	The CEU card unit can handle the T=1 protocol.
0x0004	WFS_CEU_CHIPT2	The CEU card unit can handle the T=2 protocol.
0x0008	WFS_CEU_CHIPT3	The CEU card unit can handle the T=3 protocol.
0x0010	WFS_CEU_CHIPT4	The CEU card unit can handle the T=4 protocol.
0x0020	WFS_CEU_CHIPT5	The CEU card unit can handle the T=5 protocol.
0x0040	WFS_CEU_CHIPT6	The CEU card unit can handle the T=6 protocol.
0x0080	WFS_CEU_CHIPT7	The CEU card unit can handle the T=7 protocol.
0x0100	WFS_CEU_CHIPT8	The CEU card unit can handle the T=8 protocol.

0x0200	WFS_CEU_CHIPT9	The CEU card unit can handle the T=9 protocol.
0x0400	WFS_CEU_CHIPT10	The CEU card unit can handle the T=10 protocol.
0x0800	WFS_CEU_CHIPT11	The CEU card unit can handle the T=11 protocol.
0x1000	WFS_CEU_CHIPT12	The CEU card unit can handle the T=12 protocol.
0x2000	WFS_CEU_CHIPT13	The CEU card unit can handle the T=13 protocol.
0x4000	WFS_CEU_CHIPT14	The CEU card unit can handle the T=14 protocol.
0x8000	WFS_CEU_CHIPT15	The CEU card unit can handle the T=15 protocol.

xfsCEUCapabilitiesPowerSaveControl (8)

It contains the capability of the power saving control. It is a TruthValue type field. Allowed values are:

Value	Meaning
True(1)	Power saving is supported.
False(2)	Power saving is not supported.

xfsCEUCapabilitiesExtraCapability (100)

Contains vendor dependent additional device capability information as an OCTET STRING. The information is returned as a series of *"key=value"* strings. Each string is null-terminated, with the final string terminating with two null characters.

3. CEU Traps

The following sections define XFS Traps that are specific to the CEU device class.

3.1 CEU Detailed Device Status Change Trap

Status changes within managed services are reported as system events to the XFS Agent. The following section explicitly defines the format of the CEU Detailed Device Status Change trap. However, the format is split into two sections; the fields that are common to all device specific traps and the fields that are specific to each device class. The common fields are defined in the *XFS MIB Architecture and SNMP Extensions Programmer's Reference* document. The fields that are specific to the CEU reflect the CEU Status Table as defined in section 2.1.

The detailed device status change event is only generated when the top level status changes within a managed service, i.e. the trap is generated when the *fwDevice* value in the WFS_INF_CEU_STATUS response has changed. In addition, this trap is only generated on version 1.1 of the MIB and higher and is sent in addition to the summary device status change trap.

The SNMP Specific trap value 112 defines the trap as a CEU Detailed Device Status Change trap. In the following section, the numbers in parenthesis at the end of each binding just indicate the sequence of the variable bindings within the trap, they do not represent an OID value.

3.1.1 CEU Detailed Device Status Change Trap Format

The following defines the variable bindings included in the CEU Detailed Device Status Change Trap.

xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapSysName (1)
This variable binding contains the system generating the alarm, it is a Display String field. It corresponds to *lpszWorkstationName* in the device status change event data from the Service Provider.

xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapManagedServiceName (2)
This variable binding represents the managed service name generating the alarm, it is a Display String field. The agent derives this field from the device status change event.

xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapManagedServiceClass (3)
This variable binding represents the XFS service class identifier generating the alarm, it is a 32-bit integer (INT32). It corresponds to the class identifier for the class name. The class name is identified from the registry value HKEY_LOCAL_MACHINE\SOFTWARE\XFS\MANAGEMENT_PROVIDERS\<Managed*ServiceName*>\class. This ID matches the class OID branch number i.e. PTR=1, IDC=2, CDM=3, etc. See the *XFS MIB Architecture and SNMP Extensions Programmer's Reference* document for a complete list of these values.

xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapManagedServiceClassName (4)
This variable binding represents the XFS service class name generating the alarm, it is a Display String field. It corresponds to the three character representation of the XFS device class name, and it is useful for human interpretation of a trap. The class name is identified from the registry value HKEY_LOCAL_MACHINE\SOFTWARE\XFS\MANAGEMENT_PROVIDERS\<*ManagedServiceName*>\class.

xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapManagedServiceType (5)
This variable binding represents the XFS type identifier generating the alarm, it is a 32-bit integer (INT32). It is zero as this device class does not have a type.

xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapManagedServiceOid (6)
This variable binding represents the OID of the sub-tree within *xfsManagedService* defining the management information for this class of managed service. This variable, along with the managed service name as an index, prevents the need for additional querying to find the service specific MIB branch. The CEU MIB class is represented by .1.3.6.1.4.1.16213.2.12

xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapPhysicalDeviceName (7)
This variable binding represents the physical device name or names associated with the managed service generating the alarm, it is a Display String field. It corresponds to the physical device name or names identified by the managed service. The managed service name is used to identify the physical device name or

names, from registry value HKEY_LOCAL_MACHINE\SOFTWARE\XFS\MANAGEMENT_PROVIDERS\<*ManagedServiceName*>\PhysicalDeviceName. Multiple physical device names are comma separated.

xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapDeviceVendor (8)
This variable binding represents the XFS device vendor name of the device generating the alarm, it is a Display String field. It corresponds to the vendor name for the Service Provider. The Service Provider is identified from the managed service name and the registry value HKEY_LOCAL_MACHINE\SOFTWARE\XFS\MANAGEMENT_PROVIDERS\<*ManagedServiceName*>\ServiceProvider.
The Service Provider name is then used to identify the vendor, from the registry value HKEY_LOCAL_MACHINE\SOFTWARE\XFS\SERVICE_PROVIDERS\<*ServiceProviderName*>\vendor_name.

xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapMIBVersion (9)
This variable binding represents the XFS MIB version of the device generating the alarm, it is a Display String field. It corresponds to the XFS MIB version for the managed service. The managed service name is used to identify the XFS MIB version, from registry value HKEY_LOCAL_MACHINE\SOFTWARE\XFS\MANAGEMENT_PROVIDERS\<*ManagedServiceName*>\MibVersion.

xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapEvent (10)
In case of XFS this variable binding represents the XFS event generating the alarm, it is a 32-bit integer (INT32). It corresponds to u.dwEventID in the event data from the Service Provider. See the Application Programming Interface (API) - Service Provider Interface (SPI); Programmer's Reference for a complete description of the event structure.

xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapDate (11)
This variable represents the UTC and bias for local translation of the date and time when the event was generated. It is a Display String field. The data is formatted in the following way: "DD/MM/YYYY HH:MM:SS +ZZZ" where DD/MM/YYYY HH:MM:SS is the local date and time. ZZZ is the bias, which is the difference, in minutes, between Co-ordinated Universal Time (UTC) and local time.

xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapSPVersion (12)
This variable represents the vendor-defined version of the Service Provider generating the alarm, it is a Display String field. The Service Provider is identified from the managed service name and the registry value HKEY_LOCAL_MACHINE\SOFTWARE\XFS\MANAGEMENT_PROVIDERS\<*ManagedServiceName*>\ServiceProvider.
The Service Provider name is then used to identify the version, from the registry value HKEY_LOCAL_MACHINE\SOFTWARE\XFS\SERVICE_PROVIDERS\<*ServiceProviderName*>\version.

xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusDevice**.xfsCEUStatusManagedServiceName(13)
This variable binding represents the current state of the physical device managed by the service. It is a 32 bit integer (INT32).

xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusNumberSubDevices.**xfsCEUStatusManagedServiceName (14)
Defines how many sub-devices the service has. This is zero for this device class.

xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusMedia.**xfsCEUStatusManagedServiceName (15)
Specifies the media state. It is a numeric type field.

xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusRetainBin.**xfsCEUStatusManagedServiceName (16)
Specifies the state of the card embosser device retain bin. It is a numeric type field.

xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusOutputBin.**xfsCEUStatusManagedServiceName (17)
Specifies the state of the card embosser device output bin. It is a numeric type field.

xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusInputBin.**xfsCEUStatusManagedServiceName (18)

Specifies the state of the card embosser device input bin. It is a numeric type field.

xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusTotalCards.**xfsCEUStatusManagedServiceName (19)

Specifies the total number of cards retained. It is a numeric type field.

xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusOutputCards.**xfsCEUStatusManagedServiceName (20)

Specifies the total number of cards in the Output Bin. It is a numeric type field.

xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusRetainCards.**xfsCEUStatusManagedServiceName (21)

Specifies the total number of cards in the Retain Bin. It is a numeric type field.

xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusExtraStatus.**xfsCEUStatusManagedServiceName (22)

It contains the vendor dependent additional device status information as an OCTET STRING. The information is returned as a series of "key=value" strings. Each string is null-terminated, with the final string terminating with two null characters.

xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusDevicePosition**.xfsCEUStatusManagedServiceName (23)

Specifies the device position. It is a numeric type field.

xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusPowerSaveRecoveryTime**.xfsCEUStatusManagedServiceName (24)

Specifies the actual number of seconds required by the device to resume its normal operational state from the current power saving mode. It is a numeric type field.

3.1.2 CEU Detailed Device Status Change Trap: an example

As an example, the following variable binding list represents a detailed device status change trap (6, 112) that is generated for a CEU with a managed service name of “CardEmbosser1”. It reports that the device is in HARDWARE ERROR because media is jammed in the device.

xfsMIBRoot.3.1.3.1	(xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapSysName)
	“SST System 1”
xfsMIBRoot.3.1.3.2	(xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapManagedServiceName)
	“CardEmbosser1”
xfsMIBRoot.3.1.3.3	(xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapManagedServiceClass)
	12 (WFS_SERVICE_CLASS_CEU)
xfsMIBRoot.3.1.3.4	(xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapManagedServiceClassName)
	“CEU”
xfsMIBRoot.3.1.3.5	(xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapManagedServiceType)
	0
xfsMIBRoot.3.1.3.6	(xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapManagedServiceOid)
	“.1.3.6.1.4.1.16213.2.12”
xfsMIBRoot.3.1.3.7	(xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapPhysicalDeviceName)
	“Card Embosser 7424”

xfsMIBRoot.3.1.3.8	(xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapDeviceVendor)
	"CE Card Embossers Incorporated"
xfsMIBRoot.3.1.3.9	(xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapMIBVersion)
	"1.10"
xfsMIBRoot.3.1.3.10	(xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapEvent)
	4 (WFS_SYSE_DEVICE_STATUS)
xfsMIBRoot.3.1.3.11	(xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapDate)
	"20/03/2003 15:40:53 -300"
xfsMIBRoot.3.1.3.12	(xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapSPVersion)
	"1.23"
xfsMIBRoot.2.12.1.2.1.**3**.Index	(xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusDevice**.xfsCEUStatusManagedServiceName)
	5 (WFS_STAT_HWERROR)
xfsMIBRoot.2.12.1.2.1.**2**.Index	(xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusNumberSubDevices**.xfsCEUStatusManagedServiceName)
	0 (No sub device)
xfsMIBRoot.2.12.1.2.1.**4**.Index	(xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusMedia**.xfsCEUStatusManagedServiceName)
	4 (xfsCEUMediaJammed)
xfsMIBRoot.2.12.1.2.1.**5**.Index	(xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusRetainBin**.xfsCEUStatusManagedServiceName)
	2 (xfsCEURetainBinOK)
xfsMIBRoot.2.12.1.2.1.**6**.Index	(xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusOutputBin**.xfsCEUStatusManagedServiceName)
	2 (xfsCEUOutputBinOK)
xfsMIBRoot.2.12.1.2.1.**7**.Index	(xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusInputBin**.xfsCEUStatusManagedServiceName)
	2 (xfsCEUInputBinOK)
xfsMIBRoot.2.12.1.2.1.**8**.Index	(xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusTotalCards**.xfsCEUStatusManagedServiceName)
	5
xfsMIBRoot.2.12.1.2.1.**9**.Index	(xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusOutputCards**.xfsCEUStatusManagedServiceName)
	1
xfsMIBRoot.2.12.1.2.1.**10**.Index	(xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusRetainCards**.xfsCEUStatusManagedServiceName)
	4
xfsMIBRoot.2.12.1.2.1.**100**.Index	(xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusExtraStatus**.xfsCEUStatusManagedServiceName)
	'\0"\0' (No extra data)
xfsMIBRoot.2.12.1.2.1.**11**.Index	(xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusDevicePosition**.xfsCEUStatusManagedServiceName)
	1 (xfsCEUDeviceInPosition)
xfsMIBRoot.2.12.1.2.1.**12**.Index	(xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusPowerSaveRecoveryTime**.xfsCEUStatusManagedServiceName)
	3 (3 seconds to recover from power saving mode)

3.2 CEU Sub-Device Status Change Trap

The CEU does not currently support any sub-devices so the CEU Sub-Device Status Change Trap is not currently defined. The SNMP Specific trap value 212 is reserved in case a sub-device is ever added to the CEU device class.

3.3 CEU Reset Device Complete Trap

On the CEU device class this trap reports the completion of the reset device request and includes the status of the device at that point. If the reset has changed the status of the device then the Device Status Change and a Detail Device Status traps will also be generated.

The SNMP Specific trap value 312 defines the trap as a CEU Reset Device Complete trap.

