



## **Annual Report FY 2009**



# **Joint Improvised Explosive Device Defeat Organization**



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## Message from the Director

The Department of Defense (DoD) established the Joint IED Defeat Organization (JIEDDO) in February 2006 to meet an urgent and compelling need to counter improvised explosive devices (IEDs) in Iraq and Afghanistan. Since then, JIEDDO has provided significant capabilities to warfighters – enabling IED network attack, enabling IED detection and defeat, and providing leading-edge counter-IED training to our men and women in uniform.

This Annual Report provides an accounting of JIEDDO's significant efforts in Fiscal Year 2009. Highlights include:

- Orchestrating a \$3.1 billion effort to develop and deliver counter-IED capabilities on abbreviated timelines.
- Improving effectiveness in developing and fusing information to understand and enable attacks against IED networks – and pushing that information forward to troops in theater.
- Posturing JIEDDO to meet long-term DoD needs to counter IEDs as weapons of strategic influence.

At the end of 2009, JIEDDO continued to deliver urgently needed counter-IED capabilities to U.S. Forces in Afghanistan, where IED use dramatically escalated in 2009. On a positive note, IED use continued to decline in Iraq. Elsewhere in the world, violent extremists employed, on average, more than 250 IEDs per month. Notably, IED networks continued to demonstrate remarkably rapid IED innovation cycles.

We are in an extended era of persistent conflict that spans the globe. IEDs figure prominently as the weak adversary's weapon of choice – continuing a several-century trend. To counter the persistent IED threat, our nation needs new and improved counter-IED capabilities with an eye toward leaping beyond the terrorists' next innovation.

As we move forward in 2010 and beyond, the men and women of JIEDDO remain committed to putting improved counter-IED capabilities in the hands of Soldiers, Marines, Sailors, and Airmen wherever they serve.



Michael L. Oates  
LTG, U.S. Army  
Director

# Threats and Trends

## IED Overview for Afghanistan and Iraq

IEDs continued to be a significant threat in both Afghanistan and Iraq in FY 2009, with overall incidents against U.S. and Coalition Forces (CF) decreasing in Iraq, and increasing in Afghanistan. As reflected in **Figure-1**, while the number of casualties caused by IEDs in Iraq has followed FY 2008 trends, IED casualties in Afghanistan began to increase in May 2009. IEDs in Iraq accounted for more than 14,400 casualties in FY 2009, a 31 percent decline from nearly 19,000 such casualties in FY 2008. In contrast, the number of casualties caused in Afghanistan increased 39 percent to almost 6,200 casualties in FY 2009 from approximately 3,800 casualties in FY 2008.

6,800 IED incidents in FY 2009, 52 percent were found and safely cleared; 26 percent detonated but failed to produce a casualty; and 22 percent detonated and caused a CF, Non-CF, or Host Nation casualty. As measured by CF casualties per incident, IEDs were 14 percent more effective in FY 2009 over FY 2008. Coupled with the significant corresponding increase in IED incidents, this resulted in over twice the number of CF casualties that were suffered in FY 2008.

IEDs in Afghanistan continued to present a significant threat to CF. Most IEDs encountered in Afghanistan continued to employ simple, yet effective, technologies and designs such as Victim Operated IEDs (VOIEDs) (e.g., pressure plates) and Command Wire IEDs (CWIEDs) that often used large net explosive weight (NEW) charges. These basic devices circumvented many CF countermeasures due to their simplicity and difficulty of detection.



Figure-1: IED Casualties (Coalition Force, Non-Coalition Force, and Host Nation) in Iraq and Afghanistan

## Afghanistan

IEDs were the most serious threat to Coalition Forces (CF) in Afghanistan in FY 2009. The use of IEDs in Afghanistan dramatically increased in FY 2009, continuing its steady climb since 2005. Taliban, other insurgent groups, and al Qaeda-aligned foreign fighters use IEDs to cause casualties, restrict CF Freedom of Maneuver, create insecurity in the populace, and separate CF from the civilian population. The increase in CF troop levels in Regional Commands (RC) South (S) and East (E) during FY 2009 resulted in a significant increase in IED incidents as these units pushed into areas formerly controlled by the Taliban and other insurgent groups. The influx of CF into areas has led to the highest rates of IED attacks on CF since the conflict began in 2001.

In FY 2009, the number of IED incidents in Afghanistan nearly doubled from FY 2008 (**Figure-2**). Of the more than

The incorporation of homemade explosives (HME) and other bulk explosives into large IEDs continued to be the most significant IED threat to CF in Afghanistan. HME, and other bulk explosives were used in the majority of IED main charges in Afghanistan.

