CERTIFICATION & INSPECTION

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CORSIA Greenhouse Gas Verification Procedure

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1. PURPOSE

The purpose of this procedure is to define the procedures, responsible individuals and records to be kept, from the bidding stage to the report submission and after, for the verification of greenhouse gas emissions derived from the aviation activities within the scope of CORSIA.

2. SCOPE

This Procedure covers the activities of verification and reporting of the greenhouse gas emission arising from domestic and international flights of the aircraft operators within the scope of Regulation on Monitoring of Greenhouse Gas Emissions deriving from CORSIA and DGCA CAR-16-4 Aviation Activities.

3. DEFINITIONS

EF : Emission Factor
NCD : Net Calorific Value
ACARS : Aircraft Communications Addressing and Reporting System
AOC : Air Operator's Certificate
CAEP : Committee on Aviation Environmental Protection
CERT : CO2 Estimation and Reporting Tool
CO2 : Carbon Dioxide
CO2e : Carbon Dioxide Equivalent
CORSIA : Carbon Offsetting and Reduction Scheme for International Aviation
MOEU : Ministry of Environment and Urbanization
DGOEM : Directorate General of Environmental Management
ERF : Emission Reduction Factor
GHG : Greenhouse Gases
IAF : International Accreditation Forum
ICAO : International Civil Aviation Organization,
IEC : International Electrotechnical Commission
ISO : International Standardization Organization
MJ : Megajoules
MRV : Monitoring, Reporting and Verification
OGF : Operator Growth Factor
RTK : Revenue Ton Kilometers
SARPs : ICAO Standards and Recommended Practices
SGF : Sectoral Growth Factor
DGCA : Directorate General of Civil Aviation
TÜRKAK : Turkish Accreditation Agency
UNFCCC : United Nations Framework Convention on Climate Change

Verification risk: As a function of internal risk, control risk and detection risk, the risk of the presentation of an unsuitable verification opinion by the verifier where the greenhouse gas emission report contains material false reporting,

Internal risk: The sensitivity of a parameter in the greenhouse gas emission report to material errors, which may occur alone or in combination with other false reportings before the impact of any control activity is taken into account,

Detection risk: Risk of the verifier not being able to detect a material false reporting,

Control risk: Sensitivity of a parameter in the greenhouse gas emission report to significant errors that were not prevented or detected and corrected by the control system at a certain time, which may occur alone or in combination with other false reportings,

Effect: The size of the error that the activities related to greenhouse gas emissions will cause on the Greenhouse Gas Emission report when it takes place

Confidence level: The degree of confidence it gives for the verification report according to the requirements of the verification task to reduce the verification risk,

Control environment: The environment in which the internal control system operates and the activities carried out by the facility management to raise awareness about this internal control system.

Control activities: Operations or measures taken by the enterprise to reduce internal risks,

Control system: Risk assessment established, documented, implemented and maintained by the enterprise within the scope of the Monitoring and Reporting Communique, and all control activities and their management,

Possibility: Frequency of occurrence of its dimensions resulting from activities that may interact with the calculation of greenhouse gas emissions,

Materiality level: Threshold value that ensures that false reportings, alone or together with other false reportings, are considered significant by the verifier,

Important false reportings: False reporting that exceeds the materiality level alone or together with other false reportings,

Reasonable confidence: A high but imprecise level of confidence evaluated as favorable that the verified greenhouse gas emission report does not contain material false reporting,

Field: Where relevant data and information are controlled and stored, and the monitoring process is defined and managed,

Accreditation: Evaluation of the verifier which will carry out the verification activities stipulated in this regulation, according to nationally and internationally accepted technical criteria by the national accreditation body, approval of its adequacy and inspection at regular intervals.

Great Circle Distance: The closest distance rounded to the nearest kilometer, measured between the departure and arriving airports, on the Earth's surface, modeled in accordance with the world Geodetic system 1984 (WGS84),

CORSIA: *(Carbon Offsetting and Reduction Scheme for International Aviation)*

CORSIA low carbon aviation fuel: Fossil-based aviation fuel that meets the Corsia Sustainability Criteria within the scope of this directive

CORSIA sustainable aviation fuel: Aviation fuel produced from renewable or waste that meets the CORSIA Sustainability Criteria within the scope of this directive

CORSIA-eligible fuels: CORSIA sustainable aviation fuel or CORSIA low carbon aviation fuel that the aircraft operator can use to reduce offset requirements.

State pair: Two groups of contracting states, one being the Contracting State of departure or its territory, and the other the Contracting State of arrival or its territory.

Verification team: A single verification officer; also qualified as a group of verification officer or team leader, performing Emission Unit Cancellation Reports' verification, serving within Verifier Body, can also be supported by technical experts where Emission Reports are necessary.

Verifying Body: Legal entity that performs verification of Emission Reports and, where necessary, Emissions Unit Cancellation Reports as an accredited independent third party.

Verification report: A document drafted by the Verifying Body, containing the verification statement and necessary supporting information.

Conversion process: A type of technology used to convert raw materials into aviation fuel

Conversion manner: A certain combination of raw material and conversion process, used for the production of aviation fuel

Emission: Air pollutants emitted into the atmosphere by combustion of fuel and the like.

Emission unit: Unit equal to 1 metric tonne of carbon dioxide emission reduction achieved through the implementation of projects through lending programs and varios mechanisms, programs and projects.

Emissions report: The report containing annual CO2 emissions, prepared within the framework of the emission monitoring plan approved by GDCA and GDCA regulations.

Raw material: A type of crude raw material used for the production of alternative aircraft fuel

Air Operator Certificate (AOC): A certificate that allows an operator to carry out specified commercial air transportation activities

Airport pair: Two groups of airports, one of departure and the other of arrival

Airport: A designated area on land or water that is intended to be used in whole or in part for the arrival, departure and surface activity of aircrafts, including any building, facility and equipment

ICAO: International Civil Aviation Organization

ICAO CORSIA website: The website created by ICAO which is accessible from https://www.icao.int/environmental- protection/CORSIA/Pages/default.aspx address, containing up-to-date information, ICAO documents and tools that the aircraft operator will use in transactions to be fulfilled within the framework of its obligations under this instruction.

Reporting period: The period from January 1 to December 31 in a given year during which an airplane operator or DGCA reports the required flight information in terms of flight departure time. (UTC)

Verification of the report: The process of independent and systematic evaluation of emission reports and, where necessary, the revocation of adequately documented reports of appropriate emission units.

Aircraft operator: A person, organization or enterprise that is involved in or proposes to be involved in the operation of aircraft.

Aircraft owner: The person(s), organization(s) or enterprise(s) identified by Article 4 (Owner's name) and Article 5 (Owner's address) in an aircraft's registration certificate.

Aircraft: A heavier-than-air powered aircraft supported during flight by the dynamic reaction of the air to lifting surfaces that remain stable under certain flight conditions.

Flight plan: Specific information provided to air traffic services units regarding the intended flight or part of an aircraft's flight.

National flight: An aircraft operation that departs from an airport located within the borders of Turkey and lands at an airport located within the borders of Turkey.

International flight: The operation of an aircraft departing from any airport or territory of one Contracting State and landing at any airport or territory of another Contracting State

Fuel recharge: Fuel measure provided by the fuel supplier, as documented in fuel delivery notes or invoices regarding each flight.

Authorization Certificate: Written authorization by General Directorate that allows verifiers to provide verification services in accordance with the provisions of the Regulation on Monitoring Greenhouse Gas Emissions Generated from Aviation Activities.

4. REFERENCE DOCUMENTS

4.1. Forms

• Corsia Verification Application Form	QSI-PRO.15 / F01
• Corsia Verification Agreement	QSI-PRO.15 / F02
• Corsia Question List	QSI-PRO.15 / F03
• Corsia Strategic Analysis Report	QSI-PRO.15 / F04
• Corsia Verification Report	QSI-PRO.15 / F05
• Corsia Independent Revision Form	QSI-PRO.15 / F06

4.2. Other Documents

• Feedback Form	QSI-PRO.14/F03
• Opening Meeting – Closing Meeting and Interviewee List	QSI-PRO.14/F08
• Additional Information Document Request Form	QSI-PRO.14/F06
• Visit Notification Form	QSI-PRO.14/F11
• Information Certification Request Form	QSI-PRO.14/F17
• Data Flowchart Form	QSI-PRO.14/F21
• Strategic Analysis Field Visit Form	QSI-PRO.14/F22
• Verification Plan	QSI-PRO.14/F24
• Verification Program	QSI-PRO.14/F25
• Sampling Plan	QSI-PRO.14/F26
• Risk Analysis& Test Plan	QSI-PRO.14/F27
• Logo, Document and Report Usage Instruction	QSI-TL.05
• Verification Period and Fee Calculation Instruction	QSI-TL.07
• GHG Risk Analaysis Instruction	QSI-TL.10
• GHG Data Sampling Instruction	QSI-TL.11
• Corsia Verification Instruction	QSI-TL.14
• GHGV Sampling Table	TBL.13

- SHY-16-4 Regulation on Monitoring of Greenhouse Gas Emissions from Aviation Activities
- SHT-CORSIA Carbon Offset and Reduction Scheme Implementation Instruction
- ICAO Annex 16 – Environmental Protection – Volume IV, Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)
- ICAO Doc 9501 – Environmental Technical Manal – Environmental Technical Manual
- CORSIA Chapter 3 State Pairs (CORSIA STATES for CHAPTER 3 STATE PAIRS) (https://www.icao.int/environmental-protection/CORSIA/Pages/state-pairs.aspx)
- ICAO CORSIA CO2 Estimating and Reporting Tool (CERT)

- CORSIA Sustainable Aviation Fuels (CORSIA Sustainable Aviation Fuels)https://www.icao.int/environmental-protection/corsıa/pages/corsıa-eligible-fuels.aspx)
- CORSIA Central Registry System (CORSIA Central Registry) (CCR) (https://www.icao.int/environmental-protection/corsıa/pages/ccr.aspx)

5. APPLICATION

5.1. Contract Process

5.1.1. *Activities to be Done Before the Offer*

Verification requests are received by the Planning Officer along with the Corsia Verification Application Form. If deemed necessary, additional information and documents can be requested from the facility before the offer or a site visit can be made to the facility.

