datepicker-pro: A Date picker using FLEX

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Contents

1 ⟨∗package⟩

1 Introduction

This package creates a date picker for a PDF document using a *rich media annotation* (RMA). Development of this package occurred in July, 2013.

When you have a text field that requires a date, the user clicks on the date picker icon to the right of the field and a floating window opens to display a standard calendar. The user may scroll through the dates and and choose a date by clicking one of the dates in the calendar. The floating window closes, and the formatted date appears in the input field.

The document author has some control over the positioning of the window; the window can open a various location in the application window: upper left, lower right, etc. There are numerous other options for customizing the calendar and formatting the return string.

Acrobat and Distiller required   This is a "pro" package for AeB, which mean the PDF creator is Adobe Distiller. The document author needs to use the usual combination of Acrobat and Distiller.

1

2 Options and Required Packages

The required packages are aeb_pro, eforms, and rmannot. The aeb_pro is used only to import icon appearance of the date picker push button. Obviously, eforms is for text fields and push buttons; and rmannot for importing the date picker SWF file into the document.

```
2 \RequirePackage{aeb_pro}[2013/08/05]
3 \RequirePackage{eforms}[2013/06/05]
4 \RequirePackage{rmannot}[2011/09/11]
```

3 The Main Code

\useFLEXVer determines the version of the FLEX SWF file to be used, supported are version 3 (\useFLEXVer{3}) and version 4 (\useFLEXVer{4}). As of this reading the version 4, the SWF file is very slow in loading, so version 3 is strongly recommended.

```
5 \newcommand{\useFLEXVer}[1]{\def\argi{#1}\ifnum\argi=3\relax
6     \def\flexVer{3}\else\ifnum\argi=4\relax\def\flexVer{4}\else
7     \def\flexVer{3}\PackageInfo{datepicker-pro}{FLEX version number not
8     supported,\space\MessageBreak using FLEX 3}\fi\fi}
9 \def\flexVer{3}
10 \@onlypreamble\useFLEXVer
```

\dppToolTip is used for setting the tool tip of the icon push button.

```
11 \newcommand{\dppToolTip}[1]{\def\dpp@ToolTip{#1}}
12 \dppToolTip{Date Picker\n Click to toggle open and close\n
13     Shift-click to clear and close}
14 \newcommand{\pickerOpts}[1]{\def\dpp@pickerOpts{#1}}
15     \pickerOpts{}
16 \newcommand{\pickerInputOpts}[1]{\def\dpp@pickerInputOpts{#1}}
17     \pickerInputOpts{}
18 \newcommand{\iconBenOpts}[1]{\def\dpp@iconBenOpts{#1}}
19     \iconBenOpts{}
20 \newcommand{\pickersep}{3bp}
```

Options passed through the first optional argument of \datepicker.

formatstring **Format date string.**   The formatstring uses various combinations of M, D, Y, and possible E as well as spaces and delimiters to format the date string. The following table was extracted from the page:

http://help.adobe.com/en_US/FlashPlatform/reference/actionscript/3/mx/formatters/DateFormatter.html (found here)

Pattern	Examples	Pattern	Examples
Y	YY = 05	D	D = 4
	YYY=2005		DD=04
	YYY=02005		
M	M = 7	E	E = 1
	MM=07		EE=01
	MMM=Jul		EEE=Mon
	MMMM=July		EEEE=Monday

One example is `formatstring={EEEE, DD. MMMM YYYY}`.

21 `\define@key{ddp}{formatstring}[MM/DD/YYYY]{\def\dpp@FormatStr{#1}}`

Formatting the calendar. The `dateChooser` control that is used in the SWF file contains the name of the month at the top and the names of the days of the week just below it. By default, the usual English month names are used (January, February, . . . ,December) and the usual English days of the week names are used (Sunday, Monday, . . . ,Saturday). However, these can be changed through the use

monthnames
daynames

of `monthnames` and `daynames`. For example,

```
monthnames={Jan,Feb,Mar,Apr,May,June,July,Aug,Sept,Oct,Nov,Dec}.
daynames={Su,M,Tu,W,Th,F,Sa}
```

The order must be the first month of the year (January, or the equivalent in another language) and the first day of the week (Sunday, or its equivalent). Some calendars consider Monday as the first day of the week, if this is so, *still* place Sunday, or its local equivalent, as the first entry in the list. A different starting

firstday

day is set using the `firstday` key. Setting `firstday=1` puts Monday as the first day of the week on the calendar. The values of the keys `monthnames` and `daynames` are comma-delimited list of month or day names, for example,

```
daynames={So,Mo,Di,Mi,Do,Fr,Sa},
monthnames={Jan,Febr,Mrz,Apr,Mai,Jun,Jul,Aug,Sept,Okt,Nov,Dez},
```

