Printer Management Interface

Management Object Summary

By

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Printer Component

To be supplied by DMTF to correspond to MIB II

DMTF MIF "Component ID: (From DMI Specification - Draft 4.2 - 12 January 1994)

1.	Manufacturer	String64	Name of the organization that produces this component.
2.	Product	String64	Name of this Printer
3.	Version	String64	
4.	Serial Number	String64	
5.	Installation	Date	Time and Date of the Last Installation
6.	Verify	Integer	Verification Level for this printer

"Asking for the 'Verify' attribute causes the component instrumentation code to perform checks to verify that the component is still in the system and working properly. It should return on of the following values:

Value	Meaning
0	An error occurred; Check status code
1	Component does not exist
2	Verify not supported
4	Component exists, functionally untested
5	Component exists, functionally unknown
6	Component exists, functionally no good
7	Component exists, functionally good

Printer Control Component Objects

prtControl	Mandatory			
Object Name	**Access**	**Type**	**Value**	**Description**
Status	Read-Only	Octet	PrinterStatus	Overall Printer Status
CounterUnits	Read-Only	Enum (1)	CounterUnits	Units that will be used to report counter values
LifeCount	Read-Only	Counter32		Life of printer counter in **CounterUnits**
PowerOnCount	Read-Only	Counter32		Number of units counted since power on in **CounterUnits**

Notes:

prtControl - Extended	Optional			
Object Name	**Access**	**Type**	**Value**	**Description**
Reset	Write-Only	Integer		Writing a 1 simulates a power cycle
ResetSpecial	Write-Only	Enum (3)	ResetType	Writing a 1 causes a special reset

Notes:

Input Component Objects - Mandatory

prtInput	Mandatory			
Object Name	**Access**	**Type**	**Value**	**Description**
DefaultID	Read-Write	Integer		ID of the Default Input Component

Notes:

prtInput	Mandatory		prtInputTable	
Object Name	**Access**	**Type**	**Value**	**Description**
ID	Read-Only	Integer32		Value used by the printer to identify associated input device
Type	Read-Only	Enum (2)	InputType	
DimUnits	Read-Only	Enum (1)	PhyMediaUnit	
CurDimAcrossFeedDir	Read-Write	Integer32		-1 = Other, -2 = Unknown
CurDimFeedDir	Read-Write	Integer32		-1 = Other, -2 = Unknown
CapacityUnit	Read-Only	Enum (1)	PhyMediaUnit	
MaxCapacity	Read-Write	Integer32		-1 = Other, -2 = Unknown
CurrentCapacity	Read-Write	Integer32		-1 = Other, -2 = Unknown
Status	Read-Only	Octet	CompStatus	Current Status of Input Device
MediaName	Read-Write	String		"Hillary's Presidential Letterhead"
MediaSize	Read-Write	Enum (1)	MediaSize	ISO, JIS & North American media size identifiers

Notes:

Input Component Objects - Optional

prtInput - TypeExtended	Optional		prtInputTabelAugment	
Object Name	**Access**	**Type**	**Value**	**Description**
Name	Read-Writer	String		Name assigned to this device
VendorName	Read-Only	String		
Model	Read-Only	String		
Version	Read-Only	String		
SerialNumber	Read-Only	String		
Description	Read-Only	String		
Security	Read-Write	Enum (2)	YesNo-OnOff	Indication if the Device has some security associated with it. **Note 1**

Notes:

1. Does there need to be an optional object that elaborates on the type of input security available?

prtInput - DimExtended	Optional		prtInputTableAugment	
Object Name	**Access**	**Type**	**Value**	**Description**
UnprintMarAcrossFeedDir	Read-Only	Integer32		-1 = Other, -2 = Unknown
UnprintMarFeedDir	Read-Only	Integer32		-1 = Other, -2 = Unknown
LeftMarginAcrossFeedDir	Read-Write	Integer32		-1 = Other, -2 = Unknown
RightMarginAcrossFeedDir	Read-Write	Integer32		-1 = Other, -2 = Unknown
TopMarginFeedDir	Read-Write	Integer32		-1 = Other, -2 = Unknown
BottomMarginFeedDir	Read-Write	Integer32		-1 = Other, -2 = Unknown

