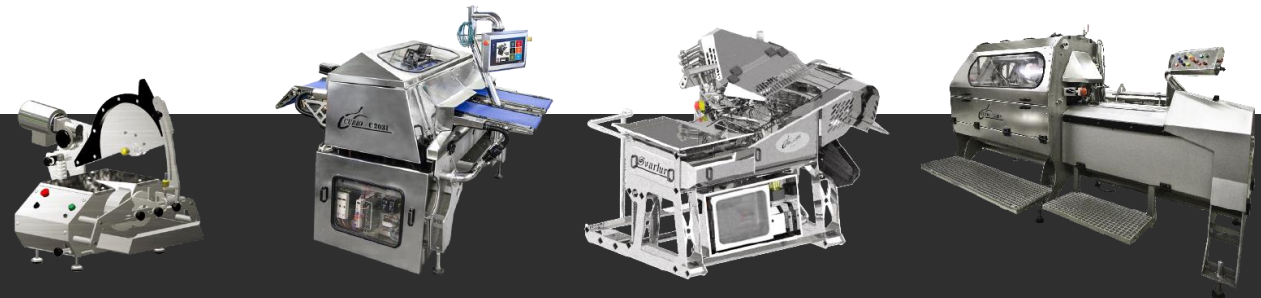




Curio 4CWhite

The first high-precision computer controlled collarbone cutter for whitefish

Axel Pétur Ásgeirsson
Sales manager
Curio Ltd.

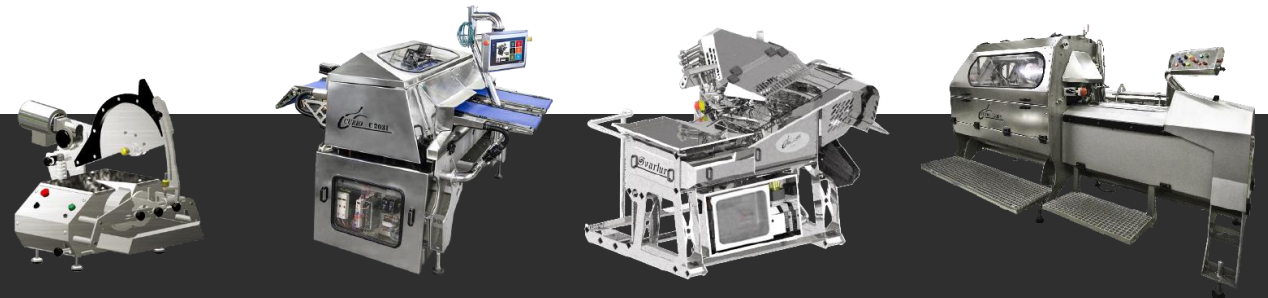


Innovative Processing Equipment for Heading, Filleting and Skinning



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



Innovative Processing Equipment for Heading, Filleting and Skinning

Background

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



Background

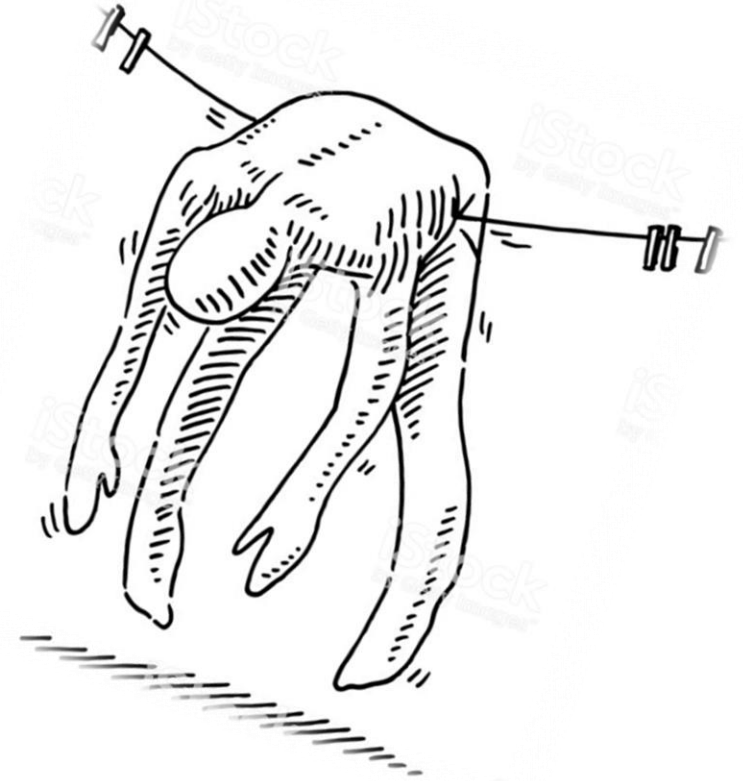
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- When producing fillets, the final product must be presented without the collarbone.



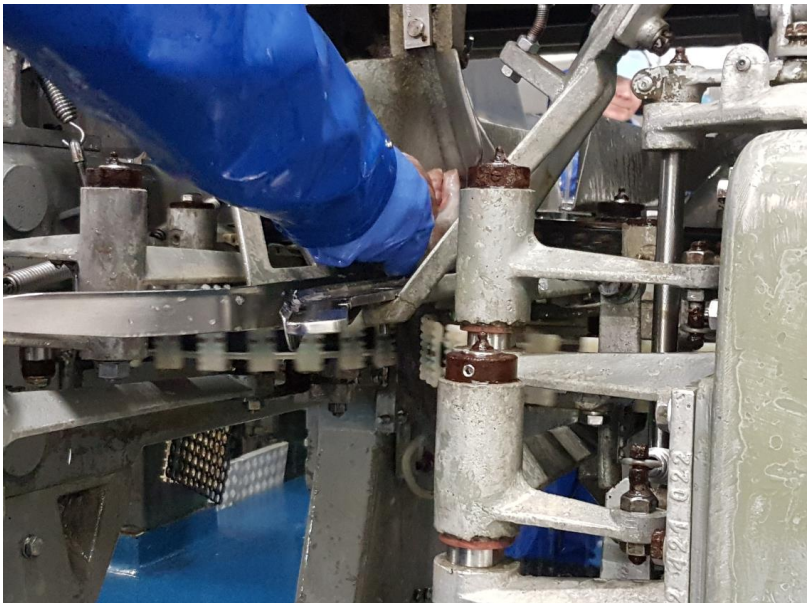
Current solutions

- 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- Adapted, outdated machines;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.



