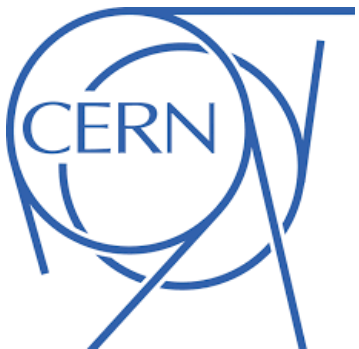


# Accelerating Innovation @ CERN

**Han Dols**

Section Leader Business Development  
Knowledge Transfer Group  
CERN



Council meeting in  
Amsterdam when the  
CERN convention was  
signed (1953).



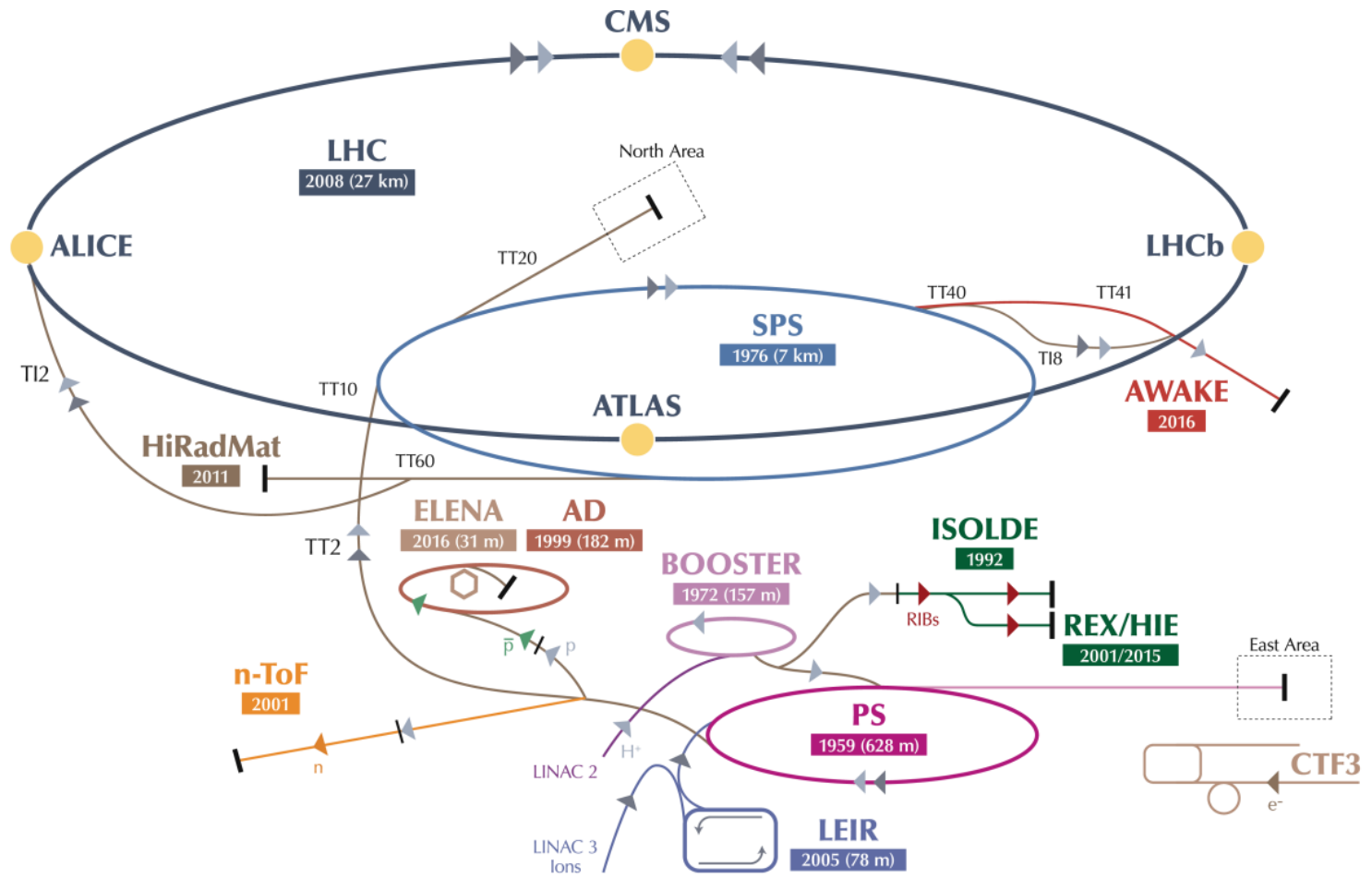


**22**  
**Member**  
**states**

**2300**  
**Staff**  
**positions**


**1600**  
**Other**  
**personnel**

**12700**  
**Scientific**  
**users**



▶ p (protons)    ▶ ions    ▶ RIBs (Radioactive Ion Beams)    ▶ n (neutrons)    ▶  $\bar{p}$  (antiprotons)    ▶  $e^-$  (electrons)    ▶  $\leftrightarrow$  proton/antiproton conversion    ▶  $\rightarrow$  proton/RIB conversion

LHC Large Hadron Collider    SPS Super Proton Synchrotron    PS Proton Synchrotron    AD Antiproton Decelerator    CTF3 Clic Test Facility  
 AWAKE Advanced WAKEfield Experiment    ISOLDE Isotope Separator OnLine    REX/HIE Radioactive EXperiment/High Intensity and Energy ISOLDE  
 LEIR Low Energy Ion Ring    LINAC LINear ACcelerator    n-ToF Neutrons Time Of Flight    HiRad/Mat High-Radiation to Materials



The Large Hadron Collider (LHC), 27km long, 100m deep.



