



Knowledge-Based Innovative Solutions to Enhance Adding-Value Mechanisms towards Healthy and Sustainable EU Fisheries

ACTION B1: Definition and testing of an iObserver

Leader: IEO

Participants: CESGA, OPROMAR, USC, IIM-CSIC



- ✓ Box with hermetic seal (40x23x26cm + 18kg) and touch screen.
- ✓ Installation in the fishing park over the conveyor belt.
- ✓ **On-board fish species recognition** system through artificial vision: Identification based on colors and textures.
- ✓ Quantification of the total captured weight (through length/weight relationships) and transmission of the total catch to RedBox.
- ✓ RedBox georeferences this information by collecting data on vessel positioning, course, speed and depth.
- ✓ **Data transmission to land systems (CESGA)** in real time through RedBox.

(1) TASKS IN PROGRESS

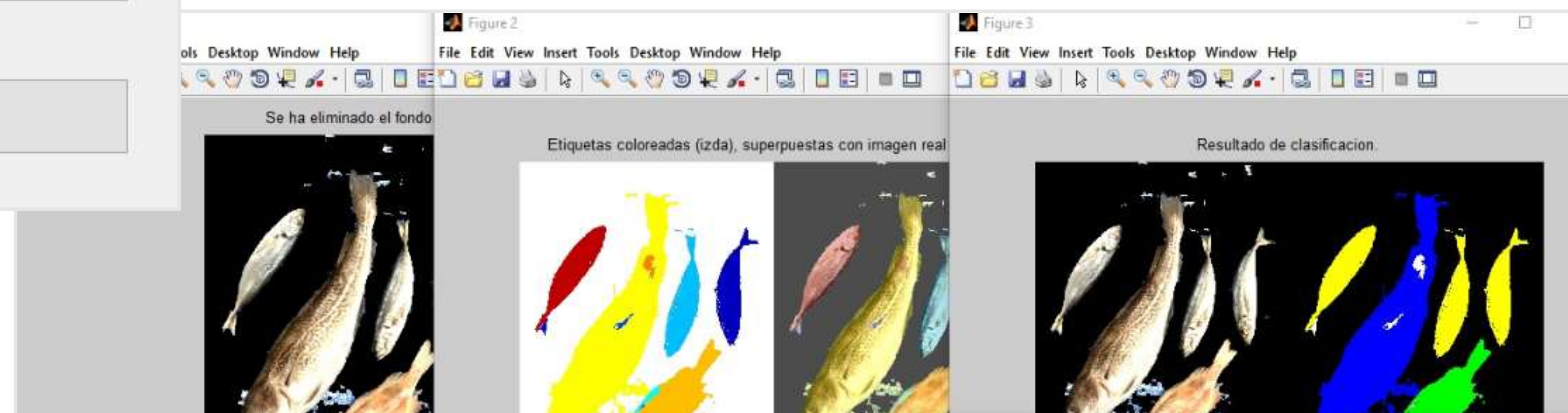
Improvements on species identification algorithms


- ✓ Optimization of recognition algorithms.
- ✓ Acquisition of a bank of high quality images (selection of images obtained on board oceanographic vessels, sampling of all species of interest).
- ✓ Optimization of identification through more intensive training.

Optimization of the equipment

Hardware + speed sensor.

Software: easy to use and suitable for on-board hard environment.






