

What SNMP Printer MIB objects should be carried forward to new CIM PrinterDevice class?																							
Last updated 20060921.1400 cdt RBL																							
SNMP Object Name	Consensus			Rick Landau			Harry Lewis			Ira McDonald			Bill Wagner			Craig Whittle			Peter Zehler			Comments	Ira's Comments
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C		
prtGeneral			0			0			0			0			0			0			0		
prtGeneralTable			0			0			0			0			0			0			0		
prtGeneralEntry			0			0			0			0			0			0			0		
prtGeneralConfigChanges		1			1			1		1				1		1				1		Semantically tricky if one of the components on which this is based is not represented in CIM.	Device event trigger [1]
prtGeneralCurrentLocalization	1			1			1			1			1			1			1			Already mapped [2]	
prtGeneralReset			1			1			1			1			1			1			1	Is this useful or just dangerous?	Bad command object [4]
prtGeneralCurrentOperator		1			1			1			1			1			1			1		Covered by MIB2:sysContact	
prtGeneralServicePerson	1				1		1			1				1			1			1		NMS trouble tickets [10]	
prtInputDefaultIndex	1			1			1			1				1			1			1		Defaults/Chaining [11]	
prtOutputDefaultIndex	1			1			1			1				1			1			1		Defaults/Chaining [11]	
prtMarkerDefaultIndex	1			1			1			1				1			1			1		Defaults/Chaining [11]	
prtMediaPathDefaultIndex	1			1			1			1				1			1			1		Defaults/Chaining [11]	
prtConsoleLocalization	1				1			1			1			1			1			1		Not likely to be managed remotely	Should be mapped [3]
prtConsoleNumberOfDisplayLines	1				1			1			1			1			1			1			
prtConsoleNumberOfDisplayChars	1				1			1			1			1			1			1			
prtConsoleDisable	1				1			1				1	1			1			1			must be implemented as CIM state accessible by RequestStateChange() method	Bad command object [4]
prtAuxiliarySheetStartupPage			1			1			1			1			1			1			1	Controlled by print service	Desirable [5]
prtAuxiliarySheetBannerPage			1			1			1			1			1			1			1	Desirable [5]	
prtGeneralPrinterName	1				1			1				1			1			1			1	Good idea, if different from sysName	Desirable [5]
prtGeneralSerialNumber	1				1			1				1			1			1			1	Often asked-for	Important [5]
prtAlertCriticalEvents	1				1		1			1				1			1			1		must capture counter semantics	Important [5]
prtAlertAllEvents		1			1			1		1				1		1				1		Important [5]	
prtCover			0			0			0			0			0			0			0		
prtCoverTable			0			0			0			0			0			0			0		
prtCoverEntry			0			0			0			0			0			0			0		
prtCoverIndex	1				0			0		1				0			0			0		Indices are Keys [6]	
prtCoverDescription	1				1			1		1				1			1			1		Description object [7]	
prtCoverStatus	1				1			1		1				1			1			1		Summary status for covers and trays may be sufficient.	Status object [8]
prtLocalization			0			0			0			0			0			0			0		
prtLocalizationTable			0			0			0			0			0			0			0		
prtLocalizationEntry			0			0			0			0			0			0			0		

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	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C				
prtLocalizationIndex	1		0			0			0			1			0			0			0				
prtLocalizationLanguage	1				1			1		1				1			1			1					Already mapped [2]
prtLocalizationCountry	1				1			1		1				1			1			1					Already mapped [2]
prtLocalizationCharacterSet	1				1			1		1				1			1			1					Already mapped [2]
prtStorageRefTable			0			0			0			0			0			0			0				
prtStorageRefEntry			0			0			0			0			0			0			0				
prtStorageRefSeqNumber			1			1			1			1			1			1			1				Office printers not multiple heads
prtStorageRefIndex			1			1			1			1			1			1			1				
prtDeviceRefTable			0			0			0			0			0			0			0				
prtDeviceRefEntry			0			0			0			0			0			0			0				
prtDeviceRefSeqNumber			1			1			1			1			1			1			1				Office printers not multiple heads
prtDeviceRefIndex			1			1			1			1			1			1			1				
prtInput			0			0			0			0			0			0			0				
prtInputTable			0			0			0			0			0			0			0				
prtInputEntry			0			0			0			0			0			0			0				
