CERN Ideasquare

INTRODUCTION

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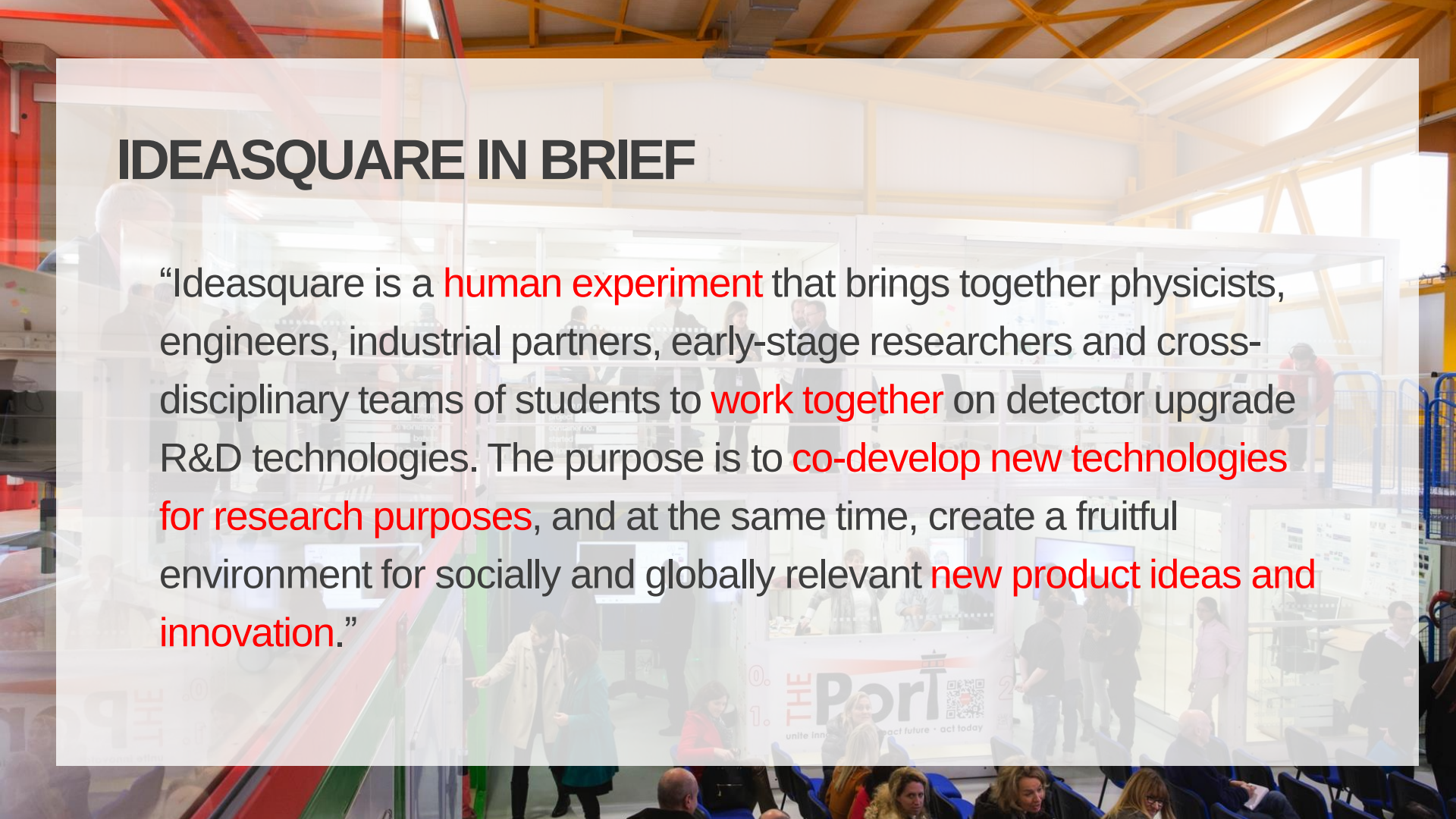
November 20th, 2017



IDEASQUARE IN BRIEF

"Ideasquare is a human experiment 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 or Research, Education and Technology - RET

