

Worker Safety and Well-being in Food Production Facilities

The **HANDFUL Project** by Plegma Labs and Helios Bakery was one of the 5 selected during the **EARASHI Open Call 1**. It tackles one of the main challenges in the production machines/tools sector, and specifically in the food industry: improving working conditions in terms of human safety, stress, and well-being, since workers are responsible for controlling machines and tools to process raw materials in order to produce food products. It utilizes AI to detect if the facility workers wear the required equipment, while it also monitors parameters related to the stress levels and well-being of workers, such as indoor climate conditions, worker movement, and machinery energy consumption.

CHALLENGES

HANDFUL aims to address several critical aspects of worker safety and well-being in food production facilities, as well as efficiency:

- Worker safety and regulations compliance
- Worker well-being in terms of indoor air quality and climate
- Equipment down-time
- Continuous Supervision Difficulty
- Process Optimization



SOLUTIONS



Advanced AI and Computer Vision



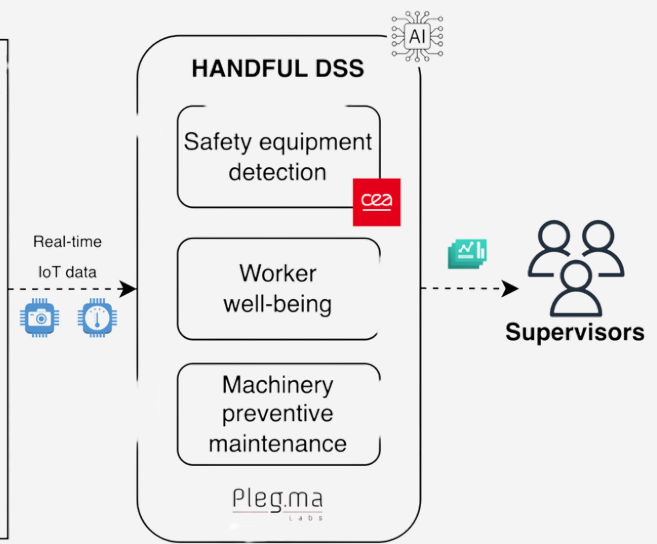
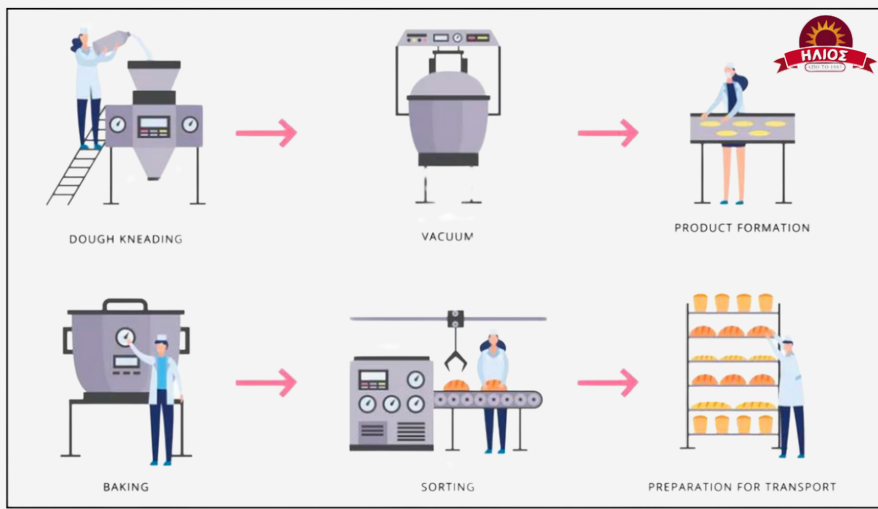
Real-Time Monitoring and Control Systems



User-Friendly DSS Interface








Automated Response Mechanisms



MAIN GOALS

- Safety Equipment Detection
- Worker Well-being
- Preventive Maintenance
- Holistic AI-Enabled DSS
- Pilot Demonstration and Validation

KEY NUMBERS

-  **3** main services integrated in a single solution
-  Solution tested for at least **6** months in a real-world environment (food production facility)
-  Solution demonstrated with **15** workers
-  Preventive maintenance service deployed in **7** food production facility machines
-  Safety equipment detection service deployed for **5** food production facility machines

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Our expectations for HANDFUL are substantial. By integrating advanced AI and computer vision technologies, we anticipate a notable reduction in workplace accidents and an increase in compliance with safety protocols, creating a safer, more secure environment for the workers who are the backbone of the food production industry.

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The financial backing and services support provided by the EU have been instrumental in bringing the HANDFUL project to life, facilitating the research and development of cutting-edge AI solutions and allowing for the practical implementation and testing of these technologies in real-world settings.

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