ANNEX 5: TECHNICAL PRESENTATIONS

Annex 5.1 History and Future of MCS

Slide 1

History and Future of Monitoring Control and Surveillance

Andrew R Smith

Fisheries Industries Officer

FAO, Rome

Slide 2

Summary

History of Fisheries Policing

The Law of the Sea and how it changed the Rules of the Game

Changes in the World's Fleets

The Emergence of VMS

The Effectiveness of the Tools of MCS

Satellite Surveillance

VMS in Fisheries Management

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ORIGINAL NATIONAL LIMITS

Up until 1982, most territorial sea limits were 3 nautical miles to 12 nautical miles

Therefore States could only control the activities of their own vessels outside these limits

This was reflected in the name given to the policing activity (In the UK “Fisheries Protection”)

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ORIGINAL LIMITS (cont)

These restricted limits allowed visual location of vessels from the shore.

Many countries entered into Multilateral Agreements to “manage” fisheries (i.e. Minimum mesh sizes, minimum landing sizes in the North Sea etc)

Never limited the amount of fish landed

Led to the moratorium on the herring fishery in the North Sea in 1980

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The Law of the Sea

Three Conferences led to the formulation of the Law of the Sea Convention in 1982 (LOSC)

Exclusive Economic Zones established at 200 nautical Miles.(not only for fisheries but for mineral rights)

However many countries have not declared EEZs (i.e. Mediterranean, Yellow Sea, Caspian Sea)

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Exclusive Economic Zones

EEZs extended the areas of some fisheries jurisdictions hundred fold and in particular created a new requirement in developing countries.

Greatest increases in area were off Small Islands such as in the South Pacific and led to the development of the South Pacific Fisheries Forum Agency (includes Australia and New Zealand)

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Monitoring Control and Surveillance (MCS)

In 1982 FAO held an Expert Consultation on Monitoring Control and Surveillance

The definition of MCS was given as follows

Monitoring - the continuous requirement for the measurement of fishing effort characteristics and resource yields.

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Monitoring Control and Surveillance (MCS) cont

Control - the regulatory conditions under which the exploitation of the resource may be conducted

Surveillance - the degree and types of observations required to maintain compliance with the regulatory controls imposed on fishing activities.

Broad Definition

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Development of MCS

Some developed countries already had the capacity with a Navy for military duties and Coastguard for civil duties.

Many countries rely on their Navy for the implementation of MCS

However since the end of the Cold War funding of military vessels has been reduced drastically and some are even limited by the cost of fuel

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Development of MCS (cont)

Many countries who had established large EEZs found that the obligations probably exceeded the opportunities gained.

The adjustments that were expected in the fleets, with a decrease in the fleets of Distant Water Fishing Nations (DWFNs) and an increase of the fleets in developing countries has been very slow.

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Global Fleet of Large Fishing Vessels

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Increase in the Fleets of Developing Countries of Africa

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Trends In the Major Fishing Fleets

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Latin American Countries

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Trends in the European Fleet

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Flags of Convenience

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Changes in the catches of Distant Water Fishing Vessels

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Code of Conduct for Responsible Fisheries

In the early 1990s it was realised that there were major problems in fisheries

High Seas Fisheries were totally unregulated

Call for a Code of Conduct for Responsible Fisheries with a Reflagging Agreement to be put on the fast track

FAO High Seas Compliance Agreement (1993)

Code of Conduct agreed (1995)

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International Plans of Action

Reducing Incidental Catch of Seabirds in Longline Fisheries

The conservation and Management of Sharks.

The Management of Fishing Capacity

On Combating Illegal Unreported and Unregulated Fishing (IUU Fishing)

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Emergence of VMS

First use of VMS was for USA to track Korean vessels

Australia and New Zealand start to monitor Japanese longliners and eventually their own trawlers

Portugal starts tracking vessels as pilot study for European Union

Now all vessels over 20 metres have to report by VMS (6,000 vessels)

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Emergence of VMS (Cont)

USA slow to adopt blanket coverage such as EU and other countries because of legal issues

Most countries with significant fishing interests have already adopted VMS for at least part of their fishing fleets.

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FAO Statistical Areas

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What VMS can do

Monitor vessels so that they do not enter closed areas.

Monitor vessels so that inspections can be targeted. (i.e. patrol vessel does not need to search)

Gives warning of when a vessel is going to land.

Gives an indication of the activities of a vessel.

Allow a country to exercise “control” over its fishing vessels wherever they are as required by International Agreements.

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VMS seen within the overall context of MCS

VMS cannot arrest a vessel

Cannot measure mesh size

Cannot examine documents

Cannot monitor an unauthorised vessel

Cannot monitor transhipments

Hence - VMS is just one tool in the MCS toolbox.

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Looking to the Future

Satellite Surveillance by SLAR

Comparison with VMS data

Satellite Surveillance by in Visual Spectrum

Interdiction by Surface Vessel

If Necessary. Arrest and escort to port

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Changes caused to MCS by VMS and Satellite Surveillance

MCS will become more cost-effective.

Increase in cost-effectiveness will reduce costs or increase effectiveness.

Increases in effectiveness will be difficult to measure.

Synergies of MCS components will have to be reviewed continually.

Property rights will impinge on decisions and on “Who pays?” - “Who says!”.

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APPENDIX I

EFFECTIVENESS OF DIFFERENT TYPES OF VESSEL MONITORING

Type of MCS

Description of Monitoring

No of Vessels Inspected

Effectiveness of Monitoring of

Amount of Time Observed

Effectiveness of Detection of Unlicensed Vessels

Coverage at Sea

Cost (US$)

Power of Arrest

Position

Fishing Gear

Catch Quotas

Days at Sea

By Vessel

Identification by sight and boarding for Inspection

12/day

High

High

Medium

Low

Low

High

300 sq. miles per hr

500-140,000 per day

Yes

By Air

Limited to daylight and identification

60/day

High

Low

None

None

Low

High

3000 sq. miles per hr

$400-3000 per hr

No

Shore Based

Inspection of catch and fishing gear. Coastal Surveillance

15/day

None

High

High

High

Low

None

$150/day

Yes

Observers on Vessels

Continual observation of activities

1

High

High

High

High

High

Medium

High

$200/day

No

Vessel Monitoring System

Periodic Monitoring of Vessels Position

All Vessels Fitted

High

None

None

High

High

None

Complete for Vessels Fitted

$100,000+$8,000/vessel

No

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APPENDIX II

MCS RECOMMENDATIONS AND COSTS FOR VARIOUS TYPES OF FISHING FLEET

Type of Fishery

Type of MCS Recommended

Amount of MCS Recommended

Capital Cost US$

Running Costs/vessel monitored/day

Artisanal Fleet (vessels < 12m)

