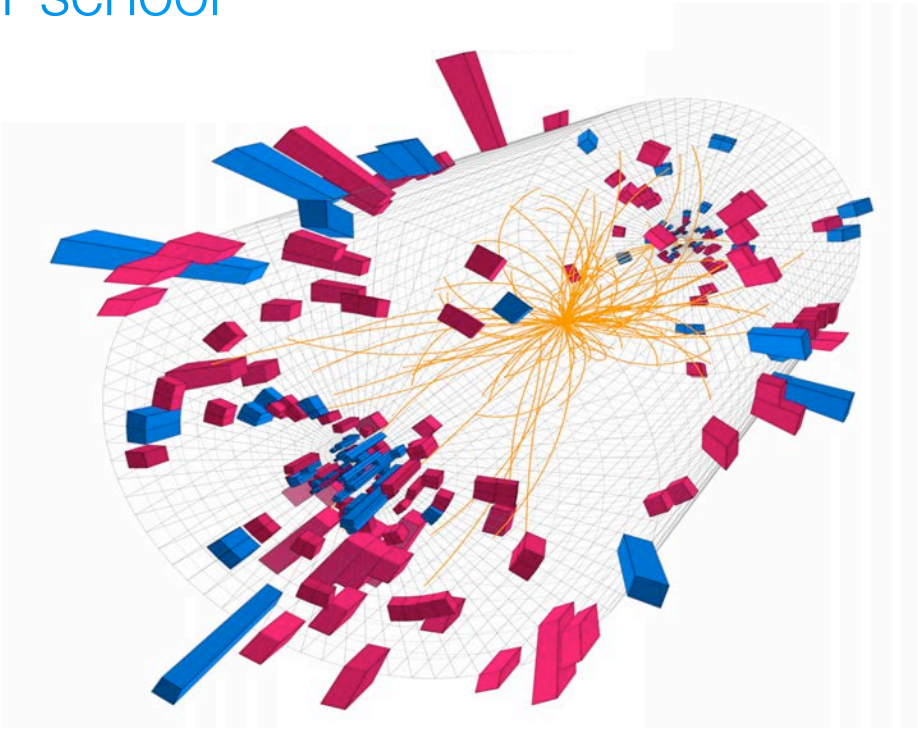
Knowledge Transfer at CERN

Norwegian mini-winter school



Vetle Nilsen
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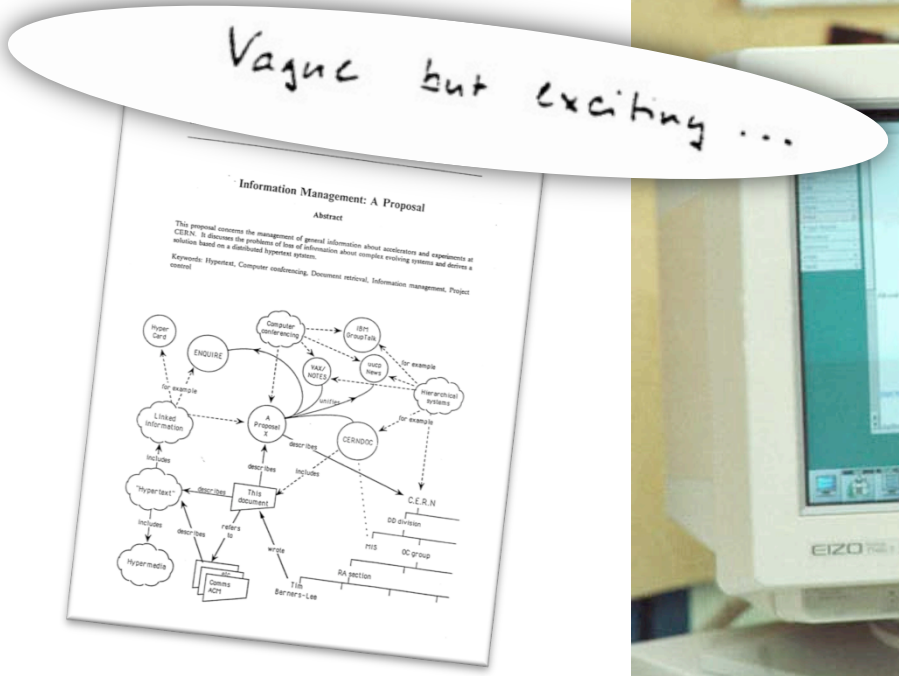
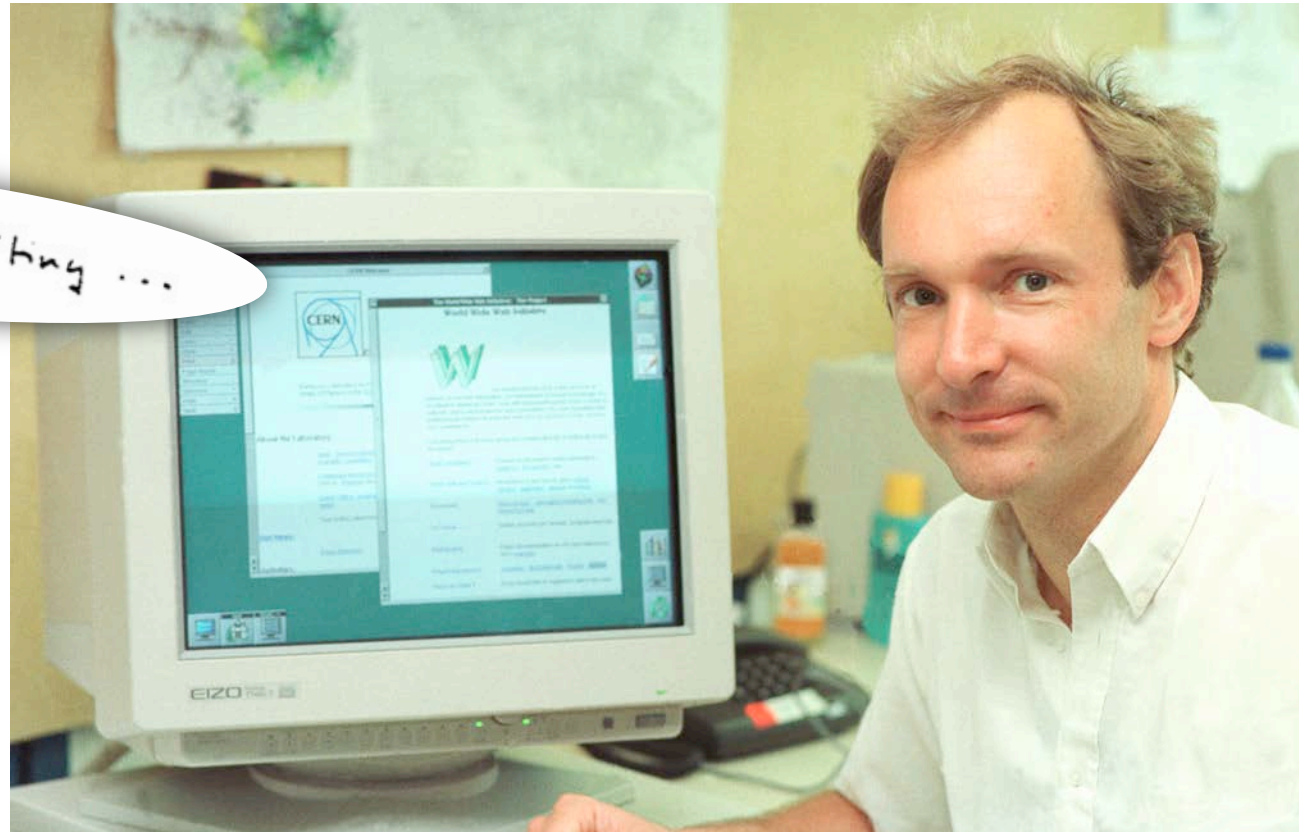
The World Wide Web





