## White Paper:

## **Capability Ordering**

The TWAIN Working Group September 1, 2009



#### **TWAIN Capability Ordering**

The purpose of this document is to point out connections between certain capabilities. The way one capability can affect another is not always obvious and failure to recognize this interdependence is often the reason for unexpected TWAIN Scanning results. Using this as a guideline, an Application Developers can code capability negotiation with confidence, and Data Source developers can refer back to this document to make sure they have not introduced an unusual dependency.

One other note about interpreting this document, the entire list of capabilities is in the context of the Current File System Device was changed using the DAT\_FILESYSTEM triplets, the context of these capabilities is expected to change and re-negotiation must occur. It is much easier to deal with if the File System operations are completed first and Capability negotiation on a large scale is left until just before scanning from a particular device.

#### **Independent Capabilities**

These capabilities are considered independent because they do not affect other capabilities and they are not affected by changes in other capabilities.

CAP\_CUSTOMDSDATA
CAP\_INDICATORS
CAP\_UICONTROLLABLE
CAP\_SERIALNUMBER
ICAP\_LAMPSTATE
CAP\_BATTERYMINUTES
CAP\_BATTERYPERCENTAGE
CAP\_POWERSUPPLY
ICAP\_BITORDER
CAP\_DEVICETIMEDATE
CAP\_DEVICEEVENT

CAP\_CAMERAPREVIEWUI

CAP ENABLEDSUIONLY

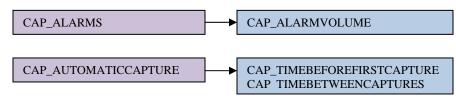
CAP\_POWERSAVETIME

ICAP\_AUTODISCARDBLANKPAGES

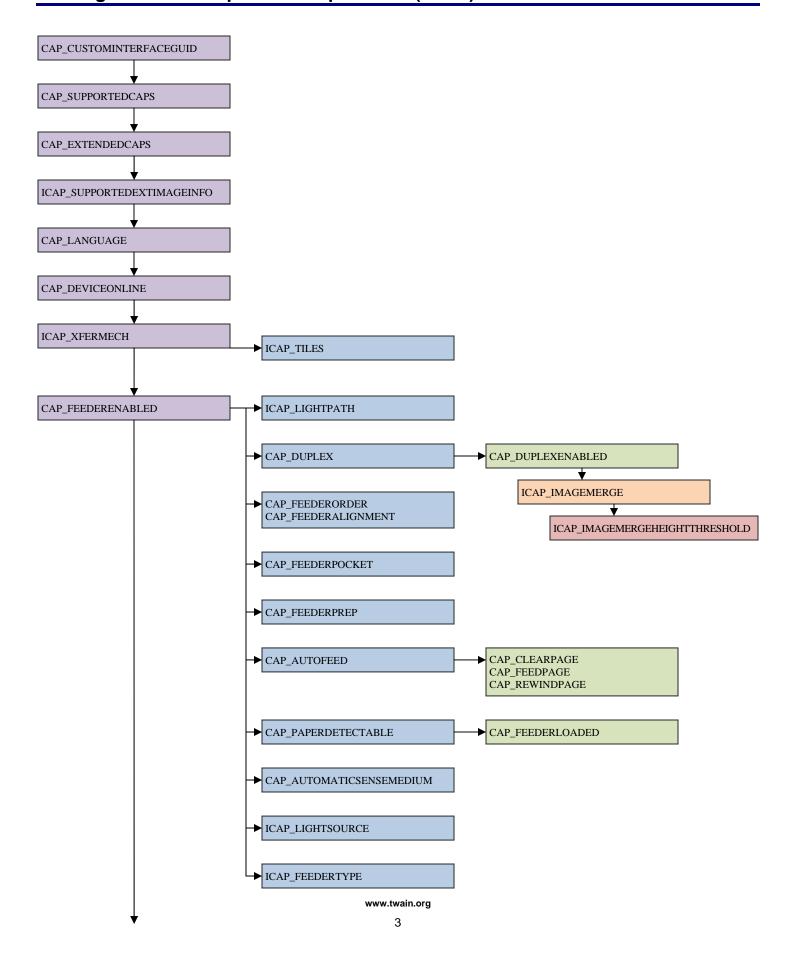
ACAP XFERMECH

#### **Semi-Independent Capabilities**

Semi Independent Capabilities are small groups that have little effect on the big picture do have their own pockets of dependencies.

