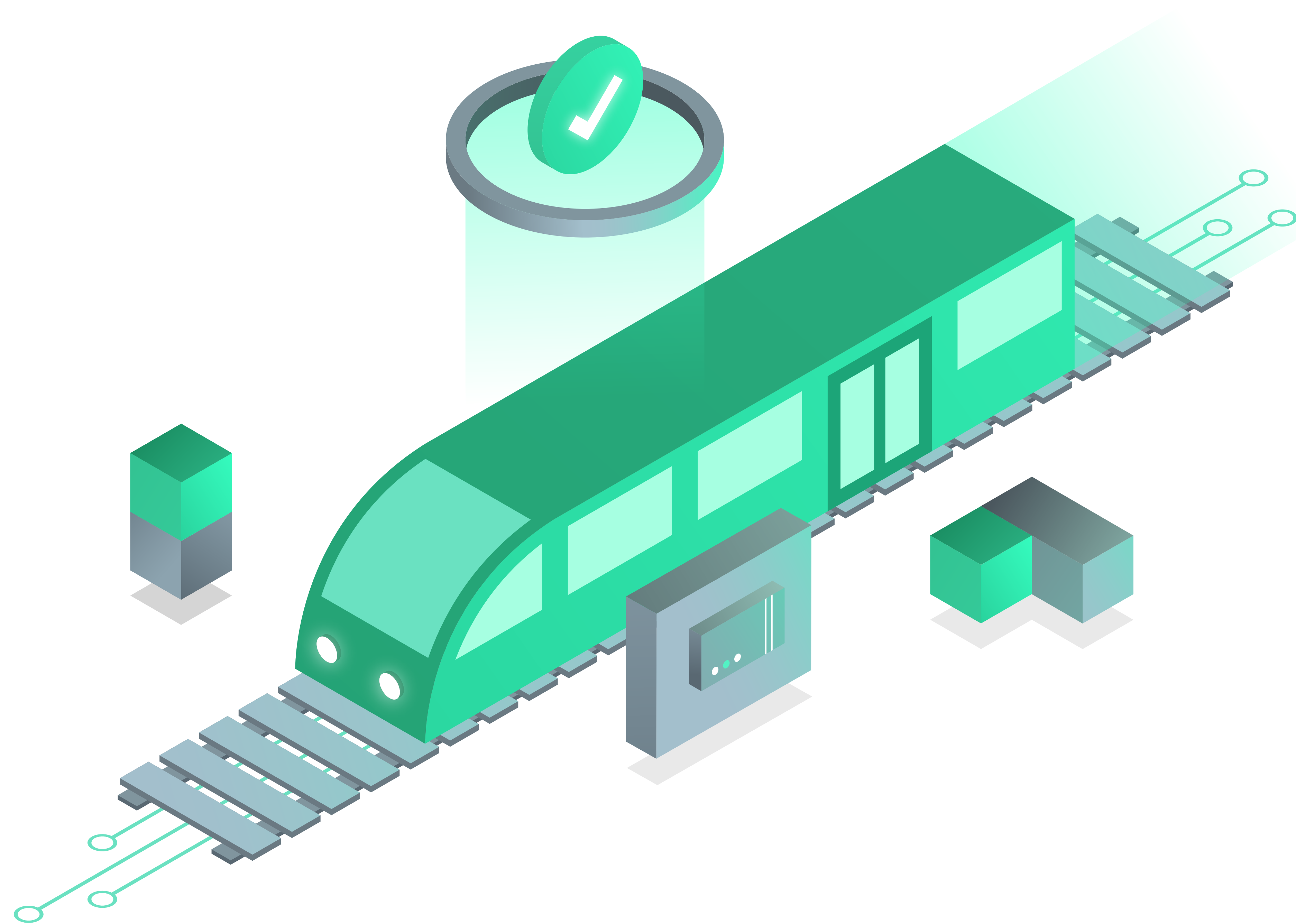




THE A.I.  
ENABLED  
RAILWAY \_

FIBER SENSING ACROSS YOUR TRACKS



# WHAT IS DISTRIBUTED FIBER SENSING?

Your trains travel along fiber optic cables that are flowing with valuable, untapped data. But what if you could harness that data?

While optical fibers generate incredibly high-resolution signals, it's been difficult to extract detailed information from these signals in the past. Now, the evolving capacity of A.I. is changing that.

By enhancing **Distributed Acoustic Sensing (DAS)** or other similar devices with Artificial Intelligence, we can tap into the information already available within your fiber optic cables to detect patterns and convert them into vital business information.

Installing DAS or other similar devices at regular intervals and combining them with Advanced Deep Learning techniques will allow you to analyse, monitor and extract the intricate data running through your cables to improve safety and security across your rails – all while enabling business growth.



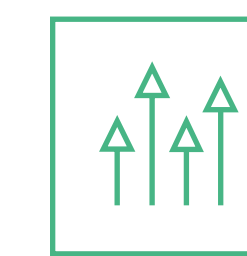
# TRACKING BUSINESS BENEFITS

Distributed Fiber Sensing doesn't just improve your crew's safety – it frees your business growth from the constraints of current technology and takes rail security to the next level.



