



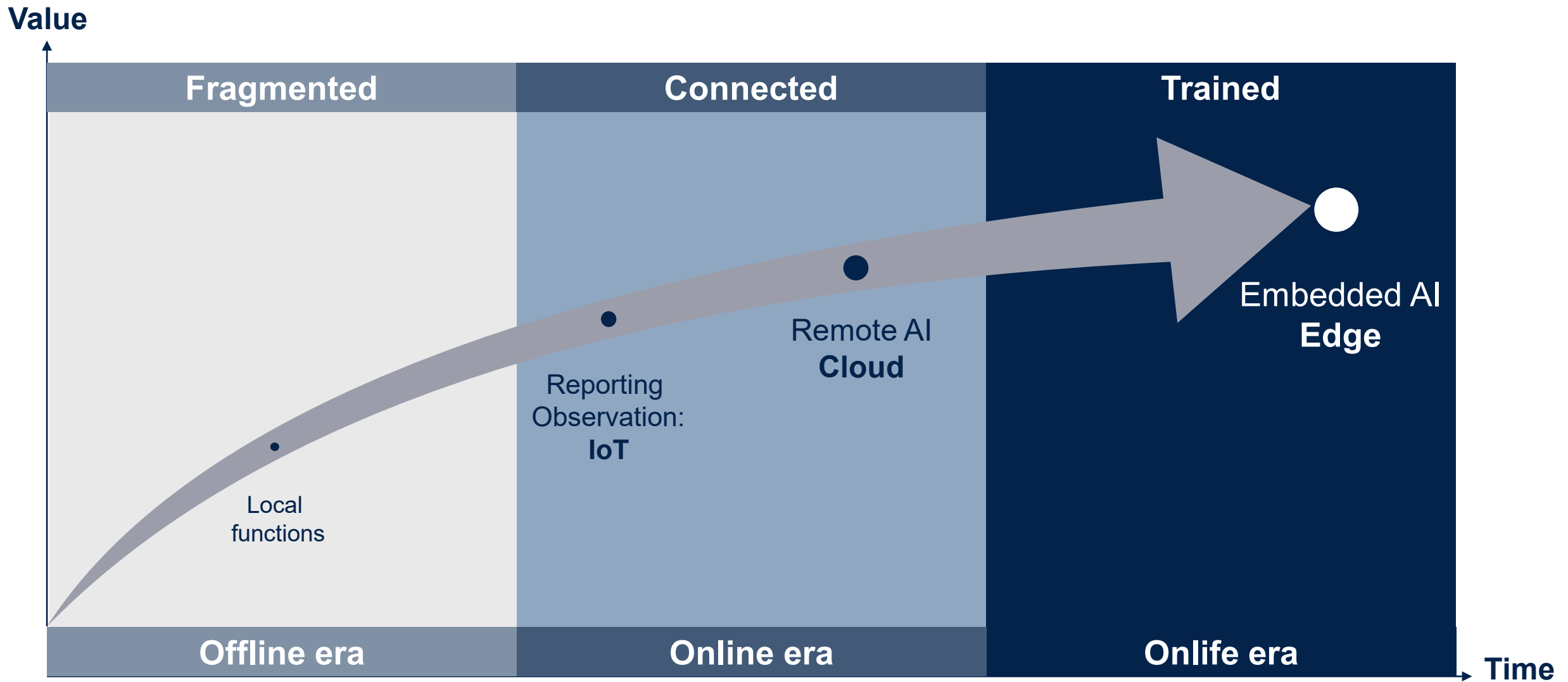
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# NANOEDGE AI STUDIO Version 3

Your fast track to smart  
products

NANOEDGE AI  
STUDIO 

# The quest for an ever-SMARTER infrastructure



# AI Momentum: Buzz versus business value

## Hype Cycle for Artificial Intelligence, 2021



Confusion around AI



Companies struggle to assign a realistic value and business outcome



AI products will be a standard on the market in 2 to 5 years (Gartner)

# 160 Billions machines just “want” to do a better job



The pump is about to  
break down  
due to  
a failure on a ball  
bearing

INDUSTRIAL  
MAINTENANCE

The washer isn't  
draining properly  
because  
a belt is showing  
signs of wear