3.3.1 CEU Reset Device Complete Trap Format

The following defines the variable bindings included in the CEU Reset Device Complete Trap. In the following section, the numbers in parenthesis at the end of each binding just indicate the sequence of the variable bindings within the trap, they do not represent an OID value.

xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapResetDeviceResult (1)
This variable binding contains a value indicating if the reset was executed, and if not provides a reason. It does not report the status of the device (i.e. the result of the reset), the current status of the device is reported within the **xfsCEUStatusDevice** binding (var bind 12 below).

xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapManagedServiceName (2)
This variable binding represents the managed service name generating the alarm, it is a Display String field. The agent derives this field from the device status change event.

xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapManagedServiceClass (3)
This variable binding represents the XFS service class identifier generating the alarm, it is a 32-bit integer (INT32). It corresponds to the class identifier for the class name. The class name is identified from the registry value HKEY_LOCAL_MACHINE\SOFTWARE\XFS\MANAGEMENT_PROVIDERS\<Managed*ServiceName*>\class. This ID matches the class OID branch number i.e. PTR=1, IDC=2, CDM=3, etc. See the *XFS MIB Architecture and SNMP Extensions Programmer's Reference* document for a complete list of these values.

xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapManagedServiceClassName (4)
This variable binding represents the XFS service class name generating the alarm, it is a Display String field. It corresponds to the three character representation of the XFS device class name, and it is useful for human interpretation of a trap. The class name is identified from the registry value HKEY_LOCAL_MACHINE\SOFTWARE\XFS\MANAGEMENT_PROVIDERS\<*ManagedServiceName*>\class.

xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapManagedServiceType (5)
This variable binding represents the XFS type identifier generating the alarm, it is a 32-bit integer (INT32). It is zero as this device class does not have a type.

xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapManagedServiceOid (6)
This variable binding represents the OID of the sub-tree within *xfsManagedService* defining the management information for this class of managed service. This variable, along with the managed service name as an index, prevents the need for additional querying to find the service specific MIB branch. The CEU MIB class is represented by .1.3.6.1.4.1.16213.2.12

xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapPhysicalDeviceName (7)
This variable binding represents the physical device name or names associated with the managed service generating the alarm, it is a Display String field. It corresponds to the physical device name or names identified by the managed service. The managed service name is used to identify the physical device name or names, from registry value

HKEY_LOCAL_MACHINE\SOFTWARE\XFS\MANAGEMENT_PROVIDERS\<*ManagedServiceName*>\PhysicalDeviceName. Multiple physical device names are comma separated.

xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapDeviceVendor (8)
This variable binding represents the XFS device vendor name of the device generating the alarm, it is a Display String field. It corresponds to the vendor name for the Service Provider. The Service Provider is identified from the managed service name and the registry value HKEY_LOCAL_MACHINE\SOFTWARE\XFS\MANAGEMENT_PROVIDERS\<*ManagedServiceName*>\ServiceProvider.
The Service Provider name is then used to identify the vendor, from the registry value HKEY_LOCAL_MACHINE\SOFTWARE\XFS\SERVICE_PROVIDERS\<*ServiceProviderName*>\vendor_name.

xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapMIBVersion (9)
This variable binding represents the XFS MIB version of the device generating the alarm, it is a Display String field. It corresponds to the XFS MIB version for the managed service. The managed service name is used to identify the XFS MIB version, from registry value HKEY_LOCAL_MACHINE\SOFTWARE\XFS\MANAGEMENT_PROVIDERS\<*ManagedServiceName*>\MibVersion.

xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapDate (10)
This variable represents the UTC and bias for local translation of the date and time when the event was generated. It is a Display String field. The data is formatted in the following way: "DD/MM/YYYY HH:MM:SS +ZZZ" where DD/MM/YYYY HH:MM:SS is the local date and time. ZZZ is the bias, which is the difference, in minutes, between Co-ordinated Universal Time (UTC) and local time.

xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapSPVersion (11)
This variable represents the vendor-defined version of the Service Provider generating the alarm, it is a Display String field. The Service Provider is identified from the managed service name and the registry value HKEY_LOCAL_MACHINE\SOFTWARE\XFS\MANAGEMENT_PROVIDERS\<*ManagedServiceName*>\ServiceProvider.
The Service Provider name is then used to identify the version, from the registry value HKEY_LOCAL_MACHINE\SOFTWARE\XFS\SERVICE_PROVIDERS\<*ServiceProviderName*>\version.

xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusDevice**.xfsCEUStatusManagedServiceName(12)
This variable binding represents the current state of the physical device managed by the service. It is a 32 bit integer (INT32).

xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusNumberSubDevices.**xfsCEUStatusManagedServiceName (13)
Defines how many sub-devices the service has. This is zero for this device class.

xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusMedia.**xfsCEUStatusManagedServiceName (14)
Specifies the media state. It is a numeric type field.

xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusRetainBin.**xfsCEUStatusManagedServiceName (15)
Specifies the state of the card embosser device retain bin. It is a numeric type field.

xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusOutputBin.**xfsCEUStatusManagedServiceName (16)
Specifies the state of the card embosser device output bin. It is a numeric type field.

xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusInputBin.**xfsCEUStatusManagedServiceName (17)
Specifies the state of the card embosser device input bin. It is a numeric type field.

xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusTotalCards.**xfsCEUStatusManagedServiceName (18)
Specifies the total number of cards retained. It is a numeric type field.

xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusOutputCards.**xfsCEUStatusManagedServiceName (19)
Specifies the total number of cards in the Output Bin. It is a numeric type field.

xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusRetainCards.**xfsCEUStatusManagedServiceName (20)

Specifies the total number of cards in the Retain Bin. It is a numeric type field.

xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusExtraStatus.**xfsCEUStatusManagedServiceName (21)

It contains the vendor dependent additional device status information as an OCTET STRING. The information is returned as a series of "key=value" strings. Each string is null-terminated, with the final string terminating with two null characters.

xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusDevicePosition**.xfsCEUStatusManagedServiceName (22)

Specifies the device position. It is a numeric type field.

xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusPowerSaveRecoveryTime**.xfsCEUStatusManagedServiceName (23)

Specifies the actual number of seconds required by the device to resume its normal operational state from the current power saving mode. It is a numeric type field.

3.3.2 CEU Reset Device Complete: an example

As an example, the following variable binding list represents a Reset Device Complete trap (6, 312) generated as a result of a request to reset the device from the remote management station. The device in question has a managed service name “CardEmbosser1”.

xfsMIBRoot.3.1.3.13	(xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapResetDeviceResult)
	0 (resetExecuted)
xfsMIBRoot.3.1.3.2	(xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapManagedServiceName)
	“CardEmbosser1”
xfsMIBRoot.3.1.3.3	(xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapManagedServiceClass)
	12 (WFS_SERVICE_CLASS_CEU)
xfsMIBRoot.3.1.3.4	(xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapManagedServiceClassName)
	“CEU”
xfsMIBRoot.3.1.3.5	(xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapManagedServiceType)
	0
xfsMIBRoot.3.1.3.6	(xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapManagedServiceOid)
	“.1.3.6.1.4.1.16213.2.12”
xfsMIBRoot.3.1.3.7	(xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapPhysicalDeviceName)
	“Card Embosser 7424”
xfsMIBRoot.3.1.3.8	(xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapDeviceVendor)
	“CE Card Embossers Incorporated”
xfsMIBRoot.3.1.3.9	(xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapMIBVersion)
	“1.10”
xfsMIBRoot.3.1.3.11	(xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapDate)
	“20/03/2003 15:40:53 -300”
xfsMIBRoot.3.1.3.12	(xfsMIBRoot.xfsTrap.xfsTrapV1.xfsCommonTrapVars.xfsCommonTrapSPVersion)
	“1.23”

