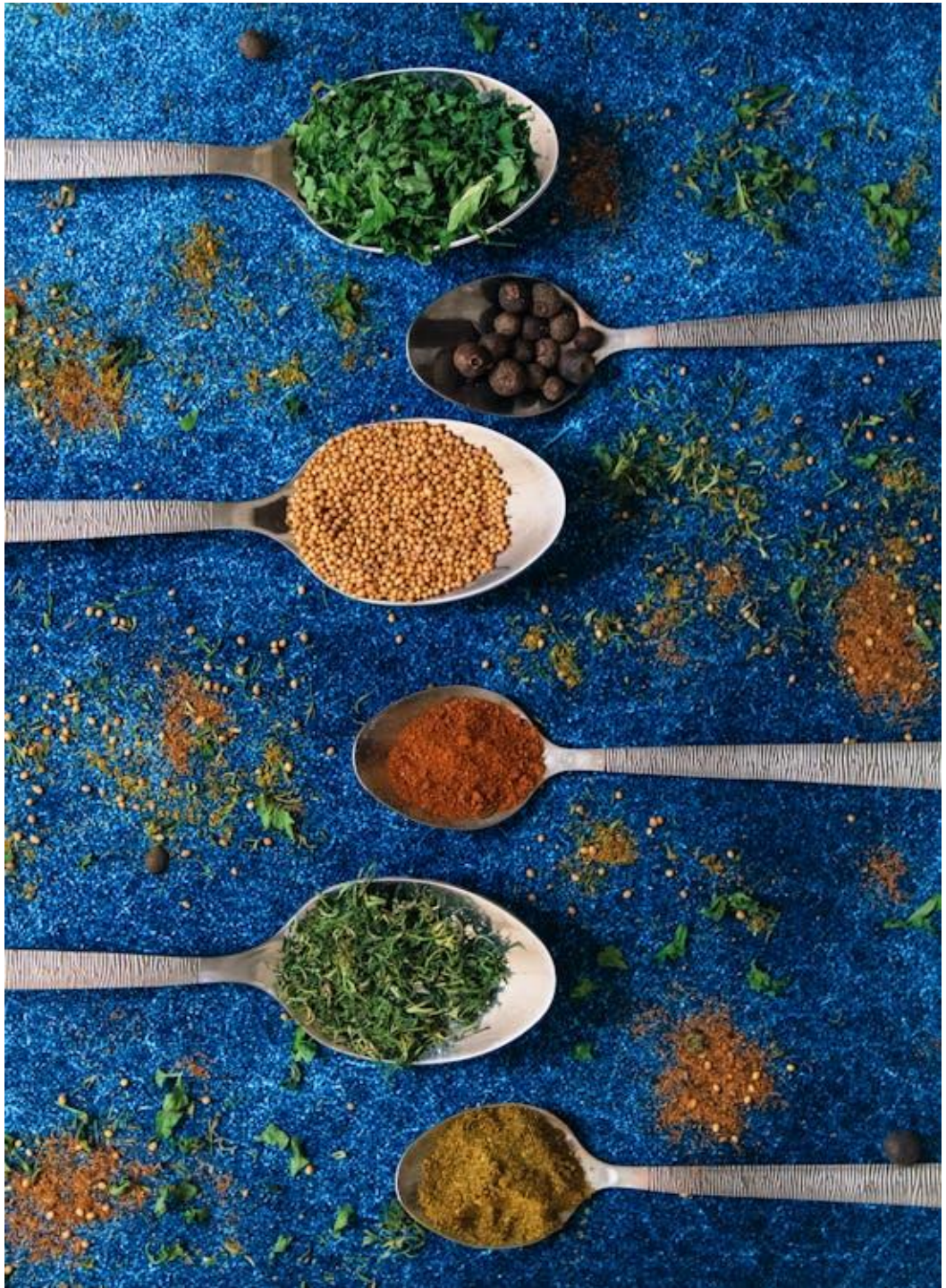
Deep technology

Considering responsible use of technology

CBI A³ DFGN SWINBURNE UNIVERSITY OF TECHNOLOGY DESIGN