



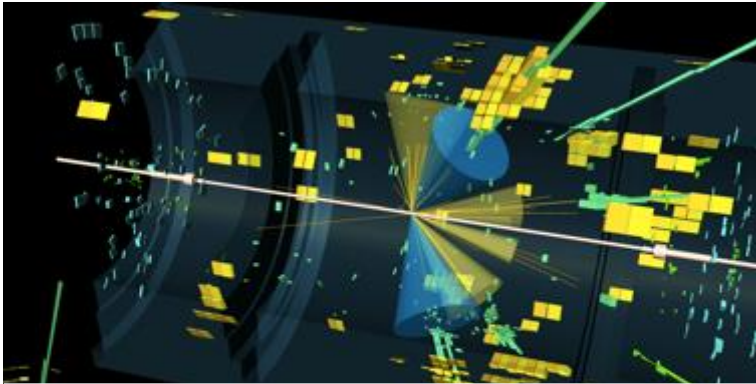
Knowledge Transfer Opportunities

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CERN's Mission



Science



Technology



Training

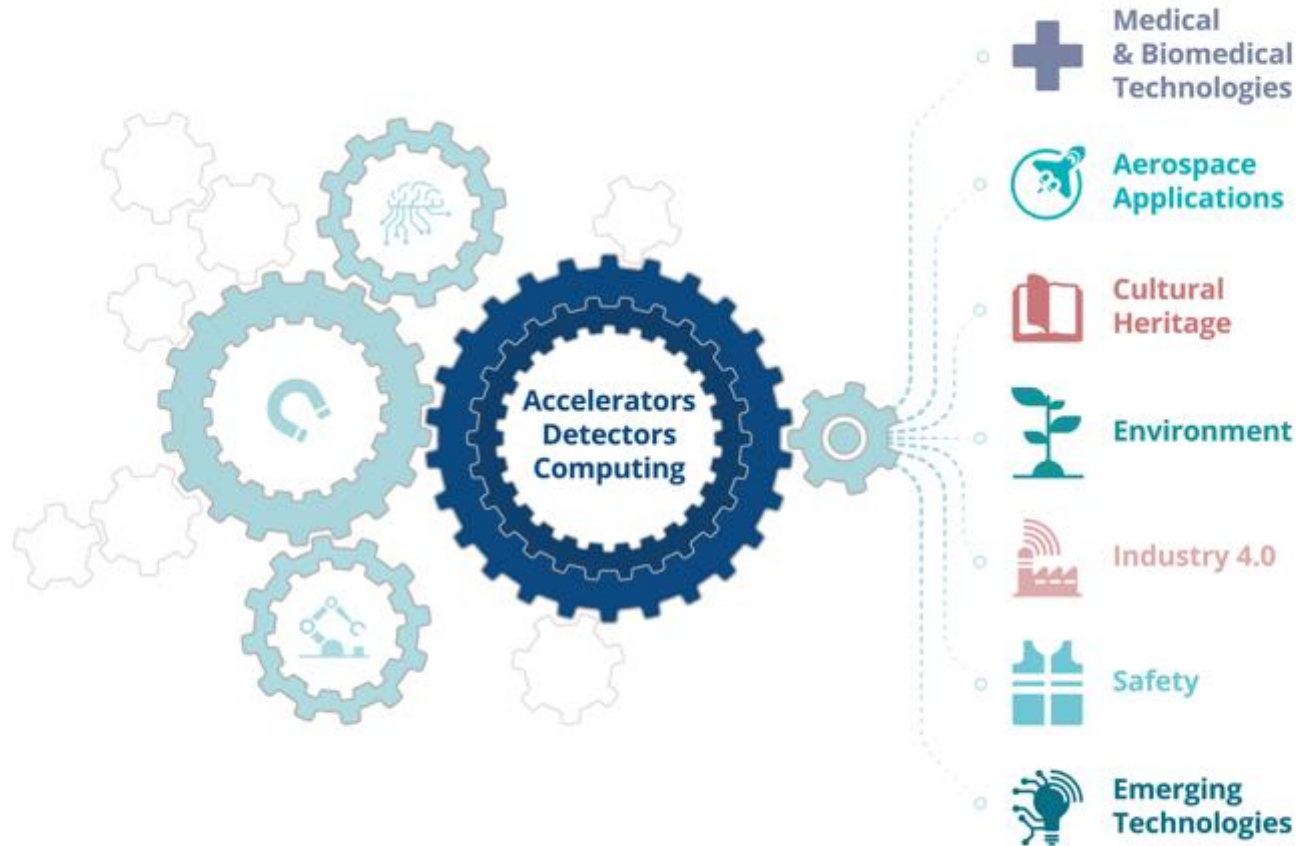


Collaboration

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...

