

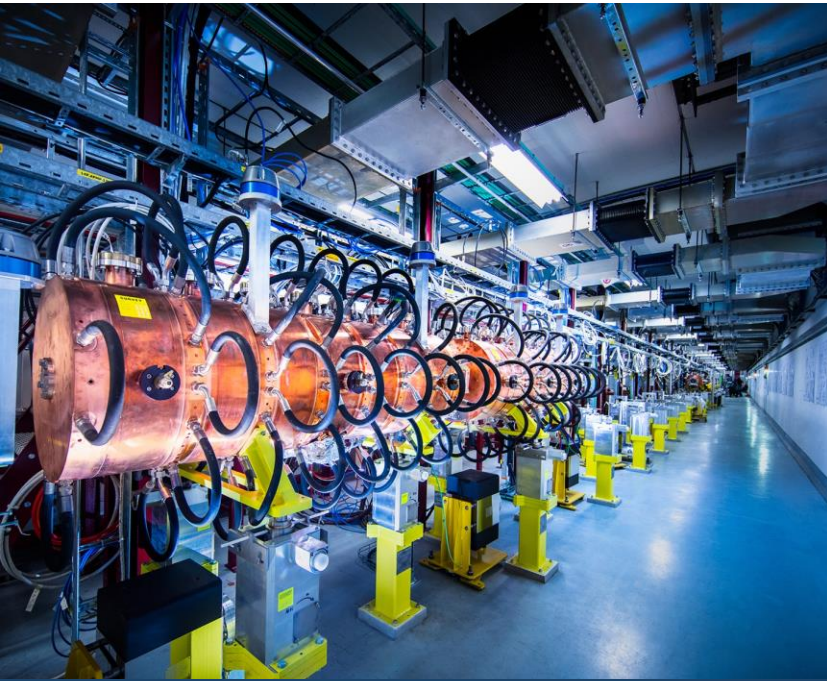
General Overview of CERN KT activities

Giovanni Anelli, Head of Knowledge Transfer Group, CERN

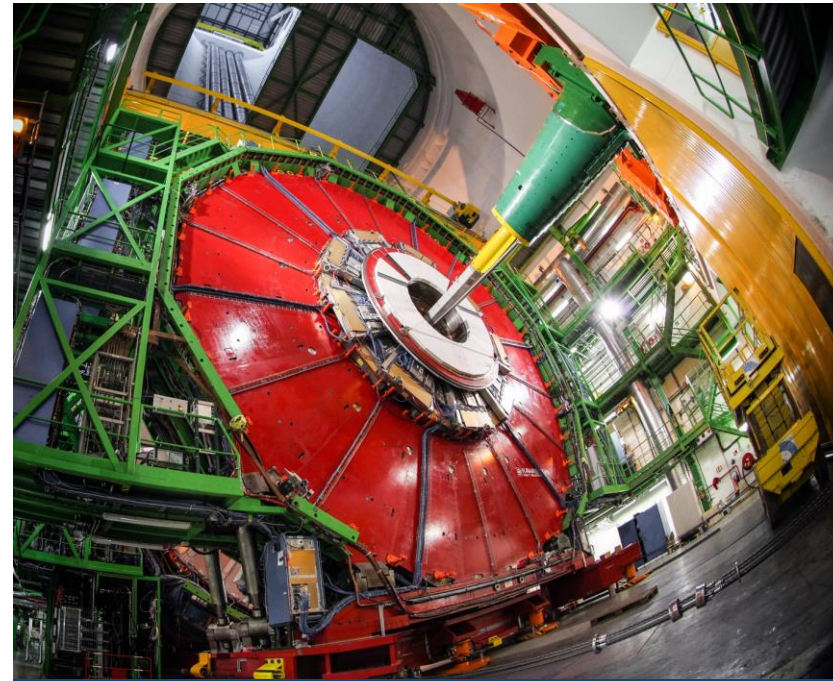
Four pillars underpin CERN's mission