SUISSE  
FRANCE

CMS

LHCb

ATLAS

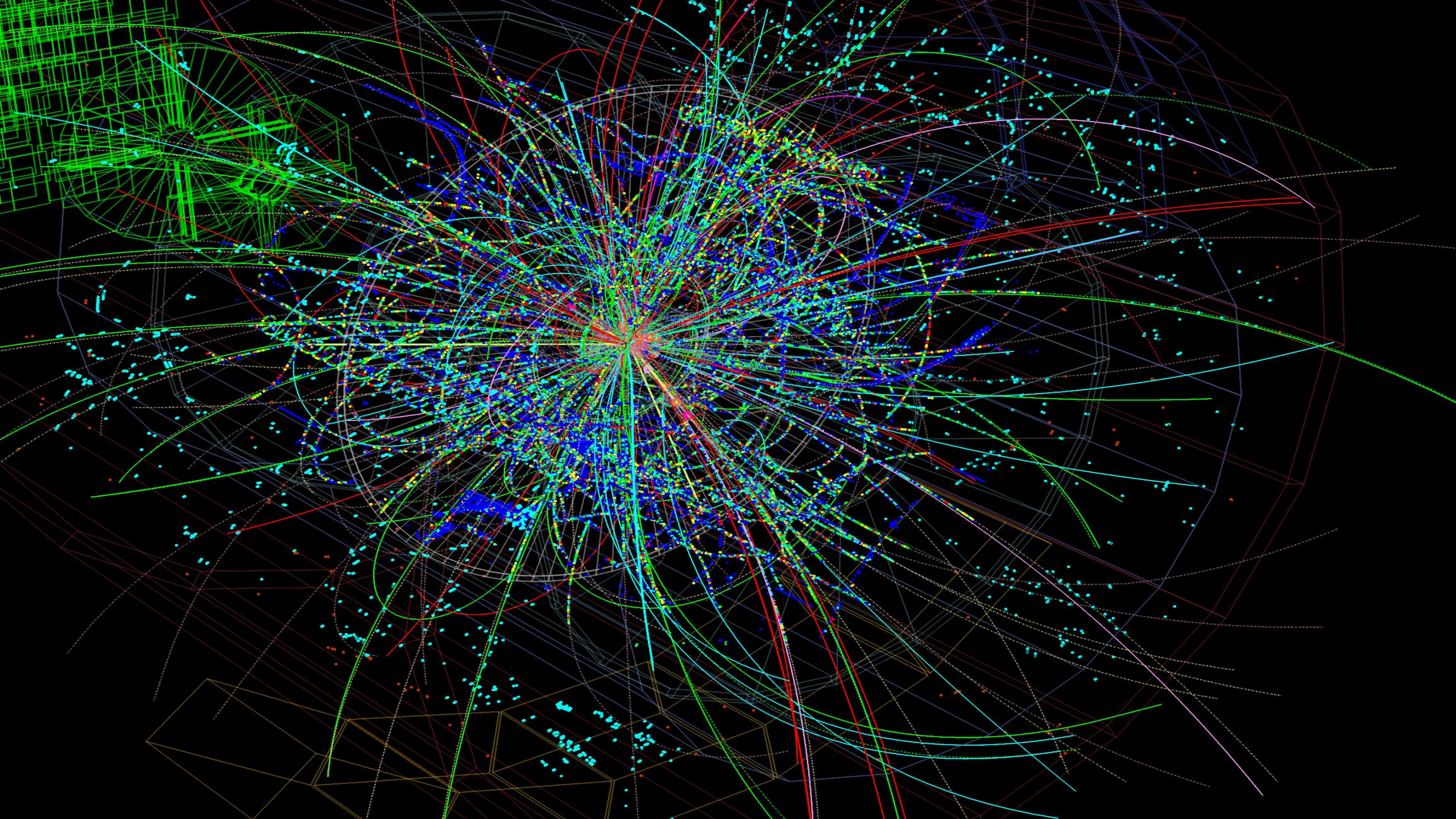
CERN Meyrin

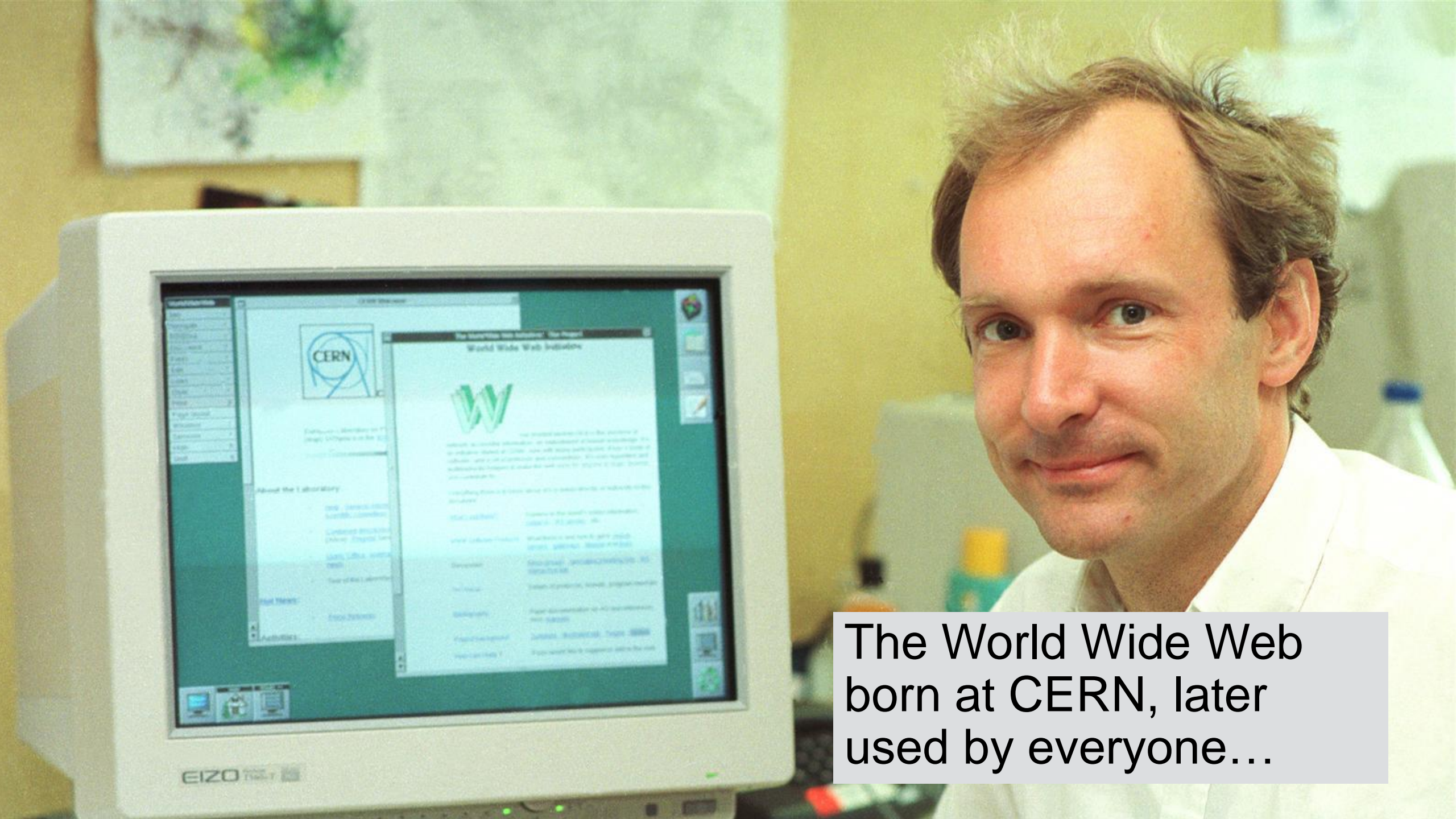
CERN Prévessin

