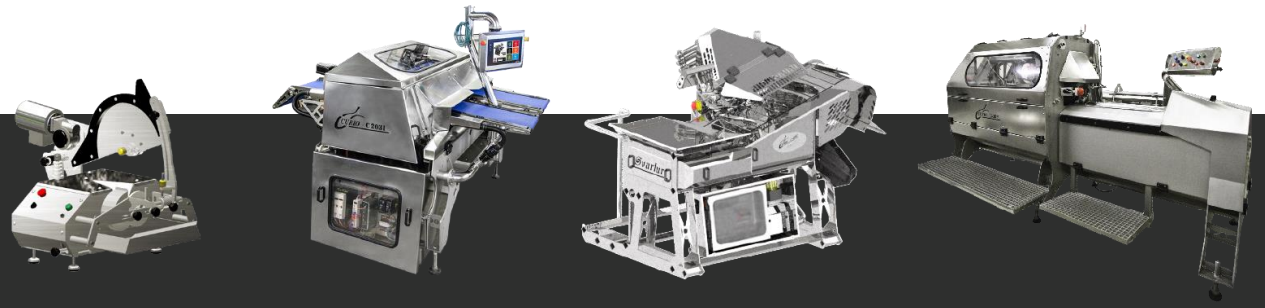
CURIO

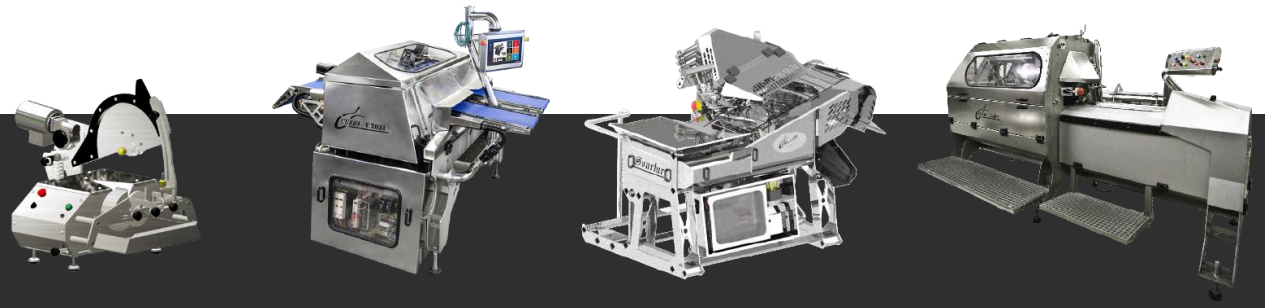


Innovative Processing Equipment for Heading, Filleting and Skinning

PROBLEM

- A large number of whitefish processors in our target markets underutilize up to 8% of fish meat during the ineffective cutting of fish collarbones
  - ❖ Lack of specialized machinery
  - ❖ Waste of raw material

- Manual cutting of the collarbone exhausting & very expensive



Background

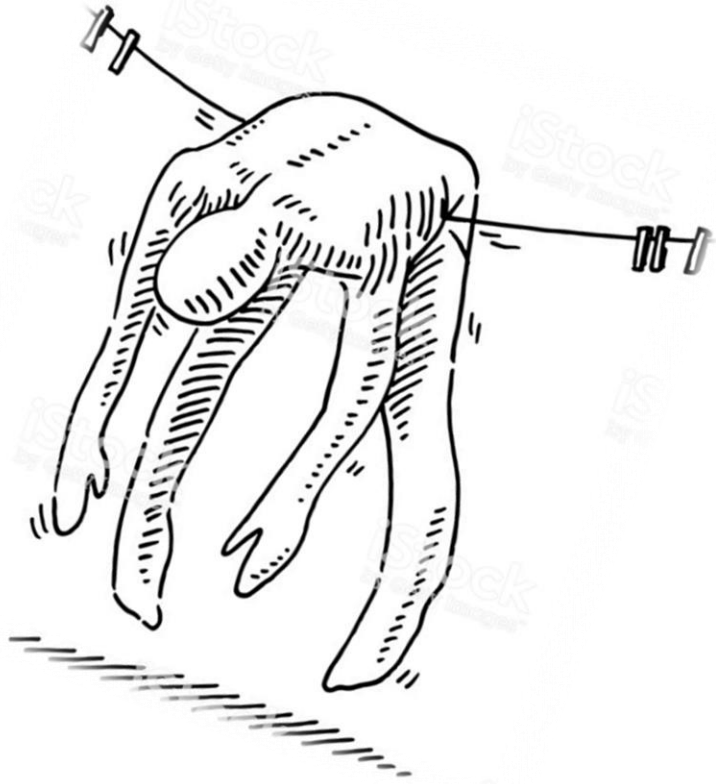
Norwegian whitefish industry wanted to increase it’s filleting production, both for fresh, frozen and salted products.

Background

- When producing fillets, the final product must be presented without the collarbone.

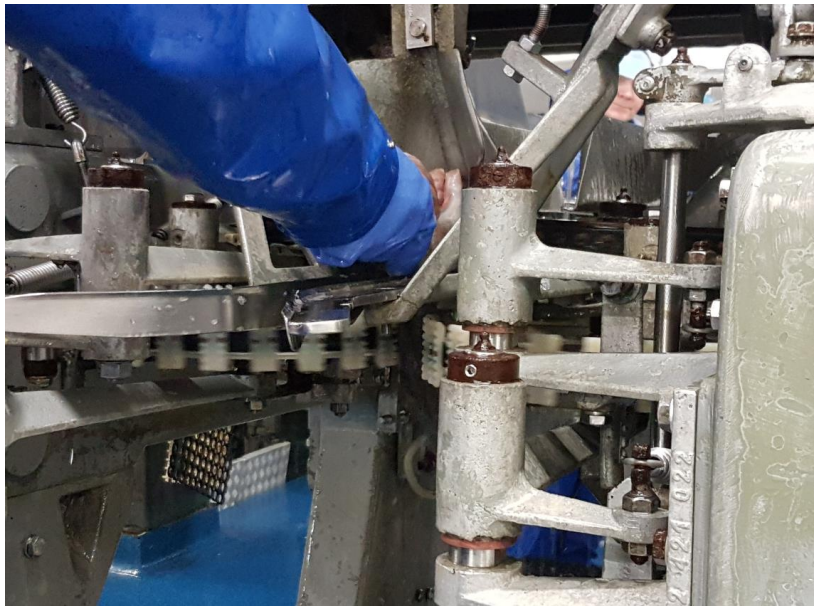
Current solutions

- Manual cutting is labour intensive, exhausting and an expensive operation.



