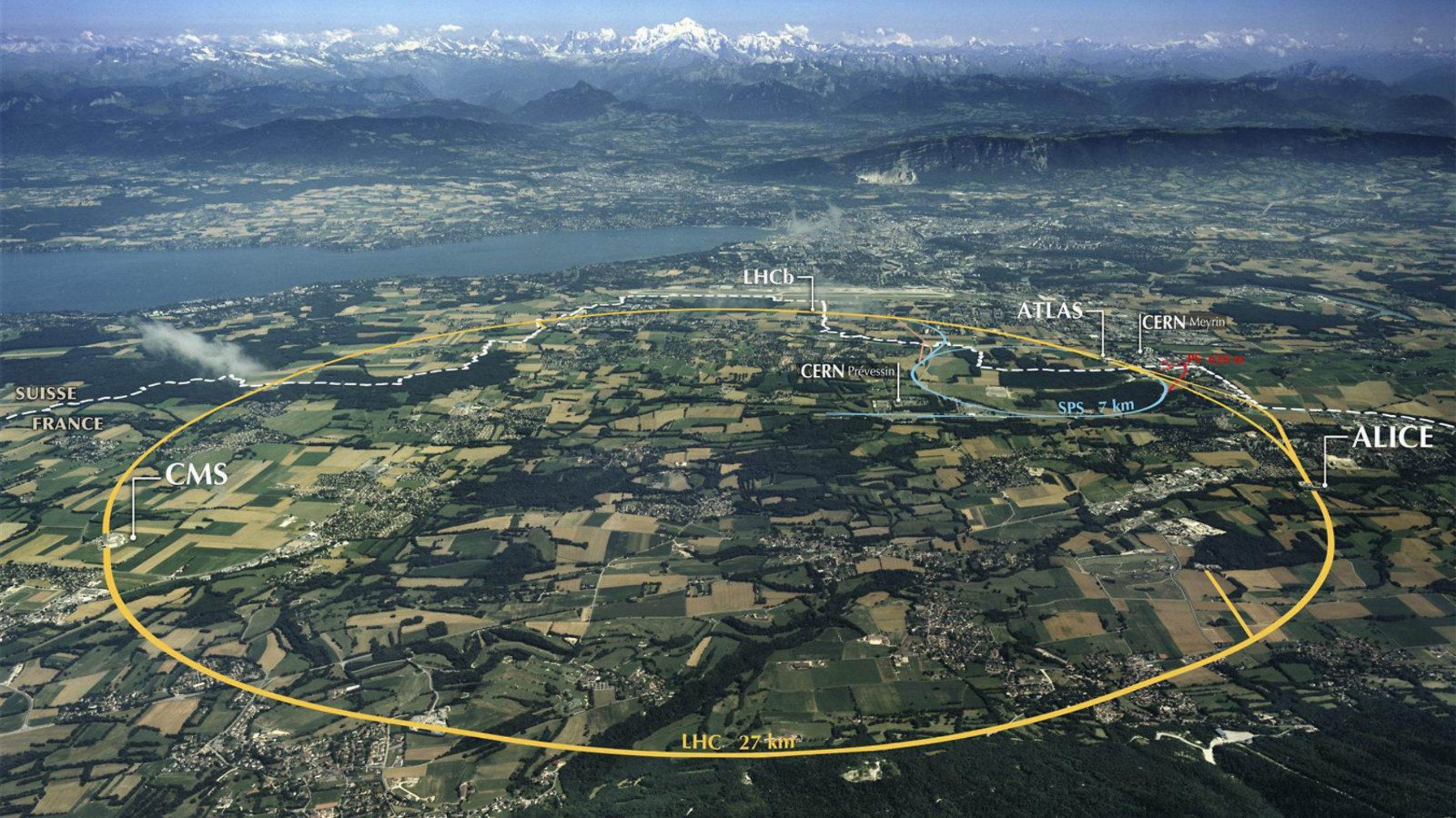
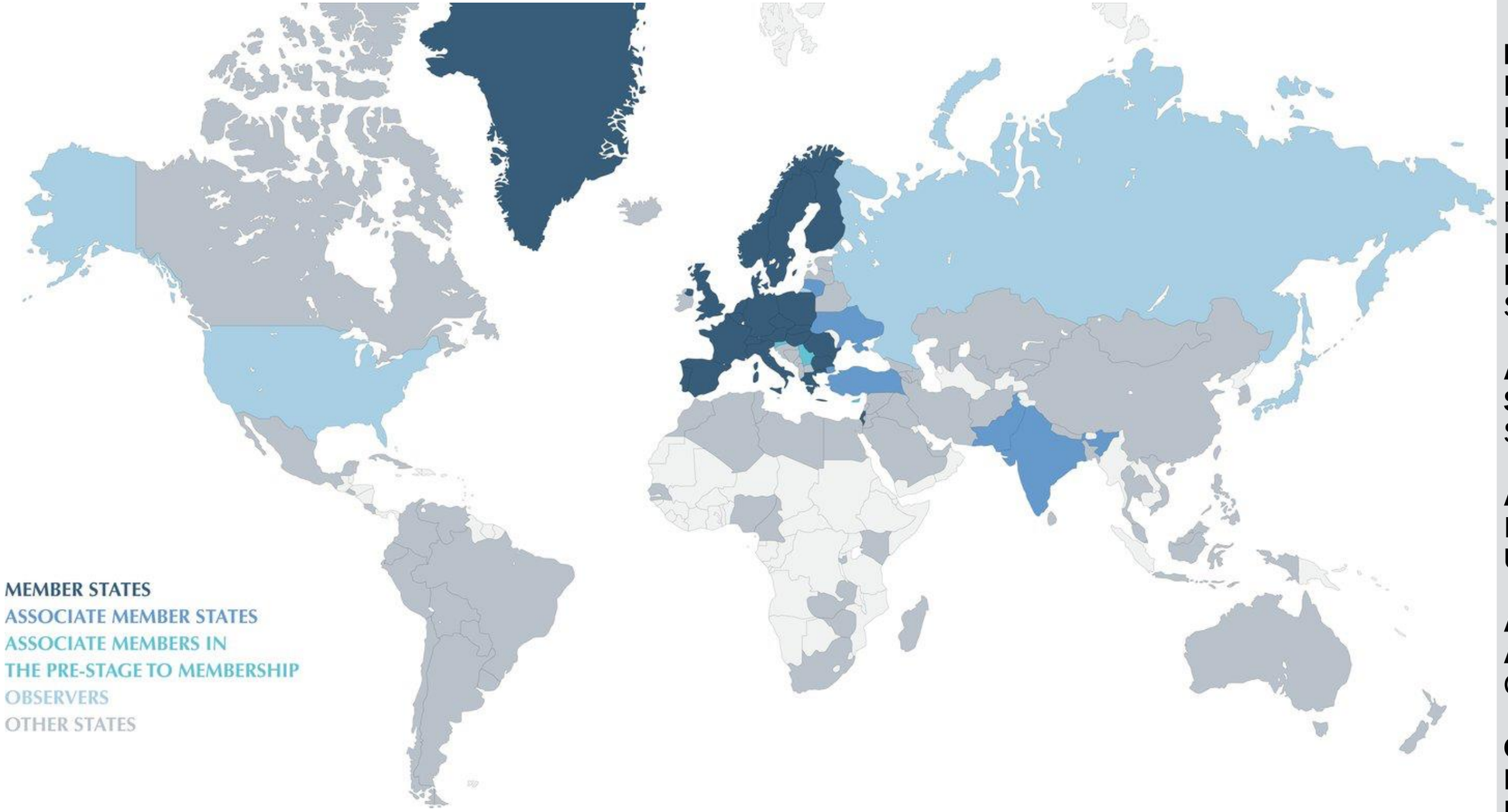
From CERN knowledge to society

Giovanni Porcellana

CERN Knowledge Transfer Group


LHCb
ATLAS
CERN Meyrin
CERN Prévessin
SPS 7 km
SUISSE
FRANCE
ALICE
CMS
LHC 27 km

An international organization



Member States: Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Israel, Italy, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Spain, Sweden, Switzerland and United Kingdom

Associate Members in the Pre-Stage to Membership: Cyprus, Serbia, Slovenia

Associate Member States: India, Lithuania, Pakistan, Turkey, Ukraine

Applications for Membership or Associate Membership: Brazil, Croatia

Observers to Council: Japan, Russia, United States of America; European Union, JINR and UNESCO