Note:

The left justified objects are currently defined. I propose that they be eliminated and the *italicized right* justified objects be added. The current object do not define which margins are being defined.

prtInput - MediaExtended	Optional		prtInputTableAugment	
Object Name	**Access**	**Type**	**Value**	**Description**
MediaDimUnits	Read-Only	Enum (2)	PhyMediaUnits	Units used in the dimensions of media
MediaDimAcrossFeedDir	Read-Write	Integer32		-1 = Other, -2 = Unknown
MediaDimFeedDir	Read-Write	Integer32		-1 = Other, -2 = Unknown
MediaWeight	Read-Write	Integer32	grams/meter^2	-1 = Other, -2 = Unknown
MediaType	Read-Write	String		ISO10175 (DPA) & ISO10180 (SPDL) Definitions
MediaColor	Read-Write	String		ISO10175 (DPA) & ISO10180 (SPDL) Definitions
MediaFormParts	Read-Write	Integer32		-1 = Other, -2 = Unknown

Notes:

Output Component Objects - Mandatory

prtOutput	Mandatory			
Object Name	**Access**	**Type**	**Value**	**Description**
DefaultID	Read-Write	Integer		ID of Default Output Device

Notes:

prtOutput	Mandatory		prtOutputTable	
Object Name	**Access**	**Type**	**Value**	**Description**
ID	Read-Only	Integer32		Value used by the printer to identify associated output device.
Type	Read-Only	Enum (2)	OutputType	
CapacityUnit	Read-Only	Enum (1)	PhyMediaUnit	
MaxCapacity	Read-Write	Integer32		-1 = Other, -2 = Unknown
CurrentCapacity	Read-Write	Integer32		-1 = Other, -2 = Unknown
Status	Read-Only	Octet	CompStatus	

Notes:

Output Component Objects - Optional

prtOutput - TypeExtended	Optional		prtOutputTableAugment	
Object Name	**Access**	**Type**	**Value**	**Description**
Name	Read-Writer	String		Name assigned to this Device
VendorName	Read-Only	String		
Model	Read-Only	String		
Version	Read-Only	String		
SerialNumber	Read-Only	String		
Description	Read-Only	String		
Security	Read-Write	Enum (2)	YesNo-OnOff	**Note 1, Note 2**

Notes:

1. I Propose that Device Security be moved from the Output Type Features subclass to be consistent with Input Device
2. Does there need to be an optional object that elaborates on the type of output security available?

prtOutput - DimExtended	Optional		prtOutputTableAugment	
Object Name	**Access**	**Type**	**Value**	**Description**
DimUnit	Read-Only	Enum (1)	PhyMediaUnit	
CurDimAcrossFeedDir	Read-Write	Integer32		-1 = Other, -2 = Unknown
CurDimFeedDir	Read-Write	Integer32		-1 = Other, -2 = Unknown
MaxDimAcrossFeedDir	Read-Write	Integer32		-1 = Other, -2 = Unknown
MaxDimFeedDir	Read-Write	Integer32		-1 = Other, -2 = Unknown
MinDimAcrossFeedDir	Read-Write	Integer32		-1 = Other, -2 = Unknown
MinDimFeedDir	Read-Write	Integer32		-1 = Other, -2 = Unknown

Notes:

prtOutput - Features	Optional		prtOutputTableAugment	
Object Name	**Access**	**Type**	**Value**	**Description**
StackingOrder	Read-Only	Enum (1)	StackingOrder	
Bursting	Read-Write	Enum (1)	YesNo-OnOff	
Decollating	Read-Write	Enum (1)	YesNo-OnOff	
PageCollated	Read-Write	Enum (1)	YesNo-OnOff	
Job Collated	Read-Write	Enum (1)	YesNo-OnOff	
OffsetStacking	Read-Write	Enum (1)	YesNo-OnOff	
Slipsheet	Read-Write	Enum (1)	YesNo-OnOff	
DeviceSecurity	Read-Only	Enum (1)	YesNo-OnOff	**Note1, Note 2**