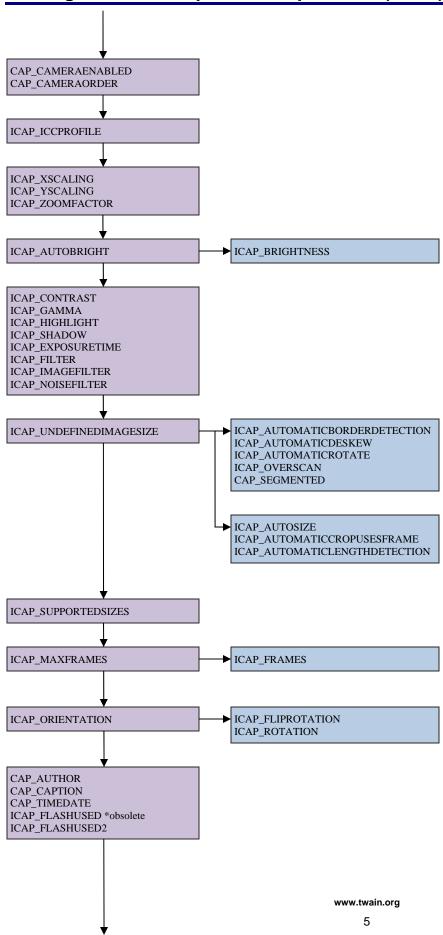


# The Big Picture of Dependant Capabilities (1 of 4)



#### The Big Picture of Dependant Capabilities (2 of 4) CAP\_MICRENABLED CAP PRINTERMODE CAP\_PRINTER CAP\_PRINTERENABLED CAP PRINTERSTRING ICAP\_UNITS CAP\_PRINTERINDEX CAP\_PRINTERSUFFIX ICAP\_IMAGEDATASET \* Note: if CAP\_THUMNAILSENABLED is enabled, do not negotiate any further capabilities related to CAP\_THUMBNAILSENABLED dimensions of the output image. This capability over-rides all in order to have the Source deliver reasonable ICAP\_XNATIVERESOLUTION ICAP\_YNATIVERESOLUTION ICAP\_PHYSICALWIDTH ICAP\_PHYSICALHEIGHT ICAP\_MINIMUMHEIGHT ICAP\_MINIMUMWIDTH ICAP\_COLORMANAGEMENTENABLED CAP\_CAMERASIDE ICAP\_AUTOMATICCOLORENABLED ICAP\_AUTOMATICCOLORNONCOLORPIXELTYPE ICAP\_PIXELTYPE ICAP\_BITDEPTH ► ICAP\_XRESOLUTION ICAP\_YRESOLUTION ► ICAP\_PIXELFLAVOR ICAP\_PLANARCHUNKY ICAP\_BITDEPTHREDUCTION ICAP\_CUSTHALFTONE ICAP\_HALFTONES ICAP\_THRESHOLD ICAP\_IMAGEFILEFORMAT ICAP\_XFERMECH \* ICAP\_COMPRESSION \*Note: Available Compressions are also directly dependent upon the current setting of ICAP XFERMECH. ICAP\_BITORDERCODES ICAP\_CCITTKFACTOR ICAP\_PIXELFLAVORCODES ICAP\_TIMEFILL ICAP\_JPEGPIXELTYPE www.twain.org ICAP\_JPEGQUALITY 4

## The Big Picture of Dependant Capabilities (3 of 4)



## The Big Picture of Dependent Capabilities (4 of 4)