- 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



Havbruk ▾ Hvitfisk ▾ Pelagisk ▾ Felles satsingsområder ▾ Om FHF ▾ Kontak



Forside > Prosjektarkiv > Prosjekt 901284

Utvikling av maskin for fjerning av ørebein på hvitfisk til filétproduksjon

Prosjektnummer: 901284 Status: Pågår
Startdato: 30.06.2016 Sluttdato: 01.07.2019
Fagfelt: Villfisk Industri, fersk/fryst torsk/fisk

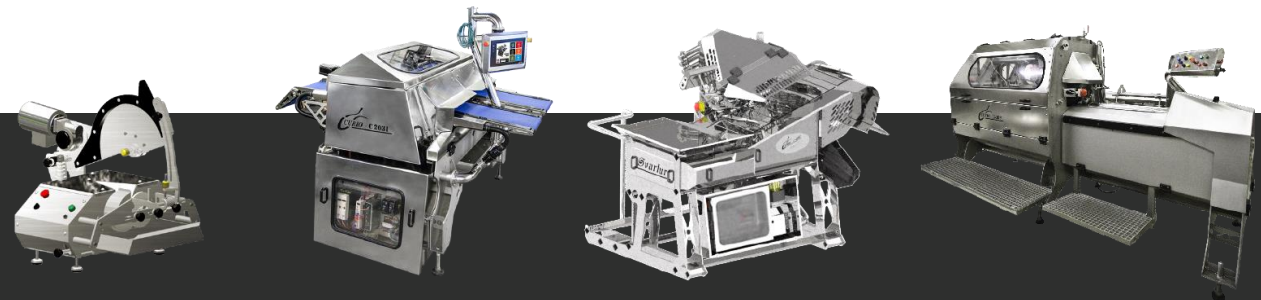
Kontakt

Ansvarlig i FHF:
Frank Jakobsen

Ansvarlig organisasjon:
Jangaard Export AS

Utførende prosjektleder:
Stein Ove Østvik

- FHF project number: 901284
- Status: Ongoing



Innovative Processing Equipment for Heading, Filleting and Skinning

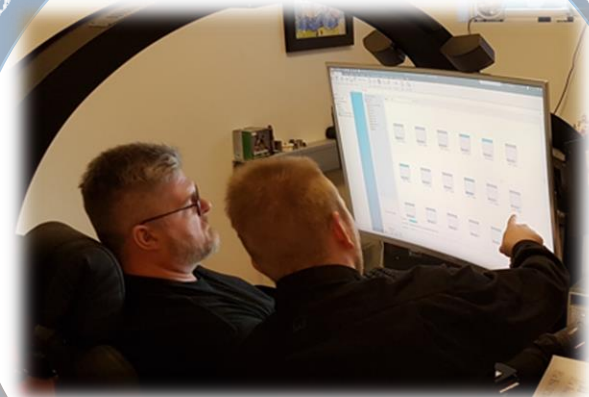
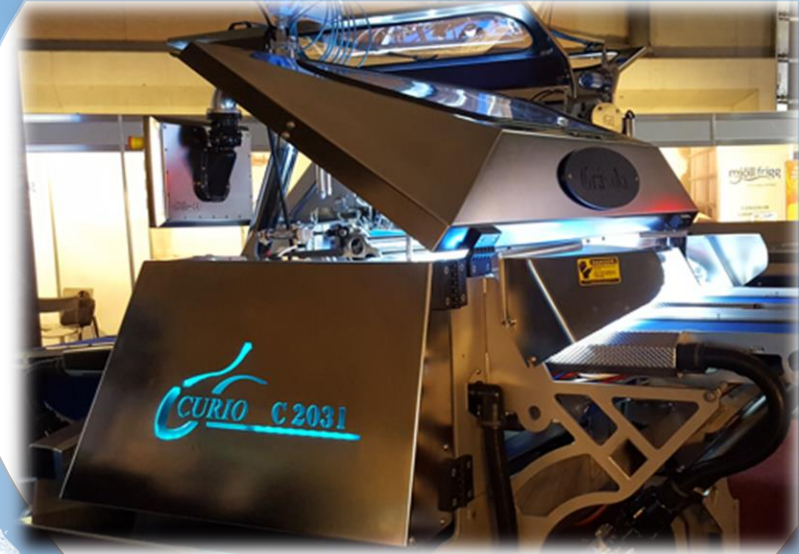


Targets

- Develop prototype, test it and verify in cooperation between the fish industry and Curio.
- Use 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
 - Be at least 3 % better than existing adapted machinery
 - Improve filleting yield from HG fish by 2%.

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.