Shore based

1 Fishery Officer per 100 boats

None

2

By vessel

1 Small Patrol Boat (4 crew)/500 boats

500,000

2

Domestic Industrial Fleet (12m<vessels<24m)

Shore based

1 Fishery Officer per 40 vessels

None

5

By Vessel

1 Medium Patrol Boat (10 crew)/500 boats

2 million

6

By Air

1 small aircraft/1000 vessels

1 million

5

Large Domestic Vessels (Vessels >24m)

Shore Based

1 Fishery Officer/20 vessels

None

10

By Vessel

1 Large Patrol Vessel (30 crew)/100 vessels

10 million

20

By Air

1 Medium Aircraft/500 vessels

10 million

25

Observer

2 Observers per Vessel (if necessary)

None

400

VMS

Recommended for all fleets >50 vessels

100,000

20

Foreign Fleet

Shore Based

1 FO/10 Vessels for Port State Control

None

20

By vessel

1 Large Patrol Vessel (30 crew)/50 vessels

10 million

40

By Air

1 medium aircraft/100 vessels

10 million

25

Observer

2 Observers per vessel

None

400

VMS

Recommended for all fleets >20 vessels

100,000

20

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HYPOTHETICAL ESTIMATION OF MCS REQUIREMENT (From APPENDIX II)

No and Category of vessels

Fishery1 Officers

Vessels

Aircraft

Observers

VMS

2,000 Artisanal

20

4 inshore

500 Medium Domestic

15

1 medium

1 Small

200 Large Domestic

10

2 Large

1 medium

400 (if necessary2)

Recommended

50 Foreign Vessels

5

100

Recommended

Capital Cost

Running Costs

4 Inshore Vessels

2 million

1 Medium Vessel

2 million

100 Fishery Officers

7 million

2 Large Vessels

20 million

4 Inshore Vessels

1 million

1 Small Aircraft

1 million

1 Medium Vessel

1 million

1 Medium aircraft

10 million

2 Large Vessels

20 million

1 VMS

0.1 million

2 Aircraft

6 million

Total

35 million

Total

35 million.

1 This is only for inspection and the total establishment for data collection, administration should be doubled

2 Observers should only be considered for domestic vessels if considered necessary for environmental reasons or in cases where there is a high probability of non-complance

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APPENDIX IV

ADVANTAGES AND DISADVANTAGES OF THE VARIOUS MCS SYSTEMS

Type of MCS	ADVANTAGES	DISADVANTAGES
By Vessel	Provides at sea verification that fishing gear and catch is legal. Most important to control Transhipment and arrest particularly of foreign vessels	Very costly
By Air	Can provide the best coverage for identification of illegal incursion of unlicensed vessels and also of observation of boxes	Very costly. No ability t5o arrest. No ability to inspect the catch or fishing gear.
Shore based		

Lowest running costs and low capital costs. Can monitor landed catch and quotas. Only power of arrest in port.

No possibility of monitoring foreign vessels that do not call at port. No possibility of monitoring transhipment

Observers

Can observe all operations

High cost. Only viable on larger vessels.

Vessel Monitoring System

Provides almost real time monitoring of position for fitted vessels and can reduce interception times for enforcement craft. Relatively low capital cost and running costs borne by fishing vessel

No coverage for vessels not fitted with the system. Involves cost of 10,000 for the fishing vessel. No detection of unlicensed vessels.

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Fisheries co-management typologies

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Pilbara Trawl Fishery Area

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Use of VMS as a tool for Fisheries Management (PilbaraTrawl Fishery)

Problem of Multi-species Trawl Fisheries

Mesh sizes and minimum landing sizes based on size of species at maturity. Hence cod-end mesh size is a compromise

Problem occurs because larger sized fish are overfishedsmaller fish are underfished

However if the distribution of fish species are slightly different, the amount of fishing can be regulated in each zone to obtain an optimal harvest from each of the species

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USE of VMS as a tool for Fisheries management (cont)

Clearwater scallop fishery in Canada

The Company has a monopoly on the scallop fishery

It can collect data on the size and abundance of scallop from the different sectors.

The company can then decide on the optimal strategy for optimisation of the harvest.

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Use of VMS as a tool for Fisheries management (cont)

Gulf of Carpentaria Prawn Fishery

Shrimp grow rapidly after the floods washing them out of the juvenile areas into salt water.

Fishing too early results in small shrimp

Fishing too late and the shrimp are dispersed with low catches

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Use of VMS as a tool for Fisheries management (cont)

Research vessels cannot cover the entire area

Fishing fleet is allowed to start fishing, but report by VMS the size of shrimp caught.

If the size of shrimp is OK the the fleet carries on fishing. If shrimp are too small then the opening of the fishery is postponed.

Annex 5.2 The International Plan of Action on IUU Fishing

Slide 1

The International Plan of Action on IUU Fishing

Andrew R Smith

Fisheries Industries Officer

FAO, Rome

Slide 2

Background

The term IUU Fishing first used by the Commission for the Conservation of the Antarctic Living Marine Resources (CCAMLR)

It is believed that IUU Fishing is increasing

In 1999 the FAO Committee on Fisheries (COFI) recommended the elaboration of an International Plan of Action

Slide 3

Background (cont)

This was backed by the FAO Ministerial meeting on Fisheries in March 1999

Expert Consultation held in Australia in May 2000

Technical Consultation held in Rome Oct 2000

Finally adodted by COFI in March 2001 and FAO Council subsequently

Slide 4

Definitions of IUU Fishing

Illegal Fishing refers to fishing activities

- Conducted by national or foreign vessels in waters under the jurisdiction of a State, without the permission of that State, or in contravention of its laws and regulations

- Conducted by vessels flying the flag of States that are party to a relevant regional fisheries management organisation but operate in contravention of the conservation and management measures adopted by that organisation and by which the States are bound, or relevant provisions of the applicable international law: or

- In violation of national laws or international obligations, including those undertaken by cooperating States to a relevant regional fisheries management organisation.

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Definitions of IUU Fishing

Unreported fi0shing refers to fishing activities

- Which have not been reported, or have been misreported, to the relevant national authority, in contravention of national laws and regulations;or

- Undertaken in the area of competence of a relevant regional fisheries management organisationwhich have not been reported or have been misreported, in contravention of the reporting procedures of that organisation.