The value of the key `firstday` is an integer, 0. . . 7.

```
22 \define@key{ddp}{daynames}[]{\def\ddp@DayNames{#1}}
23 \define@key{ddp}{monthnames}[]{\def\ddp@MonthNames{#1}}
24 \def\warningMsgFirstDay{%
25     The value of firstday must be a\MessageBreak
26     nonnegative integer less than 6.\MessageBreak
27     Setting firstday=0%
28 }
29 \define@key{ddp}{firstday}[0]{%
30     \@tempcnta=#1
31     \def\ddp@FirstDayOfWeek{#1}%
32     \ifnum\@tempcnta<0\relax\PackageWarning{datepicker-pro}
33         {\warningMsgFirstDay}{}\def\ddp@FirstDayOfWeek{0}\else
34     \ifnum\@tempcnta>6\relax\PackageWarning{datepicker-pro}
35         {\warningMsgFirstDay}{}\def\ddp@FirstDayOfWeek{0}\fi\fi
36 }
```

3

Formatting the Month and Day in the return value. These keys are not
needed unless in your `formatstring` you use MMM, MMMM, DDD, or DDDD. These should
be consistent with the calendar headings as well. You don't want English days
of the week on a German calendar. The key `monthnamesLong` is used with MMMM
and `monthnamesShort` with MMM. Similarly, `daynamesLong` is used for formatting
DDDD and `daynamesShort` is used with DDD. The values of each of these keys is a
comma-delimited list of month or day names, for example

`monthnamesLong`
`monthnamesShort`
`daynamesLong`
`daynamesShort`

```
daynamesLong={Sonntag,Montag,Dienstag,Mittwoch,Donnerstag,%
    Freitag,Samstag},
daynamesShort={So,Mo,Di,Mi,Do,Fr,Sa},
monthnamesLong={Januar,Februar,März,April,Mai,Juni,Juli,%
    August,September,Oktober,November,Dezember},
monthnamesShort={Jan,Feb,Mrz,Apr,Mai,Jun,Jul,Aug,Sep,%
    Okt,Nov,Dez},
```

```
37 \define@key{ddp}{monthnamesLong}[]{\def\ddp@monthnamesLong{#1}}
38 \define@key{ddp}{monthnamesShort}[]{\def\ddp@monthnamesShort{#1}}
39 \define@key{ddp}{daynamesLong}[]{\def\ddp@daynamesLong{#1}}
40 \define@key{ddp}{daynamesShort}[]{\def\ddp@daynamesShort{#1}}
```

`halign`
`valign`
`hoffset`
`voffset`

The keys `halign`, `valign`, `hoffset`, and `voffset` determine the positioning of
the floating windows when it opens. The default is the center of the window (for
versions > 9), for version 9, this key is ignored and the window appears in the
upper-right of the application window. See the documentation of the `rmannot`
package for more detail.

```
41 \define@key{ddp}{halign}[center]{\def\ddp@halign{#1}}
42 \define@key{ddp}{valign}[center]{\def\ddp@valign{#1}}
43 \define@key{ddp}{hoffset}[0]{\def\ddp@hoffset{#1}}
44 \define@key{ddp}{voffset}[0]{\def\ddp@voffset{#1}}
```

Setting the dimensions of the window. The dimensions of the floating win-
dow are determined by `widthOfWindow` and `heightOfWindow`.

`widthOfWindow`
`heightOfWindow`

```
45 \define@key{ddp}{widthOfWindow}[180]{\def\ddp@widthOfWindow{#1}}
46 \define@key{ddp}{heightOfWindow}[180]{\def\ddp@heightOfWindow{#1}}
```

`\setPickerOpts` can be used to globally set picker options.

```
47 \newcommand{\setPickerOpts}[1]{\let\ddp@bsSAVE\\\let\ddp@uSAVE\u
48    \def\\{\eqbs\eqbs}\def\u{\\u}%
49    \edef\x{\noexpand\setkeys{ddp}{#1}}\x
50    \let\\\ddp@bsSAVE\let\u\ddp@uSAVE
51 }
```

