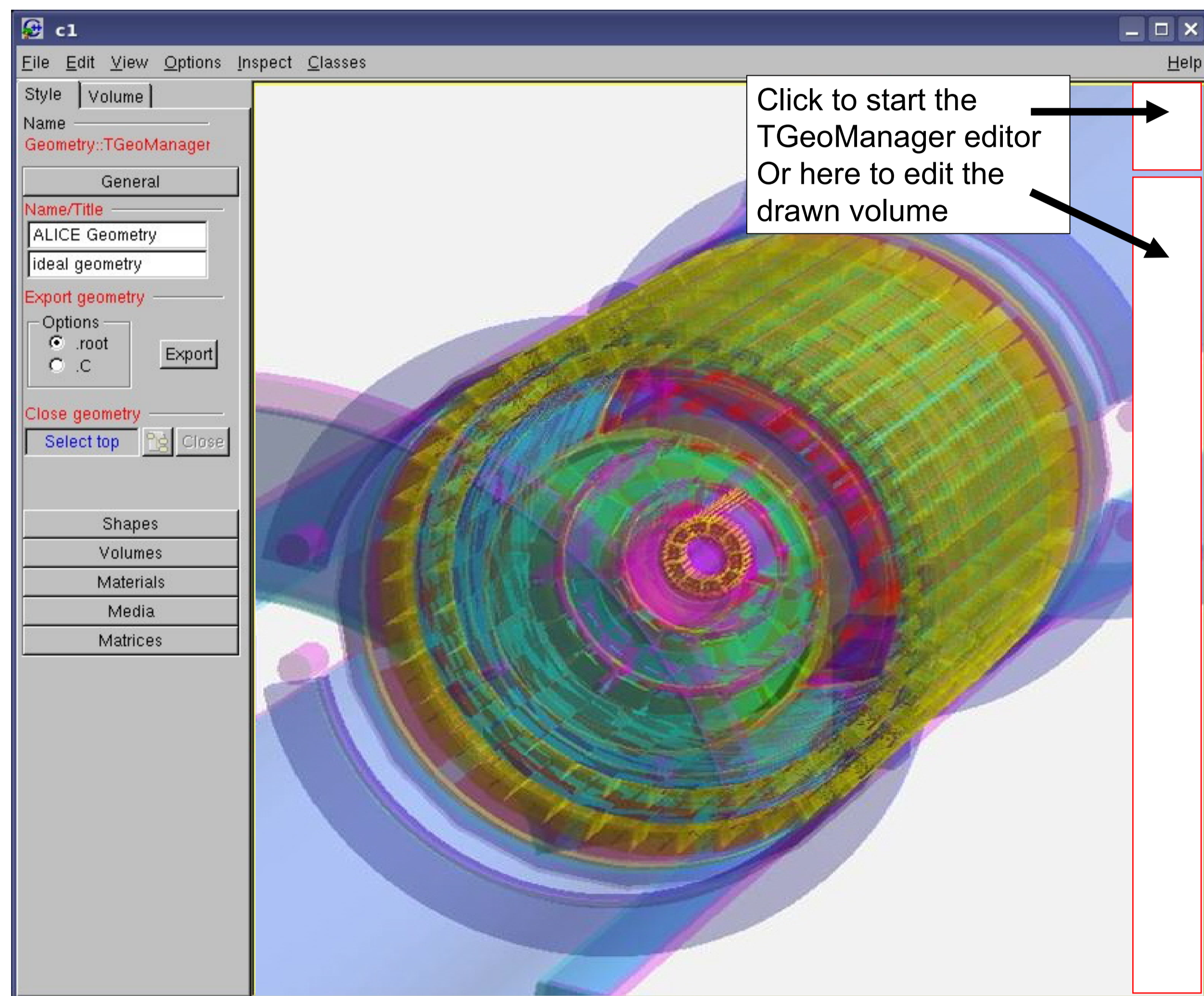


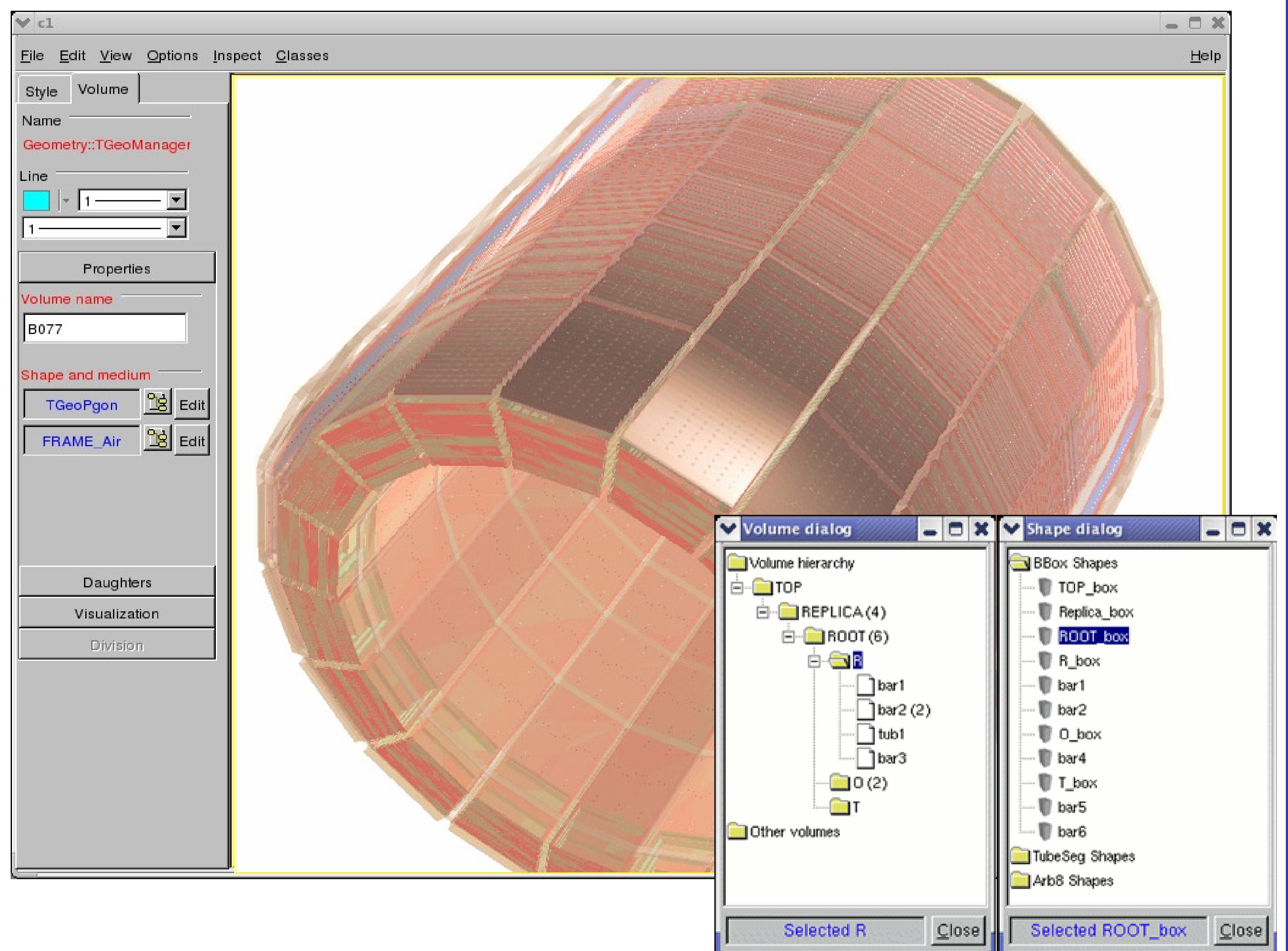
## FUNCTIONALITY: Graphical user interface for creating and editing ROOT TGeo geometries.

The package provides a library of all GUI classes related to geometry. Editable objects are: the geometry manager, volumes, nodes, shapes, tracking media, materials and matrices. The interface provide also access to specific functionality of geometry objects. The editing mechanism is based on ROOT **GED** (Graphics Editors) functionality and the library is loaded using the plug-in mechanism.



## EDITING EXISTING GEOMETRY OBJECTS

For editing an existing object, one must first select among the objects of the corresponding type stored in the geometry. The dialog interfaces are generally different for different types of objects. The volume selection dialog offers the possibility to select either a volume already connected to the geometry hierarchy or non-connected ones. Selection dialogs for shapes and matrices are split into categories represented by top level list tree items for: boxes, tubes, ..., translations, rotations, etc.



