



#### The manuals

Welcome to the suite of ConTEXt manuals. These manuals not only cover the macro package itself, but also the tools that come with it. In this suite you will also find manuals on how to use ConTFXt for processing xml. Fonts and MetaPost graphic are discussed in dedicated manuals. On the following pages, the main manuals are shown large, while their screen companions are shown in the bottom right corner of a page. Clicking on a picture brings you to the document at hand. Some manuals come in more than one language, in which case small pictures of the title pages are shown. The next pages show overviews of manuals that are specific for MkII and MkIV as well as obsolete manuals.

































































#### MkIV manuals

Here you will find the manuals that describe MkIV functionality and/or features not present in MkII.



















#### MkIV manuals

Here you will find the manuals that describe MkIV functionality and/or features not present in MkII.































#### MkII manuals

Although MkII and MkIV are rather compatible, there are some differences. Also, as MkII is frozen new features will only show up in MkIV.















#### Obsolete manuals

We keep some of the old manuals around for historic reasons. Some of what is described might still float around in the distribution but is likely replaced by more modern and hip variants.

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#### Getting started

Although meant for beginners, these manuals shows already a lot of what ConTEXt can do for you. They also demonstrate that TEX documents can be colorful and can contain lots of graphics.







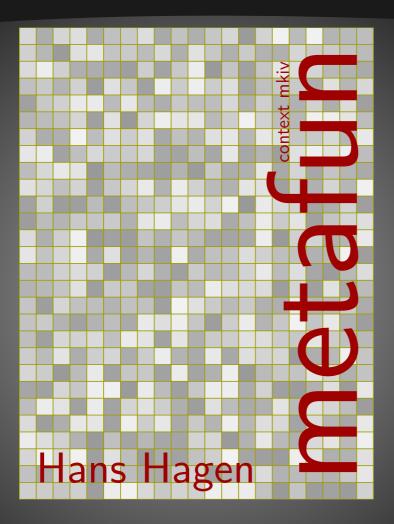




#### Read Me

It's in the name: you should read this file. Not so much because the content should bother you, but more because it gives you an idea about what we have in mind with making ConTEXt available for everyone. ConTEXt is completely free software, which does not mean that there are no restrictions on redistributing and changing the files. When you want to redistribute (changed) source code, please read this licence first.





#### MetaFun

If you like graphics, you may like MetaFun, a collection of MetaPost macros. The manual covers most of MetaPost, as well as the interface between this graphical environment and ConTEXt. There are numerous examples, that give you an impression about the power of this graphical system as well as the strength of the combination with  $T_{EX}$ .





#### The Manual

This is the big reference manual, the one that is supposed to cover the whole of ConTEXt. However, some more detailed aspects are covered in specialized manuals. This manual is written for MkII but a lot of it still applies to MkIV. Especially fonts, encodings and languages are different in MkIV. For most commands the user interface hasn't changed, so don't be fooled by the fact that this manual is old.

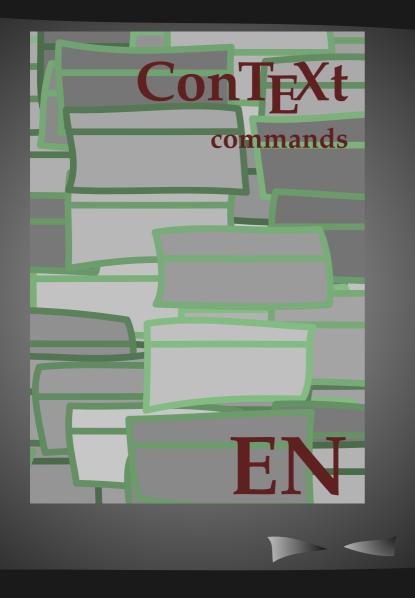












#### Quick References

This quick reference manual does not replace the other manuals, but advanced users can benefit from its compactness. The manual can be generated on the user's system, since the style and database that is needed is part of the distribution.



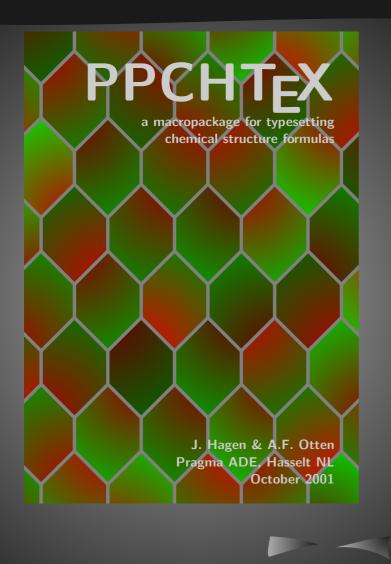












#### Chemistry

ppchTEX is a relatively independent macro package that can be used to typeset chemical formulas. These manuals show how it's done. There are also some faq's and a suite with many examples.











Chemical Formulas in ConT<sub>E</sub>Xt

Examples

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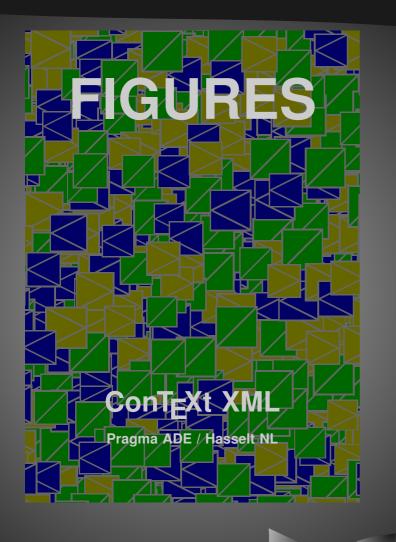
#### MathML

MathML is a way of coding math in the xml syntax. This manual not only covers both presentational and content MathML in detail, but also provides many examples and demonstrates ways to fine tune the typeset representation. In addition to the MathML examples documents we also provide some examples of OpenMath





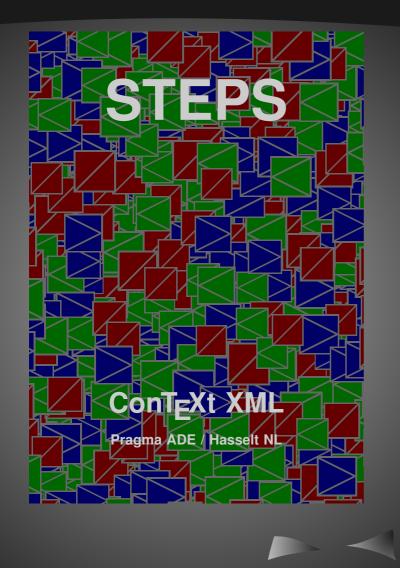




#### Figure Databases

Instead of moving hundreds of graphics around, you can package them in a database. ConTEXt not only has means to generate such databases, but also can filter the information needed from the corresponding xml files and include graphics by label. Figure bases make it easy to swap high and low resolution graphics.