Slide 6

Definitions of IUU Fishing

Unregulated fishing refers to fishing activities

- In the area of application of a relevant regional fisheries management organisation that are conducted by vessels without nationality, or by those flying the flag of a State not party to that organisation, or by a fishing entity, in a manner that is not consistent with or contravenes the conservation and management measures of that organisation; or

- In areas or for fish stocks in relation to which there are no applicable conservation or management measures and where such fishing activities are conducted in a manner inconsistent with State responsibilities for the conservation of living marine resources under international law.

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IUU Fishing and MCS

IUU Fishing is the problem

MCS is one of the answers to the problem

MCS has a very wide definition but tends to concentrate of the “Policing” of fisheries at sea

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All States Responsibilities

Observance of International Standards

- Areas Under National Jurisdiction

- High seas

National Laws, Regulations and Practices

Review of Pertinent Laws

State Control over Nationals

Vessels Without Nationality

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Flag State Responsibilities

Flag State has exclusive jurisdiction when the vessel is fishing in the flag State waters (subject to bilateral agreements)

On the high seas, again the Flag State has exclusive jurisdiction (subject to international agreements)

In the waters of another State, that State has the right or obligation to manage the fisheries and regulate the fishing activities of the vessel but the flag State still retains jurisdiction over the vessel.

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Flag State Responsibilities (cont)

Registration

- Registration of a vessel is the means whereby the vessel acquires nationality and the right to fly the States flag

- However the “Register” is also a register of property containing the names of owners, shares and also details of mortgages or liens.

- Usually this is the responsibility of the maritime administration.

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Flag State Responsibilities (cont)

Record of Fishing Vessels

Authorisations to Fish (including authorisations to fish on the high seas)

Control over transport and support vessels

Slide 12

Coastal State Measures

This is the section that corresponds to MCS as it takes into account all vessels fishing in the coastal State and the activities take place within its jurisdictional limits.

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Port State Measures

Port State Control has been in existence for many years for merchant ships (Environment, Safety and Working Conditions - IMO and ILO)

Port State Measures is a new concept for fisheries management and is just being developed.

Two weeks time an Expert Consultation will be held in Rome (the background document for the meeting has been provided)

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Internationally Agreed Market Related Measures

Trade Documents were introduced by ICCAT in 1994 and 1995

Originally called Statistical Document, the original purpose was to check the amount of bluefin tuna being imported into Japan and Europe

It was found that 30% of the catch of bluefin tuna was not being reported.

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Internationally Agreed Market Related Measures (cont)

The Trade Document was then used to implement a ban on bluefin tuna imported by ICCAT countries from Panama, Honduras, Belize and St. Vincent.

These countries subsequently joined ICCAT and took measures to control their vessels

The scheme now includes swordfish and big-eye tuna

Similar schemes have been adopted by IOTC, CCSBT and CCAMLR.

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Internationally Agreed Market Related Measures (cont)

These measures were the most contentious of all the measures in the IPOA, because they related to WTO and CITES.

WTO has now given the opinion that Trade Documentation is a good example of environment measure undertaken by a multilateral agreement.

Trade in fish products now accounts for $51 billion, of which developing countries receive $17 billion.

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Changes caused by ICCAT Measures

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Role of RFMOs

Meetings of Regional Fisheries Management Organisations now held before and after COFI (every two years)

Some of the RFMOs have been very effective in the fight against “flags of convenience” and IUU Fishing (i.e. ICCAT, IOTC, CCAMLR, I-ATTC, FFA, CCSBT)

Databases of vessels, Inspection and enforcement, port and transhipment inspections, trade measures and cooperation with nonmembers.

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Possibilities for Further Action

Institutional Strengthening

Additional Compliance Measures

Better Collection and Exchange of Information

Improved Monitoring and Surveillance

Comprehensive Port Regimes

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Possibilities for Further Action (cont)

Certification and Documentation Schemes

Controls on Chartering

Actions in Response to remaining NonMember Countries

Cooperation among RFMOs and other International Organizations

Finally - National Plans of Action

Annex 5.3 MCS and IUU in the SRFC Areas

Slide 1

MCS and IUU in the SRFC area

Kieran Kelleher

Sub-Regional VMS Workshop

Saly, Sénégal, 14-17 October, 2002

Slide 2

Content of the Presentation

1. Overview of MCS, IUU and related fisheries management issues:

- the FAO/LUX/012 study on MCS in the sub-region

- the AFD/DPSP study on MCS in Senegal undertaken by Oceanic Developpement

- UCOS (SOCU) databases

2. What is the place of VMS in a national, or sub-regional suite of MCS activities?

Slide 3

MCS/IUU overview

1. MCS institutions

2. Fishing fleets in the sub-region

3. Fishing activities and key fisheries management measures

4. IUU in the sub-region

5. Key enforcement issues

Slide 4

MCS institutions

Civil authority (DPSP, DSPCM, Fisheries Ministry or Department)

Defence forces (Guarda Costeira, Navy Wing)

SAR, Merchant Marine, Port/navigation authorities

Communications (Ministry of Telecommunications)

Fishermen’s organisations/associations

UCOS/SOCU and SRFC conventions

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Sub-Regional Fleets

Industrial fleets (approx. 1570 vessels)

- National - mainly trawlers
- Foreign licenced and high seas (trawlers, tuna vessels)
- Flags of Convenience (FOCs)
- Unlicensed/‘pirate’

Artisanal (approx. 35,000 pirogues/canoes)

- Increasing
- National and international fishing activities
- Safety

Slide 6

Industrial fleet by flag

Approx. 1570 industrial vessels (excluding CV) - 75% foreign flag

12% of the fleet are licensed to fish in more than 1 country (169 vessels)

Breakdown of industrial fleet licensed in one, or more (excluding Cape Verde, source UCOS database)

Number of countries in which vessel is fishing

4

3

Number of vessels

22

33

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Industrial fleet by type of fishing

· Approximately 80% trawling (example):

Breakdown of Mauritanian licensed fleet (2000) by type of

Demersal (mainly trawlers)

245

61%

Pelagic (mainly trawlers)

83

21%

Tuna (seiners, liners)

73

18%

Source: DSPCM

· Almost all tuna fishing vessels are non-SRFC flag

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Fishing activities

Industrial trawling

- Targetteddemersal (shrimp, cephalopods)

- Un-targetteddemersal (finfish)

- Pelagic (mainly foreign/chartered)

- Measures: licensing, zoning, mesh

Tuna and HMS

- mostly foreign/licensing & zoning

Artisanal

- conflicts with industrials/transboundary operations/safety at sea

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IUU in the SRFC area

Most common and important violations by industrial vessels

Specific examples from countries

Possible role for VMS in combatting violations

Slide 10

Violations (industrial fisheries)

Reported vs total violations

Vessel characteristics

Zones, or closed areas } 60-80% of violations

Trawl mesh } 60-80% of violations

Catch reporting } 60-80% of violations

'Pirate' or unlicensed fishing

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Vessel characteristics

Tonnage (GRT)/length (m) relationship for French fleet

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Vessel characteristics - 2

Slide 13

Zone violations

Zones are essential for protection of:

- artisanal fishing grounds

- juveniles and

- conservation areas

Up to 20% of detected violations are zone violations (CV, GA, GU, SL)

Most frequent non-administrative violation in Mauritania (1988-2002)

51% of violations (PVs) in Senegal

Conclusion: Zone regulations very poorly enforced

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Can VMS help enforce zone controls?

