INTERNET-DRAFT

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Printer Finishing MIB

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Abstract

This document defines a printer industry standard SNMP MIB for the management of printer finishing device subunits. The finishing device subunits applicable to this MIB are an integral part of the Printer System. This MIB does not apply to a Finisher Device that is external to a Printer System.

The Finisher MIB is defined as an extension of the Printer MIB [PrtMIB] and it is expected that the information defined in this document will be incorporated into a future update of the Printer MIB.

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1 INTRODUCTION

This document describes an SNMP Management Information Base (MIB) to provide for the management of in-line post-processing in a fashion that is currently provided for printers, using the Printer MIB [PrtMIB]. The Printer Finishing MIB includes the following features:

- Provides the status of the finishing device.
- Manages the features and configuration of the finishing device.
- Enables and disables the finishing operations.
- Allows unsolicited status from the finishing device.

1.1 Scope

This document provides a robust set of finishing devices, features, and functions, based upon today's state of the art of in-line finishing. Since finishing typically accompanies higher speed network printers and copiers, in contrast to simple desktop devices, no attempt is made to limit the scope to "bare minimum". On the other hand, the Printer Finishing MIB does not duplicate the production mail preparation, custom insertion, franking, and reprints that are covered by the DMTF Large Mailing Operations standard [LMO].

Information supplied by the Printer Finishing MIB may be utilized by printer and finisher management applications engaged in monitoring status and managing configuration, and also used by print and finishing submission applications which are engaged in:

- print-file-level finishing operations that are applied to a complete print file,

- document-level finishing operations that are applied individually to each document in the print file,

- document-level finishing operations that are applied to a selected document in the print file.

Note that not all combinations of finishing operations are compatible. Compatible combinations of finishing operations are device specific.

1.2 Rational

The Printer MIB [PrtMIB] is now successfully deployed in a large segment of the network printer market. SNMP and/or HTTP enabled printers and software management applications are growing in numbers.

There is an increase in the availability of network printers and copiers that include in-line finishing operations. Thus a well defined and ordered set of finishing objects is now necessary for printer management.

The printer model defined in the Printer MIB includes finishing operations and the MIB was designed to later incorporate finisher objects or to be referenced by a future Finisher MIB.

2 TERMINOLOGY

Where appropriate, the Printer Finishing MIB will conform to the terminology, syntax, and semantics from the DMTF Large Mailing Operations standard [LMO], the Internet Printing Protocol [IPP], and/or the ISO Document Printing Application [DPA].

Finisher Input: An input tray on the finisher and not otherwise associated with the printer. An example of a finisher input is a tray that holds finishing "inserts".

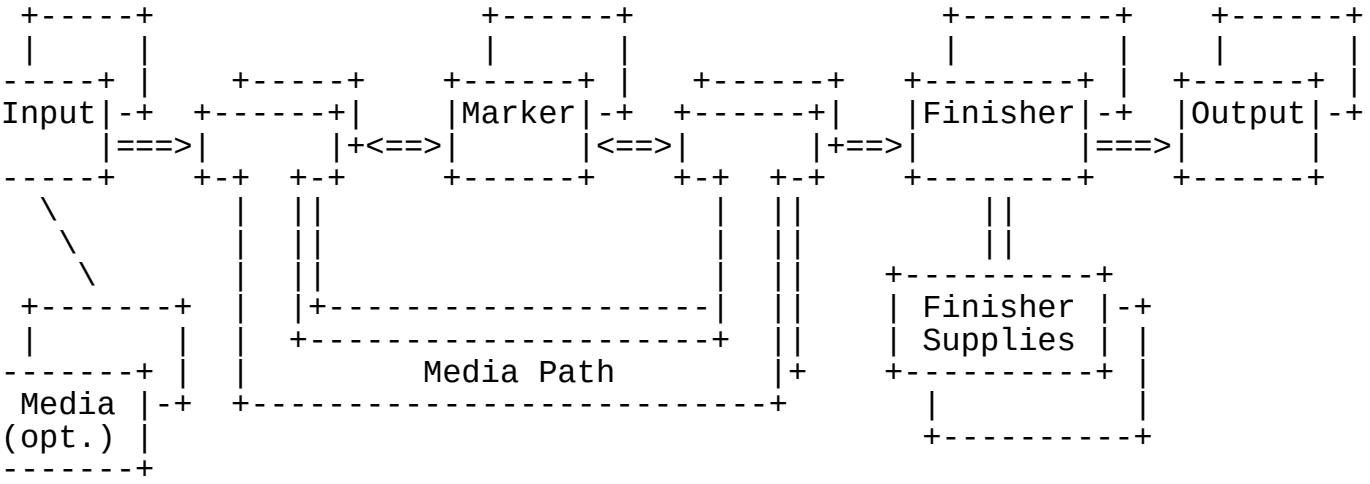
Finisher Output: The output of the finisher. Because processing is in-line, the finisher outputs are a direct extension of the set of printer outputs.

Finishing Operation Axis: Defined by DPA as the axis to which some finishing operations are applied to or referenced from. An example is the axis for a fold operation.

Finishing Axis Offset: The offset from a finishing operation axis at which the finishing operation takes place or is applied.

3 FINISHER SUBUNITS INTEGRATED INTO THE PRINTER MODEL:

The Printer Finisher Device subunits receive media from one or more Printer Media Path subunits and deliver the media to one or more Printer Output subunits after the completion of the finishing operations. The Printer Model, as described in the Printer MIB [PRTMIB], is modified adding the finisher subunit(s) and finisher supplies as follows:



ISSUE: I made the finisher use the input and marker supplies tables in the Printer MIB, so that the Finisher Supplies isn't really a separate subunit. Ok? If so, then shouldn't we remove the Finisher Supplies box above?

4 THE ATTRIBUTE MECHANISM

Attributes are similar to information objects, except that attributes are identified by an enum, instead of an OID, so that attributes may be registered without requiring a new MIB. Also an implementation that does not have the functionality represented by the attribute can omit the attribute entirely, rather than having to return a distinguished value. The agent is free to materialize an attribute in the finDeviceAttributeTable as soon as the agent is aware of the value of the attribute.

The agent materializes finishing subunit attributes in a four-indexed finDeviceAttributeTable:

1. hrDeviceIndex - which device in the host
2. finDeviceIndex - which finisher subunit in the printer device
3. finDeviceAttributeTypeIndex - which attribute

4. finDeviceAttributeInstanceIndex - which attribute instance for those attributes that can have multiple values per finishing subunit.