KT Mission

Maximizing the technological and knowledge return to the Member States industry and society

Promoting CERN's image as a center of excellence for technology

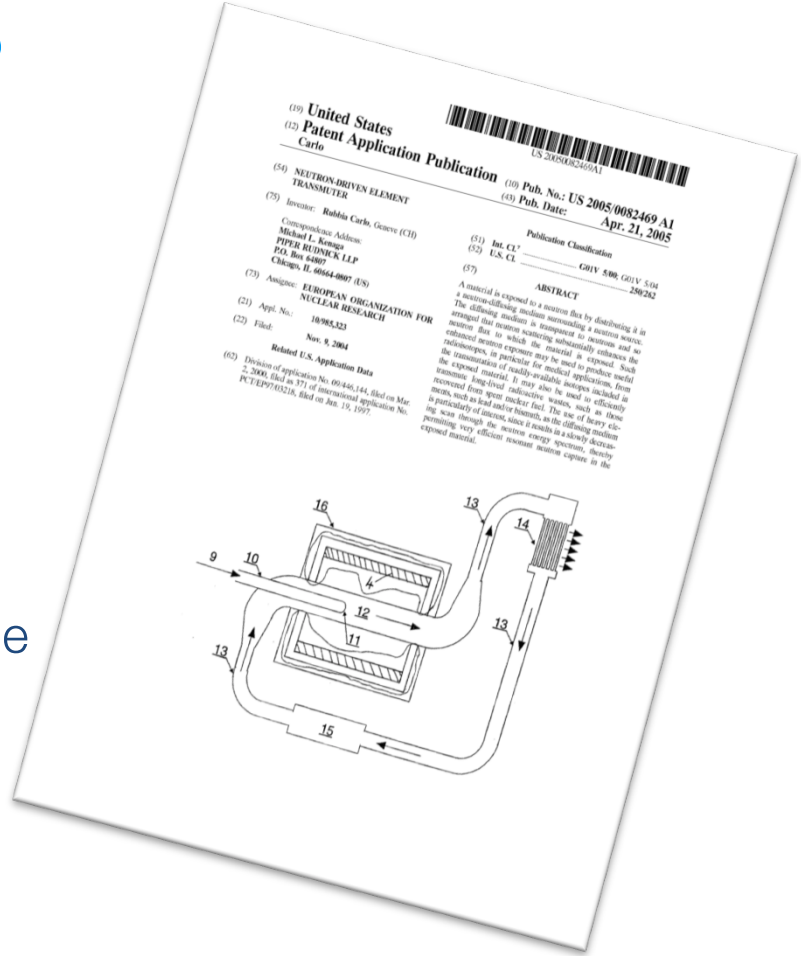
CERN and patents

Strategic motivation:

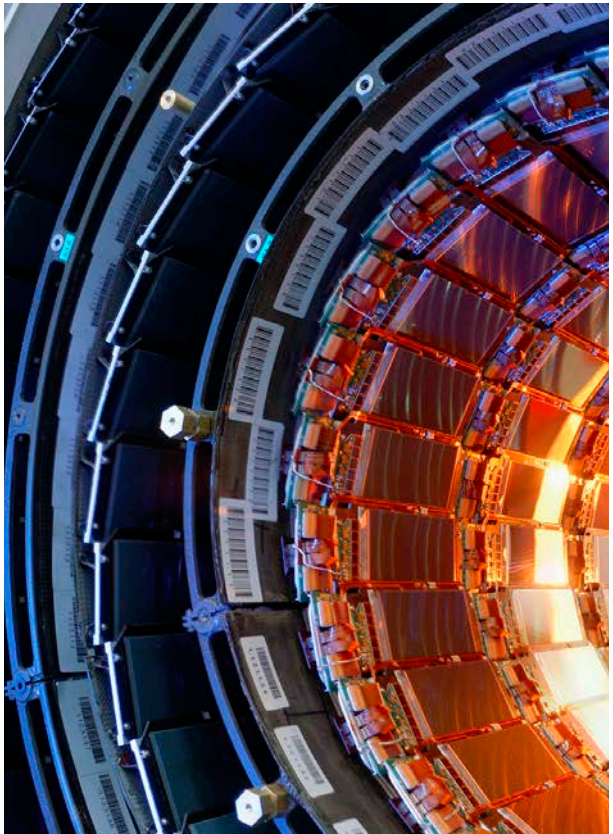
“Promote and enhance the image of the organization as a source of innovation and economic activities”

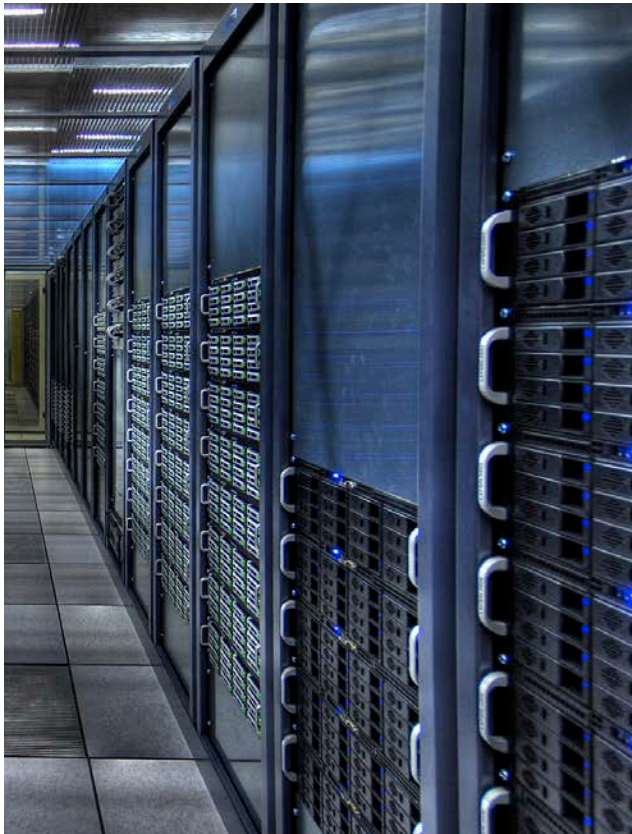
Patents are taken when it:

- Increases the probability of having the technology transferred
- Significantly enhances the commercial value
- Is needed to ensure recognition CERNs recognition as inventor



