INTERNET-DRAFT   R. Bergman
                                            Dataproducts Corporation
                                                           H. Lewis
                                                      IBM Coporation

                                         Version 0.1 October 30, 1997

                        Printer Finishing MIB

Status of this Memo

1   Introduction

This document describes a Printer Finishing MIB. The purpose this MIB is to provide management of in-line post-processing in a fashion similar to that which is currently provided for printers, themselves, via the Printer MIB (RFC1759).

The overall aims in the design of the Printer Finishing MIB are:

Provide status of the finishing device.

Manage features and configuration of the finishing device.

Enable/Disable finishing operations.

Allow unsolicited status from the finishing device.

RATIONALE: The Printer MIB (RFC1759) is already 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. The Printer MIB was designed to be augmented with finisher objects or to be referenced by a future Finisher MIB. The growing trend to include in-line finishing operations with higher speed network printers and copiers signals the need for a well defined and ordered set of finishing objects – the Printer Finishing MIB.

SCOPE: This project will address a robust set of finishing devices, features and functions, based on what exists today, in the 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 particular attempt will be made to limit the scope to "bare minimum". On the other hand, the Printer Finishing MIB project will not duplicate the production mail preparation, custom insertion, franking and re-prints which are covered by the Large Mailing Operations (LMO) DMTF standard.

Information supplied by the Printer Finishing MIB may be utilized by printer and finisher management applications engaged in monitoring status and managing configuration, and 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 presentation-device specific.

EXPECTATIONS: It is anticipated that the Printer Finishing MIB will evolve into implementations of printer(copier)/finisher pairs where both printer and finisher information is accessed via a single network connection. Finishers are not expected to provide native network services and/or SNMP/HTTP responses. A future activity, resulting from this MIB definition, may be the definition of an industry standard "finisher management interface" to facilitate the rapid development of turnkey printer/finisher solutions.

1.1 Terminology

Where appropriate, the Printer Finishing MIB will adopt terminology, syntax and semantics from LMO, IPP and/or ISO 10175 DPA standards.

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

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

Finishing Operation Axis: Defined by DPA as the axis which some finishing operations are applied to or referenced from. Example, the axis for a FOLD.

Finishing Axis Offset: The offset (DPA defines this in mm) from a finishing operation axis at which the finishing operation takes place or is applied.

2 Model

We need a model diagram. The model is that of an in-line finisher which attaches to one or more outputs of the printer and has one or more finisher outputs. Finisher outputs may actually extend the number of outputs that were originally on the printer, for example, if the finisher includes a collator or mailbox. The finisher will have one or more finishing operations. Sequence of operations will not be addressed by the finishing MIB or model. The finisher may have one or more of it's own inputs

2 Diagrams

Need to add diagrams for punch. Also disassociate diagrams and add explanatory text for each.

Corner Staple

Saddle Stitch

Edge Stitch

Top-left corner (X'D2')   Top-right corner (X'D1')

oblique stapling

Front
of
sheet

parallel stapling

Bottom-left corner (X'D3')   Bottom-right corner (X'D0')
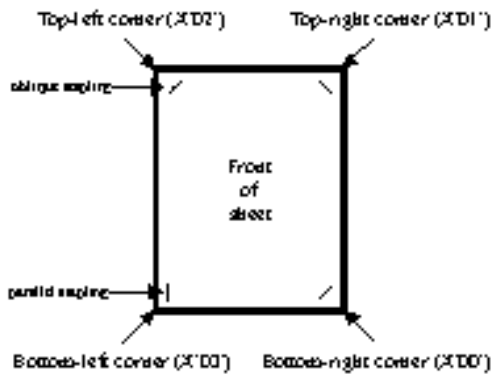
Note: The offset and angle of the staple from
the selected corner is device dependent.

Top edge

Front
of
sheet

Note: This example shows a
saddle stitch with 3 staples
parallel to the top edge.

x — mm offset from left edge

Left edge

Front
of
sheet
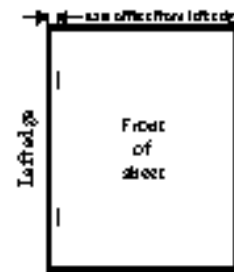
Note: This example shows an
edge stitch with 2 staples
parallel to the left edge.

Fold

Z-Fold
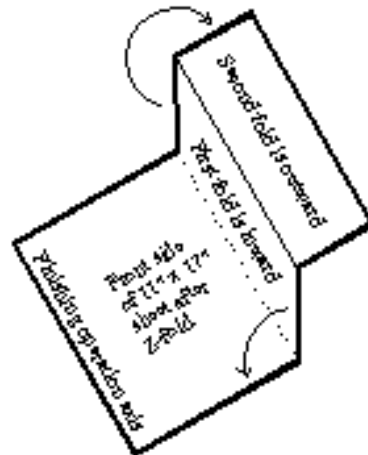
4   The Printing Finisher MIB

    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, PrtMarkerSuppliesSupplyUnitTC,

       PrtCapacityUnitTC, PrtOutputStackingOrderTC,

       PrtMarkerColorantRoleTC, prtOutputIndex,

       PrtMarkerSuppliesClassTC, PresentOnOff,

       PrtOutputPageDeliveryOrientationTC   FROM Printer-MIB

   finisherMIB MODULE-IDENTITY

       LAST-UPDATED "9710150000Z"

       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/"