4.1.1 Conformance of Attribute Implementation

An agent SHALL implement any attribute if (1) the device supports the functionality represented by the attribute and (2) the information is available to the agent. The agent MAY create the attribute row in the finDeviceAttributeTable when the information is available or MAY create the row earlier with the designated 'unknown' value appropriate for that attribute. See next section.

If the server or device does not implement or does not provide access to the information about an attribute, the agent SHOULD NOT create the corresponding row in the finDeviceAttributeTable.

4.1.2 Useful, 'Unknown', and 'Other' Values for Objects and Attributes

Some attributes have a 'useful' Integer32 value, some have a 'useful' OCTET STRING value, some MAY have either or both depending on implementation, and some MUST have both. See the FinAttributeTypeTC textual convention for the specification of each attribute.
SNMP requires that if an object cannot be implemented because its values cannot be accessed, then a compliant agent SHALL return an SNMP error in SNMPv1 or an exception value in SNMPv2. However, this MIB has been designed so that 'all' objects can and SHALL be implemented by an agent, so that neither the SNMPv1 error nor the SNMPv2 exception value SHALL be generated by the agent. This MIB has also been designed so that when an agent materializes an attribute, the agent SHALL materialize a row consisting of both the finDeviceAttributeValueAsInteger and finDeviceAttributeValueAsOctets objects.

In general, values for objects and attributes have been chosen so that a management application will be able to determine whether a 'useful', 'unknown', or 'other' value is available. When a useful value is not available for an object that agent SHALL return a zero-length string for octet strings, the value 'unknown(2)' for enums, a '0' value for an object that represents an index in another table, and a value '-2' for counting integers.

Since each attribute is represented by a row consisting of both the finDeviceAttributeValueAsInteger and finDeviceAttributeValueAsOctets MANDATORY objects, SNMP requires that the agent SHALL always create an attribute row with both objects specified. However, for most attributes the agent SHALL return a "useful" value for one of the objects and SHALL return the 'other' value for the other object. For integer-only

attributes, the agent SHALL always return a zero-length string value for the finDeviceAttributeValueAsOctets object. For octet string only attributes, the agent SHALL always return a '-1' value for the finDeviceAttributeValueAsInteger object.

4.1.3 Data Sub-types and Attribute Naming Conventions

Many attributes are sub-typed to give a more specific data type than Integer32 or OCTET STRING. The data sub-type of each attribute is indicated on the first line(s) of the description. Some attributes have several different data sub-type representations. When an attribute has both an Integer32 data sub-type and an OCTET STRING data sub-type, the attribute can be represented in a single row in the finDeviceAttributeTable. In this case, the data sub-type name is not included as the last part of the name of the attribute. When the data sub-types cannot be represented by a single row in the finDeviceAttributeTable, each such representation is considered a separate attribute and is assigned a separate name and enum value. For these attributes, the name of the data sub-type is the last part of the name of the attribute. For example, deviceAssociatedSupplyIndex(20) is an index.

4.1.4 Single-Value (Row) Versus Multi-Value (MULTI-ROW) Attributes

Most attributes SHALL have only one row per finishing subunit. However, a few attributes can have multiple values per finishing subunit, where each value is a separate row in the finDeviceAttributeTable. Unless indicated with 'MULTI-ROW:' in the FinAttributeTypeTC description, an agent SHALL ensure that each attribute occurs only once in the finDeviceAttributeTable for a finishing subunit. Most of the 'MULTI-ROW' attributes do not allow duplicate values, i.e., the agent SHALL ensure that each value occurs only once for a finishing subunit. Only if the specification of the 'MULTI-ROW' attribute also says "There is no restriction on the same xxx occurring in multiple rows" can the agent allow duplicate values to occur for a single finishing subunit.

4.1.5 Linked MULTI-ROW values

Some multi-row attributes are intended to go together. Thus a set of value instances represent a single instance. For example, the puncher attributes indicate the shape, max size, min size, and shape of the various holes that the puncher can produce. So the 1st set of values could represent one kind of hole, and the 2nd set of values a another kind of hole, etc.

4.1.6 Index Value Attributes

A number of attributes are indexes in other tables. Such attribute names end with the word 'Index'. If the agent has not (yet) assigned an index value for a particular index attribute for a finishing subunit, the agent SHALL either: (1) return the value 0 or (2) *not* add this attribute to the finDeviceAttributeTable until the index value is assigned. In the interests of brevity, the semantics for 0 is specified once here and is *not* repeated for each index attribute specification and a DEFVAL of 0 is indicated.

5 PRINTER FINISHING MIB SPECIFICATION

```
Finisher-MIB DEFINITIONS ::= BEGIN

IMPORTS
    MODULE-IDENTITY, OBJECT-TYPE, experimental,
    Integer32                                   FROM SNMPv2-SMI
    TEXTUAL-CONVENTION                           FROM SNMPv2-TC
    MODULE-COMPLIANCE, OBJECT-GROUP             FROM SNMPv2-CONF
    hrDeviceIndex                          FROM HOST-RESOURCES-MIB
    PrtSubUnitStatusTC, PrtInputTypeTC,
    PrtMarkerSuppliesSupplyUnitTC,
    PrtCapacityUnitTC, prtOutputIndex,
    PrtMarkerSuppliesClassTC, PresentOnOff,
    PrtMediaPathIndex                           FROM Printer-MIB

finisherMIB MODULE-IDENTITY
    LAST-UPDATED "9803050112 0000Z"
    ORGANIZATION "IETF Printer MIB Working Group"
    CONTACT-INFO
        "Ron Bergman
         Dataproducts Corp.
         1757 Tapo Canyon Road
         Simi Valley, CA 91063-3394
         rbergma@dpc.com

        Send comments to the printmib WG using the Finisher MIB
        Project (FIN) Mailing List:  fin@pwg.org

        For further information, access the PWG web page under 'FIN':
              http://www.pwg.org/

        Implementers of this specification are encouraged to join the
        fin mailing list in order to participate in discussions on any
        clarifications needed and registration proposals being reviewed
        in order to achieve consensus."
    DESCRIPTION
        "The MIB module for management of printer finisher units.
         The Finisher MIB is an extension of the Printer MIB."
    ::= { mib-2 43 }


-- Textual conventions for this MIB module


FinDeviceTypeTC ::= TEXTUAL-CONVENTION
-- This is a type 2 enumeration.
    STATUS       current
    DESCRIPTION
      "The defined finishing device subunit operation types."
      enumerations."
    SYNTAX       INTEGER {
         other(1),
```

```
343             unknown(2),
344             stitcher(3),
345             folder(4),
346             binder(5),
347             trimmer(6),
348             dieCutter(7),
349             puncher(8),
350             perforater(9),
351             slitter(10),
352             separationCutter(11),
353             imprinter(12),
354             wrapper(13),
355             bander(14)
356           }
357
358   FfinAttributeTypeTC  ::= TEXTUAL-CONVENTION
359       STATUS      current
360       DESCRIPTION
361           "This textual convention defines a set of enums for use in
362            the finDeviceAttributeTable.  The data type tag definitions
363            'INTEGER:' or 'OCTETS', indicate if the attribute can be
364            represented using the object finDeviceAttributeAsInteger or
365            the object finDeviceAttributeAsOctets, respectively.  In some
366            cases, a choice between the two data types is possible and for
367            a few attributes both objects may be required at the same time
368            to properly present the value.
369
370            The attribute types defined at the time of completion of this
371            specification are:"
372
373               finAttributeTypeIndex         Data type
374               ---------------------         ---------
375           other(1),                         Integer32
376                                             AND/OR
377                                             OCTET STRING (SIZE(0..63))
378                  INTEGER: and/or OCTETS:  An attribute that is not
379                  currently approved and registered.
380
381       -- Generic Finisher subunit attributes that apply to all
382       -- Finisher subunit types (3..):
383
384           FinDdeviceCapacityUnit(3),        PrtCapacityUnitTC
385               INTEGER:  The unit of measure for specifying the capacity of
386               this finisher device subunit.
387
388           FinDdeviceMaxCapacity(4),         Integer32
389               INTEGER:  The maximum capacity of this finisher device
390               subunit in finDdeviceCapacityUnits.  If the device can
391               reliably sense this value, the value is sensed by the
392               finisher device and is read-only: otherwise the value may be
393               written by a management or control console application.  The
```

