Comments on Printer Port Monitor MIB 1.0, Candidate Standard 5107.1-2005

The following observations are prompted by having observed some implementations. On reviewing the document, I discovered that some of what appeared to be inappropriate values could be justified by the standard. I suggest that some information, particularly in Section 4.2, could be lead to misunderstanding. There are also a few other areas that may be confusing.

Relationships to other MIBs

I believe that the values of certain MIB elements must be the same as elements in other MIBs, provided that these other MIBs are supported. It is understood that the intent was to encourage PPM MIB implementation even if no other MIBs are supported, while still ensuring reasonable coherence between the PPM MIB, the Printer MIB and the HR MIB, when these other MIBs are supported. The "relationships to other MIBs" section therefore hedges its statements or relationships with the conformance term "MAY" suggesting that the use of common values was optional where the PPM MIB definition itself should be read to indicated that the use of common values was mandatory, conditional upon the other MIB being supported. The PPM MIB Definition descriptions giving this conditionally mandatory requirement are themselves subject to misinterpretation by typically defining the value of the PPM object as "`zero if not specified`". This presumably means that the value must correspond to the value of the cited object in the reference MIB unless that MIB (or at least the cited object in that MIB) is not supported, in which case the value of the PPM object must be "zero".

Specific cases are:

1. 4.2.1 Relationship to IANA Printer MIB

> The PPM MIB defines the 'ppmPortProtocolType' object, which MAY contain a value from 'PrtChannelTypeTC' in the IANA Printer MIB ….

The ppmPortProtocolType description is:

> "The protocol type of this printer port, specified as a value from 'PrtChannelTypeTC' in the IANA Printer MIB (e.g.,

'chLPDServer(8) ' for LPR (RFC 1179) or 'chPort9100(11) ' for Raw), or zero if not specified…

Systems that implement any version of the IETF Printer MIB (RFC 1759/3805) SHOULD use the same value of protocol type for this port in the 'prtChannelTable', so monitoring applications MAY search for more channel information and status."

2. 4.2.3 Relationship to IETF Host Resources MIB

The PPM MIB defines the 'ppmPrinterHrDeviceIndex' object, which MAY contain a value of 'hrDeviceIndex' in the IETF Host Resources MIB [RFC1514] [RFC2790],

The MIB Defintion description states:

"The value of 'hrDeviceIndex' in the IETF Host Resources MIB (RFC 1514/2790), or zero if not specified.

3. 4.2.4 Relationship to IETF Printer MIB prtGeneralPrinterName

This is a little different. There seems confusion between section 4 and the MIB Definition on what the "MAY" applies to. The conditionally mandatory relation to the printer MIB V2 is here alluded to by saying that the "object corresponds to" the Printer MIB v2 object.

The PPM MIB defines the 'ppmPrinterName' object, which MAY contain a user-friendly printer name in the locale in 'ppmGeneralNaturalLanguage'. This object corresponds to the 'prtGeneralPrinterName' object defined in IETF Printer MIB v2 [RFC3805]

MIB read:

"A user friendly name for this printer that may be used to facilitate user selection of a printer supported by a network system, in the locale specified by 'ppmGeneralNaturalLanguage'. This printer name may contain non-ASCII characters that are NOT allowed in a URI (RFC 3986) without percent-encoding.

> Systems that implement the IETF Printer MIB v1 (RFC 1759) SHOULD implement this object as an augmentation to the Printer MIB v1.
>
> Systems that implement the IETF Printer MIB v2 (RFC 3805) MUST ensure that the value of this object is identical to the value of 'prtGeneralPrinterName' for each printer.

4. 4.2.4 Relationship to IETF Printer MIB prtChannelInformation

The relationship here is apparent.

> The PPM MIB defines the 'ppmPortName' object, which MAY contain a user-friendly port name in the locale in 'ppmGeneralNaturalLanguage'. This object MAY correspond to the 'prtChannelInformation' object defined in IETF Printer MIB v2 [RFC3805].

But the MIB reads:

> The value of this object SHOULD be set by an out-of-band method (e.g., local console) during installation (by the vendor or site administrator) and SHOULD NOT be subsequently modified, so that the value can be used as a static key for access to the port.

Mention of prtChannelInformation is only in the “Reference”. So the relationship is unclear.

5. 4.2.4 Relationship to Host Resources MIB hrDeviceIndex

> The PPM MIB defines the 'ppmPrinterHrDeviceIndex' object, which MAY contain a value of 'hrDeviceIndex' in the IETF Host Resources MIB [RFC1514] [RFC2790], for access to the IETF [RFC1759] [RFC3805] ('hrDeviceIndex' is the high-order index of all tables in the IETF Printer MIB).

The MIB description reads as follows:

> "The value of 'hrDeviceIndex' in the IETF Host Resources MIB (RFC 1514/2790), or zero if not specified.

5. 4.2.4 Relationship to Printer MIB prtChannelIndex

The PPM MIB defines the 'ppmPortPrtChannelIndex' object, which MAY contain a value of 'prtChannelIndex' in the IETF Printer MIB [RFC1759] [RFC3805], to be used for status queries in the IETF Printer MIB for each port.

The MIB description says:

```
"The value of 'prtChannelIndex' in IETF Printer MIB

(RFC 1759/3805) that corresponds to this printer port, or
zero if not specified.
```

6. 4.2.5 Relationship to IETF Interfaces Group MIB

The PPM MIB defines the 'ppmPortPrtChannelIndex' object, which MAY contain a value of 'prtChannelIndex' in the IETF Printer MIB [RFC1759] [RFC3805] and may be used to find a value of 'prtChannelIfIndex' for physical interface status queries for each port.

The MIB description says:

```
"The value of 'prtChannelIndex' in IETF Printer MIB (RFC
1759/3805) that corresponds to this printer port, or zero if
not specified.
```

Other Issues

1. 4.2.3 Relationship to IETF Host Resources MIB

The PPM MIB defines the 'ppmPrinterSnmpStatusQueryEnabled' object, to enable or disable SNMP status queries by port monitor applications.

This suggests that the MIB allows the value of this object to be set. I suggest

The PPM MIB defines the 'ppmPrinterSnmpStatusQueryEnabled' object, which indicates whether SNMP status queries by port monitor applications are enabled or disabled.

2. ppmGeneralNumberOfPorts

This is defined as:

> "The number of printer ports supported on this network system, i.e., the number of entries in the 'ppmPortTable' below, or zero if no printer ports are currently configured."

This implies that ALL ports must be listed. Generally, I have seen just a few select ports listed. The same comment applies to ppmPrinterNumberOfPorts.

Questions

1. ppmPortServiceNameOrURI

   All protocols, but IPP in particular allow a variety of URI forms, and port variations; e.g,

   http://192.168.1.102/ipp
   http://DNSNAME.hsd1.ma.comcast.net./ipp
   ipp://192.168.1.102/ipp
   ipp://DNSNAME.hsd1.ma.comcast.net./ipp
   http://192.168.1.102/631
   http://DNSNAME.hsd1.ma.comcast.net./631
   ipp://192.168.1.102/631
   ipp://DNSNAME.hsd1.ma.comcast.net./631
   http://192.168.1.102/80
   http://DNSNAME.hsd1.ma.comcast.net./80
   ipp://192.168.1.102/80
   ipp://DNSNAME.hsd1.ma.comcast.net./80

   Which should be handled as separate PPM ports? What variations should be included under ppmPortServiceNameOrURI?

2. Similar question, but with respect to IPP (or WSD) over https. Should this be listed as a separate PPM port?