Application Evaluation;

All applications are evaluated using the QSIPRO software by the Planning Officer and/or the lead verifier/s assigned in the relevant scope.

a- ***Eligibility Of Accreditation Scope;*** For the applications received, it is first checked through the QSIPRO software whether the business is within our scope of accreditation. Applications that are not within the scope of our authority are not accepted as they cannot be entered into the QSIPRO software.

b- ***Pre-Contract Risk Analysis;*** Possible risks that verification activity may bring (such as language, regional conditions, security conditions, customer financial risk, etc.) are determined and the identified risks are taken into account while giving the offer.

c- ***Confirmation Of Impartiality;*** An airplane operator that is in violation of the principles of impartiality and independence shall not be made a bid. According to the Impartiality Procedure, whether there is any conflict of interest that threatens impartiality and confidentiality, and the status of all topics listed below in terms of impartiality and independence are reviewed with the interests entered into the QSIPRO software by all full and part-time personnel within the QSIPRO software.

✓ QSI must be independent of the enterprise and impartial in carrying out verification activities.

✓ QSI and any unit within QSI should not be any airplane operator, owned by any airplane operator or be in the possession of any airplane operator.

✓ QSI and any unit within the QSI should be independent of organizations that trade emission units.

✓ The relationship between QSI and the aircraft operator should not be based on joint tenancy, joint governance, joint management or personnel, shared resources, joint financial assets and joint contracts or marketing.

✓ QSI, should not take over any delegated missions from the airplane operator with respect to the preparation of the Emissions Monitoring Plan, Emissions Report (including monitoring fuel use and calculating CO2 emissions).

✓ If the personnel working within the scope of the Communique has had a commercial relationship with the aircraft operator mentioned above in the last 3 (three) years, or if there is an actual or potential conflict of interest, this personnel cannot carry out the verification activities of the applicant aircraft operator.

d- ***Confirmation Of Strategic Analysis Requirement;*** If verification has been made with the facility in the last 2 (two) years, it is decided whether the strategic analysis will be carried out in the field, according to the information received from the facility (facility category, activity limits, monitoring methods, changes in large resource flows) with the **Approved Monitoring Plan.**

e- ***Calculation of Verification Periods;*** Verification periods **are calculated according to the Verification Period and Fee Calculation Instruction.** However, these periods may be increased at any stage of the verification process, taking into account the following situations.

✓ The information in the approved monitoring plan and the complexity of the plan,

✓ The scope and complexity of the facility's data flow activities and control system,

✓ Location and complexity of information and data on greenhouse gas emissions,

f- ***Confirmation of Competence and Capacity;*** From the QSIPRO software Application Review tab, whether there is a lead verifier/verifier assigned in the relevant scope, a Technical Expert with technical competence assigned in the relevant scope, and an independent reviewer separate from the verification team, if any, the occupancy rates of these personnel and the day capacity of the lead verifiers are checked.

Sampling is not done in enterprises with more than one facility, each facility is evaluated separately, and the day calculation is made separately.

QSI does not undertake any verification service that it believes cannot be concluded with its organization, personnel, or professional expertise.

After the application evaluation process, the application is either accepted or rejected. When the application is rejected, the reasons for the rejection are clearly communicated to the customer by email.

5.1.3 Making an Offer

For accepted applications, the following steps are followed.

a- ***Pricing;*** All fees related to verification are calculated by the Planning Officer according to the **Verification Period and Fee Calculation Instructions.**

b- ***Offer Preparing;*** Corsia Verification Agreement, which includes the details of all steps (duration, price…) by the Planning Officer, is prepared in the QSIPRO software and sent to the customer in written or electronic form. In projects with tender, offers are made in accordance with the offer format given by the customer.

c- ***Offer Tracking;*** The follow-up of the submitted bids is done through QSIPRO. The approval status of the offers is constantly kept up to date in the program.

5.1.4 Contract Signing

The signing of the offer by the business means that there is a full agreement between parties on the scope and content of the verification activity to be performed and it replaces the contract.

The Planning Officer reviews whether the conditions specified in the proposal are still valid, and whether the resources required to carry out the verification are still appropriate. After the revisions, if a situation arises between the Corsia Verification Application Form/Monitoring Plan and the approved offer, which requires a change in the offer, the offer is renewed and submitted to the customer's approval again.

At least 1 (one) of the original copies with wet-ink signatures of the Greenhouse Gas Verification Agreement approved by the customer and the QSI General Manager is kept by the Planning Officer as a quality record.

In projects with tender opened by State Institutions, the technical and administrative conditions of the tender are valid and the printed contracts of the contracting authority are used.

The minimum content of the agreement to be signed and the explanation regarding this content are as follows:

a) Verification scope, verification objectives, assurance level, materiality threshold and relevant verification standards (ISO 14065, ISO 14064-3, this Instruction and Environmental Technical Manual);

b) Allocated time for verification; It should be stated in the contract that how many man-days will the verification be completed in total.

c) Flexibility to change the allocated time, if necessary, due to the findings during verification; A statement explaining that the time can be changed if the verification does not end within the period written in the agreement should be included in the agreement.

d) Conditions that must be met for verification to be occur, such as access to all relevant documents, personnel and facilities; The verifier will need access to the necessary data, personnel and facilities to ensure that verification can be performed at a reasonable level of confidence. The conditions for this access should be included in the contract.

e) The aircraft operator's obligation to recognize the inspection as a possible witness inspection by the national accreditation body's assessors; The contract should include conditions for additional persons (accreditation body auditors, General Directorate, Ministry of Environment and Urbanization…) who may participate in the verification process as witnesses may accompany the verification as witnesses and the necessary permits for this are given by the aircraft operator should be included in the contract.

f) The obligation of the aircraft operator to authorize the submission of the Emission Report and Verification Report to the General Directorate by the Verifier (It must be included in the agreement that the Emission Report and Verification Report will be submitted to the General Directorate by the Verifier and that the aircraft operator authorizes the Verifier for his process)

g) Assurance of responsibility. (Judgements on how to procure loss in the event of the aircraft operator suffering a loss caused by faulty or incomplete verification of the verifier must be included in the agreement)

5.1.5 Procurement Of Information Certification

After approval of the Agreement, at minimum, the following information and certificates are requested by the Planning Officer via the QSIPRO software through **Information Certification Request Form.**

a) The latest approved version of the monitoring plan,
b) Definition of data flow activities of the enterprise,
c) Procedures included in the monitoring plan,
d) Aircraft Operator's greenhouse gas emissions report, if any,
e) If verification activity was carried out with a different verifier in the previous year, the verification report of the year in question

The Planning Officer electronically places the information and documents received from the facility in the relevant directory in the file of the facility and saves the necessary information in the relevant areas of the QSIPRO software.

5.2. Strategic Analysis Process

5.2.1. Assigning a Verification Team

The verification team consists of at least one lead verifier and, if necessary, a sufficient number of verifiers and technical experts. If the lead verifier or verifier is also appointed as a technical competent person in the relevant scope, there is no need to include an additional technical expert in the team. The person appointed as a Technical Competent Person, during strategic analysis or process analysis field visit, must be on the field for as long as the time specified **in the Calculation of Verification Time and Fee Directive** .

When the team is appointed, initially lead verifier is determined by the Planning Officer through QSIPRO software by evaluating criteria such as verification experience as the lead verifier, and the status of impartiality. For part-time lead verifiers, before the appointment, the Planning Officer contacts the relevant Lead Verifier and verbally confirms the appointment process. After the confirmation received, the relevant lead verifier is assigned to the project as the lead verifier via QSIPRO by the Planning officer. With the assignment, the Lead Verifier can access all records, information and documents, including past verification registrations of the facility through QSIPRO.

In the second step, the person (who can also be appointed lead verifier) who will perform the strategic analysis coordinately with the Planning Officer and the Lead Verifier is determined. The personnel who will carry out the strategic analysis must be a Lead Verifier or Verifier assigned in the relevant scope.

