

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

Marzena Lapka,
The CMS experiment, CERN
On behalf of ATLAS and CMS Outreach Teams

EPS Conference, Vienna, Austria, 25 July 2015

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.



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

Participants **visit** experimental facilities **remotely** and see even more than physical visitors



Guide accessing the detector



View of the ATLAS Control Room



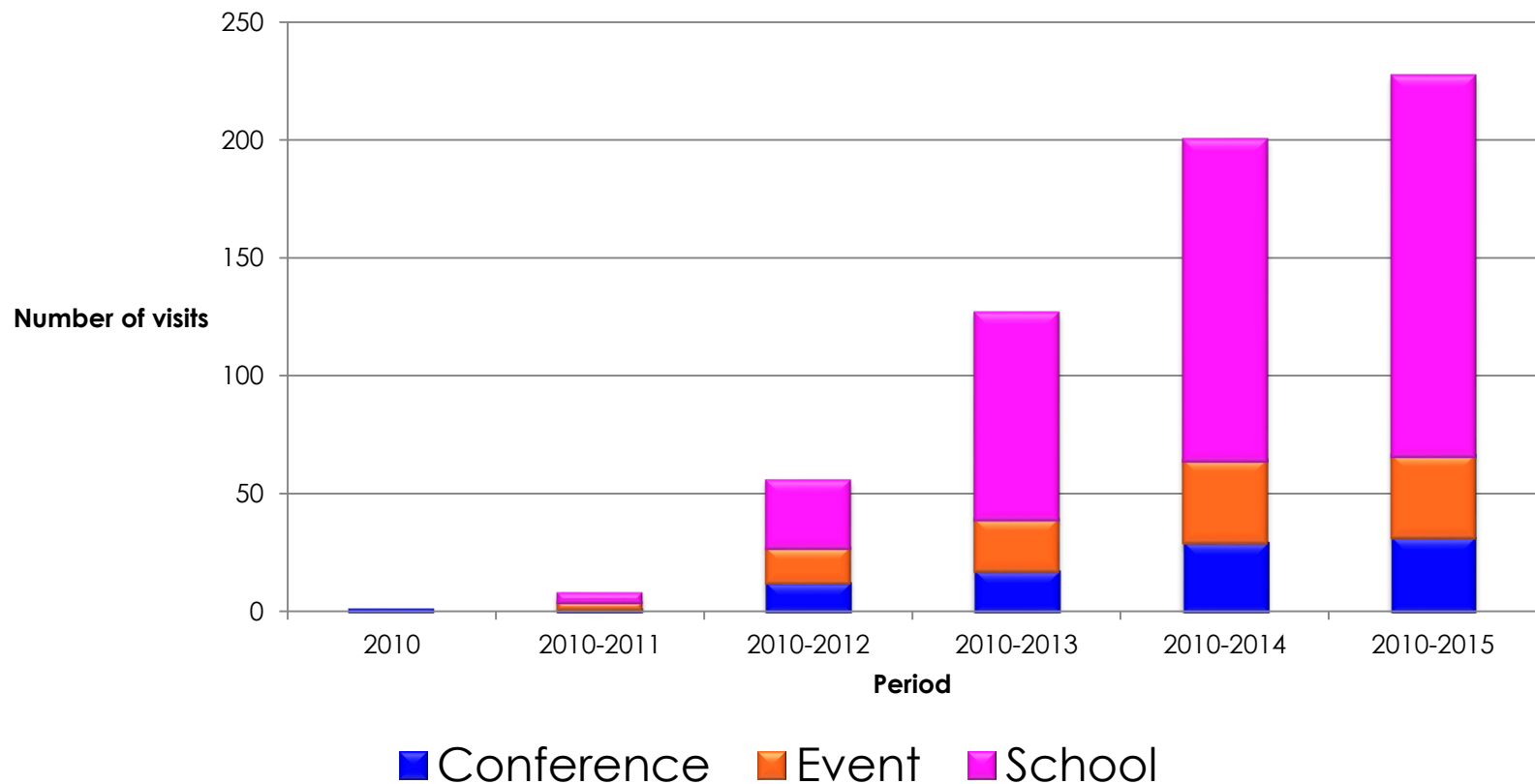
On the top of the CMS detector



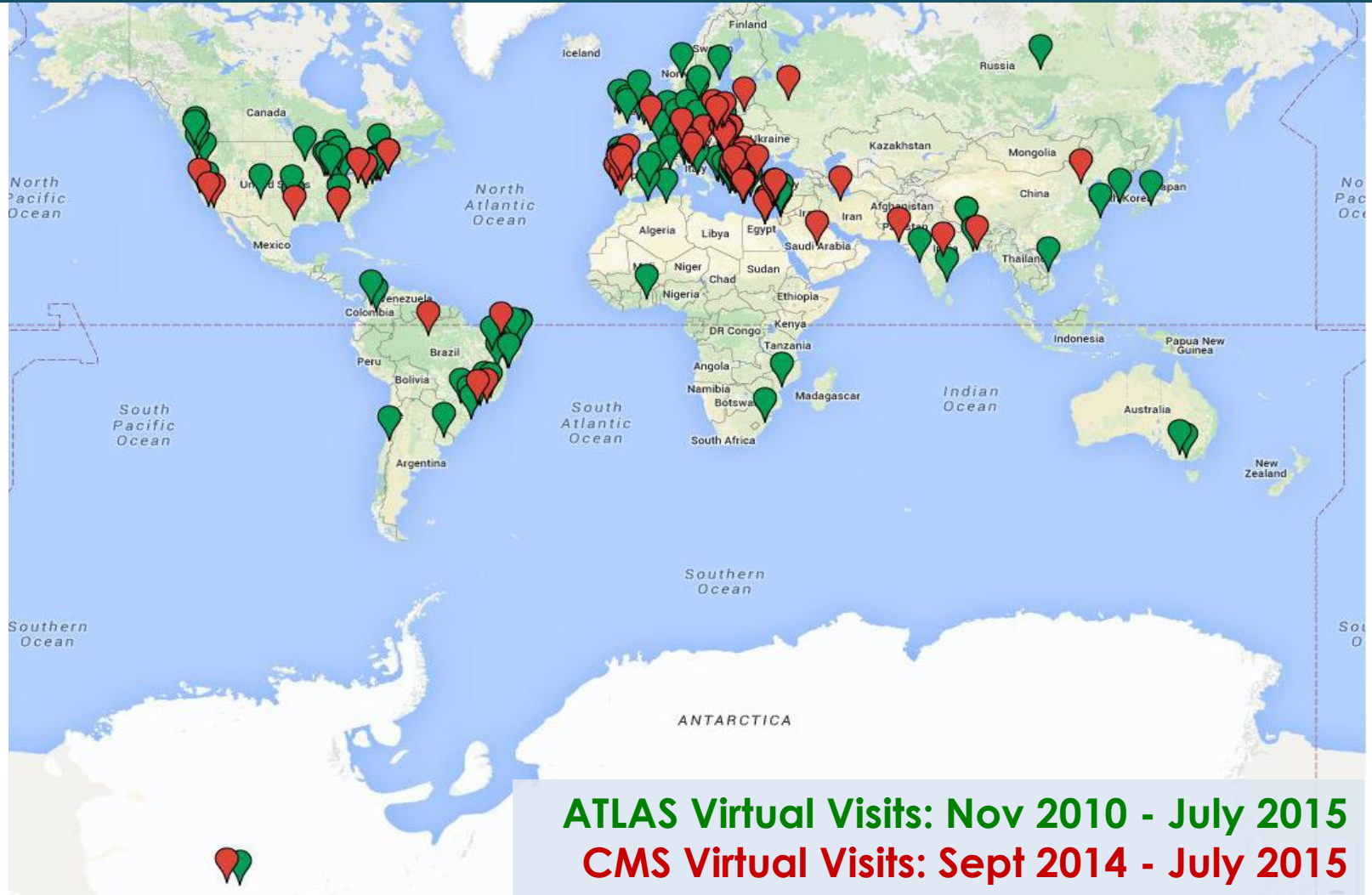
A visit from the CMS detector cavern

Everyone in the world is a potential virtual visitor, not only schools!