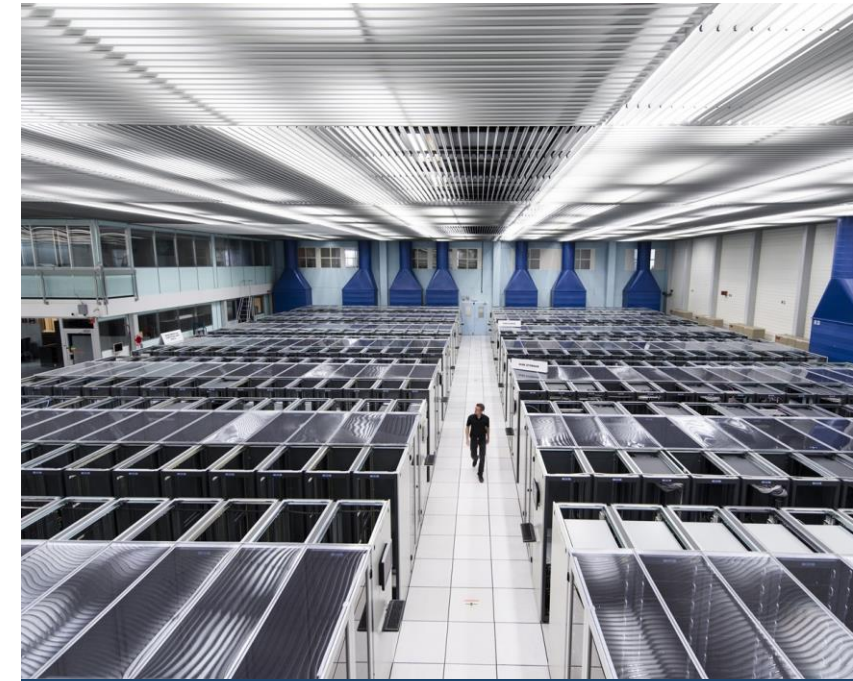
Key technological areas



ACCELERATORS



DETECTORS



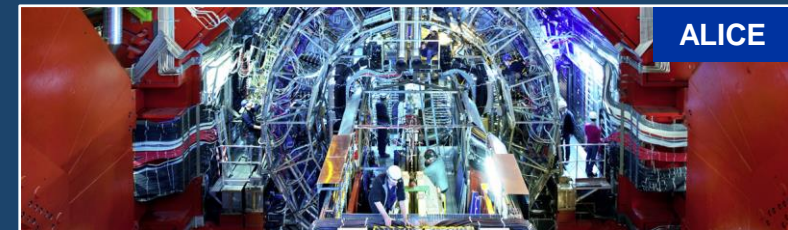
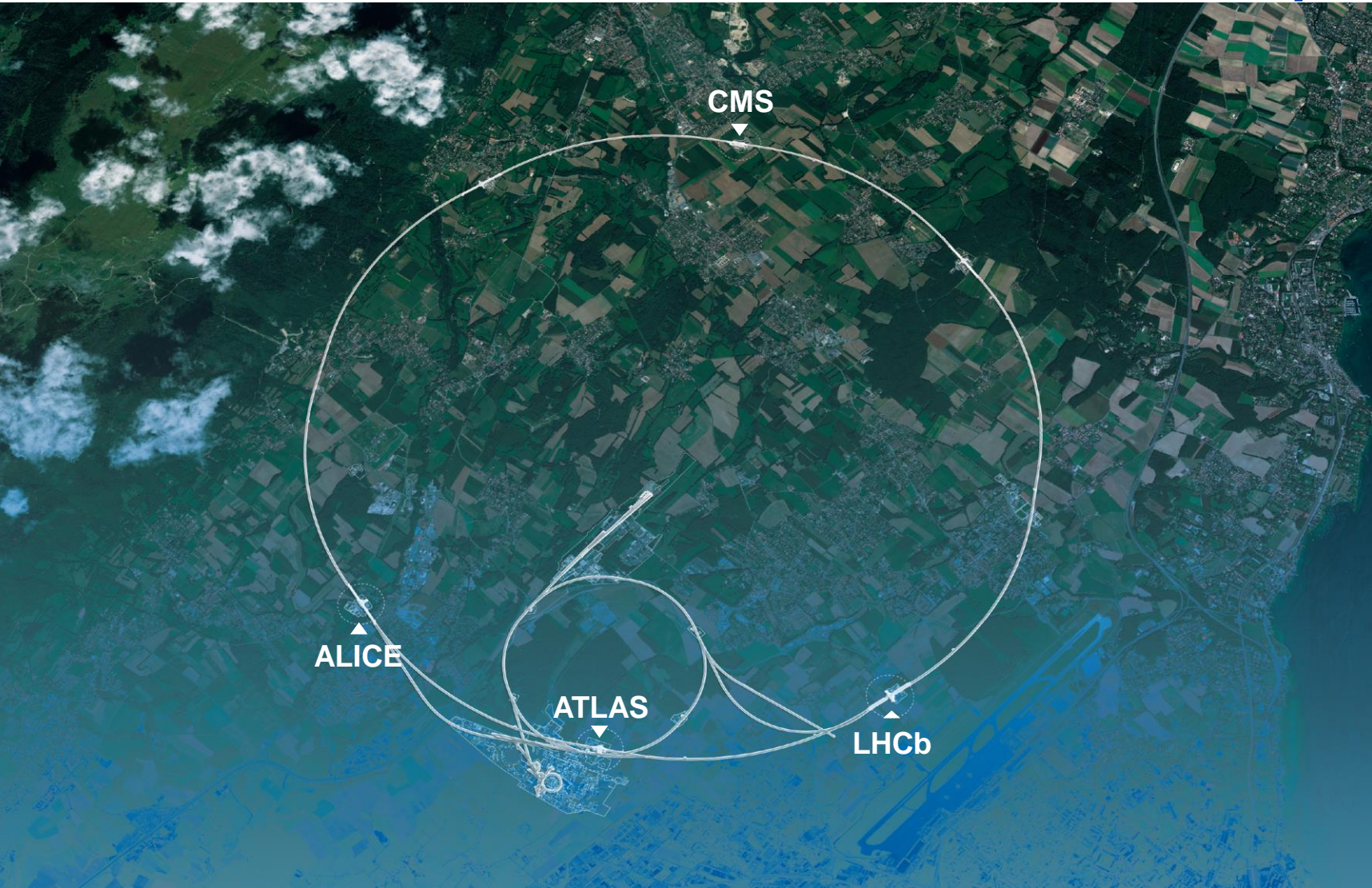
COMPUTING