In addition to targeting CF vehicles, insurgents also increased targeting of dismounted forces in FY 2009 due to the increase of dismounted operations by CF forces in support of Counterinsurgency (COIN) operations. The IEDs used in these attacks often employed the same types of simple victim operated and command wire initiation used in attacks against mounted forces.

**Afghanistan Outlook:** Driven largely by the increased CF presence and expanded COIN operations in Afghanistan, IED activity and IED-related casualties will persist at elevated levels in the near term. IED activity will increase as CF push into areas previously controlled by the Taliban, especially in traditional insurgent strongholds in RC-South as well as traditional insurgent areas of RC-East.



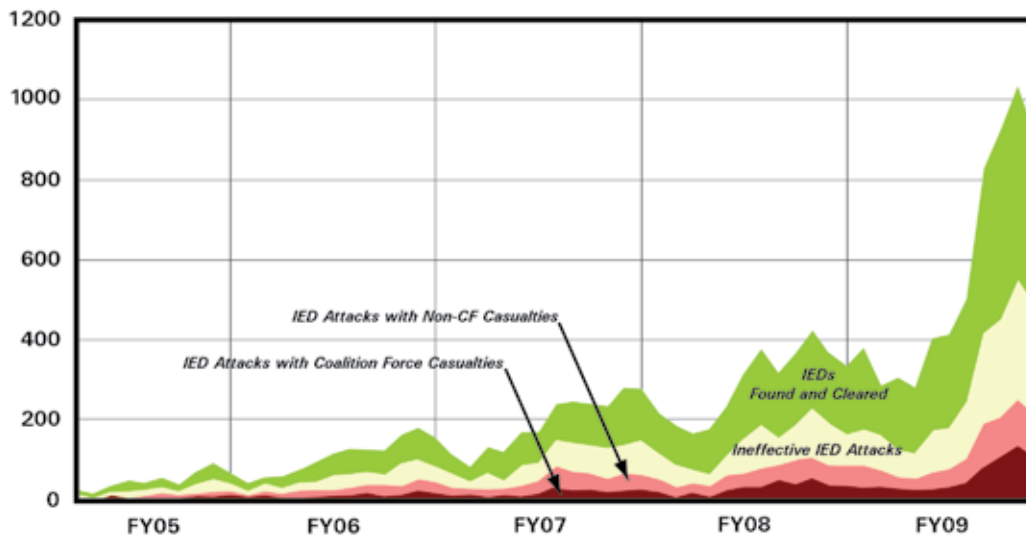


Figure-2: Afghanistan – IED Incident Trends

Most IEDs encountered by CF in Afghanistan will continue to employ simple, yet effective, technologies and designs. Insurgents will continue to target armored vehicles with large net explosive weight IEDs in an attempt to cause significant casualties. With increased COIN operations requiring dismounted tactics, insurgents will also increasingly focus on targeting dismounted troops. In addition, insurgents will focus on conducting high-profile suicide attacks similar to the multiple Suicide Vehicle-Borne IED (SVBIED) attacks against CF and Government of the Islamic State of Afghanistan (GIROA) targets in Kabul during FY 2009.

## Iraq

The decline in IED activity in Iraq continued in FY 2009, with attacks at their lowest levels since May 2004; and IED incidents falling nearly 50 percent as compared to the previous fiscal year (**Figure-3**). The withdrawal of the majority of U.S. Forces Iraq (USF-I) from Combat Outposts

in the cities to Forward Operating Bases (FOBs) in June 2009 was a major contributing factor to the decline in the IED threat. As a result, insurgents shifted some of their IED targeting efforts to Iraqi Security Forces (ISF), government and sectarian targets in attempts to reverse recent gains in security and stability.

Due to the reduced operational posture of U.S. Forces Iraq (USF-I), many threat groups in Iraq have shifted a significant portion of their IED targeting efforts to Iraqi Security Forces and symbolic government and sectarian targets. However, despite a significant reduction in IED incidents, IEDs continue to present a significant threat to USF-I and will continue to threaten USF-I forces remaining in Iraq after the completion of the drawdown.

**Iraq Outlook:** The overall decline in IED attacks against USF-I will likely continue, although there is potential that insurgents may attempt to increase attacks against USF-I depending on the outcome of Iraqi elections in FY 2010