Barco

BARCO_BARCO

Número

2

Modificar



Configuración cámara

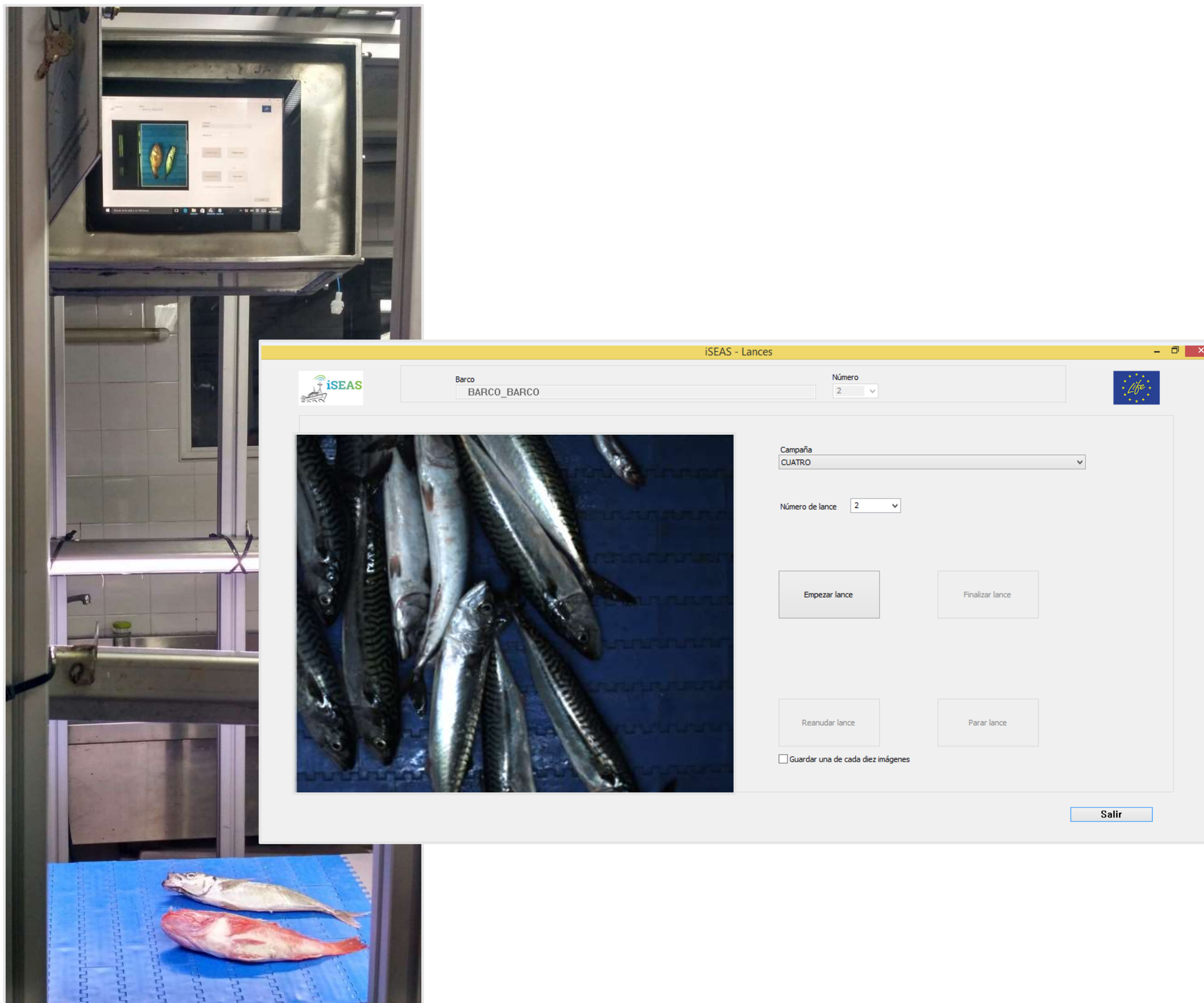
Calibración del sistema

Catálogo

Configuración campaña

Lances

Salir



(2) PILOT TESTS (2017 – 2018)

- ✓ Trawlers (OPROMAR): Portosanto, Ria de Marin, Nuevo San Cibrán.
- ✓ IEO oceanographic campaigns (R/V Miguel Oliver, R/V Vizconde de Eza).
- ✓ Customized installation for each vessel.
- ✓ Detection and resolution of potential limitations on the iObserver use on board.

(3) ANALYSIS OF RESULTS

- ✓ Detection of complementary technologies and/or adaptations of the fishing park to improve iObserver capabilities.
- ✓ Addition of new species for automatic identification → Transferability to other fisheries in the EU.
- ✓ Improved processing time required for identification.
- ✓ Improvement of the results regarding size/weight relationships.



(4) EXPECTED RESULTS

- ✓ Necessity of a specific area in the fishing park (conveyor belt or similar) where the captured fish can be recorded and correctly identified.
 - ✓ Separated individuals, not piled up.
 - ✓ Limited variability of species by trip .
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- **Short-term: Viability of use in monospecific fisheries, separated individuals, few species to be identified.**
 - **Long-term: Trawling fisheries, mixed fisheries, piled up individuals, parks with limited spaces. Potential changes/adjustments.**