FACTORY MELBOURNE CERN IdeaSquare



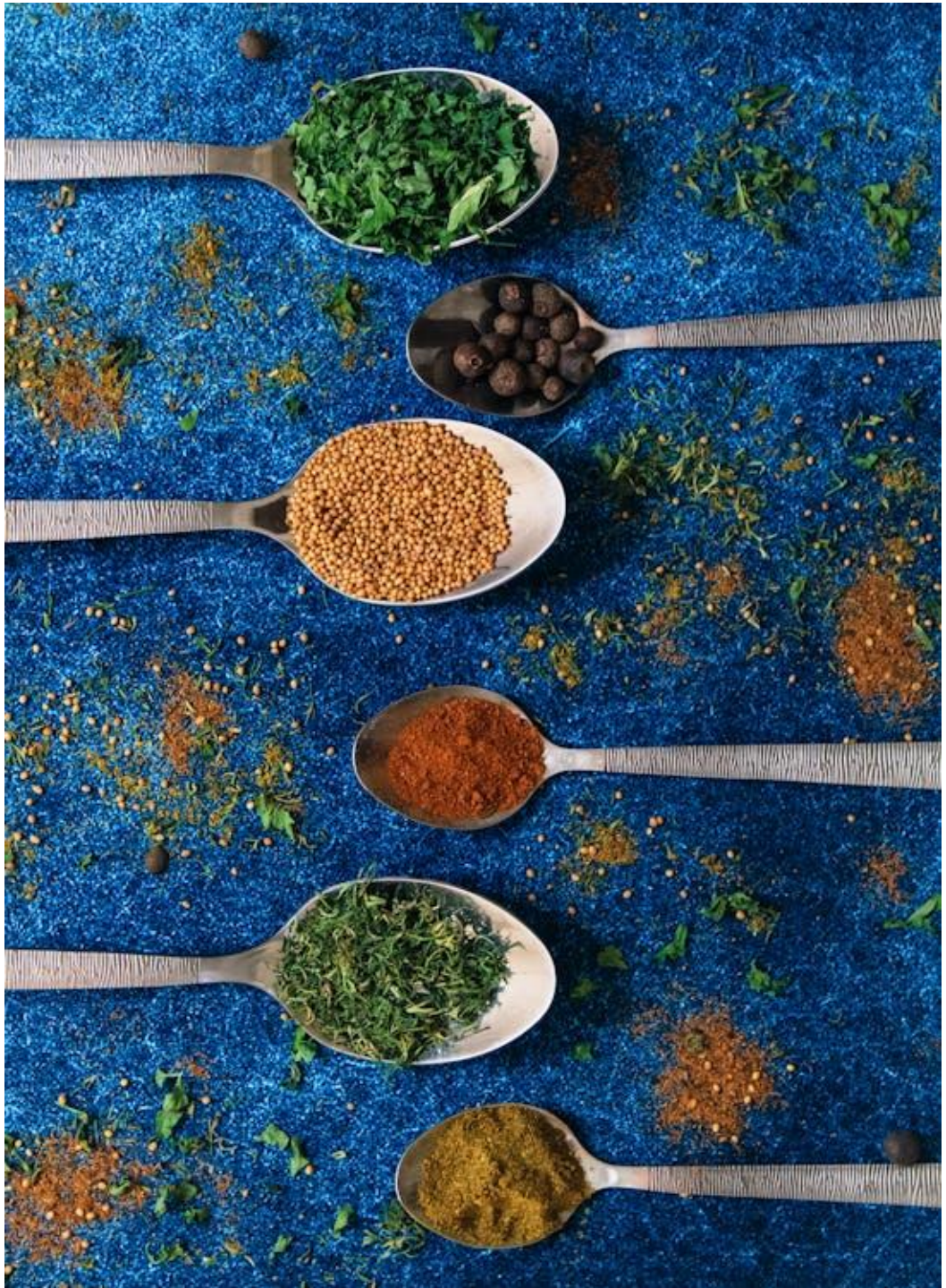
CBI A³

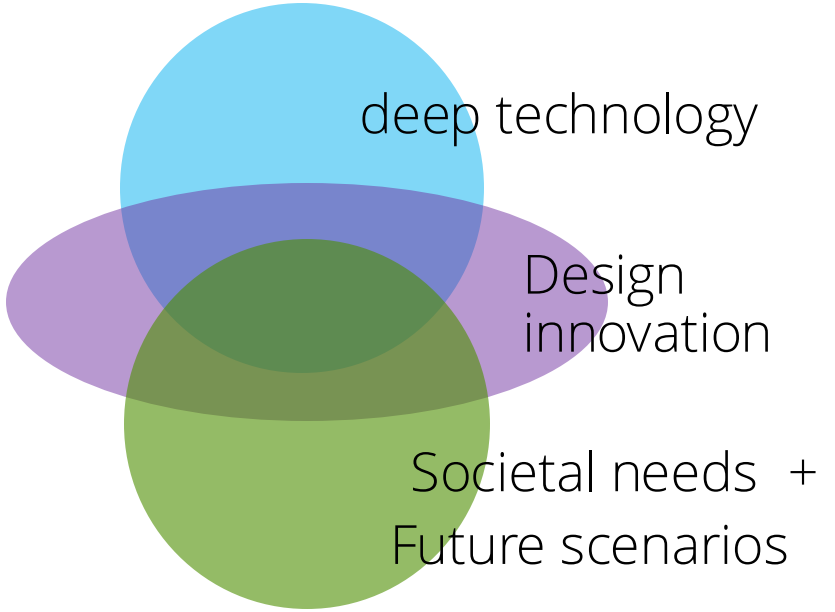
DFG

SWINBURNE UNIVERSITY OF TECHNOLOGY

