

The sustainability plan of VisIVO

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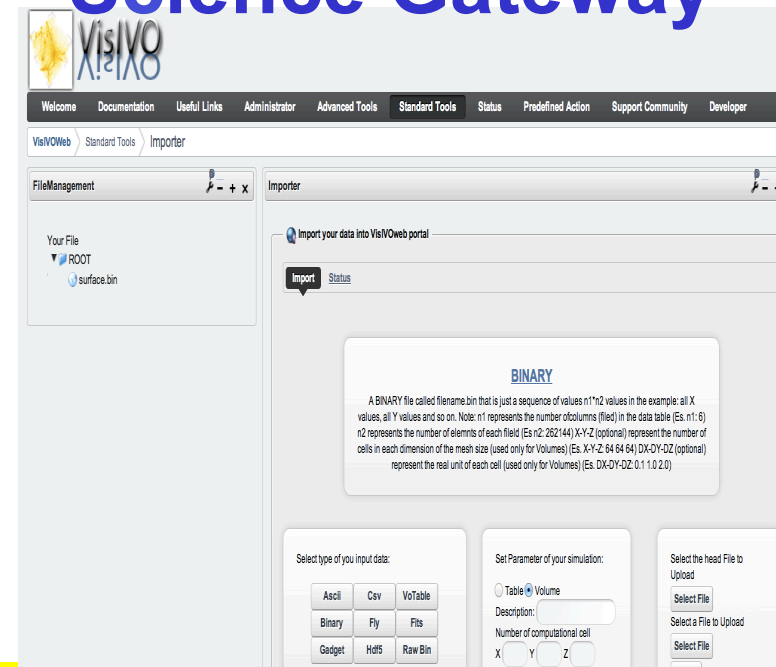
- Multidimensional Data Exploration →
 - Visualization of unknown data characteristics
 - Searching for:
 - *Outliers*
 - *Characteristic regions*
 - *Special properties*
- Astrophysical dataset as well as any other multidimensional tabular data from other communities.
- VisIVO is designed to deal with large datasets. It supports many types of data formats:
 - HDF5, VoTables, Binary Tables, Ascii , csv, fits...

VisIVO Science Gateway

VisIVO Server

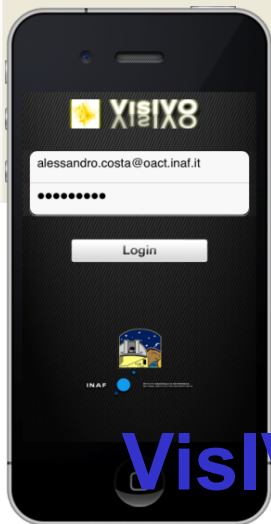
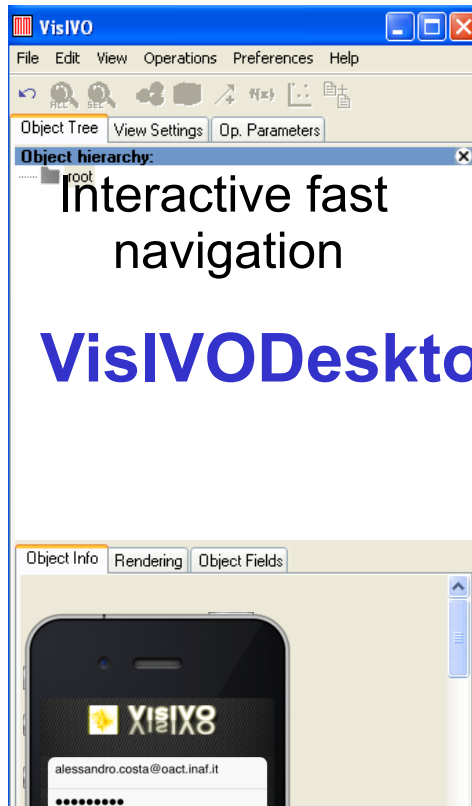
```
--fformat votable /home/user/
demo/vizier.xml

.....
--x x --y y --z z --color --colortable
--colorscalar scalar0 --glyphs
sphere
Linux Mac Windows
```



VisIVO C/C++ Library

*Closely integrated, complementary
and independent !*



VisIVOMobile



<http://visivoportal.oact.inaf.it:8080>

[Sign In](#)

Welcome Documentation Useful Links

VisIVOPortal Welcome

Welcome

VisIVO Web Portal aims to create an astrophysical gateway based on the generic-purpose [gUSE/WS-PGRADE portal](#) family to access **VisIVO** software tools. It has been developed thanks to the [Sci-Bus Project](#).

