

The digicap-pro Package

D. P. Story

Email: dpstory@acrotex.net

processed May 23, 2018

Contents

1 Introduction	1
2 Package Options	1
3 Code	2
3.1 Required Packages	2
3.2 <code>\opcolorbox</code>	2
3.3 <code>\digiCap</code> and <code>\digiCap*</code>	4
3.4 A Layout for Digital Display (Photo album)	7
3.4.1 Embedding Images/Creating Thumb Appearances	7
3.4.2 Placing the elements on the page	10
3.4.3 Form fields and JavaScript	13
4 Index	15
1 <code>*package</code>	

1 Introduction

This is a package that can create fancy, transparent captions to photos,¹ or any graphics file. The captions can be set to be continually visible, or only visible on roll-over. Captions can be placed horizontally and vertically with optional arguments. A visible, possibly transparent, border can be placed around the caption as well.

2 Package Options

`display1` The `display1` option is used to create a photo album, a single PDF that contains many photos with captions which are accessible by clicking thumbnails.

```
2 \DeclareOption{display1}{\AtEndOfPackage{\dc@input@displayi}}
```

¹Transparent here means having an opacity between 0 and 1.

```

3 \def\dc@input@displayi{\InputIfFileExists{digi-p1.def}{}{}}
4 \ProcessOptions

```

3 Code

Let's get this show on the road!

3.1 Required Packages

The package builds on packages developed as part of AeB or AeB Pro:

- `aeb-pro`: supplies support for layers and JavaScript management of layers
- `graphicx`: places a graphic as the background of a box
- `opacity-pro`: creates the transparency effects
- `eforms`: use to create Acrobat form buttons with a roll-over action to make roll-over captions visible or hidden.

The `graphicx` package is also used to import digital photos, or other graphics.

```

5 \RequirePackage{eforms}
6 \RequirePackage{graphicx}
7 \RequirePackage{graphicxbox}
8 \RequirePackage{opacity-pro}

```

3.2 `\opcolorbox`

The following are the definitions of the key-value pairs used by `\opcolorbox`. A brief description of their purpose appears in the section devoted to `\opcolorbox`.

```

9 \def\dc@nocolor{nocolor}
10 \define@key{opcolorbox}{borderwidth}[2pt]{\def\opcb@borderwidth{#1}}
11 \define@key{opcolorbox}{fboxsep}[6pt]{\def\opcb@fboxsep{#1}}
12 \define@key{opcolorbox}{width}[\linewidth]{\def\opcb@width{#1}}
13 \define@key{opcolorbox}{bordercolor}[black]{\def\opcb@bordercolor{#1}}
14 \define@key{opcolorbox}{bgcolor}[white]{\def\opcb@bgcolor{#1}}
15 \define@key{opcolorbox}{borderop}[.5]{\def\opcb@borderop{#1}}
16 \define@key{opcolorbox}{bordertextop}[1]{\def\opcb@bordertextop{#1}}
17 \define@key{opcolorbox}{bgop}[.5]{\def\opcb@bgop{#1}}
18 \define@key{opcolorbox}{textop}[1]{\def\opcb@textop{#1}}
19 \define@key{opcolorbox}{borderblend}[Normal]{%
20   \def\opcb@borderblendmode{#1}}
21 \define@key{opcolorbox}{bgblend}[Normal]{\def\opcb@bgblendmode{#1}}
22 \setkeys{opcolorbox}{borderwidth,fboxsep,width,bordercolor,bgcolor,%
23   bordertextop,borderop,bgop,textop,borderblend,bgblend}

```

`\opcolorbox` A general purpose color box that creates two color boxes, a larger one with a smaller one centered vertically and horizontally inside the larger one. Transparent options allow separate control over the opacity settings of the larger and smaller rectangle as well as the text that is written within the smaller rectangle.

Optional key-values for the first parameter

- borderwidth:** The border width. The default is 2pt
- fbxsep:** The space between the border and the text, the default is 6pt
- width:** The width of `\parbox`, the default is `\linewidth`
- bordercolor:** A named color of border, the default is `black`. A special value of `nocolor` is recognized, in that case, no color is applied.
- bgcolor:** A named color of background, the default is `white`. A special value of `nocolor` is recognized, in that case, no color is applied.
- borderop:** A number type, the opacity for border $0 \leq \text{number} \leq 1$, the default is .5
- bgop:** A number type, the opacity for background $0 \leq \text{number} \leq 1$, the default is .5
- textop:** A number type, the opacity for text $0 \leq \text{number} \leq 1$, the default is 1
- borderblend:** The blend mode for the border, the default is `Normal`
- bgblend:** The blend mode for the background, the default is `Normal`

Second parameter, required. The text that goes within the box.

```
24 \def\dc@mark{[\space}%]
25 \newcommand{\opcolorbox}[2][\begin{group
26 \edef\dc@tmp@exp{\noexpand\setkeys{opcolorbox}{#1}}\dc@tmp@exp
27 \ifx\opcb@bgcolor\dc@nocolor\let\opcb@set@bgcolor\mbox
28 \else\def\opcb@set@bgcolor{\colorbox{\opcb@bgcolor}}\fi
29 \ifx\opcb@bordercolor\dc@nocolor\let\opcb@set@bordercolor\mbox
30 \else\def\opcb@set@bordercolor{\colorbox{\opcb@bordercolor}}\fi
31 \setlength{\fbxsep}{\opcb@borderwidth}\setlength{\fbxrule}{0pt}%
32 \begin{settransparency}[\opcb@borderblendmode]{\opcb@bordertextop}%
33   {\opcb@borderop}%
34   \opcb@set@bordercolor{\parbox[c]{\opcb@width}{%
35     \setlength{\fbxsep}{\opcb@fbxsep}\setlength{\fbxrule}{0pt}%
36     \begin{settransparency}[\opcb@bgblendmode]{\opcb@textop}%
37       {\opcb@bgop}%
38       \opcb@set@bgcolor{\parbox[c]{\linewidth-2\fbxsep}{%
39         \begin{settransparency}{\opcb@textop}{\opcb@textop}%
40           #2%
41         \end{settransparency}}%
42       }}%
43     \end{settransparency}}}%
44 \end{settransparency}%
45 \endgroup
46 }
```