DESIGN FACTORY MELBOURNE

CERN IdeaSquare





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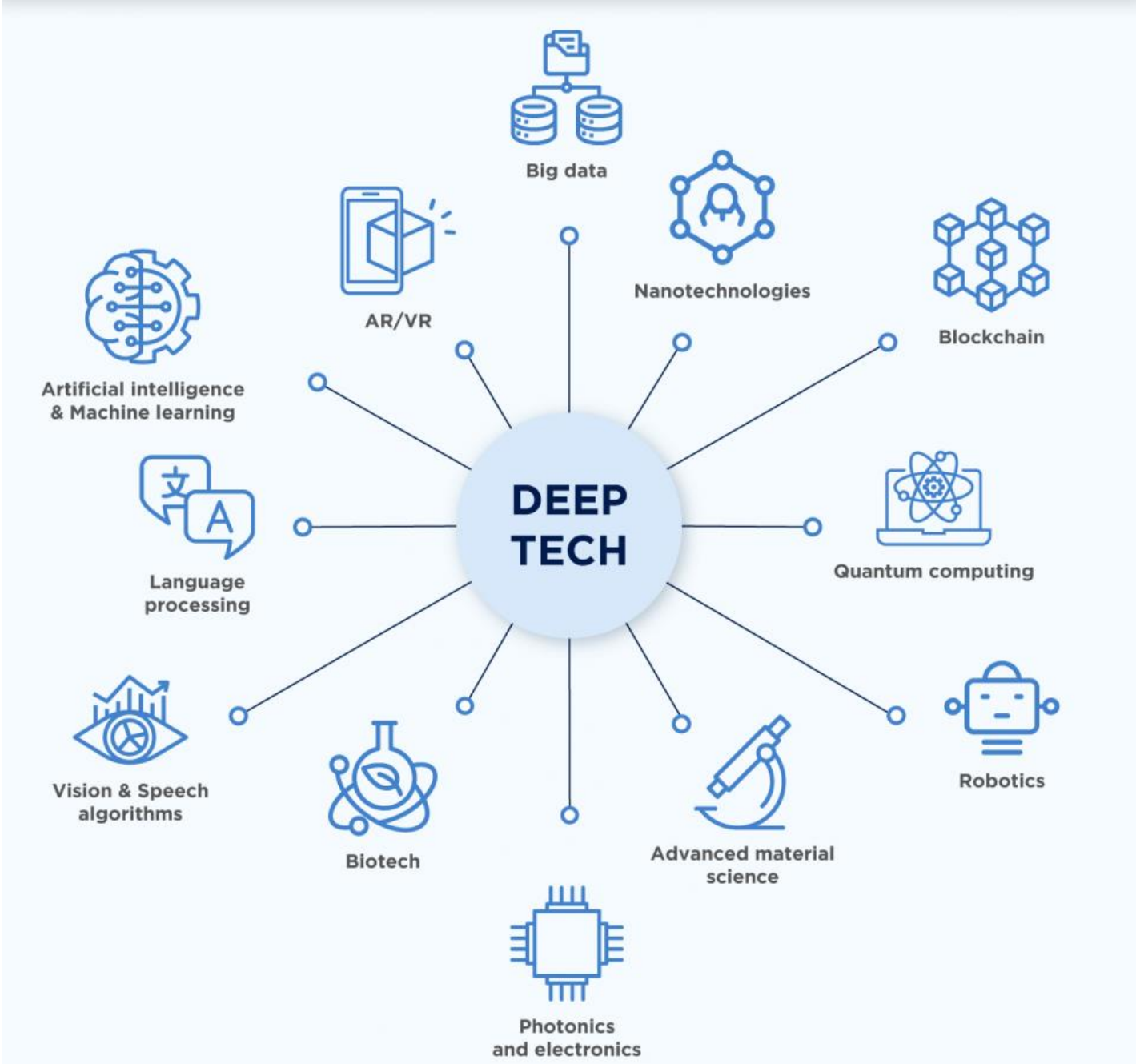


