Aquaculture 4.0

Digitalization for the SME

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Aquaculture 4.0
Overview of entire Fish Farm Eco System

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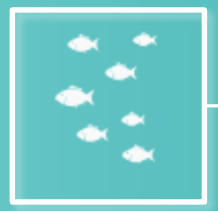
Hatchery
Baby fishes



Fish Food
Multiple suppliers
(e.g. Evonik)

Covered by current project

Fish Farm

- No automatic detection of antibiotics
- No monitoring system for chemicals
- Feeding is done manually
- Reactive disease control only
- Supply chain is not transparent

- Transport and packaging process
- Time of harvest

live

pre-packed

- Transport and packaging process
- Freezing process
- Time of Harvest

Retailer
Restaurants, supermarkets etc.

Consumer

- Trusted Origin (Harvested and not live fishing)
- Transparency on anti biotics dosages
- Consistent size/mass of fish

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Challenges & Market information

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Trusted Food Source

Consumers want to know the **origin of food source** and all relevant information during the harvesting process

Optimized Fish feed

Fish pallets is a main source of feed. A sustainable system that **matches the feeding cycles to optimal growth rate** will increase profits for farmers

Less Antibiotics

Excessive antibiotics and/or growth hormones administration is a major threat to world health as it can lead to increased **antimicrobial resistance**

Predictive Disease Control

Effective data driven disease control to limit the spread of **infectious diseases/ pathogens**

Environmental Pollution

Wastewater discharge containing feces, nutrients and chemicals released into the ocean results in **algae bloom** which **removes dissolved oxygen**

Top 10 Countries for Aquaculture Production

Rank	Country	Production MMT*
1	China	63.70
2	Indonesia	16.60
3	India	5.70
4	Vietnam	3.60
5	Bangladesh	2.20
6	Philippines	2.20
7	South Korea	1.90
8	Egypt	1.40
9	Norway	1.30
10	Japan	1.10

Source: Food & Agriculture Organization of United Nations (FAO)
https://www.worldatlas.com/articles/top-15-countries-for-aquaculture-production.html

Aquaculture 4.0

Leveraging Industry 4.0 to tackle the challenges of fish farming

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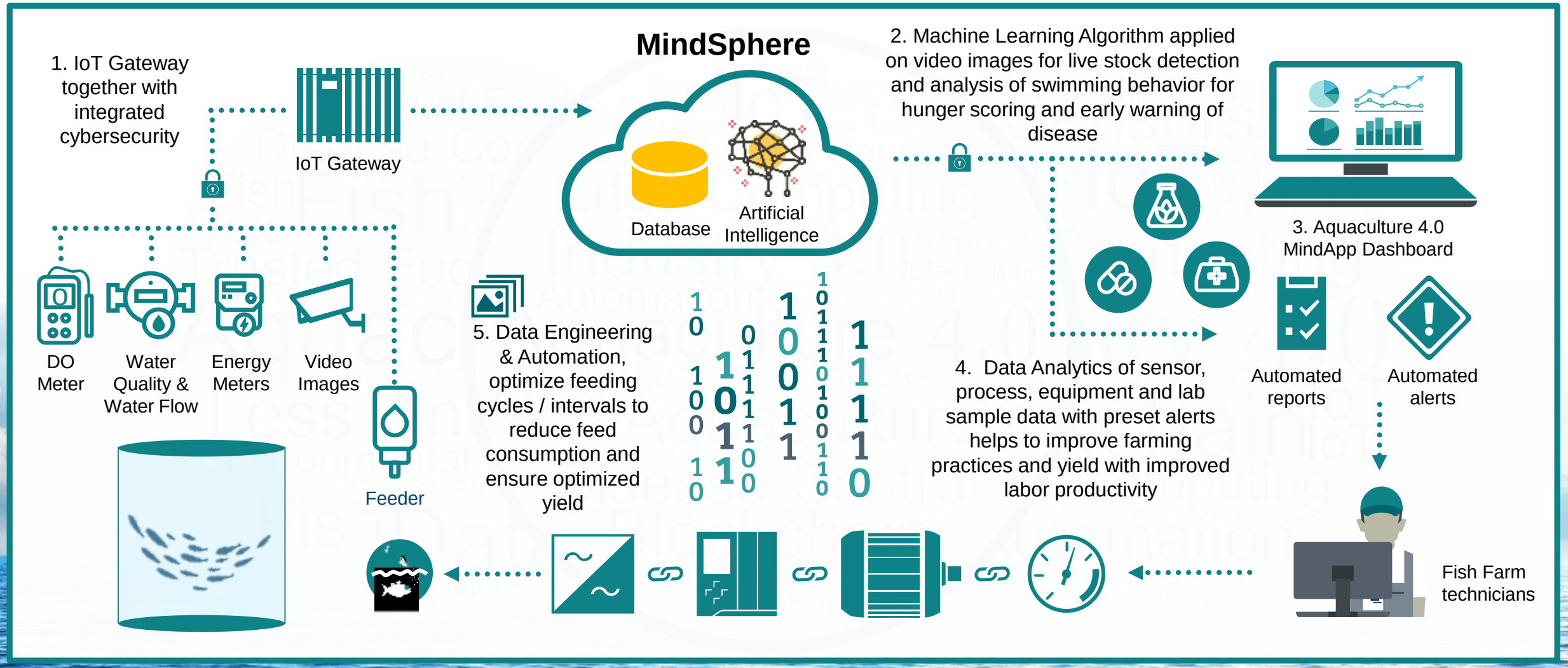

