http://atlascomputingagora.web.cern.ch/

The ATLAS Computing Agora (ACA):
a resource web site for citizen science projects

CHEP 2016

The ATLAS collaboration has recently setup a number of citizen science projects which have a strong IT component: event simulation through volunteer computing, algorithm improvements via Machine Learning challenges, event scanning on citizen science platforms, use of open data, etc. Most of the interactions with volunteers are handled through message boards, but specific outreach material has also been developed, giving enhanced visibility to the ATLAS software and computing techniques, challenges and community. The need for a dedicated platform was thus identified and discussed within the ATLAS Computing group. In the proposed "ATLAS Computing Agora" web site, static descriptions of the software and computing domains are combined with links to outreach activities and news pieces, in order to reach and engage communities beyond the usual circles of followers. Analysis of the number of visitors and evaluation surveys will help to better identify the origin, needs, wishes and motivation of our visitors.

"While running ATLAS simulation, please have a look at… and discover…"

Data Flow
Simulation, Distributed Production, Reconstruction, Calibration, Analysis, New ideas and models

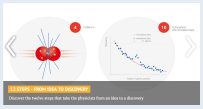
Projects
Citizen science, Machine Learning, Open data, Visualising the Invisible

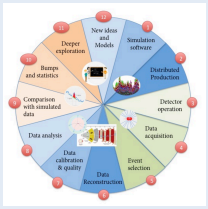
Updates
Outreach, Lectures and Talks, CHEP Briefings

Data Flow

Most of the documents prepared for the media and the general public describe detectors and physics results without detailing the data flow. This weakness was partially addressed in 2016 by a "CERN backgrounder" (short document posted on the web and social media) describing the 12 steps from ideas to discoveries:

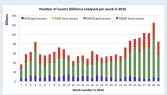
1. Ideas and models
2. Simulation
3. Construction
4. Collisions
5. Detection
6. Event selection
7. Reconstruction
8. Calibration
9. Data analysis
10. Comparison with simulation
11. Bumps and statistics
12. Deeper exploration





Each of these items involves software and computing activities. The 12 steps were adapted in ACA to highlight specific domains. Those describing computing and offline software are indicated in blue.

The theme "data flow" allows for the smooth integration of outreach material developed by other actors, such as the IT department, as well as the integration of plots, maps & numbers extracted from the ATLAS computing dashboards and monitoring tools used by shifters and experts.



Data and data flow have proven to be a strong source of inspiration for artists, educators and the public. A colourful and up-to-date page provides an overview

ACA visitors can either click on word bubbles or use keywords to access a set of project specific web sites.

Projects

ATLAS outreach involves communication platforms and content, educational tools, local events and visits addressing the general public, policy makers, students and teachers.

Projects are complementary: proposed by a small group of collaboration members, funded by their institutes, they reach specific audiences and are often set up in partnership with educators, artists or experts from other disciplines. Several projects with large outreach potential have a strong software and computing component:

❑ ***Citizen science projects***: volunteers celebrate the Higgs anniversary by looking for secondary vertices on events

❑ ***Sonification***: data transformed into sounds are a source of inspiration for musicians.

❑ ***Virtual reality:*** the ATLASrift project takes Oculus fans down to the ATLAS cavern.

❑ ***Open data:*** the portal Includes interactive tools and Virtual Machines

Updates

Agora*: central spot of ancient Greek cities. By extension a "gathering place" or "assembly".*

Interactions between the projects developers and participants occur primarily through message boards, but resource links are a source of inspiration and motivation. The ATLAS outreach group has developed over the years a strong reputation for communicating UPDATES to the general public:

❑ ***News***: describe specific events chosen by the communication team. This model was used on a few occasions for software and computing topics

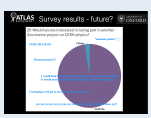
❑ ***Blogs***: written and signed by collaboration members, they have a more personal style and describe every day life and work.

❑ ***Briefings***: describe and summarise of the content of a publication to the public. This model, originally developed for physics publications, can be used for papers such as CHEP proceedings.

❑ ***Links to talks*** and seminars given as part of CERN schools and students programs. They provide a deeper understanding.

❑ ***Virtual visits***: are organised on request. They allow an interactive connection from the ATLAS control room. ATLAS activities are introduced, followed by a Q&A session.

❑ ***Evaluation:*** goes through surveys, which help to better understand the audience profile, needs and inputs. Some outreach projects have successfully pioneered this approach.



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