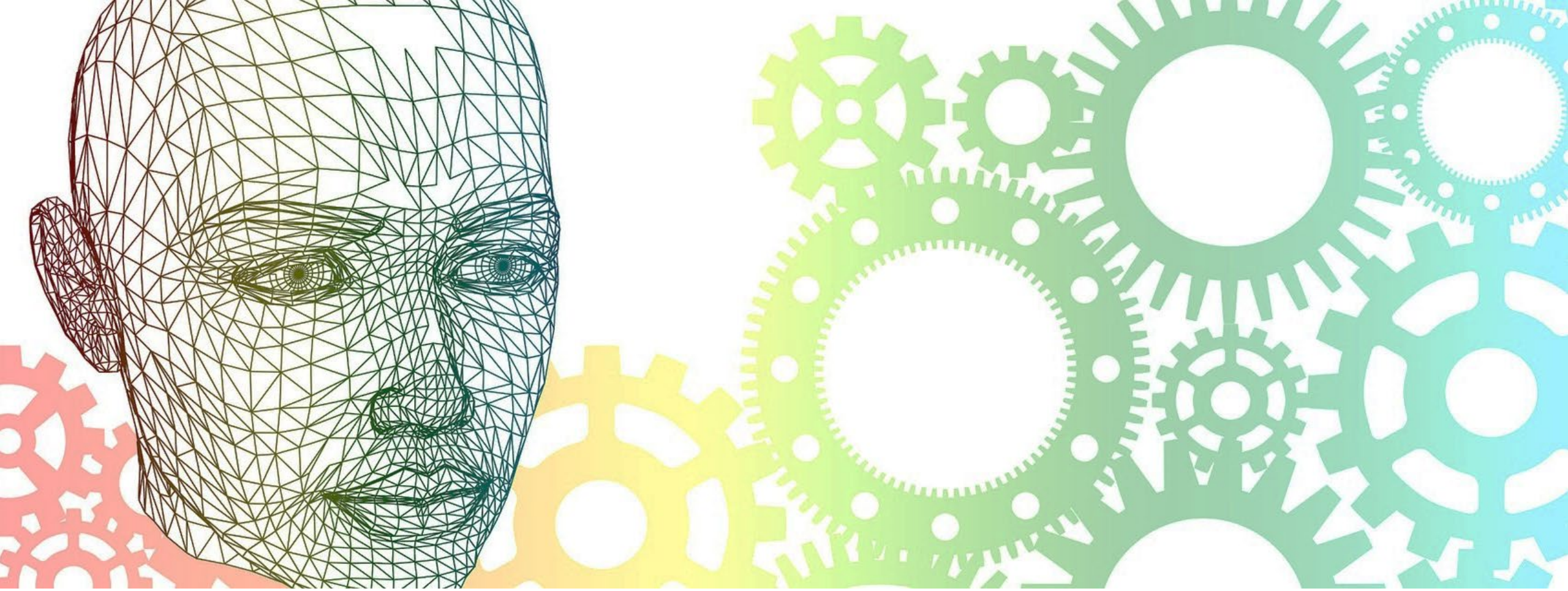


WE GIVE LOCAL INTELLIGENCE TO MACHINES

COGITO INSTRUMENTS

THE PROBLEM WE SOLVE:

MAINSTREAM AI POORLY SERVES INDUSTRIAL APPLICATIONS

Need **massive datasets**

Slow, expensive learning

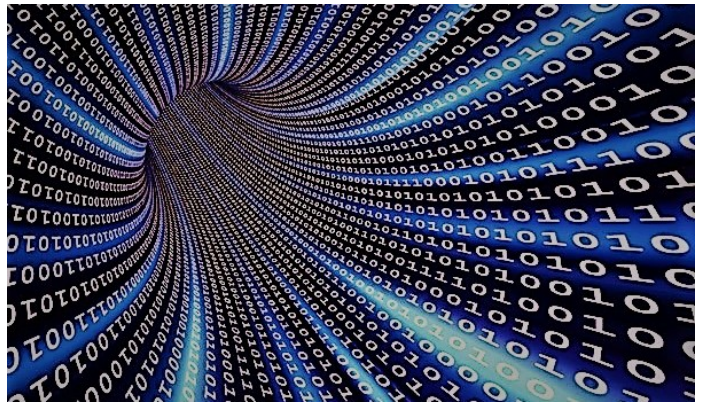
Learning is **not incremental**

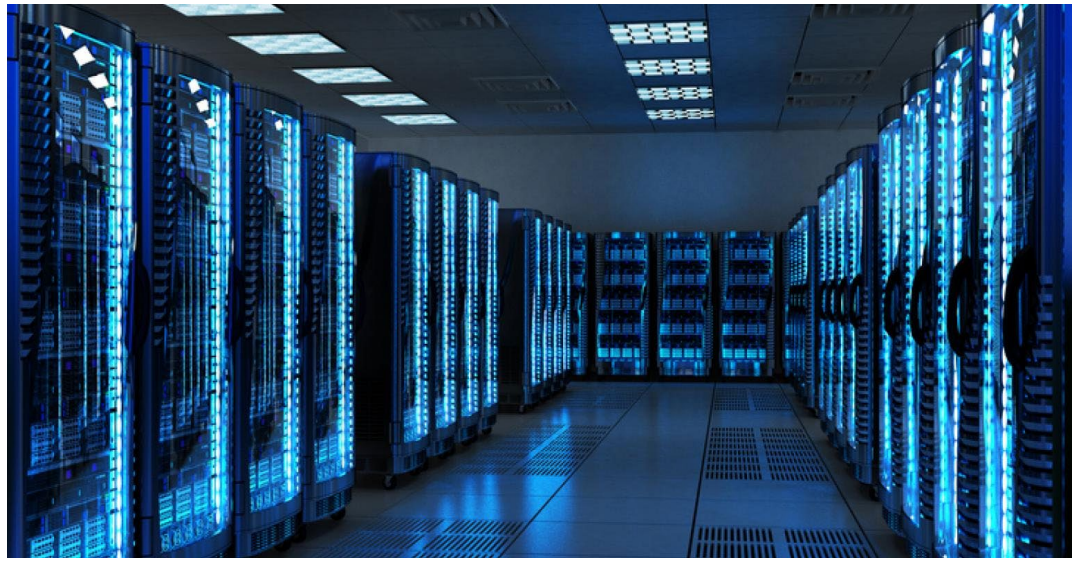
Learning is **not local (Cloud)**

Blackbox (decisions can't be explained)

Data safety & privacy issues

Very **expensive in energy, bandwidth, compute**





THE COGITO SOLUTION

REAL-TIME INTELLIGENCE "AT THE EDGE"

FOR BOTH LEARNING AND INFERENCE

Massively Parallel Cognitive H/W

Software environment for teaching the machine

Easy to use by non-IT domain experts

Does not need more data than human operators

Real-time, "on-the-job" learning and sharing

Fast, compact, low-power, auditable recognition

Knowledge ownership is clear and simple

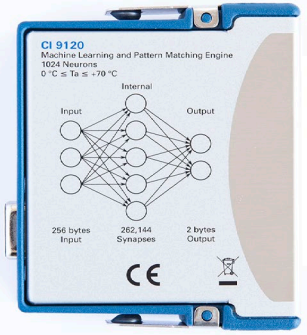
1st generation products available, certified, successful

2nd generation development → Funding Need

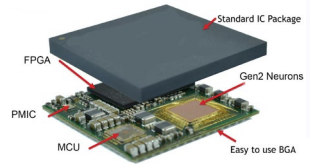
THE BRAIN

CI-Core-1

Data →



CI-912x



Gen 2 SIP

→ Recognition

THE CLASSROOM

CogiTools

THE BUSINESS MODEL

We sell:

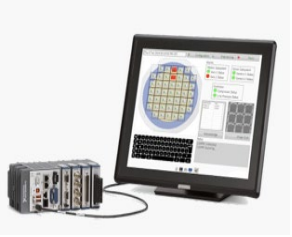
The Brain as Hardware. 1 per machine.
ASP between $100 and $1000
depending on configuration and memory size

The Classroom as bundled Software
15% of H/W value per year/per Brain

The Knowledge as downloadable content
30% of content value
70% goes to the content creator
One download counted for each brain

THE BRAIN

THE CLASSROOM



CogiTools

THE KNOWLEDGE

iKnow

COGITO DIFFERENTIATION

COGITO's DIFFERENTIATION :

- LEARN **LOCALLY**
- LEARN IN **REAL TIME** (milliseconds)
- LEARN **INCREMENTALLY**
- LEARN FROM **LIMITED DATA**
- LEARN FROM **FACTORY OPERATORS**
- **EXPLAIN** OUR CLASSIFICATION RESULTS
- LEARN WITH SMALL **CO2 FOOTPRINT**