for dvips, CA is not recognized since dvips does not stroke backgrounds, so we insert another layer of transparency, with `ca=CA=\opcb@textop`

3.3 \digiCap and \digiCap*

The \digiCap command is defined in this section; there is an * option that changes the caption into a rollover. Before we get started, we define several commands that support some of the options for this command.

The \dc@vCaptionPlacement command accomplishes two things: It records the document author's choice for vertical placement of the caption (saving it in \aeb@captionPlacement), and calculates the amount of vertical displacement needed to overlay the rollover form field correctly over the picture. Possible values for #1 and b, c, and t. The default is b. This command is called when the author sets vcaption, a key belonging to the dc@commands family. Defined below.

```

47 \def\dc@vCaptionPlacement#1{\def\dc@captionPlacement{#1}%
48   \def\dc@@captionPlacement{0pt}%
49   \if\dc@captionPlacement c%
50     \def\dc@@captionPlacement{-\dc@graphicHalfHeight+3pt}\else
51     \if\dc@captionPlacement t%
52       \def\dc@@captionPlacement{-\dc@graphicHeight}%
53     \else
54       \def\dc@captionPlacement{b}%
55       \def\dc@@captionPlacement{0pt}%
56     \fi\fi
57 }
58 \dc@vCaptionPlacement{b}

```

We set the horizontal placement of the caption, possible values are l, c, and r. The default is c. This command is called when the author sets hcaption, a key belonging to the dc@commands family. Defined below.

```

59 \def\dc@hCaptionPlacement#1{\def\dc@argi{#1}%
60   \if\dc@argi l\def\dc@Hplacement{\relax}\else
61     \if\dc@argi c\def\dc@Hplacement{\hfil}\else
62       \if\dc@argi r\def\dc@Hplacement{\hfill}\else
63         \def\dc@Hplacement{\relax}\fi\fi\fi
64 }
65 \dc@hCaptionPlacement{c}

66 \def\dc@calc@adj@width#1{%
67   \edef\dc@tmp@exp{\noexpand\setkeys{opcolorbox}{#1}}\dc@tmp@exp
68   \setlength{\linewidth}{\dc@graphicWidth-2\fbboxsep}%
69   \setlength{\dimen@}{\opcb@width}%
70   \setlength{\dimen@ii}{\opcb@borderwidth}%
71   \setlength{\dimen@}{\dimen@-2\dimen@ii}%
72   \xdef\dc@adj@width{\the\dimen@}%
73 }}

```

This is the command that inserts the caption

```

#1=path to graphic
#2=box content (#3-#5 are included in the box content)
#3=KVPairs of \opcolorbox
#4=content of \opcolorbox
#5=either empty or \eBld, if layers used

```

```

74 \long\def\dc@insert@graphicx@opcolor@boxes#1#2#3#4#5{%
75   \graphicxbox{#1}{#2\parbox[\dc@captionPlacement]{%
76     [\dc@graphicHeight-2\fbboxsep]{\dc@graphicWidth-2\fbboxsep}%
77     {\vskip0pt\dc@Hplacement\opcolorbox[#3,width=\dc@adj@width]%
78     {#4}\par\kern0pt}#5}%
79 }

```

`\graphicHeight` `\graphicWidth` These two commands may be used within the `<caption>` argument of the command `\digiCap`. `\graphicHeight` is used to set the height of a minipage of `\parbox` for a vertically oriented caption. An example appears in the demo file.

```

80 \def\graphicHeight{\dc@graphicHeight-2\fbboxsep-
81   \dc@outerboxsep-\dc@outerboxsep-\opcb@borderwidth-\opcb@borderwidth}
82 \def\graphicWidth{\dc@graphicWidth-2\fbboxsep-
83   \dc@outerboxsep-\dc@outerboxsep-\opcb@borderwidth-\opcb@borderwidth}

```

`\digiCap` A command that places a picture as background of a box, and places a, possibly, transparent caption, optionally, with a border. The syntax is...

```

\digiCap[<dc@commands_kvps>]
        {<file>}[<opcolorbox_fam_kvps>]{<caption>}

```

or

```

\digiCap*[<dc@commands_kvps>]
        {<file>}[<opcolorbox_fam_kvps>]{<caption>}

```

If the optional `*` appears, then `\dc@digiCapRollover` is called, otherwise, `\dc@digiCap`.

The `dc@commands` `xkeyval` family is defined below.