Notes

1. I Propose that Device Security be moved to the Output Type Extened subclass to be consistent with Input Device
2. Does there need to be an optional object that elaborates on the type of output security available?

prtOutput - Associated Finisher	Optional		??	
Object Name	**Access**	**Type**	**Value**	**Description**
Stitching	Read-Only	String		
Folding	Read-Only	String		
Binding	Read-Only	String		
Punching	Read-Only	String		
Trimming	Read-Only	String		
Insertion	Read-Only	String		

Notes:

Finisher Component Objects - Optional

prtFinisher	Optional			
Object Name	**Access**	**Type**	**Value**	**Description**
DefaultID	Read-Write	Integer32		0 = Finisher Not Used in Default Configuration

Notes:

prtFinisher	Optional		prtFinisherTable	
Object Name	**Access**	**Type**	**Value**	**Description**
ID	Read-Only	String		**Note 1** Value used by the printer to identify associated finisher device.
Type	Read-Only	String		**Note 2**
NamedFinishing	Read-Only	String		**Note 3**
ConusmableUnit	Read-Only	String		**Note 4**
MaxConsumableCapacity	Read-Write	Integer32		**Note 4** -1 = Other, -2 = Unknown
CurrentConsumableCapacity	Read-Write	Integer32		**Note 4** -1 = Other, -2 = Unknown
Status	Read-Only	Octet	CompStat	Current Status of Device

Notes: Above definition came from Printer Management Objects

1. The ID object being a string is inconsistent with the rest of the objects. The ID should be an integer.
2. The Type object being a string is inconsistent with the rest of the objects. The Type should be an enumeration with the enumeration's being of the value defined in FinisherType Enumeration Table.
3. The NamedFinishing object being a string is inconsistent with other like objects. Should it be an Enumeration or a string?
4. This approach limits each finisher to one "Consumable" and no provision has not been made for "receptacles" or "containers" that contain waste materials such as produced by a hole punch. Also it is possible that a particular finisher may have "supplies" and "waste".

Marker Component Objects - Mandatory

prtMarker	Mandatory			
Object Name	**Access**	**Type**	**Value**	**Description**
DefaultID	Read-Write	Integer32		ID of Default Marker

Notes:

prtMarker	Mandatory		prtMarkerTable	
Object Name	**Access**	**Type**	**Value**	**Description**
ID	Read-Only	Integer32		Value used by the printer to identify associated marker device.
MarkTech	Read-Only	Enum (1)	MarkingTech	Type of Marking Technology used for this making device
ProcessColorant	Read-Only	Integer32		Number of Process Colors (-1 = Other, -2 = Unknown)
SpotColorant	Read-Only	Integer32		Number of Spot Colors (-1 = Other, -2 = Unknown)
AddressabilityUnit	Read-Only	Enum (1)	AdressabilityUnit	Resolution Unit
AddressabilityFeedDir	Read-Only	Integer32		Feed Resolution (-1 = Other, -2 = Unknown)
AddressabilityCrossFeedDir	Read-Only	Integer32		CrossFeed Resolution (-1 = Other, -2 = Unknown)
Status	Read-Only	Octet	CompStatus	Current Status of Marker Component

Notes:

prtMarkerColorant	Optional		prtMarkerColorantTable	
Object Name	**Access**	**Type**	**Value**	**Description**
MarkerID	Read-Only	Integer32		ID of Marker that this colorant entry is associated with.
Role	Read-Only	Enum (1)	ColoranRole	Role played by this colorant
Order	Read-Only	Integer		Ordinal number of this colorant in the order in which colorants are imaged onto the medium within its role.
Value	Read-Only	String	ColorantValue	Name of the color.

