

INTER-AMERICAN TROPICAL TUNA COMMISSION
COMMITTEE ON ADMINISTRATION AND FINANCE
13TH MEETING

Lisbon, Portugal
27-28 August 2026

DOCUMENT CAF-13 INF-D

**REPORT ON THE TRANSITION FROM THE TRADITIONAL PORT
SAMPLING AND THE ENHANCED MONITORING PROGRAM TO THE
INTEGRATED PORT SAMPLING PROGRAM**

This report has been prepared in response to the information requests made by the CAF during its Intersessional Meeting, held on June 15-17, 2026

SUMMARY	1
1. PREVIOUS IATTC PORT-SAMPLING PROGRAMS.....	1
1.1. Traditional Port Sampling (TPS).....	1
1.1.1. TPS Logistical/Budgetary Aspects.....	2
1.2. Enhanced Monitoring Program (EMP)	2
1.2.1. EMP Logistical/Budgetary Aspects.....	3
2. THE IATTC INTEGRATED PORT-SAMPLING PROGRAM (IPSP).....	3
2.1. IPSP Logistical/Budgetary Aspects.	4
3. COMPARATIVE ANALYSIS OF THE TPS, IPSP AND EMP.....	6
APPENDIX 1. Report On The Development Status Of The WhisperIPS System For Processing Data Obtained From Audio Recordings.....	10

SUMMARY

The Integrated Port Sampling Program (IPSP) fleet-level sampling protocol represents an improvement over the one implemented by the Traditional Port Sampling (TPS), while incorporating the objectives of the Enhanced Monitoring Program (EMP). The purpose of the IPSP is to create a robust scientific data collection program that produces high-quality information for tropical tuna stock assessments, fleet-level catch composition estimation, and for the support of management measures such as the Individual Vessel Threshold (IVT).

The IPSP leverages the operational capacity, expertise, and procedures developed by the EMP while addressing limitations identified in the TPS methodology. The expected benefits with respect to data collection include greatly reduced potential for bias at all levels of sample selection (trips, wells, fish), greater adaptability, and a unified platform capable of supporting multiple scientific research and management needs.

1. PREVIOUS IATTC PORT-SAMPLING PROGRAMS

1.1. Traditional Port Sampling (TPS)

Starting in 2000, the TPS collected fish length and species composition data to estimate fleet-level catch composition of the three tropical tuna species: bigeye (BET), yellowfin (YFT), and skipjack (SKJ). The TPS was a task fulfilled by field office staff (FOS), two in Manta, two in Mazatlán, one in Playas and one in Manzanillo. The FOS work an eight-hour day, within a normal daytime schedule, five days a week. Within this schedule, the FOS perform multiple tasks, which include processing and editing of observer data, collection of logbook data, administrative duties mainly related to the IATTC observer program and port-sampling.

Because the timing of sampling was driven by the work schedule of the staff in each field office, given their other tasks and their scheduled work hours, there were opportunistic aspects to the TPS data collection with respect to selection of trips, wells and fish, which on any given day were influenced by availability at the time the FOS was present at port and on the unloading schedule of the purse-seine fleet in each port.

TPS protocol: key limitations

- Opportunistic sample selection influenced by FOS's availability and purse-seine fleet unloading schedules, creating the potential for bias to be introduced during data collection.
- Limited flexibility because the sampling protocol was structured around sampling only those wells with catch from a particular historical area and month.
- Limited within-well sampling, which may not always produce data representative of the full well catch composition, particularly for wells with floating-object-sets (OBJ) catch.
- A reliable estimate of uncertainty on the catch composition estimates could not be computed from the sampling protocol.

1.1.1. TPS Logistical/Budgetary Aspects

Since the TPS was not a standalone IATTC program with a dedicated budget category within the Commission's general budget, but rather a task carried out by FOS, it is not possible to identify a specific approved budget or produce a dedicated expenditure report for the TPS in its years of operation.

For the purpose of this report, the estimated TPS budget was on the annual salary paid to each FOS multiplied by the percentage of their time available for port-sampling, which takes into consideration their other tasks at their respective field offices. The results of this analysis are presented in Table 1. Based on these estimates, two FOS in Mazatlán and one FOS in Playas had an estimated 40% of their work schedule available for port-sampling, while two staff members in Manta had around 20% of their time, with the majority of their workload focused on supporting the IATTC Observer Program.