prtInputIndex	1					0			0	1					0			0			0				For all indices, the association must be preserved semantically, though it may be represented by an association class in CIM. Indices are Keys [6]
prtInputType	1				1			1		1			1			1			1		1				Types [16]
prtInputDimUnit	1				1			1		1			1			1			1		1				Units are needed [12]
prtInputMediaDimFeedDirDeclared	1				1			1		1			1			1			1		1				Dimensions/Limits [14]
prtInputMediaDimXFeedDirDeclared	1				1			1		1			1			1			1		1				Dimensions/Limits [14]
prtInputMediaDimFeedDirChosen			1			1			1			1			1			1			1				Only good for unusual sizes
prtInputMediaDimXFeedDirChosen			1			1			1			1			1			1			1				
prtInputCapacityUnit	1				1			1		1			1			1			1		1				Units are needed [12]
prtInputMaxCapacity	1				1			1		1			1			1			1		1				Status object [8]
prtInputCurrentLevel	1				1			1		1			1			1			1		1				Status object [8]
prtInputStatus	1				1			1		1			1			1			1		1				Status object [8]
prtInputMediaName	1				1			1		1			1			1			1		1				Names are Keys [13]
prtInputName	1				1			1		1			1			1			1		1				Names are Keys [13]
prtInputVendorName			1			1			1			1			1			1			1				Implied by sysDescr and hrPrinterDescr
prtInputModel			1			1			1			1			1			1			1				Same Model object [9]
prtInputVersion			1			1			1			1			1			1			1				Description object [7]
prtInputSerialNumber			1			1			1			1			1			1			1				Production printers maybe
prtInputDescription	1				1			1		1			1			1			1		1				Description object [7]
prtInputSecurity			1			1			1			1			1			1			1				Bad command object [4]
prtInputMediaWeight		1			1			1		1			1			1			1		1				Name, Type and Color are sufficient
prtInputMediaType	1				1			1		1			1			1			1		1				Types [16]
prtInputMediaColor	1				1			1		1			1			1			1	1	1				Description object [7]

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	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C		
prtInputMediaFormParts			1			1			1			1			1			1			1	Sheet-feed, not continuous forms	
prtInputMediaLoadTimeout			1			1			1			1			1			1			1		
prtInputNextIndex			1			1			1	1					1			1			1	Defaults/Chaining [11]	
prtOutput			0			0			0			0			0			0			0		
prtOutputTable			0			0			0			0			0			0			0		
prtOutputEntry			0			0			0			0			0			0			0		
prtOutputIndex	1					0			0	1					0			0			0	Indices are Keys [6]	
prtOutputType	1					1			1			1			1			1			1	Types [16]	
prtOutputCapacityUnit	1					1			1			1			1			1			1	Units are needed [12]	
prtOutputMaxCapacity	1					1			1			1			1			1			1	Status object [8]	
prtOutputRemainingCapacity	1					1			1			1			1			1			1	Status object [8]	
prtOutputStatus	1					1			1			1			1			1			1	Status object [8]	
prtOutputName	1					1			1			1			1			1			1	Names are Keys [13]	
prtOutputVendorName			1			1			1			1			1			1			1	1 Implied by sysDescr, no bolt-on attachments	
prtOutputModel			1			1			1	1					1	1					1	Model object [9]	
prtOutputVersion			1			1			1	1					1			1			1	Description object [7]	
prtOutputSerialNumber			1			1			1	1					1			1			1		
prtOutputDescription	1					1			1			1			1			1			1	Description object [7]	
prtOutputSecurity			1			1			1			1			1			1			1	Bad command object [4]	
prtOutputDimUnit			1		1				1	1					1	1					1	Units are needed [12]	
prtOutputMaxDimFeedDir			1		1				1	1					1	1					1	Dimensions/Limits [14]	
prtOutputMaxDimXFeedDir			1		1				1	1					1	1					1	Dimensions/Limits [14]	
prtOutputMinDimFeedDir			1		1				1	1					1	1					1	Dimensions/Limits [14]	
prtOutputMinDimXFeedDir			1		1				1	1					1	1					1	Dimensions/Limits [14]	
prtOutputStackingOrder		1				1			1		1				1	1				1		No face-up since LaserWriter	Order/Orientation [15]
prtOutputPageDeliveryOrientation		1				1			1		1				1	1					1	Order/Orientation [15]	
prtOutputBursting			1			1			1			1			1	1					1	No continuous forms	
prtOutputDecollating			1			1			1			1			1	1					1		
prtOutputPageCollated			1			1			1			1			1	1					1		
prtOutputOffsetStacking		1				1			1			1			1			1			1		
prtMarker			0			0			0			0			0			0			0		