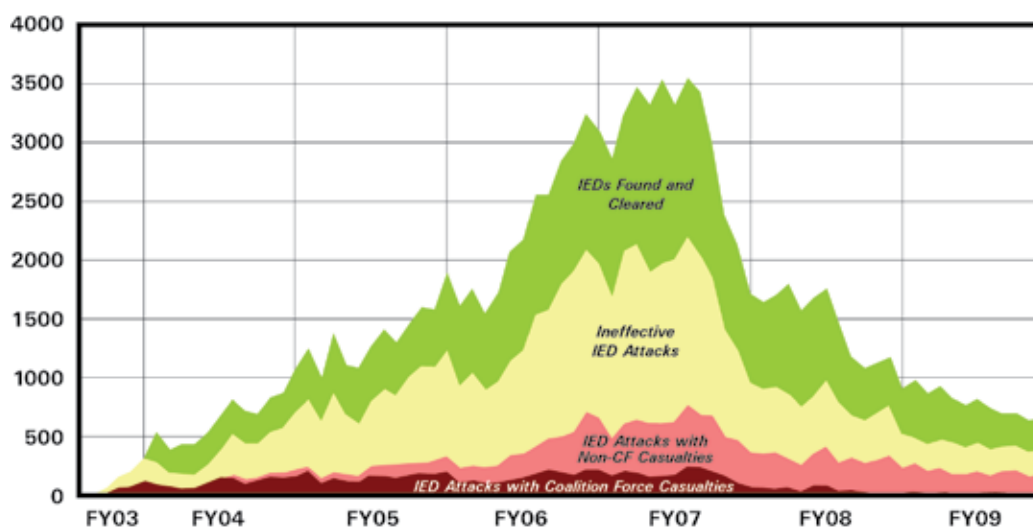


Figure-3: Iraq - IED Incidents Trends

and during USF withdrawal operations. Al Qaeda in Iraq (AQI) and Shia extremists will continue to propagate sectarian violence while AQI will attack Iraqi government and security targets using large SVBIEDs and Person-borne IEDs (PBIEDs). Periodic spikes in IED violence can be anticipated during post-election government formation, religious holidays, and associated pilgrimages.

## Global

IEDs continued to be the weapon of choice for global insurgents and terrorists. FY 2009 saw an average of over 250 IED incidents per month outside of Afghanistan and Iraq as shown in **Figure-4**. Device effectiveness and lethality continued to improve in many areas outside of Afghanistan and Iraq. Improved global communications and coordination among threat groups has enabled proliferation of IED technology world-wide (**Figure-5**). Many global terrorist and insurgent groups outside of Iraq and Afghanistan increasingly relied on IEDs and incorporated successful indigenous tactics, techniques, and procedures (TTPs) as well as those demonstrated by insurgents in Iraq and Afghanistan.

IEDs will continue to threaten security forces throughout the globe. While some threat groups will employ IEDs

that grow in sophistication, others will continue to rely on relatively simple, but effective TTPs until they are effectively countered. IED events will increase in frequency in many unstable areas of the globe as threat groups share information, capitalize on rapidly evolving global wireless communications technologies, homemade explosives (HME), and realize the potential psychological, social, and political impact of this weapon. These trends are already being seen in places such as Pakistan, North and East Africa, and South America (Colombia). No other widely available terror weapon garners such potential for mass media attention and strategic influence as does the IED.

## U.S. Central Command (CENTCOM)

Threat groups in CENTCOM (outside Iraq and Afghanistan) employed nearly every type of IED in FY 2009. Suicide attacks in the form of SVBIEDs and PBIEDs were common and caused significant casualties in countries such as Pakistan. The proliferation of suicide IED tactics by al-Qaeda and their proxies in CENTCOM continued to be a growing global threat.

Pakistan continued to be the focus of a significant IED campaign in FY 2009 by al Qaeda and Taliban affiliated groups that sought to destabilize the Pakistani government and counter ongoing Pakistani military operations targeting

