

IdeaSquare
The innovation space at CERN

Introduction

#CERNIdeaSquare

Presentation of IdeaSquare to Demokritos, Athens

17 January 2023

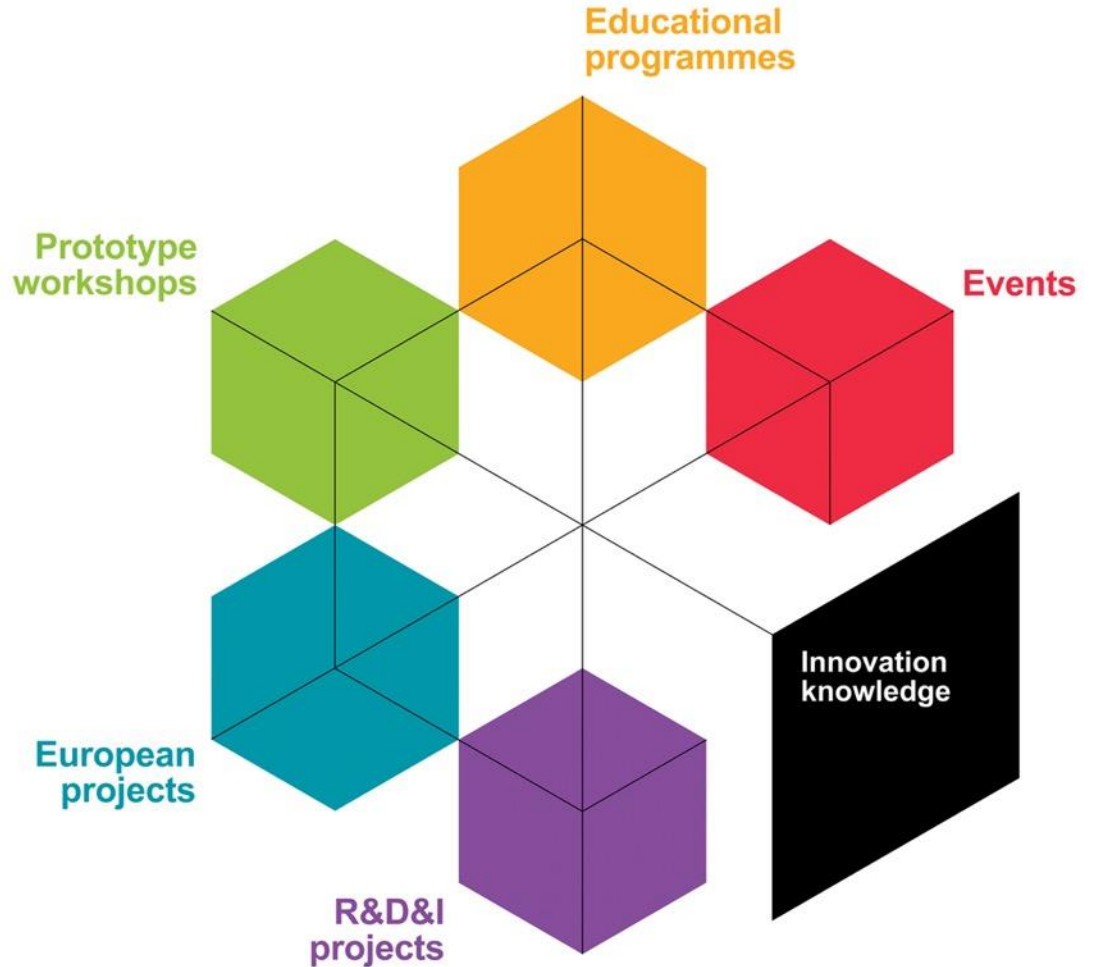
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IdeaSquare

The Innovation Space at CERN

IdeaSquare is the innovation space at CERN, that uses collaborative methodologies, access to CERN expertise and cross-connectivity to ideate solutions for the future of humankind. A place where people have the licence to dream.