FRJÁLS VERSLUN 20. maí 2018 13:09

Hátæknifyrirtæki í fremstu röð

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



HAMPIÐJAN

SKAGINN 3X



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

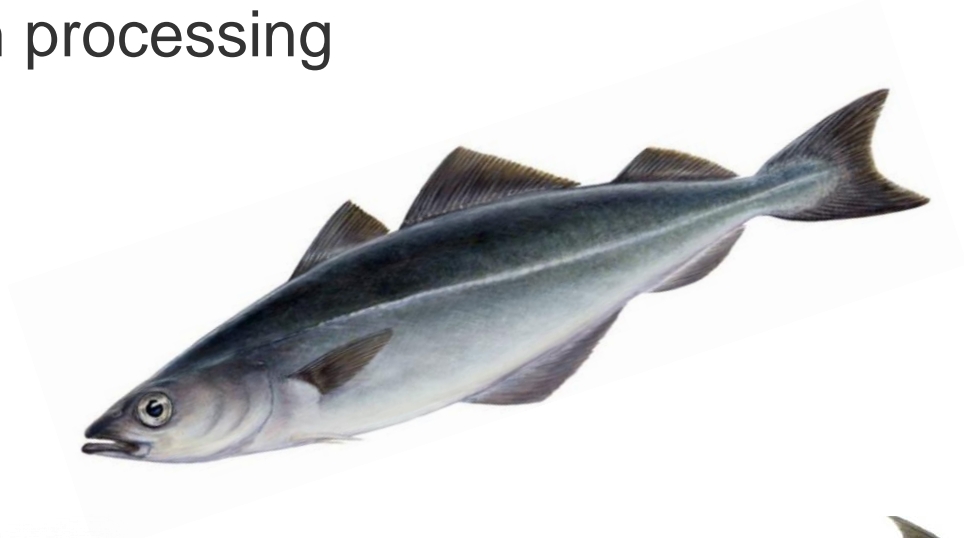


CURIO won “The Icelandic Fisheries Awards” 2017



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

- Focus on machines for whitefish processing





Heading



Skinning



Sharpening



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





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

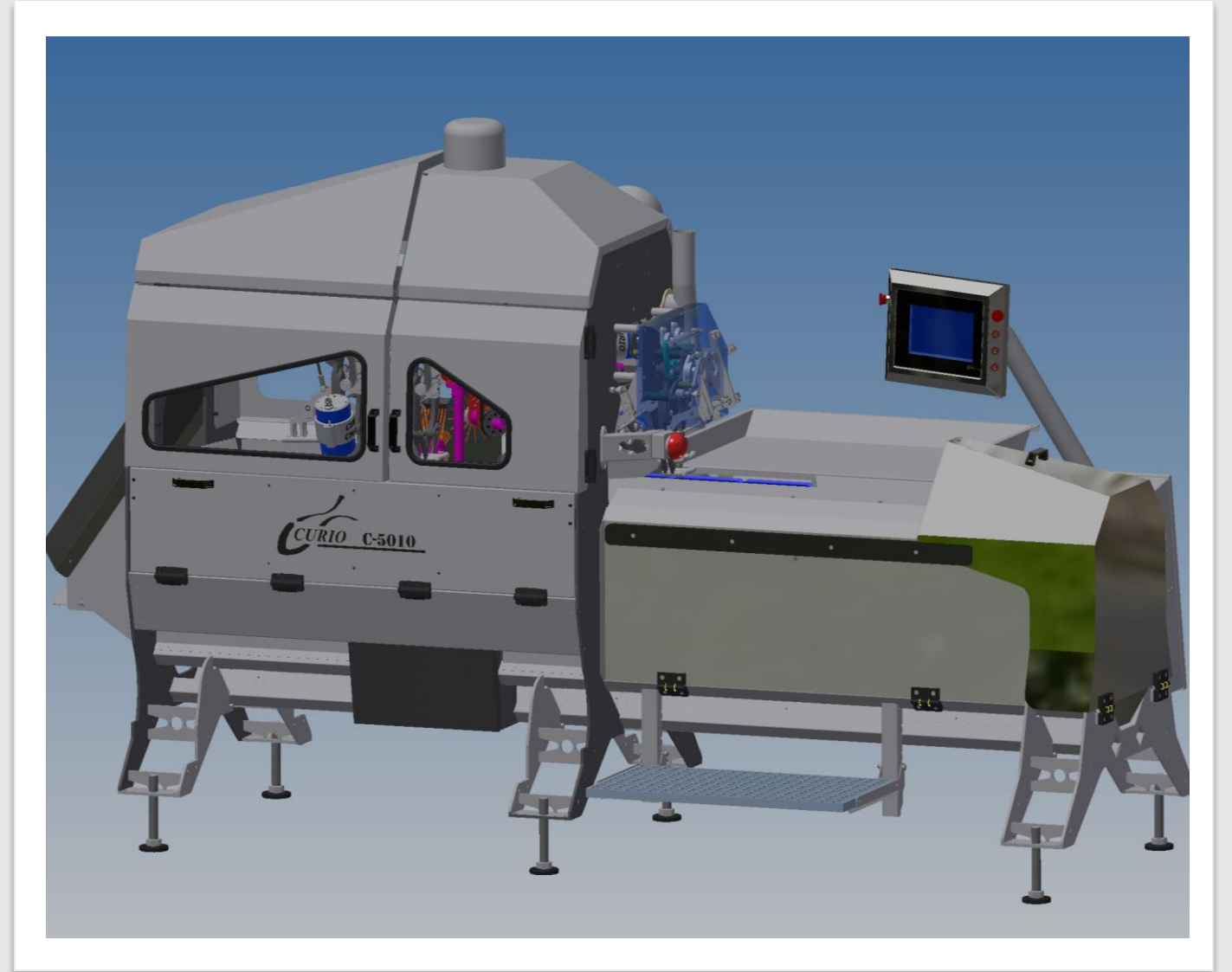


4CWhite / C-5010; The first high-precision Computer-Controlled Collarbone Cutter for Whitefish

