

crystalvision

Cutting-Edge Field Lab Solutions

Who we are



- CrystalVision is an Aqua & Agri tech company, specializing in control systems development, automation and R&D facilities
- Founded in 1992
- Based in Kibbutz Samar- Israel

Who we are



Organic dates plantation

- Over 10,000 dates palms
- Over 800 tons of dates per year
- Operating since 1976

Who we are



Gilt-head bream fish farm

Hatchery



Biomass growing



Marketing

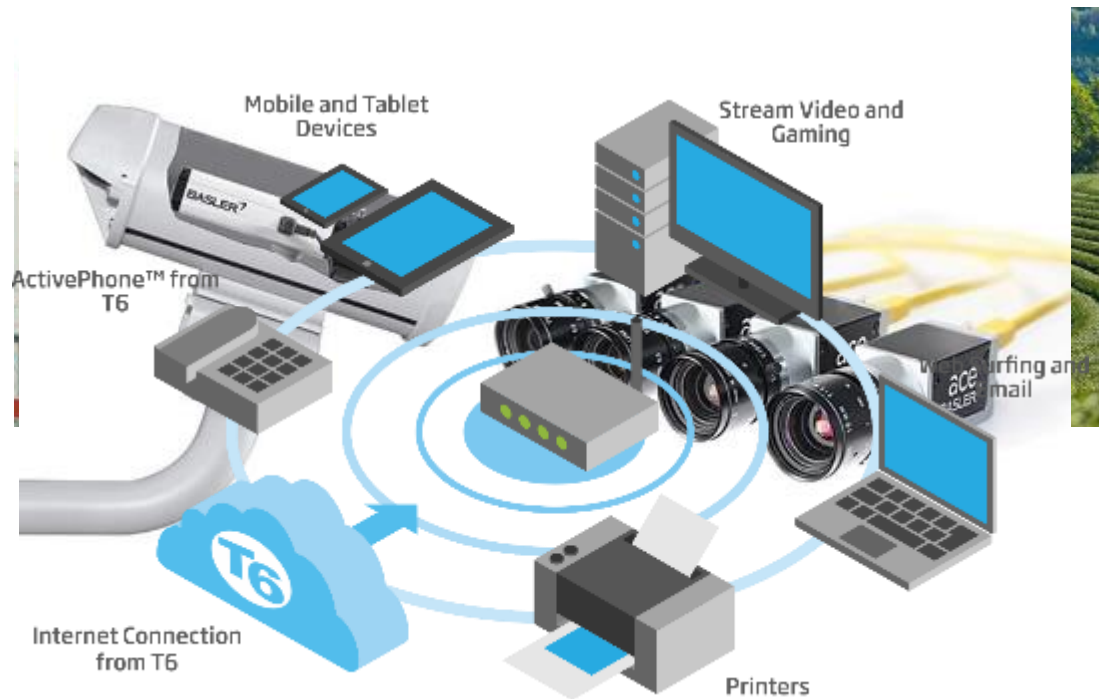
Who we are



Our expertise

- Aquatech
- Agritech
- Medtech

Who we are



Technologies we use

- SCADA OPC
- RFID systems
- Advanced HMI
- Image processing
- Wireless communication

Clients



Our **Aquatech** projects




Seawater Oxygen Enrichment System


WHAT IS **HYPOXIA**?

Hypoxia is the chemical reaction that occurs when natural waters have a low concentration of oxygen and mostly impacts aquatic life and coastal regions

Low oxygen levels dramatically alter the ecosystems of water bodies. Some marine life such as fish and mobile invertebrates migrate to escape the hypoxic areas.

Plants and slow moving animals that cannot escape the hazardous hypoxic waters eventually perish, ultimately causing a dramatic decline in the amount of life in the affected areas.