       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

```
        FinStitchingTypeTC ::= TEXTUAL-CONVENTION

        -- This is a type 2 enumeration.

            STATUS        current

            DESCRIPTION

              "The defined stitching type enumerations."

            SYNTAX        INTEGER {

                other(1),

                unknown(2),

                staple(3),

                stapleTopLeft(4),

                stapleBottomLeft(5),

                stapleTopRight(6),

                stapleBottomRight(7),

                saddleStitch(8),

                edgeStitch(9),

                stitch(10)

               }



        FinBindingTypeTC ::= TEXTUAL-CONVENTION

        -- This is a type 2 enumeration.

            STATUS        current

            DESCRIPTION

              "The defined binding type enumerations."

            SYNTAX        INTEGER {

                other(1),
```

```
            unknown(2),

            bind(3),

            tape(4),

            plastic(5),

            velo(6),

            perfect(7),

            spiral(8)

              }


    FinSlittingTypeTC ::= TEXTUAL-CONVENTION

    -- This is a type 2 enumeration.

         STATUS        current

         DESCRIPTION

           "The defined slitting type enumerations."

         SYNTAX        INTEGER {

           other(1),

           unknown(2),

           slit(3),

           slitAndSeparate(4),

           slitAndMerge(5)

            }


    FinOutputTypeTC ::= TEXTUAL-CONVENTION

    -- This is a type 2 enumeration.

         STATUS        current

         DESCRIPTION

           "The defined output type enumerations."

         SYNTAX        INTEGER {

           other(1),
```

```
        unknown(2),

        removableBin(3),

        unremovableBin(4),

        continuousRollDevice(5),

        mailbox(6),

        continuousFanFold(7),

        conveyer(8),

        smartCart(9)
       }

   FinSupplyTypeTC ::= TEXTUAL-CONVENTION

   -- This is a type 2 enumeration.

       STATUS       current

       DESCRIPTION

         "The defined finishing supply type enumerations."

       SYNTAX       INTEGER {

         other(1),

         unknown(2),

         -- toner(3),

         -- wasteToner(4),

         -- ink(5),

         -- inkCartridge(6),

         -- inkRibbon(7),

         -- wasteInk(8),

         -- opc(9), -- photo conductor

         -- developer(10),

         -- fuserOil(11),

         -- solidWax(12),

         -- ribbonWax(13),
```

```
        -- wasteWax(14),

        -- fuser(15),

        -- coronaWire(16),

        -- fuserOilWick(17),

        -- cleanerUnit(18),

        -- fuserCleaningPad(19),

        -- transferUnit(20),

        -- tonerCartridge(21),

        -- fuserOiler(22),

        water(23),

        wasteWater(24),

        glueWaterAdditive(25),

        wastePaper(26),

        bindingTape(27),

        bandingTape(28),

        stitchingWire(29),

        shrinkWrap(30),

        paperWrap(31)
          }
```

```
    -- Finisher Device Group

    --

    -- A finisher component may have multiple document finisher

    -- devices associated with it.  Each finishing device may support

    -- one or more finishing features.

    -- For example, one finisher device may cut and sequence sheets

    -- into physical pages.  Another finisher device may fold the

    -- pages for insertion into envelopes.  Each entry in the table
```

    -- corresponds to a finisher device supported by this conponent.

    finDeviceTable OBJECT-TYPE
          SYNTAX   SEQUENCE OF FinDeviceEntry
          MAX-ACCESS not-accessible
          STATUS   current
          DESCRIPTION
            "A device that performs one or more finishing operations on
             printed media other than marking. Examples of operations
             performed by finisher devices are stapling, punching,
             folding, die cutting, trimming, and banding."
          ::= { finisherMIB 18 }

    finDeviceEntry OBJECT-TYPE
          SYNTAX   FinDeviceEntry
          MAX-ACCESS not-accessible
          STATUS   current
          DESCRIPTION
            "Entries may exist in the table for each device index with
             a device type of 'printer' and for each printer output
             path with one or more finisher devices."
          INDEX { hrDeviceIndex, prtOutputIndex, finDeviceIndex }
          ::= { finDeviceTable 1 }

    FinDeviceEntry ::= SEQUENCE {
          finDeviceIndex   Integer32,
          finDeviceName   DisplayString,
          finDeviceVendorName   DisplayString,
          finDeviceModel   DisplayString,

                        Page 11 of 50

```
        finDeviceVersion               OCTET STRING,

        finDeviceSerialNumber          DisplayString,

        finDEviceDescription           OCTET STRING,

        finDeviceStatus                PrtSubUnitStatusTC
        }
```

    finDeviceIndex OBJECT-TYPE

        SYNTAX   Integer32(0..2147483647)

        MAX-ACCESS not-accessible

        STATUS   current

        DESCRIPTION

          "A unique value used by this component to identify an

           associated document finisher device. Although these values

           may change due to a major reconfiguration of the component

           (e.g. the addition of new finishing devices), values are

           normally expected to remain stable across successive power

           cycles."

        ::= { finDeviceEntry 1 }

    finDeviceName OBJECT-TYPE

        SYNTAX   DisplayString(0..63)

        MAX-ACCESS read-only

        STATUS   current

        DESCRIPTION

          "The name assigned to this document finisher device."

        ::= { finDeviceEntry 2 }

    finDeviceVendorName OBJECT-TYPE

        SYNTAX   DisplayString(0..63)

                    Page 12 of 50
```

```
     MAX-ACCESS   read-only

     STATUS       current

     DESCRIPTION

        "The name of the vendor of this device."

     ::= { finDeviceEntry 3 }


finDeviceModel OBJECT-TYPE

     SYNTAX       DisplayString(0..63)

     MAX-ACCESS   read-only

     STATUS       current

     DESCRIPTION

        "The model name of this device."

     ::= { finDeviceEntry 4 }


finDeviceVersion OBJECT-TYPE

     SYNTAX       OCTET STRING(0..63)

     MAX-ACCESS   read-only

     STATUS       current

     DESCRIPTION

        "The version string for this device."

