ain't vector graphics

Introduction

- Plattform for multimedia installations
- Framework for media presentations
- High-quality visuals
- Alternative to Macromedia Director
- Open source (LGPL)
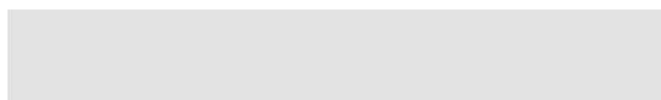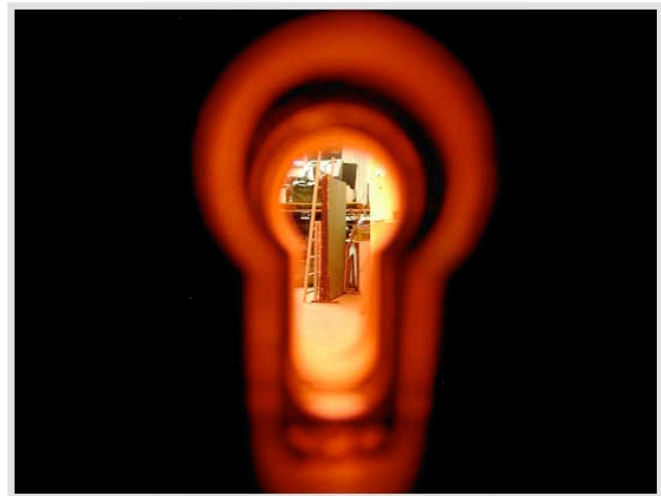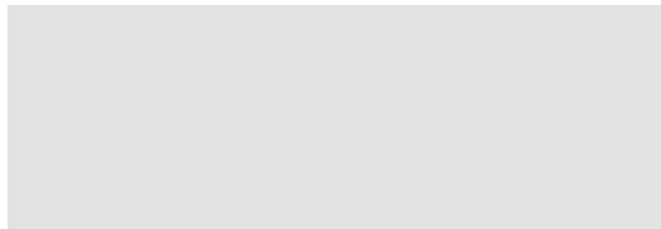
Quick Authoring

Authors need an easy and flexible method of specifying the intended results. Short time intervals between authoring changes and seeing the results are essential.

High-quality Visuals

- Flexible engine
- Seamless media integration
- High-resolution video playback
- Good font rendering, layout support

High-quality Sound

- CD-Quality, 44.1/48 kHz, 16 bit
- Low latency
- Mixer
- Nice to have: multi-channel playback

Hardware/OS Support

- Linux:
  - ° Low price
  - ° 'Embedded' support
  - ° Cloneable systems
  - ° Legacy hardware support
- Mac OS X:
  - ° Authoring tools

Openness for Expansion

The potential users of the plattform are free-minded, intelligent people who don't like to be fenced in.

- Open source
- Plugin support
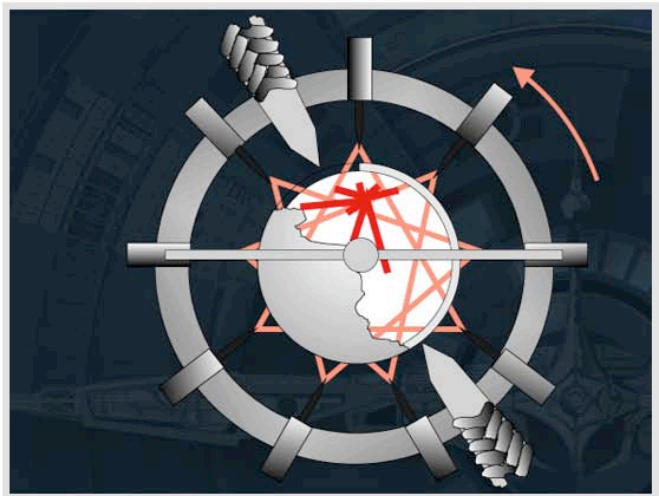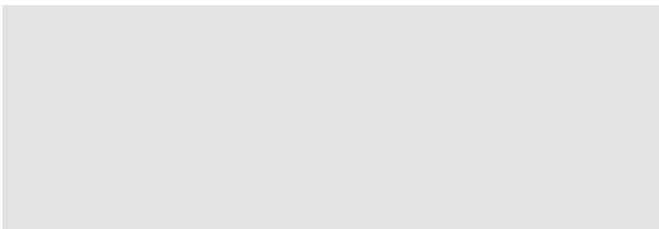
Concept

