Industry partners: LERØY · Cargill · marineharvest · Grieg Seafood · MSD Animal Health · PHARMAQ · Kontali · DNB · Benchmark StofnFiskur · Benchmark SalmoBreed · PATOGEN · THOMMESSEN

R&D Partners: Universitas Bergensis · NHH · Nofima · NIFES Nasjonalt Institutt for Ernærings- og Sjømatforskning · INSTITUTE OF MARINE RESEARCH HAVFORSKNINGSINSTITUTTET · Veterinærinstituttet Norwegian Veterinary Institute

Members: Høgskulen på Vestlandet · BI · uni Research · Anteo · FJORD MARITIME · BREMNES SEASHORE · FA · TIALTA · Seasmart · DEEP VISION · HORDAFOR · CMR Christian Michelsen Research · NORMONG · Optimeeringaqua · FishGLOBE - for bedre fiskevelferd · NIVA Norwegian Institute for Water Research · Ecomerden · MAQUA · Aquabyte · Fishency Innovation · NORTH ATLANTIC SEAFOOD FORUM · LINGA LAKS · IntraFish · EIDE Fjordbruk Tradisjon for kvalitet · NORGES SILDESALGSLAG · BOLAKS · Quantidoc · AQUAFARM Equipment · BioVivo TECHNOLOGIES AS

Contributers: eat · nyskapingsparken INKUBATOR · BTO · Hatch · CSAI · Global Centres of Expertise GCE Subsea · Gode sirklar · Sea Lice Research Centre · CONNECT Vest-Norge · CtrlAQUA · Norwegian Centres of Expertise NCE Maritime CleanTech

Financial partners: HORDALAND FYLKESKOMMUNE · BERGEN KOMMUNE · Innovation Norway · SIVA · Forskningsrådet

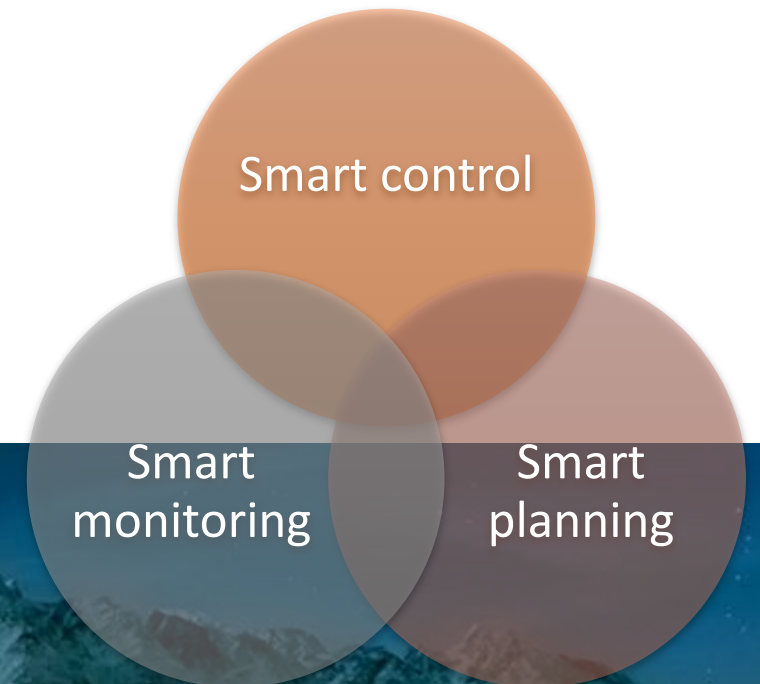Ingredients   Feed   Production/Fishery
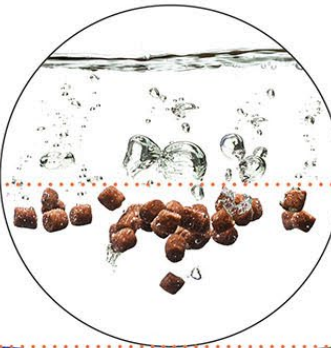
Processing   Distribution   Market

AquaCloud
DISRUPTIVE INNOVATION: TURNING OUR DATA INTO ACTION

- Establish common database to develop the aquaculture industry.
- Utilizing Big Data/IoT and Artificial Intelligence building fact based knowledge as the future foundation for innovation and growth.
- Extract learning and experience in an efficient manner.
- Open up for novel business analytics approach.
- Test case: Predict sea lice outbreaks – evaluate measures.

