

MFP PRINTER MIB ALERTS PROPOSAL

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Printer MIB Group Extensions:

Printer MIB extensions were previously defined in the Finisher and Image Counter MIBs. New extensions must be compatible with the Printer MIB plus the extensions.

From the Finisher MIB:

- 30. Finisher Device
- 31. Finisher Supply
- 32. Finisher Media Input
- 33. Finisher Device Attribute

From the Image Counter MIB:

- 40. Interface
- 50. Scanner

Proposed Additions for MFP Alerts:

- 51. Scanner Document Feeder
- 52. Scanner Image Sensor
- 53. Scanner Lamp
- 54. Scanner Image Format
- 55. Scanner Data Channel
- 56. Scanner Control Channel
- 57. Scanner Control Panel

Scanner Faults:

Definition of the possible set of faults will be used to determine if any new alert enumerations must be defined.

Scanner General (50):

- | | |
|---------------|---------------------------------------|
| Powered Off | subunitTurnedOff(21) / powerDown(504) |
| Off Line | subunitOffline(22) |
| General Error | other(1) |

Document Feeder (51):

- | | |
|------------------|-------------------------|
| Paper Feed Error | ? subunitPaperFeedError |
| Paper Jam | jam(8) |

Image Sensor (52):

- | | |
|-----------------------|---------------------------------|
| No Sensor Output | subunitUnrecoverableFailure(30) |
| Invalid Sensor Output | subunitRecoverableFailure(29) |

Lamp (53):

Lamp Failure (no output) [subunitLifeOver\(11\)](#)
 Lamp Missing [subunitMissing\(9\)](#) / [subunitRemoved\(26\)](#)

Image Format (54):

Data Channel (55):

Data Channel Failure [? subunitFailure](#)
 Diagnostic Failure [? subunitDiagnosticFailure](#)

Control Channel (56):

Control Channel Failure [? subunitFailure](#)
 Diagnostic Failure [? subunitDiagnosticFailure](#)

Control Panel (57):

Diagnostic Failure [? subunitDiagnosticFailure](#)

Scanner MIB Proposal:

A very small number of MIB objects is proposed for each scanner group. This provides a status indication and will allow for a description in the event of multiple instances a group. This MIB could be expanded at a later date to provide a complete Scanner MIB.

The following is presented as an outline, rather than in ASN.1 format, to provide a shorter and easier to understand presentation. Once there is an agreement on the need and content of the MIB, the ASN.1 can be easily generated.

Scanner General Group:

Scanner General Status

This object defines the functional status of the entire scanner device. Suggested values for this object are:

other(1)	busy(4)
unknown(2)	offline(5)
Idle(3)	fault(6)

Scanner General Description

This object provides a top level description of the scanner device.

Document Feeder Group: (Indexed Table)

Document Feeder Type

This object indicates the technology used by this feeder subunit. Suggested values for this object are:

other(1)	automaticFeed(3)
unknown(2)	flatbedManual(4)

Document Feeder Status

This object defines the functional status of the document feeder subunit. Suggested values for this object are:

other(1)	active(4)
unknown(2)	fault(5)
idle(3)	

Document Feeder Description

This object provides a description of the document feeder subunit.

Scanner Lamp Group: (Indexed Table)

Lamp Status

This object defines the functional status of the scanner lamp subunit. Suggested values for this object are:

other(1)	on(4)
unknown(2)	fault(5)
off(3)	missing(6)

Lamp Description

This object provides a description of the scanner lamp subunit.

Scanner Image Format Group: (Indexed Table)

Image Format Type

This object defines the encoding of the output image. Suggested values for this object are:

other(1)	mh(6)
unknown(2)	mr(7)
tiff(3)	mmr(8)
pdf(4)	jpeg(9)
runLength(5)	

Image Format Status ???

This object could be used to define which encoding is currently enabled. Suggested values:

other(1)	enabled(3)
unknown(2)	disabled(4)

Image Format Description ???

Not much value in this.