EXAMPLE: EU-FUNDED DETECTOR UPGRADE R&D PROJECT

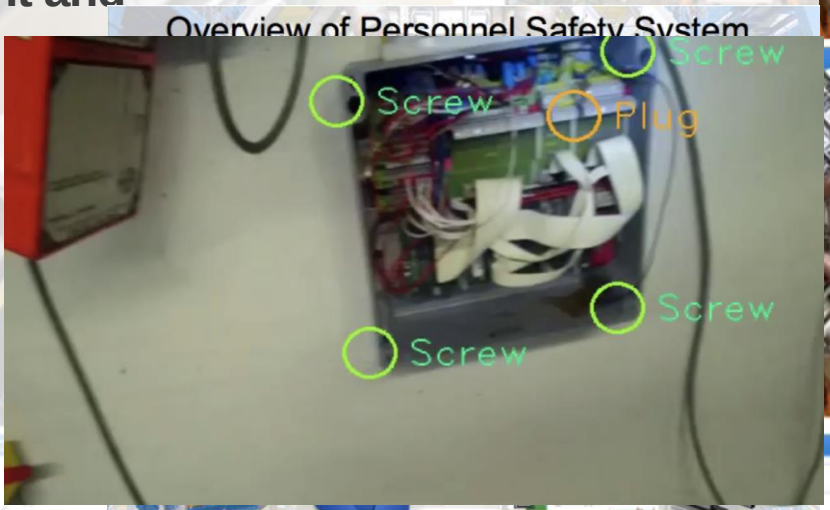
EDUSAFE

- 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
- 9 partners: AUEB, Canberra, CERN, EPFL, IASA, Novocaptis, Prisma, Roma II, TUM.
- 4 Prototypes produced

EXAMPLE: EDUSAFE ITN

- 3 main integrated functions:
  - **Workers supervision: environment and activities**
    - audio / video connection
    - environment parameters
    - health data
  - Gamma radiation camera
  - Augmented reality

(O. Beltramello, 2016)



Challenge Based Innovation

EXAMPLE: MASTER-LEVEL STUDENT COURSE

- Challenge Based Innovation (CBI) is 6 month MSc-level specialization course for product and service development, run by participating universities from (currently) 8 countries around the world
- In the course, multidisciplinary student teams learn how to apply Design Thinking – process for new product/service development; CERN researchers act as technological coaches in the process
- “Work extremely hard, learn and have fun!”
- “Fail fast and often to succeed sooner”

EXAMPLE: STUDENT PROJECT PROTOTYPE

EXAMPLE: HACKATHON

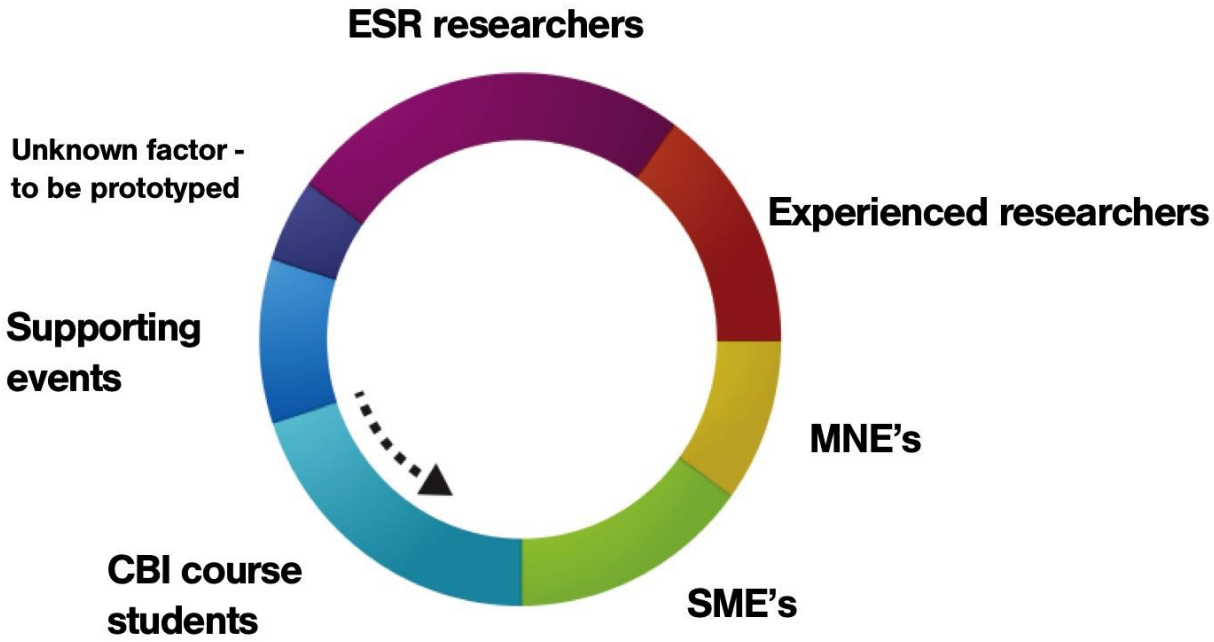
- Organised by THE Port Association, hosted by CERN IdeaSquare and with partners from other non-governmental organisations, a three-day problem solving workshop hackathon with the theme “Science for Humanitarian Purposes”
- Example prototypes produced included: open-source cosmic ray detector, an assistive electronics suit to help mine detection dogs, an inflatable fridge for vaccines, a terrain-mapping tool for refugee camps, etc.
- Three runs completed with approx. 60 participants at CERN in October 2014-2016, next one scheduled for Spring 2017

