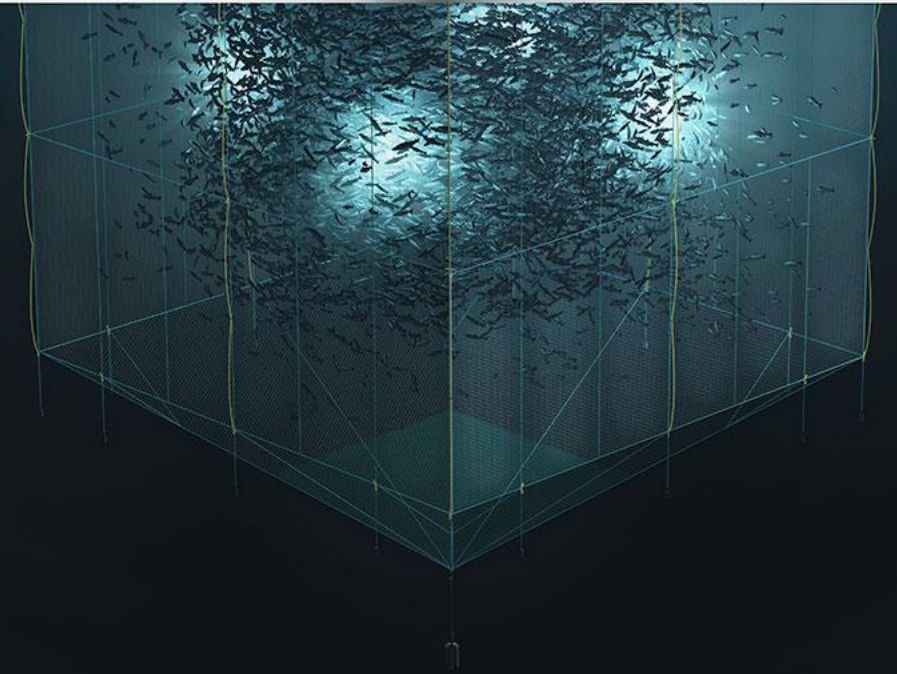


AKVA group

Andrew Campbell Oct 2018





AKVA group in brief

#1

Leading technology and service partner to the global aquaculture industry



Global presence and companies in 11 countries



Deliveries in over 65 countries last 40 years



1012 employees



Listed on Oslo Stock Exchange since 2006



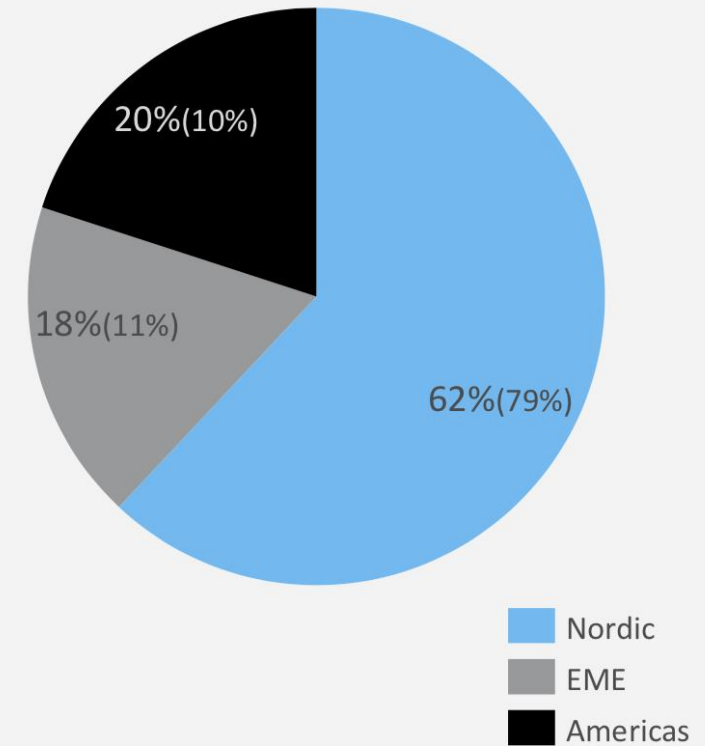


Where we deliver

AKVA group's geographical regions



Income distribution Q2 2018

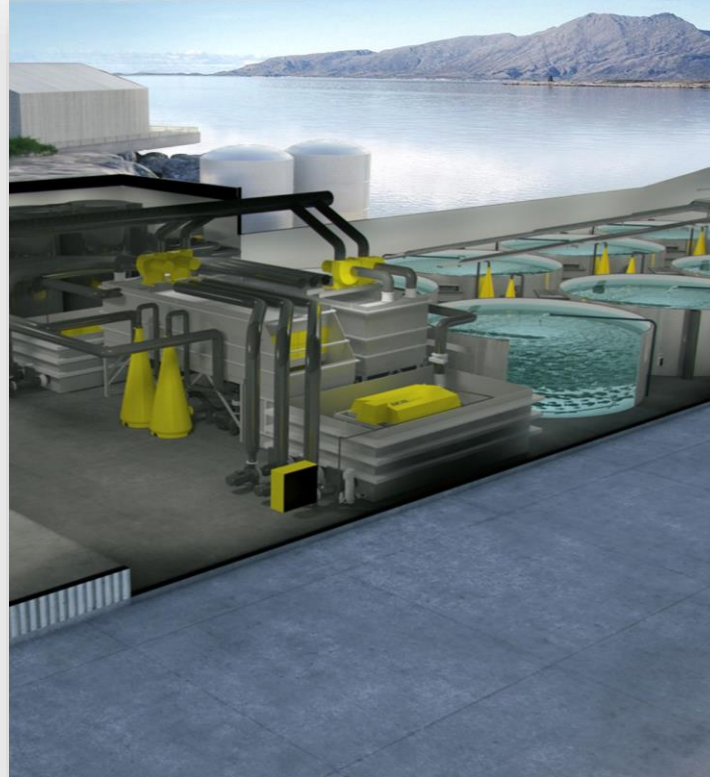


Turn-Key Solutions

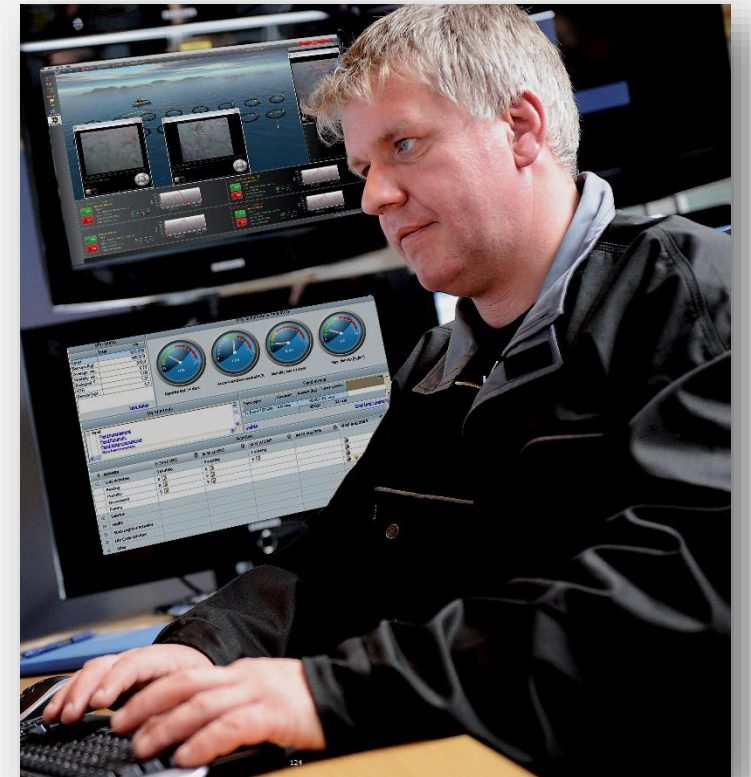
Cage Based Technology



Land Based Technology



Software



Complete cage farming solutions



Norway & Chile – just different

- 100% Plastic cage
 - No Seals
 - All equipment is regulated
 - Even playing field for suppliers
 - Ration feeding + single doser
 - Large silos
 - Quality first
 - Nets and barges single supplier contracts
 - Internet connection the norm
 - Low current, clear water
- 100% Metal Cages
 - Seals
 - Equipment not regulation
 - No playing field – mix price/quality
 - Cyclic feeding + multiple Augers
 - Smaller silos
 - Value for money - Price / Quality
 - Nets and barge each multiple suppliers
 - Internet connection the exception
 - High current, high algae load



The last 10 years

- Increasing acceptance of RAS technology in land based
- Establishment of the metal cage as the preferred solution
 - Best solution for protection against seals
- Develop of larger and more robust cages
 - 2-3m walkways, larger beams, 40m x 40m
- Use of more feed lines per farm
 - Less cages per line (Industry average getting close to 4 per line)
- Improvement in cameras quality resolution
- Remote control and off site monitoring