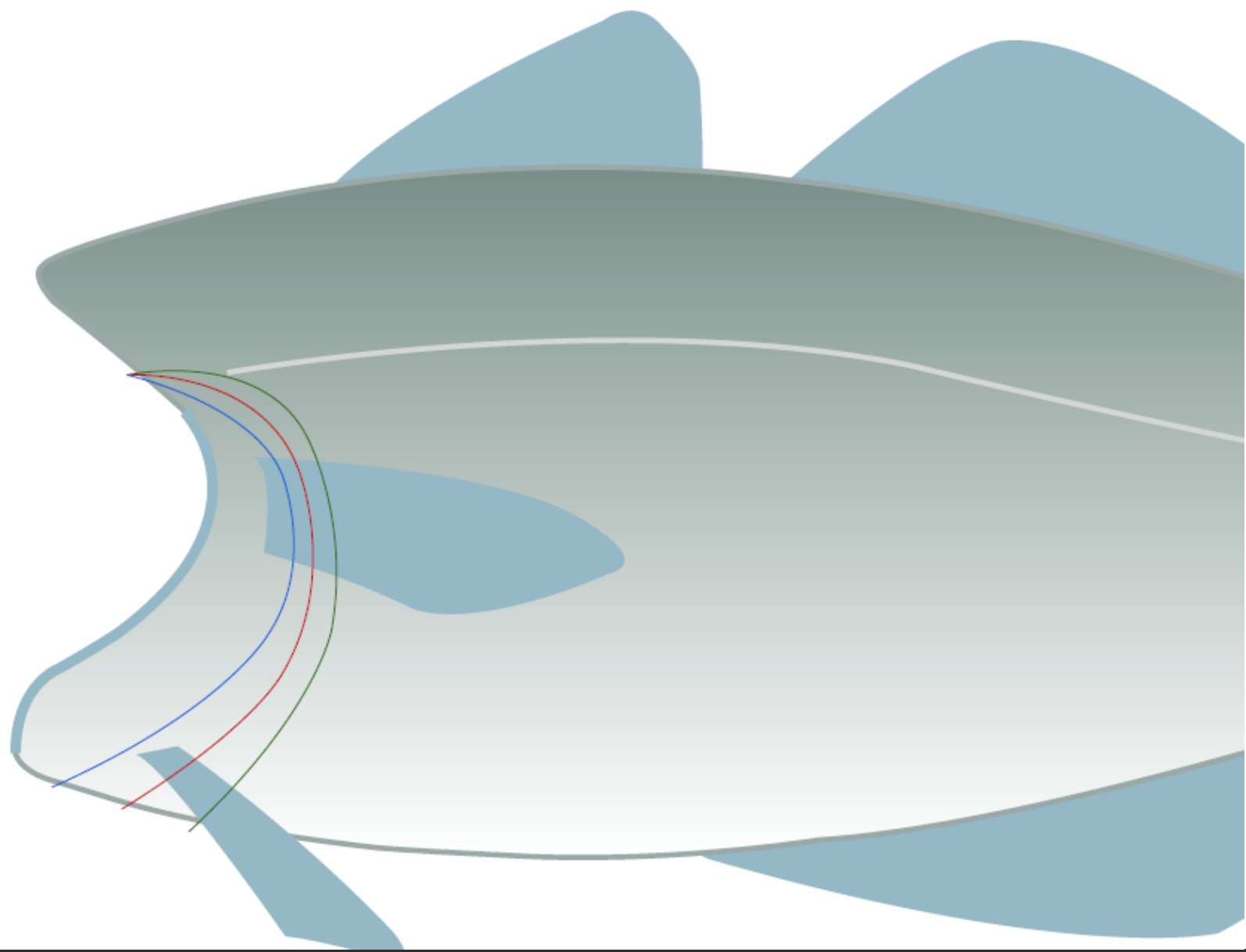
Horizon 2020 / SME Instrument
EIC Phase 2 interviews