Smart control

Smart monitoring

Smart planning

- A result of an industry workshop addressing sealice management
- Need for shared data to enforce better sealice management
- The cluster seen as the trusted partner to launch the effort
- Initiated by Grieg Seafood ASA, Lerøy Seafood ASA, Marine Harvest ASA
- Later, Bremnes Seashore AS, Lingalaks AS, Bolaks AS, Eide Fjordbruk AS and Cermaq ASA
- Discussion with further expanding the project aiming for 50-60% of volume of Norwegian Production by mid 2019.
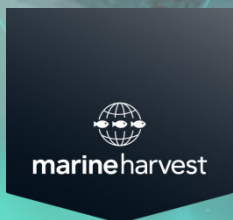
BOLAKS

BREMNES SEASHORE

CERMAQ

EIDE FJORDBRUK

Grieg Seafood®

LERØY

LINGA LAKS

marineharvest

HAVFORSKNINGS INSTITUTTET

BarentsWatch

IBM Watson

THOMMESSEN

Norwegian Centres of Expertise
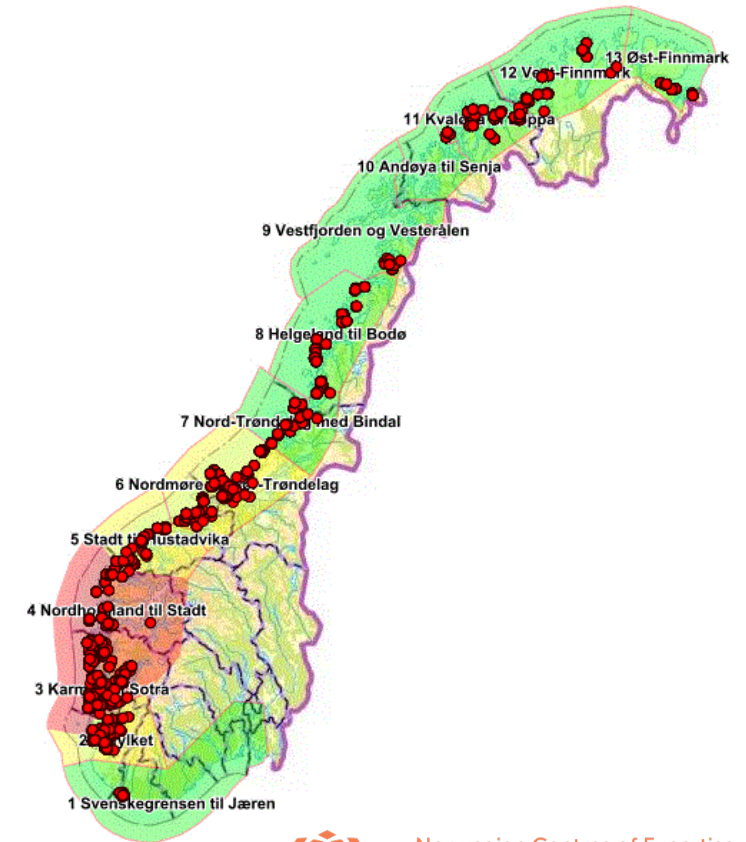NCE Seafood
Innovation Cluster

- Decision support for sealice management
- Predictive algorithms for :
- Sealice outbreaks (Daily, 14 days ahead)

- Proactive in stead of reactive
- Where/When/How to respond to an outbreak

AquaCloud – Current status

- AquaCloud receives data from 7 farmers (320 locations – 2801 cages) every day.
  - ✓ Biomass (volume in cage)
  - ✓ Environmental information
  - ✓ Feeding
  - ✓ Mortalities
  - ✓ Treatments
  - ✓ Cleaner fish
  - ✓ Coastal current models
  - ✓ Resistance data

- Data are transformed and 1, 2 & 3 weeks prediction models are run automatically.

- Prediction data are available to the farmers, and can access their own data in AquaCloud.

- Prototype where lice pressure data from IMR are included in models, have been completed. Ongoing work to embed these data in automatic prediction every night.

Norwegian Centres of Expertise
NCE Seafood
Innovation Cluster

Antall merder som rapporterer til AquaCloud - Tidlig Mores Law

@bjorgolfur
@NCESeafood

Unique features of the project
- Industry owned/Industry managed
- Comprehensive database across companies
- Comprehensive database across regions
- New tool reducing the complexity and effort of reporting
- Innovation platform
- Accelerates R&D projects through data access
- Supports the Marine Research Institute Sealice and coastal current models

