

The Up2University Project

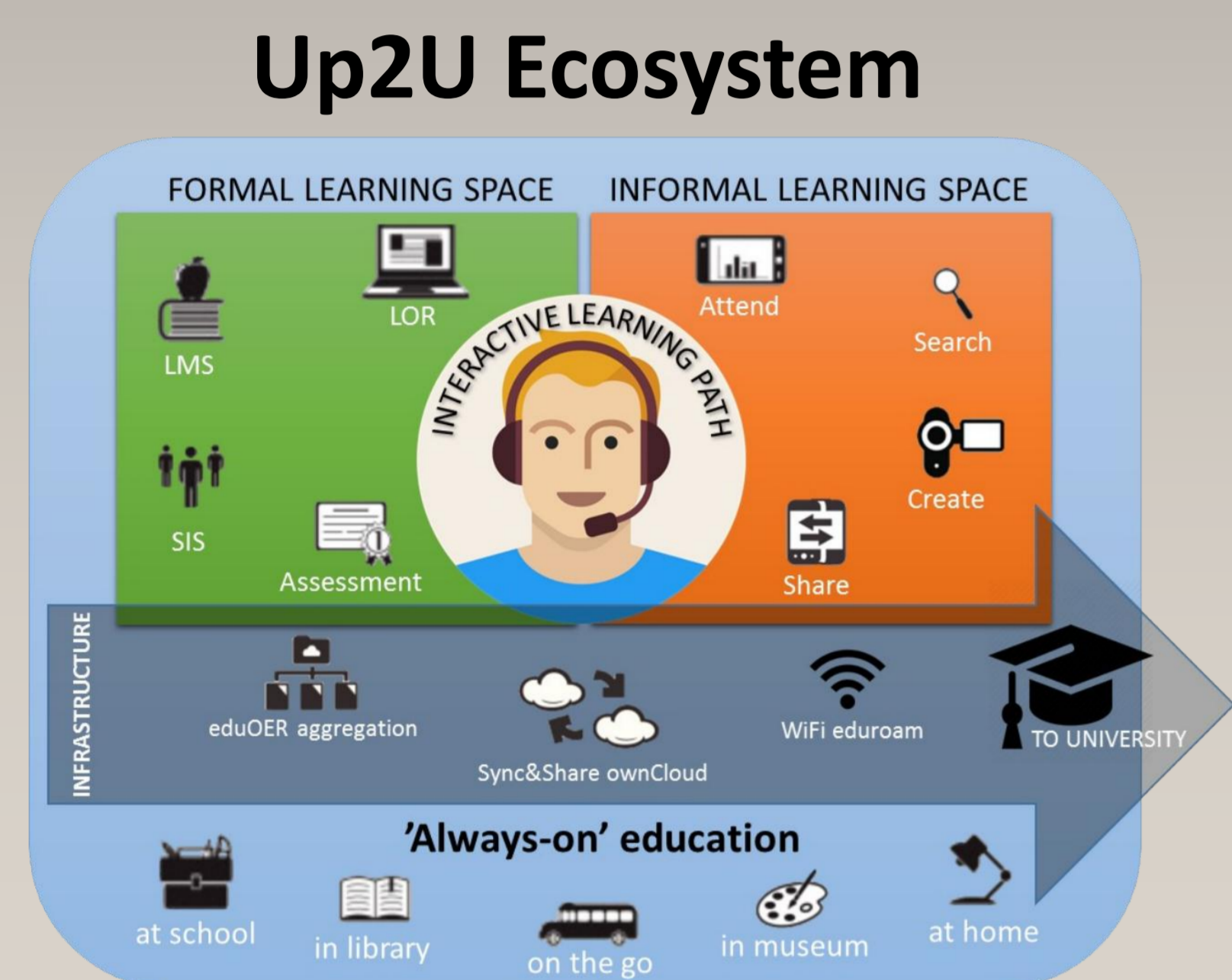
EC Call ICT-22-2016: Technologies for Learning and Skills
5M EUR funding for 3 years

12 countries in Europe
18 partners: Academia,
Research, Industry, NRENs

Objective:

Bridge the gap between secondary schools,
higher education, and the research domain
→ Adapt technology and methodology
→ Get kids interested and involved in science early on