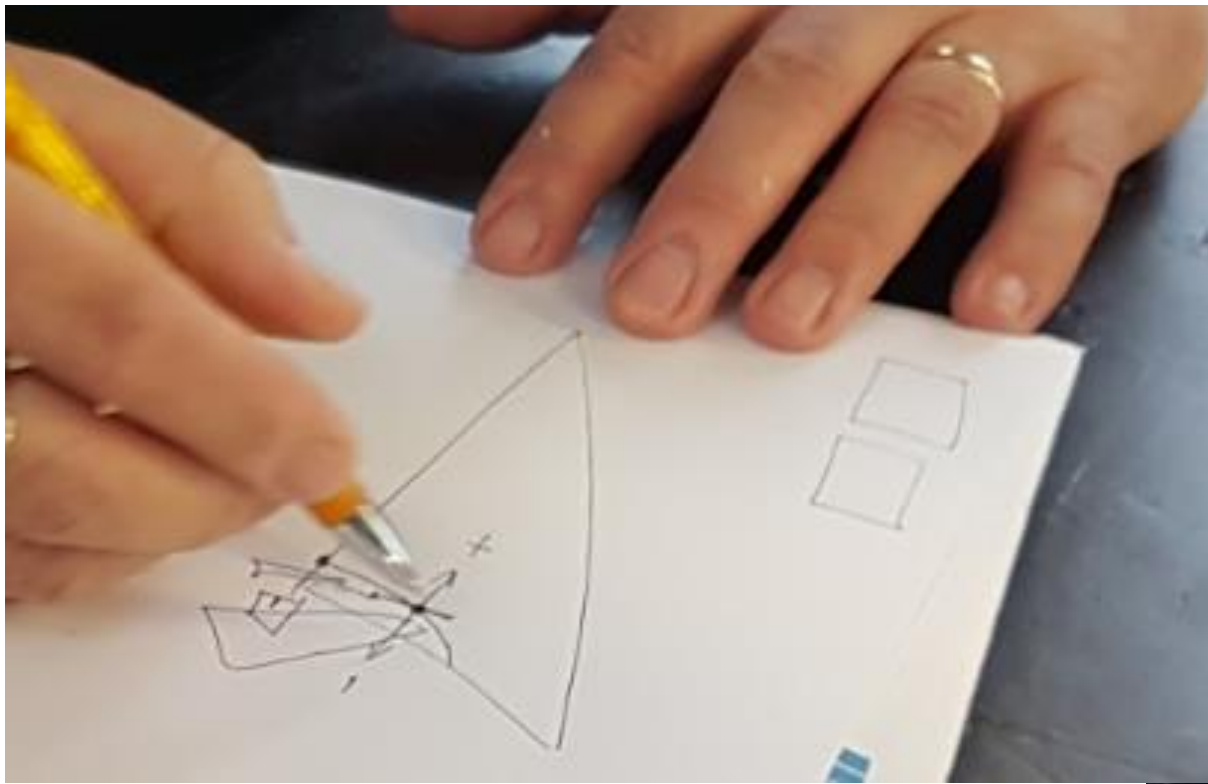


- Programmed according to different whitefish species and sizes.
- Cutting is carried out in a manner leaving as little meat as possible with the bone



Different needs

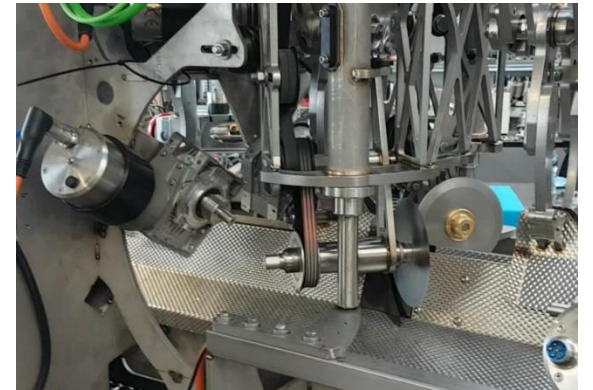
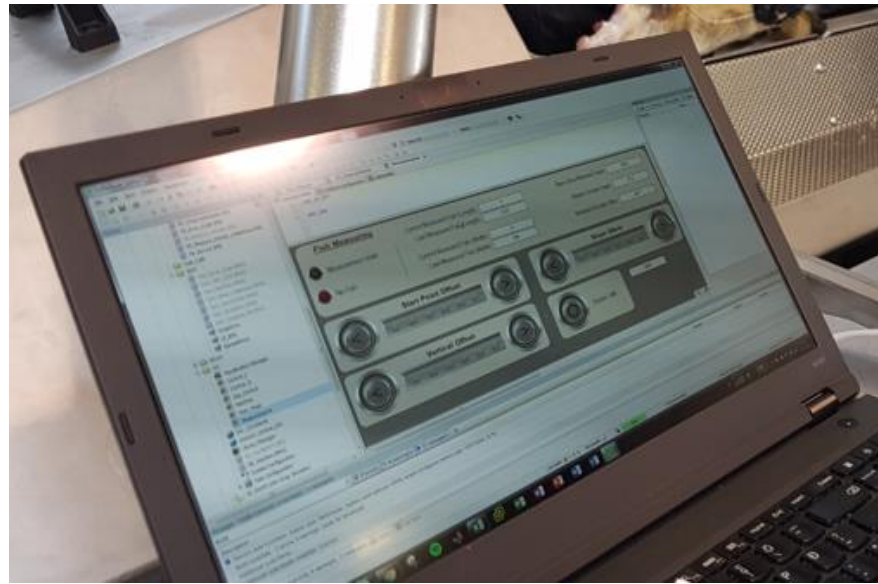
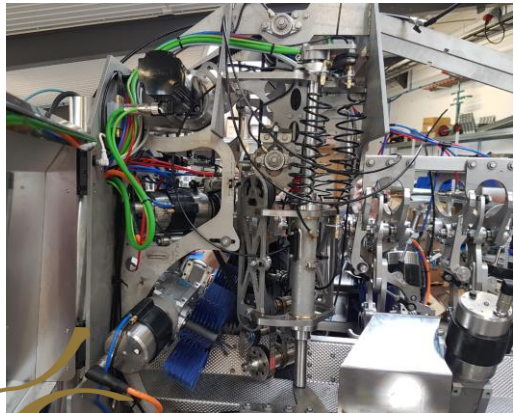
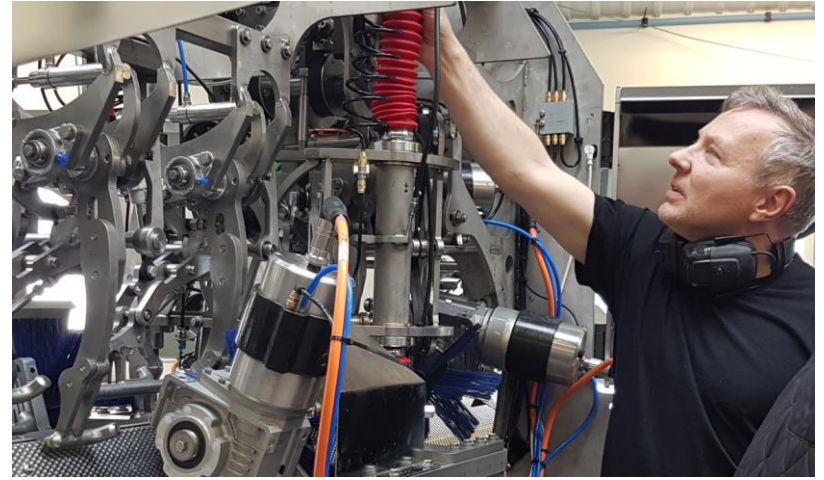


