Pilot Demonstrator

XMANAI

MAKING AI UNDERSTANDABLE

CNH Industrial is a world-class equipment and services company, a global leader in the design and manufacturing of agricultural and construction machines, that employs more than 64.000 people in 66 plants and 54 R&D centers in 180 countries. The collaboration with European partners of the XMANAI project was developed within the San Matteo plant, located in Modena, Italy. It is the most relevant R&D unit in the field of tractors in Europe, using the most advanced technologies for design and engineering purposes.

Supporting Partners

UNIMORE
UNIVERSITÀ DEGLI STUDI DI MODENA E REGGIO EMILIA

deepblue

TXT

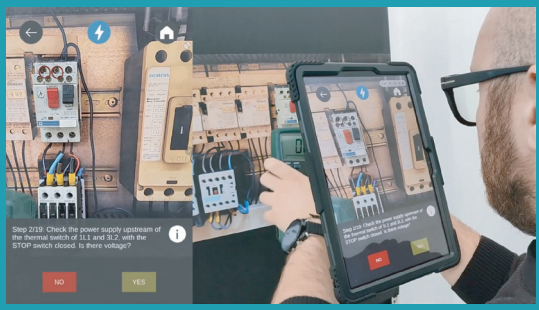
Problem Addressed: Production lines often face disruptions, both unplanned and planned, which diminish their operational availability. These interruptions commonly arise from the need to replace worn or faulty components. When a machine halts, maintenance operators must methodically isolate various parts of the machine to pinpoint the faulty component and identify the underlying cause of the stoppage, which is time-consuming. Inexperienced operators may not be able to solve the problem.

Pilot Objectives

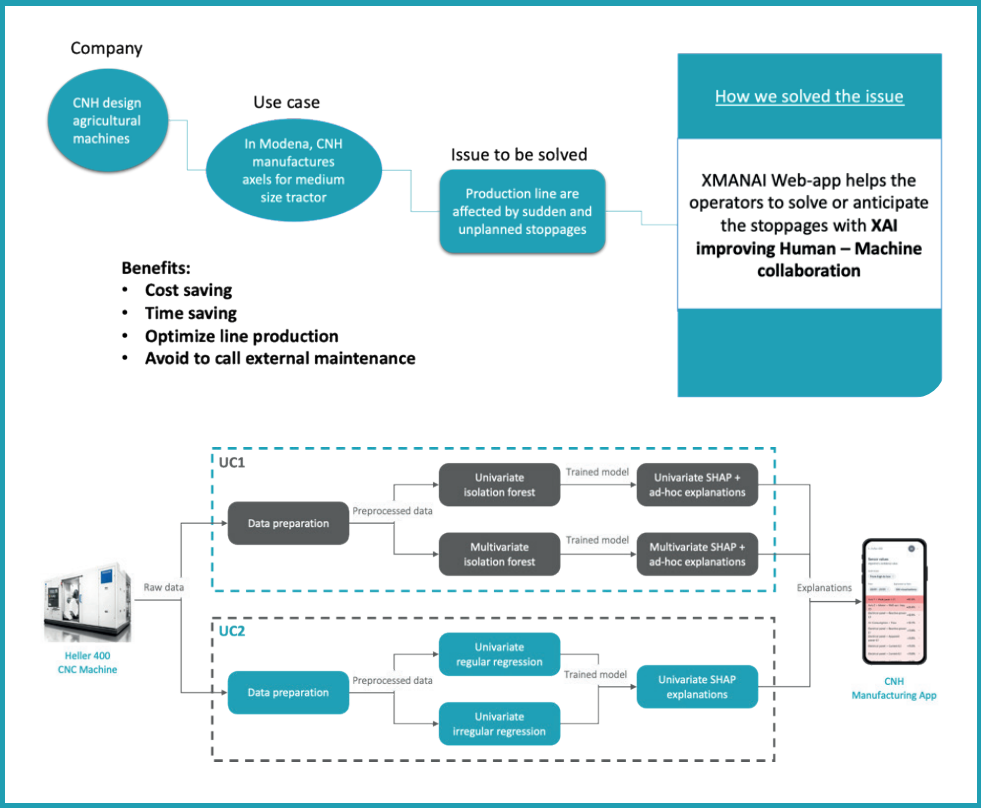
- **Implement an intelligent monitoring system to help maintenance operators**
- **Adoption of explainable artificial intelligence (XAI) techniques quickly identify the problem**
- **Address downtime issues and quickly restore machinery**
- **Minimize production losses**

Implemented Use Cases (UC)

1) **Anomaly detection with AR support,** where the idea is to analyse real-time and historical data from the CNC machine centre to provide simplified suggestions and step-by-step procedures to help the operator solve the fault and understand the causes of the failure.



2) **Forecasting,** that involves AI to anticipate anomalies and downtime periods, enabling operators to tackle in advance potential issues



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