ATLAS and CMS Virtual Visits: Bringing Cutting Edge Science into the Classroom and Beyond

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Virtual Visits are **live conversations**, in the participants’ preferred language, that **connect** the public, usually **teachers and students**, with **scientists** at laboratories e.g. the ATLAS and CMS Experiments at CERN.

An Iranian scientist guiding a CMS Virtual Visit from **Iran**

Remote audience (university students) from **Palestine** during an ATLAS Virtual Visit
Aims at **inspiring young people** to ask questions and get involved in science

A very young audience from **Poland** asking questions during a CMS Virtual Visit

Guide answering questions from the ATLAS Control Room
Empowers the education process and could be reinforced by preparation and follow-up to maximize success.

Virtual Visit consists of:
- Video conference
- Live webcast for parents and other passive audience
- Video recording on a permanent site for future reference

* List of resources for Preparation and Follow up can be found in the Backup slides.
Participants visit experimental facilities remotely and see even more than physical visitors.
Everyone in the world is a potential virtual visitor, not only schools!
Simple, cheap and accessible to all

Remote locations need:
✓ Computer
✓ Internet
✓ Video projector/TV screen/…
✓ Microphone
✓ Vidyo/Hangouts/Skype… (test compulsory)

Teams that make it happen:
✓ Guides (native language of the visitors)
✓ Coordinator (booking, preparation process, etc.)
✓ Technical Operator(s)

A visit projected on the wall of a classroom (remote location)

CMS mobile equipment
Participants join from the farthest corners of the world

ATLAS Virtual Visits: Nov 2010 - July 2015
Partnerships help to reach out to educational communities in Europe and beyond.

Partnership with Open Discovery Space Network enabled to reach numerous schools with one connection AND connect with other research infrastructures (e.g. IceCube) to perform large-scale national and international Virtual Visits.

CMS/ATLAS/IceCube Virtual Visit, Oct. 2014: 5 schools from Bulgaria, Greece, Israel, Romania, Serbia 380 students.
Feedback helps us to understand what our participants value the most.

“It’s great to work with our colleagues at CERN to show students two different cutting edge detectors, each with a different approach to exploring the universe.”

Jim Madsen

Associate Director for Education and Outreach at the Wisconsin IceCube Particle Astrophysics Centre

Local organizer of a joint ATLAS/CMS Virtual Visit
Feedback helps us to understand what our participants value the most.

“What surprised me today is the fact that I didn’t know the people were trying to find the answer about how the universe was made. I have always thought about that.”

11-year-old student from Los Angeles, US
Participant of a CMS Virtual Visit
Feedback helps us to understand what our participants value the most.

“This way of gaining knowledge is way more attractive and interesting, because it let us gather information directly from CERN workers on how one of the most important laboratories in Europe works.”

13-year-old student from Poland
Participant of a CMS Virtual Visit
**ATLAS Virtual Visits Facts**

- **Best online event / Digital Communication Award 2012**
- 40 countries reached
- **Launched in 2010**
- ~80% of the requests come from ATLAS institutes
- 227 visits since 2010
CMS Virtual Visits Facts

- Mobile equipment / access to experimental facilities
- 21 countries reached
- Officially launched Sept. 2014 / First trial visit Nov. 2011
- 80% of participants are students
- More than 7,500 participants
- 66 visits within 10 months
Really **simple for a physicist** to get involved

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**...as a coordinator**

- Bring a Virtual Visit to your local school or your own high school
- Talk to your national [IPPOG representative](#) to see how they can help you in coordination of the Virtual Visits for many schools from your country
- Giving a public/school talk? Work with us to organize a Virtual Visit as a follow-up!

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**...as a guide**

- Based at CERN? Join our team of guides!
ATLAS VIRTUAL VISITS

- Website: [http://cern.ch/atlas-virtual-visit](http://cern.ch/atlas-virtual-visit)
- Contact: atlas.public@cern.ch
- Photos: [http://cern.ch/go/B7rt](http://cern.ch/go/B7rt)

CMS VIRTUAL VISITS

- Website: [http://cms.web.cern.ch/content/virtual-visits](http://cms.web.cern.ch/content/virtual-visits)
- Contact: cms-otreach@cern.ch
- Photos: [http://cern.ch/go/lv8V](http://cern.ch/go/lv8V)
- Angelos Alexopoulos
- Noemi Beni
- Michael Hoch
- Marzena Lapka
- Achille Petrilli
- Sofoklis Sotiriou
- Zoltan Szillasi

- Steve Goldfarb
- Lucie Aguirre
- Ewan Hill
- Claire Adam-Bourdarios

+ a big team of guides
Related Education & Outreach

These resources can help with “Preparations” and “Follow up” of the Virtual Visit:

- **Masterclasses**
- **CERN Open Data Portal**
- Classroom lecture/talk by a researcher
- ...