SPS 7 km

ALICE

LHC 27 km





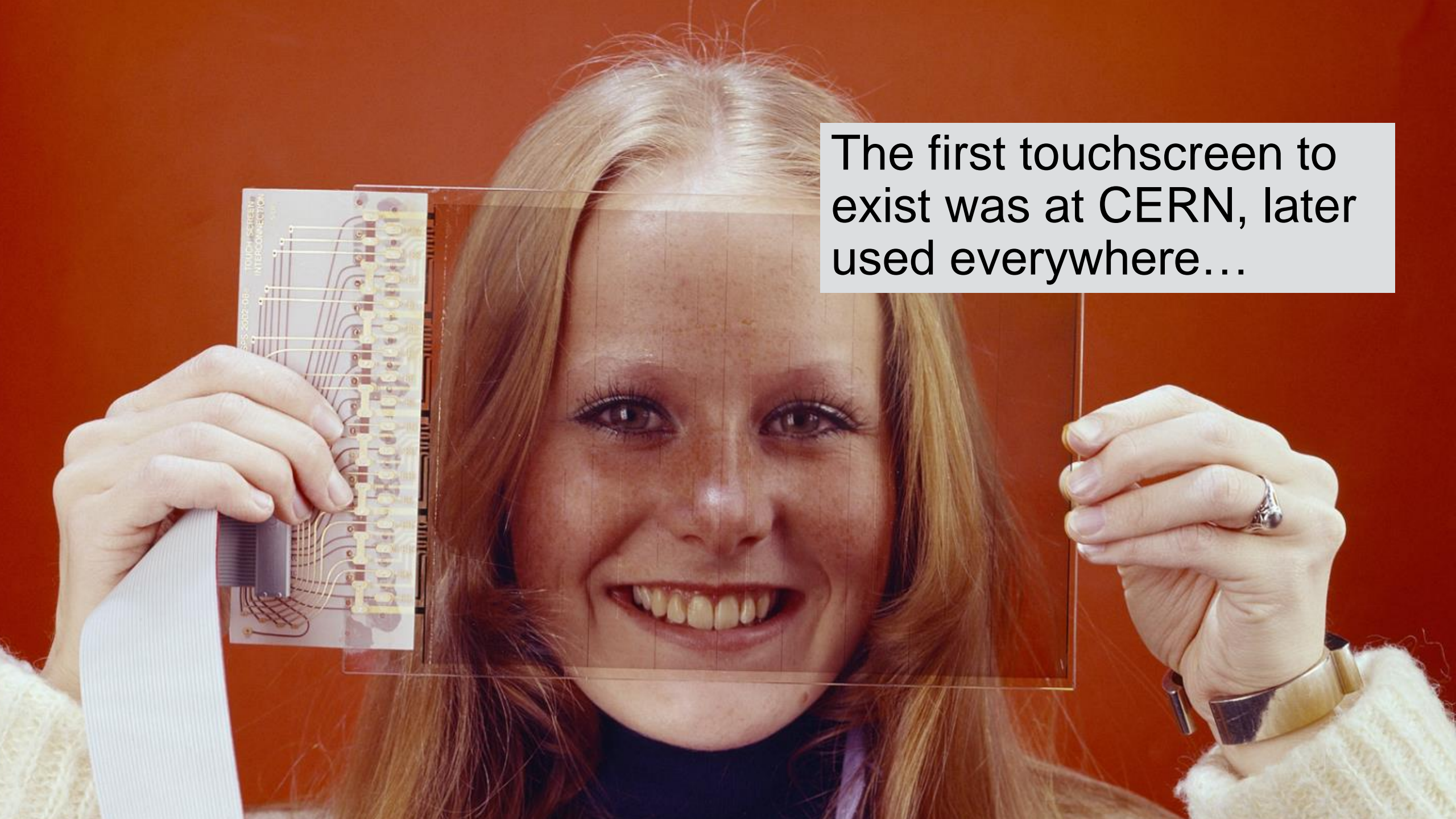
The World Wide Web born at CERN, later used by everyone...