Key domains



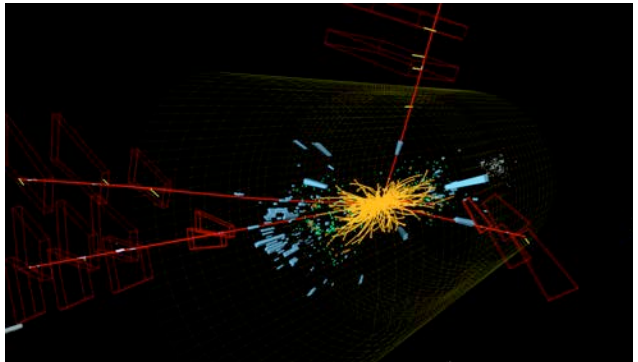


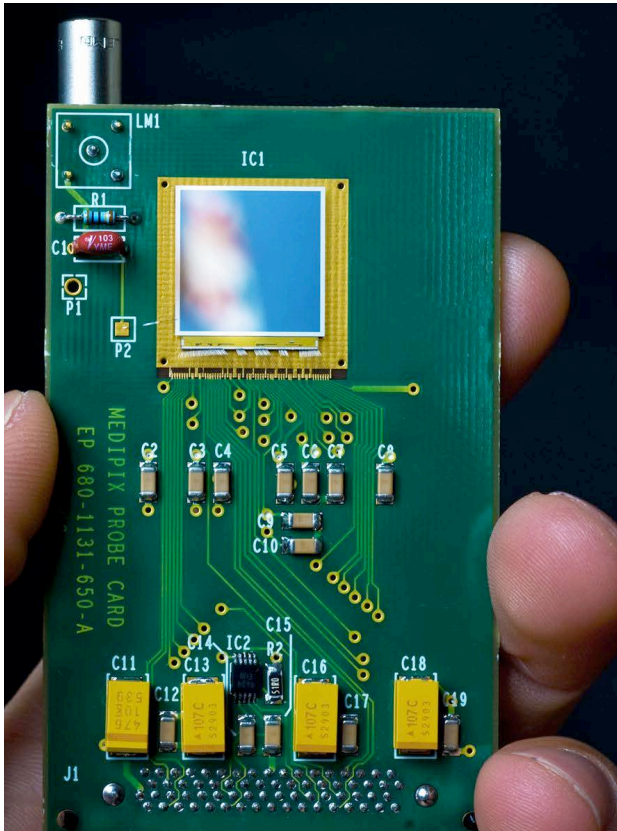
KT Modes

Licensing
Service and consultancy
R&D collaborations
Easy access IP

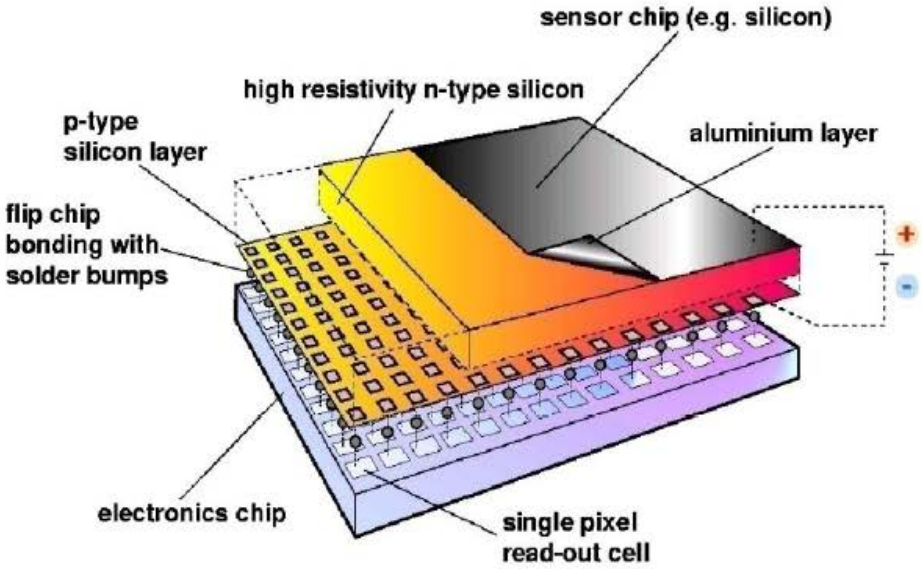
Open source software
Open hardware

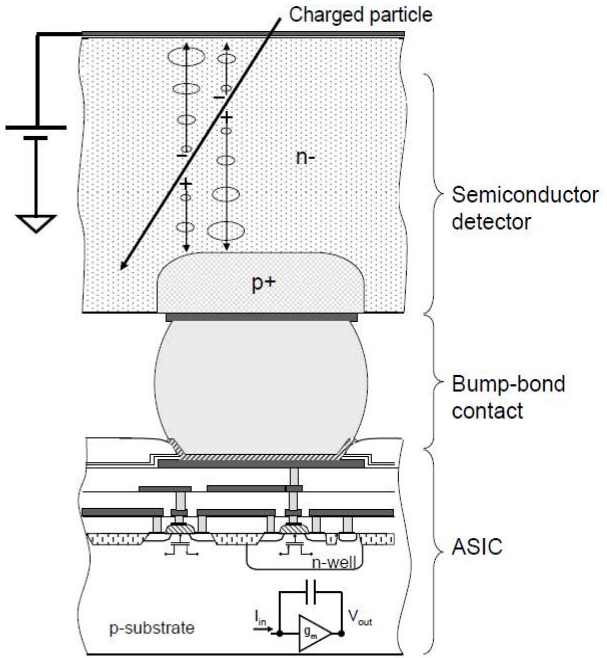
Procurement
Training
EU projects



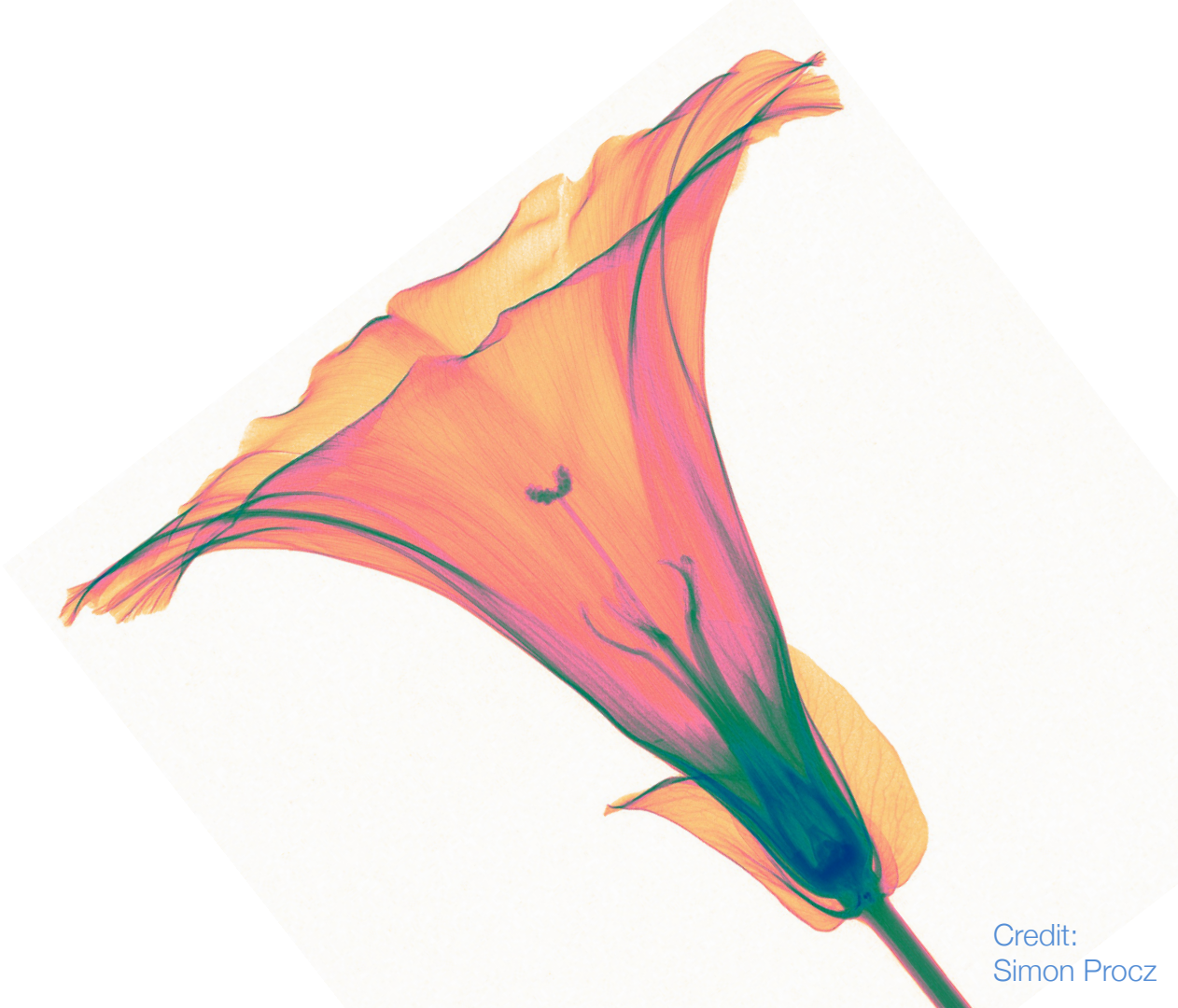


Medipix


sensor chip (e.g. silicon)
high resistivity n-type silicon
p-type
silicon layer
aluminium layer
flip chip
bonding with
solder bumps
+
-
electronics chip
single pixel
read-out cell


Charged particle
n-
p+
Semiconductor
detector
Bump-bond
contact
ASIC
n-well
p-substrate
I_{in}
g_m
V_{out}

Medipix