Electronic definition of zones

Violation definition

- Entry to the closed zone, or

- Fishing in the closed zone

Legal nature of the zone offence

- civil, or

- criminal

- presumption and burden of proof

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Seasonal changes in zones

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Mesh, gear and by-catch violations

Mesh: second most frequent type of violation in Senegal (23% of total PVs)

92% of vessels in Guinea (observers)

Shrimp vs finfish mesh

VMS: near real time catch reporting

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Catch reporting

EU: 15-25% mis-reporting in certain fisheries

ICES stock assessments dependent on catch information

Near real time catch reports/secure electronic logs

Combined with at-sea and port checks

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'Pirate' (unlicensed) fishing

Detection level ?

Role of VMS

- Incursions by known vessels

- licence conditions

- International initiative

Longliner detected fishing illegally 130nm off Freetown

Slide 19

Selected institutional issues

Financing MCS

Qualified personnel

Coordination at national level

National vs sub-regional interest

Slide 20

Selected operational issues

A focus on the licensed industrial vessels

Vessels operating under fishing agreements

Effective enforcement of fishing zones

Solutions for monitoring and safety of artisanal vessels

In the longer term - use of VMS for effort control

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In summary:

VMS

- is part of a suite of MCS activities,

- guided by and

- serving and enforcing a fishery management plan

National priorities and constraints

Sub-regional - bilateral and subregional initiatives - prerequisites

Regional and global initiatives

Annex 5.4 Fishing Vessel Monitoring: The What, Why and How

Slide 1

Fishing vessel monitoring

The what, why and how

Robert Gallaher,

FAO Consultant

Slide 2

What is VMS?

The use of communications and navigation systems to track the movements of vessels

A tool for improving the efficiency of MCS

A tool for improving the effectiveness of resource management

Slide 3

What does VMS require?

Transmission equipment aboard vessels

A transmission medium/system

A means of receiving, storing, displaying and manipulating data

Slide 4

Shipboard equipment

Typically a standard, satellite transmitter or transceiver

Almost always integrates global positioning system (GPS) receiver

Can be part of vessel's communications system or completely independent

Slide 5

Transmission medium

Two essential elements:

- From ship to shore

- From shore to fisheries monitoring centre (FMC)

Until present, satellites have exclusivity for ship to shore, but others possible

Shore to FMC can be data connection (X.25, internet), telephone (fixed or cellular) or satellite relay.

Slide 6

FMC: data storage & processing

Typically standard, PC hardware

Communications module assures interface with transmission medium

Data base manager stores and manipulates data

Graphics program permits display of data on maps

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Slide 8

Basic operational scenario

Equipment aboard vessel creates data file at pre-determined intervals

- File contains position of vessel in latitude and longitude

- Perhaps speed and course

File is transmitted via transmission media to FMC

FMC puts data at disposal of authorities for use and possible distribution

Slide 9

What does data provide?

At very minimum, an historical record of vessel's movements

Depending upon configuration used, a quasi-real-time view of vessel behavior

The basis for deductions as to fishing and commercial activity

Slide 10

A word about security

This data is highly confidential for good reason

Sufficient measures must be taken to guard that confidentiality

Failure to do this could well lead to compromise, or even failure, of project

More later

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Analyzing VMS data -- 1

The most basic case: latitude, longitude plus time stamp

- Estimation of fishing effort measured in days at sea
- Determination of ports for landing
- Control of passage or fishing activity in restricted areas

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Analysing VMS data -- 2

Addition of speed and course

- Determination of “probable” fishing activity using speed

- Certain determination of fishing activity using “fishing fingerprint”

- Prediction of future activity of vessel

Slide 13

Putting VMS data to use -- 1

Fisheries protection & control

- Control of fishing effort

- Control of protected/forbidden zones

- Control of illegal landings

- Control of illegal trans-shipments

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Putting VMS data to use -- 2

Fisheries protection & control --2

- Increasing the efficiency of patrol vessels and aircraft

- Providing a credible deterrent to illegal fishing

- Providing supporting evidence in prosecutions

- A powerful tool against illegal fishing

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Putting VMS data to use -- 3

Resource management

- Calculation of fishing effort

In zone as a whole

In specific areas

In specific fisheries

- Follow evolution of fishing grounds

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Putting VMS data to use -- 4

- Cross-referenced with landing and research data

Analysis of fisheries under pressure of over-exploitation

Analysis of seasonal trends in fisheries

Preventive measures in allocation of fishing effort and quotas

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Putting VMS data to use -- 5

At the service of industry

- Opportunity to share data to make resource management a communal effort

- Distribute data in real-time to assist operations

A serious deterrent to illegal fishing

- Significantly improved safety at sea

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Future developments -- 1

Predicted plethora of new satellite systems unlikely to develop

Nonetheless, equipment and services of existing providers tending lower

The range of companies providing FMC software and related services is growing quickly

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Future developments -- 2

Electronic log book

- Missing link in data necessary for most effective control and management

- Most important impediment is lack of standard data format

Earth observation satellites to provide independent verification of VMS data

- Definitive tool against illegal fishing

Annex 5.5 Institutional Options for VMS

Slide 1

Institutional options for VMS

Kieran Kelleher

Sub-Regional VMS Workshop

Saly, Sénégal 14-17 October, 2002

Slide 2

Presentation

Uses of VMS in fisheries control

Criteria for selection of fisheries

National VMS schemes

International VMS schemes

Slide 3

A range of uses of VMS

Use and system design dependent on fisheries management measures

- Position/location of vessels
- Measurement of fishing activity
- Catch control

Vessel safety/communications

National security

Slide 4

Uses of VMS - 2

Vessel location

- clearer definition of closed areas
- planning/targetting of patrols
- reduction in patrol cost & time, increased efficiency
- comparison with radar overlays/images