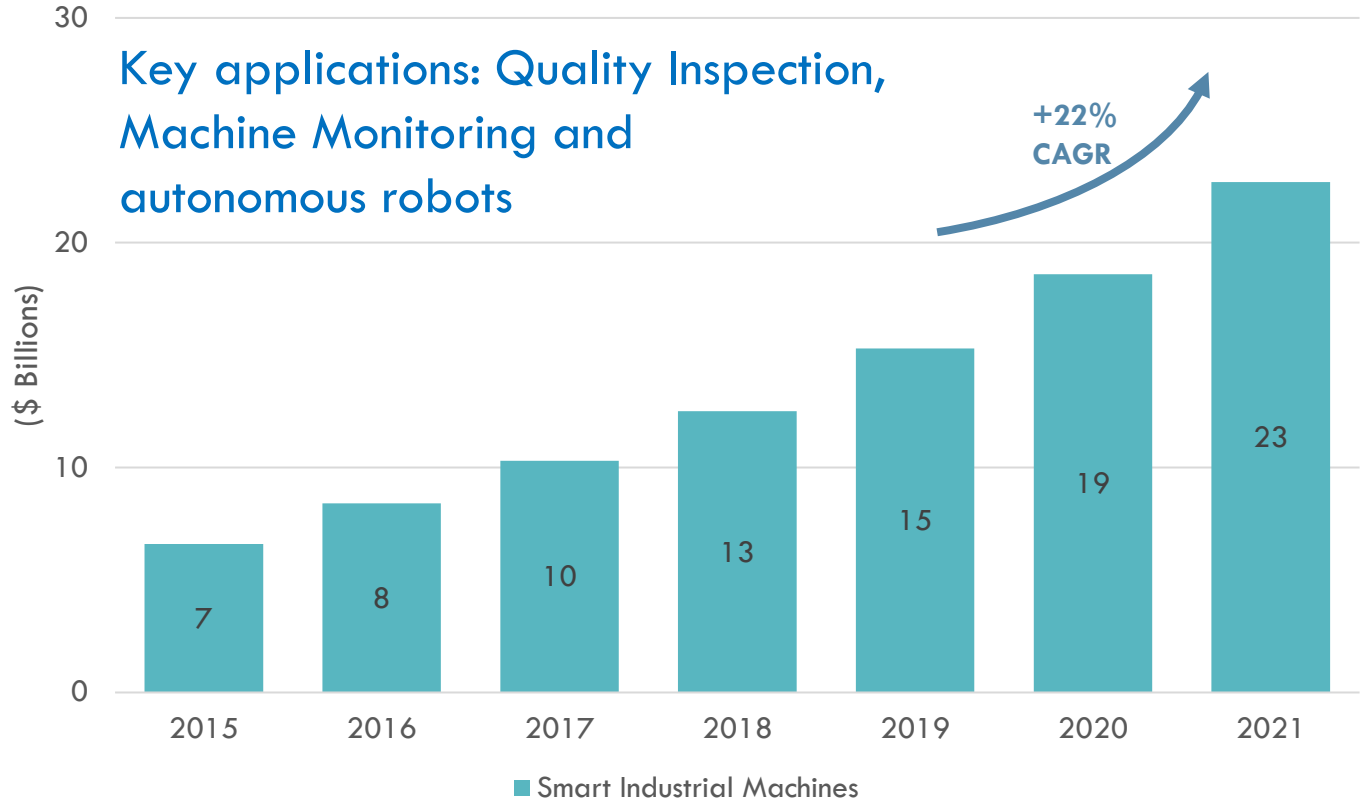
COMPETITION (Google Coral, Nvidia Jetson, Intel Movidius, etc…)

- LEARN **IN THE CLOUD**
- LEARNING TAKES **HOURS**
- FORGET AND **LEARN AGAIN**
- LEARN FROM **BIG DATA ONLY**
- LEARN WITH **IT GURUS**
- **NOT EXPLAINABLE** RESULTS
- LEARNING IS **CRAZY EXPENSIVE**

Training a single AI model with Deep Learning can emit as much carbon as 5 cars in their lifetime - MIT Tech Rev.

