



SMART BRACELET

Movement monitoring for meat-processing operations



DEPARTMENT OF INDUSTRIAL
AND SYSTEMS ENGINEERING



INDUSTRIAL SECTOR
INFORMATION
TECHNOLOGY AND
TELECOMMUNICATIONS



DEVELOPMENT LEVEL
TRL DE 3

PROBLEM



Meat-processing operations frequently encounter three problems: (1) cuts performed incorrectly or using improper technique; (2) cuts performed with inadequately sharpened knives; and (3) inefficient cutting patterns over time. These problems can cause worker injuries and reduce plant productivity.

SOLUTION



The technology consists of a bracelet that uses sensors to monitor movements performed during meat processing. Machine-learning algorithms analyze these movements and report or issue alerts for improper actions. This enables supervisors to make decisions such as retraining workers, changing knives, identifying possible pain or injuries among workers, and monitoring productivity.

MARKET



The technology targets the poultry and pork industries, which have the highest domestic production volumes. An estimated 6,765 employees work on meat-cutting lines each year. Chile's Superintendency of Social Security (SUSESO) estimates 156 occupational accidents and 2,108 workdays lost to accidents annually, translating into an approximate loss of \$274 billion.



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Intellectual property
No progress to date.

Development status
Proof of concept.

ADVANTAJES



Helps prevent worker injuries and accidents.



Supports training and correction of workers' movements.



Uses algorithms to recognize movement patterns and assess knife sharpness.



Increases plant productivity by improving cutting efficiency.



Specialized and designed specifically for meat-industry operations.