     ::= { finDeviceEntry 5 }


finDeviceSerialNumber OBJECT-TYPE

     SYNTAX       DisplayString(0..63)

     MAX-ACCESS   read-only

     STATUS       current

     DESCRIPTION

        "The serial number assigned to this device."

     ::= { finDeviceEntry 6 }
```

```
      finDeviceDescription OBJECT-TYPE

          SYNTAX      OCTET STRING(0..255)

          MAX-ACCESS  read-only

          STATUS      current

          DESCRIPTION

            "A free-form text description of this document finishing

             device."

          ::= { finDeviceEntry 7 }


      finDeviceStatus OBJECT-TYPE

          SYNTAX      PrtSubUnitStatusTC

          MAX-ACCESS  read-only

          STATUS      current

          DESCRIPTION

            "Indicates the state of the device."

          ::= { finDeviceEntry 8 }


      -- Finisher Features Group

      --

      -- A finisher device may support one or more finishing functions

      -- for for each of the input sources associated with it.


      finFeaturesTable OBJECT-TYPE

          SYNTAX      SEQUENCE OF FinFeaturesEntry

          MAX-ACCESS not-accessible

          STATUS      current

          DESCRIPTION

            "Finishing features associated with the processing of input
```

```
            media including information regarding functions supported,

            possible configuration options and status for each input

            source."

        ::= { finisherMIB 19 }



    finFeaturesEntry OBJECT-TYPE

        SYNTAX      FinFeaturesEntry

        MAX-ACCESS not-accessible

        STATUS      current

        DESCRIPTION

          "There is an entry in the finishing features table for each

           finisher device. Each entry, in turn, specifies a list of

           finishing features and identifies whether or not they are

           present, and if so, their current status and

           characteristics."

        INDEX  { hrDeviceIndex, prtOutputIndex, finDeviceIndex,

                 finFeatureIndex }

        ::= { finFeaturesTable 1 }



    FinFeaturesEntry ::= SEQUENCE {

          finStitching                PresentOnOff,

          finStitchingType            FinStitchingTypeTC,

          finMaxPagesStitched         Integer32,

          finFolding                  PresentOnOff,

          finFoldingType              Integer32,

          finMaxPagesFolded           Integer32,

          finBinding                  PresentOnOff,

          finBindingType              finBindingTypeTC,

          finMaxPagesBound            Integer32,
```

```
        finBindingColor              DisplayString,

        finTrimming                  PresentOnOff,

        finTrimmingType              Integer32,

        finMaxPagesTrimmed           Integer32,

        finDieCutting                PresentOnOff,

        finDieCuttingType            Integer32,

        finMaxPagesDieCut            Integer32,

        finPunching                  PresentOnOff,

        finPunchType                 Integer32,

        finMaxPagesPunched           Integer32,

        finPerforating               PresentOnOff,

        finPerforationType           Integer32,

        finSlitting                  PresentOnOff,

        finSlittingType              FinSlittingTypeTC,

        finSeparationCut             PresentOnOff,

        finSeparationCutType         Integer32,

        finImprinting                PresentOnOff,

        finImprintingType            Integer32,

        finWrapping                  PresentOnOff,

        finWrappingType              Integer32,

        finMaxPagesWrapped           Integer32,

        finBanding                   PresentOnOff,

        finBandingType               Integer32,

        finMaxPagesBanded            Integer32
      }


   finStitching OBJECT-TYPE

      SYNTAX       PresentOnOff

      MAX-ACCESS   read-write
```

        STATUS   current

        DESCRIPTION

          "Indicates if stitching is supported as a finishing

           feature option for this input source and whether the

           feature is enabled."

        ::= { finFeatureEntry 1 }

    finStitchingType OBJECT-TYPE

        SYNTAX   FinStitchingTypeTC

        MAX-ACCESS read-write

        STATUS   current

        DESCRIPTION

          "Type of stitching that is presently enabled for page sets

           in the input media source associated with this entry.

           Staple indicates the staple type is the finisher defined

           staple default. Stitch indicates the stitch type is the

           finisher defined stitch default."

        ::= { finFeatureEntry 2 }

    finMaxPagesStitched OBJECT-TYPE

        SYNTAX   Integer32

        MAX-ACCESS read-write

        STATUS   current

        DESCRIPTION

          "Maximum number of pages that can be in a page set to be

           stitched by this finishing device. The value of this

           object may be used for device setups and/or bypassing

           (diverting) stitching operations for sets that are too

           large to handle."

```
      ::= { finFeatureEntry 3 }



    finFolding OBJECT-TYPE

        SYNTAX      PresentOnOff

        MAX-ACCESS  read-write

        STATUS      current

    DESCRIPTION

          "Indicates if folding is supported as a finishing feature

           option for this input source and whether the feature is

           enabled."

        ::= { finFeatureEntry 4 }



    finFoldingType OBJECT-TYPE

        SYNTAX      Integer32 {

                        other(1),

                        unknown(2),

                        zFold(3),

                        halfFold(4),

                        letterFold(5)

                    }

        MAX-ACCESS  read-write

        STATUS      current

        DESCRIPTION

          "Type of folding that is presently enabled for page sets in

             the input media source associated with this entry."