HOW DOES IDEASQUARE WORK?

- Where is the magic? Bringing different people together. Empowering them. Putting people first.
  1. Information doesn't radiate (communication deprived at 4m distance, goes to nearly zero at 20m) (TJ Allen, 1976)
  2. Single disciplinary teams do not radiate (single mindset leads thus far, but not beyond the rainbow)
- People from different backgrounds are amazed by each others skills... but only when they see them! **Diversity is key factor!**
- Innovation is 1% about ideas, 99% execution & iteration: finding ways in which people can collaborate and co-create efficiently

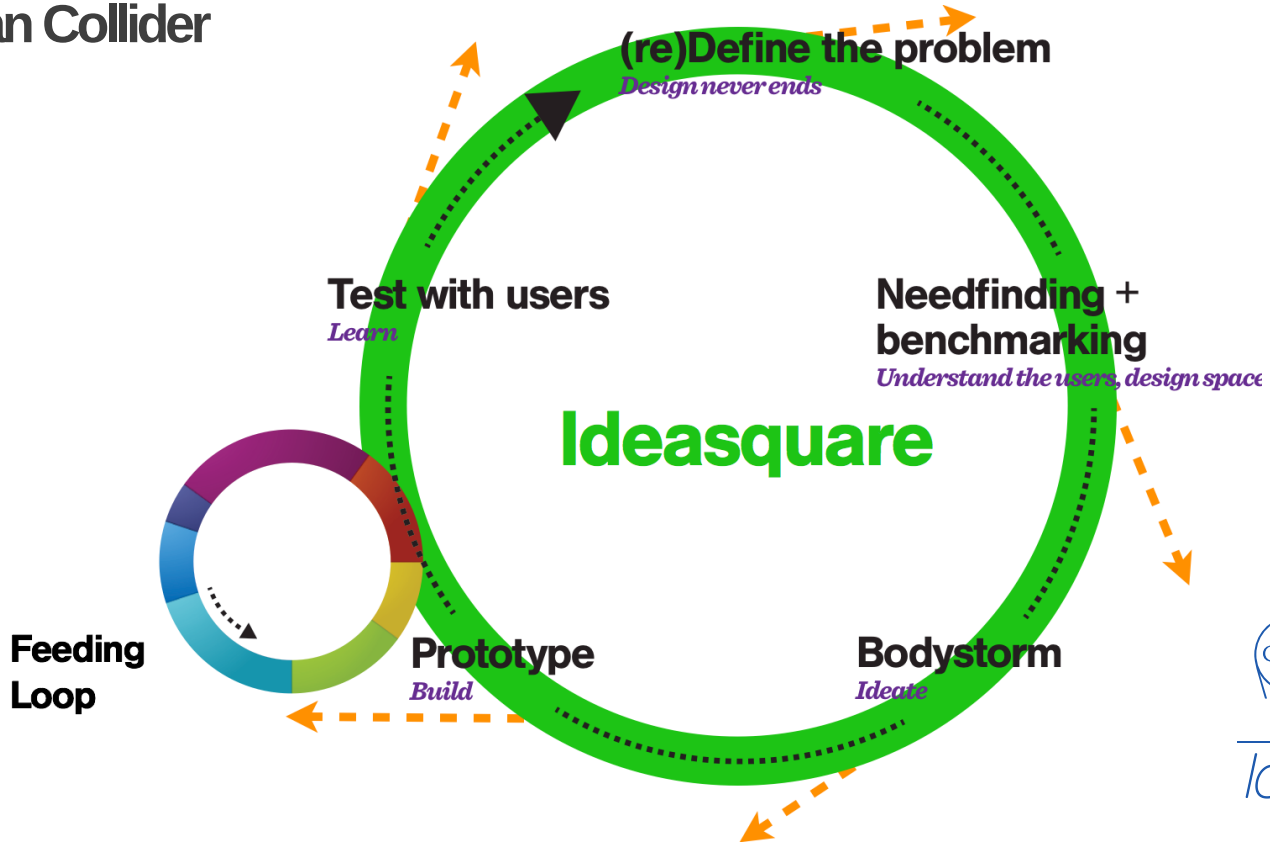
FEEDING LOOP

Ingredients for Creative Collaboration



IDEASQUARE

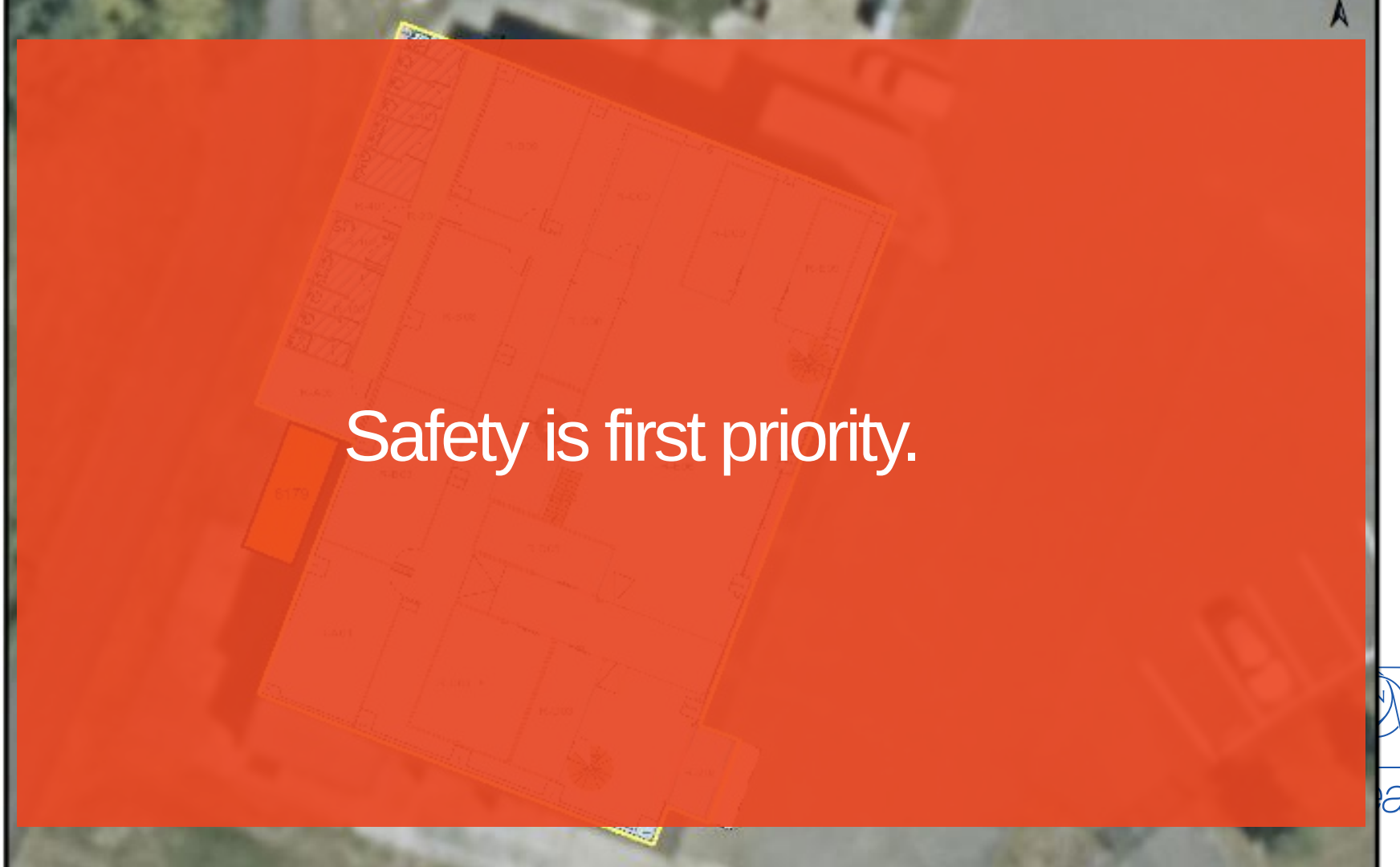
The Small Human Collider



IDEASQUARE EXPECTED OUTPUT

- Human experiment = 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
