

AMERICAN TROPICAL TUNA COMMISSION

98TH MEETING

(by videoconference)

23 – 27 August 2021

PROPOSAL IATTC-98 C-4 REV

SUBMITTED BY THE UNITED STATES AND ECUADOR

**CONSERVATION MEASURES FOR TROPICAL TUNAS IN THE
EASTERN PACIFIC OCEAN DURING 2022-2024**

The Inter-American Tropical Tuna Commission (IATTC), gathered virtually, on the occasion of its 98th Meeting:

Aware of its responsibility for the scientific study of the tunas and tuna-like species in its Convention Area and for formulating recommendations to its Members and Cooperating non-Members (CPCs) with regard to these resources;

Acknowledging the IATTC scientific staff's 2020 risk assessment for bigeye tuna shows a bimodal distribution, and the indicator analysis for tropical tunas shows trends such as declining catch per unit effort of the floating object purse-seine fishery over the past few years, increasing number of floating object-sets, and increasing number of sets per day;

Recognizing that the potential production from the resource can be reduced if fishing effort is excessive;

Concerned that the capacity of the purse-seine fleets fishing for tunas in the Convention Area continues to increase;

Taking into account the best scientific information available, reflected in the IATTC staff's recommendations, and the precautionary approach; and

Recalling the need to take into account the special circumstances and requirements of the developing countries of the region, particularly the coastal countries, as recognized in the Antigua Convention, in particular in its Preamble and its Article XXIII, paragraph 1;

Agrees:

To apply in the Convention Area the conservation and management measures for tropical tuna set out below, and to request that the staff of the IATTC monitor the fishing activities of the respective CPC's flag vessels relative to this commitment, and also report on such activities at each annual meeting of the Commission;

1. These measures are applicable from 0000 hours Coordinated Universal Time (UTC) 1 January 2022 to 2400 hours UTC 31 December 2024, with the exception of the second closure period in paragraph 3 which extends until 24:00 hours UTC on [19] January 2025. These measures are applicable to all CPCs' purse-seine vessels of IATTC capacity classes 4 to 6 (more than 182 metric tons carrying capacity), and to all their longline vessels over 24 meters length overall, that fish for yellowfin, bigeye and skipjack tunas in the Convention Area.
2. Pole-and-line, troll, and sportfishing vessels, and purse-seine vessels of IATTC capacity classes 1-3 (182 metric tons carrying capacity or less), and longline vessels less than 24 meters length overall, are not subject to these measures, except those related to the management of Fish Aggregating Devices (FADs).

MEASURES FOR PURSE-SEINE FLEETS

3. **Purse-seine closures:**

All purse-seine vessels covered by these measures must stop fishing in the Convention Area for a period of 72 days in each year covered by this Resolution. These closures shall be **observed** in one of

two periods, as follows: from 00:00 hours UTC on 29 July to 24:00 hours UTC on 8 October, or from 00:00 hours UTC on 9 November to 24:00 hours on 19 January of the following year.

4. For 2022, CPCs shall ensure that purse-seine vessels flying their flags that fished between 2017 and 2019 and have caught on average more than 1,200 metric tons of bigeye tuna in floating-object or unassociated sets during that period, shall observe an extended closure of 12 additional days as indicated in this paragraph.

In the case of vessels that have only fished for two years during the period indicated, the average based on those two years shall be used, and in the case that a vessel fished only one year during the period indicated, only the catch data for that year shall be assumed as information for the application of this measure. The IATTC technical Secretariat shall send to the CPCs by December 15, 2021, the names of the vessels that must apply the additional 12-day closure, for its pertinent application starting in 2022.

These closures shall be observed in one of two periods, as follows: from 00:00 hours UTC on 17 July to 24:00 hours UTC on 8 October, or from 00:00 hours UTC on 9 November to 24:00 hours UTC on 31 January of the following year.