value (-1) means other and specifically indicates that the device places no restrictions on this parameter. The value (-2) means unknown.

finDdeviceCurrentCapacity(5), Integer32
INTEGER: The current capacity of this finisher device subunit in finDdeviceCapacityUnits. If the device can reliably sense this value, the value is sensed by the finisher and is read-only: otherwise the value may be written by a management or control console application. The value (-1) means other and specifically indicates that the device places no restrictions on this parameter. The value (-2) means unknown.

dDeviceAssociatedMediaPaths(6), Integer32
INTEGER: Indicates the media paths which can supply media for this finisher device. The value of this object is a bit map with each position representing the value of a prtMediaPathIndex. For a media path that can be a source for this finisher device subunit, the bit position equal to 2 raised to the power of one less than the value of prtMediaPathIndex will be set.

For example, a value of hexadecimal 21 indicates the media paths with a prtMediaPathIndex of 1 or 6 will supply media to this finisher device subunit.

The most significant bit position SHALL not be used, which allows a maximum of 31 media paths to be defined.
ISSUE: Why not just have a multi-valued attribute that is each prtMediaPathIndex value? Then no limit and is more like all other associations, instead of this bit mask.

dDeviceAssociatedOutputs(7), Integer32
INTEGER: MULTI-VALUE: Indicates the printer output subunits this finisher device subunit services. The value of this object is a bit map with each position representing the value of a prtOutputIndex. For an output subunit that is serviced by this finisher device subunit, the bit position equal to 2 raised to the power of one less than the value of prtOutputIndex will be set.

For example, a value of hexadecimal 49 indicates the output subunits with a prtOutputIndex of 1, 4 or 7 can be serviced by this finisher device subunit.

The most significant bit position SHALL not be used, which allows a maximum of 31 output subunits to be defined.

If more than 31 are needed, use the next attribute value.

ISSUE: Why not just have a multi-valued attribute that is each prtMediaPathIndex value? Then no limit and is more like all other associations, instead of this bit mask.

DeviceAssociatedOutputs Integer32
Used for situations where the printer system has more that 31 output subunits to augment the attribute deviceAssociatedOutputs. This is a bit map integer which identifies the printer output subunits this finisher device subunit can deposit processed media. The least significant bit corresponds to the prtOutputIndex of 32

FinDdeviceDescription(8), OCTET STRING(0..255)
OCTETS: A free form text description of this device subunit in the localization specified by prtGeneralCurrentLocalization.

FinDdeviceName(9), OCTET STRING(0..63)
OCTETS: The name assigned to this finisher device subunit.

FinDdeviceVendorName(10), OCTET STRING(0..63)
OCTETS: The vendor name of this finisher device subunit.

FinDdeviceModel(11), OCTET STRING(0..63)
OCTETS: The model name of this finisher device subunit."

FinDdeviceVersion(12), OCTET STRING(0..63)
OCTETS: The version string for this finisher device subunit.

FinDdeviceSerialNumber(13), OCTET STRING(0..63)
OCTETS: The serial number assigned to this finisher device subunit.

-- Finisher Supply GroupAttributes
--
-- A finisher subunit may have one or more supplies associated with
-- it. For example a finisher may use both binding tape and
-- stitching wire supplies. A finisher may also have more than one
-- source for a given type of supply e.g. multiple supply sources of
-- ink for imprinters.
--
-- This finisher subunit references each marker supply row in the
-- Printer MIB with which this finisher subunit is associated.

