Making the invisible visible

to contribute to
the **health** & **safety**
of **people** & **ecosystems**

VOCSens
Smart sensing solutions

Gas emission control

and **air quality management**

have become major **global public health** and **economic challenges**

VOCSens
Smart sensing solutions

Problem solving

Legislation regarding gas emissions is about to be **repressive**
e.g., ammonia, nitrogen and methane emissions in Agri-Food and Chemical

Currently, there is **no easy-to-integrate**, **reliable** and **cost-efficient solutions** for emission monitoring

Testimonials

- **Dr. An Verfaillie**, Flanders Research Institute for Agriculture, Fisheries and Food

ILVO

"We test various sensors and the one from VOCSens is interesting because it is **simple** and cheap. The innovation lies in the combination of new sensor technology and artificial intelligence. If you can teach such a **robust** sensor to distinguish ammonia in the gas mixture that comes from an industrial farm, then you are very close to a **reliable** and **affordable** monitoring tool for livestock farming. That would make a big difference for the sector."

VOCSens Smart sensing solutions

EnviCam® product family

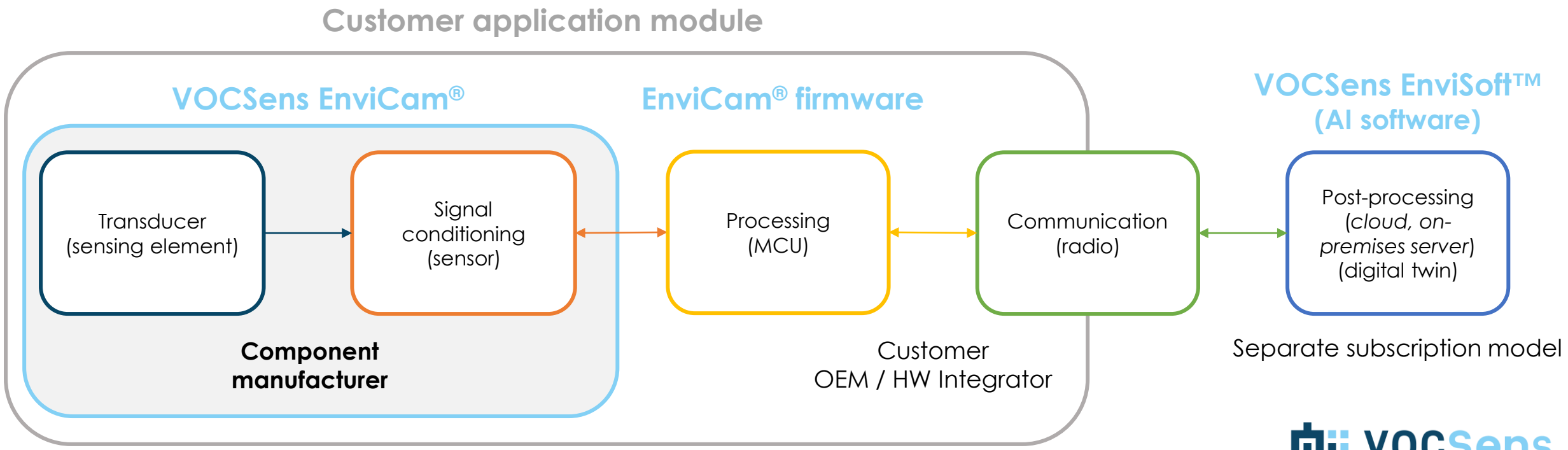
"Environmental camera concept"

Our products make the invisible visible, by combining **multiple gas sensing materials** on a **patented transducer array** with **proprietary ASIC and machine learning**

VOCSens
Smart sensing solutions

VOCSens value proposition

Our solutions cover the entire gas sensing value chain, from collecting raw data transforming it into **actionable information** for decision-making application