In case the person designated for strategic analysis is a part-time verifier other than the Lead Verifier assigned to the facility, the Planning Officer contacts the relevant Verifier before the assignment process and verbally confirms the assignment. After the confirmation received, Strategic Analysis planning is made through QSIPRO by the Planning Officer and the strategic analysis dates are registered in the QSIPRO software as Strategic Analysis Field or Strategic Analysis Office. With the registration made, the Verifier can access all records, informations and documents, including the historical verification of the facility, through QSIPRO.

After strategic analysis, changes can be made in the verification team before the process analysis, provided that the team's competence is maintained, depending on the following criteria;

a) Verification objectives, scope, criteria and estimated verification period,
b) Greenhouse Gas Verification Program Requirements,
c) The overall competence of the required verification team to achieve the verification objectives,
d) Language and culture;

If the previously assigned verification team changes, information about the new team along with **Visit Notification Form** prepared via QSIPRO transmitted to the facility prior to the field visit, and approval is obtained for the team.

The verification team can be supported by translators and interpreters. Where translators or interpreters are used, it is ensured that they are selected in such a way that they do not have unfair effects on verification.

Trainee verifiers can be participants in the verification team, provided that a lead verifier is appointed as an assessor. The evaluator is empowered to take over the ultimate responsibility and duties for training findings and activities.

The facility is asked in writing and confirmed by the Planning Officer whether the verification team assigned with the Visit Notification Forms has any conflict of interest with the facility. Whether the members of the verification team have any conflict of interest with the facility is confirmed by the Planning Officer verbally before the appointment and from the existing auditor records. In addition, since all verifiers can see the facilities assigned to them instantly in the QSIPRO software , they have to declarewhether there is a conflict of interest with the facility, in accordance with the contract they have made with QSI.

5.2.2. Execution of Strategic Analysis

Strategic analysis is performed under the supervision of the Lead Verifier including the office work and site visit to understand the activities carried out by the facility, to evaluate the competence of the verification team, evaluate the appropriateness of the verification period specified in the contract, and collect and review the information and documents necessary to conduct the risk analysis.

The planning Officer makes the planning of the site visit by pre-communicating the person/team and the facility that will conduct the strategic analysis site visit. For the finalized visit date, he/she prepares the **Visit Notification Form** via QSIPRO, and e-mails to the facility for approval.

This notice includes visit dates, as well as information about whether the client organization objects to the assignment of a specific verifier or technical expert, or whether there is a conflict of interest with any of the team members that could affect impartiality. It is done in such a way as to allow sufficient time for the verification body to rebuild the team in response to the valid objection. This notification also includes granting the verification team to access to all sites related to the verification process.

If the facility does not approve the verification team, it provides the reason for disapproval in written form. The objection is examined by the Verification Manager and if the justification is found appropriate the verification team / member is replaced.

The information and findings obtained during the strategic analysis are recorded in the Corsia Strategic Analysis Report by the person/team carrying out the strategic analysis site visit, and the people interviewed during the visit are recorded in the Strategic Analysis Site Visit Form.

During the visit and office work, the following points are evaluated at a minimum;

a-Aircraft Operator Scope Control

In the first phase of Strategic Analysis, it is first of all to check whether the Aircraft Opeator is within the scope of the Regulation in terms of the applicability of the MRV requirements. In other words, it should be checked whether it exceeds the threshold CO2 emission amount determined for both domestic and international flights within the scope of the Regulation for monitoring, reporting and verification requirements.

Since the calculation of annual CO2 emissions depends on the amount of fuel consumed in flights, whether the threshold values specified in the Regulation are exceeded can be determined approximately according to the amount of fuel consumed annually. The aircraft operator uses one of the following methods to estimate whether the thresholds will be exceeded in the first year of implementation or at the beginning of compliance periods;

- Fuel invoices for the previous year are accumulated, and the total annual fuel consumption total is obtained from these bills. Estimates annual CO2 emissions by multiplying the total annual fuel consumption by the emission factor, or

- Estimates annual CO2 emissions by using ICAO CO2 Estimation and Reporting Tool, ICAO CORSIA CERT tool.

The verification team checks the suitability of the estimate, regardless of which method is used.

The aircraft operator can make an appropriate estimate using other data arrays for different time periods.

Example: If he/she has full and continuous data of 12 months of ata over the period of 2017-2018, this data can be used to estimate CO2 emissions in 2019.

In case of he/she has monitored and reported fuel use and/or CO2 emissions regarding the last years and the relevant one-year period (for example, from 1 July 2017 to 30 June 2018), the total emission value for that period may be the basis for determining whether that airplane operator is covered.

However, if the aircraft operator does not have full year data or anticipates that her/his traffic or emissions will change significantly in 2019, the aircraft operator in question should consider this issue. If the aircraft operator is unsure, the aircraft operator in question should contact DGCA and determine a joint decision with DGCA on the course to be followed.

National Flights:

It is the operation of an aircraft (including aircraft leased by the aircraft operator) that departs from an airport in Turkey and lands at an airport within the borders of Turkey. The aircraft operator should include all National flights, except for the exemptions contained in Article 2.2 of the Aircraft Operator Guide, in calculations to determine whether they are in the scope of MRV. (Category C (1) in Table 2)

International Flights:

The operation of an aircraft (including aircraft rented by the aircraft operator) departing from any airport or territory of a State party to the Chicago Convention and landing at any airport or territory of another State Party to the Chicago Convention. Flights within the scope of the MRV are determined by taking into account the criteria for flights between State Pairs (category a (1) in Table 2) in the ICAO CORSIA list of Member States. The aircraft operator must evaluate its flights, apart from exemptions in Article 2.2 of the Air Operator Guide, in accordance with Article 2.1.1. Flights that are in the scope after the assesment must be included in the calculations to determine whether the aircraft operator is in the scope of MRV.

Only the flights operated between state pairs listed in the ICAO Member States list are subject to monitoring, reporting and verification requirements under the heading of " International Flights" .

State Pair: Defined as a group of states containing two different states or their territories that are parties to the Chicago Convention, one of which is departure and the other is arrival

International Flights That are in the Scope of MRV:

The following steps should be applied to determine whether a flight is an international flight subject to monitoring, reporting and verification requirements:

1. The departure and arrival airports of the flight are determined,
2. It is determined which state acknowledged as the owner of the departure and arrival airports before Turkey,

3. It is determined whether the State officially recognized by Turkey is included in the ICAO Member States List,

4. If ***both countries*** is included in the ICAO Member States List, the flight in question is subject to the monitoring, reporting and verification requirements.

ICAO Member States List as of 1/10/2019 (included in the procedure appendix))

National and international Flights That are not in the Scope of MRV

For ease of implementation, Carbon Offsetting and Reduction Scheme for International Aviation Implementation Directive CADs (Civil Aviation Directives)-CORSIA does not apply to low aviation activities. In this context, the following National and International flights are not included in the calculations made to determine whether the aircraft operator is in the scope of MRV:

- Flights of aircraft with a maximum take-off weight equal to or less than 5,700 kg
- Flights for humanitarian, medical and firefighting purposes
- Military, customs and other public service flights performed by government aircraft

Determination of Whether the Aircraft Operator is Included in the Scope of MRV

As a result of the flights evaluated by the aircraft operators in accordance with Articles 2.1 and 2.2, including the aircraft they have leased;

According to the regulation, aircraft operators providing **at least one** of the following conditions are required to meet monitoring, reporting and verification requirements:

- Aircraft operators that produce carbon dioxide emissions equal to or greater than 10,000 tons per year due to the use of aircraft with a certified maximum takeoff weight of more than 5,700 kg **on international flights**, or
- aircraft operators that produce an annual emission of equal to or more than 5,000 tons of carbon dioxide due to the use of aircraft with a certified maximum takeoff weight of more than 5,700 kg **on national flights**.

Decision tree in Figure 2 and 4, threshold values in table 1 and Sample Application in 1 are given for aircraft operators to decide whether they are in the scope and accordingly to prepare an Emission Monitoring Plan after calculating/ estimating annual CO2 emissions for both domestic and national flights.

Aircraft operators who should prepare an Emission Monitoring Plan according to the decision tree, need to prepare an Emission Monitoring Plan via management system for the flights that are included in the system and submit them to DGCA for approval.

