# K-9 EODS

ENHANCED
ODOR-DETECTION
SYSTEMS

A Patented System Developed
by K-9 Search on Site
(K-9 SOS)

## A REVOLUTIONARY APPROACH TO CANINE TARGET ODOR DETECTION


*"The canine is better able to detect target odors than any other method known and EODS takes it to a whole new level. We are achieving results never before experienced in our industry."*

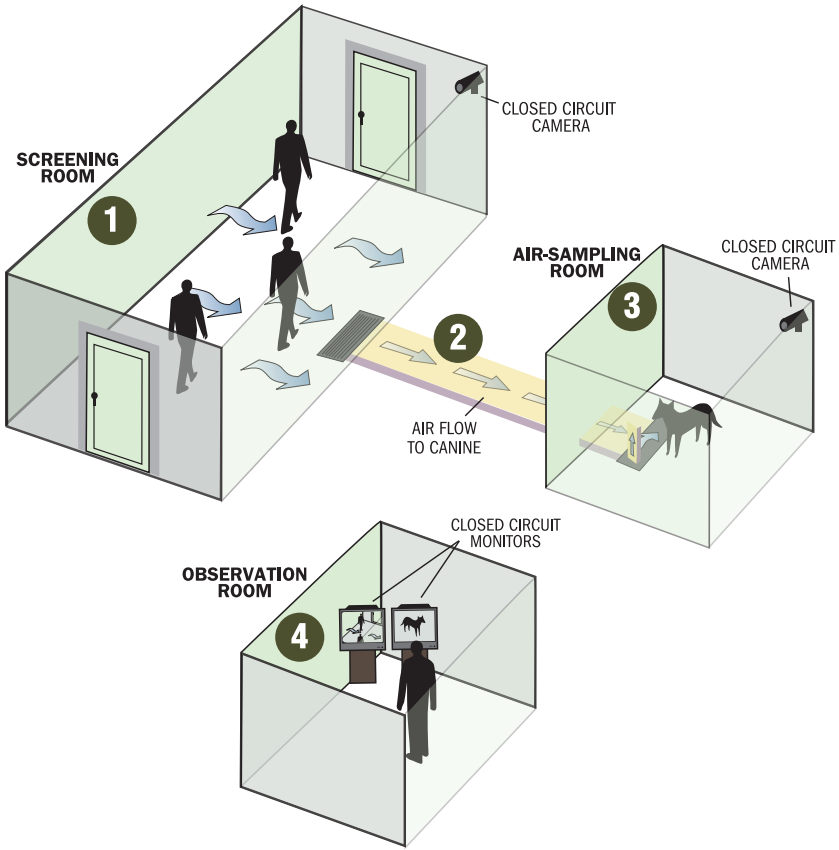
**FREDDIE BRASFIELD, CEO**

**K-9 SOS** has developed and is marketing a revolutionary new approach to canine odor detection that provides a dramatic enhancement of security in an almost infinite variety of applications.

Called K-9 Enhanced Odor Detection System (K-9 EODS), this innovation also offers the opportunity to significantly reduce the risk of injury or death to personnel charged with the responsibility for monitoring or enforcing security.

A K-9 EODS system (referred to herein as System) is a precision-designed, -built and -operated physical monitoring station that allows a canine to quickly, efficiently, and unobtrusively screen subjects as they move through an environmentally controlled screening room for target odors, such as explosives or drugs.

Potential applications include the initial approach or entry into secure facilities, mass transportation terminals, baggage and package conveyors, and field deployment along roads in hostile military zones.