Measurement of fishing activity

- effort limitations
- effort ‘quotas’ as an alternative to fish quotas
- protecting endangered species
- examples: USA, CFP

Catch control

- at sea registration of catch (e-logs), X-checks

Slide 5

Criteria for selection of fisheries

Health of the fishery, or habitat

Low compliance levels

High enforcement costs

Number/size of vessels involved

Geographical distribution of fishery

Need for ‘immediate’ information

Need more accurate management data

Views of the fishing industry

Safety of vessels

Slide 6

Examples of VMS schemes

National

- Ireland
- Norway
- France

- Mozambique

- USA

International

- FFA

- CFP

- Other RFOs

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Ireland

Fisheries Monitoring Centre (FMC) and VMS

- operated by Navy

- nightly downloads to vessels + updates as required

- aerial surveillance info faxed and emailed to FMC

Networked to fisheries administration

State of the art ‘intelligence’, or ‘expert’ system

- vessel histories including all sightings

- targeting more frequent offenders

- software link to ‘intelligent legal checklist’ and

- decision framework for on-board inspector

Slide 8

France - 1

VMS responsibility CROSS (Etel)

- CROSS is part of Regional Directorate of Maritime Affairs

- which is part of the Ministry of Transport

- CROSS functions include SAR, maritime radio watch, patrol vessel operations

- military + civilian personnel

Prefet maritime

- = “provincial governor” for sea areas

- holds executive authority over all maritime areas

- delegates this authority to CROSS > unified maritime response capability

Ministry of Fisheries provides policy orientation

Slide 9

France - 2

CROSS (Etel)

FMC investment €366,000

Recurrent costs €90,000 per year for transmissions

- » 900 vessels (» 500 French)

+ 7-8 operations personnel (24 hr)

+ maintenance personnel (in house)

5% of vessel VMS ‘down’ - fax, radio

Slide 10

Norway

Importance

- 13,000 vessels, 1200 between 13-27m, 365 > 27m
- Catch » 3 million tonnes/year
- World's 10th largest fish producer, No. 1 exporter (value)

Complex fisheries and fishing zones

- Norwegian zone, Jan Mayen, Svalbard, Loop hole, Banana hole

Objectives of VMS

- Consolidate an efficient and economic administration of fisheries
- Simplify existing reporting system

Slide 11

Foreign and Norwegian vessels today - Norwegian zones

Slide 12

Norway

Operated by Directorate of Fisheries

- operational arm of the Ministry of Fisheries
- 9 regional offices

Networked to Coast Guard

- 3 regional divisions, military + civil
- own + chartered vessels and aircraft
- checkpoints

Interface with/compatible with EU

Exchange of information with EU and RFOs

- i.e., EU vessels in Norwegian waters and Norwegian vessels in EU waters

- Also with NAFO and NEAFC (USA, Canada, Russia, etc.)

Slide 13

Norwegian VMS organization

Slide 14

Tracks of Norwegian blue whiting trawlers transiting UK and Irish waters

Slide 15

Barents Sea active closures - 1

Juvenile cod by-catch in Bering Sea shrimp fishery

Constant monitoring of by-catch by

- 14 chartered trawlers
- research surveys
- observers

Decision rule > 15% by-catch of juvenile cod

- close large blocks

Open by smaller block when juvenile cod by-catch < 15%

Slide 16

Barents Sea active closures - 2

Slide 17

USA 1

Operated by NMFS/NOAA/OLE -

- GOAL: enforcement + commerical service for fishermen
- federal fisheries (rare for State fisheries -3 nm)
- major focus on protected species
- fishery specific VMS rules and schemes
- regional offices and VMS
- VMS networked with Coast Guard/State Fisheries

Management plans regional - several states

Slide 18

USA 2

Closed area offence a civil, not criminal offence

- major implications for burden of proof

Examples:

- cost savings - Hawaiian closed area
- active management - rolling closures - Gulf of Maine

Slide 19

Numerous fisheries management plans (FMP)

- Numerous different VMS schemes
- VMS financing an integral part of each management plan
- Congress approval of FMC budget - renewable

National coordination

- Regional VMS database management

Examples

- Atlantic swordfish, Atka mackerel (Alaska)

- Gulf of Mexico shrimp, Hawaii pelagic

- Gulf of Maine 'days-at-sea' scallop

- NE multispecies groundfish

- Links: FFA, NAFO, CCAMLR, ICCAT, IATTC

Slide 20

Hawaiian longline closed area

Patrol costs pre-VMS

- vessels 3000 hours/$1000 per hour = $3 million

- Air 350 hrs/$7,500 per hour = $2.6 million

- Total per year (120 vessels) = $5.6 million

Patrol costs post-VMS

- Vessels 110 hrs/$1000/hr = $110,000

- Air 8 hrs/7,500/hr = $60,000

- VMS operations = $200,000

- Total per year = $370,000

Annual theoretical benefit $5.2 million

Slide 21

USA Gulf of Maine: days-at-sea

Scallop fishery effort + closed area (zone)

- same vessel operates in several fisheries
- -300m accuracy, 250 vessels
- allowed only “X” days fishing scallop in a given area

Days-at-sea

- Clock starts upon entry to zone - 2 hour units
- Presumption
- Other fishery-declaration prior to leaving port

VMS + observer data on discards/juveniles

Rolling seasonal closures

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Rolling closures

Gulf of Maine

Rolling Closure Area I March 1 - March 31

Rolling Closure Area II April 1 - April 30

Rolling Closure Area III May 1 - May 31

Slide 23

Mozambique

Directorate of Fisheries Administration (Ministry of Fisheries)

- exports 2001 - US$106 million (35-40%)
- responsible for VMS, licensing, catch statistics
- targets: 90 shrimp, 15 tuna purse seiners, ?40 tuna longliners
- X-25 from FMC to ADMAR (SAR) and Research Institute

Contract Thales Tracks US$ 1.5 million

- commercial financial package
- installation FMC, software, training

- 100 units to be purchased by vessel operators

- maintenance contract US$115,000/yr

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Forum Fisheries Agency

Key characteristics

- Centralised service for 16 countries

- Application only to tuna vessels

- Directed at non-MS flag vessels

- Common protocols

- Inmarsat C only

- Harmonised VMS legislation

Developed over 15 years

- Ideas, legal framework

- Strong central administration

- Australian/NZ/EU technical and financial support

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FFA & SPC areas

Slide 26

FFA - centrally coordinated system

Slide 27

Common Fisheries Policy

Control regulation

- Council Regulation (EC) N°686/97 amending Regulation (EEC) N°2847/93 establishing a control system applicable to the common fisheries policy.