Table 1. Details of the logistical and budgetary aspects of the TPS per field office.				
Country	ECUADOR		MEXICO	
Field office	Manta	Playas	Mazatlán	Manzanillo
Number of field office staff (FOS) involved in port-sampling	2	1	2	1
% of FOS work-schedule time available for port-sampling	20%	40%	40%	30%
Estimated annual cost of port-sampling as a task of the field offices	US\$ 63,000* *Proportion of FOS salaries based on the % of time available for port-sampling.			

1.2. Enhanced Monitoring Program (EMP)

The Enhanced Monitoring Program (EMP) was a provisional sampling program established in 2023 under Resolution C-21-04 in order to fulfill the Commission's request to the IATTC scientific staff for the Best Scientific Estimates (BSEs) of BET catch per trip, which were provided in support of the IVT management measure. Per Resolution C-25-01, the EMP was to be discontinued in 2026, with the IATTC staff transitioning to the provision of BSEs of BET catch per trip based on statistical models that use data being collected by the IPSP, as well as the 2023 – 2025 EMP data.

Between 2023 and 2025, the EMP sampling protocol was implemented by a dedicated team of sampling technicians, based in Manta and Playas, Ecuador (In 2025, due to budgetary limitations, the EMP did not have sampling technicians based in Playas). These sampling technicians conducted sampling without scheduling restrictions, on any day of the week and at any hour, within a 40-hour work week.

Despite the fact that the EMP focused on sampling for trip-level estimation, the implementation of the EMP protocol by a dedicated team of sampling technicians, who were available during normal purse-seine unloading operations, led to the collection of extensive data useful for studying potential improvements to the TPS protocol. Results from such studies contributed significantly to the development of the IPSP protocol.

EMP protocol: key aspects useful for IPSP protocol development

- Random selection of OBJ-set wells of specific trips, with no limitations due to staff time constraints.
- Sample catch from the start to the end of the unloading of the well.

1.2.1. EMP Logistical/Budgetary Aspects

The EMP budget was presented to and approved by the Commission each year. In response to the Commission's request to optimize and reduce the Program's implementation costs, the approved budget was reduced by nearly 50%, from US\$ 770,548 in 2023, to US\$ 400,000 in 2025 (Table 2). This budget reduction was achieved primarily by reducing the number of sampling technicians employed. In 2025, no sampling technicians were assigned to Playas, compared with the 12 technicians employed at that location in both 2023 and 2024 (Table 2). This reduction had a direct impact on the number of trips sampled by the EMP in 2025, compared with that in previous years.

Table 2. Details of the logistical and budgetary aspects of the EMP by year of implementation				
	2022 (pilot study)	2023	2024	2025
Approved budget	US\$ 386,127.00	US\$ 770,548.00	US\$ 734,000.00	US\$ 400,000.00
Sampling technicians		Manta: 16 Playas: 12	Manta: 13 Playas: 12	Manta: 12 Playas: 0
% of time dedicated to port-sampling		100%	100%	100%
Budget categories covered by the budget		- Sampling technicians - Equipment and supplies - Data handling - Coordination and supervision		

Funding for the EMP over its four years of implementation (including the EMP pilot study in 2022) was provided through contributions from Members (42%) and surplus funds (58%).

At the conclusion of the EMP in 2025, based on the cumulative execution over the program's four-year implementation period (including the pilot study), all funds contributed by Members had been fully utilized (100%). With respect to the surplus funds, the efficient implementation of the program made it possible to achieve its objective without requiring the full use of the approved surplus allocation, resulting in an unspent surplus balance of US\$ 319,876.00.

2. THE IATTC INTEGRATED PORT-SAMPLING PROGRAM (IPSP)

Scientific research related to the development of the trip-level protocol used by the EMP identified several potential areas of improvement for the TPS protocol relevant for fleet-level catch estimation. However, those improvements involved operational requirements that could not have been met by the TPS. This led the staff to develop a new sampling protocol and a sampling program to be able to implement the necessary improvements, resulting in the IPSP. In 2025, during SAC-16 the staff presented a proposal for the establishment of the IPSP (SAC-16-05). The same year, during its 103rd meeting the Commission approved the implementation of this proposal as cited in paragraph 7 of Resolution C-25-01.