	Certified Maximum Takeoff Weight Of Aircrafts	Total Annual CO_2 Emission Amount of Aircraft Operator	Scope of monitoring, reporting and verification
International Flights	a) MORE than 5,700 kg	1) 10,000 tons and ABOVE	
		2) LESS than 10,000 tons	
	b) 5,700 kg and LESS	1) 10,000 tons and ABOVE	
		2) LESS than 10,000 tons	
National Flights	o).MORE than 5,700 kg	1) 5,000 tons and ABOVE	
		2) LESS than 5,000 tons	
	d) 5,700 kg and LESS	1) 5,000 tons and ABOVE	
		2) LESS than 5,000 tons	

Table 1: Threshold *values for national and international flights*

Halihazırda kapsama dahil olarak faaliyet gösteren bir uçak işleticisi misiniz?
Are you an airplane operator currently operating within the scope?
Ulusal veya uluslararası uçuşlardan kaynaklanan yıllık emisyon miktarı, tanımlı eşik değerlere yakın veya altında mı?
Is the annual amount of emission deriving from national or international flights close to or below the defined thresholds ?
Rehberlik için SGHM ile iletişime geçin
Contact DGCA for guidance.
İlgili kapsamınız devam ediyor.
Your relevant scope continues.
Azami Kalkış Ağırlığı 5.700 kg'dan fazla olan tüm uçakları listeleyin.
List all aircraft with a Maximum Takeoff Weight of more than 5,700 kg.
Kalkış ve varış noktalarını belirleyin ve insani yardım, tıbbi ve yangın söndürme amaçlı uçuşları kapsam dışında bırakın.
Identify boarding and arrival points and exclude flights for humanitarian aid, medical and firefighting purposes.
Dış hat uçuşu mu ?
Is it an international flight?
İç hat uçuşu
Domestic flight
CO2 emisyonlarını hesaplayın.
Calculate CO2 emissions.
Yıl içerisinde herhangi bir zamandaki toplam emisyon miktarı 10.000 ton CO2 değerine erişti mi?
Did the total amount of emissions at any time during the year reach 10,000 tons of CO2?
Kapsama dahil olunmadı, herhangi bir değişiklik yapılmasına gerek yoktur.
It is not included in the scope, no changes are required.
Yıl içerisinde herhangi bir zamandaki toplam emisyon miktarı 5.000 ton CO2 değerine erişti mi?
Did the total amount of emissions at any time during the year reach 5,000 tons of CO2?
Takip eden yılın 1 Ocak tarihinden itibaren geçerli olmak üzere, 3 ay içerisinde Emisyon İzleme Planı Hazırlayarak SGHM onayına sunun.
Prepare Emissions Monitoring Plan within 3 months, effective January 1 of the following year. and submit it to DGCA approval.

Figure 1: Inclusion in monitoring, reporting and verification obligations for aircraft operators

Azami Kalkış Ağırlığı 5.700 kg dan fazla olan uçakları listeleyin.
List aircrafts with a Maximum Takeoff Weight of more than 5,700 kg.
Tüm havaalanı kalkış ve varış noktalarını belirleyin ve insani yardım, tıbbi ve yangın söndürme amaçlı uçuşları kapsam dışında bırakın.
Identify all boarding and arrival points and exclude flights for humanitarian aid, medical and firefighting purposes.
Dış hat uçuşu mu ?
Is it an international flight?
ULUSLARARASI UÇUŞLAR
INTERNATIONAL FLIGHTS
Kalkış ve Varış ülkelerinin her ikisi de ICAO Üye devletler Listesinde mi?
Are both countries of Boarding and Arrival on the ICAO Member States List?
Uçuş kapsamı dışındadır.
The flight is out of scope.
Yıllık CO2 emisyonlarını hesaplayın veya tahmin edin.
Calculate or estimate annual CO2 emissions.
Tüm dış hat uçuşlarından kaynaklanan emisyonların toplamı 10.000 ton CO2'ye eşit ve üzerinde mi?
Is the total of emissions deriving from all international flights equal or exceed 10,000 tons of CO2?
ULUSAL UÇUŞLAR
NATIONAL FLIGHTS
Yıllık CO2 emisyonlarını hesaplayan veya tahmin edin.
Calculate or estimate annual CO2 emissions.
Tüm iç hat uçuşlarından kaynaklanan emisyonların toplamı 5.000 ton CO2 ve üzerinde mi?
Is the total of emissions deriving from all domestic flights equal to 5,000 tons of CO2 or more?
Veri Yönetim Sistemi üzerinden Muafiyet Belgesi başvurusu yapın.
Apply for an **Exemption Certificate** through the Data Management System.
EMİSYON İZLEME PLANI HAZIRLANMALI
(Veri Yönetim Sistemi Üzerinde Türkçe ve İngilizce olarak hazırlanır.)
EMISSION MONITORING PLAN MUST BE PREPARED
(It is prepared in Turkish and English on the Data Management System.)
Veri Yönetim Sistemi üzerinden Muafiyet Belgesi başvurusu yapın.
Apply for an **Exemption Certificate** through the Data Management System.
EMİSYON İZLEME PLANI
Hem iç hat, hem de dış hat uçuşlarının kapsama girdiği durumda, tek bir Emisyon İzleme Planı hazırlanacaktır.
EMISSION MONITORING PLAN
Where both domestic and international flights are in the scope, a single Emissions Monitoring Plan will be prepared.

Figure 2: Decision Tree for Emission Monitoring Plan Preparation Requirements

Example 1

	Total Emissions of 2023	Total Emissions As Of June 1, 2024	Date To Start Monitoring Emissions
Annual CO2 Emissions deriving from National Flights (Threshold value > = 5,000 tons CO2)	4,000 tons CO2 (Beyond the scope of MRV requirements)	5,800 tons CO2	January 1, 2025 (Must submit its Emissions Monitoring Plan to approval of DGCA by September 1, 2024.)
Annual CO2 Emissions deriving from International Flights (Threshold value > = 10,000 tons CO2)	8,000 tons CO2 (Beyond the scope of MRV requirements)	12,000 tons CO2	January 1, 2025 (Must submit its Emissions Monitoring Plan to approval of DGCA by September 1, 2024.)

In case of ***at least one*** of the annual emission amounts deriving from the national and/ or international flights of the aircraft operator exceeding the relevant limit values in the Regulation, obligations will be effective from the following year. Aircraft operator, ***within three months from*** the moment that at least one of the emission thresholds exceeds, should prepare an Emission Monitoring Plan and submit it to the DGCA. He/she must get emissions monitoring plan approved by the DGCA before January 1 of the following year.

According to the decision tree in Figure 4, aircraft operators who are not required to prepare an Emission Monitoring Plan must apply for an Exemption Certificate through the Data Management System. For the exemption application, aircraft operators must upload the following supporting evidence to the Data Management System;

- Only calculations made using the ICAO CORSIA CERT tool, or
- An electronically signed official notification containing the declaration that he/she did not operate and/or cannot operate a national/international flight must be uploaded.

b-Control of the Emission Monitoring Plan

It is necessary for Emission Monitoring Plan to be prepared electronically in Turkish and English, completed online via Data Management System by including both national and international flights and submitted to the Directorate General by aircraft operators.

After the Monitoring Plan is approved online by DGCA via the Data Management System, it will be valid until the aircraft operator makes significant changes to the information contained in the monitoring plan and the next decision of the Directorate General. If the aircraft operator makes significant changes to the information contained in the monitoring plan, the monitoring plan must be submitted for online approval by the aircraft operator via the Data Management System and then approved by the Directorate General ("DGCA").

The Monitoring Plan; recommends a method for monitoring emissions and accurate reporting of monitored emissions under the online Emission Report via Data Management System. This monitoring method should be a method that can be applied technically and financially by the aircraft operator. It is extremely important that the Monitoring Plan is accurate and definitive, since incorrect building of the Monitoring Plan can lead to a miscalculation of the amount of emissions.

The Verification Team controls whether the Monitoring Plan is approved and compliant in the scope of the Regulation on Monitoring of Greenhouse Gas Emissions deriving from Aviation Activities (CAR- 16.4).

c-Control of Monitoring Methods

Aircraft operator controls the use of fuel deriving from domestic and international flights, and whether it has been selected appropriately to the **Corsia Verification Instructions.**

Verification team registers its findings in the **Question List.** Data flow applied for fuels according to the method chosen by the aircraft operator is registered in the **Data Flow Diagram Form.**

5.3. Verification Plan Preparation Process

The lead verifier prepares a **Verification Plan** , which includes all steps of verification according to the risks identified and the information obtained during de pre-verification, strategic analysis for each verification realted to the execution and programming of verification activities. **Verification Plan** includes at a minimum the following;

a. A **Verification Program** that describes the nature and scope of verification activities and how and when they will be carried out.
b. A **Risk analysis and test plan** which sets out the scope and methods of the testing of control activities and related procedures
c. A **Data Sampling Plan** that sets out the scope and methods of data sampling associated with the data points that make up the total emissions in the greenhouse gas emissions report.

If it is determined that there is additional risk or less risk than predicted before that needs to be reduced during verification, the risk analysis and verification plan is renewed by the Lead Verifier in accordance with these determinations, and verification activities are carried out accordingly.

The Lead Verifier creates and implements the verification plan to ensure that the verification risk is reduced to an acceptable level in order to obtain reasonable confidence that the greenhouse gas emission report does not contain significant inaccurate notice.

5.3.1. Preparing Risk Analysis

One of the objectives of Risk analysis is to manage the effort and time that QSI will make during verification operations. Another purpose of Risk analysis is to evaluate the possibility that the emissions report will contain significant inaccurate notices.

QSI determines the nature, timing and the scope of verification activities with risk analysis, in case of the risk of inaccurate notices not being detected.

The head Verifier assigned to the project, to design, plan and implement an effective verification process, considering the findings obtained from strategic analysis at minimum, for every resource flow, determines;

- ✓ Internal risks,
- ✓ Control activities,
- ✓ Control risks regarding the effectiveness of applied control activities

According to SG Risk Analysis Instruction and **evaluates using** Risk Analysis Form**.**

When analyzing at a minimum;

- ✓ Findings derived from the strategic analysis carried out,
- ✓ Information obtained from verification results for previous years, if any,
- ✓ Level of materiality,

are taken into consideration.