5. For 2022-2024, CPCs shall ensure purse-seine vessels flying their flags do not exceed an annual catch limit per vessel of 1,200 metric tons of bigeye tuna. The vessels that during any year, the period indicated in paragraph 1 of this resolution exceed the limit of 1,200 metric tons of bigeye tuna catch per year, shall increase the following year the closure period in paragraph 3 to a base closure period of 84 days as specified in this paragraph. For each 300 mt over 1,200 mt that a vessel exceeds, an additional 8 days of total closure will be added on top of the 84 days the following year.

These closures shall be observed in one of two periods, as follows: from 00:00 hours UTC on 17 July to 24:00 hours UTC on 8 October, or from 00:00 hours UTC on 9 November to 24:00 hours UTC on 31 January of the following year. [None of these closures can be observed during the “*corralito*”.]

The IATTC Secretariat shall send to the CPCs by December 15, 2022, 2023, and 2024 the names of the vessels that must observe additional closure days in accordance with this paragraph.

6. The IATTC Secretariat, in coordination with the CPCs, and within no more than 90 days from the adoption of this measure on bigeye tuna, shall prepare instructions containing the actions to implement strengthen a monitoring and control system for tuna catches using on-board observer data, logbooks, port sampling and information from tuna processing facilities, to ensure timely notification communicating in a timely manner vessel owners captains so that they do not exceed the limit per vessel established in this paragraph. The IATTC staff shall report to the Commission the outcome of these discussions and a new budget and plan to improve the monitoring for the bigeye catch limit and present at the October 2021 IATTC meeting.
7. The additional sampling in port and canneries may prioritize vessels that have reached an average catch between the years 2017 to 2019 greater than five hundred (500) tons of bigeye tuna per year, according to the data estimated by the Secretariat.
8. CPCs shall ensure cannery data for vessels flying their flags for any fish caught in the IATTC Convention Area be provided to the IATTC Director in real time (i.e., within 10 days from the first day of unloading until the last day of sizing).
9. The IATTC staff will be responsible for estimating the catch of the bigeye tuna catch of each vessel at the end of each trip, to the extent that one or more data sources are available to the staff in the days immediately after the conclusion of the trip and discharge (e.g., observer estimates, ship's log data, well sampling, cannery data). In the absence of data provided to the staff, the duty or estimate of the catch of the vessel will be the responsibility of the flag State.

As soon as possible, after the conclusion of each voyage, the IATTC staff will transmit to the flag State their best estimate of a vessel's catch for that voyage, together with an accounting of the data and the methodology used to arrive to the estimate.

The flag State once the discharge is complete will then determine the amount of bigeye catch that will be attributed to a vessel for a given voyage, based on the estimate of the IATTC staff or another method of its choice, and will inform the Director of the amount of bigeye catch to be attributed to the vessel, and this number will be used to track the progress of a vessel towards the bigeye catch limit. If the flag State authority does not respond to the communication of the bigeye catch estimate from the IATTC staff for a trip within 5 business days, the estimate will be considered supported by the flag State and attributed to the vessel for the purpose of track the ship's progress towards the bigeye catch limit.

The IATTC Secretariat shall notify the flag State when the annual bigeye tuna catch of a purse-seine vessel flying its flag has reached any of the following levels: (1) the purse-seine vessel is within 70% percent of reaching its limit; (2) the purse-seine vessel is within 80% percent of reaching its limit; or (3) the purse-seine vessel has reached its limit.

10. In the event that the *status quo* conditions, as represented by the average annual catches of bigeye tuna during the most recent three-year period (2017-2019, 65.397 t, BSE estimate), are not offset by this measure, the IATTC scientific staff may propose to the Commission an update of its recommended conservation measures.
11. If the implementation of this measure has positive effects that demonstrate an improvement of the status of the bigeye tuna stock, the scientific staff shall analyze the conservation measures in force in order to submit to the Commission for consideration new measures that consider reducing the number of closure days or eliminating the “corralito” for the fleet that fishes on floating objects.
12. The fishery for yellowfin, bigeye, and skipjack tuna by purse-seine vessels within the area of 96° and 110°W and between 4°N and 3°S, known as the “*corralito*”, which is illustrated in Figure 1, shall be closed from 00:00 hours on 9 October to 24:00 hours on 8 November of each year.