prtMarkerTable			0			0			0			0			0			0			0		
prtMarkerEntry			0			0			0			0			0			0			0		
prtMarkerIndex	1					0			0	1					0			0			0	Indices are Keys [6]	
prtMarkerMarkTech	1					1	1					1			1	1					1		
prtMarkerCounterUnit	1					1			1			1			1			1			1	Units are needed [12]	
prtMarkerLifeCount	1					1			1			1			1			1			1	Status object [8]	
prtMarkerPowerOnCount		1				1			1			1			1			1			1	Status object [8]	
prtMarkerProcessColorants	1					1			1			1			1			1			1		
prtMarkerSpotColorants	1					1			1			1			1			1			1		
prtMarkerAddressabilityUnit		1				1			1	1					1			1			1	Units are needed [12]	

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	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C			
prtMarkerAddressabilityFeedDir		1			1				1	1				1		1					1	Dimensions/Limits [14]		
prtMarkerAddressabilityXFeedDir			1			1				1	1				1		1					1	Dimensions/Limits [14]	
prtMarkerNorthMargin					1				1			1				1			1			1		
prtMarkerSouthMargin					1				1			1				1			1			1		
prtMarkerWestMargin					1				1			1				1			1			1		
prtMarkerEastMargin					1				1			1				1			1			1		
prtMarkerStatus	1				1			1		1			1		1			1		1			Status object [8]	
prtMarkerSupplies			0			0			0			0			0			0		0		0		
prtMarkerSuppliesTable			0			0			0			0			0			0		0		0		
prtMarkerSuppliesEntry			0			0			0			0			0			0		0		0		
prtMarkerSuppliesIndex	1					0			0	1					0			0			0		Indices are Keys [6]	
prtMarkerSuppliesMarkerIndex	1				1			1			1				1			1			1		Indices are Keys [6]	
prtMarkerSuppliesColorantIndex	1				1			1			1				1			1			1		Indices are Keys [6]	
prtMarkerSuppliesClass	1					1			1			1				1			1		1		Types [16]	
prtMarkerSuppliesType	1				1			1			1				1			1		1		1	Types [16]	
prtMarkerSuppliesDescription	1				1			1			1				1			1		1		1	Description object [7]	
prtMarkerSuppliesSupplyUnit	1				1			1			1				1			1		1		1	Units are needed [12]	
prtMarkerSuppliesMaxCapacity	1				1			1			1				1			1		1		1	Status object [8]	
prtMarkerSuppliesLevel	1				1			1			1				1			1		1		1	Status object [8]	
prtMarkerColorant			0			0			0			0			0			0		0		0		
prtMarkerColorantTable			0			0			0			0			0			0		0		0		
prtMarkerColorantEntry			0			0			0			0			0			0		0		0		
prtMarkerColorantIndex	1					0			0	1					0			0			0		Indices are Keys [6]	
prtMarkerColorantMarkerIndex					1	1			1			1			1			1			1		Indices are Keys [6]	
prtMarkerColorantRole					1	1			1			1			1			1			1		Types [16]	
prtMarkerColorantValue	1				1			1			1				1			1			1		Description object [7]	
prtMarkerColorantTonality			1			1			1	1					1			1			1		Dimensions/Limits [14]	
prtMediaPath			0			0			0			0			0			0		0		0		
prtMediaPathTable			0			0			0			0			0			0		0		0		
prtMediaPathEntry			0			0			0			0			0			0		0		0		
prtMediaPathIndex	1					0			0	1					0			0			0		Indices are Keys [6]	
prtMediaPathMaxSpeedPrintUnit	1				1			1			1				1			1			1		Units are needed [12]	
prtMediaPathMediaSizeUnit	1				1			1		1					1			1			1		I prefer speed measured in ppm Units are needed [12]	
prtMediaPathMaxSpeed	1					1			1			1			1			1			1		Dimensions/Limits [14]	
prtMediaPathMaxMediaFeedDir	1				1			1		1					1			1			1		Dimensions/Limits [14]	
prtMediaPathMaxMediaXFeedDir	1				1			1		1					1			1			1		Dimensions/Limits [14]	
prtMediaPathMinMediaFeedDir	1				1			1		1					1			1			1		Dimensions/Limits [14]	
prtMediaPathMinMediaXFeedDir	1				1			1		1					1			1			1		Dimensions/Limits [14]	
prtMediaPathType	1				1			1		1					1			1			1		Types [16]	
prtMediaPathDescription	1				1			1		1					1			1			1		Description object [7]	
prtMediaPathStatus	1				1			1		1					1			1			1		Status object [8]	
prtChannel			0			0			0			0			0			0		0		0		

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	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C			
prtChannelTable			0			0			0			0			0			0			0			
prtChannelEntry			0			0			0			0			0			0			0			
prtChannelIndex	1					0			0	1					0			0			0			Indices are Keys [6]