Current solutions

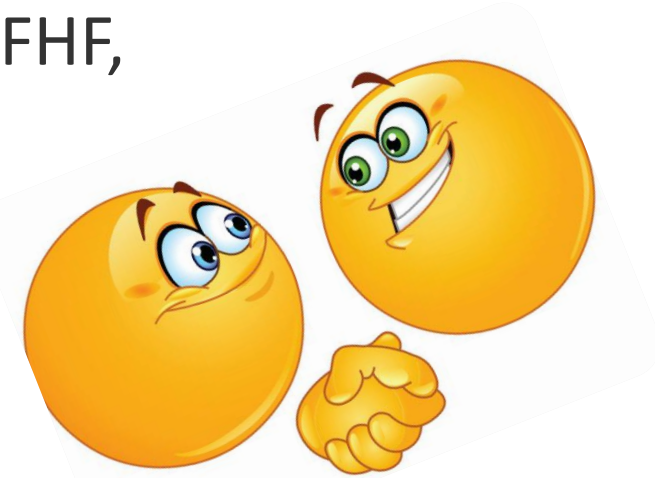
- Adapted, outdated machines;
  - Extremely poor operator safety.
  - Wasting big chunks of the most expensive part of the fillets, the loin.



Background

- Norwegian fish processing companies entered a cooperation with Curio in 2016. Priority was that the machine should function for cod, ling, haddock and saithe.

- The Norwegian Seafood Research Fund – FHF, participates. FHF manages the industry's investments into industry-based R&D.



www.fhf.no/prosjektdetaljer/?projectNumber=901284

- FHF project number: 901284
- Status: Ongoing

Targets

- Develop and build a prototype, test it and verify in cooperation with the Norwegian fish industry and Curio.

- Using one operator to reach an efficiency of at least 4 trained operators cutting manually.

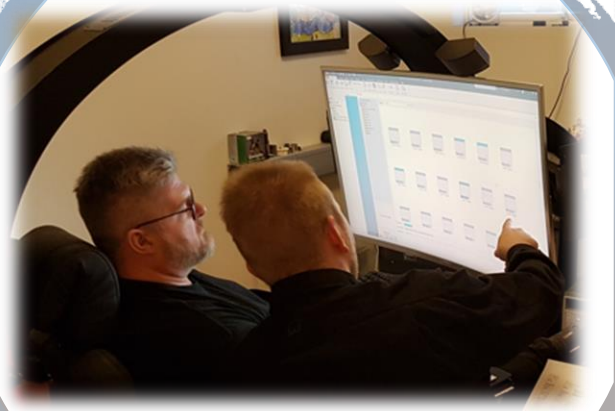
- To reach a stable yield that would top manual cutting during full working days and at least 3 % better than an eventuel existing maschine and improve filleting yield from HG fish by 2%.

FHF
FISKERI- OG HAVBRUKSNÆRINGENS FORSKNINGSFOND

Why Curio?

- One of the world's leading producers of hi-tech seafood processing equipment.

- Icelandic hi-tech producers leading when it comes to improving yield, throughput, consistency and value creation.



Viðskiptablaðið

Like Follow

ÞRIÐJUDAGUR, 16. OKTÓBER 2018

FRJÁLS VERSLUN 20. maí 2018 13:09

Hátæknifyrirtæki í fremstu röð

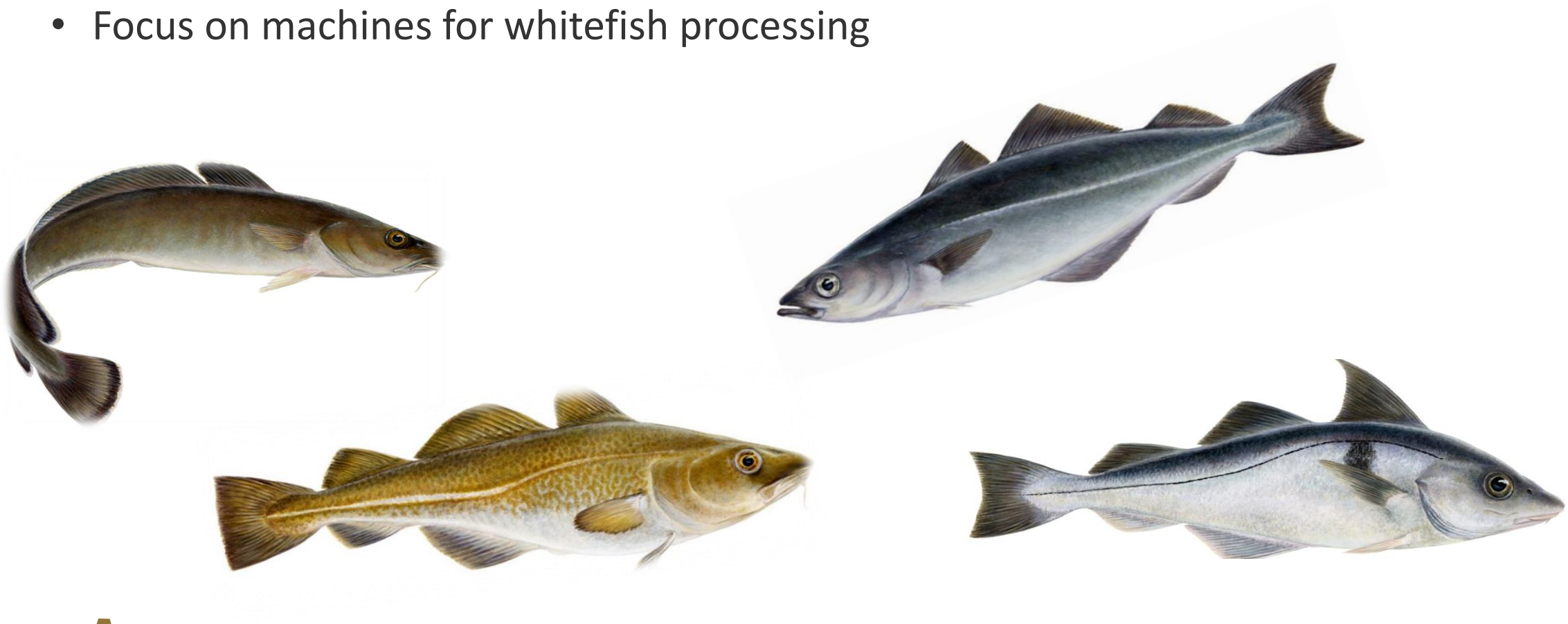
Íslensk tæknifyrirtæki sem tengjast sjávartengdum greinum eru komin langt í fjórðu iðnbyltingunni.