- Separation of static and dynamic content
- xml-based screen layout language
  - ° Based on svg
  - ° Hierarchial
- Dynamic behaviour using JavaScript
  - ° Animations
  - ° User interaction

Example

```
<avg width="640" height="480">
  <image id="logo" x="0" y="0"
         href="logo.tif"
         onmouseover="disappear();"/>
</avg>


function disappear() {
    var logoNode =
       AVGPlayer.getElementByID
                    ("logo");
    logoNode.opacity = 0;
}
```
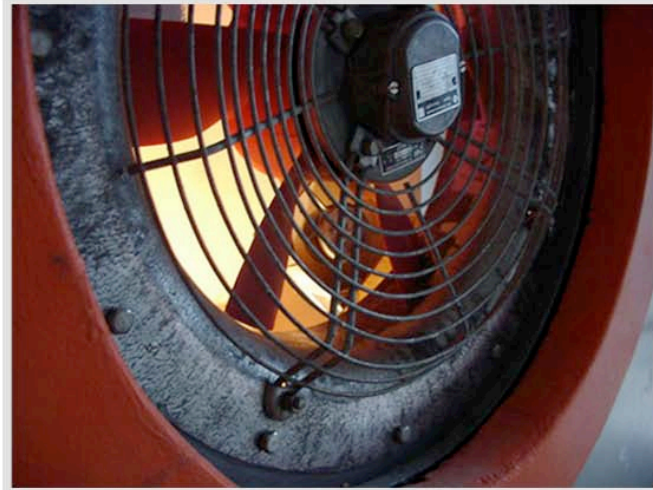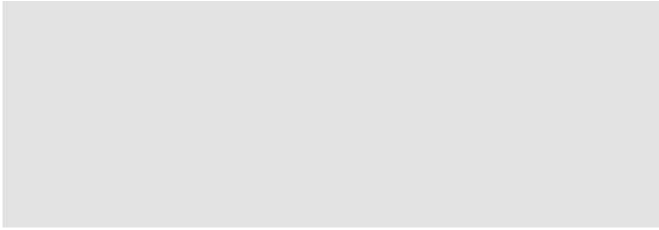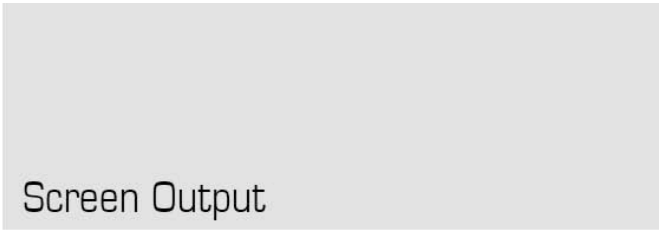
Screen Output

- OpenGL, DirectFB
- Hardware-based rendering
- OpenGL:
  ° 3d
  ° Good OS support
  ° (Comparatively) good driver support
- DirectFB
  ° Efficient 2d rendering
  ° Linux only
  ° Good on low-end systems

Image Support

- paintlib
- Support for 15 image formats
- Alternatives: imagemagick/graphicsmagick

Video Support

- libavcodec:
  ° Heart of ffmpeg
  ° Masses of video formats
  ° External video sources
- libdc1394:
  ° Industrial cameras
  ° Firewire interface

Text Output

- libfreetype:
  ° Font engine
  ° Renders individual characters
- Pango:
  ° Text layout engine
  ° Used in gnome
  ° Supports strange character sets
  ° Supports right-to-left-rendering