VisIVO is a suite of software tools for creating customized views of 3D renderings from astrophysical data tables. These tools are founded on the **VisIVO Desktop** functionality ([visivo.oact.inaf.it](#)) and support the most popular Linux based platforms (e.g. [www.ubuntu.com](#)). Their defining characteristic is that no fixed limits are prescribed regarding the dimensionality of data tables input for processing, thus supporting very large scale datasets.

[Sign In](#)

Email Address

@oact.inaf.it

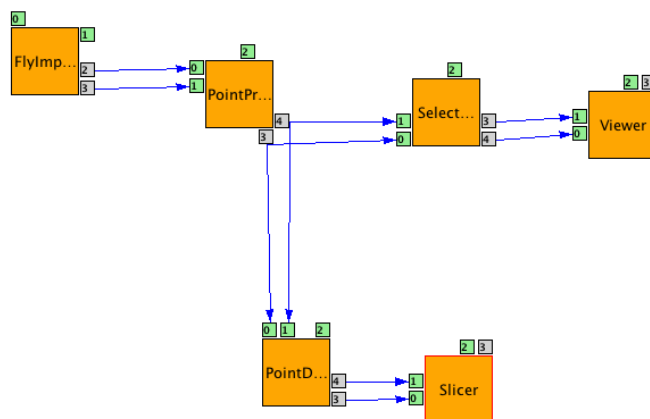
Password

[Sign In](#)

[Facebook](#) [Google+](#) [Create Account](#)

Graph Edit Help

25 50 75 100 125 150 %



Viewer

VisIVO Importer
VisIVO Filters
VisIVO Viewer

View your data into VisIVOweb portal : surface.bin

Field: density

Volume rendering: ☐ Shadow

Isosurface: ☒

Slicer: ☐

Isosurface Counter Value (0->255): 125

View

Basic Palette

BackColor: Black ☐ Forecolor: White ☐

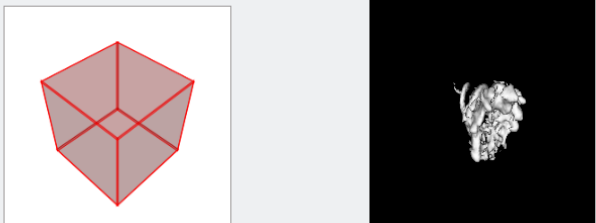
Show Palette ☐ Show Box ☐ Show Axes ☐ Stereo ☐

Image size: Medium

Azimuth: 45 Elevation: 45 Zoom: 1,000

FRONT LEFT RIGHT DOWN UP BACK

Save



Change Azimuth and Elevation values using your mouse to drag the 3-d cube.

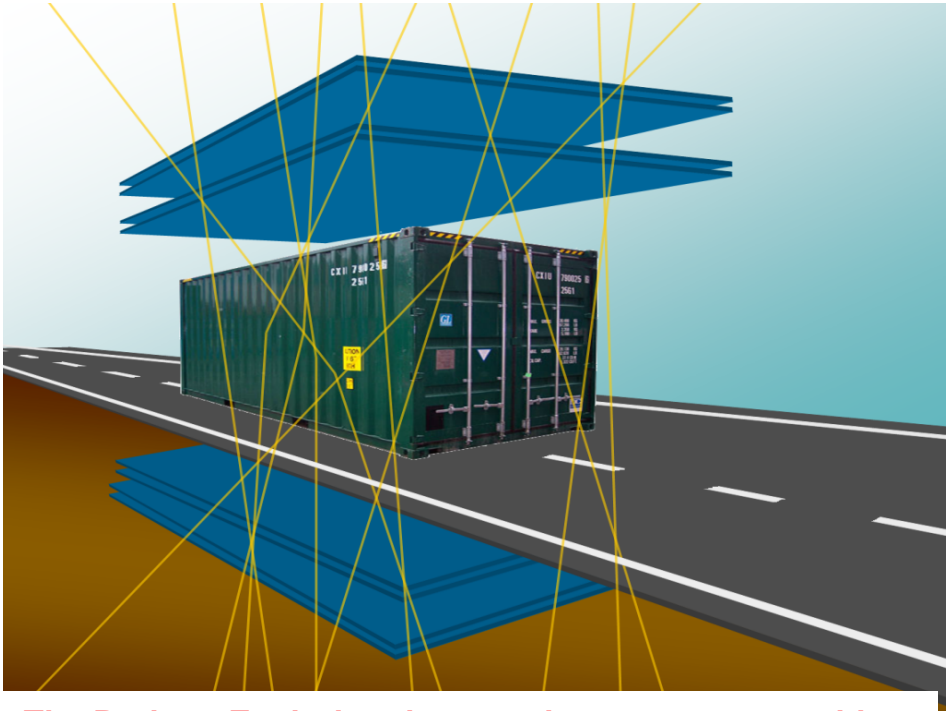
To zoom in and out, hold the shift button and again drag the model.