Marel er stærsta og líklega þekktasta íslenska hátæknifyrirtækið en Skaginn 3X, Hampiðjan, Curio og Valka hafa einnig komið ár sinni vel fyrir borð. Samkvæmt greiningu Sjávarklasans nam velta þessara fimm fyrirtækja tæplega 40 milljörðum króna í fyrra og er

CURIO won “The Icelandic Fisheries Awards” 2017

- Processing sector **value creation** small company < 50 staff

- Focus on machines for whitefish processing



Heading

Skinning

Sharpening

Filleting
XS / S / M / L / XL / XXL


UMBÚÐAMIÐLUN


CURIO C 2031

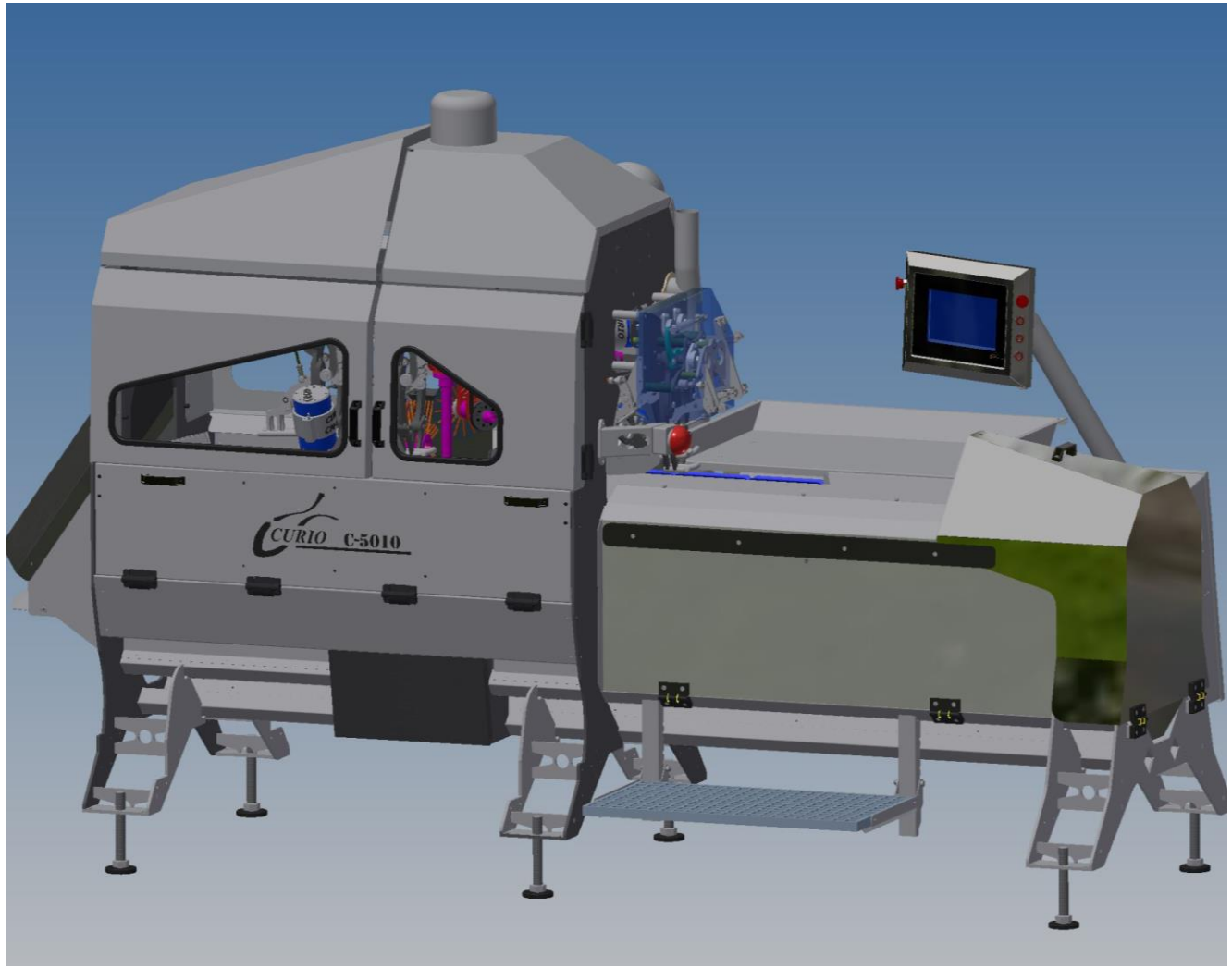

Rakki

- Development work time consuming and extremely expensive.
- Big sums of money used
- Things go slower than wished for