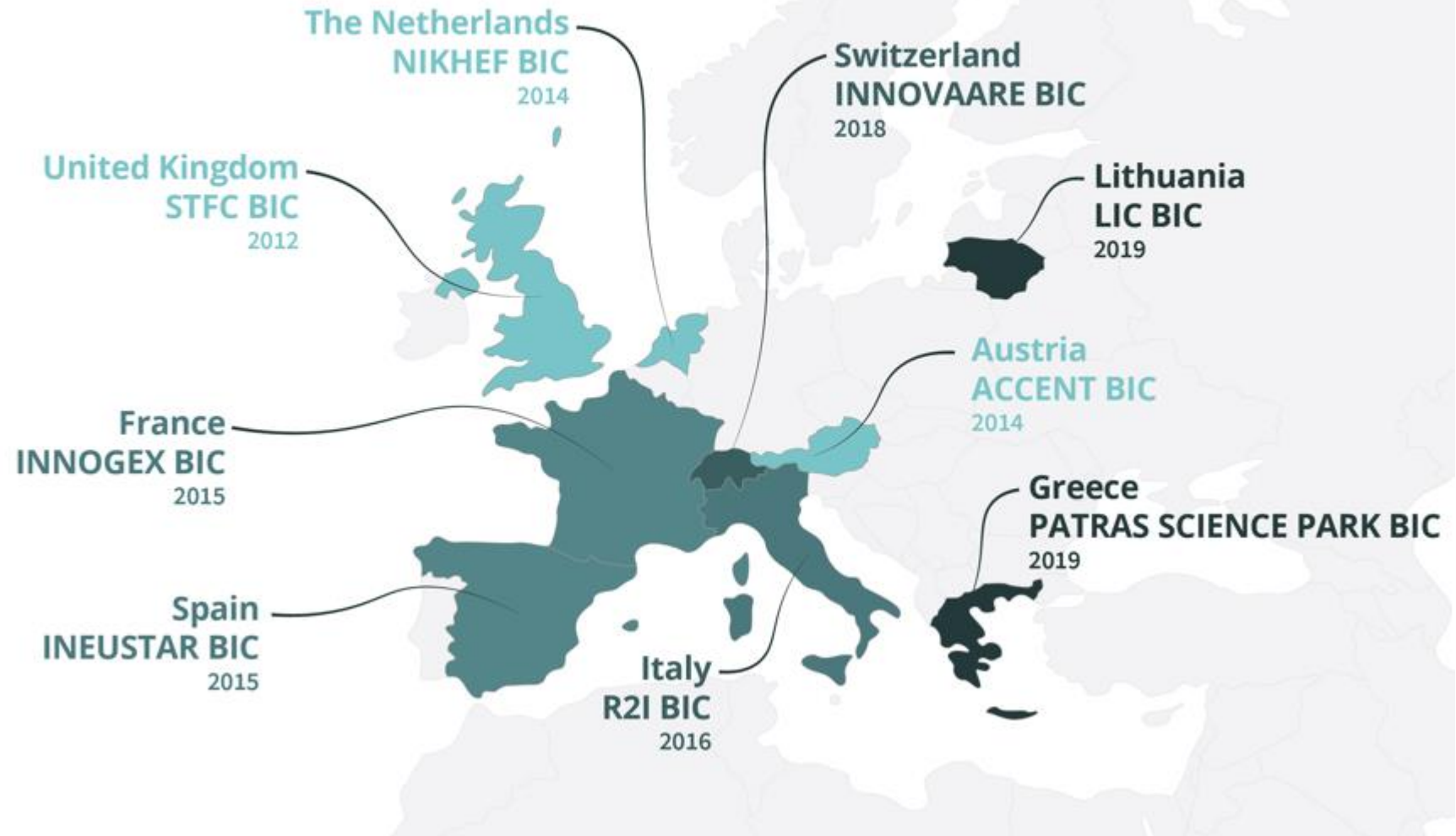


... to Society

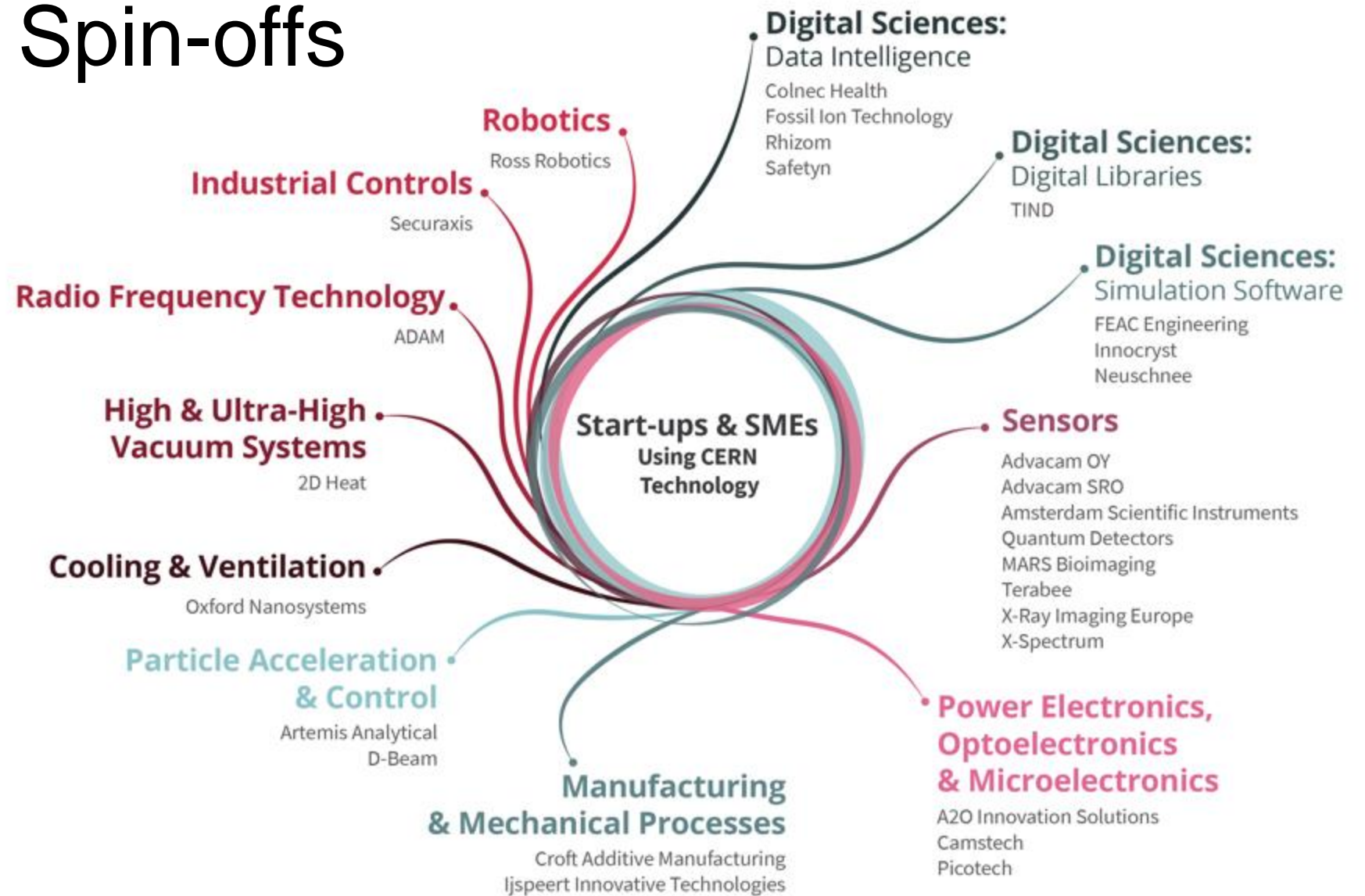
Knowledge Transfer Tools



Business Incubation Centres



Start-ups and Spin-offs



Medipix Collaborations

Active since 1990s

Several UK partners including University of Glasgow, MRC, Diamond Light Source, Oxford University

Relevant CERN Competence:

- > Microelectronics
- > Dosimetry

Use Cases

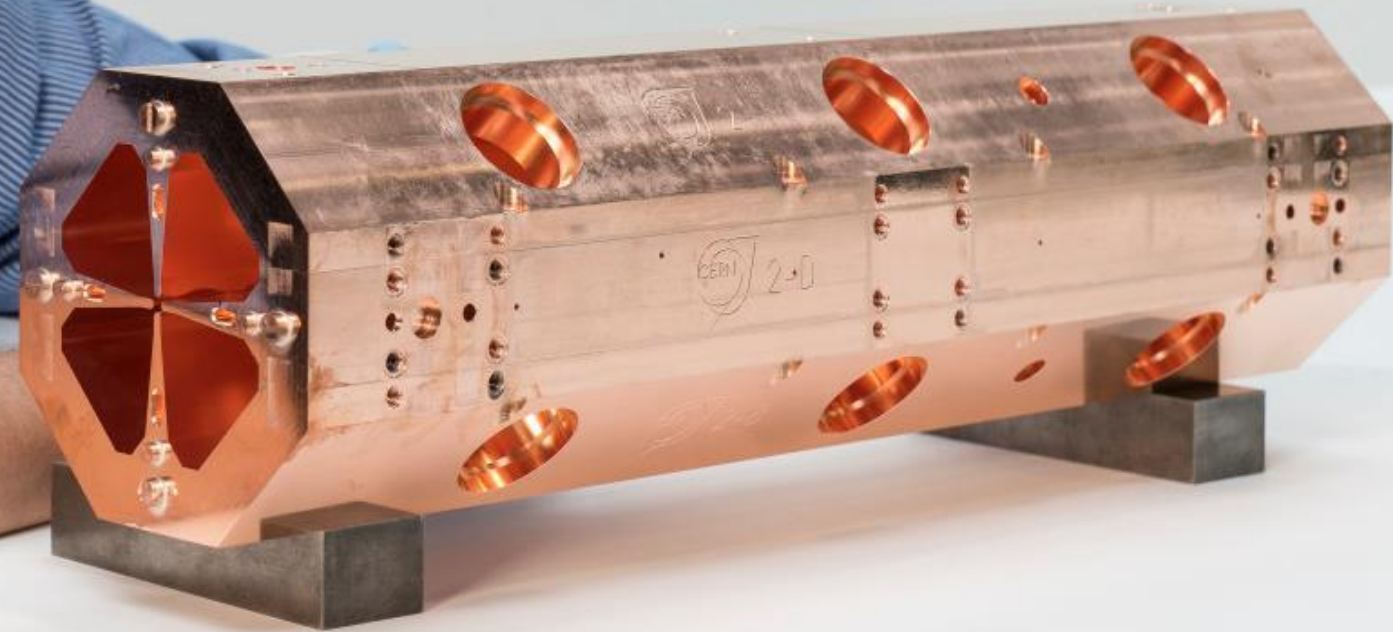
Medipix and Timepix chips have been used in:

- **Material analysis**
- **Dosimetry in space**
- **Education**
- **Medical imaging**
- **Synchrotron applications**
- **Electron microscopy**
- **Spectroscopic X-ray imaging**



Mini Linear Accelerator for Cancer Therapy

750 MHz Radio-Frequency Quadrupole (RFQ) - linear accelerator with small size and low current. A licence on the RFQ is held by the CERN spin-off ADAM (now part of AVO, UK) dedicated to the construction and testing of linear accelerators for proton therapy.



