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Problem: The large increases in the number of video cameras has created a vast amount of risk data coming into the operations center, where too few human eyes can examine every frame.

Concept of Operations:
Civil Gun Detection System

Video surveillance infrastructure is transformed into proactive threat notification with the addition of The Civil Gun Detection System.

This document outlines the capability, benefits, and limitations of The Civil Gun Detection System.

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Aim

This concept of operations (ConOps) aims to outline how **CIVIL Gun Detection** can reduce the risk of gun related catastrophe, in an operations center with vast amounts of video camera data.

The CIVIL Gun Detection System Overview

Standoff detection takes place at greater distances from people and vital assets to reduce the potential of severe damage. Improvements in video camera pixel resolution capture and image quality, processors, and computer vision make real-time gun detection possible and advantageous by extends the digital perimeter.

The GPU-based hardware is given access to the video feeds, and constantly searches for any gun model, and sends actionable intelligence alerts to video management, access control, and other systems. Faster detection, at this farther digital perimeter, provides another layer of security, greater awareness of incoming potential threats, and improved response time.

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Capabilities of Standard Gun Detection

Camera Ranges	30 ft to 300 ft
Flow Rate	Visual Line of Site to Object
Detection Rate	99%
False Positive Rate	1%
Time Required	3 Seconds
Pixel Requirement	100 on target
Light Requirement	140 Lux or greater
Camera FPS	8 FPS or greater

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Limitations

Concealed Weapons (Thermal and other sensor data collection Weapons Detection discussed in separate Civil ConOps)
Must Be Line of Site
The camera system must provide a picture image to see the gun, similar to the human eye, in order for the system to alert on it. The system is trained to understand modifications and add-ons to guns including scopes, rail mounted assessors like lasers and flashlights, suppressor, stock changes, arm straps, slings, and other frame and barrel modifications. Computer always assumes that only partial view of the outline of the weapon is available, defined at 60% visible. The system can work at less than 60%, using behavioral clues.

Benefits

Human Force Multiplier To Visually Examine Every Video Stream For Guns: Improves security by turning every surveillance camera into a true lookout point.

Faster Notification of Potential Threat: Improves security with early threat detection where every second of forewarning saves lives.

Organized Response with Visual Description: Improves security by providing a picture of gun, suspect, and location that is faster and more accurate than verbal notification.