



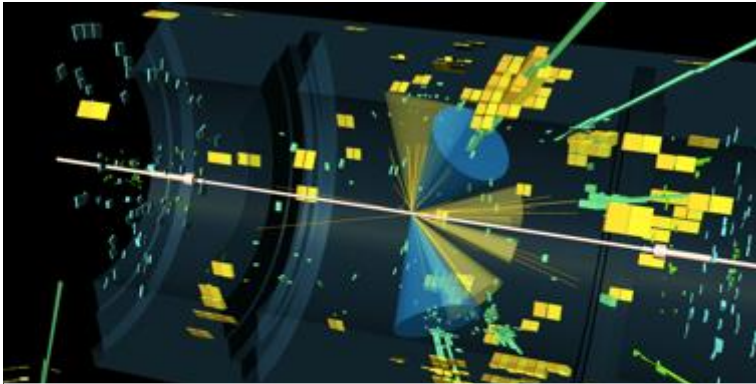
# Knowledge Transfer Opportunities

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# CERN's Mission



Science



Technology



Training

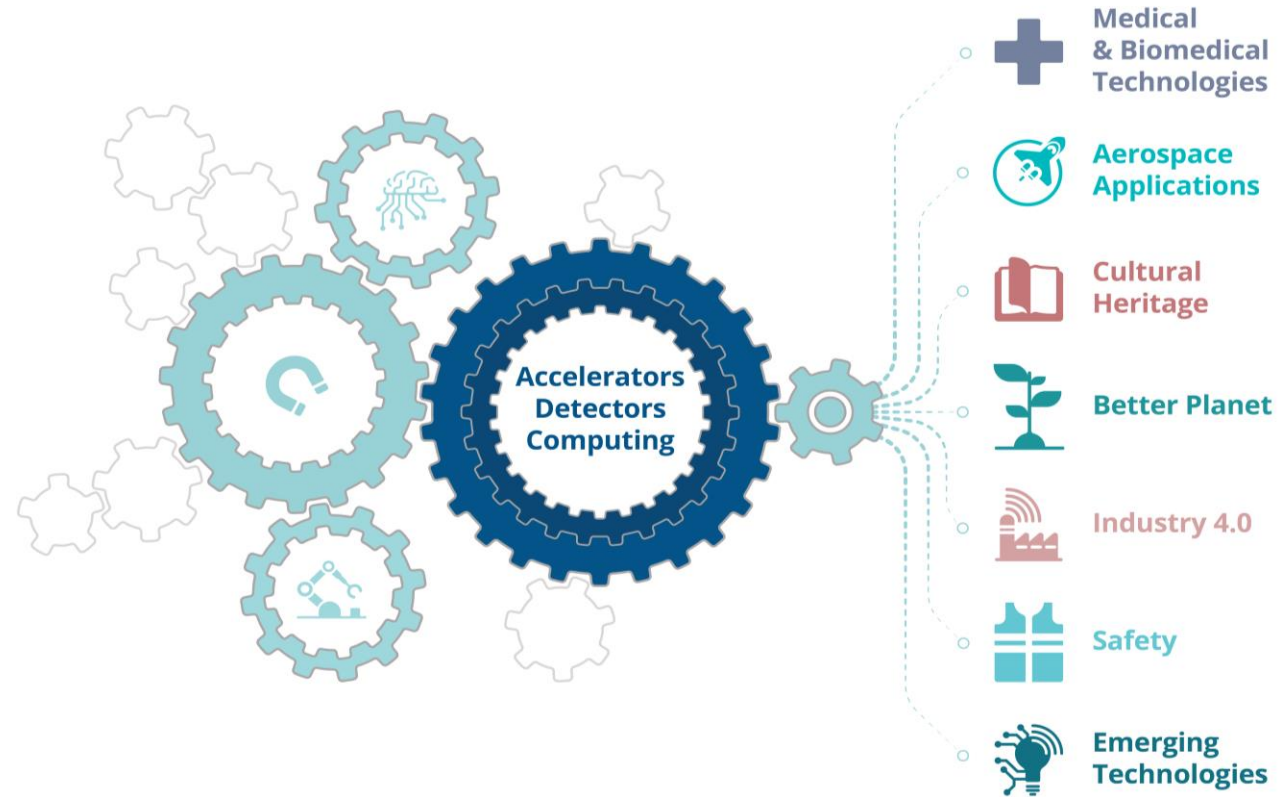


Collaboration

# KT'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

# From CERN Technologies...



... to Society

# Knowledge Transfer Tools



# How to collaborate with CERN



Start a company based on CERN technology or know-how



Service & Consultancy



Licensing



R&D Collaborations

Find out more at [kt.cern/collaborate](https://kt.cern/collaborate)

