

COUNTERING THE URBAN TERRORIST THREAT

WHITE PAPER

BY

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“Charles Goslin, Vice President of International Operations for Duos Technologies, Inc., is an international expert in security threat and risk assessment. He developed his extensive security experience as a veteran operations officer for 27 years with the Central Intelligence Agency. He is skilled in developing and executing programs targeting terrorism, espionage, weapons proliferation, and other select U.S. national security objective. He brings a unique, ground-level perspective to security challenges that can only come from a lifetime spent mitigating risk, in all its forms, while living and working abroad.

His most recent assignment, before joining Duos, was as a senior advisor to the Regional Joint Terrorism Task Forces (JTTF) in the U.S. In addition to Mr. Goslin’s current work with international clients, he has authored professional articles and undertaken public speaking engagements regarding the evolution of physical security in the 21st century, and how it can better secure critical infrastructure for public and private enterprise.”

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INTRODUCTION

On every New York City subway train, the message to passengers since the terrorist attacks of 9/11 has been clear: “If you see something, say something.” This simple admonishment is more than just a sign of the times in which we live. Between the lines it underscores the fact that we face a terrorist threat that is cunning, hidden, constant, and unpredictable. Without the eyes, ears, and intuition of the general public, authorities stand little chance of identifying the enemy among us.

The large metropolitan centers of today are dense, heterogeneous environments that are ideal for terrorists because they facilitate concealment. Whether it is in London, New York, Cairo or Tokyo, a common environmental characteristic shared by each of these urban venues is the high level of activity, making daily contacts among people transient, superficial, and relatively anonymous at best. This environment fulfills the terrorist’s need to maintain a low profile because it is nearly impossible to distinguish between friend and foe. Unusual or even suspicious behavior that might draw notice in a more rural or regional community is cloaked by the ever-changing pace of life on the streets of the great metropolis. The urban environment also serves in the execution of a terrorist operation to level the playing field against the superior numbers represented by the authorities.¹ An attack can be planned in relative anonymity with the elements of surprise, mobility, speed, confusion and escape all favoring the terrorist.

Terrorists on the urban battlefields of Iraq have gained tactical knowledge and experience that if not anticipated and countered could be used against unwitting populations in cities in the U.S., and around the world.² As the reality of urban warfare unfolds on city streets in the Middle East and Europe, even the best efforts of an alert citizenry and an augmented police presence can be “outsmarted” by terrorist tactics.



New York City subway poster after 9/11



Dense metropolitan area, Tokyo, Japan

¹ “Manual of the Urban Guerilla,” by Carlos Marighella, pp. 60-61.

² According to a key judgement in the unclassified version of the U.S. National Intelligence Estimate (NIE), dated 17 July 2007, “...Al Qaida will continue to enhance its capabilities to attack the (U.S.) Homeland through greater cooperation with regional terrorist groups. Of note, we assess that al-Qa’ida will probably seek to leverage the contacts and capabilities of al-Qa’ida in Iraq (AQI), its most visible and capable affiliate and the only one known to have expressed a desire to attack the (U.S.) Homeland.”

THE THREAT: TERRORIST PLOTS AND ATTACKS WITHIN URBAN CENTERS

The terrorist threat to urban centers in the U.S. and other nations is a reality. Terrorist plots against critical infrastructure outside of urban areas is designed to highlight vulnerabilities and destabilize global economic market; attacks against the critical infrastructure and inhabitants of a city presupposes mass casualties, widespread panic and the inevitable media coverage and focus on political and religious grievances and goals. The terrorists with whom governments, law enforcement authorities, and communities are now dealing have proven themselves to be ruthless, unpredictable, and transnational in character.



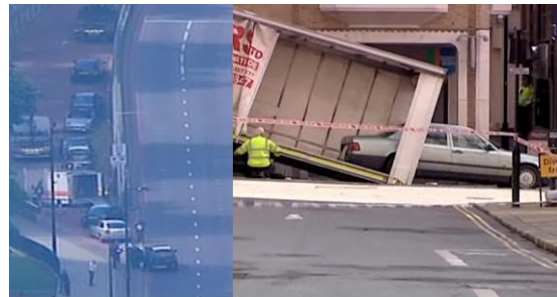
New York subway threat

With the attacks of 9/11 as context, consider the following few examples:

- May 2003, plot to destroy the Brooklyn Bridge in New York City³.
- March 2004, plot to fabricate and use ammonium nitrate (fertilizer) bombs in London⁴.
- August 2004, plot to attack financial targets such as the stock exchange in New York City and targets in London⁵.
- 2004, Madrid, Spain suicide terrorist attack against multiple metro rail targets, resulting in mass casualties, and a dramatic last minute shift in a national election⁶.
- July 2005, multiple suicide terrorist attack in central London targeting public train and bus transportation. The attack resulted in mass casualties, but was not successful in changing British public policy⁷.
- June 2006, plot to bomb multiple targets in Toronto, Canada disrupted by authorities⁸.