Image source: https://jelvix.com/blog/what-is-deep-tech

Inspired by CERN technology

Team exercise

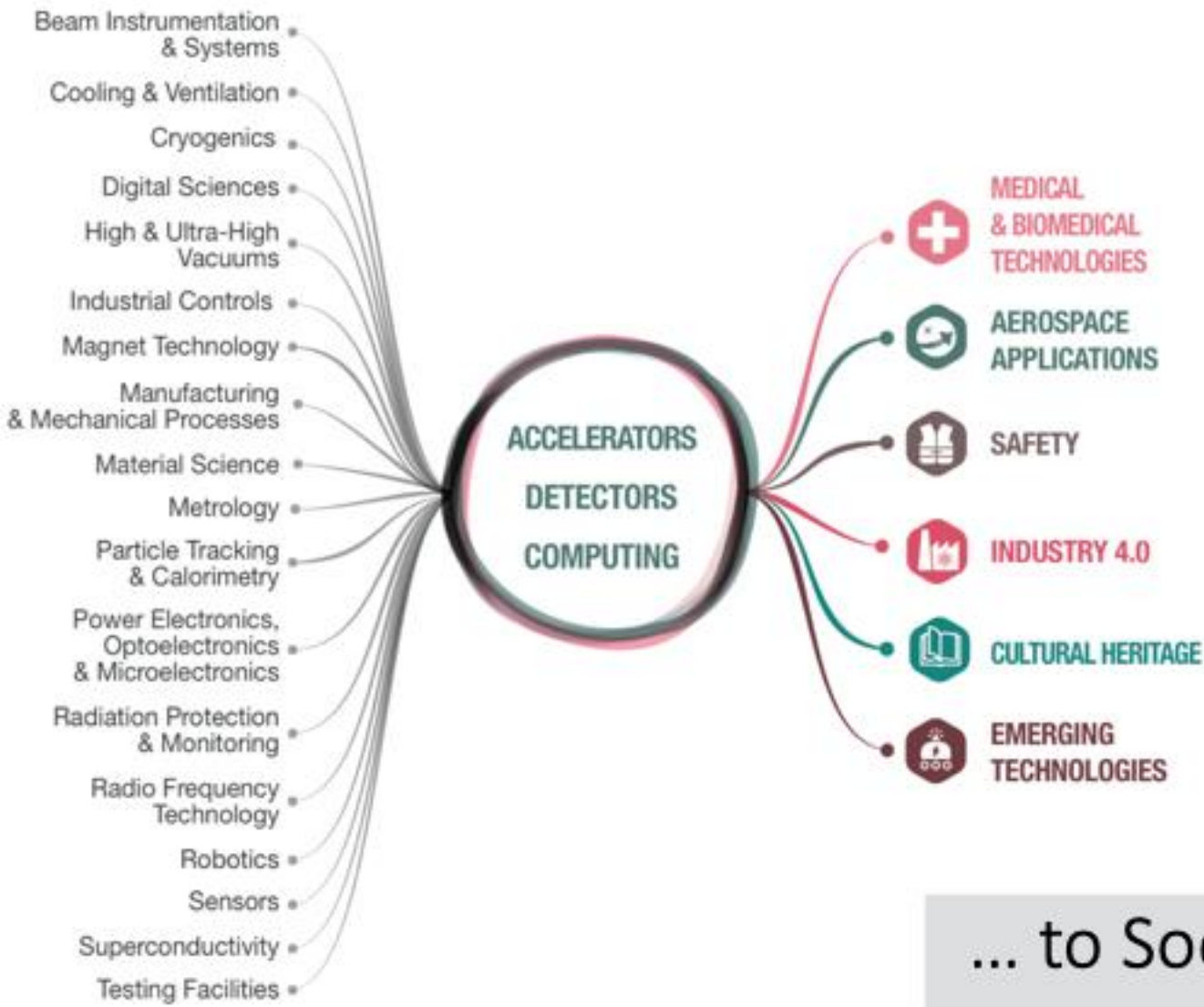
Choose 1 system mapped opportunity card from Monday

Inspired by CERN technology

1. Generate system intervention ideas (30 mins)

- Use different CERN tech to provoke system intervention ideas
- Consider different system levels, and stakeholders
- What are potential benefits and unintended consequences?