deviceAssociatedSupplyIndex(20) Integer32 (0..2147483647)
INTEGER: MULTI-ROW: The index in the prtMarkerSuppliesTable in the Printer MIB [PRTMIB] that is associated with this finisher subunit. The marker supplies table contains the following objects:

```
            prtMarkerSuppliesIndex        Integer32,
            prtMarkerSuppliesMarkerIndex  Integer32,
            prtMarkerSuppliesColorantIndex Integer32,
            prtMarkerSuppliesClass        PrtMarkerSuppliesClassTC,
            prtMarkerSuppliesType         PrtMarkerSuppliesTypeTC,
            prtMarkerSuppliesDescription  OCTET STRING,
            prtMarkerSuppliesSupplyUnit PrtMarkerSuppliesSupplyUnitTC,
            prtMarkerSuppliesMaxCapacity  Integer32,
            prtMarkerSuppliesLevel        Integer32

    -- Finisher Supply Media Input GroupAttributes
    --
    -- A finisher subunit may have one or more associated supply media
    -- inputs.  Each entry in this table defines an input for a
    -- supply media type such as inserts, covers, etc.
    --
    -- This finisher subunit references each input row in the Printer
    -- MIB with which this finisher subunit is associated.

        deviceAssociatedInputIndex(21)    Integer32 (0..2147483647)
            INTEGER:  MULTI-ROW:  The index in the prtInputTable in the
            Printer MIB [PRTMIB] that is associated with this finisher
            subunit.  The input table contains the following objects:
            prtInputIndex                 Integer32,
            prtInputTypePrt               PrtInputTypeTC,
            prtInputDimUnit               PrtMediaUnitTC,
            prtInputMediaDimFeedDirDeclared Integer32,
            prtInputMediaDimXFeedDirDeclared Integer32,
            prtInputMediaDimFeedDirChosen Integer32,
            prtInputMediaDimXFeedDirChosen Integer32,
            prtInputCapacityUnit          PrtCapacityUnitTC,
            prtInputMaxCapacity           Integer32,
            prtInputCurrentLeve           Integer32,
            prtInputStatus                PrtSubUnitStatusTC,
            prtInputMediaName             OCTET STRING,
            prtInputNameOCTET             STRING,
            prtInputVendorName            OCTET STRING,
            prtInputModel                 OCTET STRING,
            prtInputVersion               OCTET STRING,
            prtInputSerialNumber          OCTET STRING,
            prtInputDescription           OCTET STRING,
            prtInputSecurity              PresentOnOff,
            prtInputMediaWeight           Integer32,
            prtInputMediaType             OCTET STRING,
            prtInputMediaColor            OCTET STRING,
            prtInputMediaFormParts        Integer32,
            prtInputMediaLoadTimeout      Integer32,
            prtInputNextIndex             Integer32
```

```
547
548
549
550         -- Finisher type-specific attributes:
551
552         -- stitcher attributes (30..):
553             stitchingType(303),                 FinStitchingTypeTC
554                 INTEGER:  MULTI-VALUE:  Provides additional information
555                 regarding the The stitching operations supported by this
556                 finisher subunit.
557
558         -- folder attributes (40..):
559             foldingType(406),                   FinFoldingTypeTC
560                 INTEGER:  Provides additional information regarding the The
561                 folding operations supported by this finisher subunit.
562
563         -- binder attributes (50..):
564             bindingType(504),                   FinBindingTypeTC
565                 INTEGER:  Provides additional information regarding the The
566                 binding operations supported by this finisher subunit.
567
568         -- trimmer attributes (60..):
569
570         -- die cutter attributes (70..):
571
572         -- puncher attributes (80..)  These attributes are linked, so that
573         the ith value of each attribute go together:
574             punchHoleType(80),                  FinPunchHoleTypeTC
575                 INTEGER:  MULTI-VALUE:  Provides information regarding the
576                 The shapes of the punched holes supported by this finisher
577                 subunit.
578
579             punchHoleSizeMaxDim(819),           Integer32
580                 INTEGER:  MULTI-VALUE:  Defines the size of the punched hole
581                 in the maximum dimension.  This dimension shall always be
582                 measured parallel to either the long edge or the short edge
583                 of the media and the maximum dimension will always be
584                 measured 90 degrees from the minimum dimension.  The minimum
585                 and maximum dimensions may be identical.
586
587             punchHoleSizeMinDim(8210),          Integer32
588                 INTEGER:  Defines the size of the punched hole in the
589                 minimum dimension.  This dimension shall always be measured
590                 parallel to either the long edge or the short edge of the
591                 media and the minimum dimension will always be measured 90
592                 degrees from the maximum dimension.  The minimum and maximum
593                 dimensions may be identical.
594
595             punchPattern(8311),                 FinPunchPatternTC
596                 INTEGER:  MULTI-VALUE:  Defines the hole patterns produced
597                 by the punch operation.
```

```
598
599         -- perforater attributes (90..):
600
601         -- slitter attributes (100..):
602             slittingType(1005),                 FinSlittingTypeTC
603                 INTEGER:  Provides additional information regarding the The
604                 slitting operations supported by this finisher subunit.
605
606         -- separation cutter attributes (110..):
607
608         -- imprinter attributes (120..):
609
610         -- wrapper attributes (130..):
611             wrappingType(1307),                 FinWrappingTypeTC
612                 INTEGER:  Provides additional information regarding the
613                 wrapping operations supported by this finishing subunit.
614
615         -- bander attributes:
616
617         SYNTAX      INTEGER{
618             other(1),
619             deviceCapacityUnit(3),
620             deviceMaxCapacity(4),
621             deviceCurrentCapacity(5),
622             deviceAssociatedMediaPaths(6),
623             deviceAssociatedOutputs(7),
624             finDeviceMoreAssociatedOutputs(12)
625             deviceDescription(8),
626             deviceName(9),
627             deviceVendorName(10),
628             deviceModel(11),
629             deviceVersion(12),
630             deviceSerialNumber(13),
631
632             stitchingType(30),
633
634             foldingType(40{6),
635
636             bindingType(504),
637
638             punchHoleType(80),
639             punchHoleSizeMaxDim(819),
640             punchHoleSizeMinDim(8210),
641             punchPattern(8311),
642
643             slittingType(1005),
644
645             wrappingType(1307),
646         }
647
648     FinStitchingTypeTC ::= TEXTUAL-CONVENTION
```

```
649   -- This is a type 2 enumeration.
650       STATUS       current
651       DESCRIPTION
652         "The defined stitching type enumerations."
653       SYNTAX       INTEGER {
654            other(1),
655            unknown(2),
656            staple(3),
657            stapleTopLeft(4),