# CERN against COVID-19



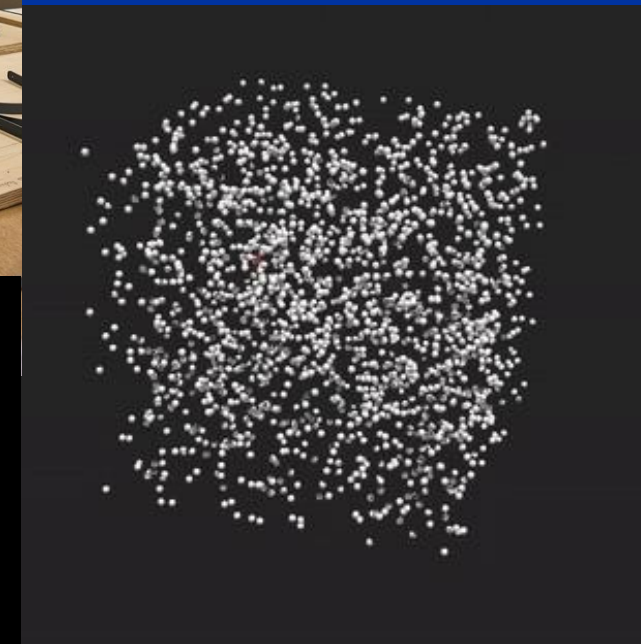
**HEV (High-Energy Ventilator)** design developed by members of the LHCb collaboration

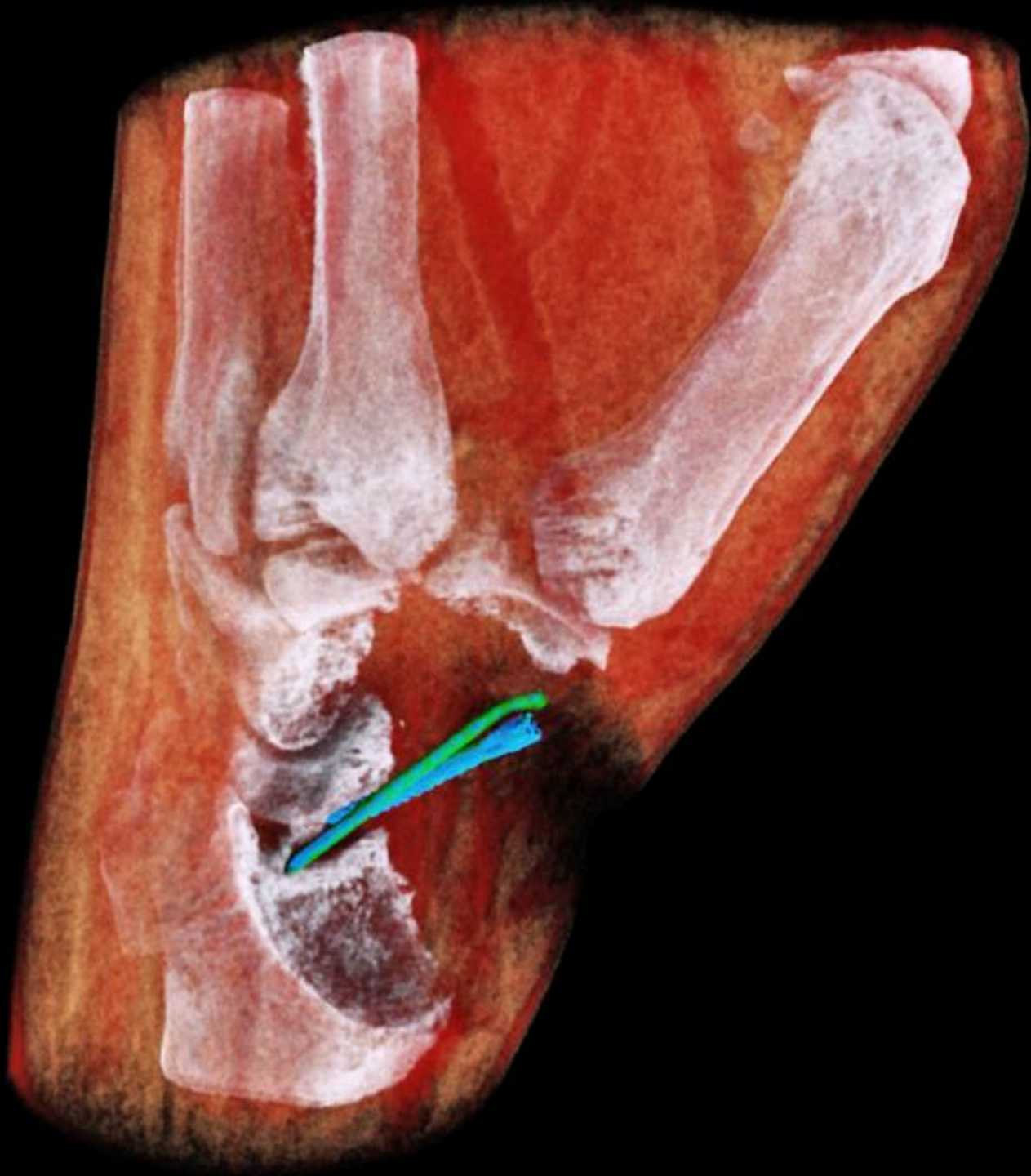
**Proximeter** a proximity sensing device based on CERN's mini-IOT for effective contact tracing



