OpenGL: (for DEV may be…)
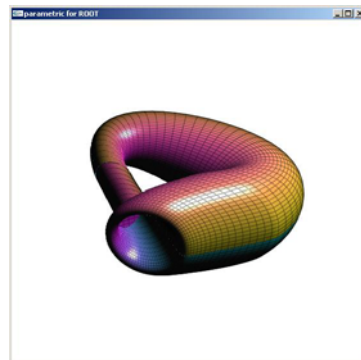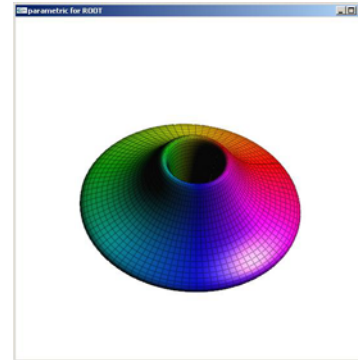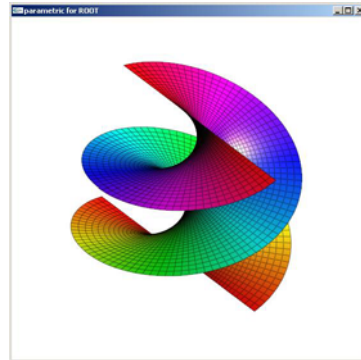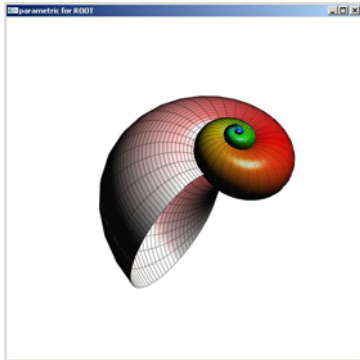
Timur is implementing the parametric surfaces:

$S(u, v) : \{x = F(u, v), y = G(u,v), z = H(u, v)\}$
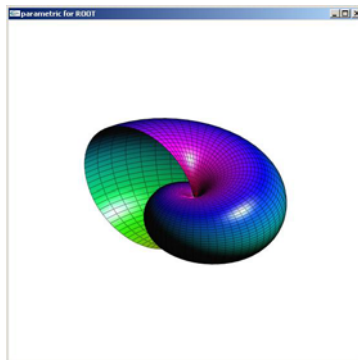
Timur and Matevz are now working on the definition of a more coherent approach for 3D open GL . The summary of the work is here:

http://mtadel.home.cern.ch/mtadel/mydoc/rootgl/rgl.html

This is longer term work. May be some prototype for the PRO release …

The 2-d graphics system directly based on OpenGL is under investigation.
If we succeed:

- we could get rid of the X11 and win32 interfaces.
- speed-up the graphics (benefit from the graphics accelerator).
- easily mix 2-d and 3-d graphics in the same OpenGL viewer.

We need first to investigate this idea with a simple prototype, by:

1. Implement a toy class `TPadGL` class inheriting from TPad.
2. Implement `TPadGL::PaintLine` with OpenGL.

Once all the problems for this simple case will be solve, the implementation of the other `TPadGL::PaintXXX` methods should not be a problem. It will just be a matter of time.

A report on this work will be given at the ROOT workshop end of march. We could hope to have a full implementation by end 2007.

(May be something in PRO)

TLine::Paint()

TPad::PaintLine()

TVirtualX::DrawLine()

TPadGL::PaintLine()