        ::= { finFeatureEntry 5 }



    finMaxPagesFolded OBJECT-TYPE

        SYNTAX      Integer32
```

MAX-ACCESS   read-write

STATUS   current

DESCRIPTION

"Maximum number of pages that can be in a page set to be

folded by this finishing device. The value of this object

may be used for device setups and/or bypassing (diverting)

folding for sets that are too large to handle."

::= { finFeatureEntry 6 }

finBinding OBJECT-TYPE

SYNTAX   PresentOnOff

MAX-ACCESS   read-write

STATUS   current

DESCRIPTION

"Indicates if binding is supported as a finishing feature

option for this input source and whether the feature is

enabled."

::= { finFeatureEntry 7 }

finBindingType OBJECT-TYPE

SYNTAX   FinBindingTypeTC

MAX-ACCESS   read-write

STATUS   current

DESCRIPTION

"Type of binding that is presently enabled for page sets in

the input media source associated with this entry. Bind

indicates that the bind type that is the finisher defined

binding default."

::= { finFeatureEntry 8 }

finMaxPagesBound OBJECT-TYPE

     SYNTAX   Integer32

     MAX-ACCESS   read-write

     STATUS   current

     DESCRIPTION

       "Maximum number of pages that can be in a page set to be

        bound by this finishing device. The value of this object

        may be used for device setups and/or bypassing (diverting)

        binding for sets that are too large to handle."

     ::= { finFeatureEntry 9 }

finBindingColor OBJECT-TYPE

     SYNTAX   DisplayString(0..63)

     MAX-ACCESS   read-only

     STATUS   current

     DESCRIPTION

       "The name of the color of the binding associated with this

        finishing feature. Standard values are standardized

        strings from ISO-10175 [DPA] and ISO-10180 [SPDL]. These

        are white, red, green, blue, pink, yellow, black, buff,

        goldenrod and other. Additional strings with names that

        do not conflict with standard names may also be

        specified."

     ::= { finFeatureEntry 10 }

finTrimming OBJECT-TYPE

     SYNTAX   PresentOnOff

     MAX-ACCESS   read-write

     STATUS   current

DESCRIPTION

   "Indicates if trimming is supported as a finishing feature

    option for this input source and whether the feature is

    enabled."

::= { finFeatureEntry 11 }

finTrimmingType OBJECT-TYPE

   SYNTAX   Integer32 {

                     other(1),

                     unknown(2),

                     trim(3)

                  }

   MAX-ACCESS read-write

   STATUS   current

   DESCRIPTION

      "Type of trimming that is presently enabled for page sets

       in the input media source associated with this entry.

       Trim indicates the trim type that is the finisher defined

       default."

   ::= { finFeatureEntry 12 }

finMaxPagesTrimmed OBJECT-TYPE

   SYNTAX   Integer32

   MAX-ACCESS read-write

   STATUS   current

   DESCRIPTION

      "Maximum number of pages that can be in a page set to be

       trimmed by this finishing device. The value of this object

       may be used for device setups and/or bypassing (diverting)

trimming for sets that are too large to handle."

::= { finFeatureEntry 13 }

finDieCutting OBJECT-TYPE

    SYNTAX   PresentOnOff

    MAX-ACCESS read-write

    STATUS   current

    DESCRIPTION

       "Indicates if die cutting is supported as a finishing

        feature option for this input source and whether the

        feature is enabled."

    ::= { finFeatureEntry 14 }

finDieCuttingType OBJECT-TYPE

    SYNTAX   Integer32 {

                     other(1),

                     unknown(2),

                     dieCut(3)

                  }

    MAX-ACCESS read-write

    STATUS   current

    DESCRIPTION

       "Type of die cutting that is presently enabled for page

        sets in the input media source associated with this entry.

        Die cut indicates the die cut type that is the finisher

        defined default."

    ::= { finFeatureEntry 15 }

finMaxPagesDieCut OBJECT-TYPE

```
        SYNTAX        Integer32

        MAX-ACCESS    read-write

        STATUS        current

        DESCRIPTION

          "Maximum number of pages that can be in a page set to be

           die cut by this finishing device. The value of this object

           may be used for device setups and/or bypassing (diverting)

           die cutting for sets that are too large to handle."

        ::= { finFeatureEntry 16 }



    finPunching OBJECT-TYPE

        SYNTAX        PresentOnOff

        MAX-ACCESS    read-write

        STATUS        current

        DESCRIPTION

          "Indicates if Punching is supported as a finishing feature

           option for this input source and whether the feature is

           enabled."

        ::= { finFeatureEntry 17 }



    finPunchType OBJECT-TYPE

        SYNTAX        Integer32 {

                          other(1),

                          unknown(2),

                          punch(3)

                        }

        MAX-ACCESS    read-write

        STATUS        current

        DESCRIPTION
```

"Type of punching that is presently enabled for page sets

in the input media source associated with this entry.

Punch indicates the punch type that is the finisher

defined default."

::= { finFeatureEntry 18 }

finMaxPagesPunched OBJECT-TYPE

    SYNTAX   Integer32

    MAX-ACCESS read-write

    STATUS   current

    DESCRIPTION

      "Maximum number of pages that can be in a page set to be

       punched by this finishing device. The value of this object

       may be used for device setups and/or bypassing (diverting)

       punching for sets that are too large to handle."

    ::= { finFeatureEntry 19 }

finPerforating OBJECT-TYPE

    SYNTAX   PresentOnOff

    MAX-ACCESS read-write

    STATUS   current

    DESCRIPTION

      "Indicates if perforating is supported as a finishing

       feature option for this input source and whether the

       feature is enabled."

    ::= { finFeatureEntry 20 }

finPerforationType OBJECT-TYPE

    SYNTAX   Integer32 {

```
                        other(1),

                        unknown(2),

                        perforate(3)
                      }
        MAX-ACCESS  read-write

        STATUS      current

        DESCRIPTION

          "Type of perforation that is presently enabled for page

           sets in the input media source associated with this entry.

           The value perforate indicates the perforation type that is

           the finisher defined default."

        ::= { finFeatureEntry 21 }


    finSlitting OBJECT-TYPE

        SYNTAX      PresentOnOff

        MAX-ACCESS  read-write

        STATUS      current

        DESCRIPTION

          "Indicates if slitting is supported as a finishing feature

           option for this input source and whether the feature is

           enabled."