## MONITOR RAIL CONDITIONS

DFS helps to cover the parts of your tracks that aren't GPS-enabled, giving you real-time information. This is useful for identifying any irregularities, like damage, defects and offset joints.



## ACCURATE TRAIN MONITORING

DFS allows you to track trains and their types throughout your entire rail system. This means you can access information such as location, travel speed and estimated journey length at any time. In turn, this allows you to make operational improvements, such as faster updates of station timing boards.



## IMPROVE CREW SAFETY

Having eyes on your crew at all times will help you to make sure they're safe and allow you to monitor their progress. You could even place DFS in any specific areas that you feel are particularly hazardous.



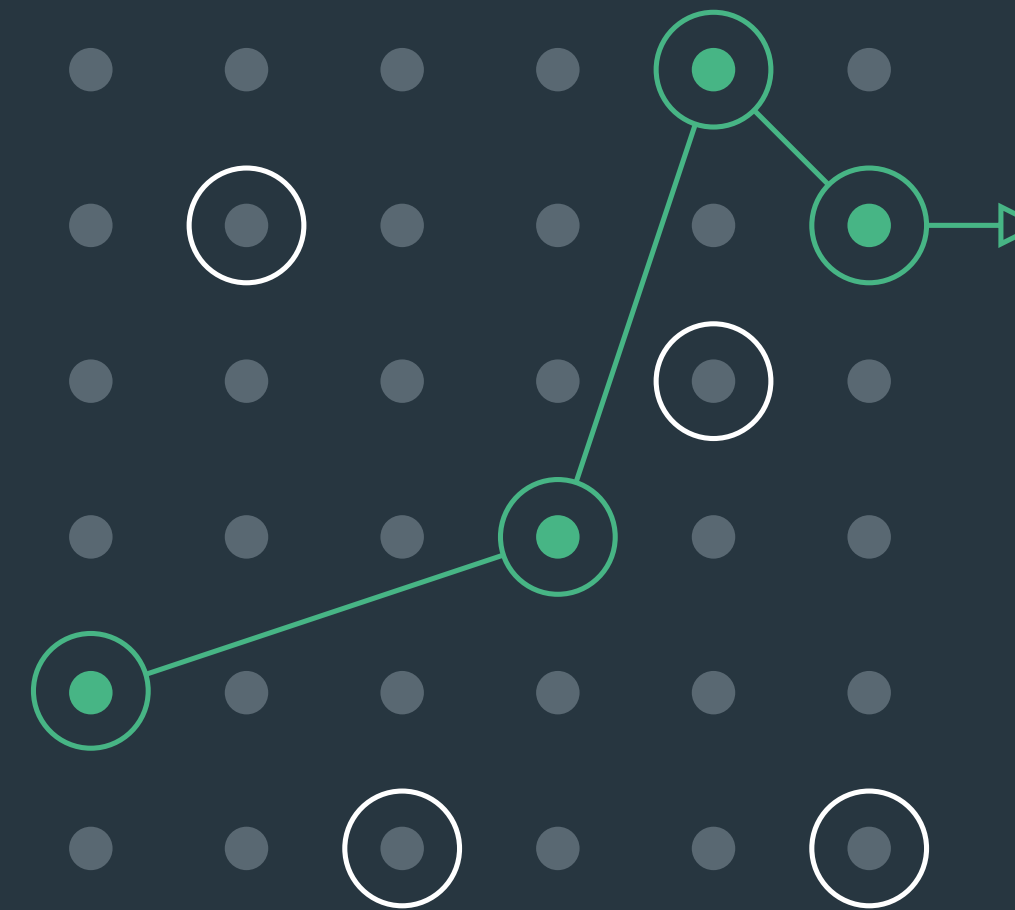
## CLASSIFY EVENTS

DFS also helps you locate and classify events that occur on the track in real time. This includes things like fallen rocks or trees, catenary flashes, trespassers, animal crossings, cable theft, vandalism and more.

# OUR PROCESS

Implementing Distributed Fiber Sensing into your business. We'll begin by assessing your tracks and establishing the devices you'll need to get started.

Then, we'll implement our tried-and-tested A.I. process to get your DFS solution up and running as early as possible.



## ► DISCOVERY

Examining the data you already have, we extract what we need and create an effective A.I. This is done by running multiple experiments to fully understand the model needed and the accuracy we can achieve. We make sure our A.I. can generate valuable information before we begin, which helps us to meet your expectations.

## ► PROOF OF CONCEPT

Then, we begin to develop a working A.I. solution, test it in a real work context, and fine-tune the ways in which it can deliver true value, insights, and automation for your business.

## ► PRODUCTION

With the result analysed and A-Okayed, we deploy the solution on a larger scale, delivering it across your systems. From here on out, the A.I. will run as a fully integrated part of your daily workflow and continue to optimize itself, so that you can continue to reap the benefits, day in and day out.