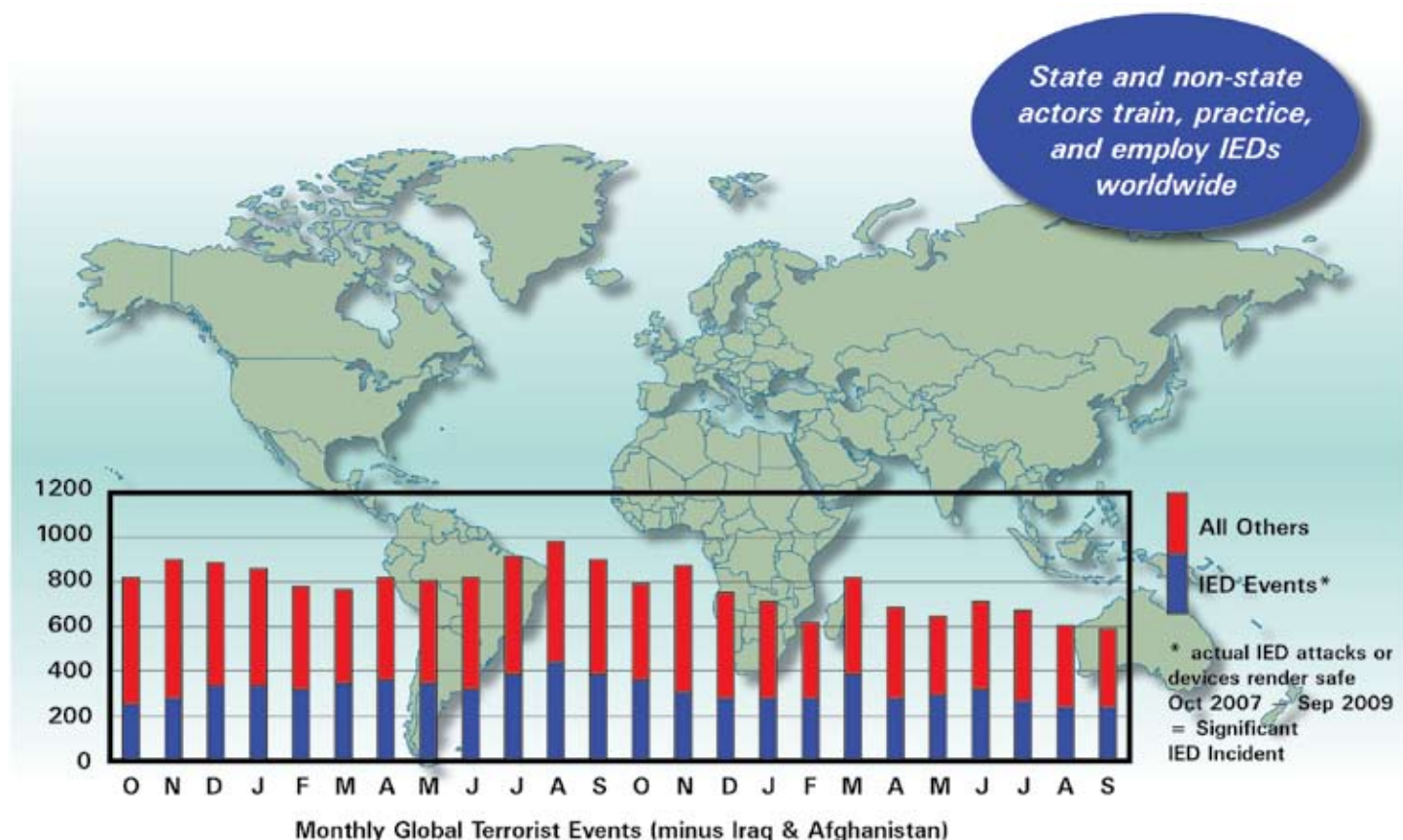


Figure-4: Global IED Incidents



## JIEDDO's Reach

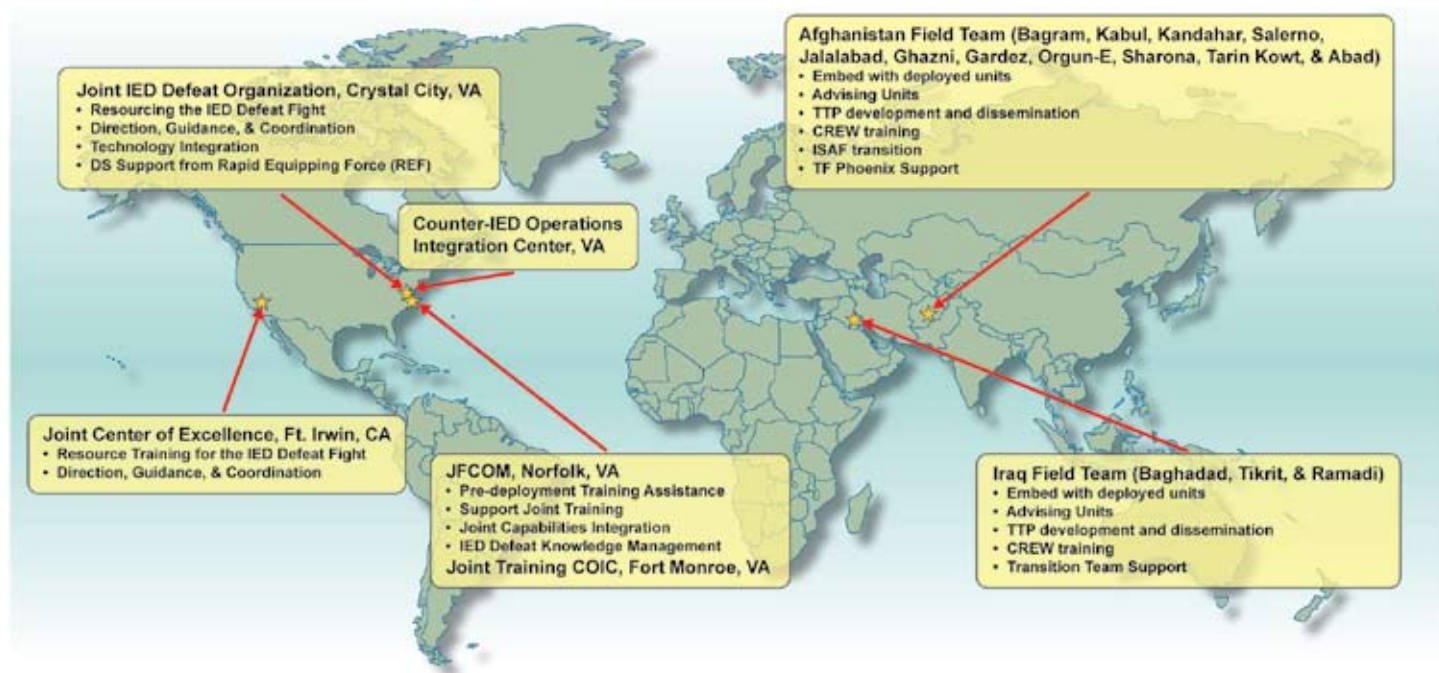


Figure-5: Global IED Network and TTP Linkages

extremist groups in the tribal regions and border areas with Afghanistan. Numerous PBIED and VBIED attacks on civilian, government and security force targets in FY 2009 illustrated the ability of Pakistani Islamist groups to conduct high casualty IED strikes that had strategic political and social impact.

In the beginning of 2009, the Saudi Arabian and Yemeni al-Qaeda organizations merged to form al Qaeda in the Arabian Peninsula (AQAP); a group capable of carrying out coordinated attacks against fortified compounds as illustrated in the 17 September 2008 assault on the U.S. Embassy in Sana'a, Yemen as well as attacking U.S. interests both inside and outside the region.

The continued proliferation of IED technology and TTPs from Iraq and Afghanistan to the rest of the CENTCOM area of responsibility will be a continuing concern.

### U.S. African Command (AFRICOM)

In AFRICOM, IED attacks were prominent in North and East Africa due to a permissive security environment, integration of foreign fighters into local insurgent groups, and increased focus on the AOR by groups such as al Qaeda. These attacks employed multiple types of IEDs. With al Qaeda influence, funding, and training, IED attacks became more lethal and sophisticated, especially in the Horn of Africa (HOA) where the al Qaeda linked al Shabaab group in Somalia demonstrated success with multiple, coordinated

SVBIED attacks against African Union security forces and other political and military targets. We assess these trends will continue into FY 2010.

In North Africa and the Sahel, al Qaeda in the Islamic Maghreb's (AQIM) maintained an ongoing IED campaign against Algerian security forces and government targets, as well as posing an increasing IED threat to western targets in the region. On the west coast of Africa, Nigeria witnessed multiple IED attacks on multinational oil company pipelines and facilities by a loose coalition of criminal extortion groups known collectively as the Movement for the Emancipation of the Niger Delta (MEND).