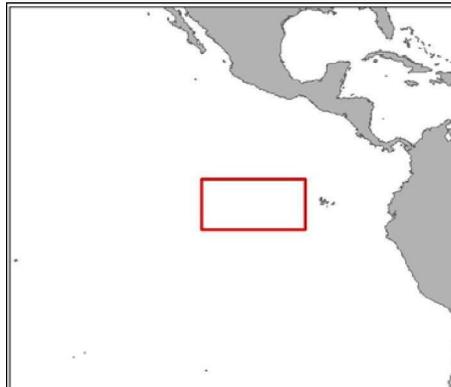


Figure 1. Closure area

13.
 - a. For each one of the closure periods, each CPC shall notify the Director, by 15 July of each year, the names of all the purse-seine vessels that will observe each closure period.
 - b. Every vessel that fishes, regardless of the flag under which it operates or whether it changes flag or the jurisdiction of the CPC under which it fishes during the year, must observe the closure period to which it was committed.
14.
 - a. If a *force majeure*¹ event renders a vessel² unable to proceed to sea outside one of the two closure periods during a period of at least 75 continuous days, a CPC may request an exemption for a reduced closure period as provided in paragraph 3 and subparagraph 13b. If an exemption is granted, the vessel will be required to observe a reduced closure period as outlined below in

¹ For the purposes of paragraph 14, only cases of vessels disabled in the course of fishing operations by mechanical and/or structural failure, fire or explosion, shall be considered *force majeure*.

² This exemption applies to the vessels of fleets that observe either of the closure periods prescribed in paragraph 3.

subparagraph 14e. A request for exemption due to *force majeure* shall be sent by a CPC to the Secretariat within 30 calendar days of the end of the period of inactivity due to *force majeure*. Requests submitted after this time will not be considered.

- b. In addition to the request for an exemption, the CPC shall send the evidence necessary to demonstrate that the vessel did not proceed to sea during said continuous period, which closure period the vessel observed, and that the facts on which the request for exemption is based were due to *force majeure*.
 - c. After the timely receipt of both the request and supporting information required in subparagraph b, the Director shall immediately send the request and the evidence electronically to the other CPCs for their consideration, duly coded in order to maintain the anonymity of the name, flag and owner of the vessel.
 - d. The request shall be considered accepted unless an IATTC Member objects to it formally within 15 calendar days of the receipt of said request, in which case the Director shall immediately notify all CPCs of the objection.
 - e. If the request for exemption is accepted:
 - i. the vessel shall observe a reduced closure period of 40 consecutive days in the same year during which the *force majeure* event occurred, in one of the two periods prescribed in paragraph 3, to be immediately notified to the Director by the CPC, or
 - ii. in the event said vessel has already observed a closure period prescribed in paragraph 3 in the same year during which the *force majeure* event occurred, it shall observe a reduced closure period of 40 consecutive days the following year, in one of the two periods prescribed in paragraph 3, to be notified to the Director by the CPC no later than 15 July.
 - iii. vessels that benefit from the exemption must carry an observer aboard authorized pursuant to the AIDCP.
15. Each CPC shall, for purse-seine fisheries:
- a. Before the date of entry into force of the closure, take the legal and administrative measures necessary to implement the closure;
 - b. Inform all interested parties in its tuna industry of the closure;
 - c. Inform the Director that these steps have been taken;
 - d. Ensure that at the time a closure period begins, and for the entire duration of that period, all the purse-seine vessels fishing for yellowfin, bigeye, and/or skipjack tunas that are committed to observing that closure period and that fly its flag, or operate under its jurisdiction, in the Convention Area are in port, except that vessels carrying an observer authorized pursuant to the AIDCP may remain at sea, provided they do not fish in the Convention Area. The only other exception to this provision shall be that vessels carrying an observer authorized pursuant to the AIDCP may leave port during the closure, provided they do not fish in the Convention Area.