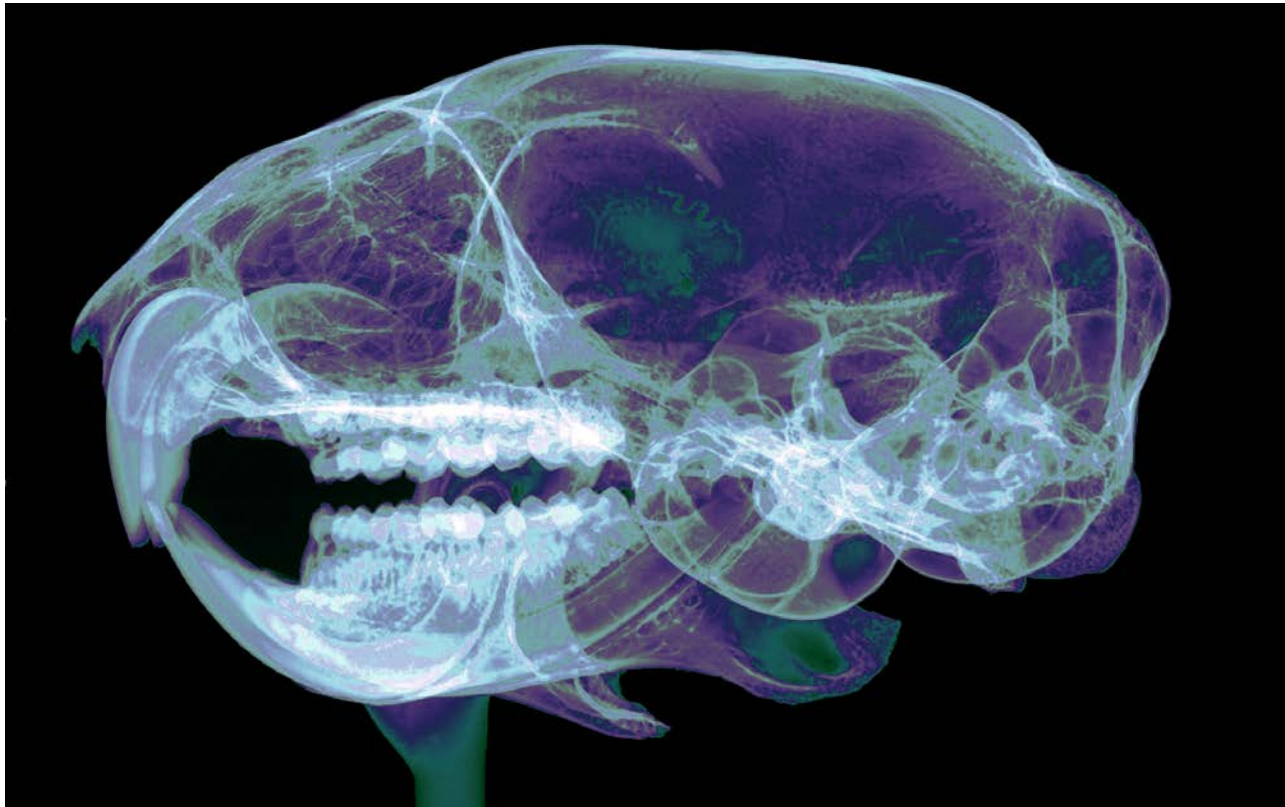


Credit:
Simon Procz

Application: X-Ray

Medical and industrial X Ray imaging

XRAY IMATEK, a spin-off company from IFAE, is selling products and services around the Medipix2 and the Timepix chips



Application: Material analysis

PANalytical is a Dutch company that develops and produces scientific instruments

Medipix is used in their range of for x-ray diffractometers

Application: Radiation monitoring

Medipix is used for radiation monitoring in space and

other types background radiation monitoring and dosimetry

Application: Research

Research applications:

- Synchrotron radiation
- Electron microscopy
- Detection of low energy particles

