

Virtual Atom Smasher, Progress of Work

Crowdcrafting: An EC project proposal

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23 February 2015

SFT group meeting, CERN

Agenda

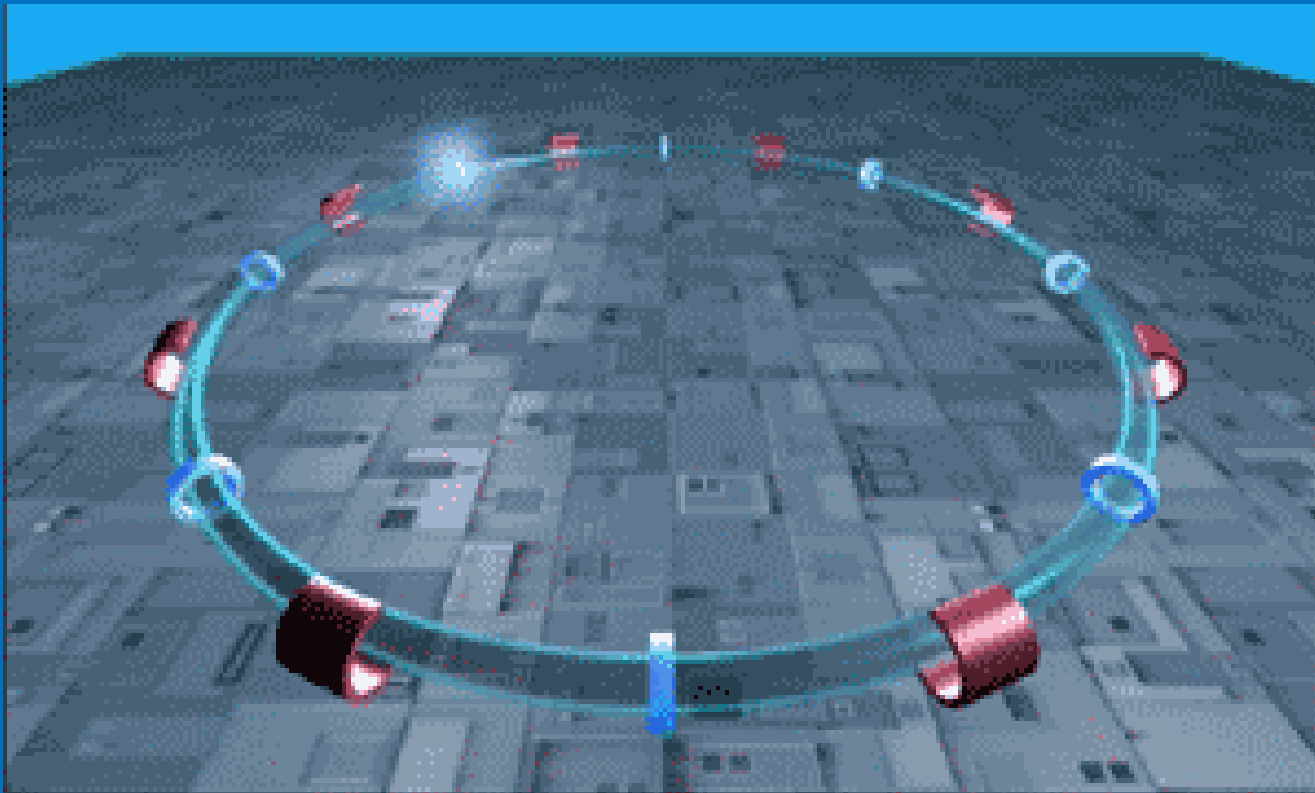
1. CCC and Citizen Cyberlab Context (10 min)
2. Virtual Atom Smasher (30 min)
3. Crowdcrafting Project Outline (10 min)
4. Q&A (10 min)