### U.S. Pacific Command (PACOM)

In FY 2009, threat groups in PACOM conducted significant IED attacks in Thailand, the Philippines, India, and Indonesia. In addition to insurgent and terrorist groups, rogue states such as North Korea are assessed to have the capability to implement state-sponsored IED campaigns in the event of hostilities in the region.

In Thailand, southern Malay Muslim insurgents continued to employ significant numbers of IEDs; these attacks were usually confined to the three southernmost Thai provinces. Threat groups in the Philippines, such as the Moro Islamic Liberation Front (MILF), continued to use IEDs against the Filipino government. Of note, on 29 September 2009, an IED emplaced by members of an Islamist group on the island of Jolo destroyed an up-armored High Mobility Multi-

purpose Wheeled Vehicle (HMMWV) and killed two U.S. soldiers as well as a Philippine Marine.

The IED threat in India consists of a combination of threats from indigenous leftist groups (e.g., the Maoist "Naxalites"), Pakistan-based Islamist groups, and domestic Indian Islamist groups. FY 2009 saw continued IED use by violent ethnic separatist groups and Indian Maoist groups (e.g., Naxalites) that will continue to pose a significant IED threat to India in FY 2010.

## U.S. Southern Command (SOUTHCOM)

In FY 2009, the most significant IED threats in SOUTHCOM emanated from the Revolutionary Armed Forces of Colombia (FARC) and the National Liberation Army (ELN) in Colombia. These groups conducted sophisticated and effective IED attacks on civilian, government, military, and infrastructure targets. Elsewhere in the SOUTHCOM AOR, leftist and criminal groups conducted IED attacks against security forces, government targets, and large corporations. These attacks tended to use smaller, less-sophisticated devices.