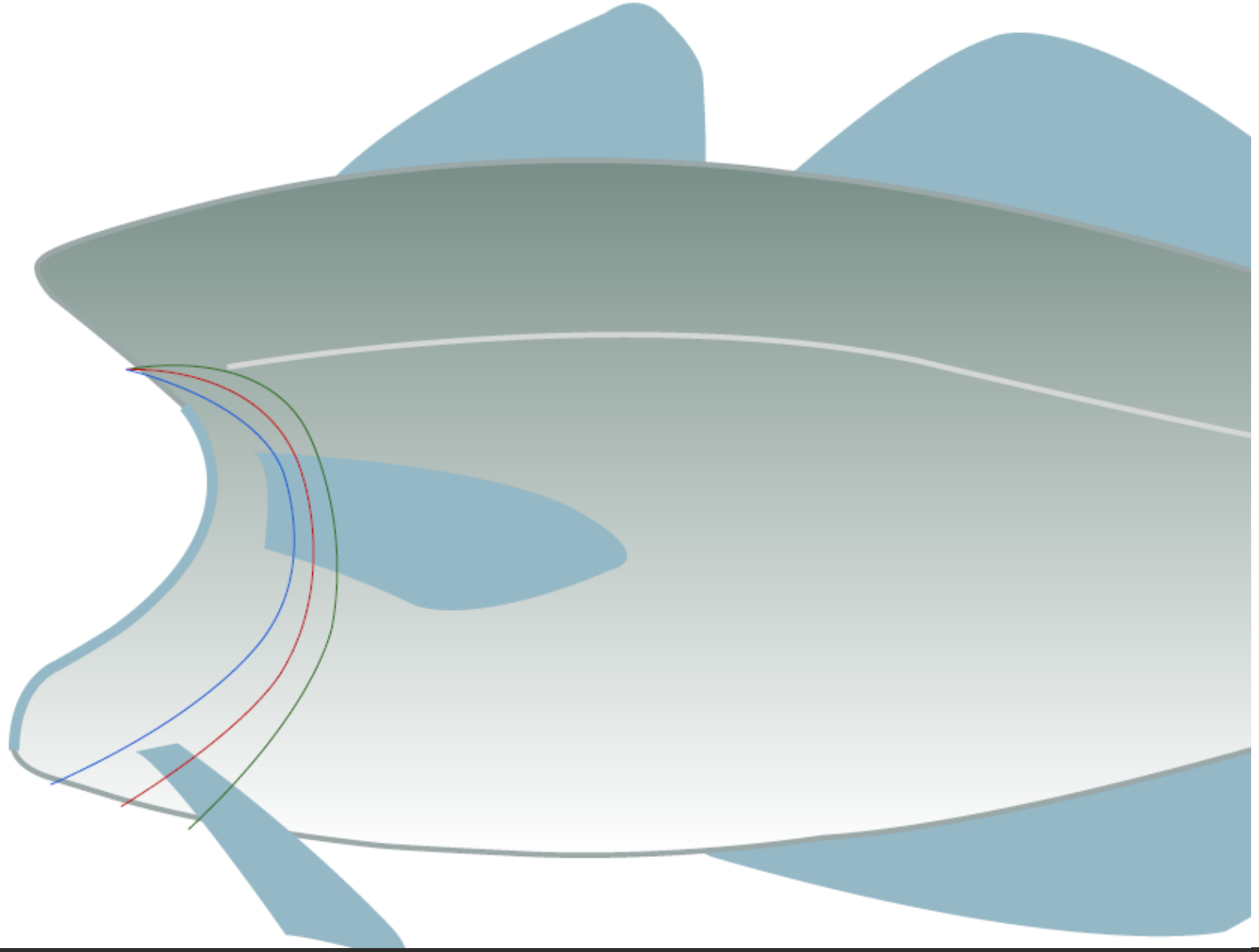
4CWhite / C-5010; The first high-precision Computer-Controlled Collarbone Cutter for Whitefish

Horizon 2020 / SME Instrument
EIC Phase 2 interviews

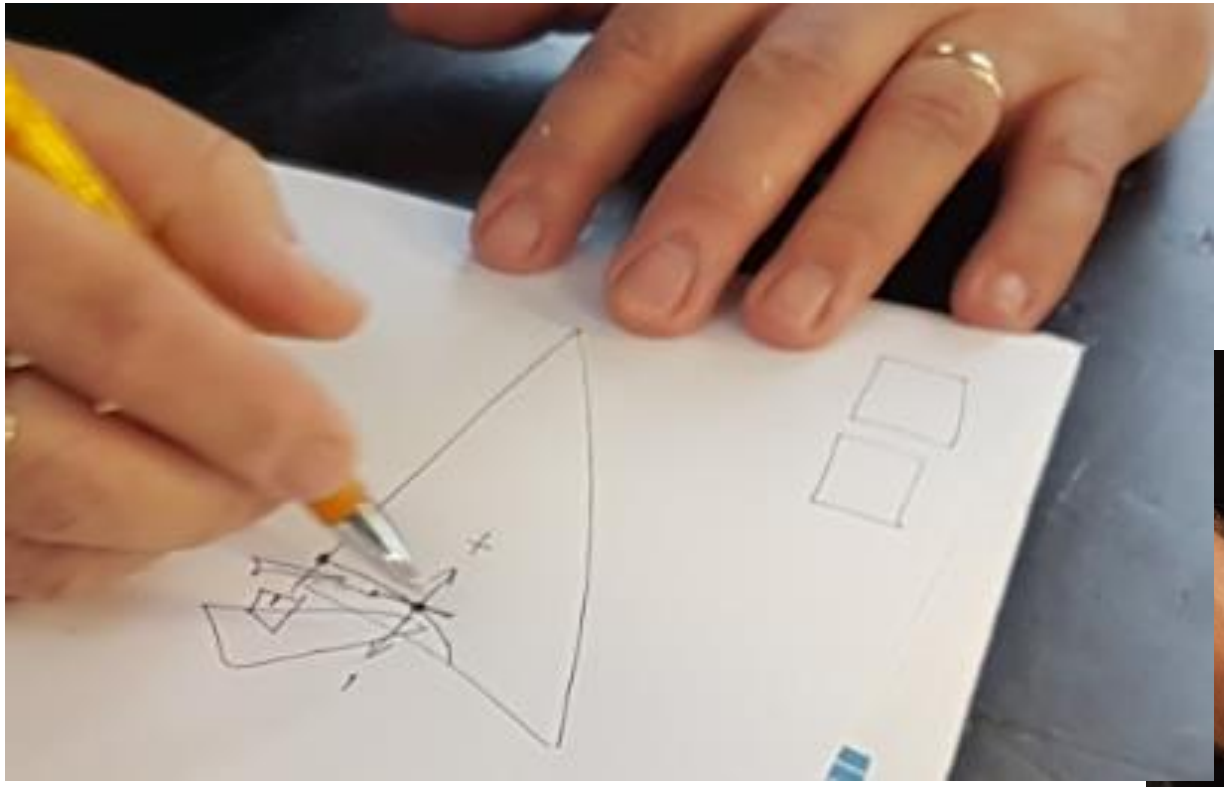
- The first high-precision computer-controlled collarbone cutter for deheaded whitefish
- Programmed according to different whitefish species and sizes.
- Cutting is carried out in a manner leaving as little meat as possible with the bone

