



COMMISSION OF THE EUROPEAN COMMUNITIES

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96/0140(CNS)

Proposal for a

COUNCIL REGULATION (EC)

**amending Regulation (EEC) No 2847/93 establishing a control system
applicable to the Common Fisheries Policy**

(presented by the Commission)

**REPORT FROM THE COMMISSION TO THE COUNCIL
AND THE EUROPEAN PARLIAMENT**

**ON THE ESTABLISHMENT OF
A SATELLITE-BASED VESSEL MONITORING SYSTEM
FOR COMMUNITY FISHING VESSELS**

EXPLANATORY MEMORANDUM

The present proposal for a Council Regulation amends Council Regulation (EEC) No 2847/93 establishing a control system applicable to the Common Fisheries Policy (hereinafter referred to as "Control Regulation"), with a view to require the Member States to establish satellite-based fishing vessel monitoring systems.

The 1992 Commission proposal for a new Control Regulation provided for the implementation of a continuous position monitoring system of fishing vessels using satellite communications in order to improve effectiveness of fisheries control. However, at that stage, the Council did not accept the Commission proposal. Instead, in the framework of an overall compromise the Council and the Commission agreed to legal provisions which required:

- Member States to carry out pilot projects in order to assess the technology to be used for the purpose of fisheries control,
- to postpone a decision, until June 1996, on when, whether and to what extent a continuous position monitoring system shall be implemented for fishing vessels.

All Member States concerned have carried out, from July 1994 to December 1995, pilot projects for satellite monitoring, involving up to 350 Community vessels. The implementation of pilot projects have demonstrated that satellite-based continuous monitoring of fishing vessels will greatly improve the effectiveness of fisheries control.

The conclusions of the implementation of the pilot projects are reflected in the "Report on the establishment of a satellite-based vessel monitoring system for Community fishing vessels". This report is based on the reports submitted by each Member State.

Taking into account the experience obtained, the present proposal for a Council Regulation amending Council Regulation (EEC) No 2847/93, provides for the implementation by Member States of satellite-based continuous monitoring systems for tracking fishing vessels flying their flag and which enable them to communicate to the Member States in which waters they are carrying out their activities, the localisation of its vessels. It is provided that such monitoring applies to

all fishing vessels exceeding a certain length whilst this obligation should be implemented gradually in the period 1997-1999. Initially vessels operating in sensitive fisheries should be monitored whilst finally all vessels should be covered. Furthermore, the present proposal contains provisions which shall ensure cooperation between the Member States concerned.

Finally, in accordance with Article 3 of Regulation (EEC) No 2847/93, it falls to the Council to adopt a decision before 1 July 1996.

26/0140(CNS)

**PROPOSAL FOR A COUNCIL REGULATION
amending Regulation (EEC) No 2847/93 establishing a control system
applicable to the Common Fisheries Policy**

THE COUNCIL OF THE EUROPEAN UNION

Having regard to the Treaty establishing the European Community, and in particular Article 43 thereof,

Having regard to the proposal from the Commission ¹,

Having regard to the opinion of the European Parliament ²,

whereas fishstocks have been overexploited in recent years and therefore significant efforts on surveillance and control of fishing activities are required to remedy this situation;

whereas there is a need to use cost-effective measures and to improve availability and accuracy of effort data, such as by introducing satellite based vessel monitoring systems;

whereas, pursuant to Article 3 of Council Regulation (EEC) No 2847/93 ⁴ establishing a control system applicable to the Common Fisheries Policy, the Council can decide for a continuous position monitoring system to be established for Community fishing vessels;

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⁴ O.J. No L 261, 20.10.1993, p. 1.

whereas experience gained in the application of pilot projects carried out by the Member States in accordance with Commission Regulation (EC) No 897/94 ⁵, laying down detailed rules for the application of Council Regulation (EEC) No 2847/93 as regards pilot projects relating to continuous position monitoring of Community fishing vessels, has demonstrated that several satellite-based Vessel Monitoring Systems can be used to determine the position of fishing vessels;

whereas satellite-based continuous monitoring of certain categories of Community fishing vessels will improve effort management, surveillance of sensitive areas, crosschecking of logbooks, and monitoring of landings,

HAS ADOPTED THIS REGULATION:

Article 1

1. Article 3 of Council Regulation No 2847/93 is replaced by the following:

"Article 3

1. Each Member State shall establish a satellite-based vessel monitoring system, hereinafter referred to as "VMS", to monitor the position of Community fishing vessels.