If the lead verifier determines that the management did not identify internal and control risks in its risk inspection, he/she notifies the management of this matter and requests correction.

In necessary cases, the risk analysis can be revised according to the information obtained during verification, and the verification activities that will be performed can be changed or repeated if necessary.

In case of the detection of a new risk during verification activities, the risk analysis may need to be renewed. In case of the renewal of the Risk analysis, the verification activities that come after the risk analysis can also be renewed.

Certifications/information obtained from the management during risk analysis, office work performed during strategic analysis, observations and interviews in field visits performed during strategic analysis, and the outcomes of strategic analysis are the basis of risk analysis.

The Lead Verifier uses the risk inspection created by the management for the internal risk and control risks which he grounds on when performing risk analysis. However, the risk inspection prepared by the management is not the only source for internal risk and control risks. The internal and control risk of the management is inspected by the Lead Verifier through the presented monitoring plan.

The Lead Verifier aims to reduce the risk of verification to an acceptable level in order to create a reasonably safe verification opinion during risk analysis The Lead Verifier is attentive to maintaining the detection risk at the necessary level in order to achieve a verification risk that can be reached with a reasonable level of trust.

Verification Risk	=	Internal Risk	x	Control Risk	x	Detection Risk
Refers to the risk of verifier presenting an improper verification opinion when the emissions report contains significant inaccurate notices. Verification risk is a function of internal risk, control risk, and detection risk.		It refers to the sensitivity of a parameter in the emission report to significant errors that it can create alone or in combination with other inaccurate notices before the impact of any control activity is taken into account.		It refers to the sensitivity of a parameter in the emission report to significant errors that can be created alone or in combination with other inaccurate notices that have not been prevented or detected and corrected by the control system at a given time.		It refers to the risk of the failure of the verifier to detect a significant inaccurate notice.

5.3.2. Test Plan

In the light of the evaluations made after Strategic Analysis and Risk Analysis; **Risk Analysis and Test Plan** is made by the Lead Verifier in order to evaluate

a. The completeness of greenhouse gas emission report and compliance of it with the provisions contained in the DGCA Regulation,

b. That The aircraft operator has carried out his/her activities and fulfilled his/her obligations in accordance with the monitoring plan approved by the DGCA,

c. That data in the greenhouse gas emissions report does not contain significant inaccurate notices,

d. Whether supporting information can be provided to data flow activities, control system and related procedures in order to improve the monitoring and reporting performance of the management,

In the Test plan, the control of the adequacy and the registry of the procedures that have been reported to be implemented by the management is planned as well as the adequacy and the accuracy of the control activities.

5.3.3. Sampling Plan

When determining the sampling size and activities for data sampling; SG Data Sampling Directive and according to SG Sampling Table, Sampling Plan is prepared by the Lead Verifier by considering

a. The internal risks and Control Risks,
b. The results of analytical procedures,
c. The obligation to provide a verification opinion with reasonable confidence,
d. The materiality level,
e. The importance of error contribution of a data element on its own to the general dataset,

Within the scope of the preparation of the verification opinion, the data submitted by the management should be examined in accordance with a plan. In this step, inaccurate notice, opposition or nonconformity are detected in the data reported by the management.

In order for sampling activity to be performed effectively, registration method of the data is searched and all registry methods performed in the data are evaluated separately. At this inspection stage, planning is done considering that there are errors related to people.

If the data gaps are homogeneous or fell upon a certain time, the necessary information is entered in the QSIPRO Questions screen by taking detailed information from the management about the subject. The number of samples is determined by taking **Strategic Analysis Report** outputs related to this stage into account.

5.4. Analyzing Process

Verification activities are implemented according to the verification plan and in the verification process, it is controlled according to the risk analysis whether the management has fulfilled its obligations in the monitoring plan and legislation approved by the DGCA.

The verification team carries out verification activities as a minimum with the aim of controlling necessary tests covering analytical procedures, control of data verification and monitoring method;

a. Data flow activities and systems used in data flow, including information technology systems,

b. Whether the control activities of the management are properly documented, implemented, maintained and effective to reduce internal risks,
c. Whether the procedures listed in the monitoring plan are effective to reduce internal risks and control Risks, that these procedures are implemented, adequately documented and properly maintained,

5.4.1. Verification Program

Verification Program , which indicates the nature and the scope of verification activities and by which method, in which part of the verification, by whom the activities will be carried out, is prepared by the Lead Verifier.

If supervisors will participate in a verification activity, presence and justification of supervisors is specified in **Verification Program** The presence of supervisors must be accepted by QSI and the customer before verification is performed. The verification team ensures that supervisors do not interfere with the verification processes or affect the verification results. The verification team and the customer must permit unplanned inspections that can be performed by the Ministry and TÜRKAK.

Note-observers may be customer organization's members, consultants, witness personnel of the accreditation organization, Greenhouse Gas Program owner officials, organizers, or other necessary persons.

When preparing **Verification Program** changes can be made about the verification period, taking into account the following considerations;

- Locations of Aircraft Operator,
- Information in the ministry approved monitoring plan and complexity of the greenhouse gas monitoring methodology
- Materiality level
- Complexity of the facility's data management system and control system
- Methods used in the calculation and evaluation of greenhouse gas emissions

- All information and certifications that need to be controlled, including information that has not yet been delivered to the verification team at the planning stage
- Qualifications of facility's personnel
- Results of previous verification activities, if any
- Internal procedures and systems directly or indirectly related to greenhouse gas emissions of the facility
- Risk Analysis evaluations.
- Due to the fact that information and data about the facility are located in a different location, the extra time to be determined by the Lead Verifier will be added to the field visit.
- In the event that verification is more complicated than previously thought, or that errors are detected.

5.4.2. Site Visit Planning

One or more field visits are made to evaluate the operation of the monitoring system during the validation process, conduct interviews, carry out the activities required by communique, collect sufficient data, information and certification that will enable the insurance that the greenhouse gas emission report does not contain inaccurate notices, incorrect declarations of the report that does not contain important ,and to evaluate the accuracy of the emission report.

The Planning Officer makes the planning of the site visit by pre-contacting the person/team who will make the site visit and aircraft operator. For a final visit date, he/she he e-mails the facility for approval by preparing **Visit Notification Form** via QSIPRO.

In order to verify the greenhouse gas emission report, based on risk analysis, it is decided whether additional visits are required for related data flow and control activities carried out at other locations, such as main office and other outside offices, if any.

Site visits include the opening meeting at the beginning of the visit and the final sitting at the end.

Verifications carried out in the field are made with **Verification Program** prepared in accordance with the **Verification Plan** . The organization about performing of verification is made by the Lead Verifier.

Site visits are conducted to evaluate, by gathering sufficient data and evidence with the aim of providing a verification opinion at a reasonable confidence level, that emission report prepared by the management does not contain inaccurate notices.

Examples of activities performed during the site visit are listed below:

- Conducting interviews with personnel of the management, examining documents, evaluating the procedures of the business on-field during its implementation,
- Evaluating data flow activities,
- Testing control activities, evaluating the implementations of procedures in the approved monitoring plan,

- Carrying out the activities required by the communiqué,
- Registering examined documents and interviewees.

Depending on the outcome and conditions of the risk analysis, it is decided which units of the aircraft operator, who have been verified, will be visited. If there is more than one facility, all facilities associated with emissions are included in the field visit. During the field visit, if it is determined that the objectives determined by strategic analysis and risk analysis are not met, re-examination of certifications, samplings and renewal of the field visit can be carried out.

Based on risk analysis, in order to verify the greenhouse gas emission report, it is decided whether additional visits are required for related data flow and control activities carried out at other locations, such as main office and other outside offices, if any.

During the field visit, all fields where activities are carried out should be visited. For example: if the location of the data used in the emission report is outside the facility (for example: main office), a field visit must also be made to the places where this data was obtained.

Activities performed during the field visit and usually specified in the verification plan:

- Performing sampling at the facility to control the actuality of the monitoring plan and thus examining the integrity of resource flow and emission sources and that all requirements are met,
- Performing samplings at the main and local offices of the facilities,
- Performing samplings at other relevant facilities where verification work must take place. For example: performing sampling at a fuel-supplying facility to evaluate the accuracy of reported data, performing sampling for control activities that are not within the facility's boundaries but are related to the data flow and monitoring methods of the management.

If a single error is detected in a sample, the management reviews the entire dataset, corrects it, and resubmits it for a new sampling activity. The sampling plan and the verification plan are also revised within this framework.

Finally, certifications examined during the site visit and information about interviewees are added to the verification registrations.