Backend

- libxml2
- Spidermonkey
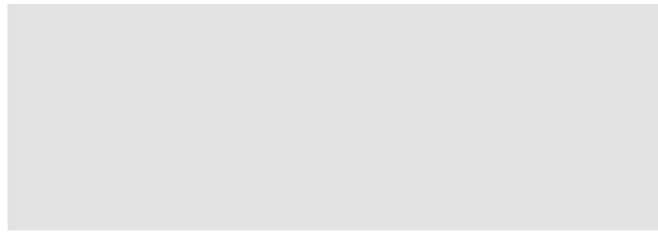
Display Mixer

- Central to avg
- Generic handling of graphical elements
- Backend: OpenGL or DirectFB
- Scale & crop support
- Alpha, opacity support

Display Mixer - OpenGL Backend

- Rendering in hardware
- Rotation
- Subpixel precision
- Additive & subtractive blend modes
- Warping
- Everything adjustable in real time

Display Mixer - DirectFB Backend

- Software rendering
- Works on low-end hardware

avg

Contents

Requirements

Concept

Base Technology
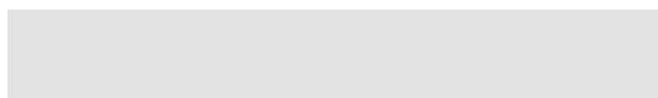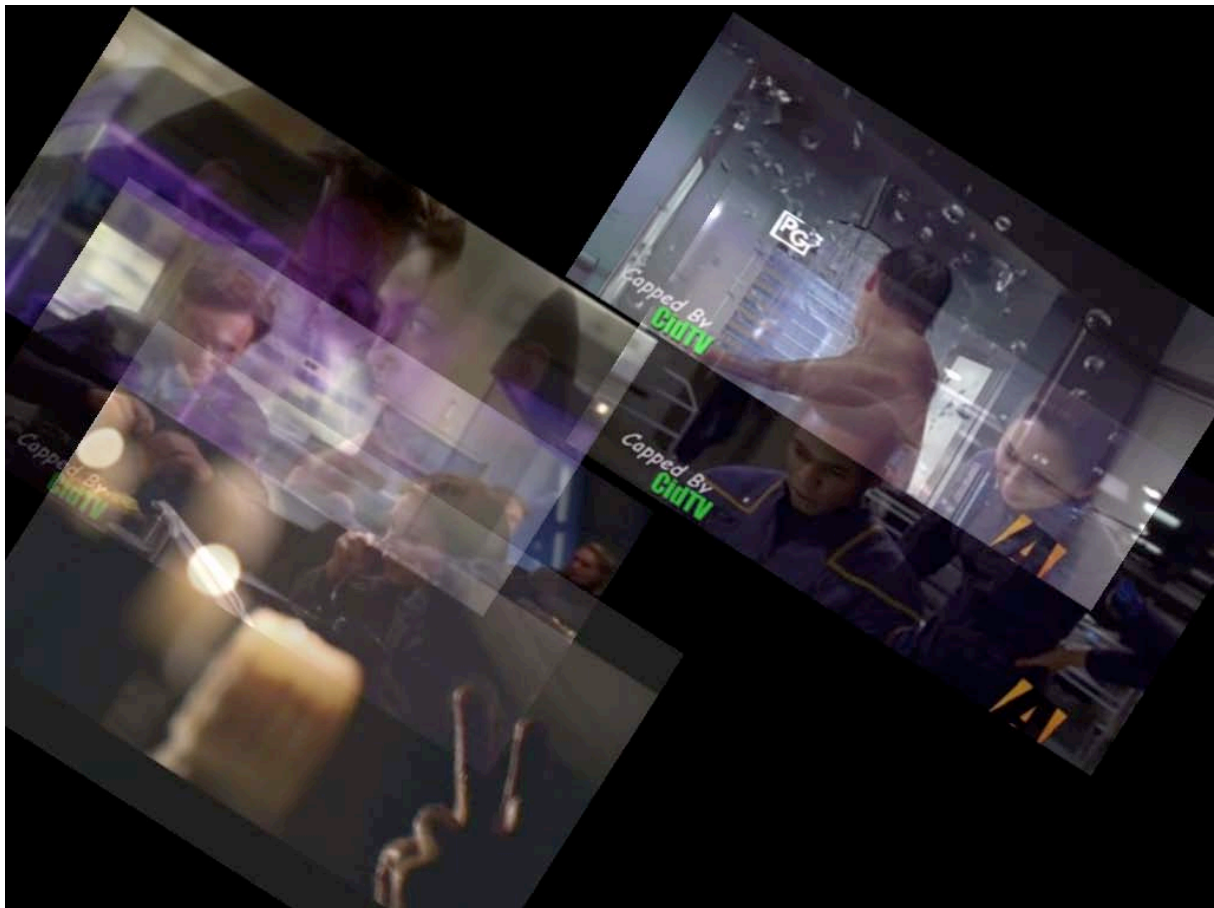
Features