Aqua Cloud in the aquaculture cloud ecosystem
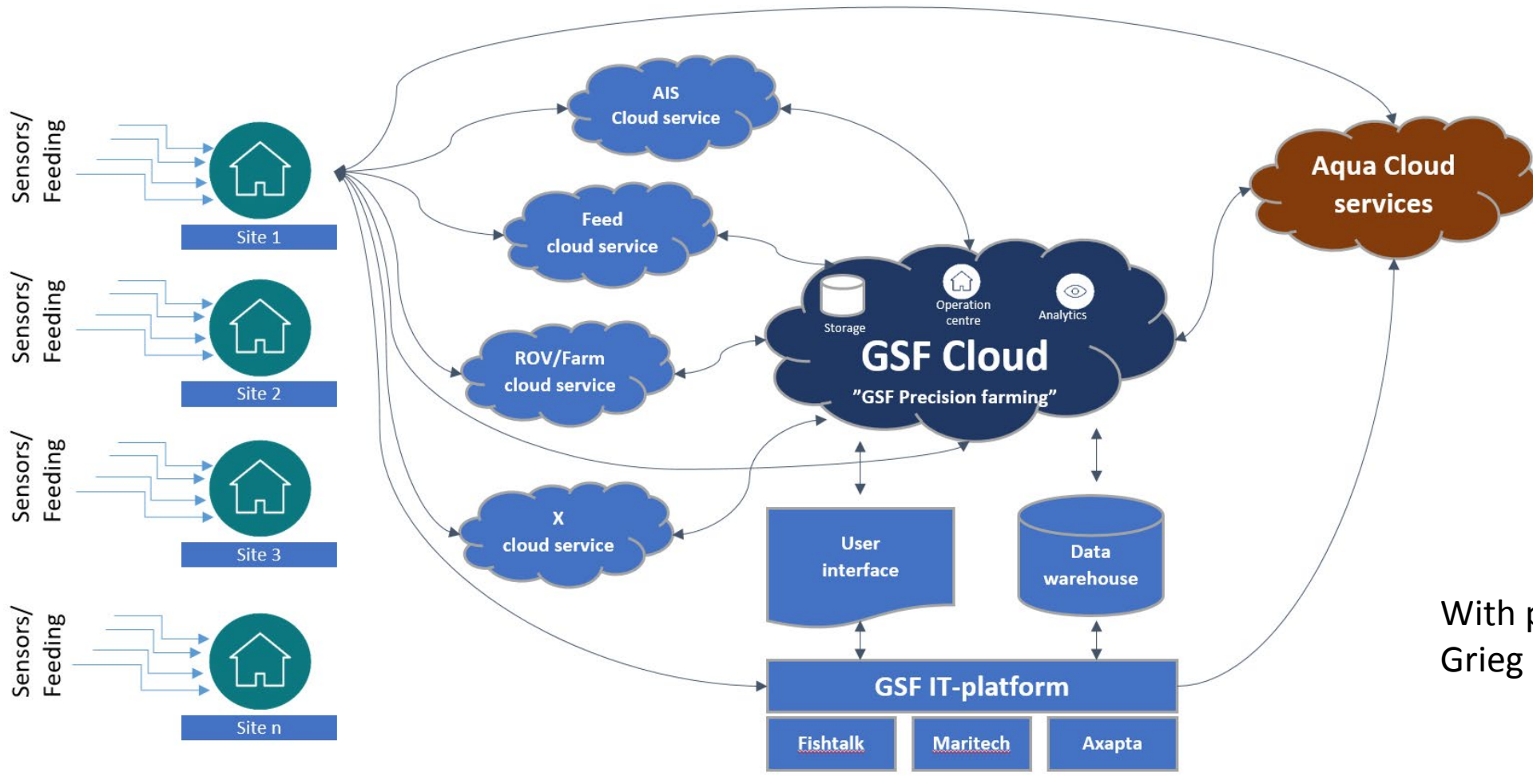
With permission from
Grieg Seafood ASA

Aqua Cloud Services in the aquaculture ecosystem

Aqua Cloud Services
The strategic digital innovation platform for the aquaculture industry

Biological challenges
- ✓ Lice
- ❑ Deceases
- ❑ Vaccines
- ❑ Algaes
- ❑ Area management
- ❑ Measures & actions
- ❑ ++

Service provider
- ❑ Reporting services for regulators / authorities
- ❑ Data source for BI solutions
- ❑ Establish and maintain industry standards
- ❑ Data source for tech dev & innovation

Industry development
- ❑ Data lake for AQ ecosystem
- ❑ Data source common or individual analytics
- ❑ Data source individual R&D projects
- ❑ Data source for tech dev & innovation

- ✓ Communication
- ✓ Conferences
- ✓ Tech Dev Incubators
- ✓ Hackatons
- ✓ Reputation
- ✓ Contracting
- ✓ Education
- ✓ Industry standards
- ✓ ++

04.10.2018