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# Remote Electronic Monitoring and Privacy: Facts, solutions and benefits

Remote Electronic Monitoring is a tried and tested technology that supports sustainable and transparent fisheries management. Even so, when introducing REM with cameras, it is not uncommon that vessel operators and crew are uneasy about how this will impact their day to day operations, particularly crew privacy. Addressing these concerns proactively is recommended, including ensuring a transparent and trustworthy framework of data access and ownership which protects fishers' commercial confidentiality. This has been achieved successfully in other countries in the past. The cameras are not constantly recording, but are triggered by sensors that initiate recording during times of deploying or hauling fishing gear and sorting the catch. The cameras are designed to operate only in the working areas of the vessel, i.e. where the nets are coming on board and where the fish are being sorted, in order to see what is being caught and discarded. The cameras do not record faces and they are not operational inside the living quarters of the vessel, meaning crew privacy is secure. It is also noteworthy that CCTV is commonplace in other industries as well as in public places.

Remote Electronic Monitoring (REM) has been proposed in the revision of the EU fisheries control system as the effective way to overcome gaps in the implementation of the Common Fisheries Policy (CFP). REM, including Closed-Circuit Television (CCTV), has been trialled in various European fleets for more than a decade to strengthen fisheries monitoring and support better stock assessments. In addition, REM is mandated in other countries such as Australia, Canada and the USA, making it a well-proven and mature technology.

Both from a policy and business perspective, the gaps observed in the implementation of the Landing Obligation (LO) and technical measures relating to the bycatch of sensitive species justify the large-scale adoption of cameras in European fisheries. While at-sea human observer programmes have traditionally produced the most accurate data on discards, REM is a scalable, modern and a much more cost-effective method to control EU fisheries and verify self-reported data.

However, one perceived obstacle concerns privacy of the crew. This paper addresses commonly held privacy concerns associated with REM, analysing their causes, highlighting existing solutions and best practices, as well as common misconceptions. In doing so, it demonstrates that privacy should not be considered an obstacle to REM deployment in European fleets, as the objections are either unfounded or solutions exist that reconcile data protection and privacy rights with these effective electronic monitoring tools.

### Why? The rationale behind REM and CCTV in European fisheries

The rationale for the introduction of CCTV into EU fisheries is chiefly the current lack of compliance with fisheries regulations. Currently, non-compliance with the LO is widespread<sup>1</sup> and insufficient information is collected regarding bycatch of marine mammals.<sup>2</sup> As the actual rates of discards are not known, fisheries

scientists are provided with incomplete data of the actual harvest rates, which impacts the quality of stock assessments.<sup>3</sup> This can, in turn, allow Total Allowable Catches (TACs) to be set at unsustainable levels, contributing to unsustainable and inequitable fisheries. These implementation gaps in monitoring and compliance in European fisheries highlight the need for an overhaul to fisheries control. REM with CCTV is an effective tool to overcome the challenges of monitoring not only the LO, but also interactions with marine mammal bycatch and in providing more complete fisheries data.

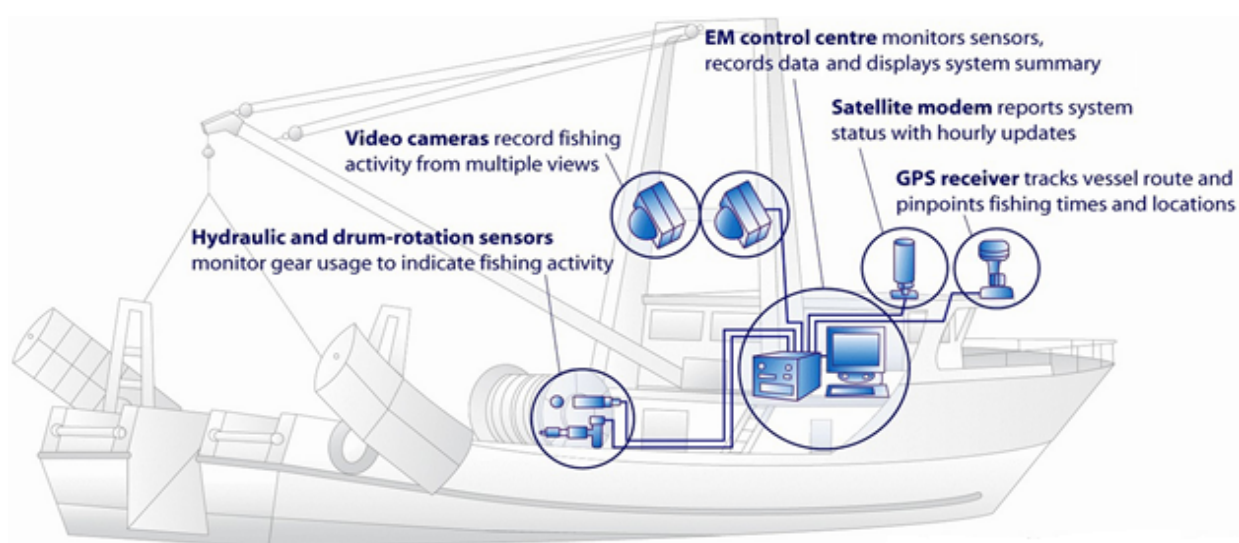
For some, it appears to be a culturally sensitive issue to deploy CCTV.<sup>4</sup> While the extent to which the technology is used varies across Member States, it has become standard practice to safeguard property and people using cameras, as well as public authorities using CCTV for control purposes in a number of other sectors, including in abattoirs, waste management sites and for controlling drive time and rest breaks for transport lorries.