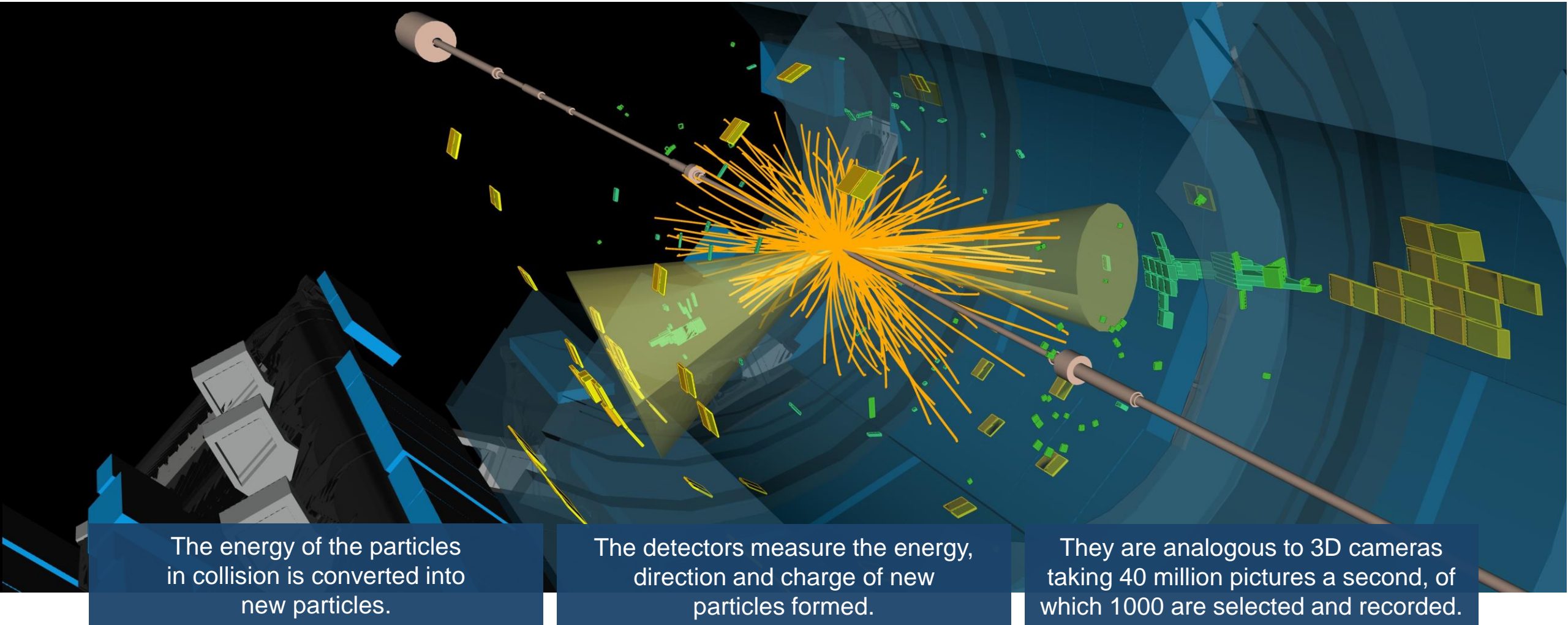
Large Hadron Collider (LHC)

- 27 km in circumference
- About 100 m underground
- Superconducting magnets steer the particles around the ring
- Particles are accelerated to close to the speed of light

Giant detectors record the particles formed at the four collision points



The LHC produces more than 1 billion particle collisions per second



The energy of the particles in collision is converted into new particles.

The detectors measure the energy, direction and charge of new particles formed.