MindApp User Interface:
Plant Manager Dashboard

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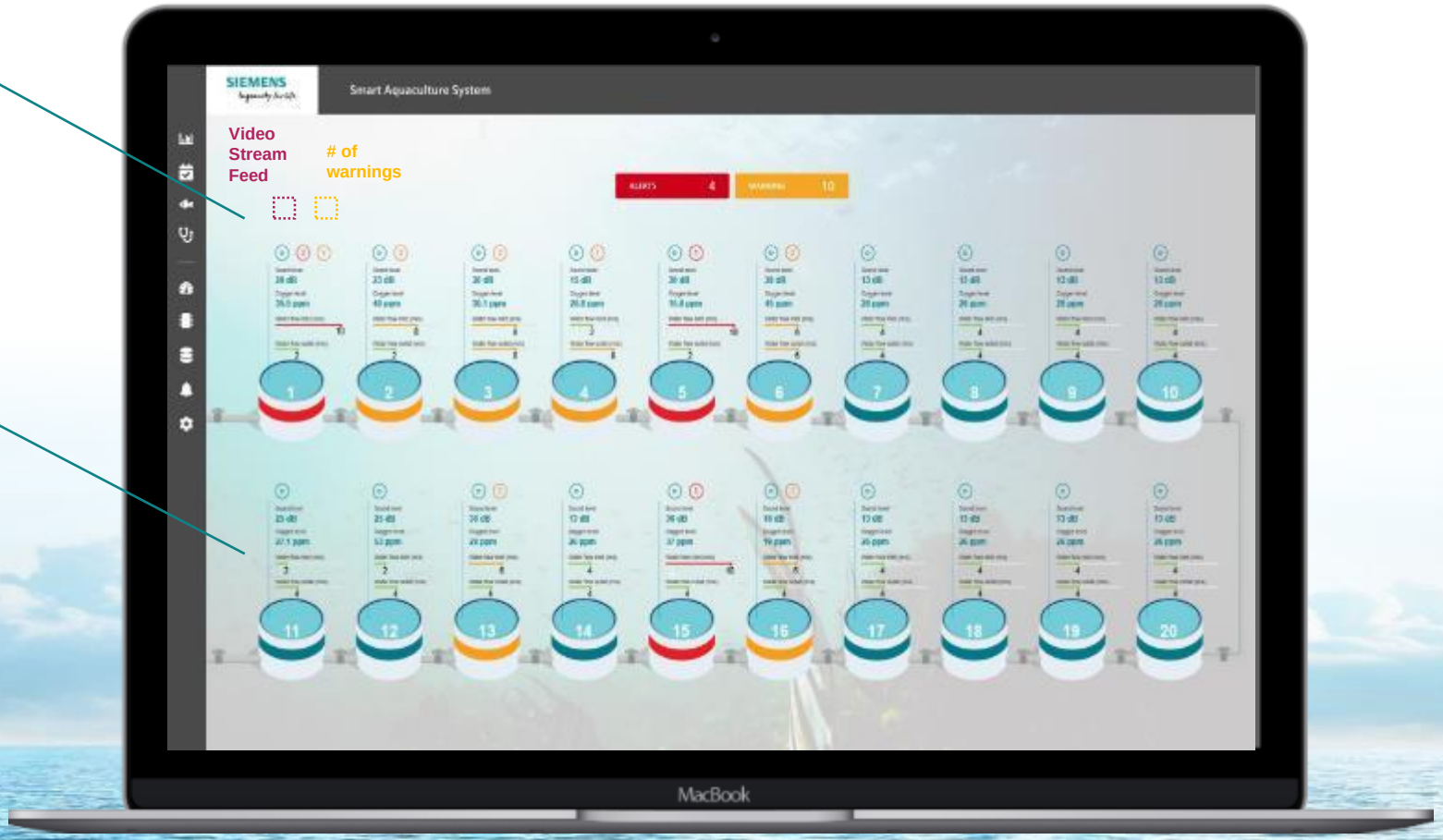
ALARMS