IPSP protocol: Key areas of improvement, relative to TPS protocol

- Minimizes opportunistic data collection, with random selection of trips, wells and fish within a well.
- Increases flexibility in trip and well selection by removing area and month constraints on well selection.
- Ensures representative samples from OBJ-set wells by sampling catch from the start to the end of the unloading of the well.

The IPSP began operation in January 2026. The IPSP is implementing an improved protocol for fleet-level catch estimation, producing high-quality data to support both the tropical tuna stock assessments and the IVT management measure. Consequently, the IPSP combines the objectives of the TPS and EMP into a single operational platform, while also supporting other scientific needs, such as the collection of morphometric data. The IPSP can implement the improved fleet-level catch estimation protocol thanks to these key features:

Centralized program coordination, from the IATTC La Jolla headquarters, including weekly random selection of trips, wells and fish to be sampled in all 4 ports, where the sample selection is carried out by the IPSP Coordinator, in coordination with staff in the Data Unit and the Stock Assessment Group. This centralized program coordination also facilitates direct discussion with the scientific staff on implementation issues as they arise, including the analysis of specific situations encountered in the field to support timely and informed decision-making.

In-the-field supervision, that ensures all logistical requirements are in place in order to implement the protocol according to the principle of no interference with the normal unloading process of the fleet and following the specific rules and regulations of the ports of unloading, either public or private. Achieving this requires direct and daily interaction with different stakeholders, to ensure that the sampling technicians can implement the sampling protocol across all ports, in a consistent manner, irrespective of the unloading practices of each specific port, vessel, and cannery.

Sampling technicians, fully dedicated to port-sampling, with a flexible work schedule that allows sampling to take place on any day, at any time, for long working periods, within a 40-hour-per-week work schedule.

During the first six months of implementation of the IPSP, the program sampled 175 trips. By way of comparison, on average, between 2000 and 2025 (excluding the pandemic years of 2020 – 2021), the TPS sampled 217 trips (minimum: 164; maximum: 269) during the first six months of the year. Of the 175 trips sampled by the IPSP in the first semester of 2026, 46 trips were from vessels previously sampled by the EMP, providing data for the model-based BET trip-level catch estimation for those vessels in support of the IVT management measure.

2.1. IPSP Logistical/Budgetary Aspects.

In 2025, during the 12th Meeting of the Committee on Administration and Finance (CAF) the Commission approved a budget of US\$ 460,000 for the first year of implementation of the IPSP, as proposed by the staff in document SAC-16-05. This proposal aimed to fulfill the Commission requirement of identifying cost-efficiency in the port-sampling process, by using the existing equipment, established operating practices and qualified personnel of the EMP, while integrating all sampling needs.

It is important to note that during the final stages of planning and coordination in late 2025, some adjustments were made in order to comply with recommendations made by the Commission related to the contractual situation of the IPSP staff based in Ecuador. The estimated costs for the 2026 IPSP budget were based on the operational cost of the EMP in 2025. In 2025, the EMP staff was hired directly from headquarters, with salaries being paid via international wire transfers. As these were international contracts, the fees did not include the payment of employee benefits provided under Ecuadorian regulations. In late 2025, an Ecuadorian legal firm was hired to review and provide legal advice on the contract modality that could comply with the Ecuadorian labor regulations under the particular work schedule of the sampling

technicians (every day of the week, at any hour, within a 40 hours-per-week work schedule). The IPSP is applying the contract modality suggested by the legal firm, thus complying with the Ecuadorian legal framework. The change in contract modality represented an increase in cost, due to employee benefit coverages per staff and other expenses related to Ecuadorian regulations. This increase in costs required changes in the IPSP budgetary items planned for 2026, with the biggest impact being the reduction of samplers hired, going from the proposed 13 samplers in Ecuador to 11. With the adjustments implemented, the IPSP is expected to complete 2026 with expenditures remaining within the approved budget (Table 3).

