

The `mdframed` package ¹

auto-split frame environment

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v1.3

2012/02/04

The standard methods for framing text (`\fbox` or `\fcolorbox`) require you to handle page breaks by hand, meaning that you have to split the `\fbox` into two. The present package defines the environment `mdframed` which automatically deals with pagebreaks in framed text.

By defining new environments the user may choose between several individual designs.

Linked files: [mdframed-example-default.pdf](#) [mdframed-example-tikz.pdf](#)
[mdframed-example-pstricks.pdf](#) [mdframed-example-texsx.pdf](#)

FYI: I create a repository for `mdframed` on [github](#) where you can [download](#) the current development status.

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1. Motivation

Many users wish to (further) emphasize lemmata, definitions, proofs, etc. The package `mdframed` allows you to create environments with breakable frames. I think an example is the best way to demonstrate its properties.

Theorem 1.1 (Pythagorean theorem) *In any right triangle, the area of the square whose side is the hypotenuse is equal to the sum of the areas of the squares whose sides are the two legs.*

¹Extending the package `framed.sty`

$$a^2 + b^2 = c^2$$

The frame was defined with the following settings.

```
\newmdtheoremenv[outerlinewidth=2,leftmargin=40,%
  rightmargin=40,backgroundcolor=yellow,%
  outerlinecolor=blue,innertopmargin=0pt,%
  splittopskip=\topskip,skipbelow=\baselineskip,%
  skipabove=\baselineskip,ntheorem]{theorem}%
{Theorem}[section]
\begin{theorem}[Pythagorean theorem]
...
\end{theorem}
```

2. Syntax

Loadings `mdframed`

The package itself loads the packages

- `kvoptions`,
- `xparse` (new),
- `etoolbox` and
- `color`.

Depending on the options `mdframed` will load

- `xcolor`,
- `tikz` or
- `pstricks`.

Load the package as usual:

```
\usepackage[<GLOBAL OPTIONS>]{mdframed}
```

Only the option `framemethod` should be loaded by the optional argument of `\usepackage`. All other options should be loaded with `\mdfsetup` or related environments. The package should be loaded after `amsthm` if you need the package.

Provided environment

The package defines only one environment with the following syntax:

```
\begin{mdframed}[<LOCAL OPTIONS>]
  <CONTENT>
\end{mdframed}
```

To create own environments with `mdframed` see section 4.

Autodetecting floats

`mdframed` detects whether the environment is used inside `float` or `minipage` environments. If you use `mdframed` in such an environment `mdframed` will use the option `nobreak` automatically.

Twoside-mode

If you are using `mdframed` inside `twoside`-mode you can set the option `innermargin` and `outermargin` (see section 5.2.1). The length will be ignored if you use the option `usetwoside`.

3. The frames

Normally you can say `mdframed` draws only some lines. To allow page breaks the following designs are supported. If you load the package with `framemethod=default` you can only draw a single line. Inside the gray box the text will be printed.

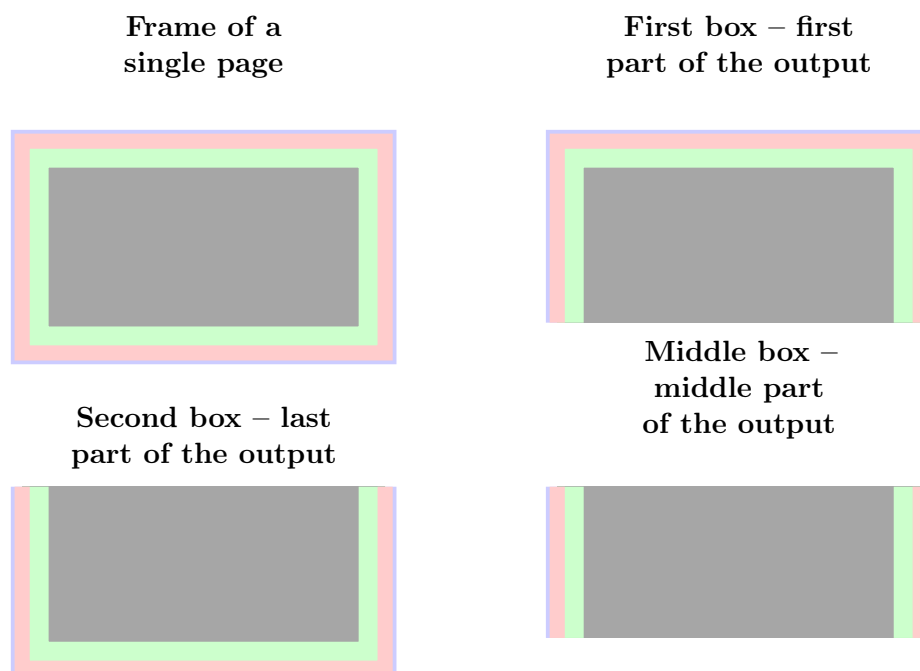


Figure 1: The basic frames

4. Commands

The following commands should countenance your by the handling with `mdframed`

`\newmdenv`

The command has the following syntax:

```
\newmdenv[<MDFRAMED OPTIONS>]{Name of the environment}
```

In this way you can simply use:

```
\newmdenv[ linecolor=red , frametitle=Infobox ]{ infobox }
...
\begin{infobox}[ backgroundcolor=yellow ]
foo   foo   foo   foo   foo   foo
\end{infobox}
```

`\renewmdenv`

By using this command you can redefine environments which are created by `\newmdenv`.

`\surroundwithmdframed`

Sometimes you have predefined environments. This commands allows you to set an `environment` surround this predefined environment. To set a `mdframed` around the environment `verbatim` you can simple say without changing the original name.

```
\surroundwithmdframed [ linewidth=2pt ] { verbatim }
```

`\mdflength`

If you want to work with length defined by `mdframed` (for example `innerleftmargin`) you can now simple use the command `\mdflength`.

```
Some Text \hspace{\mdflength{innerleftmargin}} Some Text

\the\mdflength{innerleftmargin}
```

`\mdfsetup`

To set the options you can use the optional argument of `\usepackage` or you can use the command `\mdfsetup` which is not limited to the preamble. Inside a group the settings work only local.

At this point I want to recommend the using of the command `\mdfsetup` instead of setting package option via the optional argument of `\usepackage`. So you are avoiding breaking of non robust commands.²

`\mdfdefinestyle`

`\mdfdefinestyle` allows the user to define different styles and use as an option of `mdframed` via `style`. The option `style` is explained in section 5.2.3.

Here a small example:

```
\mdfdefinestyle { mystyle } { leftmargin=0pt , %
                                linecolor=blue }

....
\begin { mdframed } [ style=mystyle ]
foo
\end { mdframed }
```

`\mdfapptodefinestyle`

This commands allows to expand a defined style.³

5. Options

The package provides various options to manipulate frames. In the following section all options are listed. Some internal macros which can be manipulated are not shown in this documentation. The listed options are divided in global and local options. The global options can not be used inside `\mdfsetup`.

²Thanks to Heiko Oberdiek and Philipp Stephani [kvoptions-Declaration von Optionen schlägt fehl](#)

³Thanks to Martin Scharrer and Enrico Gregorio:

<http://tex.stackexchange.com/questions/34684/argument-of-setkeys>

5.1. Global Options

The following options are only global options.

`xcolor` default=`none`

By setting this key, the package `xcolor` will be loaded with the given value(s). Without any value `mdframed` loads the package `color` without any options. If the package `xcolor` is already loaded the given option will be ignored. I recommend to load `xcolor` before `mdframed`.

`framemethod` default=`default`

With this key you can change the way frames are drawn. You can decide whether the frame is drawn with

1. \LaTeX -commands `\hrule`, `\vrule`, `\rule`,
2. `TikZ` (the package `TikZ` will be loaded) or
3. `PSTricks` (the package `pstricks` will be loaded).

The option `framemethod` requires a string. Allowed combinations are listed in the following table.

Table 1: Allowed keys for `framemethod`

Method	Allowed keys
\LaTeX -commands	<code>default</code> , <code>tex</code> , <code>latex</code> , <code>none</code> , <code>0</code>
<code>TikZ</code>	<code>tikz</code> , <code>pgf</code> , <code>1</code>
<code>PSTricks</code>	<code>pstricks</code> , <code>ps</code> , <code>postscript</code> , <code>2</code>

FYI

It is independently whether the `method` is written with no, one or more capital letter.

Note

The manipulation of the frames depends on the option `framemethod`. For further information see below.

5.2. Global and Local Options

The options listed below can be set globally or locally and they are not limited to the preamble. I tried to define self explained names.

5.2.1. Options with lengths

In figure (2) you can see the adjustable lengths (compare also figure (1)) which will be described below. All lengths accept two kinds of input. The first one is a length (e.g. `2pt`) and the second one is a number (e.g. `2`) which will be multiplied by `1 defaultunit`. The figure shows three different colored frames.

I know that the predefined lengths are not well prepared. Maybe I will change it later.

`defaultunit` default=`pt`

see the sentence above.

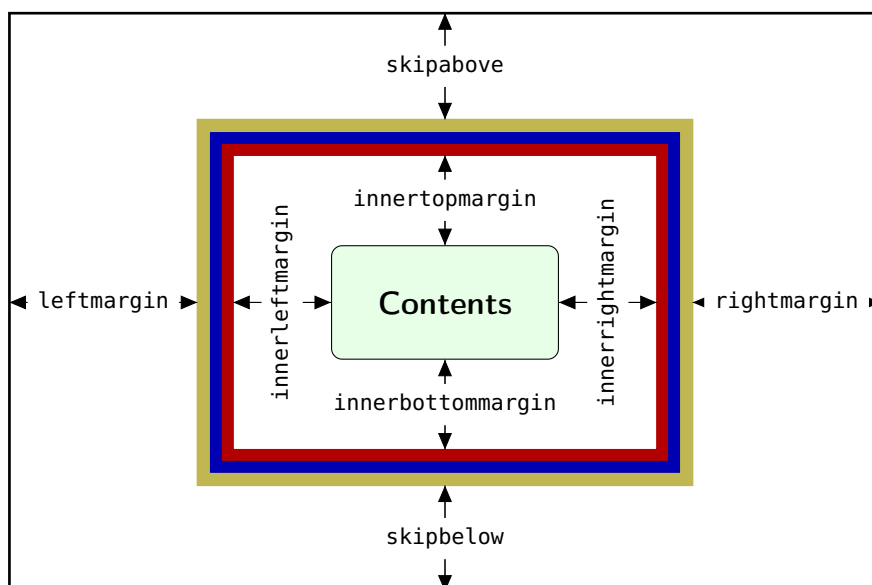


Figure 2: adjustable lengths of mdframed

`skipabove` default=0pt

Sets an additional skip above the frame.

`skipbelow` default=0pt

Sets an additional skip below the frame.

`margin`
This option is not longer supported. Use `leftmargin` and `rightmargin` instead.

`leftmargin` default=0pt

Sets the length of the left margin of the environment.

`rightmargin` default=0pt

Sets the length of the right margin of the environment.

`innerleftmargin` default=10pt

Sets the length of the inner left margin of the environment.

`innerrightmargin` default=10pt

Sets the length of the inner right margin of the environment.

`innertopmargin` default=.4\baselineskip

Sets the length of the inner top margin of the environment.

`innerbottommargin` default=.4\baselineskip

Sets the length of the inner bottom margin of the environment.

The following lengths are not shown in figure (2).

<code>userdefinedwidth</code>	default=0pt
Sets the width of the whole <code>mdframed</code> environment. The width represent the width including the line width and the inner margins. The outer margins will be ignored.	
<code>outermargin</code>	
Sets the length of the outer margin. This option is only available in <code>twoside</code> -mode.	
<code>innermargin</code>	
Sets the length of the inner margin. This option is only available in <code>twoside</code> -mode.	
<code>splittopskip</code>	default=0pt
Sets the length of the skip above the split part of the environment.	
<code>splitbottomskip</code>	default=0pt
Sets the length of the skip below the split part of the environment.	
<code>linewidth</code>	default=0.4pt
Sets the width of the line around the environment.	
<code>roundcorner</code>	default=0pt
Sets the size of the radius of the corners of the frames. This works only with <code>framemethod=TikZ</code> or <code>PSTricks</code> .	
<code>innerlinewidth</code>	default=0pt
Sets the width of the inner line around the environment. This works only with <code>framemethod=TikZ</code> or <code>PSTricks</code> .	
<code>outerlinewidth</code>	default=0pt
Sets the width of the outer line around the environment. This works only with <code>framemethod=TikZ</code> or <code>PSTricks</code> .	
<code>middlelinewidth</code>	default=linewidth
Sets the width of the middle line around the environment. This works only with <code>framemethod=TikZ</code> .	

5.2.2. Colored Options

<code>linecolor</code>	default=black
Sets the color of the line around the environment.	
<code>backgroundcolor</code>	default=white
Sets the color of the background of the environment.	
<code>fontcolor</code>	default=black

Sets the color of the contents of the environment.

`innerlinecolor` default=`linecolor`

Sets the color of the inner line around the environment.
This works only with `framemethod=TikZ` or `PSTricks`.

`middlelinecolor` default=`linecolor`

Sets the color of the middle line around the environment.
This works only with `framemethod=TikZ` or `PSTricks`.

`outerlinecolor` default=`linecolor`

Sets the color of the outer line around the environment.
This works only with `framemethod=TikZ` or `PSTricks`.

5.2.3. General options

`font` default=`{}`

Sets the font of the environment.

`ntheorem` default=`false`

Before setting this boolean key, you have to load the package `ntheorem`. With this option you set the values `\theorempreskipamount` and `\theorempostskipamount` to 0pt.

`nobreak` default=`false`

Sometimes it is useful to prevent a frame from splitting. The `nobreak` option is used for this purpose. If you activate this option you can enable it by setting `nobreak=false`.

`usetwoside` default=`true`

If you set the `twoside` option you can work with `outermargin`. This option disable this and you work with `leftmargin` and `rightmargin`.

`needspace` default=`0pt`

Sometimes it is useful to set a minimum height before a frame should be splitted. For such cases you can use `needspace`. The option requires a length which sets the minimum height before a frame will be splitted.

`style`

If you define a special style with `\mdfdefinestyle` you can use the key `style` to load the style. `mdframed` has no predefined styles yet.

`settings` default=`none`

This option allows the user to commit some macros. An example is shown in the example files.

`align` default=`left`

Sometimes it is useful to align the environment itself. For this you have the option `align` which can be set to the following strings:

- `left`,
- `right` and
- `center`.

The alignments `left` or `right` depend on the given lengths `leftmargin` and `rightmargin`. Later I will present an example to demonstrate my bad English explanation.

`shadow` default=false

Draw a shadow. Note if you are using the TikZ you must load the library. `mdframed` doesn't do the job to avoid double loading of a library.

`pstrickssetting` default=none

With this key you can pass several options to `\psset`. For example if you want all lines dashed you will have to set `pstrickssetting={linestyle=dashed}`. It is very important to put the options of `pstrickssetting` in brackets.

This works only with `framemethod=PSTricks`.

`pstricksappsetting` default=none

`mdframed` works with defined style for the different elements. By using `\apptopsstyle` in combination with this option you can expand the definition. The predefined styles are

- `mdfbackgroundstyle`
- `mdfframetitlebackgroundstyle`
- `mdfouterlinestyle`
- `mdfinnerlinestyle`
- `mdfmiddlelinestyle`

Before you change one please have a look at the file `md-frame-2.mdf` to see the settings.

This works only with `framemethod=PSTricks`.

`tikzsetting` default=none

With this key you can pass several options to `\tikzset`. Some examples are listed in the next section. It is very important to put the options of `tikzsetting` in brackets.

This works only with `framemethod=TikZ`.

`apptotikzsetting` default=none

With this key you can add several options to `tikzsetting`. This key based on the idea of manipulation of predefined keys of `mdframed`. The package `mdframed` defines via `\tikzset` the following keys to draw frames.

- `\tikzset{mdfbox/.style}`
- `\tikzset{mdfcorners/.style}`
- `\tikzset{mdfbackground/.style}`
- `\tikzset{mdfinnerline/.style}`

- `\tikzset{mdfouterline/.style}`
- `\tikzset{mdfmiddleline/.style}`
- `\tikzset{mdfframetitlerule/.style}`
- `\tikzset{mdfframetitlebackground/.style}`
- `\tikzset{mdfshadow/.style}`

Before you change one please have a look at the file **md-frame-1.mdf** to see the settings. This works only with `framemethod=TikZ`.

5.3. Hidden Lines

<code>topline</code>	default=true
Draws a line at the top.	
<code>bottomline</code>	default=true
Draws a line at the bottom.	
<code>leftline</code>	default=true
Draws a line on the left.	
<code>rightline</code>	default=true
Draws a line on the right.	
<code>hidealllines</code>	default=false
With this option you can decide whether all lines should be drawn or not.	

5.4. Frametitle

In this section all relevant options of the frame title will be presented. They are not divided in their properties.

<code>frametitle</code>	default=none
The environment gets a title. To set a title use <code>frametitle={The Title of the frame}</code> as an option of the environment.	
<code>frametitlefont</code>	default=\normalfont\bfseries
Sets the format of the <code>frametitle</code> .	
<code>frametitlealignment</code>	default=\raggedleft
Align the <code>frametitle</code> . This option must be set via <code>\mdfsetup</code> .	
<code>frametitlerule</code>	default=false
Set this key to <code>true</code> to get a line between the frame title and the text.	
<code>frametitlerulewidth</code>	default=.2pt

Sets the width of the line between the text and the title of `mdframed`.

`frametitleaboveskip` default=5pt

Sets the skip of the frame title to the margin above of `mdframed`.

`frametitlebelowskip` default=5pt

Sets the skip of the frame title to the rule of the frame title.

`frametitlebackgroundcolor` default=white

Sets the color of the background of the frametitle

FYI and Note

`mdframed` can't handle page breaks inside the frametitle well. If you get a page break please have a closer look to the output.

If a frame title is given the optional length `innertopmargin` is set between the rule under the frame title and the contents of `mdframed`.

`repeatframetitle` default=false

Repeat the frame title on every frame. The feature is currently not well implemented!!!

5.5. Theorems

In this section is described which commands can help you to define theorem environments with `mdframed`.

`\newmdtheoremenv`

Since the package is often used to highlight theorem environments, I have created a command⁴ to simplify this process. The command has the following syntax:

```
\newmdtheoremenv[<mdframed-options>]{<envname>}%
    [<numberedlike>]{<caption>}[<within>]
```

The last four arguments are equivalent to the command `\newtheorem`. Only the first optional argument is able to pass `mdframed`-options. A simple example is:

```
\theoremstyle{<some style>}
\newmdtheoremenv[<linecolor=blue>]{lemma}%
    {Lemma}[<section>]
...
\begin{lemma}[Some title]
    foo    foo    foo    foo    foo    foo
\end{lemma}
```

So far there is no `\renewmdtheoremenv`!

`\mdtheorem`

This is a special kind of `\newtheorem`. The command has the following syntax.

```
\mdtheorem[<mdframed-options>]{<envname>}%
    [<numberedlike>]{<caption>}[<within>]
```

⁴Thanks to Martin Scharrer and Enrico Gregorio:

[Own command to create new environment](#)

As you can see the arguments are equal to `\newtheorem` but the command ignores every `\theoremstyle`. This is based on the following behavior.

The command `\mdtheorem` creates two environments based on the given first mandatory argument. The first environment is named like the given argument and creates a numbered theorem. The second environment is named like the first mandatory argument with a star. This environment has the same formatting but isn't numbered.

The syntax of the new defined environments is equal to the normal theorem environments.

```
\begin{environment}[optional title]
...
\end{environment}
```

What happened? The caption of the command will be set as the frame title. In this way all options of the frame title are available. Furthermore `mdframed` provides additional options explained below.

`theoremseparator` default={:}

Sets the separator of the caption and the title of the theorem. The `theoremseparator` will be printed only if an theorem title is given.

`theoremtitlefont` default={}

Via the option `frametitlefont` you can manipulate the font of the frame title. The option `theoremtitlefont` allows to set a different font to the title of the theorem.

`theoremspace` `\space`

Sets the space after `theoremseparator`.

Examples can be found in the attached files.

5.6. Footnotes

Inside the environment you can use the command `\footnote` as usual. `mdframed` uses the syntax of environment `minipage` with the same counter.

Every footnote text will be collected inside a box and will be displayed at the end of the environment `mdframed`.

`footnotedistance` default= `\bigskipamount`

The length is the distance between the end of the environment `mdframed` and the displaying of the `\footnoterule`.

`footnoteinside` default=true

The position of the footnotes can be changed with the option `footnoteinside`. The footnotes will be displayed at the end of the environment but you can decide whether the output is inside `mdframed` or after.

Note

The output of the footnotes with the option `footnoteinside=false` are not in a splitted frame. I think it isn't useful because the first line of a new page shouldn't be a footnote.

6. Examples

I outsource the examples in four files to limit the documentation. The files are

mdframed-example-default

Demonstration of examples created with `framemethod=default`.

mdframed-example-tikz

Demonstration of examples created with `framemethod=TikZ`.

mdframed-example-pstricks

Demonstration of examples created with `framemethod=pstricks`.

mdframed-example-texsx

Demonstration of examples like interaction with `listings`

The examples are often not equivalent but normally they can be adapted to another method. So I really recommend to have a look to all example files.

7. Errors, Warnings and Messages

The package `mdframed` provides different errors, warnings and messages in the `log`-file. Some \LaTeX -editors like `TeXMaker` or `TeXStudio` have a special tab for errors and warnings but not for messages. So you should look in the `log-File` itself.

The following errors and warnings are generated by `mdframed`.

```
The package ... does not exist but
needed by mdframed
```

To avoid this problem you should install the required packages which are listed in section 2.

```
package option style is depreciated
use framemethod instead style
```

With version 0.9d `mdframed` changed the meaning of the option `style`. The option is used to load a defined style by `\mdfdefinestyle`. Instead use `framemethod` (see section 5.1).

```
Unknown framemethod .... mdframed
```

The input string for the option `framemethod` is unknown. See section 5.1.

```
You have not loaded ntheorem yet
```

To use the option `ntheorem` you have to load the package `ntheorem`.

```
You have only a width of 3cm
```

The package `mdframed` calculates the width of the contents based on the given options. If the width of the contents is smaller than 3cm you will get this warnings. You should change the settings to get a greater width.

```
You got a bad break
you have to change it manually
by changing the text, the space
or something else
```

Sometimes you have enough vertical space for the rules and the space between the rules and the contents but not for the contents itself. In this situation you will get this warning because the contents of this box is empty. You have the possibility to change the settings or include a `\clearpage` in front of the environment `mdframed`. So far I have no idea how to avoid such things.

```
You got a bad break
because the split box is empty
You have to change the page settings
like enlargethispage or something else
You got a bad break
```

See the explanation above.

```
You got a bad break
because the last split box is empty
You have to change the settings
```

The same reason as above but only in the last box.

```
Option ... is already consumed
and has no effect on input line ...
```

If you set a global option inside the document body you will get this warning.

8. Known Problems

In this section I will collect known problems. In case you encounter any further problems, please drop me an email, [marco.daniel at mada-nada.de](mailto:marco.daniel@mada-nada.de).

Do you have any ideas / wishes on further extensions to this package? Please let me know!

1. So far the environment isn't compatible with the package `gmverb`.

9. ToDo

It is important to update the documentation

1. see "Known Problems".
2. So far it isn't possible to combine the environment `\begin{multicols}` of the package `multicol` with `mdframed` with the whole option list.
3. Create new styles.
4. Improve page breaks.
5. Improve footnotes.
6. Improve documentation and examples.
7. Create styles for `frametitle`.

10. Acknowledgements

Dick Nickalls; Dietrich Grau; Piazza Luca; Jobst Hoffmann; Martin Scharrer; Enrico Gregorio;
Heiko Oberdiek; Philipp Stephani.

Thanks for proofreading

Alan Munn and Nahid Shajari

I hope I forgot nobody.

A. More information

In the following section I want to present how to create your own frame.

A.1. How does `mdframed` work?

With the environment `\begin{mdframed} ... \end{mdframed}` the whole contents will be saved in a `\savebox` called `\mdf@splitbox@one`. After the calculation of the width and the height of the `\mdf@splitbox@one` (done by `mdframed.sty`) the box will be set sequentially (done by `md-frame-X.mdf`). The following figure demonstrates this.

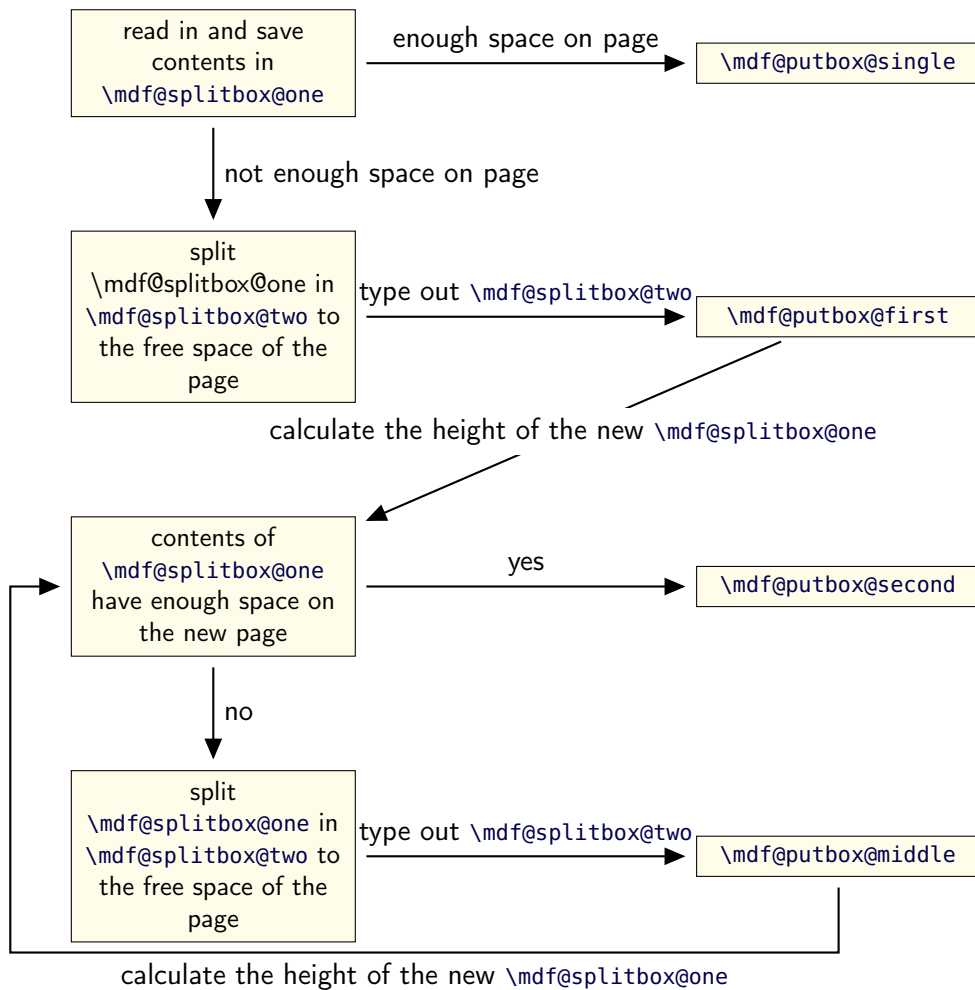


Figure 3: Setting the contents of `mdframed`

The width of the contents is the result of the settings of `leftmargin`, `rightmargin`, `linewidth`, `innerleftmargin` and `innerrightmargin` (see figure (2)).

A.2. The Framecommands

The package `mdframed` knows four kinds of “Framecommand”. These commands tell `LATEX` how to set the contents of `mdframed`.

`\mdf@putbox@single` This command sets the contents of a single unsplit frame.

`\mdf@putbox@first` This command sets the contents of the first frame of a split frame.

`\mdf@putbox@middle` This command sets the contents of the middle frame of a split frame.

`\mdf@putbox@second` This command sets the contents of the last frame of a split frame.

Using the explained commands we give an example. The command `\box` uses the contents of the savebox and types them out.