London bomb plot 07/21/05



London VBIED plot July 2007

³ According to the U.S. Department of Justice indictment in June 2003, Kashmiri-born U.S. citizen Lyman Faris received instructions from al-Qa'ida's Khalid Sheikh Mohammed (KSM), while in Pakistan, to sabotage the Brooklyn bridge by cutting its cables. Faris used the cover of a hard-working, independent truck driver while in the U.S., to develop the attack, but was caught in late 2002. Newsweek, 19 June 2003

⁴ Times of London, 30 April 2007

⁵ CBS/AP, 12 October 2006

⁶ Washington Post Foreign Service, 17 October 2004

⁷ On 7 July 2005 in London at the peak of the rush hour, bombs were detonated in three crowded subway trains and aboard a London bus. At least 52 people died, along with four bombers, and 700 were injured... two weeks after that, the transport system was targeted again - with attempted bombings on the London transportation network (CNN, July 2005); In July 2006, al-Qa'ida released video tapes of one of the suicide bombers, along with commentary by Ayman al Zawahiri, that linked the attack directly to al-Qa'ida. At least two of the bombers had trained in Pakistan (Al Jazeera, 7 July 2006).

⁸ CBC News, 4 August 2006.

- July 2006, plot disrupted to bomb New York City train tunnels with the objective of flooding Wall Street financial district⁹.
- July 2007, attempted attack in highly-populated center of London and in Glasgow Airport with separate Vehicle Borne Improvised Explosive Devices (VBIED)¹⁰.

No less devastating have been the multitude of suicide terror attacks ongoing since 2001 targeting densely populated urban areas in Tel Aviv and Jerusalem, or the many VBIED and suicide attacks occurring daily in densely populated areas of Baghdad and other regional cities in Iraq.

URBAN TERRORIST TACTICS: VULNERABILITIES OF URBAN ENVIRONMENTS

The strength of community is familiarity. The communities of urban-based immigrant populations, left unassimilated within the larger scope of established metropolitan areas, often become inward-focused and ethnocentric havens for undocumented travelers, criminal activity focused on immigration/documentation, and a base for material support to terrorists. Terrorists actively seek out the familiarity of communities sympathetic to their cause to solicit funding, support, documentation, jobs, and recruits.



London bus bombing July 2005



Alternatively, the quality of familiarity in a dense metropolitan environment can be significantly diminished and also serve terrorist operational planning and goals. Terrorists embrace the relative anonymity of big cities in all phases of their operational activities. When selecting targets, they surveil facilities or venues without being noticed. The street offers cover to a terrorist who has gone operational, using the confusion of the attack to disappear into within the crowd and vanish into the surrounding streets. As has increasingly been witnessed in Iraq and elsewhere, terrorists amplify a main attack with a supporting attack on first responders or fleeing crowds, thus increasing the lethality of their act and the panic it is their goal to induce¹¹.

Victims after London subway bombing 2005

Unlike air transportation hubs, public transportation networks within urban centers cannot be subjected to the same physical security measures. Public transportation is designed to be open and easily accessible to move vast numbers of people in, around, through, and under the city. This is a vulnerability that is not easily addressed¹².