Table 3. Approved 2026 Budget (SAC-16-05), January-June 2026 Execution, and Projected Budget Execution for Year-End 2026.				
Item No.	Category	2026 Approved Budget (SAC-16-05)	Execution Ene-Jun 2026	Projection to Dec-26
1	Operational expenses	US\$ 21,209.52	US\$ 14,285.59	US\$ 29,018.21
2	Sampling technicians*	US\$ 270,166.48	US\$ 120,257.85	US\$ 255,592.96
3	Field operations manager	US\$ 32,792.00	US\$ 17,229.27	US\$ 37,652.41
4	Data handler	US\$ 16,832.00	US\$ 9,474.86	US\$ 20,501.84
5	Program coordinator	US\$ 119,000.00	US\$ 58,576.28	US\$ 116,927.06
		US\$ 460,000.00	US\$ 219,823.85	US\$ 459,692.48

* The budget proposed in document SAC-16-05 assumed the hiring of 13 sampling technicians in Ecuador at an annual unit cost of US\$ 17,453.42. Actual implementation in 2026 reflects an annual unit cost of US\$ 19,168.18, with only 11 sampling technicians hired in Ecuador.

The proposed budget for the IPSP in 2027 is US\$ 478,258.23 (Table 4), representing a 4% increase compared to 2026. This increase is primarily attributable to additional employment benefits required under Ecuadorian labor regulations beginning in an employee's second year of service.

As a result of AI tools developed by IATTC staff, the Data Handler position is proposed to be eliminated in 2027. Transcription of sampling records collected using voice recorders will instead be performed by an AI-based tool. Further information on the development of this tool is provided in Appendix 1.

The 2027 budget also includes a new budget category to cover 75% of the salary of the IATTC Human Resources Coordinator in Ecuador.

Finally, in response to the CAF's request for a projection of the Program's costs for the remaining period covered by Resolution C-25-01, the projected budget for 2028 is presented. This projection was prepared by applying a 4% increase to the projected 2027 budget, consistent with the anticipated increase in the IATTC's overall budget for 2028.

Table 4. Proposed IPSP budgeted for 2027 and projected budget for 2028			
No.	Category	2027 Proposed Budget	2028 Projected Budget
1	Operational expenses	US\$ 23,512.44	US\$ 24,452.94
2	Sampling Technicians	US\$ 278,610.00	US\$ 289,754.40
3	Field operations manager	US\$ 41,321.76	US\$ 42,974.63
4	Data handler	-	-
5	Human resources coordinator IATTC Ecuador (75%)	US\$ 16,787.79	US\$ 17,459.30

6	Program coordinator	US\$ 118,026.24	US\$ 122,747.29
		US\$ 478,258.23	US\$ 497,388.56

IPSP key services provided in support of science and management

- Provides data for estimation of fleet-level catch composition.
- Provides inputs for tropical tuna stock assessments.
- Provides data for annual statistics of EPO tuna fisheries catches and effort presented in the Annual Fisheries Status Report.
- Provides data for model-based estimation of trip-level BET catch in support of the IVT management measure.
- Provides data for updating morphometric relationships for three tropical tuna species, and development of a morphometric database for bycatch species.
- Provides a platform for training stakeholders in species identification and biological data collection.
- Can adapt to other data needs the Commission may have in support of scientific research and management.

3. COMPARATIVE ANALYSIS OF THE TPS, IPSP AND EMP

The CAF requested an analysis comparing the IPSP, TPS, and EMP. This analysis was conducted at two levels. Table 5 presents higher-level analysis with a comparison of the objectives and scope of the three sampling protocols. Table 6 presents a more detailed comparison between the TPS and the IPSP, focusing on operational and methodological aspects and costs, as well as a comparison of their support of the IVT management measure. The EMP is not included in the comparison in table 6 because, as noted above, the EMP focused on collection of data from a subset of Class-6 vessels for the estimation of trip-level BET catch. By contrast, the IPSP focuses on data for estimation of fleet-level catch composition, as was the case for the TPS, and thus their details can be compared.

Table 5. High-level comparison of TPS, IPSP, EMP			
Aspect	IPSP	TPS	EMP
Sampling approach	Integrated sampling program supporting fleet-level estimation, IVT, and other research needs.	Field office task. Fleet-level estimation.	Program specifically for trip-level catch estimation, in support of the IVT.
Fleet component sampled	Class-6 vessels	Class 1 – 6 vessels	Class-6 vessels with high historical BET catches.
Sampling protocol	Random selection of trips, wells, and fish, to minimize data collection bias.	Opportunistic due to FOS availability and vessel unloading schedules.	Random selection of wells with OBJ-set catch for specific trips.
Scientific outputs	Data for fleet-level catch composition estimation and for model-based BET trip-level catch estimation (and estimation of uncertainty).	Data for fleet-level catch composition estimation. Limited ability to estimate uncertainty.	BET trip-level catch estimation and estimation of uncertainty.