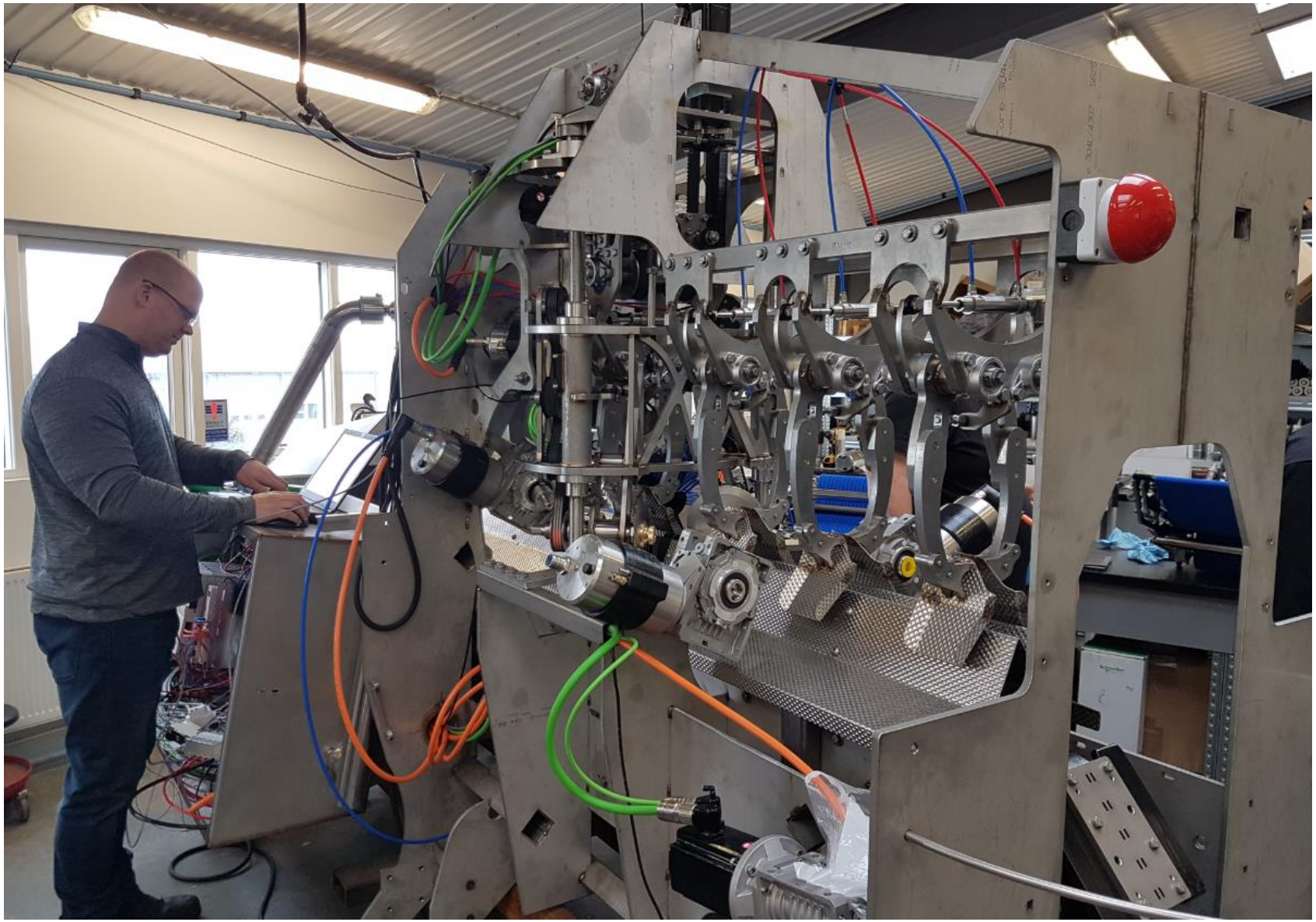


Different needs



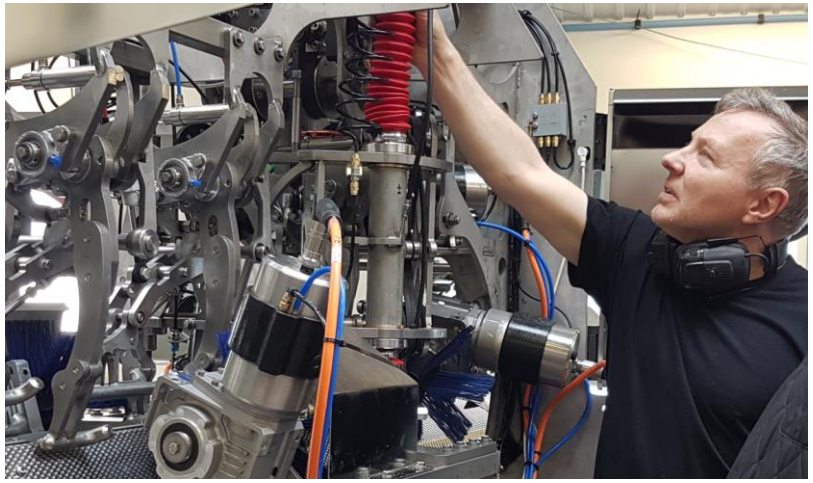
CURIO

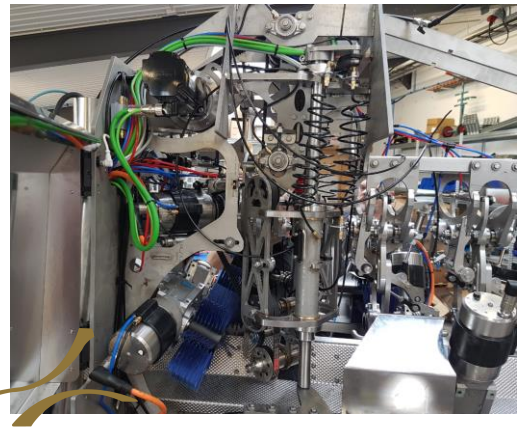


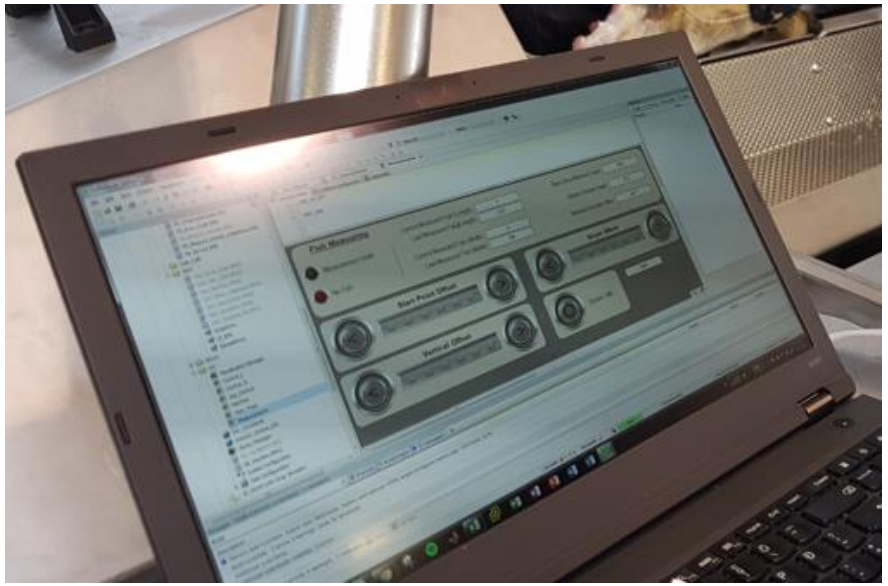


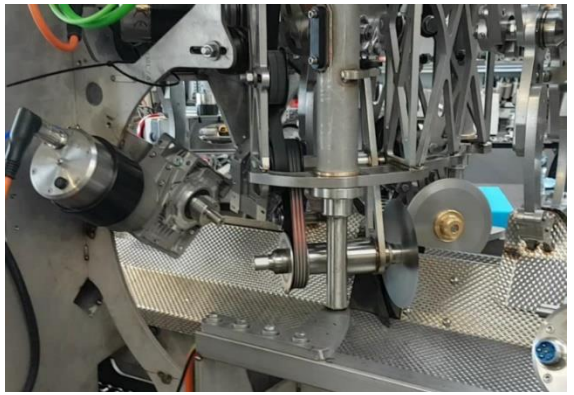
Big challenges

- Measuring system
- Not a linear relation between fish sizes and cutting patterns
- Programming of curves
- Find the right cutting curves, regardless of operating speed
- Gear and motor spead and coordination of movements
- Stable steering of the fish through the machine.