Evolution of ATLAS Virtual Visits per type



Participants join from the farthest corners of the world



Simple, cheap and accessible to all

Remote locations need:

- ✓ Computer
- ✓ Internet
- ✓ Video projector/TV screen/...
- ✓ Microphone
- ✓ Vidyo/Hangouts/Skype... (test compulsory)



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

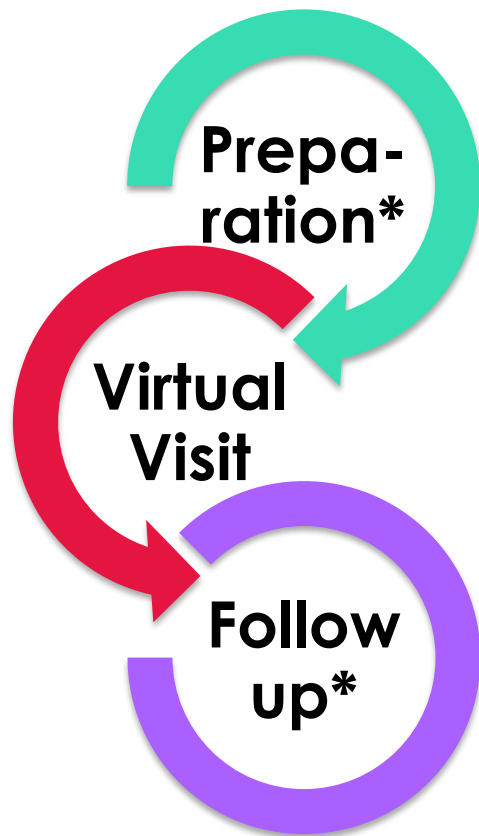
Teams that make it happen:

- ✓ Guides / **You!** 😊
(native language of the visitors)
- ✓ Coordinator (booking, preparation process, etc.)
- ✓ Technical Operator(s)



CMS mobile equipment

Empowers the **education process** and could be reinforced by **preparation and follow-up** to maximize success.