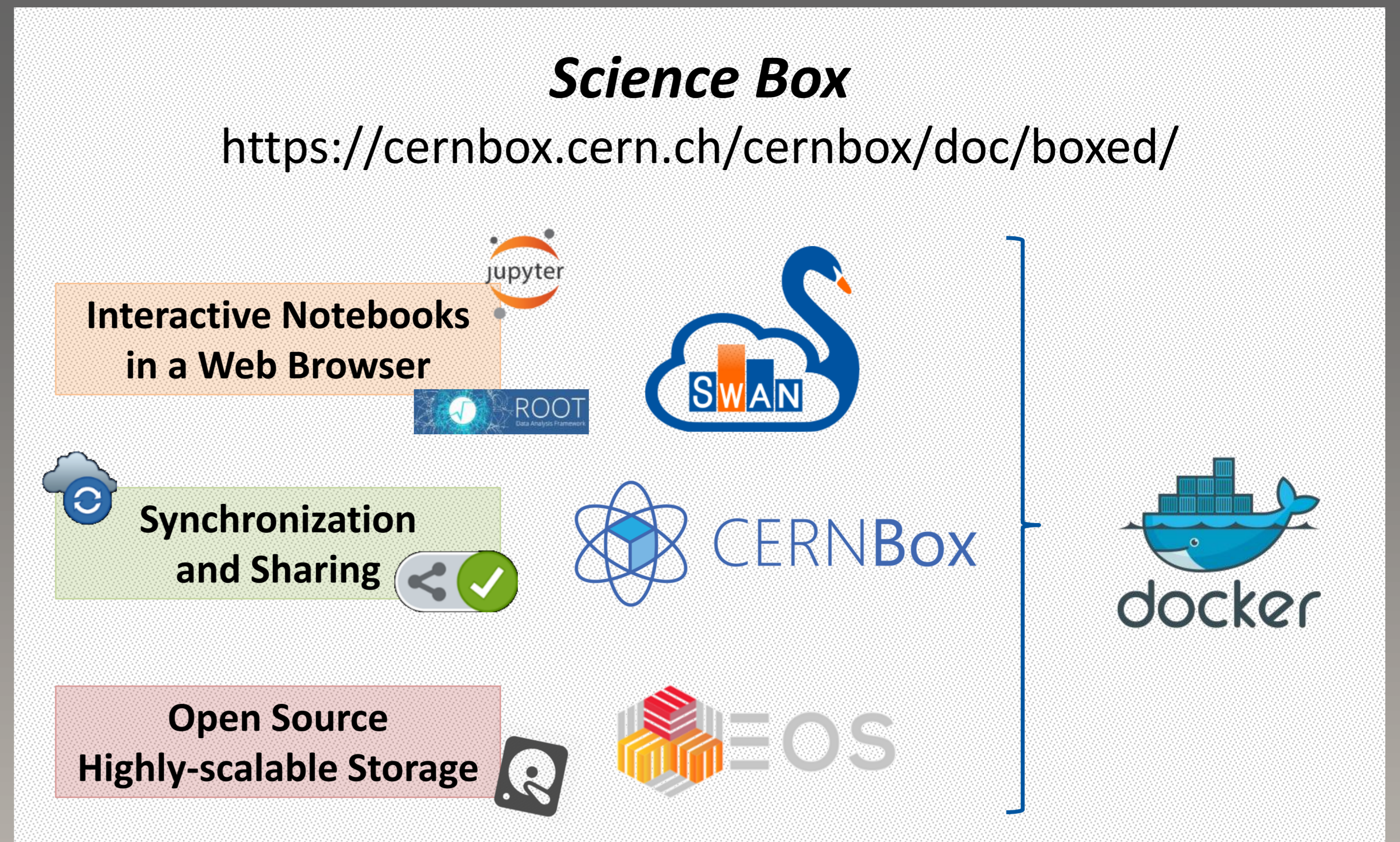
Target Audience: 12-18y old students and their teachers



Always-on Education

- **Formal**
Courses, assignments, ...
- **Informal**
Experimentation,
peer-to-peer learning,
social interactions