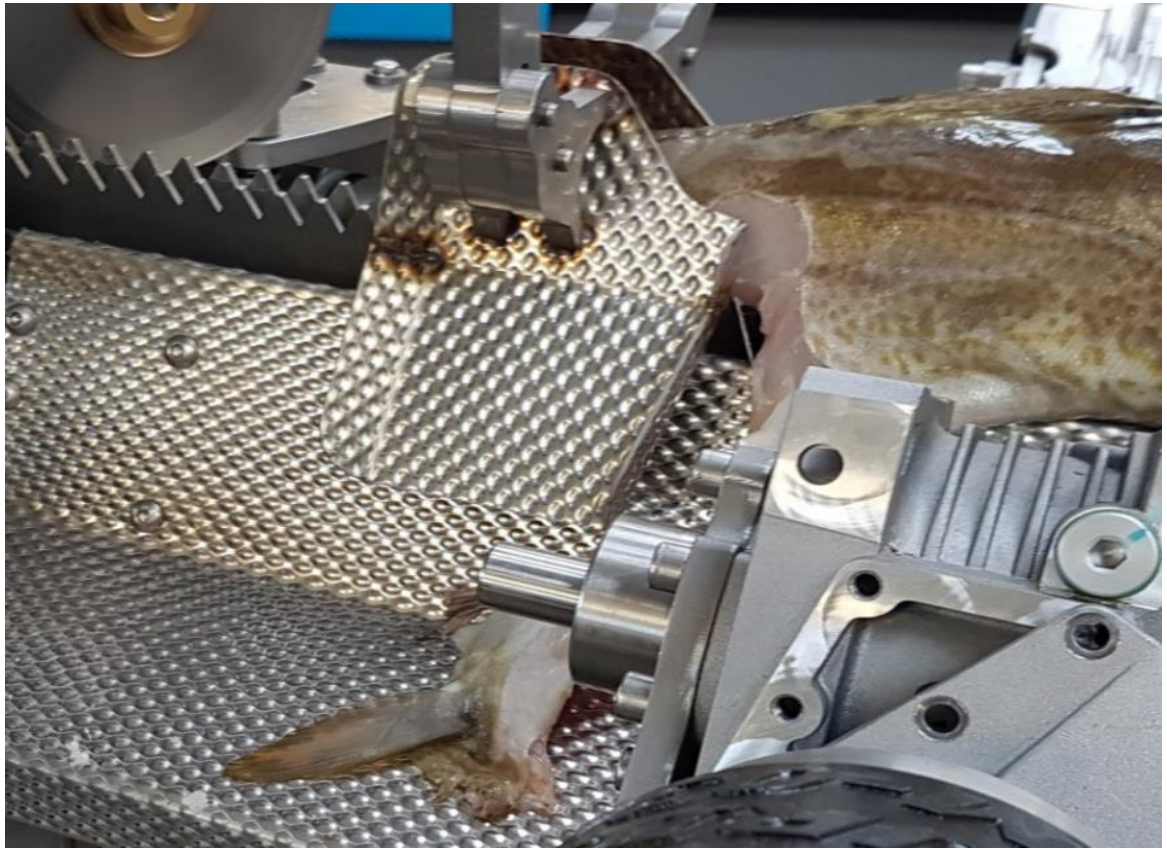








CURIO



FHF

FISKERI- OG HAVBRUKSNÆRINGENS FORSKNINGSFOND

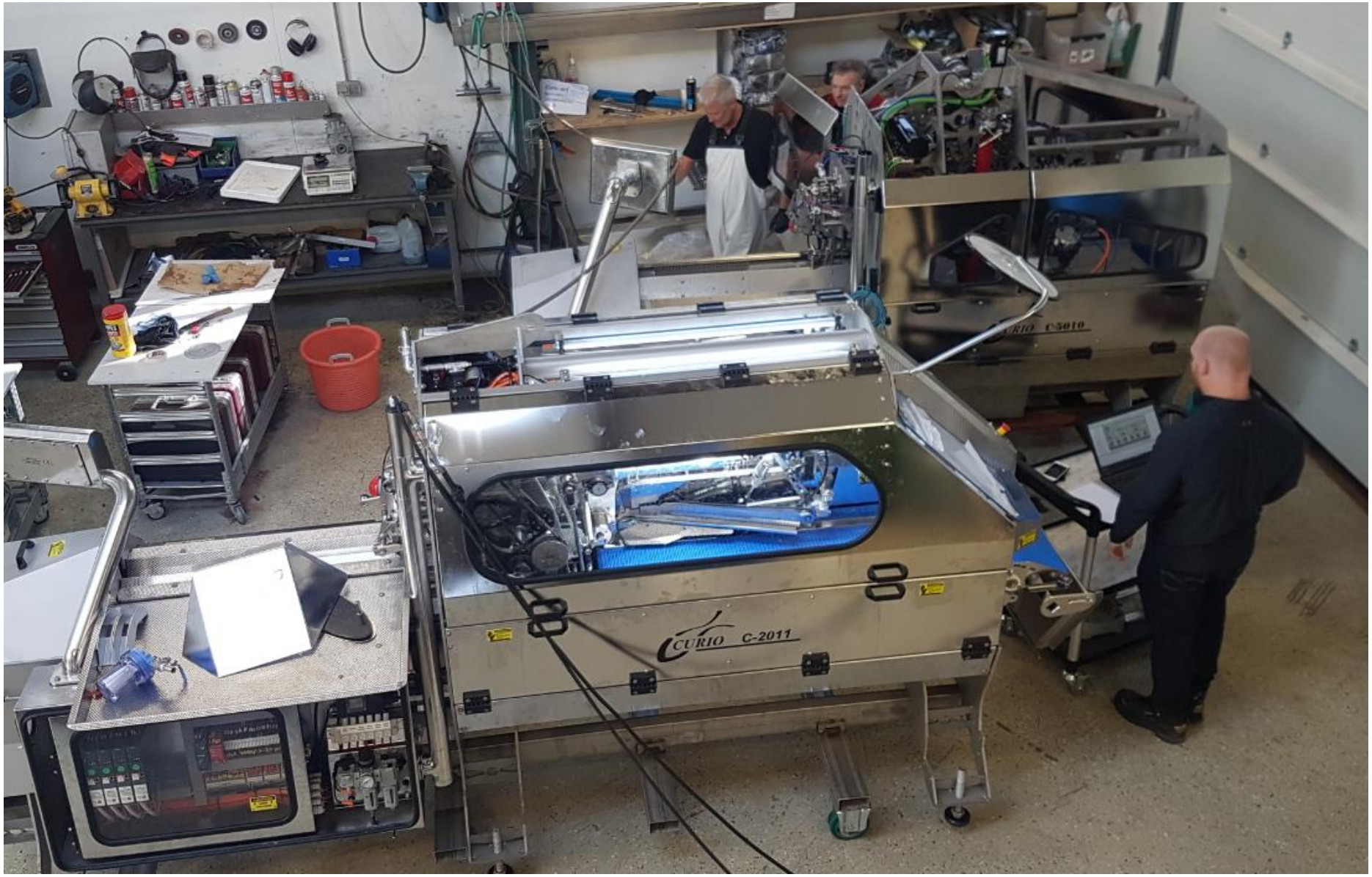
UKAP AS

Horizon 2020

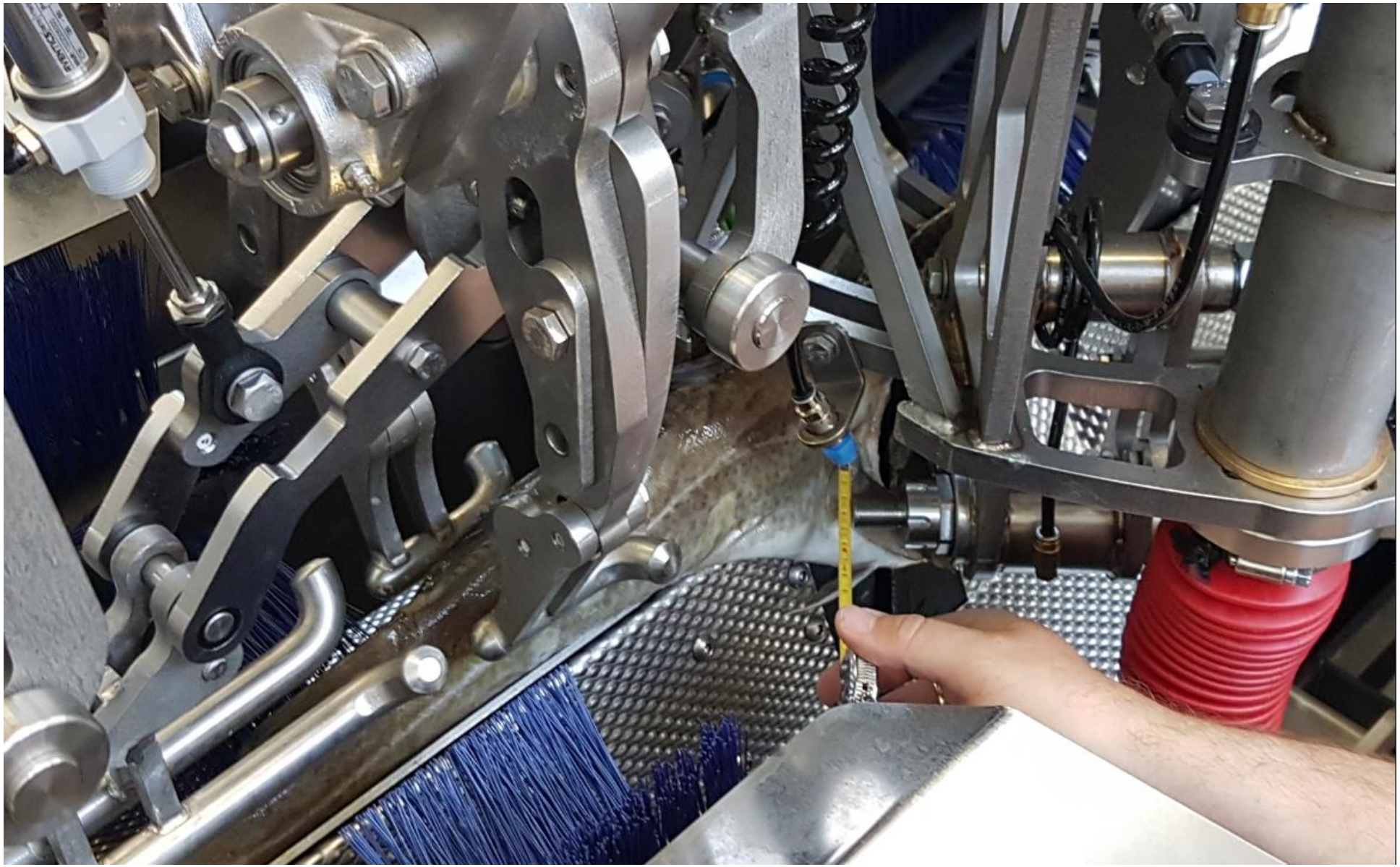
Many factors needed in place to achieve the goal

JANGAARD

CURIO


CURIO C-2011

CURIO



CURIO

Tests show:

- **1.5% to 2%** less waste than manual cutting over a full day's work period.

- Much much better than existing machinery

Next steps

- Testing on volume forms an important part of the development process. Prototype goes to Jangaard for that purpose.

- Be ready for sale no later than 2020

CONCLUSIONS

- ✓ The 4CWhite will increase utilization of raw material