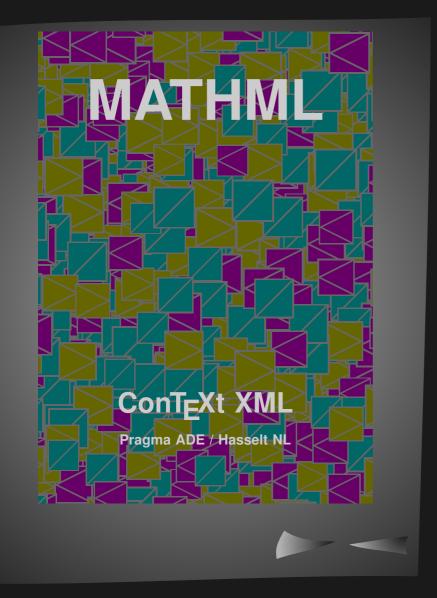




#### Stepcharts

Stepcharts are a specific kind of tabular charts. They are a combination of MetaPost graphics and  $T_E X$  code. There is a  $T_E X$  as well as xml implementation.

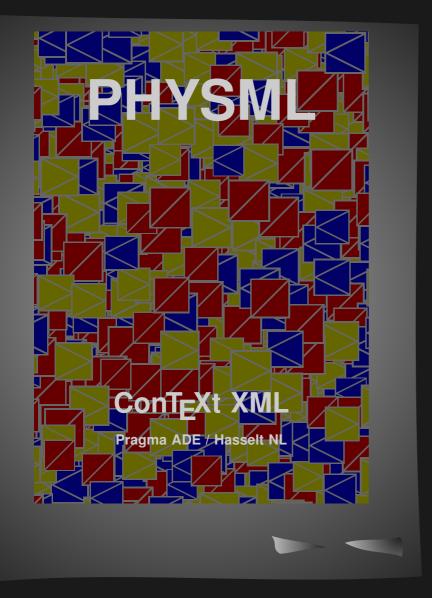




#### MathML support

This (short) manual explains how to invoke MathML support in  $ConT_EXt$ . It can be seen as an addendum to the MathML manual.

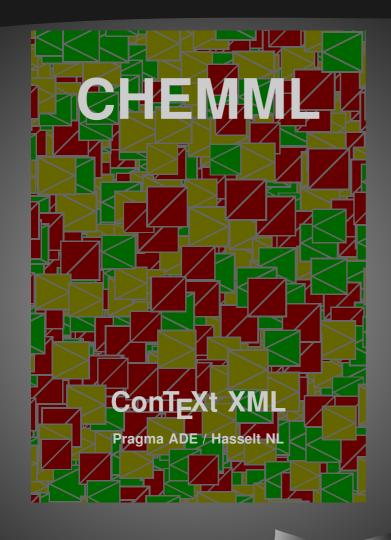




#### PhysML support

Support for physical units is build on top of the MathML engine. The method used is derived from the units module that comes with  $ConT_EXt.$ 





#### ChemML support

Chemical formulas have their own typographic needs. This module provides a way to code atoms, ions, molecules, and a sequence of reactions.





#### Widgets

Widgets are interative elements in (screen based) documents. This manual describes how to use the reference mechanism for advanced hyperlinking, but also discussed how to construct forms. Adding text annotations and page transitions is also discussed. This manual will be replaced by the manual on interaction.





#### Interaction

Producing interactive documents have always been an integral part of ConTEXt. This manual describes how to configure hyperlinks, comments, attachments, forms and also how to add navigational elements to a document designed for display.

# IT'S IN THE DETAILS

HANS HAGEN PRAGMA ADE HASSELT NL

#### It's in the details

This manual is meant for users who want to divert from the more or less traditional looking TEX documents. There is a strong focus on elements that determine the look and feel of a document, like graphics. (This manual is unfinished)



#### SciTE in ConTEXt

SciTE is an editor and these manuals describes how to configure it for use with Context and MetaFun. Beware, the mscite manuals are the old ones, still valid for traditional lexing, while the readme version descibes the latest greatest lexers.





#### xmldir

This manual describes how to access information about files on your system from within ConTEXt. The modules described here are accompanied by features in the TEXtools script. You can use the styles to generate overviews as well as access properties of files.



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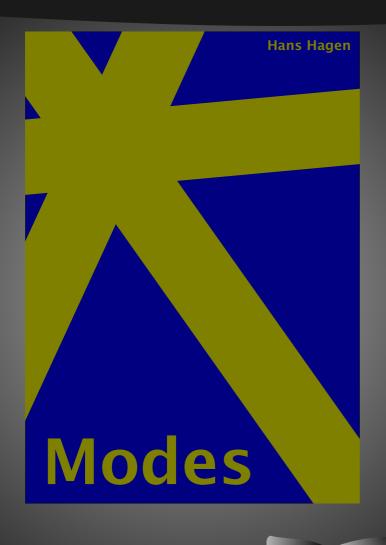
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Hans Hagen

Typographic Programming

#### Typographic Programming

Designing styles is a mixture of making the right decisions in setting up the layout, finding the right values for the parameters that determine the typographic quality of the paragraph and page, and writing programs that take care of constructing the special elements that make up the page. This document tries to provide some insight in these matters and will be completed when we have time or reason.



#### Modes

Modes are a convenient way to create styles that server multiple purposes. This manual describes how to enable modes and test for their state. The special system modes that ConTEXt sets itself are also explained.

### MKII

# CONTEXT

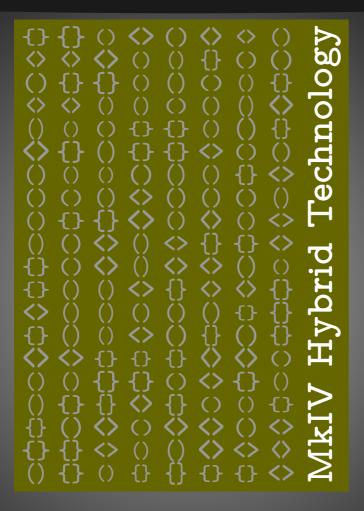
# CONTEXT

The history of luaT<sub>E</sub>X 2006–2009 / v 0.50

MKIV

### ConT<sub>E</sub>Xt MkII - MkIV, the history of LuaTeX

This document keeps track of the development history of both  $ConT_EXt$  (mkiv) as well as  $LuaT_EX$ . It is also one of our torture tests for both (rather related) systems.