- Societal value of basic research more visible and tangible

Using Ideasquare spaces for Workshops and Hackathons: Safety


Safety is first priority.

Route BALMER
Route EINSTEIN
Route de COULOMB
Route PAULI
Route VEKSLER
Route YUKAWA
Square GALILEO GALILEI
3165
2175
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602
33
5

BUILDING SAFETY B3179

- **In all inside areas of Building 3179 smoking is strictly forbidden.**
- **In Point1 areas (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 :)**

CONSIGNE d'URGENCE / EMERGENCY PROCEDURE

BATIMENT 3179- Etage R / BUILDING 3179 - Floor R

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

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

- Extincteur / Fire Extinguisher
- Alarme d'évacuation / Evacuation alarm
- Voie d'évacuation / Escape route
- Sortie de secours / Emergency exit

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

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, tel. 168883
  - Markus Nordberg, markus.nordberg@cern.ch, tel. 164452

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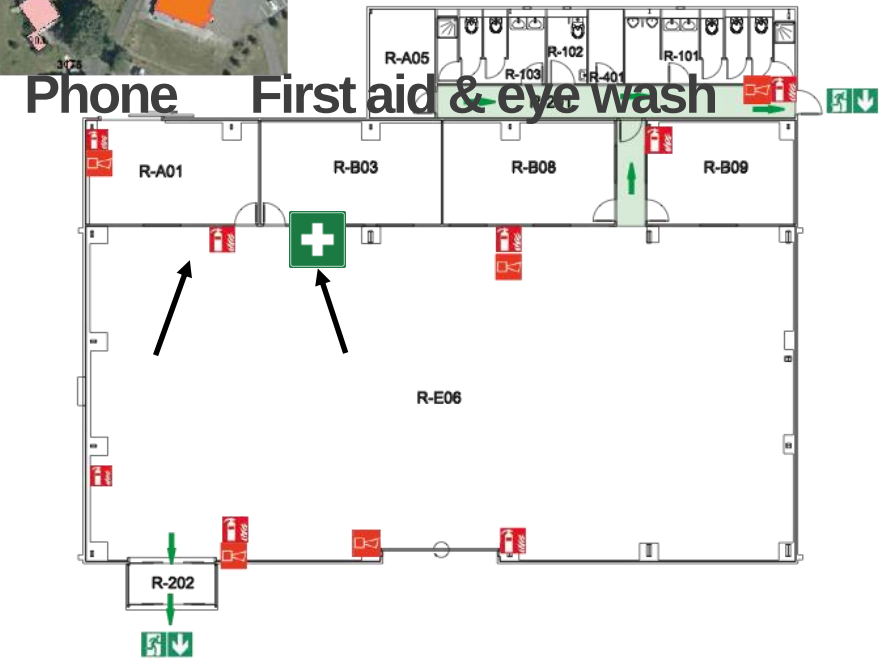

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WORKING AREA POLICY B3179

- **Safety is first priority!**
- **In laboratory areas:**
  - **Machineshop 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

CERN

Ideas

WORKSHOP SAFETY B3179

- Safety is first priority!
- in Machineshop 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 & Joona) 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!!

Take good care of eachother, your ideas and Ideasquare premises. Have a productive workshop – and remember to have fun!

Contact information:
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Natel. 166533

CERN Ideas