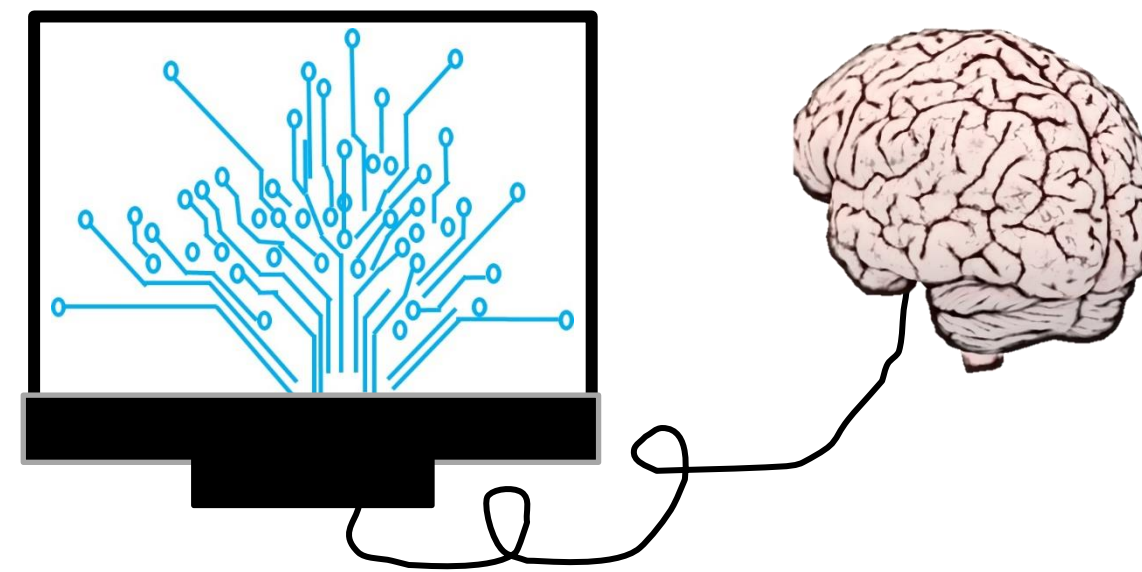# CELTIC-NEXT Proposers Day
23rd of February 2021, Online via WebEx

Pitch of the Project Proposal

AI Powered Production

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AI Powered Production

__The Idea__ is creation of AI powered production control system work as if operators are in the shop floor.

Use of AI as human operator can help manufacturers as speeds, latency, and costs. Human inspectors/operators or smart cameras can take false decisions; may be the product/ difference is acceptable but smart camera can reject it.

The challenge is make AI to take accurate decisions than human operators and improve productivity continuously.

Using data gathering tools like sensors, the physical representation of the control environment will be completely integrated and will be powered by AI

Organisation Profile
TeknoTAM

Business Description   *Our focus is machine learning and deep learning and main sectors are automotive, defence, industry and agriculture.*

Why us?   *We are offering a reliable, innovative, multi purpose, independent, self contained all in one device solutions which is based on AI technologies.*

Expertise
- ✓ *AI powered Industry 4.0*
- ✓ *Defence Autonomous Drone and small object detection*
- ✓ *AI powered security / smart home and human detection*
- ✓ *AI Agriculture systems*

Products/Services   *We offer our products and industrial solutions such as gear tooth alignment for OEMs.*
Our security product Tamkod can detect humans with AI and convert both actual IP and analogue cameras to AI powered cameras.
Autonomous drones that are able to detect and track small objects.
Automating agriculture routines such as watering and fertilization.
https://www.teknotam.com.tr/

Achievements   *Our customized hardware /software that is optimized for specific needs can be converted depending on customer needs. So, we can offer variety of products in different areas.*

AI Powered Production

Objective;