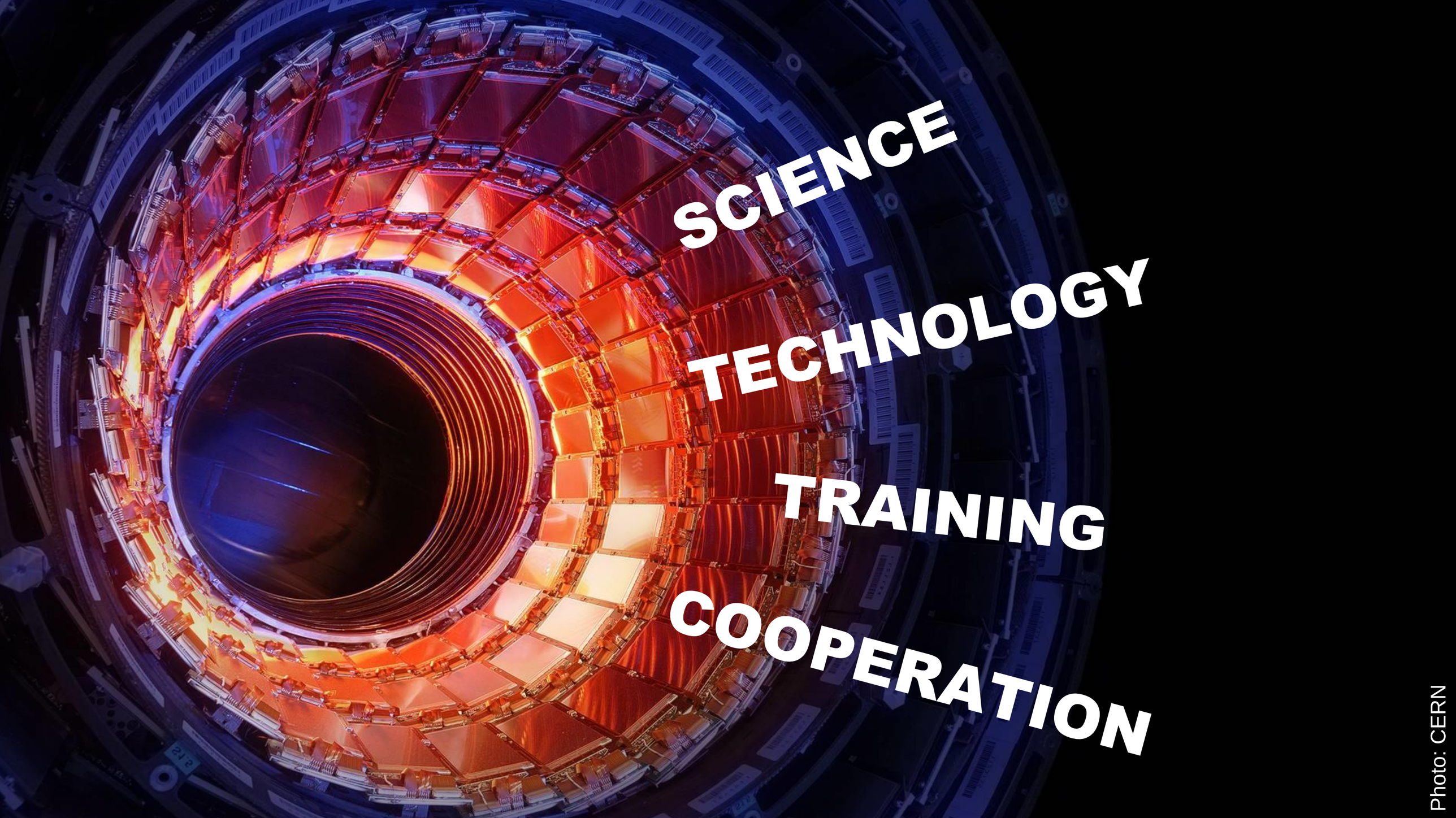

SCIENCE
TECHNOLOGY
TRAINING
COOPERATION
Photo: CERN

Photo: CERN

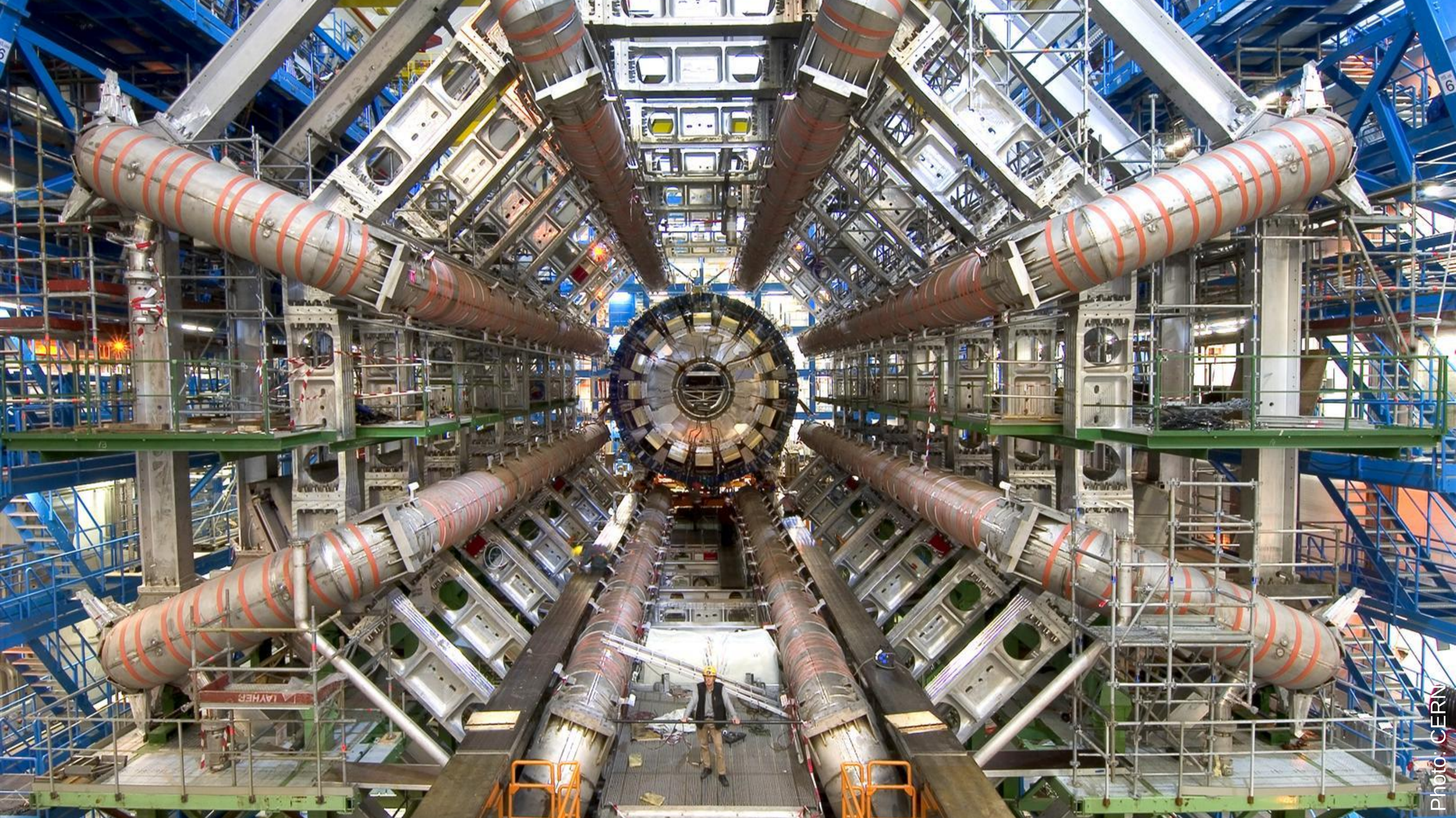
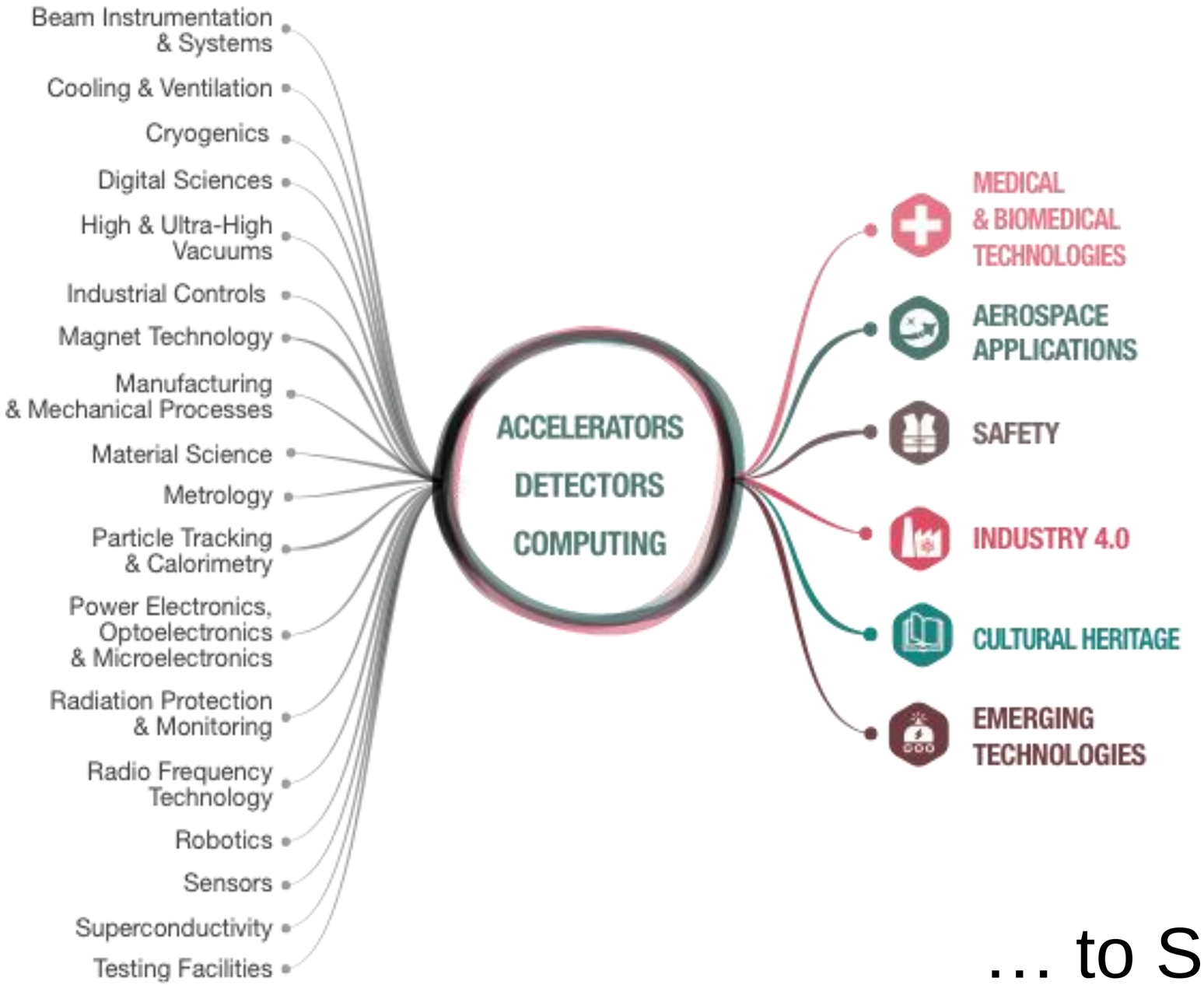