⁹ Washington Post, 9 July 2006

¹⁰ HSToday, 30 June 2007

¹¹ Senior authorities in the U.K. indicated that the second vehicle found in London with an explosive device was deliberately placed to catch rescuers attending the injured from the first explosion. Scotland on Sunday, 2 July 2007

¹² Former U.S. Homeland Security official Asa Hutchison, on PBS, 7 July 2005

When terrorists go to ground in urban environments to hide and wait, organize and activate a cell, or plot and carry out an attack, today's homeland security challenge is many-pronged:

- Develop and deploy surveillance and detection technology that can run apace with (and eventually anticipate) terrorist strategies.
- Field a comprehensive, shared global terrorist identification database.
- Train and empower metropolitan police forces, already equipped with many of the necessary tools, to detect, prevent, and investigate criminal behavior and activities as counterterrorist preemptors and first responders. While the motives of the terrorist may be different than that of the criminal, similar behavior patterns are exhibited by both and recognition can be the key to effective counterterrorist tactics.
- Showcase a swift, precise, and effective terrorist response to earn trust and promote effective information sharing between the public and counterterrorism authorities.
- Government and public-private sector partnerships at all levels must be part of the solution to fighting terrorism on the streets of our cities.



Terrorist identification database

LEVERAGING TECHNOLOGY AGAINST TERRORISM IN THE URBAN ENVIRONMENT

Terrorists recruit candidates who resemble the targeted population. Al Qaida has creatively adapted to multiple environments to expedite the successful execution of stunning terrorist attacks. The 9/11 attackers, who were living in the U.S. at the time of the attacks, were clean-shaven, well dressed, and educated in appearance, and were seated in business class when they launched their attacks. Terrorists recently arrested after abortive attacks in Great Britain were doctors and medical workers. The 7/7 bombers were legitimate members of their local communities. These terrorists did not stand out from the crowd because they were already part of it, blending seamlessly into the environment in which they were living and operating.

Identifying and Tracking Terrorist Suspects in Urban Environments

Identifying and tracking a suspect in an ongoing terrorism investigation is a resource-intensive exercise for urban security forces - not to mention those required to locate terrorists who have gone to ground. Both scenarios exemplify the "needle in a haystack" construct and until lately were beyond the reach of existing technology. Recent developments in facial recognition and high-speed retina scanning software have significantly increased the probability of detecting and tracking known suspects through crowds of commuters or identifying a fugitive terrorist casing his next target.

In order that decision makers may effectively evaluate threats in real-time and collaborate using the same data, these technologies must be interactive with shared biometric databases. When operational and integrated, such systems will enable metropolitan police and higher level intelligence authorities to virtually and automatically sit astride public chokepoints, critical infrastructure, and transportation hubs in ways imagined but never brought to fruition. The requirement to enable this technology, while becoming universally recognized, will require

massive effort and a dynamic, ongoing, unprecedented commitment by nations and governments (right on down to the metropolitan level) to succeed.

Suspicious Vehicular, Individual Behavior/Pattern Recognition

Urban environments are increasingly saturated with surveillance camera systems. An individual walking the streets of London, for instance, is expected to pass within view of at least 300 different Closed Circuit Television Cameras (CCTV) during the day. Highly visible CCTV installations are known deterrents to criminal activity and often prove useful for forensic review of crimes or terrorist incidents after the fact. With the development of sophisticated, intelligent digital analytic products, these extensive camera networks can today be integrated into sensor detection suites which analyze and process incoming video and sensor feeds to detect specific activities and alert authorities of suspicious human or vehicular behavior patterns and events.

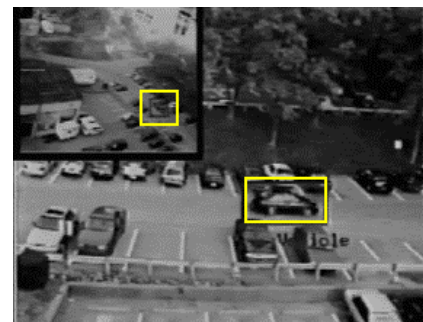
The technology is available today to detect and alert for suspicious activity such as loitering by an individual or vehicle, flag and alert for an object left behind or an object taken. An individual who moves against the pattern of pedestrian traffic can be flagged and tracked. If a vehicle is parked too long in a vulnerable location, it can be tagged for investigation. In queues moving slowly into hard-lined locations such as airports or sporting events individuals exhibiting trigger behaviors or heavy sweating can be tagged for further investigation. These tools help police and counterterrorist officials increasingly push the terrorist threat further out onto the perimeter of vulnerable urban target centers.

Besides tagging defined suspicious behaviors, extensive camera networks can be seamlessly stitched together to create a three-dimensional, immersive viewing environment. Tagged objects or individuals can be tracked forward or backward in time over great distances and through different environments.