metal cage as the preferred solution





A challenge that shapes us





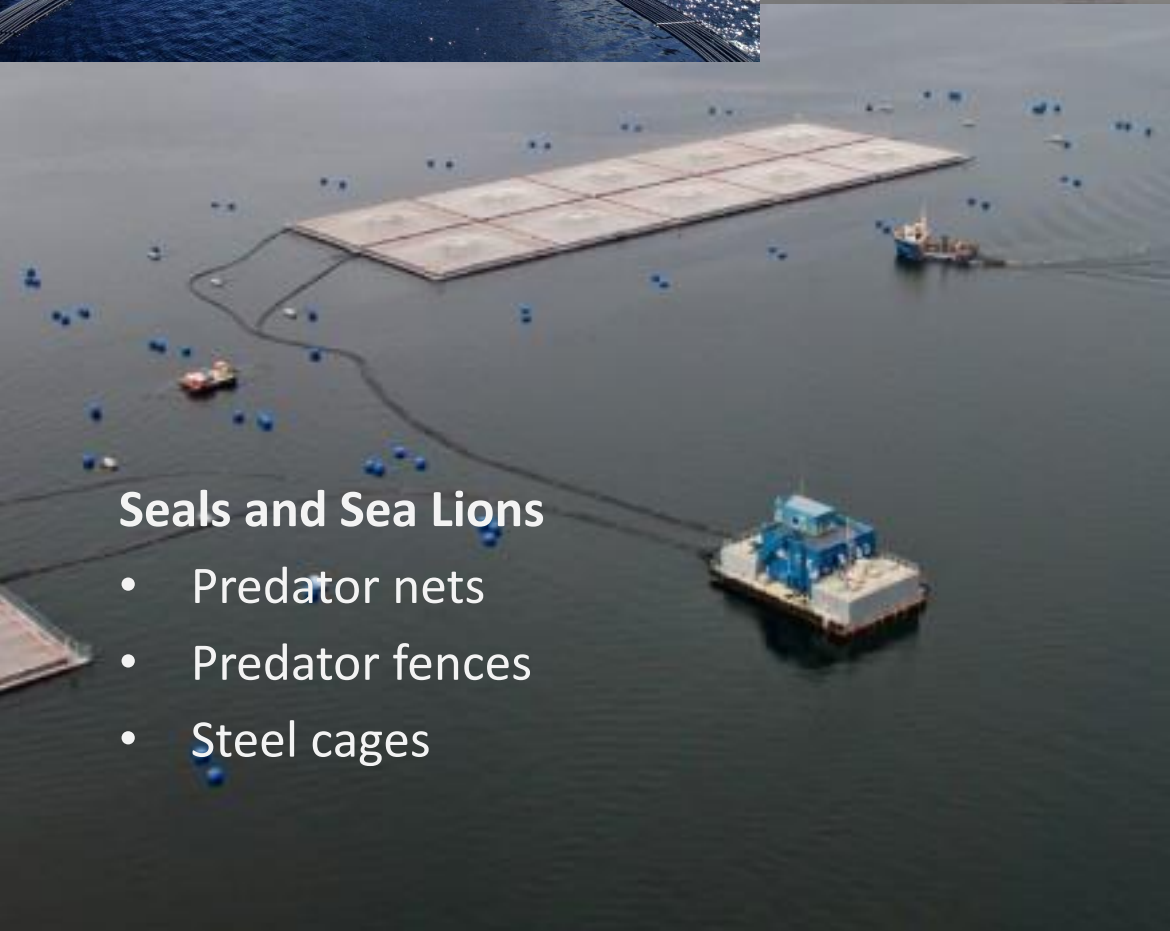
Current

- Cages in a line causes a shadowing effect



Seals and Sea Lions

- Predator nets
- Predator fences
- Steel cages



Solution

- Metal cages
- Full perimeter predator nets





