

**NAME**

**synctex** — Synchronize TeXnology help file

**DESCRIPTION**

Synchronize TeXnology help file (synctexs) are text files that help input/output synchronization during document preparation with the TeX typesetting system.

**BASICS**

The structure of this file should not be considered public, in the sense that no one should need to parse its contents, except the synctex command line utility, and the synctex\_parser library. Unless it is absolutely not avoidable, access to the contents of the synctex file should only be made through requests made to the synctex command line utility.

**STRUCTURE**

The element structure of a synctex file is a list of text line records as follows. ‘\*’, ‘+’, and ‘?’ have their usual EBNF meanings: ‘\*’ means zero or more, ‘+’ means one or more, and ‘?’ means zero or one (i.e., optional).

```
<SyncTeX> ::= ( The whole contents in 4 sections )
               <Preamble>
               <Content>
               <Postamble>
               <Post Scriptum>
```

Each section starts with the first occurrence of a sectioning line, and ends with the next section, if any. In the following definitions, we do not mention the section ending condition.

**The preamble**

```
<Preamble> ::=
    "SyncTeX Version:" <Version Number> <EOL>
    <Input Line>*
    "Magnification:" <TeX magnification> <EOL>
    "Unit:" <unit in scaled point> <EOL>
    "X Offset:" <horizontal offset in scaled point> <EOL>
    "Y Offset:" <vertical offset in scaled point> <EOL>
    <Input Line> ::= "Input:" <tag> ":" <File Name> <EOL>
```

**The content**

```

<Content> ::=
    <byte offset record>
    "Content:" <EOL>
    <sheet(1)>
    <Input Line>*
    <sheet(2)>
    <Input Line>*
    . . .
    <sheet(N)>
    <Input Line>*
<byte offset record> ::= "!" <byte offset> <end of record>
<sheet(n)> ::=
    <byte offset record>
    "{" <the integer n> <end of record>/
    <box content>*
    <byte offset record>
    "}" <the integer n> <end of record>

```

The <box content> describes what is inside a box. It is either a vertical or horizontal box, with some records related to glue, kern or math nodes.

```

<box content> ::=
    <vbox section>|<hbox section>
    |<void vbox record>|<void hbox record>
    |<current record>|<glue record>|<kern record>|<math
record>
<vbox section> ::=
    "[" <link> ":" <point> ":" <size> <end of record>
    <box content>*
    "]" <end of record>
<hbox section> ::=
    "(" <link> ":" <point> ":" <size> <end of record>
    <box content>*

```

)" <end of record>

Void boxes:

```
<void vbox record> ::= "v" <link> ":" <point> ":" <size> <end of record>
<void hbox record> ::= "h" <link> ":" <point> ":" <size> <end of record>
<size> ::= <Width> "," <Height> "," <Depth>
<Width> ::= <integer>
<Height> ::= <integer>
<Depth> ::= <integer>
<link> ::= <tag> "," <line> ( "," <column> )?
<line> ::= <integer>
<column> ::= <integer>
```

The forthcoming records are basic one liners.

```
<current record> ::= "x" <link> ":" <point> <end of record>
<kern record> ::= "k" <link> ":" <point> ":" <Width> <end of record>
<glue record> ::= "g" <link> ":" <point> <end of record>
<math record> ::= "$" <link> ":" <point> <end of record>
```

### The postamble

The postamble closes the file. If there is no postamble, it means that the typesetting process did not end correctly.

```
<Postamble> ::=
    <byte offset record>
    "Count:" <Number fo records> <EOL>
```

### The post scriptum

The post scriptum contains material possibly added by 3rd parties. It allows to append some transformation (shift and magnify). Typically, one applies a dvi to pdf filter with offset options and magnification, then he appends the same options to the syntex file, for example

```
syntex update -o foo.pdf -m 0.486 -x 9472573sp -y 13.3dd source.dvi
```

```
<Post Scriptum> ::=
    <byte offset record>
    "Post Scriptum:" <EOL>
    "Magnification:" <number> <EOL> ( Set additional magnification )
```

"X Offset:" <dimension> <EOL> ( Set horizontal offset )

"Y Offset:" <dimension> <EOL> ( Set vertical offset )

This second information will override the offset and magnification previously available in the preamble section. All the numbers are encoded using the decimal representation with "C" locale.

## USAGE

The <current record> is used to compute the visible size of hbox's. The byte offset is an implicit anchor to navigate the sync tex file from sheet to sheet.