Our latest [Progress Report](#)



**Educational
programmes**



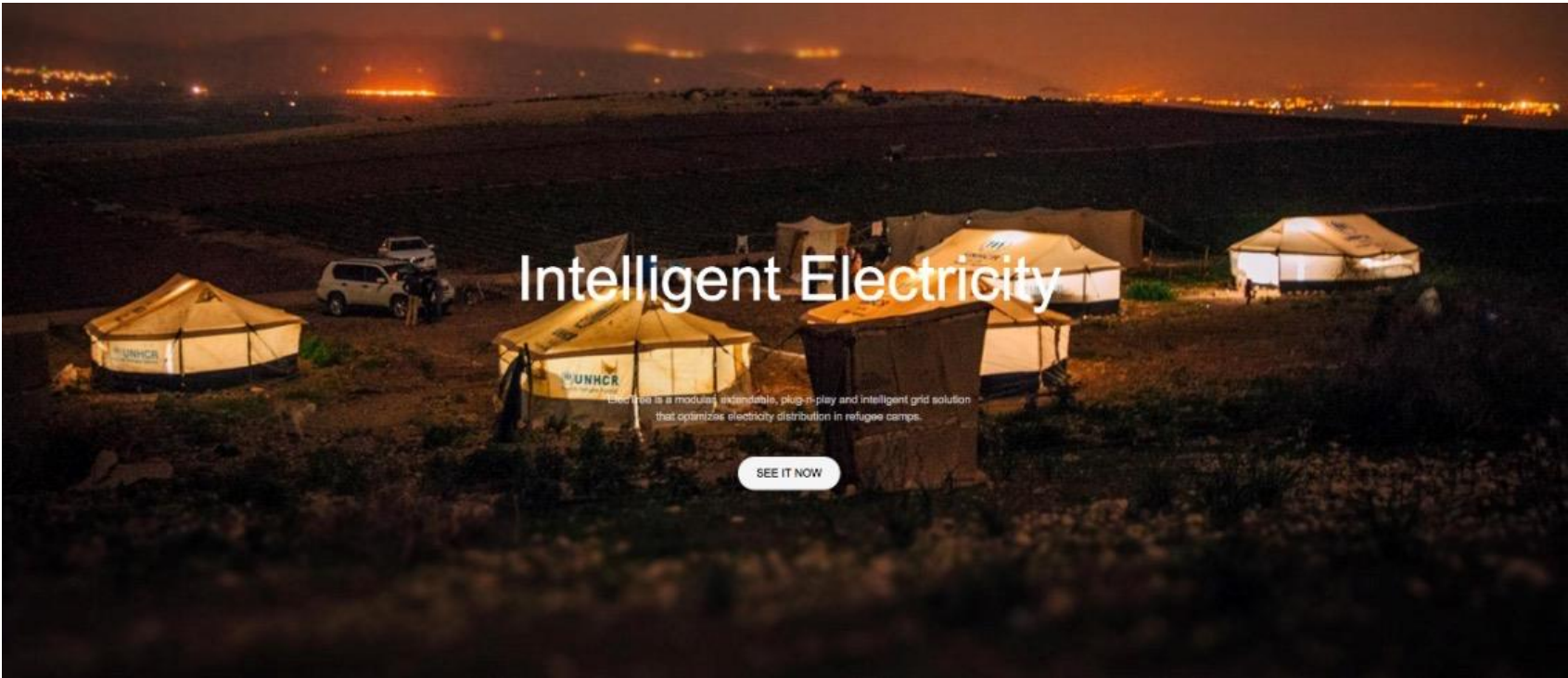
**Training and
experimenting
with the
innovators of the
future**

Challenge Based Innovation (CBI)



- 5 - 6 months MSc-level specialization course for product and service development, run by participating universities from 8 countries around the world
- Over 1700 students have participated with more than 250 conceptual prototypes produced at IdeaSquare, contributing to UN Sustainable Development Goals
- In the course, multidisciplinary student teams learn how to apply Design Thinking – process for new product/service development; engaging with CERN researchers who act as technological coaches in the process
- Unfortunately, no students from Greece at the moment...
- “Work extremely hard, learn and have fun!” AND “Fail fast and often to succeed sooner”