Photo: CERN


DESKTOP INFRASTRUCTURE
WORLD WIDE WEB SERVERS
ENGINEERING SERVICES
HOME DIRECTORY SERVERS
MAIL SERVERS

Photo: CERN

From CERN Technologies …

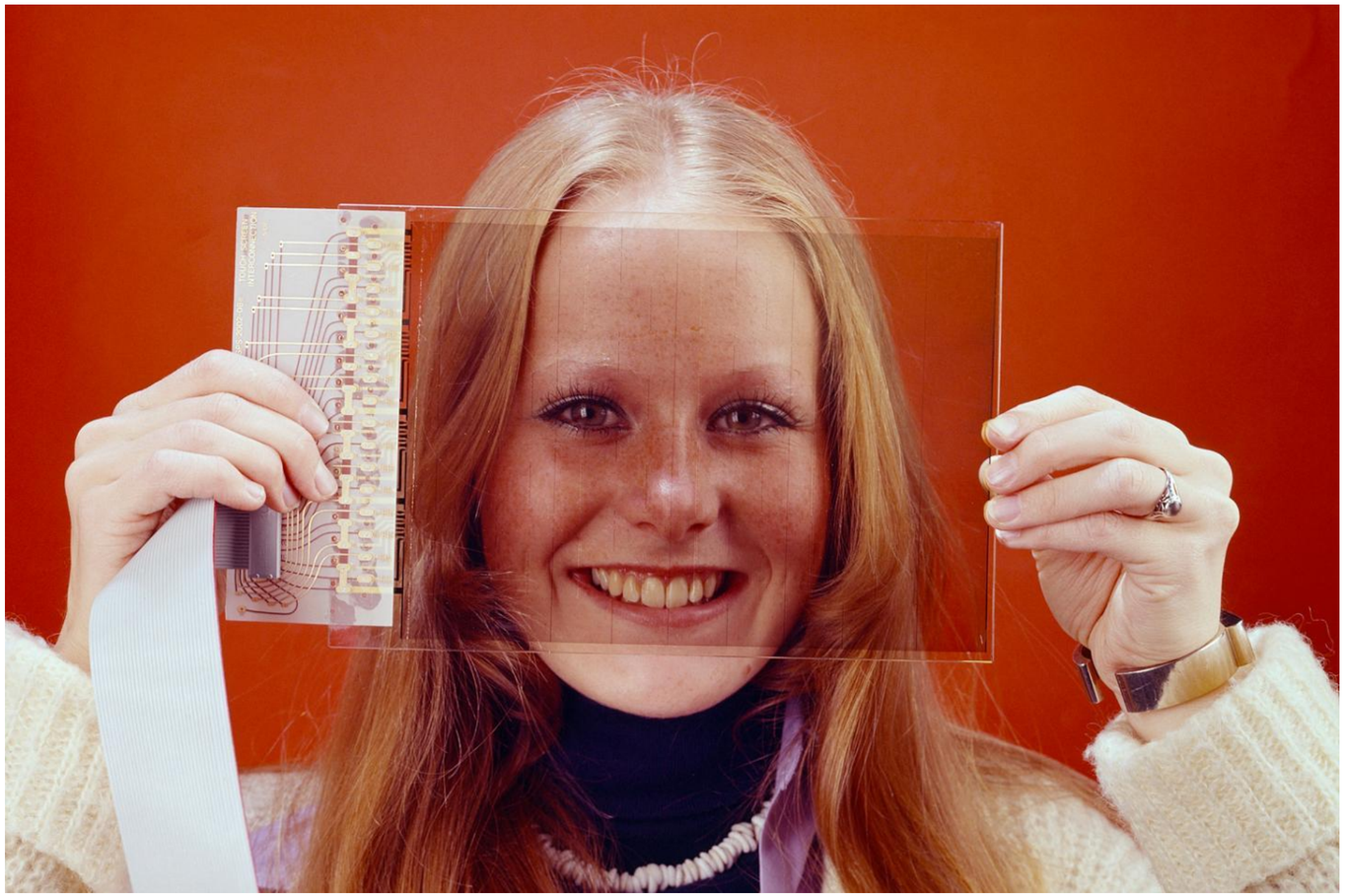


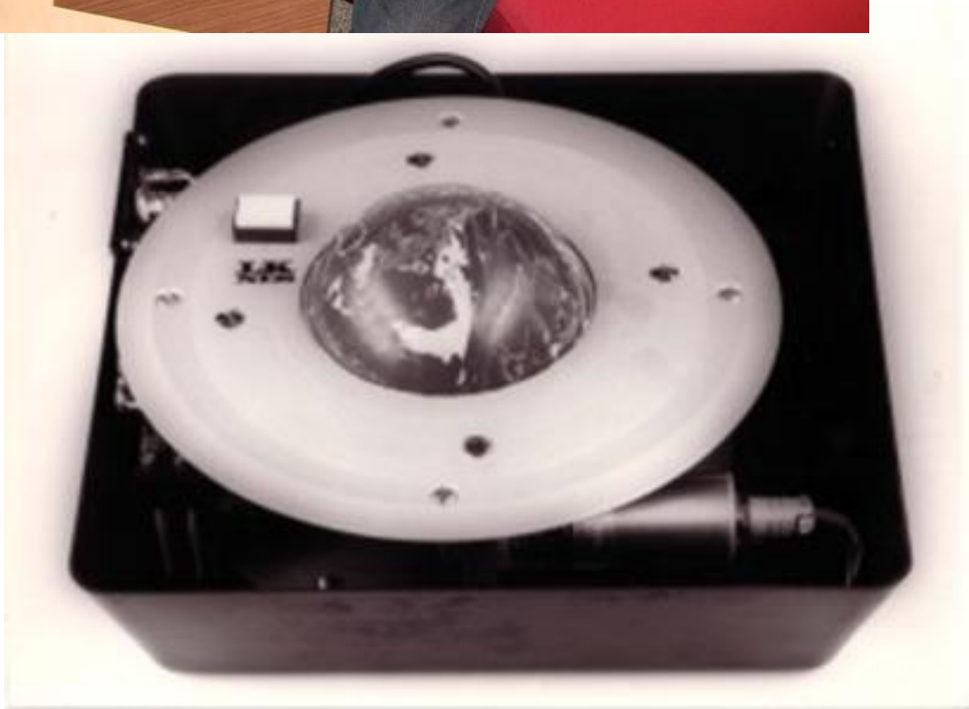
… to Society

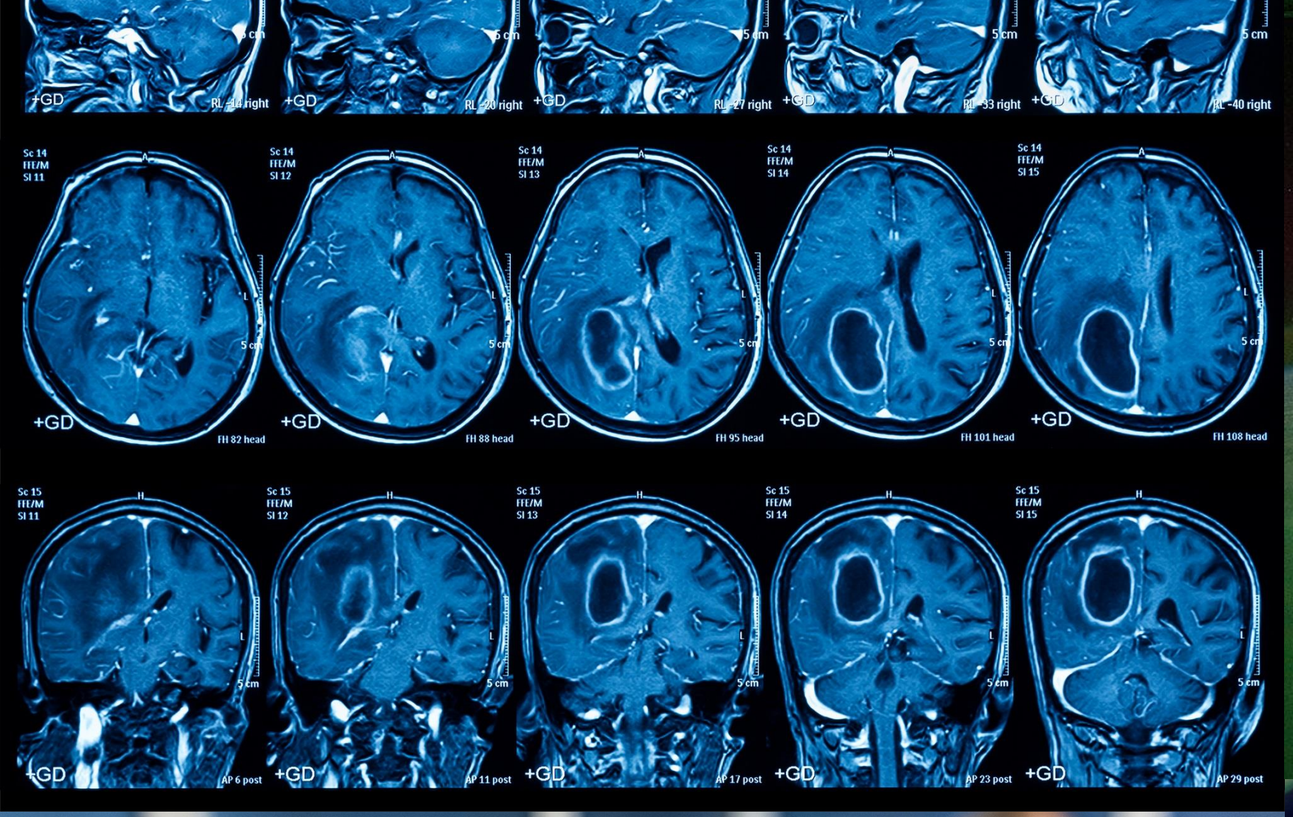
Photo: CERN

Photo: Fermilab

CERN, 1970s






+GD
RL -13 right
RL -20 right
RL -27 right
RL -33 right
RL -40 right
Sc 14 FFE/M SI 11
Sc 14 FFE/M SI 12
Sc 14 FFE/M SI 13
Sc 14 FFE/M SI 14
Sc 14 FFE/M SI 15
FH 82 head
FH 88 head
FH 95 head
FH 101 head
FH 108 head
Sc 15 FFE/M SI 11
Sc 15 FFE/M SI 12
Sc 15 FFE/M SI 13
Sc 15 FFE/M SI 14
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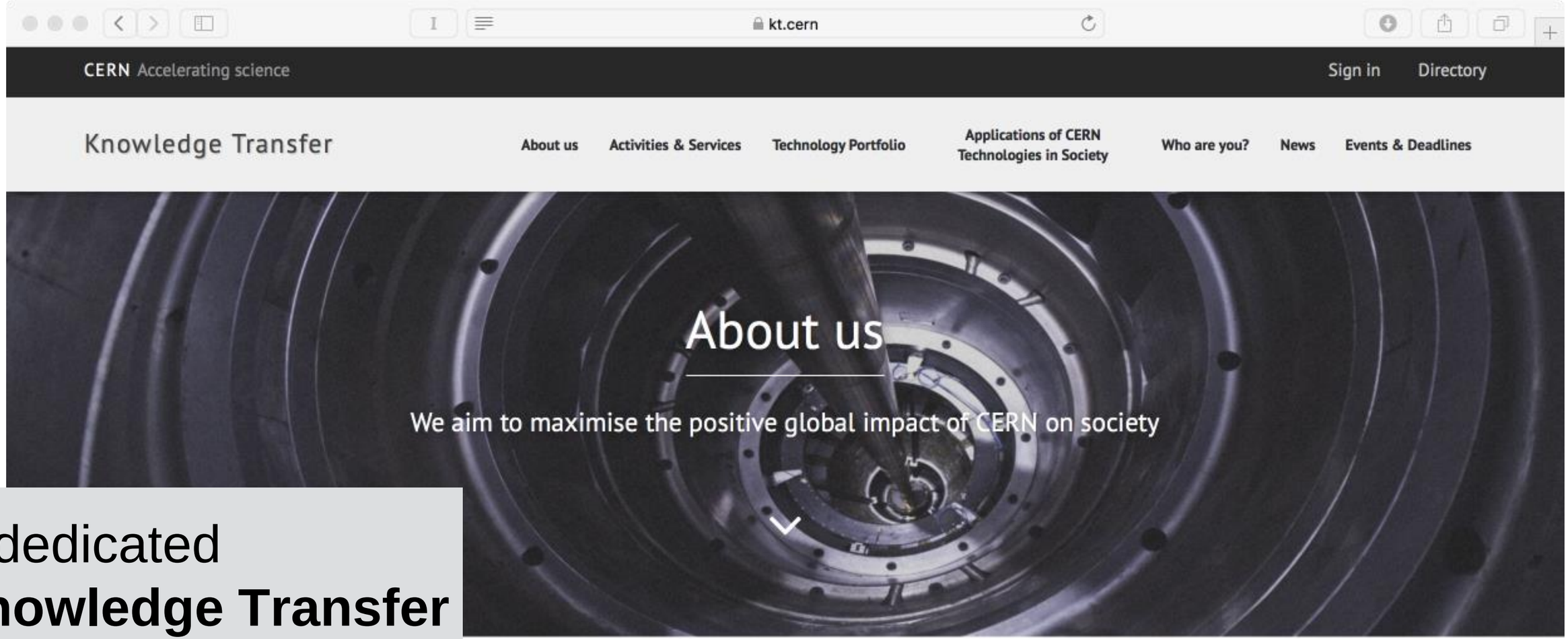
AP 6 post
AP 11 post
AP 17 post
AP 23 post
AP 29 post
5 cm


CERN DOSIMETRY SERVICE



A dedicated **Knowledge Transfer (KT) Group** at CERN

> *Places like CERN contribute to the kind of knowledge that not only enriches humanity, but also provides the wellspring of ideas that become the technologies of the future.*
>
> Fabiola Gianotti, Director-General of CERN

GET IN TOUCH

Contact the CERN Knowledge Transfer team.