prtChannelType	1			1			1			1			1			1			1			1		Types [16]
prtChannelProtocolVersion	1			1			1			1	1			1			1			1			1	Description object [7]
prtChannelCurrentJobCntLangIndex	1			1			1			1			1			1			1			1		Status object [8]
prtChannelDefaultPageDescLangIndex	1			1			1			1			1			1			1			1		Defaults/Chaining [11]
prtChannelState	1			1			1			1			1			1			1			1		Status object [8]
prtChannelIfIndex	1			1			1			1			1			1			1			1		Indices are Keys [6]
prtChannelStatus	1			1			1			1			1			1			1			1		Status object [8]
prtChannelInformation	1					1	1			1			1					1	1					Description object [7]
prtInterpreter			0			0			0			0			0			0			0			
prtInterpreterTable			0			0			0			0			0			0			0			
prtInterpreterEntry			0			0			0			0			0			0			0			
prtInterpreterIndex	1					0			0	1					0			0			0			Indices are Keys [6]
prtInterpreterLangFamily	1			1			1			1			1			1			1			1		Description object [7]
prtInterpreterLangLevel		1			1			1			1			1			1			1			1	Description object [7]
prtInterpreterLangVersion			1			1			1			1			1			1			1			Description object [7]
prtInterpreterDescription	1			1			1			1			1			1			1			1		specify ABNF, but beware localization Description object [7]
prtInterpreterVersion			1			1			1			1			1			1			1			Description object [7]
prtInterpreterDefaultOrientation			1			1			1	1			1			1			1			1		1 Ira may wish to reconsider this one. Defaults/Chaining [11]
prtInterpreterFeedAddressability		1			1			1		1			1			1			1		1			useful for MFD scanneres Dimensions/Limits [14]
prtInterpreterXFeedAddressability		1			1			1		1			1			1			1		1			Dimensions/Limits [14]
prtInterpreterDefaultCharSetIn		1			1			1	1				1			1			1			1		1 important for languages that don't have a clear default, e.g., plaintext and html. Defaults/Chaining [11]
prtInterpreterDefaultCharSetOut			1			1			1	1			1			1			1			1		Defaults/Chaining [11]
prtInterpreterTwoWay			1			1			1	1			1			1			1			1		Description object [7]
prtConsoleDisplayBuffer			0			0			0			0			0			0			0			
prtConsoleDisplayBufferTable			0			0			0			0			0			0			0			
prtConsoleDisplayBufferEntry			0			0			0			0			0			0			0			
prtConsoleDisplayBufferIndex	1					0			0	1					0			0			0			Indices are Keys [6]
prtConsoleDisplayBufferText	1			1			1			1			1			1			1			1		Status object [8]
prtConsoleLights			0			0			0			0			0			0			0			
prtConsoleLightTable			0			0			0			0			0			0			0			
prtConsoleLightEntry			0			0			0			0			0			0			0			
prtConsoleLightIndex	1					0			0	1			0			0			0			0		Indices are Keys [6]
prtConsoleOnTime		1			1				1		1			1			1			1			1	1 if these were writable, they would be more interesting. However this could be useful for a mgt ap to mimic the console appearance. Dimensions/Limits [14]

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	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C		
prtConsoleOffTime		1			1				1		1				1			1			1		Dimensions/Limits [14]
prtConsoleColor			1			1				1	1				1			1			1		Description object [7]
prtConsoleDescription	1					1				1	1				1			1			1		Description object [7]
prtAlert				0		0			0				0		0			0			0		
prtAlertTable				0		0			0				0		0			0			0		
prtAlertEntry				0		0			0				0		0			0			0		
prtAlertIndex						0			0	1					0			0			0		Indices are Keys [6]
prtAlertSeverityLevel	1				1			1			1			1			1			1			Status object [8]
prtAlertTrainingLevel		1				1			1			1			1			1			1		Status object [8]
prtAlertGroup	1				1			1			1			1			1			1			Description object [7]
prtAlertGroupIndex	1				1			1			1			1			1			1			Indices are Keys [6]
prtAlertLocation	1				1			1			1			1			1			1			Status object [8]
prtAlertCode	1				1			1			1			1			1			1			Status object [8]
prtAlertDescription	1				1			1			1			1			1			1			Description object [7]
prtAlertTime	1				1			1			1			1			1			1			Status object [8]
printerV1Alert				0		0			0				0		0			0			0		0 remove the NOTIFICATION-TYPE entries.
