

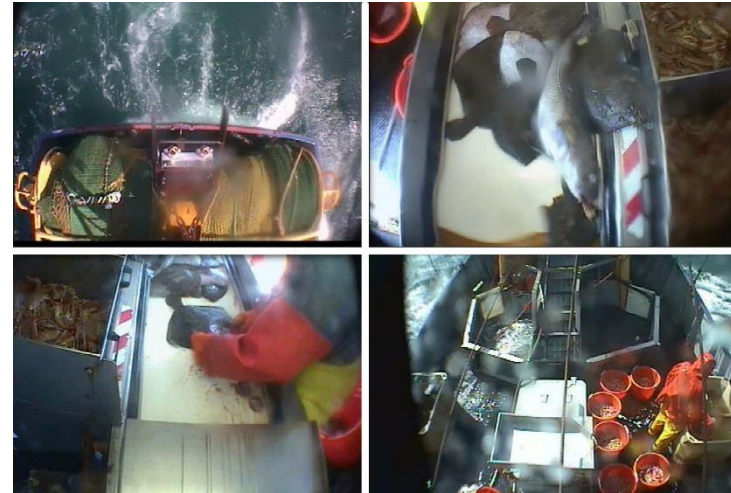
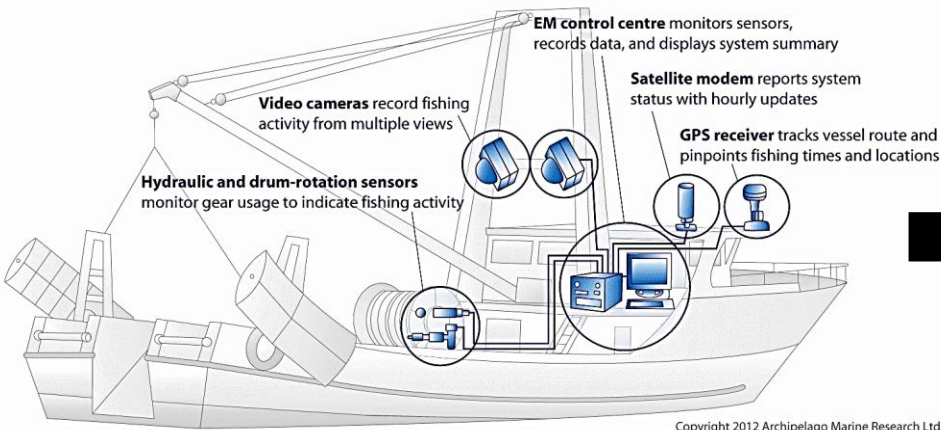
Fully Documented Fisheries Research Project

"Can we create an autonomous catch recording device?"

12 November 2019, Jurgen Batsleer



FDF – EM not as control mechanism



EM used as check

trek	datum	tijd uitzet	lat	long	tijd halen	afstand (Nm)	kabeljauwvangst in aantallen					discards
							1 (>88cm)	2 (72-88cm)	3 (55-72cm)	4 (46-55cm)	5 (35-46cm)	
1	10/19/2011	8:00	51.25	3.07	11:45	13	2	10	18	2		
2	10/20/2011	8:30	51.3	3.1	14:30	20	4	14	16	1		
3	10/21/2011	15:00	51.33	3.12	21:00	20	1	20	90	30	5	1
4	10/22/2011	21:15	51.3	3.12	3:00	21	3	11	26	1		
5	10/23/2011	4:00	51.22	3	9:00	19	10	14	20	12	3	2
6	10/24/2011	9:30	51.3	3.1	15:00	18	2	10	20	2	1	
7	10/25/2011	15:15	51.23	3.01	20:15	17	2	19	11	6	2	
8	10/26/2011	3:15	52	4.08	8:15	20		2	33	22	19	6
9	10/27/2011	8:30	52.05	4.09	13:30	18	4	21	46	14	4	3
10												
11												
12												
13												
14												



EM - Implementation



Helmond et al. 2019

Fully Documented Fisheries – Research

- Improve and automate data collection and registration to enhance fisheries management
 - Detailed information on landings and discards and catch composition.