Machines only execute basic tasks. But they can not evaluate the situation and take decisions. In other words automation is not intelligent.
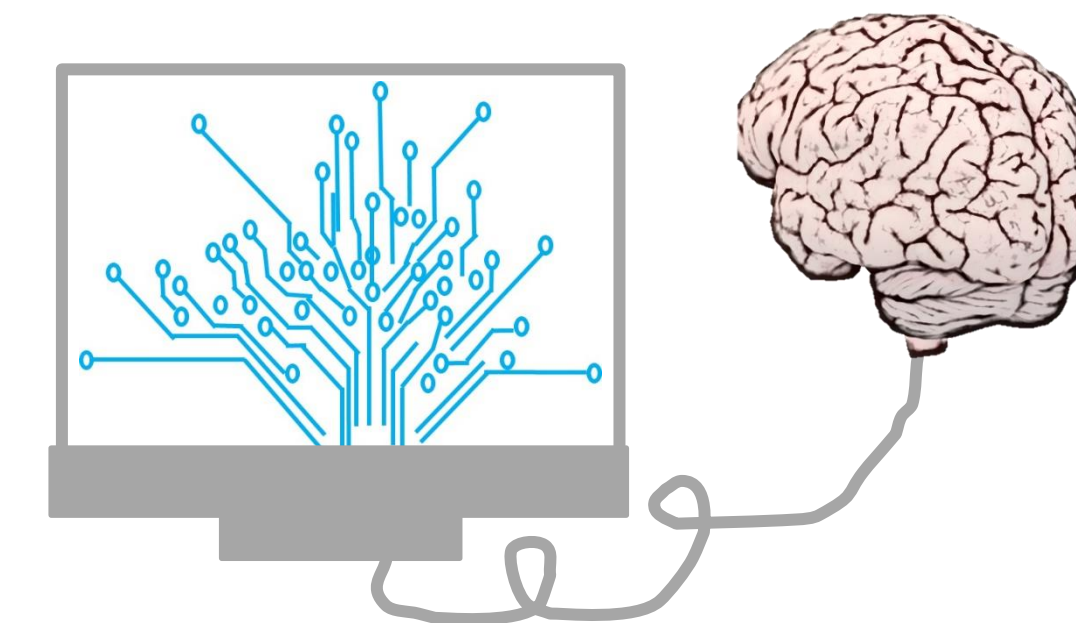
Automation systems can not know what to do with information and can not judge the situation. Moreover they can not learn to improve their productivity.

AI should take automation to another level that leaves no doubt behind.

AI independently can catch potential production issues and adapt the sitution in real-time. By that it can prevent waste of many and reduce customer complains.

Expected Outcome;

Human uses 5 senses, analyses all of them and decide simultaneously. Similar to human, high accuracy will be achieved by processing the simultaneous data of that event, voice, image and sensor data using the Artificial Intelligence Algorithms

Σ

eureka
innovation beyond borders

Smart Production System

Let's think of production system that operates with AI operators; one is responsible of product's control and definition of problem and one is responsible of solution of the problem.
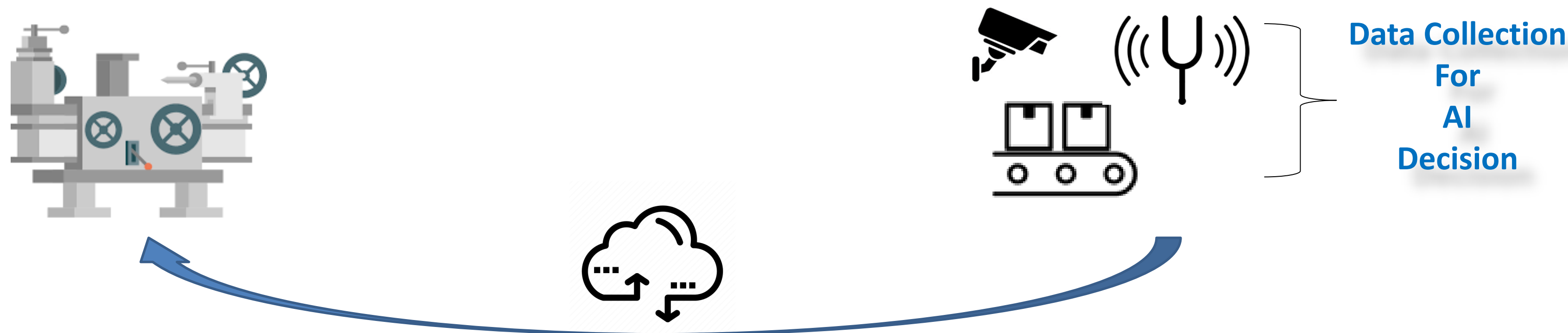
Continual improvement process ; AI will identify the anomaly, execute the solution and review the results in real time, Moreover AI will train itself continuously

