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# CERN Ideasquare

## INTRODUCTION



# EUROPEAN RESEARCH INFRASTRUCTURE CHALLENGES

- The ERI's, CERN included, deal with engineering and innovation challenges stemming from scientific progress
- Accumulated knowledge, capabilities and infrastructure aligned to drive advanced scientific field forward -> societal value and benefits are challenging to measure as the time from discovery to application is long
- How might we accelerate societal value creation (new technology, products, services, jobs, startups, etc) from basic research?



# IDEASQUARE IN BRIEF

“Ideasquare is a **pilot project** that brings together physicists, engineers, industrial partners, early-stage researchers and cross-disciplinary teams of students to **work together** on detector upgrade R&D technologies. The purpose is to **co-develop new technologies for research purposes**, and at the same time, create a fruitful environment for socially and globally relevant **new product ideas and innovation.**”

# IDEASQUARE IS

- Project with a dedicated building, hosting:
  - EU-funded detector upgrade R&D projects
  - Multidisciplinary master level student programs
  - Innovation events, workshops, hackathons
- ...to prototype, test and iterate new forms of collaboration and co-creation in the areas of Research, Education and Technology - **RET**





**EDUSAFE**

## **EXAMPLE: EU-FUNDED DETECTOR UPGRADE R&D PROJECT**

- EDUSAFE is a 4-year Marie Curie ITN project
- Training for 10 Early Stage and 2 Experienced Researchers
- Focuses on research into the use of Virtual Reality (VR) and Augmented Reality (AR) during planned and emergency maintenance in extreme environments
- The result will be an integrated wearable VR/AR system (+control system) which can be implemented and tested as a prototype, using LHC at CERN as a test and demonstration platform





**Challenge  
Based  
Innovation**

## **EXAMPLE: MASTER-LEVEL STUDENT COURSE**

- Challenge Based Innovation (CBI) is 4-6 month MSc-level specialization course for product and service development, run by participating universities from (currently) 12 countries around the world
- In the course, multidisciplinary student teams learn how to apply Design Thinking – process (PBL) for new product/service development; CERN researchers and engineers can give technical input in the process
- “Work extremely hard, learn and have fun!”
- “Fail fast and often to succeed sooner”

# EXAMPLE: STUDENT PROJECT PROTOTYPE





## EXAMPLE: HACKATHON

- Organised by THE Port Association, hosted by CERN Ideasquare and with partners from other non-governmental organisations, a three-day problem solving workshop hackathon with the theme “Science for Humanitarian Purposes”
- Example prototypes produced included: open-source cosmic ray detector, an assistive electronics suit to help mine detection dogs, an inflatable fridge for vaccines, a terrain-mapping tool for refugee camps, etc.



# CERN connections to UN & Sustainable Development Goals



IPU



ITU



UN



UNITAR



UNOG



UNOSAT



WHO



WIPO



WMO

## Sustainable Development Goals

CERN contributes de facto to some of the [Sustainable Development Goals](#), the UN roadmap for development for the years 2015-2030. These goals are of particular relevance in CERN action and impact on society.



# IDEASQUARE (EXPECTED) OUTPUT

- Pilot project = outcomes and measures for them are in development with in-situ research
- Communication, sharing ideas, spaces and resources improved in and between advanced technology development projects
- The counter-intuitive, controlled addition of variation, diversity, connections, ideas that are realised as prototypes to accelerate technology development
- Time span from discovery to application compacted
- Societal value of basic research more visible and tangible
- Education of future talent capable of working in basic research, commercial product & service development, or both
- Demonstrator for ATTRACT

some things to  
**consider**



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*Idea<sup>s</sup>*



On sharing your ideas...



Idea<sup>s</sup>

# Quick Challenge

- Please draw a picture of a device that collects balls.
- Time: 60 sec.



# Quick Challenge



- Now, please draw a picture of the person sitting next to you.
- Time: 30 sec.



Idea<sup>s</sup>



# Quick Challenge

**Please make a paper airplane  
of your drawing paper.  
Time: 30 sec.**



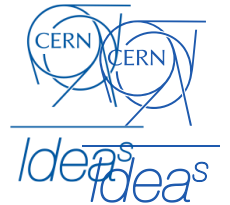
# Where the magic happens

Your  
comfort  
zone



- *Challenge your assumptions.*
- *There are no stupid questions. Fire away!*
- *[#ideas, #prototyping] Don't worry, be crappy.*
- *Our motto: Work hard, learn & have fun!*

