



Powering Efficiency



# Who are we?

**MEMSYS** develops wireless devices that generate their own electricity from vibrations - a technology called energy harvesting.

**Our vision:** a future where energy harvesting technologies are integrated in every wireless device and replacing batteries is a thing of the past.



B2B hardware + software



Raised €750k pre-seed



Railway telematics



Based in Delft



Thijs Blad  
CEO

Dion Hogervorst  
Lead Engineer

Tamar Yovell  
Data Scientist

Robin Geuze  
Lead Software  
Developer



Kiet Foeken  
Intern

Alfonso Lizza  
Intern

Sander Kooiman  
Intern

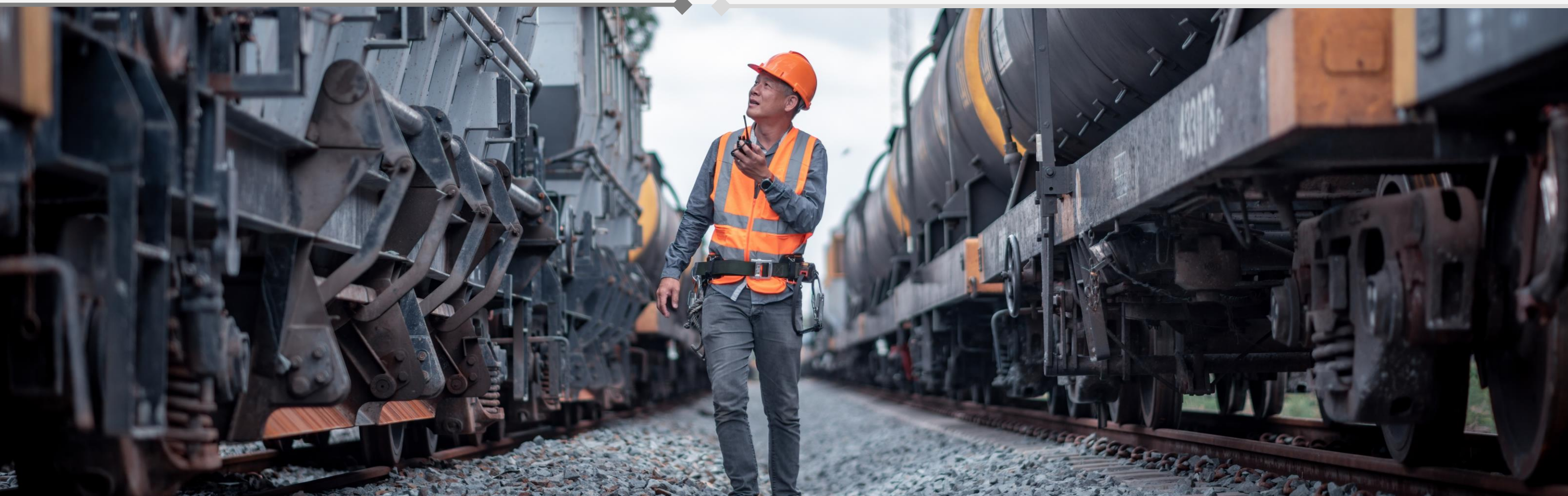
Joost Bankras  
Intern



# Problem

Asset managers in the railway industry frequently deal with unexpected technical defects. The current reactive approach results in unscheduled downtime, operational disruptions and high maintenance costs.

Visual inspections the main method of identifying technical defects, they requires a lot of time and human resources and often misses the early signs of defects that are barely visible.





# Our solution

We're developing an on-board remote monitoring solution for wheel defects



A bogie-mounted IoT module with sensors ...

... connected to the cloud for analytics and reporting



# Key enabling technology

We have developed and patented kinetic energy harvesting technology that converts vibrations into useful electrical power that feeds the sensor system.

This gives our solution the unique sales proposition that it is **fit & forget** - it is easy to install and has low operational costs because no cables are needed, and no battery replacements are required

As a result, this system is suitable for deployment on freight wagons that don't have wired power





# Market

The global market for railway telematics systems is rapidly growing due to increasing demand from the freight segment and significant tailwinds provided by government initiatives. This provides a huge opportunity for monitoring solutions that improve availability, safety and efficiency of the **6.2M** freight wagons worldwide.