First we want to type out the single box without any settings (but with the calculated width).

```
\makeatletter
\def\mdf@putbox@single{\box\mdf@splitbox@one}
\makeatother
```

I am using the command `\leftline` to start the “Framecommands” at the left.

```
\makeatletter
\def\mdf@putbox@single{\leftline{\box\mdf@splitbox@one}}
\makeatother
```

Now you have to know how the lengths are named. Every length which can be modified by the options has the following syntax:

```
\mdf@<Name of the Length>@length
```

For example the leftmargin is:

```
\mdf@leftmargin@length
```

To create only a line at the left with the correct `leftmargin` you can set `\mdf@putboxsingle` as follows

```
\makeatletter
\def\mdf@putbox@single{%
  \leftline{%
    \hspace*{\mdf@leftmargin@length}%
    \rule[-\dp\mdf@splitbox@one]{\mdf@linewidth}%
    {\ht\mdf@splitbox@one+\dp\mdf@splitbox@one}%
    \box\mdf@splitbox@one
  }%
}
\makeatother
```

In this way you can do what you want. If you create your own style you can save the file as `md-frame-X.mdf`. `X` must be an integer. In this way you can use the option `framemethod` to load the file by setting `framemethod=X`.

A.3. Revision history

Version 1.3 submitted 8 Jan 2012

- fixed documentation (Thanks to Dietrich Grau) • added option `shadow` • TODO: HANDLING `\parindent` and `\parskip`

Version 1.2 submitted 8 Jan 2012

- fixed documentation (Thanks to Dietrich Grau) • fixed bug in combination with `amsthm` • fixed bug in `\newmdtheoremenv` • defined new styles via `\newpsstyle`

This works only with `framemethod=PSTricks`. • added new commands for interaction with TikZ and PSTricks • expand frame title option by option `frametitulerule`, `frametitulerulewidth`, `frametitlefont`, `frametitleaboveskip`, `frametitlebelowskip`, `frametitlealignment` • removed limitation of three lines for PSTricks • defined new commands `\surroundwithmdframed`, `\mdflength`, `\mdtheorem` • load `xparse` by default • changed internal names • expanded examples

Version 1.0b submitted 9 Dec 2011

- fixes documentation (Thanks to Dietrich Grau) • fixes bug in `\newmdtheoremenv` • fixes bug with overfull boxes (Thanks to Dietrich Grau) • defined `\newpsstylemdfbackgroundstyle` and `mdflinestyle`

This works only with `framemethod=PSTricks`. • created dtx-file (Thanks to Kevin Godby) • added `\@parboxrestore` to `\mdf@lrbox`

Version 1.0 submitted 13 Nov 2011

- add option `userdefinedwidth` • add option `align` • add option `apptotikzsetting` • create new command `\mdfapptodefinestyle` • changed internal algorithm • removed `calc` instead using ε -TeX `\dimexpr` • expand documentation • trying to fix problems with `xcolor` • fixed bug with `framemethod=pstricks` • create file `mdframed-example-default` • create file `mdframed-example-tikz` • create file `mdframed-example-pstricks` • create file `mdframed-example-texsx` (`texsx` stands for `tex stackexchange`)

Version 0.9g submitted 08 Oct 2011

- fixed documentation • added small footnote compatibility

Version 0.9f submitted 04 Oct 2011

- fixes bugs (thanks to Lars Madsen) • added option `hidealllines` • fixed documentation

Version 0.9e submitted 11 Sep 2011

- working with `twoside` modus

Version 0.9d submitted 10 Sep 2011

- **changed the meaning of the option `style`!!!** (inspired by Lars Madsen) • added option `framemethod` (inspired by Lars Madsen) • added options `needspace` (inspired by Lars Madsen) • added new command `\mdfdefinestyle` (inspired by Lars Madsen) • fixes documentation • renamed `md-frame-3.mdf` to `md-frame-2.mdf`

Version 0.9b submitted 7 Sep 2011

- fixes bugs in `\newmdtheoremenv` (Thanks to Enrico Gregorio)

Version 0.9a submitted 5 Sep 2011

- fixes bugs (Thanks to Lars Madson) • expanded documentation (added revision history)

Version 0.9 submitted 4 Sep 2011

- added option `nobreak` • detecting float environments to prevent split calculation • expand documentation (Thanks to Alan Munn)

Version 0.8a

- fixes bugs • fixes documentation

Version 0.8 submitted 22 Aug 2011

- added commands: `\newmdenv`, `\renewmdenv`, `\newmdtheoremenv` • fixes bugs • fixes documentation

Version 0.7a submitted 6 August 2011

- added option `frametitle` • added option `frametitlefont` • allow `twocolumn`-mode • changed the calculation • added option `tikzsetting` • added options for hidden lines for all styles • fixes bugs

Version 0.6a submitted 22 Dec 2010

- fixes bugs
- added `\mdfsetup`
- expanded documentation

B. Implementation

And finally, here's how it all works...

B.1. The Explanation of mdframed.sty

Id : mdframed.dtx3382012-02-04 11:21:42Zmarco Rev : 338 Author : marco

Date : 2012-02-04 11:21:42 +0100(Sa, 04.Feb2012)

```
\mdversion
\mdframedpackagename
\mdf@maindate@svn
```

Set package information

```
1 \def\mdversion{v1.3}
2 \def\mdframedpackagename{mdframed}
3 \def\mdf@maindate@svn$#1: #2 #3 #4-#5-#6 #7 #8${#4/#5/#6\space }

4 \NeedsTeXFormat{LaTeX2e}
5 \ProvidesPackage{mdframed}%
6     [\mdf@maindate@svn$Id: mdframed.dtx 338 2012-02-04 11:21:42Z marco $%
7     \mdversion: \mdframedpackagename]
```

```
\mdf@PackageWarning
\mdf@PackageInfo
\mdf@LoadFile@IfExist
```

Set short form of `\PackageWarning`, `\PackageInfo` and `IfFileExists` in combination with `\RequirePackage`.

```
8 \newcommand*\mdf@PackageWarning[1]{\PackageWarning{\mdframedpackagename}{#1}}
9 \newcommand*\mdf@PackageInfo[1]{\PackageInfo{\mdframedpackagename}{#1}}
10 \newcommand*\mdf@LoadFile@IfExist[1]{%
11   \IfFileExists{#1.sty}{%
12     \RequirePackage{#1}%
13   }{%
14     \mdf@PackageWarning{The file #1 does not exist\MessageBreak
15       but needed by \mdframedpackagename\MessageBreak
16       see documentation fo further information
17     }%
18   }
19 }
```

Loading required packages

```
20 \RequirePackage{kvoptions}
21 \RequirePackage{xparse}
22 \RequirePackage{etoolbox}[2011/01/03]
23 \RequirePackage{zref-abspage}
24 \RequirePackage{color}
```

Set the family and the prefix of all options. (see documentation of `kvoptions`)

```
25 \SetupKeyvalOptions{family=mdf,prefix=mdf@}
```

```
\mdf@iflength
\mdf@iflength@check
\mdf@iflength@check
```

Command which checks the input of length options. If the length option is only a number the `defaultunit` will be used. Syntax: `\mdf@iflength{<Input>}{<length>}{<no length>}`

```

26 \newlength{\mdf@templength}
27 \def\mdf@iflength#1{%
28   \afterassignment\mdf@iflength@check%
29   \mdf@templength=#1\mdf@defaultunit\relax\relax
30   \expandafter\endgroup\next
31 }
32 \def\mdf@iflength@check#1{%
33   \begingroup
34   \ifx\relax#1\@empty
35     \def\next{\@secondoftwo}
36   \else
37     \def\next{\@firstoftwo}
38     \expandafter\mdf@iflength@cleanup
39   \fi
40 }
41 \def\mdf@iflength@cleanup#1\relax{}
```

`\mdf@dolist`

Loop used by *mdframed*.

```
42 \DeclareListParser*{\mdf@dolist}{,}
```

`\mdf@option@length`
`\mdf@define@key@length`

Command to define a new length with a default value.

```

\mdf@option@length{<Laengebezeichnung>}{<Defaultwert>}
43 \newrobustcmd*{\mdf@option@length}[2]{%
44   \expandafter\newlength\csname mdfl@#1@length\endcsname%
45   \expandafter\setlength\csname mdfl@#1@length\endcsname{#2}%
46 }
```

Command to create a new length option. `\mdf@define@key@length{<Bezeichnung der Option der Laenge>}`

```

47 \newrobustcmd*{\mdf@define@key@length}[1]{%
48   \define@key{mdf}{#1}{%
49     \def\@tempa{##1}
50     \mdf@iflength{\@tempa}%
51     {\csxdef{mdfl@#1}{\the\mdf@templength}}%
52     {\csxdef{mdfl@#1}{\the\mdf@length}}%
53     \expandafter\setlength\csname mdfl@#1@length\endcsname{\csname mdfl@#1\endcsname}%
54   }%
55 }
```

`\mdf@do@lengthoption`
`\mdf@lengthoption@doubledo`

The loop of `\mdf@dolist` expected one argument. So I have to define two commands to allow a loop with two arguments. The separation for the input is `==`.

```

56 \def\mdf@do@lengthoption#1{%
57   \mdf@lengthoption@doubledo#1\@nil%
58 }
59 \def\mdf@lengthoption@doubledo#1==#2\@nil{}
```

```

60 \mdf@option@length{#1}{#2}%
61 \mdf@define@key@length{#1}%
62 }

```

```

\mdf@do@stringoption
\mdf@stringoption@doubledo

```

Same as `\mdf@do@lengthoption` and `\mdf@lengthoption@doubledo`.

```

63 \def\mdf@do@stringoption#1{%
64   \mdf@stringoption@doubledo#1\@nil%
65 }
66 \def\mdf@stringoption@doubledo#1==#2\@nil{%
67   \expandafter\gdef\csname mdf@#1\endcsname{#2}%
68   \define@key{mdf}{#1}{%
69     \csdef{mdf@#1}{##1}%
70   }%
71 }

```

```

\mdf@do@booloption
\mdf@booloption@doubledo

```

Same as `\mdf@do@lengthoption` and `\mdf@lengthoption@doubledo`.

```

72 \def\mdf@do@booloption#1{%
73   \mdf@booloption@doubledo#1\@nil%
74 }
75 \def\mdf@booloption@doubledo#1==#2\@nil{%
76   \newbool{mdf@#1}\setbool{mdf@#1}{#2}%
77   \define@key{mdf}{#1}[#2]{%
78     \setbool{mdf@#1}{##1}%
79   }%
80 }

```

```

\mdf@do@alignoption
\mdf@alignoption@tripleo

```

Same as `\mdf@do@lengthoption` and `\mdf@lengthoption@doubledo`. Here three arguments are required.

```

81 \def\mdf@do@alignoption#1{%
82   \mdf@alignoption@tripleo#1\@nil%
83 }
84 \def\mdf@alignoption@tripleo#1==#2==#3\@nil{%
85   \csdef{mdf@align@#1@left}{\null\hspace*{#2}}%
86   \csdef{mdf@align@#1@right}{\hspace*{#3}\null}%
87 }

```

Start declaration of options

```

88 \newcounter{mdf@globalstyle@cnt}
89 \defcounter{mdf@globalstyle@cnt}{0}
90 \newcommand*\mdfglobal@style{0}

```

Only provide to be backward compatible

```

91 \define@key{mdf}{style}{%
92   \mdf@PackageWarning{package option style is depreciated^^J
93     use framemethod instead\MessageBreak}%
94   \renewcommand*\mdfglobal@style{#1}%

```

```

95      \defcounter{mdf@globalstyle@cnt}{#1}%
96      \ifcase\value{mdf@globalstyle@cnt}\relax
97          %0 <- kein Grafikpaket
98      \or\mdf@LoadFile@IfExist{tikz}%
99      \or\mdf@LoadFile@IfExist{pstricks-add}%
100     \or\defcounter{mdf@globalstyle@cnt}{2}%
101         \mdf@LoadFile@IfExist{pst-node}%
102     \or\mdf@LoadFile@IfExist{pst-node}%
103     \else\mdf@PackageWarning{Unknown global style \value{mdf@globalstyle@cnt}}%
104     \fi%
105 }

```

\mdf@framemethod

```

106 \providecommand*\mdf@framemethod{}
107 \def\mdf@framemethod@i{}%
108 \def\mdf@framemethod@ii{}%
109 \def\mdf@framemethod@iii{}%

110 \define@key{mdf}{framemethod}[default]{%
111     \lowercase{\def\mdf@tempa{#1}}
112     \forcsvlist{\listadd\mdf@framemethod@i}{default,tex,latex,none,0}
113     \forcsvlist{\listadd\mdf@framemethod@ii}{pgf,tikz,1}
114     \forcsvlist{\listadd\mdf@framemethod@iii}{pstricks,ps,2,postscript}
115     \xifinlist{\mdf@tempa}{\mdf@framemethod@i}%
116         {\def\mdf@@framemethod{default}\defcounter{mdf@globalstyle@cnt}{0}}%
117     {\xifinlist{\mdf@tempa}{\mdf@framemethod@ii}%
118         {\def\mdf@@framemethod{tikz}\defcounter{mdf@globalstyle@cnt}{1}}%
119     {\xifinlist{\mdf@tempa}{\mdf@framemethod@iii}%
120         {\def\mdf@@framemethod{pstricks}\defcounter{mdf@globalstyle@cnt}{2}}}%
121     {%
122         \mdf@LoadFile@IfExist{#1}%
123     }%
124 }%
125 }%
126 \ifcase\value{mdf@globalstyle@cnt}\relax%
127     %0 <- kein Grafikpaket
128     \or\mdf@LoadFile@IfExist{tikz}%
129     \or\mdf@LoadFile@IfExist{pst-node}%
130     \or\mdf@LoadFile@IfExist{pst-node}%
131 \fi%
132 }

```

\mdf@do@lengthoption

Here the declaration of the length option. The input method is explained above.

```

133 \mdf@dolist{\mdf@do@lengthoption}{%
134     {skipabove==\z@},%
135     {skipbelow==\z@},%
136     {leftmargin==\z@},%
137     {rightmargin==\z@},%
138     {innerleftmargin==10pt},%
139     {innerrightmargin==10pt},%

```

```

140 {innertopmargin==0.4\baselineskip},%
141 {innerbottommargin==0.4\baselineskip},%
142 {splittopskip==\z@},%
143 {splitbottomskip==\z@},%
144 {outermargin==\z@},%
145 {innermargin==\z@},%
146 {linewidth==0.4pt},%
147 {innerlinewidth==\z@},%
148 {middlelinewidth==\expandafter\mdf@linewidth@length},%
149 {outerlinewidth==\z@},%
150 {roundcorner==\z@},%
151 {footenotedistance==\medskipamount},
152 {userdefinedwidth==\linewidth},
153 {frametitleaboveskip==5pt},
154 {frametitlebelowskip==5pt},
155 {frametitlerulewidth==.2pt},
156 {frametitleleftmargin==10pt},%
157 {frametitlerightmargin==10pt},%
158 }

```

`\mdf@do@lengthoption`

Here the declaration of the string option. The input method is explained above.

```

159 \mdf@dolist{\mdf@do@stringoption}{%
160   {frametitle=={}},%
161   {defaultunit==pt},%
162   {linecolor==black},%
163   {backgroundcolor==white},%
164   {fontcolor==black},%
165   {frametitlefontcolor==black},%
166   {innerlinecolor==\mdf@linecolor},%
167   {outerlinecolor==\mdf@linecolor},%
168   {middlelinecolor==\mdf@linecolor},%
169   {psroundlinecolor==\mdf@backgroundcolor},%
170   {frametitlerulecolor==\mdf@linecolor},
171   {frametitlebackgroundcolor==\mdf@backgroundcolor},%
172   {settings=={}},%
173   {frametitlesettings=={}},%
174   {font=={}},%
175   {frametitlefont==\normalfont\bfseries},%
176   {printheight==none},%
177   {alignment=={}},%
178   {frametitlealignment=={}},%
179   {theoremseparator=={:}},%
180   {theoremcountersep=={.}},%
181   {theoremtitlefont=={}},%
182   {theoremspace==\space}},%
183 }

```

`\mdf@do@booloption`

Here the declaration of the string option. The input method is explained above.


```

184 \mdf@dolist{\mdf@do@booloption}{%
185     {ntheorem==false},%
186     {topline==true},%
187     {leftline==true},%
188     {bottomline==true},%
189     {rightline==true},%
190     {frametitletopline==true},%
191     {frametitleleftline==true},%
192     {frametitlebottomline==true},%
193     {frametitlerightline==true},%
194     {hidealllines==false},%
195     {frametitlerule==false},%
196     {nobreak==false},%
197     {footnoteinside==true},%
198     {usetwoside==true},%
199     {repeatframetitle==false},%Noch nicht richtig implementiert
200     {shadow==false},%
201 }

```

`\mdf@do@alignoption`

Here the declaration of the align option. The input method is explained above.

```

202 \mdf@dolist{\mdf@do@alignoption}{%
203     {left==\mdf@leftmargin@length==\z@},%
204     {center==\fill==\fill},%
205     {right==\fill==\mdf@rightmargin@length},%
206     {outer==\fill==\mdf@rightmargin@length},%not supported yet
207     {outer==\mdf@leftmargin@length==\fill},%not supported yet
208 }

```

`\mdf@align`
`\mdf@makeboxalign@left`
`\mdf@makeboxalign@right`
`\mdf@makeboxalign@right`

Set the alignment.

```

209 \newcommand*\mdf@align{%
210 \newcommand*\mdf@makeboxalign@left{\null\hspace*\mdf@leftmargin@length}}%
211 \newcommand*\mdf@makeboxalign@right{}%
212 \define@key{mdf}{align}[left]{%
213     \ifcsundef{mdf@align@#1@left}{%
214         \mdf@PackageWarning{Unknown alignment #1\MessageBreak}%
215         \letcs\mdf@makeboxalign@left{mdf@align@left@left}%
216         \letcs\mdf@makeboxalign@right{mdf@align@left@right}%
217     }{%
218         \def\mdf@makeboxalign@left{\csuse{mdf@align@#1@left}}%
219         \def\mdf@makeboxalign@right{\csuse{mdf@align@#1@right}}%
220     }%
221 }

```

`\mdf@tikzset@local`
`\mdf@psset@local`

Option to pass options to tikz or pstricks

```

222 \def\mdf@tikzset@local{\tikzset{tikzsetting/.style={}}}
223 \define@key{mdf}{tikzsetting}{%
224   \def\mdf@tikzset@local{\tikzset{tikzsetting/.style={#1}}}%
225 }
226 \define@key{mdf}{apptotikzsetting}{%
227   \appto\mdf@tikzset@local{#1}%
228 }
229 \def\mdf@psset@local{}
230 \define@key{mdf}{pstrickssetting}{%
231   \def\mdf@psset@local{#1}
232 }
233 \def\mdfpstricks@appendsettings{}
234 \define@key{mdf}{pstricksappsetting}{%
235   \def\mdfpstricks@appendsettings{#1}%
236 }
237

```

\mdf@xcolor

Problem with xcolor. This part must be reworked!

```

238 \def\mdf@xcolor{}
239 \define@key{mdf}{xcolor}[none]{%
240   \def\@tempa{#1}%
241   \ifpackageloaded{xcolor}{%
242     \let\mdf@xcolor\@empty %ignoriere die Eingabe der Optionen
243     \def\@tempa{}%
244   }{}%
245   \ifx\relax\@tempa\relax\else
246     \PassOptionsToPackage{\mdf@xcolor}{xcolor}%
247     \RequirePackage{xcolor}%
248   \fi%
249 }%

```

\mdf@needspace

Defining the option needspace

```

250 \define@key{mdf}{needspace}[\z@]{%
251   \begingroup%
252     \setlength{\dimen@}{#1}%
253     \vskip\z@\@plus\dimen@%
254     \penalty -100\vskip\z@\@plus -\dimen@%
255     \vskip\dimen@%
256     \penalty 9999%
257     \vskip -\dimen@%
258     \vskip\z@skip % hide the previous |\vskip| from |\addvspace|
259   \endgroup%
260 }

261 \DeclareDefaultOption{%
262   \mdf@PackageWarning{Unknown Option '\CurrentOption' for mdframed}}
263 \ProcessKeyvalOptions*\relax

```

\mdfsetup

Short form of `\setkeys{mdf}`

```
264 \newrobustcmd*{\mdfsetup}{\setkeys{mdf}}
```

`\mdf@style`

Redefinition of the option `style` to use the key in combination with `mdfdefinedstyle`.

```
265 \define@key{mdf}{style}{%
266   \ifcsundef{mdf@definestyle@#1}{%
267     \mdf@PackageWarning{Unknown definedstyle #1^^J
268                         You have to define a style ^^J
269                         via \string\mdfdefinedstyle\MessageBreak
270                       }%
271   }%
272   {\expandafter\expandafter\expandafter\mdfsetup%
273     \expandafter\expandafter\expandafter{\csname mdf@definestyle@#1\endcsname}}%
274 }
```

`\mdf@print@space`

Option to type out the free vertical space of the current page.

```
275 \let\mdf@PackageNoInfo\@gobble
276 \newrobustcmd*{\mdf@ifstrequal@expand{%
277   \expandafter\ifstrequal\expandafter{\mdf@printheight}%
278 }
279 \newrobustcmd*{\mdf@print@space{%
280   %case "none"
281   \mdf@ifstrequal@expand{none}{\def\mdf@tempa{NoInfo}}{%
282     %case "info"
283     \mdf@ifstrequal@expand{info}{\def\mdf@tempa{Info}}{%
284       %case "warning"
285       \mdf@ifstrequal@expand{warning}{\def\mdf@tempa{Warning}}{%
286         %case "unknown"
287         \mdf@PackageWarning{Unknown key for printheight=\mdf@printheight^^J
288                             use none, info or warning}%
289         \def\mdf@tempa{none}%
290       }%
291     }%
292   }%
293   \def\mdf@PackageInfoSpace{\csname mdf@Package\mdf@tempa\endcsname}%
294 }
```

`\new...`

Initialize all commands and length which will we used later

```
295 \newsavebox\mdf@frametitlebox
296 \newsavebox\mdf@footnotebox
297 \newsavebox\mdf@splitbox@one
298 \newsavebox\mdf@splitbox@two
299 \newlength\mdf@splitboxwidth
300 \newlength\mdf@splitboxtotalwidth
301 \newlength\mdf@splitboxheight
302 \newlength\mdf@splitboxdepth
303 \newlength\mdf@splitboxtotalheight
```

```

304 \newlength\mdfframetitleboxwidth
305 \newlength\mdfframetitleboxtotalwidth
306 \newlength\mdfframetitleboxheight
307 \newlength\mdfframetitleboxdepth
308 \newlength\mdfframetitleboxtotalheight
309 \newlength\mdffootnoteboxwidth
310 \newlength\mdffootnoteboxtotalwidth
311 \newlength\mdffootnoteboxheight
312 \newlength\mdffootnoteboxdepth
313 \newlength\mdffootnoteboxtotalheight
314
315 \newlength\mdftotallinewidth
316
317 \newlength\mdfboundingboxwidth
318 \newlength\mdfboundingboxtotalwidth
319
320 \newlength\mdfboundingboxheight
321 \newlength\mdfboundingboxdepth
322 \newlength\mdfboundingboxtotalheight
323
324 \newlength\mdf@freevspace@length
325 \newlength\mdf@horizontalwidthofbox@length
326 \newlength\mdf@verticalmarginwhole@length
327
328 % Command to expand the tikz code. (see md-frame-1.mdf)
329 \newrobustcmd\mdfcreateextratikz{}
330

```

```

\mdf@lrbox
\endmdf@lrbox

```

Modification of the default `\lrbox` and `\endlrbox`

```

331 \def\mdf@lrbox#1{%
332 %%patch to work with amsthm
333 \mdf@patchamsthm
334 %%end patch
335 \edef\mdf@restoreparams{%
336 \parindent=\the\parindent \parskip=\the\parskip}
337 \setbox#1\vbox\bgroup
338 \begingroup
339 \mdf@horizontalmargin@equation%
340 \color@setgroup%
341 \hsize=\mdf@horizontalsofbox%
342 \columnwidth=\hsize%
343 \textwidth=\hsize%
344 \let\if@nobreak\iffalse
345 \let\if@noskipsec\iffalse
346 \let\par\@par
347 \let\-\@dischph
348 \let'\@acci\let'\@accii\let\=\@acciii
349 \parindent\z@ \parskip\z@skip
350 \linewidth\hsize
351 \@totalleftmargin\z@
352 \leftskip\z@skip \rightskip\z@skip

```

```

353 \parfillskip\@flushglue \lineskip\normallineskip%
354 \baselineskip\normalbaselineskip%
355 \everypar{\mdf@restoreparams}\ignorespaces%
356 }
357
358
359 \def\endmdf@lrbox{\endgroup\unskip\color@endgroup\egroup}
360

```

```

\mdf@ignorevbadness
\mdf@restorevbadness

```

Avoiding warnings during the splitting process by `\vsplit`. see [How to avoid underfull vbox in combination with \vsplit?](#)

```

361 \newrobustcmd*\mdf@ignorevbadness{%
362   \edef\mdf@currentvbadness{\the\vbadness}%
363   \vbadness=\@M%
364   \afterassignment\mdf@restorevbadness}
365 \newrobustcmd*\mdf@restorevbadness{\vbadness=\mdf@currentvbadness\relax}

```

```
\mdf@patchamsth
```

The package `amsthm` provides a not compatible starting of theorem. So I have to change the header of `amsthm`.

```

366 \ifpackageloaded{amsthm}{%
367   \newrobustcmd\mdf@patchamsth{%
368     \let\mdf@deferred@thm@head\deferred@thm@head
369     \patchcmd{\deferred@thm@head}{\indent}{\relax}{}{}
370   }%
371 }{\let\mdf@patchamsth\relax}%

```

```

\mdf@trivlist
\endmdf@trivlist

```

Modification of the default `\trivlist` and `\endtrivlist`.

```

372 \def\mdf@trivlist#1{%
373   \setlength{\topsep}{#1}%
374   \partopsep\z@%
375   \parsep\z@%
376   \@nmblistfalse%
377   \@trivlist%
378   \labelwidth\z@%
379   \leftmargin\z@%
380   \itemindent\z@%
381   \let\@itemlabel\@empty%
382   \def\makelabel##1{##1}%
383   %% \item\leavevmode\hrule \@height\z@ \@width\linewidth\relax%
384   %% \item\mbox{}\relax% second version
385   \item\relax% first Version
386 }
387 \let\endmdf@trivlist\endtrivlist
388 \patchcmd\endmdf@trivlist\@endparenv\mdf@endparenv{}{}
389 \def\mdf@endparenv{%

```

```

390 \addpenalty\@endparpenalty\addvspace\mdf@skipbelow@length\@endpetrue}
391

```

```

\mdf@makebox@out
\mdf@makebox@in

```

```

392 \newrobustcmd*\mdf@makebox@out[2][\linewidth]{%
393 \noindent\hb@xt@\z@{%
394 \noindent\makebox[\dimexpr #1\relax][l]{#2}%
395 \hss}%
396 }%
397 \newrobustcmd*\mdf@makebox@in[2][\mdf@userdefinedwidth@length]{%
398 \noindent\makebox[\dimexpr #1\relax][l]{#2}%
399 }

```

```

\mdfdefinestyle
\mdfapptodefinestyle

```

See explanation of this commands above.

```

400 \newrobustcmd*\mdfdefinestyle[2]{%
401 \csdef{mdf@definestyle@#1}{#2}%
402 }
403 \newrobustcmd*\mdfapptodefinestyle[2]{%
404 \ifcsundef{mdf@definestyle@#1}%
405 {\mdf@PackageWarning{Unknown style #1}}%
406 {\csappto{mdf@definestyle@#1}{, #2}}%
407 }

```

```

\mdflength
\surroundwithmdframed

```

Helper macros to work with *mdframed*

```

408 \newrobustcmd*\mdflength[1]{\csuse{mdf@#1@length}}
409
410 \newrobustcmd*\surroundwithmdframed[2][]{%
411 \BeforeBeginEnvironment{#2}{\begin{mdframed}[#1]}%
412 \AfterEndEnvironment{#2}{\end{mdframed}}%
413 }

```

```

\newmdenv
\renewmdenv
\newmdtheoremenv
\mdtheorem

```

Defining of the new environment definitions.

```

414 \newrobustcmd*\newmdenv[2][]{%
415 \newenvironment{#2}{%
416 \mdfsetup{#1}%
417 \begin{mdframed}%
418 }{%
419 \end{mdframed}%
420 }%