Optional key-values for the first parameter. This set of parameters control the placement of the caption on top of the background picture. There is also a parameter to set the `\includegraphics` options, and the underlying form field name, in the case of a rollover.

outerboxsep: The space the surrounds the boundary of the caption, the default is `3pt`

vcaption: The vertical placement of the caption on the background graphic, possible values are `b`, `c`, and `t`. The default is `b`.

hcaption: The horizontal placement of the caption on the background graphic, possible values are `l`, `c`, and `r`. The default is `c`.

inclgraphicx: The value of this key is a list of key-value pairs that are passed on to the underlying `\includegraphics` command.

rollovername: The basename of the push button form field that is used for a rollover effect. This command is used only with `\digiCap*`, ignored otherwise. For the `\digiCap*` command, this key is optional, if not present, this package supplies a name.

Second parameter, required. The second parameter <file> is the path to the graphic to be use as a background to this box.

Optional key-values for the third parameter. The options for the underlying \opcolorbox. See above for a listing and description.

Fourth parameter, required. The content of the caption.

```

84 \define@key{dc@commands}{outerboxsep}[3pt]{\def\dc@outerboxsep{#1}}
85 \define@key{dc@commands}{vcaption}[b]{\dc@vCaptionPlacement{#1}}
86 \define@key{dc@commands}{hcaption}[c]{\dc@hCaptionPlacement{#1}}
87 \define@key{dc@commands}{inclgraphicx}[]{%
88     \def\dc@inclgraphicx{#1\dc@incgfx@addkeys}}
89 \let\dc@incgfx@addkeys\empty
90 \define@key{dc@commands}{rollovername}[]{%
91     \gdef\dc@rollovername{#1}%
92     \ifx\dc@rollovername\empty
93         {\count0=\dc@rollover@cnt\advance\count0by1\relax
94         \xdef\dc@rollover@cnt{\the\count0}%
95         \xdef\dc@rollovername{Cnt\dc@rollover@cnt}}%
96     \fi
97 }}
98 \let\dc@rollovername\empty
99 \def\dc@rollover@cnt{0}%
100 \setkeys{dc@commands}{outerboxsep,vcaption,hcaption,inclgraphicx}
101 \newcommand{\digiCap}{\ifstar{\dc@digiCapRollover}
102     {\dc@digiCap}}

```

`\dc@digiCap` This creates a digital photo with caption, no rollover.

```

103 \newcommand{\dc@digiCap}[2] []{\begingroup
104     \edef\dc@tmp@exp{\noexpand\setkeys{dc@commands}{#1}}\dc@tmp@exp
105     \def\dc@filename{#2}\setlength{\fboxsep}{\dc@outerboxsep}%
106     \dc@@digiCap
107 }
108 \newcommand{\dc@@digiCap}[2] []{%
109     \edef\dc@tmp@exp{\noexpand\setkeys{Gin}{\dc@inclgraphicx}}%
110     \dc@tmp@exp\edef\dc@tmp@exp{\setbox0=
111         \hbox{\noexpand\includegraphics[draft,\dc@inclgraphicx]%
112             {\dc@filename}}}\dc@tmp@exp\dimen@=\dp0 \advance\dimen@\ht0
113     \edef\dc@graphicHeight{\the\dimen@}%
114     \edef\dc@graphicWidth{\the\wd0}%
115     \dc@calc@adj@width{#1}\parbox{\dc@graphicWidth}{%
116     \dc@insert@graphic@opcolor@boxes{\dc@filename}{-}{#1}{#2}{}}%
117 \endgroup}

```

`\dc@digiCap*` Same as `\dc@digiCap`, but the caption is placed in a layer and a rollover effect is use to make the caption appear. The syntax is...

```

118 \newcommand{\dc@digiCapRollover}[2] []{\begingroup

```

```

119 \edef\dc@tmp@exp{\noexpand\setkeys{dc@commands}{#1}}%
120 \dc@tmp@exp\def\dc@filename{#2}%
121 \setlength{\fboxsep}{\dc@outerboxsep}%
122 \ifx\dc@rollovername\empty\setkeys{dc@commands}{rollovername}\fi
123 \dc@@digiCapRollover
124 }
125 \newcommand{\dc@@digiCapRollover}[2] [] {%
126 \edef\dc@tmp@exp{\noexpand\setkeys{Gin}{\dc@inclgraphicx}}%
127 \dc@tmp@exp\edef\dc@tmp@exp{\setbox0=\hbox{%
128 \noexpand\includegraphics[draft,\dc@inclgraphicx]%
129 {\dc@filename}}}\dc@tmp@exp\dimen@=\dp0\advance\dimen@\ht0
130 \edef\dc@graphicHeight{\the\dimen@}\dimen@=.5\dimen@
131 \edef\dc@graphicHalfHeight{\the\dimen@}%
132 \edef\dc@graphicWidth{\the\wd0}%
133 \dc@calc@adj@width{#1}\parbox{\dc@graphicWidth}{%
134 \raisebox{\dc@@captionPlacement}[Opt][Opt]{\rlap
135 {\pushButton[\presets{\digiCapsPresets{\dc@rollovername}}%
136 \presets{\hiddenPresets}]{dcRollover.\dc@rollovername}%
137 {\dc@graphicWidth}{\dc@graphicHeight}}}%
138 \dc@insert@graphicx@opcolor@boxes{\dc@filename}%
139 {\xBld{\dc@rollovername}}{#1}{#2}{\eBld}%
140 }\global\let\dc@rollovername\empty%
141 \endgroup}

This is a listing of options to be used by the push button that supplies the rollover effect.

142 \def\digiCapsPresets#1{\W0\BG{} \BC{} \H{N} \autoCenter{n}% rollover mod
143 \AA{\AAMouseEnter{\JS{toggleSetThisLayer("#1",true);}}%
144 \AAMouseExit{\JS{toggleSetThisLayer("#1",false);}}}
145 \def\hiddenPresets{}

146 </package>
147 <*digidisplay1>

```

3.4 A Layout for Digital Display (Photo album)

This segment of code provides for a layout to display digital images. Thumbnails of the images are lined up in rows or columns. When the user rolls over a thumb, a large version of that photo appears in the display area. The photos can optionally contain a short caption, and a longer caption. This latter caption appears on a transparent background on top of the photo (`\digiCap` is used here).

