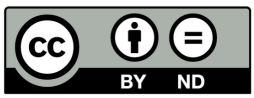
Monitoring Technology Compatibility Assessment

(*GHGSat DATA.AIR Gen 2*)



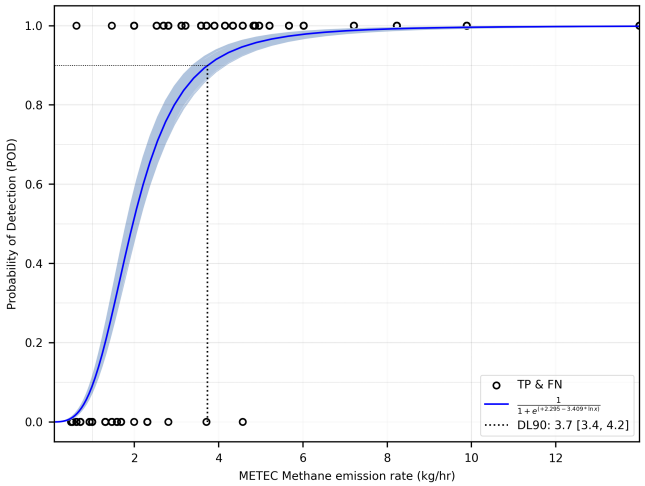
Purpose

The MiQ Foundation, as the Standard holder, has developed this monitoring technology compatibility assessment to streamline market research conducted by Operators and other stakeholders to assess the compatibility of methane monitoring technologies against the requirements in the Monitoring Technology Deployment pillar of the MiQ Standard.

This document does not endorse or reflect the personal views of the MiQ Foundation and is not intended to be exhaustive. The sole aim of this document is to provide stakeholders with an impartial summary mapping the characteristics of methane monitoring technologies and methods to MiQ requirements. This document does not guarantee that a monitoring technology or method will be compliant for a specific deployment of that technology or method. MiQ Auditors may reference the information in this document while conducting MiQ Audits but still must assess each deployment individually. MiQ encourages Operators to carry out additional independent assessments of technologies and methods for their specific deployments.

MiQ has conducted the following assessment based on best available data, vendor-provided documentation, and published studies at the time of preparation. MiQ reserves the right to make updates to the documentation on a periodic basis to conform with new MiQ Standard updates and updated vendor documentation.

MiQ is not liable for any information provided or technology capabilities guaranteed by the technology provider.

CRITERIA	STANDARD REFERENCE	DESCRIPTION
GENERAL INFORMATION		
Name		GHGSat DATA.AIR Gen 2
MiQ Application	Section 3.2.1	Facility Scale Inspection
Deployment Method	Section 4.1 – *Table 3 Detection Technology Specification (Bullet 2)*	Fixed Wing Aircraft
Sensor	Section 4.1 – *Table 3 Detection Technology Specification (Bullet 1)*	Imaging spectrometer, shortwave infrared (SWIR) band
PERFORMANCE SPECIFICATIONS		
Emission Source Coverage	Section 3.2.1- *Item 1*	DATA.AIR measures methane emissions from all sources, including elevated sources and underground sources (buried pipelines) once methane reaches the atmosphere.
Measurement Frequency	Section 3.2.1- *Item 1*	Periodic – DATA.AIR scans target areas at the frequency specified by the Operator.
Attribution Level	Section 3.2.1- *Item 4*	Equipment Level
Published Test Protocol	Section 4.1 – *Table 3 Detection Technology Specification (Bullet 4)*	METEC/TADI Combined Monitoring Protocol V1.2
MDL @ 90% PoD (Min MiQ MDL requirement is 25kg/hr)	Section 3.2.1- *Item 3*	3.5 kg/hr is the DATA.AIR Gen 2 MDL at 90% PoD By changing deployment characteristics, DATA.AIR Gen 2 can achieve detection sensitivity between 3.5 kg/hr and 15 kr/hr.
PoD Curve	Section 3.2.1- *Item 3*	 Probability of Detection (PoD) against controlled release events performed at Colorado State University's (CSU) Methane Emissions Technology Evaluation Center (METEC). A log-logistic regression model was used to fit True Positive (TP) and

		False Negative (FN) events, shown at y=1 and at y=0, respectively. The plot also shows the emission rate at which emissions are detected 90% of the time (DL90, dotted line). The envelope of pale blue curves represents the uncertainty of the fitted PoD model estimated via the bootstrapping method.

TECHNOLOGY LIMITATIONS		
Operational Limitations	Section 4.1 – *Table 3 Detection Technology Specification (Bullet 3)*	Time of day: daytime operations only. Technology requires sunlight. Water bodies: Onshore sites only. Works for sites near water if emissions are wind-transported towards land. Land cover: technology requires line-of-sight between aircraft and target. Sites under heavy tree cover cannot be measured.
Environmental Limitations	Section 4.1 – *Table 3 Detection Technology Specification (Bullet 3)*	Wind speed: safe flight conditions required, detection threshold is a function of wind speed (specified PoD is at 3 m/s) Cloud coverage: Not applicable in mostly cloudy, full overcast, ground-level fog, heavy smoke or haze.
EQUIVALENCY DETERMINATION		
Applicability	Section 3.2.3	A company specific LDAR program which achieves equivalent or greater emission reductions compared to the pre-defined strategies in Table 2 of the MTD Subsidiary Document 3 of the MiQ Standard would be awarded the eligible MTD points. A Producer/Operator utilizing DATA.AIR for MiQ Certification may be able to implement a deployment frequency that differs from the pre-defined strategies through equivalency determination. Please refer to the MiQ Equivalency Table for additional information or contact MiQ.
RECONCILIATION CONDISERATIONS		
Reconciliation	MI Section 3.3 - *Item 4*	DATA.AIR can attribute individual emission plumes to the equipment-level, allowing operators to attribute emissions to a specific source. Due to the spatial resolution of DATA.AIR a Producer/Operator utilizing this technology must follow up with

	a ground inspection to attribute emissions accurately to an equipment or component level. This technology quantifies emission rate using a proprietary process that takes into consideration the environmental conditions and methane plume vertical and lateral profiles. Due to the nature of periodic screening technologies, Producers/Operators will need to conduct a Causal Examination using operational and maintenance data to understand the origin, cause, and duration of a detected event.
ADDITIONAL DOCUMENTS	
Guides & Whitepapers	https://www.ghgsat.com/en/scientific-publications/validation-and-metrics-for-emissions-detection-by-satellite/
Case Studies	

Document Status

Table: Version History

Version	Date	Summary of Change
1.0	2026-02-25	Initial version