- Adaptive optics
- Neutron imaging
- and more

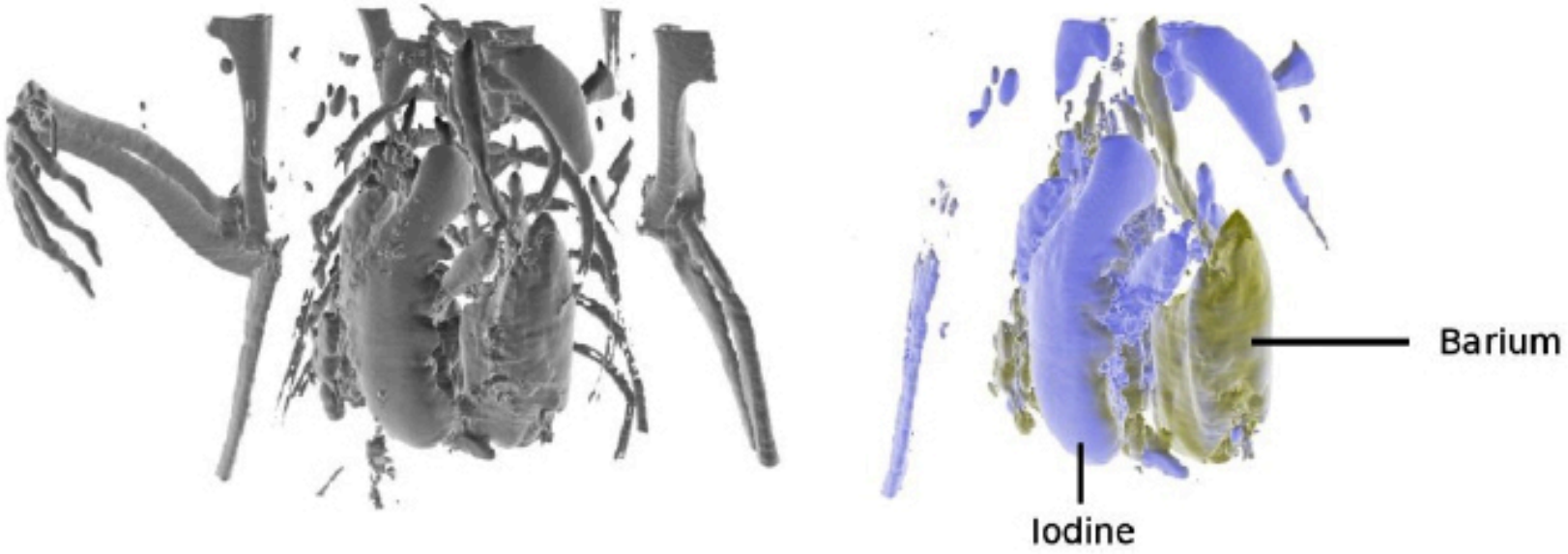
Application: Education

Medipix 2 technology used in an educational toolkit

Allows students to use a Timepix chip in the lab to visualise radiation

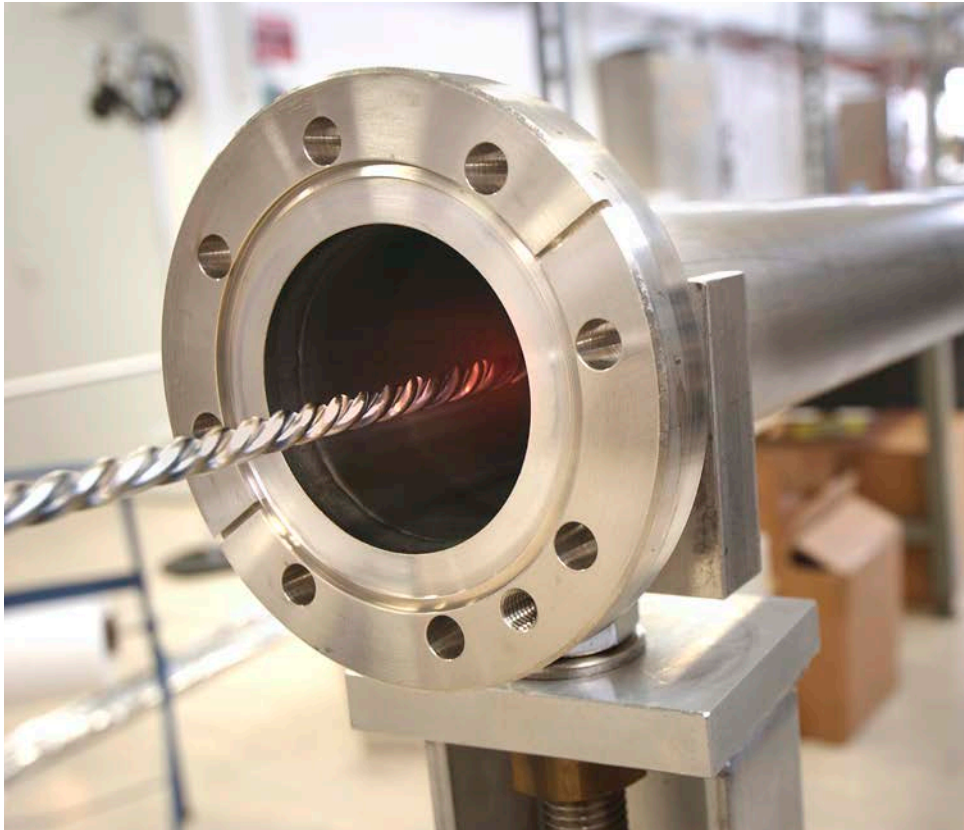
CERN has recently adopted this toolkit as part of its new SchoolLab

Application: Medical Imaging



Credit: MBI

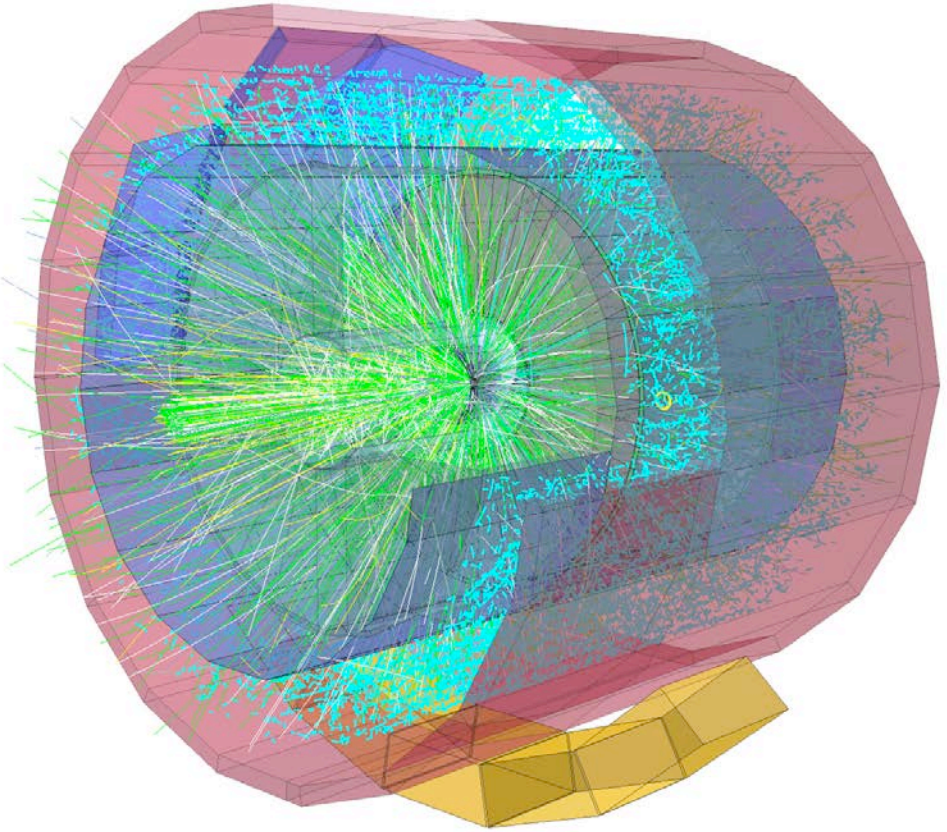
Non-Evaporable Getter



Open Source

ROOT:

- Finance
- Insurance
- Computing
- Aerospace
- Car manufacturing
- …



TIND

INVENIO is a digital library or repository system, released open source

TIND Technologies are selling service, support and customization for the software

CERN Open Hardware License

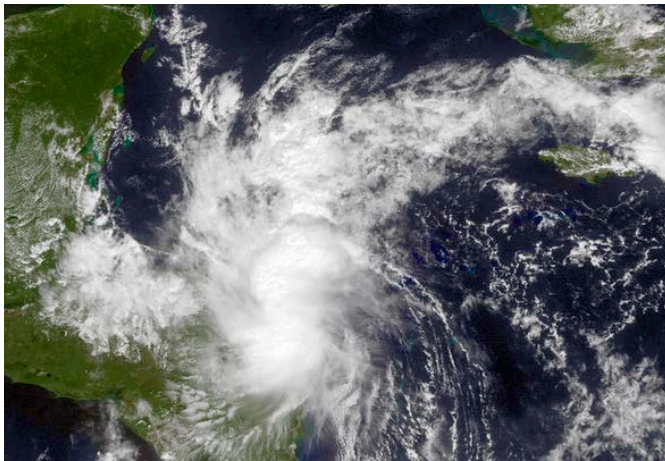
Legal framework

Electronic design community

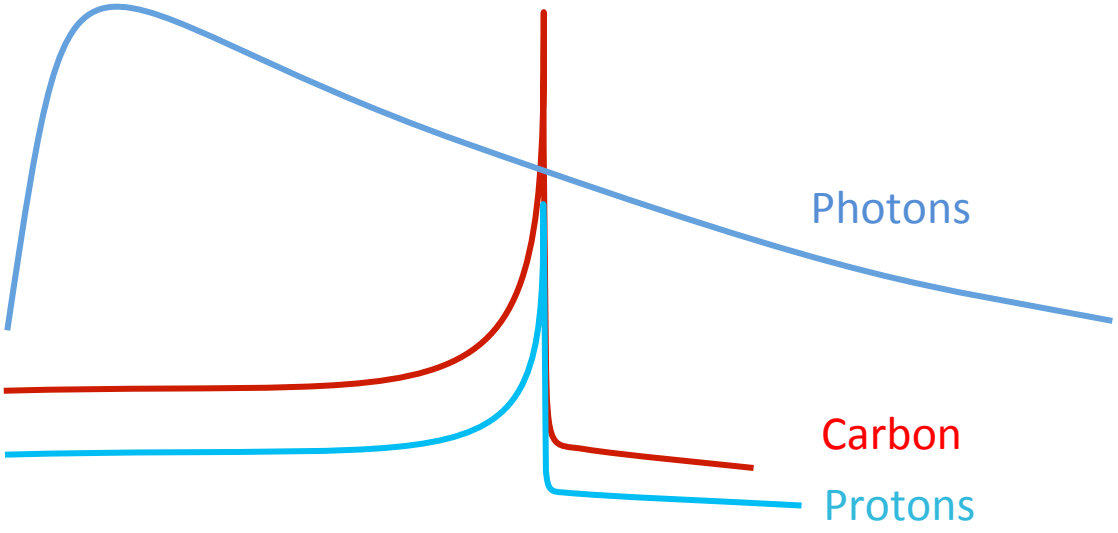
Facilitate knowledge exchange

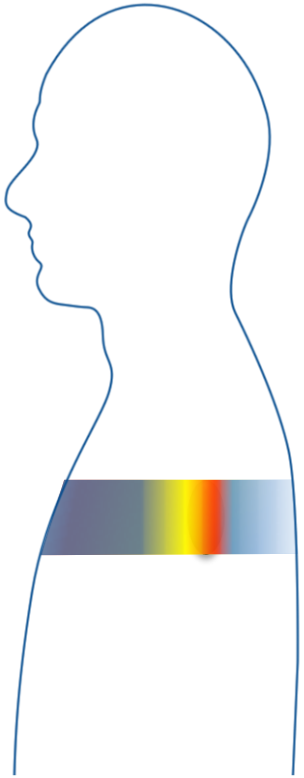
http://ohwr.org/