Scanner Data Channel Group: (Indexed Table)

Data Channel Status

This object defines the functional status of the scanner data channel subunit. Suggested values for this object are:

other(1)	active(4)
unknown(2)	fault(5)
idle(3)	disabled(6)

Data Channel Description

This object provides a description of the scanner data channel subunit.

Scanner Control Channel Group: (Indexed Table)

Control Channel Status

This object defines the functional status of the scanner control channel subunit. Suggested values for this object are:

other(1)	active(4)
unknown(2)	fault(5)
idle(3)	disabled(6)

Control Channel Description

This object provides a description of the scanner control channel subunit.

Scanner Control Panel Group: (Indexed Table)

Control Panel Status

This object defines the functional status of the scanner control panel subunit. Suggested values for this object are:

other(1)	fault(4)
unknown(2)	disabled(5)
operational(3)	

Control Panel Description

This object provides a description of the scanner control panel subunit.

MFP Model:

The following two scenarios are the most likely models for an MFP device. For these examples, the MFP contains one print engine and two scanner devices. This may not represent any current devices but it demonstrates how well each model scales.

1. Common hrDeviceIndex value

In this scenario, the printer and both scanners are indexed by the same value hrDeviceIndex. The scanner tables will require 3 indices.

hrDeviceIndex, scanner Index, and subunitIndex.

2. Unique hrDeviceIndex values

In this scenario, the printer and both scanners are indexed by the same value hrDeviceIndex. The scanner tables will require 2 indices.

hrDeviceIndex and subunitIndex.

A new hrDeviceType for scanner will be required for this scenario.

```
PrtAlertGroupTC ::= TEXTUAL-CONVENTION
-- Values in the range 1 to 29 must not be IANA-assigned without
-- re-publishing Printer MIB.
-- Values of 30 and greater are for use in MIBs that augment
-- the Printer MIB, such as the Finisher MIB.
-- This TC extracted from prtAlertGroup in RFC 1759.

STATUS      current
DESCRIPTION
    "The type of subunit within the printer model that this alert
    is related.  Input, output, and markers are examples of
    printer model groups, i.e., examples of types of subunits.
    Wherever possible, the enumerations match the sub-identifier
    that identifies the relevant table in the Printer MIB.

    NOTE: Alert type codes have been added for the Host Resources
    MIB storage table and device table.  These additional types
    are for situations in which the printer's storage and device
    objects must generate alerts (and possibly traps for critical
    alerts)."
```

```
SYNTAX      INTEGER {
    other(1),
    unknown(2),
-- Values for Host Resources MIB
    hostResourcesMIBStorageTable(3),
    hostResourcesMIBDeviceTable(4),
-- Values for Printer MIB
    generalPrinter(5),
    cover(6),
    localization(7),
    input(8),
    output(9),
    marker(10),
    markerSupplies(11),
    markerColorant(12),
    mediaPath(13),
    channel(14),
    interpreter(15),
    consoleDisplayBuffer(16),
    consoleLights(17),
    alert(18),
-- Values (5) to (29) reserved for Printer MIB
-- Values for Finisher MIB
    finDevice(30),
    finSupply(31),
    finSupplyMediaInput(32),
    finAttribute(33)
-- Values (30) to (39) reserved for Finisher MIB

NEW VALUES -->
}
```

PrtAlertCodeTC ::= TEXTUAL-CONVENTION

-- This TC was extracted from prtAlertCode in RFC 1759.

STATUS current

DESCRIPTION

"The code that describes the type of alert for this entry in the table. Binary change event alerts describe states of the subunit while unary change event alerts describe a single event. The same alert code can be used for a binary change event or a unary change event, depending on implementation. Also, the same alert code can be used to indicate a critical or non-critical (warning) alert, depending on implementation. The value of prtAlertSeverityLevel specifies binary vs. unary and critical vs. non-critical for each event for the implementation.

While there are some specific codes for many subunits, the generic codes should be used for most subunit alerts. The network management station can then query the subunit specified by prtAlertGroup to determine further subunit status and other subunit information.