```

```

421 }
422 \newrobustcmd*\renewmdenv[2][\%
423   \expandafter\let\csname #2\endcsname\relax%
424   \expandafter\let\csname end#2\endcsname\relax%
425   \newmdenv[#1]{#2}%
426   }%
427
428
429 \DeclareDocumentCommand\newmdtheoremenv{0}{ m o m o }{%
430   \ifboolexpr{ test {\IfNoValueTF {#3}} and test {\IfNoValueTF {#5}} }{%
431     {\newtheorem{#2}{#4}}{%
432       \IfValueTF{#3}{\newtheorem{#2}[#3]{#4}}{%
433         \IfValueTF{#5}{\newtheorem{#2}{#4}[#5]}{%
434           }%
435       }%
436     }%
437   \BeforeBeginEnvironment{#2}{%
438     \begin{mdframed}[#1]}%
439   \AfterEndEnvironment{#2}{%
440     \end{mdframed}}%
441 }
442
443 \DeclareDocumentCommand{\mdtheorem}{ 0{ } m o m o }%
444 {\ifcsdef{#2}%
445   {\mdf@PackageWarning{Environment #2 already exists\MessageBreak}}%
446   {%
447     \IfNoValueTF {#3}%
448     {%#3 not given -- number relationship
449     \IfNoValueTF {#5}
450     {%#3+#5 not given
451     \@definecounter{#2}%
452     \expandafter\xdef\csname the#2\endcsname{\@thmcounter{#2}}
453     \newenvironment{#2}[1][\%
454       \refstepcounter{#2}
455       \ifstrempy{##1}%
456       {\let\@temptitle\relax}%
457       {%
458         \def\@temptitle{\mdf@theoremseparator%
459           \mdf@theoremspace%
460           \mdf@theoremtitlefont%
461           ##1}%
462       }%
463       \begin{mdframed}[#1,frametitle={\strut#4\ \csname the#2\endcsname\@temptitle}}}%
464       {\end{mdframed}}}%
465     \newenvironment{#2*}[1][\%
466       \ifstrempy{##1}{\let\@temptitle\relax}{\def\@temptitle{: \ ##1}}
467       \begin{mdframed}[#1,frametitle={\strut#4\@temptitle}}}%
468       {\end{mdframed}}}%
469     }%
470     {%#5 given -- reset counter
471     \@definecounter{#2}\@newctr{#2}[#5]%
472     \expandafter\xdef\csname the#2\endcsname{\@thmcounter{#2}}
473     \expandafter\xdef\csname the#2\endcsname{%
474       \expandafter\noexpand\csname the#5\endcsname \@thmcountersep
475       \@thmcounter{#2}}%
476     \newenvironment{#2}[1][\%
477       \refstepcounter{#2}
478       \ifstrempy{##1}%

```

```

477         {\let\@temptitle\relax}%
478     {%
479         \def\@temptitle{\mdf@theoremseparator%
480             \mdf@theoremspace%
481             \mdf@theoremtitlefont%
482             ##1}%
483     }
484     \begin{mdframed}[#1,frametitle={\strut#4\ \csname the#2\endcsname\@temptitle}]]}%
485     {\end{mdframed}}}%
486 \newenvironment{#2*}[1][]{%
487     \ifstrepty{##1}%
488     {\let\@temptitle\relax}%
489     {%
490         \def\@temptitle{\mdf@theoremseparator%
491             \mdf@theoremspace%
492             \mdf@theoremtitlefont%
493             ##1}%
494     }
495     \begin{mdframed}[#1,frametitle={\strut#4\@temptitle}]]}%
496     {\end{mdframed}}}%
497 }%
498 }%
499 {%#3 given -- number relationship
500     \global\@namedef{the#2}{\@nameuse{the#3}}%
501     \newenvironment{#2}[1][]{%
502         \refstepcounter{#3}
503         \ifstrepty{##1}%
504         {\let\@temptitle\relax}%
505         {%
506             \def\@temptitle{\mdf@theoremseparator%
507                 \mdf@theoremspace%
508                 \mdf@theoremtitlefont%
509                 ##1}%
510         }
511         \begin{mdframed}[#1,frametitle={\strut#4\ \csname the#2\endcsname\@temptitle}]]}%
512         {\end{mdframed}}}%
513     \newenvironment{#2*}[1][]{%
514         \ifstrepty{##1}{\let\@temptitle\relax}{\def\@temptitle{: \ ##1}}
515         \begin{mdframed}[#1,frametitle={\strut#4\@temptitle}]]}%
516         {\end{mdframed}}}%
517 }%
518 }%
519 }
520

```

```

\mdfframedtitleenv
\mdf@frametitle
\mdf@setopt@body
\mdf@setopt@title

```

Default definition of the frame tile used by *mdframed*.

```

521 %TESTVERSION
522 % \newrobustcmd*\mdf@setopt@title{%
523 %   \ifbool{mdf@frametitlerule}{\booltrue{mdf@bottomline}}{\boolfalse{mdf@bottomline}}}%

```



```

524 % \let\ifmdf@leftline\ifmdf@frametitleleftline%
525 % \let\ifmdf@topline\ifmdf@frametitletopline%
526 % \let\ifmdf@rightline\ifmdf@frametitlerightline%
527 % \let\ifmdf@bottomline\ifmdf@frametitlebottomline%
528 % \mdfsetup{innerbottommargin=\mdf@titlebelowskip@length,%
529 %           innertopmargin=\mdf@titleaboveskip@length,%
530 %           middlelinecolor=\mdf@frametitlerulecolor,%
531 %           backgroundcolor=\mdf@frametitlebackgroundcolor,%
532 %           middlelinewidth=\mdf@frametitlerulewidth@length,%
533 %           innerleftmargin=\mdf@frametitleleftmargin@length,%
534 %           innerrightmargin=\mdf@frametitlerightmargin@length,%
535 %           alignment=\mdf@frametitlealignment,%
536 %           skipbelow=\z@}%
537 % \def\mdf@linecolor@bottom{\color{\mdf@frametitlebottomrulecolor}}%
538 % \mdf@frametitlesettings%
539 % }
540 %
541 % \newrobustcmd*\mdf@setopt@body{%
542 %   \mdfsetup{topline=false,skipabove=\z@}%
543 %   \unskip\nointerlineskip%
544 % }
545 %
546 % \newrobustcmd\mdfframedtitleenv[1]{%
547 %   \begingroup
548 %     \mdf@setopt@title
549 %     \color@setgroup
550 %     \mdf@frametitlefont
551 %     \mdf@lrbox{\mdf@splitbox@one}%
552 %       \mdf@frametitlealignment
553 %       #1\par\unskip
554 %     \endmdf@lrbox
555 %     \mdf@ignorevbadness
556 %     \global\setbox\mdf@frametitlebox\vbox{\unvbox\mdf@splitbox@one}%
557 %     \mdf@ignorevbadness
558 %     \global\setbox\mdf@splitbox@one\vbox{\unvcopy\mdf@frametitlebox}%
559 %     \detected@mdf@put@frame%
560 %     \color@endgroup%
561 %   \endgroup
562 % }
563 % \newrobustcmd\mdfframedtitleenv[1]{%
564 %   \begingroup%
565 %     \color@setgroup%
566 %     \mdf@frametitlefont\color{\mdf@frametitlefontcolor}%
567 %     \mdf@lrbox{\mdf@frametitlebox}%
568 %       \mdf@frametitlealignment%
569 %       #1\par\unskip
570 %     \endmdf@lrbox%
571 %     \mdf@ignorevbadness%
572 %     \global\setbox\mdf@frametitlebox\vbox{\unvbox\mdf@frametitlebox}%
573 %     \global\mdfframetitleboxwidth=\wd\mdf@frametitlebox\relax%
574 %     \global\mdfframetitleboxheight=\ht\mdf@frametitlebox\relax%
575 %     \global\mdfframetitleboxdepth=\dp\mdf@frametitlebox\relax%
576 %     \global\mdfframetitleboxtotalheight=\dimexpr\ht\mdf@frametitlebox+
577 %       \dp\mdf@frametitlebox+
578 %       \mdf@titleaboveskip@length+\mdf@titlebelowskip@length\relax%
579 %     \color@endgroup%
580 %   \endgroup%

```

```

580 }
581
582 \newrobustcmd*\mdf@@frametitle{%
583   \mdfframedtitleenv{\mdf@frametitle}%
584 }
585
586 \newrobustcmd*\mdf@@frametitle@use{%
587   \begingroup
588   \parskip\z@
589   \parindent\z@
590   \offinterlineskip
591   \mdf@ignorevbadness%
592   \global\setbox\mdf@splitbox@one\vbox{%
593     \unvcopy\mdf@frametitlebox%
594     \mdf@@frametitlerule%
595     \unvbox\mdf@splitbox@one
596   }%
597   \mdf@ignorevbadness%
598   \global\setbox\mdf@splitbox@one\vbox{%
599     \unvbox\mdf@splitbox@one}%
600   \endgroup
601   \mdfsetup{innertopmargin=\mdf@frametitleaboveskip@length}%
602 }

```

`\mdf@checkntheorem`

Command which checks only `ntheorem`. Later I will support also `thmtools`.

```

603
604 \newrobustcmd*\mdf@checkntheorem{%
605   \ifbool{mdf@ntheorem}%
606     {\ifundef{\theorempreskipamount}%
607       {\mdf@PackageWarning{You have not loaded ntheorem yet}}%
608       {\setlength{\theorempreskipamount}{\z@}%
609        \setlength{\theorempostskipamount}{\z@}%
610       }%
611     }{}%
612 }

```

`\mdf@footnoterule`
`\mdf@footnoteoutput`
`\mdf@footnoteinput`

Support for footnotes.

```

613 \newrobustcmd*\mdf@footnoterule{%
614   \kern0\p@
615   \hrule \@width 1in \kern 2.6\p@}
616 \newrobustcmd*\mdf@footnoteoutput{%
617   \ifvoid\@mpfootins\else
618     \nobreak%
619     \vskip\mdf@footnotedistance@length%
620     \normalcolor%
621     \mdf@footnoterule
622     \unvbox\@mpfootins
623   \fi%
624 }

```

```

625 \newrobustcmd*\mdf@footnoteinput{%
626   \def\@mpfn{mpfootnote}%
627   \def\thempfn{\thempfootnote}%
628   \c@mpfootnote\z@%
629   \let\@footnotetext\@mpfootnotetext%
630 }

```

```

\mdf@load@style
\mdf@styledefinition

```

Load the method to draw the frame and set style definition.

```

631 \newrobustcmd*\mdf@load@style{%
632   \ifcase\value{mdf@globalstyle@cnt}\relax%
633     \input{md-frame-0.mdf}%
634   \or\input{md-frame-1.mdf}%
635   \or\input{md-frame-2.mdf}%
636   \or\input{md-frame-3.mdf}%
637   \else%
638     \IfFileExists{md-frame-\value{mdf@globalstyle@cnt}.mdf}%
639     {\input{md-frame-\value{mdf@globalstyle@cnt}.mdf}}%
640     {%
641       \input{md-frame-0.mdf}%
642       \mdf@PackageWarning{The style number \value{mdf@globalstyle@cnt} does not exist^^J
643                           mdframed ues instead style=0 \mdframedpackagename}%
644     }%
645   \fi%
646 }%
647 \mdf@load@style
648
649 \newrobustcmd*\mdf@styledefinition{%AVOID!!!
650   \ifnumequal{\value{mdf@globalstyle@cnt}}{0}%
651   {\deflength{\mdf@innerlinewidth@length}{\z@}%
652    \deflength{\mdf@middlelinewidth@length}{\mdf@linewidth@length}%
653    \deflength{\mdf@outerlinewidth@length}{\z@}%
654    \let\mdf@innerlinecolor\mdf@linecolor%
655    \let\mdf@middlelinecolor\mdf@linecolor%
656    \let\mdf@outerlinecolor\mdf@linecolor%
657   }{}%
658   % \ifnumequal{\value{mdf@globalstyle@cnt}}{2}%
659   % {\deflength{\mdf@innerlinewidth@length}{\z@}%
660   %   \deflength{\mdf@middlelinewidth@length}{\mdf@linewidth@length}%
661   %   \deflength{\mdf@outerlinewidth@length}{\z@}%
662   %   \let\mdf@innerlinecolor\mdf@linecolor%
663   %   }{}%
664   % \ifnumequal{\value{mdf@globalstyle@cnt}}{3}%
665   % {\deflength{\mdf@innerlinewidth@length}{\z@}%
666   %   \deflength{\mdf@middlelinewidth@length}{\mdf@linewidth@length}%
667   %   \deflength{\mdf@outerlinewidth@length}{\z@}%
668   %   \let\mdf@innerlinecolor\mdf@linecolor%
669   %   }{}%
670 }

```

```

\detected@mdf@put@frame

```

Detect whether inside a non breakable environment.

```

671 \let\mdf@reserved@a\@empty
672 \newrobustcmd*\detected@mdf@put@frame{%
673   \ifmdf@nobreak%Option nobreak=true?
674   \def\mdf@reserved@a{\mdf@put@frame@standalone}%
675   \else
676     \def\mdf@reserved@a{\mdf@put@frame}%
677     \ifnum\@floatpenalty<0\relax%Detecting float
678       \if@twocolumn%
679         \ifx\@capttype\@undefined
680           \def\mdf@reserved@a{\mdf@put@frame}%
681         \else
682           \mdf@PackageInfo{mdframed inside float ^^J
683             mdframed uses option nobreak \mdframedpackagename}%
684           \def\mdf@reserved@a{\mdf@put@frame@standalone}%
685         \fi
686       \else
687         \mdf@PackageInfo{mdframed inside float ^^J
688           mdframed uses option nobreak \mdframedpackagename}%
689         \def\mdf@reserved@a{\mdf@put@frame@standalone}%
690       \fi%
691     \fi%
692     \if@minipage%
693       \mdf@PackageInfo{mdframed inside minipage ^^J
694         mdframed uses option nobreak \mdframedpackagename}%
695       \def\mdf@reserved@a{\mdf@put@frame@standalone}%
696     \fi%
697     \ifinner%
698       \mdf@PackageInfo{mdframed inside a box ^^J
699         mdframed uses option nobreak \mdframedpackagename}%
700       \def\mdf@reserved@a{\mdf@put@frame@standalone}%
701     \fi%
702   \fi%
703 \mdf@reserved@a%
704 }

```

`\mdf@hidealllines@check`

```

705 \newrobustcmd*\mdf@hidealllines@check{%
706   \ifbool{mdf@hidealllines}{%
707     \boolfalse{mdf@leftline}\boolfalse{mdf@rightline}%
708     \boolfalse{mdf@topline}\boolfalse{mdf@bottomline}%
709     \boolfalse{mdf@frametitleleftline}\boolfalse{mdf@frametitlerightline}%
710     \boolfalse{mdf@frametitletopline}\boolfalse{mdf@frametitlebottomline}%
711   }{}%
712 }

```

`\mdframed`
`\mdframed@ii`
`\mdframed@i`

That the user environment.

```

713 \newenvironment{mdframed}[1][[]]{%

```

```

714 \begingroup%
715 \color@setgroup%
716   \mdfsetup{userdefinedwidth=\linewidth,#1}%
717   \mdf@hidealllines@check%
718   \mdf@twoside@checklength%
719   \let\width\z@%
720   \let\height\z@%
721   \mdf@checknththeorem%
722   \mdf@styledefinition%
723   \mdf@footnoteinput%
724   \color{\mdf@fontcolor}%
725   \ifvmode\nointerlineskip\fi%
726   \mdf@trivlist{\mdf@skipabove@length}%%
727   \ifdefempty{\mdf@frametitle}{\mdf@@frametitle}%
728   \mdf@settings%
729   \mdf@lrbox{\mdf@splitbox@one}%
730 }%
731 {\par\unskip%
732   \ifmdf@footnoteinside%
733     \def\mdf@reserveda{%
734       \mdf@footnoteoutput%
735       \endmdf@lrbox%
736       \ifdefempty{\mdf@frametitle}{\mdf@@frametitle@use}%
737       \detected@mdf@put@frame}%
738   \else%
739     \def\mdf@reserveda{%
740       \endmdf@lrbox%
741       \ifdefempty{\mdf@frametitle}{\mdf@@frametitle@use}%
742       \detected@mdf@put@frame%
743       \mdf@footnoteoutput%
744     }%
745   \fi%
746   \mdf@reserveda%
747   \endmdf@trivlist%
748 \color@endgroup\endgroup\@doendpe%\@endparenv%
749 }
750
751

```

```

\mdf@twoside@checklength
\mdf@zref@label
\ifmdf@pageodd
\mdf@pageisodd
\mdf@pageiseven
\mdf@@setzref

```

The whole bunch is used to work with twoside mode and uses the correct margins.

```

752 \newtoggle{md:checktwoside}
753 \settoggle{md:checktwoside}{false}
754 \newrobustcmd*\mdf@twoside@checklength{%
755   \if@twoside
756     \ifbool{mdf@usetwoside}%
757       {\mdf@PackageInfo{mdframed works in twoside mode}%
758        \settoggle{md:checktwoside}{true}%
759        \setlength\mdf@rightmargin@length{\mdf@outermargin@length}%
760        \setlength\mdf@leftmargin@length{\mdf@innermargin@length}%

```

```

761     }%
762     {\mdf@PackageInfo{mdframed inside twoside mode but\MessageBreak
763         works with oneside mode}%
764     \settoggle{md:checktwoside}{false}%
765     }%
766 \fi%
767 }
768
769 \newcounter{mdf@zref@counter}%keine doppelten laebes
770 \zref@newprop*{mdf@pagevalue}[0]{\number\value{page}}
771 \zref@addprop{\ZREF@mainlist}{mdf@pagevalue}
772 \newrobustcmd*{\mdf@zref@label{%
773     \stepcounter{mdf@zref@counter}
774     \zref@label{mdf@pagelabel-\number\value{mdf@zref@counter}}}%
775 }
776 \newrobustcmd*{\ifmdf@pageodd{%
777     \zref@refused{mdf@pagelabel-\the\value{mdf@zref@counter}}}%
778     \ifodd\zref@extract{mdf@pagelabel-\the\value{mdf@zref@counter}}{mdf@pagevalue}%
779     \setlength\mdf@rightmargin@length{\mdf@outermargin@length}%
780     \setlength\mdf@leftmargin@length{\mdf@innermargin@length}%
781     \else
782     \setlength\mdf@rightmargin@length{\mdf@innermargin@length}%
783     \setlength\mdf@leftmargin@length{\mdf@outermargin@length}%
784     \fi%
785 }
786 \newrobustcmd*{\mdf@@setzref{%
787     \iftoggle{md:checktwoside}{\mdf@zref@label\ifmdf@pageodd}{}}%
788 }

```

`\mdf@freepagevspace`

```

789 \newrobustcmd*{\mdf@freepagevspace{%
790     \penalty@M \vskip 2\baselineskip \vskip\height
791     \penalty9999 \vskip -2\baselineskip \vskip-\height
792     \penalty9999
793     \ifdimequal{\pagegoal}{\maxdimen}%
794         {\mdf@freevspace@length\vsiz}%
795         {\mdf@freevspace@length=\pagegoal\relax%
796         \advance\mdf@freevspace@length by -\pagetotal\relax%
797         \addtolength\mdf@freevspace@length{\dimexpr-\parskip\relax}\relax%
798         }%
799 }

```

`\mdf@advancelength@horizontalmargin@add`
`\mdf@horizontalsofbox`
`\mdf@horizontalmargin@equation`

Width of the box

```

800 \newrobustcmd*{\mdf@advancelength@horizontalmargin@sub[1]{%
801     \advance\mdf@horizontalsofbox by -\csname mdf@#1@length\endcsname\relax%
802 }
803 \newlength\mdf@horizontalsofbox

```

```

804 \newrobustcmd*\mdf@horizontalmargin@equation{%
805   \setlength{\mdf@horizontalsofbox}{\mdf@userdefinedwidth@length}%
806   \mdf@dolist{\mdf@advancelength@horizontalmargin@sub}{%
807     leftmargin,outerlinewidth,middlelinewidth,%
808     innerlinewidth,innerleftmargin,inerrightmargin,%
809     innerlinewidth,middlelinewidth,outerlinewidth,%
810     rightmargin}%
811   \notbool{mdf@leftline}{%
812     \advance\mdf@horizontalsofbox by \mdf@innerlinewidth@length\relax%
813     \advance\mdf@horizontalsofbox by \mdf@middlelinewidth@length\relax%
814     \advance\mdf@horizontalsofbox by \mdf@outerlinewidth@length\relax%
815   }{}%
816   \notbool{mdf@rightline}{%
817     \advance\mdf@horizontalsofbox by \mdf@innerlinewidth@length\relax%
818     \advance\mdf@horizontalsofbox by \mdf@middlelinewidth@length\relax%
819     \advance\mdf@horizontalsofbox by \mdf@outerlinewidth@length\relax%
820   }{}%
821   \ifdimless{\mdf@horizontalsofbox}{3cm}%
822     {\mdf@PackageWarning{You have only a width of 3cm}}{}
823   \hsize=\mdf@horizontalsofbox%
824 }

```

`\mdf@keep@lines@single`

horizontal space in relation of the lines.

```

825 \newrobustcmd*\mdf@keep@lines@single{%
826   \notbool{mdf@topline}{%
827     \advance\mdf@verticalmarginwhole@length by -\mdf@innerlinewidth@length%
828     \advance\mdf@verticalmarginwhole@length by -\mdf@middlelinewidth@length%
829     \advance\mdf@verticalmarginwhole@length by -\mdf@outerlinewidth@length%
830   }{}%
831   \notbool{mdf@bottomline}{%
832     \advance\mdf@verticalmarginwhole@length by -\mdf@innerlinewidth@length%
833     \advance\mdf@verticalmarginwhole@length by -\mdf@middlelinewidth@length%
834     \advance\mdf@verticalmarginwhole@length by -\mdf@outerlinewidth@length%
835   }{}%
836 }

```

`\mdf@advancelength@verticalmarginwhole`
`\mdf@advancelength@freevspace@sub`
`\mdf@advancelength@freevspace@add`

Loop macros to calculate the height. Used by `\mdf@dolist`.

```

837 \newrobustcmd*\mdf@advancelength@verticalmarginwhole[1]{%
838   \advance\mdf@verticalmarginwhole@length by \csname md f@#1@length\endcsname\relax%
839 }
840 \newrobustcmd*\mdf@advancelength@freevspace@sub[1]{%
841   \advance\dimen@ by -\csname md f@#1@length\endcsname\relax%
842 }
843 \newrobustcmd*\mdf@advancelength@freevspace@add[1]{%
844   \advance\dimen@ by \csname md f@#1@length\endcsname\relax%
845 }

```

`\mdf@reset`

Reset changes

```
846 \protected@edef\mdf@reset{\boxmaxdepth\the\boxmaxdepth
847 \splittopskip\the\splittopskip}%
```

`\mdf@put@frame@standalone`

Output of `mdframed` inside a non breakable environment.

```
848 \newrobustcmd*\mdf@put@frame@standalone{\relax%
849 \ifvoid\mdf@splitbox@one\relax
850 \mdf@PackageWarning{The environment is empty\MessageBreak}%
851 \let\mdf@reserved@a\relax%
852 \else
853 %Hier berechnung Box-Inhalt+Rahmen oben und unten
854 \setlength{\mdf@verticalmarginwhole@length}%
855 {\dimexpr\ht\mdf@splitbox@one+\dp\mdf@splitbox@one\relax}%
856 \mdf@dolist{\mdf@advancelength@verticalmarginwhole}{%
857 outerlinewidth,middlelinewidth,innerlinewidth,innertopmargin,
858 innerbottommargin,innerlinewidth,middlelinewidth,outerlinewidth}%
859 \mdf@keeplines@single%
860 \def\mdf@reserved@a{\mdf@putbox@single}%
861 \fi
862 \mdf@reserved@a%
863 }
```

`\mdf@put@frame`

Output of `mdframed` inside a breakable environment. The comparison are only check whether the contents must be split or not.

```
864 \def\mdf@put@frame{\relax%
865 \ifvoid\mdf@splitbox@one\relax
866 \mdf@PackageWarning{The environment is empty\MessageBreak}%
867 \let\mdf@reserved@a\relax%
868 \else
869 \setlength\mdf@boundingboxwidth{\wd\mdf@splitbox@one}%
870 \mdf@print@space%
871 \mdf@freepagevspace@gives \mdf@freevspace@length
872 \mdf@PackageInfoSpace{\the\mdf@freevspace@length before the beginning of \MessageBreak
873 the environment ending on input line \MessageBreak}%
874 \ifdimless{\mdf@freevspace@length}{2\baselineskip}
875 {\mdf@PackageInfo{Not enough space on this page}
876 \vfill\eject%
877 \def\mdf@reserved@a{\mdf@put@frame}%
878 }{%
879 %Hier berechnung Box-Inhalt+Rahmen oben und unten
880 \setlength{\mdf@verticalmarginwhole@length}%
881 {\dimexpr\ht\mdf@splitbox@one+\dp\mdf@splitbox@one\relax}%
882 \mdf@dolist{\mdf@advancelength@verticalmarginwhole}{%
883 outerlinewidth,middlelinewidth,innerlinewidth,innertopmargin,
884 innerbottommargin,innerlinewidth,middlelinewidth,outerlinewidth}%
885 \mdf@keeplines@single%
886 \ifdimless{\mdf@verticalmarginwhole@length}{\mdf@freevspace@length}%
887 {%passt auf Seite%
888 \beginngroup
889 \mdf@@setzref
```



```

890             \mdf@putbox@single%
891         \endgroup
892         \let\mdf@reserved@a\relax}%
893         {\def\mdf@reserved@a{\mdf@put@frame@i}}%passt nicht auf Seite
894     }%
895 \fi
896 \mdf@reserved@a%
897 }

```

`\mdf@put@frame@i`

Output of the first splitted box.

```

898 \def\mdf@put@frame@i{%Box muss gesplittet werden -- Ausgabe der ersten Teilbox
899 %Berechnung der Splittgroesse -- Linien und Abstand oben
900 %\vbox to 0pt{}%
901 %\rlap{\smash{\the\mdf@freeevspace@length}}%\hrule \@height\z@ \@width\hsize
902 \mdf@freepagevspace@gives \mdf@freeevspace@length
903 %Berechnung ob nur oberen Linien nur auf die Seite passe
904 \dimen@=\the\mdf@freeevspace@length%
905 \dimen@i=\mdf@innertopmargin@length%
906 \advance\dimen@i by \mdf@innerlinewidth@length%
907 \advance\dimen@i by \mdf@middlelinewidth@length%
908 \advance\dimen@i by \mdf@outerlinewidth@length%
909 \advance\dimen@i by 2\baselineskip%
910 \ifdimless{\dimen@}{\dimen@i}%
911     {\hrule \@height\z@ \@width\hsize%
912       \vfill\eject%
913       \def\mdf@reserved@a{\mdf@put@frame}%
914     }{%
915       \mdf@freepagevspace%
916       \dimen@=\the\mdf@freeevspace@length%
917       \mdf@dolist{\mdf@advancelength@freeevspace@sub}{%calculate with \dimen@
918         outerlinewidth,middlelinewidth,innerlinewidth,%
919         innertopmargin,splitbottomskip}%
920       \ifbool{mdf@topline}{%
921         \advance\dimen@ by \mdf@innerlinewidth@length%
922         \advance\dimen@ by \mdf@middlelinewidth@length%
923         \advance\dimen@ by \mdf@outerlinewidth@length%
924       }%
925       \advance\dimen@.8\pageshrink
926       \ifdimless{\ht\mdf@splitbox@one+\dp\mdf@splitbox@one}{\dimen@}%
927         {\mdf@PackageWarning{You got a bad break\MessageBreak
928           you have to change it manually\MessageBreak
929           by changing the text, the space\MessageBreak
930           or something else}%
931         \advance\dimen@ by -1.8\baselineskip\relax%
932       }{%
933 %       \advance\dimen@ by -1pt\relax%Box darf nicht zu Groß werden.
934       \splitmaxdepth\z@ \splittopskip\mdf@splittopskip@length%
935       \mdf@ignorevbadness%
936       \setbox\mdf@splitbox@two\vsplit\mdf@splitbox@one to \dimen@
937       \setbox\mdf@splitbox@two\vbox{\unvbox\mdf@splitbox@two}%
938       \setbox\mdf@splitbox@one\vbox{\unvbox\mdf@splitbox@one}%
939       \ifbool{mdf@repeatframetitle}{%

