



**YANMAR**

News Release

April 20<sup>th</sup>, 2021

Yanmar Holdings Co., Ltd

## Yanmar Launches "Automated Fish Counting System" Using Image Recognition Technology

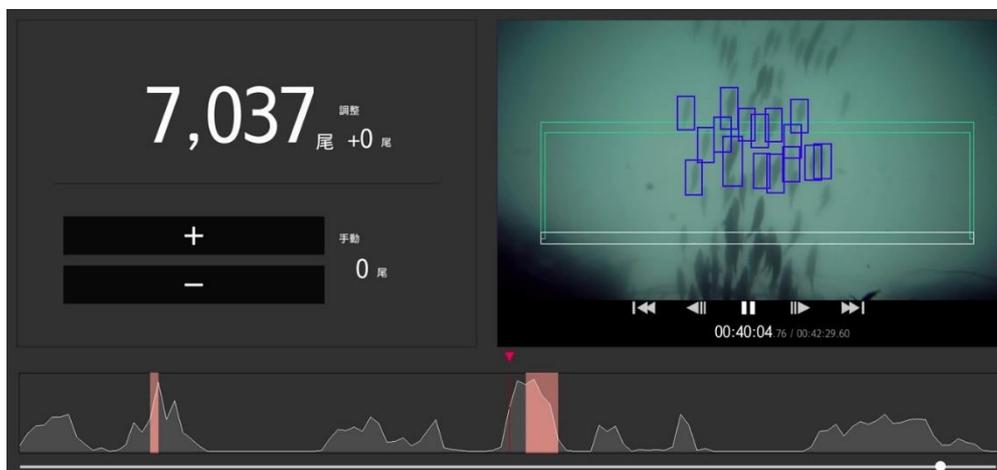


Image of automated fish counting system

Osaka, Japan (April 20<sup>th</sup>, 2021) Yanmar Marine Systems Co., Ltd. (YMS), a Yanmar Group company, begins accepting orders within Japan for a new automated fish counting system from April, 2021. The system is designed for tuna farming and utilizes image recognition technology to count the number of fish.

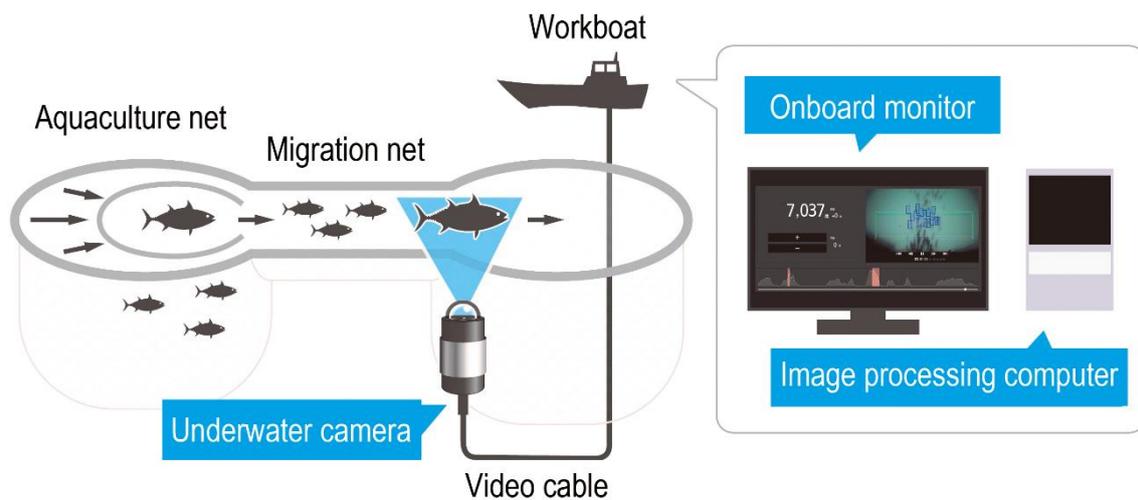
In fish farming, it is essential to know the number of fish inside each net in order to control production volume and the amount of feed used. Furthermore, in recent years as part of a drive towards more sustainable resource management, fishing vessels are required to accurately report the number of young pacific bluefin tuna caught in the wild, which end up being used for breeding at fish farms. Current methods are laborious and time-intensive requiring manual counting of the total number of fish caught, and visually counting underwater images when moving the fish to aquaculture nets.

To tackle this problem and support the aquaculture industry, YMS has developed the Automated Fish Counting System which significantly reduces the time needed to count fish. Yanmar's Research & Development Center developed image recognition and processing technology and an integrated system including hardware, such as a specially designed underwater camera and image processing computer, to realize real-time automated counting. Under optimal conditions, the system has succeeded in

automatically counting tuna with an accuracy of more than 98%. In the future YMS aims to contribute to greater efficiency and development of the fishing and aquaculture industry by reducing feed costs, cutting work time, and facilitating the accurate reporting of catches.

## ■ Product Overview

- Launch: April 2021 (available only in the Japan market)
- Standard configuration: underwater camera (including video cable), onboard monitor, image processing computer and dedicated software



Automated fish counting system

## ■ Main Features

- Counting system enables users to analyze and check results during or immediately after video capture.
  - Angle of view of underwater camera can be adjusted by remote control even after the camera is installed underwater, reducing the time required to install and adjust the camera.
  - Angle of view and brightness can be adjusted to reduce image disturbances and reduce impact on automated analysis.
  - Screen display and correction functionality to enable easy manual counting and correction after automated analysis even for images affected by environmental disturbances.
- \* If the image is affected by environmental disturbance, counting correction is required after the automated analysis process.

## ■ Video of the System in Action



Video of the automated fish counting system

Video on YouTube: [https://youtu.be/hr-CO8hJ\\_SE](https://youtu.be/hr-CO8hJ_SE)

## ■ Product Trials

This product is being developed in collaboration with the aquaculture division of Maruha Nichiro Co., Ltd. In preparation for mass production, Maruha Nichiro Co., Ltd. arranged several sites for Yanmar to conduct trials under various environmental conditions to evaluate the product's performance.

## About Yanmar

Founded in Osaka, Japan in 1912, Yanmar was the first ever to succeed in making a compact diesel engine of a practical size in 1933. A pioneer in diesel engine technology, Yanmar is a global innovator in a wide range of industrial equipment, from small and large engines, agricultural machinery and facilities, construction equipment, energy systems, marine, to machine tools, and components — Yanmar's global business operations span seven domains.

On land, at sea, and in the city, Yanmar provides advanced solutions to the challenges customers face, towards realizing A Sustainable Future.

For more details, please visit the official website of Yanmar Holdings Co., Ltd.

<https://www.yanmar.com/global/>

<Note>

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