MEASURES FOR THE FISHERY ON FISH-AGGREGATING DEVICES

16. For the purposes of this Resolution, the definitions listed in Annex I shall apply:
17. CPCs shall ensure that purse-seine vessels flying their flag have no more than the following number of FADs, as defined in Resolution C-19-01, active at any one time:

For 2022:

Class 6 (1,200 m ³ and greater):	380 FADs
Class 6 (< 1,200 m ³):	270 FADs
Class 4-5:	110 FADs
Class 1-3:	66 FADs

For 2023:

Class 6 (1,200 m ³ and greater):	350 FADs
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Class 6 (< 1,200 m ³):	255 FADs
Class 4-5:	105 FADs
Class 1-3:	64 FADs
For 2024:	
Class 6 (1,200 m ³ and greater):	315 FADs
Class 6 (< 1,200 m ³):	210 FADs
Class 4-5:	85 FADs
Class 1-3:	50 FADs

18. A FAD shall be activated exclusively onboard a purse-seine vessel.
19. For the purposes of this Resolution, a FAD is considered active when it:
 - a. is deployed at sea; and
 - b. activation of the satellite buoy has occurred and the satellite buoy is transmitting its location and is being tracked by the vessel, its owner, or operator.
20. Deactivation of a satellite buoy attached to a FAD may only be done in the following circumstances: if signal loss, beaching, if a FAD is stolen, temporarily during a selected closure period, or transferred ownership. CPCs shall report, or require their vessels to report, deactivations to the Secretariat using the specific data fields indicated in Annex II. The reports shall be submitted at monthly intervals with a time delay of at least 60 days, but no longer than 90 days after the deactivation.
21. Remote reactivation of a satellite buoy at sea shall only occur in the following circumstances: aid in the recovery of beached FAD, after a temporary deactivation during the closure period, or transfer of ownership while FAD is at sea. CPCs shall report, or require their vessels to report, any remote reactivation to the Secretariat using the specific data fields indicated in Annex II. The reports shall be submitted at monthly intervals with a time delay of at least 60 days, but no longer than 90 days after the remote reactivation.
22. The *ad hoc* Working Group on FADs shall recommend to the SAC for its consideration at its meeting in 2022 at the latest, advice to further develop the use of biodegradable materials in FADs, including a definition and criteria for biodegradable FADs, or FADs with designs and materials that pose less risk to the environment.
23. The IATTC scientific staff and the Working Group on FADs will also review the variation in levels of aggregation, mortality, change in fishing strategy, and durability of FADs built with biodegradable materials or with designs and materials that present less risk for the environment. These results will also be presented at the 13th meeting of the Scientific Advisory Committee and the 99th meeting of the Commission to determine adjustments to the active FAD limits for vessels switching to biodegradable FADs.
24. Beginning January 1, 2023, to monitor compliance with the procedures established in Paragraphs 19-21, CPCs shall require their purse-seine vessels (required to carry VMS pursuant to Resolution C-14-02) to have their Vessel Monitoring System (VMS) automatically and independently of any intervention on the vessel communicate VMS data to the IATTC. The information reported to the Secretariat shall include, at a minimum, the information specified in Paragraphs 2(a) of and 2(b) of that Resolution. Where the flag CPC requires more frequent polling rates, CPCs are encouraged to submit higher-frequency VMS data. Data collected pursuant to this paragraph shall be treated in accordance with Resolution C-15-07 on data confidentiality policy and procedures.
25. In order to support the monitoring of compliance with the limitation established in Paragraphs 17-19, and the work of the IATTC scientific staff in analyzing the impact of FAD fisheries, while protecting business confidential data, CPCs shall report, or require their vessels to report, daily information on all active FADs to the Secretariat. The information provided shall be identical in form and content to the

raw satellite buoy data provided by the buoy manufacturers to the original users (i.e., vessels and vessel administrators), as specified in the Annex IV of this Resolution. Reporting shall occur at monthly intervals and with a time delay of at least 60 days, but no longer than 90 days.