Contact now

ABOUT US

CERN KT Group’s Mission

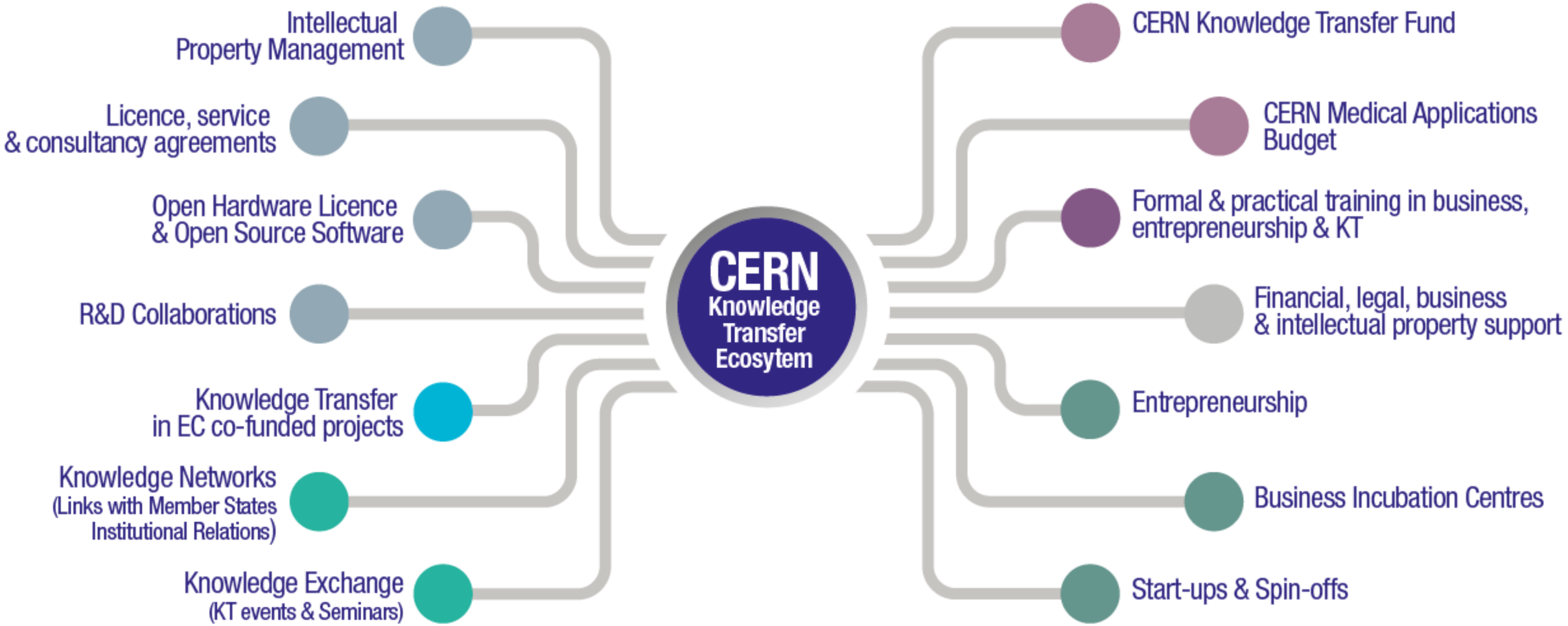
Maximise the technological and knowledge return to society in particular through Member States industry

Promote CERN as a centre of excellence for technology and innovation

Demonstrate the importance and impact of fundamental research investments

Key concepts: Dissemination and Impact

How we do it


Intellectual Property Management
Licence, service & consultancy agreements
Open Hardware Licence & Open Source Software
R&D Collaborations
Knowledge Transfer in EC co-funded projects
Knowledge Networks (Links with Member States Institutional Relations)
Knowledge Exchange (KT events & Seminars)
CERN Knowledge Transfer Ecosytem
CERN Knowledge Transfer Fund
CERN Medical Applications Budget
Formal & practical training in business, entrepreneurship & KT
Financial, legal, business & intellectual property support
Entrepreneurship
Business Incubation Centres
Start-ups & Spin-offs

Who are we working with?

We need to constantly assess the market and look for the best partners for every kind of situation.
A multinational or a SME? Which one will be the best partner for our technology / know-how?

Medical Imaging

SIEMENS Healthineers

PHILIPS Healthcare

GE Healthcare

Medipix is a family of read-out chips for particle imaging and detection developed by the **Medipix Collaborations**