        ::= { finFeatureEntry 22 }


    finSlittingType OBJECT-TYPE

        SYNTAX      FinSlittingTypeTC

        MAX-ACCESS  read-write

        STATUS      current

        DESCRIPTION

          "Type of slitting that is presently enabled for page sets
```

in the input media source associated with this entry.

The value Slit indicates the slitting type that is the

finisher defined slitting default."

::= { finFeatureEntry 23 }

finSeparationCut OBJECT-TYPE

    SYNTAX   PresentOnOff

    MAX-ACCESS   read-write

    STATUS   current

    DESCRIPTION

      "Indicates if separation cuts are supported as a finishing

       feature option for this input source and whether the

       feature is enabled."

    ::= { finFeatureEntry 24 }

finSeparationCutType OBJECT-TYPE

    SYNTAX   Integer32 {

                      other(1),

                      unknown(2),

                      separationCut(3)

                   }

    MAX-ACCESS   read-write

    STATUS   current

    DESCRIPTION

      "Type of separation cut that is presently enabled for page

       sets in the input media source associated with this entry.

       The value separationCut indicates the separation cut type

       that is the finisher defined default."

    ::= { finFeatureEntry 25 }

```
finImprinting OBJECT-TYPE

    SYNTAX      PresentOnOff

    MAX-ACCESS  read-write

    STATUS      current

    DESCRIPTION

      "Indicates if imprinting is supported as a finishing

       feature option for this input source and whether the

       feature is enabled."

    ::= { finFeatureEntry 26 }


finImprintingType OBJECT-TYPE

    SYNTAX      Integer32 {

                    other(1),

                    unknown(2),

                    imprinting(3)

                  }

    MAX-ACCESS  read-write

    STATUS      current

    DESCRIPTION

      "Type of imprinting that is presently enabled for page

       sets in the input media source associated with this entry.

       The value imprinting indicates the imprinting type that is

       the finisher defined default."

    ::= { finFeatureEntry 27 }


finWrapping OBJECT-TYPE

    SYNTAX      PresentOnOff

    MAX-ACCESS  read-write
```

```
        STATUS       current

        DESCRIPTION

          "Indicates if wrapping is supported as a finishing feature

           option for this input source and whether the feature is

           enabled."

        ::= { finFeatureEntry 28 }


    finWrappingType OBJECT-TYPE

        SYNTAX       Integer32 {

                        other(1),

                        unknown(2),

                        wrap(3),

                        shrinkWrap(4),

                        paperWrap(5)

                      }

        MAX-ACCESS   read-write

        STATUS       current

        DESCRIPTION

          "Type of wrapping that is presently enabled for page

           sets in the input media source associated with this entry.

           The value wrap indicates the wrapping type that is the

           finisher defined default."

        ::= { finFeatureEntry 29 }


    finMaxPagesWrapped OBJECT-TYPE

        SYNTAX       Integer32

        MAX-ACCESS   read-write

        STATUS       current

        DESCRIPTION
```

          "Maximum number of pages that can be in a page set to be

            wrapped by this finishing device."

        ::= { finFeatureEntry 30 }

    finBanding OBJECT-TYPE

        SYNTAX   PresentOnOff

        MAX-ACCESS read-write

        STATUS   current

        DESCRIPTION

          "Indicates if banding is supported as a finishing feature

            option for this input source and whether the feature is

            enabled."

        ::= { finFeatureEntry 31 }

    finBandingType OBJECT-TYPE

        SYNTAX   Integer32 {

                        other(1),

                        unknown(2),

                        band(3)

                    }

        MAX-ACCESS read-write

        STATUS   current

        DESCRIPTION

          "Type of banding that is presently enabled for page

            sets in the input media source associated with this entry.

            The value band indicates the banding type that is the

            finisher defined default."

        ::= { finFeatureEntry 32 }

```
        finMaxPagesBanded OBJECT-TYPE

            SYNTAX        Integer32

            MAX-ACCESS   read-write

            STATUS        current

            DESCRIPTION

              "Maximum number of pages that can be in a page set to be

               banded by this finishing device."

            ::= { finFeatureEntry 33 }




    -- Finisher Output Group

    --

    -- A finisher may have multiple output devices associated with it

    -- For example, a finisher can have several output trays.



    finOutputTable OBJECT-TYPE

            SYNTAX        SEQUENCE OF FinOutoutEntry

            MAX-ACCESS not-accessible

            STATUS        current

            DESCRIPTION

              "The output devices associated with a finisher are

               identified in this table.  Each entry in the table is an

               output device definition with an ordered set of attributes

               describing the output characteristics and indicating

               current status or capacity. Only those attributes

               applicable to the output device need be specified."

            ::= { finisherMIB 20 }



        finOutputEntry OBJECT-TYPE
```

```
            SYNTAX      FinOutputEntry

            MAX-ACCESS not-accessible

            STATUS      current

            DESCRIPTION

              "A list of output devices capable of receiving media

               delivered from the printing process including information

               regarding their identity, possible and current

               configuration, and status."