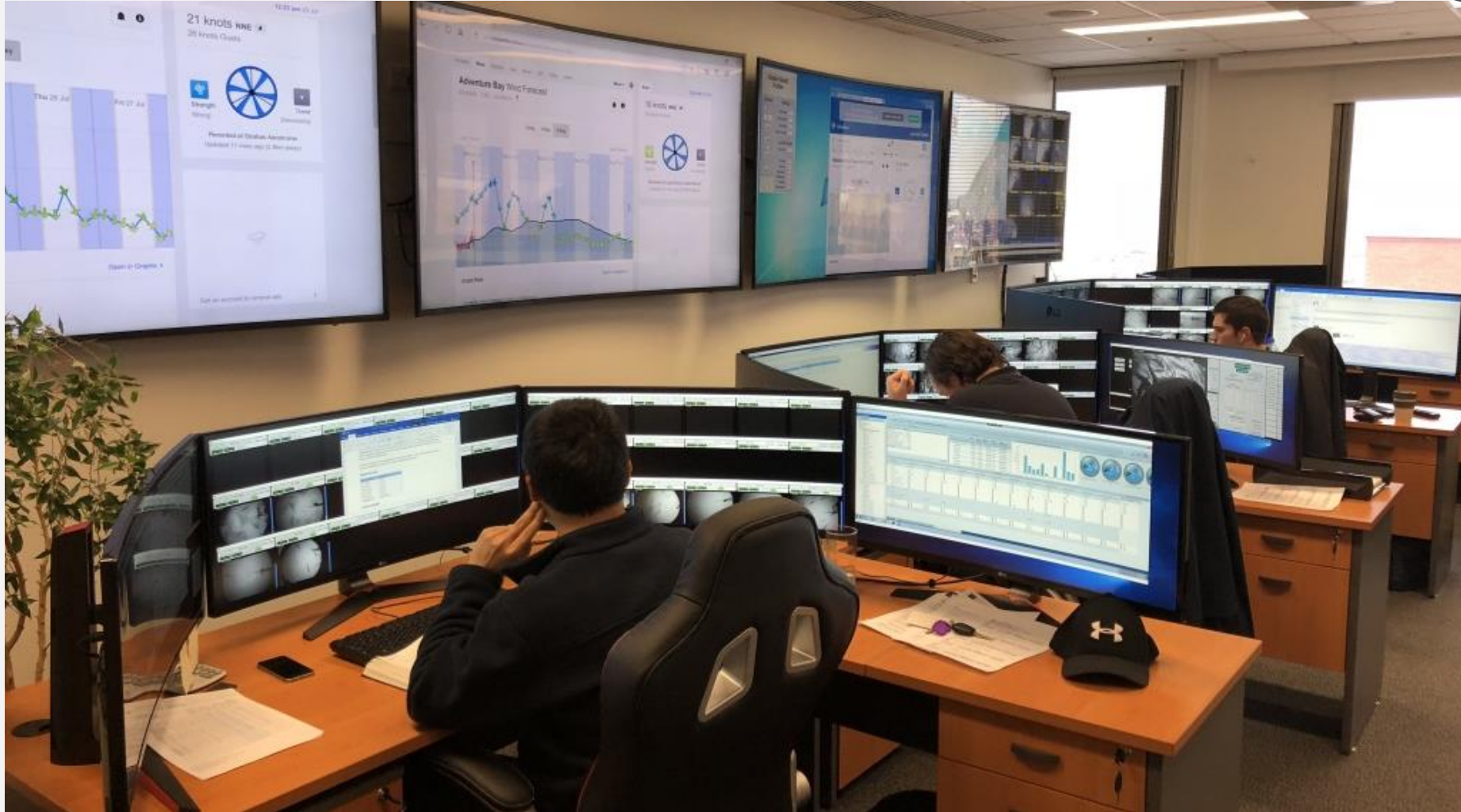
Use of more feed lines per farm



Improvement in cameras quality resolution



Remote control and off site monitoring



The future?

Cage Based Technology



Your Aquaculture Technology and Service Partner

AKVAGROUP™



Driving forces – salmon industry

LAND BASED
FARMING