xfsMIBRoot.2.12.1.2.1.**3**.Index	(xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusDevice**.xfsCEUStatusManagedServiceName)
	5 (WFS_STAT_ONLINE)
xfsMIBRoot.2.12.1.2.1.**2**.Index	(xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusNumberSubDevices**.xfsCEUStatusManagedServiceName)
	0 (No sub device)
xfsMIBRoot.2.12.1.2.1.**4**.Index	(xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusMedia**.xfsCEUStatusManagedServiceName)
	12 (xfsCEUMediaRetained)
xfsMIBRoot.2.12.1.2.1.**5**.Index	(xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusRetainBin**.xfsCEUStatusManagedServiceName)
	2 (xfsCEURetainBinOK)
xfsMIBRoot.2.12.1.2.1.**6**.Index	(xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusOutputBin**.xfsCEUStatusManagedServiceName)
	2 (xfsCEUOutputBinOK)
xfsMIBRoot.2.12.1.2.1.**7**.Index	(xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusInputBin**.xfsCEUStatusManagedServiceName)
	2 (xfsCEUInputBinOK)
xfsMIBRoot.2.12.1.2.1.**8**.Index	(xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusTotalCards**.xfsCEUStatusManagedServiceName)
	6
xfsMIBRoot.2.12.1.2.1.**9**.Index	(xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusOutputCards**.xfsCEUStatusManagedServiceName)
	1
xfsMIBRoot.2.12.1.2.1.**10**.Index	(xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusRetainCards**.xfsCEUStatusManagedServiceName)
	5
xfsMIBRoot.2.12.1.2.1.**100**.Index	(xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusExtraStatus**.xfsCEUStatusManagedServiceName)
	'\0"\0' (No extra data)
xfsMIBRoot.2.12.1.2.1.**11**.Index	(xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusDevicePosition**.xfsCEUStatusManagedServiceName)
	1 (xfsCEUDeviceInPosition)
xfsMIBRoot.2.12.1.2.1.**12**.Index	(xfsMIBRoot.xfsManagedService.xfsCEU.xfsCEUV1.xfsCEUStatusTable.xfsCEUStatusEntry.**xfsCEUStatusPowerSaveRecoverTimes**.xfsCEUStatusManagedServiceName)
	3 (3 seconds to recover from power saving mode)

4. Appendix A - CEU MIB sub-tree

The following paragraph contains the definition of the XFS CEU MIB sub-tree in ASN-1 format.