#### MkIV hybrid technology

This document keeps track of the development history of both ConTEXt (mkiv) as well as LuaTEX from the moment we considered ourselves to be halfway in the project. Like the MK document it is also one of our torture tests. Many of the chapters of MK were first published as articles and the same is true for this document. So, the version published on the web lags behind as we don't want to compete with the user group journals.

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#### Libraries <u>in LuaTeX</u>

In LuaTEX we use the ffi interface to implement support for external (binary) libraries. In LuaMetaTEX we use so called optional libraries instead. This manual explains this in modre detail.

## ECMA SCRIPT

in context lmtx

using the optional mujs library

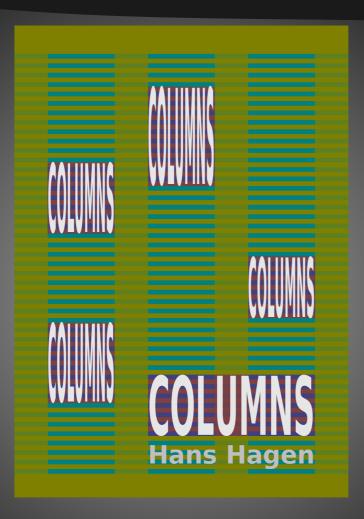
#### ECMASCRIPT in ConTeXt LMTX

It is possible to embed ecmascript (of which JavaScript is an example) in ConTEXt lmtx. The (external) library used is .

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#### SwigLib basics

The swiglib project provides a framework for using additional Lua libraries in LuaTeX. Although ConTeXt supports this, it will not depend on external libraries for typesetting.



#### Columnsets

Column sets can be used for quite complex but nice looking layouts. They are used for magazine like layouts and mix well with explicitly placed graphics. The MkIV version is a bit different from the MkII version but uses teh same principles.



#### Math

This a preliminary manual about some aspects of math typesetting. It is not a replacement for the Knuthian references.

Spacing in ConT <sub>E</sub> Xt
phacing in confere

#### Spacing

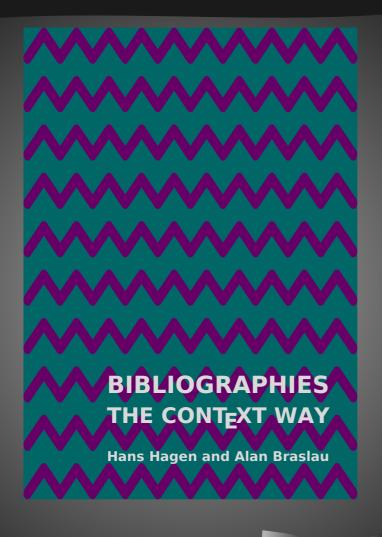
This a work-in-progress manual about aspects of spacing in ConT<sub>E</sub>Xt MkIV.



support in context

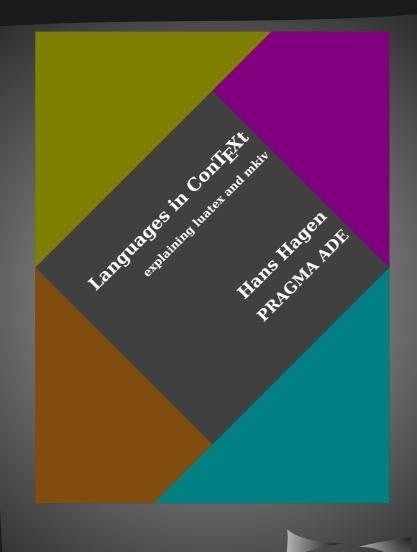
#### Workflows

The  $ConT_EXt$  ecosystem is of course centered around typesetting but in addition comes with all kind of tools and subsystems for managing the process. Here we collect some tips.



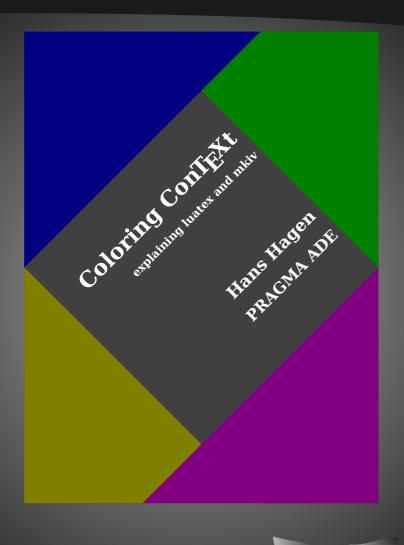
#### Publications

In ConT<sub>E</sub>Xt we support the bibT<sub>E</sub>X format for handling references. The subsystem for dealing is flexible enough to deal with many situations and is extensible as well. It does not depend on external tools and is driven by Lua on the one hand and ConT<sub>E</sub>Xt setups on the other



#### Languages

The ability to deal with many languages is an important property of TEX systems. Here we cover aspects like hyphenation and language dependent labels.



#### Colors

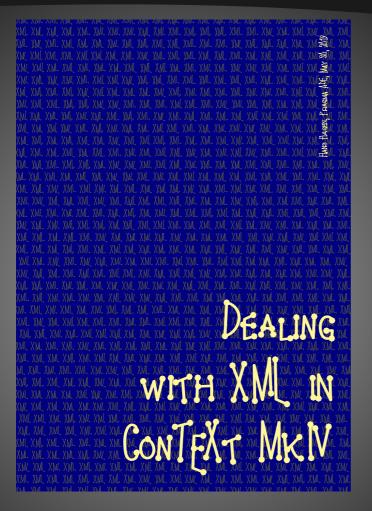
Color support is like fonts and languages a core mechanism. This manual is part of the more technical description of features like that.

hans hagen

# about luatex and context

#### About LuaT<sub>E</sub>X and Con-T<sub>E</sub>Xt

This is the third document in the series about the development of LuaTEX and MkIV. This one goes under the name 'about' as one might wonder what all this development is about. After all we've now reached a state where we can think about future applications instead of improving older features as that process is ongoing. As we're a bit beyond experimenting now, the focus will be on practical usage and of course we target on applications that the Lua and Texcombination makes possible, either new or in a renewed form.



