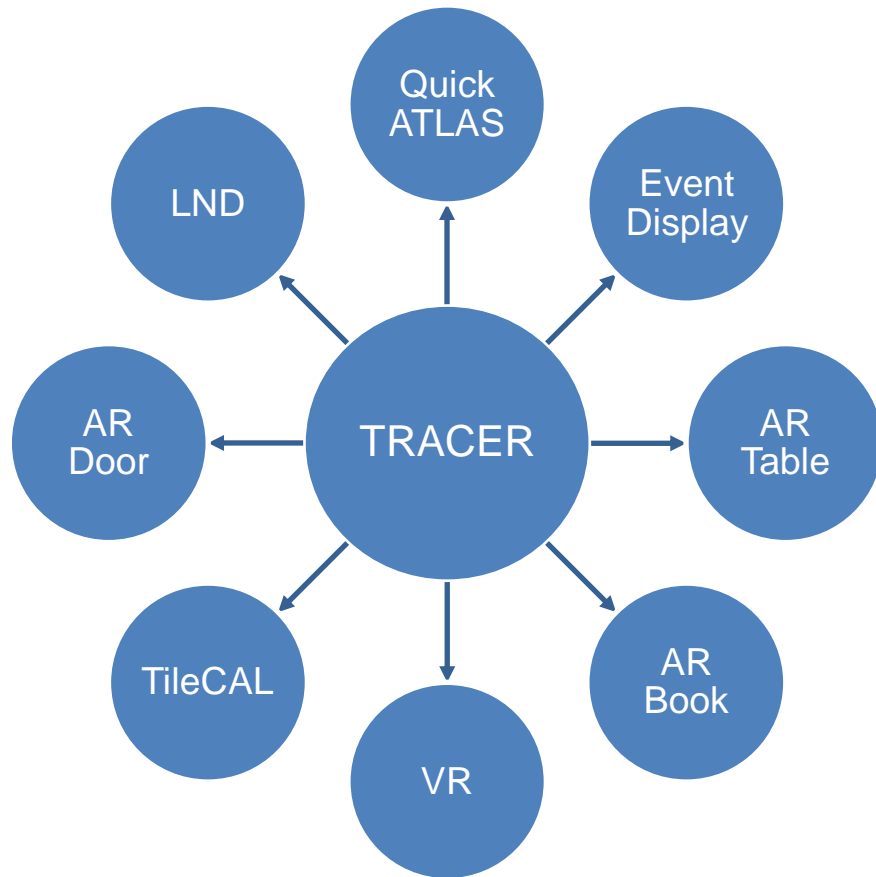


RACING NEW VISUALISATION TECHNOLOGIES – TRACER FRAMEWORK


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- What is the TRACER?
 - TRACER is the browser-based Visualization Framework of the ATLAS Detector
- Is it Free?
 - Yes, TRACER is non-commercial and freeware software application never requires third-party authorization for work
- How it works?
 - TRACER accessible in all browsers by the link <https://tracer.web.cern.ch> , compatible with all hardware and never requires the installations



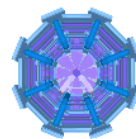
<https://tracer.web.cern.ch>



ATLAS Tracer

3-Dimensional Framework for the Visualization of the ATLAS Detector

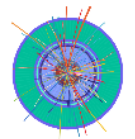
[GitLab](#)



TracerCORE

Core module of the 3-Dimensional Visualization of the ATLAS detector

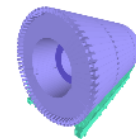
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TracerEVD

3-Dimensional Event Display Application


[Go to Application](#)



TracerTCAL

3-Dimensional Interactive Display of the Tile Calorimeter


[Go to Application](#)



TracerART

Augmented Reality Table enables to put detector on the discussion table


[Go to Application](#)



TracerAR-BOOK

Augmented Reality Book is the 3D-extension of the paper printed documents

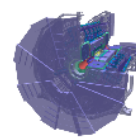
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TracerVR

Virtual Reality application for the realistic representation of the digital content of Detector in the 3D


[Go to Application](#)



TracerQuickATLAS

Quick Visualization of the ATLAS detector

[Go to Application](#)