```

```

940         \setbox\mdf@splitbox@one\vbox{%
941             \vbox to \mdf@splittopskip@length{\hsize\z@}
942             %\par\unskip\nointerlineskip
943             \unvcopy\mdf@frametitlebox%
944             \mdf@@frametitlerule%
945             \vbox to\dimexpr
946                 -\mdf@splittopskip@length+\ht\strutbox+\dp\strutbox
947                 +\mdf@innertopmargin@length\relax{\hsize\z@}%
948             \unvbox\mdf@splitbox@one}%
949     }{}%
950 \ifdimgreater{\ht\mdf@splitbox@two+\dp\mdf@splitbox@two}{\dimen@}%
951 {%Falsch gesplittet
952 \mdf@PackageInfo{Box was splittet wrong\MessageBreak}%
953 \dimen@i=\dimen@
954 \advance\dimen@ by -\ht\mdf@splitbox@two
955 \advance\dimen@ by -\dp\mdf@splitbox@two
956 \advance\dimen@i by 0.5\dimen@
957 \splittopskip\z@%
958 \setbox\mdf@splitbox@one\vbox{\unvbox\mdf@splitbox@two%
959     %benoetigt um Tiefe zu haben
960     \hrule \@height\dp\strutbox \@width\z@
961     \unvbox\mdf@splitbox@one}
962 \splittopskip\mdf@splittopskip@length%
963 \mdf@ignorevbadness%
964 \setbox\mdf@splitbox@two\vsplit\mdf@splitbox@one to \dimen@i
965 \setbox\mdf@splitbox@two\vbox{\unvbox\mdf@splitbox@two}%
966 \setbox\mdf@splitbox@one\vbox{\unvbox\mdf@splitbox@one}%
967 \ifbool{\mdf@repeatframetitle}{%
968     \setbox\mdf@splitbox@one\vbox{%
969         \vbox to \mdf@splittopskip@length{\hsize\z@}
970         %\par\unskip\nointerlineskip
971         \unvcopy\mdf@frametitlebox%
972         \mdf@@frametitlerule%
973         \vbox to\dimexpr
974             -\mdf@splittopskip@length+\ht\strutbox+\dp\strutbox
975             +\mdf@innertopmargin@length\relax{\hsize\z@}%
976         \unvbox\mdf@splitbox@one}%
977     }{}%
978 }{}%
979 \ifvoid\mdf@splitbox@one
980 \mdf@PackageWarning{You got a bad break\MessageBreak
981     because the splittet box is empty\MessageBreak
982     You have to change the page settings\MessageBreak
983     like enlargethispage or something else}%
984 \setbox\mdf@splitbox@one\vbox{\unvbox\mdf@splitbox@two%
985     %benoetigt um Tiefe zu haben
986     \hrule \@height\dp\strutbox \@width\z@
987     \unvbox\mdf@splitbox@one}%
988 \setbox\mdf@splitbox@one\vbox{\unvbox\mdf@splitbox@one}%
989 \enlargethispage{\baselineskip}%
990 \def\mdf@reserved@a{\mdf@put@frame}%
991 \fi
992 \ifvoid\mdf@splitbox@two%pruefe, ob erste Box leer ist
993 \hrule \@height\z@ \@width\hsize
994 \vfill\@eject%
995 \def\mdf@reserved@a{\mdf@put@frame}%

```

```

996      \else
997      \ifdimequal{\ht\mdf@splitbox@two}{0pt}%
998      {\hrule \@height\z@ \@width\hsize%
999      \vfill\ject%
1000      \setbox\mdf@splitbox@one\vbox{\unvbox\mdf@splitbox@two\unvbox\mdf@splitbox@one}
1001      \def\mdf@reserved@a{\mdf@put@frame}%
1002      }%
1003      {%
1004      \begingroup%
1005      \mdf@setzref
1006      \mdf@putbox@first%%Groesse des Splittens passt
1007      \endgroup%
1008      \hrule \@height\z@ \@width\hsize%
1009      \vfill\ject%
1010      \def\mdf@reserved@a{\mdf@put@frame@ii}%
1011      }%
1012      \fi%
1013      }%
1014 \mdf@reserved@a%
1015 }

```

`\mdf@put@frame@ii`

Output of the middle and last box.

```

1016 \def\mdf@put@frame@ii{%Ausgabe der mittleren Box(en) wenn vorhanden
1017 \setlength{\mdf@freevspace@length}{\vsize}%
1018 \setlength{\dimen@}{\dimexpr\ht\mdf@splitbox@one+\dp\mdf@splitbox@one\relax}%
1019 \mdf@dolist{\mdf@advance@length@freevspace@add}{%used \dimen@
1020             outerlinewidth,middlelinewidth,innerlinewidth,%
1021             innerbottommargin}%%Addition der Linien unten
1022 \ifbool{mdf@bottomline}{}%
1023             \advance\dimen@i by \mdf@innerlinewidth@length%
1024             \advance\dimen@i by \mdf@middlelinewidth@length%
1025             \advance\dimen@i by \mdf@outerlinewidth@length%
1026             \relax}%
1027 \ifdimgreater{\dimen@}{\mdf@freevspace@length}%
1028     {%
1029     \advance\mdf@freevspace@length by -\mdf@splitbottomskip@length\relax%
1030     \ifbool{mdf@bottomline}{}%
1031             \advance\dimen@i by -\mdf@innerlinewidth@length%
1032             \advance\dimen@i by -\mdf@middlelinewidth@length%
1033             \advance\dimen@i by -\mdf@outerlinewidth@length%
1034             \relax}%
1035     \splitmaxdepth\z@ \splittopskip\mdf@splittopskip@length%
1036     \mdf@ignorevbadness%
1037     \setbox\mdf@splitbox@two\vsplit\mdf@splitbox@one to \mdf@freevspace@length%
1038     \setbox\mdf@splitbox@two\vbox{\unvbox\mdf@splitbox@two}%PRUEFEN!!!
1039     \setbox\mdf@splitbox@one\vbox{\unvbox\mdf@splitbox@one}%PRUEFEN!!!!
1040     \ifbool{mdf@repeatframetitle}{%
1041         \setbox\mdf@splitbox@one\vbox{%
1042             \vbox to \mdf@splittopskip@length{\hsize\z@}
1043             %\par\unskip\nointerlineskip
1044             \unvcopy\mdf@frametitlebox%
1045             \mdf@@@frametitlerule%
1046             \vbox to\dimexpr

```

```

1047             -\mdf@splittopskip@length+\ht\strutbox+\dp\strutbox
1048             +\mdf@innertopmargin@length\relax{\hsize\z@}%
1049             \unvbox\mdf@splitbox@one}%
1050         }{}%
1051     \ifvoid\mdf@splitbox@one\relax%
1052         \mdf@PackageWarning{You got a bad break\MessageBreak
1053             because the split box is empty\MessageBreak
1054             You have to change the settings}%
1055         \setbox\mdf@splitbox@one{\unvbox\mdf@splitbox@two}%
1056         \def\mdf@reserved@a{\enlargethispage{\baselineskip}\mdf@put@frame@ii}%
1057     \else
1058         \begingroup
1059         \mdf@@setzref
1060         \mdf@putbox@middle%
1061         \endgroup
1062         \hrule \@height\z@ \@width\hsize
1063         \vfill\ject
1064         \def\mdf@reserved@a{\mdf@put@frame@ii}%
1065     \fi
1066 }%Hier die Ausgabe der mittleren Box
1067 {\ifvoid\mdf@splitbox@one
1068     \mdf@PackageWarning{You got a bad break\MessageBreak
1069         because the last split box is empty\MessageBreak
1070         You have to change the settings}%
1071     \setbox\mdf@splitbox@one\vbox{\unvbox\mdf@splitbox@one\hrule \@height\z@ \@width\mdfbounding
1072 \fi%
1073 \ifdimless{\ht\mdf@splitbox@one}{1sp}{%
1074     \mdf@PackageWarning{You got a bad break\MessageBreak
1075         because the last split box is empty\MessageBreak
1076         You have to change the settings}%
1077     %\hb@xt@\z@{\box\mdf@splitbox@one}%
1078     \let\mdf@reserved@a\relax%
1079     \setbox\mdf@splitbox@one\vbox{\unvbox\mdf@splitbox@one\hrule \@height\z@ \@width\mdfboundin
1080 }{}%
1081 \begingroup%
1082     \mdf@@setzref
1083     \mdf@putbox@second%
1084     \hrule \@height\z@ \@width\hsize%
1085 \endgroup%
1086 \let\mdf@reserved@a\relax%
1087 }%Hier kommt die Ausgabe der letzten Box
1088 \mdf@reserved@a%
1089 }
1090

```

```

\mdf@test@lrb
\mdf@test@ltr
\mdf@test@ltb
\mdf@test@trb
\mdf@test@lrb
\mdf@test@lb
\mdf@test@rb
\mdf@test@tr
\mdf@test@lt
\mdf@test@lr
\mdf@test@tb
\mdf@test@l
\mdf@test@r
\mdf@test@t
\mdf@test@b
\mdf@test@noline

```

Short forms of checking the option which lines should be drawn.

```

1091 %%% -----t-----
1092 %%% |               |
1093 %%% |               |
1094 %%% |               |
1095 %%% l|               |r
1096 %%% |               |
1097 %%% |               |
1098 %%% |-----|
1099 %%%               b
1100 %%Zusammenhaenge abfragen:
1101 \newrobustcmd*\mdf@test@lrb{%
1102   \ifboolexpr{ (bool {mdf@topline}) and (bool {mdf@bottomline})
1103               and (bool {mdf@leftline}) and (bool {mdf@rightline})}}
1104 %3-set
1105 \newrobustcmd*\mdf@test@ltr{%
1106   \ifboolexpr{ (bool {mdf@topline}) and not (bool {mdf@bottomline})
1107               and (bool {mdf@leftline}) and (bool {mdf@rightline})}}
1108 \newrobustcmd*\mdf@test@ltb{%
1109   \ifboolexpr{ (bool {mdf@topline}) and (bool {mdf@bottomline})
1110               and (bool {mdf@leftline}) and not (bool {mdf@rightline})}}
1111 \newrobustcmd*\mdf@test@trb{%
1112   \ifboolexpr{ (bool {mdf@topline}) and (bool {mdf@bottomline})
1113               and not (bool {mdf@leftline}) and (bool {mdf@rightline})}}
1114 \newrobustcmd*\mdf@test@lrb{%
1115   \ifboolexpr{ not (bool {mdf@topline}) and (bool {mdf@bottomline})
1116               and (bool {mdf@leftline}) and (bool {mdf@rightline})}}
1117 %2-set
1118 \newrobustcmd*\mdf@test@lb{%
1119   \ifboolexpr{ not (bool {mdf@topline}) and (bool {mdf@bottomline})
1120               and (bool {mdf@leftline}) and not (bool {mdf@rightline})}}
1121 \newrobustcmd*\mdf@test@rb{%
1122   \ifboolexpr{ not (bool {mdf@topline}) and (bool {mdf@bottomline})
1123               and not (bool {mdf@leftline}) and (bool {mdf@rightline})}}
1124 \newrobustcmd*\mdf@test@tr{%
1125   \ifboolexpr{ (bool {mdf@topline}) and not (bool {mdf@bottomline})
1126               and not (bool {mdf@leftline}) and (bool {mdf@rightline})}}
1127 \newrobustcmd*\mdf@test@lt{%
1128   \ifboolexpr{ (bool {mdf@topline}) and not (bool {mdf@bottomline})

```

```

1129         and (bool {mdf@leftline}) and not (bool {mdf@rightline}}})
1130 \newrobustcmd*{\mdf@test@lr{%
1131     \ifboolexpr{not (bool {mdf@topline}) and not (bool {mdf@bottomline})
1132         and (bool {mdf@leftline}) and (bool {mdf@rightline}}})
1133 \newrobustcmd*{\mdf@test@tb{%
1134     \ifboolexpr{ (bool {mdf@topline}) and (bool {mdf@bottomline})
1135         and not (bool {mdf@leftline}) and not (bool {mdf@rightline}}})
1136 %Einzellinien
1137 \newrobustcmd*{\mdf@test@l{%
1138     \ifboolexpr{ not (bool {mdf@topline}) and not (bool {mdf@bottomline})
1139         and (bool {mdf@leftline}) and not (bool {mdf@rightline}}})
1140 \newrobustcmd*{\mdf@test@r{%
1141     \ifboolexpr{ not (bool {mdf@topline}) and not (bool {mdf@bottomline})
1142         and not (bool {mdf@leftline}) and (bool {mdf@rightline}}})
1143 \newrobustcmd*{\mdf@test@t{%
1144     \ifboolexpr{ (bool {mdf@topline}) and not (bool {mdf@bottomline})
1145         and not (bool {mdf@leftline}) and not (bool {mdf@rightline}}})
1146 \newrobustcmd*{\mdf@test@b{%
1147     \ifboolexpr{ not (bool {mdf@topline}) and (bool {mdf@bottomline})
1148         and not (bool {mdf@leftline}) and not (bool {mdf@rightline}}})
1149 %keine Linien
1150 \newrobustcmd*{\mdf@test@noline{%
1151     \ifboolexpr{ not (bool {mdf@topline}) and not (bool {mdf@bottomline})
1152         and not (bool {mdf@leftline}) and not (bool {mdf@rightline}}})
1153 \newrobustcmd*{\mdf@test@single{%
1154     \ifboolexpr{ not (test {\mdf@test@ltrb} or test {\mdf@test@ltr} or
1155         test {\mdf@test@ltb} or test {\mdf@test@trb} or
1156         test {\mdf@test@lrb} or test {\mdf@test@lb} or
1157         test {\mdf@test@rb} or test {\mdf@test@tr} or
1158         test {\mdf@test@lt} ) }}
1159 %
1160 \DisableKeyvalOption[action=warning,package=mdframed]{mdf}{framemethod}%
1161 \DisableKeyvalOption[action=warning,package=mdframed]{mdf}{xcolor}%
1162
1163 \endinput

```

B.2. The Explanation of md-frame-0.mdf

```

1164 %% Style file for mdframed for package option 'framemethod=default'
1165 %%
1166 %% This package may be distributed under the terms of the LaTeX Project
1167 %% Public License, as described in lppl.txt in the base LaTeX distribution.
1168 %% Either version 1.0 or, at your option, any later version.
1169 %%
1170 %%
1171 %%$Id: mdframed.dtx 338 2012-02-04 11:21:42Z marco $
1172 %

```

```

\mdframed0packagename
\mdf@frame0date@svn

```

local settings

```

1173 \def\mdframed0packagename{md-frame-0}
1174 \def\mdf@frame0date@svn$#1: #2 #3 #4-#5-#6 #7 #8$#{#4/#5/#6\space }
1175 \ProvidesFile{md-frame-0.mdf}%

```

```

1176      [\mdf@frame0date@svn$Id: mdframed.dtx 338 2012-02-04 11:21:42Z marco $%
1177      \mdversion: \mdframed0packagename]

```

```

\mdf@background@default
\mdf@linecolor@default
\mdf@linecolor@bottom

```

short command

```

1178 \def\mdf@background@default{\color{\mdf@backgroundcolor}}
1179 \def\mdf@frametitlebackground@default{\color{\mdf@frametitlebackgroundcolor}}
1180 \def\mdf@innerlinecolor@default{\color{\mdf@innerlinecolor}}
1181 \def\mdf@middlelinecolor@default{\color{\mdf@middlelinecolor}}
1182 \def\mdf@outerlinecolor@default{\color{\mdf@outerlinecolor}}
1183 \def\mdf@frametitlerulecolor@default{\color{\mdf@frametitlerulecolor}}
1184 \let\mdf@linecolor@default\mdf@middlelinecolor@default
1185 \def\mdf@@frametitlerule{%
1186   \ifbool{mdf@frametitlerule}{%
1187     \vbox to \mdf@frametitlerulewidth@length {\hsize\mdfframetitleboxwidth%
1188       \par\unskip\vskip\mdf@frametitlebelowskip@length%
1189       \rlap{\noindent\hspace*{-\mdf@innerleftmargin@length}%
1190         \mdf@frametitlerulecolor@default%
1191         \rule{\dimexpr\mdfframetitleboxwidth%
1192           +\mdf@innerleftmargin@length
1193           +\mdf@innerrightmargin@length\relax
1194           }{\mdf@frametitlerulewidth@length}%
1195         }}%
1196   }{}
1197   \par\unskip\vskip\mdf@innertopmargin@length%
1198 }%
1199

```

```

\mdf@putbox@single
\mdf@frame@background@single
\mdf@frame@topandbottomline@single
\mdf@frame@leftline@single
\mdf@frame@rightline@single
\mdf@frame@rightline@single

```

The frame of of a non splitted contents of mdframed

```

1200 \def\mdf@frame@background@single{%
1201   \rlap{\mdf@background@default%
1202     \rule[-\mdfboundingboxdepth]%
1203       {\mdfboundingboxtotalwidth}%
1204       {\mdfboundingboxtotalheight}%
1205   }%
1206 }%
1207 \def\mdf@frame@frametitlebackground@single{%
1208   \rlap{\mdf@frametitlebackground@default%
1209     \rule{\dimexpr-\mdfboundingboxdepth+\mdfboundingboxtotalheight-\mdfframetitleboxtotalheight\relax}
1210       {\mdfboundingboxtotalwidth}%
1211       {\mdfframetitleboxtotalheight}%
1212   }%
1213 }%
1214
1215 \def\mdf@frame@topline@single{%

```

```

1216 \rlap{\mdf@linecolor@default%
1217 \ifbool{mdf@topline}{%
1218 \rule[\dimexpr\mdfboundingboxheight-\mdfboundingboxdepth%
1219 +\mdf@innerbottommargin@length+\mdf@innertopmargin@length\relax}%
1220 {\mdfboundingboxtotalwidth}%
1221 {\mdf@middlelinewidth@length}}%
1222 }%
1223 }%
1224 }%
1225 \def\mdf@frame@bottomline@single{%
1226 \rlap{\ifbool{mdf@leftline}{\hspace*{-\mdf@middlelinewidth@length}}{\mdf@linecolor@default%
1227 \ifbool{mdf@bottomline}{%
1228 \rule[\dimexpr-\mdfboundingboxdepth-\mdf@middlelinewidth@length\relax}%
1229 {\dimexpr\mdfboundingboxtotalwidth
1230 \ifbool{mdf@rightline}{+\mdf@middlelinewidth@length}}}%
1231 \ifbool{mdf@leftline}{+\mdf@middlelinewidth@length}}{\relax}%
1232 {\mdf@middlelinewidth@length}}%
1233 }%
1234 }%
1235 }%
1236 \def\mdf@frame@leftline@single{%
1237 \llap{\mdf@linecolor@default%
1238 \rule[-\mdfboundingboxdepth]%
1239 {\mdf@middlelinewidth@length}%
1240 {\dimexpr\mdfboundingboxtotalheight%
1241 \ifbool{mdf@topline}{+\mdf@middlelinewidth@length}}{\relax}%
1242 }%
1243 }%
1244 \def\mdf@frame@rightline@single{%
1245 \rlap{\mdf@linecolor@default%
1246 \hspace*{\mdfboundingboxwidth}%
1247 \hspace*{\mdf@innerrightmargin@length}%
1248 \rule[\dimexpr-\mdfboundingboxdepth%
1249 \relax]%
1250 {\mdf@middlelinewidth@length}%
1251 {\dimexpr\mdfboundingboxtotalheight%
1252 +\ifbool{mdf@topline}{\mdf@middlelinewidth@length}{0pt}\relax}%
1253 }%
1254 }%
1255 \def\mdf@putbox@single{%%%% Ausgabe der ungesplitteten Gesamtbox
1256 \ifvoid\mdf@splitbox@one
1257 \else%
1258 \mdf@makebox@out{%
1259 \mdf@makeboxalign@left%
1260 \setlength{\mdfboundingboxwidth}%
1261 {\wd\mdf@splitbox@one}%
1262 \setlength{\mdfboundingboxtotalwidth}%
1263 {\dimexpr\mdfboundingboxwidth+\mdf@innerleftmargin@length%
1264 +\mdf@innerrightmargin@length\relax}%
1265 \setlength{\mdfboundingboxheight}%
1266 {\dimexpr\ht\mdf@splitbox@one+\dp\mdf@splitbox@one\relax}%
1267 \setlength{\mdfboundingboxdepth}%
1268 {\dimexpr\dp\mdf@splitbox@one+\mdf@innerbottommargin@length\relax}%
1269 \setlength{\mdfboundingboxtotalheight}%
1270 {\dimexpr\mdfboundingboxheight+\mdf@innertopmargin@length%
1271 +\mdf@innerbottommargin@length\relax}%

```



```

1272 \setlength{\mdftotalllinewidth}{%
1273     \dimexpr\mdf@innerlinewidth@length+\mdf@middlelinewidth@length%
1274     +\mdf@outerlinewidth@length}%
1275 \noindent%
1276 \setlength{\@tempdima}{\dimexpr\mdfboundingboxtotalwidth%
1277     +\ifbool{mdf@leftline}%
1278         {\mdf@middlelinewidth@length}{\z@}%
1279     +\ifbool{mdf@rightline}%
1280         {\mdf@middlelinewidth@length}{\z@}\relax}%
1281 \mdf@makebox@in[\@tempdima]{%
1282     \null%
1283     \ifbool{mdf@leftline}{%
1284         \hspace*{\mdftotalllinewidth}%
1285         \mdf@frame@leftline@single%
1286     }{}%
1287     \mdf@frame@topline@single%
1288     \mdf@frame@bottomline@single%
1289     \mdf@frame@background@single%
1290     \ifdefempty{\mdf@frametitle}{\mdf@frame@frametitlebackground@single}%
1291     \hspace*{\mdf@innerleftmargin@length}%
1292     \ifbool{mdf@rightline}{%
1293         \mdf@frame@rightline@single%
1294     }{}%
1295     {\box\mdf@splitbox@one}%
1296 }%
1297 \mdf@makeboxalign@right%
1298 }%
1299 \fi%
1300 }

```

```

\mdf@putbox@first
\mdf@frame@background@first
\mdf@frame@leftline@first
\mdf@frame@topline@first
\mdf@frame@rightline@first

```

The first frame of of a splitted contents of mdframed

```

1301 \def\mdf@frame@background@first{%
1302     \rlap{\mdf@background@default%
1303         \rule[-\mdfboundingboxdepth]{%
1304             {\mdfboundingboxtotalwidth}%
1305             {\mdfboundingboxtotalheight}%
1306         }%
1307 }%
1308 \def\mdf@frame@frametitlebackground@first{%
1309     \ifdimless{\mdfframetitleboxtotalheight}{\mdfboundingboxtotalheight}%
1310     {%
1311         \rlap{\mdf@frametitlebackground@default%
1312             \rule[\dimexpr-\mdfboundingboxdepth+\mdfboundingboxtotalheight-\mdfframetitleboxtotalheight\relax]{%
1313                 {\mdfboundingboxtotalwidth}%
1314                 {\mdfframetitleboxtotalheight}%
1315             }%
1316         \global\mdfframetitleboxtotalheight=-\p@relax%
1317     }{\mdf@PackageWarning{You got a page break inside the frame title\MessageBreak
1318         Current this isn't well supported}%

```

```

1319 \rlap{\mdf@frametitlebackground@default%
1320 \rule[-\mdfboundingboxdepth]%
1321 {\mdfboundingboxtotalwidth}%
1322 {\mdfboundingboxtotalheight}%
1323 }%
1324 \global\mdfframetitleboxtotalheight=\dimexpr\mdfframetitleboxtotalheight
1325 -\mdfboundingboxheight
1326 +\mdf@frametitlebelowskip@length
1327 +.5\baselineskip-1pt
1328 % +\dp\strutbox
1329 \relax%
1330 }%
1331 }%
1332 \def\mdf@frame@leftline@first{%
1333 \llap{\mdf@linecolor@default%
1334 \rule[-\mdfboundingboxdepth]%
1335 {\mdf@middlelinewidth@length}%
1336 {\dimexpr\mdfboundingboxtotalheight%
1337 +\ifbool{mdf@topline}{\mdf@middlelinewidth@length}{0pt}}\relax}%
1338 }%
1339 }%
1340 \def\mdf@frame@topline@first{%
1341 \rlap{\mdf@linecolor@default%
1342 \rule[\dimexpr\mdfboundingboxheight-\mdfboundingboxdepth+
1343 \mdf@splitbottomskip@length+\mdf@innertopmargin@length]\relax}%
1344 {\mdfboundingboxtotalwidth}%
1345 {\mdf@middlelinewidth@length}%
1346 }%
1347 }
1348 \def\mdf@frame@rightline@first{%
1349 \rlap{\mdf@linecolor@default\hspace*{\mdfboundingboxwidth}%
1350 \hspace*{\mdf@innerrightmargin@length}%
1351 \rule[-\mdfboundingboxdepth]%
1352 {\mdf@middlelinewidth@length}%
1353 {\dimexpr\mdfboundingboxtotalheight%
1354 +\ifbool{mdf@topline}{\mdf@middlelinewidth@length}{0pt}}\relax}%
1355 }%
1356 }%
1357 \def\mdf@putbox@first{%% %% Ausgabe der Teilbox 1
1358 \ifvoid\mdf@splitbox@two
1359 \else%
1360 \mdf@makebox@out[\linewidth]{%
1361 \mdf@makeboxalign@left%
1362 \setlength{\mdfboundingboxwidth}{\wd\mdf@splitbox@two}%
1363 \setlength{\mdfboundingboxtotalwidth}%
1364 {\dimexpr\mdfboundingboxwidth+\mdf@innerleftmargin@length%
1365 +\mdf@innerrightmargin@length\relax}%
1366 \setlength{\mdfboundingboxheight}{\dimexpr\ht\mdf@splitbox@two+\dp\mdf@splitbox@two\relax}%
1367 \setlength{\mdfboundingboxdepth}%
1368 {\dimexpr\dp\mdf@splitbox@two+\mdf@splitbottomskip@length\relax}%
1369 \setlength{\mdfboundingboxtotalheight}%
1370 {\dimexpr\mdfboundingboxheight+\mdf@innertopmargin@length%
1371 +\mdf@splitbottomskip@length\relax}%
1372 \setlength{\@tempdima}%
1373 {\dimexpr\mdfboundingboxtotalwidth%
1374 +\ifbool{mdf@leftline}{\mdf@middlelinewidth@length}{\z@}%

```

```

1375             +\ifbool{mdf@rightline}{\mdf@middlelinewidth@length}{\z@}%
1376             \relax}%
1377     \mdf@makebox@in[\@tempdima]{%
1378       \null%
1379       \ifbool{mdf@leftline}{%
1380         \hspace*{\mdf@middlelinewidth@length}%
1381         \mdf@frame@leftline@first}{}%
1382       \ifbool{mdf@topline}{%
1383         \mdf@frame@topline@first}{}%
1384       \mdf@frame@background@first%
1385       \ifdefempty{\mdf@frametitle}{\mdf@frame@frametitlebackground@first}%
1386       \hspace*{\mdf@innerleftmargin@length}%
1387       \ifbool{mdf@rightline}{%
1388         \mdf@frame@rightline@first}{}%
1389       {\box\mdf@splitbox@two}%
1390     }%
1391     \mdf@makeboxalign@right%
1392   }%
1393 \fi%
1394 }

```

```

\mdf@putbox@second
\mdf@frame@background@second
\mdf@frame@leftline@second
\mdf@frame@bottomline@second
\mdf@frame@rightline@second

```

The last frame of of a splitted contents of mdframed

```

1395 \def\mdf@frame@background@second{%
1396   \rlap{\mdf@background@default%
1397     \rule[-\mdf@boundingboxdepth]{%
1398       {\mdf@boundingboxtotalwidth}%
1399       {\mdf@boundingboxtotalheight}%
1400     }%
1401   }%
1402 \def\mdf@frame@frametitlebackground@second{%
1403   \ifdimless{\mdfframetitleboxtotalheight}{\z@}%
1404   {%
1405     {\rlap{\mdf@frametitlebackground@default%
1406       \rule[\dimexpr-\mdf@boundingboxdepth+\mdf@boundingboxtotalheight-\mdfframetitleboxtotalheight\relax]{%
1407         {\mdf@boundingboxtotalwidth}%
1408         {\mdfframetitleboxtotalheight}%
1409       }%
1410     }%
1411   }%
1412 \def\mdf@frame@leftline@second{%
1413   \llap{\mdf@linecolor@default%
1414     \rule[-\mdf@boundingboxdepth]{%
1415       {\mdf@middlelinewidth@length}%
1416       {\dimexpr\mdf@boundingboxtotalheight}%
1417     }%
1418   }%
1419 \def\mdf@frame@bottomline@second{%
1420   \rlap{\ifbool{mdf@leftline}{\hspace*{-\mdf@middlelinewidth@length}}{\mdf@linecolor@default%
1421     \rule[\dimexpr-\mdf@boundingboxdepth-\mdf@middlelinewidth@length\relax]{%