5.4.2. Opening Meeting

In cases where participants are registered with **Opening Meeting- Final Meeting and Interviewee List** and are free, a formal opening meeting is held with the persons responsible for the processes and functions of the organization, and including the customer's management authority. The opening meeting is conducted by the Lead Verifier, a brief description of how to perform the verification activities to be performed, and includes the following elements. The degree of detail is performed consistently with the customer's familiarity with the verification process:

a) QSI & Verification Team Introduction, self- introduction of the participants, representation of their roles (accreditation organization, Ministry, etc.... included)
b) Information about the purpose and scope of the visit, confirmation of the scope of the facility, confirmation of the visit plan
c) Information about the verification process (from strategic analysis to providing a verification opinion.). Specifying what the verification opinion means. Confirmation that the customer will be notified of the progress of the verification and any worrying situation
d) Representation of notification and following method of detected findings
e) Representation of what is expected of the management during the execution of verification, confirmation of access to fields and data. Request of guides to accompany the verification team and explaining their tasks
f) Confirmation of issues related to confidentiality and neutrality. Confirmation of whether there are people with interests in the team
g) Confirmation of work environment and resources, relevant occupational safety, emergency and safety procedures for the verification team
h) Approval of the language to be used during verification
i) Giving the customer the opportunity to ask questions

Each verifier performs verification in the field accompanied by a guide, unless otherwise agreed by the verification team leader and customer. Guides are included in the verification team to facilitate verification. The verification team ensures that the guides do not interfere with the verification processes or affect the verification results.

The responsibilities of the guides are:

a) Scheduling and making contact for interviews,
b) Providing access to activity data,
c) Arranging visits to specific parts of the field or organization,
d) Guaranteeing known rules regarding field safety and safety procedures, addressed by members of the verification team,
e) Being a verification witness on behalf of the customer,
f) Providing representation or information if requested by an inspector.

5.4.3. Verification Activities

The verification team monitors the data flow, which tracks the sequence and interaction of all data flow activities, from primary source data to the compilation of the greenhouse gas emission report. In these activities, the primary objective is to control the procedures that take place in tracing the data in the emission report to the primary data source.

The adequacy of the evidence varies with the risk that QSI presents a false verification opinion. The higher the risk of misrepresentation, the greater the amount of evidence that needs to be collected and the effort that needs to be expended. At this point, the quality of the evidence obtained is also very important. If the collected evidence is of sufficient quality, the importance of the multiplicity of evidence decreases to this extent.

Information collection methods include following, but are not limited to them:

a) Interviews;
b) Observation of processes and activities,
c) Review Documentation and registrations
d) Collection of Activity Data

All of the interviews are registered with **Opening Meeting and Final Meeting Reviewee List.**

In the event of unachievable verification goals, an inability to access data to be verified , or existing verification evidence indicating an immediate and significant risk (e.g. security), the verification team leader report it to the customer and, if possible, to QSI, if possible, by identifying the appropriate action and. Such action may include changing or canceling the objectives or scope of verification, changing or reaffirming the verification plan. The verification team leader reports the result of the action to QSI.

The verification team leader reviews any changes to the scope of verification that arise in the progress of verification activities conducted on the field with the customer and reports this to QSI.

QSI can make recommendations to the management regarding the monitoring and reporting process when conducting verification operations. But these recommendations can never be implemented in the form of consulting.

During the visit, the verification team periodically evaluates the progress of the verification and the exchange of information with occasional meetings. The verification team leader, in case of progress of the verification and any concerns of the customer, periodically reorganizes the needed business situation among the verification team members by communicating.

5.4.4.I. Verification Of Emission Report:

The most important step of Process Analysis is the verification of the Emission Report.

a) QSI collects all the data necessary for verification to occur at a reasonable level of trust, cross-controls to ensure the reliability and accuracy of the data. One of the most important methods of achieving this is the controls made in the aircraft operator's fields, and the verification team collects a sufficient level of objective evidence during these field visits.

b) QSI must ensure that the aircraft operator monitors, measures and reports its emissions, which originate in the course of the Emission Report, in accordance with the CADs-CORSIA Document and the approved Emission Monitoring Plan. For this purpose, QSI makes examinations on the competence of its personnel involved in collecting, calculating, measuring and reporting data, since the aircraft operator has a documentary infrastructure on this issue during its field visits,

c) The aircraft operator must determine international flights for which he/she is responsible, in accordance with the approach specified in the standards HAD-ENV-0010 and HAD-ENV-0015. QSI verifies flight liability determination management documented by the aircraft operator under the approved Emissions Monitoring Plan based on objective evidence;

d) QSI verifies by collecting objective evidence of the aircraft operator's monitoring, calculation and reporting of the amount of emission reduction declared by the aircraft operator due to the use of CORSIA eligible fuels and for this amount.

QSI verifies the CO2 emissions obtained by the Aircraft Operator from aircraft fuel monitoring methods in accordance with CADs- CORSIA Annex2 section 2.2 and the emission reductions deriving from the use of CORSIA eligible fuels, based on objective evidence.

5.4.4.2. Verification Of CORSIA Eligible Fuel Use:

QSI verifies the aircraft operator's declaration of use of CORSIA eligible fuels using objective evidence.

Accordingly, Aircraft Operator's use of CORSIA eligible fuels and availability, implementation and sustainability of internal documentation structure for the controls of this process is controlled by QSI. These controls are carried out by methods such as document revision, interview with aircraft operator's personnel and examination of data sets during field visits and office work conducted by QSI.

The QSI verification team must ensure that there are repeating registrations of the flight. Controls for repeated declaration are limited to the specific aircraft operator and if findings that are not in this scope are not related to the verification declaration, they will indicated by QSI with Verification Report for detailed review by the General Directorate;

Additional information is requested directly from the fuel manufacturer if QSI determines that the statements made by the aircraft operator regarding the Corsia eligible fuel use are not appropriate or adequate,

If the verification plan changes during verification activities QSI updates the risk inspection.

5.4.4.3. Verification Of Data:

The verification team confirms that data which are in the scope of emission report is collected in accordance with the approved Emission Monitoring Plan and the monitoring requirements specified in the CADs CORSIA Document.

Verifiers implement analytical procedures and various data verification activities to ensure at a reasonable level of trust that the data does not contain significant inaccurate notice.

QSI performs important data testing operations in accordance with the Emission Report sampling plan, consisting of analytical procedures for evaluating the reasonableness and completeness of the data, and data verification. The verification team immediately identifies and evaluates outstanding contradictions, unexpected data, abnormalities, and data gaps at least by evaluating the reasonableness of fluctuations and trends over time or between comparable data elements.

Analytical procedures refer to the analysis of fluctuations and tendencies in data, including the analysis of values that deviate from estimated amounts that are not consistent with other relevant information. A more extensive data control is required if the verifier doubts the adequacy of internal risk, control risk, control activities and procedures. analytical procedures are used to determine that as a result of the evaluations, the data is complete and convincing.

Analytical procedures are usually horizontal and vertical comparison of emission and activity data. For example, in vertical controls how emissions and/or the amount of material/fuel consumption have historically fluctuated over the past few years is controlled, and if there are major difference, justification for this is requested. Another form of vertical control is to compare emissions with production data, or how material/fuel consumption changes over time. Horizontal controls can be performed in the form of comparing data with various literature values or data obtained by other similar facilities.

- In order to identify possible risks and carry out planned verification activities, the reported data is evaluated and the following applications are carried out at a minimum.
- Evaluation of fluctuations in data over time and rationality of the data tendency

- Detection of outliers, unexpected data, and data gaps (for example, outliers and data gaps can be detected by examining a graph of data that is constantly registered.) Examples of controls performed accordingly are as follows:
- Comparison of emissions from different years of the same aircraft operator
- Comparison of calculated emissions on similar aircrafts

If contradictory data, data showing serious inconsistencies or serious deviations from expectations are detected, the verifier requests an explanation from the Aircraft Operator, which will be supported by additional evidence. Their impact on the verification plan and other verification activities carried out within this framework is evaluated.

verification and sampling plans with risk evaluation should be changed when necessary depending on the outcome of , Emission Report data tests and evaluations.

5.4.4.4. Verification Of The Monitoring Method

QSI controls whether the monitoring methods declared in the approved monitoring plan are applied correctly. Some of the subjects that the Verification Team should pay attention to when evaluating the monitoring method are stated below.

- Does the DGCA approved monitoring plan comply with regulatory? (Even if the DGCA has approved the monitoring plan, if there is an inadequate situation, it must be reported.)
- Has the monitoring method specified in the approved monitoring plan been applied? (Example: If Method A is selected for data monitoring, is this method used for all monitoring?)
- Is a tool designated for the emission calculation, and is this designated tool appropriate? (Example: emission calculation excel file)
- Are the parameters used in the calculations correct?
- Are the procedures specified in the monitoring plan appropriate?

5.4.4.5. Data Gap Verification

A data gap, along with missing data, is considered data that cannot be presented with objective evidence during verification. The data gap can be identified by the Aircraft Operator during the reporting period or detected by the verifier during verification. QSI can detect data gaps during the implementation of analytical procedure tests or during detailed data verification. The verifier controls the measures taken by the Aircraft Operator against data gaps during monitoring and the adequacy of these measures. If a data gap exists, the verifier evaluates the adequacy of substitution data.

When evaluating the adequacy of substitution data;

- Regarding the data gap, the existence of an approved procedure in monitoring plan is looked for. If it is in existence, the adequacy of the procedure and whether the procedure has been performed are controlled.
- If there is no approved procedure for the data gap in the monitoring plan, but the management has applied a procedure for the data gap, the adequacy of this procedure and whether the prepared data is adequate.
- Control of whether substitution data is cautiously selected in such a way as to ensure reasonable confidence is carried out.

If it is determined that there is a data gap in the management, elements such as the time of accruing of the data gap, for how long, whether the data substitution is performed, how cautious the method used in the data substitution is, and the adequacy of the substitution data are considered. It is checked that this information is also reported in the emissions report.