#### Dealing with XML

This manual explains how to define styles for tree based processing of xml files. This variant showed up in MkIV. The manual also contains examples of filtering content.

### ConTEXt Lua Documents

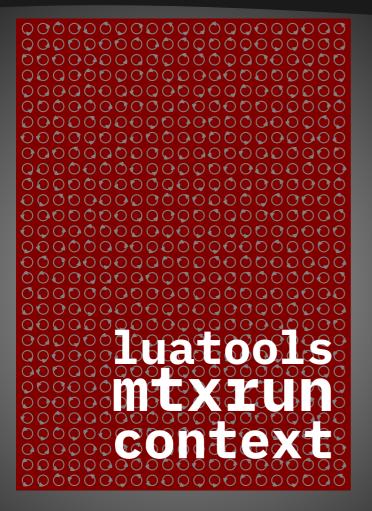
rgot දිඩුණ ද දෙන ඉහැරියා සි දිගින්න අදහස් දෙන දිරියා දිරිය සිසි ද ඉහැරි දිරියා විය ද දීර්ල් දිහර සිද්දී ද සිදු නොලද කර සි කොරුව උදුද්දී දිහා දිරිය සිදු ද ද ද ද නොවේ දිරියා විය ද

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#### ConTeXt Lua Documents

This manual describes how to generate documents (structure as well as content) using Lua exclusively. Of course you can also embed such code in your normal TEX documents but usign Lua has some advantages when you deal with for instance database output.





#### Luatools, Mtxrun & Context

Here we discuss the main tools on the Con-TEXt suite of programs. We focus on the luatools tree handler, the mtxrun script manager and the process management tool ConTEXt.



#### Extreme Tables

This is a short introduction to yet another table mechanism built in ConTEXt. It is a variant of the so called natural tables but it has a different configuration. These tables are faster to process and can span lots of pages.



#### What is ConTeXt

Occasionally I run into a description of Con-TEXt that contains observations that are somewhat off. This document provides some insight in why this macro package looks the way it looks. What started out as a TEX only system evolved via adding MetaPost to the current hybrid system that also uses Lua.

#### HANS HAGEN CONTEXT MKIV



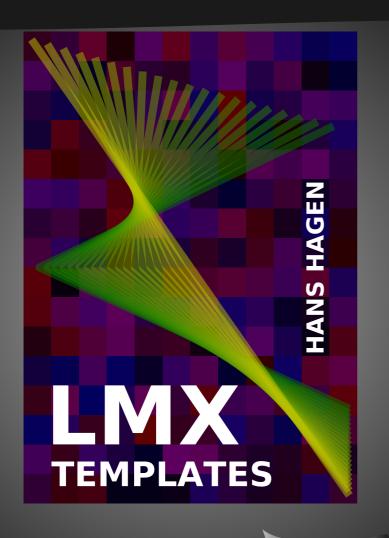
#### Units

As part of physics support the ConTeXt core provides a mechanism for typesetting units. This manual describes the basics as well as explains how additional units can be added and extra variants of the command can be configured. The manual also introduces the related digits mechanism. The built in support for units should not be confused with the older (incompatible but conceptually similar) units module.

```
\boldsymbol{\sigma}
ConTeXt MkIV
     Hans Hagen
    May 12, 2016
```

#### Simple Spreadsheets

This module provides an easy way to add calculations to a document in a tabular form. It is not a replacement for a decent spreadsheet program but fits well into regular document processing as done by ConTEXt.



#### LMX templates

Templates as described here can be used to construct ConT<sub>E</sub>Xt documents using a more programmatic approach. The method discussed wil stay but might get extended. This mechanism also introduces two new dialects: MkIX and MkXI.

# Lua

the context libraries

#### Lua libraries

This manual describes how to use generic Lua modules outside ConTEXt. The helper functions themselves are discussed in the cld manuals.



#### SQL in context

The ConTEXt infrastructure can be quite handy to process sql output. This manual describes how integrate mysql support into your styles. The libraries can also be used independent from ConTEXt but fit into the package.



#### Fonts out of context

In TEX and therefore in ConTEXt fonts play an important role. This document describes some of the characteristics of the MkIV font system. It is not a manual about using fonts, although some details can be found only here.







#### Math

This manual describes a few aspects of typesetting mathematics in  $ConT_EXt$  and will evolve over time.

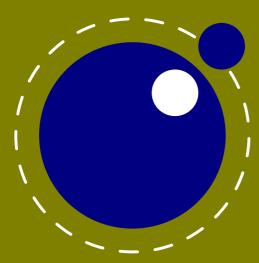
# <div/><div/><div/></div>

exporting xml and epub from context

#### Epub

The export option in ConTEXt can produce a basic set of xml and epub files that can be either used directly (using a css) or enhanced for usage otherwise. This manual gives an overview of the process.

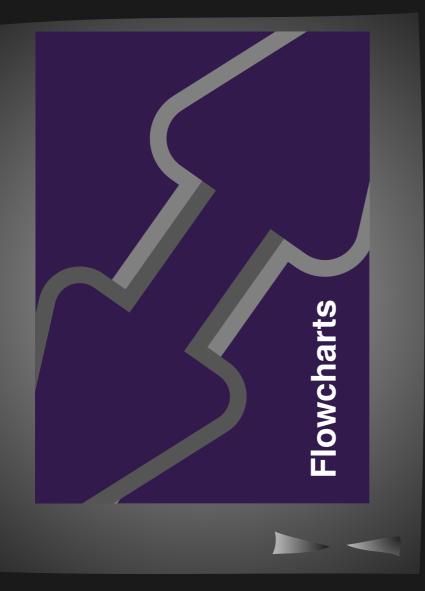
#### LuaT<sub>E</sub>X Reference Manual



stable December 2019 Version 1.10

#### LuaTeX

The MkIV version of ConT<sub>E</sub>Xt uses the LuaT<sub>E</sub>X engine. This engine is an ongoing development and happens in the scope of ConT<sub>E</sub>Xt development. This manual descibes the current version and is offered here for convenience.



#### Flowcharts

The flowchart module is an old one that has been around for a while. It got updated to MkIV and wil stay around.

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This is yet another document in the series about the development of LuaTEX and MkIV. This time we use the tag 'onandon' to indicate that we never seem to stop moving forwards. The content lags a bit behind in the sense that some chapters are first published in user group journals.