4.1 CEU MIB in SMIv2 and SMIv1 format


SMIv1_xfsCEU.mib


SMIv2_xfsCEU.mib

The following text is the content of xfsCEU.mib in SMIv2 format.

```
-- ****************************************************************
-- XFS MIB for CEU
-- Management Information Base for XFS CEU Device
--
-- The CEU Number is 12
-- The ASN.1 prefix to, and including the CEU is: 1.3.6.1.4.1.16213.2.12
--
-- ****************************************************************

  XFS-CEU-MIB DEFINITIONS ::= BEGIN

    IMPORTS
      Integer32, OBJECT-TYPE, OBJECT-IDENTITY, NOTIFICATION-TYPE
        FROM SNMPv2-SMI
      DisplayString, TruthValue
        FROM SNMPv2-TC
      xfsCEU, xfsTrap, IxfsMIBDeviceStatus
        FROM XFSMIB;


--
-- Type definitions
--

--  Type definitions
--
-- ****************************************************************
--   CEU #defines
-- ****************************************************************
    IxfsCEUMediaStatus ::= INTEGER
      {
      xfsCEUMediaPresent(2),
      xfsCEUMediaNotPresent(3),
      xfsCEUMediaJammed(4),
      xfsCEUMediaNotSupported(5),
      xfsCEUMediaUnknown(6),
      xfsCEUMediaEntering(7),
      xfsCEUMediaTopper(8),
      xfsCEUMediaInHopper(9),
      xfsCEUMediaOutHopper(10),
      xfsCEUMediaMsre(11),
      xfsCEUMediaRetained(12),
      xfsCEUMediaRemoved(13)
      }

    IxfsCEURetainBinStatus ::= INTEGER
      {
      xfsCEURetainBinOK(2),
      xfsCEURetainBinFull(3),
      xfsCEURetainBinHigh(4),
      xfsCEURetainBinNotSupported(5)
      }

    IxfsCEUOutputBinStatus ::= INTEGER
      {
      xfsCEUOutputBinOK(2),
      xfsCEUOutputBinFull(3),
      xfsCEUOutputBinHigh(4),
      xfsCEUOutputBinNotSupported(5)
      }
```

```
    IxfsCEUInputBinStatus ::= INTEGER
      {
      xfsCEUInputBinOK(2),
      xfsCEUInputBinEmpty(3),
      xfsCEUInputBinLow(4),
      xfsCEUInputBinNotSupported(5)
      }

    IxfsCEUDevicePositionStatus ::= INTEGER
      {
      xfsCEUDeviceInPosition(1),
      xfsCEUDeviceNotInPosition(2),
      xfsCEUDevicePosUnknown(3),
      xfsCEUDevicePosNotSupported(4)
      }



--
-- Node definitions
--

--  Node definitions
--
-- ********************************************************************
--   Version 1 of CEU MIB
--
--   The ASN.1 prefix to, and including the Version 1 of CEU is:
1.3.6.1.4.1.16213.2.12.1
--
-- ********************************************************************
    -- 1.3.6.1.4.1.16213.2.12.1
    xfsCEUV1 OBJECT IDENTIFIER ::= { xfsCEU 1 }


    -- 1.3.6.1.4.1.16213.2.12.1.1
    xfsCEUInstances OBJECT-TYPE
      SYNTAX Integer32
      MAX-ACCESS read-only
      STATUS current
      DESCRIPTION
        "Number that represents the number of CEU managed services."
      ::= { xfsCEUV1 1 }


-- ********************************************************************
-- CEU Device Status Table
-- ********************************************************************
    -- 1.3.6.1.4.1.16213.2.12.1.2
    xfsCEUStatusTable OBJECT-TYPE
      SYNTAX SEQUENCE OF XfsCEUStatusEntry
      MAX-ACCESS not-accessible
      STATUS current
      DESCRIPTION
        "Define the set of MIB Variables for the CEU status table."
      ::= { xfsCEUV1 2 }


    -- 1.3.6.1.4.1.16213.2.12.1.2.1
    xfsCEUStatusEntry OBJECT-TYPE
      SYNTAX XfsCEUStatusEntry
      MAX-ACCESS not-accessible
      STATUS current
      DESCRIPTION
        "CEU Device Status Table Entry."
      INDEX { xfsCEUStatusManagedServiceName }
      ::= { xfsCEUStatusTable 1 }


    XfsCEUStatusEntry ::=
      SEQUENCE {
        xfsCEUStatusManagedServiceName
          DisplayString,
        xfsCEUStatusNumberSubDevices
          Integer32,
```

```
      xfsCEUStatusDevice
        IxfsMIBDeviceStatus,
      xfsCEUStatusMedia
        IxfsCEUMediaStatus,
      xfsCEUStatusRetainBin
        IxfsCEURetainBinStatus,
      xfsCEUStatusOutputBin
        IxfsCEUOutputBinStatus,
      xfsCEUStatusInputBin
        IxfsCEUInputBinStatus,
      xfsCEUStatusTotalCards
        Integer32,
      xfsCEUStatusOutputCards
        Integer32,
      xfsCEUStatusRetainCards
        Integer32,
      xfsCEUStatusDevicePosition
        IxfsCEUDevicePositionStatus,
      xfsCEUStatusPowerSaveRecoveryTime
        Integer32,
      xfsCEUStatusExtraStatus
        OCTET STRING
     }

-- 1.3.6.1.4.1.16213.2.12.1.2.1.1
xfsCEUStatusManagedServiceName OBJECT-TYPE
  SYNTAX DisplayString
  MAX-ACCESS read-only
  STATUS current
  DESCRIPTION
    "Instance identifier of the managed service."
  ::= { xfsCEUStatusEntry 1 }


-- 1.3.6.1.4.1.16213.2.12.1.2.1.2
xfsCEUStatusNumberSubDevices OBJECT-TYPE
  SYNTAX Integer32
  MAX-ACCESS read-only
  STATUS current
  DESCRIPTION
    "Number of sub devices supported by the CEU device."
  ::= { xfsCEUStatusEntry 2 }


-- 1.3.6.1.4.1.16213.2.12.1.2.1.3
xfsCEUStatusDevice OBJECT-TYPE
  SYNTAX IxfsMIBDeviceStatus
  MAX-ACCESS read-only
  STATUS current
  DESCRIPTION
    "Device status."
  ::= { xfsCEUStatusEntry 3 }


-- 1.3.6.1.4.1.16213.2.12.1.2.1.4
xfsCEUStatusMedia OBJECT-TYPE
  SYNTAX IxfsCEUMediaStatus
  MAX-ACCESS read-only
  STATUS current
  DESCRIPTION
    "Media Status.
    xfsCEUMediaPresent(2),
    xfsCEUMediaNotPresent(3),
    xfsCEUMediaJammed(4),
    xfsCEUMediaNotSupported(5),
    xfsCEUMediaUnknown(6),
    xfsCEUMediaEntering(7),
    xfsCEUMediaTopper(8),
    xfsCEUMediaInHopper(9),
    xfsCEUMediaOutHopper(10),
    xfsCEUMediaMsre(11),
    xfsCEUMediaRetained(12),
    xfsCEUMediaRemoved(13)"
  ::= { xfsCEUStatusEntry 4 }
```

```
-- 1.3.6.1.4.1.16213.2.12.1.2.1.5
xfsCEUStatusRetainBin OBJECT-TYPE
  SYNTAX IxfsCEURetainBinStatus
  MAX-ACCESS read-only
  STATUS current
  DESCRIPTION
    "Contains the state of the ID card unit retain bin.
    xfsCEURetainBinOK(2),
    xfsCEURetainBinFull(3),
    xfsCEURetainBinHigh(4),
    xfsCEURetainBinNotSupported(5)"
  ::= { xfsCEUStatusEntry 5 }


-- 1.3.6.1.4.1.16213.2.12.1.2.1.6
xfsCEUStatusOutputBin OBJECT-TYPE
  SYNTAX IxfsCEUOutputBinStatus
  MAX-ACCESS read-only
  STATUS current
  DESCRIPTION
    "Contains the state of the ID card unit output bin.
    xfsCEUOutputBinOK(2),
    xfsCEUOutputBinFull(3),
    xfsCEUOutputBinHigh(4),
    xfsCEUOutputBinNotSupported(5)"
  ::= { xfsCEUStatusEntry 6 }


-- 1.3.6.1.4.1.16213.2.12.1.2.1.7
xfsCEUStatusInputBin OBJECT-TYPE
  SYNTAX IxfsCEUInputBinStatus
  MAX-ACCESS read-only
  STATUS current
  DESCRIPTION
    "Contains the state of the ID card unit input bin.
    xfsCEUInputBinOK(2),
    xfsCEUInputBinFull(3),
    xfsCEUInputBinHigh(4),
    xfsCEUInputBinNotSupported(5)"
  ::= { xfsCEUStatusEntry 7 }


-- 1.3.6.1.4.1.16213.2.12.1.2.1.8
xfsCEUStatusTotalCards OBJECT-TYPE
  SYNTAX Integer32
  MAX-ACCESS read-only
  STATUS current
  DESCRIPTION
    "Number of cards in the Retain, Output and Input bins."
  ::= { xfsCEUStatusEntry 8 }


-- 1.3.6.1.4.1.16213.2.12.1.2.1.9
xfsCEUStatusOutputCards OBJECT-TYPE
  SYNTAX Integer32
  MAX-ACCESS read-only
  STATUS current
  DESCRIPTION
    "Number of cards in the Output bin."
  ::= { xfsCEUStatusEntry 9 }


-- 1.3.6.1.4.1.16213.2.12.1.2.1.10
xfsCEUStatusRetainCards OBJECT-TYPE
  SYNTAX Integer32
  MAX-ACCESS read-only
  STATUS current
  DESCRIPTION
    "Number of cards in the Retain bin."
  ::= { xfsCEUStatusEntry 10 }


-- 1.3.6.1.4.1.16213.2.12.1.2.1.11
xfsCEUStatusDevicePosition OBJECT-TYPE
```

```
      SYNTAX IxfsCEUDevicePositionStatus
      MAX-ACCESS read-only
      STATUS current
      DESCRIPTION
        "Specifies the device position.
        xfsCEUDeviceInPosition(1),
        xfsCEUDeviceNotInPosition(2),
        xfsCEUDevicePosUnknown(3),
        xfsCEUDevicePosNotSupported(4)."
      ::= { xfsCEUStatusEntry 11 }


    -- 1.3.6.1.4.1.16213.2.12.1.2.1.12
    xfsCEUStatusPowerSaveRecoveryTime OBJECT-TYPE
      SYNTAX Integer32
      MAX-ACCESS read-only
      STATUS current
      DESCRIPTION
        "Specifies the actual number of seconds required by the device