Notes:

Media Path Component Objects - Mandatory

prtMediaPath	Mandatory			
Object Name	**Access**	**Type**	**Value**	**Description**
MaxSpeedPrintUnit	Read-Only	Enum (1)	SpeedPrintUnit	Numerator units of print speed
MaxSpeedTimeUnit	Read-Only	Enum (1)	SpeedTimeUnit	Denominator units of print speed
MaxSpeed	Read-Only	Integer32		-1 = Other, -2 = Unknown
PhyMediaUnit	Read-Only	Enum (1)	PhyMediaUnit	Units of media size
MaxMediaFeedDir	Read-Only	Integer32		-1 = Other, -2 = Unknown
MaxMediaAcrossFeedDir	Read-Only	Integer32		-1 = Other, -2 = Unknown
MinMediaFeedDir	Read-Only	Integer32		-1 = Other, -2 = Unknown
MinMediaAcrossFeedDir	Read-Only	Integer32		-1 = Other, -2 = Unknown

Notes:

Media Path Device Component Objects - Optional

prtMediaPathDevice	Optional			
Object Name	**Access**	**Type**	**Value**	**Description**
DefaultID	Read-Write	Integer		ID of Default Device 0 = Media Path Device is Not Used in Default Configuration

Notes:

prtMediaPathDevice	Optional		prtMediaPathDeviceTable	
Object Name	**Access**	**Type**	**Value**	**Description**
ID	Read-Only	Integer		Value used by the printer to identify associated media path device.
Type	Read-Only	Enum ( )	MediaPathDeviceType	
Status	Read-Only	Octet	CompStatus	

Notes:

Operator Console Objects

prtOperatorConsole				
Object Name	**Access**	**Type**	**Value**	**Description**

Interpreter Component Objects - Mandatory

prtInterpreter	Mandatory			
Object Name	**Access**	**Type**	**Value**	**Description**
DefaultID	Read-Write	Integer	IntpLangFam	

Notes:

prtInterpreter	Mandatory		prtInterpreterTable	
Object Name	**Access**	**Type**	**Value**	**Description**
LangFamily	Read-Only	Integer	IntpLangFam	
LangLevel	Read-Only	String		
LangVersion	Read-Only	String		
Desciption	Read-Only	String		
Version	Read-Only	String		
FeedAddressability	Read-Only	Integer32		-1 = Other, -2 = Unknown
CrossFeedAddressability	Read-Only	Integer32		-1 = Other, -2 = Unknown
DefaultOrientation	Read-Write	Enum (2)	MediaOrientation	

Notes:

Critical Alerts Component Object - Mandatory

prtCriticalAlert	Mandatory		prtCriticalAlertTable	
Object Name	**Access**	**Type**	**Value**	**Description**
Index	Read-Only	Enum ( )		
SeverityLevel	Read-Only	Enum ( )		
InfoClass	Read-Only	Enum ( )		
Component	Read-Only	Enum ( )		
ComponentID	Read-Only	Integer		
ComponentLocation	Read-Only	Integer		
Code	Read-Only	Enum ( )		
Description	Read-Only	String		

Notes:

Critical Alerts Component Object - Mandatory

prtNonCriticalAlert	Mandatory		prtNonCriticalAlertTable	
Object Name	**Access**	**Type**	**Value**	**Description**
Index	Read-Only	Enum ( )		
SeverityLevel	Read-Only	Enum ( )		
InfoClass	Read-Only	Enum ( )		
Component	Read-Only	Enum ( )		
ComponentID	Read-Only	Integer		
ComponentLocation	Read-Only	Integer		
Code	Read-Only	Enum ( )		
Description	Read-Only	String		

Notes:

Component Status Octet

Printer Status

Bit	Meaning
0	NonCritical Alert Active
1	Critical Alert Active
2	On Request
3	Unavailable
4	Busy / Temporarily Unabailable
5	Line Status Bit 0
6	Line Status Bit 1