The tried and tested solutions offered by REM demonstrate the added value of this technology to support a fisheries management system that successfully promotes environmental sustainability, whilst furthering the economic viability of the fishing industry.

## What? From the need for REM programmes to how to design them

While there is evidently a need for improved fisheries controls in EU seas, vessel operators and crew are sometimes uneasy about how REM will affect their day to day operations. Fishers sometimes see REM with cameras as an intrusion<sup>5,6</sup> by public authorities. This relates to a personal opposition to being recorded in principle,<sup>7</sup> as crews will often not only consider fishing vessels as operation sites, but understandably also as their temporary “home” while at sea.<sup>8</sup> Some fear that REM could lead to trade secrets being exposed<sup>9</sup> or impact business privacy.<sup>10</sup> Others have voiced concerns over possible manipulation or misuse of video footage to discredit fisheries.<sup>11</sup> To a large extent, these concerns are based on common misconceptions about the technology and the retention of the data.

Firstly, there should be a clear understanding from the outset of the purpose of REM, as the data is solely intended for monitoring and compliance purposes. This means that the objective of REM is to monitor the fishing operation, i.e. the vessel’s catch and how it is being handled once on board. Conversely, the purpose is neither to monitor the entire vessel nor to record people on board individually. This is reflected in how the cameras are positioned.



*The typical positioning of cameras on a vessel, all of which record the catching or sorting areas of the vessel (i.e. not in the private areas of the vessel). Photo credit: Archipelago Marine Research Ltd., 2012.*

Monitoring programmes focus on fisheries activities, which may in turn indirectly lead to the collection of private data, such as partial footage of the crew. EU citizens enjoy specific rights when it comes to their privacy which are granted by the EU General Data Protection Regulation (GDPR), and any implementation of video monitoring schemes must be GDPR-compliant. Nonetheless, many of these concerns can be addressed through effective set-up and management of REM operating systems.

## How? Reconciling data protection and privacy rights with REM through effective set-up and management systems

From a privacy perspective, the set-up and management of REM operating systems give rise to two questions: 1) what footage is acquired and 2) how is the footage used once collected?

In those cases in which REM footage may capture recognisable individuals on a fishing vessel, it is essential to comply with GDPR rules and protect privacy. There are two solutions to this: avoiding personal data collection wherever possible or, where this is not feasible, irreversibly anonymise all personal data recorded to prevent any identification of individuals by way of technology.<sup>12</sup>

Avoiding personal data collection boils down to monitoring the technical processes without recording the crew in a way that would make them identifiable.<sup>13</sup> In practice, this means adjusting the location, range and angle of cameras on board, as well as making information available to the crew about the systems installed on their vessels. Standard operating practice is to limit the video monitoring to a minimum time,<sup>14</sup> usually recording only the landing, sorting and processing of the catch, e.g. by using sensors on winches and sorting bands to switch cameras on and off.<sup>15</sup> In working areas, the CCTV recording angles can be adjusted to prevent the identification of workers. This, in turn, limits the opportunity for crew to be caught on camera indiscriminately. Naturally, the cameras only cover the operation areas and exclude other locations, such as living areas. REM also provides fishers with more privacy on board in comparison to human observers, as it focuses on catching and handling zones only, whereas human observers have access to the whole vessel and remain on board for the duration of the fishing trip.

When it comes to anonymisation, technological solutions can deliver on personal data protection at the recording stage. Software solutions exist today that are capable of irreversibly anonymising the individuals operating in the monitored areas at the time of recording, for instance, by means of pixelation.<sup>16</sup> According to technology companies providing CCTV recording services for fisheries, improved machine learning will, in the near future, further improve the technological anonymisation solutions offered to protect the data privacy of crew members.<sup>17</sup>



Cameras are positioned so that they only record the catching or sorting activities. Photo credit: Environmental Justice Foundation

When dealing with data privacy, consent and clear protocols are key. A best practice reported by one fishing association was to adopt a fully transparent communication with the crew. On these vessels, it is required that all areas which are recorded are screened on a video control panel, so that the crew knows what is being recorded in which working area.<sup>18</sup> Comfort levels of working whilst being monitored by a camera also relate to a question of habit and trust. In this regard, studies have shown that there is a big difference in the level of acceptance between REM-experienced fishers, who are mostly positive, and those without any first-hand experience with REM.<sup>19 20</sup> Many studies suggest that the crew simply become acquainted with the presence of cameras during trials and operation.<sup>21 22</sup>

Consent, however, relates to broader considerations than data collection methods. The overarching purpose and data ownership impact the acceptance of CCTV on board vessels, as well as the trust between fishing operators and public authorities. Many fishers acknowledge that having cameras on vessels is not a problem in itself, but rather the concerns relate to having a clear set of agreements and policies on who has access to the information and how it can be used. The issues of data access and ownership have been successfully addressed in various countries that have introduced REM. In Australia and New Zealand, for example, the footage is automatically encrypted at the time of recording and access is only granted to competent authorities. As the concerns will often relate to commercial confidentiality and potential damage to a fisher's reputation, the introduction of REM needs to be accompanied by clear objectives and data management policies, e.g. imagery retention timeframes, privacy provisions, delivery of REM information from vessel to review facility. Clear and transparent rules around design, transmission, treatment and storage of data are needed to provide assurances regarding the benefits of REM.

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