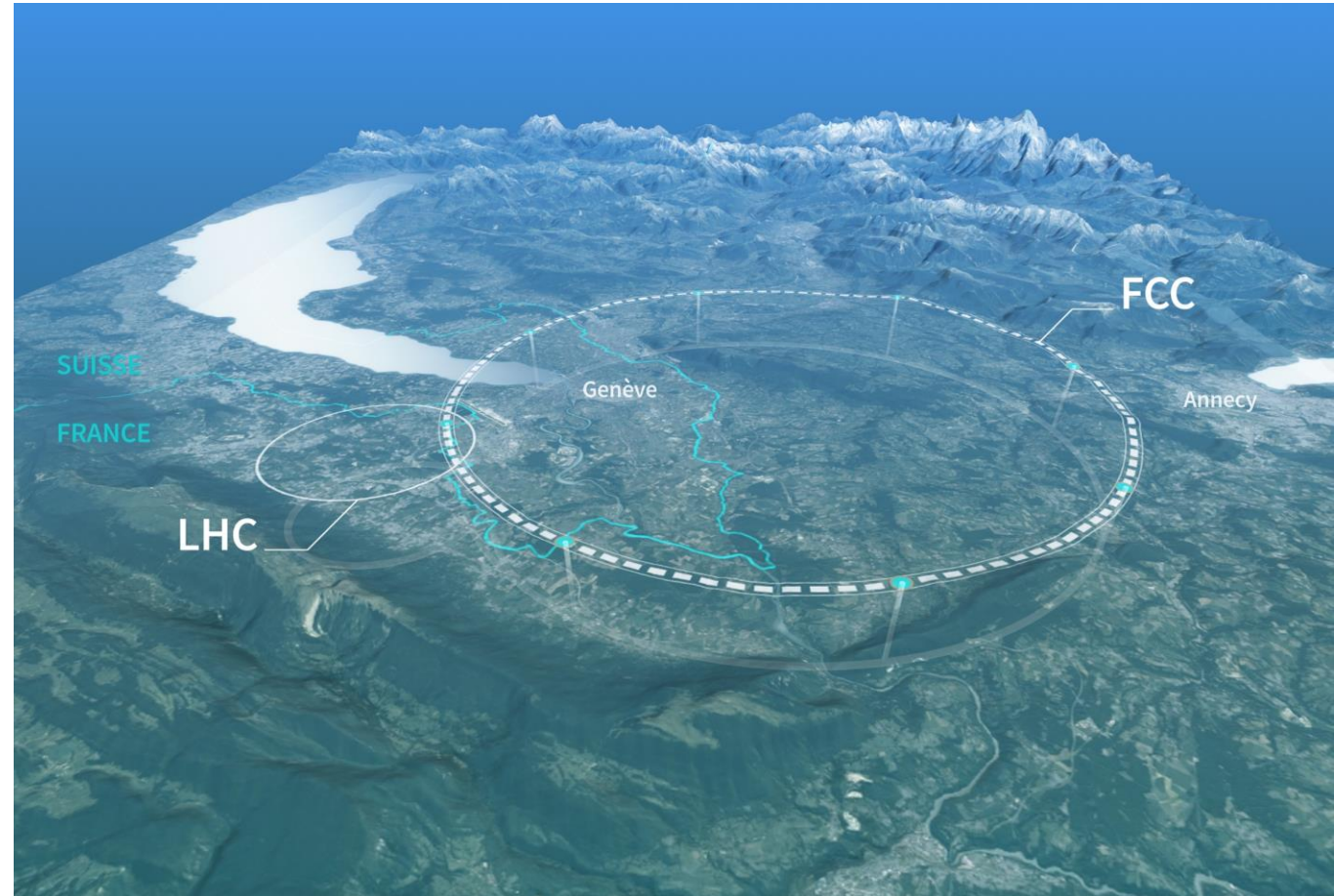
They are analogous to 3D cameras taking 40 million pictures a second, of which 1000 are selected and recorded.