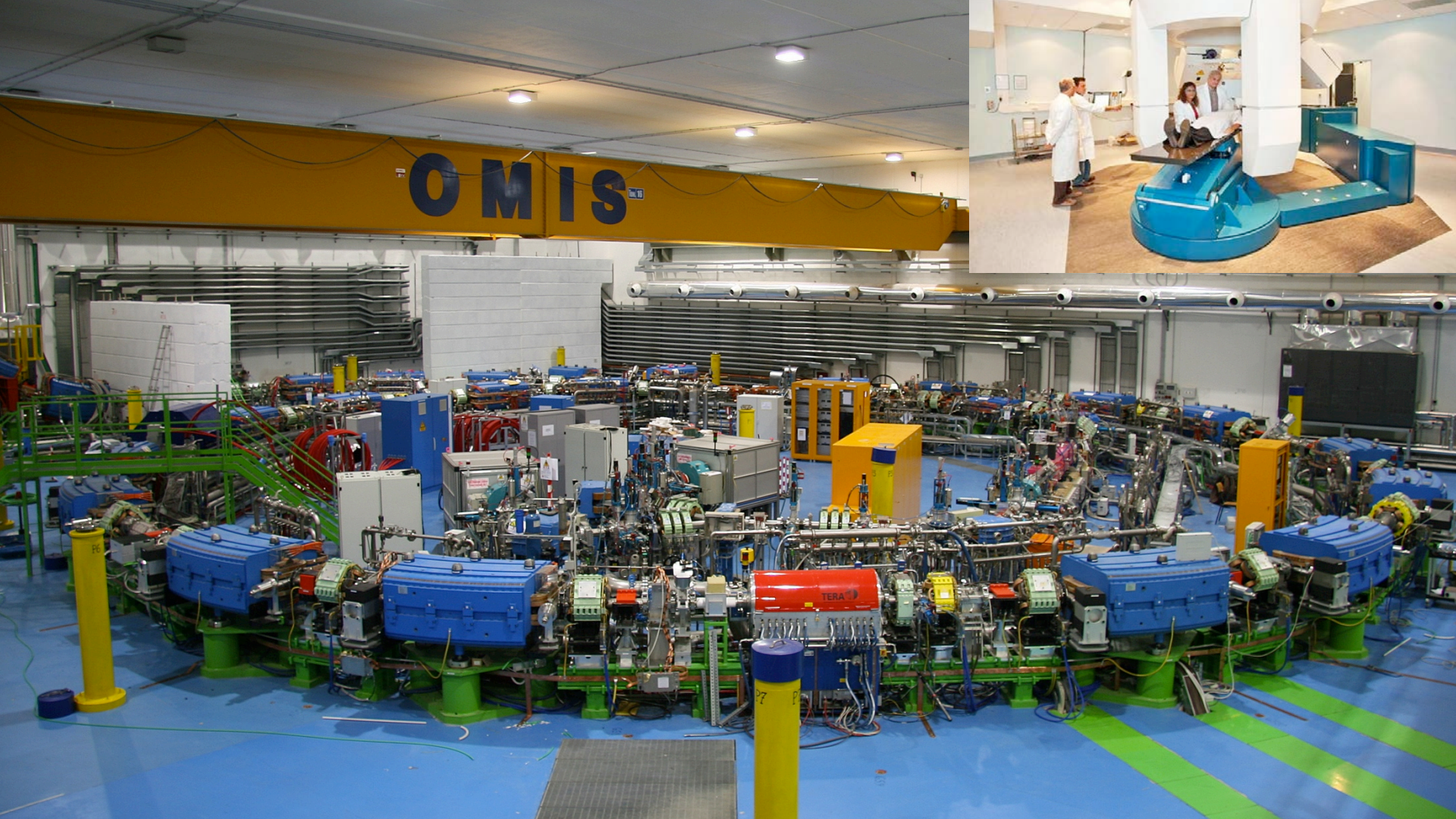
White Rabbit



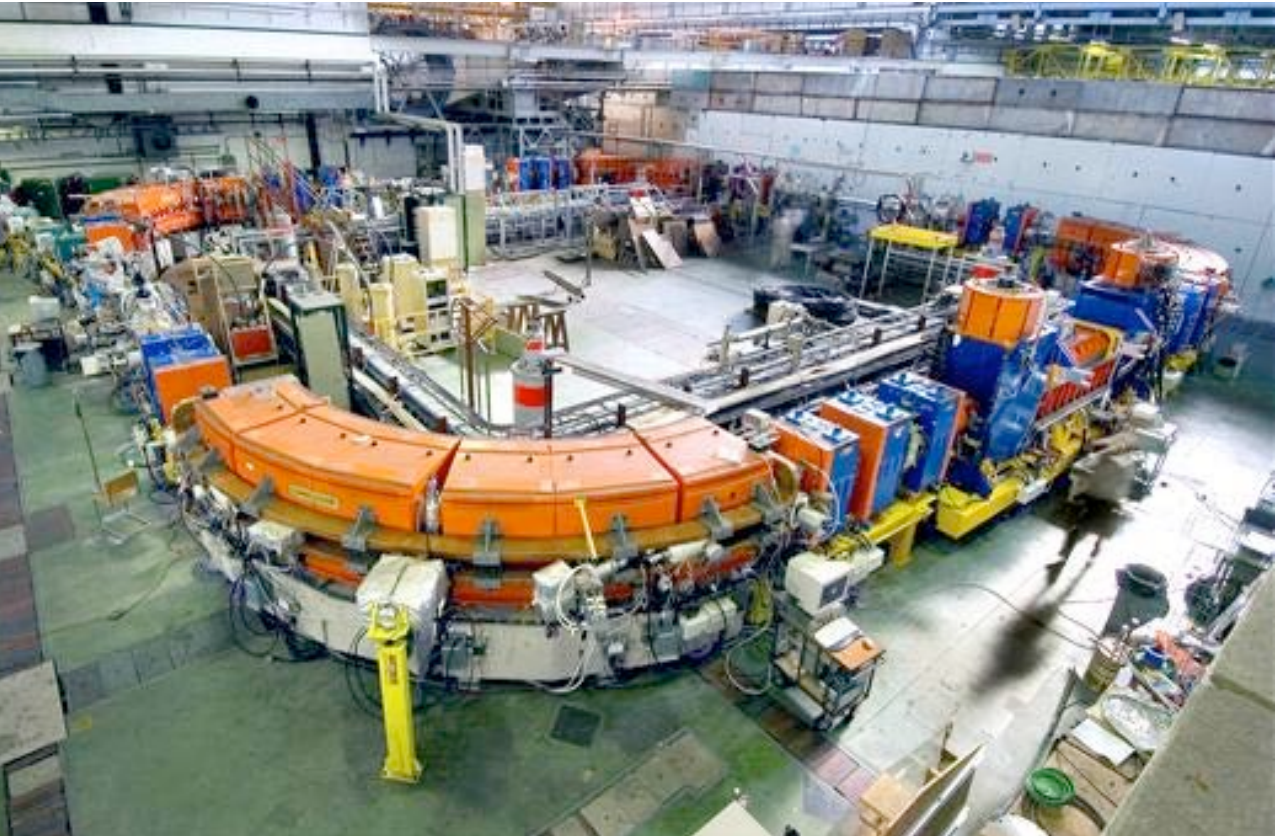
Hadron Therapy






OMIS
TERA

Medical Initiatives



Medical Accelerator Design

Biomedical Facility

Detectors for beam control and medical imaging

Diagnostics and Dosimetry for control of radiation

Radio-Isotopes (imaging and treatment)

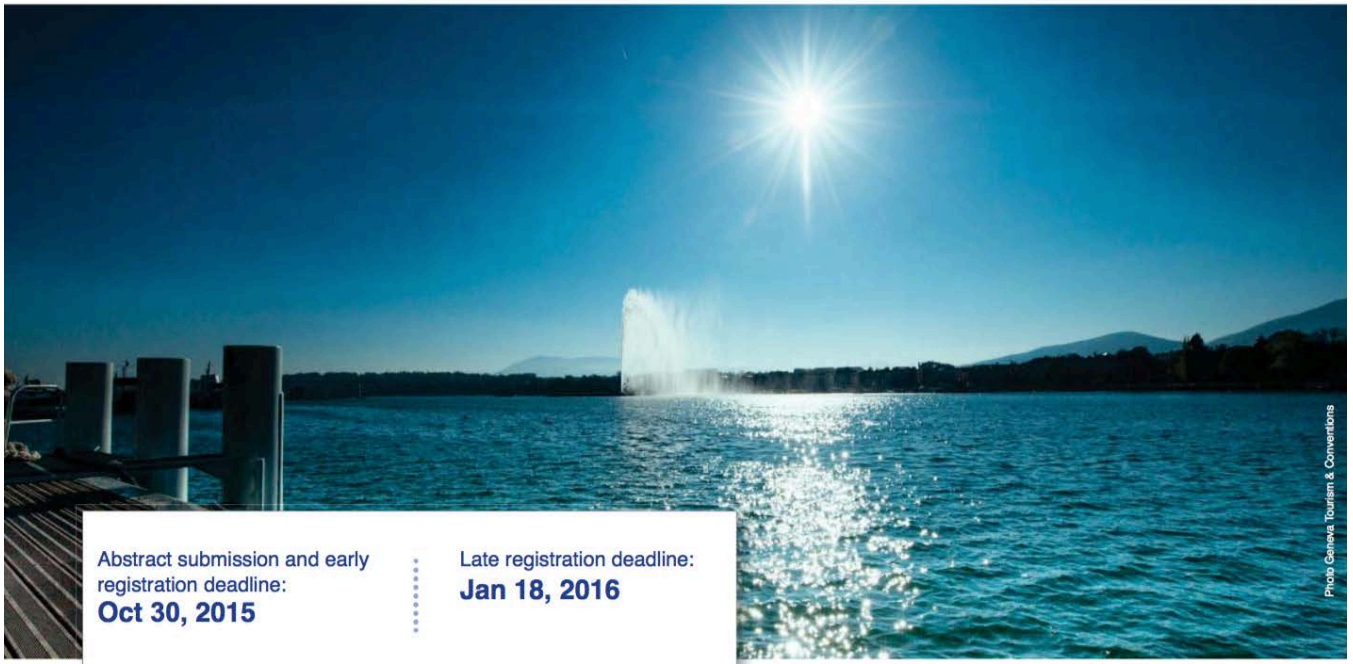
Large Scale Computing (large data transfers and analysis, treatment planning and simulations)