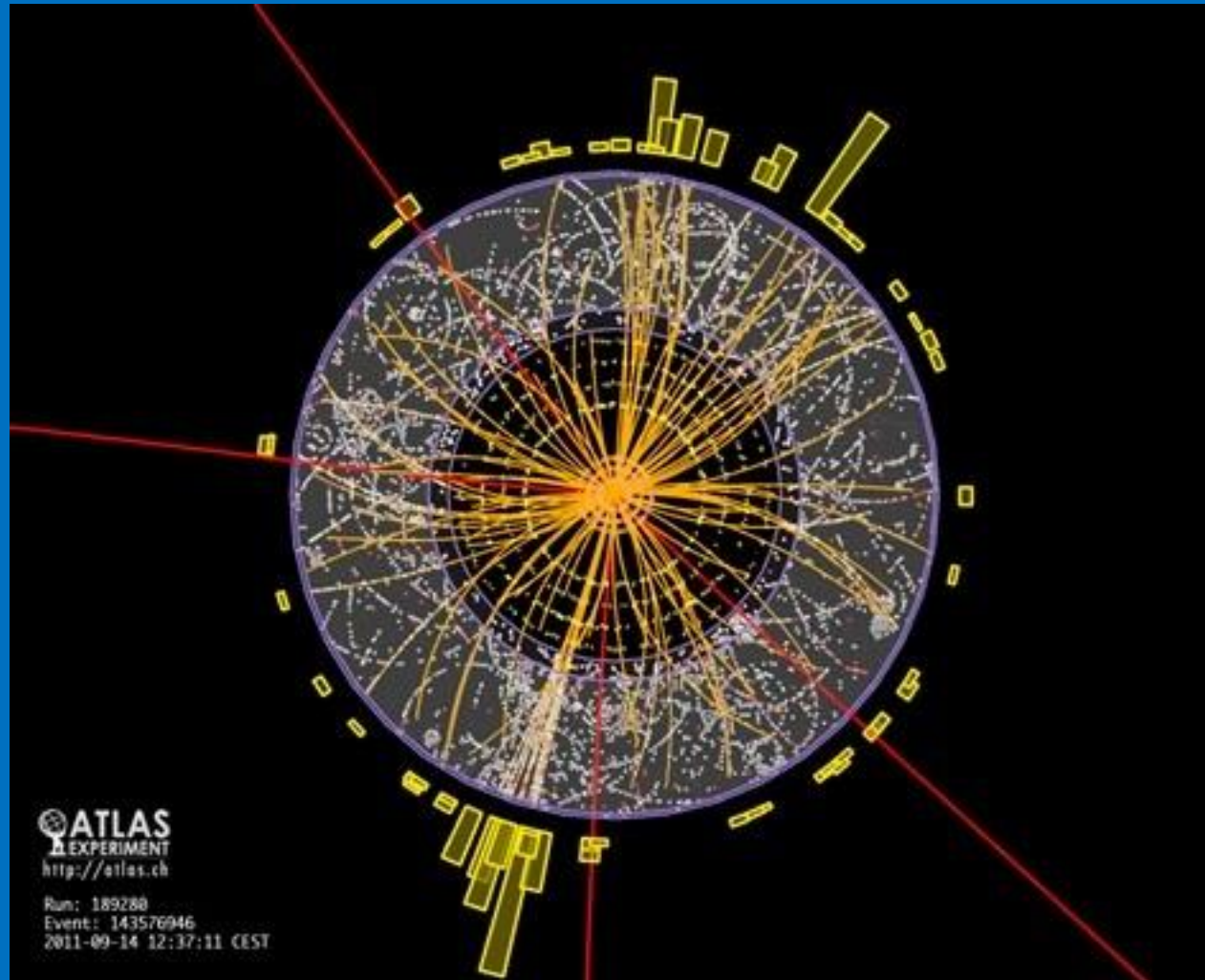
CERN
UN Institute for Training and Research
University of Geneva

“All for science, and science for all”

LHC@home (2004-now)
accelerator design
particle physics simulation



2011: LHC@home “Test4Theory”