658            stapleBottomLeft(5),
659            stapleTopRight(6),
660            stapleBottomRight(7),
661            saddleStitch(8),
662            edgeStitch(9),
663            stitch(10)
664           }
665
666   FinFoldingTypeTC ::= TEXTUAL-CONVENTION
667   --This is a type 2 enumeration.
668      STATUS       current
669      DESCRIPTION
670        "The defined folding device operation enumerations."
671      SYNTAX       INTEGER {
672            other(1),
673            unknown(2),
674            zFold(3),
675            halfFold(4),
676            letterFold(5)
677           }
678
679   FinBindingTypeTC ::= TEXTUAL-CONVENTION
680   -- This is a type 2 enumeration.
681       STATUS       current
682       DESCRIPTION
683         "The defined binding type enumerations."
684       SYNTAX       INTEGER {
685            other(1),
686            unknown(2),
687            bind(3),
688            tape(4),
689            plastic(5),
690            velo(6),
691            perfect(7),
692            spiral(8)
693           }
694
695   FinPunchHoleTypeTC ::= TEXTUAL-CONVENTION
696   --This is a type 2 enumeration.
697      STATUS       current
698      DESCRIPTION
699        "The defined hole type punch operation enumerations."
```

```
700     SYNTAX       INTEGER {
701           other(1),
702           unknown(2),
703           round(3),
704           oblong(4),
705           square(5),
706           rectangular(6),
707           star(7)
708          }
709
710   FinPunchPatternTC ::= TEXTUAL-CONVENTION
711   --This is a type 2 enumeration.
712      STATUS       current
713      DESCRIPTION
714        "The defined hole pattern punch operation enumerations."
715      SYNTAX       INTEGER {
716           other(1),
717           unknown(2),
718           punch(3),             --Pattern to be defined in other
719                                 --attributes
720           twoHoleUS(4),         --Letter top edge, 8.5 inch side
721           threeHoleUS(5),       --Letter/ledger left edge, 11 inch side
722           twoHoleMetric(6),     --A4/A3 left edge, 297 mm side
723           fourHoleMetric(7),    --A4/A3 left edge, 297 mm side
724           twentyTwoHoleUS(8),   --Letter/ledger left edge, 11 inch side
725           nineteenHoleUS(9)     --Letter/ledger left edge, 11 inch side
726          )
727
728   FinSlittingTypeTC ::= TEXTUAL-CONVENTION
729   -- This is a type 2 enumeration.
730       STATUS       current
731       DESCRIPTION
732         "The defined slitting type enumerations."
733       SYNTAX       INTEGER {
734           other(1),
735           unknown(2),
736           slit(3),
737           slitAndSeparate(4),
738           slitAndMerge(5)
739          }
740
741   FinWrappingTypeTC ::= TEXTUAL-CONVENTION
742   --This is a type 2 enumeration.
743      STATUS       current
744      DESCRIPTION
745        "The defined wrapping device operation enumerations."
746      SYNTAX       INTEGER {
747           other(1),
748           unknown(2),
749           wrap(3),
750           shrinkWrap(4),
```

```
751           paperWrap(5)
752          }
753
754   ISSUE:  Where is the following TC used?  Can we delete it?
755
756   FinOutputTypeTC ::= TEXTUAL-CONVENTION
757   -- This is a type 2 enumeration.
758       STATUS       current
759       DESCRIPTION
760         "The defined output type enumerations."
761       SYNTAX       INTEGER {
762            other(1),
763            unknown(2),
764            removableBin(3),
765            unremovableBin(4),
766            continuousRollDevice(5),
767            mailbox(6),
768            continuousFanFold(7),
769            conveyer(8),
770            smartCart(9)
771           }
772
773   FinSupplyTypeTC ::= TEXTUAL-CONVENTION
774   -- This is a type 2 enumeration that is an extension to the
775   -- Printer MIB textual convention PrtMarkerSuppliesTypeTC.
776
777   -- ****************************************************************
778   -- ISSUE: Should this just define new enums added to the Printer MIB
779   --         or keep it separate?  If separate, should the duplicates
780   --         from the Printer MIB be eliminated?
781   -- ****************************************************************
782
783       STATUS       current
784       DESCRIPTION
785         "The defined finishing supply type enumerations."
786       SYNTAX       INTEGER {
787            other(1),
788            unknown(2),
789            toner(3),
790            wasteToner(4),
791            ink(5),
792            inkCartridge(6),
793            inkRibbon(7),
794            wasteInk(8),
795            opc(9),                 --photo conductor
796            developer(10),
797            fuserOil(11),
798            solidWax(12),
799            ribbonWax(13),
800            wasteWax(14),
801            fuser(15),
```

```
802           coronaWire(16),
803           fuserOilWick(17),
804           cleanerUnit(18),
805           fuserCleaningPad(19),
806           transferUnit(20),
807           tonerCartridge(21),
808           fuserOiler(22),       --Supply types 3 to 22 are from the
809                                 --Printer MIB
810           water(23),
811           wasteWater(24),
812           glueWaterAdditive(25),
813           wastePaper(26),
814           bindingTape(27),
815           bandingTape(28),
816           stitchingWire(29),
817           shrinkWrap(30),
818           paperWrap(31),
819           staples(32),
820           inserts(33),
821           covers(34)
822         }
823
824
825   -- Finisher Device Group (Mandatory)
826   --
827   -- A printer may support zero or more finishing subunits.  A
828   -- finishing device subunit may be associated with one or more
829   -- output subunits and one or more media path subunits.
830   --
831   -- NOTE: The objects in this table could not have been made attributes
832   -- because the Printer MIB trap mechanism needs to be able to indicate
833   -- alerts in subunits which are rows in tables.
834
835   finDeviceTable OBJECT-TYPE
836       SYNTAX     SEQUENCE OF FinDeviceEntry
837       MAX-ACCESS not-accessible
838       STATUS     current
839       DESCRIPTION
840         "This table defines the finishing device subunits,
841          including information regarding possible configuration
842          options and the status for each finisher device subunit."
843       ::= { finisherMIB 18 }
844
845   finDeviceEntry OBJECT-TYPE
846       SYNTAX      FinDeviceEntry
847       MAX-ACCESS  not-accessible
848       STATUS      current
849       DESCRIPTION
850         "There is an entry in the finishing device table for each
851          possible finisher operation."
852       INDEX  { hrDeviceIndex, finDeviceIndex }
```

```
853       ::= { finDevicesTable 1 }
854
855   FinDeviceEntry ::= SEQUENCE {
856         finDeviceIndex                  Integer32,
857         finDeviceType                   FinDeviceTypeTC,
858         finDevicePresentOnOff           PresentOnOff,
859         finDeviceCapacityUnit           PrtCapacityUnitTC,
860         finDeviceMaxCapacity            Integer32,
861         finDeviceRemainingCapacity      Integer32,
862         finDeviceAssociatedMediaPaths   Integer32,
863         finDeviceAssociatedOutputs      Integer32,
864         finDeviceStatus                 PrtSubUnitStatusTC,
865         finDeviceDescription            OCTET STRING
866         finDeviceName                   OCTET STRING,