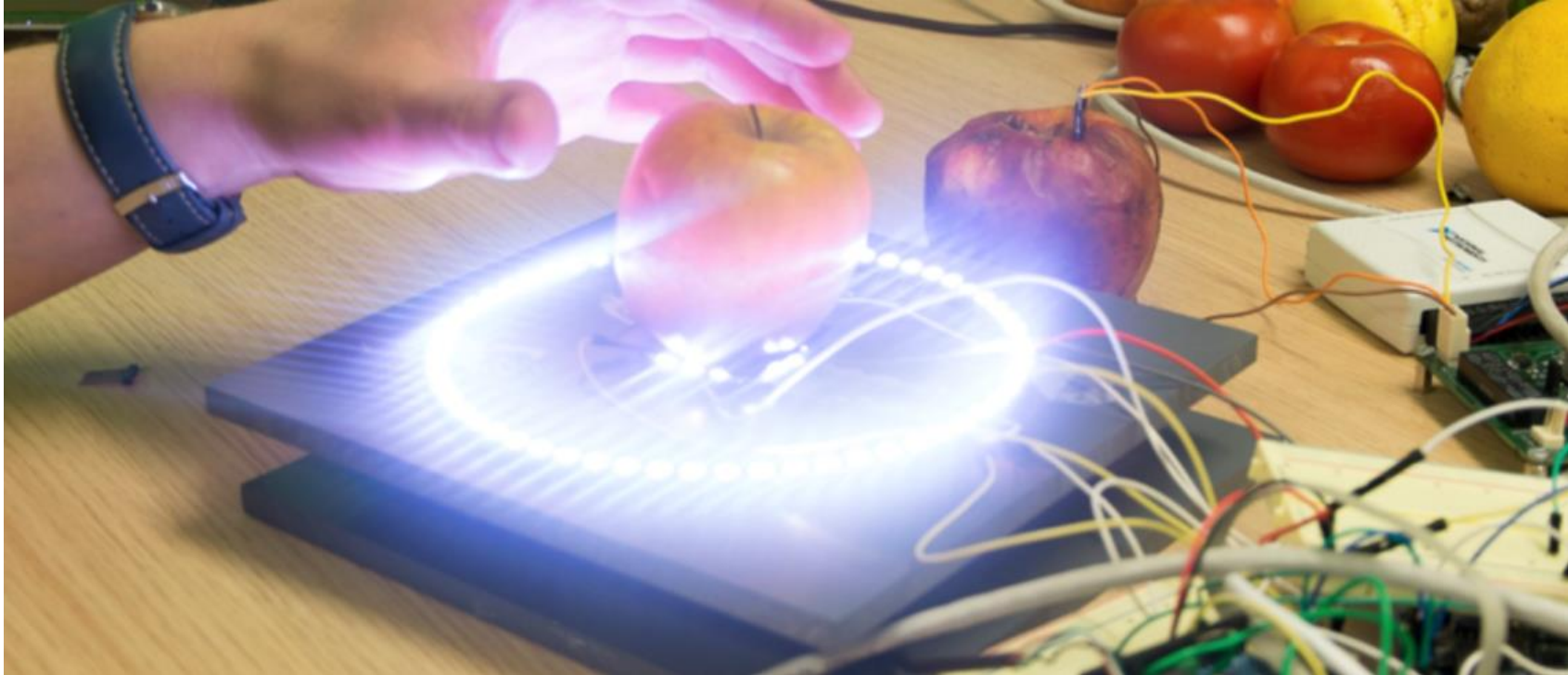
Students prototype to TEDxCERN installation