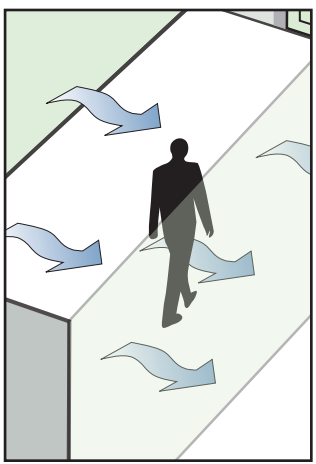

**K-9 EODS** directs a continuous current of clean air over and around subjects as they pass through the screening room. 1 This air stream 4 releases target odors from clothing, skin, hair, and other surfaces and carries that odor into an observation room 2 through vents or ductwork where a canine samples the airflow. In the event the canine detects a target odor, it is trained to demonstrate a behavior known as an "alert" that will indicate a positive finding. A canine observer 3 monitors the canine's behavior at all times when the canine is on duty. In the event the canine demonstrates the "alert" behavior, the observer will perform the agreed upon action, such as sounding an audible or inaudible alarm.

# CRITICAL SYSTEM COMPONENTS

## Screening Room

The screening room is a chamber fitted with sealed entry and exit doors and inflow and outflow air vents from a carefully engineered, highly efficient airflow system. Subjects enter, pass through unimpeded, and exit the screening room.

As subjects pass through the screening room, a stream of clean air flows over and around them, thereby releasing target odors from clothing, skin, hair, and other surfaces and carries that odor into an observation room through vents or ductwork where a canine samples the airflow.



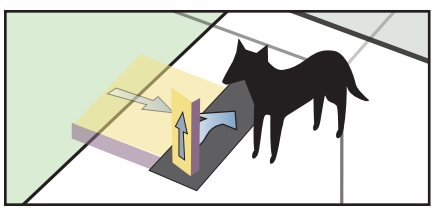
The size, configuration, and location of the screening room may vary based on operational parameters. Under a limited set of conditions, the screening room may be located adjacent to the observation room. More commonly, however, the screening room is in a "stand-off" configuration up to 100 feet away from the observation room, accommodating a variety of application designs and, in some situations, offering maximum security to the canine and operational personnel.

In many System configurations, the canine and its observer will remain invisible to subjects being screened; it is altogether possible for subjects to be completely unaware they are being screened. In other applications, it may be desirable for subjects to be aware they are being screened, providing the highest form of prevention.

Screening rooms can be engineered and built to accommodate a variety of subjects: multiple people at once, bags or packages on a conveyor, large shipping and storage containers, or vehicular traffic. The System is proving to be sound and reliable for all tested applications.

## Observation Room

The observation room provides a comfortable, temperature-controlled area for the canine to stand as it smells the air flowing from the screening room. In the event the canine detects a target odor, it is trained to demonstrate a behavior known as an "alert" that will indicate a positive finding.



# CRITICAL SYSTEM COMPONENTS

## Canine Observer

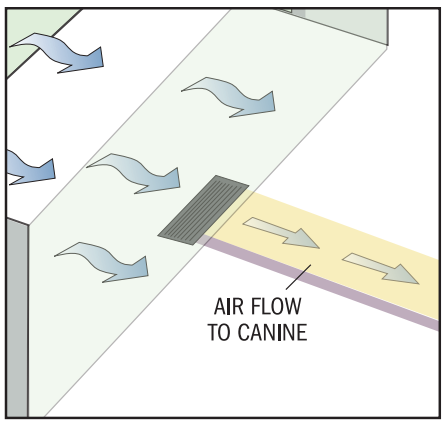
The canine observer monitors the canine's behavior at all times when the canine is on duty. In the event the canine demonstrates the "alert" behavior, the observer will perform the agreed upon action, such as sounding an audible or inaudible alarm.

Under a limited set of conditions, the canine observer may be located in the observation room with the canine. However, more commonly the observer will monitor the canine's behavior telemetrically. This arrangement will avoid having anyone distract the canine in any way and allow the canine to remain focused for the entire duration of its duty assignment.

## Continuous Air Flow

Forced air circulates continually through the screening room and then through vents or duct work into the observation room. Under certain conditions, such as when the System is located inside a building or other structure in which the air is already conditioned to be reasonably clean and of a moderate temperature, the air handling unit may utilize an "open design." Based on such a design, the unit would extract ambient air and direct it into the screening room, through vents or duct work to the observation room, from which it would be exhausted from the System.

