

**Comments on  
Electronic Monitoring and Electronic Reporting: Guidance & Best Practices for  
Federally-Managed Fisheries**

M. Brady  
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An additional main principle is needed. Namely, “An overall integrated target architecture must be described prior to evaluating, designing, or implementing any electronic reporting system.” The reason for this is that the effectiveness of an electronic reporting/monitoring system is determined by the larger architecture in which it functions. Also, electronic reporting/monitoring requirements cannot be defined in the absence of a host system. NMFS data managers and users have long lived with un-integrated data reporting. You will often hear the term “stovepipe” used to describe such systems. From this experience, we have learned that a compilation of independently designed data processing modules performs poorly.

Definition: A *target architecture* is an optimized system design which one evolves towards over time. A target architecture is not one which exists today. And, if the current architecture is in dire need of improvement, it may take a significant amount of time to obtain.

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Phase “0” – Design an overall integrated target architecture in which any proposed electronic system will reside.

Page 7, last paragraph

The term “co-management” here can be interpreted rather broadly. In some cases, co-management can be very effective. For example, in some regions, NOAA VMS systems communicate with vessel based VMS systems that have been developed in the private sector. Boatracs, Skymate, and GMPCS are examples. NMFS defines a set of system requirements and the developers produce and sell the systems. Competition drives quality and value. Reduced government development efforts reduces cost. In such an approach, the requirements should not only include communication protocols but should also specify such things as user interface quality, error prevention, and error checking on input.

In the case where private sector developers provide system modules, it is still necessary for NMFS to develop and maintain the core module. The core module is the module that collects data from modules operated by our partners such as vessel operators and seafood dealers. The core module may also deliver messages to other modules. For example, if a vessel reporting module on vessel X reports to the core that a sale is pending to dealer Y, the core module would then notify dealer Y so that the proper pairing of vessel and dealer can be confirmed. (Mismatched between reported and actual sales pairing are common errors in fisheries data.)

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Actually I find that the slowest and least accurate systems are also the most expensive to operate because they tend to be inefficient. Also, a poorly designed system will not produce the quality or timeliness required and will result in additional development costs in the future.

#### Discussion of video technology in general

It might be assumed that video technology is able to perform certain functions that are beyond the state of the art. Object and event recognition technologies are still in their infancy. A review of the reliability of any such technology should be made before it is deployed. In fact, the technology should be proven before it is even considered as a component of some system.

#### Infrastructure, Integration, and Timeliness

There is a growing understanding of the importance of integration. However, some confusion still exists. To avoid confusion over this importance issue some clarification is needed. When it comes to reporting data from fishing trips, there are two types of integration. One is *reconciliation*, where trip data from distinct sources are matched after the fact. This approach is costly, time consuming, and error prone. The other integration approach is *integrated reporting*. In integrated reporting, data is integrated at the moment of collection. It provides speed, accuracy, and efficiency.

#### Section 5.2.4

Good points made here. It should also be added that the benefits of data integration increase greatly when the integration of distinct data streams occurs as far upstream as possible. In fact it should at the point where data is reported.