- Indicates the alarms and notifications based on preset threshold limits
- User are allowed to set the limits for various measured / input parameters

OVERVIEW

- Indicates the overall condition of individual tanks
- Flow rates (inlet/outlet), and relevant sensor data such as dissolved oxygen level will be reflected
- Color coding of each tanks for indication of statuses



MindApp User Interface:
Feed Dashboard

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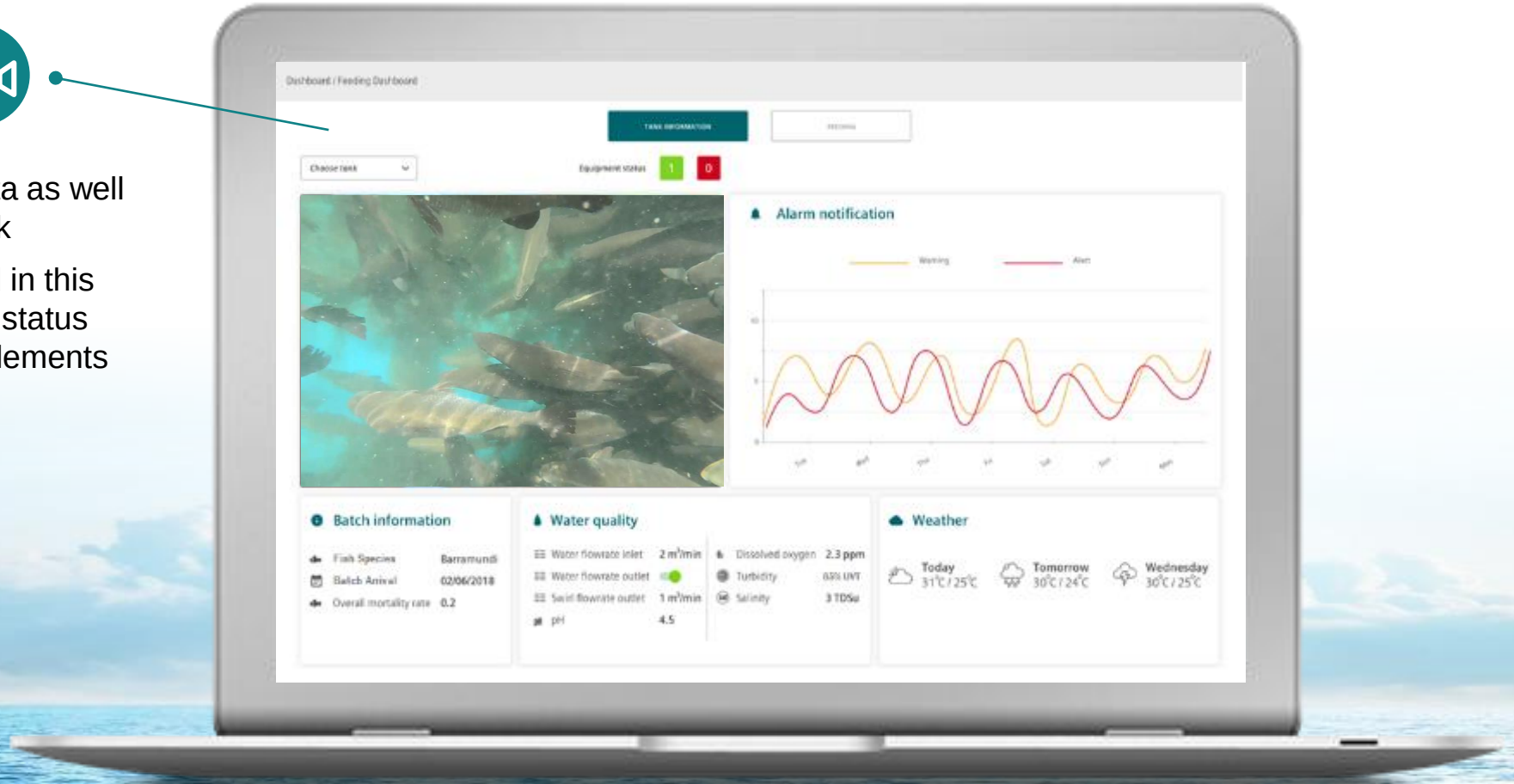
VIDEO FEED

- Reflects relevant batch related data as well as video feed streams of each tank
- Weather forecast is also displayed in this stream with the overall equipment status reflected in different color coded elements



Thank You !

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