FOCUSING ON HIGH-GROWTH END-MARKETS

First Priority: Smart Machines & Robots



Sources BCC Research, Grand View Research

COGITO CUSTOMER TRACTION - PIPELINE

3 MAJOR APPLICATION DOMAINS

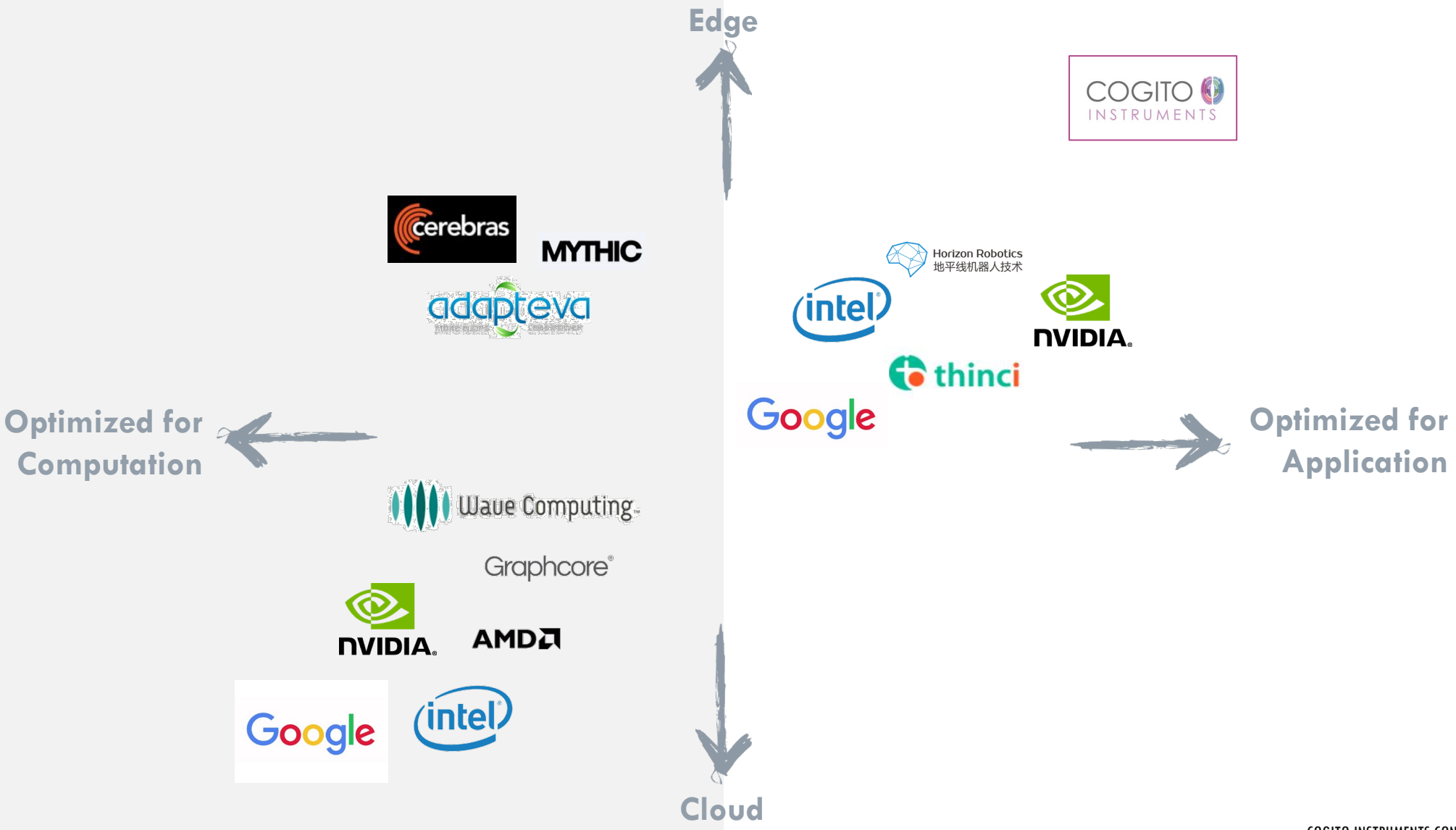
- **VISUAL INSPECTION**
  - 3 on-going pilot projects with industry leaders for deployment in 2021
  - Huge opportunity as surface inspection is still manpower intensive
  - System Integration partners in Switzerland and France.

- **ROBOT GUIDANCE**
  - Pilot completed
  - Huge opportunity as robots need to become trainable and low-cost
  - System Integration partner in Switzerland with access to Asian markets

- **MACHINE MONITORING & PREDICTIVE MAINTENANCE**
  - **+GF+** project progressing well, opening new opportunities inside GF
  - Other opportunities with large industrial companies

COMPETITIVE LANDSCAPE

COGITO INSTRUMENTS



WHO?

Innovating is easy,
Delivering innovation, and scaling it, is hard.
This team has done it, repeatedly

Philippe LAMBINET — **CEO**

. GM of $1B+ businesses at ST / Chief Strategy Officer
. **CEO of startup going to IPO & startup sold to a tech giant**

Eric JUMELET — **COO**

. BU Manager ($500M+) at ST
. Group VP Strategy at ST & COO of startups

Jacques CHAVADE — **CTO**

. Group VP Design and Engineering at ST
. Successfully introduced high-volume leading-edge products

A very strong team with a successful track record is inventing the future of real-time AI at the Edge