HOME  
MAINTENANCE



An unusual noise has  
been detected  
and  
recognized as a  
window break

SECURITY

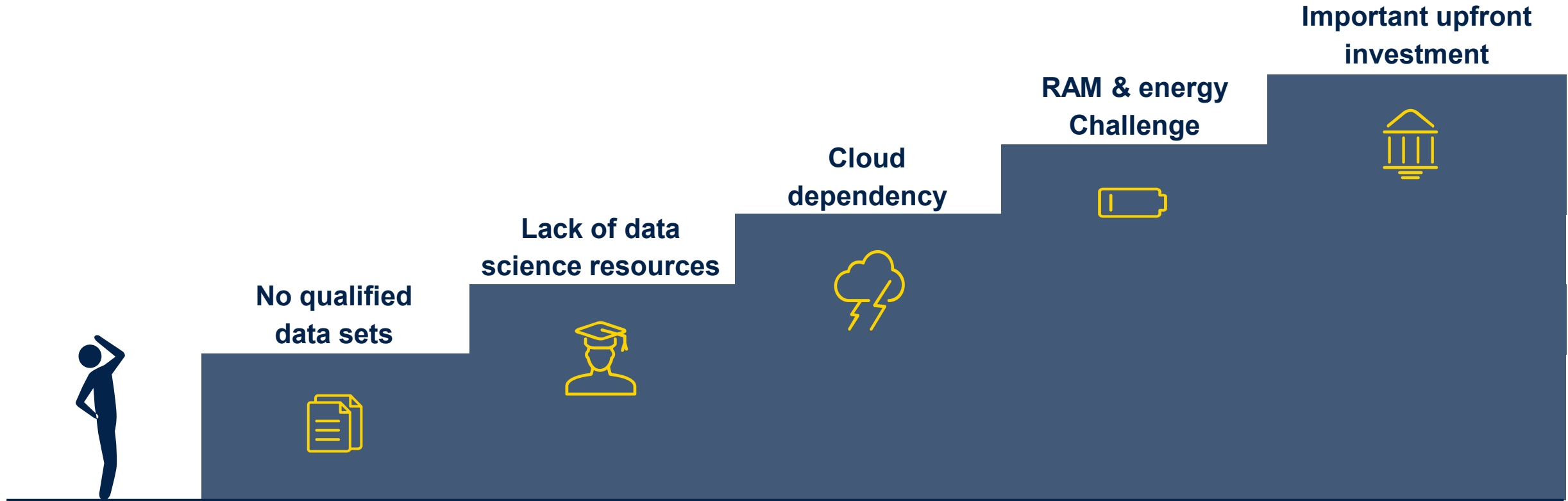


Enterprise restaurant  
is full  
and  
your waiting time is  
currently estimated  
to 15mn

PEOPLE  
COUNTING

# For most companies, creating an edge AI device is a long journey with extraordinary challenges

Investment, complexity and development time are often barriers to AI adoption



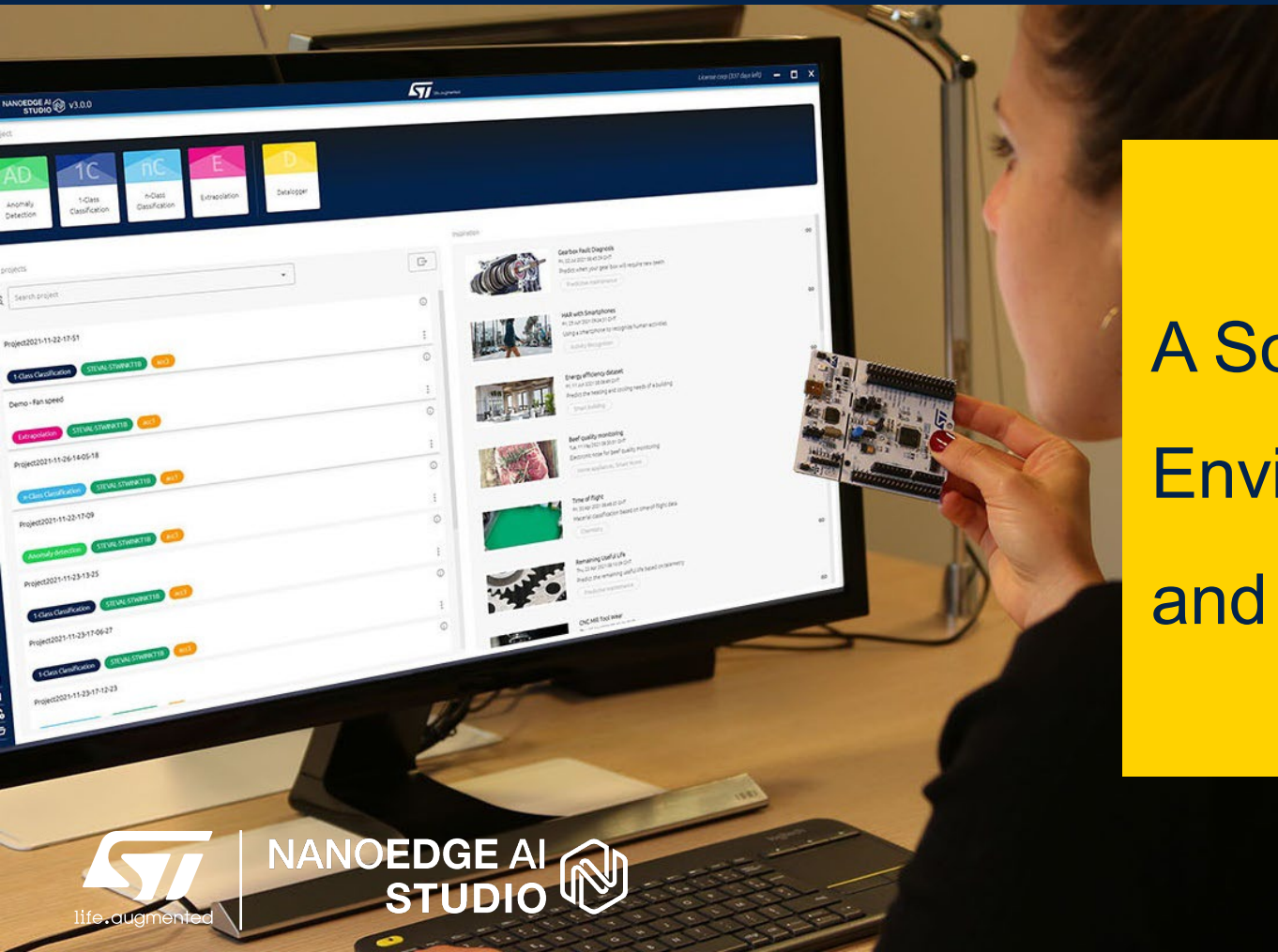
# Start today with Edge AI

“ If only  
I had solutions to overcome  
AI design challenges

That's where we come in

# Introducing NanoEdge™ AI Studio V3

New “V3” major release for NanoEdge™ AI Studio



A Software Development Environment to radically simplify and shorten Edge AI Solution design