26. Each CPC shall ensure that:
- a. its purse-seine vessels do not deploy FADs during a period of 15 days prior to the start of the selected closure period;
 - b. all its Class-6 purse-seine vessels recover within 15 days prior to the start of the closure period a number of FADs equal to the number of FADs set upon during that same period.
27. The Scientific Advisory Committee and the *Ad hoc* Permanent Working Group on FADs shall review the progress and results of the implementation of the FAD provisions contained in this Resolution and make recommendations to the Commission, as appropriate.
- 28.
- a. To reduce the entanglement of sharks, sea turtles or any other species, CPCs shall ensure that the design, deployment, or redeployment of FADs shall be based on the principles set out in paragraphs 1 and 2 of Annex II of Resolution C-19-01.
 - b. CPCs, with the support of the Commission and its staff and in consultation with all stakeholders, as appropriate, shall encourage the design and use of biodegradable non-entangling FADs.

MEASURES FOR THE LONGLINE FISHERY

29. China, Japan, Korea, United States, and Chinese Taipei undertake to ensure that the total annual catches of bigeye tuna by their longline vessels in the Convention Area during 2022, 2023, and 2024 do not exceed 55,131 metric tons, distributed at the following levels:

Metric tons	2022 - 2024
China	2,507
Japan	32,372
Korea	11,947
Chinese Taipei	7,555
United States	750

30. All other CPCs undertake to ensure that the total annual catches of bigeye tuna by their longline vessels in the Convention Area during the years included in this Resolution do not exceed the greater of 500 metric tons or their respective catches of bigeye tuna in 2001³ ⁴. CPCs whose annual catches have exceeded 500 metric tons shall provide monthly catch reports to the Director.
31. A CPC referenced in paragraph 29 may make a single transfer of a portion of its bigeye tuna catch limit each year to other CPCs that also have a bigeye tuna catch limit listed in paragraph 29, provided that the total transferred by any CPC in a given year does not exceed 30 percent of its catch limit. These transfers cannot be made to retroactively cover an overage of another CPC's catch limit. Both CPCs involved in a transfer shall, separately or jointly, notify the Director 10 days in advance of the intended transfer. This notification shall specify the tonnage to be transferred and the year in which the transfer will occur. The Director shall promptly notify the Commission of the transfer.
32. The CPC that receives the transfer shall be responsible for management for the transferred catch limit, including monitoring and monthly reporting of catch. A CPC that receives a one-time transfer of bigeye tuna catch limit in a given year shall not retransfer that catch limit to another CPC. The amount of bigeye transferred in any one year shall be considered without prejudice by the Commission for the purposes of establishing any future limits or allocations.

³ The Commission acknowledges that France, as a coastal State, is developing a tuna longline fleet on behalf of its overseas territories situated in the Convention Area.

⁴ The Commission acknowledges that Peru, as a coastal State, will develop a tuna longline fleet, which will operate in strict compliance with the rules and provisions of the IATTC and in accordance with the Resolutions of the Commission.

33. Evaluate, in 2023, the status of bigeye tuna through updated assessments (as defined in Document IATTC-98-INF-B), ensuring that these research complements do not impact the original research plan of the scientific staff reported in Document SAC-12-01.
34. Review, during 2022, the weighting process and risk analysis implemented for bigeye tuna and yellowfin tuna (SAC-11 INF-F, SAC-11-INF-J, SAC-11-06, and SAC-11-07) with emphasis on the impact on management advice, ensuring that these research complements do not impact the original research plan of the scientific staff reported in Document SAC-12-01.
35. The IATTC Secretariat shall conduct, for presentation at the 2022 SAC meeting, an interim assessment for skipjack tuna using currently available fisheries and biological data (as proposed in IATTC-98-INF-F), which may be replaced or improved with the results of the benchmark assessment scheduled as part of the work plan described in document SAC-12-01.
36. IATTC's scientific staff will initiate, as of 2022, a research work on the relationship of the depth of nets of tuna vessels with the catches of bigeye tuna, with the purpose of knowing its effect on an increase in mortality due to fishing for each area of operation. For the IATTC SAC meeting in 2023, the results of this work must be presented for their respective analysis and recommendations to the Commission.