COGITO INSTRUMENTS

INVESTMENT

MILESTONES

Seed	€800K	Q3-17	Deliver MVP Seed industrial market Engage with 5 lead customers Partnership with National Instruments
Pre-Series A	€1300K	Q3-18	Engage more MVP customers Finalize Gen2 definition and deliver: . Patents . Detailed architecture specification . Neuron simulation and FPGA
Series A	**€5000K**	**2020**	Implement Gen2, protos in 12 mths Engage lead customers with Gen 2 More MVP customers engaged Build the team (R&D, Sales, Support)

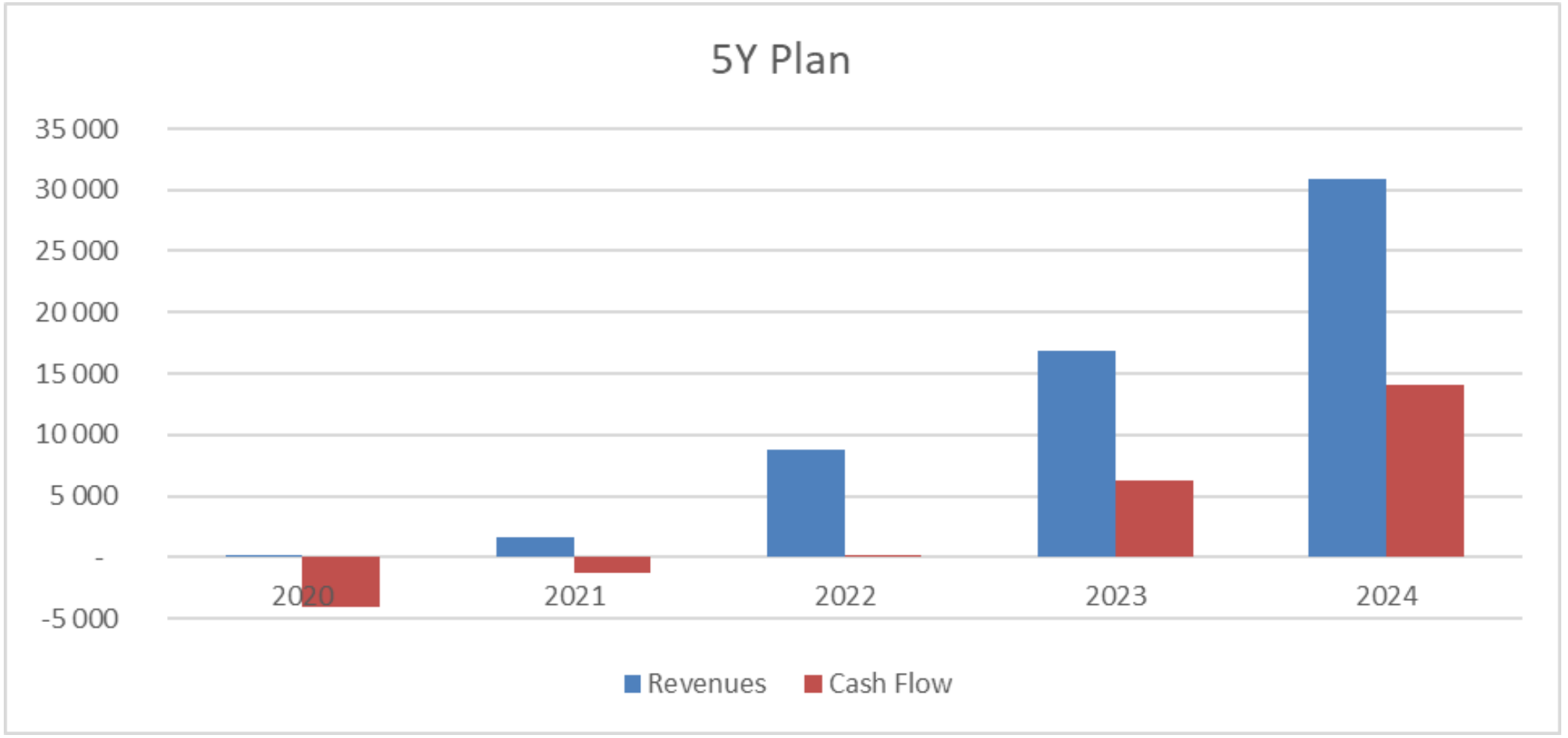
Done

Use of Proceeds
1/3 SG&A
2/3 R&D

5 YEARS RESOURCE PLAN

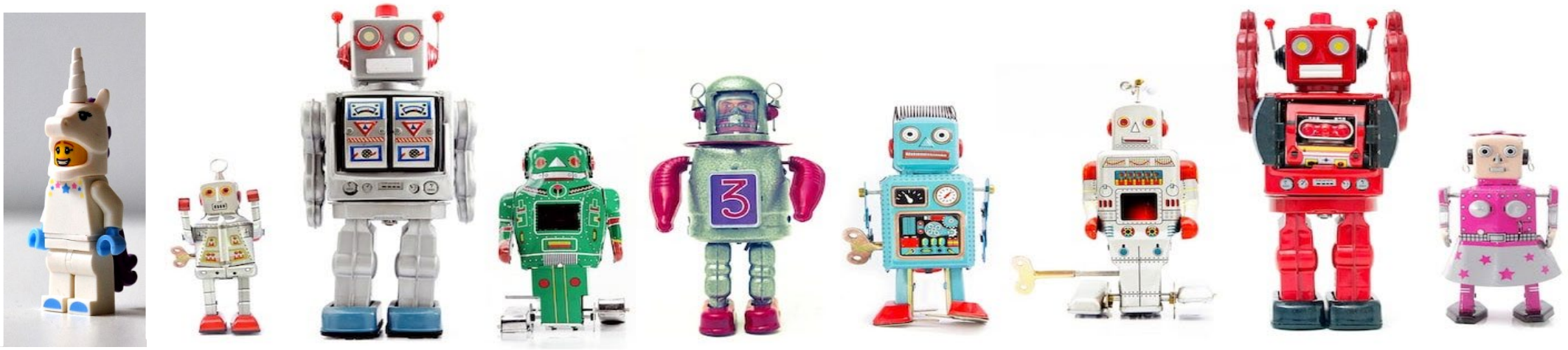
Resources end of YEAR	2020	2021	2022	2023	2024
Management	3	3	3	3	3
R&D Headcount	5	8	14	19	23
R&D Subco	0	0	0	0	0
Apps Devpt & Support	2	2	4	6	9
Sales & Marketing	2	2	5	8	10
Admin & Finance	1	1	2	3	4
Geneva	**6**	**6**	**11**	**17**	**22**
Grenoble	**7**	**10**	**17**	**22**	**27**
TOTAL	**13**	**16**	**28**	**39**	**49**