CCC Global Activities



Crowdcrafting: open source platform for citizen science

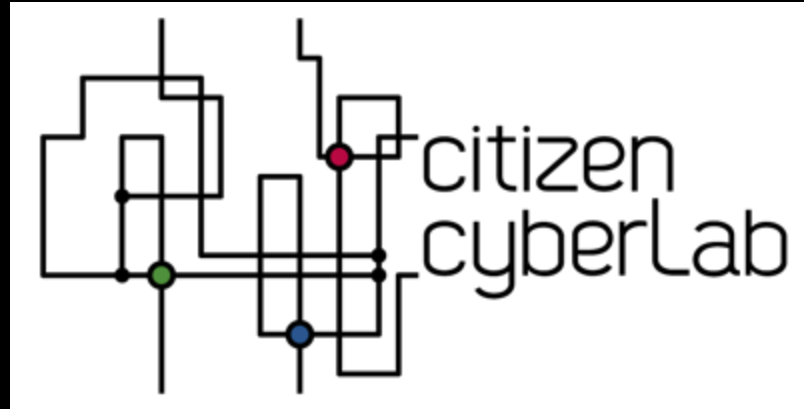
The screenshot shows the Crowdcrafting website interface. At the top, the navigation bar includes the Crowdcrafting logo, links for COMMUNITY, PROJECTS, and ABOUT, a SIGN IN button, and a prominent CREATE YOUR PROJECT button. Below the navigation bar is a banner with the text "We can do research *together*". Underneath the banner is a row of category icons: Featured (star), Economics (dollar), Humanities (grad cap), Biology (globe), Science (atom), Social (speech bubble), and Art (compass). The main content area displays three featured projects, each with a thumbnail image, a title, a progress bar, and statistics for tasks, crafters, and completion percentage.

Project Name	Tasks	Crafters	Done (%)
MapKnitter	18	362	70%
Dark Skies ISS	135019	15856	91%
Feynman's flowers	186	720	73%



Sponsors & Partners

Sponsor	Project	Years	Amount
GIAN/RUIG	Africa@home	2005-2007	170kCHF
IBM	Computing for Clean Water	2010-2013	(in kind)
Shuttleworth Foundation	Various	2010-11, 13-	800kCHF
HP	Geotag Libya	2011	120kCHF
Mozilla Foundation	Asia@home, CERN Webfest	2011, 12, 13, 14	25kCHF
Open Society Foundations	ForestWatchers	2011 -12	90kCHF
Sloan Foundation	PyBossa, Citizen Cyberscience Summit, Science x Kickstarter	2012, 14	100kCHF
EC 7 th Framework	Citizen Cyberlab	2013-15	4MCHF (1.3M CCC)