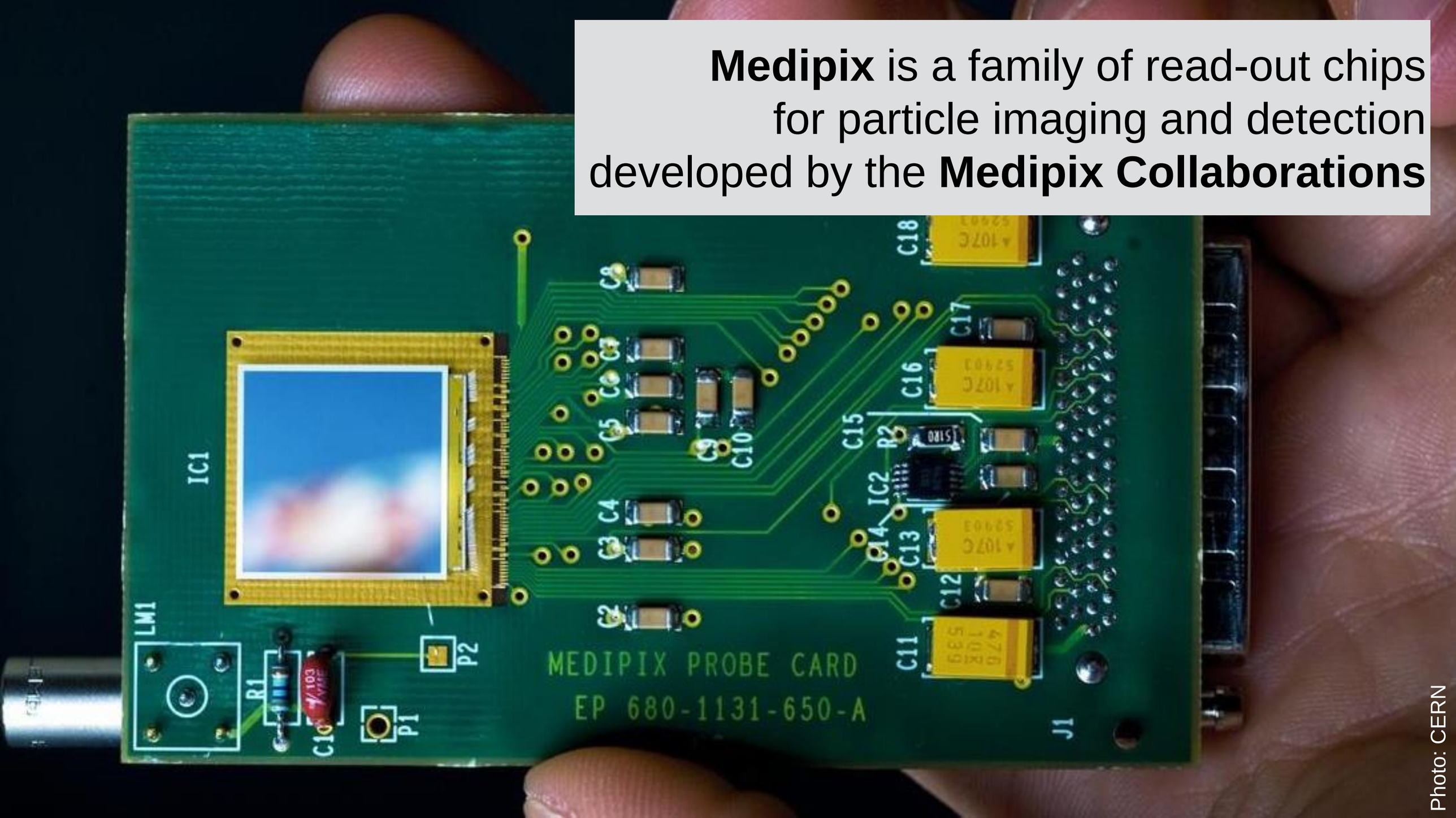


Photo: CERN

MARS Bio-scanner now commercial

Notre Dame imaging lab

Slide courtesy of A. Butler, University of Canterbury

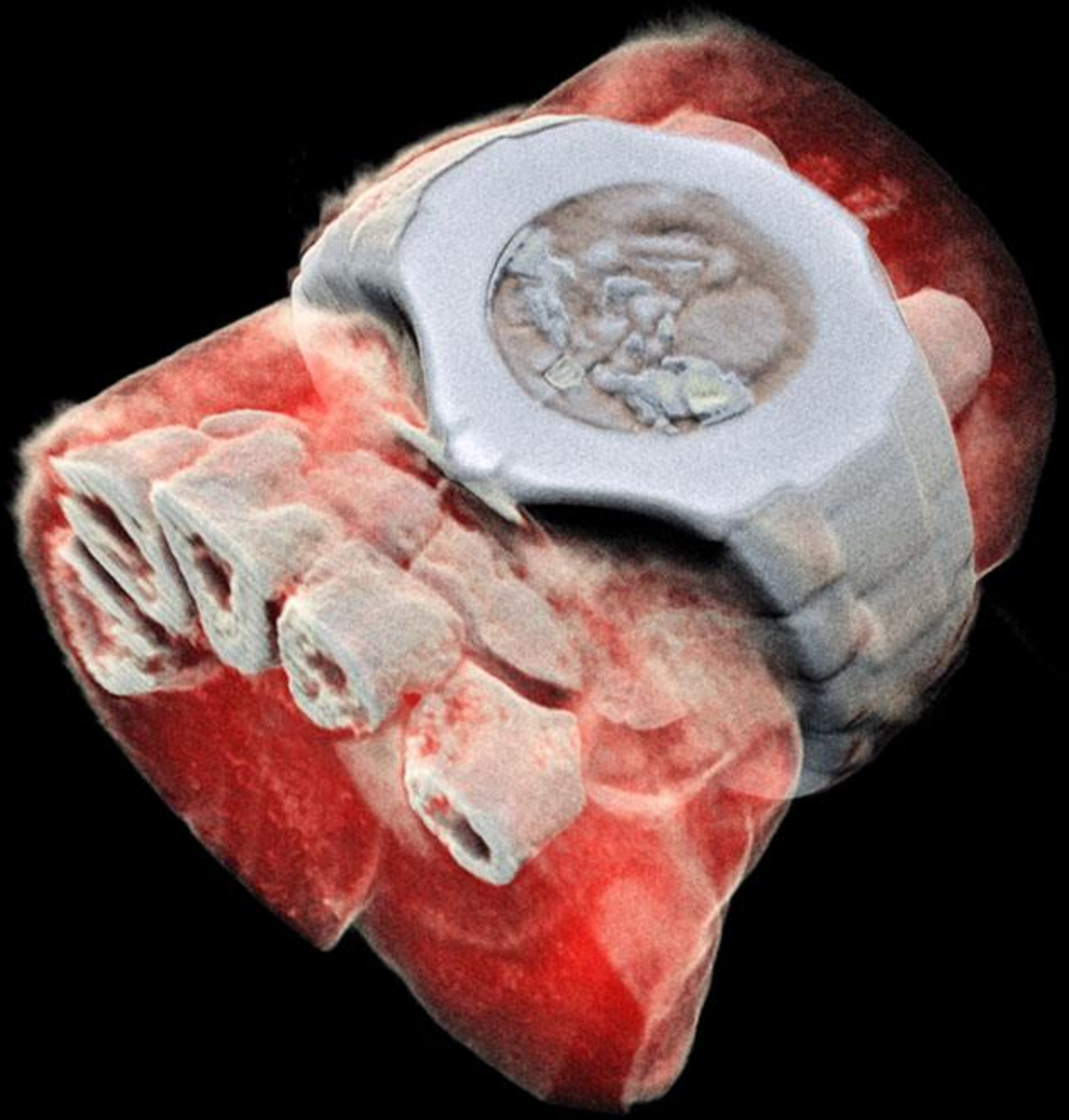
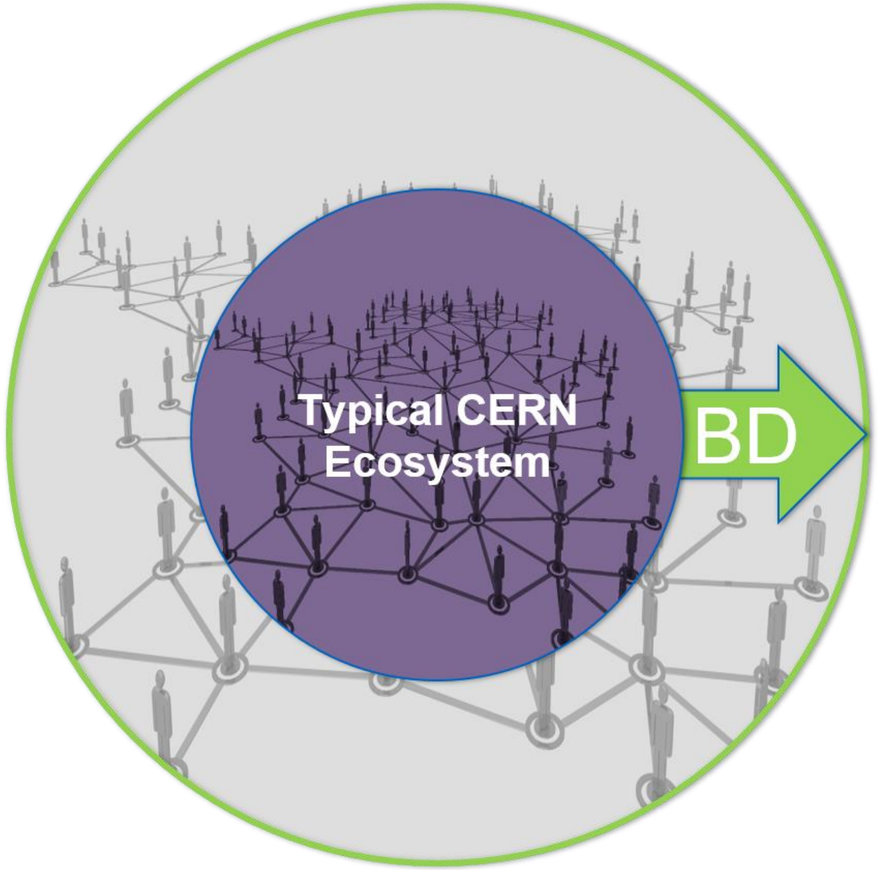