printerV2AlertPrefix				0		0			0				0		0			0			0		0 ditto
printerV2Alert				0		0			0				0		0			0			0		0 ditto
Total counts	94	20	41	70	28	45	66	19	58	113	21	22	65	24	54	69	35	38	64	24	55		
Total total			155			143			143			156			143			142			143		
Notes (Ira's Comments):																							
[1] WIMS Events.xsd defines REQUIRED 'DeviceConfigChanged' and IPP Notifications (RFC 3995) defines OPTIONAL 'PrinterConfigChanged'. Printer MIB v2 'PrtAlertCodeTC' defines 'configurationChange' trap _triggered_ by the change in 'prtGeneralConfigChanges' - this is NOT just "left over from SNMP polling" - a special mapping may be needed to restrict CIM property to other CIM-visible properties.																							
[2] 'prtGeneralCurrentLocalization' already mapped to 'CurrentCharset' and 'CurrentNaturalLanguage' - no work for Phase 2.																							
[3] WIMS Subunits.xsd defines REQUIRED 'ConsoleNaturalLanguage' for the 'Console' subunit (charset is fixed at UTF-8 for WIMS/PWG SM).																							
[4] 'prtGeneralReset', 'prtConsoleDisable', 'prtInputSecurity', and 'prtOutputSecurity' are bad read-write command objects! 'prtConsoleDisable' is especially dangerous (it can remotely lock the local device console - a terrible "feature").																							

SNMP Object Name	Consensus			Rick Landau			Harry Lewis			Ira McDonald			Bill Wagner			Craig Whittle			Peter Zehler			Comments	Ira's Comments
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C		
[5] With strong industry consensus all of these new general objects were added to Printer MIB v2 - they SHOULD NOT be left out of CIM.																							
[6] Index objects in the Printer MIB are _keys_ and REQUIRED in WIMS Subunits.xsd - implicit ordering (in an array) will fail because indices in Printer MIB tables are NOT required to be contiguous and frequenting have 'holes' in practice. Rick's comment on 'prtCoverIndex' confuses events and status (can be rolled) with device capabilities (lists of specific configuration). The lists of all basic subunits (Covers, Input, etc.) SHOULD be included in CIM.																							
[7] Description objects are REQUIRED and localized in the Printer MIB. Descriptions of all basic subunits (Covers, Input, etc.) SHOULD be included in CIM.																							
[8] Status objects are REQUIRED in Printer MIB and WIMS Subunits.xsd.																							
[9] Model objects are desirable in CIM. Ricks' comment that they're implied by 'sysDescr' and 'hrDeviceDescr' is incorrect - third parties manufacture stackers, bins, etc. for many laser printers.																							
[10] Existing NMS plug-ins write "trouble tickets" using the value of 'prtGeneralServicePerson' - this is useful remotely.																							
[11] Defaults (e.g., 'prtInputDefaultIndex') and input tray chaining (i.e., 'prtInputNextIndex') are important configuration elements.																							
[12] Units (e.g., 'prtInputDimUnit') are needed (unless the DMTF CIM mapping forces conversion to a fixed unit for the element).																							
[13] Name objects in the Printer MIB are alternate keys and RECOMMENDED in WIMS 'Subunits.xsd' - WIMS allows searching by id, name, or URI.																							
[14] Dimensions and limits (e.g., 'prtInputMediaDimFeedDirDeclared') are important configuration elements.																							
[15] 'prtOutputStackingOrder' and 'prtOutputPageDeliveryOrientation' are not as obsolete as Rick's note implies - Fuji Xerox currently makes some face-up and some face-down printer engines.																							
[16] Type objects (e.g., 'prtInputType' and 'prtMarkerMarkTech') are important machine-readable descriptive elements.																							