The VMS shall apply no later than 1 January 1997 to all Community fishing vessels belonging to at least one of the following categories regardless of their length :

- vessels operating on the high seas, except in the Mediterranean Sea,
- vessels operating in the waters of third countries,
- vessels catching fish for reduction to meal and oil,
- vessels using driftnets longer than one kilometer,

as well as, no later than 1 January 1999, to all other Community fishing vessels exceeding 15 metres in length overall.

⁵ O.J. No L 104, 23.04.1994, p. 18.

2. Member States shall ensure that satellite-tracking devices be installed and fully operational on Community fishing vessels flying their flag to which VMS shall apply. The satellite-tracking device shall enable a fishing vessel to communicate by satellite to its flag State, its geographical position and where applicable the effort reports referred to in Article 19b below. In the case of *force majeure* relevant information shall be communicated by radio via a radio station approved under Community rules for the reception of such information.

Member States shall conduct an annual inspection of the satellite-tracking devices installed on board the fishing vessels flying their flag.

3. The masters of the Community fishing vessels to which VMS applies shall ensure that the satellite-tracking devices are at any time fully operational and that the information referred to in paragraph 2 is transmitted.
4. Member States shall establish and operate Fisheries Monitoring Centres, hereinafter referred to as "FMC", which shall monitor fishing activities and fishing effort. The FMC shall be operational no later than 1 January 1997.

The FMC of a particular Member State shall monitor the fishing vessels flying its flag, regardless of the waters in which they are operating or the port they are in as well as Community fishing vessels flying the flag of other Member States operating in the waters under the sovereignty or the jurisdiction of that particular Member State.

5. Where its fishing vessels are operating in waters subject to the sovereignty or jurisdiction of another Member State, the flag Member State shall ensure immediate communication of specific data related to their position by its FMC to the FMC of the coastal Member State concerned. The flag Member State shall be discharged of this obligation if the fishing vessels flying its flag transmit directly all relevant information to the FMC of the Coastal Member State concerned, on the basis of a protocol to be agreed upon between the flag Member State and the coastal Member State, which shall be transmitted to the Commission.

6. Each flag Member State shall appoint the competent authorities responsible for the FMC and shall take the appropriate measures to ensure that its FMC has the proper staffing resources and is equipped with computer hard- and software enabling automatic data processing and electronic data transmission. Member States shall provide for back-up and recovery procedures in case of system failure.

Member States may operate a joint FMC.

7. The flag Member State shall take the necessary measures to ensure that the data received from its fishing vessels are recorded in computer-readable form for a period of three years. The Commission shall have direct access to these computer files at any time. Due respect shall be given to the prevailing rules concerning data protection.
8. Detailed rules for the implementation of this Article shall be decided in accordance with the procedure laid down in Article 36. "

Article 2

This Regulation shall enter into force on the seventh day following its publication in the Official Journal of the European Communities.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at

For the Council
The President

REPORT FROM THE COMMISSION TO THE COUNCIL
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I.

INTRODUCTION

For many and many generations, the stars have been the sole means of navigation over land and on sea. Still in use today as back-up, celestial navigation has been gradually complemented by other navigation techniques. Over the past decades, the world has seen a revolutionary transition to space-based systems. Satellite navigation is probably one of the better known applications of space technology.

Today, satellite-based systems are finding new applications in many other areas including air (traffic control systems, approach and landing systems, ...), road (private transport, truck management, ...), rail and survey sectors. The number of users of these systems and the economic benefits increase continuously, due to liberalisation and privatisation initiatives. The technologies developed in different areas can be applied to fisheries monitoring, control and surveillance, as will be demonstrated hereafter.

This report is made in response to a formal obligation pursuant to Article 11 of Commission Regulation (EC) No 897/94 which requires the Commission to present a report to the Council regarding the pilot projects carried out by the Member States relating to the continuous position monitoring of Community fishing vessels⁽¹⁾. It is partly based on the final reports of the Member States, which were unfortunately transmitted with delay.