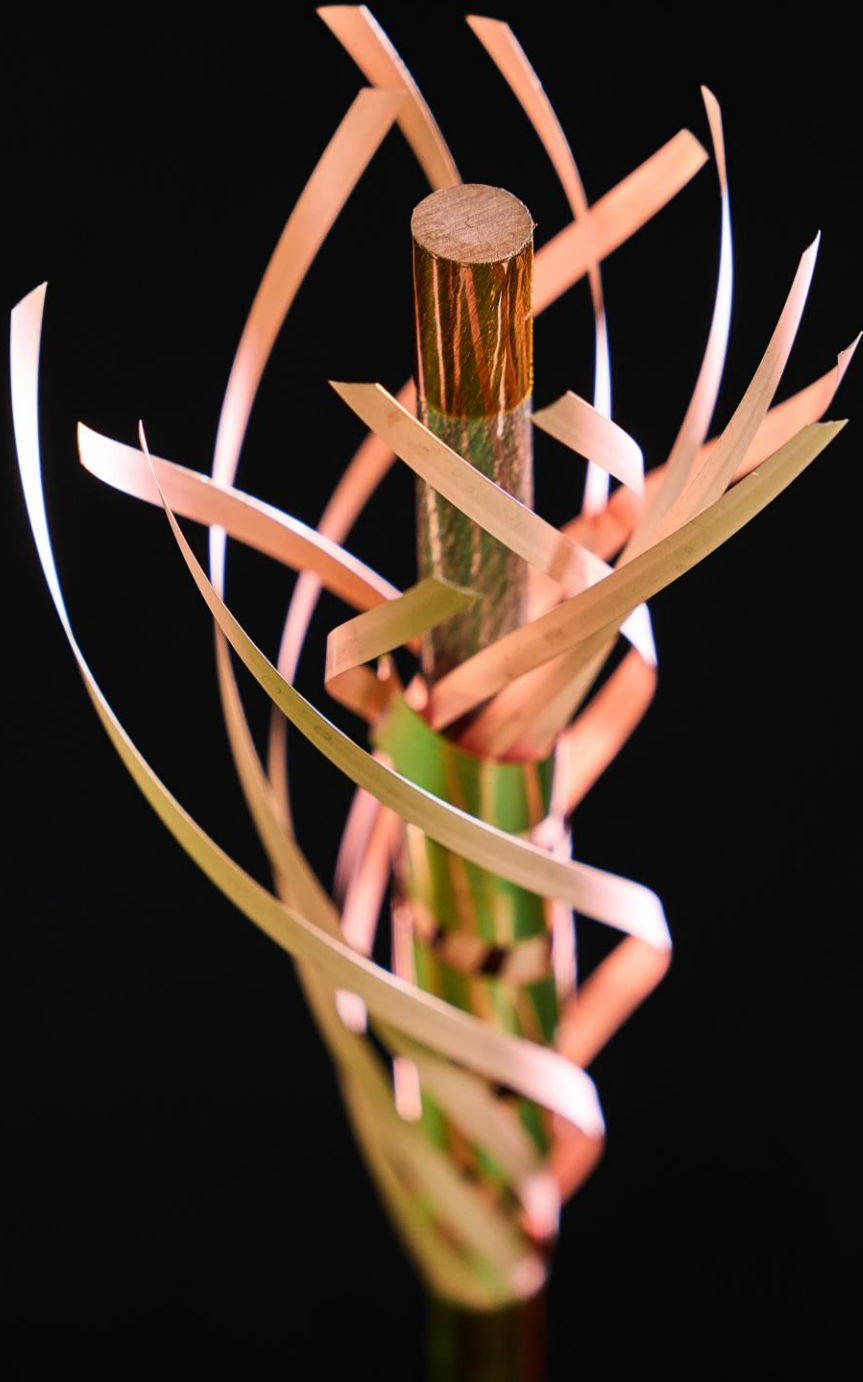
Preparing CERN's future

Driven by the **2020 Update of the European Strategy for Particle Physics**

- Technical and financial feasibility study of a Future Circular Collider (Spring 2025)
- Accelerator R&D to develop technologies for FCC and for alternative options
- Detector and computing R&D
- Maintain a diverse and compelling scientific programme
- Continue to support other projects around the world

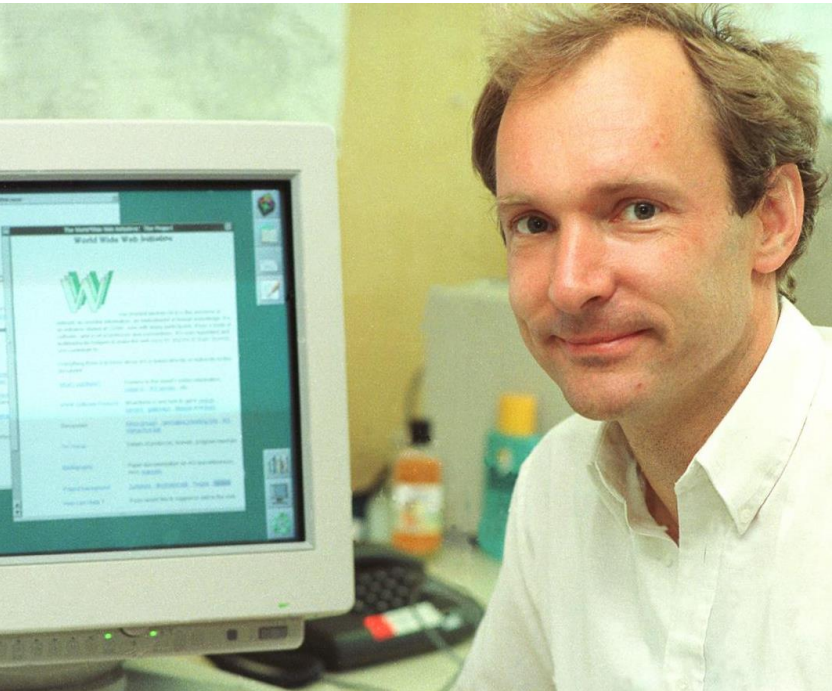
CERN Council has launched the next **ESPP Update for 2026**