Applications other than cancer therapy

ICTR-PHE 2016

INTERNATIONAL CONFERENCE ON TRANSLATIONAL RESEARCH IN RADIATION ONCOLOGY | PHYSICS FOR HEALTH IN EUROPE

February 15 – 19, 2016 CICG, Geneva, Switzerland



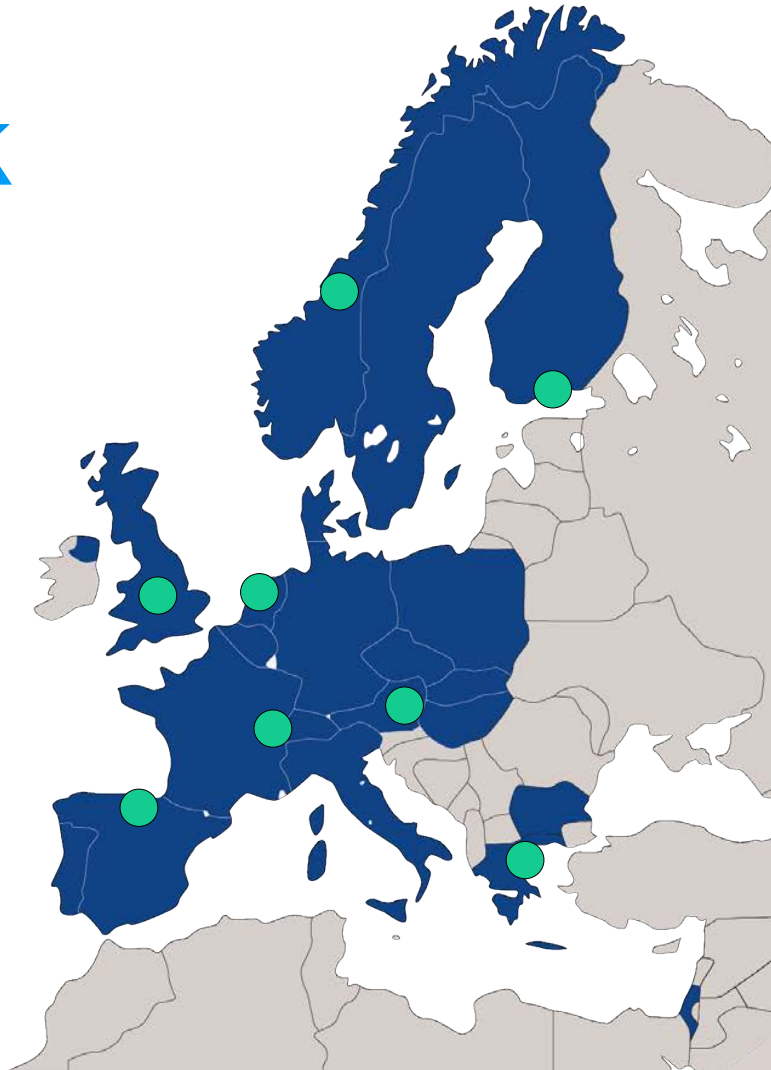
Abstract submission and early registration deadline:
Oct 30, 2015

Late registration deadline:
Jan 18, 2016

CERN BIC Network

Established incubators:

UK – STFC-CERN BIC
Netherlands – NIKHEF-CERN BIC
Norway – NTNU BIC of CERN Technology
Greece – Technopolis BIC of CERN Technology
Austria – Austria BIC of CERN Technology
France – InnoGEX BIC of CERN Technology
Finland – Finnish BIC of CERN Technology
Spain – Spanish BIC of CERN Technology



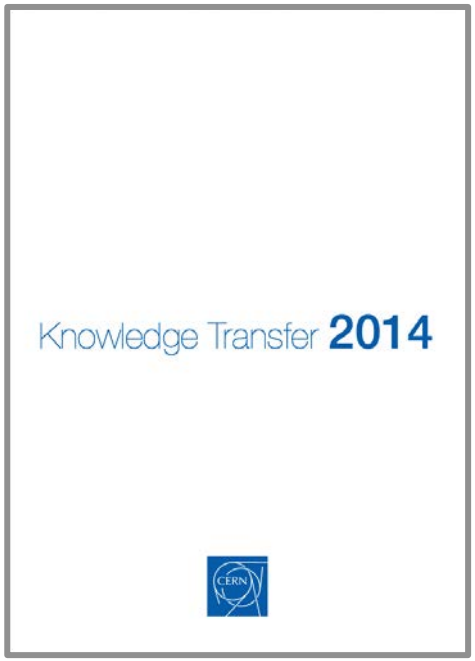
KT through People

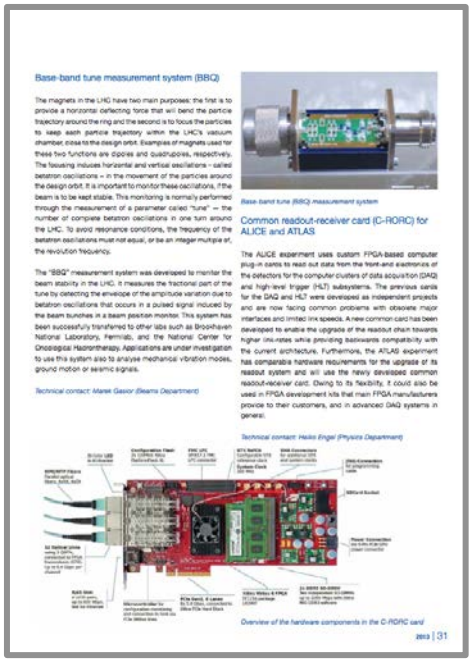
Every year, hundreds of students come to CERN to contribute to our research programs

An opportunity for young people to learn in a multicultural environment

CERN-NTNU Screening Week

KT Annual Report





cern.ch/kt

Questions

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