`\setPickerOptsToDefaults` resets picker options back to their original defaults.

```
52 \newcommand{\setPickerOptsToDefaults}{\let\ddp@bsSAVE\\\let\ddp@uSAVE\u
53    \setkeys{ddp}{formatstring,daynames,monthnames,firstday,halign,%
54        valign,hoffset,voffset,widthOfWindow,heightOfWindow,%
55        monthnamesLong,monthnamesShort,daynamesLong,daynamesShort}%
56    \let\\\ddp@bsSAVE\let\u\ddp@uSAVE
```

```
57 }
58 \setPickerOptsToDefaults
```

\dppBtnAction   sets the action of the icon push button. When pressed, it simply activates the RMA, when shift-clicked, it resets the field and closes the RMA.

```
59 \def\dppBtnAction#1{%
60   var annot = this.getAnnotRichMedia(this.pageNum,"#1");\r
61   if (event.shift){\r\t
62     this.resetForm(["txt#1"]);\r\t
63     annot.activated=false;\r
64   } else
```

If widget is already activated close it, otherwise open it.

```
65       annot.activated=( annot.activated )?false:true;
66 }
```

\datepicker   is the primary command for this package. It produces a readonly text field to hold the chosen date, a rich media annotation that holds the flash widget (SWF), `datepickerN.swf`, and a push button containing script to activate the annotation.

Naming conventions.   Argument `#2` is the base name passed by the author. The name of the RMA is `name=#2`; the field name of the input text field is `txt#2` and the field name of the push button is `btn#2`. There is also a hidden text field named `htxt#2`.

```
67 \newcommand{\datepicker}[4][]{\begingroup
68   \def\\{\eqbs\eqbs}\def\u{\\u}
```

Expand `#1` then get options. Useful if options are passed as a macro.

```
69     \edef\x{\noexpand\setkeys{ddp}{#1}}\x
```

Set window related parameters.

```
70 \setWindowDimPos{width={default=\ddp@widthOfWindow},%
71   height={default=\ddp@heightOfWindow},%
72   position={halign=\ddp@halign,valign=\ddp@valign,
73   hoffset=\ddp@hoffset,voffset=\ddp@voffset}}%
```

This hidden field holds the date selected in a standard format of `MM/DD/YYYY`, this helps me to highlight the date when the user opens the date picker again.

```
74 \makebox[0pt][l]{\textField[\F{\FHidden}\BC{}\BG{}\W0
75   ]{htxt#2}{1bp}{1bp}}%
```

The text field that holds the date selected by the user through the date package.

```
76     \expandafter\textField\expandafter[\dpp@pickerInputOpts\Ff{\FfReadOnly}
77       \AA{\AAValidate{%
78         this.getAnnotRichMedia(this.pageNum,"#2").activated=false;}
79     }]{txt#2}{#3}{#4}\makebox[0pt][r]{%
```

Followed by the SWF widget, very small, invisible, transparent, and hidden by the text field.

```
80     \rmAnnot[invisible,transparentBG,deactivated=pageclose,
81       passcontext,\dpp@pickerOpts,windowed,name=#2,
82       flashvars={field=txt#2&formatstring=\dpp@FormatStr
```

```
83      \ifx\ddp@DayNames\@empty\else
84        &daynames=\ddp@DayNames\fi
85      \ifx\ddp@MonthNames\@empty\else
86        &monthnames=\ddp@MonthNames\fi
87      \ifnum\ddp@FirstDayOfWeek=0 \else
88        &firstday=\ddp@FirstDayOfWeek\fi
89      \ifx\ddp@monthnamesLong\@empty\else
90        &monthnamesLong=\ddp@monthnamesLong\fi
91      \ifx\ddp@monthnamesShort\@empty\else
92        &monthnamesShort=\ddp@monthnamesShort\fi
93      \ifx\ddp@daynamesLong\@empty\else
94        &daynamesLong=\ddp@daynamesLong\fi
95      \ifx\ddp@daynamesShort\@empty\else
96        &daynamesShort=\ddp@daynamesShort\fi
97      }
98    ]{4bp}{4bp}{dppDatePicker}}\kern\pickersep
```

Finally, the push button that has an icon for its appearance.

```
99    \expandafter\pushButton\expandafter[\dpp@iconBenOpts\TU{\dpp@ToolTip}
100     \H{O}\S{S}\BC{}\BG{}\FB{true}\I{null}\TP{1}
101     \A{\JS{\dppBtnAction{#2}}}
102   ]{btn#2}{\dp@iconWidth}{\dp@iconHeight}\endgroup
103 }
```

Installing the picker icon. We use `\declareMultiImages` from AeB Pro to create a simplified method of installing the picker icon.

`\setpickerIcon` The command takes two arguments, the path to the icon, and the names of the date picker fields.