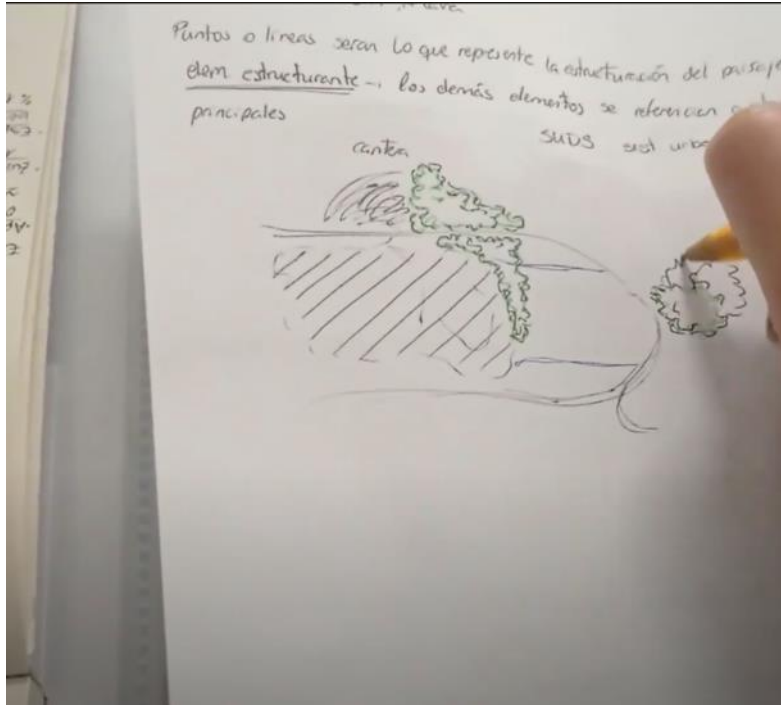
Intelligent Electricity

Electra is a modular, extendable, plug-n-play and intelligent grid solution that optimizes electricity distribution in refugee camps.

[SEE IT NOW](#)



Design the Future

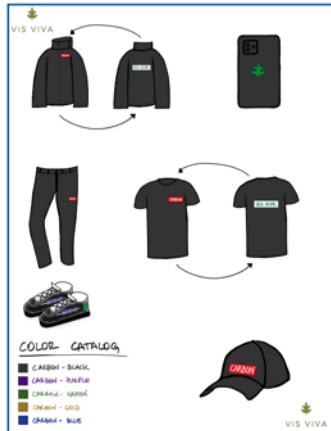


Design the Future is a programme which addresses so-called wicked problems and stimulates participants to use a combination of exponential thinking, system thinking as well as disruptive thinking. The aim of Design the Future is to provide students with a toolbox of methodologies combining the above thinking schools while stimulating their imagination. It is an invitation for designing our future society