5.4.4.6. Testing Control Activities

The control activities necessary to prevent or minimize internal risks deriving from data flow activities are determined through risk evaluation. Managements implement control activities to minimize or prevent risks that may occur.

Besides implementing control activities o minimize or prevent risks that may occur ,managements can also change the steps of their data flow activities. For example: to narrow the space of effect of the risk, the frequency of analysis can be increased.

Examples of control activities are as follows:

- Quality control and quality assurance of measuring tools (calibration, control of required standards and procedures)
- Quality assurance of information technologies used for data flow activities
- Internal inspections and data verification of reported data
- Control of data sources related to activities carried out by service procurement (for example, control of the accredited laboratory in which analysis is made outside the management)
- Regulations and corrective actions
- Examination of registrations and certifications

- Separation of duties (revision of data by another person who did not take part in obtaining this data)

QSI tests the effectiveness of these control activities. Examples of subjects considered in these tests are as follows:

- Are the control activities set up to function properly and effectively?
- What is the frequency of control activities?
- Are control activities carried out electronically or manually?
- Does the person responsible for the control activities have the necessary knowledge and competence and differ from the person who creates the data? Can 4 eyes principles, which include control of data by a personnel , be applied?
- Are there any procedures applied by the management when evaluating competence of the personnel?

Various methods can be used for these tests. Some of these methods are as follows:

- Investigation of the necessary information (for example, the necessary information investigated by mutual negotiations)
- Observation (Observation of the procedures applied by the management)
- Inspection (on-field inspection of manual control activities)

Renewal of performance test (cross-controlling of data by the verifier)

This Tests is performed according to **Risk Analysis and Test Plan** and registered with the Question List Form.

5.4.4.7. Evaluation Of Adequacy of The Procedures Included In The Monitoring Plan

The following controls are carried out for the procedures prepared by the QSI Aircraft Operator.

- Are written procedures in existence, are the operation of the procedure properly registered and sustainable?
- Does it contain the information summarized in the approved monitoring plan?
- Is it properly carried out and up to date?
- Is it effective in preventing or reducing internal risks and control Risks?

If it is decided that the procedures are insufficient, the management will be contacted via QSIPRO by a feedback with **Feedback Form** , and it will be requested to correct the inadequacies. If corrections are not made, the explanations and improvements related to this are clearly stated in the verification report.

5.4.5. Final Sitting

Prior to the final sitting, with occasional and final meetings the verification team:

a) reviews verification findings and other adequate information, which meet verification objectives, collected during verification,
b) Taking into account the uncertainty inherent in the verification process, comes to terms with field verification results,
c) Determines all necessary tracking actions,
d) Confirms the adequacy of the verification program or identifies any changes requested.

In cases where participants are registered with **Opening Meeting- Final Sitting and Interviewee List** and are free, a formal opening meeting is held with the persons responsible for the processes and functions, and including the customer's management authority. The purpose of the final sitting, normally conducted by the verification team leader, is to inform the management about the following steps of the verification process.

The final sitting also includes the following elements. The extent of detail is made in accordance with the verification process and awareness of the customer:

a) Thanking you and reminding of confidentiality/neutrality
b) Explanation of notification and tracking of the detected findings (for all findings, the facility must get back before the verification opinion is formed)
c) Repeating what the verification opinion means
d) Providing information about the online system of the ministry related to the process that will take place until the verification opinion is given and the submission of the verification report.
e) Providing information about handling complaints and objection processes
f) Giving information about obligations of facility after verification (improvement reports, monitoring plan revision requirements...)
g) Confirming the providing of information and certifications that will be needed for office work
h) Giving the customer the opportunity to ask questions

The customer is given the opportunity to ask questions. Unresolved different opinions are managed according to **Customer Complaint and Objection Procedure** .

5.4.6. Evaluation of Inaccurate Notice, Nonconformity, and Oppositions

When QSI detects inaccurate notices or nonconformity when performing verification operations, the business is immediately informed via QSIPRO with **Feedback Form** and requested that the necessary corrections be made. The management is responsible for correcting inaccurate notices or nonconformities reported to it.

QSI marks and registers all inaccurate notices or nonconformity corrected by the management during verification as corrected in the verification registrations.

If the management does not correct inaccurate notices or nonconformities reported to it, Before concluding the verification report, in order to evaluate the impact of such nonconformities or inaccurate notices on the reported data, QSI requests the facility to clarify the main reasons of the nonconformity or inaccurate notices via **Feedback Form**.

QSI determines whether uncorrected inaccurate notices, alone or in combination with other inaccurate notices, have a significant impact on the reported total emissions. When evaluating the level of significance of inaccurate notices, QSI takes into account the size, nature and reasons of the inaccurate notice.

QSI determines whether uncorrected nonconformity, alone or in combination with other nonconformities, has a significant impact on the reported data and whether this leads to significant inaccurate notices.

QSI accepts inaccurate notices as significant inaccurate notices, if necessary, based on their size and the nature of the special situations in which they occur, even if they are below the level of materiality alone or together with other inaccurate notices.

5.4.7. Evaluation of Inaccurate Notice, Nonconformity, and Oppositions Which are not Eliminated by the Aircraft Operator

The management must eliminate the detected inaccurate notices, nonconformities or oppositions. If uncorrected findings remain before the verification report is completed, the impact of these situations on the reported data of total emission is evaluated by the Lead Verifier. In order to make this evaluations, information about the reasons for uncorrected findings is requested from the management. In determining the impact of uncorrected findings on reported emissions and the level of importance of this effect, the size, nature and reasons for its occurrence are taken into account.

If the Inaccurate notices, nonconformities or oppositions that are not corrected by the management are not corrected, although they are correctable, a positive verification opinion will not be given.

Examples of subjects that will be taken into account in determining whether an inaccurate notice, nonconformity or opposition is important are as follows.

- Can inaccurate notice, nonconformity or opposition be corrected?
- Does the management object to correcting an inaccurate notice, nonconformity or opposition?
- What is the probability that an inaccurate notice, nonconformity or opposition will occur again?
- What is the duration of inaccurate notice, nonconformity or opposition?
- Are inaccurate notice, nonconformity or opposition caused by an intentional /unintentional act?
- Do inaccurate notice, nonconformity or opposition contradict the legislation?

In light of the controls and information from the management, the evaluation of uncorrected findings is made by the Lead Verifier. In order for QSI to provide an adequate verification opinion, the impact of errors contained in the emissions report on the total reported emissions is considered. It is evaluated whether the findings alone or in combination with other findings have a significant impact on emission data, or whether these findings lead to other significant inaccurate notices, nonconformities or oppositions. However, an inaccurate notice may be considered a significant inaccurate notice as a result of the examination conducted by the Lead Verifier, even if it is below the level of materiality specified in the legislation. The size of the inaccurate notice and the nature of the exception in which it occurs play an important role here.

Evaluations are made both qualitatively and quantitatively. Quantitative evaluations are situations that can be expressed more numerically and are usually based on the level of materiality. Here, whether inaccurate notices exceed the level of materiality is evaluated individually and together.

While the effect of a resource flow on emissions alone is above the level of materiality, the total difference created by all resource flows may be below the threshold value. The Lead Verifier consider all of these situations when making an evaluation.

In cases that cannot be evaluated numerically, qualitative evaluations are carried out within the framework of competence. For example, qualitative evaluations are also made to decide whether an inaccurate notice also constitutes nonconformity. One of the main points to consider in this evaluation is the evaluations of whether the judgement related to inaccurate notice or nonconformity will affect the decisions of the Ministry in the future.

The difference between the Lead Verifier's calculations and the management's account is used to determine the level of materiality. A negative difference between the value reported by the management and the value calculated by the Lead Verifier indicates that emissions are reported lower than they are. A positive difference indicates that reporting is higher than it is.

All evaluation registrations are kept on QSIPRO or in the Customer File.

5.4.8. Verification Opinion

In order to properly and fully monitor evaluations of verification activities and decisions that provide a verification opinion at a reasonable level of trust, verifiers compile and register all documents within their structure.

All decisions made in the process are added to the registrations along with their reasons. Evidence documents explaining the reasons, information obtained from the management, interviews, visits should be registrations and added to the internal registrations of the management in question regarding the verification process. In the verification steps, documents such as strategic analysis, risk analysis, and verification plan created by the verifier are also registered. In summary, all data based on the verification report and all evidence supporting the verification opinion should be accessible and added to the verification registrations.

Verification registrations must be transparent and clear. In addition, it should be prepared in such a way that it is possible for Directorate General, TÜRKAK or an independent inspector to make an evaluation of whether the verification is carried out in accordance with the legislation. That is, when people who are not involved in the process examine the verification registrations, they should be able to follow the process loudly and clearly. If necessary, it is essential that the document can be fully tracked, the data can be monitored and the findings and critical decisions determined during verification can be evaluated.

In light of the findings obtained at the end of this entire process, the Verifier chooses one of the statements of the verification opinion 'adequately verified' or inadequately verified'.

If the report contains non-based misrepresentations and / or non-based nonconformities, the Report will be 'adequately verified with explanations' and misrepresentations and nonconformities should be stated.