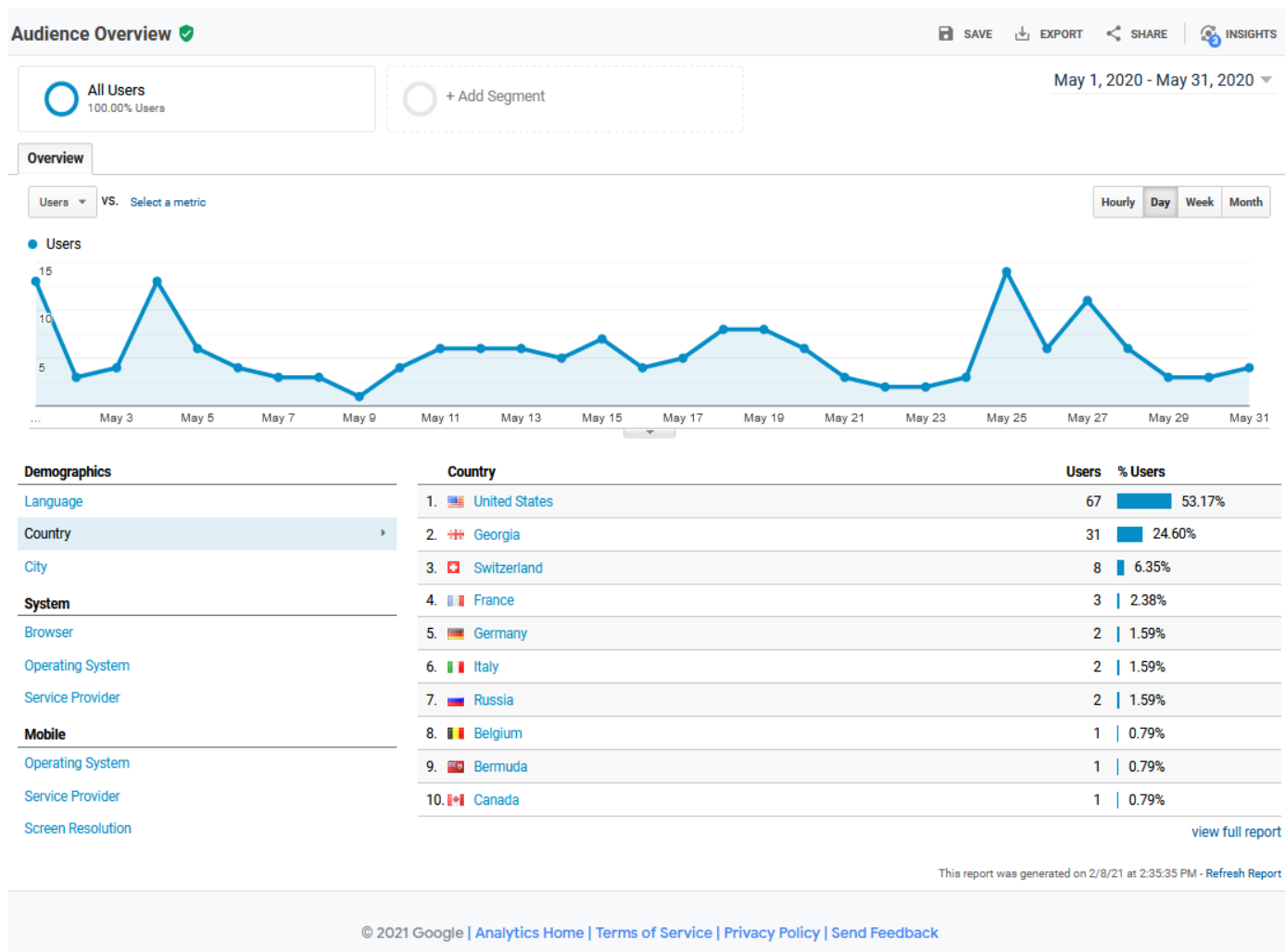


TracerARD

Augmented Reality Door for the navigation inside of the ATLAS detector

[Go to Application](#)

■ TRACER Framework usage statistic in 1 month

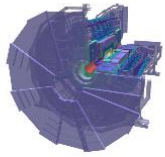


- Visualization technologies are growing rapidly
 - This is a highly competitive field - everybody developing, everything is developing
 - 1 year here is like 10 years. Everything growing fast and even months are decisive
 - The only opportunity to succeed is to have developers team with high momentum on a long period
 - Otherwise, there are no chances to compete
- 
- Georgian Team has high creativity and momentum to challenge the rapidly developing field
 - Since our last presentation on the ATLAS week in June 2020 we have developed 3 new visualization applications which I would like to present you today:

TRACER/QuickATLAS

TRACER/ARB

TRACER/VR



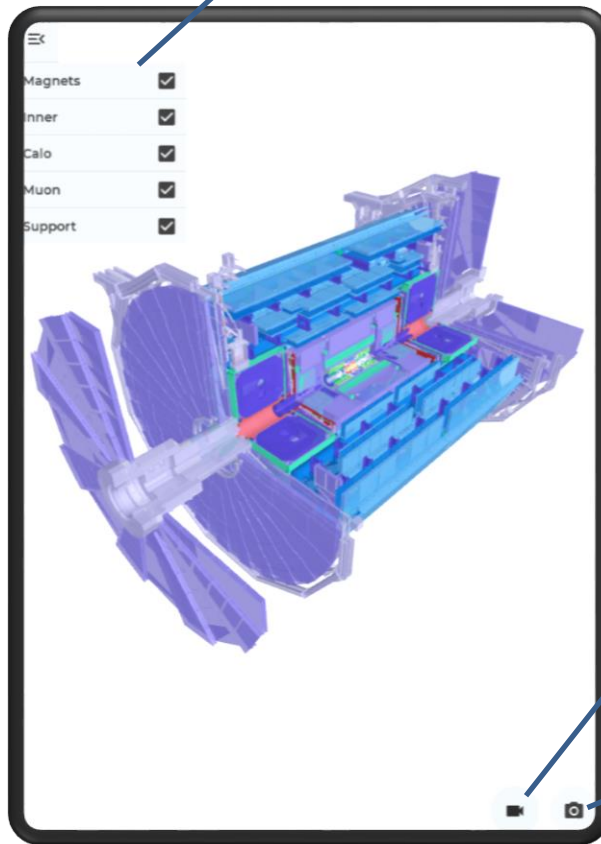
TracerQuickATLAS

Quick Visualization of the ATLAS detector

[Go to Application](#)

- Quick ATLAS is the application for the mobile devices
- That can be used as a quick visit card of Detector

Choosing the different detector configurations



Video recording

Make real life photo with detector





TracerAR-BOOK

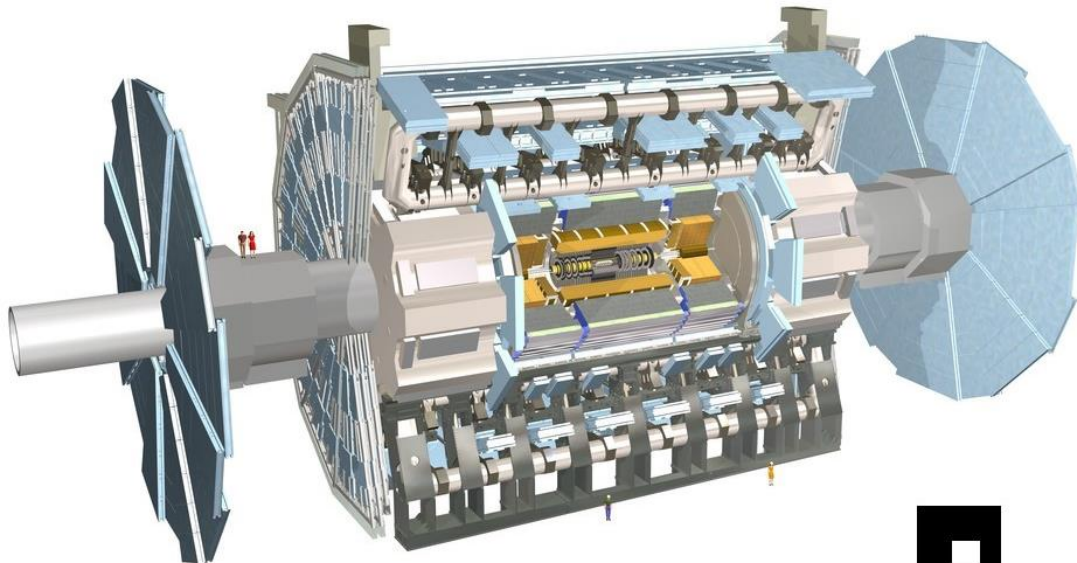
Augmented Reality Book
is the 3D-extension of the
paper printed documents