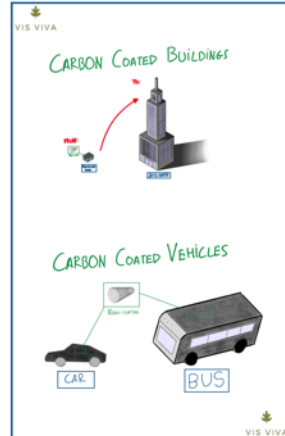
Design the future

VIS VIVA
Collection

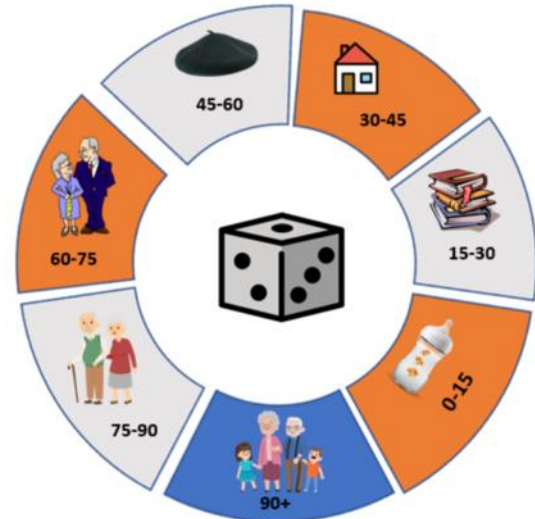
Clothes



Building and Vehicle Coatings



PREJUDICE-FREE LEARNING GAME





Linking science innovation and the SDGs

#ATTRACT EU Project

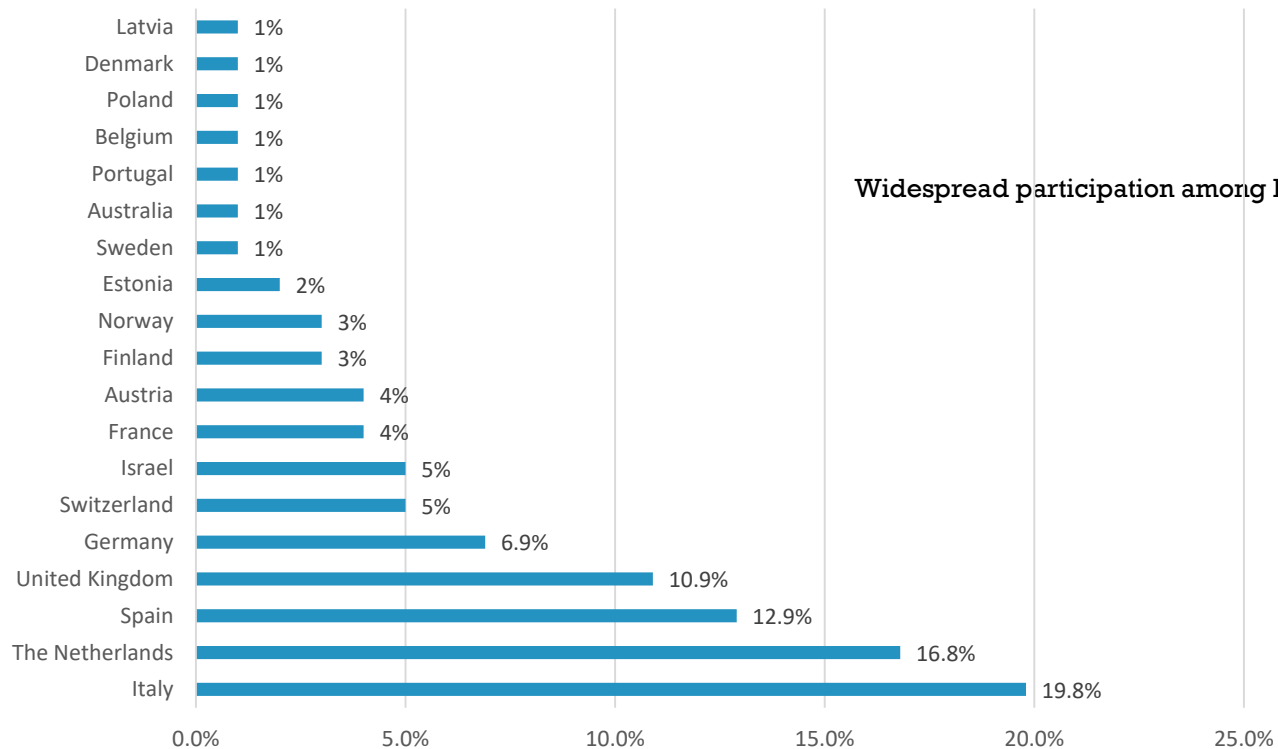


- ATTRACT funds breakthrough projects in Detection & Imaging
- Provides funding for developing early-stage ideas and prototypes
- Focuses on high innovation with potential outside research
- Engages with MSc-level, cross-disciplinary student activities, seeking for unforeseen entrepreneurial opportunities for the young
- Strong collaboration with partners in most European countries
- Purpose is to create a new innovation ecosystem in Europe
- ATTRACT is coordinated by CERN (IdeaSquare)