3.4.1 Embedding Images/Creating Thumb Appearances

Embed each image using `\embedEPS`, then create other images of that digital in normal, rollover and down appearances. These are used for the form field thumbnails.

`\PicsThisDoc` This command is executed in the preamble of the document. The one argument is a comma delimited list of four parameters:

```

\PicsThisDoc
{%
  <embed_name>{<graphic_path>}{<short_caption>}{<long_caption>},
  <embed_name>{<graphic_path>}{<short_caption>}{<long_caption>},
  ...
  <embed_name>{<graphic_path>}{<short_caption>}{<long_caption>}
}

```

We pass each set of four arguments on to `\dc@setPicsAndCaptions` for processing.

```

148 \newcommand{\PicsThisDoc}[1]{%
149   \for\@args:=#1\do{\expandafter\dc@setPicsAndCaptions\@args}%
150 }

```

This command takes the four arguments passed to it from `\PicsThisDoc`, and passes the required args to the commands `\dc@embedEPSCreateAppearances` and to `\dc@defTheseCaptions`.

```

151 \def\dc@setPicsAndCaptions#1#2#3#4{%
152   \dc@embedEPSCreateAppearances{#1}{#2}%
153   \dc@defTheseCaptions{#1}{#3}{#4}%
154 }

```

This command embeds the graphic file `#2`, names that file as `#1`. The name `#1` is later used to show the figure. The `grahicxsp` package is used here. This command also builds images used in the appearance states of the thumbnail images. The appearance states can be redefined, as desired.

`\setThumbAppearances` Set the appearances of the thumbnail images. There are three appearances: normal, rollover and push. The settings for these parameters are use in the command `\dc@embedEPSCreateAppearances`.

There is one optional argument, the value of this optional argument is the name of one of the photos; in this case, the second argument is used only for that picture. This way, you can change the appearance of the thumbs. Normally, they would all look the same.

```

155 \newcommand{\setThumbAppearances}[2] [] {%
156   \def\dc@argi{#1}\ifx\dc@argi\@empty\def\dc@thumbApprs{#2}%
157   \setkeys{dc@ro@appr}{#2}\else
158   \expandafter\def\csname dc@thumbApprs@#1\endcsname{#2}\fi
159 }
160 \define@key{dc@ro@appr}{normalop}[.5]{\def\dc@ro@appr@normalopacity{#1}}
161 \define@key{dc@ro@appr}{rolloverop}[1]%
162   {\def\dc@ro@appr@rolloveropacity{#1}}
163 \define@key{dc@ro@appr}{downop}[.3]%
164   {\def\dc@ro@appr@downopacity{#1}}
165 \define@key{dc@ro@appr}{boundarywidth}[30]%
166   {\def\dc@ro@appr@boundarywidth{#1}}
167 \define@key{dc@ro@appr}{rgbcolor} [] {%
168   \def\dc@ro@appr@rgbcolor{#1}\ifx\dc@ro@appr@rgbcolor\@empty

```



```

169 \else
170 \expandafter\ef@isitnamed\dc@ro@appr@rgbcolor\ef@nil
171 \ifx\ef@latex@color\ef@y\expandafter
172 \HyColor@XZeroOneThreeFour
173 \expandafter{\dc@ro@appr@rgbcolor}{\dc@ro@appr@rgbcolor}{-}{-}%
174 \edef\dc@ro@appr@rgbcolor{\dc@ro@appr@rgbcolor}\fi
175 \fi}
176 \let\dc@ro@appr@rgbcolor\@empty
177 % {\def\dc@ro@appr@rgbcolor{#1}}
178 \define@key{dc@ro@appr}{cmykcolor}[0 0 1 0]{%
179 \def\dc@ro@appr@cmykcolor{#1}\ifx\dc@ro@appr@cmykcolor\@empty
180 \else
181 \expandafter\ef@isitnamed\dc@ro@appr@cmykcolor\ef@nil
182 \ifx\ef@latex@color\ef@y\expandafter
183 \HyColor@XZeroOneThreeFour
184 \expandafter{\dc@ro@appr@cmykcolor}{\dc@ro@appr@cmykcolor}{-}{-}%
185 \edef\dc@ro@appr@cmykcolor{\dc@ro@appr@cmykcolor}\fi
186 \fi}
187 \def\dc@ro@appr@cmykcolor{0 0 1 0}
188 % {\def\dc@ro@appr@cmykcolor{#1}}
Set the default values for these key-value pairs.
189 \setThumbAppearances{normalop,rolloverop,downop,boundarywidth,%
190 rgbcolor,cmykcolor}