# ConTEXt lmtx O

#### Followingup

This is the fifth document in the series about the development of LuaTEX and MkIV, but here we focus on LuaMetaTEX instead. It is a relative small set of progress reports that describes the steps to get there. This engine is a follow up on LuaTEX, the engine that is used for the ConTEXt version tagged as Imtx. While the functionality of its ancestor is more or less set in stone, so that it can be used in other macro packages, this follow up permits further experiments in ConTEXt.

#### RULES

HANS HAGEN A CONTEXT MKIV MANUAL

#### Rules

In this manual we cover some aspects of drawing (ornamental) rules in ConTEXt using native rule operators as well as MetaPost.

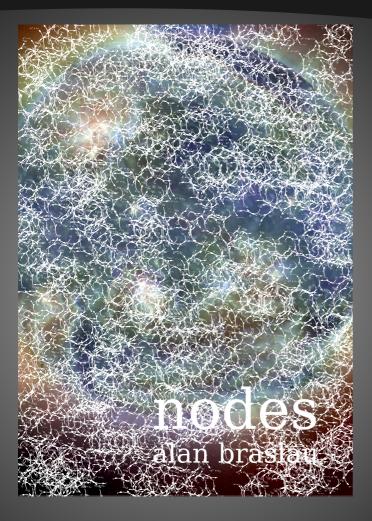
# a few tips

#### Bidi

Right to left typesetting involves directives, fonts, heuristics, and a sometimes dedicated layout. In ConTEXt some mechanism are direction aware. Here we discuss some details.

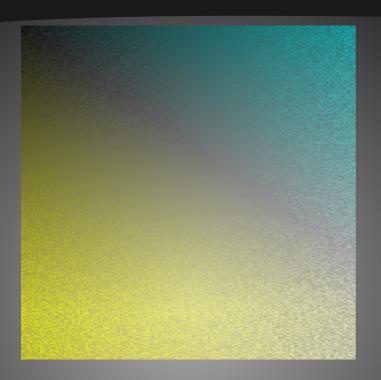
#### Musings

In this manual we collect articles that don't fit into another manual or collection. Some relate to talks, other to experiences or observations. They are often opinions.



#### Nodes

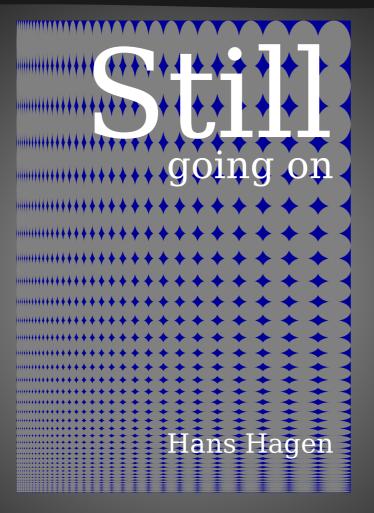
This manual is about a rather neat set of macros to produce node related drawings in MetaPost and ConTEXt like charts and trees. It also presents some tricks that can be applied elsewhere.



Graphics
Hans Hagen

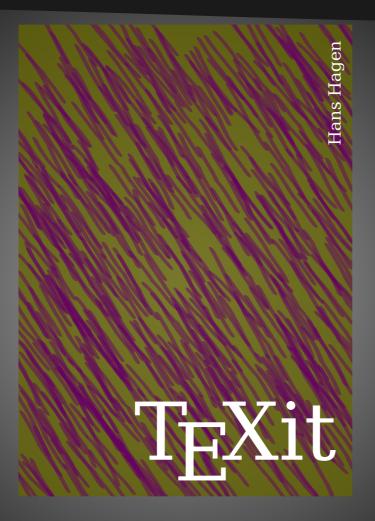
#### Graphics

This manual explains how to insert images into a document.



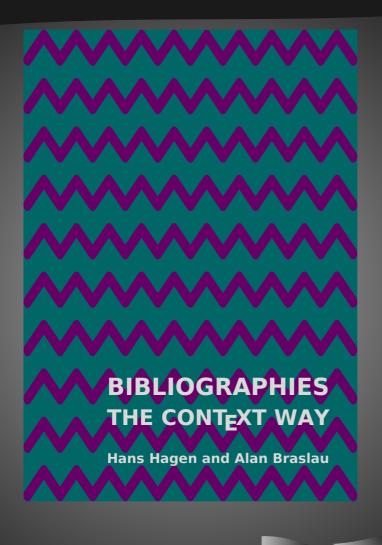
#### Still

This is the fourth document describing the history of LuaT<sub>E</sub>X. Most of the development is done, but we keep on playing with the possibilities it offers for ConT<sub>E</sub>Xt. We finally arrive at version 1.0 too.



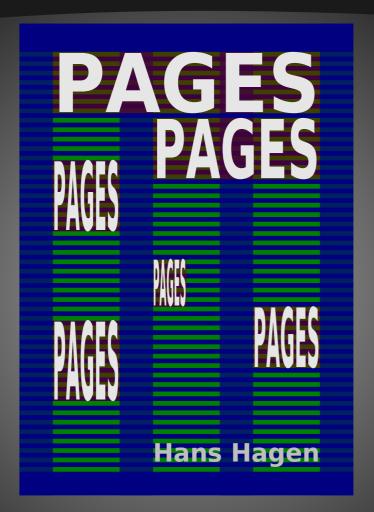
#### Texit

Sometimes questions on the mailing list pop up that demand a bit more tex-nical explanation. This manual will collect explanations and insights that don't fit into regular manuals.



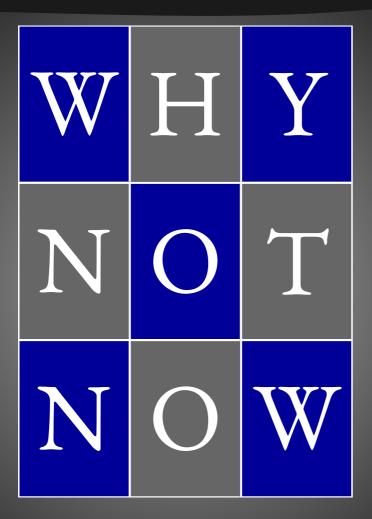
#### Publications

Like any macro package ConTEXt has to support bibliographies. This manual describes in great detail how to copye with this, and especially bibTEX databases and finetuning the rendering. We got rid of depdencies of external programs and all happens in Lua. This also opens up access to the data to users for various purposes.