Versatile, High-Quality Ventilator

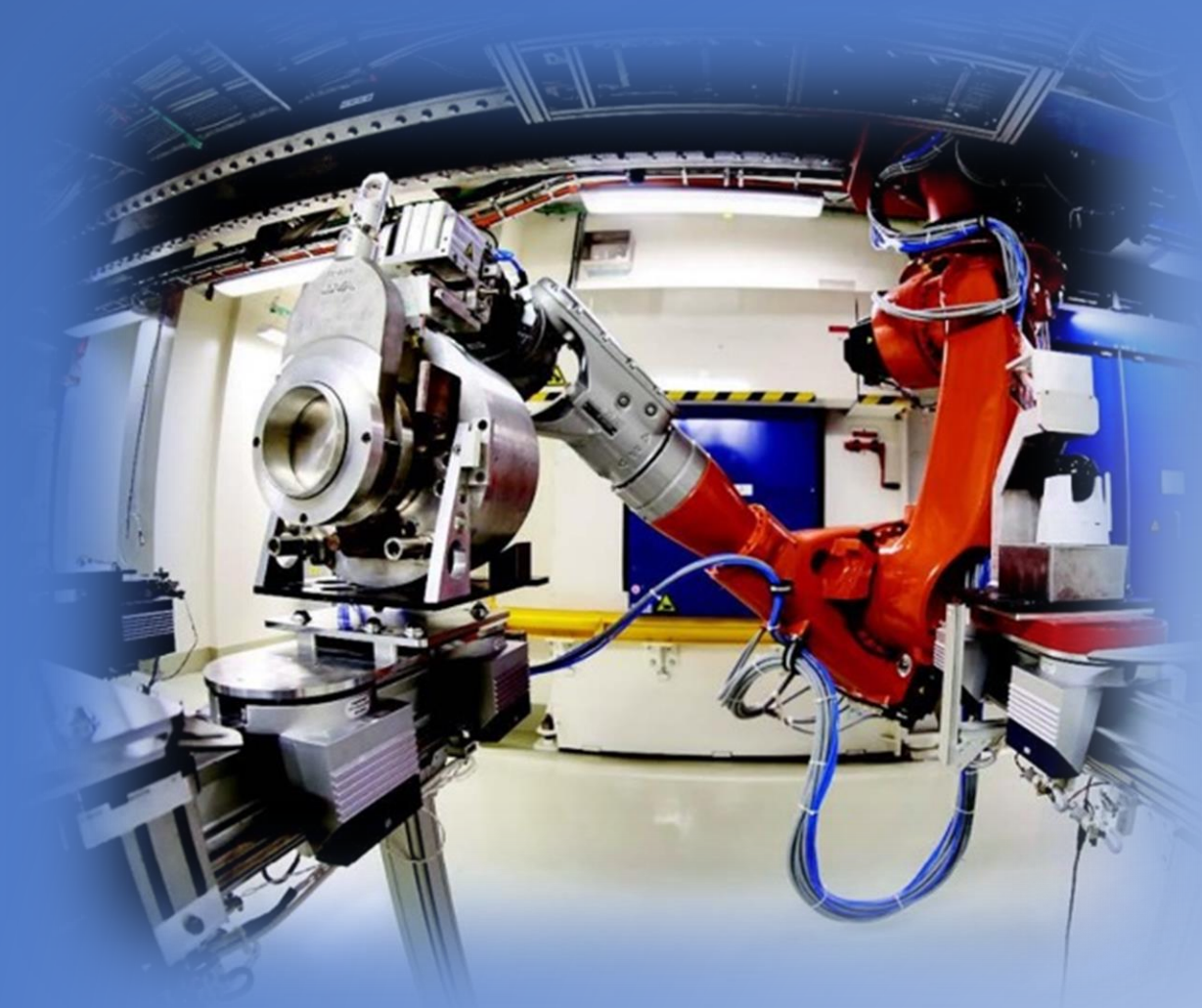
The High Energy Ventilator (HEV) was developed by members of the high-energy physics community, in response to the COVID-19 pandemic. HEV is a ventilator designed to provide long term alveolar ventilation support to patients, both in and out of Intensive Care Units (ICUs), for both intubated and non-invasive cases.

- Several UK institutes involved in its development
- A new project, “the High Performance Low Cost Ventilator (HPLV)”, has been awarded funding by UK Research and Innovation (UKRI) through the Global Challenges Research Fund to redevelop the HEV for use in low and middle-income countries. The project runs from Oct 2020 – Apr 2022.



Novel radioisotopes for medical research

- MEDICIS is a facility contributing to medical research by producing novel radioisotopes
- These radioisotopes not only help diagnose cancers and other diseases, but can also deliver precise radiation doses to treat diseased cells without destroying the surrounding healthy tissue.
- Initiated in 2010, MEDICIS produced its first radioisotopes on 12 December 2017.
- The UK's National Physical Laboratory (NPL) is a member of the MEDICIS collaboration.



Quantum technologies

- **An emerging area of interest for us**
- **Conversations taking place with organisations across our Member States, including some UK institutes and companies**
- **KT had a virtual exhibition booth at the UK Quantum Showcase event on 6th November 2020**

Areas of potential technology overlap include...