$O_2 + CO_2 =$ 

$\downarrow O_2 + \uparrow CO_2 =$ 

Problem

- During the summer the oxygen levels in the water drop
- This leads to insufficient oxygen for optimal fish growth

Goal

To Make sure there is enough oxygen in the water for the fish

Seawater Oxygen Enrichment System



What we did



- CrystalVision designed and implemented an offshore wireless system that monitors dissolved oxygen in the seawater cages
- When needed the system opens oxygen banks and enriches the water

Seawater Oxygen Enrichment System



The Seawater Oxygen Enrichment System
makes sure that fish have enough oxygen
for optimal growth

Guppy Fish Sorting Machine



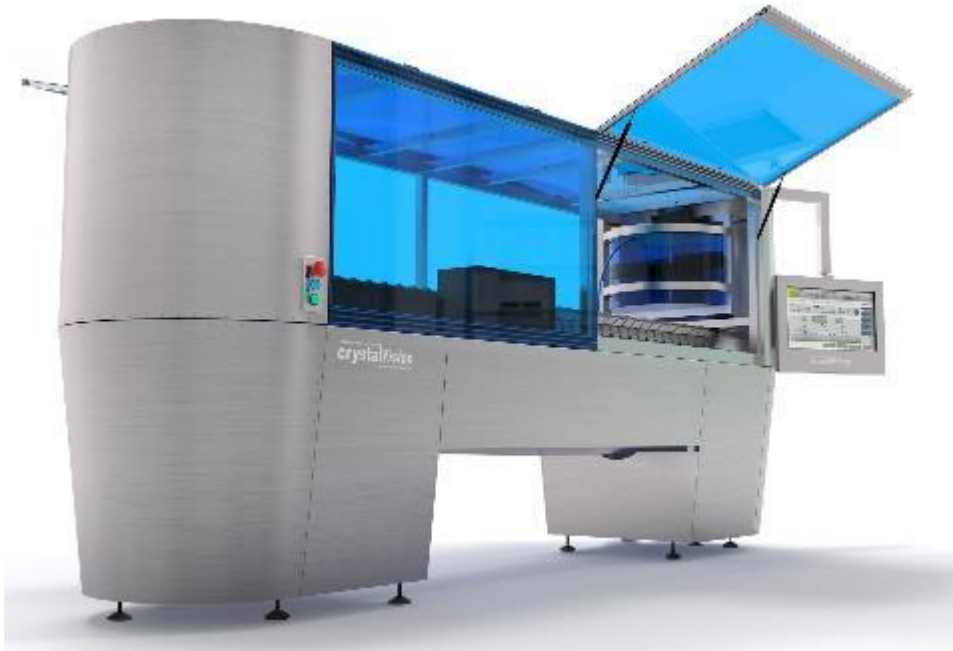
Problem 🤔

Many manual working hours for fish sorting

Goal 👉

To automate the sorting process

Guppy Fish Sorting Machine



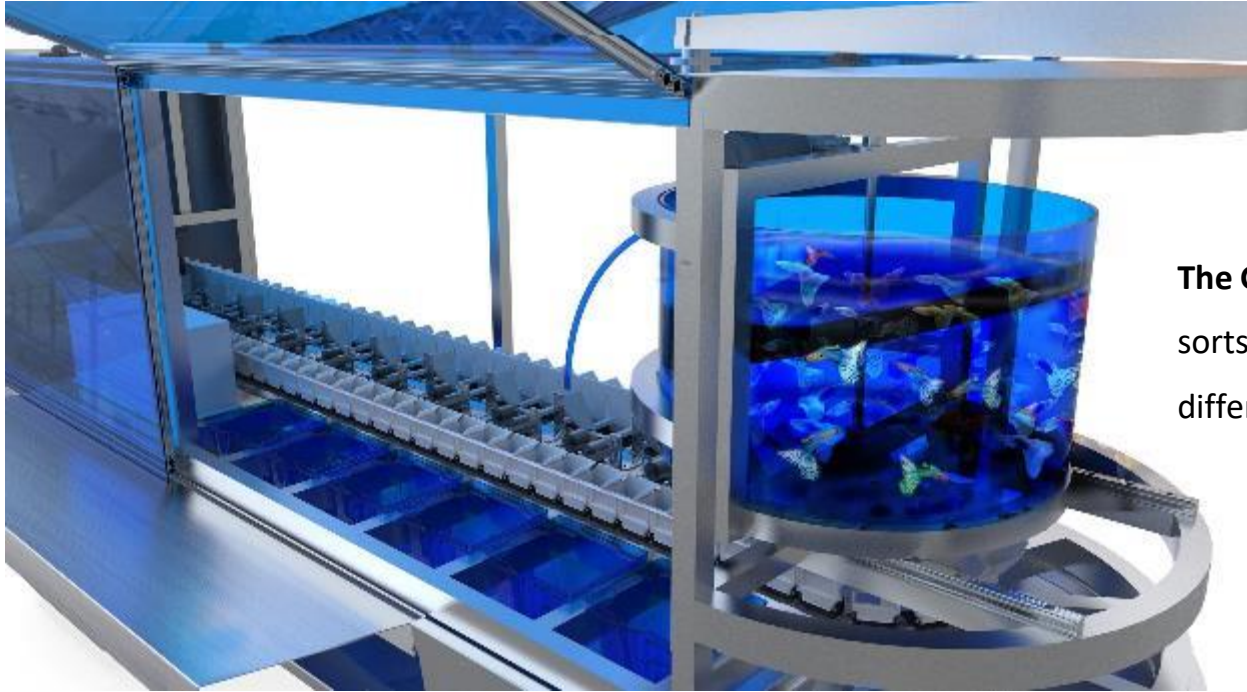
What we did



CrystalVision invented a special fish singulatore to single out the fish

With cutting edge image processing we are able to sort the fish by different parameters

Guppy Fish Sorting Machine



The Guppy Fish Sorting Machine easily sorts ornamental fish according to different parameters

Monitored Climate Simulator



-1.0 -0.5 -0.2 +0.2 +0.5 +1.0 +2.0 +4.0

Problem



Global warming and pollution destroy the coral reefs

Goal



To analyze the behavior of reefs under different conditions

Monitored Climate Simulator



What we did



1. Developed and built a system of 80 acidity and temperature controlled aquariums
2. Installed a smart remote control robot to automatically measure:
 - water temperature
 - dissolved oxygen