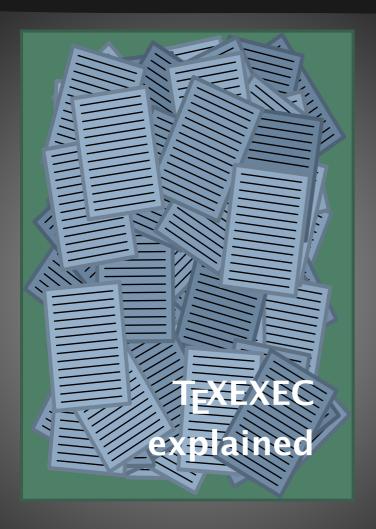
#### Page columns

There are several column mechanisms and this is one of them. It boils down to treating each column as a page which in turn means that we can do for instance side floats. This manual might also give you an idea about its usability.



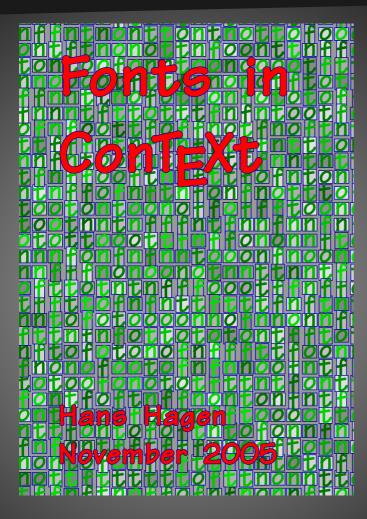
#### Not now

This is more an excuse manual: why are some features not supported or limited.



#### TEXexec

Traditional T<sub>E</sub>X is hard to control on the commandline. This is why ConT<sub>E</sub>Xt comes with T<sub>E</sub>Xexec, a Perl script that makes document processing more convenient. This script also helps you to postprocess pdf files, typeset ConT<sub>E</sub>Xt documentation, arrange pages, and manage files.



#### Fonts

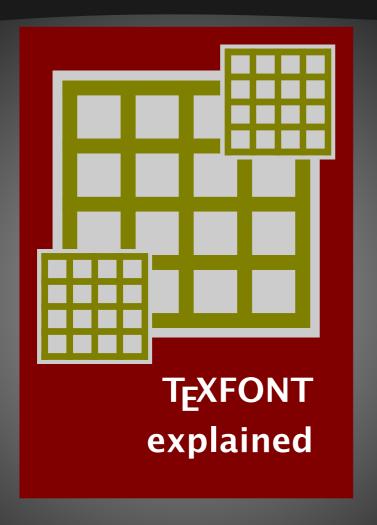
Although installation of TEX and friends has become relatively easy, fonts always will be a special case. This is a result from the flexibility of TEX, as well as the fact that TEX can typeset virtually any language. The font manual covers the installation of fonts in ConTEXt and describes in detail how to define typescripts, how to achieve special effects, like hanging punctuation, and how to set up math fonts.





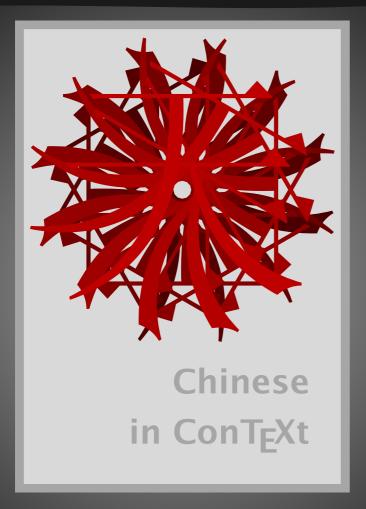


www.pragma-ade.com



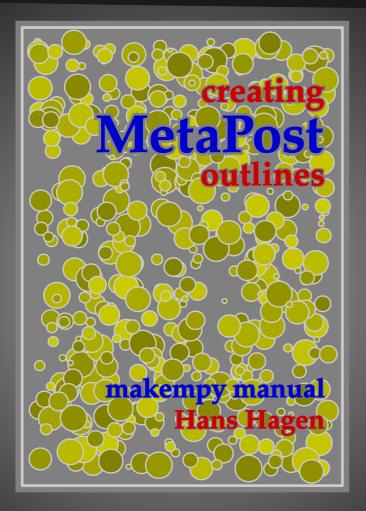
#### Fonts

Installing fonts is one of the nasty parts of using TEX. This is why ConTEXt comes with a Perl script called TEXfont. You can use TEXfont to generate font metric files in specified encodings, manipulate fonts, creating instances of multiple master fonts, build map files, etc. The script runs on top of afm2tfm and the mminetance tools.



#### Chinese

In many aspects, typesetting Chinese differs from typesetting Latin languages. Most noticably are the pictographic characters, vertical typesetting, multiple numbering systems, and a different way of handling labels. This manual covers the specific font setups, encoding issues, and mixed Latin and Chinese typesetting.



#### MetaPost outlines

MakeMPY is a Perl script and some macros that make it possible to create outlines from text typeset by TEX, that can be imported into MetaPost graphics. This toolkit uses pdfTEX, pdftops, pstoedit and Ghostscript, and works with any TEX.

## XML in ConT<sub>E</sub>Xt

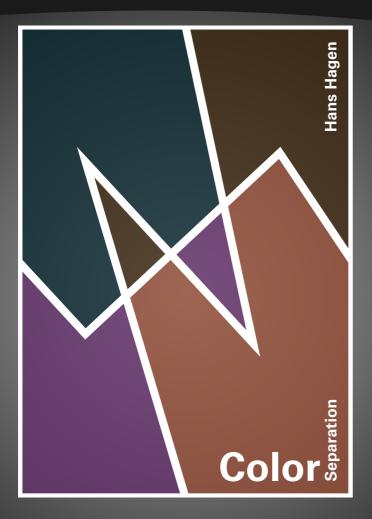
introduction general markup processing files defining interfaces basic workflows some examples command reference

PRAGMA ADE | November 9, 2001

exit begin reference

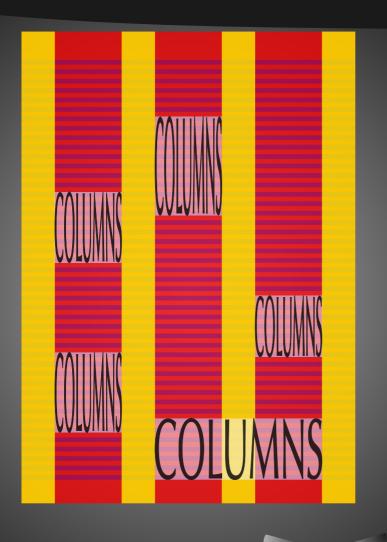
#### **XML**

Since T<sub>E</sub>X can handle ascii input rather well, it will be no surprise that ConT<sub>E</sub>Xt can handle xml. In this document we describe the interface to xml. We also provide some examples, tips and tricks. This document is still under construction.