Viewer Param File

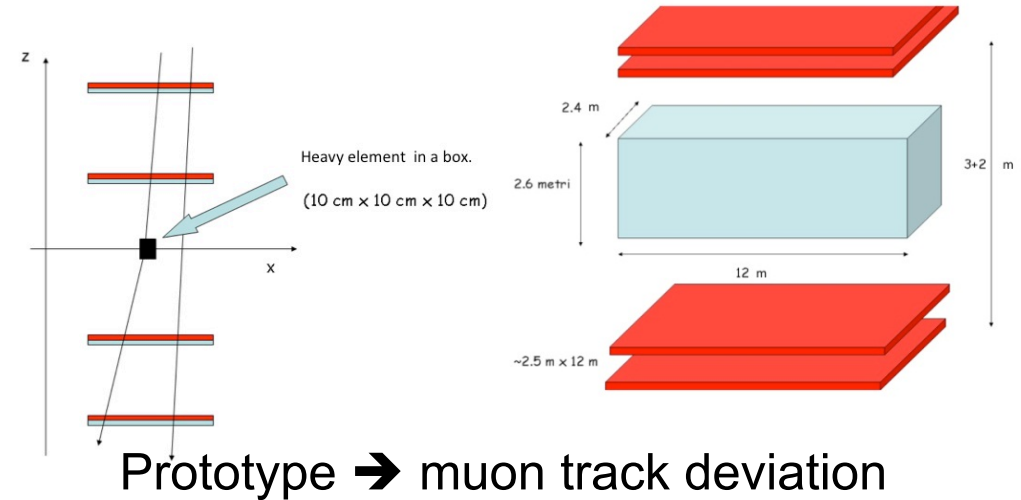




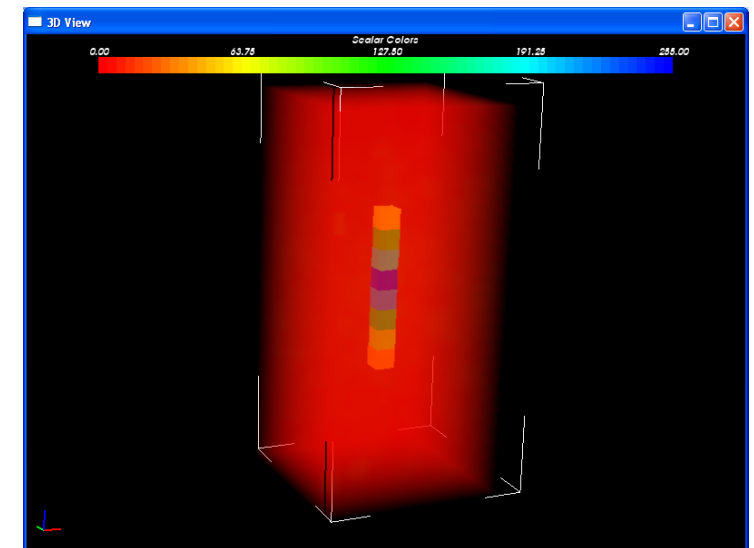
- Over 120 million vehicles enter the United States each year.
- Many are capable of transporting hidden nuclear weapons or nuclear material.
- Currently deployed X-ray radiography systems are limited because they cannot be used on occupied vehicles and the energy and dose are too low to penetrate many cargos.
- We will build an equipment that overcomes these limitations ***by obtaining tomographic images using the scattering of cosmic radiation as it transits each cargo container.***



The Project: Exploring the container content searching for nuclear material (uranium, plutonium)



Compute: coordinates and deviation angle that the muon track has when high-Z material element is in the path.