OTHER PROVISIONS

37. Landings and transshipments of tuna or tuna products that have been positively identified as originating from fishing activities that contravene these measures are prohibited. The Director is requested to provide relevant information to CPCs to assist them in this regard.
38. Each CPC shall submit to the Director, by 15 July of each year, a national report on its updated national compliance scheme and actions taken to implement these measures, including any controls it has imposed on its fleets and any monitoring, control, and compliance measures it has established to ensure compliance with such controls.
39. In order to evaluate progress towards the objectives of these measures, in each year the IATTC scientific staff will analyze the effects on the stocks of the implementation of these measures, and previous conservation and management measures, and will propose, if necessary, appropriate measures to be applied in future years.
40. Subject to the availability of the necessary funding, the Director is requested to continue the experiments with sorting grids for juvenile tunas and other species of non-target fish in the purse-seine nets of vessels that fish on FADs and on unassociated schools, by developing an experimental protocol, including parameters for the materials to be used for the sorting grids, and the methods for their construction, installation, and deployment. The Director shall also specify the methods and format for the collection of scientific data to be used for analysis of the performance of the sorting grids. The foregoing is without prejudice to each CPC carrying out its own experimental programs with sorting grids and presenting its results to the Director.
41. Renew the program to require all purse-seine vessels to first retain on board and then land all bigeye, skipjack, and yellowfin tuna caught, except fish considered unfit for human consumption for reasons other than size. A single exception shall be the final set of a trip, when there may be insufficient well space remaining to accommodate all the tuna caught in that set.
42. The IATTC shall continue efforts to promote compatibility between the conservation and management measures adopted by the IATTC and WCPFC in their goals and effectiveness, especially in the overlap area, including by frequent consultations with the WCPFC, in order to maintain, and inform their respective members of, a thorough understanding of conservation and management measures directed at bigeye, yellowfin, and other tunas, and the scientific bases and effectiveness of those measures.
43. In 2022, 2023, and 2024, the IATTC scientific staff shall evaluate and present to the Scientific Advisory Committee any recommendations for adjustments to the closure days or bigeye tuna catch limits to maintain sets on FADs and fishing mortality of bigeye tuna at or below 2017-2019 *status quo* levels. In addition, the results of these measures shall be evaluated in the context of the results of the stock

assessments and of changes in the level of active capacity in the purse-seine fleet and, depending on the conclusions reached by the IATTC scientific staff, in consultation with the Scientific Advisory Committee, and based on such evaluation, the Commission **may either consider a reduction in measures or** shall take further actions including substantial extension of closure days for purse-seine vessels or equivalent measures, such as catch limits.

44. Except in cases of *force majeure* prescribed in paragraph 14, no exemptions will be allowed with regard to the closure periods notified to the Director in accordance with paragraph 13a, nor with regard to the fishing effort of the purse-seine fleets of the respective CPCs.

Annex I

For the purposes of this Resolution, the following definitions shall apply:

- a. FAD (consistent with Resolution C-19-01): Anchored, drifting, floating or submerged objects deployed and/or tracked by vessels, including through the use of radio and/or satellite buoys, for the purpose of aggregating target tuna species for purse-seine fishing operations.
- b. Satellite buoy: A buoy that uses a satellite network service to indicate its geographical position and is compliant with requirements in Resolution C-19-01 to be clearly marked with a unique identification code.
- c. Activation of a satellite buoy: The act of initializing network service for receiving the satellite buoy's position. Activation is done by the buoy supplier company at the request of the vessel owner or manager. Following activation, the vessel owner pays for the communication service. The buoy can be transmitting or not, depending if it has been switched on.
- d. Deactivation of a satellite buoy: The act of cancelling network service for receiving the satellite buoy's position. Deactivation is done by the buoy supplier company at the request of the vessel owner or manager. Following deactivation, the communication service is no longer paid for, and the buoy stops transmitting.
- e. Reactivation of a satellite buoy: The act of re-initializing network service for transmission of a satellite buoy's position after deactivation. The procedure is the same as the one to be followed for activation of a satellite buoy.
- f. Signal loss: The situation in which, without any intervention of the owner/operator/manager, a satellite buoy cannot be located by the owner on a monitoring device. The main causes of signal loss are buoy retrieved by another vessel or person (at-sea or on-shore), FAD sinking and buoy failure.