Table 6. Detailed comparison of the TPS and the IPSP.								
	TPS				IPSP			
Country	ECUADOR		MEXICO		ECUADOR		MEXICO	
Field office	Manta	Playas	Mazatlán	Manzanillo	Manta	Playas	Mazatlán	Manzanillo
OPERATIONAL ASPECTS								
Sampling								
Field office staff (FOS)	2	1	2	1	2	1	2	1
% FOS time for port-sampling	20%	40%	40%	30%	-	-	25%	-
Sampling technicians	-	-	-	-	7	4	2	-
% time sampling technicians dedicate to port-sampling	-	-	-	-	100%	100%	100%	-
SAMPLING SELECTION								
Who is responsible for the selection of trips, wells and fish to sample?	FOS responsible for selection of trips, wells and fish to sample, subject to their availability in port (field office work schedule) and the vessels unloading schedule.				Coordinator generates the random selection of trips, wells and fish to sample in coordination with SAP staff. Sampling is independent of field office working hours and is adapted to the vessels' unloading schedules.			
Who oversees the implementation of port-sampling procedures in all four ports?	- Supervision by staff responsible for Field Offices, occurring independently in each office. - Support from Data Unit staff				- A coordinator from the Data Unit in La Jolla supervises the program, allowing: - Standardization of port-sampling procedures in the different ports of the region, while also adapting to particularities of each port. - Development of tools and procedures to improve the implementation of protocols in all four ports.			

Who ensures the fulfillment of logistical in-the-field requirements for port-sampling?	Since the TPS protocol was opportunistic and field office staff could only dedicate a few hours per day to port-sampling within a fixed work-schedule, the TPS logistical needs were minimal.	- A supervisor in the major port of unloading provides an in-the-field presence and coordinates day-to-day logistics for all 4 ports, adapting to port and vessel unloading schedules to obtain the coordinator-directed samples. The supervisor also: - Coordinates the port-sampling activities of student interns. - Coordinates with authorities and the industry regarding capacity building activities.
BUDGET		
Does it have a specific budgetary component within the IATTC budget?	No	Yes
Estimated cost of the activity	US\$ 63,000 (2025)	US\$ 478,258.23 (2027)
Items included in the budget	Salaries for the time FOS members conducted port-sampling (based on the full salary paid to each field office staff member, multiplied by the percentage of their time that they dedicated to collecting port-sampling data).	1. Total salaries (100%) of sampling technicians 2. Operational costs (equipment, materials, insurance, permits). 3. Coordination and supervision. 4. Human resource related costs.
IVT SUPPORT		
Is the contribution to the IVT already covered within the cost?	No	Yes
If not, what is the estimated additional cost of including all operational needs to support the IVT?	US\$ 430,000.00	N/A
FLEET-LEVEL CATCH ESTIMATION PROTOCOL		
Random selection of trips, wells and fish?	No	Yes

Can a reliable measure of uncertainty on the estimates be obtained?	No	Yes
Start-to-end within-well sampling of OBJ-set wells?	No	Yes
Complies with recommendations made by the IPSP External Review on the sampling protocol?	No	Yes
Adaptability. Is the protocol flexible enough to adapt to potential changes in catch estimation processes and stock assessment needs?	No	Yes
MORPHOMETRIC PROTOCOL		
Sampling includes the collection of morphometric data for the three tropical tuna species and prioritized bycatch species.	No	Yes

APPENDIX 1. Report On The Development Status Of The WhisperIPS System For Processing Data Obtained From Audio Recordings.

Summary

WhisperIPS is an artificial intelligence tool based on the procedures, experience, and data from the Integrated Port Sampling Program (IPSP). Its function is to generate a structured initial version of the sampling records contained in audio format and to facilitate their review. The tool does not replace human verification or institutional controls: it organizes the information, flags potential inconsistencies, and leaves final decisions to the discretion of the reviewing staff.