In Chile, small leftist and anarchist groups continued to carry out small-scale IED attacks on multinational corporations, banks and embassies in Santiago. In Peru, the Maoist influenced Shining Path, aka Sendero Luminoso (SL), has continued IED attacks against Peruvian security forces.

Several Islamic extremist groups maintain a presence in multiple areas of Latin America. This presence may provide increased potential for future IED efforts across the SOUTHCOM area of operational responsibility (AOR) as demonstrated by the 1992 and 1994 Hezbollah IED attacks against Jewish targets in Argentina. Sunni Islamists

groups could also exploit the presence of Sunni supporters in Latin America to facilitate future IED attacks against U.S. interests.

## U.S. European Command (EUCOM)

In the EUCOM area of responsibility, domestic leftist and anarchist groups in Greece, dissident Irish republican groups in Northern Ireland, Spain's separatist Basque Fatherland and Liberty (ETA), and Turkey's Kongra Gel (KGK), continued significant use of IEDs in FY 2009.

Islamic terrorists associated with, or inspired by al-Qaeda, may also attempt direct targeting of Western interests in the EUCOM area of responsibility with IED attacks that may involve suicide operatives. The Imirat Kavkaz (IK), an Islamic extremist group in the Russian North Caucasus, will continue using sophisticated suicide IED attacks against Russian security forces.

## U.S. Northern Command (NORTHCOM)

Historically, IEDs in NORTHCOM are limited to small devices related to criminal activity. Most IEDs in the U.S. and Canada during FY 2009 consisted of simple devices such as pipe bombs. However, there remains a growing threat that U.S.-based Islamic extremists will carry out IED attacks against the U.S. homeland using training and TTPs obtained overseas.

In Mexico, drug cartels began to use IEDs on a limited scale. Mexican cartels may increase the use of IED TTPs to respond to increased law enforcement pressure.



## JIEDDO Mission and Mission Areas

JIEDDO's mission is to focus (lead, advocate, coordinate) all DoD actions in support of the Combatant Commanders and their respective joint task forces' efforts to defeat IEDs as weapons of strategic influence.

To accomplish this mission, JIEDDO has four specified mission areas: strategic planning, rapid acquisition, information fusion, and operations and training support.

## Organizational Structure

JIEDDO continued to implement the organizational structure adopted in FY 2008. JIEDDO's organization (**Figure-6**) reflects two significant changes in FY 2009. First, JIEDDO realigned the Technology Requirements and Integration Division (TRID) and Acquisition Oversight Division (AOD) under the Capabilities Acquisition Center (CAC). Second, the Joint Training Counter-IED Operations Center (JTCOIC) achieved initial operational capability in Newport News, Virginia.

