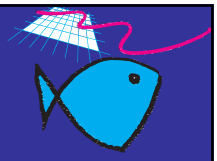
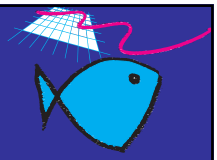


The world of artisanal vessels

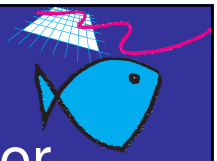
New challenges for VMS



What are artisanal vessels?

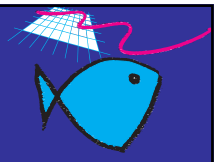
- A very imprecise term but:
  - Comparatively small vessels
  - Relatively short trip time
  - Modest equipment (compared to industrial vessels)
  - Often deal in high-value catch
  - Collective catch is significant

Equipment requirements for smaller vessels



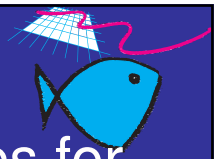
- Satisfying the needs of vessels that have unsatisfactory power supply
- VMS gear that is small and unobtrusive enough to keep out of the way
- Providing an adequate service at a price that is “reasonable” for vessels that are worth hundreds of dollars

Living with limited power supply



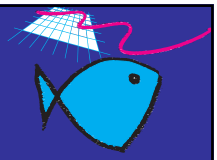
- Changing batteries requires regular physical access
- Autonomous power supplies are preferable but often expensive or impractical
  - e.g. solar
- Availability and autonomy are the measures of success

What are acceptable prices for equipment and service?

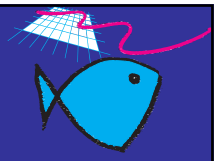


- Highly dependent upon fishery, but price is in low hundreds of Euros
- In many ways, service rates are more important as they are recurring costs
- Price per position determines frequency of data?

Low-cost solutions for artisanal vessels

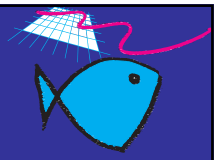


- Are terrestrial solutions adequate?
  - VHF radio
  - Cellular telephony
- Advantage is low-cost, very small equipment
- Suitability depends upon coverage
- In some cases transmission can be minimized



Which services are required?

- Positioning with latitude and longitude
- Transmission of emergency message
- Polling?
- Data logging
- IT IS IMPROBABLE THAT ALL SMALL VESSELS WILL BE TRACKED AS INDIVIDUAL ASSETS



The Seychelles story

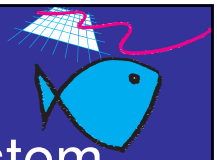
- Country with a significant natural resource
- Exploited by two fleets
  - Foreign purse seiners and longliners (tuna)
  - Native artisanal fleet (highly polyvalent fishery)
- FMC, specifically for foreign fleet, installed in December, 2000

The Seychelles -- 2

- FMC operating satisfactorily, foreign fleet reporting as required
- Data exchange with EU countries as per agreement
- Next step is to apply VMS technology to artisanal fleet

Artisanal fishing in the Seychelles

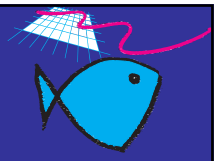
- About 450 vessels, most of them only a few metres long, powered by outboards
- Safety and communications equipment is virtually non-existent
- Almost any accident at sea -- engine failure is most common -- can be fatal



Seychelles monitoring system for artisanal vessels

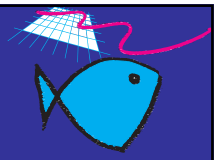
- Based upon battery powered Inmarsat D+
  - Small, light, modest power requirements
- Daily “heartbeat” signal to assure equipment is functioning
- Panic button provides emergency message
- Associated data logger records movements of vessel

Seychelles operational scenario

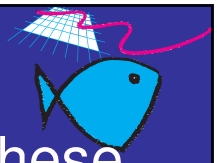


- In normal operation, vessel sends one daily report and logs movements at pre-determined interval (between 15 minutes and 2 hours)
- Panic button provides emergency signal which can be cancelled by crew
- When vessel is in port, at least once every two months, data is downloaded and battery changed
- Data is uploaded into FMC and battery re-charged

Benefits of system

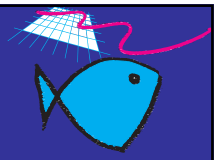


- Security at sea infinitely improved
- Data on operations of artisanal fleet minutely documented
- Resource management applied with enormously improved insight
- Data logging provides significant economies



The rewards for meeting these challenges?

- A likely explosion in VMS
  - Including both new markets and upgrading of existing ones
- Significantly increased added-value
- A market measured in the hundreds of thousands of vessels



Above all, an infrastructure capable of making a real difference in the health and sustainability of our fisheries resources