The pilot evaluation of the tool comprised seven complete processing runs, involving 113 audio files corresponding to 113 sampling units. The objective was to examine the tool's initial performance under regular operational conditions and to determine what proportion of the records could be retained without changes. WhisperIPS generated 3,114 records. Of these, 3,000 were retained unchanged, 62 were corrected, and 52 were deleted during the review. In addition, staff added 155 records that had not been automatically detected, resulting in a final revised output of 3,217 records. In plain terms, 96.34% of the records generated by the tool were kept without any edit. Almost all of the tool's detections were valid — only about 1.7% had to be deleted (precision: 98.33%) — and the tool captured most of the records on its own, with staff adding roughly 5% it had missed (recall/sensitivity: 95.18%). Combined, these two measures give an overall balanced score of 96.73% (F1).

A preliminary comparison of processing time was also carried out, based on a single well sampled, processed under each method, the traditional process and the WhisperIPS process. In the traditional case, the process took approximately 2 hours and 30 minutes. With WhisperIPS, the same process took 24 minutes. These figures are indicative and do not yet constitute a definitive estimate of time savings.

Preliminary results show that WhisperIPS can reduce the workload associated with manual listening and transcription, allowing staff to focus their attention on records that require verification. Human review remains essential for correcting, deleting, or adding information. Before broader implementation is considered, further testing, comparable time measurements, process documentation, and validation of the system across different operational scenarios will be carried out.

1. Introduction

Part of the information generated during the activities of the Integrated Port Sampling Program (IPSP) is collected via audio recordings. These audio recordings contain sampling data including species identification and length or weight of fish sampled. Under the traditional process, staff listen to the audio recordings, manually transcribe the data, and carry out successive reviews before migrating the information into the Commission's permanent database. This traditional process of data capture and review is a time-consuming and cognitively demanding task, with the requirement of sustained attention due to factors such as background noise, change in volume, pauses, repetitions, and long sequences of numerical values. These are precisely the conditions under which the manual transcription of numbers is most prone to error, such as the loss, addition, or inversion of digits. Each recording therefore requires substantial time and repeated review to reach the level of reliability the database demands. It is this effort that WhisperIPS intends to address: the hours of concentrated listening and the risk of transcription error. By reducing that effort, the tool aims to free staff to focus their attention on the review and verification steps where their judgment adds the most value.

WhisperIPS was developed to support the IPSP's workflow, reduce the effort associated with listening and manual transcription, and facilitate the review of records, without replacing human validation or institutional controls. The design of WhisperIPS is based on program procedures, staff experience, data structure, and the characteristics of operational audio recordings. Therefore, the tool is closely linked to the IPSP and must be evaluated within that context. Additionally, the development of WhisperIPS also generates technical knowledge and validation practices that could be applied to other institutional initiatives for the development of artificial intelligence tools.

This report responds to the recommendation made during the June 2026 intersessional meeting of the Administration and Finance Committee (CAF), at which a progress report on WhisperIPS was requested. Its purpose is to provide an explanation of the observed operational efficiency, the level of consistency in the generated records, the human controls that are in place, and the aspects that must be considered before gradually expanding the use of the tool toward its full implementation planned for 2027.

1.1. Key Concepts

Table 1: Terms Used in the Report

Term	Meaning
Sampling record	Information pertaining to a sampled fish, primarily species, length or weight.
Initial output	The first version of the records generated by WhisperIPS prior to human review.
Reviewed Output	Set of records after human review.
Validation rules	Checks that flag data or patterns that may require the attention of reviewers.

2. Comparison of Processes

2.1. Traditional Process

The traditional process requires listening to all audio recordings and manually transcribing the sampling records. This is followed by the review of the data before the information is migrated to the Commission's permanent database. This approach devotes a significant amount of time to listening, transcribing, and repetitive verifying data.

2.2. WhisperIPS Process

WhisperIPS processes the audio recordings and organizes the sampling information into structured records, while also identifying patterns that may indicate errors and require the attention of the reviewing staff. The tool allows users to locate the audio segment associated with each sampling record and play it back to facilitate the verification process in order to confirm, correct, delete, or add records.