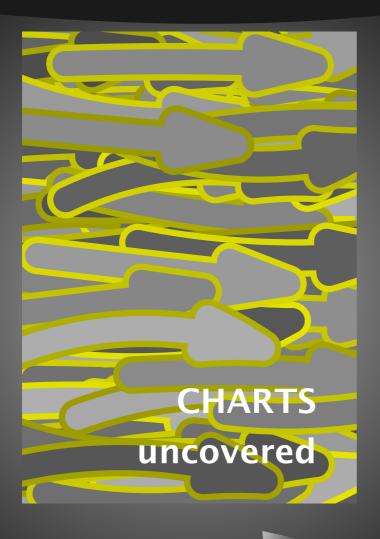
#### Color separation

This is a manual for those who are forced to deliver their typeset results color separated. The manual describes how to create an instance of a document in a specific color space and channel. Text as well as graphics are covered.



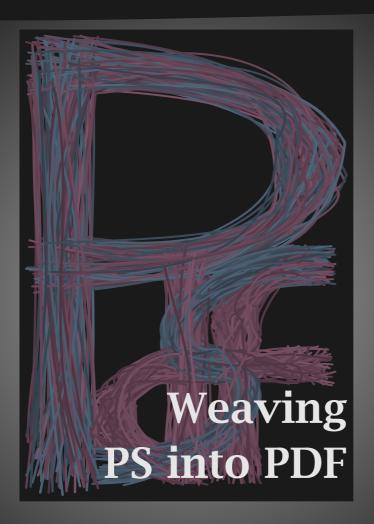
#### Extreme Columns

Column sets can be used for quite complex but nice looking layouts. (Behind the screens) this mechanims goes to the extremes of what we can do with  $T_EX$ 's output routines. With columnsets we try to bridge between sequential makeup and semi automated desk top publishing.



#### Charts

The flow chart module is an example of combining the power of TEX and MetaPost. You can use this module to define charts in a descriptive way such that parts can be used, and or charts can be combined. The advantage of using this integrated approach (opposite to dedicated programms) is that you have the whole ConTEXt machinery available, like hyperlinks and embedded graphics. Also, by using this module, you have a proper match of fonts between graphics and text.



# Weaving PS into PDF

This manual describes the petopdf tool that comes with ConTEXt. You can use this tool to convert PostScript images into pdf. The program is actually a wrapper around Ghostscript, but applies some additional trickery and filtering. It also supports watched folders and is suited for interfacing to the eXaMpLe framework.

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examplap/gui/pstopdf.pdf
file:

examplap/gui/pstopdf.pdf

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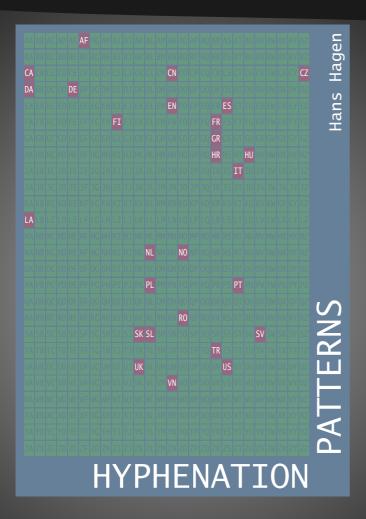
#### texmfstart & ...tools

This very short manual demonstrates how you can use texmfetart to launch scripts and documents located in your TEX tree. The script uses kpsewhich as well as its own (more aggressive) methods for locating the file. The TEXtools manual describes a program that actually is a (growing) collection of small utilities that operate on TEX related files and trees. The xmltools manual describes a similar program, this time a collection of utilities that operate on cq. produce xml files and trees. Finally, the pdftools manual deals with the associated program, that operates on pdf files. This tool is not yet public.



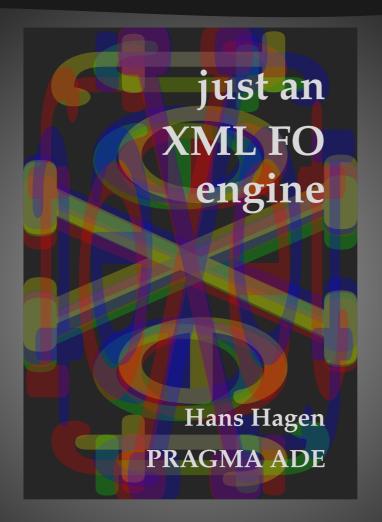






# Hyphenation Patterns

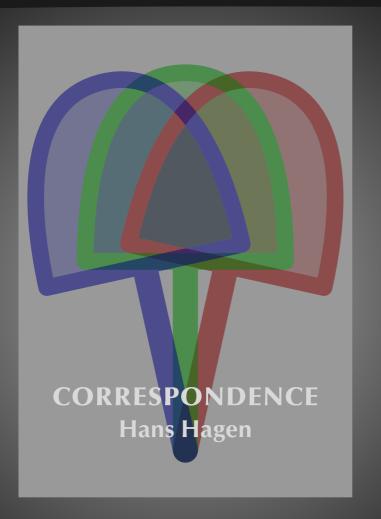
Although normally users are not supposed to know the dirty details of pattern management, it may be handy to read this manuals at least once, if only to know what to do when for some reason pattern loading fails on your machine. This manual also describes how to apply the ctxtools program to generate generic pattern files from existing encoding specific files.



#### foXet

You can see foXet as just another way of processing xml formatting objects. You may use it to process documents coded in (reasonable) xsl-fo or as (textual) graphics format in ConTEXt documents, a sort of placed xml.



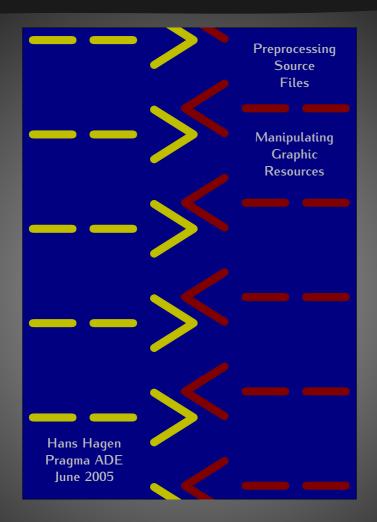


# Correspondence

One of the first application at Pragma ADEof  $T_{EX}$  was in typesetting letters. Over time the  $T_{EX}$  only based system moved to a combination of xml and  $T_{EX}$ . This manual roughly describes the components that make up such a system. A graphical user interface is provided as well.