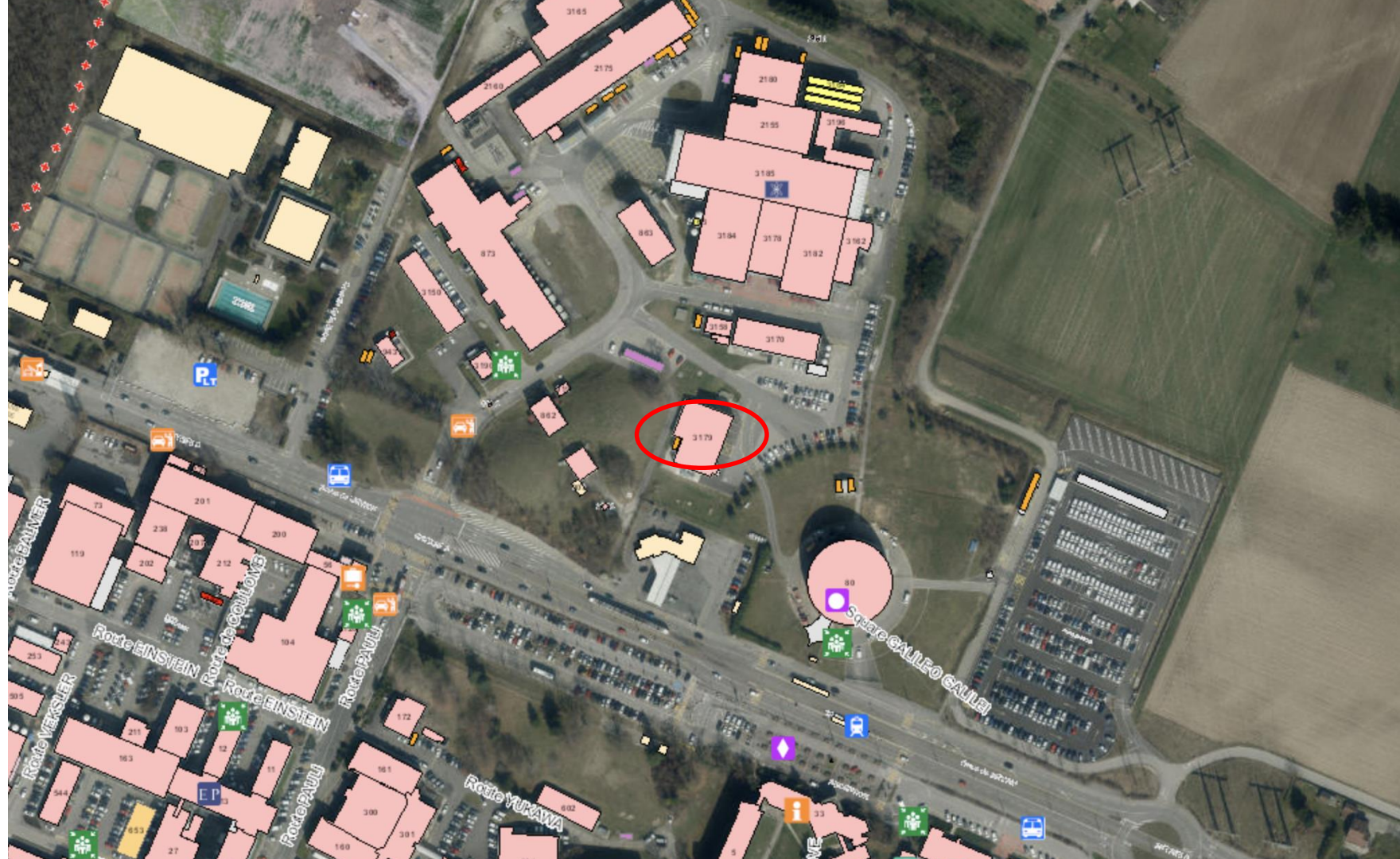
# Using Ideasquare spaces for Workshops and Hackathons: Safety







Safety is first priority.





# BUILDING SAFETY B3179

- In all inside areas of Building 3179 smoking is strictly forbidden.
- In Point 1 areas (at and nearby Ideasquare) alcoholic beverages are strictly forbidden.
- Working is possible 24/7 with CERN access card, sleeping is prohibited in all CERN buildings.
- Eating, drinking, coffee breaks are encouraged in the kitchen area.
- Cameras, photos, posting in social media are highly encouraged :)