Annex II

CPCs shall report, or require their vessels to report, any deactivation of a satellite buoy to the Secretariat using the following data fields of the first communication of the buoy after being activated:

- date [YYYY/MM/DD],
- time [hh:mm],
- buoy identifier code,
- latitude [expressed in degrees and minutes in decimal values],
- longitude [expressed in degrees and minutes in decimal values],
- speed [knots], and
- reason of deactivation: signal loss, stolen FAD, beaching, temporarily during closure periods, transferred ownership, other (specify).

Annex III

CPCs shall report, or require their vessels to report, any remote reactivation of a satellite buoy to the Secretariat using the following data fields of the last communication of the buoy before being deactivated:

- date [YYYY/MM/DD],
- time [hh:mm],
- buoy identifier code,
- latitude [expressed in degrees and minutes in decimal values],
- longitude [expressed in degrees and minutes in decimal values],
- speed [knots], and
- reason of remote reactivation: recovery of a signal loss, after a temporary deactivation during the closure period, or transfer of ownership while FAD is at sea, other (specify).

Annex IV

Format of the information to be requested to satellite buoy manufacturers

a) Daily information on buoy location

The following data fields should be included for all the buoys and positions recorded during the day, in fishing company-specific csv files:

- date [dd-mm-yyyy],
- time [hh.mm],
- unique buoy identifier code [the format varies for each buoy manufacturer but is always an alphanumeric code],
- IMO of the vessel associated to the buoy and receiving the information,
- latitude [expressed as decimal degrees],
- longitude [expressed as decimal degrees],
- speed [knots].

Besides, whenever possible, the following information corresponding to each transmission will be included:

- Water temperature.
- Buoy in the water (only for those buoys with sensors that allow identifying buoys in the water)
- Activation and deactivation dates.
- Estate or transmission mode of the buoy (e.g. immediate information, retrieving, etc.)

Data should be received in csv files named “X-YYYY-MM-ZZZZZZZ.csv” where X is the code of the buoy manufacturer (M, S, Z, for Marine Instruments, Satlink, and Zunibal, respectively), YYYY is the year, MM the month, and ZZZZZZZ the name of the fishing company. A single csv file will be prepared for company, year and month.

b) Information on acoustic records

The following data fields must be included for all the buoys and acoustic records recorded daily, in fishing company-specific csv files:

- ZUNIBAL: company, unique buoy identifier code, date (date, time), type (position or sounder), latitude, longitude, speed, drift, total
- SATLINK: Company, unique buoy identifier code, Message Descriptor (MD), date (date, time), latitude, longitude, battery charge (bat), temp, speed, drift, layer1, layer2, layer3, layer4, layer5, layer6, layer7, layer8, layer9, layer10, sum, max, mag1, mag2, mag3, mag4, mag5, mag6, mag7, mag8.
- MARINE INSTRUMENTS: company, unique buoy identifier code, TransmissionDate, TransmissionHour, lat, lon, mode, light, poll, temperature, vcc, SounderDate, gain, layers, layerbits, maxdepth, sd1, sd2, sd3, sd4, sd5, sd6, sd7, sd8, sd9, sd10, sd11, sd13, sd12, sd14, sd15, sd16, sd17, sd18, sd19, sd20, sd21, sd22, sd23, sd24, sd25, sd26, sd27, sd28, sd29, sd30, sd31, sd32, sd33, sd34, sd35, sd36, sd37, sd38, sd39, sd40, sd41, sd42, sd43, sd44, sd45, sd346, sd47, sd48, sd49, sd50.

Data should be received in csv files named “X-YYYY-MM-ZZZZZZZ-Sounder.csv” where X is the code of the buoy manufacturer (M, S, Z, for Marine Instruments, Satlink, and Zunibal, respectively), YYYY is the year, MM the month, and ZZZZZZZ the name of the fishing company. A single csv file will be prepared for company, year and month.