⁽¹⁾ OJ No L 104/18

1. Background

In 1992, the Commission proposed that a continuous position-monitoring system using satellite communications should be introduced for fishing vessels, in order to improve the effectiveness of surveillance of fishing activities⁽¹⁾.

Subsequently, the Council decided that Member States were to carry out pilot projects, in cooperation with the Commission, in order to assess the technology to be used and the vessels to be included in the above mentioned system (as provided for by Article 3 of Council Regulation (EEC) No 2847/93 establishing a control system applicable to the common fisheries policy, of 12 October 1993, hereafter called "the Control Regulation"). Commission Regulation (EC) No 897/94 laid down detailed rules for the pilot projects. Thirteen EU Member States (Belgium, Denmark, Germany, Greece, Spain, France, Ireland, Italy, the Netherlands, Portugal, Finland, Sweden and the United Kingdom) have carried out pilot projects for satellite monitoring, involving up to 350 vessels throughout the Community.

Three different, commercially available, satellite-based vessel monitoring systems (Argos, Euteltracs and Inmarsat) were used to track the movements of the participating vessels. Several Member States have tested more than one of these systems.

The pilot projects were funded with ECU 10 million from the Community budget. The projects started in July 1994 and were due to end in June 1995.

⁽¹⁾ COM(92) 392 final

On request of a number of Member States, whose projects were overdue, the projects were prolonged to December 1995. A number of Member States continue to use the systems as a means of improving and developing their understanding of this type of technology for fisheries enforcement and conservation purposes.

The pilot projects were coordinated by the European Commission. The Commission regularly organised meetings of the Expert Group Fisheries Control with the national officials in charge in the Member States in order to monitor the progress of the projects.

The Commission has also been conducting trials since 1992. It has been using its inspection vessel operating in the Northwest Atlantic Fisheries Organisation (NAFO) Regulatory Area (i.e. international waters off Newfoundland) for this purpose.

2. The International Context

The management dilemma in commercial fisheries of reconciling the availability of limited fishery resources with the overcapacity in the catching sector has been compounded by the difficulties enforcement agencies face with monitoring large numbers of vessels spread over immense ocean areas. In recent years, many nations have resorted to technological innovations such as monitoring vessel locations by satellite as a means of improving the enforcement and effectiveness of their fishery management regimes. A number of examples are set out below.

In April 1990, an international agreement among the United States of America, Canada and Japan required that satellite monitoring be placed on 100% of the Japanese squid and large-mesh driftnet fishing vessels operating in the North Pacific in 1990. Similar agreements were reached between the U.S. and Korea and the U.S. and Taiwan. The U.S. has monitored the operations of nearly 800 fishing vessels on the high seas. More recently a score of U.S. longliners have been equipped with satellite surveillance devices in the Western Pacific pelagic longline fishery. The U.S. are at present preparing a scheme for two specific fisheries in the New England region (groundfish and scallops).

On 1 January 1994, **Australia** officially implemented its first Vessel Monitoring System in a deep sea Orange Roughy trawl fishery with approximately 30 vessels. Further developments include extending the coverage of the system to Tuna longliners and Northern Prawn fishery trawlers for both position and catch reporting.

Since 1 April 1994, **New Zealand** requires certain categories of vessels to carry and operate vessel monitoring equipment. At present around 200 vessels are equipped.

Several other countries worldwide have been conducting trials or are considering doing so: Argentina, Canada, Chile, French overseas territories (French Polynesia and New Caledonia), Indonesia, Iran, Japan, Morocco, Norway, Peru, Russia and Taiwan.

Both the *United Nations agreement for the implementation of the provisions of the UN Convention on the Law of the Sea of 10 December 1982, relating*

to the conservation and management of straddling fish stocks and highly migratory fish stocks and the Code of Conduct for Responsible Fisheries make explicit reference to the use of vessel monitoring systems (VMS).

The Bering Sea Convention foresees that each contracting party shall require its fishing vessels that fish for pollack in the convention area to use real-time satellite position-fixing transmitters while in the Bering Sea. Other regional organisations such as CCAMLR (Antarctic), ICCAT (Atlantic tuna), FFA (South Pacific) and NAFO (Northwest Atlantic) have also taken interest in the subject. NAFO Contracting Parties will carry out pilot projects involving 35% of the fishing fleet operating in the NAFO Regulatory Area during 1996/1997.