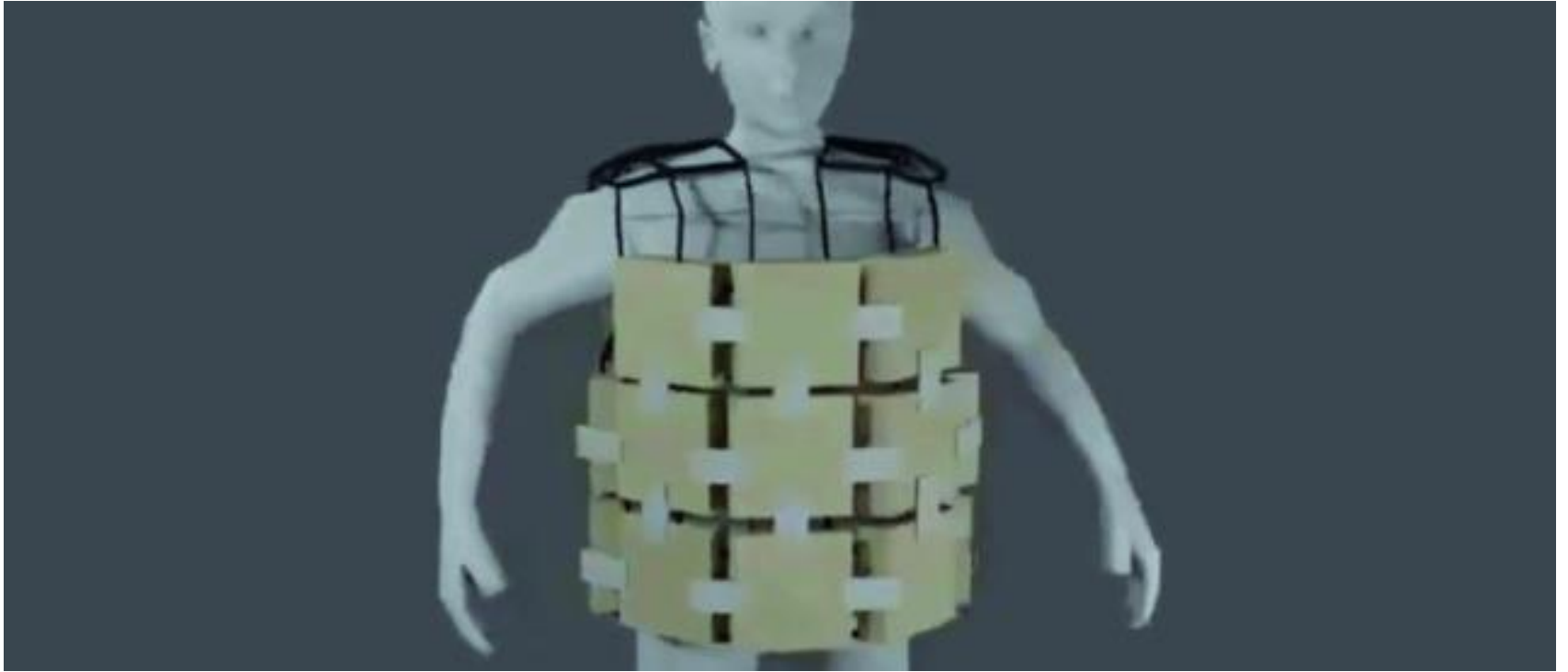


ATTRACT Phase 2: 18 R&D&I funded projects; 28M Euros

Distribution by country



Widespread participation among EU MS and AC



WPET - Wearable PET scanner jacket prototype

#Crowd4SDG



- Crowd4SDG is a three-year Horizon 2020 Research and Innovation Action supported by the European Commission's Science with and for Society (SwafS) programme.
- Through an innovation cycle called GEAR (Gather, Evaluate, Accelerate, Refine), the transdisciplinary Crowd4SDG consortium of six partners will promote the development of citizen science projects aimed at tackling the SDG's, with a focus on climate action.
- Its goal is to assess the usefulness of practical innovations developed by the teams and to research how AI applications can enhance and provide effective monitoring of SDG targets and indicators by citizens

«User-X-pull, tech-solution push»

Technology

Initially undefined/open



Product

Process

Focus



**Connecting
curious minds**

Events, workshops and hackatons



When the building is not in full use, Ideasquare can offer access to its open work areas, rapid prototyping facilities and its meeting rooms for short, deadline driven Challenge Events, such as :