        to resume its normal operational state from the current power saving
        mode. This value is zero if either the power saving mode has not been
        activated or no power save control is supported."
      ::= { xfsCEUStatusEntry 12 }


    -- 1.3.6.1.4.1.16213.2.12.1.2.1.100
    xfsCEUStatusExtraStatus OBJECT-TYPE
      SYNTAX OCTET STRING
      MAX-ACCESS read-only
      STATUS current
      DESCRIPTION
        "Vendor dependent additional device status information."
      ::= { xfsCEUStatusEntry 100 }


-- ********************************************************************
-- CEU Sub Device Status Table
--
-- Note that the CEU device does not currently have sub-devices. The
-- sub-device table is not required for this device and is shown as an
-- example for those devices that do support sub-devices.
--
-- Note, to ensure consistency across all MIB extensions OID 16213.2.12.1.3
-- must be reserved for the sub-device table.
-- ********************************************************************
    -- 1.3.6.1.4.1.16213.2.12.1.3
    xfsCEUSubDeviceTable OBJECT-TYPE
      SYNTAX SEQUENCE OF XfsCEUSubDeviceEntry
      MAX-ACCESS not-accessible
      STATUS current
      DESCRIPTION
        "Define the set of MIB Variables for the CEU Sub-Device Status Table."
      ::= { xfsCEUV1 3 }


    -- 1.3.6.1.4.1.16213.2.12.1.3.1
    xfsCEUSubDeviceEntry OBJECT-TYPE
      SYNTAX XfsCEUSubDeviceEntry
      MAX-ACCESS not-accessible
      STATUS current
      DESCRIPTION
        "CEU Sub-Device Status Table Entry."
      INDEX { xfsCEUSubDeviceManagedServiceName, xfsCEUSubDeviceIndex }
      ::= { xfsCEUSubDeviceTable 1 }


    XfsCEUSubDeviceEntry ::=
      SEQUENCE {
        xfsCEUSubDeviceManagedServiceName
          DisplayString,
        xfsCEUSubDeviceIndex
          INTEGER
       }

--   As an example if you want to add values to the sub-device table, add
```

```
-- entries as shown in the example below.
-- xfsCEUSubDeviceValue         INTEGER }
    -- 1.3.6.1.4.1.16213.2.12.1.3.1.1
    xfsCEUSubDeviceManagedServiceName OBJECT-TYPE
      SYNTAX DisplayString
      MAX-ACCESS read-only
      STATUS current
      DESCRIPTION
        "Instance identifier of the managed service."
      ::= { xfsCEUSubDeviceEntry 1 }


    -- 1.3.6.1.4.1.16213.2.12.1.3.1.2
    xfsCEUSubDeviceIndex OBJECT-TYPE
      SYNTAX INTEGER (1..65535)
      MAX-ACCESS read-only
      STATUS current
      DESCRIPTION
        "Index into the array of sub devices supported."
      ::= { xfsCEUSubDeviceEntry 2 }


--   As an example if you want to add values to the sub-device table, add
-- entries as shown in the example below.
-- xfsCEUSubDeviceValue   OBJECT-TYPE
-- SYNTAX     INTEGER
-- ACCESS     read-only
-- STATUS     mandatory
-- DESCRIPTION  "Returns the value of the sub device referenced by the index."
-- ::= {xfsCEUSubDeviceEntry 3}
-- ************************************************************************
-- CEU Error Table
-- ************************************************************************
    -- 1.3.6.1.4.1.16213.2.12.1.4
    xfsCEUErrorTable OBJECT-TYPE
      SYNTAX SEQUENCE OF XfsCEUErrorEntry
      MAX-ACCESS not-accessible
      STATUS current
      DESCRIPTION
        "Define the set of MIB Variables for the CEU Error Table."
      ::= { xfsCEUV1 4 }


    -- 1.3.6.1.4.1.16213.2.12.1.4.1
    xfsCEUErrorEntry OBJECT-TYPE
      SYNTAX XfsCEUErrorEntry
      MAX-ACCESS not-accessible
      STATUS current
      DESCRIPTION
        "CEU Error Table Entry."
      INDEX { xfsCEUErrorManagedServiceName, xfsCEUErrorCommandCode,
xfsCEUErrorResponseCode }
      ::= { xfsCEUErrorTable 1 }


    XfsCEUErrorEntry ::=
      SEQUENCE {
        xfsCEUErrorManagedServiceName
          DisplayString,
        xfsCEUErrorCommandCode
          INTEGER,
        xfsCEUErrorResponseCode
          INTEGER,
        xfsCEUErrorCount
          Integer32
       }

    -- 1.3.6.1.4.1.16213.2.12.1.4.1.1
    xfsCEUErrorManagedServiceName OBJECT-TYPE
      SYNTAX DisplayString
      MAX-ACCESS read-only
      STATUS current
      DESCRIPTION
        "Instance identifier of the managed service."
      ::= { xfsCEUErrorEntry 1 }
```

```
    -- 1.3.6.1.4.1.16213.2.12.1.4.1.2
    xfsCEUErrorCommandCode OBJECT-TYPE
      SYNTAX INTEGER (1201..1300)
      MAX-ACCESS read-only
      STATUS current
      DESCRIPTION
        "The executable command code supported by the Service
        Provider associated with the error count of interest."
      ::= { xfsCEUErrorEntry 2 }


    -- 1.3.6.1.4.1.16213.2.12.1.4.1.3
    xfsCEUErrorResponseCode OBJECT-TYPE
      SYNTAX INTEGER (0..99 | 1200..1299)
      MAX-ACCESS read-only
      STATUS current
      DESCRIPTION
        "The response code supported by Service Provider for the
        corresponding command code associated with the error count
        of interest."
      ::= { xfsCEUErrorEntry 3 }


    -- 1.3.6.1.4.1.16213.2.12.1.4.1.4
    xfsCEUErrorCount OBJECT-TYPE
      SYNTAX Integer32
      MAX-ACCESS read-write
      STATUS current
      DESCRIPTION
        "The counter value corresponding to the managed service,
        command code and response code."
      ::= { xfsCEUErrorEntry 4 }


-- ************************************************************************
-- CEU Reset Table
-- ************************************************************************
    -- 1.3.6.1.4.1.16213.2.12.1.5
    xfsCEUResetTable OBJECT-TYPE
      SYNTAX SEQUENCE OF XfsCEUResetEntry
      MAX-ACCESS not-accessible
      STATUS current
      DESCRIPTION
        "Defines the set of MIB Variables for the CEU Reset Table."
      ::= { xfsCEUV1 5 }


    -- 1.3.6.1.4.1.16213.2.12.1.5.1
    xfsCEUResetEntry OBJECT-TYPE
      SYNTAX XfsCEUResetEntry
      MAX-ACCESS not-accessible
      STATUS current
      DESCRIPTION
        "CEU Reset Table Entry."
      INDEX { xfsCEUResetManagedServiceName }
      ::= { xfsCEUResetTable 1 }


    XfsCEUResetEntry ::=
      SEQUENCE {
        xfsCEUResetManagedServiceName
          DisplayString,
        xfsCEUResetAll
          Integer32,
        xfsCEUResetTimestamp
          DisplayString
       }

    -- 1.3.6.1.4.1.16213.2.12.1.5.1.1
    xfsCEUResetManagedServiceName OBJECT-TYPE
      SYNTAX DisplayString
      MAX-ACCESS read-only
      STATUS current
```

```
      DESCRIPTION
        "Instance identifier of the managed service."
      ::= { xfsCEUResetEntry 1 }


    -- 1.3.6.1.4.1.16213.2.12.1.5.1.2
    xfsCEUResetAll OBJECT-TYPE
      SYNTAX Integer32
      MAX-ACCESS read-write
      STATUS current
      DESCRIPTION
        "Returns all counter values for this managed service to
        zero when set to zero and returns zero when read."
      ::= { xfsCEUResetEntry 2 }


    -- 1.3.6.1.4.1.16213.2.12.1.5.1.3
    xfsCEUResetTimestamp OBJECT-TYPE
      SYNTAX DisplayString
      MAX-ACCESS read-only
      STATUS current
      DESCRIPTION
        "Date and time the last reset of the counters was
        performed."
      ::= { xfsCEUResetEntry 3 }


--  ************************************************************************
-- CEU Reset Device Table
-- ************************************************************************
    -- 1.3.6.1.4.1.16213.2.12.1.6
    xfsCEUResetDeviceTable OBJECT-TYPE
      SYNTAX SEQUENCE OF XfsCEUResetDeviceEntry
      MAX-ACCESS not-accessible
      STATUS current
      DESCRIPTION
        "Define the set of MIB Variables for the CEU Reset Device Table."
      ::= { xfsCEUV1 6 }


    -- 1.3.6.1.4.1.16213.2.12.1.6.1
    xfsCEUResetDeviceEntry OBJECT-TYPE
      SYNTAX XfsCEUResetDeviceEntry
      MAX-ACCESS not-accessible
      STATUS current
      DESCRIPTION
        "CEU Reset Device Table Entry."
      INDEX { xfsCEUResetDeviceManagedServiceName }
      ::= { xfsCEUResetDeviceTable 1 }


    XfsCEUResetDeviceEntry ::=
      SEQUENCE {
        xfsCEUResetDeviceManagedServiceName
          DisplayString,
        xfsCEUResetDeviceAction
          INTEGER,