AI Powered Production System
Then, production AI will evaluate the definition of problem and change proper production configurations. So production will continue without anomalies, moreover AI will be training itself.

AI Quality Control System
If an anomaly occurred in the product, AI Quality Control System will detect it and send definition of the problem to AI Powered Production System. AI Quality Control System will give definition of the problem; what is the problem, what is the dimension of the problem, where is the problem etc. It will exactly understand the problem.

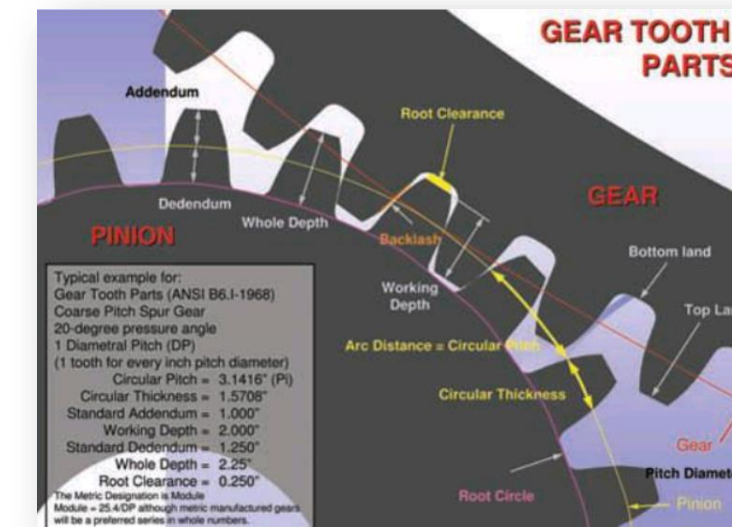**Data Collection For AI Decision**

Case Study; Gear Tooth Alignme

Ex: Quality control project is a use of AI for Ford Motor Company.

Traditional methods such as smart cameras can not determine whether the gears produce a loud or quiet differential.

But manufacturers needed a system that could objectively determine errors within a certain tolerance.

The TeknoTAM's AI quality control solution is able to deterimne complex patterns, analyse the situation and detect the problem.

We want to go further and not only detect to problem but also solve it using AI and contnious improvement will be achieved by AI that train itself.

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Project Setup

- **Project consortium to be ready during early 2021**

- **Celtic project application for spring call (deadline April 12th)**

- **Project for 3 years, starting at 3Q2021**

Partners

NEEDED PARTNERS

User case providers / OEM / Industry

Contact Info

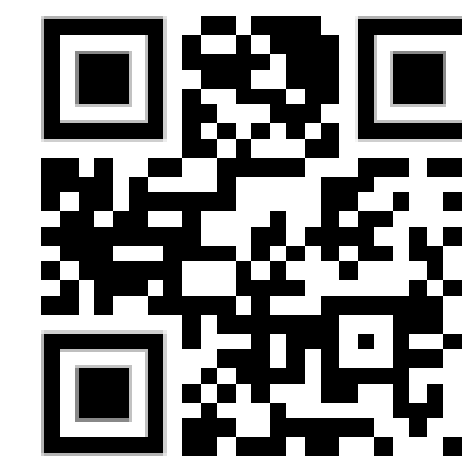**For more information and for interest to participate please contact:**

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