```

This command embeds the graphic file #2, names that file as #1. The name #1 is later used to show the figure. The `grahicxsp` package is used here. This command also builds images used in the appearance states of the thumbnail images. The appearance states can be redefined, as desired.

```

191 \def\dc@embedEPSCreateAppearances#1#2{%
192 \embedEPS[transparencyGroup]{#1}{#2}%
193 \@ifundefined{dc@thumbApprs@#1}{\edef\dc@tmp@exp%
194 {\noexpand\setkeys{dc@ro@appr}{\dc@thumbApprs}}}%
195 {\edef\dc@tmp@exp{\noexpand\setkeys{dc@ro@appr}%
196 {\csname dc@thumbApprs@#1\endcsname}}}\dc@tmp@exp
197 \begin{createImage}{\bboxOf{#1}}{n#1}
198 gsave
199 \dc@mark/ca \dc@ro@appr@normalopacity
200 /SetTransparency pdfmark
201 \urxOf{#1} .1 mul \uryOf{#1} .1 mul moveto
202 currentpoint translate
203 .8 .8 scale
204 \dc@mark{#1} /SP pdfmark
205 grestore
206 \end{createImage}
207 \begin{createImage}{\bboxOf{#1}}{r#1}
208 \dc@mark/ca \dc@ro@appr@rolloveropacity
209 /CA \dc@ro@appr@rolloveropacity
210 /SetTransparency pdfmark
211 \dc@mark{#1} /SP pdfmark

```

```

212     \dc@ro@appr@boundarywidth\space setlinewidth
213     \ifx\dc@ro@appr@rgbcolor\@empty
214     \dc@ro@appr@cmykcolor\space setcmykcolor\else
215     \dc@ro@appr@rgbcolor\space setrgbcolor\fi\space
216     currentlinewidth 2 div dup
217     \urxOf{#1} currentlinewidth sub \uryOf{#1} currentlinewidth sub
218     rectstroke
219 \end{createImage}
220 \begin{createImage}{\bboxOf{#1}}{d#1}
221     \dc@mark/ca \dc@ro@appr@downopacity
222     /CA \dc@ro@appr@downopacity/SetTransparency pdfmark
223     \dc@mark{#1} /SP pdfmark
224     \dc@ro@appr@boundarywidth\space setlinewidth
225     \ifx\dc@ro@appr@rgbcolor\@empty
226     \dc@ro@appr@cmykcolor\space setcmykcolor\else
227     \dc@ro@appr@rgbcolor\space setrgbcolor\fi\space
228     currentlinewidth 2 div dup
229     \urxOf{#1} currentlinewidth sub \uryOf{#1} currentlinewidth sub
230     rectstroke
231 \end{createImage}
232 }

```

This command takes that short and long captions and saves them in a text macro under the name #1Caption and #1Text, where #1 is the graphic name.

```

233 \def\dc@defTheseCaptions#1#2#3{%
234     \expandafter\gdef\csname #1Caption\endcsname{#2}%
235     \expandafter\gdef\csname #1Text\endcsname{#3}%
236 }

```

3.4.2 Placing the elements on the page

This section of the code is devoted to defining the commands to insert the various elements on the page: the photos, the captions, and the thumbs.

`\presentationOrder` A command to create a text macro. The argument is a comma delimited list of photo names.

```

237 \newcommand{\presentationOrder}[1]{\def\dc@presentationOrder{#1}}

```

`\dcFirstOpt` `\dcSecondOpt` These two commands are used to pass optional arguments to `\digiCap`. `\` with various required arguments). These controls for the appearance, transparency, and positioning of the long caption box. These `\dcFirstOpt` and `\dcSecondOpt` are passed as the first optional parameter and third parameters of the `\digiCap` command.

```

238 \newcommand{\dcFirstOpt}[2] [] {%
239     \def\dc@argi{#1}\ifx\dc@argi\@empty\def\dc@icontrol{#2}\else
240     \expandafter\def\csname dc@icontrol@#1\endcsname{#2}\fi}
241 \newcommand{\dcSecondOpt}[2] [] {%
242     \def\dc@argi{#1}\ifx\dc@argi\@empty\def\dc@iicontrol{#2}\else
243     \expandafter\def\csname dc@iicontrol@#1\endcsname{#2}\fi}

```

The following are the default settings for these controls. The values for the macros `\digiDSWidth` and `\digiDSHeight` are defined in `\digiDisplayStyle`.

```
244 \dcFirstOpt{vcaption=b,hcaption=c,outerboxsep=0pt}
245 \dcSecondOpt{borderwidth=0bp,fbboxsep=10bp,bordercolor=nocolor,bgop=.7}
```

`\useRollovers` Execute these commands to create rollovers for the long captions. The default is
`\noRollovers` to use no rollovers.

```
246 \def\useRollovers{\def\dc@use@Rollover{*}%
247   \def\hiddenPresets{F\FHidden}}
248 \def\noRollovers{\let\dc@use@Rollover\@empty
249   \def\hiddenPresets{}}
250 \let\dc@use@Rollover\@empty
251 \def\dc@fudge{\llap{. \hskip20in}}
```

`\longCapFmt` Use this command to apply a global format to the long captions. For example,
`\longCapFmt{\bfseries\scriptsize}`. The default setting does nothing.

```
252 \newcommand{\longCapFmt}[1]{%
253   \def\dc@longCapFmt{#1}}
254 \longCapFmt{}
```

`\dc@showPic` This is the command that places the large digital image in the display area.

```
255 \def\dc@showPic#1{\leavevmode\xBld{#1}\dc@fudge
256   \vbox to0pt{\vss\hbox to0pt{\hss
```

The `\inclgraphicx` of the `dc@commands` family has a secret macro named `\gc@incgfx@addkeys` inserted in its definition. By default, `\gc@incgfx@addkeys` is `\let` equal to `\@empty`. We change that definition here to include the name of the graphic, so the document author does not have to bother. We also scale the picture to fit in the display space.

```
257   \def\dc@incgfx@addkeys{width=\digiDSWidth,%
258     height=\digiDSHeight,keepaspectratio,name=#1}%
```