Landings well documented



Part of catch discarded at sea...?



Fully Documented Fisheries – Research

- Improve and automate data collection and registration to enhance fisheries management
 - Detailed information on landings and discards and catch composition.
- Explore, evaluate innovations and enhance fisheries research

Gear trials



Selectivity



Discard survival



Manual monitoring

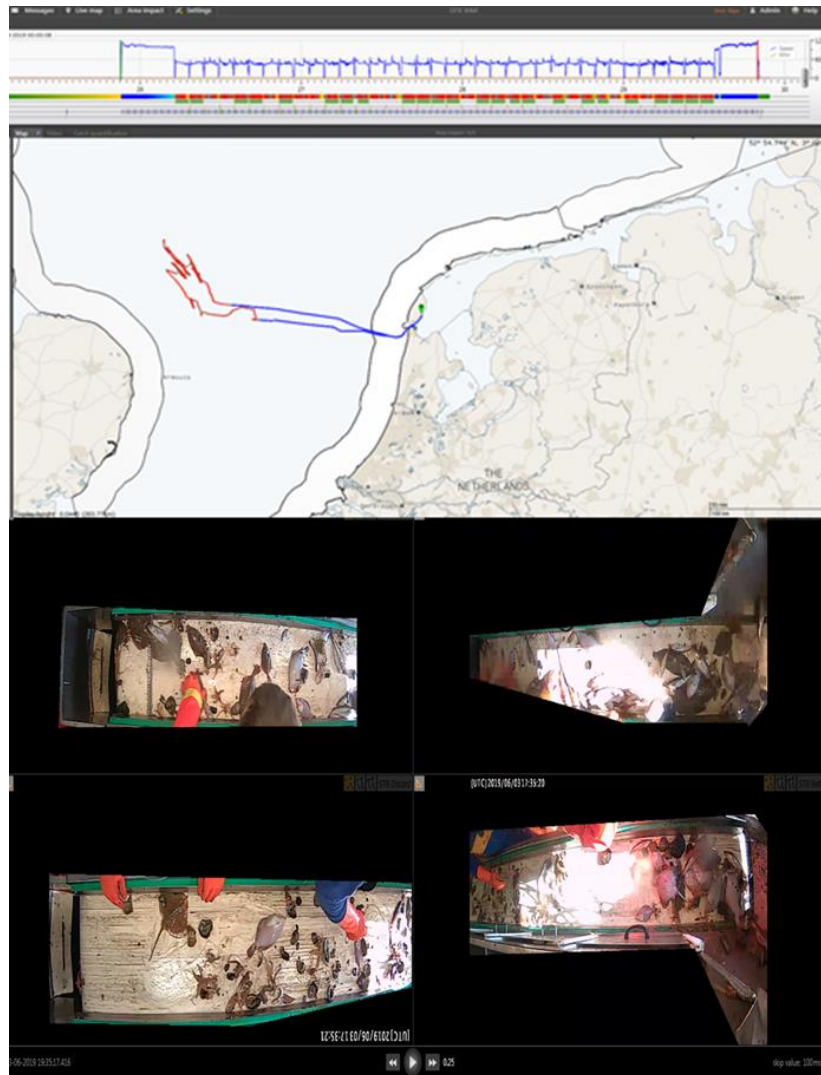


Accurate identification

Labour intensive:

**Small sample size
< 5% of total catch
< 1% of fleet**

Fully documented - Video monitoring



Manual review



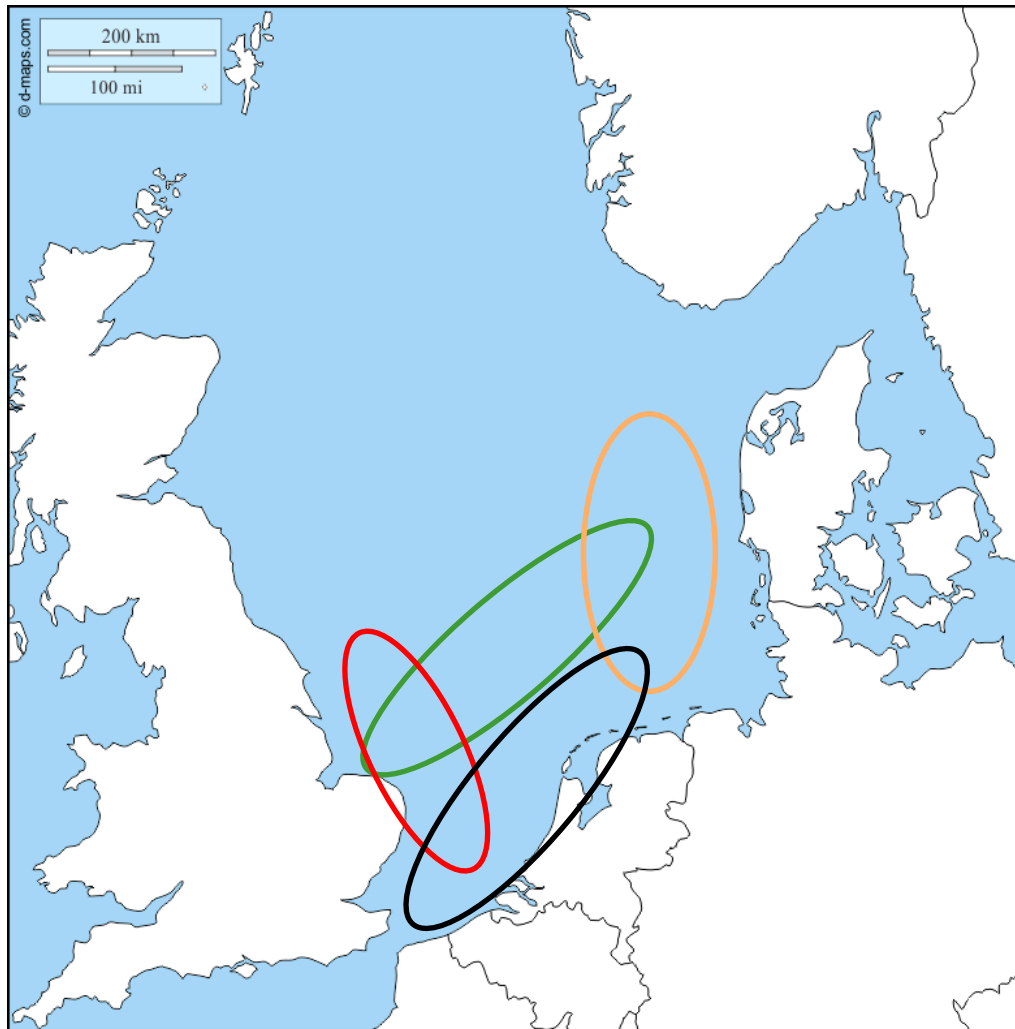