TECHNOLOGY
& INNOVATION

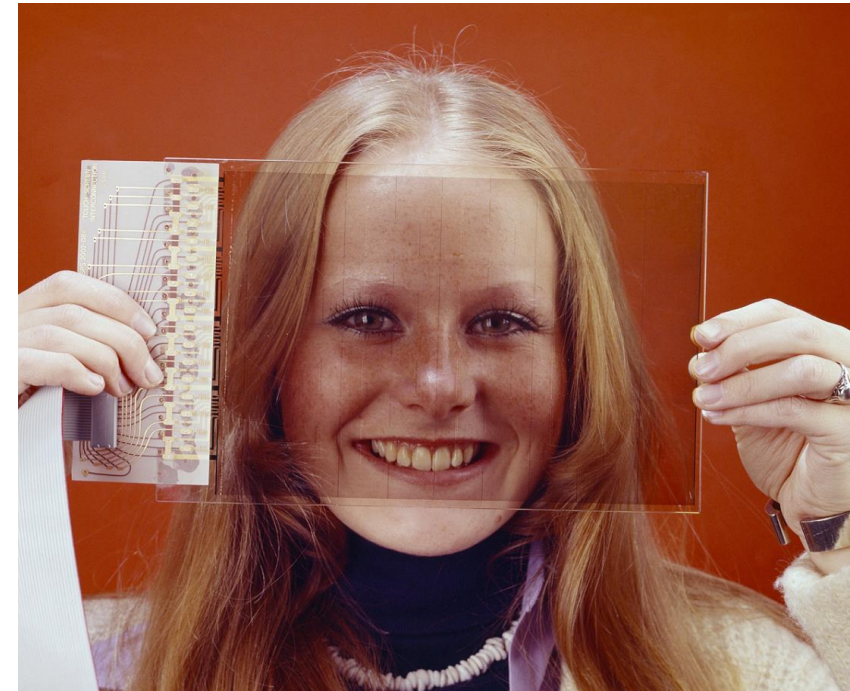
Some historic examples



WWW



TRACKERBALL



TOUCHSCREEN

Our toolbox to accelerate innovation



Knowledge Transfer Channels

Dedicated actions to **foster the transfer of technologies and know-how** to other fields than particle physics
(very often with the involvement of industry)

Technology-intensive **procurement contracts**

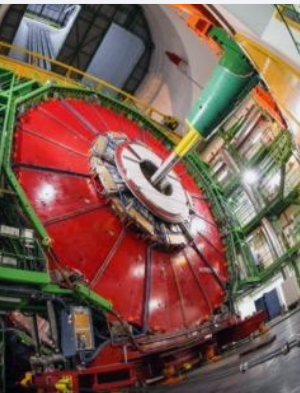
People

(very hard to quantify but extremely impactful for particle physics)

Bridging the gap



ACCELERATORS



DETECTORS



COMPUTING

Mobilize tech experts

Create tech and IP dossiers

Scout for technologies

Mobilize innovation partners

Create value propositions

Search unmet needs



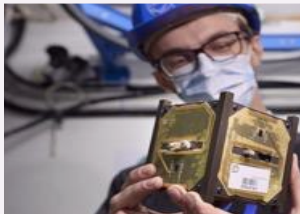
HEALTHCARE



ENVIRONMENT



DIGITAL



AEROSPACE



QUANTUM

From CERN technologies to medical and biomedical applications

Updated June 2023

<https://cds.cern.ch/record/2864317/files/English.pdf>

CERN/SPC/1091/RA
CERN/FC/6125/RA
CERN/3311/RA
Original: English
23 May 2017

ORGANISATION EUROPEENNE POUR LA RECHERCHE NUCLEAIRE
CERN EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

Action to be taken

Voting Procedure

For information	SCIENTIFIC POLICY COMMITTEE 304 th Meeting 12 & 13 June 2017	-
For information	FINANCE COMMITTEE 360 th Meeting 13 & 14 June 2017	-
For approval	RESTRICTED COUNCIL 185 th Session 16 March 2017	Simple majority of Member States represented and voting

**Strategy and framework applicable to knowledge transfer
by CERN for the benefit of medical applications**

The Council is invited to approve the strategy and framework set out in this document for medical applications-related activities, and to take note of the information contained in Annexes I and II.