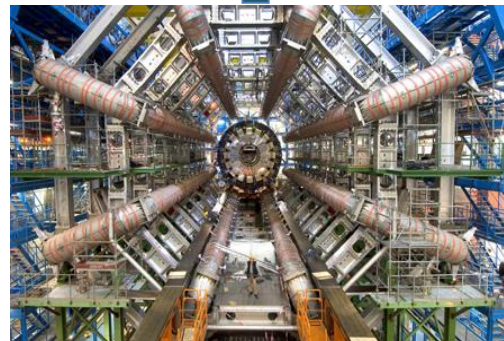
Virtual Visit consists of:

- Video conference
- Live webcast for parents and other passive audience
- Video recording on a permanent site for future reference

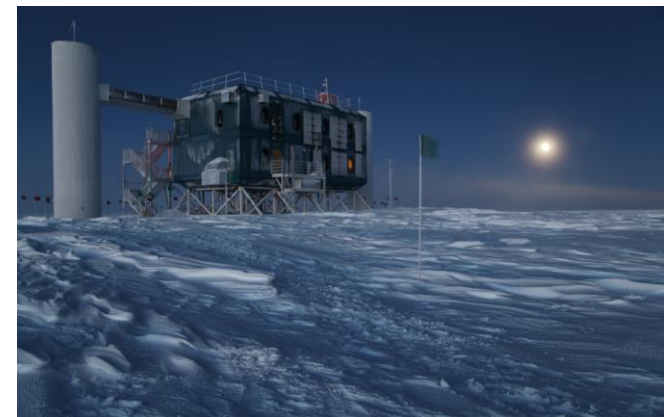
** List of resources for Preparation and Follow up can be found in the Backup slides.*

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.



inspiring
SCIENCE
education



CMS/ATLAS/IceCube Virtual Visit,
Oct. 2014:
5 schools from Bulgaria, Greece, Israel, Romania, Serbia

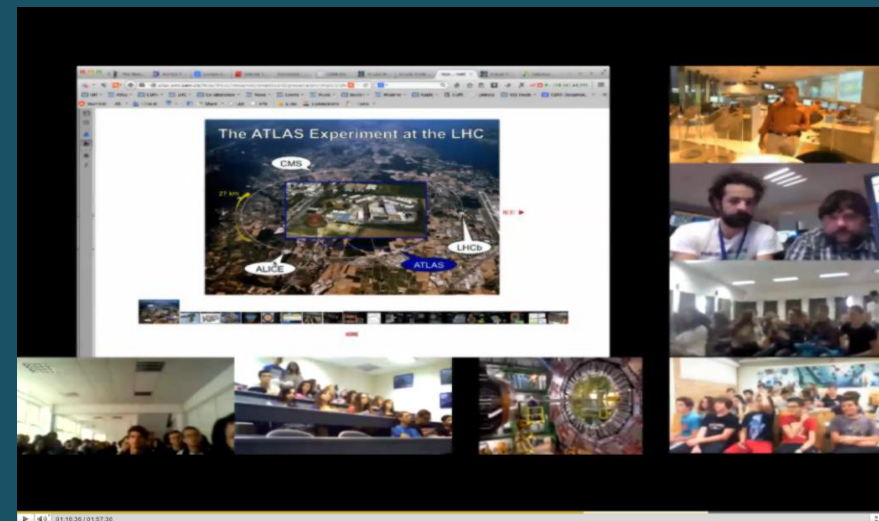
Feedback helps us to understand what our participants value the most.

*“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 organiser 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



Feedback helps us to understand what our participants value the most.



جامعة المنصورة
مكتب العميد

Dear Colleagues,

We would to express our great thanks to CERN organization especially CMS and ATLAS experiments for the succeeded scientific event “**Virtual Visit to CERN**” on **27 October 2014** in collaboration with Faculty of Science, Mansoura University, Egypt.

Thank you in advance
All of our best regards,

EL-Bass

Prof. Dr. Ahmed H. Bassiouny
Professor of Mathematical Statistics,
Dean of Faculty of Science,
Mansoura University
Mansoura 35516,
Egypt.