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- The Augmented Reality Extension of the Children Book - “Liza Max”
- Collaborative partner – The ORIGIN Collaboration



Scan the QR code and watch with camera the detector image below for activation the AR Extension



Main difficultness:

- Gyroscopic Control
- Stabilization of Scene
- A mixture of Orbit and Gyroscopic controls

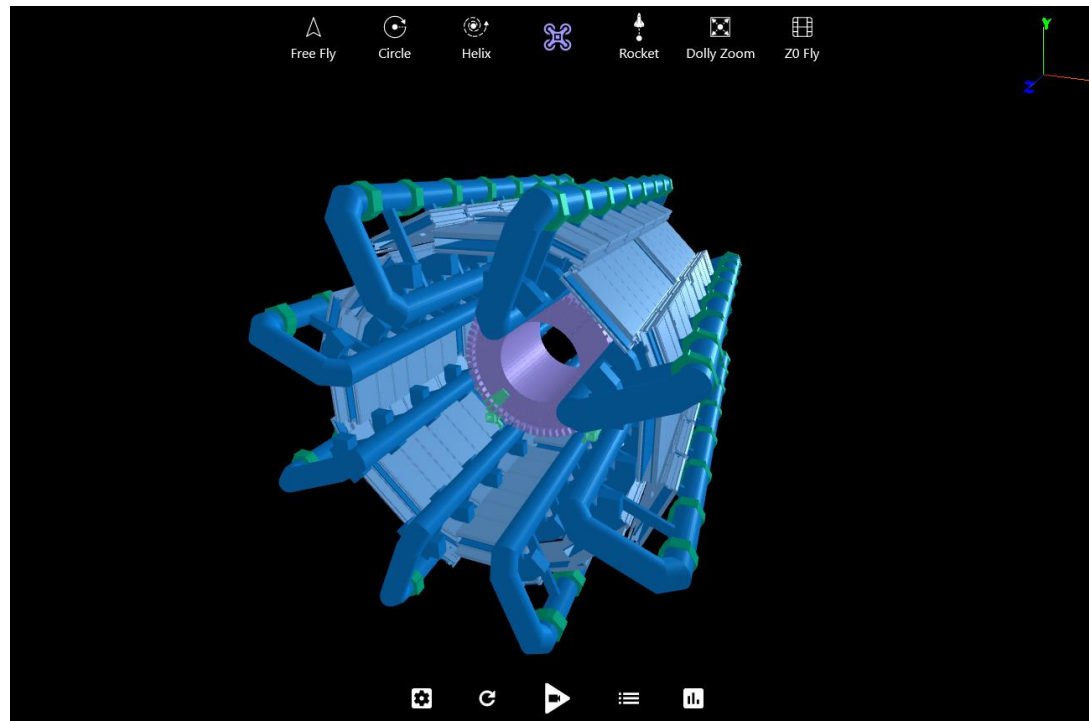


TracerVR

Virtual Reality application
for the realistic
representation of the
digital content of
Detector in the 3D

[Go to Application](#)

- The Virtual Reality Application for realization of the ATLAS virtual tours
- Application running in browsers, using average power mobile phones and 10 euro Google cardboards
- No special hardware, engines or super notebooks!



1. The development of state-of-the-art visualization applications on the base of browsers is a very challenging
2. It is difficult for developers but brings maximum benefits to the user's community
3. The main difficultness of the browser-based applications is the lack of Performance and Quality of the 3D scenes
4. TRACER framework use unique solutions to ensure the high performance and high quality of the 3D scenes
5. TRACER use so-called fast geometries and high-performance loaders, developed by the Georgian team

6. TRACER has a library with 246 geometry models, specially designed for browser-based visualization applications and ensuring a minimal amount of triangles and high quality of the 3D scenes. The special topology of the geometry volumes, developed in recent 5 months, bring the high performance of their visualization
7. TRACER has high momentum and a dynamic team of developers. We have very nice and healthy collaborations with the several partners

Thanks for your
Attention!

Comments are Welcome

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