- Standards and protocols, e.g., Reg. 1449/98 entry/exit

Obligatory

- Member States can be penalised by Commission/ECJ

Application

- vessels > 24m, > 12m (proposed)

Third countries

RFOs

Slide 28

ICES areas

Key geographical units for:

- TACs
- Quotas
- Reporting

Slide 29

VMS in the EU

Slide 30

Scope and authority: FFA vs CFP

FFA

- FFA - South Pacific Economic Commission - economic cooperation

- FFA decisions, agreements, policy endorsed by SPEC summit

- Obligation: international agreement and peer pressure

CFP

- EC Treaties - must apply EC legislation in full

- Enforcableby ECJ

- Member States can be penalised

Annex 5.6 Legal Issues Relating to VMS

Slide 1

Legal issues relating to VMS

by Henning OsnesTeigene

Workshop on VMS, Saly, Senegal, 14-17 October 2002

Slide 2

Main issues

Legal basis for VMS

- International
- Regional
- National

Legal issues

- Constitutionality
- Confidentiality
- Evidence
- Maritime boundaries
- Intellectual property

Main features of VMS regulations

Slide 3

International law basis for the use of VMS

United Nations Convention on the Law of the Sea (1982 UN Convention)

- in force from 16 November 1994

Agreement for the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (1995 UN Fish Socks Agreement)

- in force from 11 December 2001

Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (1993 FAO Compliance Agreement)

- not in force

Slide 4

1982 UN Convention

Within the EEZ the coastal state has sovereign rights to explore, exploit, conserve and manage the natural resources (Article 56.1)

The coastal state shall ensure through proper conservation and management measures the sustainable utilization of the living resources of the EEZ (Article 61.2)

Nationals of other states fishing in the EEZ shall comply with conservation measures, terms and conditions established in coastal state legislation (Article 62.4)

Within the EEZ coastal states may take such measures as may be necessary to ensure compliance with its laws and regulations (Article 73.1)

States have responsibilities over fishing vessels flying their flags (Article 117)

Slide 5

1995 UN Fish Socks Agreement

In giving effect to their duty to cooperate in accordance with the 1982 UN Convention states are required to

- collect and share data concerning fishing activities, including on vessel position (Article 5(j))

- Promote and conduct scientific research and develop appropriate technologies in support of fisheries management (Article 5(k))

- Implement and enforce conservation and management measures through effective MCS (Article 5(l))

Article 18 imposes flag state duties among which are

- the recording and timely reporting of relevant fisheries data (vessel position, catch, effort) in accordance with sub-regional, regional and global standards for collection of such data (Article 18.3 (e)); and

- the development and implementation of VMS, including as appropriate, satellite transmitter systems, in accordance with any national programs and subregional, regional or global programs that may have been agreed to (Article 18.3 (g) (iii)).

Slide 6

1993 FAO Compliance Agreement

Imposes flag state responsibilities

- no state shall authorize its flag vessels to fish on the high seas unless it is able to exercise effectively its responsibility (Article III.3)

- States shall ensure that their flag vessels provide information on their fishing activities, including on area of fishing operations (Article III.7)

Requires states to exchange information, including evidentiary material relating to activities of fishing vessels (Article V.1)

Slide 7

Regional agreements

SRFC Convention

- Has as its objective the long term harmonization of the fisheries policies of the member states and the strengthening of cooperation (Article 2)

SRFC access convention

SRFC protocol for the coordination of surveillance operations

All of the above may facilitate the implementation of VMS

Slide 8

The FFA solution

FFA VMS is implemented under the auspices of the South Pacific Forum Fishing Agency Convention

Harmonized Minimum Terms and Conditions for Foreign Fishing Vessel Access include VMS requirements

Foreign fishing vessel must be registered on the VMS register of Foreign Fishing Vessels

Each member State concludes bilateral access agreements

- which must comply with the Harmonized Minimum Terms and Conditions (among which are to “install and operate a registered ALC on board the vessel; and maintain the ALC in good working order”)

Slide 9

National legal basis

International legal instruments not binding in areas under national jurisdiction and on nationals

- Enabling national legislation is needed to require the use of VMS

Other legal issues connected to VMS (confidentiality, evidence, maritime boundaries) are primarily dealt with under national law

Slide 10

National legal basis continued

All the countries of the region have declared 200nm exclusive economic zones

All the countries have in place the legal framework for a licensing system

To varying degrees existing fisheries legislation provides the framework for VMS regulations.

- Detailed regulations are lacking.

- Common law and Civil Law countries

- E.g. Sierra Leone 1994 Fisheries Decree Article 107 provides wide powers to make regulations on “any other matter which is required or authorised to be prescribed”.

- E.g. Morocco 1973 Sea Fisheries Act needed to be amended in order to provide a legal basis for VMS

Slide 11

Constitutionality of VMS requirements

Legal implications of all new approaches should be identified and analyzed

Countries have to ensure that the introduction of the VMS system does not constitute a violation of the supreme law of the country

To date VMS had not been challenged in court on the ground so unconstitutionality

Slide 12

Confidentiality of VMS information

Confidentiality of VMS information is recognized to be a sensitive issue for the fishing industry

Fisheries administration's responsibilities starts when information is received by the monitoring agency, prior to this responsibility for security of data belongs to the manufacturer

Countries need to determine what kind of information would qualify as warranting confidentiality

- USA: all data required to be submitted to the fisheries administration with respect to any fisheries management plan

- Papua New Guinea: all data supplied by VMS

Slide 13

Confidentiality continued

Rules restricting disclosure of VMS information can be found in different pieces of legislation

- Some countries include rules on confidentiality and disclosure in fisheries legislation (to date not common)

Legislation relating to informational privacy and record keeping systems (in particular computerized)

- Balance between government's legitimate need for information and the individuals right of informational privacy

- Limits on the external disclosure of information a record keeping entity may make

Legislation concerning protection of commercially sensitive information

- Limitation on disclosure of information that may lead to a commercial disadvantage

Confidentiality may be ensured by the release of data in aggregated form

- Does not permit direct or indirect id of natural or legal persons

Slide 14

Confidentiality continued

Access to confidential information

- Generally restricted to specified categories of persons

- To safeguard confidentiality persons given access might be held responsible for unauthorized disclosure

- Such persons must be informed and may be required to sign a form of confidentiality (Norway)

Use of confidential information

- As a general principle VMS information shall only be used for fisheries management purposes (research (not USA), enforcement)

- Secondary uses (based on enabling legislation) may include:

General law enforcement (as evidence in court cases)

(Search and) rescue

International obligations

Slide 15

VMS as evidence

Can VMS be used (by itself) as evidence in judicial proceedings?