MAIN POINTS

- ✓ **PROJECTS & MAN POWER**
- ✓ **ROLES AND RESPONSIBILITIES**
- ✓ **CONTRIBUTING PATCHES**
- ✓ **ISSUE TRACKING**
- ✓ **DOCUMENTATION**
- ✓ **DISSEMINATION & OUTREACH**

VisIVO - Projects

EDGI (ended in August 2012)

EGI-INSPIRE (end 2013)

SCI-BUS (end 2014)

ER-FLOW (end 2014)

INAF-UoP (TBD end 2015)

Muon Portal (end 2014)

**INAF LONG/MEDIUM TERM
PLAN ACTIVITY**

Man Power

INAF

3 Staff Pers. + 3 Temp. Pers.

UoP

1 Staff Pers. + 1 Temp. Pers.

Roles and Responsibilities

Users: software usage, bugs report, requests asking new features and suggestions (approx 50)

Contributors & Committers: source code patches, new code, individual modules (approx 10)

Maintainers: merge of contributions, bug fixing, new development branches, etc. (4 people)

Project Lead: INAF OACT: Ube + Aco

Contributing Patches

The contributed patches are normally submitted via e-mail

Mailing List: two public mailing lists hosted by sourceforge.

- VisIVO Users list
- VisIVO Developers list

Issues Tracking

Four tracks will be soon available

Bug Reports: for software bug fixing tracking and management

Support Requests: end-users needs and assistance

Features Requests: collecting and processing feedback

Patches: a drop box for end-users supplied code patches

Documentation

User Documentation: it is provided through sourceforge. It includes examples and test-cases

Developers User Guide:
Although it is not difficult to modify/extend the VisIVO code, a developers user-guide will be provided.

Dissemination

Referred Papers: more than 10 on Specialistic Journals in the last 5 years.

Conferences: 2/4 per year

Contributed Papers: 2 per year

Portal (Science Gateway): Not limited to the Scientific Community

Outreach

Common Citizens: *International Competitions* open to scientists and common citizens (commercial activities)

→ To increase the number of users and to open our participation in new projects.

Scientific Support: New Scientific Communities: Data Exploration Features and Infrastructures (grid and HPC) that can be used by many researchers in different fields... and simple to use

Industry: Participation to Industrial/Commercial projects (e.g. Muon Portal / Spin-off)

Outreach:

2,000 students in UK, 1,600 students in Italy



VisIVO Corner

Prizes for using SpaceMission

MacBook + Ipad

Maintenance costs

They are correlated to the target end users

- **Astro Community:** Low maintenance costs: 1 FTE provided by INAF
- **Other scientific communities** (CompChem, Particle Physics, etc.): 1 additional FTE to be hired through participation to funded research projects during the development/porting phase. Man power contributed by target communities to support maintenance.
- **Industry/Commerce:** A spin-off project is under discussion. The start-up phase will require 1 FTE provided by INAF. In the second phase the spin-off should be able to auto-sustain through its commercial activity.
- **Outreach:** it is a fundamental mission of INAF. Projects like Intech activity could be funded through 0.5 FTE provided by INAF. An efficient outreach activity in this phase opens new opportunities in Horizon 2020.

- VisIVO offers a **rich set of functionalities** for data visualization and exploration
- It is now **a multi-disciplinary tool** with an expanding community of end-users
- The increase of the community of end users will have a **positive impact on the long-term sustainability**
 - More users whose scientific production rely on the tool
 - More feedback and contributors
 - More chances to get funds to maintain the tool
 - New projects that adopt the tool to achieve its goals

- The group that originally designed and developed VisIVO will continue to maintain it and to add new functionalities
- Part of the members of the group who maintain VisIVO are **staff personnel** of INAF
- New projects and e-Infrastructures that choose to use VisIVO means new opportunities **to get fresh resources** partly invested in maintaining the tool