If there is a custom control for this image, we swap off the default one with the custom one.

```
259   \ifundefined{dc@icontrol@#1}{\expandafter\let\expandafter
260     \dc@icontrol\expandafter=\csname dc@icontrol@#1\endcsname}%
```

If there is a custom control for this image for the second optional argument, we swap off the default one with the custom one.

```
261   \ifundefined{dc@iicontrol@#1}{\expandafter\let\expandafter
262     \dc@iicontrol\expandafter=\csname dc@iicontrol@#1\endcsname}{}%
```

Finally, we are ready to execute the appropriate graphic caption command, with or without rollover.

```
263   \expandafter\digiCap\dc@use@Rollover%
```

After determining which control for the first optional argument we insert `rollovername=ro#1` to give the rollover a pre-determined name that we know

and can use to give the rollover effect for the long caption, if requested. The rollover key is ignored, if `\digiCap*` is not used.

```
264      [\dc@icontrol,rollovername=ro#1]{\null}[\dc@iicontrol]%
265      {\dc@longCapFmt\csname#1Text\endcsname}%
266 \hss}\vss}\eBld}
```

`\digiDisplaySpace` A simple command to define a space to place the digital images into. The images are centered both horizontally and vertically in the display space. The first parameter is the height of the digital display, the second is the width. These dimensions are recorded in the macros `\digiDSHeight` and `\digiDSWidth`. This command can be redefined, but the developer needs to define these two macros.

```
267 \newcommand{\digiDisplaySpace}[2]{%
268   \def\digiDSHeight{#1}\def\digiDSWidth{#2}%
269   \parbox[c][#1]{#2}{\centering\insertPhotos}%
270 }
```

`\insertPhotos` This is a user-interface to inserting the photos into the display area. Used by `\digiDisplaySpace`.

```
271 \newcommand{\insertPhotos}{\edef\dc@tmp@exp{\noexpand\@for
272   \noexpand\@args:=\dc@presentationOrder}\dc@tmp@exp\do{%
273   \edef\dc@tmp@exp{\noexpand\dc@showPic{\@args}}\dc@tmp@exp}%
274 }
```

`\shortCapFmt` User-interface to formatting the short captions.

```
275 \newcommand{\shortCapFmt}[1]{%
276   \def\dc@showCaption##1##2{\makebox[0pt][c]{\xBld{##1}#1##2\eBld}}}
```

The default caption formatting is given below.

```
277 \shortCapFmt{\sfamily\bfseries\color{blue}}
```

`\insertCaptions` The main command for inserting captions, these can be placed above or below the display area.

```
278 \newcommand{\insertCaptions}{\dc@fudge\edef\dc@tmp@exp{\noexpand\@for
279   \noexpand\@args:=\dc@presentationOrder}\dc@tmp@exp\do{%
280   \edef\dc@tmp@exp{\noexpand\dc@showCaption{\@args}%
281     {\noexpand\csname\@args\Caption\noexpand\endcsname}}}%
282   \dc@tmp@exp}%
283 }
```

`\insertThumbs` The command to insert the thumbs in a tabular environment. The first argument is the number of rows, and second argument is the number of columns.

```
\setWidthOfThumbs
\addvspacetorows
284 \newcommand{\setWidthOfThumbs}[1]{%
285   \setlength{\dimen0}{#1}%
286   \xdef\dc@thumbwidth{\the\dimen0}%
287 }}
288 \setWidthOfThumbs{0pt}
289 \newcommand{\addvspacetorows}[1]{\def\dc@addvspacetorows{#1}}
290 \addvspacetorows{1ex}%
```

```

291 \def\eq@tabSep{&}
292 \def\insertThumbs#1#2{\begingroup
293   \count0=0\relax\count2=0\relax
294   \def\dc@maxRows{#1}\def\dc@maxCols{#2}%
295   \setlength{\dimen0}{\dc@thumbwidth}\ifdim\dimen0=0pt
296   \setWidthOfThumbs{\linewidth/(\dc@maxCols)-\tabcolsep*2}\fi
297   \edef\dc@thisArg{\dc@presentationOrder,}%
298   \def\dc@insThumb@cr{\[\dc@advspacetorows]}%
299   \kernOpt\begin{tabular}{*#2}{m{\dc@thumbwidth}}}%
300   \@whilenum\count0<#1\do{%
301     \@whilenum\count2<#2\do{%
302       \ifx\dc@thisArg\@empty
303         \global\let\dc@insThumb@cr\relax
304         \global\count0=\dc@maxRows
305         \global\count2=\dc@maxCols\else
306         \expandafter\dc@getNextArg\dc@thisArg\@nil
307         \global\advance\count2by1\relax
308         \ifx\dc@testArg\@empty
309         \else\ifnum\count2=\dc@maxCols
310         \else\eq@tabSep\fi\fi\fi
311       }\dc@insThumb@cr
312     \global\count2=0\relax\global\advance\count0by1\relax
313   }%
314 \end{tabular}}%
315 \endgroup}
316 \def\dc@getNextArg#1,#2\@nil{\dc@digi@thumbs{#1}\gdef\dc@thisArg{#2}}

```

3.4.3 Form fields and JavaScript

We define a push button with a normal, rollover and push appearance. The JavaScript actions makes the picture in the display space visible, and making the previous picture hidden.