On 21-22 November 1995, the Commission organised an International Symposium on Fisheries Enforcement in Madrid, Spain. The aim of the symposium was to consider the use of satellite-based technology for monitoring, control and surveillance. Thirteen Member States, four third countries, the FAO and a score of companies have participated. The symposium resulted in a useful exchange of information among participants.

Experience outside the European Union has clearly indicated that although satellite monitoring has not replaced conventional enforcement methods, it has made them more efficient and effective. In particular, it has allowed enforcement agencies to identify problems on a priority basis.

Other than the use of satellite technology for enforcement purposes there have been many satellite technology innovations that have helped fishermen to operate more efficiently. These applications have included the Global

Positioning System (GPS) satellites that have allowed fishing vessels to immediately determine their position, course and speed. Other developments include satellite application of remote sensing to fisheries which has facilitated the precise location of highly productive biological zones of certain stocks. Furthermore, telecommunication satellites have improved inter-vessel communications for some fishing fleets and this saves search times in locating the optimal fishing sites as well as providing additional security in the event of emergency.

II. THE PILOT PROJECTS

Member States have carried out extensive trials with Vessel Monitoring Systems in the course of their respective projects. Globally, more than 300 Community fishing vessels have been equipped with a blue box (30 Argos, 60 Euteltracs and 175 Inmarsat, in addition to Portugal where MONICAP is operational with over one hundred vessels). In 1995, Finland and Sweden set up a joint pilot project with Denmark. Sweden because of the short time frame of their project did not however succeed in finding voluntary participant vessels.

All Member States have tested GPS-INMARSAT. Only some Member States tested ARGOS and/or EUTELTRACS. In a complementary project, Greece has also tried out VHF/DSC data communication, the use of which is more limited to territorial waters. The United Kingdom has conducted trials with Automatic Position Recorders (APR), which store data onboard the fishing vessel without transmitting the information in real-time.

The Annex recapitulates the main facts about each project.

1. Evaluation of the Pilot Projects

This section summarises the principle findings of the Member State reports and the reflections of the Expert Group Fisheries Control which was convened regularly throughout the duration of the pilot projects.

The pilot projects proved the reliability of real-time satellite position monitoring equipment on board fishing vessels and established that this type of technology will greatly enhance the efficiency and effectiveness of the existing aerial, surface and land based resources.

Although the pilot projects in the Member States revealed a number of technical problems, they also clearly demonstrate that these could be resolved by a joint approach between the project managers and the system providers. It was particularly evident that satellite-based vessel monitoring technology has evolved considerably during the period of the project. This trend is set to continue. The further development of ready-to-use products as well as the improvement in satellite services will greatly assist the realisation of the full potential of a future operational system.

The pilot project demonstrated that the quality, robustness and reliability of vessel equipment had improved significantly during the trial period. Ongoing technological progress will continue to offer new functionalities at a lower cost. Prices of mobile equipment are expected to drop significantly with the advent of low earth orbit satellite systems, and the liberalisation and privatisation policies should diminish telecommunication costs. Computer hard- and software is getting cheaper in general. The principle problem encountered was the loss of data through system failures. This problem

occurs however only occasionally and can be resolved by appropriate back-up and recovery procedures.

All Member States reported that the Global Positioning System (GPS), integrated in the ARGOS transponders and used in combination with INMARSAT C, is sufficiently precise for fishery enforcement purposes. The positioning function of Euteltracs is evaluated positively as well.

2. The Issue of Data Exchange

A significant number of data exchange trials between Member States have been undertaken during the operational phase of the pilot projects. The trials identified the complexity and difficulties of exchanging position data. However, they also provided valuable information on how data exchange may be improved and how a unique solution or other alternatives may be achieved in an operational system.

The data exchange format proposed by Denmark and X.25 data exchange protocol have been accepted as standards for the purpose of the pilot projects. The X.25 services available are however not the same in each Member State. A number of Member States failed to exchange position reports on a regular basis. In this regard, the technical effort required to establish and operate reliable and effective data communication procedures during the period of the pilot project has apparently been underestimated by the Member States. From the Commission point of view this was the least successful aspect of the pilot project.