From CERN Technologies …



… to Society

Inspired by CERN technology

2. Prototype 1 x idea (30 mins)

- Prototype 1 x idea (15 mins)
- Share & feedback (10 mins)

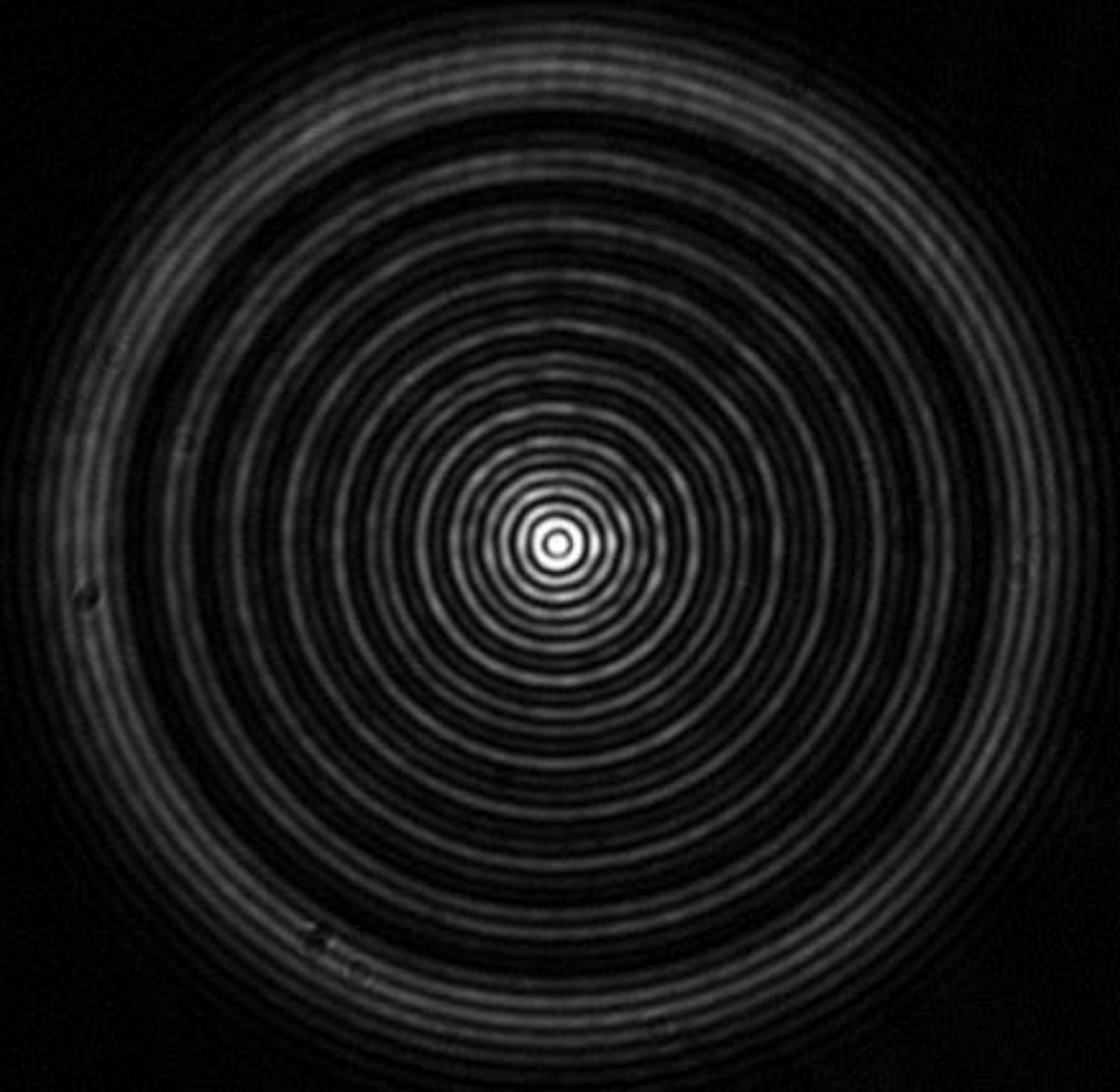
Long Distance Sharp Laser

Very small spot size (> 100m)