**6 Billion**

Global market for railway telematics

**TAM**

**100 Million**

European market for freight wagon telematics

**SAM**

**3 Million**

Estimated revenue from regional railways and transporters of dangerous substances in NL, BE and DE

**SOM**

(By end of 2026)





## Live on 5 trains

Over this year, we have developed a first prototype and are currently piloting this system at our pilot customer in Germany

We have installed 10 units on 5 of their trains, and are right now, these units are operational in normal conditions and are continuously measuring and sending real-time data

With this data we are validating 2 use-cases:

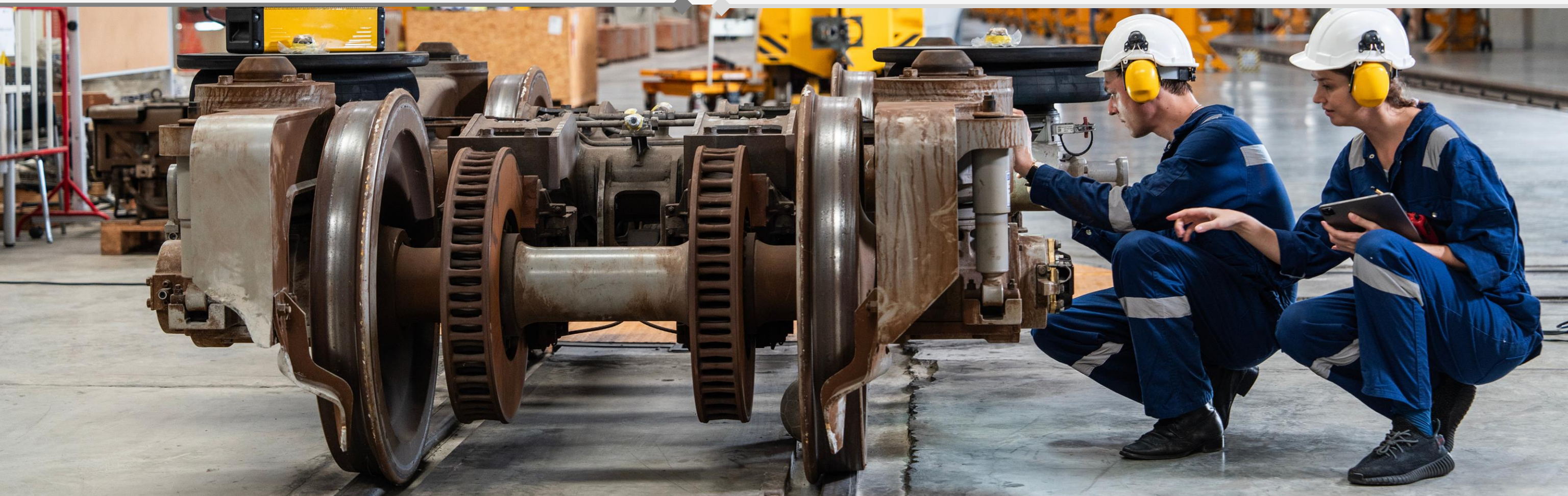
- Automatic detection of flat spots
- Automatic detection of hotspots in track settlements



# Call to action

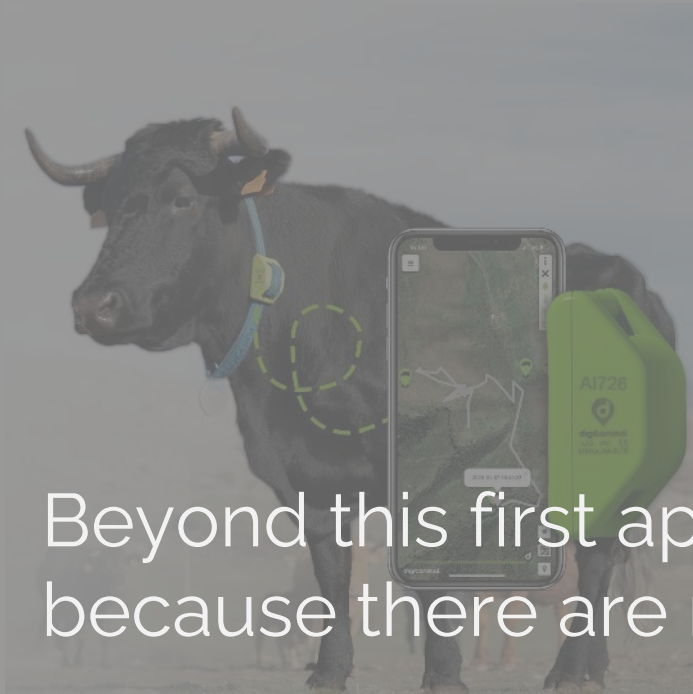
We're looking for closed railway systems where we can pilot our solution in a controlled environment: shunting yards, regional railways, industrial sites.

In the pilot, we can provide continuous monitoring of the wagons and infrastructure and real-time reporting on identified damages.





# Follow on markets



Beyond this first application on trains, this technology has a huge potential to scale because there are many similar applications in other industries.



In our vision, energy harvesting technology will become a platform that enables thousands of IoT products. We want to become the leading firm in this segment.





Powering Efficiency

[www.memsys.nl](http://www.memsys.nl)  
[thijs@memsys.nl](mailto:thijs@memsys.nl)