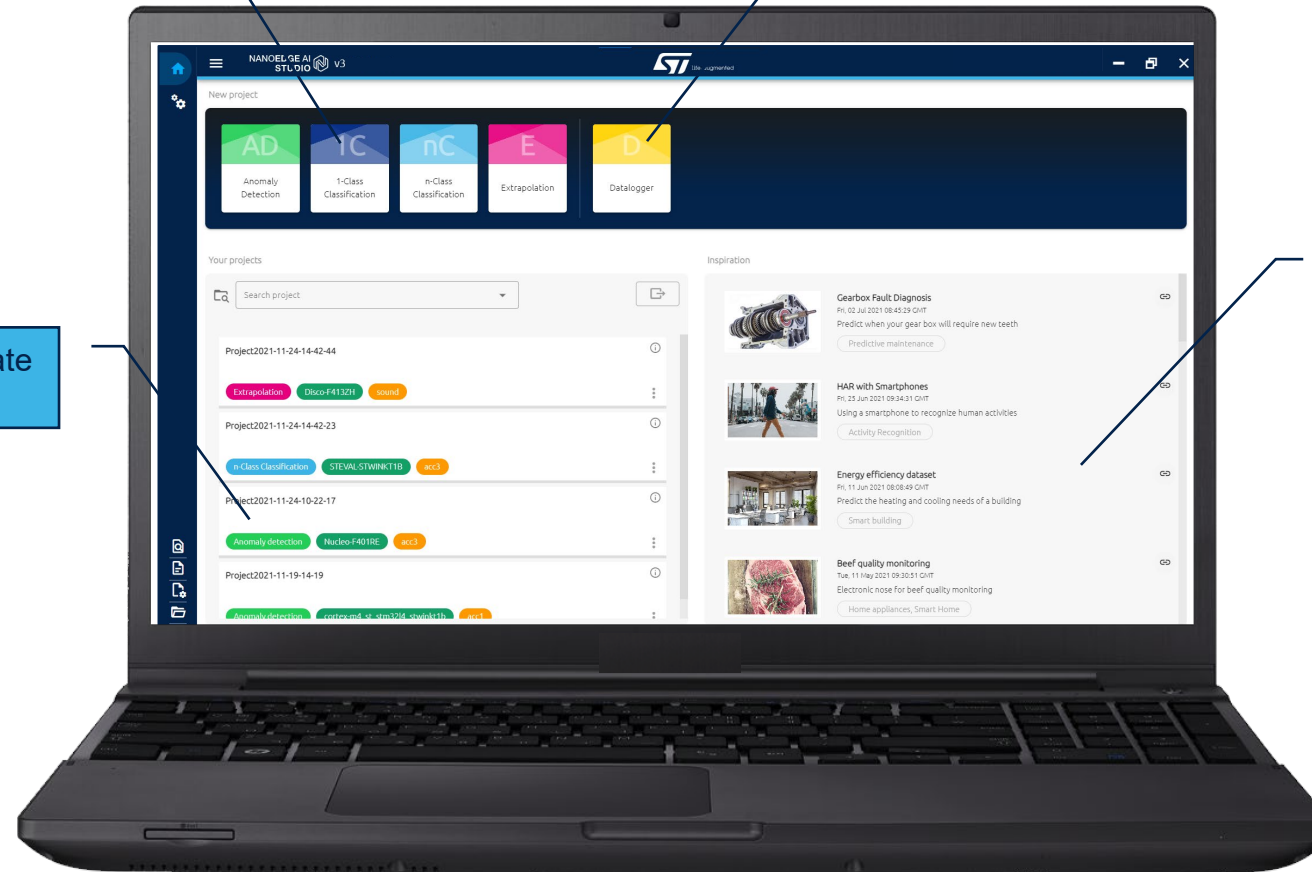
# New user interface, more functions, better user experience

New families of Machine Learning algorithms

New Datalogging experience

Easily retrieve or create projects

Get inspired by Multiple uses cases



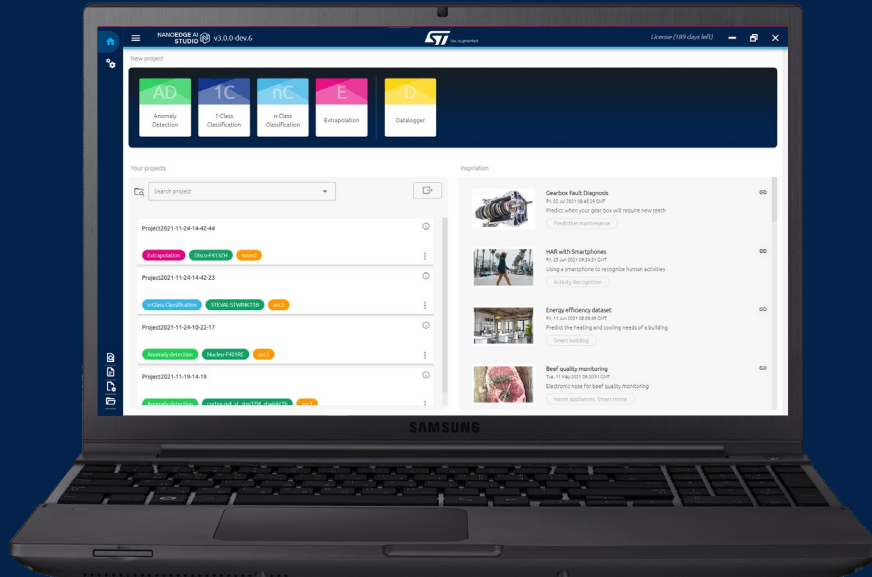


# NanoEdge AI Studio V3

## Same easiness, more power

ON THE PC

1 Create the library, **ONCE**.

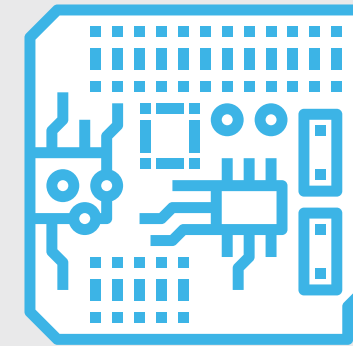


Standalone PC (Win/Linux) solution

ON THE MCU

2 Use the library, **MANY TIMES**.

Create and embed  
a self learning engine



For anomaly detection, the model is  
self-trained at the Edge.

# Our customers have increasingly ambitious use cases for ever smarter products



"My pumps are installed in a variety of environments that I can't anticipate.