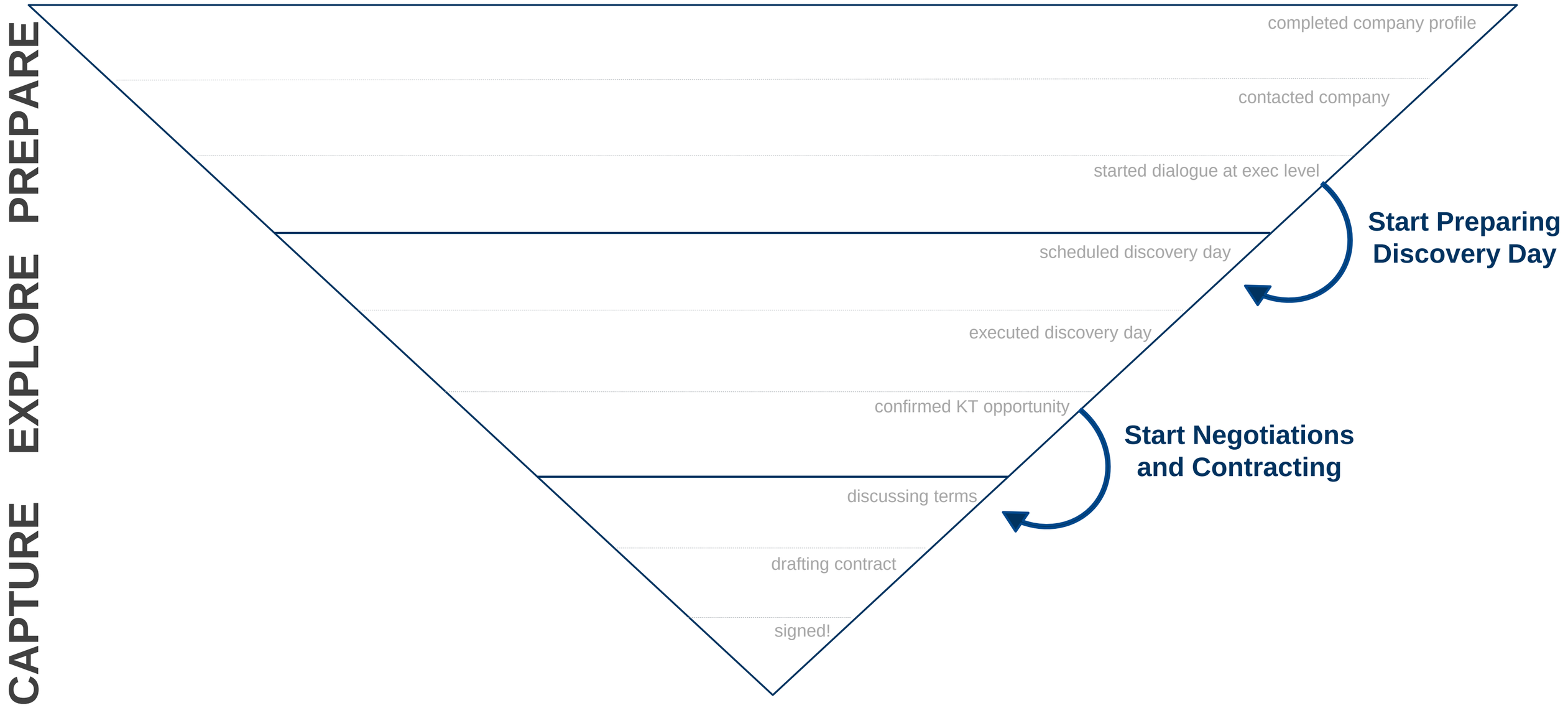
Photo: MARS Bioimaging

Looking for partners: Business Development

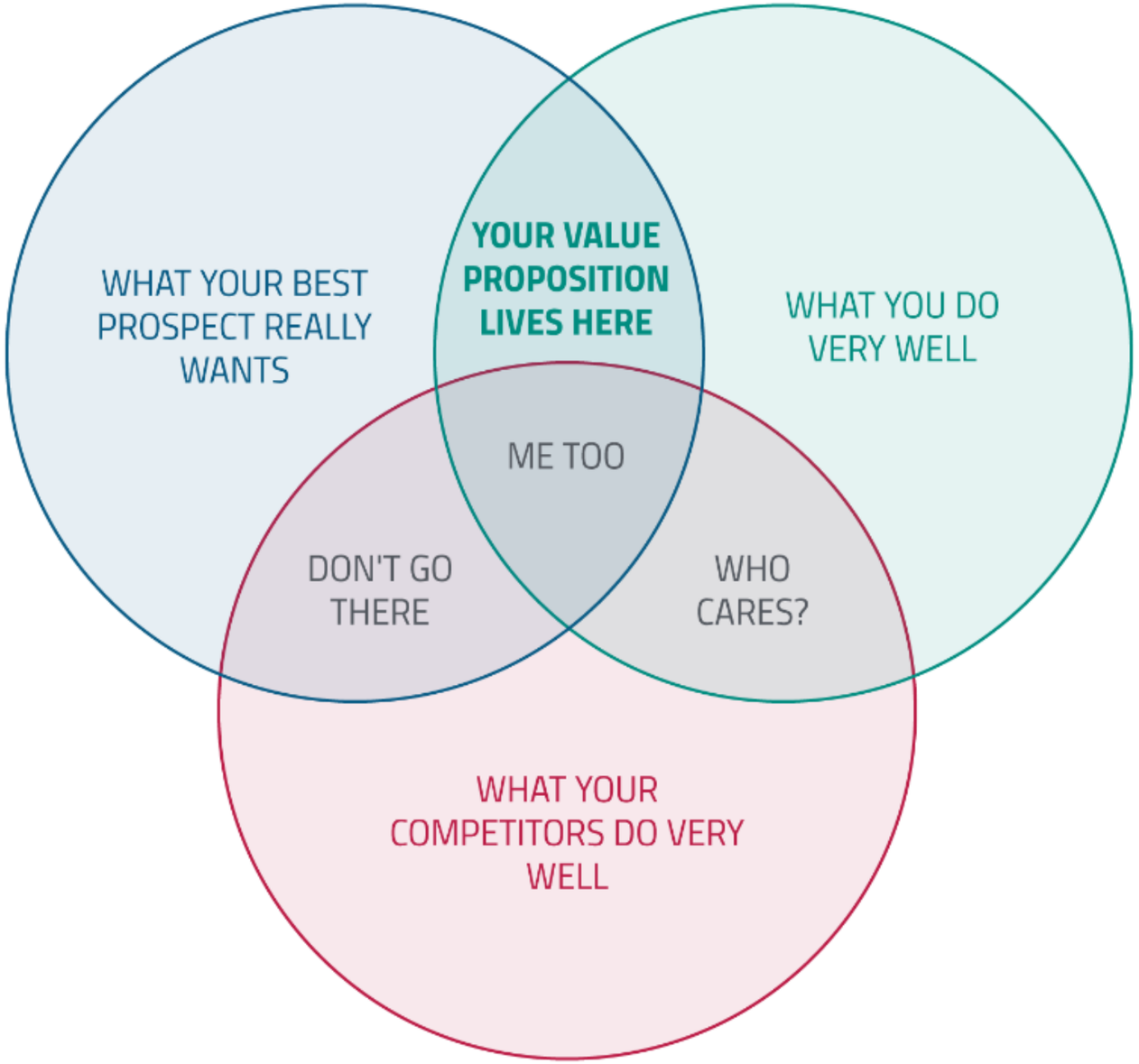
Who can we work with, *outside* the typical CERN HEP ecosystem? We are actively looking for *new* industrial partnerships, aiming for *more positive impact* on society by *accelerating innovation* in the *CERN member states.*

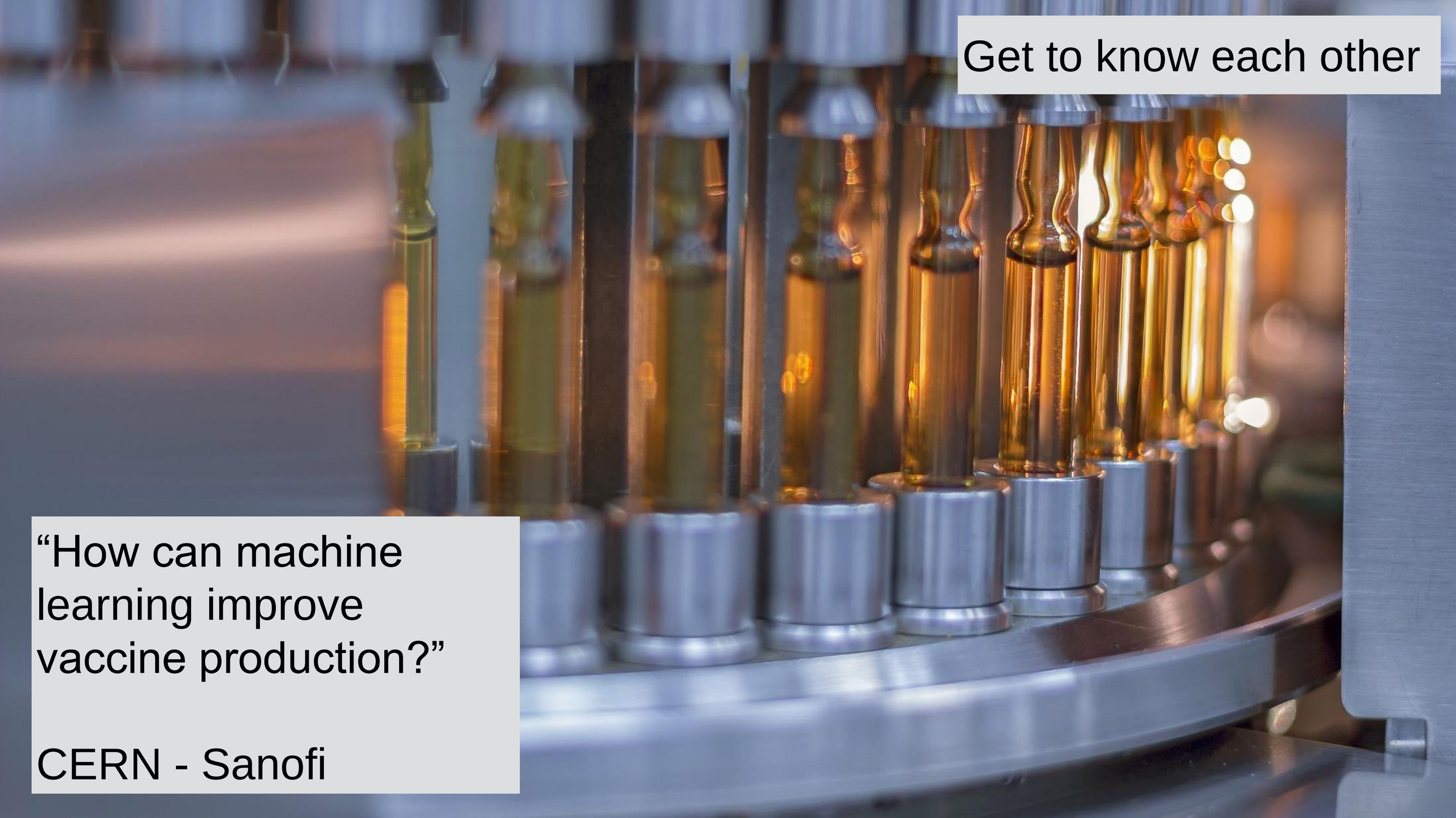


Business Development Funnel



Value Proposition





Get to know each other

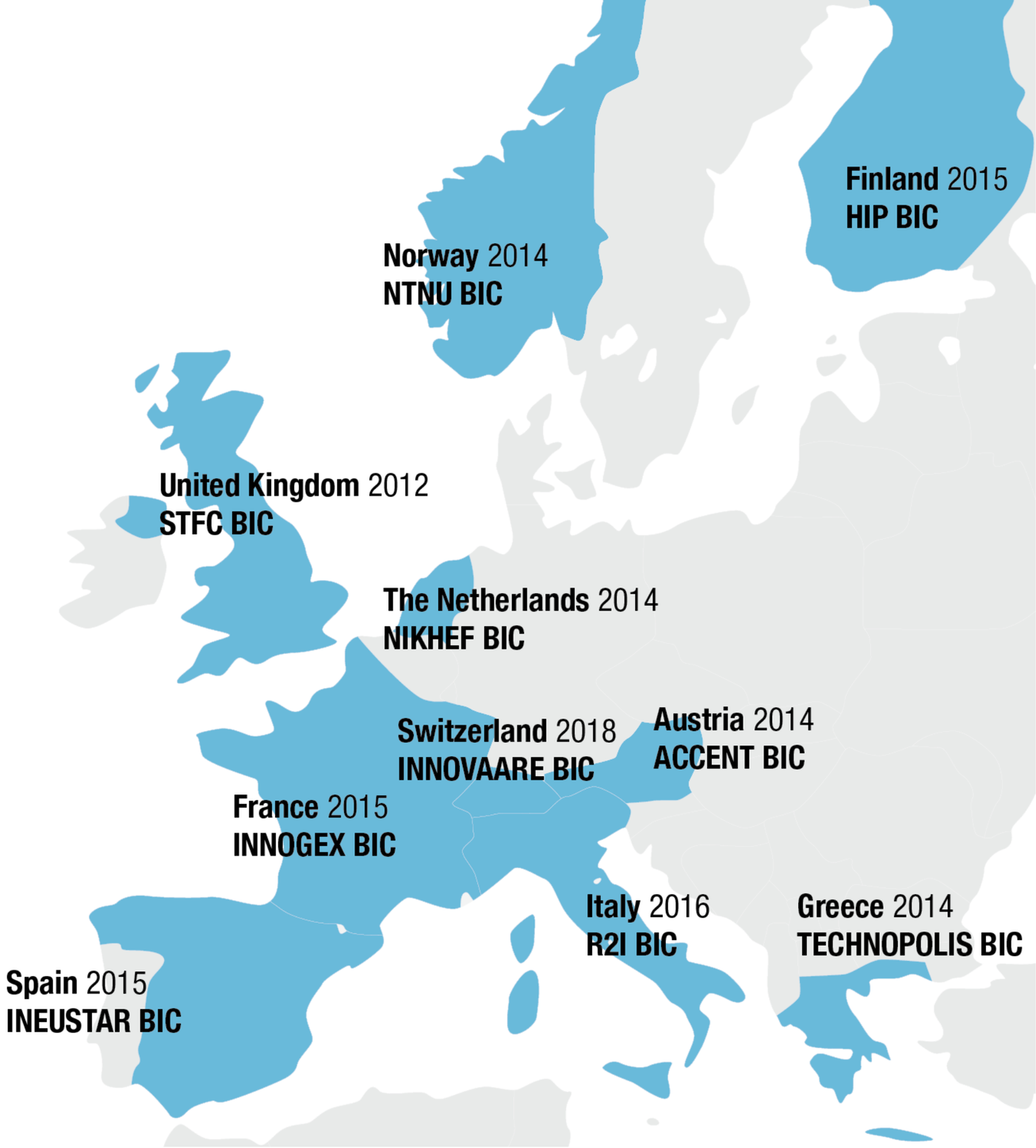
“How can machine learning improve vaccine production?”

CERN - Sanofi

Push or pull?

CERN BICs

CERN Network of 10 Member State Business Incubation Centres of CERN Technologies



Building a culture of entrepreneurship

Photo: CERN

MED TECH HACK

AN INNOVATION COMPETITION WHERE TEAMS CAN SOLVE MEDTECH PROBLEMS PITCHED BY HEALTHCARE ORGANISATIONS AND INDUSTRY.

#CERNMEDTECHHACK

AWARD FEST, FIND OUT MORE AT:
INDICO.CERN.CH/E/MEDTECHHACK18

CERN

G-ray Make it clear

radiabeam TECHNOLOGIES

GHL Global Humanitarian Lab

IMPACT HUB

HUG Hôpitaux Universitaires Genève

THE Port

GENEVA HEALTH FORUM


M-E-D
T-E-C-H
H-A-C-K
CERN
Ideas
THINK. DO. COLLABORATE.
Photo: CERN

Photo: Alamy Stock

Photo: Flickr

Want to know more?

