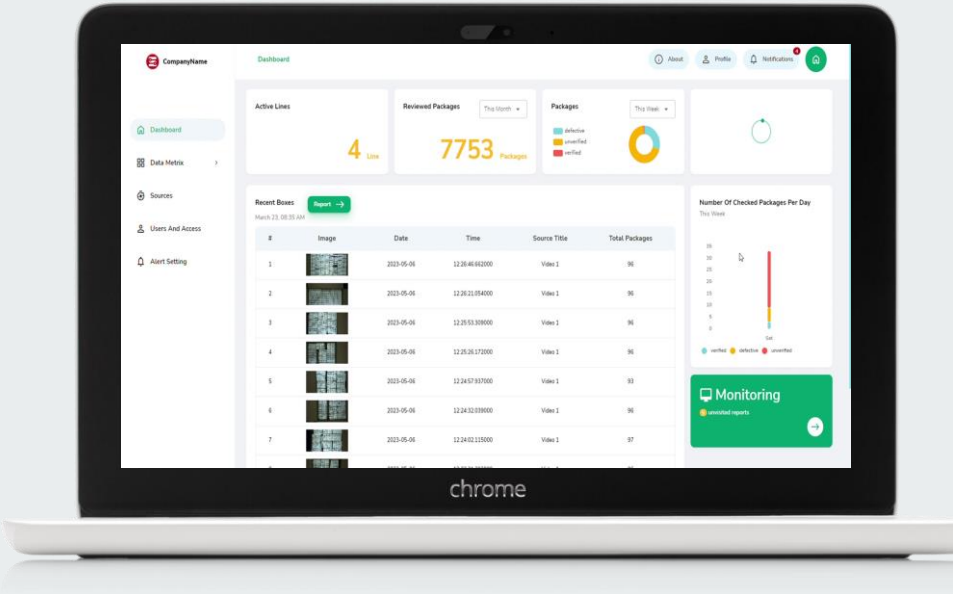
MASSIVE DATA MATRIX IMAGE PROCESSING IN PHARMACEUTICAL LOGISTICS

intrasensors
Smart Sensors Powered by AI

COFARES REACH Incubator



Company Profile

intrasensors
Smart Sensors Powered by AI

is a tech-startup was founded in Belgium in 2020 to develop and create smart sensors and solutions to help people around the globe to live in a safe and smart environment.

Current Number of Employees:

9

6

3

PhD	M.Eng	B.A.Sc
4	4	1

Key Members:

K.M. Aghdam
Founder & CEO

M. Bahari
Advisor

S. Sarvi
PMO Manager

A. Heravi
Technical Manager

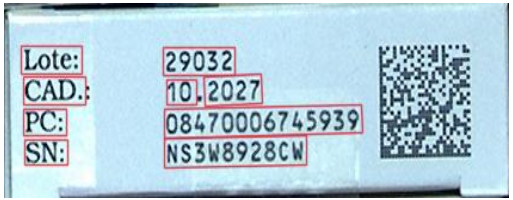
Problem Statement & Our Solution

Problem:

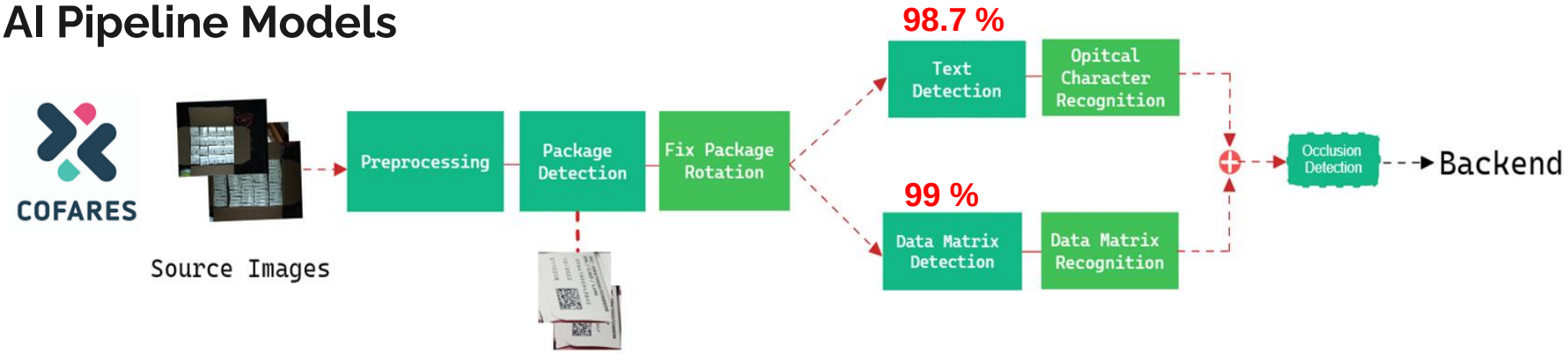
- All medicines packages identified with a **Unique Serial Number** which in coded in a **Data Matrix.**