The command, `\dc@digi@thumbs`, creates a push button with normal, down and rollover appearances. The JavaScript actions is to show execute the function `showThisPicture()`, which is defined as document JavaScript, below. The function manages the hiding and showing of layers, and if the `\useRollovers` is in effect, manages the rollover field created by `\digiCap*` command.

```

317 \def\normalAppr#1{n#1}
318 \def\downAppr#1{d#1}
319 \def\rolloverAppr#1{r#1}
320 \def\dc@digi@thumbs#1{\hfil%
321 {\dimen0=\widthOf{#1}bp\relax\dimen2=\heightOf{#1}bp\relax
322 \ifdim\dimen0<\dimen2\relax
323   \edef\dc@argi{\string!}\edef\dc@argii{\dc@thumbwidth}\else
324   \edef\dc@argi{\dc@thumbwidth}\edef\dc@argii{\string!}\fi
325   \xdef\dc@tmp@exp{\noexpand\resizebox{\dc@argi}{\dc@argii}}%
326 }\dc@tmp@exp{\pushButton[%
327   \autoCenter{n}\BC}\BG}\S}\W0
328   \A\JS{%

```

```

329     showThisPicture("#1");\r
330     lastPicture="#1";\r
331     this.dirty=false;
332   }}\I{\normalAppr{#1}}\RI{\downAppr{#1}}\IX{\rolloverAppr{#1}}
333   \TP{1}\FB{true}]{pb#1}{\widthOf{#1}bp}{\heightOf{#1}bp}}

```

The JavaScript function manages the hiding and showing of layers, and if the `\useRollovers` is in effect, manages the rollover field. The argument `name` is the name of the graph to be shown. The name one to be hidden is saved as the value of `lastPicture`.

```

334 \begin{insDLJS}[showThisPicture]{digidjs1}{Show This Picture}
335 var lastPicture="";
336 function showThisPicture(name) {
337   if (lastPicture != "") {
338     var f = this.getField("dcRollover.ro"+lastPicture);
339     if ( f != null ) f.display=display.hidden;
340     toggleSetThisLayer(lastPicture,false);
341   }
342   var f = this.getField("dcRollover.ro"+name);
343   if ( f != null ) f.display=display.visible;
344   toggleSetThisLayer(name);
345 }
346 try { app.runtimeHighlight=false; app.focusRect=false; } catch(e) {};
347 \end{insDLJS}
348 </digidisplay1>

```

4 Index

Numbers written in *italic* refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in *roman* refer to the code lines where the entry is used.

Symbols	
<code>\@args</code>	149, 272, 273, 279–281
A	
<code>\A</code>	328
<code>\AA</code>	143
<code>\AAMouseEnter</code>	143
<code>\AAMouseExit</code>	144
<code>\advspacetorows</code>	<u>284</u>
<code>\AtEndOfPackage</code>	2
<code>\autoCenter</code>	142, 327
B	
<code>\bboxOf</code>	197, 207, 220
<code>\BC</code>	142, 327
<code>\BG</code>	142, 327
C	
<code>\centering</code>	269
<code>\color</code>	277
<code>\colorbox</code>	28, 30
D	
<code>\dc@@captionPlacement</code>	48, 50, 52, 55, 134
<code>\dc@@digiCap</code>	106, 108
<code>\dc@@digiCapRollover</code>	123, 125
<code>\dc@advspacetorows</code>	289, 298
<code>\dc@adj@width</code>	72, 77
<code>\dc@argi</code>	59–62, 156, 239, 242, 323–325
<code>\dc@argii</code>	323–325
<code>\dc@calc@adj@width</code>	66, 115, 133
<code>\dc@captionPlacement</code>	47, 49, 51, 54, 75
<code>\dc@defTheseCaptions</code>	153, 233
<code>\dc@digi@thumbs</code>	316, 320
<code>\dc@digiCap</code>	102, 103
<code>\dc@digiCapRollover</code>	101, 118
<code>\dc@embedEPSCreateAppearances</code>	152, 191
<code>\dc@filename</code>	105, 112, 116, 120, 129, 138
<code>\dc@fudge</code>	251, 255, 278
<code>\dc@getNextArg</code>	306, 316
<code>\dc@graphicHalfHeight</code>	50, 131
<code>\dc@graphicHeight</code>	52, 76, 80, 113, 130, 137
<code>\dc@graphicWidth</code>	68, 76, 82, 114, 115, 132, 133, 137
<code>\dc@hCaptionPlacement</code>	59, 65, 86
<code>\dc@Hplacement</code>	60–63, 77
<code>\dc@icontrol</code>	239, 260, 264
<code>\dc@iicontrol</code>	242, 262, 264
<code>\dc@incgfx@addkeys</code>	88, 89, 257
<code>\dc@inclgraphicx</code>	88, 109, 111, 126, 128
<code>\dc@input@displayi</code>	2, 3
<code>\dc@insert@graphicx@opcolor@boxes</code>	74, 116, 138
<code>\dc@insThumb@cr</code>	298, 303, 311
<code>\dc@longCapFmt</code>	253, 265
<code>\dc@mark</code>	24, 199, 204, 208, 211, 221, 223
<code>\dc@maxCols</code>	294, 296, 305, 309
<code>\dc@maxRows</code>	294, 304
<code>\dc@nocolor</code>	9, 27, 29
<code>\dc@outerboxsep</code>	81, 83, 84, 105, 121
<code>\dc@presentationOrder</code>	237, 272, 279, 297
<code>\dc@ro@appr@boundarywidth</code>	166, 212, 224
<code>\dc@ro@appr@cmymcolor</code>	179, 181, 184, 185, 187, 188, 214, 226
<code>\dc@ro@appr@downopacity</code>	164, 221, 222
<code>\dc@ro@appr@normalopacity</code>	160, 199
<code>\dc@ro@appr@rgbcolor</code>	168, 170, 173, 174, 176, 177, 213, 215, 225, 227
<code>\dc@ro@appr@rolloveropacity</code>	162, 208, 209
<code>\dc@rollover@cnt</code>	93–95, 99
<code>\dc@rollovername</code>	91, 92, 95, 98, 122, 135, 136, 139, 140
<code>\dc@setPicsAndCaptions</code>	149, 151
<code>\dc@showCaption</code>	276, 280
<code>\dc@showPic</code>	<u>255</u> , 273
<code>\dc@testArg</code>	308
<code>\dc@thisArg</code>	297, 302, 306, 316
<code>\dc@thumbApprs</code>	156, 194
<code>\dc@thumbwidth</code>	286, 295, 299, 323, 324
<code>\dc@tmp@exp</code>	26, 67, 104, 109, 110, 112, 119, 120, 126, 127, 129, 193, 195, 196, 271–273, 278–280, 282, 325, 326
<code>\dc@use@Rollover</code>	246, 248, 250, 263
<code>\dc@vCaptionPlacement</code>	47, 58, 85
<code>\dcFirstOpt</code>	<u>238</u>
<code>\dcSecondOpt</code>	<u>238</u>
<code>\DeclareOption</code>	2
<code>\digiCap</code>	<u>84</u> , 263
<code>\digiCapsPresets</code>	135, 142
<code>\digiDisplayStyle</code>	<u>267</u>
<code>\digiDSHeight</code>	258, 268
<code>\digiDSWidth</code>	257, 268
<code>\dimen</code>	285, 286, 295, 321, 322