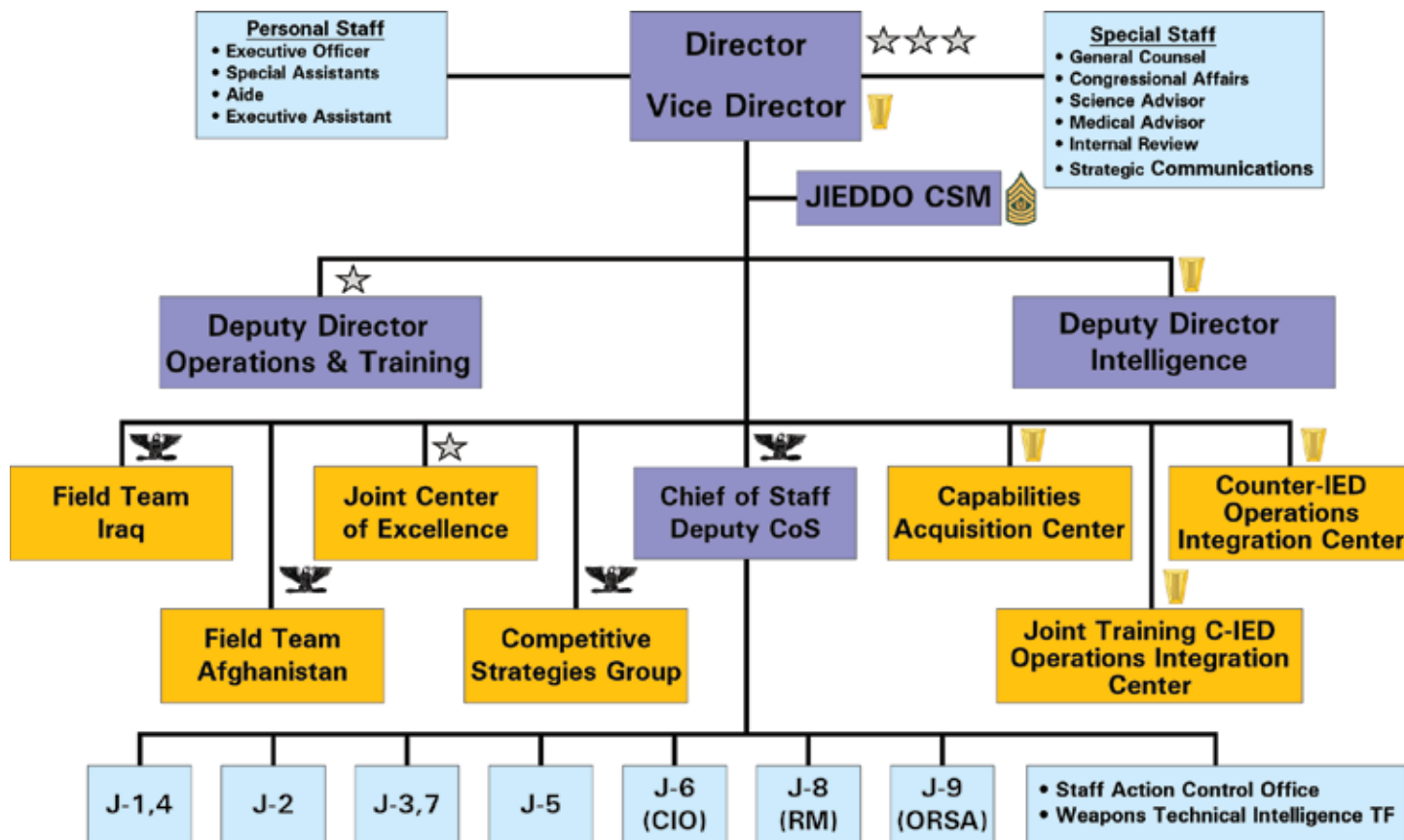


Figure-6: JIEDDO Organization



# Resources

## Funding

The Joint IED Defeat Fund (JIEDDF), established by Congress in FY 2007 as a new appropriation, provides JIEDDO with the flexibility and agility necessary to counter IEDs and the highly adaptive networks which employ them against U.S. and Coalition forces.

Providing funds with a three-year life span, the JIEDDF allows JIEDDO to respond rapidly to changing IED threats and invest in promising emerging technologies.

During FY 2006 – FY 2008, JIEDDO funded more than \$12B for the C-IED effort (**Figure-7**). During this three-year period, JIEDDO's main effort was to counter the IED threat in Iraq. In FY 2009, JIEDDO's funding levels decreased – reflecting the transfer of very expensive established programs to the Services (e.g., Counter Radio-Controlled Electronic Warfare (CREW) systems). In FY 2009, the focus of the C-IED effort transitioned from Iraq to Afghanistan due to a shift in national priorities and the troop surge in Afghanistan; the grey and red lines show the historic allocation of funds to Iraq and Afghanistan respectively. In FY 2009, JIEDDO requested and received \$1.1B in funding originally planned for FY 2010 in anticipation of significant expenditures to support the force surge to Afghanistan. The final bar depicts JIEDDO's requested FY 2010 funding. The Overseas Contingency Operations (OCO) supplemental provided 100 percent of JIEDDO's FY 2009 budget authority through the JIEDDF and was used to fund its four Lines of Operation (LOOs) by supporting warfighter needs in Iraq and Afghanistan. **Figure-8** on the next page shows the funding breakout of \$3.1B by LOO and the initiatives funded within these LOOs. These initiatives are described in more detail later in this report. Notably, as the focus of the C-IED effort transitioned from Iraq to Afghanistan, the

Defeat the Device line of operation received 45 percent of total obligations.

## Personnel and Staffing

In FY 2009, JIEDDO filled 90 percent of its Joint Manning Document (JMD) personnel authorizations. While making great strides filling its permanent government civilian billets approved in FY 2007, JIEDDO had challenges filling its military personnel billets.

Recognizing the military Services' difficulty in providing active duty military personnel, JIEDDO initiated an aggressive effort to develop and gain approval for reserve component augmentation from each of the Services. When approved, these personnel resources will enhance JIEDDO's ability to meet warfighters' C-IED needs.

An institutional review, reassessment, and revalidation of the organization's mission and functions, supported by repeated Government Accountability Office (GAO) recommendations, highlighted the urgent need to increase government oversight and direction. To this end, JIEDDO sought authorizations for additional government civilian billets to provide an experienced, mid-level leadership team. To reinforce government oversight and direction of its heavily contractor-based workforce, JIEDDO sought to convert the 192 contracted manpower equivalent authorizations to government civilian positions approved at the organization's inception in 2006.