        xfsCEUResetDeviceMediaControl
          INTEGER,
        xfsCEUResetDeviceStatus
          INTEGER
       }

    -- 1.3.6.1.4.1.16213.2.12.1.6.1.1
    xfsCEUResetDeviceManagedServiceName OBJECT-TYPE
      SYNTAX DisplayString
      MAX-ACCESS read-only
      STATUS current
      DESCRIPTION
        "Instance identifier of the managed service."
      ::= { xfsCEUResetDeviceEntry 1 }


    -- 1.3.6.1.4.1.16213.2.12.1.6.1.2
    xfsCEUResetDeviceAction OBJECT-TYPE
```

```
      SYNTAX INTEGER { executeReset(1) }
      MAX-ACCESS read-write
      STATUS current
      DESCRIPTION
        "Variable that initiates the device reset"
      ::= { xfsCEUResetDeviceEntry 2 }


    -- 1.3.6.1.4.1.16213.2.12.1.6.1.3
    xfsCEUResetDeviceMediaControl OBJECT-TYPE
      SYNTAX INTEGER
        {
        mediaDefault(1),
        mediaIn(2),
        mediaOut(3),
        mediaNoAction(4)
        }
      MAX-ACCESS read-only
      STATUS current
      DESCRIPTION
        "Variable that reports the media handling during the device reset"
      ::= { xfsCEUResetDeviceEntry 3 }


    -- 1.3.6.1.4.1.16213.2.12.1.6.1.4
    xfsCEUResetDeviceStatus OBJECT-TYPE
      SYNTAX INTEGER
        {
        resetIdle(1),
        resetInProgress(2)
        }
      MAX-ACCESS read-only
      STATUS current
      DESCRIPTION
        "Variable that reports the progress of the device reset"
      ::= { xfsCEUResetDeviceEntry 4 }


--    ************************************************************************
-- CEU Device Capabilities Table
-- ************************************************************************
    -- 1.3.6.1.4.1.16213.2.12.1.7
    xfsCEUCapabilitiesTable OBJECT-TYPE
      SYNTAX SEQUENCE OF XfsCEUCapabilitiesEntry
      MAX-ACCESS not-accessible
      STATUS current
      DESCRIPTION
        "Define the set of MIB Variables for the CEU capabilities table."
      ::= { xfsCEUV1 7 }


    -- 1.3.6.1.4.1.16213.2.12.1.7.1
    xfsCEUCapabilitiesEntry OBJECT-TYPE
      SYNTAX XfsCEUCapabilitiesEntry
      MAX-ACCESS not-accessible
      STATUS current
      DESCRIPTION
        "CEU Device Capabilities Table Entry."
      INDEX { xfsCEUCapabilitiesManagedServiceName }
      ::= { xfsCEUCapabilitiesTable 1 }


    XfsCEUCapabilitiesEntry ::=
      SEQUENCE {
        xfsCEUCapabilitiesManagedServiceName
          DisplayString,
        xfsCEUCapabilitiesCompoundDevice
          TruthValue,
        xfsCEUCapabilitiesCompareMagneticStripe
          TruthValue,
        xfsCEUCapabilitiesMagneticStripeRead
          TruthValue,
        xfsCEUCapabilitiesMagneticStripeWrite
          TruthValue,
        xfsCEUCapabilitiesChipIO
```

```
      TruthValue,
    xfsCEUCapabilitiesChipProtocols
      Integer32,
    xfsCEUCapabilitiesPowerSaveControl
      TruthValue,
    xfsCEUCapabilitiesExtraCapability
      OCTET STRING
   }

-- 1.3.6.1.4.1.16213.2.12.1.7.1.1
xfsCEUCapabilitiesManagedServiceName OBJECT-TYPE
  SYNTAX DisplayString
  MAX-ACCESS read-only
  STATUS current
  DESCRIPTION
    "Instance identifier of the managed service."
  ::= { xfsCEUCapabilitiesEntry 1 }


-- 1.3.6.1.4.1.16213.2.12.1.7.1.2
xfsCEUCapabilitiesCompoundDevice OBJECT-TYPE
  SYNTAX TruthValue
  MAX-ACCESS read-only
  STATUS current
  DESCRIPTION
    "It specifies whether the logical device is part of a compound
    physical device. It is a TruthValue type field."
  ::= { xfsCEUCapabilitiesEntry 2 }


-- 1.3.6.1.4.1.16213.2.12.1.7.1.3
xfsCEUCapabilitiesCompareMagneticStripe OBJECT-TYPE
  SYNTAX TruthValue
  MAX-ACCESS read-only
  STATUS current
  DESCRIPTION
    "Specifies whether the CEU has the capability of comparing
    magnetic stripe contents as a prerequisite for an encoding
    or embossing operation in a TruthValue variable type field."
  ::= { xfsCEUCapabilitiesEntry 3 }


-- 1.3.6.1.4.1.16213.2.12.1.7.1.4
xfsCEUCapabilitiesMagneticStripeRead OBJECT-TYPE
  SYNTAX TruthValue
  MAX-ACCESS read-only
  STATUS current
  DESCRIPTION
    "Specifies whether the CEU has magnetic stripe reading
    capability in a TruthValue variable type field."
  ::= { xfsCEUCapabilitiesEntry 4 }


-- 1.3.6.1.4.1.16213.2.12.1.7.1.5
xfsCEUCapabilitiesMagneticStripeWrite OBJECT-TYPE
  SYNTAX TruthValue
  MAX-ACCESS read-only
  STATUS current
  DESCRIPTION
    "Specifies whether the CEU has magnetic stripe writing
    capability in a TruthValue variable type field."
  ::= { xfsCEUCapabilitiesEntry 5 }


-- 1.3.6.1.4.1.16213.2.12.1.7.1.6
xfsCEUCapabilitiesChipIO OBJECT-TYPE
  SYNTAX TruthValue
  MAX-ACCESS read-only
  STATUS current
  DESCRIPTION
    "Specifies whether the CEU has smart card updating
    capability in a TruthValue variable type field."
  ::= { xfsCEUCapabilitiesEntry 6 }
```

```
    -- 1.3.6.1.4.1.16213.2.12.1.7.1.7
    xfsCEUCapabilitiesChipProtocols OBJECT-TYPE
      SYNTAX Integer32
      MAX-ACCESS read-only
      STATUS current
      DESCRIPTION
        "Specifies the chip card protocols that are supported by the
        Service Provider."
      ::= { xfsCEUCapabilitiesEntry 7 }


    -- 1.3.6.1.4.1.16213.2.12.1.7.1.8
    xfsCEUCapabilitiesPowerSaveControl OBJECT-TYPE
      SYNTAX TruthValue
      MAX-ACCESS read-only
      STATUS current
      DESCRIPTION
        "Specifies whether or not power saving control is available
        in a TruthValue variable type field."
      ::= { xfsCEUCapabilitiesEntry 8 }


    -- 1.3.6.1.4.1.16213.2.12.1.7.1.100
    xfsCEUCapabilitiesExtraCapability OBJECT-TYPE
      SYNTAX OCTET STRING
      MAX-ACCESS read-only
      STATUS current
      DESCRIPTION
        "Vendor dependent additional device capabilities information."
      ::= { xfsCEUCapabilitiesEntry 100 }


    -- 1.3.6.1.4.1.16213.3.0
    xfsTrapV2 OBJECT-IDENTITY
      STATUS current
      DESCRIPTION
        "Root node for the converted TRAP-TYPEs."
      ::= { xfsTrap 0 }


--  ********************************************************************
-- Trap definitions
-- ********************************************************************
    -- 1.3.6.1.4.1.16213.3.0.112
    xfsCEUDetailedDSCTrap NOTIFICATION-TYPE
      OBJECTS { xfsCommonTrapSysName, xfsCommonTrapManagedServiceName,
xfsCommonTrapManagedServiceClass, xfsCommonTrapManagedServiceClassName,
xfsCommonTrapManagedServiceType,
        xfsCommonTrapManagedServiceOid, xfsCommonTrapPhysicalDeviceName,
xfsCommonTrapDeviceVendor, xfsCommonTrapMIBVersion, xfsCommonTrapEvent,
        xfsCommonTrapDate, xfsCommonTrapSPVersion, xfsCEUStatusDevice,
xfsCEUStatusNumberSubDevices, xfsCEUStatusMedia,
        xfsCEUStatusRetainBin, xfsCEUStatusOutputBin, xfsCEUStatusInputBin,
xfsCEUStatusTotalCards, xfsCEUStatusOutputCards,
        xfsCEUStatusRetainCards, xfsCEUStatusExtraStatus,
xfsCEUStatusDevicePosition, xfsCEUStatusPowerSaveRecoveryTime }
      STATUS current
      DESCRIPTION
        "This trap indicates a change in the status of a managed
        service."
      ::= { xfsTrapV2 112 }


    -- 1.3.6.1.4.1.16213.3.0.312
    xfsCEUResetDeviceCompleteTrap NOTIFICATION-TYPE
      OBJECTS { xfsCommonTrapResetDeviceResult, xfsCommonTrapManagedServiceName,
xfsCommonTrapManagedServiceClass, xfsCommonTrapManagedServiceClassName,
xfsCommonTrapManagedServiceType,
        xfsCommonTrapManagedServiceOid, xfsCommonTrapPhysicalDeviceName,
xfsCommonTrapDeviceVendor, xfsCommonTrapMIBVersion, xfsCommonTrapDate,
        xfsCommonTrapSPVersion, xfsCEUStatusDevice, xfsCEUStatusNumberSubDevices,
xfsCEUStatusMedia, xfsCEUStatusRetainBin,
        xfsCEUStatusOutputBin, xfsCEUStatusInputBin, xfsCEUStatusTotalCards,
xfsCEUStatusOutputCards, xfsCEUStatusRetainCards,
```

```
        xfsCEUStatusExtraStatus, xfsCEUStatusDevicePosition,
xfsCEUStatusPowerSaveRecoveryTime }
      STATUS current
      DESCRIPTION
        "This trap indicates the Reset action has complete and reports the
        state of the device after the reset."
      ::= { xfsTrapV2 312 }


  END

--
-- SMIv2_xfsCEU.mib
--
```