**I want them to autonomously adapt to their target environment and detect anomalies by themselves."**

"I know exactly how my pumps behave.

**I want to detect any outliers."**

"I know the signals when a pump is experiencing, for example, ball bearing or cavitation problems.

**I want to know by name what problems are occurring."**

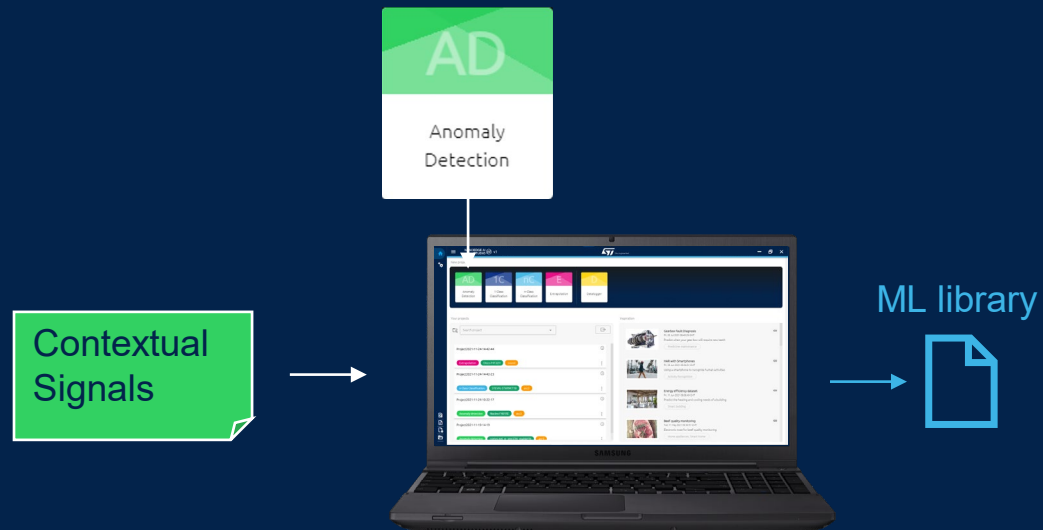
"I know several vibration values of my machine.

**I want to anticipate when a specific vibration level will be reached so that I have time to take corrective actions before reaching that limit."**