Samples

The Future

Wishlist

Video Support

- Several videos at once
- play/pause/stop at any time using javascript
- seek support
- Framerate synchronized with avg framerate
- Complete integration
- Speed: P4 Mobile 1.6 GHz shows 5 videos
  ° 352x240 resolution
  ° 25 fps

Text Support

- Pangos <div> tag support in avg files.
- Bold, italic, color,...
- Left/right-justified, centered paragraphs
- High-quality font rendering
- Utf8-support
- Fully integrated
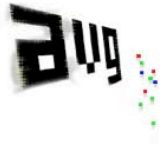
The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog. The quick brown fox jumped over the lazy dog.

一二三四五六七八九

Camera Support

- Board cameras using firewire
- Setting camera params supported
  ° brightness
  ° exposure
  ° saturation
  ° gamma
  ° …
- Example? Kaputt

Input Support

- Mouse/touchscreen:
  ° JavaScript handlers for display elements
  ° MouseDown/Up/Over/Out/Move
  ° Mouse event bubbling
- Keyboard
- Parallel port control lines
- Hack: Soundcard as A/D converter

Authoring

- Complete JavaScript language is available
- Display element properties as js variables:
     (Example: image.angle += 3.14159)
- React to user events (preceeding section)
- Timers (setTimeout, setInterval)
- System call support
- Print to console support
- Javascript base libraries

Other Stuff

- Strange conrad relais cards
- Plugin support (dlopen)
- Profiling
- High-precision frame timing (from mplayer)
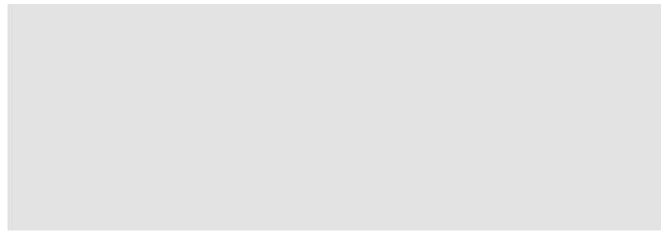- Panorama image support

Contents

Requirements

Concept

Base Technology

Features

Samples

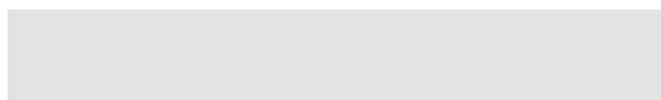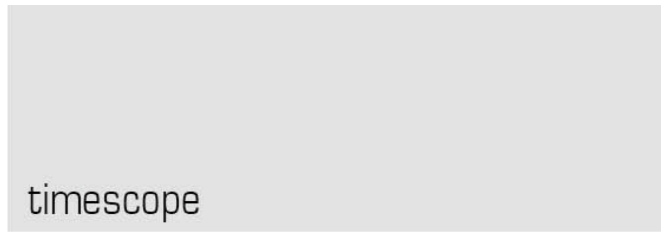The Future