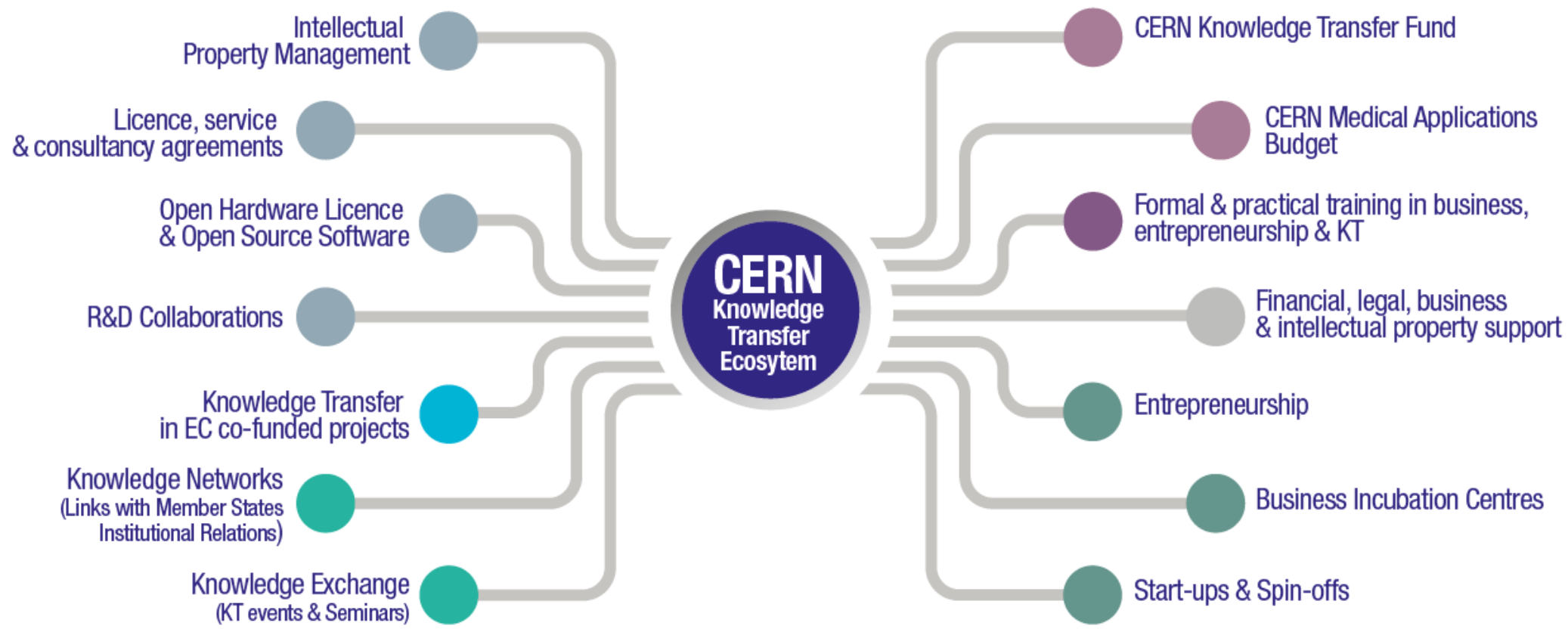




Trackball with optical encoders, used later in the mouse of a PC...

The first touchscreen to exist was at CERN, later used everywhere...







CERN's Controls  
middleware software  
for worldwide factory  
automation at LG.



Machine learning to improve  
vaccine production at Sanofi.