# Anomaly detection use-case

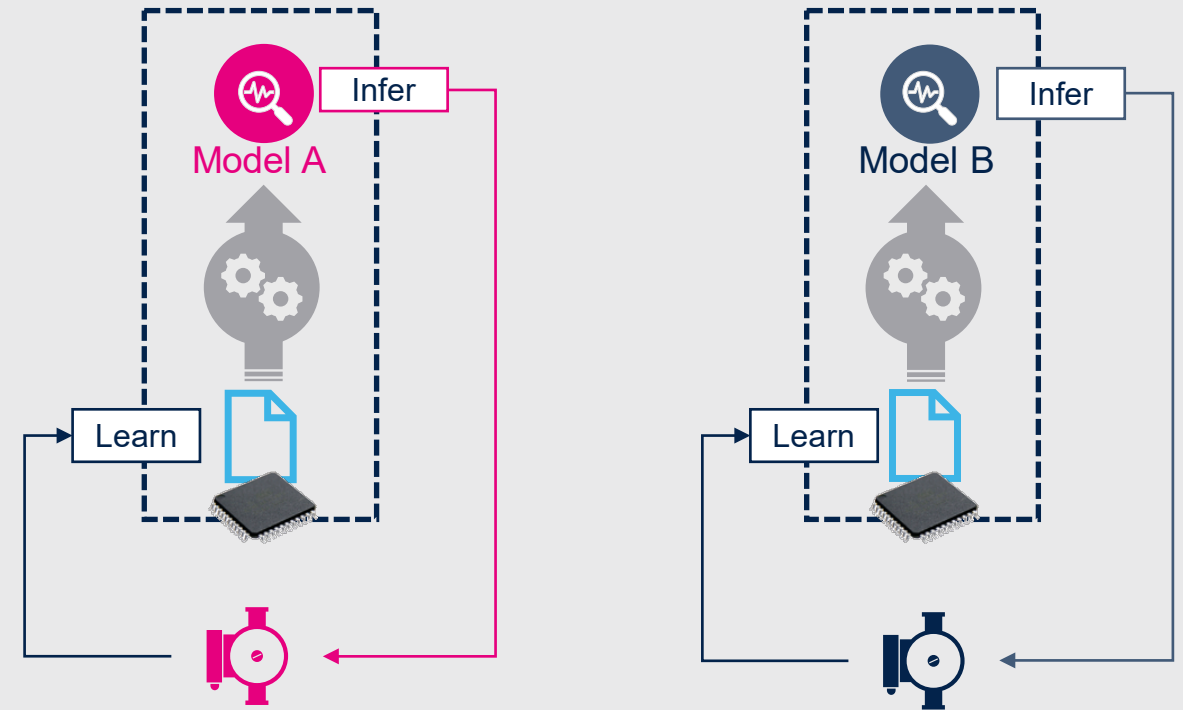
## ON THE PC

- 1 Creation of an **ANOMALY DETECTION** Machine Learning library



## ON THE MCU

- 2 Use of an **ANOMALY DETECTION** Machine Learning library

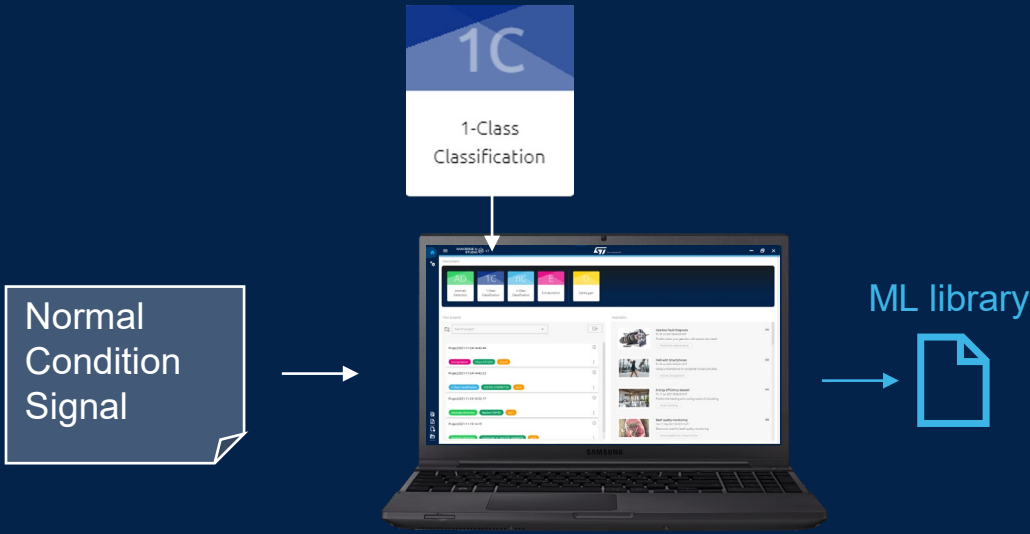




# One class classification use-case

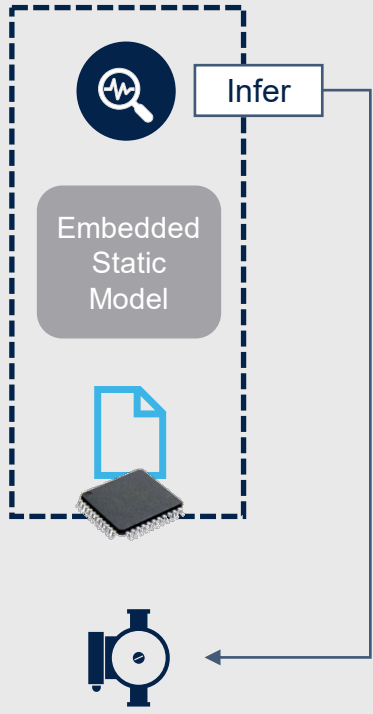
## ON THE PC

- 1 Creation of a **ONE CLASS CLASSIFICATION** Machine Learning library



## ON THE MCU

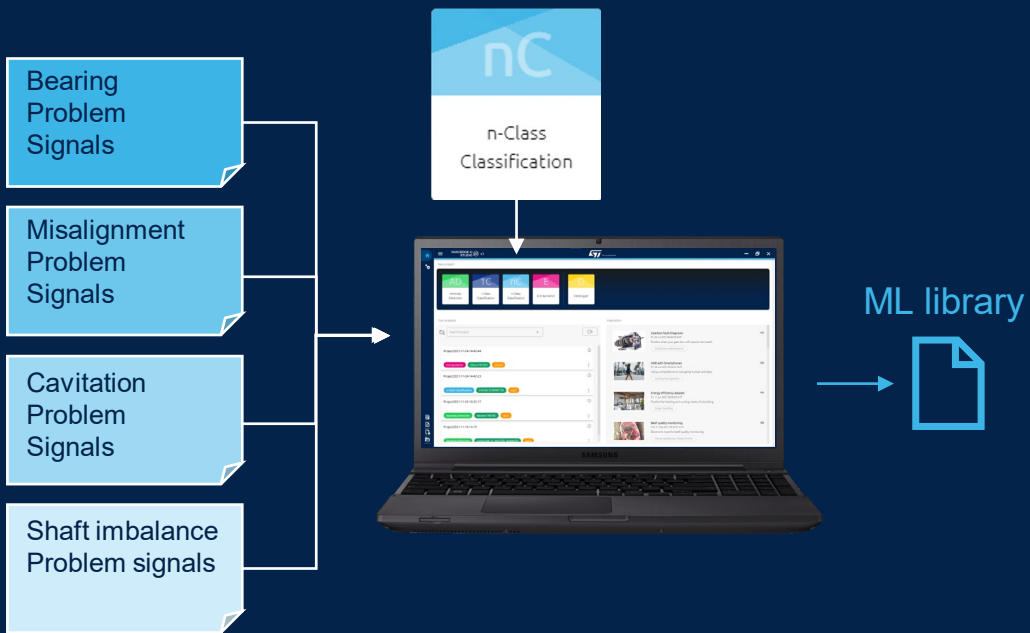
- 2 Use of an **ONE CLASS CLASSIFICATION** Machine Learning library