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# Preprocessing and Manipulating

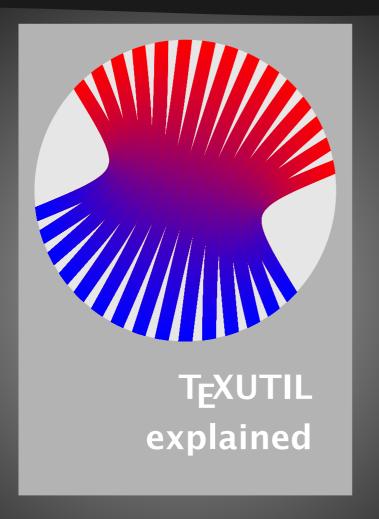
This manual describes the facilities for automatic preprocessing of source files and manipulation of graphics. These features come in handy in automated typesetting workflows and are handled by TEXEXEC and rixtools. The definition files are xml based.



### Installation

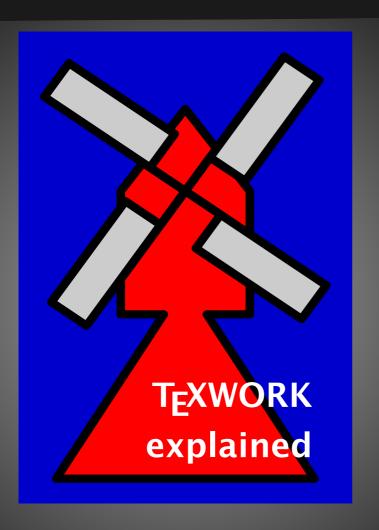
When one uses teTeX, fpTeX, gwTeX, MikTeX or TeX Live, installation of ConTeXt is a breeze. Nevertheless, in this manual, we provide some information on installing ConTeXt.





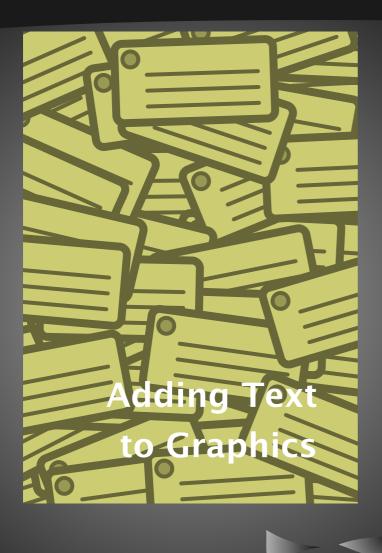
# TEXutil

The  $T_EXutil$  Perl script deals with files, especially the Con $T_EXt$  second pass data file. It moves information around and sorts indexes and lists. This script is the natural companion of  $T_EXexec$ .



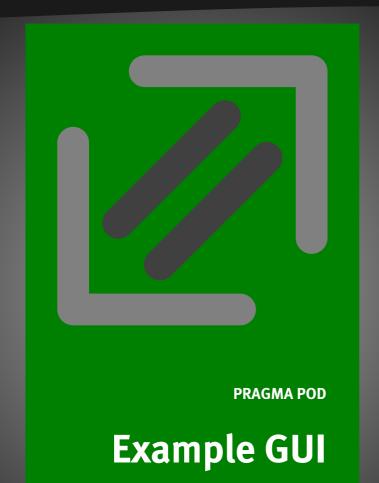
# TEXwork

 $T_EX$ work is our local editing environment. It is a rewrite of the Modula $\sim$ 2 program  $T_EX$ edit in Perl/Tk.



# Labels

The author of a graphic is not neccessarily also its graphic designer. In that case it makes sense to split the design of the graphic elements from the process of adding labels. This document describes how to add text to graphics either or not using the resource (figure) library mechanism.



# Example GUI

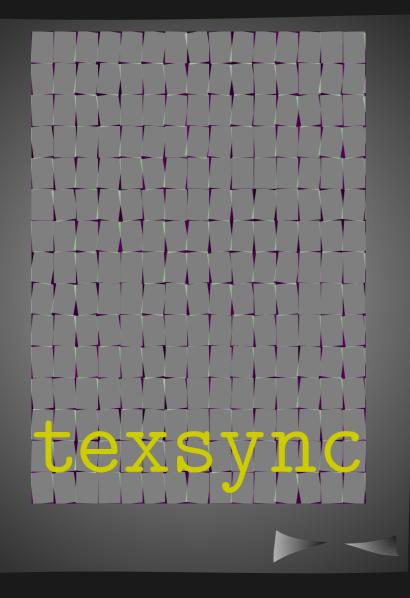
This manual describes how to install a user interface to some of the ConTEXt mechanisms and other programs. In the distribution there are applications for postprocessing documents (page imposition), testing MathML, and converting PostScript files to pdf.

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examplap/gui/examplap.pdf file:

examplap/gui/examplap.pdf

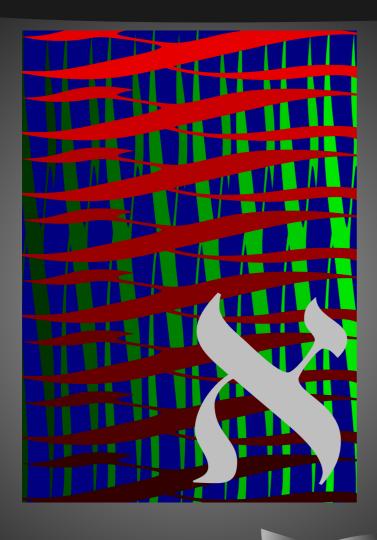
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#### texsync

There are several ways to install a TEX system on your machine. Popular platform dependent distributions are fpTEX, teTEX, gwTEX and MikTEX, and user groups distribute the nicely packaged TEXLive collection. At Pragma ADE we use for projects a small subset of TEX Live, often with the latest ConTEXt and project specific font trees. The program described in this manual enables you to synchronize with our minimal ConTEXt tree.





# Aleph

This document shows a few things that Aleph can do with respect to multidirectional type-setting. This document may change over time and is mostly a testbed and less a manual, although in the end it may evolve into one.