**le dauphiné** libéré


1,00€ - 1,50 FS | JEUDI 30 NOVEMBRE 2017 | G 01

BELLEGARDE & PAYS DE GEX

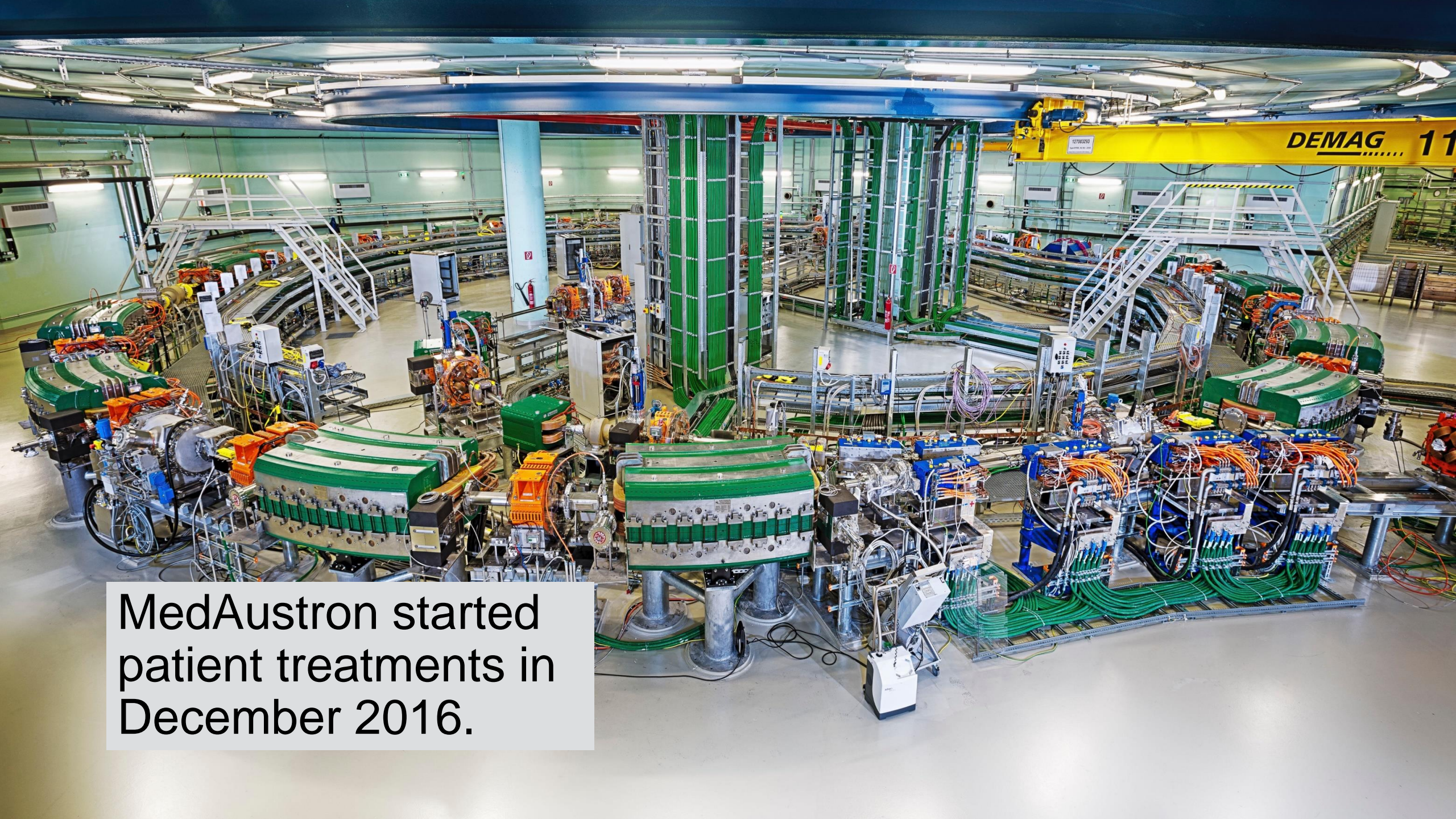
**GENEVOIS** LE SAVOIR DES PHYSICIENS AU SERVICE DE LA MÉDECINE DE