Experience with AI-assisted processes highlights the importance of maintaining adequate human oversight, especially when system errors can influence human decisions. In WhisperIPS, artificial intelligence performs the initial data capture and supports the review, while the validation of information and final decisions remain under human control.

Table 2: Key Differences Between the Two Processes

Stage	Traditional process	WhisperIPS process
Audio processing	Human listening of 100% of the recordings.	Automatic processing of 100% of recordings.
Record generation	Manual capture of 100% of the information.	Automatic generation of an initial structured output.
Data review	Comprehensive review of all records and associated audio files.	Review supported by automatic alerts and direct access to the related audio clip.

2.3. Preliminary Timelines

A comparison was made between the time taken to process data from audios of a sampled well using both processes. In the case of the traditional process, data capture and review took approximately 2 hours and 30 minutes; while with WhisperIPS the same process took approximately 24 minutes. This preliminary comparison shows a significant time-related operational difference when applying the WhisperIPS process (Figure 1). Further analysis will be carried out and presented at SAC-18.

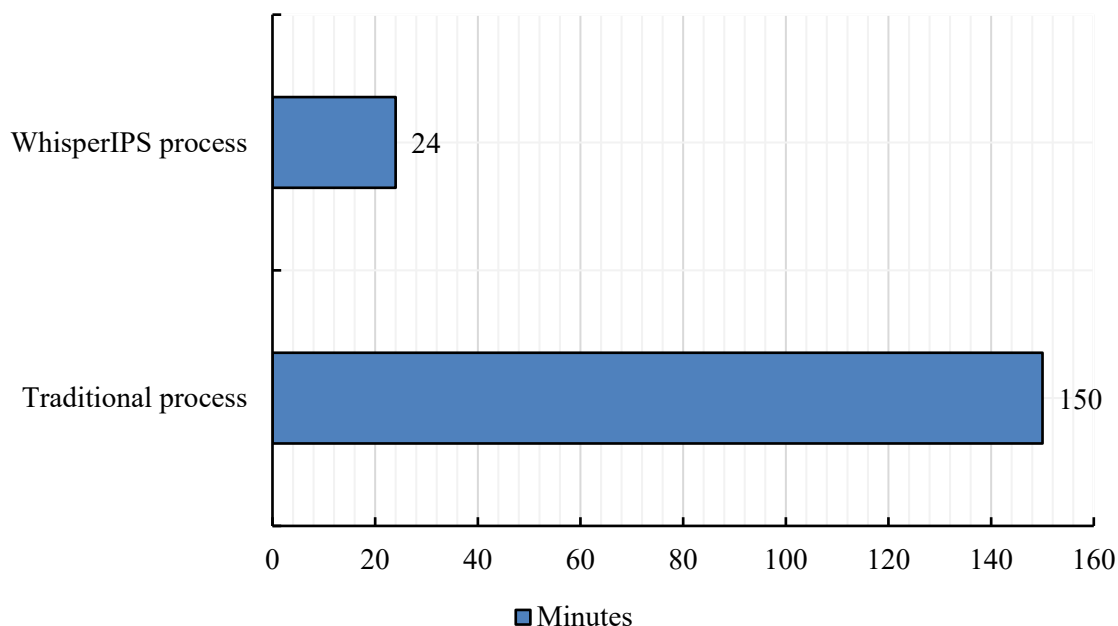


Figure 1: Visual comparison of preliminary times between the Traditional process and the WhisperIPS process.

3. Pilot Evaluation of WhisperIPS.

A preliminary evaluation of WhisperIPS was made using seven complete processing runs, involving 113 audio files, each corresponding to a sampling unit. A processing run refers to the group of audio files that compile the information of a single sampled well; each audio file contains the information of a sampling unit, where a sampling unit is a container full of fish unloaded from the well with each fish identified by species and measured. The initial output generated by WhisperIPS was compared with the output reviewed by staff.

To facilitate interpretation of the evaluation, the sampling records were organized into four categories:

1. sampling records generated that were retained without changes;
2. sampling records generated that required correction;
3. incorrectly generated sampling records that were deleted;
4. sampling records not detected by WhisperIPS that were added during the review.

4. Results

4.1. Sampling Record Disposition

WhisperIPS generated 3,114 sampling records in the initial output. Of these, 3,000 were retained without change, 62 were corrected, and 52 were deleted. Additionally, during the review 155 records that had not been automatically detected were added. With these additions, the reviewed output consisted of 3,217 records (Figure 2). Human intervention was limited to a small share of the output, allowing staff to shift their effort from transcription to

verifying the data.