Other applications, such as when the System is located in an external setting in which environmental conditions are not suitable to use ambient air, may require a "closed design." Such environmental conditions may include extremes of temperature, high concentrations of dust or sand, or high concentrations of industrial or other fumes. A closed design re-circulates, filters, and conditions the air to provide a safe,comfortable and productive environment for subjects, canines and security personnel.




The design of the air handling unit, including vents and ducting, that will provide effective performance results is a significant part of the System design. EODS personnel have conducted rigorous testing of both prototype and field units to establish optimum operational parameters.

# EODS Configurations

Each EODS installation will be configured to meet the stated operational criteria; the required operational location, inside an existing structure or building or outside; entirely new construction or a retrofit of existing space. EODS applications are extremely flexible and can accommodate a variety of locations and applications.

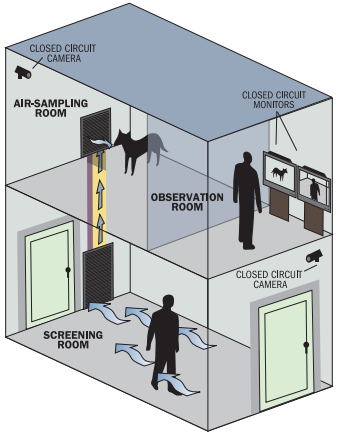
## Each EODS installation will be configured to meet:

- The stated operational criteria,
- The required operational location, inside an existing structure or building or outside, and
- Entirely new construction or a retrofit of existing space.

## TYPICAL CONFIGURATIONS INCLUDE:

### Stand-off Units

For many applications, it is desirable to utilize Systems in which the screening room is physically separate from the observation room. In such configurations, the two rooms will be connected with air vents or duct work. Stand-off units may be selected to provide security for the canine and security personnel. In other situations, such units may provide the flexibility needed to accommodate the retrofitting of an existing space. For example, the screening room and observation room may occupy space on different floors of the same building or be separated by several feet on the same floor.

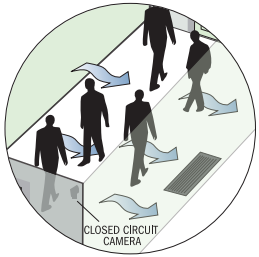



### Mobile Deployment Units

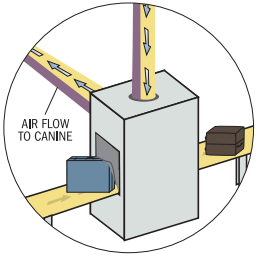
K-9 EODS has mobile deployment systems that can be deployed rapidly to a customer's site for immediate operation. A deployment System can be utilized in areas where no immediate source of electricity exists because the unit is self-sufficient, requiring no external resources to function. The System allows for quick set up time. The average time to set the unit up for operation once it is in place is approximately 10 minutes. It also takes only 10 minutes to get the unit ready to travel again. Therefore the System works well for random checkpoints.

# Special Applications

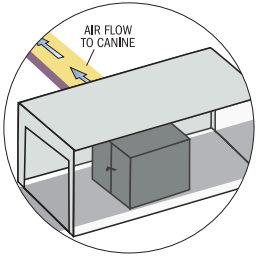
Rather than an off-the shelf unit, EODS is custom designed for the specific application. However, all Systems include the key components: screening room, observation room, efficient airflow system, highly trained canine, and canine observer.



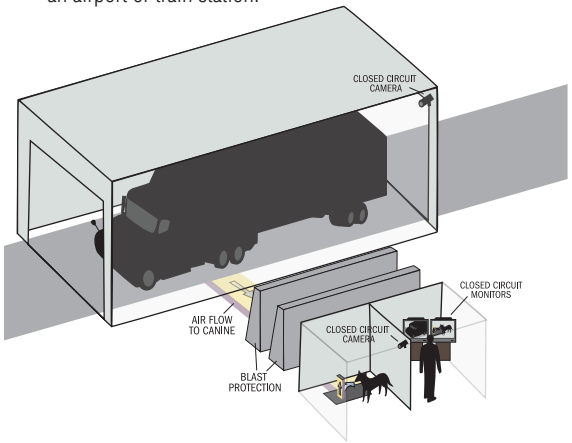

The screening room can be built large enough to allow multiple people to pass on a continuing basis, such as at an airport or train station.




