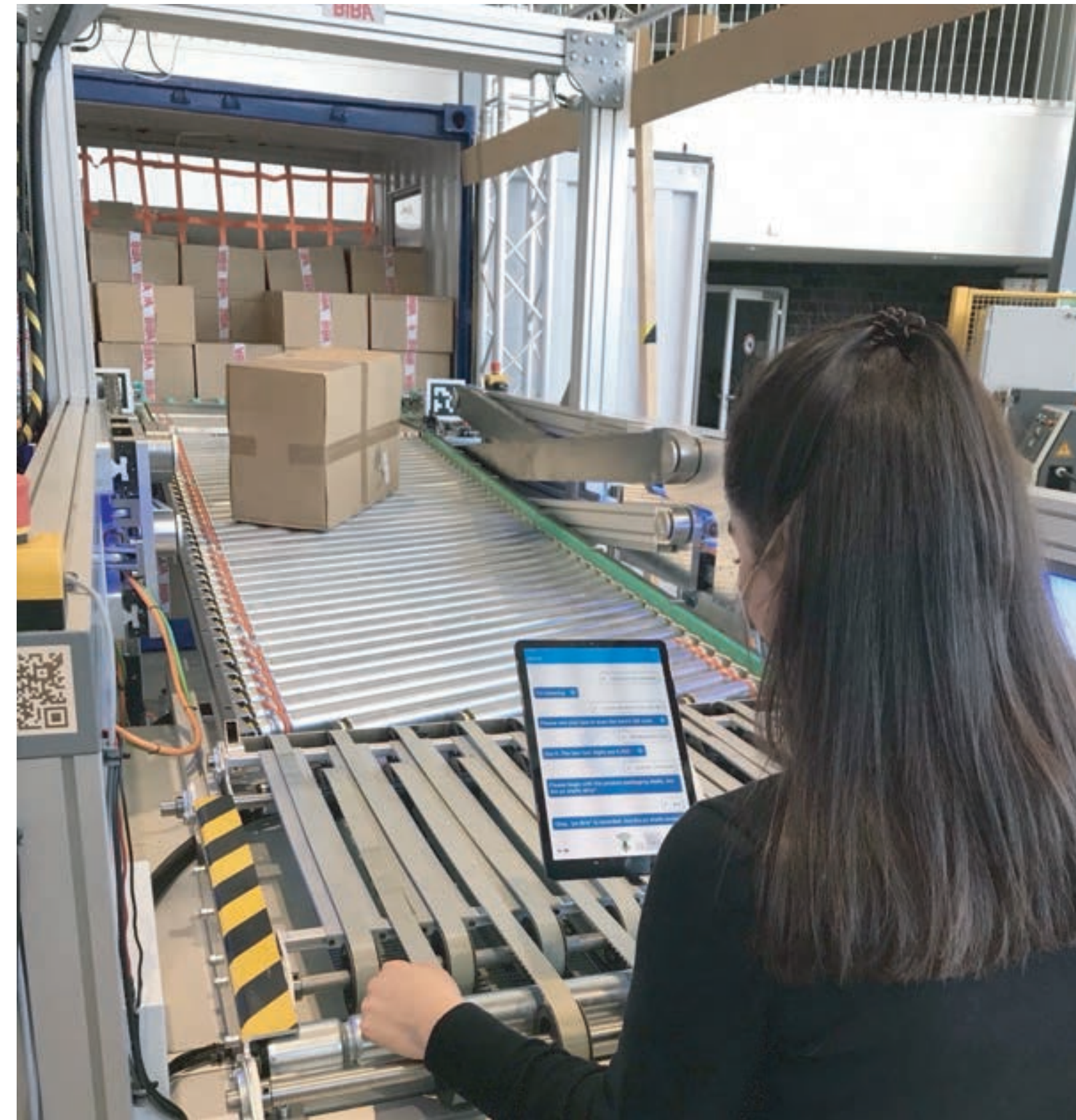# A Trustworthy Voice-Enabled Digital Assistant for the Manufacturing Industry

COALA SOLUTION

The EU-funded COALA project will design and develop a cutting-edge Digital Intelligent Assistant (DIA) to support manufacturing industry.

At its core is the privacy-focused, open-source voice assistant, Mycroft, COALA will integrate trustworthy AI components, such as augmented quality analytics, an experimental mechanism for explainable AI, and features for the assistance of on-the-job training. AI-focused change management process and guidelines for professional worker education will complement the technical work.

The project will significantly decrease the costs of failures in manufacturing and will reduce training time for workers.