5. Appendix B - C-Header files

5.1 XFSMIBCEU.H

```
/******************************************************************************
*                                                                             *
* xfsmibceu.h      CEN/XFS - MIB CEU                                          *
*                                                                             *
*               Version 3.10  --  Dec 14, 2010                                *
*                                                                             *
******************************************************************************/

#ifndef __inc_xfsmibceu__h
#define __inc_xfsmibceu__h

#ifdef __cplusplus
extern "C" {
#endif


enum IxfsCEUMediaStatus
{
    xfsCEUMediaPresent                = 2,
    xfsCEUMediaNotPresent,
    xfsCEUMediaJammed,
    xfsCEUMediaNotSupported,
    xfsCEUMediaUnknown,
    xfsCEUMediaEntering,
    xfsCEUMediaTopper,
    xfsCEUMediaInHopper,
    xfsCEUMediaOutHopper,
    xfsCEUMediaMsre,
    xfsCEUMediaRetained,
    xfsCEUMediaRemoved

} xfsCEUMediaStatus;


enum IxfsCEURetainBinStatus
{
    xfsCEURetainBinOK                 = 2,
    xfsCEURetainBinFull,
    xfsCEURetainBinHigh,
    xfsCEURetainBinNotSupported

} xfsCEURetainBinStatus;

enum IxfsCEUOutputBinStatus
{
    xfsCEUOutputBinOK                 = 2,
    xfsCEUOutputBinFull,
    xfsCEUOutputBinHigh,
    xfsCEUOutputBinNotSupported

} xfsCEUOutputBinStatus;

enum IxfsCEUInputBinStatus
{
    xfsCEUInputBinOK                  = 2,
    xfsCEUInputBinEmpty,
    xfsCEUInputBinLow,
    xfsCEUInputBinNotSupported

} xfsCEUInputBinStatus;

enum IxfsCEUDevicePositionStatus
{
    xfsCEUDeviceInPosition            = 1,
    xfsCEUDeviceNotInPosition,
    xfsCEUDevicePosUnknown,
    xfsCEUDevicePosNotSupported
```

```
} xfsCEUDevicePositionStatus;


/******************************************************************************
*                                                                             *
*     MIB Variables for the Status Table                                      *
*                                                                             *
******************************************************************************/
#define    xfsCEUStatusManagedServiceName      (1)
#define    xfsCEUStatusNumberSubDevices        (2)
#define    xfsCEUStatusDevice                  (3)
#define    xfsCEUStatusMedia                   (4)
#define    xfsCEUStatusRetainBin               (5)
#define    xfsCEUStatusOutputBin               (6)
#define    xfsCEUStatusInputBin                (7)
#define    xfsCEUStatusTotalCards              (8)
#define    xfsCEUStatusOutputCards             (9)
#define    xfsCEUStatusRetainCards             (10)
#define    xfsCEUStatusDevicePosition          (11)
#define    xfsCEUStatusPowerSaveRecoveryTime   (12)
#define    xfsCEUStatusExtraStatus             (100)


/******************************************************************************
*                                                                             *
*     MIB Variables for the Error Table                                       *
*                                                                             *
******************************************************************************/
// Command codes and error codes correspond to the Service Provider definitions.


/******************************************************************************
*                                                                             *
*     MIB Variables for the Capabilities Table                                *
*                                                                             *
******************************************************************************/
#define    xfsCEUCapabilitiesManagedServiceName        (1)
#define    xfsCEUCapabilitiesCompoundDevice            (2)
#define    xfsCEUCapabilitiesCompareMagneticStripe     (3)
#define    xfsCEUCapabilitiesMagneticStripeRead        (4)
#define    xfsCEUCapabilitiesMagneticStripeWrite       (5)
#define    xfsCEUCapabilitiesChipIO                    (6)
#define    xfsCEUCapabilitiesChipProtocols             (7)
#define    xfsCEUCapabilitiesPowerSaveControl          (8)
#define    xfsCEUCapabilitiesExtraCapability           (9)


#ifdef __cplusplus
}       /*extern "C"*/
#endif

#endif  /* __inc_xfsmibceu__h */
```