 - pH
 - electrical conductivity
 - photosynthesis activity
 - salinity

Monitored Climate Simulator



The Monitored Climate Simulator is a unique system that simulates climatic changes in the sea

Our Fish Feeder Robot

Problems with manual feeding



- Dirty pools from food waste = unhealthy fish
- A need for a lot of working hands (food distribution, pool cleaning, maintenance)
- Inaccurate food dosing and distribution

Fish Feeder Advantages



- Cut the costs on manual labour
- Accurate feeding times and amounts
- Up to 200 pools for each robot
- No room for human error
- Easy data collection

Fish Feeder Robot



- Feeding fish is a complex and important process
- The CrystalVision Fish Feeder robot system replaces manual feeding, allowing the grower to define the frequency, size, and food type of each fish

Fish Feeder Robot



- The Fish Feeder system provides automatic recording of quantities of food issued
- The web app allows to manage and monitor the pools to achieve savings in food and manpower
- The Fish Feeder can also distribute Artemia, additives, medications and more

Opportunities with CrystalVision



- The Fish Feeder Robot is a platform, that can be customized. More sensors and abilities can be added to it. Pool monitoring, antibiotics distribution & more
- Feeding systems and environmental control systems for land based fisheries:
 - Recirculating aquaculture system (RAS)
 - Flow-through systems (FTS)
 - Ponds systems
- Sorting systems for live fish and fish production & processing facilities

Thank You!

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