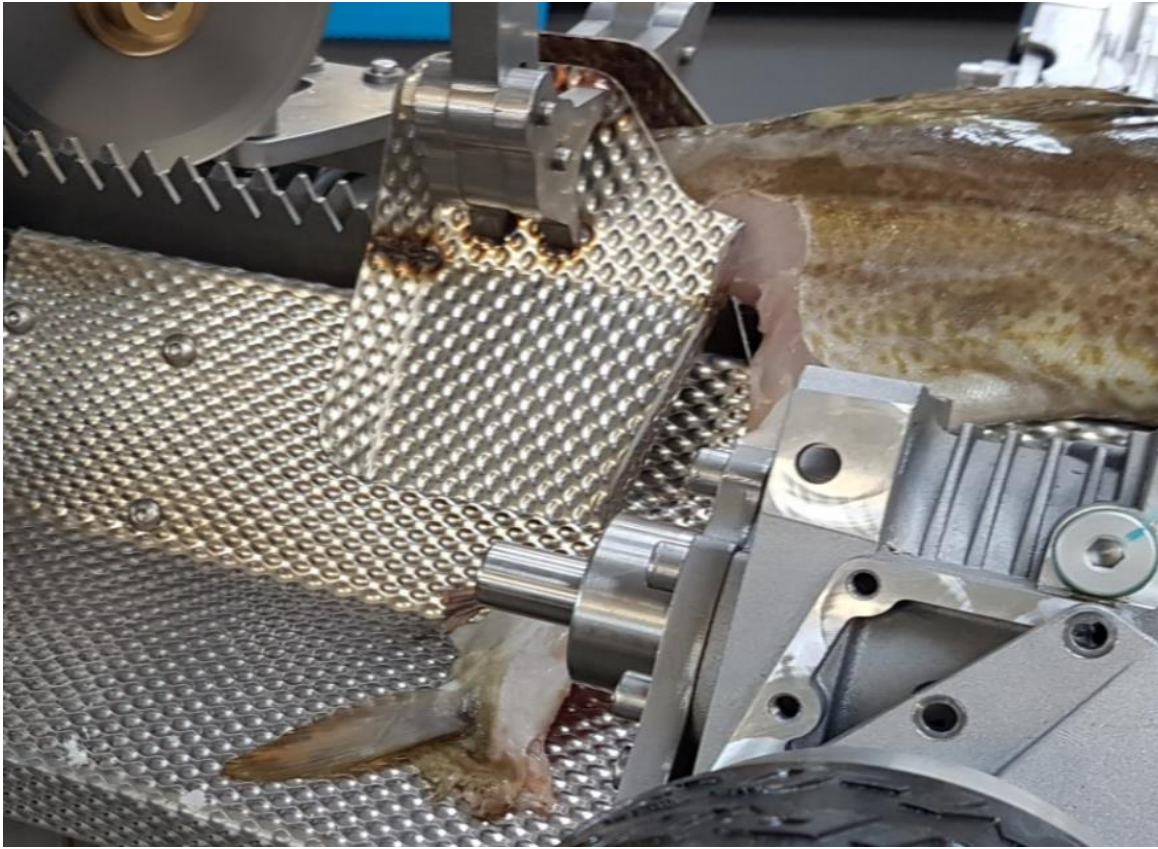




Big challenges

- 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 speed and coordination of movements
- Stable steering of the fish through the machine.