            INDEX  { hrDeviceIndex, prtOutputIndex, finDeviceIndex,

                     finOutputIndex }

            ::= { finOutputTable 1 }


        FinOutputEntry ::= SEQUENCE {

            finOutputIndex              Integer32,

            finOutoutType               FinOutputTypeTC,

            finOutputCapacityUnit       PrtCapacityUnitTC,

            finOutputMaxCapacity        Integer32,

            finOutputRemainingCapacity  Integer32,

            finOutputStatus             PrtSubUnitStatusTC,

            finOutputName               OCTET STRING,

            finOutputVendorName         OCTET STRING,

            finOutputModel              OCTET STRING,

            finOutputVersion            OCTET STRING,

            finOutputSerialNumber       OCTET STRING,

            finOutputDescription        OCTET STRING,

            finOutputSecurity           PresentOnOff,

            finOutputDimUnit            MediaUnit,

            finOutputMaxDimFeedDir      Integer32,

            finOutputMaxDimXFeedDir     Integer32,
```

```
        finOutputMinDimFeedDir          Integer32,

        finOutputMinDimXFeedDir         Integer32,

        finOutputStackingOrder          PrtOutputStackingOrderTC,

        finOutputPageDeliveryOrient

                                PrtOutputPageDeliveryOrientationTC,

        finOutputBursting               PresentOnOff,

        finOutputDecollating            PresentOnOff,

        finOutputPageCollated           PresentOnOff,

        finOutputOffsetStacking         PresentOnOff
      }
```

```
    finOutputIndex OBJECT-TYPE
        SYNTAX      Integer32(0..2147483647)
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
          "A unique value used by this component to identify an
           associated output device. Although these values may change
           due to a major reconfiguration of the component (e.g. the
           addition of new output devices to the finisher), values
           are normally expected to remain stable across successive
           power cycles."
        ::= { finOutputEntry 1 }
```

```
    finOutputType OBJECT-TYPE
        SYNTAX      FinOutputTypeTC
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
```

             "The type of technology employed by this output unit."

          ::= { finOutputEntry 2 }

        finOutputCapacityUnit OBJECT-TYPE

             SYNTAX   PrtCapacityUnitTC

             MAX-ACCESS   read-only

             STATUS   current

             DESCRIPTION

               "The unit of measure for specifying capacity."

          ::= { finOutputEntry 3 }

        finOutputMaxCapacity OBJECT-TYPE

             SYNTAX   Integer32

             MAX-ACCESS   read-write

             STATUS   current

             DESCRIPTION

               "The maximum capacity of this device in Output Capacity

                Units. There is no convention associated with the media

                itself so this value is claimed capacity. 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."

             ::= { finOutputEntry 4 }

        finOutputRemainingCapacity OBJECT-TYPE

             SYNTAX   Integer32

```
             MAX-ACCESS   read-write

             STATUS       current

             DESCRIPTION

               "The remaining capacity of this device in Output Capacity

                Units.  If the output 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)
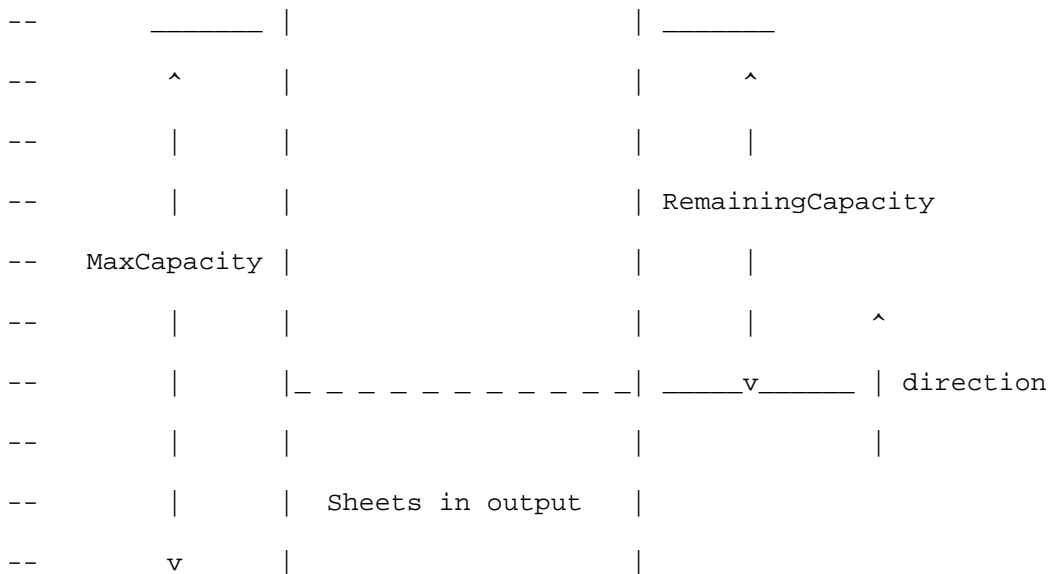
                means unknown."

             ::= { finOutputEntry 5 }




     --                    Capacity Attribute Relationships

     --

     --

     --                    OUTPUT MEASUREMENT

     --

     --        _____ |                      | _____

     --           ^    |                      |     ^

     --           |    |                      |     |

     --           |    |                      | RemainingCapacity

     --   MaxCapacity |                      |     |

     --           |    |                      |     |     ^

     --           |    |_ _ _ _ _ _ _ _ _ _ _|  ____v_____  | direction

     --           |    |                      |              |

     --           |    | Sheets in output     |

     --           v    |                      |
```

```
--         ------- +--------------------+

--




        finOutputStatus OBJECT-TYPE

            SYNTAX      PrtSubUnitStatusTC

            MAX-ACCESS  read-only

            STATUS      current

            DESCRIPTION

              "Indicates the current status of this output device."

            ::= { finOutputEntry 6 }




        -- The Extended Finisher Output Group

        --

        -- This group is optional.  However, to claim conformance to this

        -- group, it is necessary to implement every object in the group.


        finOutputName OBJECT-TYPE

            SYNTAX      OCTET STRING(0..63)

            MAX-ACCESS  read-write

            STATUS      current

            DESCRIPTION

              "The name assigned to this output device."