Visit http://kt.cern

Sign-up to our newsletter
http://kt.cern/newsletter

Contact us at kt@cern.ch

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Thanks to:
Giovanni Anelli, Etiennette Auffray-Hillemans, Michael Campbell, Manuela Cirilli, Han Dols, David Mazur, Anaïs Rassat, Marco Silari

CERN


3
GOOD HEALTH AND WELL-BEING


4
QUALITY EDUCATION


9
INDUSTRY, INNOVATION AND INFRASTRUCTURE


16
PEACE, JUSTICE AND STRONG INSTITUTIONS

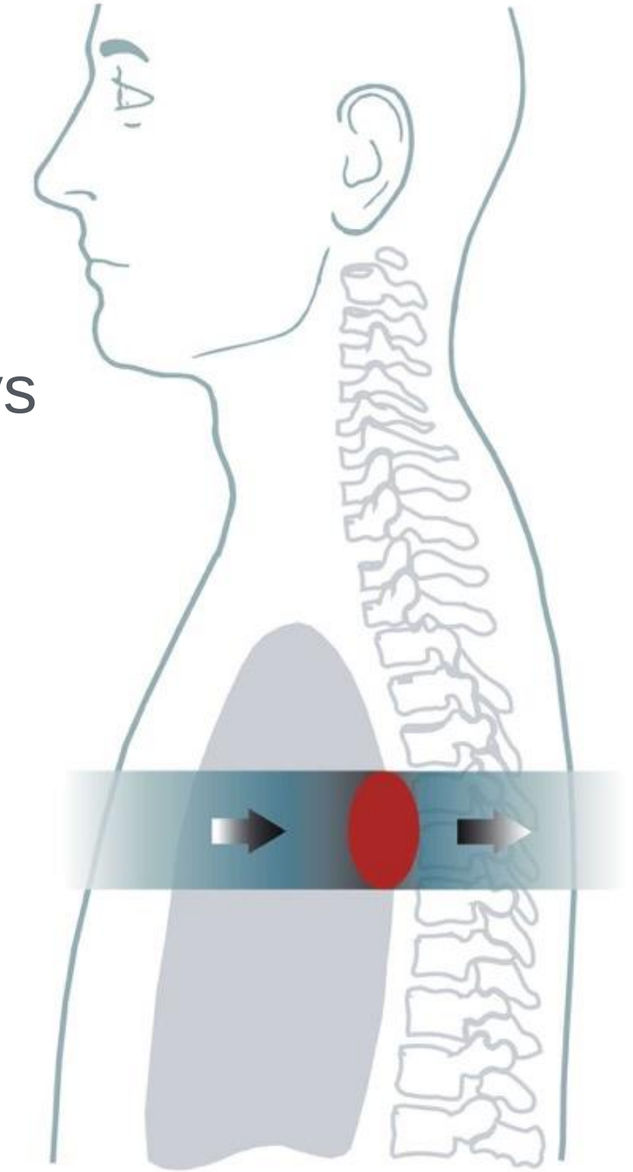

17
PARTNERSHIPS FOR THE GOALS

Medical Technologies

From particle accelerators

Hadron Therapy

X rays



Protons

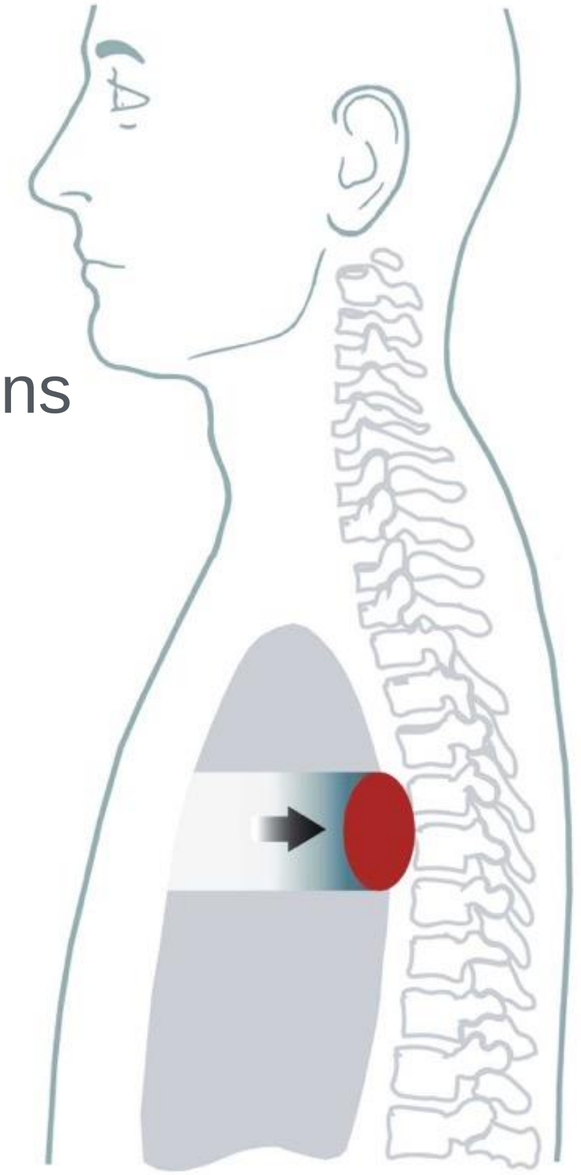


Image courtesy MedAustron

Make them smaller

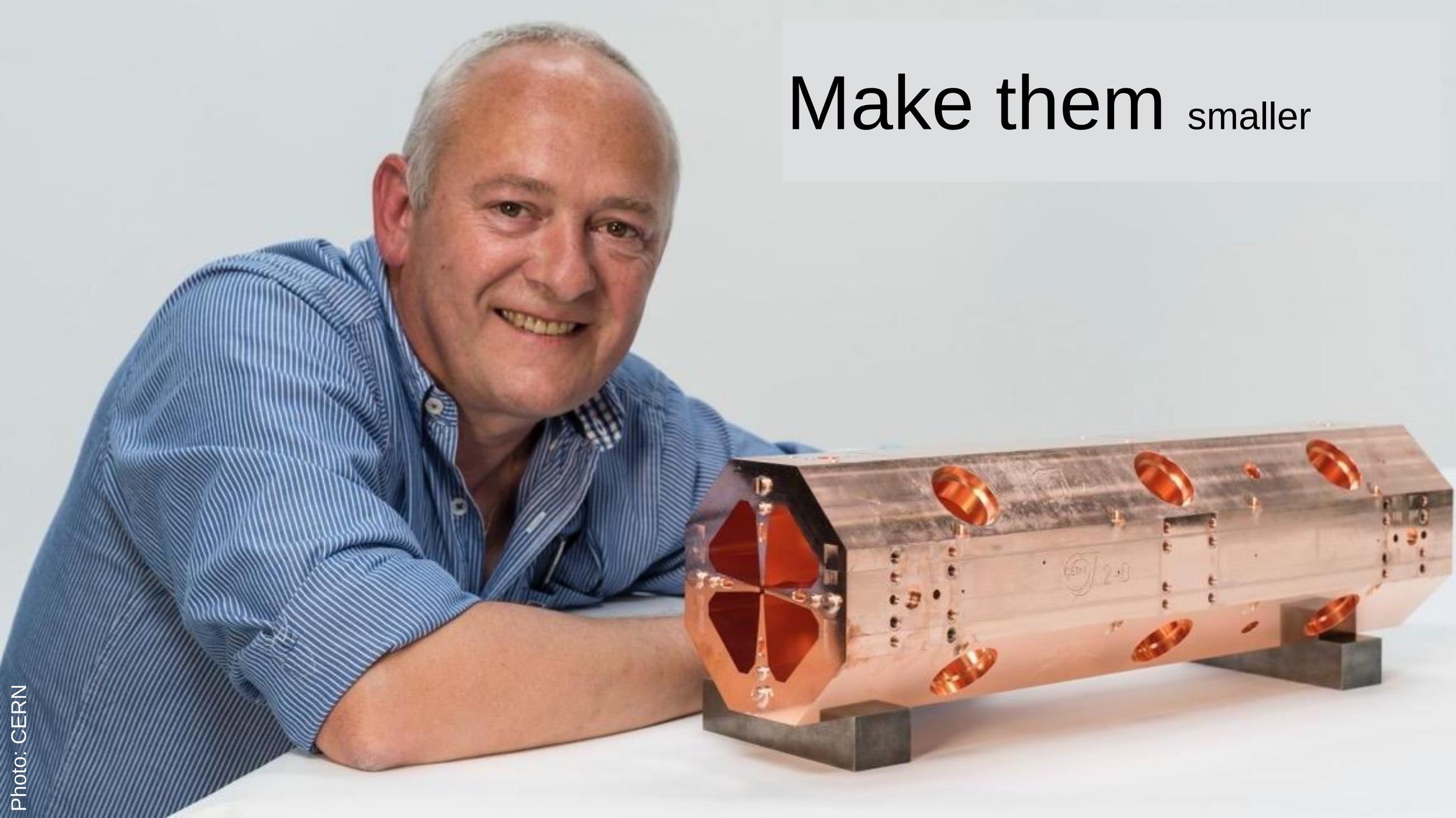
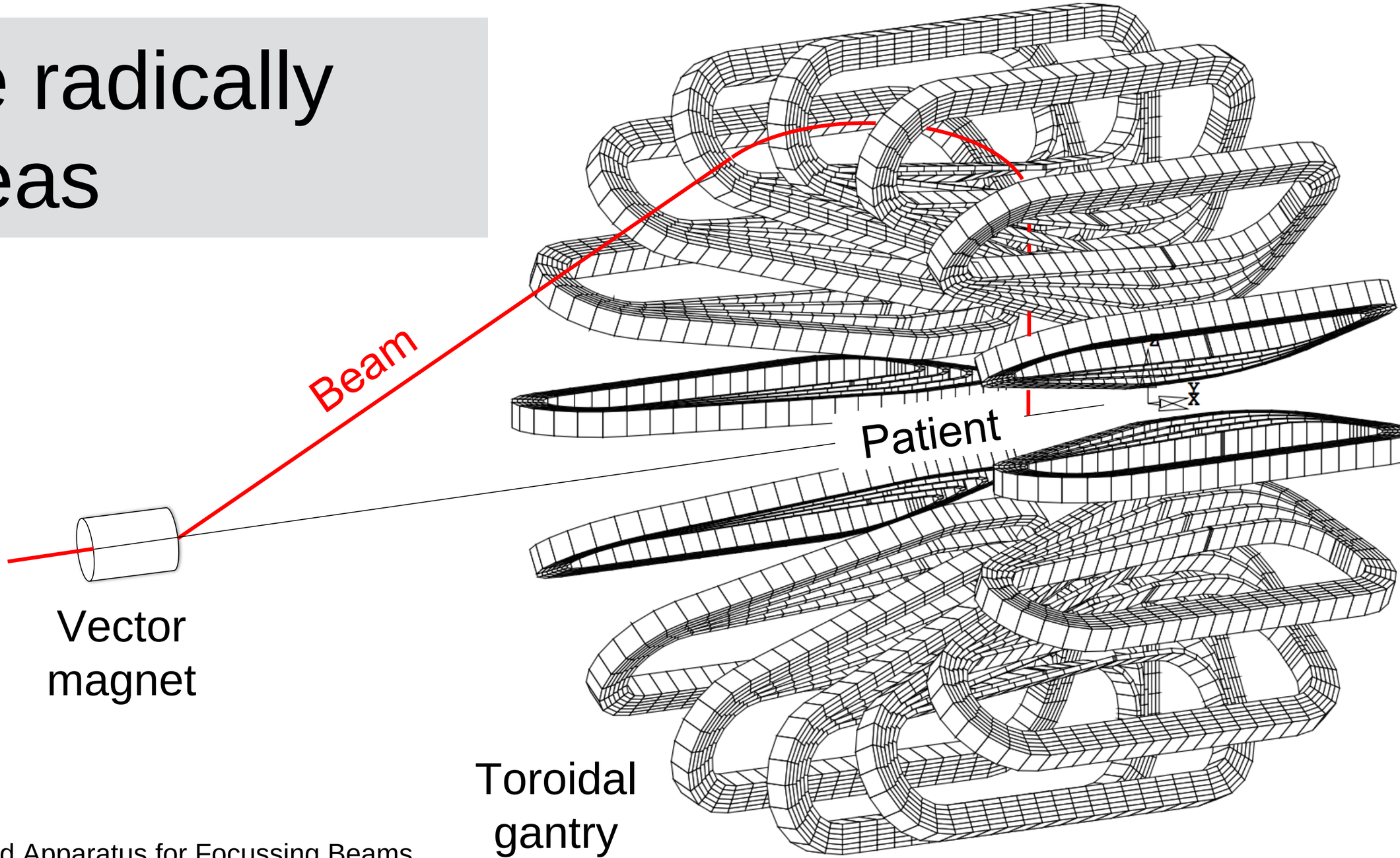