Direct transmission from the fishing vessel to the coastal state has only been tested by two Member States. It can nevertheless be considered to be a valid alternative for communication by the Flag State to the Coastal State.

Member States recognize the need to standardise the data exchange procedures and reflect further on the architecture of the future Community system for satellite monitoring. In that context the issues of inter-operability of different mobile satellite communication and tracking technologies with terrestrial networks will have to be addressed in a comprehensive manner. It should be noted that the issue of data communication between Member States is a general issue that is not limited to satellite tracking applications.

3. Legal and Evidential Issues

In their reports Member State did not undertake an elaborate assessment of the legal and evidential issues pertaining to the data acquired from a satellite based vessel monitoring system. The Commission is nevertheless aware that the vessels participated in the pilot projects on a voluntary basis and that many issues such as tampering or misuse of the devices for the purpose of cloning (the unauthorised use of a legitimate unit to mislead the authorities as to the correct location of vessels) or of ghosting (the unauthorised disabling of a unit) will not be fully apparent until the system is mandatory for certain categories of vessels. It is therefore essential that the full onus of responsibility for the installation, operation and maintenance of the operational equipment is placed on the vessel and that it will be illegal to be at sea without an operational unit on board. It is also imperative that there will be a full range of appropriate sanctions, as well as incentives, to ensure

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that vessels comply with the regulatory requirements.

In general, Member States have widely diverging rules of evidence. The admissibility and evidential value of the data provided by a satellite-based vessel monitoring system could to some extent differ in each Member State, such as is the case with other information, e.g. photographs taken during aerial surveillance flights. In order for VMS to operate effectively, co-operation between the competent authorities of the Flag State and the Coastal state is required. This may imply that certain Member States will have to introduce rules under their national law in order to enable the evaluation of evidence obtained by satellite-based VMS.

III. THE APPROPRIATENESS OF A SATELLITE-BASED VMS FOR FISHERY ENFORCEMENT AND MANAGEMENT

The trials demonstrated that a fully operational system will have many benefits for fisheries enforcement. As noted in the Commission Report on Monitoring the Common Fisheries Policy ⁽¹⁾ there are at present many serious shortcomings in the effectiveness and efficiency of enforcement . Satellite monitoring of fishing vessels will improve the control of many areas in the current fisheries regime.

In particular it will :

- improve effort management by providing high-quality effort

⁽¹⁾ COM (96) 100 final

reports;

- improve the monitoring of closed boxes or sensitive areas;
- allow a more cost effective deployment of patrol vessels and surveillance aircraft as well as a more efficient use of boarding parties at sea;
- allow the verification of logbook data and in some instances the validation of catch area reports;

- assist in the detection of illegal or unauthorised landings;
- allow the monitoring of the advance notification of landing requirement.

The diverse nature of EU fisheries requires a complex management and control structure. However, in the long term a satellite based vessel monitoring system may allow simplification of the regulatory framework. In particular, it may provide an incentive for fishermen to comply with the regulations which in turn may result in a reduction of some of the current obligations such as hail requirements.

Satellite-based systems will assist the monitoring of fishing effort and will, if combined with other enforcement tools, improve the recording of quota uptake by vessels.

From the Community perspective, a satellite based vessel monitoring system will improve the uniform application of the regulatory framework, enhance cooperation between enforcement agencies and ensure greater transparency of the fishery control and enforcement effort in the Member States.

The pilot projects in the Member States revealed that there are also many advantages for the fishing industry. These include, cheaper communication costs, improved safety features in the event of an emergency, confidential messaging services for catch and market information, and improved access to weather, port, and other information. Furthermore, recent experience in the Member States indicates that fishermen are already investing in satellite telecommunications equipment and services.

The encouraging results of the pilot projects conducted by the Member States and developments in international fisheries indicate that it is now appropriate to prepare for an operational scheme applicable to Community fishing vessels.

The cost of satellite-based VMS will depend mainly on the number of vessels included in the system. It can further be assumed that Member States will prefer maximum flexibility to develop a national system tailored specifically to their needs and to integrate the system with existing monitoring facilities and operations.

