Fully Documented Fisheries (FDF) Research Program in the Dutch Demersal Fisheries

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European Union,
European Maritime and Fisheries Fund

My personal conclusions

Not fit for human consumption

Doomed to fail

without the proper use of Artifical Intelligence (AI)

This presentation

- Rationale
- Why and how this program?
- Skippers and crews
- Practical experiences
- Scientific results
- Considerations
- Next steps
- Discussion

Rationale

The Landing Obligation

In Dutch Demersal Fisheries, the landing obligation ***as described in art 15 of 2013/1380*** is

- Not Practical
- Not Compliable
- Not Enforceable

Best Practices I Projects 2013-2015

Best Practices II Projects 2016-2018

- Vessels unfit
- Cost on board are excessive
- Costs on shore are huge
- Unnecessary mortality

Rationale

CCTV

- CCTV control is seen as the solution
- CCTV is presented as panacea to the problems
- CCTV is controversial

- Accurate registration of all catches is necessary
- Previous projects concluded good estimates impossible

Note:

Fully Documented Fisheries ≠ Camera Control

FDF research program

Timeline

- Searching a ‘way forward’ by VisNed and Ministry in 2019
- VisNed and Wageningen University & Research consortium started the FDF research program 2020-2022
- Wageningen Research parallel project Image Recognition
- We now present the interim results of both projects
- This is research, no involvement of Control Authorities
- A continuation 2022-2024 is ongoing
- We shall suggest a joint international way forward

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FDF research program

Why?

Why this program?

- A Landing Obligation is a given only workable because of exemptions, but for how long?
- A reliable registration at sea system could be an alternative
  - No misreporting
  - Reduced administrative burden for skipper and crew
  - No landing of discards > more survival no unnecessary waste
  - Increase transparency towards consumers and NGO’s
  - Improved quality of data for stock assessment and research
- FDF seems the only reliable alternative

FDF research program

How?

How to develop a feasible FDF system

- Collecting Video footage
- Analysing Video footage
- Reporting on catches (both commercial and discarded)

FDF research program

Initial steps

The Industry Role

- After internal repositioning of VisNed in 2021 the FDF research program transferred to BluePortCentre Den Helder

Practical participation from the fleet

- Without committed skippers and crews the program would fail
- Eight vessels participated
- Convincing crews
- Installing camera systems on existing vessels
- Collecting video footage when vessels are in port
- Liaising for week by week practical hickups

FDF research program

Role of skipper and crew

Forward thinking skippers are convinced

- Research is the best way proving (im)possibilities
- Developing new routes to market online ship to shore

Crews are reluctant

- Privacy Breaches
    - *Masking of images*
- Increase of workload
    - *Sufficient renumeration*
- Unnecessary mortality
    - *15-20% of hauls are used*
- Anxiety of use of results
    - *Trust as a priority*