867         finDeviceVendorName             OCTET STRING,
868         finDeviceModel                  OCTET STRING,
869         finDeviceVersion                OCTET STRING,
870         finDeviceSerialNumber           OCTET STRING,
871        }
872
873   finDeviceIndex OBJECT-TYPE
874       SYNTAX      Integer32(0..2147483647)
875       MAX-ACCESS  not-accessible
876       STATUS      current
877       DESCRIPTION
878         "A unique value used to identify a finisher operation.
879          Although these values may change due to a major
880          reconfiguration of the printer system (e.g. the addition
881          of new finishing operations), the values are normally
882          expected to remain stable across successive power cycles."
883       ::= { finDeviceEntry 1 }
884
885   finDeviceType OBJECT-TYPE
886       SYNTAX      FinDeviceTypeTC
887       MAX-ACCESS  read-only
888       STATUS      current
889       DESCRIPTION
890         "Defines the type of finishing operation associated with this
891          table row entry."
892       ::= { finDeviceEntry 2 }
893
894   finDevicePresentOnOff OBJECT-TYPE
895       SYNTAX      PresentOnOff
896       MAX-ACCESS  read-write
897       STATUS      current
898       DESCRIPTION
899         "Indicates if this finishing device subunit is available
900          and whether the device subunit is enabled."
901       ::= { finDeviceEntry 3 }
902
903   finDeviceStatus OBJECT-TYPE
```

```
904       SYNTAX      PrtSubUnitStatusTC
905       MAX-ACCESS  read-only
906       STATUS      current
907       DESCRIPTION
908         "Indicates the current status of this finisher device
909          subunit."
910       ::= { finDeviceEntry 49 }
911
912
913   -- Finisher Supply Group
914   --
915   -- A finisher may have one or more supplies associated with it.
916   -- For example a finisher may use both binding tape and stitching
917   -- wire supplies. A finisher may also have more than one source
918   -- for a given type of supply e.g. multiple supply sources of ink
919   -- for imprinters.
920
921   finSupplyTable OBJECT-TYPE
922       SYNTAX      SEQUENCE OF FinSupplyEntry
923       MAX-ACCESS not-accessible
924       STATUS      current
925       DESCRIPTION
926         "Each unique source of supply is an entry in the finisher
927          supply table. Each supply entry has its own
928          characteristics associated with it such as colorant and
929          current supply level."
930       ::= { finisherMIB 19 }
931
932   finSupplyEntry OBJECT-TYPE
933       SYNTAX      FinSupplyEntry
934       MAX-ACCESS not-accessible
935       STATUS      current
936       DESCRIPTION
937         "A list of finisher devices, with their associated
938          supplies and supplies characteristics."
939       INDEX  { hrDeviceIndex, finDeviceIndex, finSupplyIndex }
940       ::= { finSupplyTable 1 }
941
942   FinSupplyEntry ::= SEQUENCE {
943         finSupplyIndex                Integer32,
944         finSupplyClass                PrtMarkerSuppliesClassTC,
945         finSupplyType                 FinSupplyTypeTC,
946         finSupplyDescription          OCTET STRING,
947         finSupplyUnit                 PrtMarkerSuppliesSupplyUnitTC,
948         finSupplyMaxCapacity          Integer32,
949         finSupplyCurrentLevel         Integer32,
950         finSupplyColorantValue        OCTET STRING
951       }
952
953   finSupplyIndex OBJECT-TYPE
954       SYNTAX      Integer32(0..2147483647)
```

```
955     MAX-ACCESS  not-accessible
956     STATUS      current
957     DESCRIPTION
958         "A unique value used by a finisher to identify this supply
959          container/receptacle.  Although these values may change
960          due to a major reconfiguration of the finisher (e.g. the
961          addition of new supply sources to the finisher), values
962          are normally expected to remain stable across successive
963          power cycles."
964     ::= { finSupplyEntry 1 }
965
966   finSupplyClass OBJECT-TYPE
967     SYNTAX      PrtMarkerSuppliesClassTC
968     MAX-ACCESS  read-only
969     STATUS      current
970     DESCRIPTION
971         "This value indicates whether this supply entity
972          represents a supply that is consumed or a container that
973          is filled."
974     ::= { finSupplyEntry 2 }
975
976   finSupplyType OBJECT-TYPE
977     SYNTAX      FinSupplyTypeTC
978     MAX-ACCESS  read-only
979     STATUS      current
980     DESCRIPTION
981         "The type of this supply."
982     ::= { finSupplyEntry 3 }
983
984   finSupplyDescription OBJECT-TYPE
985     SYNTAX      OCTET STRING(0..255)
986     MAX-ACCESS  read-only
987     STATUS      current
988     DESCRIPTION
989         "The description of this supply/receptacle in text useful
990          for operators and management applications."
991     ::= { finSupplyEntry 4 }
992
993   finSupplyUnit OBJECT-TYPE
994     SYNTAX      PrtMarkerSuppliesSupplyUnitTC
995     MAX-ACCESS  read-only
996     STATUS      current
997     DESCRIPTION
998         "Unit of measure of this finisher supply container or
999          receptacle."
1000    ::= { finSupplyEntry 5 }
1001
1002  finSupplyMaxCapacity OBJECT-TYPE
1003    SYNTAX      Integer32
1004    MAX-ACCESS  read-write
1005    STATUS      current
```

```
    DESCRIPTION
      "The maximum capacity of this supply container/receptacle
       expressed in Supply Units.  If this supply container/
       receptacle can reliably sense this value, the value is
       sensed  and is read-only; otherwise the value may be
       written by a control panel or management application.  The
       value (-1) means other and places no restrictions on this
       parameter.  The value (-2) means unknown."
    ::= { finSupplyEntry 6 }

finSupplyCurrentLevel OBJECT-TYPE
    SYNTAX       Integer32
    MAX-ACCESS   read-write
    STATUS       current
    DESCRIPTION
      "The current level if this supply is a container; the
       remaining space if this supply is a receptacle. If this
       supply container/receptacle can reliably sense this value,
       the value is sensed  and is read-only; otherwise the value
       may be written by a control panel or management
       application.  The value (-1) means other and places no
       restrictions on this parameter. The value (-2) means
       unknown."
    ::= { finSupplyEntry 7 }

--               Capacity Attribute Relationships
--
--                   MEDIA INPUT MEASUREMENT
--
--         _______ |                    |
--           |     |                    |
--           |     |                    |                    |
--           |     |_ _ _ _ _ _ _ _ _ _ | ________________   |direction
--           |     |                    |      |             v
-- MaxCapacity     |                    |      |
--           |     | Sheets remaining   | CurrentLevel
--           |     |                    |      |
--           v     |                    |      v
--        -------  +--------------------+ -------

finSupplyColorantValue OBJECT-TYPE
    SYNTAX       OCTET STRING(0..63)
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
      "The name of the color of this colorant using standardized
       string names from ISO 10175 (DPA) and ISO 10180 (SPDL)
       which are: other, unknown, white, red, green, blue, cyan,
       magenta, yellow and black.  Implementors may add
       additional string values.  The naming conventions in ISO