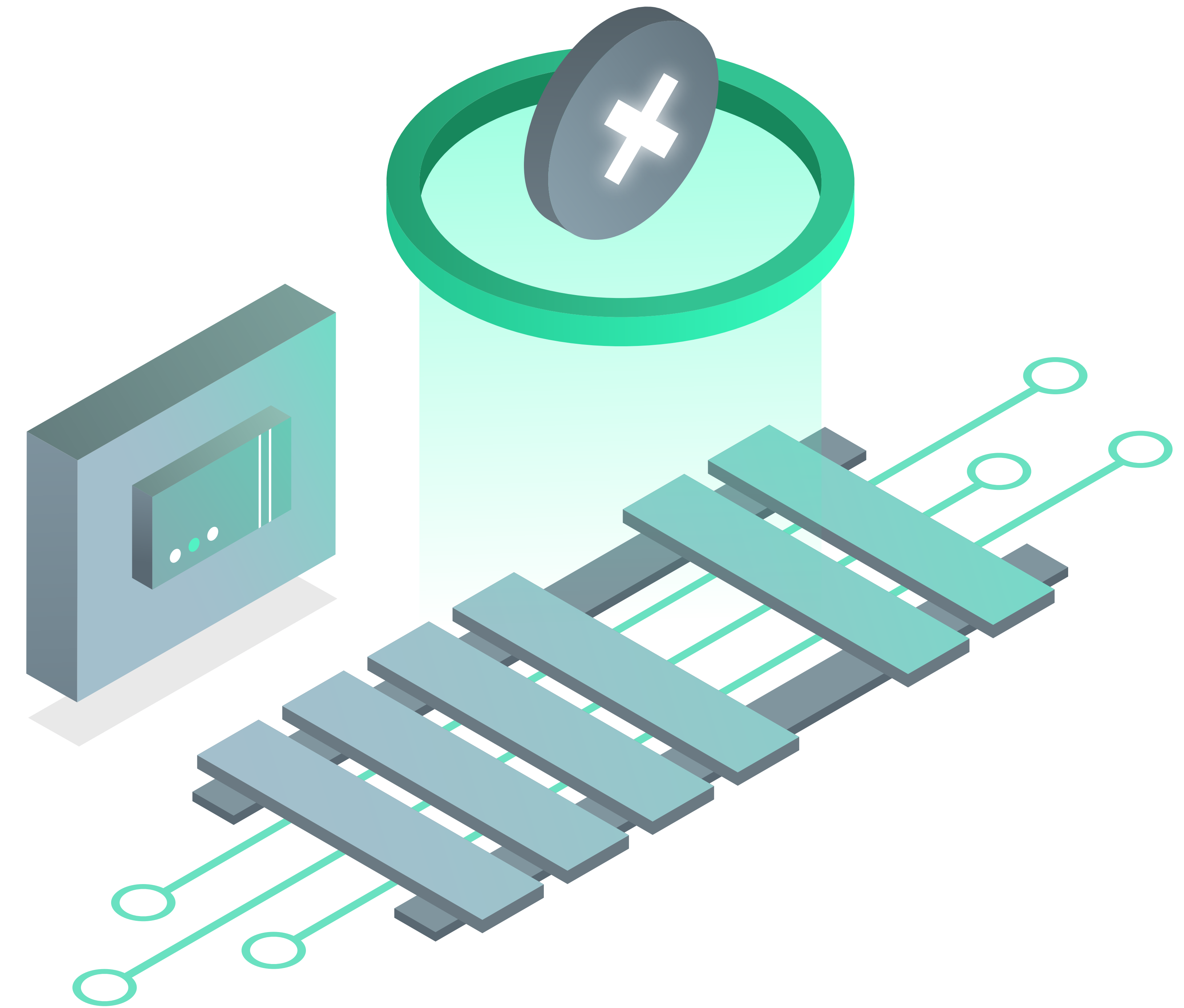
# MORE THAN JUST A TRAIN TRACKING SYSTEM

DFS isn't just available for trains – it is currently being applied across perimeter security networks for event detection on fences and borders including climbing, cutting, scabbling, or digging.

DFS can also be used in roadways to detect defects, such as holes or bumps, and unusual events, like level crossings and accidents.

## WHO WE ARE

Intelygenz A.I. is the artificial intelligence development branch of global tech company Intelygenz. With offices in San Francisco and Madrid, we provide innovative, applied solutions for real business challenges across a multitude of industries. Our ethos is to create agile, concrete solutions that increase revenue for our customers while contributing groundbreaking work to the world of tech. Head to [intelygenz.com](https://intelygenz.com) to read our case studies or [find out more.](#)



## DISCOVER THE POWER OF A.I. FOR BUSINESS

Find out more information on Intelygenz A.I., Distributed Fiber Sensing, or how we can assess your rail system to begin implementing your DFS solution.

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