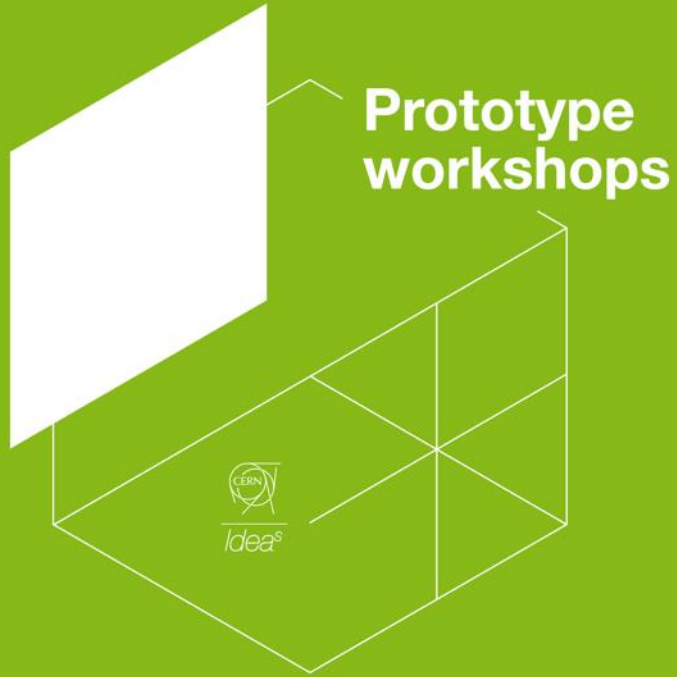
- Innovation Events,
- Workshops
- Hackathons (an event compressed into a short number of days where participants work towards a concept prototype).



FPGA Workshop



Hackathon for the visually impaired for the development of the CERN Exhibitions



**Fast forward
through
prototyping**

Our Facility



Our facility has 700m² of office space, with 5 meeting room containers and 2 meeting rooms in our famous double-decker. Additionally, 140m² of prototyping facilities including

- An open space for ideation
- An electro shop
- A machine shop with a laser cutter
- 3D printing equipment



Idea^s



**R&D&I
projects**

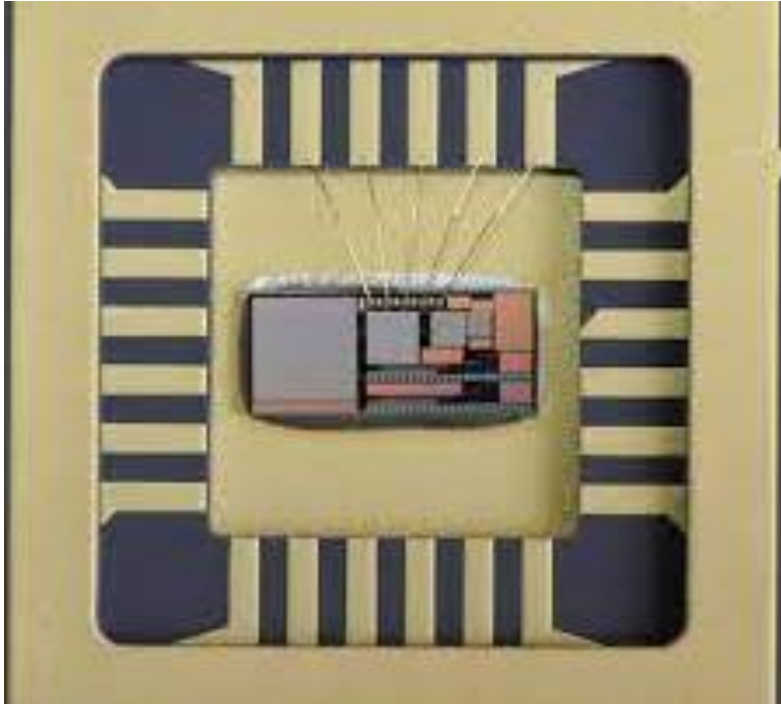
**Stimulating
instrumentation
in research**

Neutrino Platform



- Neutrino Platform (CENF) fosters fundamental research in the field of Neutrino Accelerator Physics
- CENF supports generic detector, neutrino beams R&D and large detector prototypes or demonstrators. It gives technical, financial and logistics support to approved projects
- Currently includes seven projects, including significant involvement in (Proto) DUNE
- CERN & IdeaSquare provides a facility for R&D on future technologies (HW and SW) and partner in several neutrino research programs