**Personal Protective Equipment-** under the Open Hardware Licence, CERN designed and produced innovative 3-D printed facemasks

**BioDynaMo** simulation software, a CERN openlab project & funded by the MA budget- used to visualise how COVID-19 spreads



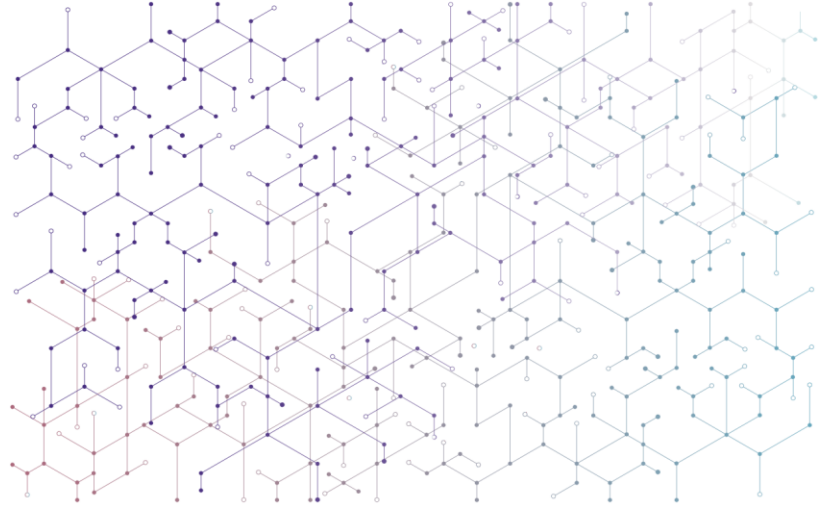


- New 3D colour X-rays made possible with CERN technology
- MARS Bioimaging released new 3D colour X-ray images generated with the innovative MARS compact scanner, based on the Medipix3 technology developed at CERN.





- InsightART successfully helped attribute the painting, *The Madonna and Child* to the Renaissance master Raphael, using RToo – a robotic X-ray scanner with Timepix photon detectors.



Knowledge Transfer  
**2020 Highlights**



**FROM CERN  
TO AEROSPACE**

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Knowledge Transfer  
*Accelerating Innovation*



Knowledge Transfer  
*Accelerating Innovation*

# NINO: a fast readout ASIC

- Several licenses granted:
  - in 2019 to the Institute of High Energy Physics-Tata Institute of Fundamental Research (TIFR) who will use the NINO ASIC for Medical Imaging
  - in 2017 to Saha Institute of Nuclear Physics who will use the ASIC in their Cosmic Ray Muon tomography devices
  - in 2015 to Variable Energy Cyclotron Centre who will use the NINO ASIC in their readout of RCP and MRCP detectors
  - in 2015 to Department of Physics and Astrophysics-University of Delhi who will use the ASIC to optimize its integration with Resistive Plate Chamber detectors

# GEM licenses

- Several licenses have been granted on a method of manufacturing Gas Electron Multipliers (GEM)
  - in 2014 to Micropack Limited
  - in 2016 to Indian Institute of Technology Bombay
  - in 2017 to Saha Institute of Nuclear Physics