Bit 6	Bit 7	Meaning
0	0	On Line
0	1	Pending On Line
1	0	Pending Off Line
1	1	Off Line

Bit	Meaning
7	Not Used

Component Status

Bit	Meaning
0	NonCritical Alert Active
1	Critical Alert Active
2	On Request
3	Unavailable
4	Busy / Temporarily Unabailable
5	Not Used
6	Not Used
7	Not Used

PMI Enumerations - Units

Addressabililty Unit 1 Other 2 Unknown 3 Inches 4 Centimeters	**Physical Media Unit** 1 Other 2 Unknown 3 Inches 4 Millimeters 5 Sheets	**Counter Unit** 1 Other 2 Unknown 3 Characters 4 Lines 5 Impressions 6 Inches 7 Feet 8 Millimeters 9 Sheets 10 Seconds 11 Minutes 12 Hours
Speed Print Unit 1 Other 2 Unknown 3 Characters 4 Lines 5 Impressions 6 Inches 7 Feet 8 Millimeters 9 Meters 10 Sheets	**Speed Time Unit** 1 Other 2 Unknown 3 Seconds 4 Minutes 5 Hours	**Finisher Consumable Unit** 1 Other 2 Unknown

PMI Enumerations - Device Types

Input Type

1	Other
2	Unknown
3	Sheet-feed-auto-removable-tray
4	sheet-feed-auto-non removable tray
5	Sheet Feed Manual
6	continuous-roll
7	continuous-fan-fold

Output Type

1	Other
2	Unknown
3	Removable Bin
4	UnRemovable Bin
5	Continuous Roll Device
6	Mail Box

Media Path Device Type

1	Other
2	Unknown
3	Long Edge Binding
4	Short Edge Binding

Finisher Type

1	Other
2	Unknown
3	Stitching
4	Binding
5	Trimming
6	Die-cutting
7	Punching
8	Perforating
9	Slitting
10	Inserting
11	Covers
12	Folding

Interface Type

1	Other
2	Unknown
3	RS-232
4	IEEE1284 Parallel
5	Centronics Parallel
6	Local Talk
7	Network
8	SCSI
9	Coax
10	Twinax
11	Fax
12	IEEE 1394

Interpreter Language Family

1	Other
2	Unknown
3	PCL
4	HPGL
5	PJL
6	PostScript
7	PPDS
8	EscapeP
9	Epson
10	DDIF
11	Interpress
12	ISO6429
13	LinePrinter
14	MODCA
15	ReGIS
16	SCS
17	SPDL
18	Tek4014
19	PDS
20	IGP
21	Code-V
22	DSC-DSE
23	WPS
24	LN03
25	CCITT
26	QUIC

Marking Technology

1	Other
2	Unknown
3	Electophotographic:LED
4	Electrophotographic:Laser
5	Electrophotographic:Other
6	Impact:Moving_Head:Dot_Matrix:9pin
7	Impact:Moving_Head:Dot_Matrix:24pin
8	Impact:Moving_Head:Dot_Matrix:other
9	Impact:Moving_Head:Fully_Formed
10	Impact:band
11	Impact:other
12	Inkjet:Aqueous
13	Inkjet:Solid
14	Inkjet:Other
15	Pen
16	Thermal:Transfer
17	Thermal:Sensitive
18	Thermal:Diffusion
19	Thermal:Other
20	Electroerosion
21	Electrostatic
22	Photographic:Microfiche
23	Photographic:Imagesetter
24	Photographic:Other
25	Ion-deposition
26	E-beam
27	Typesetter