# n Class classification use-case

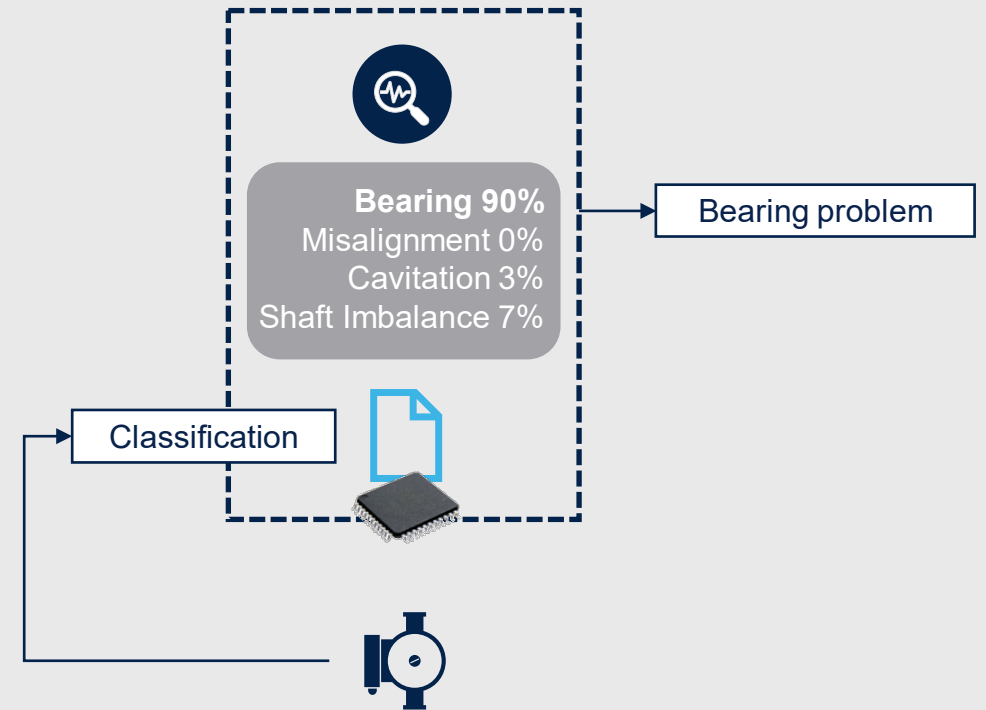
## ON THE PC

### 1 Creation of a **n CLASS CLASSIFICATION** Machine Learning library



## ON THE MCU

### 2 Use of an **n CLASS CLASSIFICATION** Machine Learning library

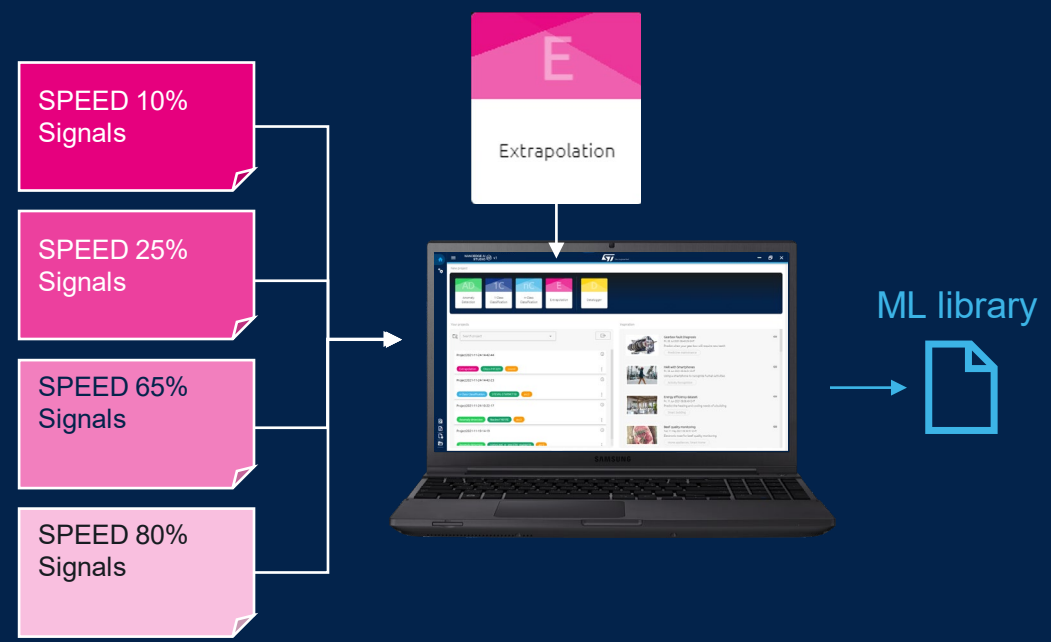




# Extrapolation use-case

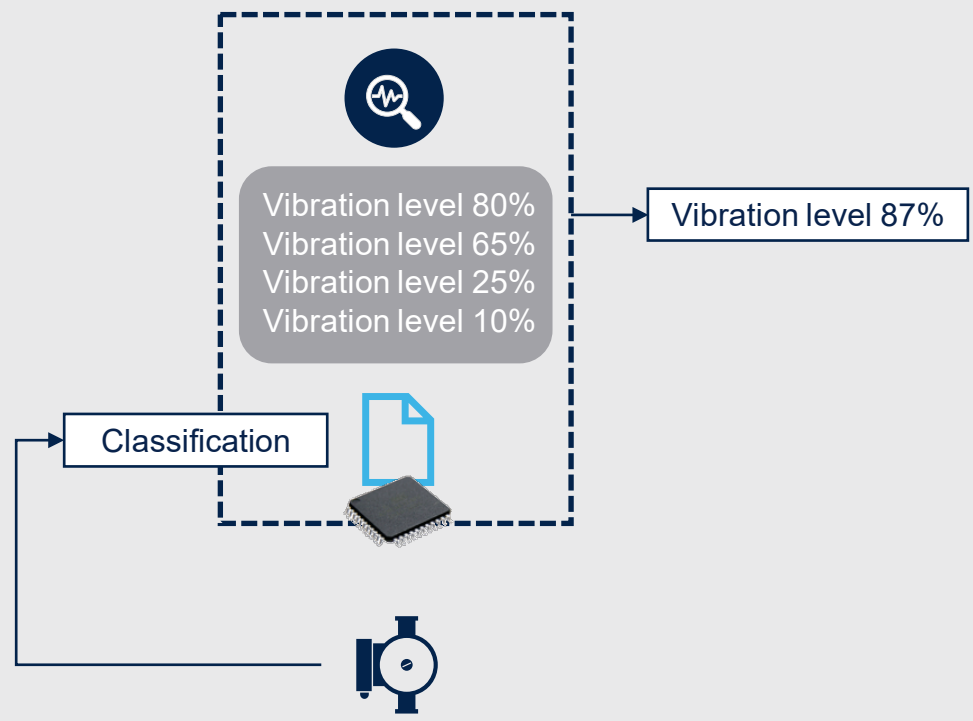
## ON THE PC

- 1 Creation of an **EXTRAPOLATION** Machine Learning library



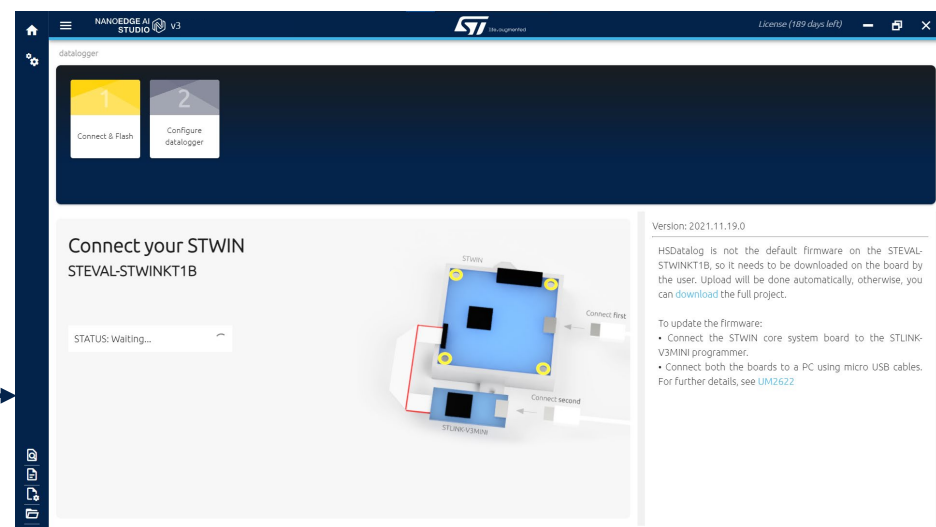
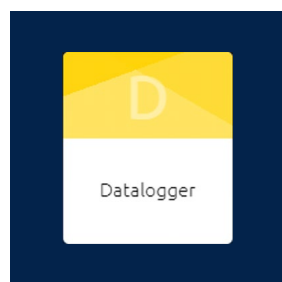