Validation of manual review

On board observers

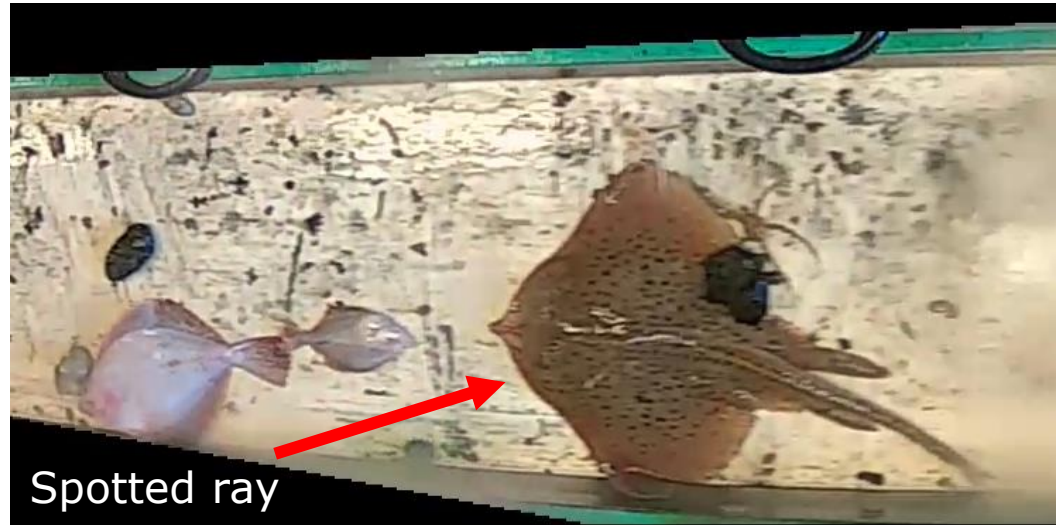
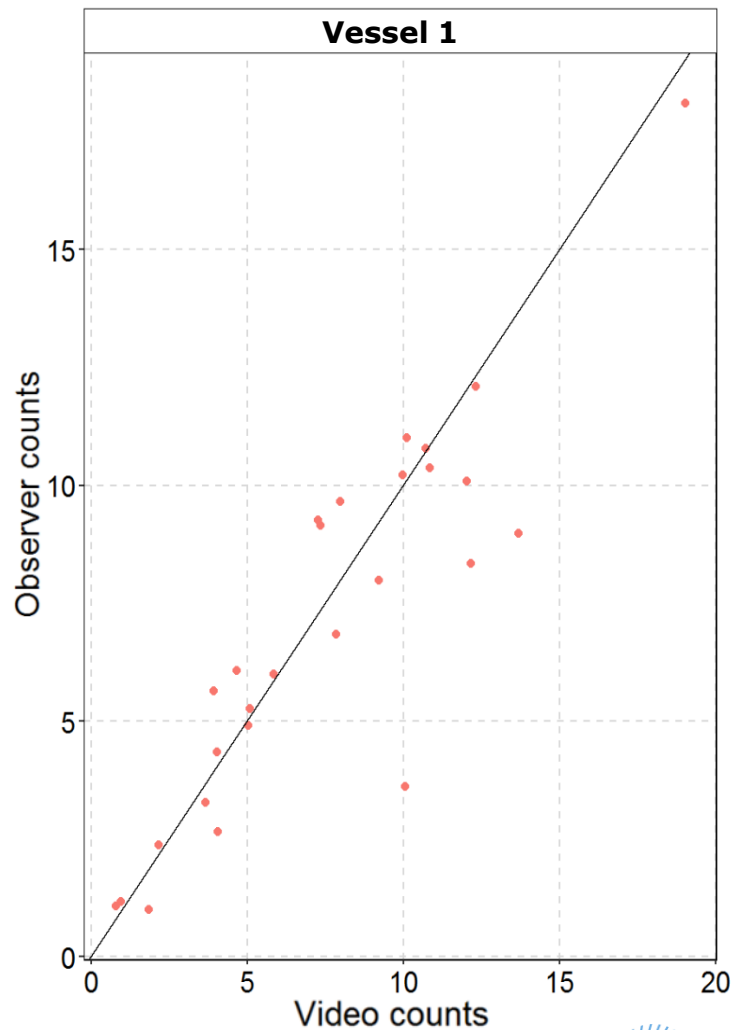