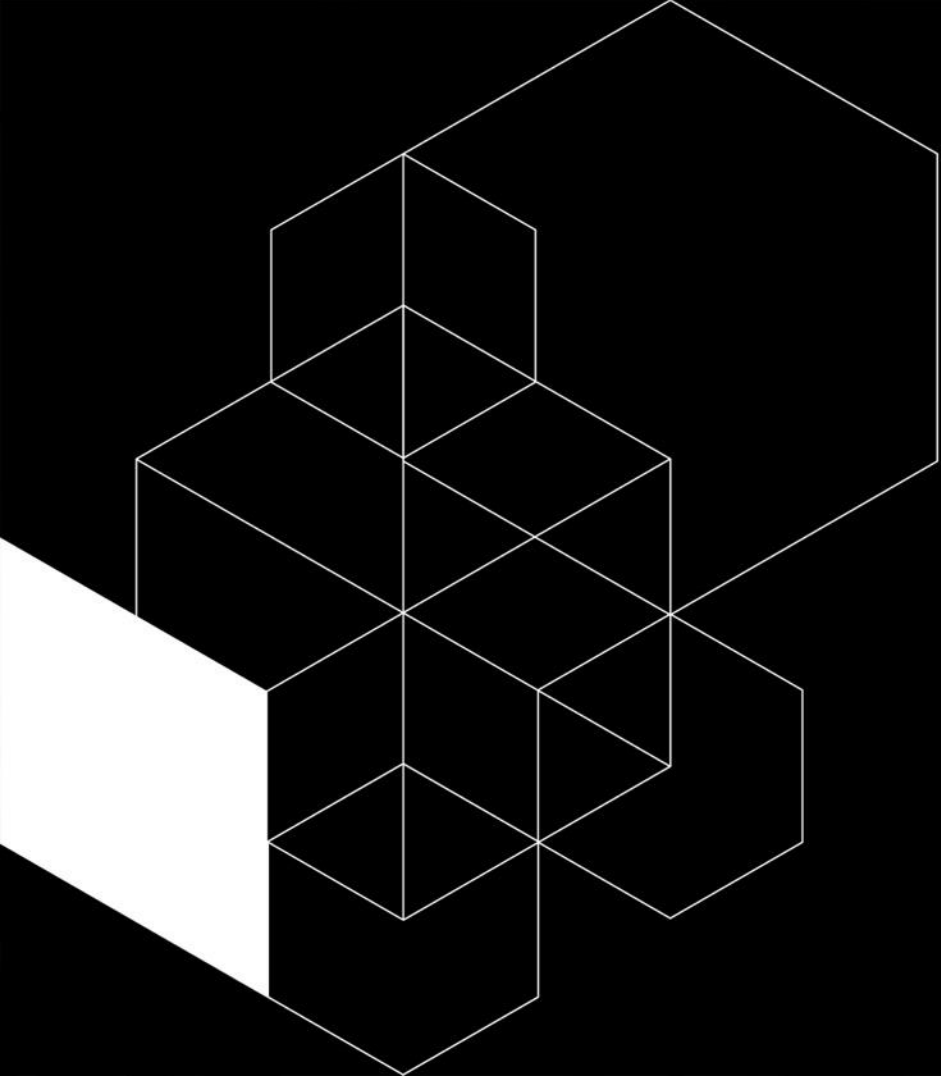
GRADE Platform



- GRADE Platform is a MoU framework for creating «mini-collaborations» at IdeaSquare to foster (very) early-stage fundamental ideation around instrumentation in detection & imaging
 - Strong element of student involvement!
 - Exploration of new possible areas of societal use
- IdeaSquare has so far launched five projects: SiPMs, gamma-cameras, AR/VR, fast pattern recognition (chips), TeraHz electronics
 - Many of these projects have moved on to be funded by ATTRACT
- New initiatives now starting in [Green Village](#)
 - Hoping to get EU-funding
- Possible areas of future initiatives: use of (red-wl) LIDAR for particle detection? Decomposable calorimeters? Rad damage on LGAD, SiPM?



Contact us!
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