ICT for medical applications

Nuclear Medicine

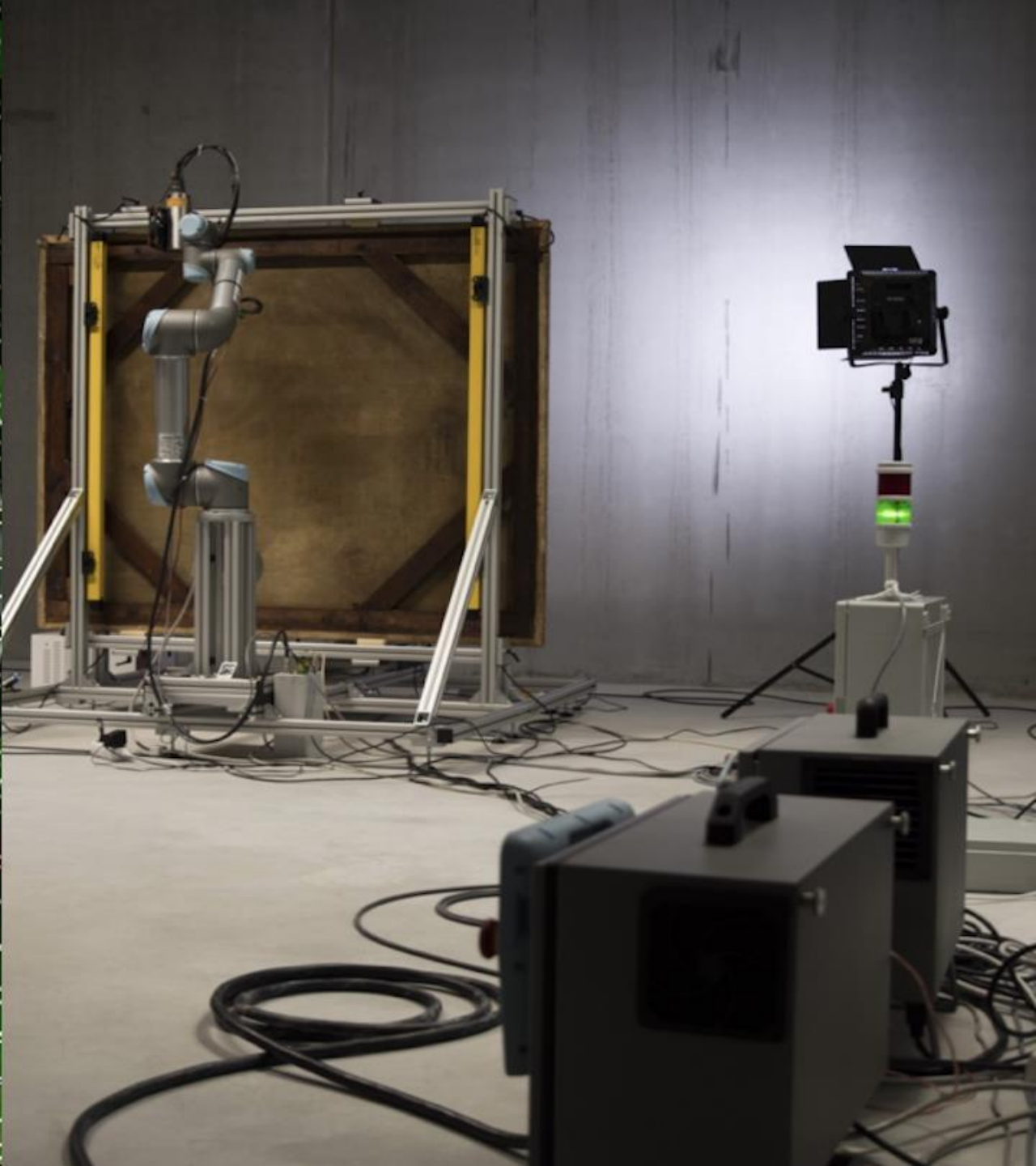
Medical Imaging

Radiotherapy

Radiation Monitoring and Dosimetry


Robotics

Medical devices



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

Consultancy



Bundesdruckerei (Berlin) works with CERN on next generation ideas for identity management and cryptography and data handling.



Collaborative R&D

CERN and ABB team up on reducing electricity in cooling and ventilation.