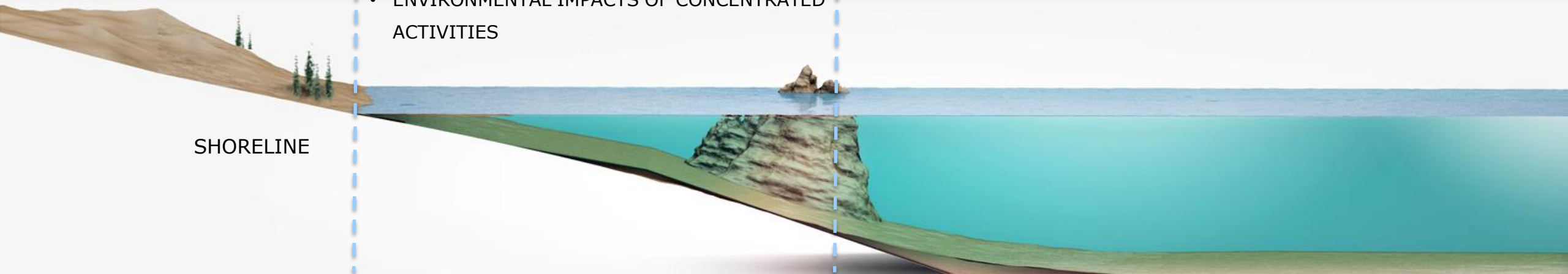
Challenge of nearshore farming

- SALMON LICE
- CONCENTRATION OF STAKEHOLDER INTEREST
- WATER QUALITY
- AVAILABLE SPACE FOR EXPANSION
- ENVIRONMENTAL IMPACTS OF CONCENTRATED ACTIVITIES

EXPOSED SITES
FARMING

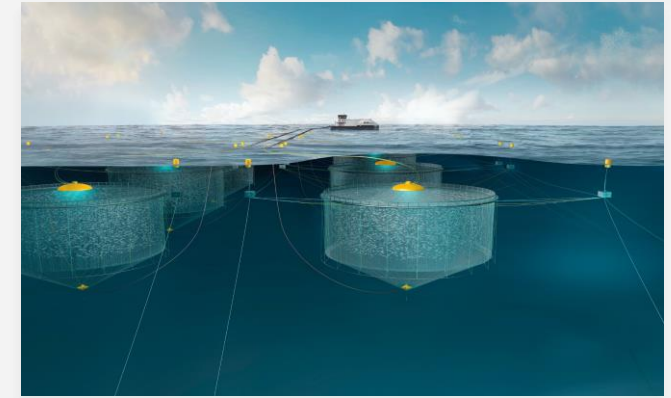
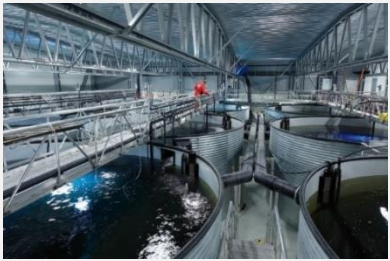