An agent shall not add two entries to the alert table for the same event, one containing a generic event code and the other containing a specific event code; the agent shall add only one entry in the alert table for each event; either generic (preferred) or specific, not both.

Implementation of the unary change event alertRemovalOfBinaryChangeEvent(1801) is optional. When implemented, this alert code shall indicate to network management stations that the trailing edge of a binary change event has occurred and the corresponding alert entry has been removed from the alert table. As with all events, the alertRemovalOfBinaryChangeEvent(1801) alert shall be placed at the end of the alert table. Such an alert table entry shall specify the following information:

prtAlertSeverityLevel	warningUnaryChangeEvent(4)
prtAlertTrainingLevel	noInterventionRequired(7)
prtAlertGroup	alert(18)
prtAlertGroupIndex	the index of the row in the alert table of the binary change event that this event has removed.
prtAlertLocation	unknown (-2)
prtAlertCode	alertRemovalOfBinaryChangeEvent(1801)
prtAlertDescription	<description or null string>
prtAlertTime	the value of sysUpTime at the time of the removal of the binary change event from the alert table.

Optionally, the agent may generate a trap coincident with

removing the binary change event and placing the unary change event alertRemovalOfBinaryChangeEvent(1801) in the alert

table. For such a trap, the prtAlertIndex sent with the above trap parameters shall be the index of the alertRemovalOfBinaryChangeEvent row that was added to the prtAlertTable; not the index of the row that was removed from the prtAlertTable."

```
SYNTAX      INTEGER {
    other(1),
        -- an event that is not represented
        -- by one of the alert codes
        -- specified below.
    unknown(2),
        -- The following generic codes are common to
        -- multiple groups. The NMS may examine the
        -- prtAlertGroup object to determine what group
        -- to query for further information.
    coverOpen(3),
    coverClosed(4),
    interlockOpen(5),
    interlockClosed(6),
    configurationChange(7),
    jam(8),
    subunitMissing(9),           -- Not in RFC 1759
        -- The subunit tray, bin, etc.
        -- has been removed.
    subunitLifeAlmostOver(10),  -- Not in RFC 1759
    subunitLifeOver(11),       -- Not in RFC 1759
    subunitAlmostEmpty(12),    -- Not in RFC 1759
    subunitEmpty(13),          -- Not in RFC 1759
    subunitAlmostFull(14),     -- Not in RFC 1759
    subunitFull(15),           -- Not in RFC 1759
    subunitNearLimit(16),      -- Not in RFC 1759
    subunitAtLimit(17),        -- Not in RFC 1759
    subunitOpened(18),         -- Not in RFC 1759
    subunitClosed(19),         -- Not in RFC 1759
    subunitTurnedOn(20),       -- Not in RFC 1759
    subunitTurnedOff(21),      -- Not in RFC 1759
    subunitOffline(22),        -- Not in RFC 1759
    subunitPowerSaver(23),     -- Not in RFC 1759
    subunitWarmingUp(24),      -- Not in RFC 1759
    subunitAdded(25),          -- Not in RFC 1759
    subunitRemoved(26),        -- Not in RFC 1759
    subunitResourceAdded(27),  -- Not in RFC 1759
    subunitResourceRemoved(28), -- Not in RFC 1759
    subunitRecoverableFailure(29),
        -- Not in RFC 1759
    subunitUnrecoverableFailure(30),

        -- Not in RFC 1759
    subunitRecoverableStorageError(31),
        -- Not in RFC 1759
    subunitUnrecoverableStorageError(32),
        -- Not in RFC 1759
    subunitMotorFailure(33),   -- Not in RFC 1759
    subunitMemoryExhausted(34), -- Not in RFC 1759
    subunitUnderTemperature(35), -- Not in RFC 1759