Photo: CERN

Explore radically new ideas



L. Bottura, A Gantry and Apparatus for Focussing Beams of Charged Particles, European Patent Application EP 18173426.0, May 2018

CERN-MEDICIS
First medical isotopes produced

Aerospace

Timepix:
another member of the **Medipix** family

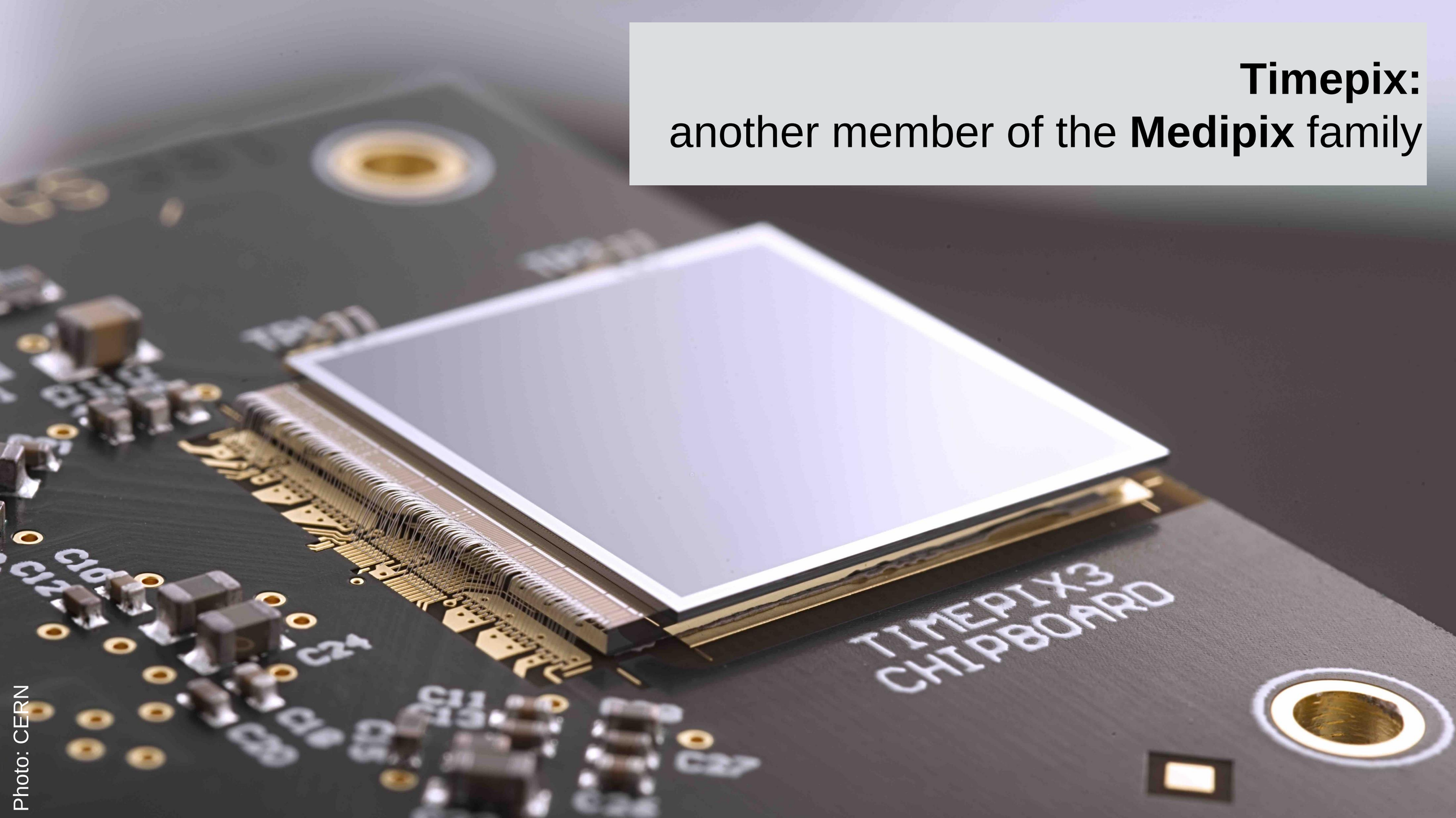
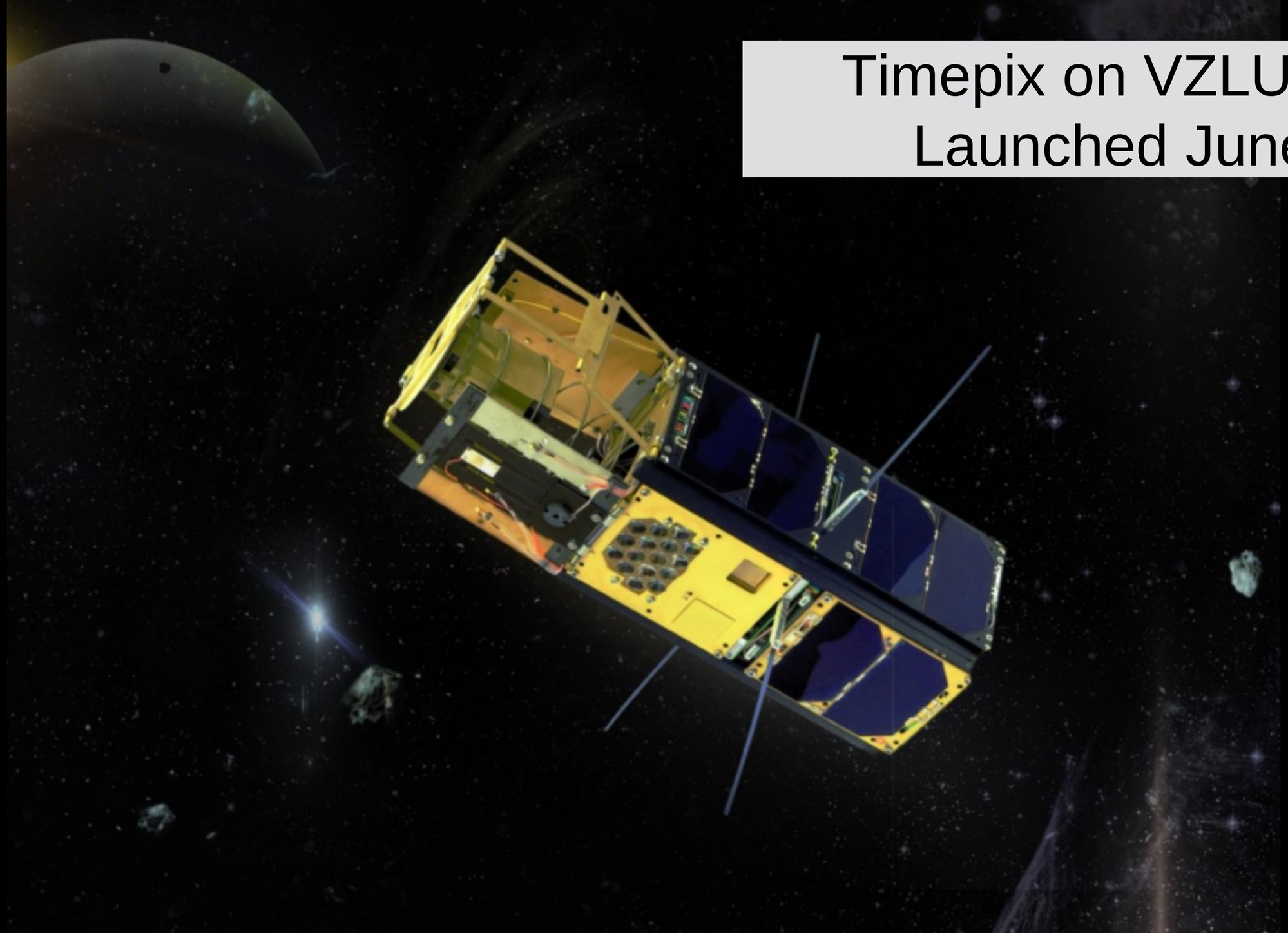


Photo: CERN

Timepix on the ISS

Courtesy of NASA, photo ref. no. iss036e006175

Timepix on VZLUSAT-1
Launched June 2017



Picture courtesy VZLU:
https://www.vzlu.cz/en/czech-vzlusat-1-reports-from-the-orbit-c563.html#prettyPhoto

Cultural heritage

#EuropeForCulture

2018 is the European Year for Cultural Heritage

InsightArt

Start-up using Medipix
X-ray eyes for cultural heritage

MACHINA

Movable Accelerator for Cultural Heritage In-situ Non-destructive Analysis

Photo: INFN

Construction of a compact, transportable accelerator

based on the HF-RFQ developed at CERN

With the involvement of INFN-CHNet (Cultural Heritage Network)

Digital Preservation

TIND:
a **CERN spin-off** providing solutions for library management and data preservation based on the CERN open source software Invenio

Photo: Renee Jones Schneider, Star Tribune