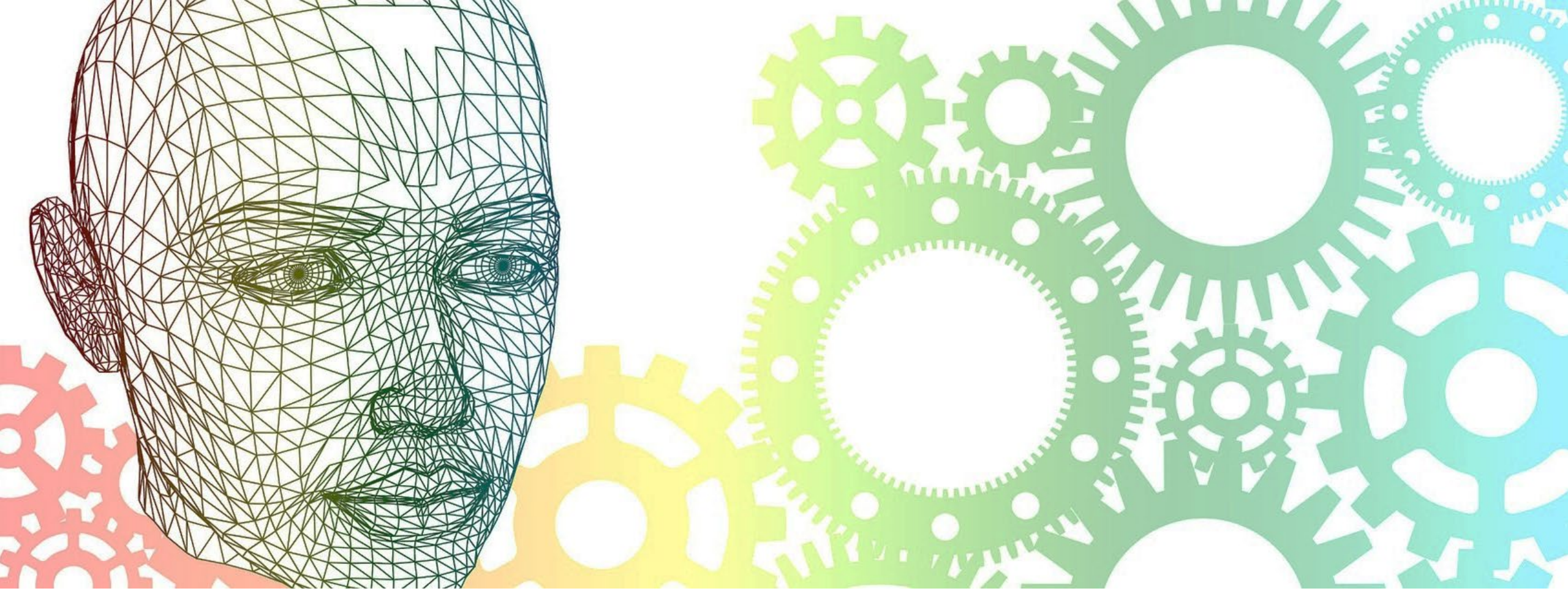
5 YEARS BUSINESS PLAN



COGITO: THE VALUE IS IN THE WISDOM

DATA ⟶ KNOWLEDGE ⟶ WISDOM





APPENDIX

COGITO INSTRUMENTS

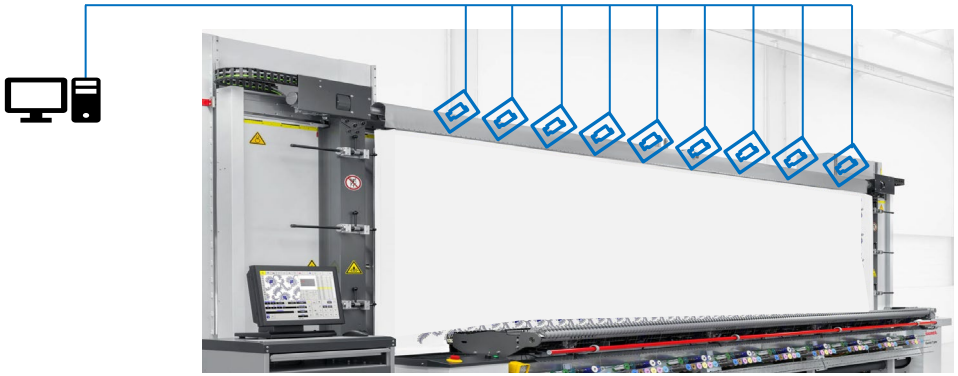
COGITO PILOT PROJECTS – VISUAL INSPECTION

SEVERAL ACTIVE PROJECTS BASED ON OUR CORE1 GENERIC PLATFORM

- **Surface Inspection Writing Instruments (2021 deployment)**

- **Visual Inspection Cosmetic Bottles (2021 deployment)**

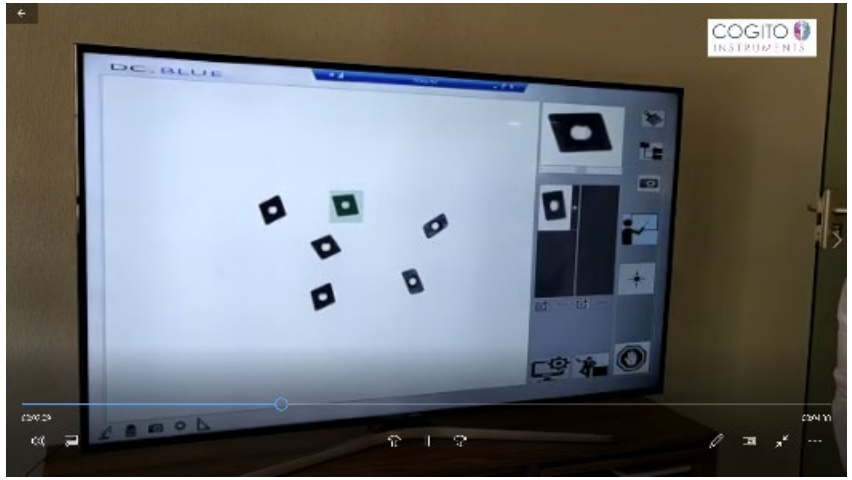
- **Visual Inspection of Textile/Paper**



COGITO PILOT PROJECTS – ROBOT GUIDANCE

COOPERATION WITH AN INDUSTRIAL PARTNER (SUNROCK) TO BUILD A COMPLETE GUIDANCE SOLUTION BASED ON OUR CORE1 GENERIC PLATFORM

- **READY TO DEPLOY** AS SOON AS COVID-19 ALLOWS
  - STRONG INTEREST IN ASIAN MARKETS
- **EASY TO TRAIN** – NO PROGRAMMING NEEDED
- **ROBUST** AND FAST RECOGNITION
- **UNIVERSAL** - ADAPTS TO ANY PICK AND PLACE ROBOT



ALL AVAILABLE GUIDANCE SOLUTIONS NEED PROGRAMMING AND/OR LARGE TRAINING DATA SETS AND CANNOT BE TRAINED IN REAL TIME BY AN OPERATOR. **COGITO SOLVES A MAJOR INDUSTRY PROBLEM.**