Prototype

OpenGL

X11

Windows
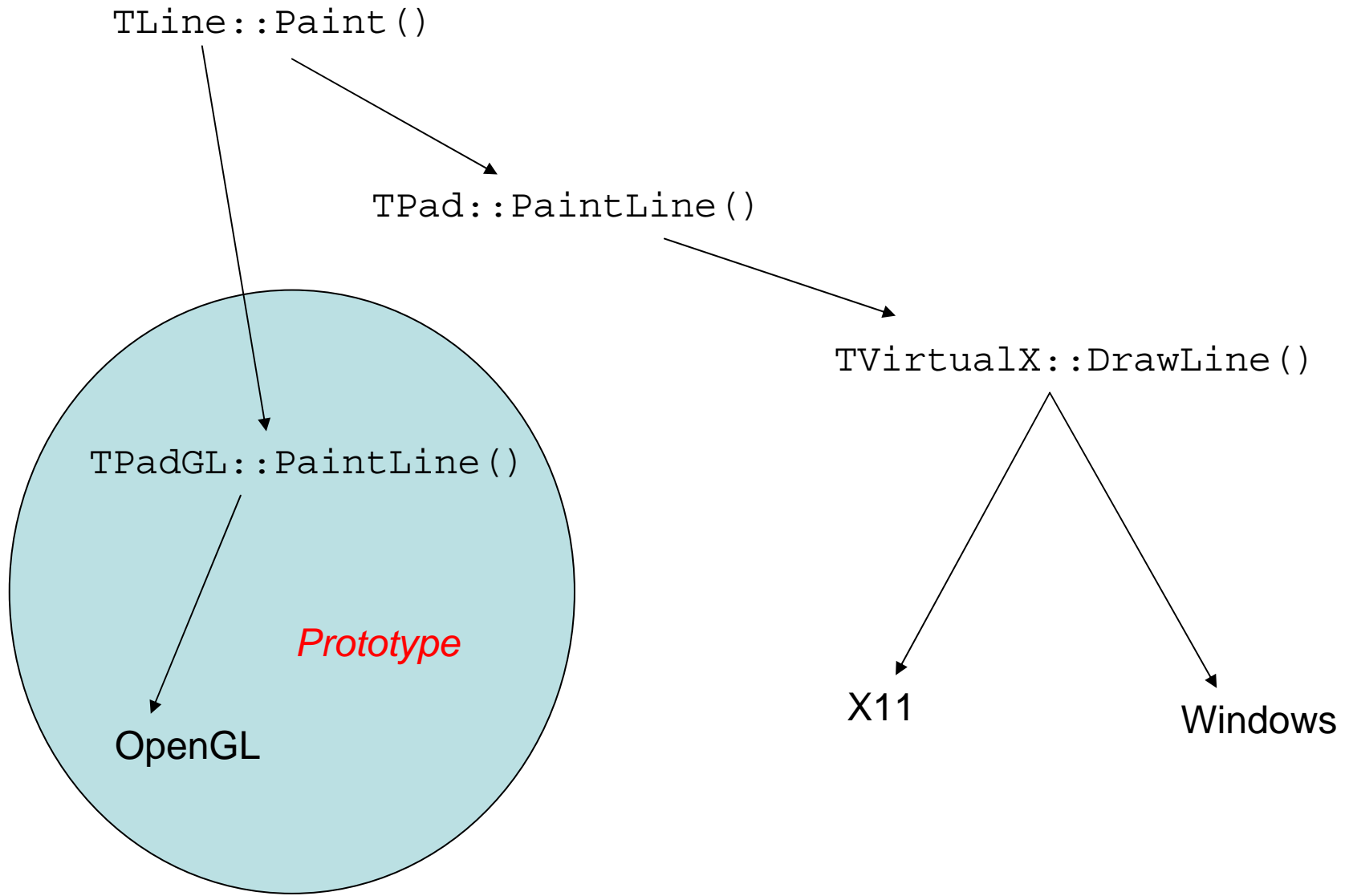
A more difficult basic primitive to implement above OpenGL is the text because OpenGL does not have some build-in text facility.

The text painting in `TPad` is done by the `PainText` method.

To implement `TPadGL::PaintText` we plan to use the domain public library: FTGL. It is an OpenGL implementation of the freetype fonts.

We have done some small tests with this library and they look promising.
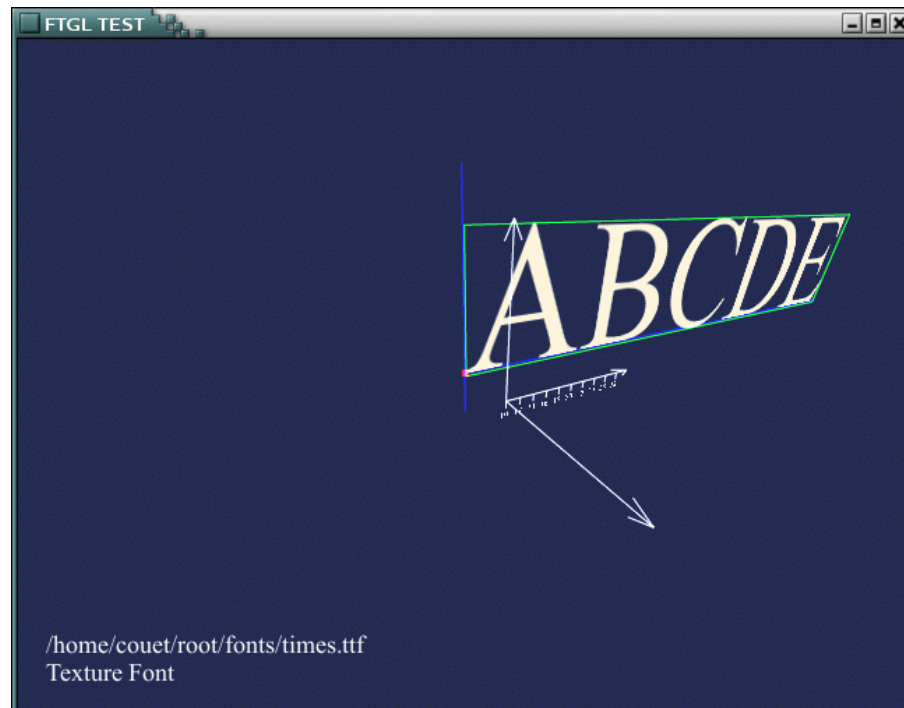
- TPie: 1st version of TPieSlice class has been done. But it is not yet used to do individual interaction on slices. Also some improvements on the 3D drawing and interactions (on the version using TPieSlice).