**EVACUATION**

**A l'audition du signal**  
When the alarm rings

**Fermez portes et fenêtres**  
Close doors and windows

**Suivez le balisage**  
Follow the signs

**N'utilisez pas l'ascenseur**  
Do not use the lift

**Se rendre au point de rassemblement**  
Report to the assembly point



**CONSIGNE d'URGENCE / EMERGENCY PROCEDURE**

**BATIMENT 3179- Etage R / BUILDING 3179 - Floor R**



**Emergency assembly point is located next to the Point1 access gate.**



**INCENDIE/FIRE**

**112 ou 7 44 44**

**Donnez l'alarme**  
Set off the alarm

**Prévenez les autres personnes**  
Inform others

**Fermez portes et fenêtres**  
Close doors and windows

**N'utilisez pas l'ascenseur**  
Do not use the lift

**Combattez le feu**  
Start fighting the fire

**Extincteur / Fire Extinguisher**

**Alarme d'évacuation / Evacuation alarm**

**Voie d'évacuation / Escape route**

**Sortie de secours / Emergency exit**

Date:11.12.2014



EDMS:1454499



# In case of an emergency

- If needed, press Fire Alarm (see map on next slide)
- If electric danger present, press Emergency Stop switch - located in each workshop area right next to the door
- Contact Fire Brigade, tel. 74444
- Go to the assembly point next to the Point 1 car gate, stay there until Fire Brigade gives you permission to leave.
- Notify immediately:
  - TSO Johann Poirot, [johann.poirot@cern.ch](mailto:johann.poirot@cern.ch), tel. 168883
  - Markus Nordberg, [markus.nordberg@cern.ch](mailto:markus.nordberg@cern.ch), tel. 164452

# EVACUATION

-  A l'audition du signal  
When the alarm rings
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Close doors and windows
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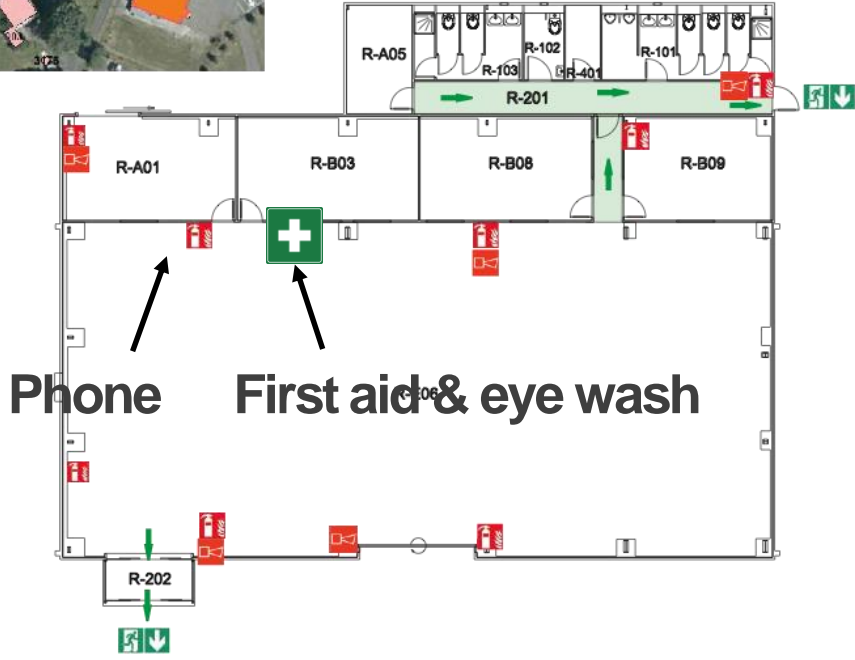
## BATIMENT 3179- Etage R / BUILDING 3179 - Floor R



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Emergency exit



Date:11.12.2014

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# WORKING AREA POLICY B3179

- Safety is first priority!
- In laboratory areas:
  - Machinshop 3179-R-A01
  - Electroshop 3179-R-B03 and
  - 3D Studio 3179-1-D01
- eating and drinking are strictly forbidden.
- For grey room (Light Lab 3179-R-B08) and dark room (3179-R-A06) areas access is restricted to authorised personnel only.



- Free to use
- Work under supervision
- Restricted area





# WORKSHOP SAFETY B3179

- Safety is first priority!
- in Machinshop 3179-R-A01, Electroshop 3179-R-B03, 3D Studio 3179-1-D01 working is conducted “under supervision”.
- i.e. When you want to use the workshops:
- Come talk to us (Harri & Jani) what would you like to do and we'll figure it out together what is the easiest and fastest way to do it safely.

# Keeping places tidy

- This is a work environment, please respect our common workspace.
- For CERN ways of working, see CERN Code of Conduct.
- **Please, please:**
  - Bring all coffee cups, plates, dishes to kitchen, put them in the machine.
  - Help collaboratively to clean up the space at the end of the day.
  - Thank you!!



*All you need is*

*..Love* + PHYSICS

*..Design*

*..Business*

*..and Engineering.*

Questions? Comments?

Contact information:

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Skype: olavi-dude

Take care of the space, each other and  
your ideas! Remember to have fun!



Idea<sup>s</sup>