The hard- and software purchased for the purpose of the pilot projects may be reused whenever possible.

Based on an earlier study, the cost of satellite monitoring, including a control center in each Member State for monitoring a fleet of 10.000 vessels, over five years, is likely to be of the order of 80 to 100 Mecu. The predominant part will be the mobile equipment on board of each vessel. Expenditure would normally be eligible under Council Decision 95/527/EC on a Community financial contribution towards certain expenditure incurred by

the Member States implementing the monitoring and control systems applicable to the Common Fisheries Policy⁽¹⁾.

⁽¹⁾ O.J. No L 301, 14.12.1995, p. 30
Rectified O.J. No L 302, 15.12.1995, p. 45

ANNEX

SYNOPTIC TABLE (situation on 01.05.96)

Member State	Community financial contribution (MECU)	Number of vessels		Control Centre	Satellite System	Operational starting date (deadline: 01.10.94)	Receipt final report (deadline: 29.02.96)	Remarks
		Minimum	Actual					
Belgium	0,3	10	21	Dienst voor Zeevisserij, Oostende	INMARSAT	March '95	-	- Cost of connectivity software shared with Netherlands - Loss of INMARSAT data reports
Denmark	0,9	10	10	Fiskeridirektoratet, Copenhagen	INMARSAT	April '95	26.03.96	- Difficulties in finding voluntary participants - Developed data exchange format for position reporting
Germany	0,4	15	22	Bundesanstalt LE, Hamburg	INMARSAT	October '94	04.03.96	- Telecom does not support X.25 fast select mode for international communications
Greece	0,8	10	20	Hellenic Coast Guard, Piraeus	INMARSAT	October '94	13.03.96	- Tested VHF/DSC in a complementary projet - LES does not support individual polling function
Spain	3,0	124	124	IGPM, Madrid	EUTELTRACS INMARSAT	March '94	14.03.96	- Developed an extension of the Danish data exchange format for event reporting - Continues to use the system for effort reporting
France	0,9	67	45	CROSSA, Etel	ARGOS EUTELTRACS INMARSAT	May '95	19.03.96	- Eutelsat developed technical solution for the integration of the data flows from the three satellite systems - Continues to use the system for effort reporting
Ireland	0,7	10	10	Naval Base, Cork	EUTELTRACS INMARSAT	October '94	-	- Encryption of position reports - In favour of direct transmission to coastal state - Suggests use of central data routing facility
Italy	0,5	17	(20)	Coast Guard, Rome	INMARSAT	-	-	- Not yet operational

Member State	Community financial contribution (MECU)	Number of vessels		Control Centre	Satellite System	Operational starting date (deadline: 01.10.94)	Receipt final report (deadline: 29.02.96)	Remarks
		Minimum	Actual					
Netherlands	0,5	14	41	AID, Kerkrade	ARGOS EUTELTRACS INMARSAT	October '94	20.03.96	<ul style="list-style-type: none"> - Cost of connectivity software shared with Belgium - Loss of INMARSAT data reports - Previous experience with project "Verre Visserijen" - PTT Telecom does not support X.25 fast select mode
Portugal	-	47	104	IGP, Lisbon	INMARSAT	-	-	<ul style="list-style-type: none"> - Portugal did not carry out a specific pilot project, since it had prior experience with MONICAP - Satellite-monitoring is an established means of control under national law
Finland	0,2	-	5	Department of Fisheries, Helsinki	INMARSAT	After accession	05.03.96	<ul style="list-style-type: none"> - Joint project with Denmark and Sweden
Sweden	0,2	-	3	Fiskeriverket, Göteborg	INMARSAT	After accession	07.03.96	<ul style="list-style-type: none"> - Joint project with Denmark and Finland - No voluntary participants - Equipped two Coast Guard vessels and one research vessel
United Kingdom	0,9	19	29	MAFF, London DAFS, Edinburgh	ARGOS EUTELTRACS INMARSAT	September '94	22.03.96 (draft provisional)	<ul style="list-style-type: none"> - Full integration of satellite systems through customised monitoring system (CTMS) - No participation of Fisheries Organisations - 18 vessels equipped with Automatic Position Recorders

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