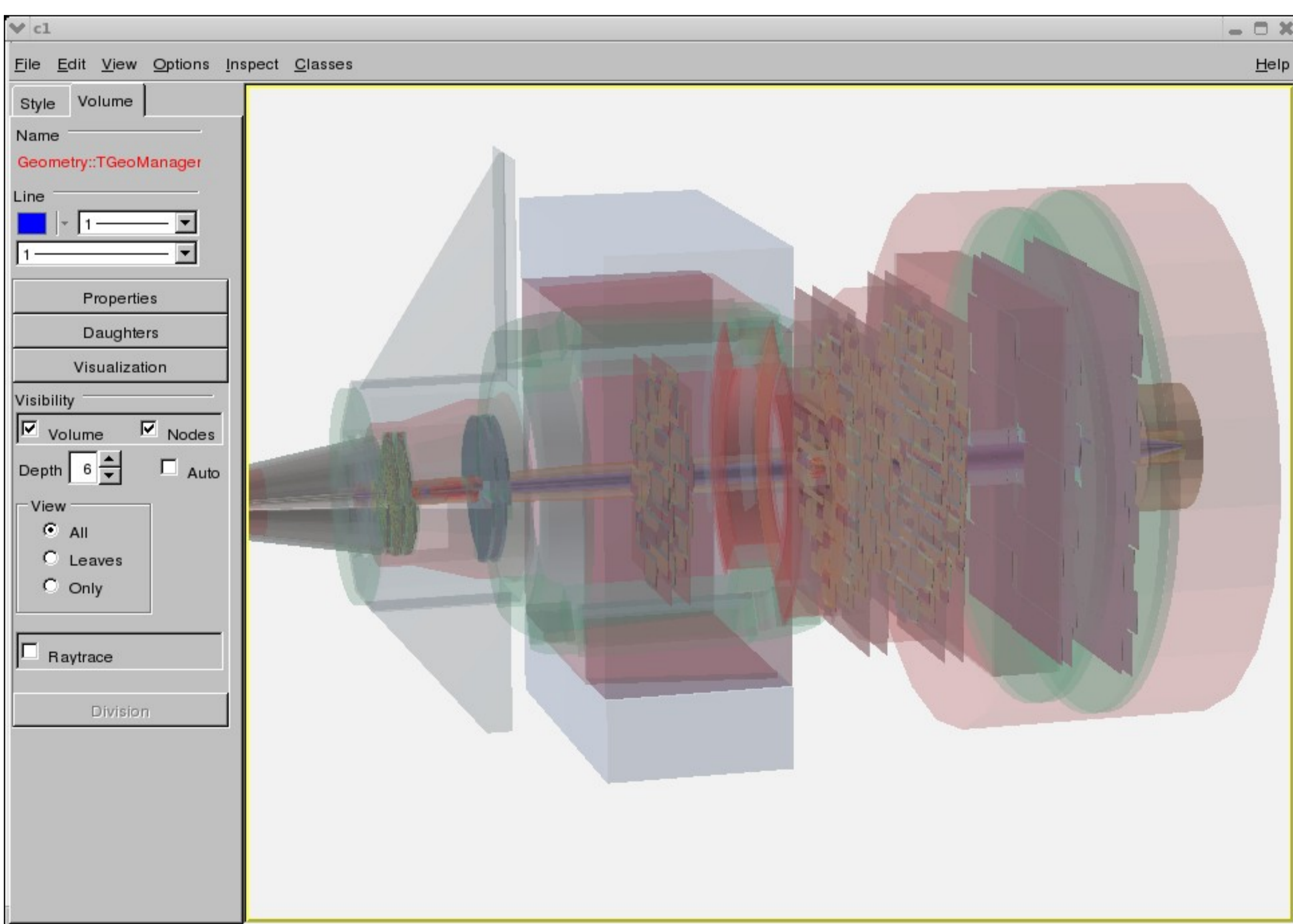
## EDITING A NEW GEOMETRY

```
rootf1] TGeoManager *geom = new TGeoManager("test", "test geometry");
rootf1] geom->Edit();
```

The lines above will create a new TGeoManager class, create an empty canvas and start the editor in the left-sided editor frame attached to the canvas.

## MODIFYING VOLUME PROPERTIES

Volumes are the basic "bricks" in building the geometry. One has first to create a set of volumes reflecting the geometry objects needed in the model, then try to assemble them in a hierarchic manner. The volume interface allow these operations. The UNDO functionality restores the initial object properties (before the editing operation)



## EXAMPLES OF INTERFACES

Most geometry objects have an editor implementation. The corresponding interfaces are much to many to fit a poster, but the general guideline in their development was to be able to visualize the modifications as they are made. The geometry builder classes allow access to most important geometry objects and features. In future we foresee their extension to many more other TGeo-based tools (geometry checking features, OpenGL viewer editor integration, navigation tools)

## CREATING GEOMETRY OBJECTS

Once the interface is created, several categories can be accessed via the TGeoManager editor:

**General.** This allows changing the name/title of the geometry, setting the top volume, closing the geometry and **saving the geometry in a file**. The name of the geometry file is formed by *geometry\_name.C/.root* depending if the geometry need to be saved as a C macro or a .root file.

**Shapes, Volumes, Materials, Media, Matrices.** These categories are providing interfaces for creation of all supported geometry objects. The new objects are created having default values that can be changed using their interface.