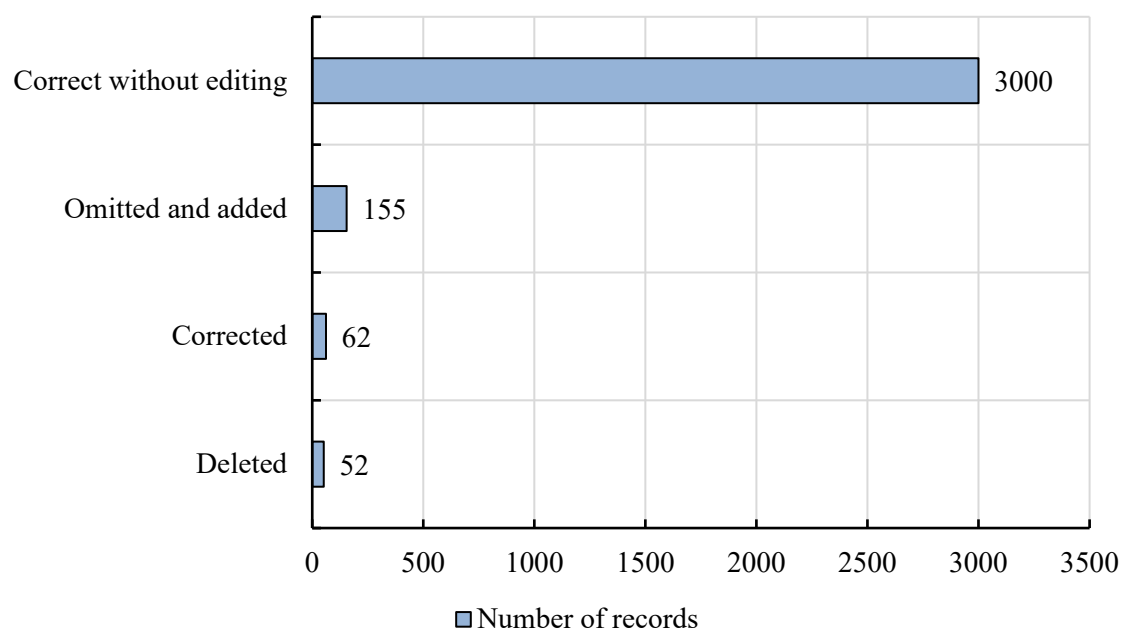


Figure 2: Distribution of sampling records by action required during the review

4.2. Performance Metrics

The precision of 98.33% indicates that nearly all records generated by WhisperIPS were valid. The sensitivity of 95.18% shows that the tool automatically detected most of the records that should have been included in the final result. Finally, the combined F1 is a metric that is widely used to evaluate performance of classification and information extraction systems. It combines two key aspects into a single value: the proportion of records generated correctly and the ability to identify all relevant information while minimizing omissions. In this case, the F1 score was 96.73% which reflects a high level of performance in both aspects.

5. Preliminary Conclusions And Next Steps

A preliminary comparison of processing times shows a substantial operational difference between the traditional process, which took approximately 2 hours and 30 minutes, and the WhisperIPS process with a processing time of 24 minutes while maintaining very high levels of precision and sensitivity while capturing the information.

The preliminary results shown on this report demonstrate that the implementation of WhisperIPS could improve the operational efficiency of the IPSP by reducing the staff effort in routine data capture and review, while maintaining the human oversight necessary to ensure data quality. By automating repetitive transcription tasks, the tool enables staff to focus on validation of the data, improving the allocation of the IPSP resources without compromising the reliability of the data.

More broadly, WhisperIPS represents an initial step in the Commission's development and application of artificial intelligence technologies, demonstrating how AI can be integrated into institutional processes while preserving established standards of oversight, validation and quality control.

The next steps include expanding the number of validation tests, conducting controlled comparisons of processing times, documenting the complete workflow, from record generation to integration into the Commission's permanent database, and continuing to refine the validation rules. Subject to the satisfactory completion of these activities, WhisperIPS is expected to be ready for full implementation beginning in 2027.