FDF research program

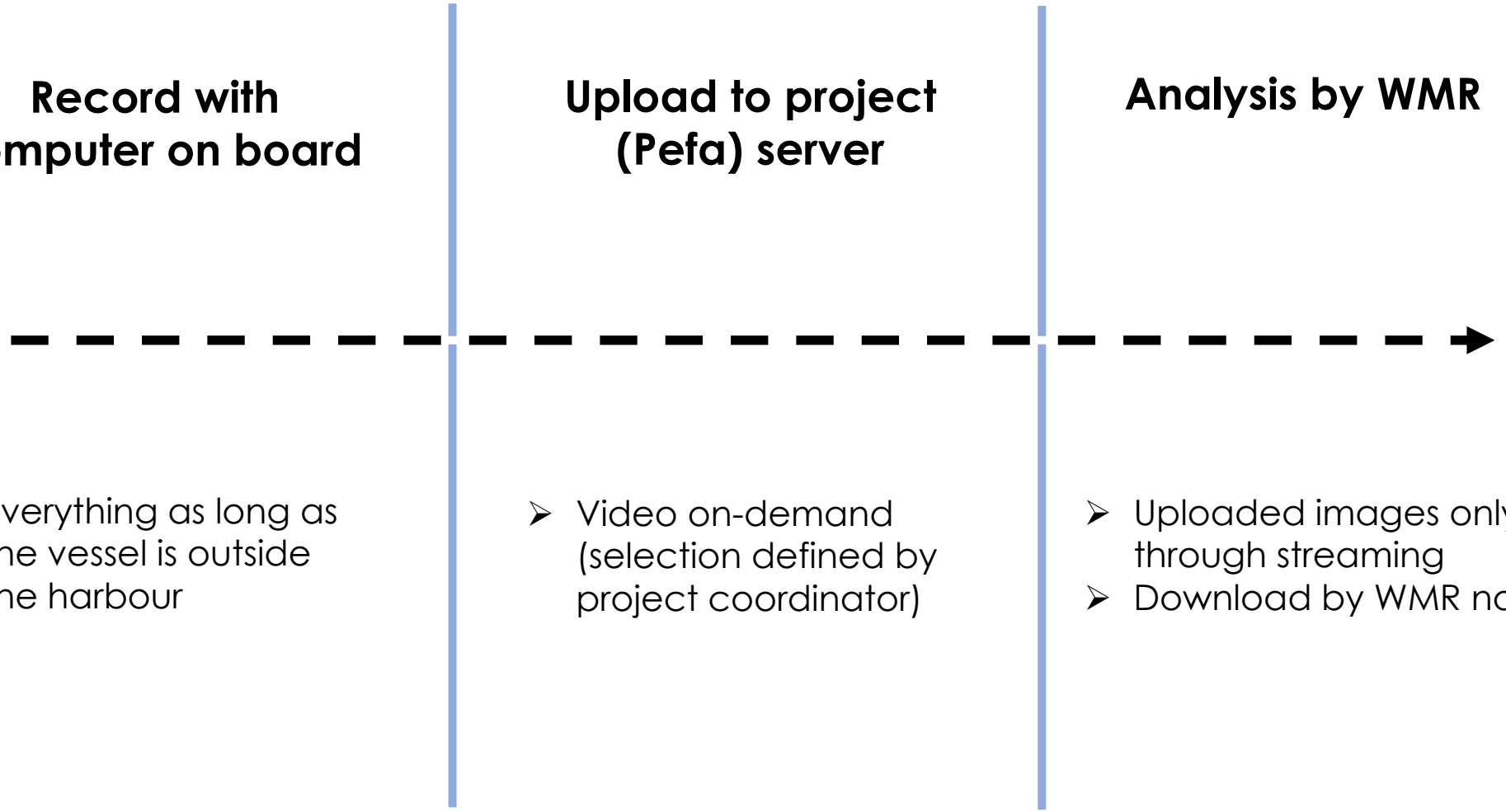
Practical issues

Installation phase

- Existing vessels of 20+ years, compartmentalised
  - Cable routing, ducts, water and fire integrity etc.
  - Wheelhouse lay out and antennas

- Operational phase
  - Selecting video fragments is time consuming
  - Downloading takes considerable transfer time
  - Water damage of the camera’s a serious issue
  - Quality Assurance of video images problematic
  - Computer integrity complex and time consuming

Data flow FDF research program



WMR analysis

Analysis

Automatic Image Recognition

FDF research program

Considerations

- No operational results without practical liaisons
  - NL fleet would require about 8 committed persons
  - Data transfer operations
  - Need for a hardware parts exchange system
- A large sample of images must be analysed
  - NL would need at least 40 full time video analysts
- Computer services
  - License management
  - Data management
  - Data transfer management

FDF research program

Next steps

- No sustainable FDF with human video observations
- Prerequisites for success of a FDF system
  - Automatic Image recognition
  - Deep Learning software
- Catch ID conference in Bergen 2-3 November 2022
  - Many initiatives
  - Joining forces will speed up the fly wheel

FDF research program

Next steps

- NL continuation of FDF and AI project until 2024
  - 4-5 beamtrawl vessels (incl. new participants)
  - Extend to flyshoot and twinrig
  - Non-NL flagged vessels are invited
    - Contacts with Belgian Scientists
    - Good discussions with Danish Industry
  - Project will keep delivering reliable information (FDF)

- *A reliable alternative for Article 15 must be found!*

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Discussions on post 2024 North Sea wide approach