Urban Crowd Control

Urban rioting, often another manifestation of terrorism, has been on the rise for several years in conjunction with G8 summits, environment issues and other perceived wrongs spanning the political spectrum. Police and intelligence officials have traditionally prepared through conventional police work to mitigate potential violence in part by attempting to learn the identities of career anarchists and other promoters of civil unrest ahead of scheduled events. Recent developments in facial recognition and high-speed retina scanning software make significantly greater the probability of detecting and tracking known instigators.

When riots begin, the violence often ebbs and flows over many square blocks of urban space challenging authorities who must confront and control rioters in order to prevent civilian casualties and destruction of property. Now, intelligent CCTV technology can be used to detect and alert authorities in a tactical command center to crowd flow and congestion. Tied to an urban overlay in a three-dimensional immersive environment, responders can more efficiently head off and deter crowd violence as riots unfold. Using



Multi-camera hand-off

multi-camera hand-off, biometrically documented individuals and/or tagged groups can be dynamically tracked from zone to zone forward or backward in time and more effectively neutralized.

SOLUTIONS

A limited number of providers and integrators market products that with varying degrees of success execute one or more of the security and surveillance technologies referenced above. **Duos Technologies'** solutions encompass a wide spectrum of security and surveillance needs. This includes comprehensive vulnerability and risk assessments that are designed to deliver focused, sophisticated solutions to complex security problems. Duos technology applications are scalable and can be infinitely adjusted to anticipate unique, elevated security threats.

DUOS TECHNOLOGIES, INC.

Duos Technologies is a privately owned corporation headquartered in Jacksonville, Florida. Our combined team expertise includes subject matter experts with years of practical experience in the diverse fields of mechanical, electrical, chemical, industrial, electronic and computer engineering, IT, procurement, project management, and construction management. Security challenges outlined by our clientele are reviewed by our in-house experts in counterterrorism, counterintelligence, and law enforcement to ensure that solutions make sense and are the right fit for the customer.

Duos Technologies in-house expertise in counterterrorism and counterintelligence tailors our technical security solutions to today's security challenges. We provide a broad range of sophisticated, turnkey technology based systems for security, surveillance and automation for the private sector and for governments. Duos is engaged in the design and deployment of customized, artificial intelligence-driven digital security systems integrated with actionable video surveillance. Harnessing the most significant technologies in the digital world, Duos transcends traditional security measures with state-of-the-art information technologies distributed over highly effective network architecture, and wired or wireless (WiFi, 802.11xx, satellite) distribution technologies. Customized browser based interfaces and database integration provide seamless, cost effective and easy-to-learn operator interfaces.



Customized browser based interface and database

Duos Technologies PRAESIDIUM® Intelligent Sensor Detection Suite processes incoming video and sensor feeds utilizing algorithms to detect specific activities and events for security and surveillance applications. Combined with intelligent browser-based mapping software, **PRAESIDIUM®** visualizes suspected security breach types and locations, simultaneously detecting multiple events and processing each in accordance with user-defined parameters.



Surveillance cameras

The flexibility of the **PRAESIDIUM**[®] sensor detection suite is one of its strengths. It integrates the sensors and behavior measurements tools outlined in this paper, and can accommodate many others. Driving the powerful **rvspro**[™] server, **PRAESIDIUM**[®] can manage everything from a simple placement of high-resolution fixed cameras to a full array of Pan/Tilt/Zoom day/night and thermal cameras, sensors and detectors for motion, impact, chemical and biological agents, radiation, explosives, and seismic activity, and can tie in radar and other platforms.

Capabilities can be enhanced by integrating Global Positioning Systems (GPS), Radio Frequency Identification (RFID) capability, biometrics, Optical Character Recognition (OCR), meteorological, and other platforms into an open-architecture system deployed on a range of devices (including mobile devices) with an intuitive, browser-based Graphical User Interface (GUI).

PRAESIDIUM[®] incorporates proven, robust applications that minimize false alarms and smoothly integrate camera and sensor input to secure a complex, urban environment. **PRAESIDIUM**[®] technology can be integrated with global databases for authentication, identification, and alerting/tracking requirements to empower real-time threat evaluation and collaboration.

PRAESIDIUM[®] permits an unlimited number of users, features automatic failure recovery, strong encryption, low bandwidth requirements, and months of archival storage. It provides the most advanced, accurate, and flexible video analysis available, providing a powerful counterterrorist tool to police and homeland security officials.



Graphic User Interface (GUI) in PDF