DEMAIN

# La lutte anti-cancer se prépare au Cern

CERN-MEDICIS produces radioisotopes for medical research



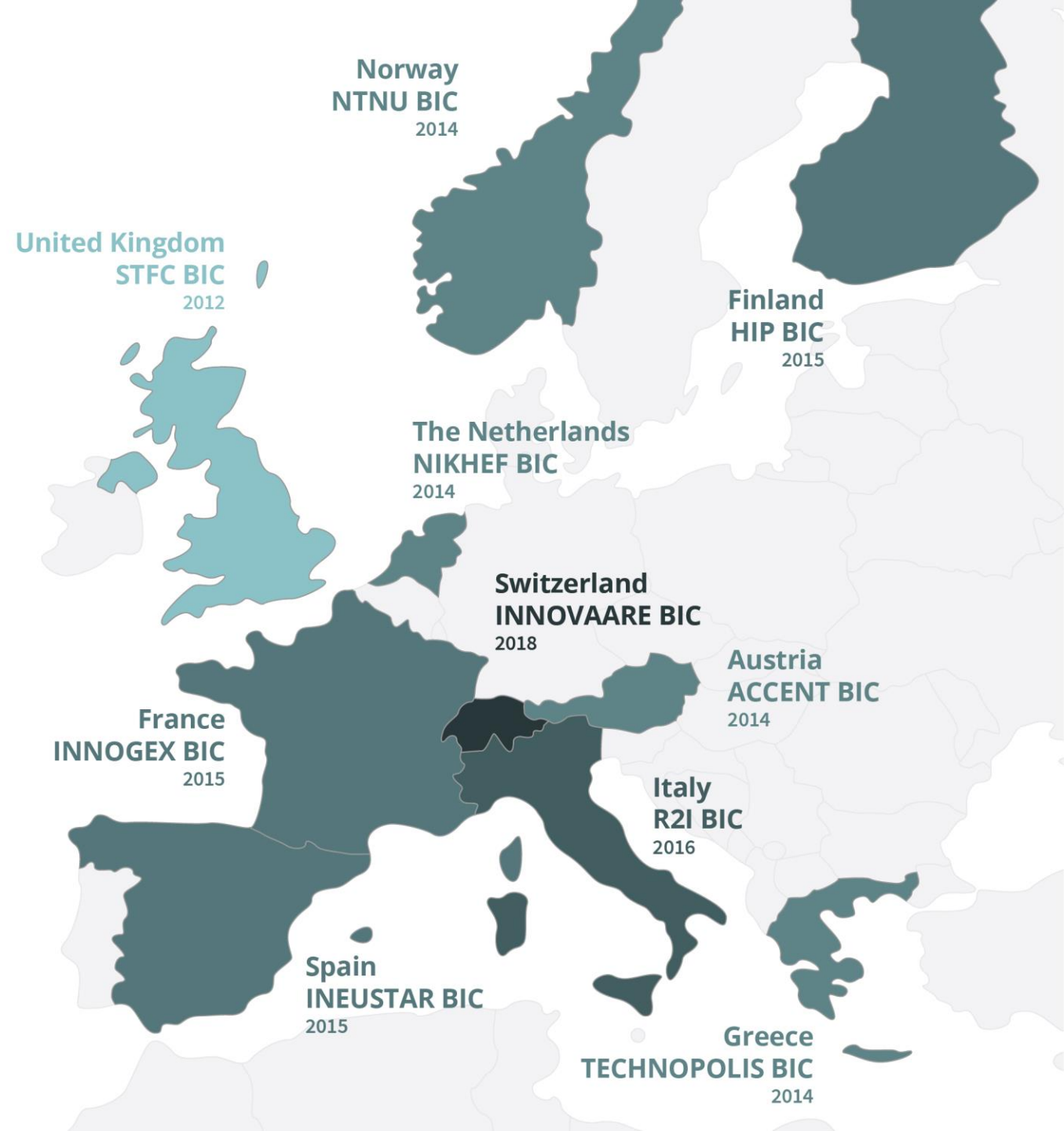
MedAustron started patient treatments in December 2016.