<code>\dimen@</code>	69, 71, 72, 112, 113, 129–131		
<code>\dimen@ii</code>	70, 71		
<code>display1</code> (option)	1		
<code>\downAppr</code>	318, 332		
E		N	
<code>\eBld</code>	139, 266, 276	<code>\normalAppr</code>	317, 332
<code>\ef@isitnamed</code>	170, 181	<code>\noRollovers</code>	246
<code>\ef@latex@color</code>	171, 182	<code>\null</code>	264
<code>\ef@nil</code>	170, 181	O	
<code>\ef@y</code>	171, 182	<code>\opcb@bgblendmode</code>	21, 36
<code>\embedEPS</code>	192	<code>\opcb@bgcolor</code>	14, 27, 28
<code>\eq@tabSep</code>	291, 310	<code>\opcb@bgop</code>	17, 37
F		<code>\opcb@borderblendmode</code>	20, 32
<code>\F</code>	247	<code>\opcb@bordercolor</code>	13, 29, 30
<code>\FB</code>	333	<code>\opcb@borderop</code>	15, 33
<code>\fboxrule</code>	31, 35	<code>\opcb@bordertextop</code>	16, 32
<code>\fboxsep</code>	31, 35, 38, 68, 76, 80, 82, 105, 121	<code>\opcb@borderwidth</code>	10, 31, 70, 81, 83
<code>\FHidden</code>	247	<code>\opcb@fboxsep</code>	11, 35
G		<code>\opcb@set@bgcolor</code>	27, 28, 38
<code>\graphicHeight</code>	80	<code>\opcb@set@bordercolor</code>	29, 30, 34
<code>\graphicWidth</code>	80	<code>\opcb@textop</code>	18, 36, 39
<code>\graphicxbox</code>	75	<code>\opcb@width</code>	12, 34, 69
H		<code>\opcolorbox</code>	24, 77
<code>\H</code>	142	options:	
<code>\heightOf</code>	321, 333	<code>display1</code>	1
<code>\hiddenPresets</code>	136, 145, 247, 249	P	
<code>\HyColor@XZeroOneThreeFour</code>	172, 183	<code>\PicsThisDoc</code>	148
I		<code>\presentationOrder</code>	237
<code>\I</code>	332	<code>\presets</code>	135, 136
<code>\ifdim</code>	295, 322	<code>\ProcessOptions</code>	4
<code>\includegraphics</code>	111, 128	<code>\pushButton</code>	135, 326
<code>\InputIfFileExists</code>	3	R	
<code>\insertCaptions</code>	278	<code>\r</code>	329, 330
<code>\insertPhotos</code>	269, 271	<code>\raisebox</code>	134
<code>\insertThumbs</code>	284	<code>\RequirePackage</code>	5–8
<code>\IX</code>	332	<code>\resizebox</code>	325
J		<code>\RI</code>	332
<code>\JS</code>	143, 144, 328	<code>\rlap</code>	134
K		<code>\rolloverAppr</code>	319, 332
<code>\kern</code>	78, 299	S	
L		<code>\S</code>	327
<code>\llap</code>	251	<code>\setbox</code>	110, 127
<code>\longCapFmt</code>	252	<code>\setThumbAppearances</code>	155
L		<code>\setWidthOfThumbs</code>	284
T		<code>\sffamily</code>	277
<code>\tabcolsep</code>	296	<code>\shortCapFmt</code>	275
<code>\TP</code>	333	T	

U		W	
\urxOf	201, 217, 229	\W	142, 327
\uryOf	201, 217, 229	\widthOf	321, 333
\useRollovers	<u>246</u>		
V		X	
\vss	256, 266	\xBld	139, 255, 276