SHORELINE





Cage farming development



SHELTERED

EXPOSED

OCEAN FARMING

SHORELINE

INCREMENTAL DEVELOPMENT:

- ENLARGEMENT AND INCREASED ROBUSTNESS

INCREMENTAL DEVELOPMENT:

- BASED ON EXPERIENCES FROM AQUACULTURE AND OFFSHORE INDUSTRY

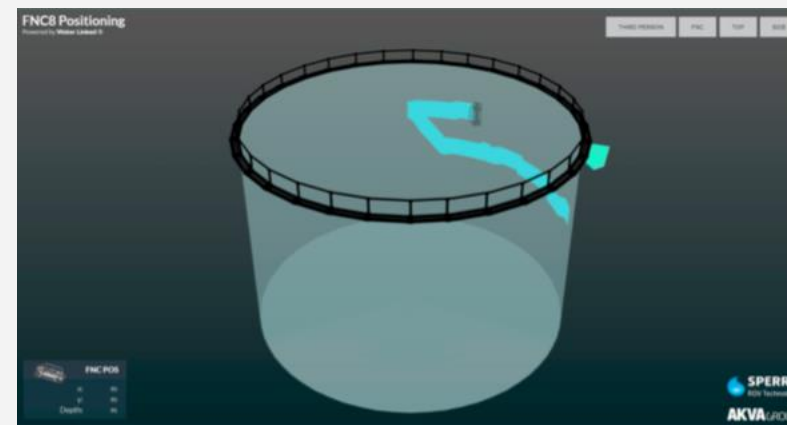
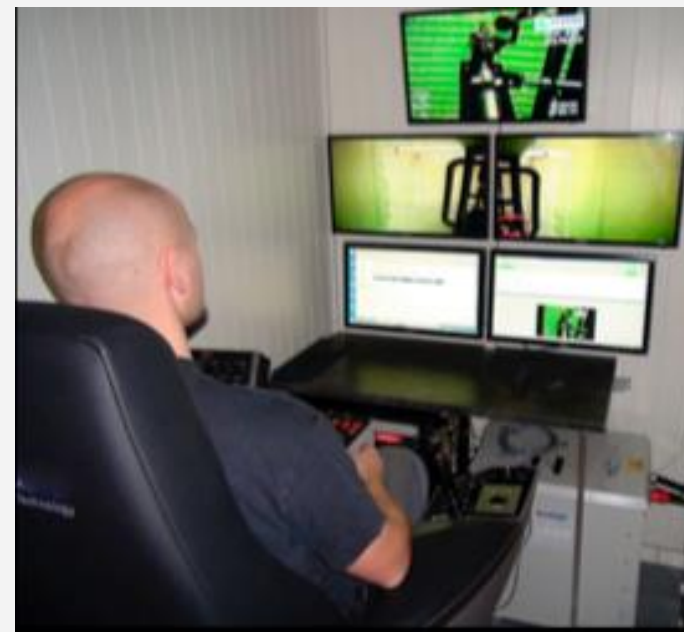


The next 5 years

- Larger land based RAS facilities for post smolt
- Development of larger and more robust cages for exposed sites
- More feed lines per farm, until one line per cage
- Use of ROV technology
- Remote control and off site monitoring
 - Increase of on-site data streams, (environment, average weight, health)
- Assisted site management (AI)
 - Machine learning giving assistance to staff..... intelligent feeding



Use of ROV technology



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Activity: 7% Pellets: 0



Activity: 12% Pellets: 0



Activity: 5% Pellets: 0



Activity: 4% Pellets: 0



Activity: 7% Pellets: 2



Activity: 7% Pellets: 0



Activity: 7% Pellets: 0



Activity: 6% Pellets: 0





Aquaculture is key to reaching multiple UN sustainable development goals