            ::= { finOutputEntry 7 }



        finOutputVendorName OBJECT-TYPE

            SYNTAX      OCTET STRING(0..63)

            MAX-ACCESS  read-only
```

       STATUS   current

       DESCRIPTION

          "The vendor name of this output device."

       ::= { finOutputEntry 8 }

    finOutputModel OBJECT-TYPE

       SYNTAX   OCTET STRING(0..63)

       MAX-ACCESS   read-only

       STATUS   current

       DESCRIPTION

          "The model name of this output device."

       ::= { finOutputEntry 9 }

    finOutputVersion OBJECT-TYPE

       SYNTAX   OCTET STRING(0..63)

       MAX-ACCESS   read-only

       STATUS   current

       DESCRIPTION

          "The version string for this output device."

       ::= { finOutputEntry 10 }

    finOutputSerialNumber OBJECT-TYPE

       SYNTAX   OCTET STRING(0..63)

       MAX-ACCESS   read-only

       STATUS   current

       DESCRIPTION

          "The serial number assigned to this output device."

       ::= { finOutputEntry 11 }

        finOutputDescription OBJECT-TYPE

            SYNTAX   OCTET STRING(0..255)

            MAX-ACCESS read-only

            STATUS   current

            DESCRIPTION

              "A free form text description of this output device in the

               localization specified by prtGeneralCurrentLocalization."

            ::= { finOutputEntry 12 }

        finOutputSecurity OBJECT-TYPE

            SYNTAX   PresentOnOff

            MAX-ACCESS read-write

            STATUS   current

            DESCRIPTION

              "Indicates if this device has some security associated with

               it."

            ::= { finOutputEntry 13 }

        -- The Finisher Output Dimensions Group

        --

        -- This group is optional. However, to claim conformance to this

        -- group, it is necessary to implement every object in the group.

        finOutputDimUnit OBJECT-TYPE

            SYNTAX   Integer32 {

                          other(1),

                          unknown(2),

                          tenThousandthsOfInches(3),

```
                      micrometers(4),

                      sheets(8)
                 }
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
        "The unit of measure for specifying dimensional values for
         this output device."
      ::= { finOutputEntry 14 }


  finOutputMaxDimFeedDir OBJECT-TYPE
      SYNTAX      Integer32
      MAX-ACCESS  read-write
      STATUS      current
      DESCRIPTION
        "This object provides the value of the maximum dimension in
         the feed direction of the media that is placed or will be
         placed in this output device.  Feed dimension measurements
         are taken parallel relative to the feed direction of the
         device and measured in Output Dim Units. If the device can
         reliably sense this value, the value is sensed by the
         device and is read-only; otherwise the value may be
         written (set) by a management application."
      ::= { finOutputEntry 15 }


  finOutputMaxDimXFeedDir OBJECT-TYPE
      SYNTAX      Integer32
      MAX-ACCESS  read-write
      STATUS      current
```

DESCRIPTION

"The maximum dimensions supported by this output device for

measurements taken ninety degrees relative to the feed

direction associated with this device in Output Dim Units.

If the device can reliably sense this value, the value is

sensed by the device and is read-only; otherwise the value

may be written (set) by a management application."

::= { finOutputEntry 16 }

finOutputMinDimFeedDir OBJECT-TYPE

SYNTAX   Integer32

MAX-ACCESS read-write

STATUS   current

DESCRIPTION

"This object provides the value of the minimum dimension in

the feed direction of the media that is placed or will be

placed in this output device. Feed dimension measurements

are taken parallel relative to the feed direction of the

device and measured in Output Dim Units. If the device can

reliably sense this value, the value is sensed by the

device and is read-only; otherwise the value may be

written (set) by a management application."

::= { finOutputEntry 17 }

finOutputMinDimXFeedDir OBJECT-TYPE

SYNTAX   Integer32

MAX-ACCESS read-write

STATUS   current

DESCRIPTION

"The minimum dimensions supported by this output device for

measurements taken ninety degrees relative to the feed

direction associated with this device in Output Dim Units.

If the device can reliably sense this value, the value is

sensed by the device and is read-only; otherwise the value

may be written (set) by a management application."

::= { finOutputEntry 18 }

-- The Finisher Output Features Group

--

-- This group is optional. However, to claim conformance to this

-- group, it is necessary to implement every object in the group.

--

-- This group is identical to the Output Features Group in the

-- Printer MIB and should be used when the outputs of the

-- finisher do not have identical characteristics and can be

-- described by the objects in this group.

finOutputStackingOrder OBJECT-TYPE

     SYNTAX   PrtOutputStackingOrderTC

     MAX-ACCESS   read-write

     STATUS   current

     DESCRIPTION

       "The current state of the stacking order for this output

         device. firstToLast means that as pages are output, the

         front of the next page is placed against the back of the

         previous page. lastToFirst means as pages are output, the

         back of the next page is placed against the front of the

previous page."

::= { finOutputEntry 19 }

finOutputPageDeliveryOrient OBJECT-TYPE

    SYNTAX   PrtOutputPageDeliveryOrientationTC

    MAX-ACCESS read-write

    STATUS   current

    DESCRIPTION

      "The reading surface that will be up when pages are

       delivered to the output device."

    ::= { finOutputEntry 20 }

finOutputBursting OBJECT-TYPE

    SYNTAX   PresentOnOff

    MAX-ACCESS read-write

    STATUS   current

    DESCRIPTION

      "This object indicates if the output unit supports

       bursting, and if so, whether the feature is enabled.

       Bursting is the process by which continuous media is

       separated into individual sheets typically by bursting

       along pre-formed perforations."

    ::= { finOutputEntry 21 }

finOutputDecollating OBJECT-TYPE

    SYNTAX   PresentOnOff

    MAX-ACCESS read-write

    STATUS   current

    DESCRIPTION

"This object indicates if the output device supports

decollating, and if so, whether the feature is enabled.

Decollating is the process by which the parts of a

multi-part form are separated and sorted into separate

stacks for each part."

::= { finOutputEntry 22 }

finOutputPageCollated OBJECT-TYPE

SYNTAX   PresentOnOff

MAX-ACCESS   read-write

STATUS   current

DESCRIPTION

"This object indicates if the output device supports

page collation, and if so, whether the feature is

enabled."

::= { finOutputEntry 23 }

finOutputOffsetStacking OBJECT-TYPE

SYNTAX   PresentOnOff

MAX-ACCESS   read-write

STATUS   current

DESCRIPTION

"This object indicates if the output device supports

offset stackin, and if so, whether the feature is

enabled."

::= { finOutputEntry 24 }

-- Finisher Supply Group

--

-- A finisher 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.

    finSupplyTable OBJECT-TYPE

    SYNTAX   SEQUENCE OF FinSupplyEntry

    MAX-ACCESS not-accessible

    STATUS   current

    DESCRIPTION

      "Each unique source of supply is an entry in the finisher

       supply table. Each supply entry has its own

       characteristics associated with it such as colorant and

       current supply level."

    ::= { finisherMIB 21 }

finSupplyEntry OBJECT-TYPE

    SYNTAX   FinSupplyEntry

    MAX-ACCESS not-accessible

    STATUS   current

    DESCRIPTION

      "A list of finisher devices, with their associated

       supplies and supplies characteristics."

    INDEX { hrDeviceIndex, prtOutputIndex, finDeviceIndex,

          finSupplyIndex, finSupplyColorantIndex }

    ::= { finSupplyTable 1 }