Solution:

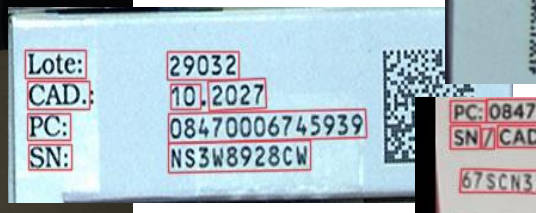
- Our **Ai-powered solution**, detects Serial number and Data matrix Simultaneously and compare and report Incomplete **Data Printing on Medicine packages.**



AI Pipeline Models



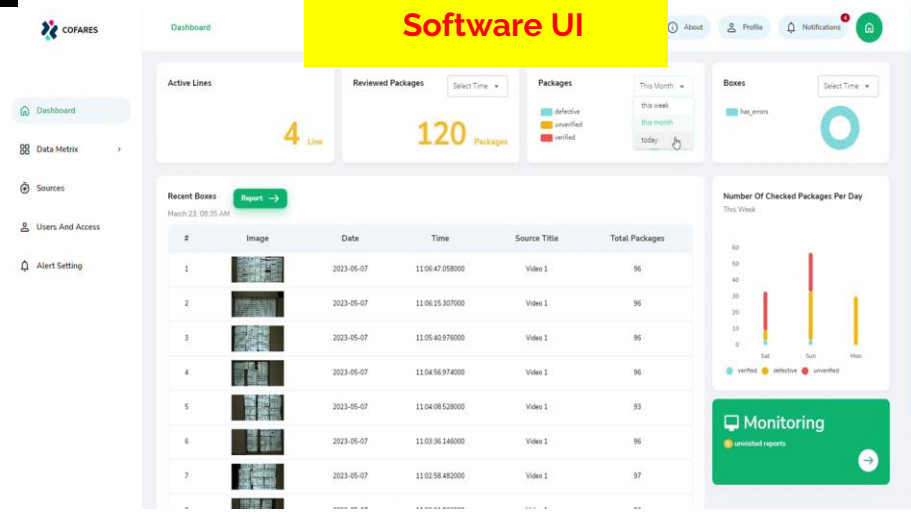
Results



Data Matrix System	
CPU	i5 11400F
RAM	16GB DDR4
Graphic Card	VGA RTX 3060 12 GB
Storage	NVMe 512GB
Case	Green mid-tower Pars-EVO
Power	Green 550+ watt