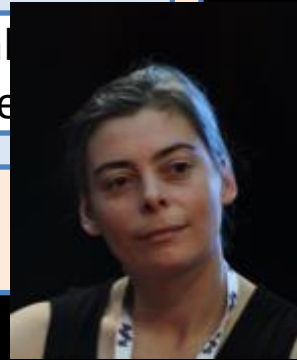
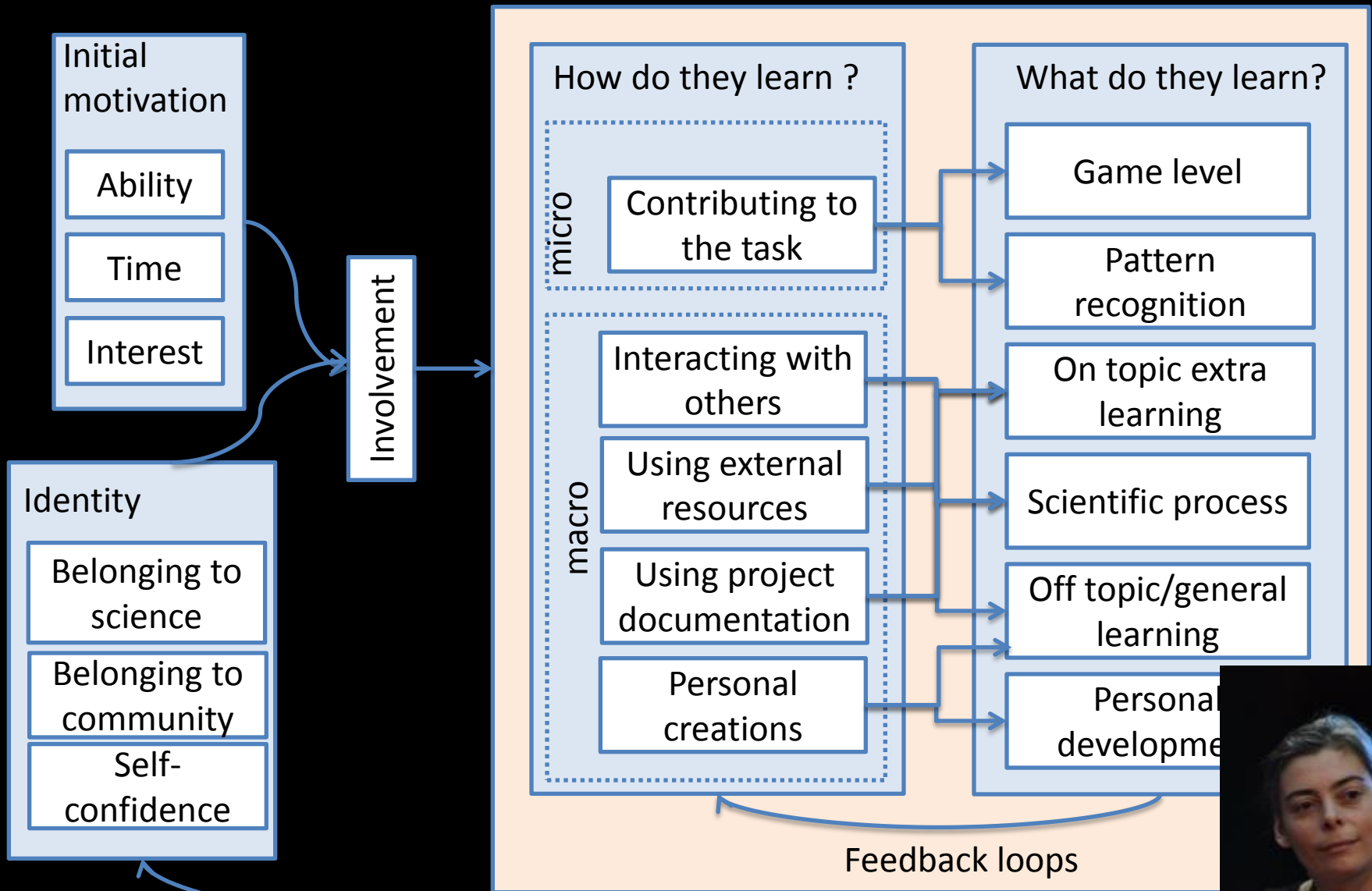
“Stimulate Learning and Creativity in Citizen Science”

EC Project (FP7-ICT-2011-8 STREP 2012-2015):

- Université Paris Descartes
- University College London
- Imperial College
- Mobile Collective
- CCC partners: CERN + UNIGE + UNITAR

<http://citizencyberlab.eu>

UNIGE: Online Learning



UNOSAT: Geotag-X

[Projects](#) [About](#)

Hey! You are an anonymous user. [Sign in now!](#) [Sign in](#)

Drought



Test project for analysing photos of comi...

Projects **3**

Yemeni Agricultural Water Assessment



UNOSAT is assisting the NGO ACTED in ...

Projects **1**

Yamuna - Women for Sustainable Cities



The river Yamuna is the lifeline of Delhi's...

Projects **4**

Get more info:

[FIND PHOTOS](#)

or

[ANALYSE PHOTOS](#)



CERN: Virtual Atom Smasher

Starting virtual event generator

 John Charalampidis [Progress details](#)

Public Beta

Event Rate

How many events (particle collisions) your virtual machine is simulating per minute.

300
0

Progress

What fraction of the current job is completed. (Typically, 1 job = 100,000 events)

1 %
0 %

Jobs Completed

How many simulation jobs your virtual machine has processed.

1
0

Ranking

Your ranking among the volunteers in this challenge, by number of jobs completed.