OBJECTIVES

• Reduce the number of quality incidents in manufacturing

• Reduce the time needed for on-the-job training of workers

• Overcome barriers and reduce skepticism regarding the use of a voice-enabled DIA

• Improve the competencies of blue-collar workers in managing AI opportunities, challenges, and risks in the shop floor

KEY FEATURES

PRESCRIPTIVE QUALITY ANALYTICS

Supports quality analytics including descriptions, predictions, prescriptions on the products quality

DIGITAL INTELLIGENT ASSISTANT

Provide evidence that an open digital assistant can support manufacturing

DATA ANONYMISATION

Supports a set of anonymization and privacy-preserving services over the user data to safeguard user's privacy, personal and behavioural data preservation
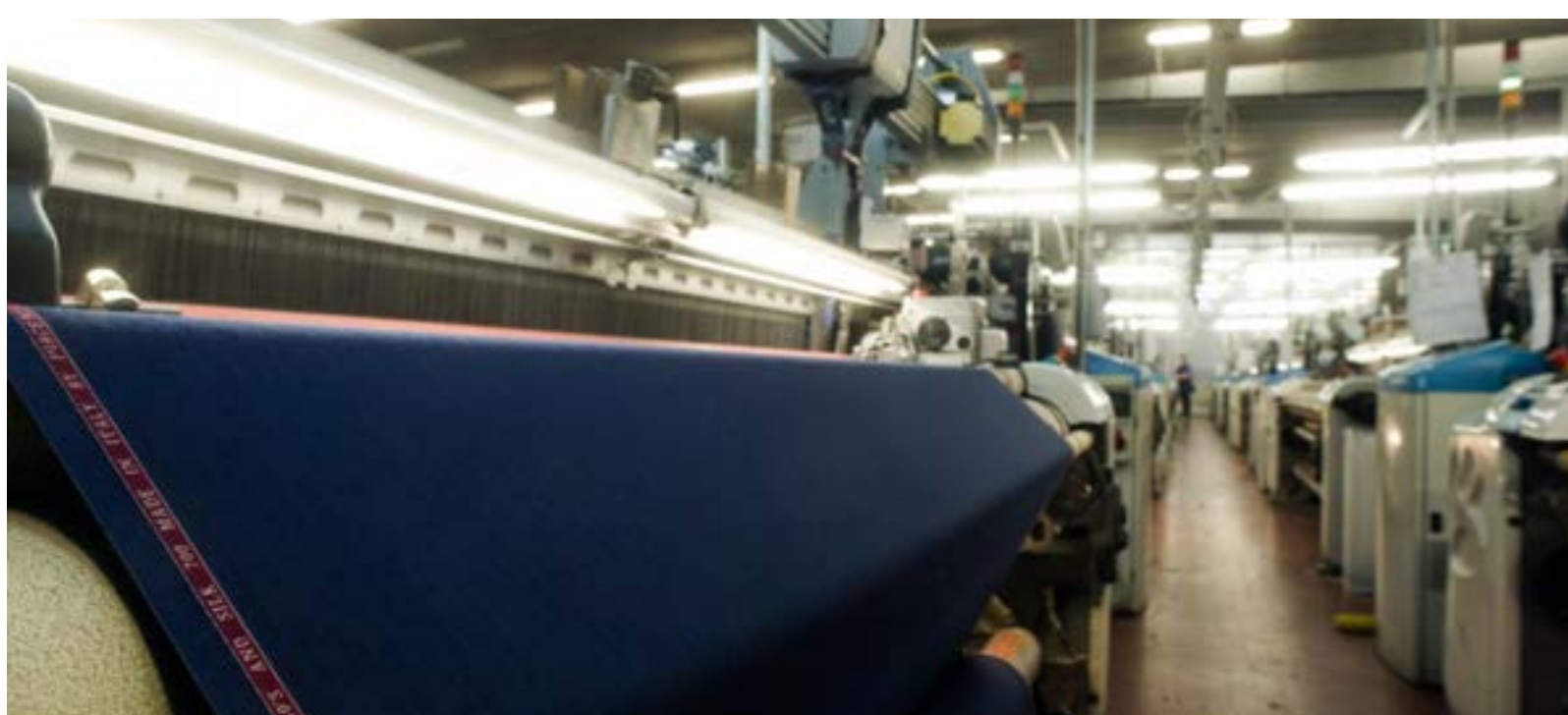
WHY ENGINE

Allows the assistant to answer "why" questions concerning advices and predictions provided by the DIA

COGNITIVE ADVISOR

Provides cognitive advices through an expert system for on-the-job training of machine operators and production line managers

PRODUCT AVATAR

Aggregates context information from individual manufacturing resources and presents the machines and products in a digital manner

ASSISTANCE TO ON-THE-JOB TRAINING

Enables machine operators and production line managers to become more effective and faster

EDUCATION AND TRAINING CONCEPT

Allows education facilities and companies to better prepare their labor force for human-AI collaboration

CHANGE MANAGEMENT

Seeks to prepare middle-managers and other decision-makers related to digital assistants in the shop floor

USE CASES

Textile Production

• AI-assisted on-the-job training for machine operators

• Development of didactic concept and AI competencies of manufacturing workers

Detergent Production

• Improvement in line re-configuration

• On-the-job training for production line managers

White Good Production

• Human-AI collaboration in quality control

• Adoption of a predictive quality strategy