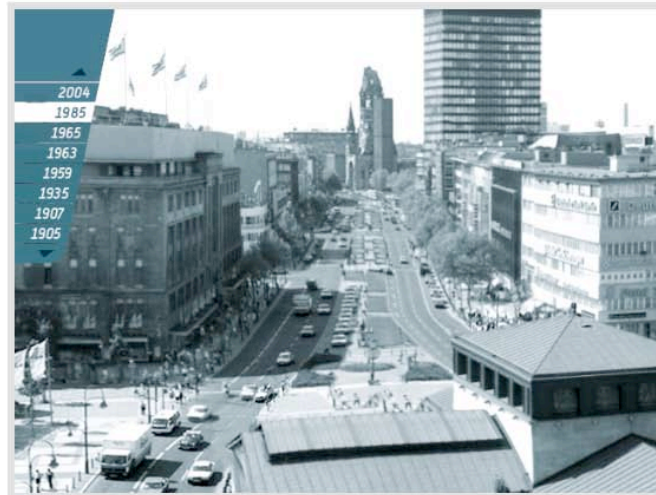Wishlist

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Base Technology
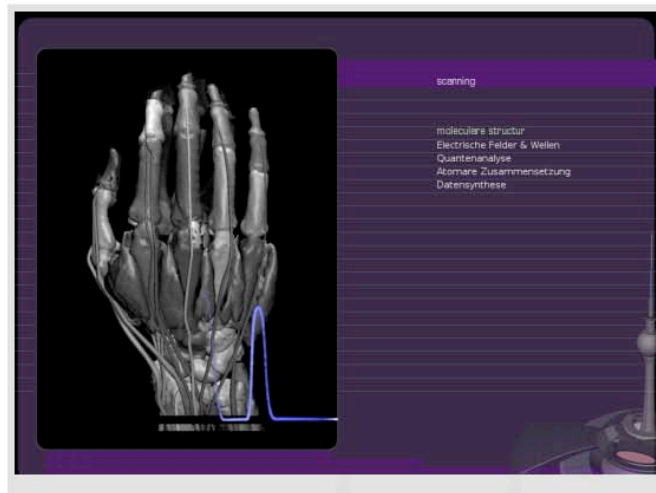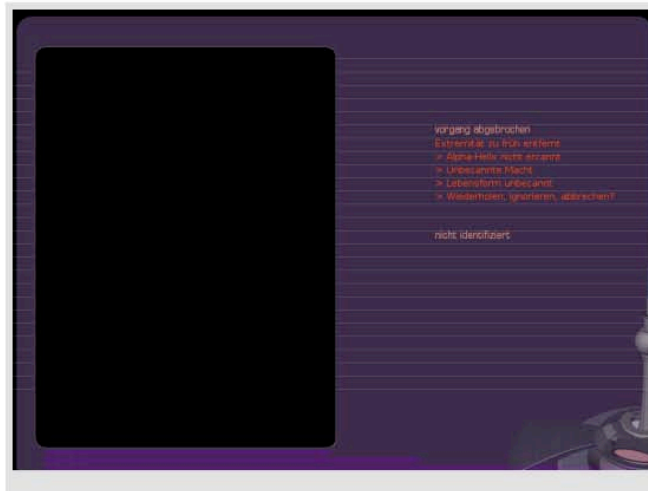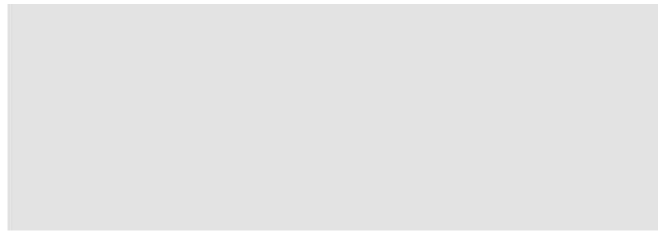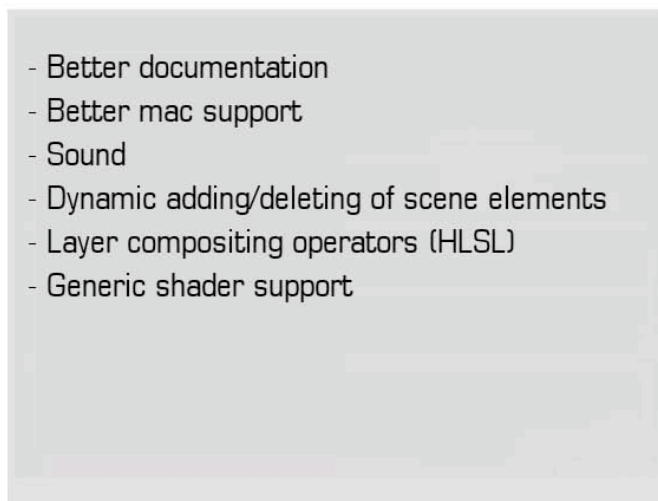
Features