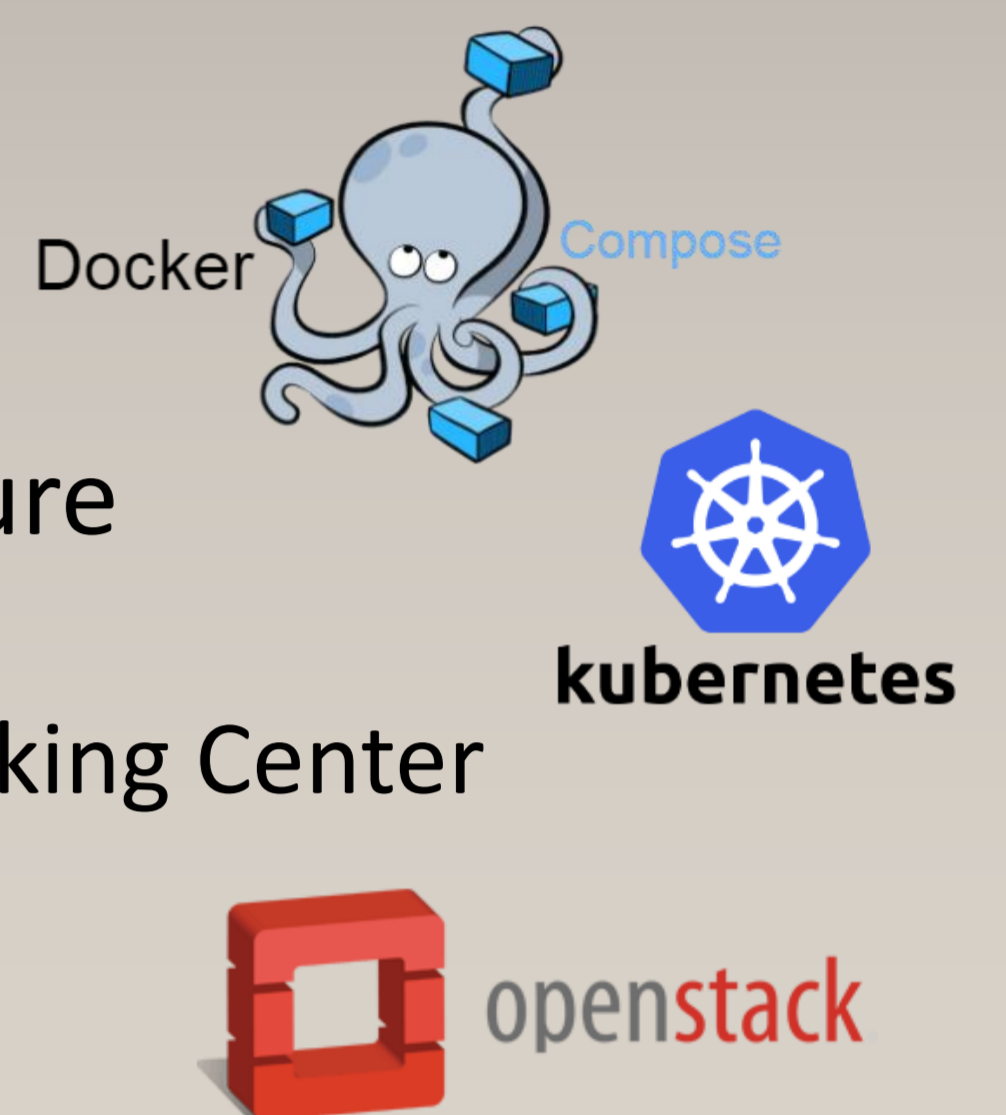
CERN Cloud Technology for Up2U



Docker-based package with storage,
sync & share, and interactive notebooks

Pilot Service for Up2U:

- Deployable on any cloud infrastructure
 - CERN
 - Poznań Supercomputing and Networking Center
- Highly customizable and scalable
- Elastic provisioning of resources



Up to University

CERN IT-Storage:

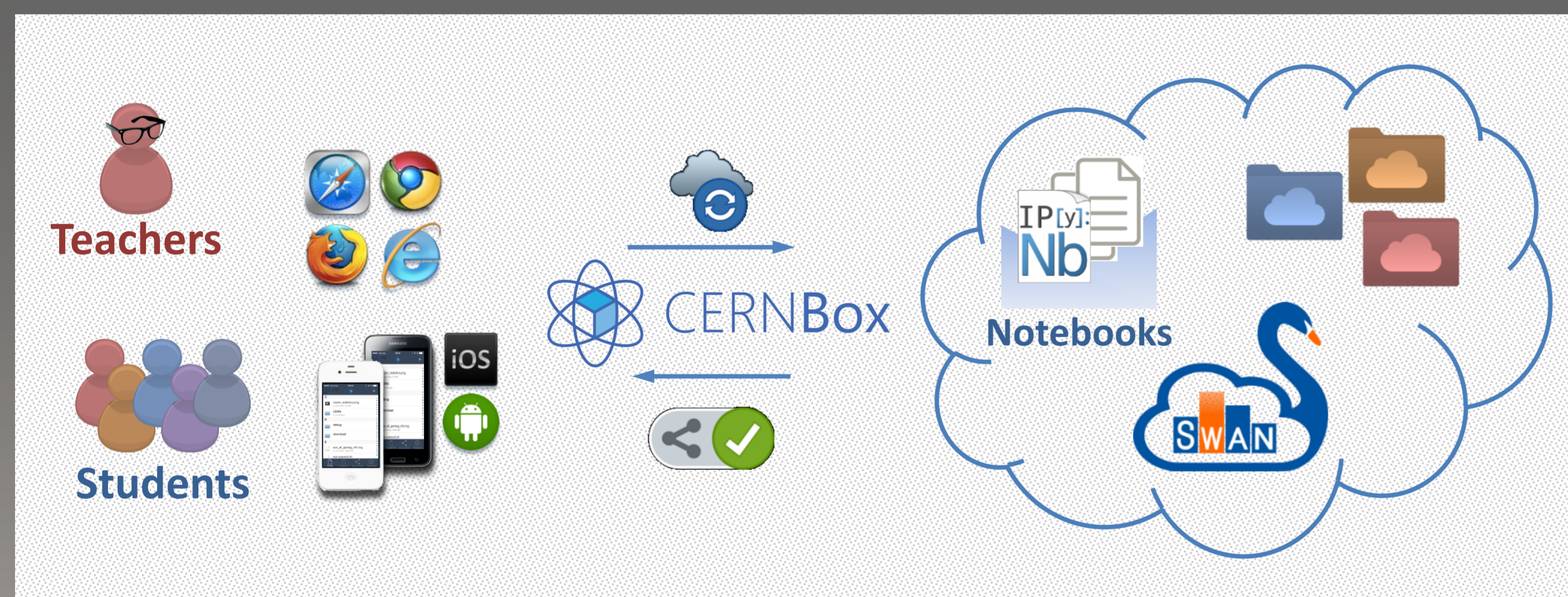
Enrico Bocchi
Jakub Mościcki



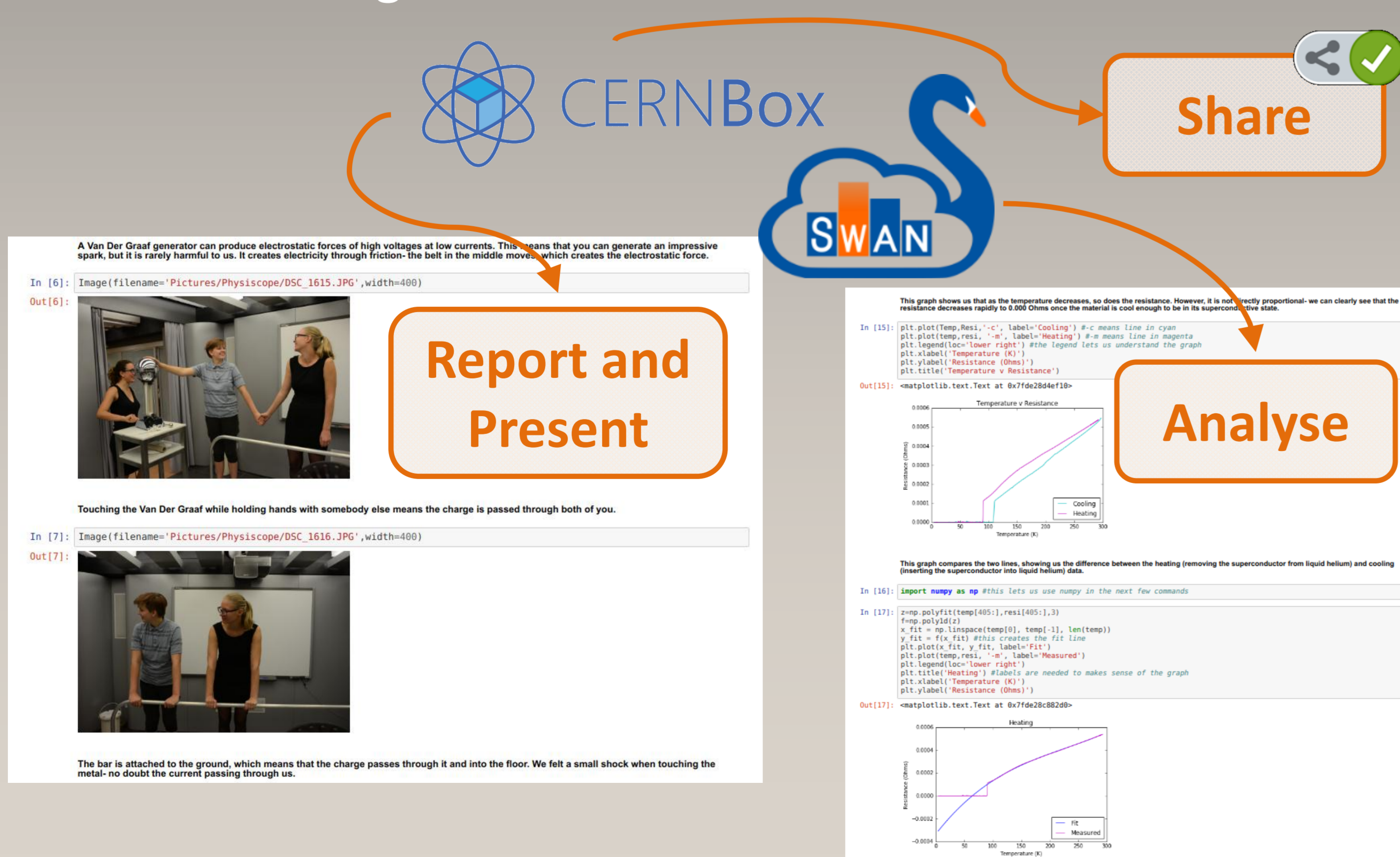
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Let Students Use Big Science Tools



- Students and teachers work using their browser
- Educational notebooks live in the CERNBox storage
- Foster sharing and reutilization of educational resources



Education & Research Community

Growing Interest in Education from Physicists:

Welcome to S'Cool LAB

S'Cool LAB is a new hands-on particle physics learning laboratory at CERN, the European Organization for Nuclear Research in Geneva, Switzerland. We offer experimental workshops for high schools students and their teachers from around the world. The development of our workshop content is supported by our empirical physics education research.

Education

The CMS/Compact Muon Solenoid experiment is one of two large general purpose detectors built on the Large Hadron Collider (LHC). Its goal is to investigate a wide range of physics such as the characteristics of the Higgs boson, extra dimensions or dark matter.

ALICE (A Large Ion Collider Experiment) is a heavy-ion detector designed to study the physics of strongly interacting matter at extreme energy densities, where a phase of matter called quark-gluon plasma forms. More than 1000 scientists are part of the collaboration.

The ATLAS (A Toroidal LHC Apparatus) experiment is a general purpose detector exploring topics like the properties of the Higgs-like particle, extra dimensions of space, unification of fundamental forces and evidence for dark matter candidates in the Universe.

The LHCb (Large Hadron Collider beauty) experiment aims to record the decay of particles containing b and anti-b quarks, known as B mesons. The detector is designed to gather information about the identity, trajectory, momentum and energy of each particle.

Cloud Sync and Share Community:



- **Open Cloud Mesh**
Multi-vendor API to connect sync
and share clouds across silos borders