```
FinSupplyEntry ::= SEQUENCE {

    finSupplyIndex              Integer32,

    finSupplyClass              PrtMarkerSuppliesClassTC,

    finSupplyType               FinSupplyTypeTC,

    finSupplyDescription        OCTET STRING,

    finSupplyUnit

                                PrtMarkerSuppliesSupplyUnitTC,

    finSupplyMaxCapacity        Integer32,

    finSupplyCurrentLevel       Integer32
  }
```

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

```
finSupplyClass OBJECT-TYPE
    SYNTAX      PrtMarkerSuppliesClassTC
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
```

       "The value of the Index corresponding to the finisher

       device with which this supply entry is associated."

    ::= { finSupplyEntry 2 }

    finSupplyType OBJECT-TYPE

       SYNTAX   FinSupplyTypeTC

       MAX-ACCESS   read-only

       STATUS   current

       DESCRIPTION

         "The type of this supply."

       ::= { finSupplyEntry 3 }

    finSupplyDescription OBJECT-TYPE

       SYNTAX   OCTET STRING(0..255)

       MAX-ACCESS   read-only

       STATUS   current

       DESCRIPTION

         "The description of this supply/receptacle in text useful

          for operators and management applications."

       ::= { finSupplyEntry 4 }

    finSupplyUnit OBJECT-TYPE

       SYNTAX   PrtMarkerSuppliesSupplyUnitTC

       MAX-ACCESS   read-only

       STATUS   current

       DESCRIPTION

         "Unit of measure of this finisher supply container or

          receptacle."

       ::= { finSupplyEntry 5 }

finSupplyMaxCapacity OBJECT-TYPE

    SYNTAX   Integer32

    MAX-ACCESS read-write

    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 }

       -- Finisher Supply Colorant Group

       --

       -- A Finisher may have one or more colorants associated with it.

       finSupplyColorantTable OBJECT-TYPE

           SYNTAX   SEQUENCE OF FinSupplyColorantEntry

           MAX-ACCESS not-accessible

           STATUS   current

           DESCRIPTION

             "A table of all the colorants available on the finisher."

           ::= { finisherMIB 22 }

       finSupplyColorantEntry OBJECT-TYPE

           SYNTAX   FinSupplyColorantEntry

           MAX-ACCESS not-accessible

           STATUS   current

           DESCRIPTION

             "Each colorant supported by the finisher is an entry in

              this table."

           INDEX { hrDeviceIndex, prtOutputIndex, finDeviceIndex,

                    finSupplyColorantIndex }

           ::= { prtChannelTable 1 }

       FinSupplyColorantEntry ::= SEQUENCE {

             finSupplyColorantIndex   Integer32,

             finSupplyColorantRole   PrtMarkerColorantRoleTC,

             finSupplyColorantValue   OCTET STRING,

```
             finSupplyColorantTonality     Integer32

          }


       finSupplyColorantIndex OBJECT-TYPE

           SYNTAX      Integer32(0..2147483647)

           MAX-ACCESS  not-accessible

           STATUS      current

           DESCRIPTION

             "A unique value used by a finisher to identify this

              colorant.  Although these values may change due to a major

              reconfiguration of the finisher (e.g. the addition of new

              colorants to the finisher), values are normally expected

              to remain stable across successive power cycles."

           ::= { finSupplyColorantEntry 1 }


       finSupplyColorantRole OBJECT-TYPE

           SYNTAX      PrtMarkerColorantRoleTC

           MAX-ACCESS  read-only

           STATUS      current

           DESCRIPTION

             "The role played by this colorant."

           ::= { finSupplyColorantEntry 2 }


       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."

::= { finSupplyColorantEntry 3 }

finSupplyColorantTonality OBJECT-TYPE

    SYNTAX   Integer32

    MAX-ACCESS read-only

    STATUS   current

    DESCRIPTION

     "The distinct levels of tonality realizable by a finisher

      device when using this colorant. This value does not

      include the number of levels of tonal difference that an

      interpreter can obtain by techniques such as half toning.

      This value must be at least 2."

    ::= { finSupplyColorantEntry 4 }

END

5   Alerts

6   References

[ISO] ISO/IEC 10175 Document Printing Application (DPA), Final,
June 1996

[RFC1759] Smith, R. Wright, F. Hastings, T,Zilles, S., and
Gyllenskog, J. "Printer MIB" RFC 1759, March 1995

___