Full market-fit solution

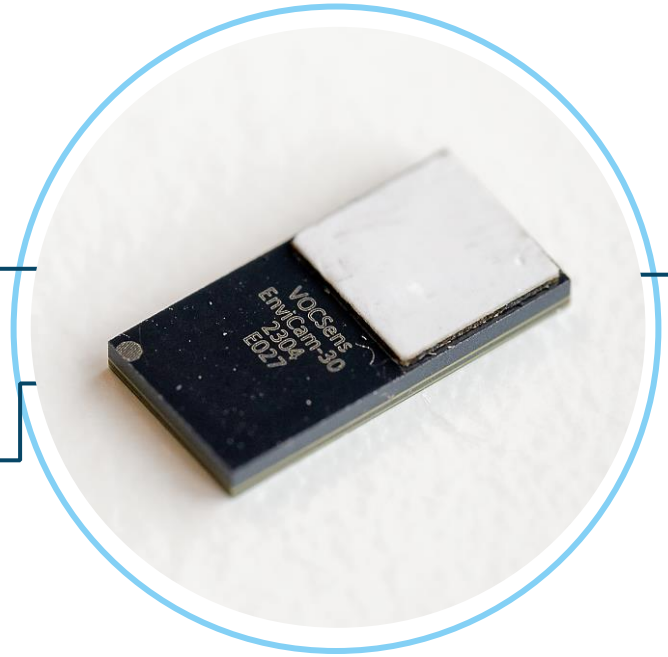
VOCSens products answer key market requirements

Selectivity

to the target molecules

Autonomy

in terms of calibration needs/maintenance & energy consumption



Integrability

in terms of miniaturization & cost efficiency

VOCSens
Smart sensing solutions

EnviCam®-3x product line

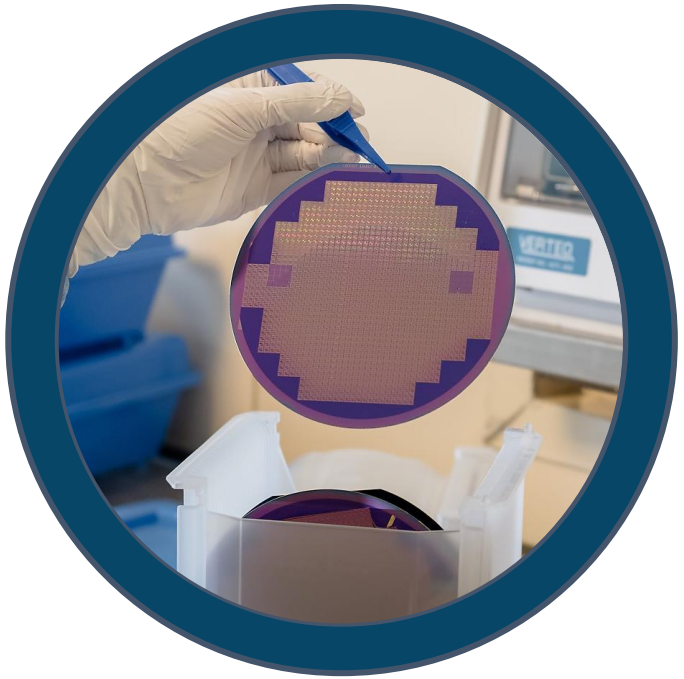
Multi-gas CMOS integrated microsensors

- ✓ **Transducer array**, multi-pixel (up to 16 pixels), chemiresistive working principle
- ✓ **Patented CMOSEnvi™ technology** towards multiple sensing materials integration on a semiconductor chip (polymer and nanocomposites), operating at room temperature
- ✓ Co-integration with **ultra-low-power sensor interface** (**ASIC**)
- ✓ **Self-calibration AI-based algorithms** for maintenance less applications

VOCSens
Smart sensing solutions

EnviCam®-3x product line

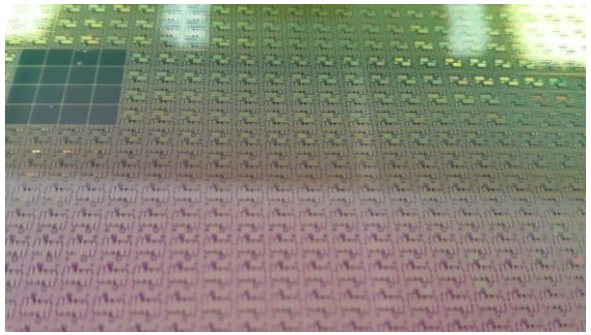
Multi-gas sensing capabilities on a single chip