Scanning Labor cost reduction up to 90%

Software UI



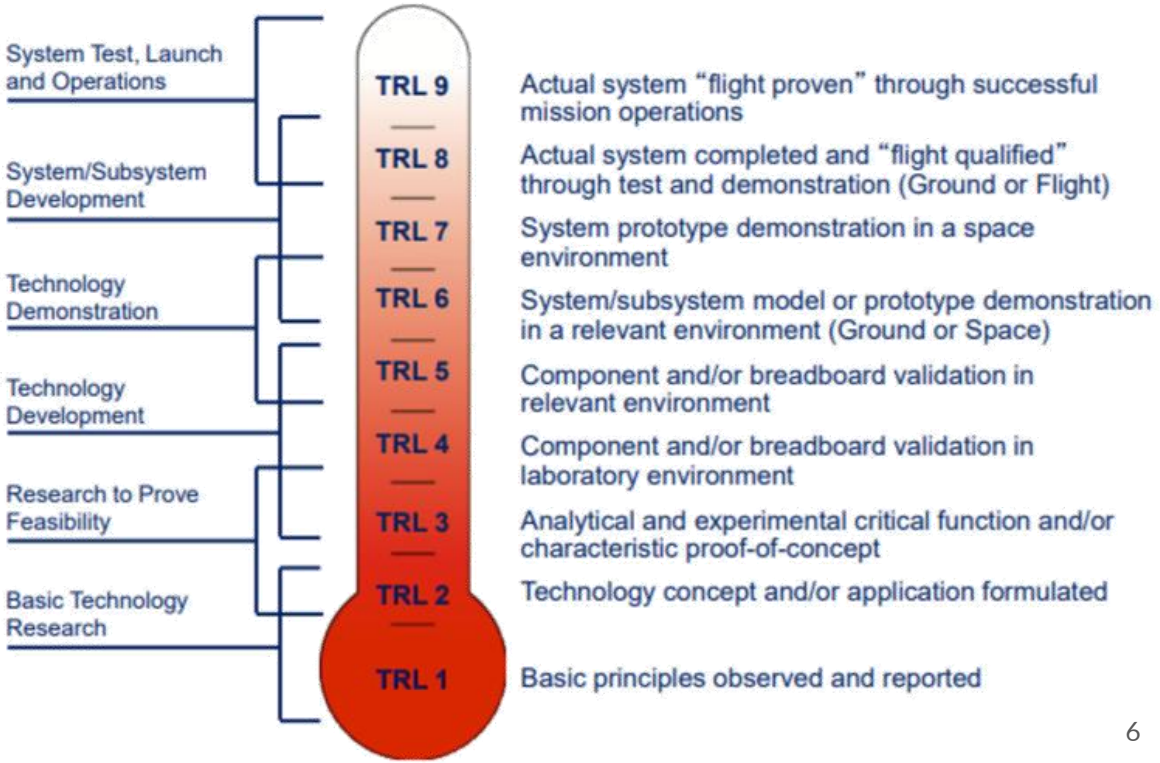
Risk Management

Risk Register	Risk Response
Limited generalizability	By modulated concept, we can easily develop the MBDP
Sensitivity to extreme conditions, Limited real-world experiments, and Adaptation to new regulations and standards	Our solution has been designed and tested to be adaptable in various conditions, according to the feedbacks and insights from industry's used case (espaciallty from COFARES). Some limitions comes from the hardwarw sensors and its mountiong condition such as the lightning and camera placement.
Scalability and resource management for very large scale situation	we have implemented a robust infrastructure that can handle increased demand by minimizing the computation resourse and results extraction time. Thanks to the modular AI models implemented in our solution, the proposed system utilizes scalable technologies and efficient resource allocation algorithms to ensure optimal performance even under high load conditions.

Solution Maturity

- **~100% Detecting Accuracy**
- Cutting-edge AI-powered solutions
- Modulated Scalable Solution
- Real-time processing
- Fully automated process
- Compatible with low-cost PC resource
- Monitoring multiple camera streams
- User-friendly UI

Medical Big Data Processor (MBDP)



Main Benefits

High Accuracy & Success Rate in Detection

Thanks to fully automated packing inspection, the number of employees involved in the logistics line reduces from 10 individuals to one person

Designed to be scalable and adaptable across diverse industries that engage in logistics

Market Size

Other pharmaceutical logistics companies:

- Walgreens Boots Alliance (Headquartered in the United States, but operates in Europe through its Boots pharmacy chain)
- Johnson & Johnson (Headquartered in the United States, but has operations and subsidiaries in Europe)
- Novartis AG (Headquartered in Switzerland)
- Roche Holding AG (Headquartered in Switzerland)
- Sanofi (Headquartered in France)
- GlaxoSmithKline plc (Headquartered in the United Kingdom)
- AstraZeneca plc (Headquartered in the United Kingdom)
- Bayer AG (Headquartered in Germany)
- Teva Pharmaceutical Industries Ltd. (Headquartered in Israel, but has operations and subsidiaries in Europe)
- Eli Lilly and Company (Headquartered in the United States, but has operations and subsidiaries in Europe)

US$ 1,325 Billion

The global pharmaceutical drug delivery market size reached **US$ 1,325 Billion** in 2022. Looking forward, IMARC Group expects the market to reach US$ 1,848 Billion by 2028, exhibiting a growth rate (CAGR) of 5.5% during 2023-2028.

USD 10.260 billion

The pharmaceutical packaging machines market is projected and estimated to touch **USD 10.260 billion** by 2028.

Our Business Model

Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer Segments
• REACH Incubator • COFARES • Partnerships	• R&D • Marketing • Solution Optimization • Technology Setup • Test & Go-live	• Real-time Image Processing • Smart Dashboards • Flexibility to Future Development • Module based Software • Standard Data Bank • Centralized Monitoring • High Security	• Regular Communication • CRM	• Accelerators • Logistic Companies • Smart Packing
	Key Resources • Intellectual Property • Researchers • Software		**Channels** • Website • Social Media • REACH Network	

Cost Structure	Revenue Streams
• Salary (Researcher, Engineers, Developers) • Promotion and Marketing	• Funds • Founder Investment

After conducting thorough market research, we have successfully developed a robust business model for our solution. The good news is that our solution caters to multiple customer segments, offering a unique value proposition tailored to each of them. We understand the importance of staying ahead in a dynamic market, which is why we continually assess the market conditions and update our action plan using a rolling-wave-planning approach that allows us to address emerging issues effectively.

Our Future Roadmap

Improvement Projects in the Future Steps

- ➔ Expanding the AI pipeline
- ➔ Integration with other systems
- ➔ Improved handling of challenging conditions
- ➔ Adaptation to new packaging formats
- ➔ Enhanced UI/UX design
- ➔ Security and privacy enhancements

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Walk with us into the FUTURE …

Questions?