PMI Enumerations - Misc

Media Orientation 1 Other 2 Unknown 3 Portrait 4 Reverse Portrait 5 Landscape 6 Reverse Landscape	**Media Color** 1 Other 2 Unknown 3 White 4 Pink 5 Yellow 6 Buff 7 Goldenrod 8 Blue 9 Green 10 Transparent	**Line Status** 1 Other 2 Unknown 3 On Line 4 Pending On Line 5 Off Line 6 Pending Off Line
Named Finshing 1 Other 2 Unknown 3 Staple 4 Staple Top Left 5 Staple Bottom Left 6 Stable Top Right 7 Staple Bottom Right 8 Saddle Stitch 9 Edge Stitch 10 Punch 11 Cover 12 Bind	**MediaSize** 1. Other 2. Unknown 3. Use Dimensions not Enumeration 4. -- 5. --	**StackingOrder** 1. Other 2. Unknown 3. Face-Up 4. Face-Down
YesNo -OnOff 1. Other 2. Unknown 3. Yes - On 4. No - Off	**ResetType** 1. Other 2. Unknown 3. Reset NVRAM 4. Reset to Factory Defaults	
ColorantRole 1. Other 2. Unknown 3. Process 4. Spot	**ColorantValue - String** ASCII representation of the integer asociated with the folloing names. 1. Other 2. Unknown 3. White 4. Red 5. Green 6. Blue 7. Cyan 8. Magenta 9. Yellow 10. Black Additional names using ISO9070 naming convention.	

PMI Enumerations - Alert Codes

Security Level Alert Code

1 Other
2 Unknown
3 Critical
4 Severly Critical
5 Mild
6 Severly Mild

Alert Class Code

1 Other
2 Unknown
3 Management
4 Technical
5 Operator

Alert Component Code

1 Other
2 Unknown
3 Input
4 Output
5 Finisher
6 Media Path
7 Media Path Device
8 Marker
9 System Controller
10 Interface
11 Interpreter
12 Operator Console

Input Alert Code

1 Other
2 Unknown
3 Cover Open
4 Cover Closed
5 Interlock Open
6 Interlock Closed
7 Configuration Change
8 Jam
9 Media Tray Missing
10 Media Size Change
11 Media Weight Change
12 Media Type Change
13 Media Color Change
14 Media Form Parts Change
15 Media Supply Low
16 Media Supply Empty

Output Alert Code

1 Other
2 Unknown
3 Cover Open
4 Cover Closed
5 Interlock Open
6 Interlock Closed
7 Configuration Change
8 Jam
9 Media Tray Missing
10 Media Tray Almost Full
11 Media Tray Full

Marker Alert Code

1 Other
2 Unknown
3 Cover Open
4 Cover Closed
5 Interlock Open
6 Interlock Closed
7 Configuration Change
8 Jam
9 Toner Empty
10 Ink Empty
11 Print Ribbon Empty
12 Toner Almost Empty
13 Ink Almost Empty
14 Print Ribbon Almost Empty
15 Waste Toner Receptical Almost Full
16 Waste Ink Receptical Almost Full
17 Waste Toner Receptical Full
18 Waste Ink Receptical Ful
19 Fuser Under Temperature
20 Fuser Over Temperature
21 OPC LIfe Almost Over
22 OPC Life Over
23 Developer Almost Empty
24 Developer Empty

Media Path Alert Code

1 Other
2 Unknown
3 Cover Open
4 Cover Closed
5 Interlock Open
6 Interlock Closed
7 Configuration Change
8 Jam

Media Path Device Alert Code

1 Other
2 Unknown
3 Cover Open
4 Cover Closed
5 Interlock Open
6 Interlock Closed
7 Configuration Change
8 Jam
9 Media Tray Missing
10 Media Tray Almost Full
11 Media Tray Full

Finisher Alert Code

1 Other
2 Unknown
3 Cover Open
4 Cover Closed
5 Interlock Open
6 Interlock Closed
7 Configuration Change
8 Jam
9 Media Tray Missing
10 Supply Empty
11 Supply Low
12 Receptical Almost Full
13 Receptical Full

Interpreter Alert Code

1 Other
2 Unknown
3 Configuration Change
4 Memory Increase
5 Memory Decrease
6 Cartridge Added
7 Cartridge Deleted
8 Resource Added
9 Resource Deleted

Interface Alert Code

1 Other
2 Unknown
3 Configuration Change