1
0

Learn more:

- Introduction to high energy physics simulations
- See the simulations produced by your computer
- Learn about the software that does the simulations

Generator: **pythia8**

Collisions analyzed with: **ATLAS_2011_S9131140**

Process: 2
Starting virtual event generator
Producing: 100,000 events

Energy: 7000.00 GeV

Beam: 

 While waiting... wanna help ATLAS look for H

Stop  



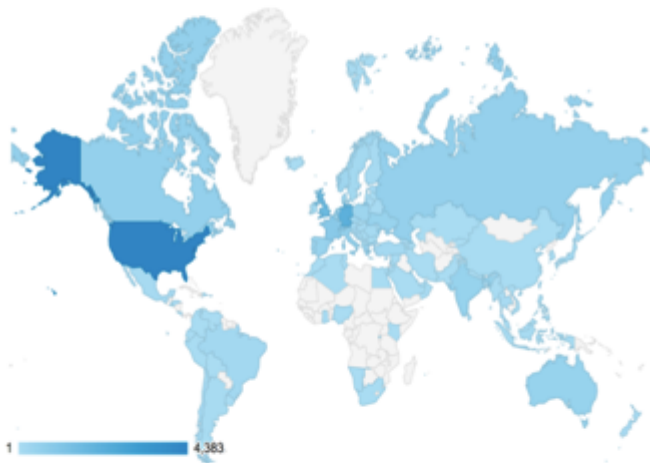
CERN Public computing challenge

16.000 sessions

8.000 users

108 countries – 90 languages

Avg. of 400 sessions per day



● Sessions

3,000

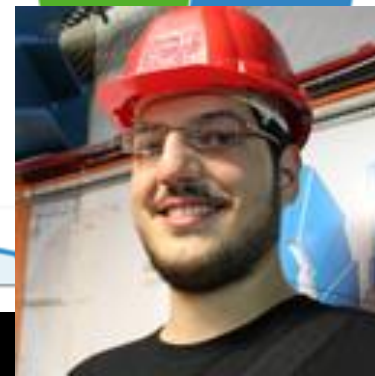
1,500

Nov 18

Nov 19

Country	Sessions	% Sessions
1. United States	4,383	23.37%
2. Germany	2,148	11.45%
3. United Kingdom	1,677	8.94%
4. Switzerland	912	4.86%
5. France	884	4.71%
6. Italy	603	3.21%
7. Canada	593	3.16%
8. Netherlands	572	3.05%
9. Russia	566	3.02%
10. India	495	2.64%

■ New Visitor ■ Returning Visitor



The meat



ICT10 – Collective Awareness Platforms for Sustainability and Social Innovation



*To harness **ICT networks**, **network effects** and **collective intelligence** for **cooperation**, supporting new economic models beyond GDP*

*To create awareness of **sustainability** challenges - and of bottom-up solutions grounded on **real communities** of people*

*Based on open data, open source and open hardware **participatory innovation paradigms***

*Requires participation of at least two entities from **non-ICT** domains*

*Appeals to new **grassroots** actors (including social entrepreneurs, students, hackers, civil society organisations)*