> `\setpickerIcon{icons/dp_icon2.pdf}{PickADate,GERDate}`

The second argument is a comma-delimited list picker names (the first argument of the `\datepicker` command).

```
104 \newcommand{\setpickerIcon}[2]{% #1=path, #2=placement
105   \let\@thesetoks\@empty
106   \@for\@dppName:=#2\do{\edef\@thesetoks{\@thesetoks btn\@dppName,}}%
107   \def\stripOffComma##1,\@nil{\def\@placeIcons{##1}}%
108   \expandafter\stripOffComma\@thesetoks\@nil
109   \declareImageAndPlacement{name=dppIcon,path=#1,%
110       placement={\@placeIcons}}%
```

We then write a `execJS` environment to a CUT file, then input it back in immediately. Here, I'm using the write handle from the comment package, brought in by AeB Pro. At this moment, it is not being used.

```
111   \immediate\openout\CommentStream=ddpdocassmbly.cut
112   \immediate\write\CommentStream{\string\begin{execJS}{dppicons}}%
113   \immediate\write\CommentStream{\string\insertPreDocAssembly}%
114   \immediate\write\CommentStream{\string\end{execJS}}%
115   \immediate\closeout\CommentStream
```

```
116   \input{ddpdocassmbly.cut}%
117 }
118 \@onlypreamble\setpickerIcon
```

\pickerIconWidth
\pickerIconHeight

The two commands \pickerIconWidth and \pickerIconHeight set the width and the height, respectively, of the icon picker icon. The default to 6bp.

```
119 \newcommand\pickerIconWidth[1]{\def\dp@iconWidth{#1}}
120 \pickerIconWidth{10bp}
121 \newcommand\pickerIconHeight[1]{\def\dp@iconHeight{#1}}
122 \pickerIconHeight{12bp}
```

4   Supporting Document JavaScript

The popDateField is called from the Flash widget to pass the date from the widget to the input field.

```
123 \begin{insDLJS}{dppdljs}{JavaScript for Date Picker Pro}
```

setDateField

The setDateField function is called by the widget to set the field value. The widget passes three arguments: fname (the field name that is the target of the date), value is the value of the field that will appear to the user, and svalue is the value formatted using the date template MM/DD/YYYY. This latter value is used to highlight this date if the user returns to the same calendar to change the date.

```
124 function _dppConvUnicode(v){
125 var fm,re,str=v;
126 re=/\\u([0-8A-Fa-f]{4})/g
127   while ((fm=str.search(re))!=-1) {
128     str=str.substring(0,fm)
129     +eval("String.fromCharCode(0x"
130     +str.substring(fm+2,fm+6)+")")
131     +str.substring(fm+6);
132   }
133 return str;
134 }
135 function setDateField(fname,value,svalue) {
136 %console.println("setDateField: fname="+fname
137 %     +", value="+value+", svalue="+svalue);
138   var f = this.getField(fname);
139   var g = this.getField("h"+fname);
140   if (f !=null ) {
141       f.value = _dppConvUnicode(value);
142       g.value = svalue;
143   }
144 }
```

getDateValue

The JavaScript function getDateValue is also called by the widget to get the current values of the target field. The return value is an object containing these two values.

```
145 function getDateValue(fname) {
```

```
146 %console.println("getDateValue: fname="+fname);
147   var f = this.getField(fname);
148   var g = this.getField("h"+fname);
149   var value;
150   if ( f != null )
151       value = { value: f.value, svalue: g.value };
152   return value;
153 }
154 \end{insDLJS}
```

We wait until after the preamble to see if the document author chooses a version for FLEX. We also check to see if a path to the widget has been set. The document author is required to define a path to the datepicker SWF with the name of \dppPath:

```
\definePath{\dppPath}{C:/Users/Public/Documents/My TeX Files/%
    tex/latex/aeb/aebpro/datepicker_pro/swf}
```

```
155 \def\dpp@initdpp{%
156   \@ifundefined{dppPath}{\PackageError{datepicker-pro}
157     {You must specify the path to datepicker\flexVer.swf\MessageBreak
158     by defining \string\dppPath\space in the configuration file\MessageBreak
159     dp-pro.cfg, see documentation}{}}
160     {\saveNamedPath{dppDatePicker}{\dppPath/datepicker\flexVer.swf}}%
161 }
162 \AtBeginDocument{\dpp@initdpp}

163 \InputIfFileExists{dp-pro.cfg}{}{}
164 ⟨/package⟩
```

5 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.

6 Change History