FISKERI- OG HAVBRUKSNÆRINGENS
FORSKNINGSFOND

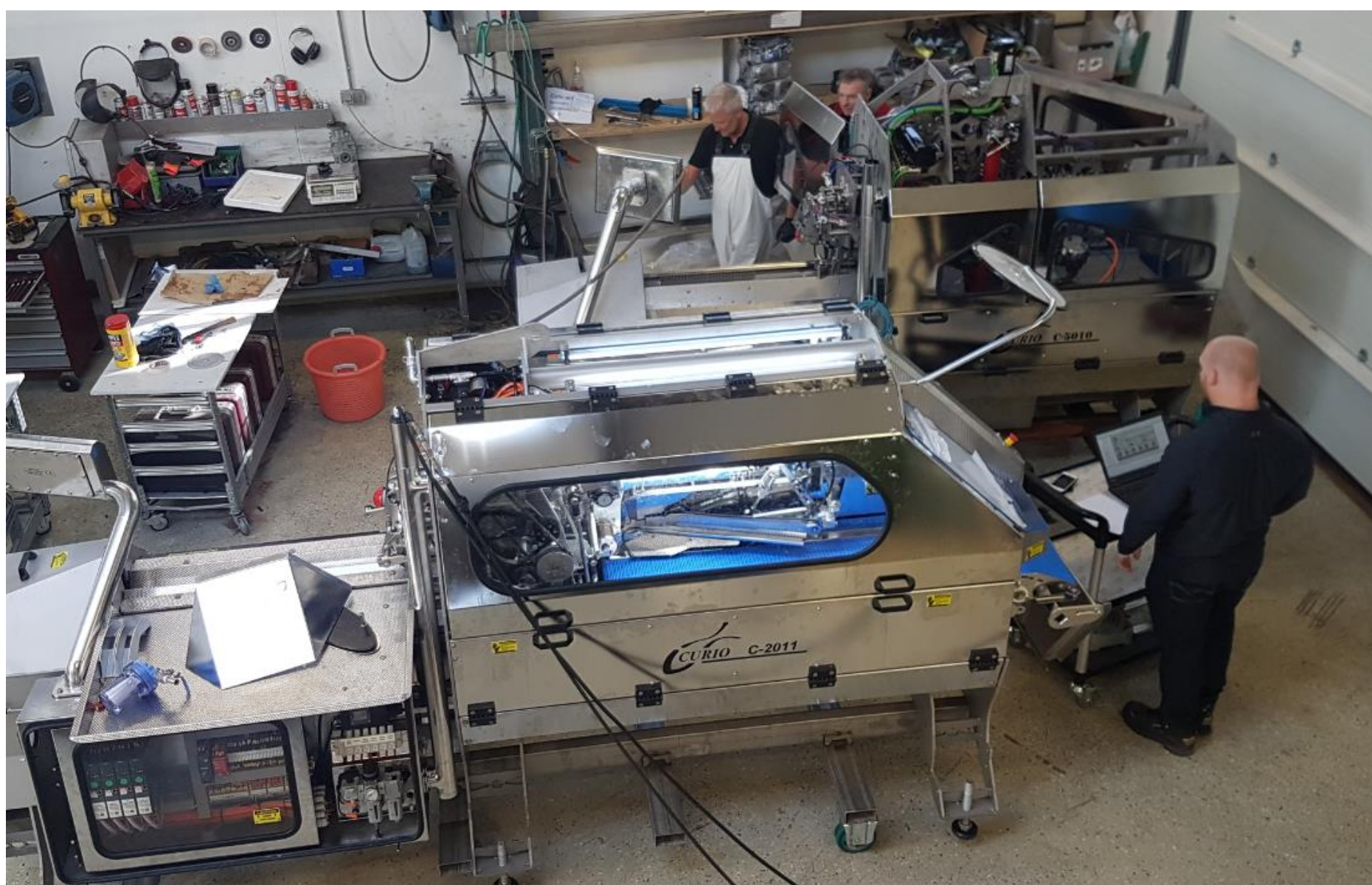
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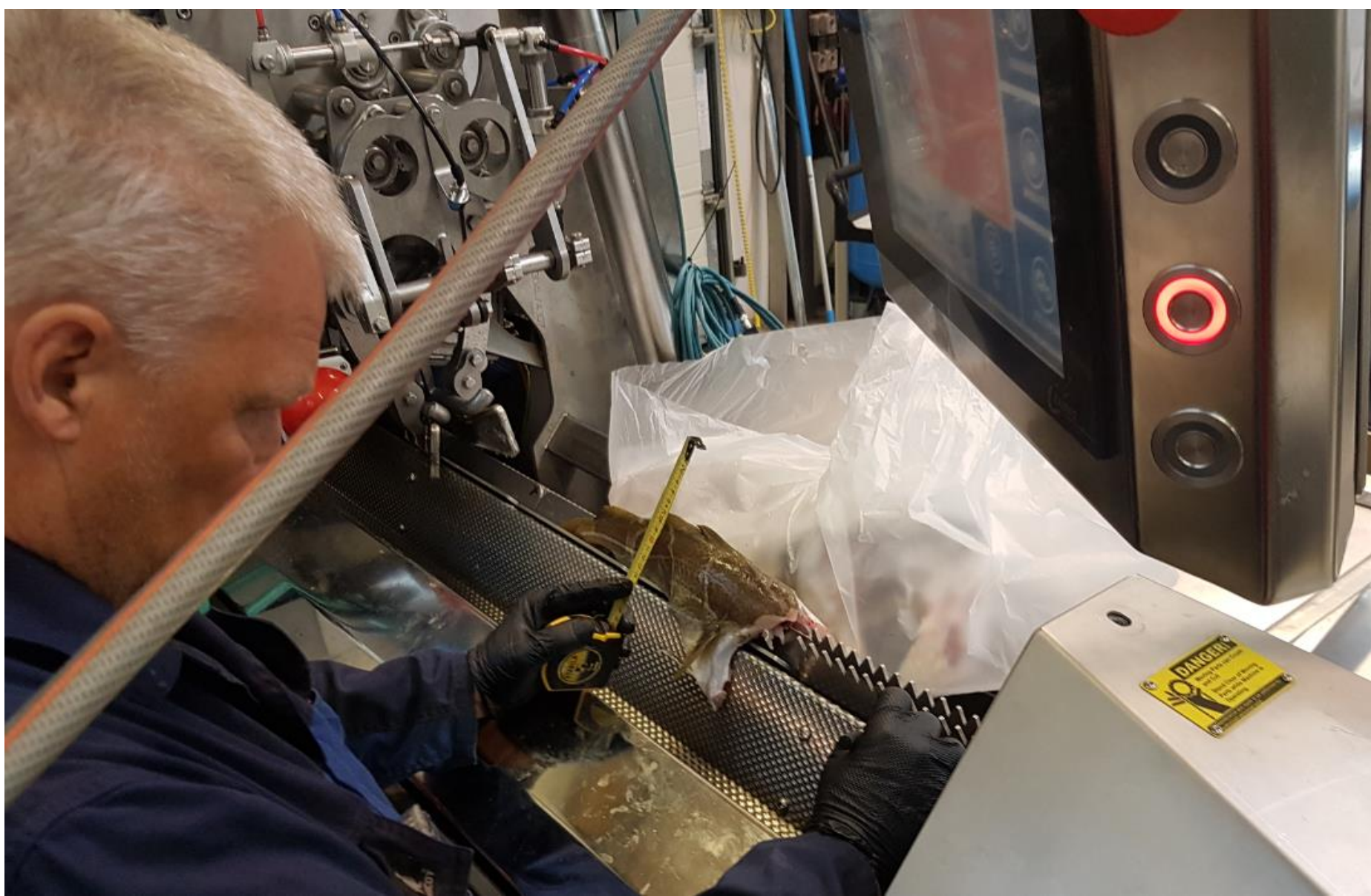
Many factors needed in place to achieve the goal