Video monitoring of Dutch fleet

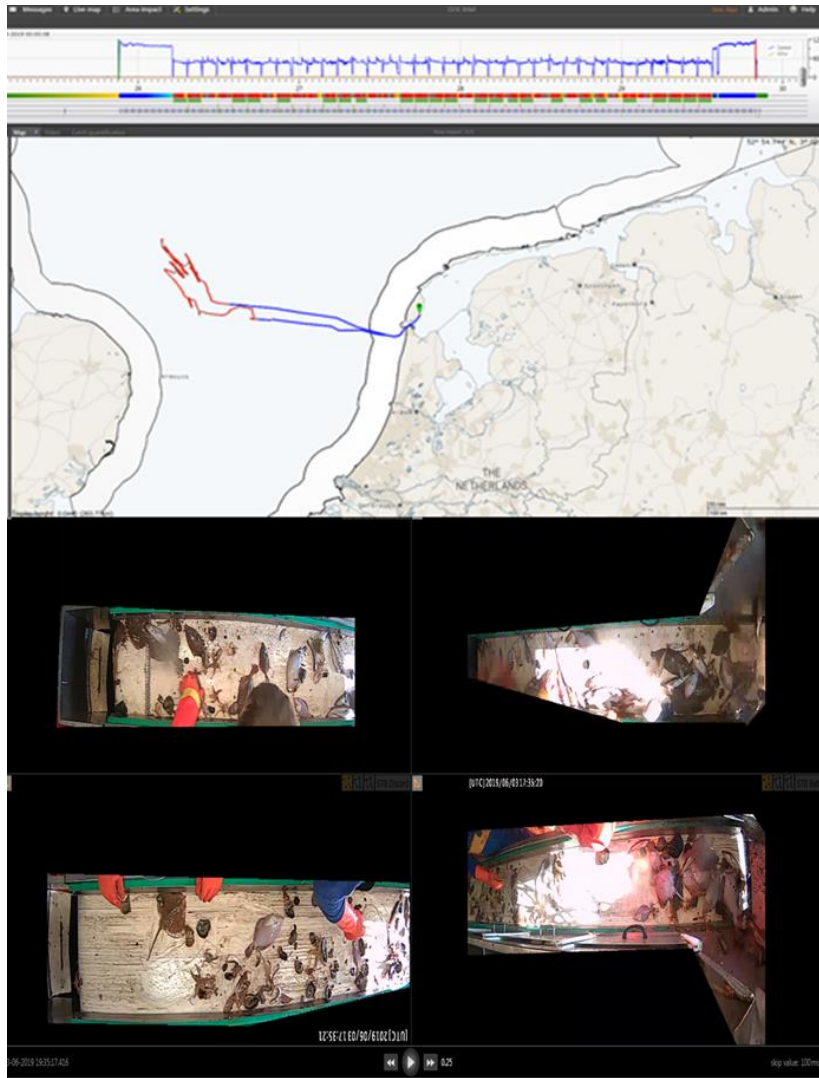
- 4 beam trawl vessel fishing for flatfish in the North Sea
- Started in May 2019



FDF – in practice



Pros and cons video review



Improved sampling coverage

Time consuming in terms of:

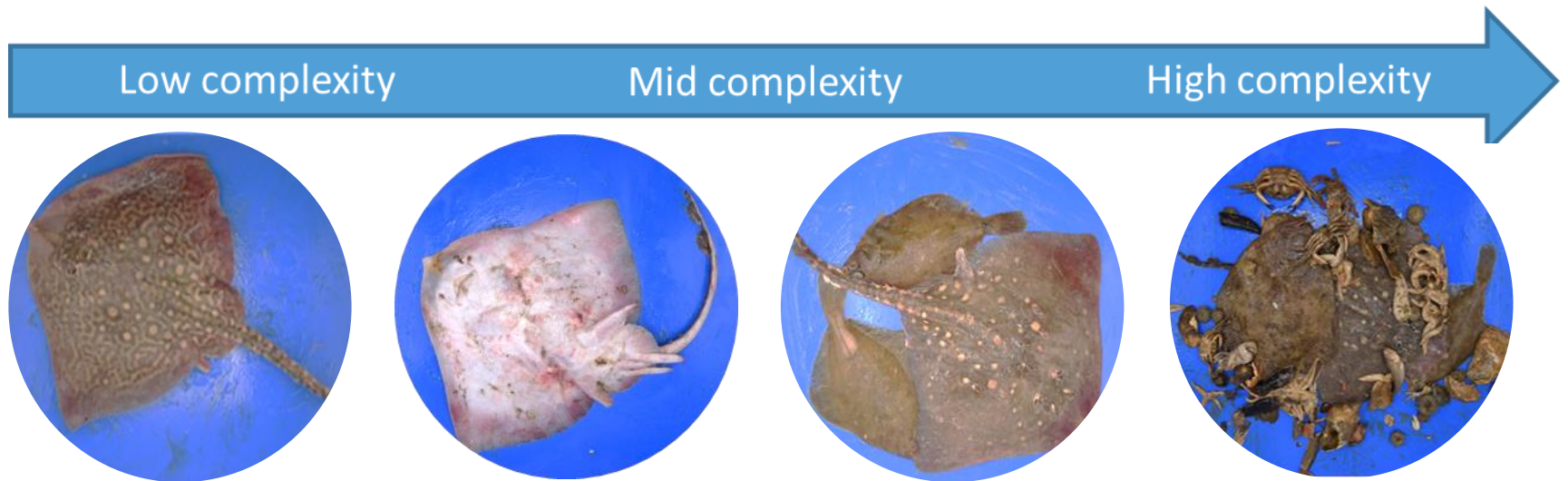
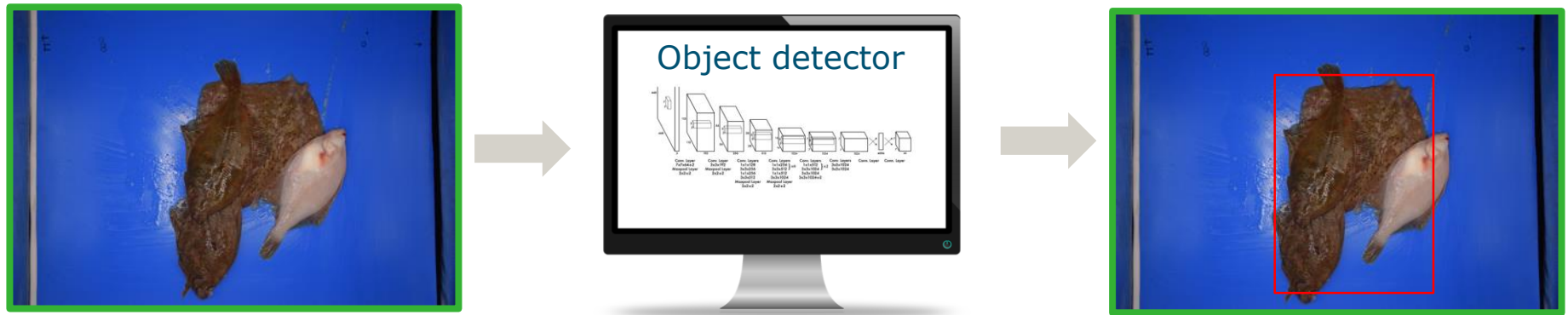
- **Manual review**
- **Briefing skipper/crew**