```

```

1422         {\dimexpr\mdfboundingboxtotalwidth
1423          \ifbool{mdf@rightline}{+\mdf@middlelinewidth@length}{ }
1424          \ifbool{mdf@leftline}{+\mdf@middlelinewidth@length}{ }\relax}%
1425     {\mdf@middlelinewidth@length}%
1426 }%
1427 }%
1428 \def\mdf@frame@rightline@second{%
1429   \rlap{\mdf@linecolor@default\hspace*{\mdfboundingboxwidth}%
1430     \hspace*{\mdf@innerrightmargin@length}%
1431     \rule[-\mdfboundingboxdepth]{\mdf@middlelinewidth@length}%
1432       {\mdfboundingboxtotalheight}%
1433     }%
1434 }%
1435 }%
1436 \def\mdf@putbox@second{%
1437   \ifvoid\mdf@splitbox@one%
1438   \else
1439     \mdf@makebox@out{%
1440       \mdf@makeboxalign@left%
1441       \setlength{\mdfboundingboxwidth}{\wd\mdf@splitbox@one}%
1442       \setlength{\mdfboundingboxtotalwidth}%
1443         {\dimexpr\mdfboundingboxwidth+\mdf@innerleftmargin@length%
1444          +\mdf@innerrightmargin@length\relax}%
1445       \setlength{\mdfboundingboxheight}{\dimexpr\ht\mdf@splitbox@one+\dp\mdf@splitbox@one\relax}%
1446       \setlength{\mdfboundingboxdepth}%
1447         {\dimexpr\dp\mdf@splitbox@one+\mdf@innerbottommargin@length\relax}%
1448       \setlength{\mdfboundingboxtotalheight}%
1449         {\dimexpr\mdfboundingboxheight+\mdf@innerbottommargin@length\relax}%
1450       \setlength{\@tempdima}{\dimexpr\mdfboundingboxtotalwidth%
1451        +\ifbool{mdf@leftline}{\mdf@middlelinewidth@length}{\z@}%
1452        +\ifbool{mdf@rightline}{\mdf@middlelinewidth@length}{\z@}%
1453        \relax}%
1454       \mdf@makebox@in[\@tempdima]{%
1455         \null%
1456         \ifbool{mdf@leftline}{%
1457           \hspace*{\mdf@middlelinewidth@length}%
1458           \mdf@frame@leftline@second}{ }%
1459         \ifbool{mdf@bottomline}{%
1460           \mdf@frame@bottomline@second}{ }%
1461         \mdf@frame@background@second%
1462         \ifdefempty{\mdf@frametitle}{ }\mdf@frame@frametitlebackground@second}%
1463         \hspace*{\mdf@innerleftmargin@length}%
1464         \ifbool{mdf@rightline}{%
1465           \mdf@frame@rightline@second}{ }%
1466         {\box\mdf@splitbox@one}%
1467       }%
1468       \mdf@makeboxalign@right%
1469     }%
1470   \fi%
1471 }%

```

```

\mdf@putbox@middle
\mdf@frame@background@middle
\mdf@frame@leftline@middle
\mdf@frame@rightline@middle

```

The last frame of of a splitted contents of mdframed

```

1472 \def\mdf@frame@leftline@middle{%
1473   \llap{\mdf@linecolor@default%
1474     \rule[-\mdfboundingboxdepth]%
1475       {\mdf@middlelinewidth@length}%
1476       {\mdfboundingboxtotalheight}%
1477   }%
1478 }%
1479 \def\mdf@frame@background@middle{%
1480   \rlap{\mdf@background@default%
1481     \rule[-\mdfboundingboxdepth]%
1482       {\mdfboundingboxtotalwidth}%
1483       {\mdfboundingboxtotalheight}%
1484   }%
1485 }%
1486 \def\mdf@frame@frametitlebackground@middle{%
1487   \ifdimless{\mdfframetitleboxtotalheight}{\z@}%
1488     {}%
1489     {\rlap{\mdf@frametitlebackground@default%
1490       \rule[\dimexpr-\mdfboundingboxdepth+\mdfboundingboxtotalheight-\mdfframetitleboxtotalheight\relax]
1491         {\mdfboundingboxtotalwidth}%
1492         {\mdfframetitleboxtotalheight}%
1493       }%
1494       \global\mdfframetitleboxtotalheight=-\p@relax%
1495     }%
1496 }%
1497 \def\mdf@frame@rightline@middle{%
1498   \rlap{\mdf@linecolor@default\hspace*{\mdfboundingboxwidth}%
1499     \hspace*{\mdf@innerrightmargin@length}%
1500     \rule[-\mdfboundingboxdepth]%
1501       {\mdf@middlelinewidth@length}%
1502       {\mdfboundingboxtotalheight}%
1503   }%
1504 }%
1505 \def\mdf@putbox@middle{%
1506   \ifvoid\mdf@splitbox@two%
1507     \else
1508       \mdf@makebox@out{%
1509         \mdf@makeboxalign@left%
1510         \setlength{\mdfboundingboxwidth}{\wd\mdf@splitbox@two}%
1511         \setlength{\mdfboundingboxtotalwidth}%
1512           {\dimexpr\mdfboundingboxwidth+\mdf@innerleftmargin@length%
1513             +\mdf@innerrightmargin@length\relax}%
1514         \setlength{\mdfboundingboxheight}{\dimexpr\ht\mdf@splitbox@two+\dp\mdf@splitbox@two\relax}%
1515         \setlength{\mdfboundingboxdepth}%
1516           {\dimexpr\dp\mdf@splitbox@two+\mdf@splitbottomskip@length\relax}%
1517         \setlength{\mdfboundingboxtotalheight}%
1518           {\dimexpr\mdfboundingboxheight+\mdf@splitbottomskip@length\relax}%
1519         \setlength{\@tempdima}{\dimexpr\mdfboundingboxtotalwidth%
1520           +\ifbool{\mdf@leftline}{\mdf@middlelinewidth@length}{\z@}%
1521           +\ifbool{\mdf@rightline}{\mdf@middlelinewidth@length}{\z@}%
1522         \relax}%
1523         \mdf@makebox@in[\@tempdima]{%
1524           \null%
1525           \ifbool{\mdf@leftline}{%
1526             \hspace*{\mdf@middlelinewidth@length}%

```

```

1527         \mdf@frame@leftline@middle}{}%
1528         \mdf@frame@background@middle%
1529         \ifdefempty{\mdf@frametitle}{\mdf@frame@frametitlebackground@middle}%
1530         \hspace*{\mdf@innerleftmargin@length}%
1531         \ifbool{mdf@rightline}{%
1532             \mdf@frame@rightline@middle}{}%
1533             {\box\mdf@splitbox@two}%
1534         }%
1535         \mdf@makeboxalign@right%
1536     }
1537 \fi%
1538 }

1539 \endinput

```

B.3. The Explanation of md-frame-1.mdf

```

1540 %% Style file for mdframed for package option 'framemethod=default'
1541 %%
1542 %% This package may be distributed under the terms of the LaTeX Project
1543 %% Public License, as described in lppl.txt in the base LaTeX distribution.
1544 %% Either version 1.0 or, at your option, any later version.
1545 %%
1546 %%
1547 %%$Id: mdframed.dtx 338 2012-02-04 11:21:42Z marco $
1548 %

```

```

\mdframedIpackagename
\mdf@frameIdate@svn

```

local settings

```

1549 \def\mdframedIpackagename{md-frame-1}
1550 \def\mdf@frameIdate@svn$#1: #2 #3 #4-#5-#6 #7 #8${#4/#5/#6\space }
1551 \ProvidesFile{md-frame-1.mdf}%
1552         [\mdf@frameIdate@svn$Id: mdframed.dtx 338 2012-02-04 11:21:42Z marco $ %
1553         \mdversion: \mdframedIpackagename]
1554 %

```

```

\mdf@tikz@settings

```

Define settings for tikz

```

1555 %Allgemeine Einstellungen fuer tikz
1556 \def\mdf@tikz@settings{%
1557 %
1558     \tikzset{mdfbox/.style={anchor=south west,%
1559                             inner sep=0pt,%
1560                             outer sep=0pt,%
1561                             \mdf@fontcolor,}}% anchor der Ausgabebox ist unten links
1562     \tikzset{mdfcorners/.style={rounded corners=\mdf@roundcorner@length}}%
1563     \tikzset{mdfbackground/.style={fill=\mdf@backgroundcolor,%
1564                                     draw=\mdf@backgroundcolor}}%
1565     \tikzset{mdfframetitlebackground/.style={fill=\mdf@frametitlebackgroundcolor,%
1566                                                draw=none,%
1567                                                rounded corners={max(\mdf@roundcorner@length%
1568                                                                -\mdf@innerlinewidth@length%

```

```

1569                                     -.5\mdf@middlelinewidth@length,0)}}}%
1570 %
1571 \tikzset{mdfouterline/.style={}}%
1572 % nur wenn outerlinewidth>0 wird aussere Linie gezeichnet
1573 \ifdimgreater{\mdf@outerlinewidth@length}{\z@}
1574     {\tikzset{mdfouterline/.append style={%
1575         draw=\mdf@outerlinecolor,%
1576         line width=2\mdf@outerlinewidth@length+\mdf@middlelinewidth@length}}}%
1577 %
1578 \tikzset{mdfinnerline/.style={}}%
1579 % nur wenn innerlinewidth>0 wird innere Linie gezeichnet
1580 \ifdimgreater{\mdf@innerlinewidth@length}{\z@}
1581     {\tikzset{mdfinnerline/.append style={%
1582         draw=\mdf@innerlinecolor,%
1583         line width=2\mdf@innerlinewidth@length+\mdf@middlelinewidth@length}}}%
1584 %
1585 \tikzset{mdfshadow/.style={drop shadow={%
1586                                     shadow xshift=2.0ex,
1587                                     shadow yshift=-0.5em,
1588                                     fill=black!50,
1589                                     every shadow }}}%
1590 %
1591 \mdf@tikzset@local
1592 \tikzset{mdfmiddleline/.style={}}%
1593 % nur wenn middlelinewidth>0 wird mittlere Linie gezeichnet
1594 \ifdimgreater{\mdf@middlelinewidth@length}{\z@}
1595     {\tikzset{mdfmiddleline/.append style={%
1596         preaction={draw=\mdf@middlelinecolor,%
1597             line width=\mdf@middlelinewidth@length},%
1598         line width=\mdf@middlelinewidth@length,%
1599         tikzsetting}}}%
1600     }{}%
1601 }%

```

```

\mdf@tikzbox@tfl
\mdf@tikzbox@otl

```

Befehle fuer Ausgabe von Rahmen und Hintergrund

```

1602 \newrobustcmd*\mdf@tikzbox@tfl[1]{%three or four borders
1603     \clip(0,0)rectangle(\mdfboundingboxwidth,\mdfboundingboxheight);%
1604     \begin{scope}[mdfcorners]%
1605         \clip[preaction=mdfouterline]%
1606             [postaction=mdfbackground]%
1607             [postaction=mdfinnerline]#1;%
1608     \end{scope}%
1609     \path[mdfmiddleline,mdfcorners]#1;
1610 }%
1611
1612
1613
1614 \newrobustcmd*\mdf@tikzbox@otl[2]{%one or two borders
1615     \clip(0,0)rectangle(\mdfboundingboxwidth,\mdfboundingboxheight);%
1616     \begin{scope}
1617         \path[mdfouterline,mdfcorners]#1;%
1618         \clip[postaction=mdfbackground]#2;%

```

```

1619      \path[mdfinnerline,mdfcorners]#1;%
1620      \end{scope}%
1621      \path[mdfmiddleline,mdfcorners]#1;%

```

```
\mdf@put@frametitlerule
```

frametitlerule with tikz

```

1622 \tikzset{mdfframetitlerule/.style={%
1623     draw=none,
1624     fill=\mdf@frametitlerulecolor,
1625 }%
1626 }
1627 \def\mdf@@frametitlerule{%
1628     \ifbool{mdf@frametitlerule}{%
1629         \vbox{\hsize0pt
1630             \par\unskip\vskip\mdf@frametitlebelowskip@length
1631             \noindent\rlap{\hspace*{-\mdf@innerleftmargin@length}%
1632             \begingroup%
1633                 \pgfmithsetlength{\dimen@}{\mdfframetitleboxwidth+\mdf@innerleftmargin@length+\mdf@innerrightmargin@length}%
1634                 \tikz\draw[mdfframetitlerule] (0,0)%
1635                     rectangle (\dimen@,\mdf@frametitlerulewidth@length);
1636                 \endgroup}
1637             }%
1638         }{}
1639     \par\unskip\vskip\mdf@innertopmargin@length%
1640 }%
1641

```

```
\mdf@putbox@single
```

Output of the non breakable contents.

```

1642 % Info zu den verwendeten Punkten:
1643 % O ist die untere linke Ecke der Mitte der middleline
1644 % P ist die obere rechte Ecke der Mitte der middleline
1645 % A ist der Punkt fuer den anchor (d.h. die untere linke Ecke) der Ausgabebox
1646 %
1647 \def\mdf@putbox@single{%
1648     \ifvoid\mdf@splitbox@one
1649     \else%
1650         \mdf@makebox@out{%
1651             \mdf@makeboxalign@left%
1652             \mdf@tikz@settings%
1653 %
1654             \setlength\mdfboundingboxwidth{\wd\mdf@splitbox@one}%
1655             \advance\mdfboundingboxwidth by \mdf@innerleftmargin@length\relax%
1656             \advance\mdfboundingboxwidth by \mdf@innerrightmargin@length\relax%
1657             \ifbool{mdf@leftline}{%
1658                 \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
1659                 \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
1660                 \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}}{}%
1661             \ifbool{mdf@rightline}{%
1662                 \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
1663                 \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
1664                 \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}}{}%
1665 %

```



```

1666 \setlength\mdfboundingboxheight{\dimexpr\ht\mdf@splitbox@one+\dp\mdf@splitbox@one\relax}%
1667 \advance\mdfboundingboxheight by \mdf@innertopmargin@length\relax%
1668 \advance\mdfboundingboxheight by \mdf@innerbottommargin@length\relax%
1669 \ifbool{mdf@topline}{%
1670   \advance\mdfboundingboxheight by \mdf@innerlinewidth@length\relax%
1671   \advance\mdfboundingboxheight by \mdf@middlelinewidth@length\relax%
1672   \advance\mdfboundingboxheight by \mdf@outerlinewidth@length\relax}{}%
1673 \ifbool{mdf@bottomline}{%
1674   \advance\mdfboundingboxheight by \mdf@innerlinewidth@length\relax%
1675   \advance\mdfboundingboxheight by \mdf@middlelinewidth@length\relax%
1676   \advance\mdfboundingboxheight by \mdf@outerlinewidth@length\relax}{}%
1677 \mdf@makebox@in[\mdfboundingboxwidth]{%
1678 \null%
1679 \begin{tikzpicture}[remember picture]%
1680   \pgfmathsetlengthmacro\mdf@Ax{+\mdf@innerleftmargin@length}%
1681   \pgfmathsetlengthmacro\mdf@Ay{+\mdf@innerbottommargin@length}%
1682   \pgfmathsetlengthmacro\mdf@Ox{+0pt}%
1683   \pgfmathsetlengthmacro\mdf@Oy{+0pt}%
1684   \pgfmathsetlengthmacro\mdf@Px{+\mdfboundingboxwidth}%
1685   \pgfmathsetlengthmacro\mdf@Py{+\mdfboundingboxheight}%
1686   \ifbool{mdf@leftline}{%
1687     {%
1688       \pgfmathsetlengthmacro\mdf@Ax%
1689         {\mdf@Ax+\mdf@outerlinewidth@length+
1690          \mdf@middlelinewidth@length+\mdf@innerlinewidth@length}%
1691       \pgfmathsetlengthmacro\mdf@Ox%
1692         {\mdf@Ox+\mdf@outerlinewidth@length+0.5\mdf@middlelinewidth@length}%
1693     }{}%
1694   \ifbool{mdf@rightline}{%
1695     {%
1696       \pgfmathsetlengthmacro\mdf@Px%
1697         {\mdf@Px-\mdf@outerlinewidth@length-0.5\mdf@middlelinewidth@length}%
1698     }{}%
1699   \ifbool{mdf@bottomline}{%
1700     {%
1701       \pgfmathsetlengthmacro\mdf@Ay%
1702         {\mdf@Ay+\mdf@outerlinewidth@length+\mdf@middlelinewidth@length%
1703          +\mdf@innerlinewidth@length}%
1704       \pgfmathsetlengthmacro\mdf@Oy%
1705         {\mdf@Oy+\mdf@outerlinewidth@length+0.5\mdf@middlelinewidth@length}%
1706     }{}%
1707   \ifbool{mdf@topline}{%
1708     {%
1709       \pgfmathsetlengthmacro\mdf@Py%
1710         {\mdf@Py-\mdf@outerlinewidth@length-0.5\mdf@middlelinewidth@length}%
1711     }{}%
1712 %
1713   \coordinate(0)at(\mdf@Ox,\mdf@Oy);%
1714   \coordinate(P)at(\mdf@Px,\mdf@Py);%
1715 %
1716   \ifbool{mdf@shadow}
1717     {\path[mdfshadow,mdfcorners](0) rectangle (P);}%
1718 %
1719   \begin{scope}[use as bounding box]
1720     \mdf@test@ltrb{\mdf@tikzbox@tfl{(0)--(0|-P)--(P)--(P|-0)--cycle)}}{}%
1721 %

```

```

1722 \mdf@test@ltb{\mdf@tikzbox@tfl{(P|-O)--(O)--(O|-P)--(P)}}{}%
1723 \mdf@test@trb{\mdf@tikzbox@tfl{(O|-P)--(P)--(P|-O)--(O)}}{}%
1724 \mdf@test@ltr{\mdf@tikzbox@tfl{(O)--(O|-P)--(P)--(P|-O)}}{}%
1725 \mdf@test@lrb{\mdf@tikzbox@tfl{(P|-O)--(O)--(O|-P)--(P)}}{}%
1726 %
1727 \mdf@test@lb{\mdf@tikzbox@otl{(P|-O)--(O)--(O|-P)}}%
1728 { (P)--(P|-O)[mdfcorners]--(O)--(O|-P)}%
1729 {}%
1730 \mdf@test@rb{\mdf@tikzbox@otl{(P)--(P|-O)--(O)}}%
1731 { (O|-P)--(P)[mdfcorners]--(P|-O)--(O)}%
1732 {}%
1733 \mdf@test@tr{\mdf@tikzbox@otl{(O|-P)--(P)--(P|-O)}}%
1734 { (O)--(O|-P)[mdfcorners]--(P)--(P|-O)}%
1735 {}%
1736 \mdf@test@lt{\mdf@tikzbox@otl{(O)--(O|-P)--(P)}}%
1737 { (P|-O)--(O)[mdfcorners]--(O|-P)--(P)}%
1738 {}%
1739 \mdf@test@lr{\mdf@tikzbox@otl{(O)--(O|-P)(P)--(P|-O)}}%
1740 { (O)rectangle(P)}%
1741 {}%
1742 \mdf@test@tb{\mdf@tikzbox@otl{(O)--(O|-P)(O|-P)--(P)}}%
1743 { (O)rectangle(P)}%
1744 {}%
1745 %
1746 \mdf@test@l{\mdf@tikzbox@otl{(O)--(O|-P)}}%
1747 { (O)rectangle(P)}%
1748 {}%
1749 \mdf@test@r{\mdf@tikzbox@otl{(O|-P)--(P)}}%
1750 { (O)rectangle(P)}%
1751 {}%
1752 \mdf@test@t{\mdf@tikzbox@otl{(O|-P)--(P)}}%
1753 { (O)rectangle(P)}%
1754 {}%
1755 \mdf@test@b{\mdf@tikzbox@otl{(O)--(O|-P)}}%
1756 { (O)rectangle(P)}%
1757 {}%
1758 %
1759 \mdf@test@noline{\path[mdfbackground,mdfcorners](O)rectangle(P);}%
1760 %
1761 %Frametitlebackground
1762 \drawbackgroundframetitle@single
1763 %
1764 \node[mdfbox]at(\mdf@Ax,\mdf@Ay){\box\mdf@splitbox@one};% Ausgabebox einfuegen
1765 \end{scope}
1766 %HIER KOMMT EIN WEITERES MAKRO
1767 \mdfcreateextratikz
1768 \end{tikzpicture}%
1769 }%
1770 \mdf@makeboxalign@right%
1771 }%
1772 \fi
1773 }%
1774 \def\drawbackgroundframetitle@single{%
1775 \ifdefempty{\mdf@frametitle}}{}{%
1776 \drawbackgroundframetitle@single%
1777 }%

```

```

1778 }%
1779 \def\drawbackgroundframetitle@@single{%
1780     \begin{scope}%background frame title
1781     \ifbool{mdf@leftline}{
1782         \pgfmathsetlengthmacro\mdf@0x%
1783             {\mdf@0x+\mdf@innerlinewidth@length+0.5\mdf@middlelinewidth@length}
1784     }{}%
1785     \ifbool{mdf@rightline}{%
1786         \pgfmathsetlengthmacro\mdf@Px%
1787             {\mdf@Px-\mdf@innerlinewidth@length-0.5\mdf@middlelinewidth@length}
1788     }{}%
1789     \ifbool{mdf@topline}{%
1790         \pgfmathsetlengthmacro\mdf@Py%
1791             {\mdf@Py-\mdf@innerlinewidth@length-0.5\mdf@middlelinewidth@length}
1792     }{}%
1793     \pgfmathsetlengthmacro\mdf@Fy
1794         {\mdf@Py-\mdfframetitleboxtotalheight}
1795     \path[mdfframetitlebackground]
1796         (\mdf@0x,\mdf@Fy) -- (\mdf@0x,\mdf@Py)%
1797         --(\mdf@Px,\mdf@Py) --(\mdf@Px,\mdf@Fy);
1798     \end{scope}
1799 }

```

`\mdf@putbox@first`

Output of the first breakable contents.

```

1800 \def\drawbackgroundframetitle@@first{%
1801     \ifdefempty{\mdf@frametitle}{}{}%
1802     \ifdimgreater{\mdf@boundingboxheight}{\mdfframetitleboxtotalheight}%
1803     {%
1804         \drawbackgroundframetitle@@first
1805         \pgfmathsetlength{\global\mdfframetitleboxtotalheight}{-\p@}%
1806     }\mdf@PackageWarning{You got a page break inside the frame title\MessageBreak
1807         Currently this isn't well supported}%
1808     \drawbackgroundframetitle@@first
1809     \pgfmathsetlength{\global\mdfframetitleboxtotalheight}%
1810         {\mdfframetitleboxtotalheight-\mdf@boundingboxheight-
1811             \mdf@innerlinewidth@length-0.5\mdf@middlelinewidth@length%
1812             +\mdf@frametitlebelowskip@length+\mdf@splitbottomskip@length+\mdf@splittopskip@length}
1813     +\dp\strutbox%
1814     }%
1815 }%
1816 }%
1817 }%
1818 %
1819 \def\drawbackgroundframetitle@@first{%
1820     \begin{scope}%background frame title
1821     \ifbool{mdf@leftline}{%
1822         \pgfmathsetlengthmacro\mdf@0x%
1823             {\mdf@0x+\mdf@innerlinewidth@length+0.5\mdf@middlelinewidth@length}
1824     }{}%
1825     \ifbool{mdf@rightline}{%
1826         \pgfmathsetlengthmacro\mdf@Px%
1827             {\mdf@Px-\mdf@innerlinewidth@length-0.5\mdf@middlelinewidth@length}
1828     }{}%

```

```

1829 \ifbool{mdf@topline}{%
1830 \pgfmathsetlengthmacro\mdf@Py%
1831 {\mdf@Py-\mdf@innerlinewidth@length-0.5\mdf@middlelinewidth@length}
1832 }{}%
1833 \pgfmathsetlengthmacro\mdf@Fy
1834 {\max(0,\mdf@Py-\mdfframetitleboxtotalheight)}
1835 \path[mdfframetitlebackground]
1836 (\mdf@0x,\mdf@Fy) -- (\mdf@0x,\mdf@Py)%
1837 -- (\mdf@Px,\mdf@Py) -- (\mdf@Px,\mdf@Fy);
1838 \end{scope}%
1839 }%
1840 %
1841 \def\mdf@putbox@first{%
1842 \ifvoid\mdf@splitbox@two
1843 \else%
1844 \mdf@makebox@out{%
1845 \mdf@makeboxalign@left%
1846 \mdf@tikz@settings%
1847 \setlength\mdfboundingboxwidth{\wd\mdf@splitbox@two}%
1848 \advance\mdfboundingboxwidth by \mdf@innerleftmargin@length\relax%
1849 \advance\mdfboundingboxwidth by \mdf@innerrightmargin@length\relax%
1850 \ifbool{mdf@leftline}{%
1851 \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
1852 \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
1853 \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}}{}%
1854 \ifbool{mdf@rightline}{%
1855 \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
1856 \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
1857 \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}}{}%
1858 %
1859 \setlength\mdfboundingboxheight{\dimexpr\ht\mdf@splitbox@two+\dp\mdf@splitbox@two\relax}%
1860 \advance\mdfboundingboxheight by \mdf@innertopmargin@length\relax%
1861 \advance\mdfboundingboxheight by \mdf@splitbottomskip@length\relax%
1862 \ifbool{mdf@topline}{%
1863 \advance\mdfboundingboxheight by \mdf@innerlinewidth@length\relax%
1864 \advance\mdfboundingboxheight by \mdf@middlelinewidth@length\relax%
1865 \advance\mdfboundingboxheight by \mdf@outerlinewidth@length\relax}}{}%
1866 %
1867 %\ifdimequal{\pagegoal}{\maxdimen}{\enlargethispage{\baselineskip}}{} ???
1868 \ifdimgreater{\pagegoal-\maxdimen}{0pt}{\enlargethispage{\baselineskip}}{}%
1869 \mdf@makebox@in[\mdfboundingboxwidth]{%
1870 \null%
1871 \begin{tikzpicture}[remember picture]
1872 %
1873 \pgfmathsetlengthmacro\mdf@Ax{+\mdf@innerleftmargin@length}%
1874 \pgfmathsetlengthmacro\mdf@Ay{+\mdf@splitbottomskip@length}%
1875 \pgfmathsetlengthmacro\mdf@0x{+0pt}%
1876 \pgfmathsetlengthmacro\mdf@0y{+0pt}%
1877 \pgfmathsetlengthmacro\mdf@Px{+\mdfboundingboxwidth}%
1878 \pgfmathsetlengthmacro\mdf@Py{+\mdfboundingboxheight}%
1879 \ifbool{mdf@leftline}
1880 {%
1881 \pgfmathsetlengthmacro\mdf@Ax%
1882 {\mdf@Ax+\mdf@outerlinewidth@length+%
1883 \mdf@middlelinewidth@length+\mdf@innerlinewidth@length}%
1884 \pgfmathsetlengthmacro\mdf@0x%

```

```

1885         {\mdf@0x+\mdf@outerlinewidth@length+0.5\mdf@middlelinewidth@length}%
1886     }{}%
1887 \ifbool{mdf@rightline}{%
1888     \pgfmathsetlengthmacro\mdf@Px%
1889         {\mdf@Px-\mdf@outerlinewidth@length-0.5\mdf@middlelinewidth@length}%
1890     }{}%
1891 \ifbool{mdf@topline}{%
1892     \pgfmathsetlengthmacro\mdf@Py%
1893         {\mdf@Py-\mdf@outerlinewidth@length-0.5\mdf@middlelinewidth@length}%
1894     }{}%
1895 %
1896 \coordinate(0)at(\mdf@0x,\mdf@0y);%
1897 \coordinate(P)at(\mdf@Px,\mdf@Py);%
1898 %
1899 \ifbool{mdf@shadow}
1900     {\path[mdfshadow] (0) -- (0|-P) to[mdfcorners] (P) -- (P|-0) -- (0);}{}%
1901 %
1902 \begin{scope}[use as bounding box]
1903     \ifboolexpr{test {\mdf@test@lrb} or test {\mdf@test@lrb}}%
1904         {\mdf@tikzbox@otl{(0)--(0|-P)--(P)--(P|-0)}}%
1905         {}%
1906     \ifboolexpr{test {\mdf@test@ltb} or test {\mdf@test@ltb}}%
1907         {\mdf@tikzbox@otl{(0)--(0|-P)--(P)}{(P|-0)--(0)[mdfcorners]--(0|-P)--(P)}}%
1908         {}%
1909     \ifboolexpr{test {\mdf@test@trb} or test {\mdf@test@trb}}%
1910         {\mdf@tikzbox@otl{(0|-P)--(P)--(P|-0)}{(0)--(0|-P)[mdfcorners]--(P)--(P|-0)}}%
1911         {}%
1912     \ifboolexpr{test {\mdf@test@lrb} or test {\mdf@test@lrb}}%
1913         {\mdf@tikzbox@otl{(0)--(0|-P)(P)--(P|-0)}{(0)rectangle(P)}}%
1914         {}%
1915     \ifboolexpr{test {\mdf@test@tb} or test {\mdf@test@tb}}%
1916         {\mdf@tikzbox@otl{(0|-P)--(P)}{(0)rectangle(P)}}%
1917         {}%
1918     \ifboolexpr{test {\mdf@test@lb} or test {\mdf@test@lb}}%
1919         {\mdf@tikzbox@otl{(0)--(0|-P)}{(0)rectangle(P)}}%
1920         {}%
1921     \ifboolexpr{test {\mdf@test@rb} or test {\mdf@test@rb}}%
1922         {\mdf@tikzbox@otl{(0|-P)--(P)}{(0)rectangle(P)}}%
1923         {}%
1924     \mdf@test@b{\path[mdfbackground](0)rectangle(P);}{}%
1925 %
1926     \mdf@test@noline{\path[mdfbackground,mdfcorners](0)--(0|-P)--(P)--(P|-0);}{}%
1927 %
1928     \drawbackgroundframetitle@first
1929 %
1930     \node[mdfbox]at(\mdf@Ax,\mdf@Ay){\box\mdf@splitbox@two};% Ausgabebox einfuegen
1931 \end{scope}
1932 %HIER KOMMT EIN WEITERES MAKRO
1933 \mdfcreateextratikz%
1934 \end{tikzpicture}%
1935 }%
1936 \mdf@makeboxalign@right%
1937 }%
1938 \fi
1939 }%

