AT A GLANCE

Requested by the PECH committee

Study in Focus

European Parliament

Electronic technologies for fisheries: Electronic monitoring systems

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Electronic Monitoring (EM) is used to support management driven monitoring schemes, e.g. effort, catch, discard monitoring, by-catch registration of protected species, monitoring of by-catch mitigation, and catch-handling measures.

Main observations

Since 1999, the use of camera-systems on board, commonly referred to as Electronic Monitoring (EM), has emerged as an innovative approach for documenting catches in fisheries.

The number of vessels involved in **EM is steadily growing**, and estimated at approximately **1 900** fishing vessels worldwide in 2019. Canada, the United States of America, Australia and Chile have successfully **implemented EM** in their **national fisheries management administrations**.

The study provides a global overview of the latest developments, as well as potential benefits and risks of Electronic Monitoring (EM). for fisheries. Lessons learnt show potential for implementing EM on larger scale in the EU.

During the period 2008 – 2019, **more than twenty EM trials** were conducted **in the EU**. Despite promising results, **none of the trials evolved into a fully integrated EM programme**. Still, valuable lessons are learnt on EM implementation in European fisheries.

EM **improves monitoring coverage** without a considerable increase in the monitoring budgets.

Involvement of fishers is crucial for EM implementation. Fishers need to conform to the operational practices on board to facilitate the success of EM.

In the context of the **EU Landing Obligation** and the requirement to **record discards**, **further work on development is still needed**. Detecting **smaller fish specimens** in large volumes of catch is still **challenging**.

Conclusions and policy recommendations

Experiences and lessons learnt from EM trials are valuable and useful for **implementing EM on a larger scale in European fisheries**. In the context of the EU landing obligation and the requirement to record discards, further work on **EM development is still needed**. Processing large amounts of video data and detecting **smaller fish specimens** in large volumes of catch with video review can still be challenging. **Computer vision technology** is a possible solution to facilitate processing large amounts of EM data and improve fish detection.

The study's **policy recommendations** are as follows:

- **Support the development of technical innovation in Electronic Monitoring**. Facilitate research on species recognition through computer vision technology; support networking between fisheries research, EM providers and robotics, e.g. (technical) universities and private sector; develop strategies to process large amounts of EM data (video data).
- **Build fishing industry support for Electronic Monitoring**. Demonstrate EM benefits and

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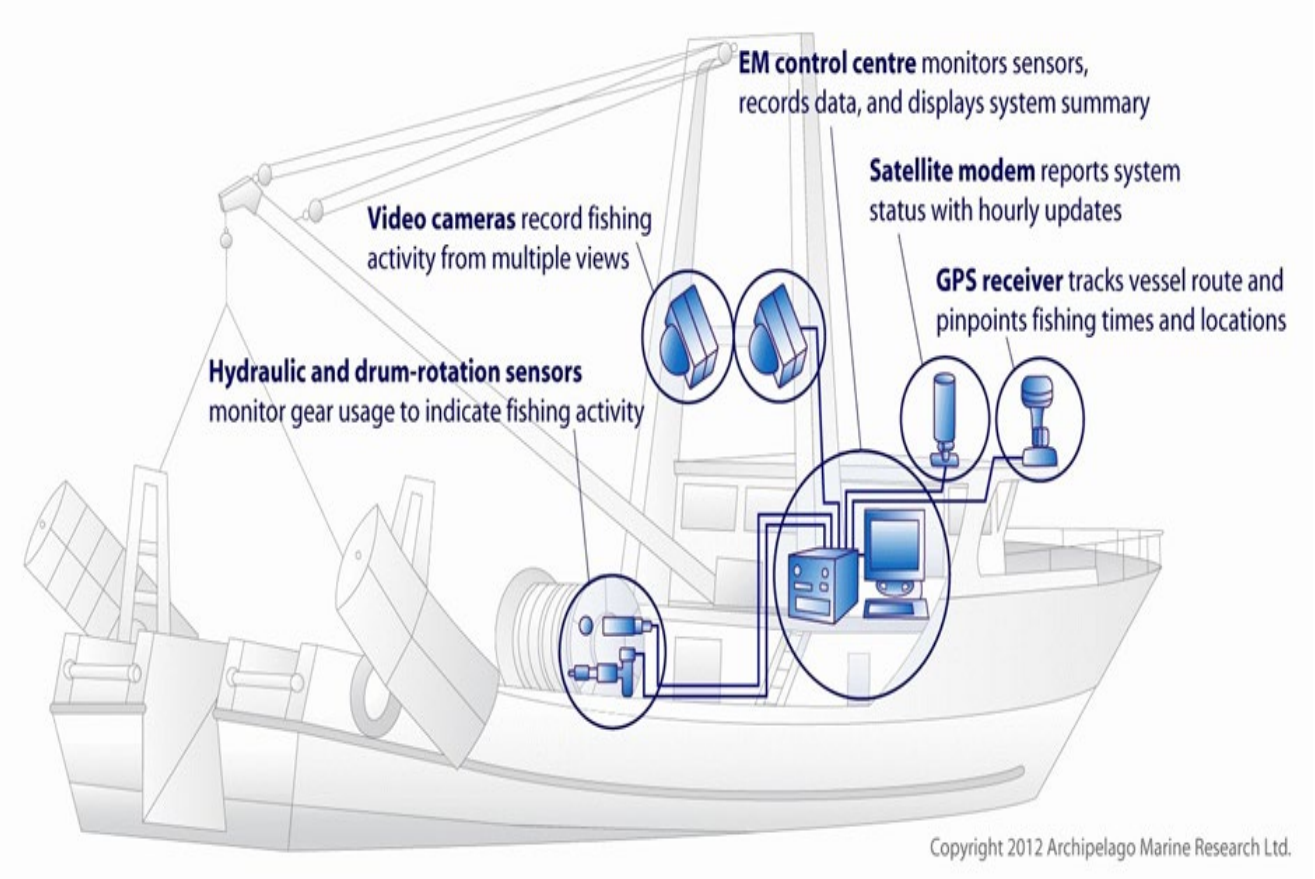
best-practise examples; facilitate communication around EM between stakeholders; develop "win-win" scenarios through alternative uses of EM data.

- **Create a European Electronic Monitoring infrastructure**. Provide legal guidelines around EM (e.g. privacy, data ownership); facilitate workgroups or committees with experts representing all stakeholder parties when implementing EM in a particular fleet or fisheries. Provide **legal requirements** and **governing framework** for Member States to implement EM.

Key areas for EU action

- Support the development of technical innovation in Electronic Monitoring
- Build fishing industry support for Electronic Monitoring
- Create a European Electronic Monitoring infrastructure

Figure : General overview of a standard remote electronic monitoring system set-up



Source: van Helmond et al., 2020

The present note is based on the study *Workshop on Electronic technologies for fisheries – Part II: Electronic monitoring systems* authored by: Wageningen Marine Research (WMR) part of Wageningen University & Research (WUR): Aloysius (Edwin) T.M. VAN HELMOND.
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