Timepix on the ISS

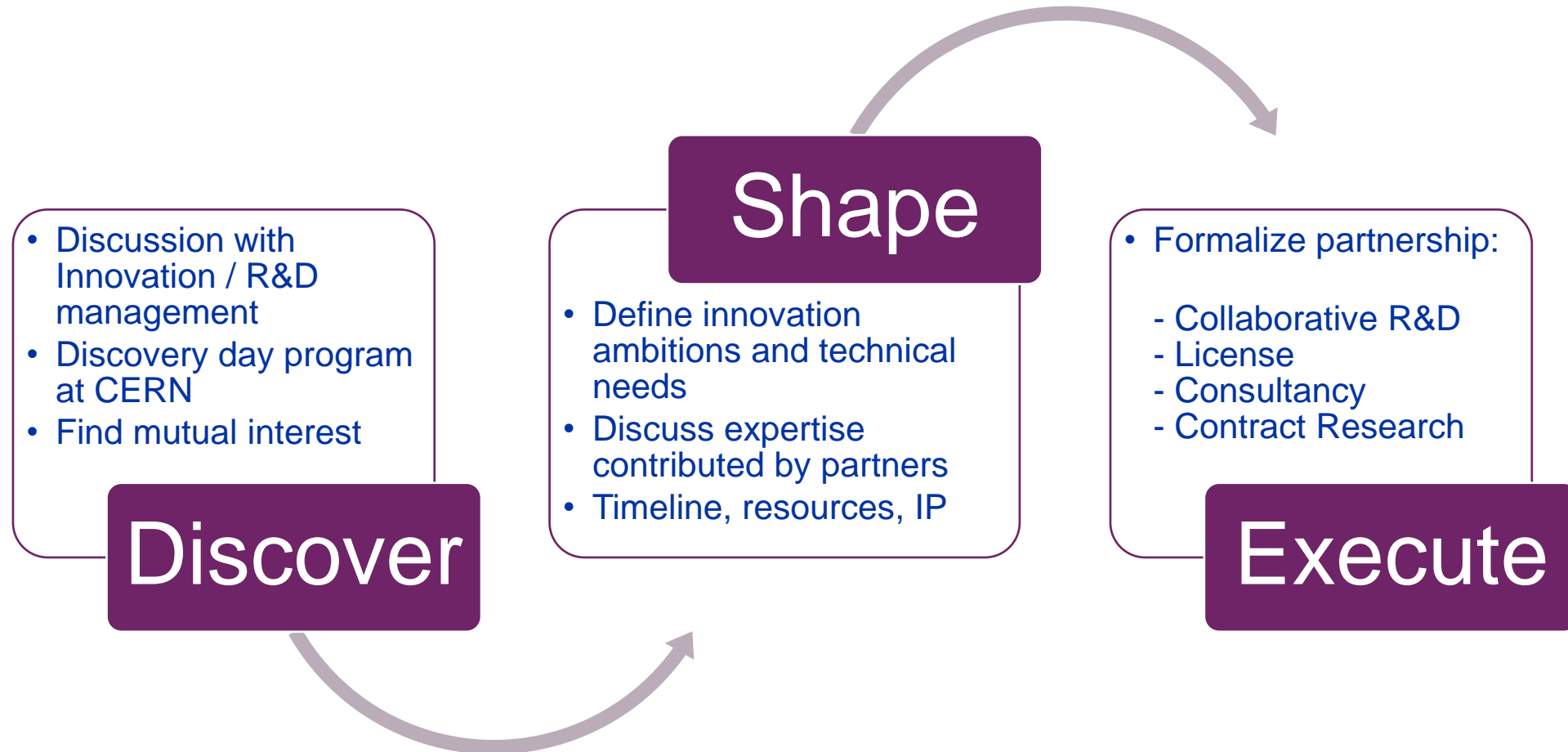


Courtesy of NASA, photo ref. no. iss036e006175



Knowledge Transfer
Accelerating Innovation

Shaping innovation partnerships



Much more to discover

<https://knowledgetransfer.web.cern.ch/technology-portfolio>

Browse our value propositions

<https://cernbox.cern.ch/files/link/public/yMzSQLuMDeYObti?tiles-size=1&items-per-page=100%7C&view-mode=resource-table>

Who to contact in Türkiye

KT Forum

The CERN-Member States KT (knowledge-transfer) Thematic Forum (CERN KT Forum) brings together CERN's Knowledge Transfer group and Knowledge Transfer representatives (called "KT Forum delegates") from each Member and Associate Member State. The list of KT Forum delegates is available below.

In June 2017, the CERN Council approved the "Strategy and Framework Applicable to Knowledge Transfer by CERN for the Benefit of Medical Applications". At least one meeting a year will be entirely devoted to the discussion of medical applications-related activities. The list of KT Forum on Medical Applications delegates is available below.

[Read the KT Forum's mandate here](#)

Turkey



› **Hakan
Kiziloprak**

Delegate to KT Forum
The Union of Chambers
and Commodity
Exchanges of Turkey
(TOBB)



› **Mehmet
Yasin Kuru**

Delegate to KT Forum
TOBB Economics and
Technology University



› **Osman
Eroglu**

Delegate to KT Forum on
Medical Applications
TOBB University of
Economics and
Technology

Many thanks
for your
attention!