Self-reconstructs after obstacles

Works for any wavelength (visible, IR, UV)

Construction, alignment, communication



Big Data & Machine Learning Software - ROOT

Analysis of extreme large sets of homogeneous data

Big data processing, statistical analysis, visualization and storage

Open source software

GEM Radon Detector

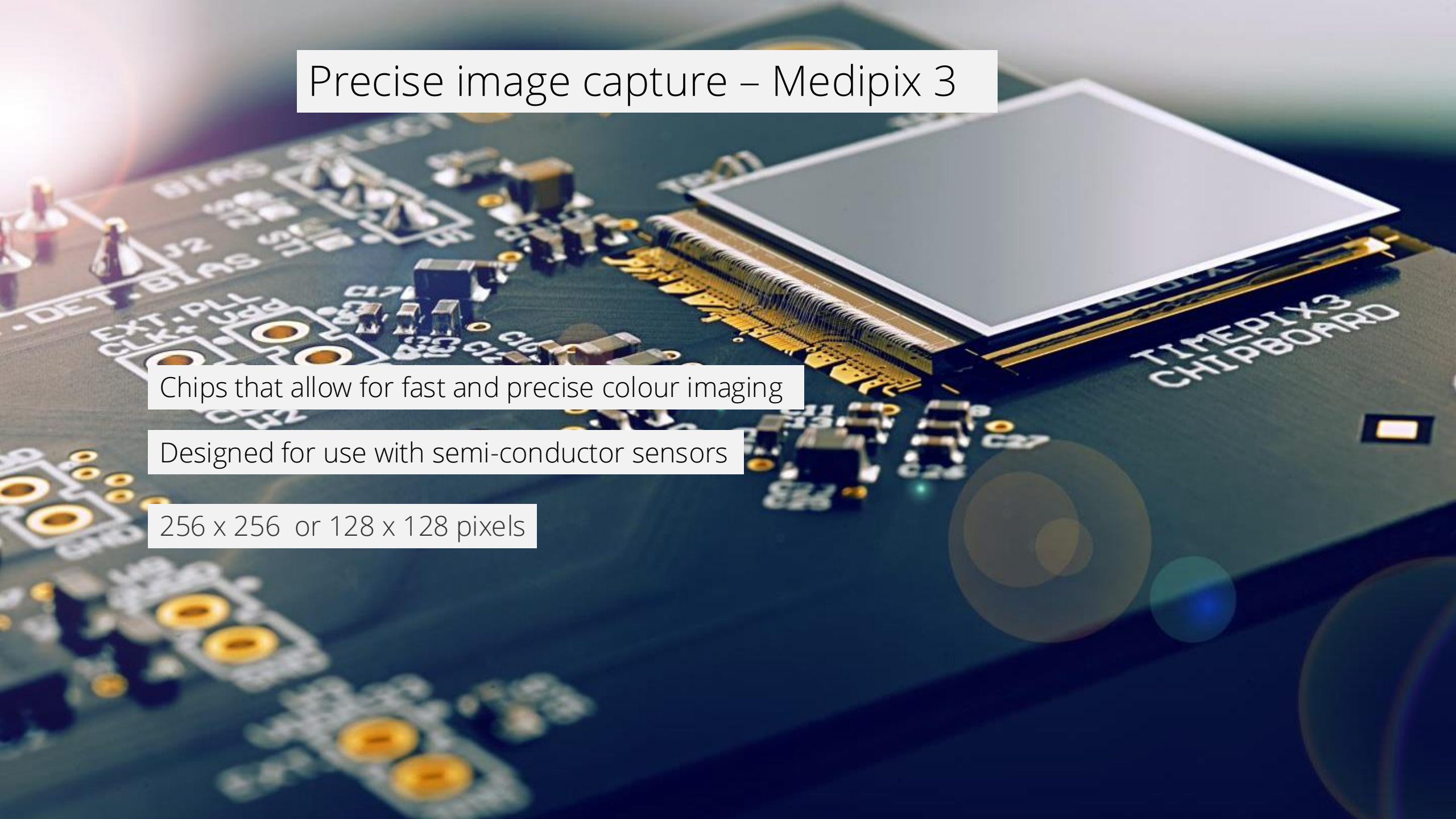
Control and monitoring systems – C2MON

