

Percepto Autonomous OGI Drone & AI Software

EXECUTIVE SUMMARY



March 2025

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Percepto delivers fully autonomous emissions surveying, leveraging drones and SaaS to scale OGI surveying at oil & gas enterprises. The Air Max OGI drone-in-a-box is a ruggedized solution that once deployed, remotely detects fugitive emissions down to the component level, pinpointing emission sources. Percepto AIM proprietary software enables accurate and consistent drone data collection, managing and tagging data on a geospatial map. The software automatically bookmarks emissions detected and generates a system of records for all OGI surveys performed.

With unmanned OGI surveying and cloud-based data tools, organizations can run more OGI surveys to detect and respond to emissions quicker and safer, while reducing OpEx.

The technology is currently deployed in the Permian & Delaware Basins by several organizations, validating its efficacy in remote OGI surveying to enhance safety, reduce operational complexities and reduce carbon footprints.

Percepto remote OGI solutions have undergone rigorous testing both at METEC and in the field, demonstrating the ability to detect emissions well below 1kg/hr in various weather conditions.

Percepto is submitting an application for an alternative test method for methane detection technology under 40 C.F.R. § 60.5398b(d). The system has demonstrated a detection threshold of 0.1 kg/hr at 90% probability for methane leaks. This alternative test method utilizes the Percepto Air Max OGI autonomous drone and is intended to be used for meeting the inspection and monitoring requirements applicable to fugitive emissions components effected facilities and covers and closed vent systems under 40 C.F.R. §60.5398b, specifically demonstrating compliance through periodic monitoring per 40 CFR §60.5398b(b).

Percepto is the manufacturer and provider of the Air Max OGI, which is currently available for use by the general public. Accordingly, Percepto meets the requirements for entities submitting an alternative test method for methane detection technology under 40 C.F.R. §60.5398b(d)(2).

1. TECHNICAL SUMMARY OF TECHNOLOGY

The Percepto Air Max OGI is a system developed for autonomous gas leak detection using Optical Gas Imaging (OGI) technology. The system's goal is to provide accurate identification and visualization of methane gas emissions by detecting infrared radiation specific to different gas molecules. The system's effectiveness is optimized by monitoring environmental factors, such as wind, which influence gas plume behavior and visibility. Through rigorous testing, the system has demonstrated a detection threshold of 0.1 kg/hr at 90% probability for methane leaks at distances aligned with operational standards, underscoring its sensitivity and accuracy in various conditions.

The remote OGI system is composed of three main components: the Air Max OGI drone, the Percepto Base, and Percepto AIM software. The Air Max OGI drone is fully integrated with a Ventus OGI camera capable of detecting gases like methane and propane with precision.



The Ventus OGI is an optical gas imaging camera designed to detect and visualize hydrocarbon gases, and can recognize a number of gasses including methane, propane and butane. The Ventus OGI's Gas Enhancement Mode (GEM) colorizes the hydrocarbon carbon gas leaks, such as methane and propane, to detect leaks at well pads, tank farms, gas processing facilities, pipelines, refineries, etc. quickly and accurately. Its operating temperature envelope is between -35°C to +65°C. The Ventus OGI camera is also OOOOb, OOOOc, and Appendix K certified.¹

2. SUMMARY OF DOCUMENTS SUBMITTED

2.1. EXECUTIVE SUMMARY

Document name with extension	Document description
Executive summary	A short description of the proposed method and the utilized technology.

2.2. DESCRIPTION OF TECHNOLOGY

Document name with extension	Document description
Description of the technology	Description of the components of the system: Air Max OGI drone, Percepto Base, AIM software system.

2.3. SUPPORTING DOCUMENTATION

Document name with extension	Document description	CBI?
Air Max OGI System description PRCPTO-RG-S-0005 Rev2 (3).pdf	A comprehensive technical description of the components of the Air Max OGI	Yes
ATP & Routine Maintenance	A summary of Ground ATP, Flight ATP and Deployment ATP test Percepto conducts as well as routine maintenance.	Yes

¹ See Sierra-Olympia Technologies, Inc., Ventus OGI™, <https://sierraolympia.com/product/ventus-ogi/>.



Real world test data	Test results providing verification that the technology meets the detection threshold, taking into account distance from object, wind conditions, and temperatures in real-world conditions in the Permian Basin.	Yes
Incoming Inspection Report.PDF	Inspection report process for hardware material that is used for drone assembly.	Yes
Supplier Quality Audit Report.docx	Supplier quality audit report, used to evaluate and document a supplier's quality management system, processes, and compliance with requirements.	Yes
Nonconformance Report (NCR).docx	Internal form used to document and track product or process nonconformances, including their evaluation, disposition, root cause analysis, corrective and preventive actions, and supplier related issues.	Yes
METEC test data	Test results providing verification that the technology meets the detection threshold, considering distance from object, wind conditions, and temperatures in real-world conditions in the METEC facilities in Colorado.	Yes
Percepto product specifications - Percepto Air Max OGI Jan24.pdf	An informational brochure of the Air Max OGI drone, base, and data collection, management and deliverable module.	Yes
Shielded Operations with One-to-Many Concept of Operations.pdf	A detailed explanation of automated and manual system inspections and checks conducted preflight and during flights. An explanation of emergency procedures conducted by the drone.	Yes
Quality Assurance Work Methodology.pdf	A short description of Quality Assurance processes conducted within Percepto for hardware and software releases.	Yes



Quality Process.pptx	A slideshow portraying Percepto's process of identifying and analyzing hardware quality events.	Yes
Percepto Waiver.pdf	FAA Waiver for shielded ops, One to Many.	Yes
UAS Remote Course Operator - Course Syllabus.docx	manual for Percepto's remote operations operators.	Yes

2.4. FORMAL ALTERNATIVE TEST METHOD

Document name with extension			Document description
Formal Method.pdf	Alternative	Test	The formal alternative test method application document