    subunitOverTemperature(36), -- Not in RFC 1759
    subunitTimingFailure(37),  -- Not in RFC 1759
```

```
subunitThermistorFailure(38), -- Not in RFC 1759

-- General Printer group
doorOpen(501),      -- DEPRECATED
                   -- Use coverOpened(3)
doorClosed(502),   -- DEPRECATED
                   -- Use coverClosed(4)
powerUp(503),
powerDown(504),
printerNMSReset(505),      -- Not in RFC 1759
  -- The printer has been reset by some
  -- network management station(NMS)
  -- writing into 'prtGeneralReset'.
printerManualReset(506),  -- Not in RFC 1759
  -- The printer has been reset manually.
printerReadyToPrint(507), -- Not in RFC 1759
  -- The printer is ready to print. (i.e.,
  -- not warming up, not in power save
  -- state, not adjusting print quality,
  -- etc.).

-- Input Group
inputMediaTrayMissing(801),
inputMediaSizeChange(802),
inputMediaWeightChange(803),
inputMediaTypeChange(804),
inputMediaColorChange(805),
inputMediaFormPartsChange(806),
inputMediaSupplyLow(807),
inputMediaSupplyEmpty(808),
inputMediaChangeRequest(809), -- Not in RFC 1759
  -- An interpreter has detected that a
  -- different medium is need in this input
  -- tray subunit. The prtAlertDescription may
  -- be used to convey a human readable
  -- description of the medium required to
  -- satisfy the request.
inputManualInputRequest(810), -- Not in RFC 1759
  -- An interpreter has detected that manual
  -- input is required in this subunit. The
  -- prtAlertDescription may be used to convey
  -- a human readable description of the medium
  -- required to satisfy the request.
inputTrayPositionFailure(811), -- Not in RFC 1759
  -- The input tray failed to position correctly.
inputTrayElevationFailure(812),
  -- Not in RFC 1759
inputCannotFeedSizeSelected(813),
  -- Not in RFC 1759

-- Output Group
outputMediaTrayMissing(901),
outputMediaTrayAlmostFull(902),
outputMediaTrayFull(903),
outputMailboxSelectFailure(904),
  -- Not in RFC 1759

-- Marker group
```



```
markerFuserUnderTemperature(1001),
markerFuserOverTemperature(1002),
markerFuserTimingFailure(1003),
    -- Not in RFC 1759
markerFuserThermistorFailure(1004),
    -- Not in RFC 1759
markerAdjustingPrintQuality(1005),
    -- Not in RFC 1759
-- Marker Supplies group
markerTonerEmpty(1101),
markerInkEmpty(1102),
markerPrintRibbonEmpty(1103),
markerTonerAlmostEmpty(1104),
markerInkAlmostEmpty(1105),
markerPrintRibbonAlmostEmpty(1106),
markerWasteTonerReceptacleAlmostFull(1107),
markerWasteInkReceptacleAlmostFull(1108),
markerWasteTonerReceptacleFull(1109),
markerWasteInkReceptacleFull(1110),
markerOpcLifeAlmostOver(1111),
markerOpcLifeOver(1112),
markerDeveloperAlmostEmpty(1113),
markerDeveloperEmpty(1114),
markerTonerCartridgeMissing(1115),
    -- Not in RFC 1759
-- Media Path Device Group
mediaPathMediaTrayMissing(1301),
mediaPathMediaTrayAlmostFull(1302),
mediaPathMediaTrayFull(1303),
mediaPathCannotDuplexMediaSelected(1304),
    -- Not in RFC 1759
-- Interpreter Group
interpreterMemoryIncrease(1501),
interpreterMemoryDecrease(1502),
interpreterCartridgeAdded(1503),
interpreterCartridgeDeleted(1504),
interpreterResourceAdded(1505),
interpreterResourceDeleted(1506),
interpreterResourceUnavailable(1507),
interpreterComplexPageEncountered(1509),
    -- Not in RFC 1759
    -- The interpreter has encountered a page
    -- that is too complex for the resources that
    -- are available.
-- Alert Group
alertRemovalOfBinaryChangeEntry(1801)
    -- Not in RFC 1759
    -- A binary change event entry has been
    -- removed from the alert table. This unary
    -- change alert table entry is added to the
    -- end of the alert table.
}
```