CMOSEnvi™ post-process at large-scale (mass production), **patent PCT/EP2020/076048**

Sensing material integration:

- Electropolymerization (ECD)
- Inkjet printing (drop casting)
- Spray coating



VOCSens
Smart sensing solutions

Request to generate actionable insights

VOCSens solutions help extract and provide **qualified and reliable multi-gas concentration data** for **high value-added applications**

Environment & Air quality monitoring

- **Societal concern** (well-being, COVID-19, climate, etc.)
- **Legislation**
- **Industries**, **agriculture**, **building**, etc.

Health & Safety

- Leakage of toxic and/or explosives gasses

Process control

- Pipeline monitoring
- HVAC steering
- Facility management
- Fruit logistics

VOCSens
Smart sensing solutions

Main market applications

Agri-Food & Recycling

EnviCam-3x-AFR
(NH_3, CO_2, CH_4, C_2H_4O)

Smart Building

EnviCam-3x-SMB
(CO_2, NO_2, HCHO, CO, NH_3)

Chemical and Oil & Gas

EnviCam-3x-COG
(NH_3, NO_2, CO, CH_4, H_2)

VOCSens
Smart sensing solutions

Company profile

Origins

UCLouvain spin-off, established in 2019, **seed fundraising** of 2.5M€ in September 2021

Location

Located in **Mont-Saint-Guibert, Belgium**, close to Louvain-la-Neuve Science Park (30 minutes from Brussels)

Team

18 highly motivated people (as of October 2023)

- Chief Executive Officer: *Dr. Thomas Walewyns*
- Chief Scientific Officer: *Dr. Yann Danlée*
- VP Sales: *Bram Senave*
- *VP Product Development: Dr. Guillaume Pollissard*

Ecosystem

Benefit from **20+ years of research from the UCLouvain laboratories** in gas & environmental microsensor, as well as related IC interface, including **many collaborations** (UMONS, Materia Nova, Certech, UNamur, CeREF, IMT Bucharest, ENEA, LIST, etc.)

VOCSens Smart sensing solutions

Company profile

Current investors

Industrya

THE INNOVATION FUND
INNOVATION THAT IMPACTS

WE Wallonie Entreprendre

invest. bw

VIVES

VOCSens
Smart sensing solutions

VOCSens in 2023

4.4 M€ raised so far

- **Equity**: 2.65 M€
- **Loan**: 0.4 M€
- **Grant**: 1.35 M€

Product-oriented

- **Full manufacturing** chain with dedicated subcontractors
  - ✓ Transducer + Functionalization
  - ✓ ASIC
  - ✓ Packaging
- Compatibility towards **mass testing & validation**