Samples

The Future

Wishlist

timescope

timescope

c-base scanner

scanning

moleculare structur
Electrische Felder & Wellen
Quantenanalyse
Atomare Zusammensetzung
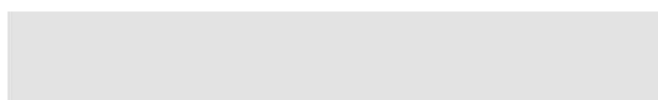Datensynthese

c-base scanner

c-base scanner
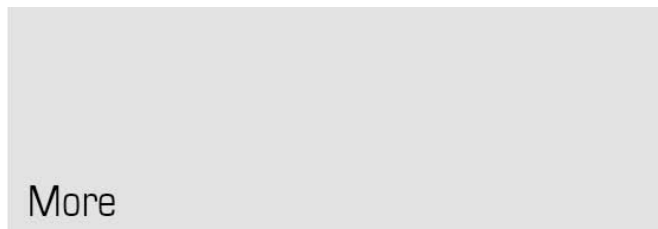
More

- Better documentation
- Better mac support
- Sound
- Dynamic adding/deleting of scene elements
- Layer compositing operators (HLSL)
- Generic shader support

Even more

- Better memory management
- Networking
- Stylesheet support?
- More media types:
  ° svg?
  ° Quicktime on mac?
  ° Video4Linux

Wishlist

- Participation:
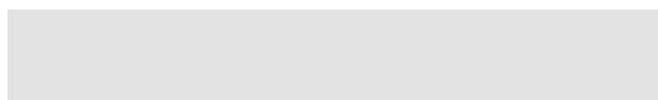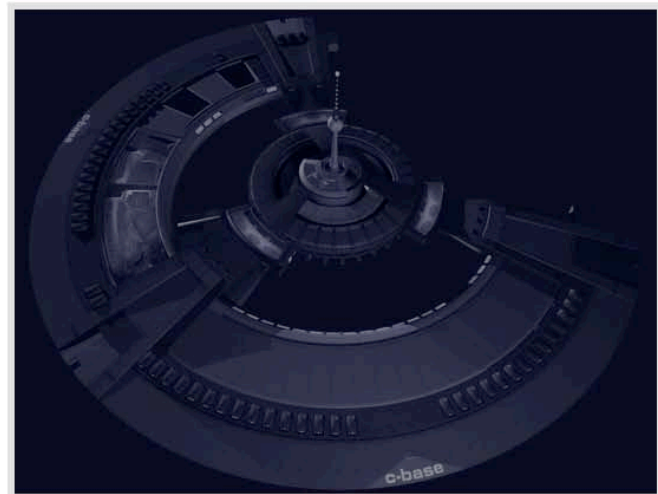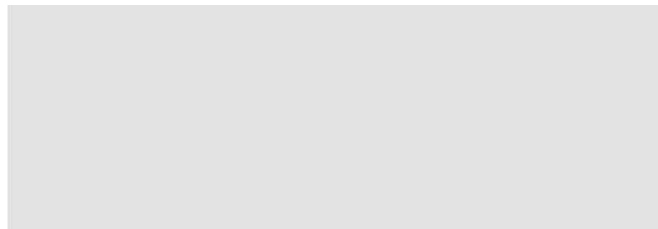 ° Developers
  ° Artists/Designers
  ° http://www.libavg.de
  ° Mailing list: lists.sourceforge.net/
       lists/listinfo/avg-user
- No more software patent issues.

Finding me: look in art+beauty room