```

\mdf@putbox@middle

Output of the middle breakable contents.

```

1940 \def\drawbackgroundframetitle@middle{%
1941   \ifdefempty{\mdf@frametitle}}{%
1942     \ifdimless{\mdfframetitleboxtotalheight}{\z@}
1943     {%
1944       \drawbackgroundframetitle@@middle%
1945       \pgfmathsetlength{\global\mdfframetitleboxtotalheight}{-\p@}%
1946     }%
1947   }%
1948 }%
1949 %
1950 \def\drawbackgroundframetitle@@middle{%
1951   \begin{scope}%background frame title
1952     \ifbool{mdf@leftline}{
1953       \pgfmathsetlengthmacro\mdf@0x%
1954         {\mdf@0x+\mdf@innerlinewidth@length+0.5\mdf@middlelinewidth@length}
1955     }{%
1956       \ifbool{mdf@rightline}{%
1957         \pgfmathsetlengthmacro\mdf@Px%
1958           {\mdf@Px-\mdf@innerlinewidth@length-0.5\mdf@middlelinewidth@length}
1959       }{%
1960         \pgfmathsetlengthmacro\mdf@Fy
1961           {\mdf@Py-\mdfframetitleboxtotalheight}
1962         \path[mdfframetitlebackground,rounded corners=\z@]
1963           (\mdf@0x,\mdf@Fy) -- (\mdf@0x,\mdf@Py)%
1964           --(\mdf@Px,\mdf@Py) --(\mdf@Px,\mdf@Fy);
1965       }
1966     }%
1967   }%
1968 \def\mdf@putbox@middle{%
1969   \ifvoid\mdf@splitbox@two
1970   \else%
1971     \mdf@makebox@out{%
1972       \mdf@makeboxalign@left%
1973       \mdf@tikz@settings%
1974     }%
1975     \setlength\mdfboundingboxwidth{\wd\mdf@splitbox@two}%
1976     \advance\mdfboundingboxwidth by \mdf@innerleftmargin@length\relax%
1977     \advance\mdfboundingboxwidth by \mdf@innerrightmargin@length\relax%
1978     \ifbool{mdf@leftline}{%
1979       \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
1980       \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
1981       \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}%
1982     \ifbool{mdf@rightline}{%
1983       \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
1984       \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
1985       \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}%
1986   }%
1987   \setlength\mdfboundingboxheight{\dimexpr\ht\mdf@splitbox@two+\dp\mdf@splitbox@two\relax}%
1988   \advance\mdfboundingboxheight by \mdf@splitbottomskip@length\relax%
1989 }%
1990 \mdf@makebox@in[\mdfboundingboxwidth]{%
1991   \null%
1992   \begin{tikzpicture}[remember picture]

```

```

1993 \pgfmathsetlengthmacro\mdf@Ax{+\mdf@innerleftmargin@length}%
1994 \pgfmathsetlengthmacro\mdf@Ay{+\mdf@splitbottomskip@length}%
1995 \pgfmathsetlengthmacro\mdf@Ox{+0pt}%
1996 \pgfmathsetlengthmacro\mdf@Oy{+0pt}%
1997 \pgfmathsetlengthmacro\mdf@Px{+\mdfboundingboxwidth}%
1998 \pgfmathsetlengthmacro\mdf@Py{+\mdfboundingboxheight}%
1999 \ifbool{mdf@leftline}%
2000 {%
2001 \pgfmathsetlengthmacro\mdf@Ax%
2002 {\mdf@Ax+\mdf@outerlinewidth@length+
2003 \mdf@middlelinewidth@length+\mdf@innerlinewidth@length}%
2004 \pgfmathsetlengthmacro\mdf@Ox%
2005 {\mdf@Ox+\mdf@outerlinewidth@length+0.5\mdf@middlelinewidth@length}%
2006 }{}%
2007 \ifbool{mdf@rightline}%
2008 {%
2009 \pgfmathsetlengthmacro\mdf@Px%
2010 {\mdf@Px-\mdf@outerlinewidth@length-0.5\mdf@middlelinewidth@length}%
2011 }{}%
2012 %
2013 \coordinate(0)at(\mdf@Ox,\mdf@Oy);%
2014 \coordinate(P)at(\mdf@Px,\mdf@Py);%
2015 %
2016 \ifbool{mdf@shadow}
2017 {\path[mdfshadow](0) rectangle (P);}%
2018 %
2019 \begin{scope}[use as bounding box]
2020 \ifboolexpr{bool {mdf@leftline} and bool {mdf@rightline}}%
2021 {\mdf@tikzbox@otl{(0)--(0|-P)(P)--(P|-0)}{(0)rectangle(P)}}{}%
2022 \ifboolexpr{bool {mdf@leftline} and not (bool {mdf@rightline})}%
2023 {\mdf@tikzbox@otl{(0)--(0|-P)}{(0)rectangle(P)}}{}%
2024 \ifboolexpr{not (bool {mdf@leftline}) and bool {mdf@rightline}}%
2025 {\mdf@tikzbox@otl{(P)--(P|-0)}{(0)rectangle(P)}}{}%
2026 \ifboolexpr{not (bool {mdf@leftline}) and not (bool {mdf@rightline})}%
2027 {\path[mdfbackground](0) rectangle(P);}%
2028 %
2029 \drawbrackgroundframetitle@middle
2030 %
2031 \node[mdfbox]at(\mdf@Ax,\mdf@Ay){\box\mdf@splitbox@two};% Ausgabebox einfüegen
2032 \end{scope}
2033 %HIER KOMMT EIN WEITERES MAKRO
2034 \mdfcreateextratikz
2035 \end{tikzpicture}%
2036 }%
2037 \mdf@makeboxalign@right%
2038 }%
2039 \fi
2040 }%

```

\mdf@putbox@second

Output of the last breakable contents.

```

2041 \def\drawbrackgroundframetitle@second{%
2042 \ifdefempty{\mdf@frametitle}}{}%
2043 \ifdimless{\mdfframetitleboxtotalheight}{\z@}

```



```

2044  {}{%
2045    \drawbackgroundframetitle@@second%
2046  }%
2047 }%
2048 }%
2049 %
2050 \def\drawbackgroundframetitle@@second{%
2051     \begin{scope}%background frame title
2052     \ifbool{mdf@leftline}{
2053         \pgfmathsetlengthmacro\mdf@0x%
2054             {\mdf@0x+\mdf@innerlinewidth@length+0.5\mdf@middlelinewidth@length}
2055     }{%
2056     \ifbool{mdf@rightline}{%
2057         \pgfmathsetlengthmacro\mdf@Px%
2058             {\mdf@Px-\mdf@innerlinewidth@length-0.5\mdf@middlelinewidth@length}
2059     }{%
2060     \pgfmathsetlengthmacro\mdf@Fy
2061         {\mdf@Py-\mdfframetitleboxtotalheight}
2062     \path[mdfframetitlebackground,rounded corners=\z@]
2063         (\mdf@0x,\mdf@Fy) -- (\mdf@0x,\mdf@Py)%
2064         --(\mdf@Px,\mdf@Py) --(\mdf@Px,\mdf@Fy);
2065     \end{scope}
2066 }%
2067 \def\mdf@putbox@second{%
2068     \ifvoid\mdf@splitbox@one
2069     \else%
2070         \mdf@makebox@out{%
2071             \mdf@makeboxalign@left%
2072             \mdf@tikz@settings%
2073 %
2074             \setlength\mdfboundingboxwidth{\wd\mdf@splitbox@one}%
2075             \advance\mdfboundingboxwidth by \mdf@innerleftmargin@length\relax%
2076             \advance\mdfboundingboxwidth by \mdf@innerrightmargin@length\relax%
2077             \ifbool{mdf@leftline}{%
2078                 \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
2079                 \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
2080                 \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}%
2081             \ifbool{mdf@rightline}{%
2082                 \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
2083                 \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
2084                 \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}%
2085 %
2086             \setlength\mdfboundingboxheight{\dimexpr\ht\mdf@splitbox@one+\dp\mdf@splitbox@one\relax}%
2087             \advance\mdfboundingboxheight by \mdf@innerbottommargin@length\relax%
2088             \ifbool{mdf@bottomline}{%
2089                 \advance\mdfboundingboxheight by \mdf@innerlinewidth@length\relax%
2090                 \advance\mdfboundingboxheight by \mdf@middlelinewidth@length\relax%
2091                 \advance\mdfboundingboxheight by \mdf@outerlinewidth@length\relax}%
2092 %
2093             \mdf@makebox@in[\mdfboundingboxwidth]{%
2094                 \null%
2095                 \begin{tikzpicture}[remember picture]
2096                     \pgfmathsetlengthmacro\mdf@Ax{+\mdf@innerleftmargin@length}%
2097                     \pgfmathsetlengthmacro\mdf@Ay{+\mdf@innerbottommargin@length}%
2098                     \pgfmathsetlengthmacro\mdf@0x{+0pt}%
2099                     \pgfmathsetlengthmacro\mdf@0y{+0pt}%

```



```

2100 \pgfmathsetlengthmacro\mdf@Px{+\mdfboundingboxwidth}%
2101 \pgfmathsetlengthmacro\mdf@Py{+\mdfboundingboxheight}%
2102 \ifbool{mdf@leftline}%
2103 {%
2104 \pgfmathsetlengthmacro\mdf@Ax%
2105 {\mdf@Ax+\mdf@outerlinewidth@length+
2106 \mdf@middlelinewidth@length+\mdf@innerlinewidth@length}%
2107 \pgfmathsetlengthmacro\mdf@Ox%
2108 {\mdf@Ox+\mdf@outerlinewidth@length+0.5\mdf@middlelinewidth@length}%
2109 }{}%
2110 \ifbool{mdf@rightline}%
2111 {%
2112 \pgfmathsetlengthmacro\mdf@Px%
2113 {\mdf@Px-\mdf@outerlinewidth@length-0.5\mdf@middlelinewidth@length}%
2114 }{}%
2115 \ifbool{mdf@bottomline}%
2116 {%
2117 \pgfmathsetlengthmacro\mdf@Ay%
2118 {\mdf@Ay+\mdf@outerlinewidth@length+
2119 \mdf@middlelinewidth@length+\mdf@innerlinewidth@length}%
2120 \pgfmathsetlengthmacro\mdf@Oy%
2121 {\mdf@Oy+\mdf@outerlinewidth@length+0.5\mdf@middlelinewidth@length}%
2122 }{}%
2123 %
2124 \coordinate(0)at(\mdf@Ox,\mdf@Oy);%
2125 \coordinate(P)at(\mdf@Px,\mdf@Py);%
2126 %
2127 \ifbool{mdf@shadow}
2128 {\path[mdfshadow] (0|-P) to[mdfcorners] (0) to[mdfcorners] (P|-0) -- (P) -- (0|-P);}%
2129 %
2130 \begin{scope}[use as bounding box]
2131 \ifboolexpr{test {\mdf@test@lrb} or test {\mdf@test@lrb}}%
2132 {\mdf@tikzbox@otl{(P|-0)--(0)--(0|-P)--(P))}%
2133 }{}%
2134 \ifboolexpr{test {\mdf@test@ltb} or test {\mdf@test@lb}}%
2135 {\mdf@tikzbox@otl{(P|-0)--(0)--(0|-P)){(P)--(P|-0)[mdfcorners]--(0)--(0|-P))}%
2136 }{}%
2137 \ifboolexpr{test {\mdf@test@trb} or test {\mdf@test@rb}}%
2138 {\mdf@tikzbox@otl{(P)--(P|-0)--(0)){(0|-P)--(P)[mdfcorners]--(P|-0)--(0))}%
2139 }{}%
2140 \ifboolexpr{test {\mdf@test@ltr} or test {\mdf@test@lr}}%
2141 {\mdf@tikzbox@otl{(0)--(0|-P)(P)--(P|-0)){(0)rectangle(P)}}%
2142 }{}%
2143 \ifboolexpr{test {\mdf@test@tb} or test {\mdf@test@b}}%
2144 {\mdf@tikzbox@otl{(0)--(0|-P)){(0)rectangle(P)}}%
2145 }{}%
2146 \ifboolexpr{test {\mdf@test@lt} or test {\mdf@test@l}}%
2147 {\mdf@tikzbox@otl{(0)--(0|-P)){(0)rectangle(P)}}%
2148 }{}%
2149 \ifboolexpr{test {\mdf@test@tr} or test {\mdf@test@r}}%
2150 {\mdf@tikzbox@otl{(0|-P)--(P)){(0)rectangle(P)}}%
2151 }{}%
2152 \mdf@test@t{\path[mdfbackground,mdfcorners](0|-P)--(0)--(0|-P)--(P);}%
2153 %
2154 \mdf@test@noline{\path[mdfbackground,mdfcorners](0|-P)--(0)--(0|-P)--(P);}%
2155 %

```

```

2156      \drawbackgroundframetitle@second
2157 %
2158      \node[mdfbox] at (\mdf@Ax,\mdf@Ay){\box\mdf@splitbox@one};% Ausgabebox einfuegen
2159      \end{scope}
2160      %HIER KOMMT EIN WEITERES MAKRO
2161      \mdfcreateextratikz
2162      \end{tikzpicture}%
2163      }%
2164      \mdf@makeboxalign@right%
2165      }%
2166 \fi
2167 }%

2168 \endinput

```

B.4. The Explanation of md-frame-2.mdf / md-frame-3.mdf

```

2169 %% Style file for mdframed for package option 'framemethod=default'
2170 %%
2171 %% This package may be distributed under the terms of the LaTeX Project
2172 %% Public License, as described in lppl.txt in the base LaTeX distribution.
2173 %% Either version 1.0 or, at your option, any later version.
2174 %%
2175 %%
2176 %%$Id: mdframed.dtx 338 2012-02-04 11:21:42Z marco $
2177 %

```

```

\mdframedIIPackagename
\mdf@frameIIDate@svn

```

local settings

```

2178 \def\mdframedIIPackagename{md-frame-2}
2179 \def\mdf@frameIIDate@svn$#1: #2 #3 #4-#5-#6 #7 #8${#4/#5/#6\space }
2180 \ProvidesFile{md-frame-2.mdf}%
2181      [\mdf@frameIIDate@svn$Id: mdframed.dtx 338 2012-02-04 11:21:42Z marco $ %
2182      \mdversion: \mdframedIIPackagename]

```

```

\mdf@ptlength@to@pscode
\ptTps

```

Command to calculate a latex length to postscript

```

2183 \def\mdf@ptlength@to@pscode#1{\pst@number{#1} \pst@number\psxunit div }
2184 \def\mdf@ptlength@to@pscode@length#1{\pst@number{\csname mdf@#1@length\endcsname} \pst@number\psxunit o
2185 \let\ptTps\mdf@ptlength@to@pscode\relax
2186 \let\ptTpsL\mdf@ptlength@to@pscode@length\relax

```

```

\mdfbackgroundstyle
\mdflinestyle
\mdfframetitlerule
\mdfframetitlebackground

```

background and line settings for pstricks

```

2187 \def\mdfppstricks@settings{%expand by \addtopsstyle
2188      \newpsstyle{mdfbackgroundstyle}%

```

```

2189     {linecolor=\mdf@backgroundcolor,fillstyle=solid,%
2190       fillcolor=\mdf@backgroundcolor,linestyle=none,%
2191       ,dimen=middle,%
2192     }%
2193 %
2194 \newpsstyle{mdfframetitlebackgroundstyle}{%
2195   linecolor=\mdf@frametitlebackgroundcolor,
2196   fillcolor=\mdf@frametitlebackgroundcolor,
2197   fillstyle=solid,linestyle=none,
2198   lineararc=\ifdimgreater{\mdf@roundcorner@length%
2199               -\mdf@innerlinewidth@length%
2200               -.5\mdf@middlelinewidth@length}%
2201   {\z@}{\dimexpr\mdf@roundcorner@length%
2202           -\mdf@innerlinewidth@length%
2203           -.5\mdf@middlelinewidth@length}{\z@},
2204 }
2205 %
2206 \newpsstyle{mdfouterlinestyle}{linestyle=none}%
2207 \ifdimgreater{\mdf@outerlinewidth@length}{\z@}%
2208   {\newpsstyle{mdfouterlinestyle}{%
2209     linecolor=\mdf@outerlinecolor,%
2210     linewidth=\dimexpr2\mdf@outerlinewidth@length+\mdf@middlelinewidth@length\relax,
2211     dimen=middle,
2212   }}}%
2213 %
2214 \newpsstyle{mdfinnerlinestyle}{linestyle=none}%
2215 \ifdimgreater{\mdf@innerlinewidth@length}{\z@}%
2216   {\newpsstyle{mdfinnerlinestyle}{%
2217     linecolor=\mdf@innerlinecolor,%
2218     linewidth=\dimexpr2\mdf@innerlinewidth@length+\mdf@middlelinewidth@length\relax,
2219     dimen=middle,
2220   }}}%
2221 %
2222 \newpsstyle{mdfmiddlelinestyle}{linestyle=none}%
2223 \ifdimgreater{\mdf@middlelinewidth@length}{\z@}%
2224   {\newpsstyle{mdfmiddlelinestyle}{%
2225     linewidth=\mdf@middlelinewidth@length,%
2226     linecolor=\mdf@middlelinecolor,dimen=middle
2227   }}}%
2228 \mdfpstricks@appendsettings
2229 }%
2230 %
2231 \newrobustcmd*\mdf@pstricksbox@fl[2]{%four lines
2232   \psframe[style=mdfouterlinestyle](#1)(#2)%aussen=3mm
2233   \psframe[style=mdfbackgroundstyle](#1)(#2)%Hintergrund
2234   \psclip{\psframe[style=mdfmiddlelinestyle](#1)(#2)}
2235     \psframe[style=mdfinnerlinestyle](#1)(#2)%innere=3mm
2236   \endpsclip
2237   \psframe[style=mdfmiddlelinestyle](#1)(#2)%mittlere=2mm
2238 }%
2239 \newrobustcmd*\mdf@pstricksbox@tl[1]{%three lines
2240   \psline[style=mdfouterlinestyle]#1%aussen=3mm
2241   \psline[style=mdfbackgroundstyle]#1%Hintergrund
2242   \psclip{\psline[style=mdfmiddlelinestyle]#1}
2243     \psline[style=mdfinnerlinestyle]#1%innere=3mm
2244   \endpsclip

```

```

2245 \psline[style=mdfmiddlelinestyle]#1%mittlere=2mm
2246 }%
2247 \newrobustcmd*\mdf@pstricksbox@tcl[2]{%two combined lines
2248 %%#1 background comple
2249 %%#2 line path
2250 \psline[style=mdfouterlinestyle]#2%ausсен=3mm
2251 \psline[style=mdfbackgroundstyle]#2%Hintergrund
2252 \psclip{\pscustom[linestyle=none]{
2253     \psline[style=mdfmiddlelinestyle]#2
2254     \psline[linestyle=none,linearc=0pt]#1}
2255 }
2256 \psframe[style=mdfbackgroundstyle,linearc=0pt](mdf@0)(mdf@P)%Hintergrund
2257 \psline[style=mdfinnerlinestyle]#2%innere=3mm
2258 \endpsclip
2259 \psline[style=mdfmiddlelinestyle]#2%mittlere=2mm
2260 }%
2261 \newrobustcmd*\mdf@pstricksbox@tncl[2]{%two not combined lines
2262 \beginngroup
2263 \psset{linearc=0pt}
2264 \psline[style=mdfouterlinestyle](mdf@0)#1%ausсен=3mm
2265 \psline[style=mdfouterlinestyle](mdf@P)#2%ausсен=3mm
2266 \psclip{
2267     \pscustom[linestyle=none]{%
2268         \psline[style=mdfmiddlelinestyle](mdf@0)#1%mittlere=2mm
2269         \psline[linestyle=none](mdf@0)#2
2270         \psline[style=mdfmiddlelinestyle](mdf@P)#2%mittlere=2mm
2271         \psline[linestyle=none](mdf@P)#1
2272     }%
2273 }%
2274 \psframe[style=mdfbackgroundstyle,linearc=0pt](mdf@0)(mdf@P)%Hintergrund
2275 \psline[style=mdfinnerlinestyle](mdf@0)#1%innere=3mm
2276 \psline[style=mdfinnerlinestyle](mdf@P)#2%innere=3mm
2277 \endpsclip
2278 \psline[style=mdfmiddlelinestyle](mdf@0)#1%mittlere=2mm
2279 \psline[style=mdfmiddlelinestyle](mdf@P)#2%mittlere=2mm
2280 \endgroup
2281 }%
2282 \newrobustcmd*\mdf@pstricksbox@ol[1]{%one line
2283 \beginngroup
2284 \psset{linearc=0pt}
2285 \psline[style=mdfouterlinestyle]#1%ausсен=3mm
2286 \psline[style=mdfbackgroundstyle]#1%Hintergrund
2287 \psclip{\pscustom[linestyle=none]{
2288     \psline[style=mdfmiddlelinestyle]#1
2289     \psframe[linestyle=none,fillstyle=none,dimen=inner](mdf@0)(mdf@P)
2290 }}
2291 \psframe[style=mdfbackgroundstyle](mdf@0)(mdf@P)
2292 \psline[style=mdfinnerlinestyle]#1%innere=3mm
2293 \endpsclip
2294 \psline[style=mdfmiddlelinestyle]#1%mittlere=2mm
2295 \endgroup%
2296 }%
2297
2298 %
2299 \newpsstyle{mdfframetitlerule}{%
2300     linecolor=\mdf@frametitlerulecolor,%

```

```

2301 fillcolor=\mdf@frametitlecolor,%
2302 fillstyle=solid,dimen=outer,%
2303 }
2304 %

```

\mdf@put@frametitle

rule

frametitle rule with pstricks

```

2305 \def\mdf@@frametitle rule{%
2306   \ifbool{mdf@frametitle rule}{%
2307     \vbox{\hsize0pt
2308       \par\unskip\vskip\mdf@frametitle belowskip@length
2309       \noindent\rlap{%
2310         \begin{group}%
2311           \begin{pspicture}(0,0)(0,\mdf@frametitle rule width@length)
2312             \psframe[style=mdfframetitle rule](!\ptTpsL{innerleftmargin} neg 0)%
2313               (! \ptTpsL{innerrightmargin}
2314                 \ptTps{\mdfframetitle boxwidth} add \ptTpsL{frametitle rule width})
2315           \end{pspicture}
2316         \end{group}
2317       }%
2318     }{}
2319   \par\unskip\vskip\mdf@innertopmargin@length%
2320 }%
2321 %
2322 % \begin{macro}{mdf@putbox@single}
2323 % Single output
2324 %   \begin{macrocode}
2325 % Info zu den verwendeten Punkten:
2326 % 0 ist die untere linke Ecke der Mitte der middleline
2327 % P ist die obere rechte Ecke der Mitte der middleline
2328 % A ist der Punkt fuer den anchor (d.h. die untere linke Ecke) der Ausgabebox
2329 \def\mdf@putbox@single{%
2330   \ifvoid\mdf@splitbox@one
2331   \else%
2332     \mdf@makebox@out{%
2333       \mdf@makeboxalign@left%
2334       \setlength\mdfboundingboxwidth{\wd\mdf@splitbox@one}%
2335       \advance\mdfboundingboxwidth by \mdf@innerleftmargin@length\relax%
2336       \advance\mdfboundingboxwidth by \mdf@innerrightmargin@length\relax%
2337       \ifbool{mdf@leftline}{%
2338         \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
2339         \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
2340         \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}}{}%
2341       \ifbool{mdf@rightline}{%
2342         \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
2343         \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
2344         \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}}{}%
2345     %
2346     \setlength\mdfboundingboxheight{\dimexpr\ht\mdf@splitbox@one+\dp\mdf@splitbox@one\relax}%
2347     \advance\mdfboundingboxheight by \mdf@innerbottommargin@length\relax%
2348     \advance\mdfboundingboxheight by \mdf@innertopmargin@length\relax%
2349     \ifbool{mdf@topline}{%
2350       \advance\mdfboundingboxheight by \mdf@innerlinewidth@length\relax%
2351       \advance\mdfboundingboxheight by \mdf@middlelinewidth@length\relax%

```

```

2352      \advance\mdfboundingboxheight by \mdf@outerlinewidth@length\relax}}}%
2353      \ifbool{mdf@bottomline}}{%
2354      \advance\mdfboundingboxheight by \mdf@innerlinewidth@length\relax%
2355      \advance\mdfboundingboxheight by \mdf@middlelinewidth@length\relax%
2356      \advance\mdfboundingboxheight by \mdf@outerlinewidth@length\relax}}}%
2357 %
2358      \setlength\mdftotalllinewidth{\dimexpr\mdf@innerlinewidth@length%
2359      +\mdf@middlelinewidth@length
2360      +\mdf@outerlinewidth@length\relax}%
2361      \psset{unit=1truecm}%
2362      \mdf@makebox@in[\mdfboundingboxwidth]{%
2363      \null%
2364      \begin{pspicture}(0,0)(\mdfboundingboxwidth,\mdfboundingboxheight)
2365      \mdfpstricks@settings%
2366      \psset{lineararc=\mdf@roundcorner@length, cornersize=absolut,}%
2367      \expandafter\psset\expandafter{\mdf@psset@local}%
2368      \pnode(\mdf@innerleftmargin@length,\mdf@innerbottommargin@length){mdf@A}
2369      \pnode(0,0){mdf@0}
2370      \pnode(\mdfboundingboxwidth,\mdfboundingboxheight){mdf@P}
2371      \ifbool{mdf@leftline}%
2372      {%
2373      \nodexn{(\mdf@A)+(\mdf@outerlinewidth@length,0)
2374      +(\mdf@middlelinewidth@length,0)
2375      +(\mdf@innerlinewidth@length,0)}}{mdf@A}%
2376      \nodexn{(\mdf@0)+(\mdf@outerlinewidth@length,0)
2377      +0.5(\mdf@middlelinewidth@length,0)}}{mdf@0}%
2378      }{}%
2379      \ifbool{mdf@rightline}%
2380      {%
2381      \nodexn{(\mdf@P)-(\mdf@outerlinewidth@length,0)
2382      -0.5(\mdf@middlelinewidth@length,0)}}{mdf@P}%
2383      }{}%
2384      \ifbool{mdf@bottomline}%
2385      {%
2386      \nodexn{(\mdf@A)+(0,\mdf@outerlinewidth@length)
2387      +(0,\mdf@middlelinewidth@length)
2388      +(0,\mdf@innerlinewidth@length)}}{mdf@A}%
2389      \nodexn{(\mdf@0)+(0,\mdf@outerlinewidth@length)
2390      +0.5(0,\mdf@middlelinewidth@length)}}{mdf@0}%
2391      }{}%
2392      \ifbool{mdf@topline}%
2393      {%
2394      \nodexn{(\mdf@P)-(0,\mdf@outerlinewidth@length)
2395      -0.5(0,\mdf@middlelinewidth@length)}}{mdf@P}
2396      }{}%
2397 %
2398      \psclip{%
2399      %Four lines
2400      \mdf@test@lrb{\mdf@pstricksbox@fl{mdf@0}{mdf@P}}{}
2401      %three lines
2402      \mdf@test@ltb{\mdf@pstricksbox@tl{(mdf@P|mdf@0)(mdf@0)(mdf@0|mdf@P)(mdf@P)}}{}
2403      \mdf@test@trb{\mdf@pstricksbox@tr{(mdf@0)(mdf@P|mdf@0)(mdf@P)(mdf@0|mdf@P)}}{}
2404      \mdf@test@ltr{\mdf@pstricksbox@tl{(mdf@0)(mdf@0|mdf@P)(mdf@P)(mdf@P|mdf@0)}}{}
2405      \mdf@test@lrb{\mdf@pstricksbox@tl{(mdf@0|mdf@P)(mdf@0)(mdf@P|mdf@0)(mdf@P)}}{}
2406      %two lines combined
2407      \mdf@test@lb{\mdf@pstricksbox@tcl{(mdf@P|mdf@0)(mdf@P)(mdf@0|mdf@P)}}%
2408      {(mdf@0|mdf@P)(mdf@0)(mdf@P|mdf@0)}}{}