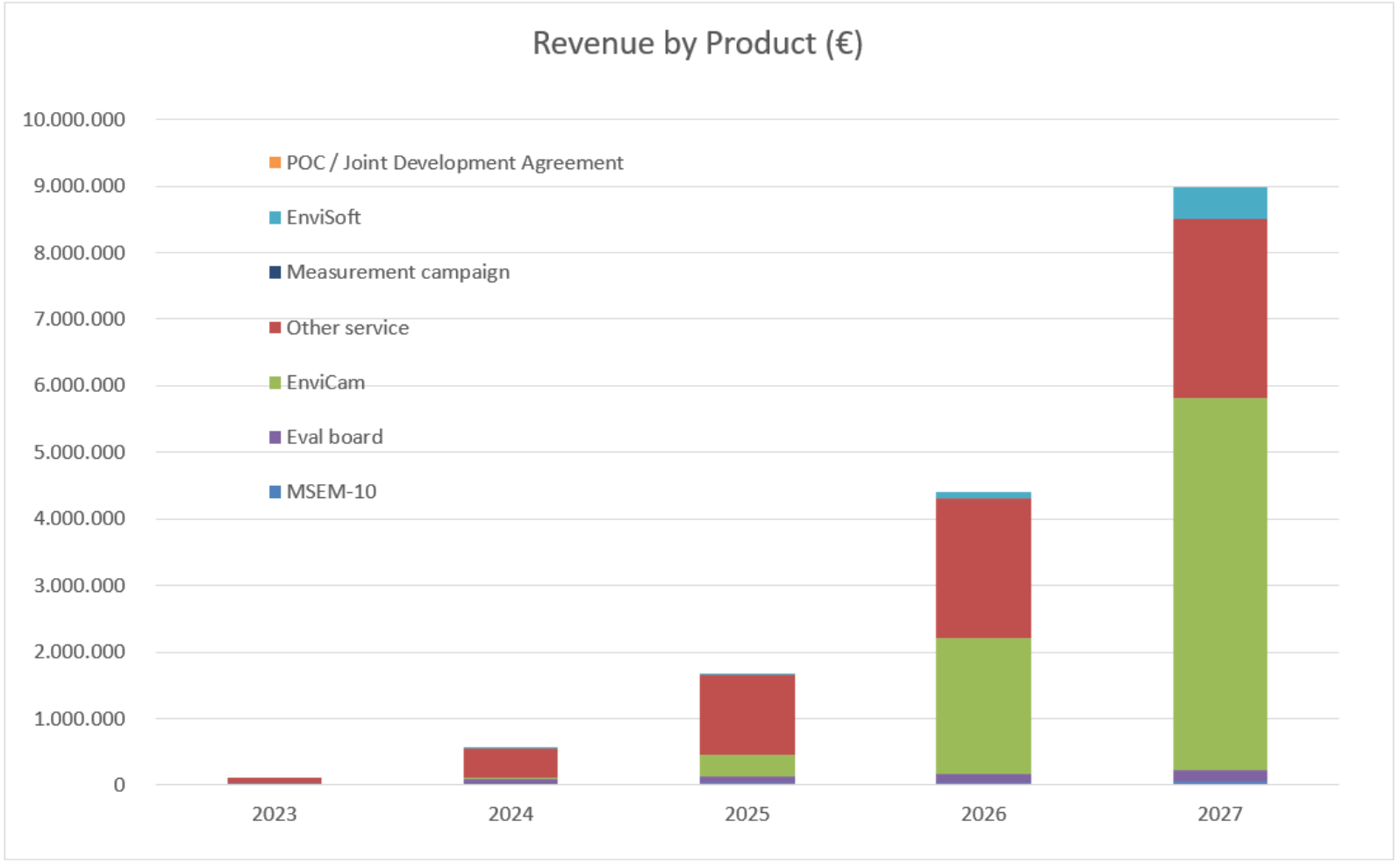
Strong IP

- **Patented microfabrication process** and **transducer array**
- **Proprietary sensing materials**
- **Proprietary ASIC**
- **Proprietary** IP64 **package**
- 3 patents under preparation

Sales

- **Measurement campaign** with system integrators for about 100 K€ in 2023, 200 K€ expected in 2024
- **Collaboration contract** with RHEA and ESA for 375 K€ in 2024 – 2025
- Collaboration contract under negotiation with **main industry player**
- **Sales ops**: 2 ongoing design-in, volume target > 100.000 units, 5 ongoing evaluations

Sales growth



VOCSens
Smart sensing solutions

Future

- Bridge of 2M€ planned for November 2023
- Next fundraising by Q4 2024, objective 5M€ for 2025 – 2026, including
  - Commercial scale-up (1 M€)
  - Production consolidation (1 M€)
  - Product development (2 M€)
  - Technological strengthening (1 M€)
- Full business plan being updated
- Restructuration ongoing towards full product-market fit with new CEO hiring

Thank you!

Contact:

Thomas Walewyns,
Co-Founder & CEO
+32 479 54 23 52
thomas.walewyns@vocsens.com

VOCSens
Smart sensing solutions