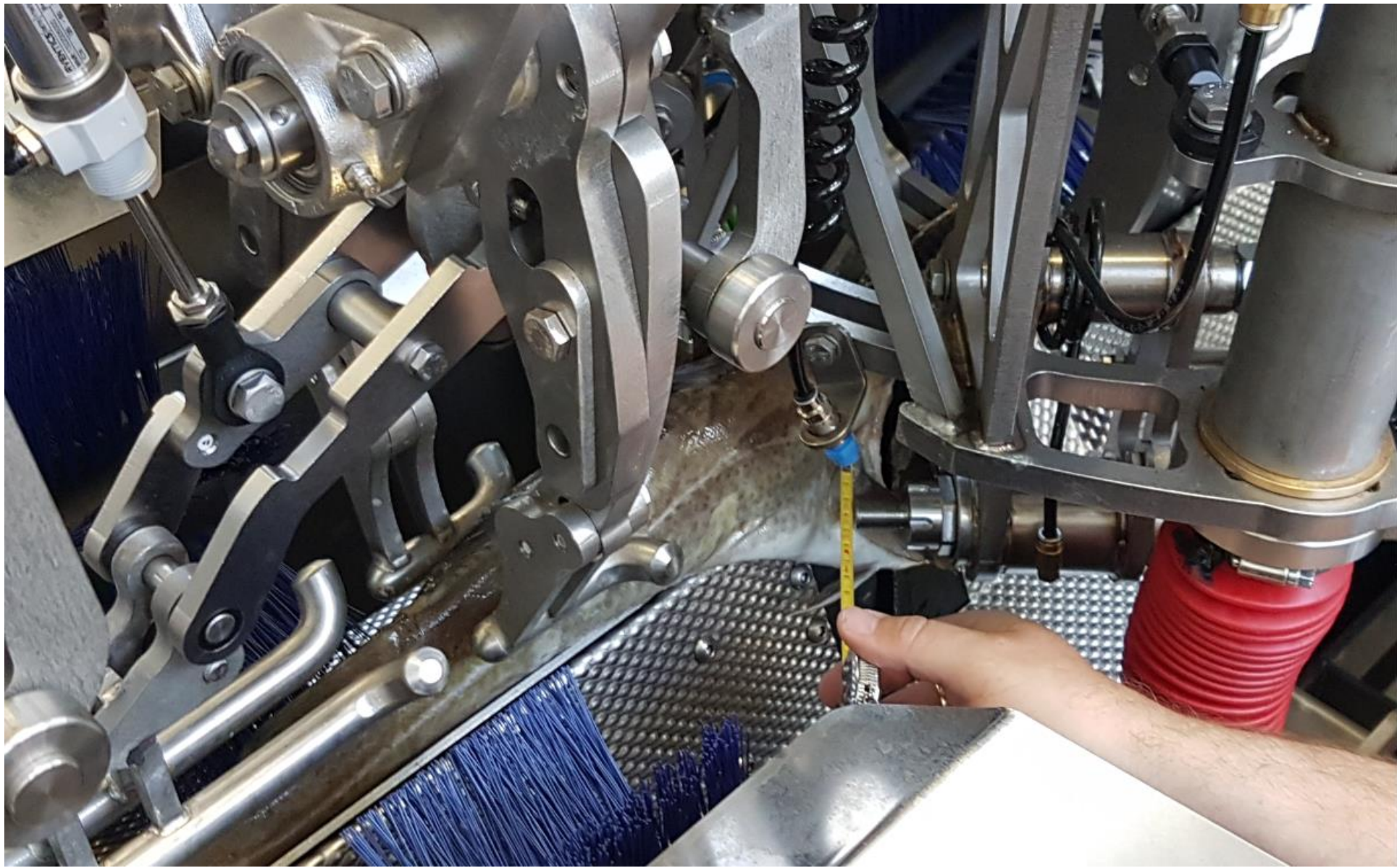














MADE IN FRANCE 2016 USE <CHAR> HORN-1 SOE 3



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. “0” machines will go to chosen partners 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



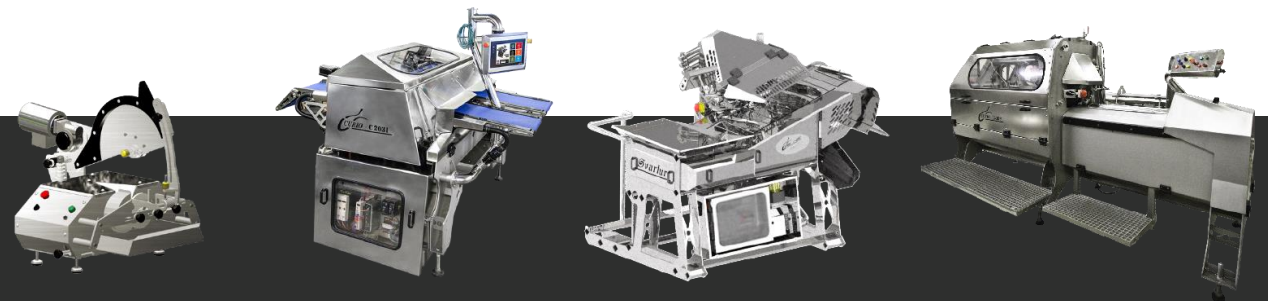
“This machine will increase the fish industry competitiveness and give us a head-start”

Knud Haagersen, **Jangaard Export**, Sunnmørsposten



Innovative Processing Equipment for Heading, Filleting and Skinning

CURIO



Innovative Processing Equipment for Heading, Filleting and Skinning