## ON THE MCU

- 2 Use of an **EXTRAPOLATION** Machine Learning library



NEW

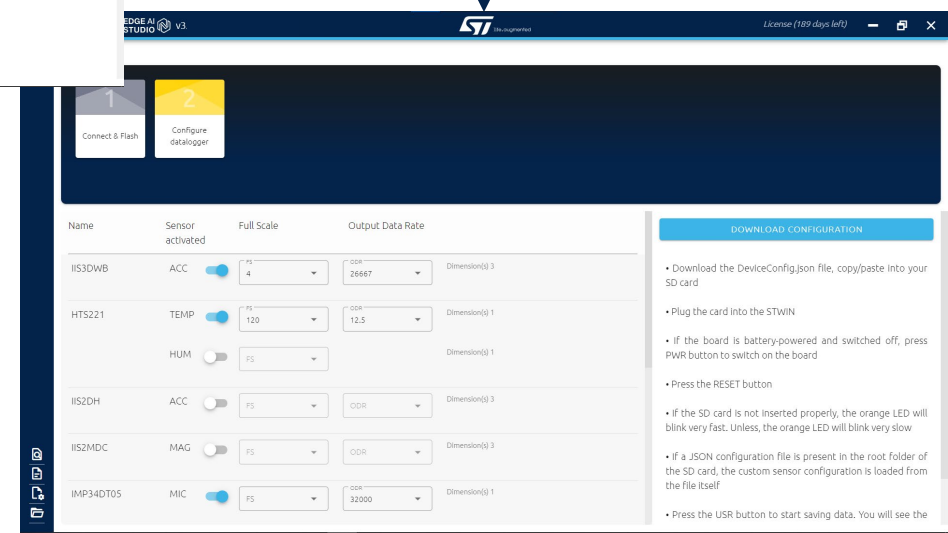
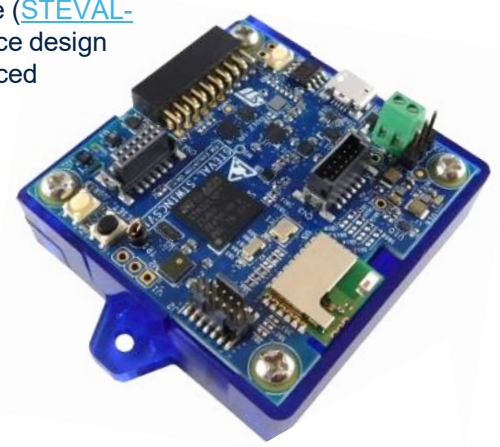
# From idea to datalogging in a matter of minutes



- Streamlined data logging process
- No code
- All settings done using a graphic interface

The STWIN SensorTile wireless industrial node ([STEVAL-STWINKT1B](#)) is a development kit and reference design that simplifies prototyping and testing of advanced industrial IoT applications such as condition monitoring and predictive maintenance