```

```

2408 \mdf@test@rb{\mdf@pstricksbox@tcl{(mdf@P)(mdf@0|mdf@P)(mdf@0)}%
2409 { (mdf@0)(mdf@P|mdf@0)(mdf@P)} }{}
2410 \mdf@test@tr{\mdf@pstricksbox@tcl{(mdf@P|mdf@0)(mdf@0)(mdf@0|mdf@P)}%
2411 { (mdf@0|mdf@P)(mdf@P)(mdf@P|mdf@0)} }{}
2412 \mdf@test@lt{\mdf@pstricksbox@tcl{(mdf@0)(mdf@P|mdf@0)(mdf@P)}%
2413 { (mdf@0)(mdf@0|mdf@P)(mdf@P)} }{}
2414 %two lines not combined combined
2415 \mdf@test@lr{\mdf@pstricksbox@tncl{(mdf@0|mdf@P)}{(mdf@P|mdf@0)}
2416 }{}
2417 \mdf@test@tb{\mdf@pstricksbox@tncl{(mdf@P|mdf@0)}{(mdf@0|mdf@P)}
2418 }{}
2419 %single line
2420 \mdf@test@l{\mdf@pstricksbox@ol{(mdf@0)(mdf@0|mdf@P)} }{}
2421 \mdf@test@r{\mdf@pstricksbox@ol{(mdf@P)(mdf@P|mdf@0)} }{}
2422 \mdf@test@t{\mdf@pstricksbox@ol{(mdf@P)(mdf@0|mdf@P)} }{}
2423 \mdf@test@b{\mdf@pstricksbox@ol{(mdf@0)(mdf@P|mdf@0)} }{}
2424 %no line
2425 \mdf@test@noline{\psframe[style=mdfbackgroundstyle](mdf@0)(mdf@P)}{}
2426 %
2427 %Frametitlebackground
2428 \drawbackgroundframetitle@single
2429 %output%
2430 \rput[bl](mdf@A){\box\mdf@splitbox@one}
2431 % \psdot(mdf@A)\uput[90](mdf@A){mdf at A}
2432 % \psdot(mdf@P)\uput[90](mdf@P){mdf at P}
2433 % \psdot(mdf@0)\uput[90](mdf@0){mdf at 0}
2434 %
2435 % \endpsclip
2436 \end{pspicture}%
2437 }%
2438 \mdf@makeboxalign@right%
2439 }%
2440 \fi
2441 }%
2442 \def\drawbackgroundframetitle@single{%
2443 \ifdefempty{\mdf@frametitle}{}{}%
2444 \drawbackgroundframetitle@@single%
2445 }%
2446 }%
2447 \def\drawbackgroundframetitle@@single{%
2448 \begingroup%
2449 \ifbool{mdf@leftline}{%
2450 \nodexn{(mdf@0)+(\mdf@innerlinewidth@length,0)
2451 +0.5(\mdf@middlelinewidth@length,0)}{mdf@0}%
2452 }{}%
2453 \ifbool{mdf@rightline}{%
2454 \nodexn{(mdf@P)-(\mdf@innerlinewidth@length,0)
2455 -0.5(\mdf@middlelinewidth@length,0)}{mdf@P}%
2456 }{}%
2457 \ifbool{mdf@topline}{%
2458 \nodexn{(mdf@P)-(0,\mdf@innerlinewidth@length)
2459 -0.5(0,\mdf@middlelinewidth@length)}{mdf@P}%
2460 }{}%
2461 \nodexn{(mdf@P)-(0,\mdfframetitleboxtotalheight)}{mdf@F}%
2462 \psline[style=mdfframetitlebackgroundstyle](mdf@0|mdf@F)(mdf@0|mdf@P)
2463 (mdf@P)(mdf@P|mdf@F)%

```



```
2464 \endgroup
2465 }
```

\mdf@putbox@first

First output

```
2466 \def\mdf@putbox@first{%
2467   \ifvoid\mdf@splitbox@two
2468   \else%
2469     \mdf@makebox@out{%
2470       \mdf@makeboxalign@left%
2471       %\ifbool{mdf@leftline}{\hspace*{\mdf@middlelinewidth@length}}{}%
2472       \setlength\mdfboundingboxwidth{\wd\mdf@splitbox@two}%
2473       \advance\mdfboundingboxwidth by \mdf@innerleftmargin@length\relax%
2474       \advance\mdfboundingboxwidth by \mdf@innerrightmargin@length\relax%
2475       \ifbool{mdf@leftline}{%
2476         \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
2477         \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
2478         \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}%{}%
2479       \ifbool{mdf@rightline}{%
2480         \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
2481         \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
2482         \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}%{}%
2483       \setlength\mdfboundingboxheight{\dimexpr\ht\mdf@splitbox@two+\dp\mdf@splitbox@two\relax}%
2484       \advance\mdfboundingboxheight by \mdf@innertopmargin@length\relax%
2485       \advance\mdfboundingboxheight by \mdf@splitbottomskip@length\relax%
2486       \ifbool{mdf@topline}{%
2487         \advance\mdfboundingboxheight by \mdf@innerlinewidth@length\relax%
2488         \advance\mdfboundingboxheight by \mdf@middlelinewidth@length\relax%
2489         \advance\mdfboundingboxheight by \mdf@outerlinewidth@length\relax}%{}%
2490       \psset{lineararc=\mdf@roundcorner@length, cornersize=absolute}%
2491       \expandafter\psset\expandafter{\mdf@psset@local}%
2492       \mdf@makebox@in[\mdfboundingboxwidth]{%
2493         \null%
2494         \psset{unit=1truecm}%
2495         \ifdimgreater{\mdfboundingboxheight}{\vsize}
2496           {\begin{pspicture}(0,0)(\mdfboundingboxwidth,\vsize)}
2497           {\begin{pspicture}(0,0)(\mdfboundingboxwidth,\mdfboundingboxheight)}
2498             \mdfpstricks@settings%
2499             \psset{lineararc=\mdf@roundcorner@length, cornersize=absolut,}%
2500             \expandafter\psset\expandafter{\mdf@psset@local}%
2501             \pnode(\mdf@innerleftmargin@length,\mdf@splitbottomskip@length){mdf@A}
2502             \pnode(0,0){mdf@0}
2503             \pnode(\mdfboundingboxwidth,\mdfboundingboxheight){mdf@P}
2504             \ifbool{mdf@leftline}%
2505               {%
2506                 \nodexn{(\mdf@A)+(\mdf@outerlinewidth@length,0)
2507                   +(\mdf@middlelinewidth@length,0)
2508                   +(\mdf@innerlinewidth@length,0)}{mdf@A}
2509                 \nodexn{(\mdf@0)+(\mdf@outerlinewidth@length,0)
2510                   +0.5(\mdf@middlelinewidth@length,0)}{mdf@0}
2511               }{}%
2512             \ifbool{mdf@rightline}%
2513               {%
2514                 \nodexn{(\mdf@P)-(\mdf@outerlinewidth@length,0)
```



```

2515             -0.5(\mdf@middlelinewidth@length,0)){mdf@P}
2516         }{}%
2517     \ifbool{mdf@topline}%
2518     {%
2519         \nodexn{(mdf@P)-(0,\mdf@outerlinewidth@length)}
2520         -0.5(0,\mdf@middlelinewidth@length)){mdf@P}
2521     }{}%
2522 %     \psclip{
2523 %Four or Three lines
2524     \ifboolexpr{test {\mdf@test@ltrb} or test {\mdf@test@ltr}}%
2525     {\mdf@pstricksbox@tl{(mdf@0)(mdf@0|mdf@P)(mdf@P)(mdf@P|mdf@0)}}%
2526     }{}%
2527 %two combined lines
2528     \ifboolexpr{test {\mdf@test@ltb} or test {\mdf@test@lt}}%
2529     {\mdf@pstricksbox@tcl{(mdf@0)(mdf@P|mdf@0)(mdf@P)}%
2530      {(mdf@0)(mdf@0|mdf@P)(mdf@P)}}{}%
2531     \ifboolexpr{test {\mdf@test@trb} or test {\mdf@test@tr}}%
2532     {\mdf@pstricksbox@tcl{(mdf@P|mdf@0)(mdf@0)(mdf@0|mdf@P)}%
2533      {(mdf@0|mdf@P)(mdf@P)(mdf@P|mdf@0)}}{}%
2534 %two not combined lines
2535     \ifboolexpr{test {\mdf@test@lrb} or test {\mdf@test@lr}}%
2536     {\mdf@pstricksbox@tncl{(mdf@0|mdf@P)}{(mdf@P|mdf@0)}}{}%
2537 %single line
2538     \ifboolexpr{test {\mdf@test@tb} or test {\mdf@test@t}}%
2539     {\mdf@pstricksbox@ol{(mdf@P)(mdf@0|mdf@P)}}{}%
2540     \ifboolexpr{test {\mdf@test@lb} or test {\mdf@test@l}}%
2541     {\mdf@pstricksbox@ol{(mdf@0)(mdf@0|mdf@P)}}{}%
2542     \ifboolexpr{test {\mdf@test@rb} or test {\mdf@test@r}}%
2543     {\mdf@pstricksbox@ol{(mdf@P)(mdf@P|mdf@0)}}{}%
2544 %no line
2545     \mdf@test@b{\psframe[style=mdfbackgroundstyle](mdf@0)(mdf@P)}{}%
2546     \mdf@test@noline{\psframe[style=mdfbackgroundstyle](mdf@0)(mdf@P)}{}%
2547 % }
2548 %Frametitlebackground
2549     \drawbackgroundframetitle@first
2550 %output%
2551     \rput[bl](mdf@A){\box\mdf@splitbox@two}
2552 %     \psdot(mdf@A)\uput[90](mdf@A){mdf at A}
2553 %     \psdot(mdf@P)\uput[90](mdf@P){mdf at P}
2554 %     \psdot(mdf@0)\uput[90](mdf@0){mdf at 0}
2555 %     \endpsclip
2556     \end{pspicture}
2557 }%
2558 \mdf@makeboxalign@right%
2559 }%
2560 \fi
2561 }%
2562 \def\drawbackgroundframetitle@first{%
2563 \ifdefempty{\mdf@frametitle}}{}%
2564 \ifdimgreater{\mdf@boundingboxheight}{\mdf@frametitleboxtotalheight}%
2565 {%
2566     \drawbackgroundframetitle@@first
2567     \global\mdf@frametitleboxtotalheight=-\p@%
2568 }{\mdf@PackageWarning{You got a page break inside the frame title\MessageBreak
2569     Currently this isn't well supported}%
2570     \drawbackgroundframetitle@@first

```

```

2571 \global\mdfframetitleboxtotalheight=\dimexpr\mdfframetitleboxtotalheight
2572         -\mdfboundingboxheight
2573         -\mdf@innerlinewidth@length-0.5\mdf@middlelinewidth@length%
2574         +\mdf@frametitlebelowskip@length+\mdf@splitbottomskip@length
2575         +\mdf@splittopskip@length
2576         +\dp\strutbox\relax%
2577 }%
2578 }%
2579 }%
2580 \def\drawbackgroundframetitle@@first{%
2581 \begingroup%
2582 \ifbool{mdf@leftline}{%
2583     \nodexn{(\mdf@0)+(\mdf@innerlinewidth@length,0)
2584             +0.5(\mdf@middlelinewidth@length,0)}{mdf@0}%
2585     }{}%
2586 \ifbool{mdf@rightline}{%
2587     \nodexn{(\mdf@P)-(\mdf@innerlinewidth@length,0)
2588             -0.5(\mdf@middlelinewidth@length,0)}{mdf@P}%
2589     }{}%
2590 \ifbool{mdf@topline}{%
2591     \nodexn{(\mdf@P)-(0,\mdf@innerlinewidth@length)
2592             -0.5(0,\mdf@middlelinewidth@length)}{mdf@P}%
2593     }{}%
2594 \ifdimgreater{\mdfboundingboxheight}{\mdfframetitleboxtotalheight}
2595     {\nodexn{(\mdf@P)-(0,\mdfframetitleboxtotalheight)}{mdf@F}}%
2596     {\nodexn{(\mdf@0)}{mdf@F}}%
2597 \psline[style=mdfframetitlebackgroundstyle](mdf@0|mdf@F)(mdf@0|mdf@P)
2598         (mdf@P)(mdf@P|mdf@F)%
2599 \endgroup
2600 }

```

\mdf@putbox@middle

Middle output

```

2601 \def\mdf@putbox@middle{%
2602 \ifvoid\mdf@splitbox@two
2603 \else%
2604 \mdf@makebox@out{%
2605 \mdf@makeboxalign@left%
2606 % \ifbool{mdf@leftline}{\hspace*{\mdf@middlelinewidth@length}}{}%
2607 \setlength\mdfboundingboxwidth{\wd\mdf@splitbox@two}%
2608 \advance\mdfboundingboxwidth by \mdf@innerleftmargin@length\relax%
2609 \advance\mdfboundingboxwidth by \mdf@innerrightmargin@length\relax%
2610 \ifbool{mdf@leftline}{%
2611 \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
2612 \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
2613 \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}}{}%
2614 \ifbool{mdf@rightline}{%
2615 \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
2616 \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
2617 \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}}{}%
2618 \setlength\mdfboundingboxheight{\dimexpr\ht\mdf@splitbox@two+\dp\mdf@splitbox@two\relax}%
2619 \advance\mdfboundingboxheight by \mdf@splitbottomskip@length\relax%
2620 \psset{unit=1truecm}%
2621 \mdf@makebox@in[\mdfboundingboxwidth]{%

```

```

2622 \null%
2623 \ifdimgreater{\mdfboundingboxheight}{\vsize}
2624 {\begin{pspicture}(0,0)(\mdfboundingboxwidth,\vsize)}
2625 {\begin{pspicture}(0,0)(\mdfboundingboxwidth,\mdfboundingboxheight)}
2626 \mdfpstricks@settings%
2627 \psset{lineararc=0pt, cornersize=absolut,}%
2628 \expandafter\psset\expandafter{\mdf@psset@local}%
2629 %%%
2630 \pnode(\mdf@innerleftmargin@length,\mdf@splitbottomskip@length){mdf@A}
2631 \pnode(0,0){mdf@0}
2632 \pnode(\mdfboundingboxwidth,\mdfboundingboxheight){mdf@P}
2633 \ifbool{mdf@leftline}%
2634 {%
2635 \nodexn{(mdf@A)+(\mdf@outerlinewidth@length,0)
2636 +(\mdf@middlelinewidth@length,0)
2637 +(\mdf@innerlinewidth@length,0)}{mdf@A}
2638 \nodexn{(mdf@0)+(\mdf@outerlinewidth@length,0)
2639 +0.5(\mdf@middlelinewidth@length,0)}{mdf@0}
2640 }{}%
2641 \ifbool{mdf@rightline}%
2642 {%
2643 \nodexn{(mdf@P)-(\mdf@outerlinewidth@length,0)
2644 -0.5(\mdf@middlelinewidth@length,0)}{mdf@P}
2645 }{}%
2646 %%
2647 \ifboolexpr{bool {mdf@leftline} and bool {mdf@rightline}}%
2648 {\mdf@pstricksbox@tncl{(mdf@0|mdf@P)}{(mdf@P|mdf@0)}}{}%
2649 \ifboolexpr{bool {mdf@leftline} and not (bool {mdf@rightline})}%
2650 {\mdf@pstricksbox@ol{(mdf@0)(mdf@0|mdf@P)}}{}%
2651 \ifboolexpr{not (bool {mdf@leftline}) and bool {mdf@rightline}}%
2652 {\mdf@pstricksbox@ol{(mdf@P)(mdf@P|mdf@0)}}{}%
2653 \ifboolexpr{not (bool {mdf@leftline}) and not (bool {mdf@rightline})}%
2654 {\psframe[style=mdfbackgroundstyle](mdf@0)(mdf@P)}}{}%
2655 %Frametitlebackground
2656 \drawbackgroundframetitle@middle
2657 %output%
2658 \rput[bl](mdf@A){\box\mdf@splitbox@two}
2659 % \psdot(mdf@A)\uput[90](mdf@A){mdf at A}
2660 % \psdot(mdf@P)\uput[90](mdf@P){mdf at P}
2661 % \psdot(mdf@0)\uput[90](mdf@0){mdf at 0}
2662 \end{pspicture}%
2663 }%
2664 \mdf@makeboxalign@right%
2665 }%
2666 \fi
2667 }%
2668 \def\drawbackgroundframetitle@middle{%
2669 \ifdefempty{\mdf@frametitle}}{}{%
2670 \ifdimless{\mdfframetitleboxtotalheight}{\z@}
2671 {}{}%
2672 \drawbackgroundframetitle@@middle
2673 \global\mdfframetitleboxtotalheight=-\p@relax%
2674 }%
2675 }%
2676 }%
2677 \def\drawbackgroundframetitle@@middle{%

```

```

2678 \beginingroup%
2679 \ifbool{mdf@leftline}{%
2680     \nodexn{(mdf@0)+(\mdf@innerlinewidth@length,0)
2681             +0.5(\mdf@middlelinewidth@length,0)}{mdf@0}%
2682 }{}%
2683 \ifbool{mdf@rightline}{%
2684     \nodexn{(mdf@P)-(\mdf@innerlinewidth@length,0)
2685             -0.5(\mdf@middlelinewidth@length,0)}{mdf@P}%
2686 }{}%
2687 \nodexn{(mdf@P)-(0,\mdfframetitleboxtotalheight)}{mdf@F}%
2688 \psline[style=mdfframetitlebackgroundstyle,linearc=\z@](mdf@0|mdf@F)(mdf@0|mdf@P)
2689                                     (mdf@P)(mdf@P|mdf@F)%
2690 \endgroup
2691 }

```

`\mdf@putbox@second`

Last output

```

2692 \def\mdf@putbox@second{
2693   \ifvoid\mdf@splitbox@one
2694   \else%
2695     \mdf@makebox@out{%
2696       \mdf@makeboxalign@left%
2697     %   \ifbool{mdf@leftline}{\hspace*{\mdf@middlelinewidth@length}}{}%
2698     \setlength\mdfboundingboxwidth{\wd\mdf@splitbox@one}%
2699     \advance\mdfboundingboxwidth by \mdf@innerleftmargin@length\relax%
2700     \advance\mdfboundingboxwidth by \mdf@innerrightmargin@length\relax%
2701     \ifbool{mdf@leftline}{%
2702       \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
2703       \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
2704       \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}{}%
2705     \ifbool{mdf@rightline}{%
2706       \advance\mdfboundingboxwidth by \mdf@innerlinewidth@length\relax%
2707       \advance\mdfboundingboxwidth by \mdf@middlelinewidth@length\relax%
2708       \advance\mdfboundingboxwidth by \mdf@outerlinewidth@length\relax}{}%
2709     \setlength\mdfboundingboxheight{\dimexpr\ht\mdf@splitbox@one+\dp\mdf@splitbox@one\relax}%
2710     \advance\mdfboundingboxheight by \mdf@innerbottommargin@length\relax%
2711     \ifbool{mdf@bottomline}{%
2712       \advance\mdfboundingboxheight by \mdf@innerlinewidth@length\relax%
2713       \advance\mdfboundingboxheight by \mdf@middlelinewidth@length\relax%
2714       \advance\mdfboundingboxheight by \mdf@outerlinewidth@length\relax}{}%
2715     \psset{unit=1truecm}%
2716     \mdf@makebox@in[\mdfboundingboxwidth]{%
2717       \null%
2718       \begin{pspicture}(0,0)(\mdfboundingboxwidth,\mdfboundingboxheight)
2719         \mdfpstricks@settings%
2720         \psset{linearc=\mdf@roundcorner@length,corner size=absolut,}%
2721         \expandafter\psset\expandafter{\mdf@psset@local}%
2722         \pnode(\mdf@innerleftmargin@length,\mdf@innerbottommargin@length){mdf@A}
2723         \pnode(0,0){mdf@0}
2724         \pnode(\mdfboundingboxwidth,\mdfboundingboxheight){mdf@P}
2725         \ifbool{mdf@leftline}{%
2726           {%
2727             \nodexn{(mdf@A)+(\mdf@outerlinewidth@length,0)
2728                     +(\mdf@middlelinewidth@length,0)

```

```

2729             +(\mdf@innerlinewidth@length,0)){mdf@A}
2730         \nodexn{(mdf@0)+(\mdf@outerlinewidth@length,0)
2731             +0.5(\mdf@middlelinewidth@length,0)){mdf@0}
2732     }{}%
2733     \ifbool{mdf@rightline}%
2734     {%
2735         \nodexn{(mdf@P)-(\mdf@outerlinewidth@length,0)
2736             -0.5(\mdf@middlelinewidth@length,0)){mdf@P}
2737     }{}%
2738     \ifbool{mdf@bottomline}%
2739     {%
2740         \nodexn{(mdf@A)+(0,\mdf@outerlinewidth@length)
2741             +(0,\mdf@middlelinewidth@length)
2742             +(0,\mdf@innerlinewidth@length)){mdf@A}
2743         \nodexn{(mdf@0)+(0,\mdf@outerlinewidth@length)
2744             +0.5(0,\mdf@middlelinewidth@length)){mdf@0}
2745     }{}%
2746     %Four + Three
2747     \ifboolexpr{test {\mdf@test@ltrb} or test {\mdf@test@lrb}}%
2748     {\mdf@pstricksbox@tl{(mdf@0|mdf@P)(mdf@0)(mdf@P|mdf@0)(mdf@P)}}{}%
2749     %Two combined
2750     \ifboolexpr{test {\mdf@test@ltb} or test {\mdf@test@lb}}%
2751     {\mdf@pstricksbox@tcl{(mdf@P|mdf@0)(mdf@P)(mdf@0|mdf@P)}%
2752         {(mdf@0|mdf@P)(mdf@0)(mdf@P|mdf@0)}}{}%
2753     \ifboolexpr{test {\mdf@test@trb} or test {\mdf@test@rb}}%
2754     {\mdf@pstricksbox@tcl{(mdf@P)(mdf@0|mdf@P)(mdf@0)}%
2755         {(mdf@0)(mdf@P|mdf@0)(mdf@P)}}{}%
2756     %Two not combined
2757     \ifboolexpr{test {\mdf@test@ltr} or test {\mdf@test@lr}}%
2758     {\mdf@pstricksbox@tncl{(mdf@0|mdf@P)}{(mdf@P|mdf@0)}}{}%
2759     %one line
2760     \ifboolexpr{test {\mdf@test@tb} or test {\mdf@test@b}}%
2761     {\mdf@pstricksbox@ol{(mdf@0)(mdf@P|mdf@0)}}{}%
2762     \ifboolexpr{test {\mdf@test@lt} or test {\mdf@test@l}}%
2763     {\mdf@pstricksbox@ol{(mdf@0)(mdf@0|mdf@P)}}{}%
2764     \ifboolexpr{test {\mdf@test@tr} or test {\mdf@test@r}}%
2765     {\mdf@pstricksbox@ol{(mdf@P)(mdf@P|mdf@0)}}{}%
2766     %no line
2767     \mdf@test@t{\psframe[style=mdfbackgroundstyle](mdf@0)(mdf@P)}{}%
2768     \mdf@test@noline{\psframe[style=mdfbackgroundstyle](mdf@0)(mdf@P)}{}%
2769     %Frametitlebackground
2770     \drawbackgroundframetitle@second
2771     %output%
2772     \rput[bl](mdf@A){\box\mdf@splitbox@one}
2773     % \psdot(mdf@A)\uput[90](mdf@A){mdf at A}
2774     % \psdot(mdf@P)\uput[90](mdf@P){mdf at P}
2775     % \psdot(mdf@0)\uput[90](mdf@0){mdf at 0}
2776     \end{pspicture}%
2777     }%
2778     \mdf@makeboxalign@right%
2779     }%
2780     \fi
2781     }%
2782     \def\drawbackgroundframetitle@second{%
2783     \ifdefempty{\mdf@frametitle}}{}%
2784     \ifdimless{\mdf@frametitleboxtotalheight}{\z@}

```

```

2785  {}{%
2786    \drawbackgroundframetitle@@second
2787  }%
2788 }%
2789 }%
2790 \def\drawbackgroundframetitle@@second{%
2791   \begingroup%
2792   \ifbool{mdf@leftline}{%
2793     \nodexn{(mdf@0)+(\mdf@innerlinewidth@length,0)
2794             +0.5(\mdf@middlelinewidth@length,0)}{mdf@0}%
2795     }{}%
2796   \ifbool{mdf@rightline}{%
2797     \nodexn{(mdf@P)-(\mdf@innerlinewidth@length,0)
2798             -0.5(\mdf@middlelinewidth@length,0)}{mdf@P}%
2799     }{}%
2800   \nodexn{(mdf@P)-(0,\mdfframetitleboxtotalheight)}{mdf@F}%
2801   \psline[style=mdfframetitlebackgroundstyle,lineararc=\z@](mdf@0|mdf@F)(mdf@0|mdf@P)
2802                                     (mdf@P)(mdf@P|mdf@F)%
2803   \endgroup
2804 }

2805 \endinput
2806 %eof

```

C. The file *mdframed-example-default*

```

2807 %Documentation of the package mdframed
2808 %$Id: mdframed.dtx 338 2012-02-04 11:21:42Z marco $
2809 \setcounter{errorcontextlines}{999}
2810 \documentclass[parskip=false,english,11pt]{ltxmdf}
2811 \ltxmdfsetifoot $Id: mdframed.dtx 338 2012-02-04 11:21:42Z marco $
2812
2813 \usepackage{showexpl}
2814 \lstset{style=lstltxmdf,explpreset={pos=b,rframe={}}},
2815
2816 \newcommand\Loadedframemethod{default}
2817 \usepackage[framemethod=\Loadedframemethod]{mdframed}
2818
2819 \title{The \Pack{mdframed} package}
2820 \subtitle{Examples for \Opt{framemethod=\Loadedframemethod}}
2821 \author{\href{mailto:marco.daniel@mada-nada.de}{Marco Daniel}}
2822 \date{\mdfdateID$Id: mdframed.dtx 338 2012-02-04 11:21:42Z marco $}
2823 \version{\mdversion}
2824 \introduction{In this document I collect various examples for \Opt{framemethod=\Loadedframemethod}.
2825 Some presented examples are more or less exorbitant.}
2826
2827 \mdfsetup{skipabove=\topskip,skipbelow=\topskip}
2828 \newrobustcmd\ExampleText{%
2829   An \textit{inhomogeneous linear} differential equation has the form
2830   \begin{align}
2831     L[v] &= f,
2832   \end{align}
2833   where  $L$  is a linear differential operator,  $v$  is
2834   the dependent variable, and  $f$  is a given non-zero
2835   function of the independent variables alone.