       9070 are recommended in order to avoid potential name
```

```
            clashes."
        ::= { finSupplyEntry 8 }


-- Finisher Supply Media Input Group
--
-- A finisher device may have one or more associated supply media
-- inputs.  Each entry in this table defines an input for a
-- supply media type such as inserts, covers, etc.

finSupplyMediaInputTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF FinSupplyMediaInputEntry
    MAX-ACCESS not-accessible
    STATUS      current
    DESCRIPTION
        "The input subunits associated with a finisher supply media
         are each represented by an entry in this table."
::= { finisherMIB 20 }

finSupplyMediaInputEntry OBJECT-TYPE
    SYNTAX      FinSupplyMediaInputEntry
    MAX-ACCESS not-accessible
    STATUS      current
    DESCRIPTION
        "A list of finisher supply media input subunit features and
         characteristics."
    INDEX  { hrDeviceIndex, finDeviceIndex, finSupplyIndex,
             finSupplyMediaInputIndex }
    ::= { finSupplyMediaInputTable 1 }

FinSupplyMediaInputEntry ::= SEQUENCE {
        finSupplyMediaInputIndex            Integer32,
        finSupplyMediaInputType             PrtInputTypeTC,
        finSupplyMediaInputDimUnit          PrtCapacityUnitTC,
        finSupplyMediaInputMediaDimFeedDir  Integer32,
        finSupplyMediaInputMediaDimXFeedDir Integer32,
        finSupplyMediaInputStatus           PrtSubUnitStatusTC,
        finSupplyMediaInputMediaName        OCTET STRING,
        finSupplyMediaInputName             OCTET STRING,
        finSupplyMediaInputVendorName       OCTET STRING,
        finSupplyMediaInputModel            OCTET STRING,
        finSupplyMediaInputVersion          OCTET STRING,
        finSupplyMediaInputSerialNumber     OCTET STRING,
        finSupplyMediaInputDescription      OCTET STRING,
        finSupplyMediaInputSecurity         PresentOnOff,
        finSupplyMediaInputMediaWeight      Integer32,
        finSupplyMediaInputMediaThickness   Integer32,
        finSupplyMediaInputMediaType        OCTET STRING,
        finSupplyMediaInputMediaColor       OCTET STRING,
        finSupplyMediaInputMediaFormParts   Integer32
```

```
finSupplyMediaInputIndex OBJECT-TYPE
    SYNTAX      Integer32(0..2147483647)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A unique value used by a finisher to identify this supply
         media input subunit.  Although these values may change
         due to a major reconfiguration of the finisher (e.g. the
         addition of new supply media input sources to the
         finisher), values are normally expected to remain stable
         across successive power cycles."
    ::= { finSupplyMediaInputEntry 1 }

finSupplyMediaInputType OBJECT-TYPE
    SYNTAX      PrtInputTypeTC
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The type of technology (discriminated primarily according
         to the feeder mechanism type) employed by the input
         subunit."
    ::= { finSupplyMediaInputEntry 2 }

finSupplyMediaInputDimUnit OBJECT-TYPE
    SYNTAX      PrtCapacityUnitTC
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The unit of measure for specifying dimensional values for
         this input device."
    ::= { finSupplyMediaInputEntry 3 }

finSupplyMediaInputMediaDimFeedDir OBJECT-TYPE
    SYNTAX      Integer32
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "This object provides the value of the dimension in the
         feed direction of the media that is placed or will be
         placed in this input device.  Feed dimension measurements
         are taken parallel to the feed direction of the device and
         measured in finSupplyMediaInputDimUnits.  If this input
         device can reliably sense this value, the value is sensed
         and is read-only access. Otherwise the value is read-write
         access and may be written by management or control panel
         applications. The value (-1) means other and specifically
         indicates that this device places no restrictions on this
         parameter. The value (-2) indicates unknown. "
    ::= { finSupplyMediaInputEntry 4 }

finSupplyMediaInputMediaDimXFeedDir OBJECT-TYPE
```

```
        SYNTAX      Integer32
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "This object provides the value of the dimension across the
             feed direction of the media that is placed or will be
             placed in this input device.  The cross feed direction is
             ninety degrees relative to the feed direction on this
             device and measured in finSupplyMediaInputDimUnits.  If
             this input device can reliably sense this value, the value
             is sensed and is read-only access. Otherwise the value is
             read-write access and may be written by management or
             control panel applications. The value (-1) means other and
             specifically indicates that this device places no
             restrictions on this parameter. The value (-2) indicates
             unknown. "
        ::= { finSupplyMediaInputEntry 5 }

finSupplyMediaInputStatus OBJECT-TYPE
        SYNTAX      PrtSubUnitStatusTC
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
            "This value indicates the current status of this input
             device."
        ::= { finSupplyMediaInputEntry 6 }

finSupplyMediaInputMediaName OBJECT-TYPE
        SYNTAX      OCTET STRING(0..63)
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "The name of the current media contained in this input
             device. Examples are Print Job Output A, Triple A Billing
             Statements or ISO standard names."
        ::= { finSupplyMediaInputEntry 7 }


-- Finisher Supply Media, Extended Input Group
--
-- This group is optional. However, to claim conformance to this
-- group it is necessary to implement every object in the group.
--
-- This group defines objects that augment the
-- finSupplyMediaInputType object for this input subunit.

finSupplyMediaInputName OBJECT-TYPE
        SYNTAX      DisplayString(0..63)
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
```

```
        "The name assigned to this input subunit."
    ::= { finSupplyMediaInputEntry 8 }

finSupplyMediaInputVendorName OBJECT-TYPE
    SYNTAX      DisplayString(0..63)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The vendor name of this input subunit component."
    ::= { finSupplyMediaInputEntry 9 }

finSupplyMediaInputVendorModel OBJECT-TYPE
    SYNTAX      DisplayString(0..63)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The model name of this input subunit."
    ::= { finSupplyMediaInputEntry 10 }

finSupplyMediaInputVersion OBJECT-TYPE
    SYNTAX      DisplayString(0..63)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The version string for this input subunit."
    ::= { finSupplyMediaInputEntry 11 }

finSupplyMediaInputSerialNumber OBJECT-TYPE
    SYNTAX      DisplayString(0..63)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The serial number assigned to this input subunit."
    ::= { finSupplyMediaInputEntry 12 }

finSupplyMediaInputDescription OBJECT-TYPE
    SYNTAX      DisplayString(0..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "A free form text description of this input subunit in the
         localization specified by prtGeneralCurrentLocalization."
    ::= { finSupplyMediaInputEntry 13 }

finSupplyMediaInputSecurity OBJECT-TYPE
    SYNTAX      PresentOnOff