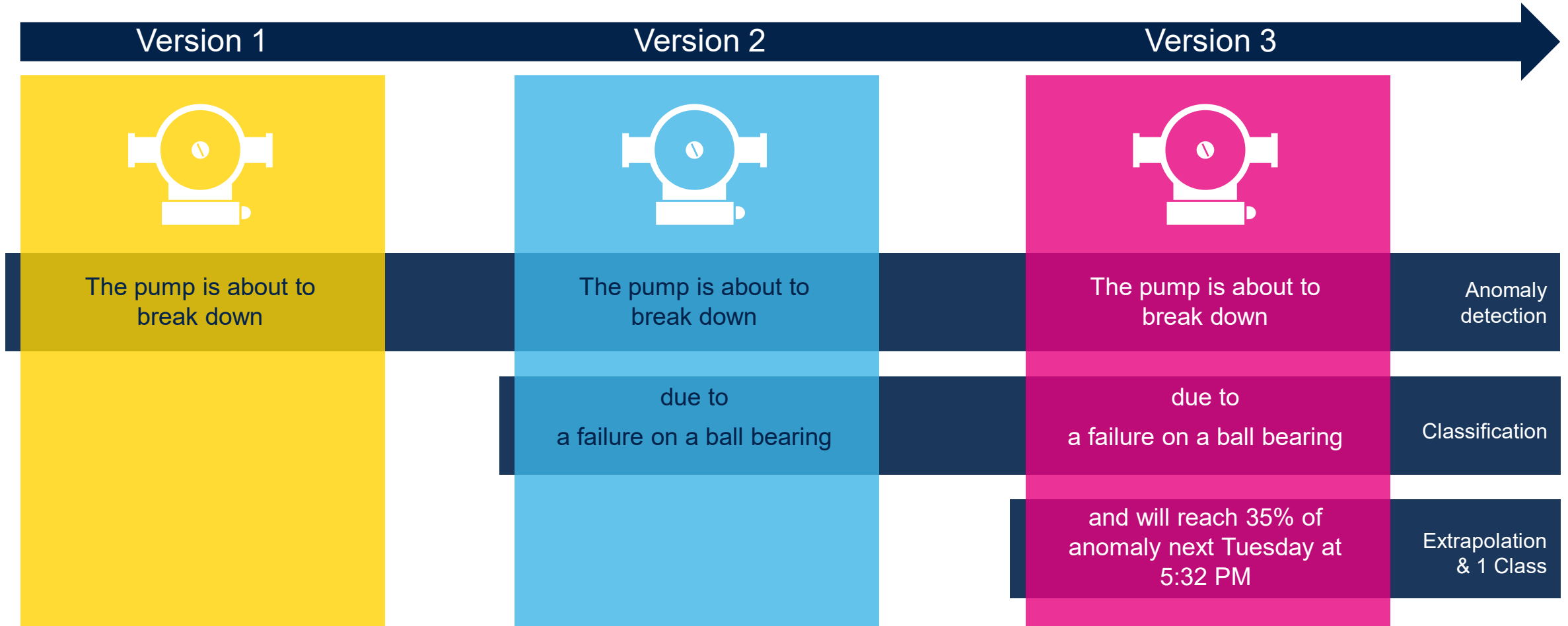
The kit features a core system board with a range of embedded industrial-grade sensors and an ultra-low-power microcontroller





# NanoEdge AI Studio

## Always more added value, always as simple to use

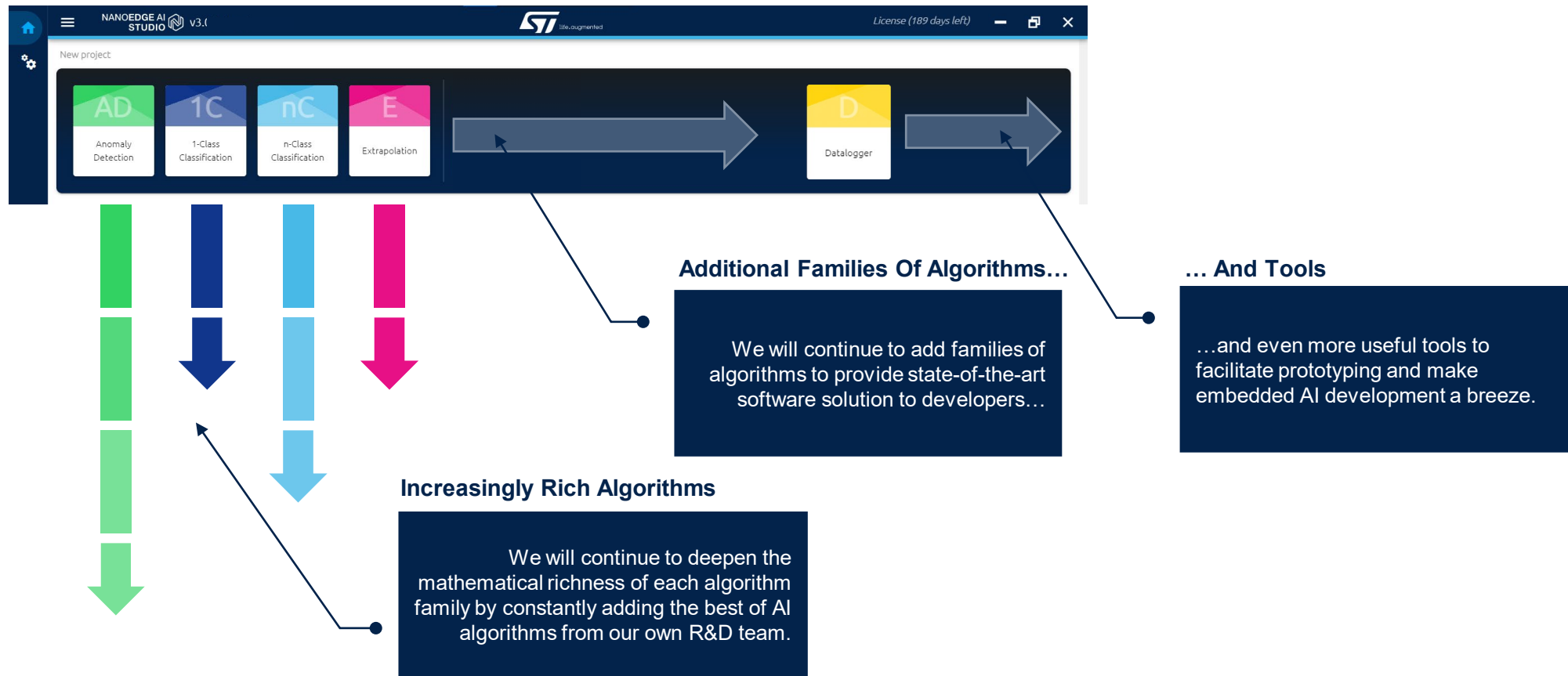


# What's next?



# NanoEdge AI Studio Version 3 roadmap

« A complete development software for any embedded developer willing to easily make any product smarter.



# Our technology starts with You

Find out more at <http://www.st.com/stm32NanoEdgeAI>

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