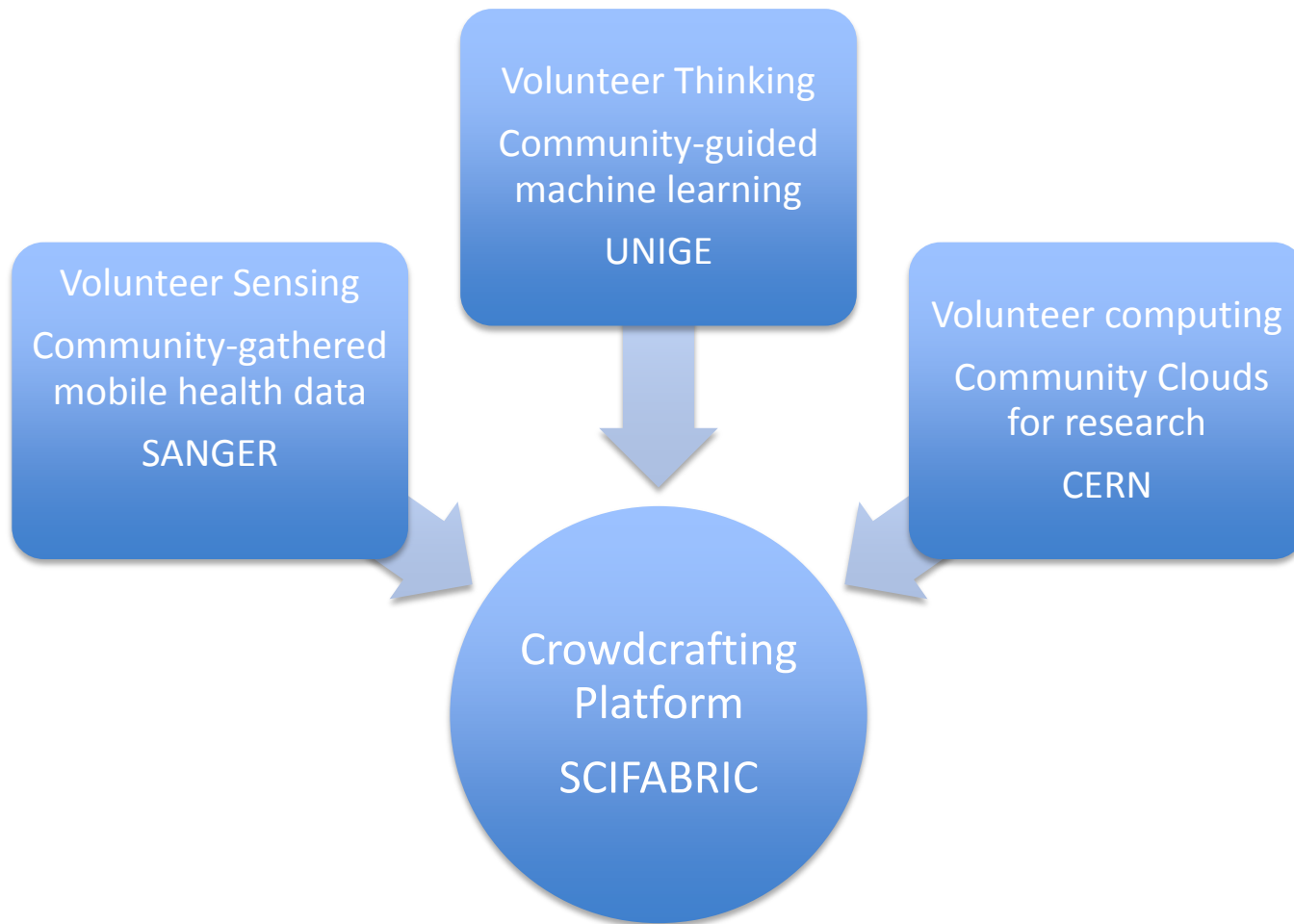
Horizon 2020 Call 2 – deadline 14 April 2015 - Budget 37 M€

<http://ec.europa.eu/digital-agenda/en/collectiveawareness>

Crowdcrafting: Proposed Partners

- CERN (IO)
- European Citizen Science Association (DE)
- Laboratoire pour l'Accélérateur Linéaire (FR)
- Sanger Institute (UK)
- Scifabric (ES)
- University College London (UK)
- UN Institute for Training and Research (IO)
- University of Geneva (CH) [project lead]

Crowdcrafting proposal: integrate new technologies



Crowdcrafting proposal: link existing communities

Environmental Activists

UCL

NGOs for Global Change

UNITAR

Citizen Science Organizations

ECSA

High Energy Physics Community

LAL

Research Challenges

- How can we accelerate social innovation in different communities by integrating different types of participatory research (sensing, thinking, computing)?
- How can we improve outcomes for bottom-up social innovation (diversity of projects, numbers and engagement of participants) by lowering the barrier for access to these tools?

Proposed Budget for a 36 month project

- **CERN 300k – developer (integrating open source virtual machine technology for volunteer computing with Crowdcrafting)**
- ECSA 300k – community manager (training ECSA partners to use Crowdcrafting and other open source data gathering tools)
- LAL 300k – community manager (working with the HEP community to increase use of sustainable public computing using Crowdcrafting)
- SANGER 300k – community manager (building a community around EpiCollect and developing projects that integrate with Crowdcrafting)
- SCIFABRIC 300k – developer (front-end and back-end development of Crowdcrafting, based on community-driven feedback)
- UCL 300k – community manager (training local communities to use Crowdcrafting and other open source data gathering tools)
- UNITAR 300k – community manager (coordination NGO communities using their Geotag-X platform, powered by Crowdcrafting)
- UNIGE 500k [separate CH budget] – developer (integrating open source solutions for machine learning with Crowdcrafting + project administrator (part time))