In common law countries VMS information may be inadmissible in criminal proceedings due to the rule against hearsay evidence

- (In short:) a testimony in court of a statement made out of court resting for its value upon the out of court statement

- Proof of physical location may be overcome by exceptions: “rebuttablepresumption” and “judicial notice”

- Proof of activities (e.g. illegal fishing) at this stage fails to furnish evidence of a sufficient caliber

Rules on admittance of evidence in civil law countries are generally less strict than in common law countries

Slide 16

VMS as evidence continued

USA applies the system of civil and administrative penalties for fisheries offences

- Permits hearing where rules on evidence are not so strict, the standards of proof are lower

- In a US administrative proceeding of 5 December 2001 the Initial Decision found the respondent guilty of illegal fishing in a closed area. One of two incursions into the closed area was based was based solely on VMS information.

Sierra Leone 1994 Fisheries (Management and Development) Decree includes interesting rules:

- applies civil proceedings to pecuniary penalties (Article 96)

- Director may issue “certificate evidence” as to the location of a fishing vessel which shall be evidence of the vessels position “unless the contrary is proven” (Article 85)

Slide 17

Maritime boundaries

Certainty of boundaries of maritime zones is required to ascertain the scope of application of VMS requirements

Lack of clarity may destroy any civil or criminal case

For the purpose of effective VMS it is recommended that the countries ascertain their maritime boundaries and conclude boundary agreements where necessary

Slide 18

Intellectual Property

Question has been raised whether the VMS database kept by the competent authority would be granted copyright protection

- Might be questionable since intellectual creativity as a distinctive human intervention is a basic requirement

A pragmatic approach is to leave the question of management of the information up to the coastal states as the owners of the VMS information in respect of their EEZ

Slide 19

Main features of VMS regulations

Fisheries Monitoring Agency

- Must specify the responsible authority

Condition to fishing license

- Fishing vessels must comply with requirements to carry VTUsin order to be authorized to fish (NZ and Norwegian approach with regard to foreign fishing vessels)

Scope

- Evolutionary approach has been common, certain fisheries or class of vessels

- EU, Norway: all vessels exceeding 24 meters overall length

- New Zealand: all foreign fishing vessels, all local vessels exceeding 43 meters and all local vessels exceeding 28 meters used in certain fisheries

Slide 20

Main features continued

VTU minimum performance standards

- VTU must be tamper proof and shall not permit input of false positions or information

- VTU must be operational at all times. Mounting requirements to ensure continuous reliable operation

- Position accuracy within set number of meters (USA within 400m, EU within 500m)

- Frequency of position reporting (USA, Norway at least every hour. NZ minimum range of reporting intervals between 15 minutes and 24 hours)

- Must support polling (Norway required, EU recommended)

- Data to be transmitted (EU: (i) vessel id; (ii) geographical position; (iii) date and time, Australia and Japan also catch data)

- Format (no universally agreed format so formats must be specified)

Slide 21

Main features continued

Approval of VTU

- To ensure compliance with the minimum performance standards some countries prescribe a detailed approval process (NZ, FFA)

Registration of VTUs

- Only required by FFA and NZ

Procedures in case of VTU failure

- To assure continuity and permanency of the reporting of the fishing vessels

- Should include: (i) notification procedures; (ii) require information through alternative communication system; (iii) specification of time period within which the VTU must be repaired/replaced

Slide 22

Main features continued

Responsibilities of permit holder and master

- Ensure VTU is fully operational and requested information transmitted regularly

Offences and penalties

- Experience from Australia, NZ and USA indicates that VMS has reduced the number of violations, in particular fishing in prohibited areas

- Must cover every imaginable interference with the proper functioning of VMS

- Penalties must be severe enough to deter violations

Slide 23

Closing Remarks

Most of the countries of the sub region should be able to support implementation of VMS through their licensing systems

- But, this is a short term measure

The adoption of new legislation or amendments to existing legislation are better options as they are able to deal with some of the legal issues discussed in the presentation

- Drawing on experience from the FFA regional VMS cooperation countries who incorporated the provisions recommended by FFA into national legislation have had more success in ensuring that vessels install and keep operational at all times their ALCs

Annex 5.7 Putting VMS Into Practice: The Devil is in the Details

Slide 1

Putting VMS into practice

The devil is in the details

Robert Gallagher

FAO Consultant

Slide 2

Planning is the key to success

Four stage process

- Feasibility study

Means available, technical, human, economic?

- Definition stage

Functional specification developed, tender documents finalized

- Selection stage

Supplier chosen, delivery schedule decided

- Delivery stage

System implemented and exhaustively tested

Slide 3

A series of critical choices

Transmission medium ship-to-shore

Terrestrial transmission medium

Characteristics of FMC and “clients”

Supplier for FMC

Future-proofing the system

Slide 4

Ship to shore transmission issues

What is my required geographical coverage?

How timely is the required data?

What power supply is available aboard vessels?

What supplementary services are necessary?

Slide 5

Ship-to-shore available choices

ARGOS

Emsat/Euteltracs

Inmarsat-C

Inmarsat-D+

Terrestrial systems

Voice systems

Slide 6

ARGOS

Advantages

- World-wide coverage
- Simple and reliable
- Relatively low power consumption

Disadvantages

- Delays in delivery of data

- One-way communications only

Slide 7

Emsat/Euteltracs

Advantages

- Quasi real-time data
- Voice services for vessel crew

Disadvantages

- Limits to geographical cover
- Relatively expensive equipment
- Requires sturdy power supply

Slide 8

Inmarsat-C

Advantages

- Quasi real-time data
- Small and light equipment

- Multiple manufacturers

- GMDSS

- Data messaging

Disadvantages

- Equipment relatively expensive

- No coverage in polar regions

- Requires sturdy power supply

Slide 9

Inmarsat-D+

Very small and light

Low power requirements

Service too expensive for intensive use

No polar area coverage

Slide 10

Terrestrial systems (VHF/cellular)

Cost of service often inexpensive

Equipment very inexpensive

Low power requirements

Coverage very limited

Slide 11

Voice systems (satellite, i.e. Iridium, Globalstar)

Provides voice for vessel crew

Iridium coverage quasi wold-wide

Not best adapted for data transmission

Globalstar coverage marginal in ocean regions

Will they be here tomorrow?