- ✓ Pay-back time short (1-2 years to regain investment)
- ✓ Increase profitability of the industry
- ✓ High demand for a collarbone cutting solution


Denne maskinen skal gi norsk fiskeindustri mer konkurransekraft

– Skal gi oss et forsprang

Jangaard Export utvikler en maskin som erstatter ansatte i filetproduksjon

Jeg er litt overraska over at dette ikke har vært gjort tidligere

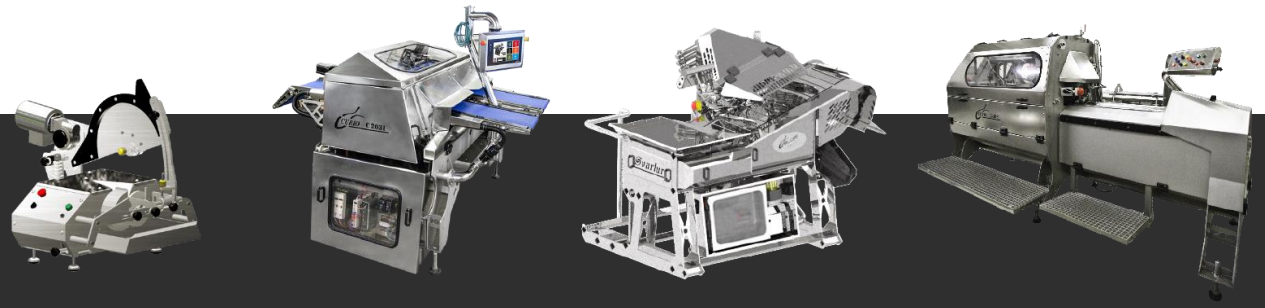
Knut Haagensen

"This machine will increase the fish industry competitiveness and give us a head-start"

Knut Haagersen, **Jangaard Export**, Sunnmørsposten

Innovative Processing Equipment for Heading, Filleting and Skinning

CURIO



Innovative Processing Equipment for Heading, Filleting and Skinning