Coordinator:
Dr. M. Sallah, *M. Sallah*
M. Ezzat Kassar,
M. Kassar

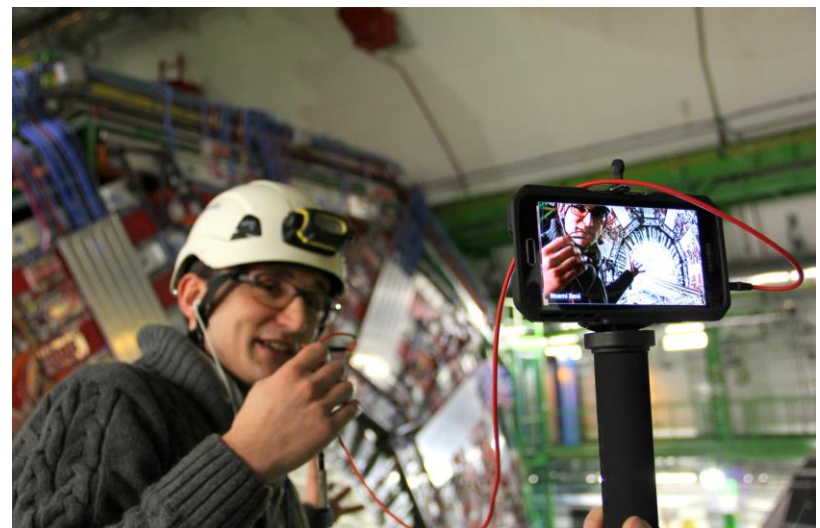
Really **simple** for **YOU** to get involved!

...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 organise a Virtual Visit as a follow-up!

...as a guide

- Based at CERN? Join our team of guides!



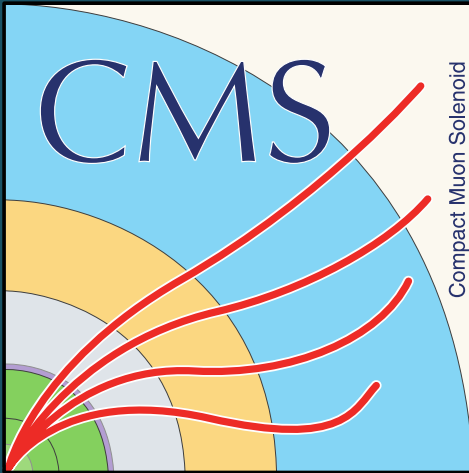
Practical information

ATLAS VIRTUAL VISITS

- Website: <http://cern.ch/atlas-virtual-visit>
- Contact: atlas.public@cern.ch
- Photos: <http://cern.ch/go/B7rt>

CMS VIRTUAL VISITS

- Website: <http://cms.web.cern.ch/content/virtual-visits>
- Contact: cms-otreach@cern.ch
- Photos: <http://cern.ch/go/lv8V>



BACKUPS

ATLAS Virtual Visits Facts



Best online event / Digital
Communication Award 2012



40 countries reached



~ 80% of the requests come from
ATLAS institutes



Launched in 2010



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

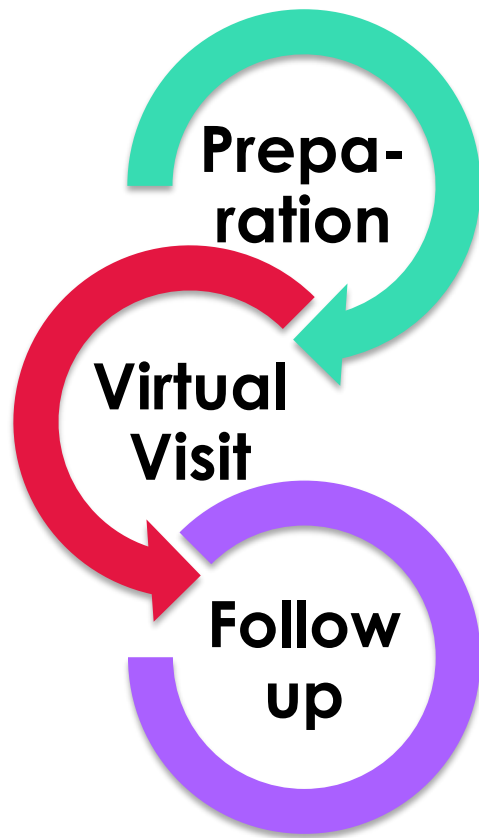


More than 7 500 participants



66 visits within 10 months

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
- ...

Acknowledgements

ATLAS Experiment

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

CMS Experiment

- Angelos Alexopoulos
- Noemi Beni
- Michael Hoch
- Marzena Lapka
- Achille Petrilli
- Sofoklis Sotiriou
- Zoltan Szillasi