A system can be constructed to screen baggage or parcels that move on a conveyer through the screening room.




The system can be used to systematically examine large shipping and/or storage containers.




Screening rooms can be configured to allow vehicles to be screened as they pass through without being required to come to a full stop.

# EODS Benefits

The System is designed to optimize the detection ability of the dog by eliminating distracters (factors harmful to the detection process of the canine). This unique detection environment maximizes the odor detection capabilities of the dog to a degree never before experienced in the canine target odor detection industry.

Not only does the System allow the canine to detect target odors without approaching and touching a subject, it allows the canine to detect significantly better than in a traditional field testing environment. The System is a revolutionary advancement.

## Decreased Risk and Reduced Anxiety

Unlike in field sampling scenarios, the canine does not approach subjects, much less come into physical contact with them in any way. In fact, the canine and handler may be completely hidden from subjects' view, eliminating the anxiety sometimes felt, or expressed by subjects who are afraid of dogs.

## Increased Coverage in Reduced Time

Whereas typical field sampling protocol provides testing of a sampling of subjects, EODS applications allow sampling of each and every subject by passing them through the System. In addition, EODS sampling requires a fraction of the time required to effectively field search a subject.

## Greatly Enhance Security

In the stand off configuration, EODS offers substantial reduction of risk of injury or death in situations where subjects carry explosives on their person or in their vehicle and are willing to commit suicide for the purpose of causing harm or death.

## Increased Efficiency and Accuracy

K-9 SOS, the sister company to K-9 EODS that conducts field searches with canines, attained a non-productive response rate of 1 in 65,000 during 500,000 searches over more than two years of actual field searches. K-9 EODS believes that, based on experience and testing so far, it can improve that result to one non-productive response per million searches.

## Flexibility

The System can be configured to meet customer demands, typically by retrofitting existing facilities, and may include a sampling room up to 60 by 100 feet. Subjects may be pedestrians, vehicles, cargo containers, or items on a moving conveyor. The target odor may include explosives, narcotics, chemical weapons of mass destruction, or other odors the client may wish to target. In addition, a client may "tag" items they wish to protect with a target odor known to the dog. The System will prevent theft of the protected items such as computer components or storage media.

# The Results Are In

Based on observation and results obtained in a prototype K-9 EODS System, the U.S. Department of Energy ordered onsite testing at a major secure facility. The testing took place over a period of about three weeks during 2008. The remarkable results are revealed in this excerpt from the official report summary:

> In 30 randomized trials, the EODS process provided a 100% detection rate of explosive training aids at the threat quantity utilized for this evaluation. This was accomplished with no false or nuisance alarms encountered during nearly 2,800 employee and test subject entries through the system.

The bottom line is that in this U.S. government-mandated, scientifically conducted test at a highly secure operational facility, the EODS detected target odors every time they were administered. In addition, the System produced no false alerts during the entire course of the testing.

# Canine Target Odor Detection Enhances Modern Security Programs.

Research has shown that a dog's olfactory sensitivity is millions of times greater than that of a human. Canine detection also greatly exceeds the effectiveness of manufactured odor detection equipment.

Detection dogs are widely used by local, state, and federal law enforcement, the military, and security companies. This growth and widespread acceptance is explained by one key factor—odor detection by dogs is extremely effective.

Based on laboratory testing at Auburn University's Canine and Detection Research Institute, dogs can detect certain scents in a concentration at least as low as 400 parts per trillion. It should be noted that even that astounding result does not precisely define how sensitive the dog's sense of smell really is. It just indicates that no research technology currently exists that can test a dog's sense of smell below that threshold.

In a report published by Auburn's Institute, Dr. L. Paul Waggoner concluded that the properly trained and maintained explosive detection dog is the most effective readily available explosives detection tool.

K-9 EODS capitalizes on the remarkable capabilities of the canine and achieves detection accuracy and reliability never before attained in field sampling or any other security setting.

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