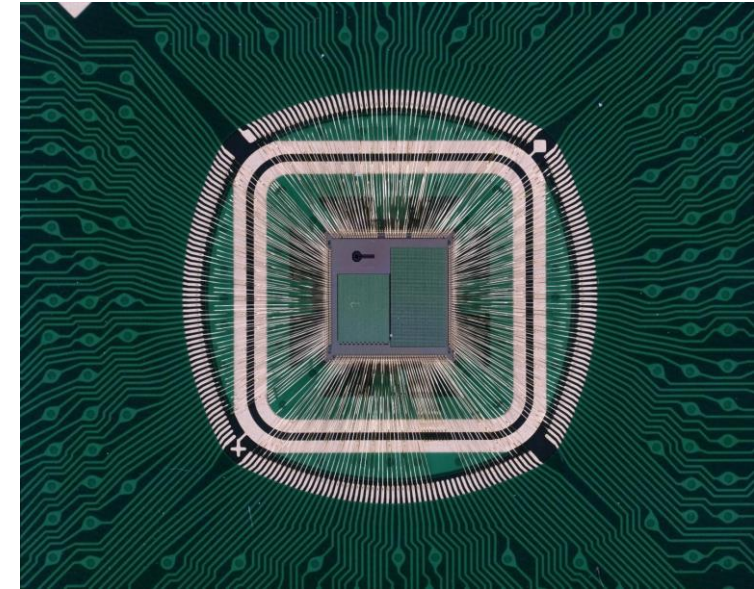
# HEV

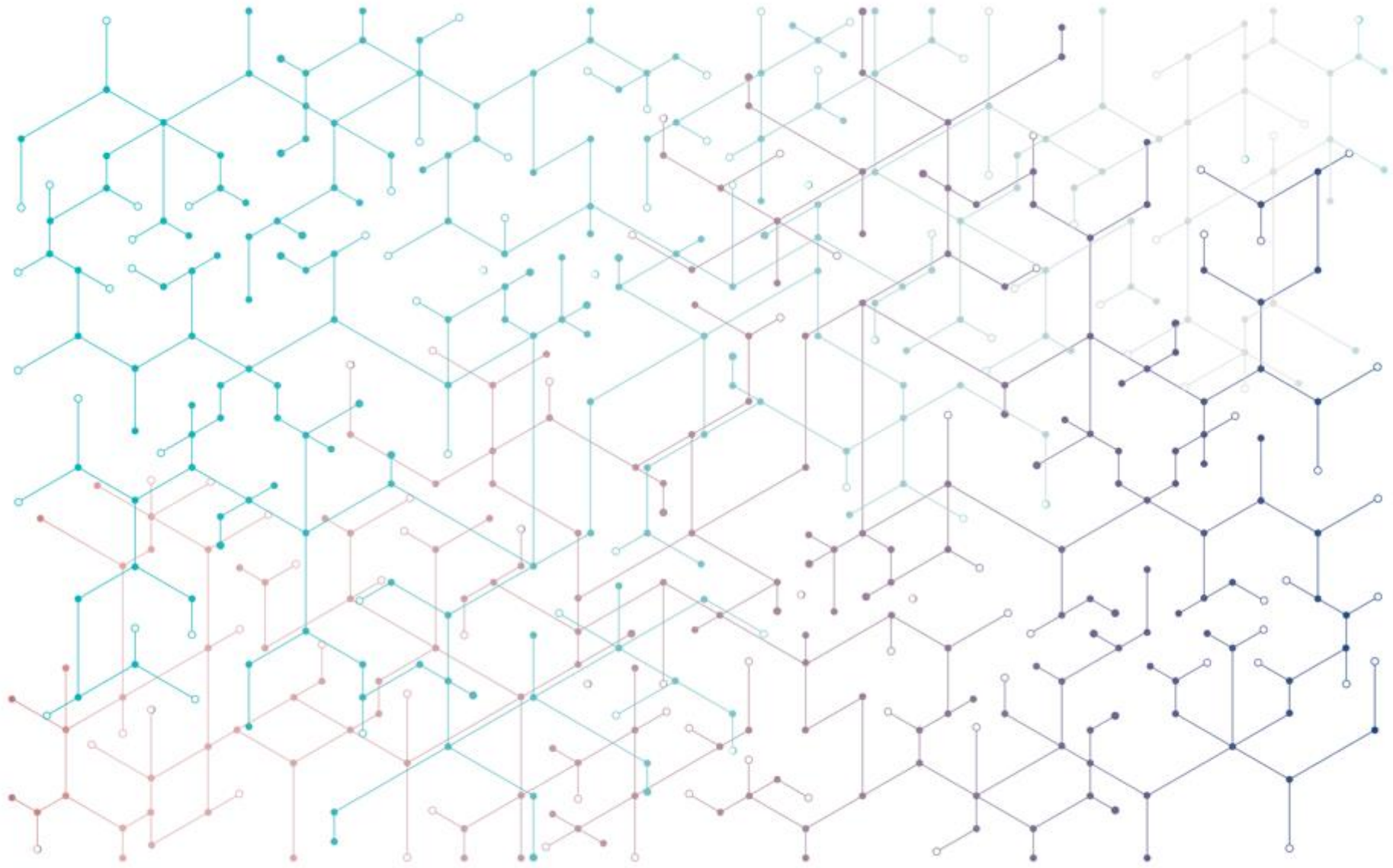
- A CERN easy access non-exclusive licence has been granted in 2020 to **AXIS ENTERPRISES PRIVATE LIMITED** for the use and commercial exploitation of the High Energy Ventilator.



# Ongoing requests

- The Institute of High Energy Physics-Tata Institute of Fundamental Research (TIFR) expressed interest for the use of the following technologies:
  - picoTDC and FASTIC to be used in neutrino imaging and Medical Imaging
  - Medipix3 to be used in small organ Imaging Gamma camera system.





**Find out more at [kt.cern](http://kt.cern)**