Species identification

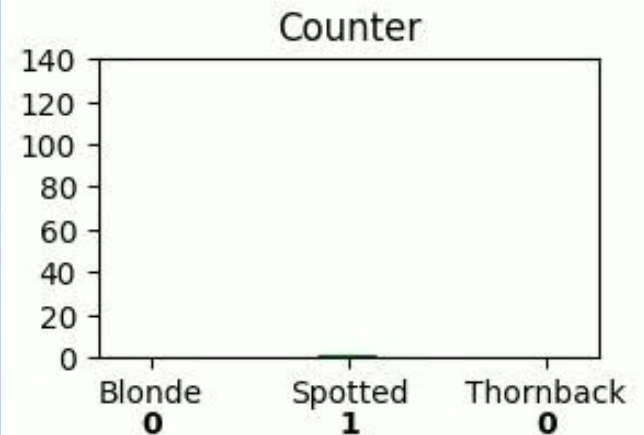
Size measurement

- **Scaling up the numbers of vessels?**

Computer vision technology

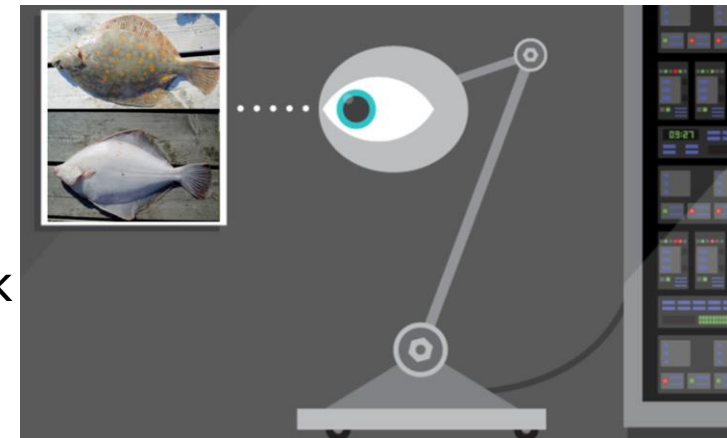
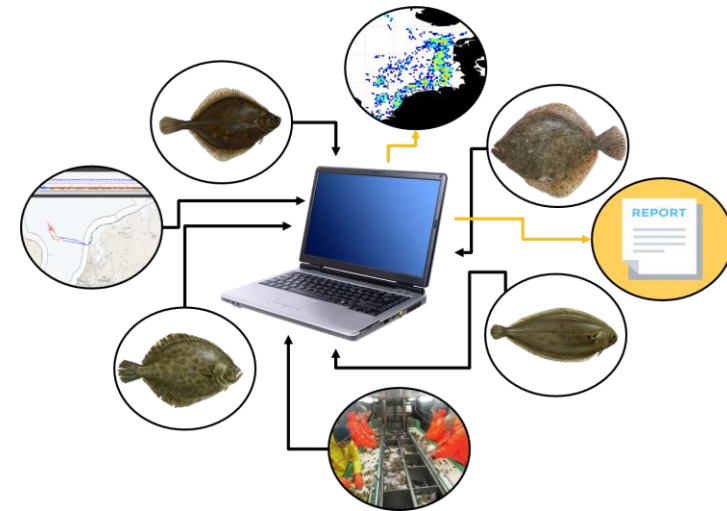


Automated counting system in action!



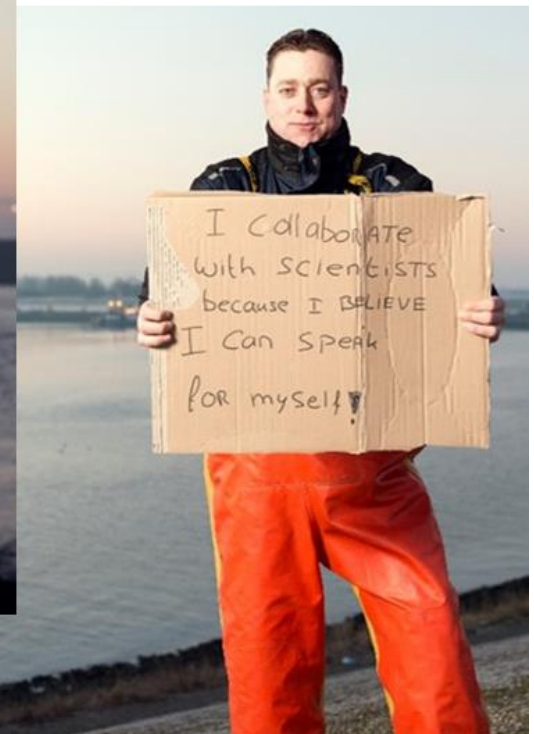
Fully Documented Fisheries – Research

- Enhancing data collection and registration for fisheries management
 - Detailed information on landings and discards and catch composition.
- Explore, evaluate and enhance innovations
 - Automatic species recognition and data registration
 - Potential for gear trials, selectivity work and analyse survivability



Stakeholder collaboration & commitment

- Lowering of the administrative burden and simplification of procedures on board for research and eventually fisheries management.
- Stakeholder commitment and work towards sustainable future of fisheries.



Thank you for your attention!



Wageningen Marine Research

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