GF Machining Solutions

GFMS DIGITAL TRANSFORMATION PACE PROJECT: A COLLABORATION WITH COGITO

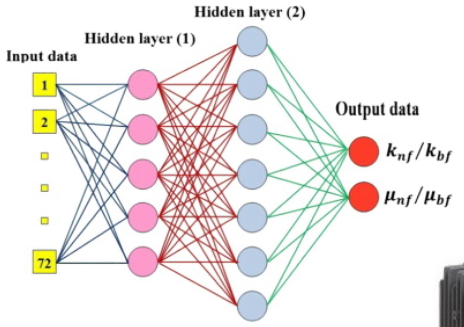
THE HURDLE: ETRACKING DEFECT DETECTION

SELECTED SOLUTION

AI HARDWARE CLASSIFICATION SYSTEM

Cogito Instruments

- Innovative hardware accelerated Neural Network concept (RBF).
- Fast and deterministic : constant Low Latency of 50µs for any knowledge complexity.
- Designed for real-time image processing, or multipurpose signals (sensors, etc.)
- Evolving and context sensitive, thanks to Machine Learning approach.
- Compact hardware solution (NI Compact-RIO for prototyping)
- Quick development of algorithms and front-ends (NI LabVIEW)



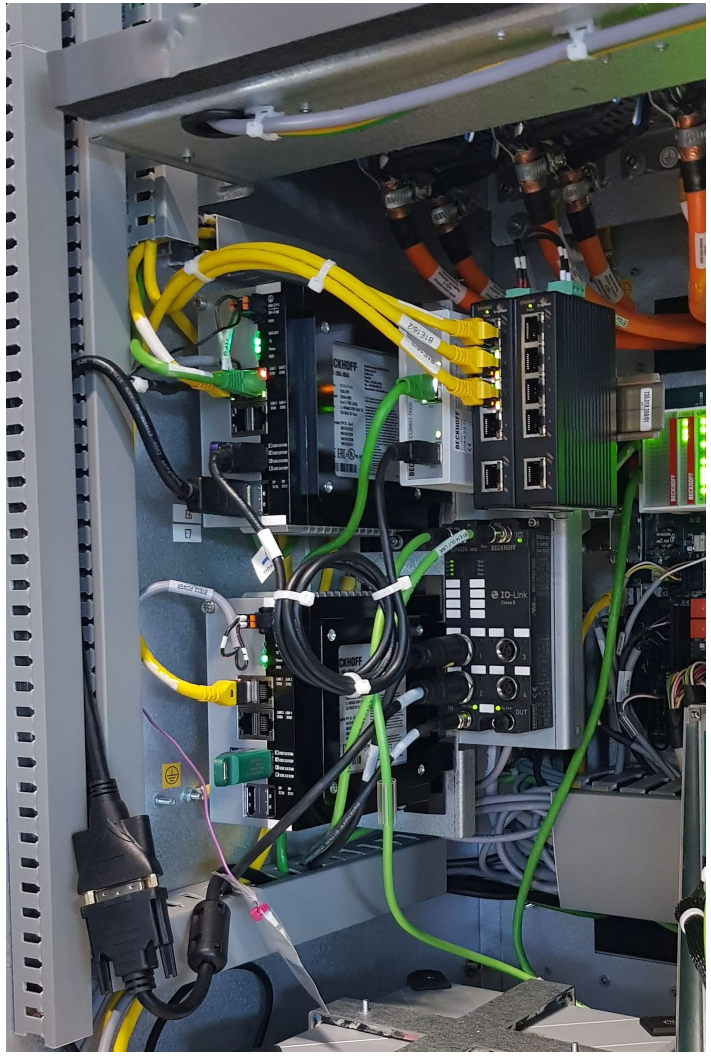
COGITO INSTRUMENTS https://cogitoinstruments.com/

BENEFITS

Highly portable system

the system is exploitable for many TU applications

(yet not intrusive to the process).



Unlimited uses cases

- Image & Signal processing
- Modelling where BIG data with many variables have to be considered

Extremely accurate on prediction

(≈95% of success, ±50µm localization)

able to generalize knowledge to find new anomalies.

Safe, simple and accessible

COGITO ECOSYSTEM DEVELOPMENT

- PARTNERSHIPS
  - Already 4 system integration partners active (Switzerland, Italy)
  - 2 more in discussion (France)
- 2 INNOSUISSE PROGRAMS
  - MACHINE MONITORING WITH GF and HEPIA Electronics Lab
  - COGITOOLS with HEPIA (Optics, AI and Electronics Labs)
- Signed MOU with STMicroelectronics