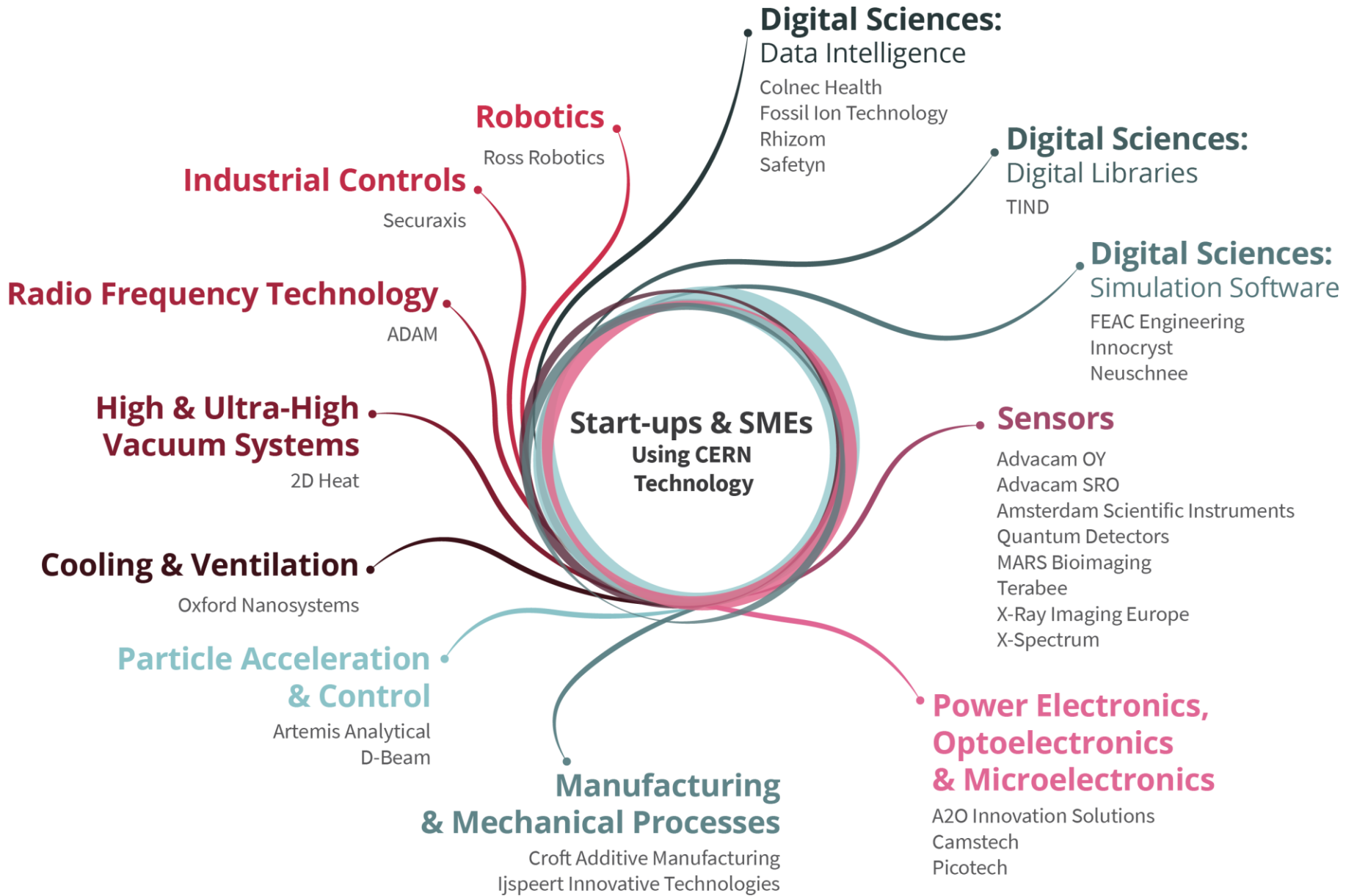



MedAustron started patient treatments in December 2016.



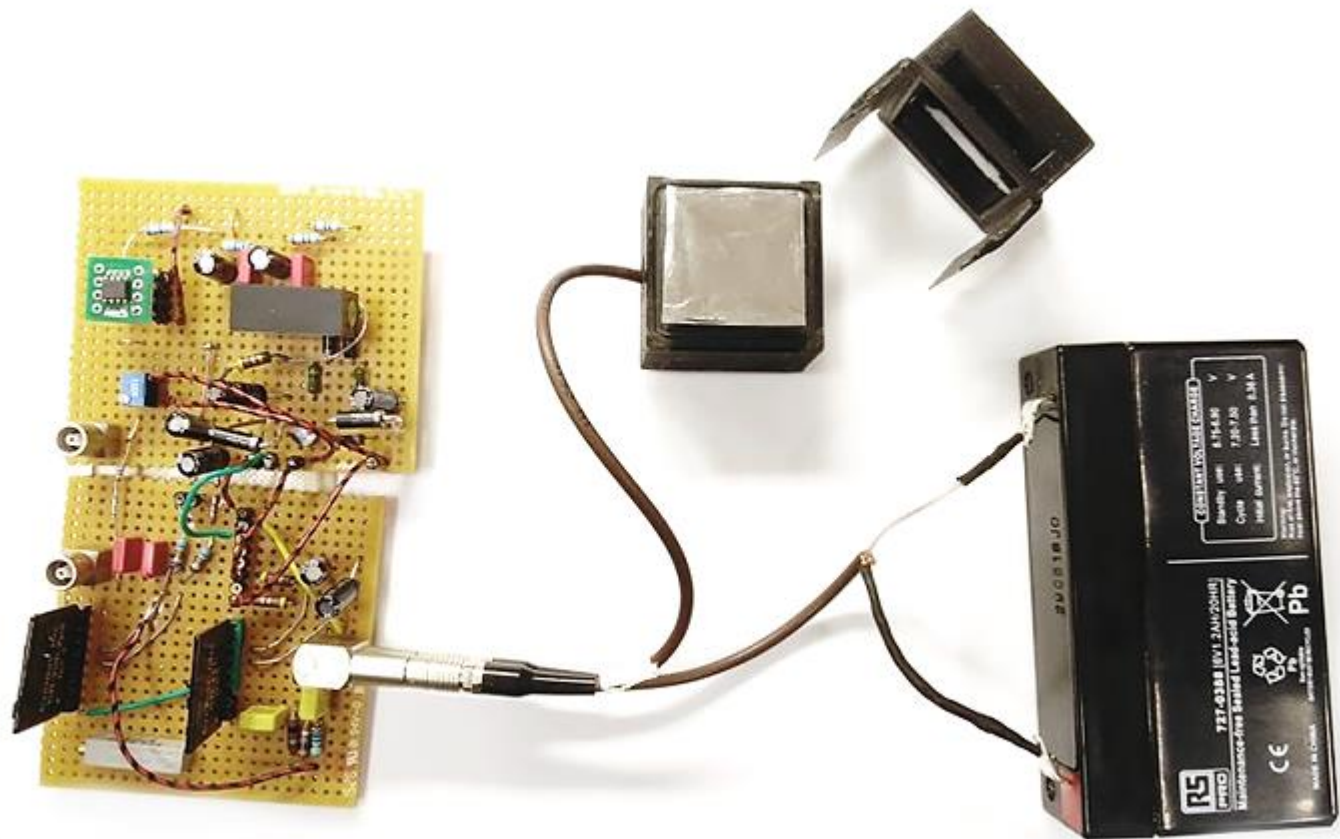
Our network of Business Incubation Centers (BICs) help accelerate innovation in the CERN Member States.