Java framework for industrial control and monitoring systems

Data acquisition from high number of sensors

Data filtering mechanisms to ensure stability and reliability

Precise image capture – Medipix 3

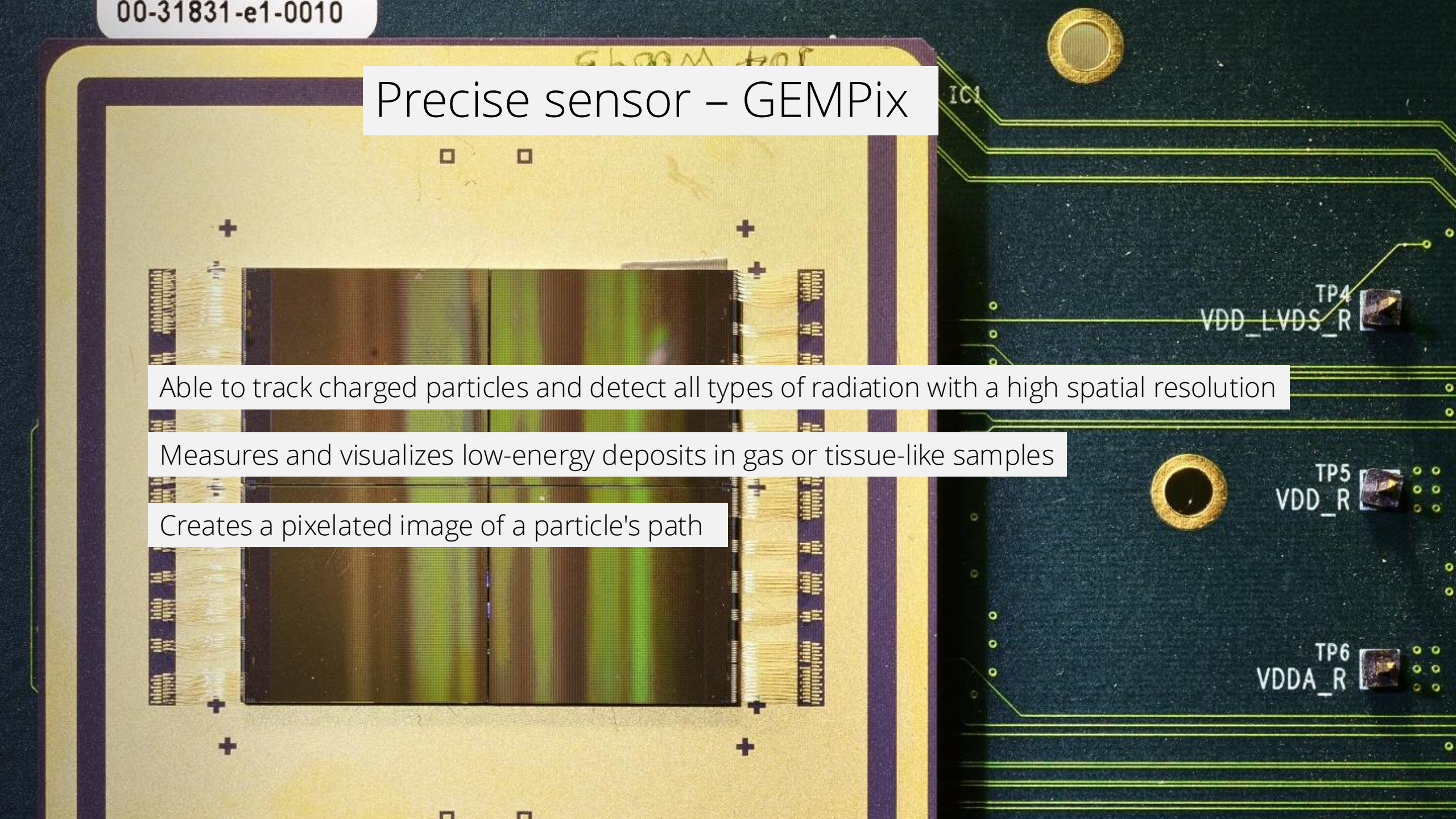


Chips that allow for fast and precise colour imaging

Designed for use with semi-conductor sensors

256 x 256 or 128 x 128 pixels

Precise sensor – GEMPix

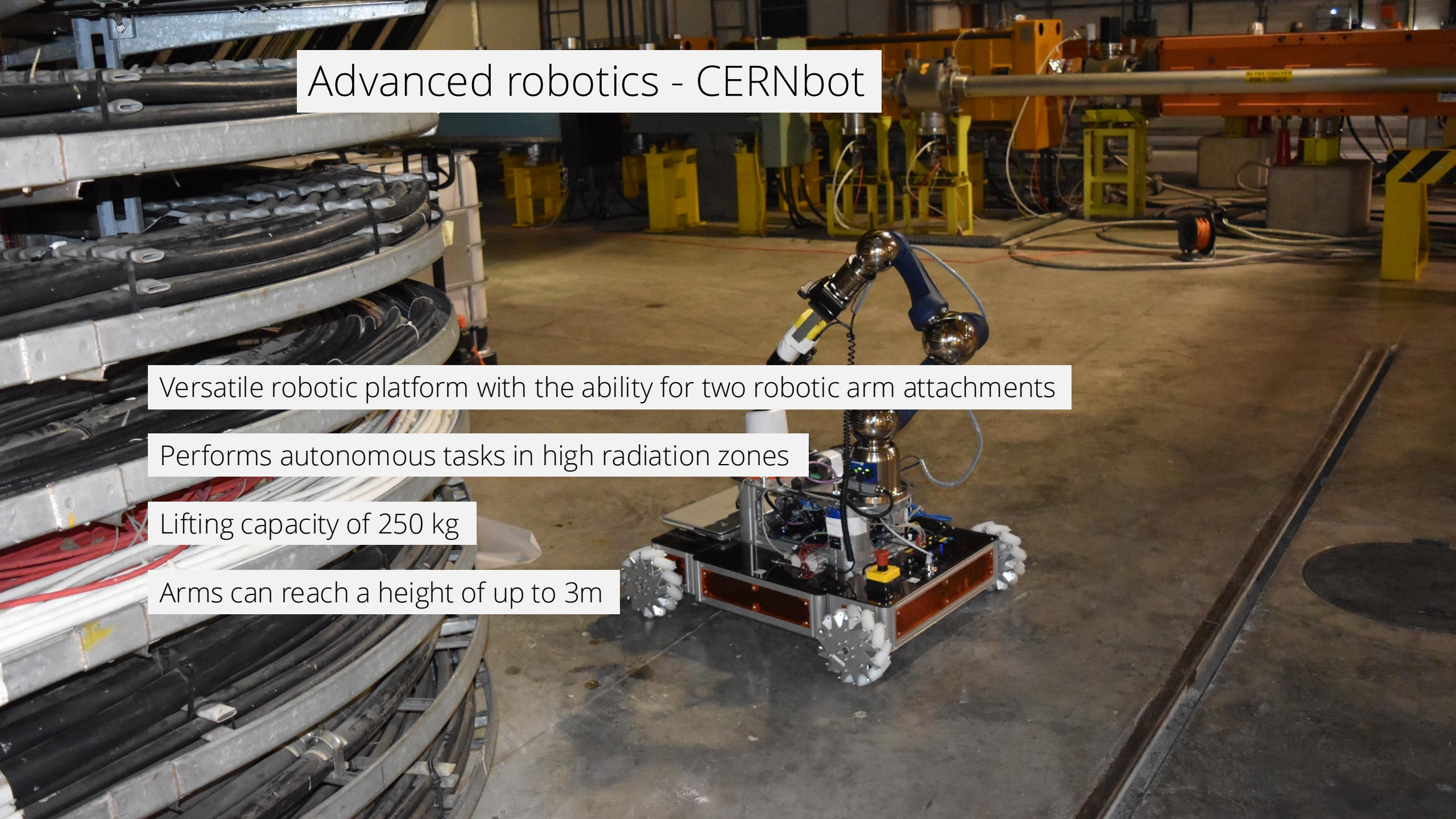


Able to track charged particles and detect all types of radiation with a high spatial resolution

Measures and visualizes low-energy deposits in gas or tissue-like samples

Creates a pixelated image of a particle's path

Advanced robotics - CERNbot



Versatile robotic platform with the ability for two robotic arm attachments

Performs autonomous tasks in high radiation zones

Lifting capacity of 250 kg

Arms can reach a height of up to 3m