If the report contains substantial misrepresentations and / or substantial nonconformities, or if the scope of verification is very limited, or if the Verifier is unable to provide sufficient confidence in the data, the report must be ' inadequately verified'.

5.5. Independent Revision Process

Before the verification report is closed, all documentation and draft verification report created by the verifier during the verification process is subjected to an independent final check. Independent revision activities is carried out by an independent and competent inspector.

The most important aspect here is that the independent inspector who will perform the control has not been involved in any way in the verification team for this activity. In this way, controls can be carried out objectively.

The person or team conducting the independent revision must also have the necessary competence.

The purpose of independent revision controls (but is not limited to) includes the subjects below:

- Revision of the quality of the activities carried out and control of technical errors or negligence,
- Re-control of whether accurate professional care and evaluation has been applied (such as control of the consistency of the scope of the activity with the activities carried out in the management, access to a reasonable level of trust),
- Confirmation that the verification team has carried out the activities within the framework of the legislation and that the verification procedures have been carried out accurately
- Evaluation of the adequacy of the evidence collected to support the verification opinion,
- A final general revision (correction of minor errors, correction of misspellings, etc.).

In the independent revision, the activities carried out in all the steps of verification are reviewed. Examples of issues of particular attention are as follows.

- Is the verification team appropriate or do team members meet the required qualification requirements?
- How did the verifier evaluate the business risk regarding the conduction of verification activities? How long is the verification period? What conditions are included in the contract with the management?
- Was strategic analysis, risk analysis and verification plan (including changes made in the process) properly prepared?
- Are the activities carried out in the process analysis step, the evidence information/ certification obtained, the changes between the planned and realized activities accurate?
- Did the verification team keep the verification registrations accurately? Does the verification registry and the verification report show inconsistency?
- Are there any finding(s) directed by the verification team that specifically affect the verification opinion?

- Have inaccurate notice, nonconformity or oppositions reported to the management been taken into account by the management? How were the findings resolved and closed? Has this process been added to the verification registrations?
- Are there areas open to improvement? Have they been evaluated?
- Revision of uncorrected inaccurate notice, nonconformity, and oppositions:
- Did the verification team make the materiality evaluation accurately? Was the impact of the findings on reporting data properly evaluated?
- Is the justification for the verification opinion appropriate?

As it can be seen from the above explanations, the independent inspector does not perform all activities from the beginning. The aim of this step is, rather, to finally review the appropriateness and adequateness of the controls, whether there are overlooked points. If the independent inspector believes that sufficient evidence has not been obtained or detects errors regarding the process, the lead verifier must complete the missing evidence or ensure the adequacy of the evidence and correct the detected errors. After necessary corrections, the independent inspector reviews the verification report, changes made, and the latest status with reasons.

Activities carried out during the independent revision process are also added to the verification registrations.

Independent inspector performing independent revision offers his/her decision to QSI with **Corsia Independent Revision Form.**

The verification report prepared based on the findings of the independent inspector and the information and certifications contained in the verification registrations is approved by the General Manager.

Only QSI is responsible for approving the report and never transfers its authority.

5.6. Verification Report Preparation

With the completion of the independent revision process, a verification report is created as the final step of the process. After evaluating the results obtained during verification, the verifying organization submits a verification report to the aircraft operator after the necessary steps. Verification reports are generated, validated and directed to the aircraft operator via the Data Management System. The verification report prepared via Data Management System includes:

a) Names of verifying organization and verification team members;

b) Given time (including revisions and dates);
c) Scope of verification;
d) Main results of evaluation of neutrality and conflict of interest prevention;
e) Criteria used in emissions report verification;
f) Information and data of aircraft operator used by the verifying organization to cross-control data and perform other verification activities;

g) Main results of strategic analysis and risk evaluations;
h) Description of the verification activities each of which is undertaken (comparatively on-field and off-field) and the results of the controls carried out on the CO2 emissions information system and controls;
i) Description of data sampling and testing operations performed, including registrations and sampled evidence, sample size, and sampling method(s)used;
j) Results of all data sampling and testing activities, including cross-controls;
k) Conformity with Emissions Monitoring Plan;
l) Nonconformities regarding the Emissions Monitoring Plan under this directive;
m) Identified nonconformities and inaccurate notices (including how these were resolved);
n) Results regarding data quality and materiality;
o) Results regarding Emissions Report verification;
p) Justifications for a verification opinion of the Verifying Organization;
q) The independent revision results, the name of the independent revision officer and
r) A final verification statement.

5.7. Invoicing and Archiving

After the verification report is completed, a detailed invoice is prepared in accordance with the terms of the agreement between the management and QSI. All activity items are written in detail in the invoice, and no subject outside the verification process is combined with the verification invoice.

5.8. Obtainment of Corroborating Evidence After the Verification Report is Given

Errors can be detected in the verified report for the following reasons.

- After internal investigations conducted in-house
- After the results of external investigation
- In light of additional information from the customer
- After complaints regarding the customer received by QSI
- In line with the results of verification of the following year
- After inspections by the ministry
- Other reasons.

After the verification process is completed, if it is determined that the verified greenhouse gas emission reports do not comply with the provisions of the DGCA communique, the report is returned to the aircraft operator and the is corrected by QSI.

5.9. Verification Registrations

QSI, at a minimum, prepares, compiles and stores verification registrations containing;

a) Results of verification operations performed,
b) Strategic Analysis, risk analysis and verification plan,
c) Sufficient information to support the verification opinion, including justifications for provisions given on whether detected inaccurate notices have a significant impact on reported emissions,
d) Administrative and financial certifications that are evidence of field visits,

on QSIPRO and in the customer file.

In order to properly and fully monitor evaluations of verification activities and decisions that provide a verification opinion at a reasonable level of trust, the lead verifier and verifiers compile and register all documents within QSI. Verification registrations include the following elements as a minimum:

- Total verification and field visit time,
- Strategic analysis, results of this analysis, updates made (if any) and reasons for these updates
- Risk analysis, results of this analysis, updates made (if any) and reasons for these updates
- Verification plan, updates made (if any) and reasons for these updates
- Information on verification activities, analytical procedures, results of verification controls of data verification and monitoring method, and additional samples
- Marking and registering all explanations and findings regarding inaccurate notices or nonconformities corrected by the business, as "corrected"
- If there are unresolved nonconformities from the previous verification report, details about whether they were resolved (when and how they were resolved, etc.),
- Sufficient information to support the verification opinion, including justifications for provisions given on whether detected inaccurate notices have a significant impact on reported emissions,
- Registrations regarding the independent revision process,
- Results of verification operations performed,

In addition to those given above, the elements listed below must also be added to the verification registrations.

- Evaluation of risks for carrying out verification activities conducted at the pre-agreement evaluation stage and the results of this evaluation
- Changes made in to verification period and the reasons for these changes
- Agreement with the management and other relevant information used for verification preparation
- Information on the verification team and the how team was created (the names of the lead verifier, verifier and other team members, information regarding verification competency, duties and responsibilities of each team member, the man, number of days spent by each team member, etc.)
- Results of controls on neutrality and independence evaluations and registrations clearly showing the independence required to carry out verification
- Scope of verification
- Criteria of emission report verification
- Explanations/comments on tracking issues related to past inspections
- Management information used for cross-controlling of data and other verification activities
- Emissions report of the management
- Process analysis, results of this analysis and updates (if any)
- Relevant evidence obtained during verification
- Explanations of activities carried out on and off the field
- Explanations of changes occurred during verification process
- Information about the sampling method used and evidence regarding samples taken
- Explanations of the reasons for decreasing or increasing the sampling size
- Information on clarification of issues that require more detailed research, and evidence and explanations of the judgement reached as a result of these researches
- Comments on the quality and materiality of data
- If the scope is limited, explanations for this situation
- Financial (invoices, accommodation documents) and administrative (Expense forms ....) registrations to prove that field visits have been made.

QSI prepares the verification registrations in such a way that it can evaluate if the verification activities performed by Ministry, DGCA, TÜRKAK and an independent inspector is in accordance with the communique.

QSI adds the results of independent revision to the verification registrations after the verification report is approved.

Verification registrations are stored for a period of five years. QSI must submit verification registrations during inspections or, if requested, send them to the Ministry within five business days.

5.10. Information Open to the General Public

QSI provides customers and third parties with the following information through its website and updates this information in case of any revision. In internal inspections, the update of the Website is inspected.

a) A detailed description of the application and verification activity,
b) Scope Of Authority
c) Mandatory conditions for verification,
d) Information about verification fees,

e) Requirements for facilities to be verified:

- Corresponding with verification requirements,
- Making all necessary arrangements for verification to occur, including revision of the documentation and access to all processes and areas, registrations and personnel for verification and complaint resolution.
- Taking measures to ensure that observers (such as accreditation inspectors or candidate verifiers) are present, when applicable.

f) Information about procedures for handling complaints and objections.

5.11. Logo and Report Use

QSI customers can use the TÜRKAK and QSI logos according to the Logo Usage Guidelines. This situation is specifies in the agreements made between QSI and the customer.

6. REVISION MONITORING PAGE

Rev. No	Rev. Date	Revision Description
0	01.05.2016	First Publishment