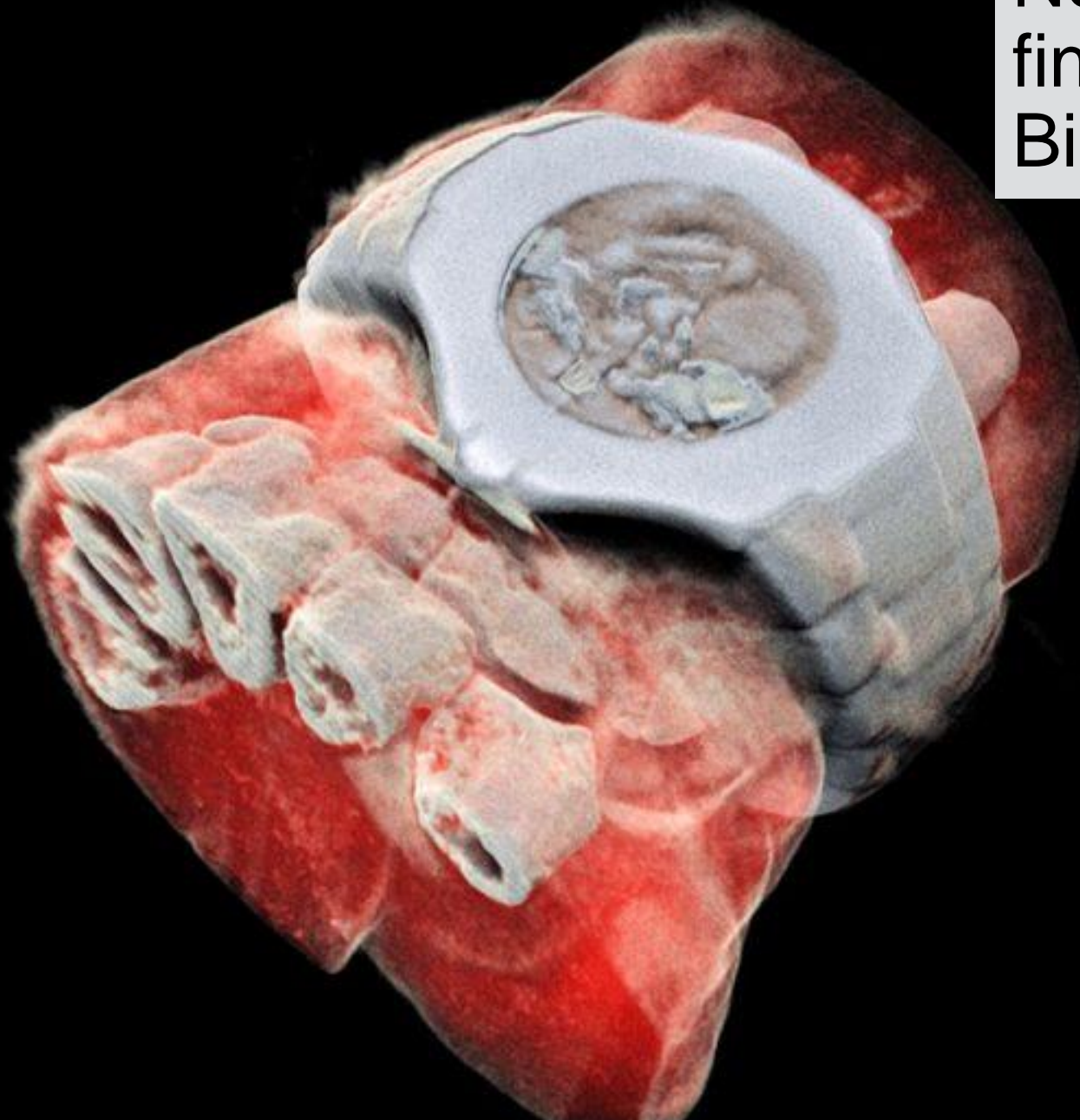
A man with dark hair and a mustache, wearing a white button-down shirt and white gloves, is holding a framed painting. The painting depicts the Virgin Mary in a red mantle over a blue gown, holding the Christ Child who is wearing a red garment. The painting is set within a complex metal frame with various mechanical components, including a camera or detector assembly. The background is a dark, industrial-looking environment.

Using CERN Medipix detector to analyse art (InsightART).



Tackling the risk of radon gas risk (BAQ).

Next generation X ray  
finally in color (MARS  
Bio Imaging).



# REIMAGINING LIBRARY TECHNOLOGY



## TIND ILS

Management of print and electronic resources.



## TIND RDM

Capture and preserve datasets of any size and format.



## TIND DA

Digital archive for digitized and special collections.



## TIND IR

Manage publications and other traditional research output.

Library management and preservation (TIND).

# TPX3Cam fast optical photon camera (ASI)



## Lessons learned for making industrial strategic alliances aiming to accelerate innovation.

- You need passionate experts on both sides to make it work
- Start with a concrete project and business need
- Mind the gap – in language, culture, goals
- Knowledge transfer is hard work
  
- Be aware... magic may happen!





THANK YOU!

[han.dols@cern.ch](mailto:han.dols@cern.ch)