- **Precision synchronisation and control**
- **Neural networks on FPGAs**
- **Vacuum systems**
- **Improvement of magnetic field stability**
- **Temperature stability at cryogenic temperatures**

How to collaborate with CERN



Start a company based on CERN technology or know-how



Service & Consultancy

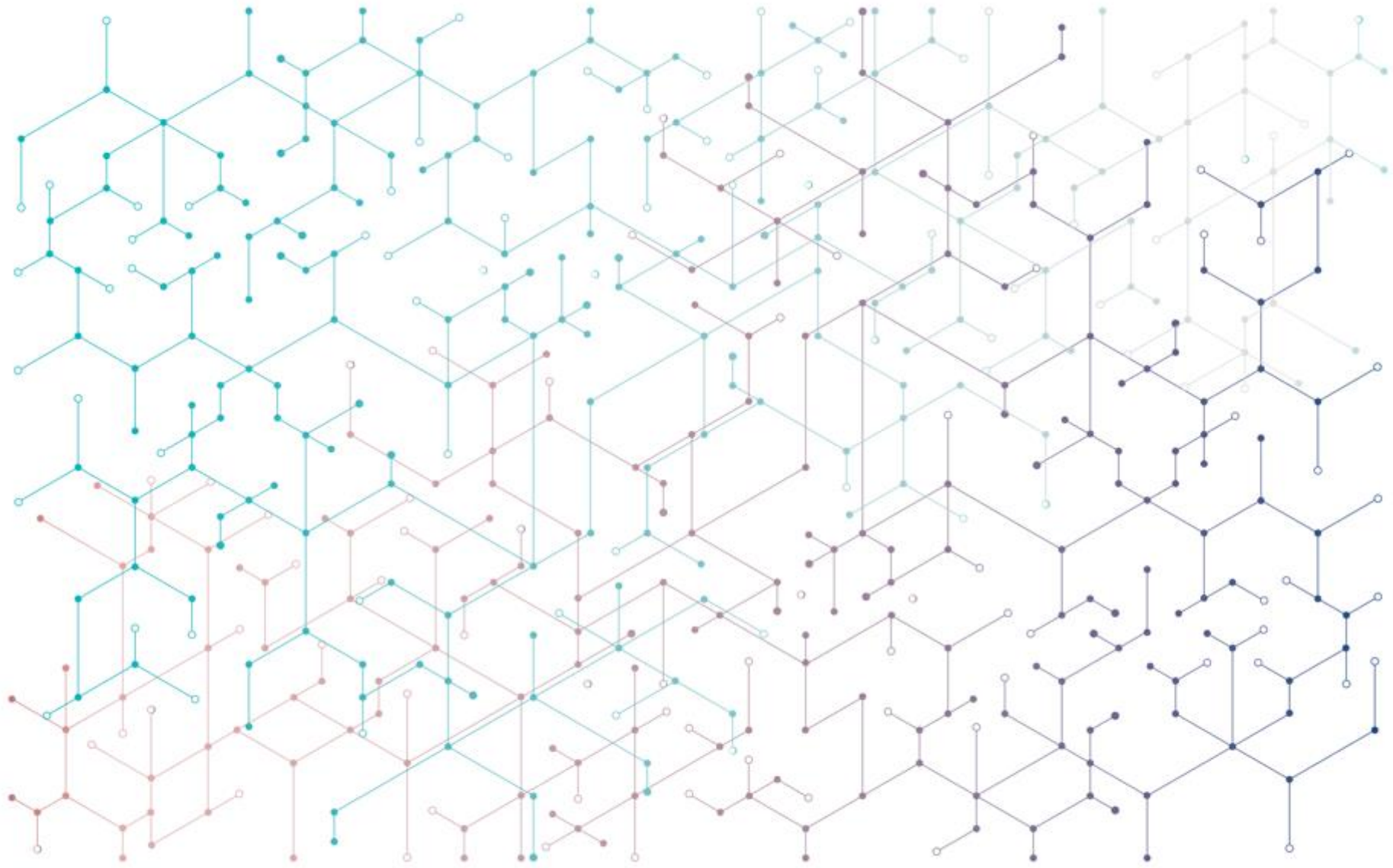


Licensing



R&D Collaborations

Find out more at kt.cern/collaborate



Find out more at kt.cern