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Indicates if this subunit has some security associated
         with it."
```

```
    ::= { finSupplyMediaInputEntry 14 }


-- Finisher Supply Media, Extended Media Input Group
--
-- This group is optional. However, to claim conformance to this
-- group it is necessary to implement every object in the group.
--
-- This group defines objects that augment the
-- finSupplyMediaInputType object for this input subunit.
--
-- The Extended Media Input Group objects support identification
-- of media installed or available for use on a finisher device.
-- Medium resources are identified by name. and include a
-- collection of characteristic attributes that may further be
-- used for selection or management of them.

finSupplyMediaInputMediaWeight OBJECT-TYPE
    SYNTAX      Integer32
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION

        "The weight of the media associated with this Input device
        in grams per meter squared.  The value (-1) means other
        and specifically indicates that the device places no
        restriction on this parameter.  The value (-2) means
        unknown.  This object can be used to calculate the weight
        of individual pages processed by the document finisher.
        This value, when multiplied by the number of pages in a
        finished set, can be used to calculate the weight of a set
        before it is inserted into a mailing envelope."
    ::= { finSupplyMediaInputEntry 16 }

finSupplyMediaInputMediaThickness OBJECT-TYPE
    SYNTAX      Integer32
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "This object identifies the thickness of the input media
        processed by this document input subunit measured in
        micrometers.  This value may be used by devices (or
        operators) to set up proper machine tolerances for the
        feeder operation.  The value (-2) indicates that the media
        thickness is unknown or not used in the setup for this
        input subunit."
    ::= { finSupplyMediaInputEntry 17 }

finSupplyMediaInputMediaType OBJECT-TYPE
    SYNTAX      DisplayString(0..63)
    MAX-ACCESS  read-write
```

```
    STATUS      current
    DESCRIPTION
        "The name of the type of the type of medium associated with
         this input subunit.  Valid values are standardized strings
         from ISO 10175 (DPA) and ISO 10180 (SPDL) which are:
         stationary, transparency, envelope, envelope-plain,
         envelope window, continuous-long, continuous-short,
         tab-stock, labels, multi-layer."
    ::= { finSupplyMediaInputEntry 18 }

finSupplyMediaInputMediaFormParts OBJECT-TYPE
    SYNTAX      Integer32
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The number of parts associated with the media associated
         with this input subunit if the media is a multi-part form.
         The value (-1) means other and specifically indicates the
         device places no restrictions on this parameter. The value
         (-2) means unknown."
    ::= { finSupplyMediaInputEntry 19 }


-- Finisher Device Attribute Group (Mandatory)
--
-- A finisher device subunit may have one or more parameters that
-- cannot be specified by any other objects in the MIB.  The
-- Device Attribute group allows the definition of these
-- parameters.

finDeviceAttributeTable OBJECT-TYPE
    SYNTAX     SEQUENCE OF FinDeviceAttributeEntry
    MAX-ACCESS not-accessible
    STATUS     current
    DESCRIPTION
      "The attribute table defines special parameters that are
       applicable only to a minority of the finisher devices.
       An attribute table entry is used, rather than unique
       objects, to minimize the number of MIB objects and to
       allow for expansion without the addition of MIB objects.
       Each finisher device is represented by a separate row
       in the device subunit attribute table."
::= { finisherMIB 21 }

finDeviceAttributeEntry OBJECT-TYPE
    SYNTAX     FinDeviceAttributeEntry
    MAX-ACCESS not-accessible
    STATUS     current
    DESCRIPTION
      "Each entry defines a finisher function parameter that
       cannot be represented by an object in the finisher
```

```
1363          device subunit table."
1364      INDEX  { hrDeviceIndex, finDeviceIndex,
1365               finDeviceAttributeTypeIndex }
1366   ::= { finDeviceAttributeTable 1 }
1367
1368   FinDeviceAttributeEntry ::= SEQUENCE {
1369         finDeviceAttributeTypeIndex        FinAttributeTypeTC,
1370         finDeviceAttributeInstanceIndex    Integer32,
1371         finDeviceAttributeValueAsInteger   Integer32,
1372         finDeviceAttributeValueAsOctets    OCTET STRING
1373       }
1374
1375   finDeviceAttributeTypeIndex OBJECT-TYPE
1376       SYNTAX      FinAttributeTypeTC
1377       MAX-ACCESS  not-accessible
1378       STATUS      current
1379       DESCRIPTION
1380         "Defines the attribute type represented by this row."
1381       ::= { finDeviceAttributeEntry 1 }
1382
1383   finDeviceAttributeInstanceIndex OBJECT-TYPE
1384       SYNTAX      Integer32
1385       MAX-ACCESS  not-accessible
1386       STATUS      current
1387       DESCRIPTION
1388         "An index that allows the discrimination of an attribute
1389          instance when the same attribute occurs multiple times for
1390          a specific instance of a finisher function.  The value of
1391          this index shall be 1 if only a single instance of the
1392          attribute occurs for the specific finisher function."
1393       ::= { finDeviceAttributeEntry 2 }
1394
1395   finDeviceAttributeValueAsInteger OBJECT-TYPE
1396       SYNTAX      Integer32
1397       MAX-ACCESS  read-only
1398       STATUS      current
1399       DESCRIPTION
1400         "Defines the integer value of the attribute.  The value of
1401          the attribute is represented as an integer if the
1402          FinAttributeTypeTC description for the attribute has the
1403          tag 'INTEGER:'.
1404
1405          Depending upon the attribute enum definition, this object
1406          may be either an integer, a counter, an index, or an enum.
1407          Attributes for which the concept of an integer value is
1408          not meaningful SHALL return a value of -1 for this
1409          attribute."
1410       ::= { finDeviceAttributeEntry 3 }
1411
1412   finDeviceAttributeValueAsOctets OBJECT-TYPE
1413       SYNTAX      OCTET STRING (SIZE(0..63))
```

```
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
      "Contains the octet string value of the attribute.  The
       value of the attribute is represented as a string if the
       FinAttributeTypeTC description for the attribute has the
       tag 'OCTETS:'.

       Depending upon the attribute enum definition, this object
       may be either a coded character set string (text) or a
       binary octet string.  Attributes for which the concept of
       an octet string value is not meaningful SHALL contain a
       zero length string."
    ::= { finDeviceAttributeEntry 4 }

END
```

6 REFERENCES

[PRTMIB] The Printer MIB, RFC 1759, IETF standards track document.

[LMO] Large Mailing Operations Specification, DMTF. See http://www.dmtf.org/tech/apps.html

[DPA] ISO/IEC 10175 Document Printing Application (DPA). See ftp://ftp.pwg.org/pub/pwg/dpa/

[IPP] Internet Printing Protocol/1.0: Model and Semantics, work in progress on the IETF standards track. See draft-ietf-ipp-model-09.txt.

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