```

```

2836 }
2837
2838 \newcounter{examplecount}
2839 \setcounter{examplecount}{0}
2840 \renewcommand\thesubsection{}
2841 \newcommand\Examplesec[1]{%
2842 \stepcounter{examplecount}%
2843 \subsection{Example~\arabic{examplecount}~---#1\relax}%
2844 }
2845
2846 \begin{document}
2847 \maketitle
2848 \section{Loading}
2849 In the preamble only the package \Pack{mdframed} with the option \Opt{framemethod=\Loadedframemethod}
2850
2851 {\large\color{red!50!black}
2852 \NOTE Every \Cmd{global} inside the examples is necessary to work with the package \Pack{showexpl}.}
2853
2854 \section{Examples}
2855 All examples have the following settings:
2856
2857 \begin{tltxmdfexample}
2858 \mdfsetup{skipabove=\topskip,skipbelow=\topskip}
2859 \newrobustcmd\ExampleText{%
2860 An \textit{inhomogeneous linear} differential equation
2861 has the form
2862 \begin{align}
2863 L[v] = f,
2864 \end{align}
2865 where  $L$  is a linear differential operator,  $v$  is
2866 the dependent variable, and  $f$  is a given non-zero
2867 function of the independent variables alone.
2868 }
2869 \end{tltxmdfexample}
2870 \clearpage
2871 \Examplesec{very simple}
2872 \begin{LTxexample}
2873 \global\mdfdefinestyle{exampledefault}{%
2874     linecolor=red,linewidth=3pt,%
2875     leftmargin=1cm,rightmargin=1cm
2876 }
2877 \begin{mdframed}[style=exampledefault]
2878 \ExampleText
2879 \end{mdframed}
2880 \end{LTxexample}
2881
2882 \Examplesec{hidden line + frame title}
2883 \begin{LTxexample}
2884 \global\mdfapptodefinestyle{exampledefault}{%
2885     topline=false,rightline=true,bottomline=false}
2886 \begin{mdframed}[style=exampledefault,frametitle={Inhomogeneous linear}]
2887 \ExampleText
2888 \end{mdframed}
2889 \end{LTxexample}
2890 \clearpage
2891

```



```

2892 \Examplesec{colored frame title}
2893 \begin{LTExample}
2894
2895 \global\mdfapptodefinestyle{exampledefault}{%
2896     rightline=true,innerleftmargin=10,innerrightmargin=10,
2897     frametitle=rule=true,frametitlecolor=green,
2898     frametitlebackgroundcolor=yellow,
2899     frametitlewidth=2pt}
2900 \begin{mdframed}[style=exampledefault,frametitle={Inhomogeneous linear}]
2901 \ExampleText
2902 \end{mdframed}
2903 \end{LTExample}
2904
2905 \Examplesec{framed picture which is centered}
2906 \begin{LTExample}
2907 \begin{mdframed}[userdefinedwidth=6cm,align=center,
2908     linecolor=blue,linewidth=4pt]
2909 \includegraphics[width=\linewidth]{donald-duck}
2910 \end{mdframed}
2911 \end{LTExample}
2912
2913 \clearpage
2914 \Examplesec{Theorem environments}
2915 \begin{LTExample}
2916 \mdfdefinestyle{theoremstyle}{%
2917     linecolor=red,linewidth=2pt,%
2918     frametitle=rule=true,%
2919     frametitlebackgroundcolor=gray!20,
2920     innertopmargin=\topskip,
2921 }
2922 \mdtheorem[style=theoremstyle]{definition}{Definition}
2923 \begin{definition}
2924 \ExampleText
2925 \end{definition}
2926 \begin{definition}[Inhomogeneous linear]
2927 \ExampleText
2928 \end{definition}
2929 \begin{definition*}[Inhomogeneous linear]
2930 \ExampleText
2931 \end{definition*}
2932 \end{LTExample}
2933
2934
2935 \clearpage
2936 \Examplesec{theorem with separate header and the help of TikZ (complex)}
2937 \begin{LTExample}
2938 \newcounter{theo}[section]
2939 \newenvironment{theo}[1][1]{%
2940     \stepcounter{theo}%
2941     \ifstrepty{#1}%
2942     {\mdfsetup{%
2943         frametitle={%
2944             \tikz[baseline=(current bounding box.east),outer sep=0pt]
2945             \node[anchor=east,rectangle,fill=blue!20]
2946             {\strut Theorem~\thetheo};}}
2947     }%

```



```

2948 {\mdfsetup{%
2949   frametitle={%
2950     \tikz[baseline=(current bounding box.east),outer sep=0pt]
2951     \node[anchor=east,rectangle,fill=blue!20]
2952     {\strut Theorem~\thetheo:~\#1};}%
2953   }%
2954   \mdfsetup{innertopmargin=10pt,linecolor=blue!20,%
2955     linewidth=2pt,topline=true,
2956     frametitleaboveskip=\dimexpr-\ht\strutbox\relax,}
2957   \begin{mdframed}[]\relax%
2958   }\end{mdframed}}
2959 \begin{theo}[Inhomogeneous Linear]
2960 \ExampleText
2961 \end{theo}
2962
2963 \begin{theo}
2964 \ExampleText
2965 \end{theo}
2966 \end{LTXexample}
2967
2968 \clearpage
2969 \Examplesec{hide only a part of a line}
2970 The example below is inspired by the following post on StackExchange \href{http://tex.stackexchange.com}
2971 \begin{LTXexample}
2972 \makeatletter
2973 \newlength{\interruptlength}
2974 \setlength{\interruptlength}{2.5ex}
2975 \newrobustcmd\overlaplines{%
2976   \appto\mdf@frame@leftline@single{%
2977     \llap{\color{white}%
2978       \rule[\dimexpr-\mdfboundingboxdepth+\interruptlength\relax]{%
2979         {\mdf@middlelinewidth@length}%
2980         {\dimexpr\mdfboundingboxtotalheight%
2981           \ifbool{mdf@topline}{+\mdf@middlelinewidth@length}{}}
2982         -2\interruptlength\relax}%
2983     }%
2984   }%
2985   \appto\mdf@frame@rightline@single{%
2986     \rlap{\color{white}%
2987       \hspace*{\mdfboundingboxwidth}%
2988       \hspace*{\mdf@innerrightmargin@length}%
2989       \rule[\dimexpr-\mdfboundingboxdepth%
2990         +\interruptlength\relax]{%
2991         {\mdf@middlelinewidth@length}%
2992         {\dimexpr\mdfboundingboxtotalheight%
2993           +\ifbool{mdf@topline}{\mdf@middlelinewidth@length}{0pt}}
2994         -2\interruptlength\relax}%
2995     }%
2996   }%
2997 }
2998 \makeatother
2999 \overlaplines
3000
3001 \begin{mdframed}[linecolor=blue,linewidth=8pt]
3002 \ExampleText
3003 \end{mdframed}

```

```

3004 \end{LTXexample}
3005 \end{document}
3006 \endinput

```

D. The file mdframed-example-tikz

```

3007 %Documenation of the package mdframed
3008 %$Id: mdframed.dtx 338 2012-02-04 11:21:42Z marco $
3009 \setcounter{errorcontextlines}{999}
3010 \documentclass[parskip=false,english,11pt]{ltxmdf}
3011 \ltxmdfsetifoot $Id: mdframed.dtx 338 2012-02-04 11:21:42Z marco $
3012
3013
3014 \usepackage{showexpl}
3015 \lstset{style=lstltxmdf,explpreset={pos=b,rframe={}},}
3016
3017 \newcommand\Loadedframemethod{TikZ}
3018 \usepackage[framemethod=\Loadedframemethod]{mdframed}
3019
3020 \title{The \Pack{mdframed} package}
3021 \subtitle{Examples for \Opt{framemethod=\Loadedframemethod}}
3022 \author{\href{mailto:marco.daniel@mada-nada.de}{Marco Daniel}}
3023 \date{\mdfdateID$Id: mdframed.dtx 338 2012-02-04 11:21:42Z marco $}
3024 \version{\mdversion}
3025 \introduction{In this document I collect various examples for \Opt{framemethod=\Loadedframemethod}.
3026 Some presented examples are more or less exorbitant.}
3027
3028 \mdfsetup{skipabove=\topskip,skipbelow=\topskip}
3029 \newrobustcmd\ExampleText{%
3030     An \textit{inhomogeneous linear} differential equation has the form
3031     \begin{align}
3032         L[v] &= f,
3033     \end{align}
3034     where  $L$  is a linear differential operator,  $v$  is
3035     the dependent variable, and  $f$  is a given non-zero
3036     function of the independent variables alone.
3037 }
3038
3039 \newcounter{examplecount}
3040 \setcounter{examplecount}{0}
3041 \renewcommand\thesubsection{}
3042 \newcommand\Examplesec[1]{%
3043 \stepcounter{examplecount}%
3044 \subsection{Example~\arabic{examplecount}~---~\relax}%
3045 }
3046
3047 \begin{document}
3048 \maketitle
3049 \section{Loading}
3050 In the preamble only the package \Pack{mdframed} width the option \Opt{framemethod=\Loadedframemethod}
3051
3052 {\large\color{red!50!black}
3053 \NOTE Every \Cmd{global} inside the examples is necessary to work with the package \Pack{showexpl}.}
3054
3055 \section{Examples}
3056 All examples have the following settings:

```

```

3057
3058 \begin{tltxmdfexample}
3059 \mdfsetup{skipabove=\topskip,skipbelow=\topskip}
3060 \newrobustcmd\ExampleText{%
3061 An \textit{inhomogeneous linear} differential equation
3062 has the form
3063 \begin{align}
3064 L[v] = f,
3065 \end{align}
3066 where  $L$  is a linear differential operator,  $v$  is
3067 the dependent variable, and  $f$  is a given non-zero
3068 function of the independent variables alone.
3069 }
3070 \end{tltxmdfexample}
3071 \clearpage
3072 \ExampleText{round corner}
3073 \begin{LTXexample}
3074 \global\mdfdefinestyle{exampledefault}{%
3075     outerlinewidth=5pt,innerlinewidth=0pt,
3076     outerlinecolor=red,roundcorner=5pt
3077 }
3078 \begin{mdframed}[style=exampledefault]
3079 \ExampleText
3080 \end{mdframed}
3081 \end{LTXexample}
3082
3083 \Examplesec{hidden line + frame title}
3084 \begin{LTXexample}
3085 \global\mdfapptodefinestyle{exampledefault}{%
3086     topline=false,leftline=false,}
3087 \begin{mdframed}[style=exampledefault,frametitle={Inhomogeneous linear}]
3088 \ExampleText
3089 \end{mdframed}
3090 \end{LTXexample}
3091 \clearpage
3092 \Examplesec{framed picture which is centered}
3093 \begin{LTXexample}
3094 \begin{mdframed}[userdefinedwidth=6cm,align=center,
3095     linecolor=blue,middlelinewidth=4pt,roundcorner=5pt]
3096 \includegraphics[width=\linewidth]{donald-duck}
3097 \end{mdframed}
3098 \end{LTXexample}
3099
3100 \Examplesec{Gimmick}
3101 \begin{LTXexample}
3102 \mdfsetup{splitbottomskip=0.8cm,splittopskip=0cm,
3103     innerrightmargin=2cm,innertopmargin=1cm,%
3104     innerlinewidth=2pt,outerlinewidth=2pt,
3105     middlelinewidth=10pt,backgroundcolor=red,
3106     linecolor=blue,middlelinecolor=gray,
3107     tikzsetting={draw=yellow,line width=3pt,%
3108         dashed,%
3109         dash pattern= on 10pt off 3pt},
3110     rightline=false,bottomline=false}
3111 \begin{mdframed}
3112 \ExampleText

```

```

3113 \end{mdframed}
3114 \end{LTXexample}
3115
3116 \Examplesec{complex example with TikZ}
3117
3118 \begin{tltxmdfexample}
3119 \tikzstyle{titregris} =
3120     [draw=gray, thick, fill=white, shading = exersicetitle, %
3121     text=gray, rectangle, rounded corners,
3122     right,minimum height=.7cm]
3123
3124 \pgfdeclarehorizontalshading{exersicebackground}{100bp}
3125 {color(0bp)=(green!40);
3126 color(100bp)=(black!5)}
3127
3128 \pgfdeclarehorizontalshading{exersicetitle}{100bp}
3129 {color(0bp)=(red!40);
3130 color(100bp)=(black!5)}
3131
3132 \newcounter{exercise}
3133 \renewcommand\theexercise{Exercise~\n\arabic{exercise}}
3134 \makeatletter
3135 \def\mdf@@exercisepoints{}
3136 \define@key{mdf}{exercisepoints}{%
3137     \def\mdf@@exercisepoints{#1}
3138 }
3139 \renewrobustcmd\mdfcreateextratikz{%
3140     \node[titregris,xshift=1cm] at (P-|0) %
3141     {~\mdf@frametitlefont{\theexercise}~};
3142     \ifdefempty{\mdf@@exercisepoints}%
3143     {}%
3144     {\node[titregris,left,xshift=-1cm] at (P)%
3145     {~\mdf@frametitlefont{\mdf@@exercisepoints points}~};}%
3146 }
3147 \makeatother
3148
3149 \mdfdefinestyle{exercisestyle}{%
3150     outerlinewidth=1pt,
3151     innerlinewidth=0pt,
3152     roundcorner=2pt,
3153     linecolor=gray,
3154     tikzsetting={shading = exersicebackground},
3155     innertopmargin=1.2\baselineskip,
3156     skipabove={\dimexpr0.5\baselineskip+\topskip\relax},
3157     needspace=3\baselineskip,
3158     frametitlefont=\sffamily\bfseries,
3159     settings={\global\stepcounter{exercise}},
3160 }
3161
3162 \begin{mdframed}[style=exercisestyle,]
3163 \ExampleText
3164 \end{mdframed}
3165
3166 \begin{mdframed}[style=exercisestyle,exercisepoints=10]
3167 \ExampleText
3168 \end{mdframed}

```

```

3169 \end{tltxmdfexample}
3170
3171 \tikzstyle{titregris} =
3172     [draw=gray, thick, fill=white, shading = exersicetitle, %
3173     text=gray, rectangle, rounded corners,
3174     right,minimum height=.7cm]
3175
3176 \pgfdeclarehorizontalshading{exersicebackground}{100bp}
3177 {color(0bp)=(green!40);
3178 color(100bp)=(black!5)}
3179
3180 \pgfdeclarehorizontalshading{exersicetitle}{100bp}
3181 {color(0bp)=(red!40);
3182 color(100bp)=(black!5)}
3183
3184 \newcounter{exercise}
3185 \renewcommand\theexercise{Exercise~\n\arabic{exercise}}
3186 \makeatletter
3187 \def\mdf@@exercisepoints{}
3188 \define@key{mdf}{exercisepoints}{%
3189     \def\mdf@@exercisepoints{#1}
3190 }
3191 \newrobustcmd\mdfcreateextratikzlocal{%
3192     \node[titregris,xshift=1cm] at (P-|0) {\textbf{\theexercise}~};
3193     \ifdefempty{\mdf@@exercisepoints}%
3194     {}%
3195     {\node[titregris,left,xshift=-1cm] at (P)%
3196         {\mdf@frametitlefont{\mdf@@exercisepoints points}~};}%
3197 }
3198 \makeatother
3199
3200 \mdfdefinestyle{exercisestyle}{%
3201     outerlinewidth=1pt,
3202     innerlinewidth=0pt,
3203     roundcorner=2pt,
3204     linecolor=gray,
3205     tikzsetting={shading = exersicebackground},
3206     innertopmargin=1.2\baselineskip,
3207     skipabove={\dimexpr0.5\baselineskip+\topskip\relax},
3208     needspace=3\baselineskip,
3209     frametitlefont=\sffamily\bfseries,
3210     settings={\global\stepcounter{exercise}\let\mdfcreateextratikz\mdfcreateextratikzlocal},
3211 }
3212
3213 \begin{mdframed}[style=exercisestyle,]
3214 \ExampleText
3215 \end{mdframed}
3216
3217 \begin{mdframed}[style=exercisestyle,exercisepoints=10]
3218 \ExampleText
3219 \end{mdframed}
3220
3221 \clearpage
3222 \Examplesec{Theorem environments}
3223 \begin{LTXexample}
3224 \mdfdefinestyle{theoremstyle}{%

```

```

3225     linecolor=red,linewidth=2pt,%
3226     frametitleule=true,%
3227     apptotikzsetting={\tikzset{mdfframetitlebackground/.append style={%
3228         shade,left color=white, right color=blue!20}}},
3229     frametitleulecolor=green!60,
3230     frametitleulewidth=1pt,
3231     innertopmargin=\topskip,
3232   }
3233 \mdtheorem[style=theoremstyle]{definition}{Definition}
3234 \begin{definition}[Inhomogeneous linear]
3235 \ExampleText
3236 \end{definition}
3237 \begin{definition*}[Inhomogeneous linear]
3238 \ExampleText
3239 \end{definition*}
3240 \end{LTXexample}
3241
3242 \end{document}
3243 \endinput

```

E. The file *mdframed-example-pstricks*

```

3244 %Documenation of the package mdframed
3245 %$Id: mdframed.dtx 338 2012-02-04 11:21:42Z marco $
3246 \setcounter{errorcontextlines}{999}
3247 \documentclass[parskip=false,english,11pt]{ltxmdf}
3248 \ltxmdfsetifoot$Id: mdframed.dtx 338 2012-02-04 11:21:42Z marco $
3249
3250 \lstDeleteShortInline{||}
3251 \newcommand\Loadedframemethod{PSTricks}
3252 \usepackage[framemethod=\Loadedframemethod]{mdframed}
3253
3254 \usepackage{showexpl}
3255 \lstset{style=lstltxmdf,explpreset={pos=b,rframe={}}},}
3256
3257 \title{The \Pack{mdframed} package}
3258 \subtitle{Examples for \Opt{framemethod=\Loadedframemethod}}
3259 \author{\href{mailto:marco.daniel@mada-nada.de}{Marco Daniel}}
3260 \date{\mdfdateID$Id: mdframed.dtx 338 2012-02-04 11:21:42Z marco $}
3261 \version{\mdversion}
3262 \introduction{In this document I collect various examples for \Opt{framemethod=\Loadedframemethod}.
3263 Some presented examples are more or less exorbitant.}
3264
3265 \mdfsetup{skipabove=\topskip,skipbelow=\topskip}
3266 \newrobustcmd\ExampleText{%
3267     An \textit{inhomogeneous linear} differential equation has the form
3268     \begin{align}
3269         L[v] &= f,
3270     \end{align}
3271     where  $L$  is a linear differential operator,  $v$  is
3272     the dependent variable, and  $f$  is a given non-zero
3273     function of the independent variables alone.
3274 }
3275
3276 \newcounter{examplecount}
3277 \setcounter{examplecount}{0}

```

```

3278 \renewcommand\thesubsection{}
3279 \newcommand\Examplesec[1]{%
3280 \stepcounter{examplecount}%
3281 \subsection{Example~\arabic{examplecount}~---~#1\relax}%
3282 }
3283
3284 \begin{document}
3285 \maketitle
3286 \section{Loading}
3287 In the preamble only the package \Pack{mdframed} with the option \Opt{framemethod=\Loadedframemethod}
3288
3289 {\large\color{red!50!black}
3290 \NOTE Every \Cmd{global} inside the examples is necessary to work with the package \Pack{showexpl}.}
3291 X
3292 \section{Examples}
3293 All examples have the following settings:
3294
3295 \begin{tltxmdfexample}
3296 \mdfsetup{skipabove=\topskip,skipbelow=\topskip}
3297 \newrobustcmd\ExampleText{%
3298 An \textit{inhomogeneous linear} differential equation
3299 has the form
3300 \begin{align}
3301 L[v] = f,
3302 \end{align}
3303 where  $L$  is a linear differential operator,  $v$  is
3304 the dependent variable, and  $f$  is a given non-zero
3305 function of the independent variables alone.
3306 }
3307 \end{tltxmdfexample}
3308 \clearpage
3309
3310 \Examplesec{very simple}
3311 \begin{LTExample}
3312 \global\mdfdefinestyle{exampledefault}{%
3313     linecolor=red,middlelinewidth=3pt,%
3314     leftmargin=1cm,rightmargin=1cm
3315 }
3316 \begin{mdframed}[style=exampledefault,roundcorner=5]
3317 \ExampleText
3318 \end{mdframed}
3319 \end{LTExample}
3320
3321 \Examplesec{hidden line + frame title}
3322 \begin{LTExample}
3323 \global\mdfapptodefinestyle{exampledefault}{%
3324     topline=false,rightline=false,bottomline=false,
3325     frametitlerule=true,innertopmargin=6pt,
3326     outerlinewidth=6pt,outerlinecolor=blue,
3327     pstricksappsetting={\addtopsstyle{mdfouterlinestyle}{linestyle=dashed}},
3328     innerlinecolor=yellow,innerlinewidth=5pt}%
3329 \begin{mdframed}[style=exampledefault,frametitle={Inhomogeneous linear}]
3330 \ExampleText
3331 \end{mdframed}
3332 \end{LTExample}
3333

```

```

3334 \clearpage
3335
3336 \Examplesec{Dash Lines}
3337 \begin{LTXexample}
3338 \global\mdfdefinestyle{exampledefault}{%
3339   pstrickssetting={linestyle=dashed,,linecolor=red,linewidth=5pt}
3340 \begin{mdframed}[style=exampledefault,]
3341 \ExampleText
3342 \end{mdframed}
3343 \end{LTXexample}
3344
3345 \Examplesec{Double Lines}
3346 \begin{LTXexample}
3347 \global\mdfdefinestyle{exampledefault}{%
3348   pstrickssetting={doubleline=true,doublesep=6pt},
3349   linecolor=red,linewidth=5pt,middlelinewidth=4pt}
3350 \begin{mdframed}[style=exampledefault,]
3351 \ExampleText
3352 \end{mdframed}
3353 \end{LTXexample}
3354 \end{document}
3355 \endinput

```

F. The file *mdframed-example-texsx*

```

3356 %Documenation of the package mdframed
3357 %$Id: mdframed.dtx 338 2012-02-04 11:21:42Z marco $
3358 \setcounter{errorcontextlines}{999}
3359 \documentclass[parskip=false,english,11pt,ltxlipsum]{ltxmdf}
3360 \ltxmdfsetifoot $Id: mdframed.dtx 338 2012-02-04 11:21:42Z marco $
3361
3362
3363 \usepackage{showexpl}
3364 \lstset{style=lstltxmdf,explpreset={pos=b,rframe={}}},}
3365
3366 \newcommand\Loadedframemethod{default}
3367 \usepackage[framemethod=\Loadedframemethod]{mdframed}
3368
3369 \title{The \Pack{mdframed} package}
3370 \subtitle{Examples for \Opt{framemethod=\Loadedframemethod}}
3371 \author{\href{mailto:marco.daniel@mada-nada.de}{Marco Daniel}}
3372 \date{\mdfdateID$Id: mdframed.dtx 338 2012-02-04 11:21:42Z marco $}
3373 \version{\mdversion}
3374 \introduction{In this document I collect various examples for \Opt{framemethod=\Loadedframemethod}.
3375 Some presented examples are more or less exorbitant.}
3376
3377 \mdfsetup{skipabove=\topskip,skipbelow=\topskip}
3378 \newrobustcmd\ExampleText{%
3379   An \textit{inhomogeneous linear} differential equation has the form
3380   \begin{align}
3381     L[v] &= f,
3382   \end{align}
3383   where  $L$  is a linear differential operator,  $v$  is
3384   the dependent variable, and  $f$  is a given non-zero
3385   function of the independent variables alone.
3386 }

```



```

3387
3388 \newcounter{examplecount}
3389 \setcounter{examplecount}{0}
3390 \renewcommand\thesubsection{}
3391 \newcommand\Examplesec[1]{%
3392 \stepcounter{examplecount}%
3393 \subsection{Example~\arabic{examplecount}~---~#1\relax}%
3394 }
3395
3396 \begin{document}
3397 \maketitle
3398 \section{Loading}
3399 In the preamble only the package \Pack{mdframed} with the option \Opt{framemethod=\Loadedframemethod}
3400
3401 {\large\color{red!50!black}
3402 \NOTE Every \Cmd{global} inside the examples is necessary to work with the package \Pack{showexpl}.}
3403
3404 \section{Examples}
3405 All examples have the following settings:
3406
3407 \begin{tltxmdfexample}
3408 \mdfsetup{skipabove=\topskip,skipbelow=\topskip}
3409 \newrobustcmd\ExampleText{%
3410 An \textit{inhomogeneous linear} differential equation
3411 has the form
3412 \begin{align}
3413 L[v] = f,
3414 \end{align}
3415 where  $L$  is a linear differential operator,  $v$  is
3416 the dependent variable, and  $f$  is a given non-zero
3417 function of the independent variables alone.
3418 }
3419 \end{tltxmdfexample}
3420 \clearpage
3421 \Examplesec{Package listings}
3422 The example below is inspired by the following post on StackExchange \href{http://tex.stackexchange.com}
3423
3424 Here the solution which can be decorate as usual.
3425
3426 \begin{tltxmdfexample}[moretexcs={BeforeBeginEnvironment,AfterEndEnvironment},morekeywords={lstlisting}]
3427 \BeforeBeginEnvironment{lstlisting}{%
3428 \begin{mdframed}[<modification>%
3429 \vspace{-0.7em}}
3430 \AfterEndEnvironment{lstlisting}{%
3431 \vspace{-0.5em}%
3432 \end{mdframed}}
3433 \end{tltxmdfexample}
3434
3435 With the new command \Cmd{surroundwithmdframed} you can use
3436 \begin{tltxmdfexample}[moretexcs={BeforeBeginEnvironment,AfterEndEnvironment},morekeywords={lstlisting}]
3437 \surroundwithmdframed{listings}
3438 \end{tltxmdfexample}
3439
3440 \Examplesec{Package multicol}
3441 How I wrote in \enquote{Known Problems} you can't combine \Pack{multicol} with \Pack{mdframed}. In a s
3442 \begin{LTXexample}

```

```

3443 \begin{multicols}{2}
3444 \lipsum[1]
3445 \begin{mdframed}
3446 \ExampleText
3447 \end{mdframed}
3448 \lipsum[2]
3449 \end{multicols}
3450 \end{LTXexample}
3451 \clearpage
3452 \twocolumn[\Examplesec{Working in twocolumn mode}]
3453 \begin{tltxmdfexample}
3454 \twocolumn[%
3455   \Examplesec{Working in
3456     twocolumn mode}]
3457 \lipsum[1]\lipsum[2]
3458 \begin{mdframed}[%
3459   leftmargin=10pt,%
3460   rightmargin=10pt,%
3461   linecolor=red,
3462   backgroundcolor=yellow]
3463 \ExampleText
3464 \end{mdframed}
3465 \lipsum[2]
3466 \end{tltxmdfexample}
3467 \lipsum[1]\lipsum[2]
3468 \begin{mdframed}[leftmargin=10pt,%
3469   rightmargin=10pt,%
3470   linecolor=red,
3471   backgroundcolor=yellow]
3472 \ExampleText
3473 \end{mdframed}
3474 \lipsum[2]
3475 \clearpage
3476 \onecolumn
3477 \Examplesec{Working inside enumerate}
3478 \begin{LTXexample}
3479 Text Text Text Text Text Text Text Text
3480 \begin{enumerate}
3481 \item in the following \ldots
3482   \begin{mdframed}[linecolor=blue,linewidth=2]
3483     \ExampleText
3484   \end{mdframed}
3485 \item \lipsum[2]
3486 \end{enumerate}
3487 Text Text Text Text Text Text
3488 \end{LTXexample}
3489 \end{document}
3490 \endinput

```

G. Change History

v1.0a		Removing <code>\@arrayparboxrestore</code>	37
General: Created dtx and fixes bugs	1	Renamed some commands so that every command have the same prefix <code>\mdf@</code> . . .	1
v1.0b			
General: added command <code>\@parboxrestore</code> to <code>\mdf@lrbox</code>	27		
removed <code>\setbox\mdf@splitbox@two</code> <code>\vbox\unvbox \mdf@splitbox@two</code> . . .	40		
v1.1beta			
General: added command to avoid overfull box warning by <code>vsplit</code>	28		
Added <code>frametitle</code> detection to <code>\detected@mdf@put@frame</code>	34		
added lost semicolons	53		
Added method frame title via <code>\savebox</code> .	31		
Added option <code>frametitlerulecolor</code> , <code>frametitlebackgroundcolor</code> , <code>font</code> . . .	23		
Added option <code>titleaboveskip</code> , <code>titlebelowskip</code> , <code>frametitlerulewidth</code>	22		
Added option <code>usetwoside</code>	23		
Changed the definition of <code>\mdf@trivlist</code>	35		
Create new <code>\savebox</code> and renamed <code>\@tempboxa</code>	26		
Defining <code>mdframed</code> with <code>\newenvironment</code>	35		
Joining all new definitions	26		
Redefinition of <code>\newmdtheoremenv</code> . – Now check of theorem definition.	29		
		v1.1release	
		General: Added <code>\mbox</code> to the definition. <code>\item\mbox\relax</code> – Need for <code>amsthm</code>	28
		changed definition of <code>\mdf@lrbox</code> (Thanks Lars Madsen)	27
		Changed the enddefinition of <code>mdframed</code> . Uses now <code>\@doendpe</code> instead of <code>\endparyenv</code>	35
		Edit algorithm to combine the saveboxes <code>\mdf@frametitlebox</code> and <code>\mdf@splitboxone</code> by the predefined set- tings: <code>\parskip\z@</code> , <code>\parindent\z@</code> and <code>\offinterlineskip</code>	31
		expand definition of <code>\mdf@lrbox</code> by <code>\mdf@restoreparams</code>	27
		v1.2a	
		General: take account of <code>\parskip</code> for the vertical calculation	37
		v1.3	
		General: Added option <code>shadow</code>	23
		Use now <code>\item\mbox\relax</code>	28

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\drawbackgroundframetitle@first	1800, 1928, 2549, 2562	
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