Slide 12

Slide 13

Terrestrial transmission: getting the data to the FMC

Available infrastructure is everything

- Are switched data services available?
- Are high quality digital voice lines available (i.e. IDSN)
- Are high quality analogue voice services available?

Slide 14

If answer to these three question is negative

Living with low-quality voice lines

- Problems of economy
- Operational difficulties

Fixed satellite services, e.g. V-SAT

- Implies high data throughput

Mobile satellite services could be the answer

Each case studied individually

Slide 15

Choosing an FMC

Above all, be clear about your needs

- How may people will be using data?

- What is the urgency of each user?

- How much detail does each user require?

- Do you have sufficient IT resources to maintain and modify the FMC software

- What are your requirements for exchanging data with other departments (police, customs) or countries?

Slide 16

Don’t’ forget the future

Will your use of the data develop over the next few years?

Will your department expand in the next five years?

Will demands on your data increase from other national services?

Is a regional VMS or MCS on the horizon?

Slide 17

Time spent planning and understanding the requirements of users is ALWAYS time well-spent

Annex 5.8 Towards a Subregional VMS Strategy

Slide 1

Towards a subregional VMS strategy

prepared by

Kieran Kelleher

Sub-Regional Fisheries Commission

FAO Joint VMS Workshop

Saly 14-17 October 2002

Slide 2

Presentation

1. Identify possible objectives and targets

2. Develop sub-regional scenarios:

apply selected regional VMS solutions to the SRFC sub-region

3. Assess the Sub-Regional context using

- SWOT analysis (points forts/faiblesses/opportunites/menaces ourisks)

4. Conclusions

Slide 3

Possible generic objective(s)

“Greatest possible cooperation on VMS between Member States”

Financing of VMS systems

Sharing of VMS facilities between Member States

Sharing VMS information

Slide 4

Target fleets?

SRFC Member State flag industial vessels

- ‘National’ industrial vessels (i.e., operating only in flag state)

- Selected fisheries, or groups of vessels

- ‘Sub-Regional’ industial vessels (i.e., operating in more than 1 Member State)

Foreign (i.e., non-Member State flag) vessels

- joint position vis a vis

Large/‘migrating’ artisanal vessels

Reefers and supply vessels (bunker) 82 vessels

Slide 5

2. Selected scenarios

FFA model unified single system

CFP model - cooperating national systems

Fishery specific model

Bilateral service model

- Extended to a multilateral service

Slide 6

FFA ® SRFC a shared subregional model

UCOS set up as a sub-regional Fisheries Monitoring Centre (FMC)

SRFC Convention on VMS with

- Harmonised requirements for all vessels
- Harmonised VMS provisions in access agreements
- Possible sub-contracting to reputable private company, or agency

Contractual obligations

- e.g., timely payments, possible commercial contracts

Slide 7

FFA model ® SRFC

Slide 8

Representation of the FFA model - UCOS decision engine, client server network

Slide 9

FFA model: advantages and disadvantages

Advantages

- Lower costs, effective coordination (in principle)

Disadvantages

- Institutional weakness of SRFC/UCOS

- Timely payments problem?

- Not an integral part of the national security system

Questions

- not necessary for all vessels, e.g. if a vessel only fishes in Sénégal

- ? how to select target groups of vessels

Slide 10

CFP model ® SRFC

All SRFC states operate their own VMS

Agree to provide information to each other

- ? which fleets are the targets of VMS cooperation

- ? type of information to be exchanged

SRFC VMS Convention and permanent working group

Standardise data exchange (and equipment?)

Mutual assistance and technology transfer

Gradual development of VMS network

Presence of equipent service agents throughout subregion

Slide 11

Information exchange in a peer to peer configuration Secure Network WAN

Slide 12

Peer to peer model network (EU) (simplified representation)

Each Member State operates a decision engine, information exchange is under agreement(s) with other Member States

Slide 13

CFP model cooperating national systems

Slide 14

CFP model - advantages and disadvantages

Advantages

- Full national responisbility and control

Disadvantages

- Higher costs
- Un-necessary duplication of equipment
- Possible compatibility/data exchange problems
- Weakened common approach to foreign vessels

Slide 15

Fishery specific: example: Senegambia shrimp trawl fishery

Requirements:

- Joint fishery management plan/clear definition of fishery
- Harmonised legislative requirements for VMS
- Operational agreement/contract

Operated by:

- Sénégal, or

- Gambia, or

- UCOS under agreement with both Member States

Other possible international fisheries:

- Tuna longline/purse seine

- Sénégal-G.Bissau joint area

Slide 16

Bilateral service arrangement Example: Sénégal/Gambia

Example: Sénégal operates a VMS system on behalf of Gambia for all industrial vessels licensed to fish in Gambia

(near) Real-time access by Gambia authorities for Gambian all Gambian vessels

Automatic transmission to Gambia of VMS data on Senegalese vessels transiting Gambia, or fishing in Gambian waters

Possible extension to cover other countries/areas, e.g., Agéncia de Cooperação GB/Sénégal

Eventual network of such agreements

Possibloe service contract with reputable commercial operator to guarantee effective operation

Slide 17

SWOT analysis

Internal to SRFC and Member States

Strengths

Weaknesses

External

Opportunities

Threats

Slide 18

Strengths

Unifying character of SRFC

Existence of UCOS and joint MCS programme

MCS conventions and bilateral protocols

IUU declaration and SRFC ‘strategic action plan’

VMS operating in Sénégal and Mauritania already considering, Guinea testing

SRFC vessel register initiatives

Joint research capability (SIAP) established

Slide 19

Weaknesses

Financing of investement AND recurrent expenditure a major problem for Member States and SRFC

Lack of skilled personnel and technical capacity to build and maintain VMS systems (adapt software)

- Is VMS a priority?

Slide 20

Opportunities

FAO strategy on IUU and VMS

- FISHCODE, COFI
- ICCAT

EU access agreements already include provisions for VMS

Maritime security a global concern

- drugs, terrorism, illegal immigration
- safety, oil pollution

Financial and cost related opportunities

- EU, commercial banks, vessel operators
- Possible future cost reductions
- Combined action - local land station (s)
- operating costs jointly negotiated

Slide 21

Threats

Vendors selling proprietary (closed) VMS systems

Suppliers poorly represented in subregion

Opposition by vessel operators

Possible failure of supplier companies

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Conclusions

Cooperation essential not merely desirable

- Evident from the national and regional examples

No recommendations .... your work

Actions you may wish to consider:

- Draft sub-regional strategy
- Working group to follow up
- More detailed study of the options
- Pilot schemes - communicate results
- Identify possible donors
- ? a model VMS regulation
- Feasability studies