JIEDDO continued to rely heavily on service contracts to quickly acquire the variety of engineering, scientific, and subject-matter expertise not easily found in the Services or through government civilian recruiting. To this end, JIEDDO implemented a comprehensive services support contract which provides a flexible and enduring contracting vehicle, enabling JIEDDO to respond quickly to the needs of warfighters.

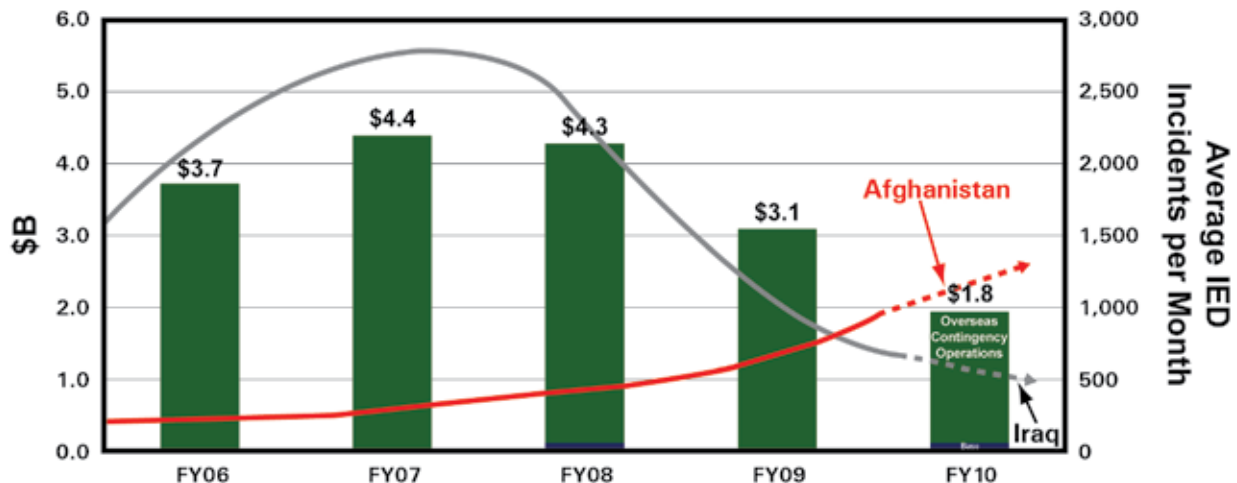


Figure-7: JIEDDO Funding - Historical Perspective

# JIEDDO Enterprise Management System

The JIEDDO Enterprise Management System (JEMS) increases execution efficiency of JIEDDO activities by providing a streamlined, web-based, and enterprise-wide set of business tools to automate organizational processes.

In FY 2009, JEMS achieved initial operating capability as an integrated tracking, staffing, and decision-making tool,

enabling rapid acquisition by serving as the repository for information about JIEDDO's initiatives. Residing on the SIPR network, JEMS provides internal and external transparency to JIEDDO's decision-making process. JEMS access is available to external users with a "need to know" – instructions for obtaining access are on JIEDDO's SIPR website. Full JEMS operational capability is expected in FY 2010, with possible capabilities expansion in future years.

**\$3.1B**

<b>Attack the Network</b> <b>\$1.1B</b>	<p><b>Attack the Network:</b></p> <p>C-IED Operations Integration Center (COIC):</p> <ul style="list-style-type: none"> <li>• COIC Analytical Support Team (JCAST): \$128.2M</li> <li>• Social Dynamics: \$39.5M</li> <li>• Network Dynamic Analysis Comprehensive Look Team: \$1.5M</li> <li>• Edge User: \$5.4M</li> <li>• Other COIC Programs: \$139.3M</li> </ul> <p>Weapons Technical Intelligence (WTI): \$125M</p> <p>Special Programs:</p> <ul style="list-style-type: none"> <li>• Wolfhound: \$14.7M</li> </ul> <p>Detect Air:</p> <ul style="list-style-type: none"> <li>• Other DA Initiatives: \$138.04</li> <li>• Vehicle and Dismount Exploitation Radar (VADER): \$22M</li> </ul> <p>Predict and Prevent:</p> <ul style="list-style-type: none"> <li>• Keyhole: \$21.1M</li> <li>• Route Clearance Optics Suite (RCOS): \$17.8M</li> </ul> <p>Other R&amp;D Investments: \$158.1M</p> <p>Remaining 69 Programs: \$280.2M*</p>
<b>Defeat the Device</b> <b>\$1.4B</b>	<p><b>Defeat the Device:</b></p> <p>Counter Radio-Controlled IED Electronic Warfare (CREW):</p> <ul style="list-style-type: none"> <li>• Dismounted Man-Portable CREW 3.1: \$181M</li> <li>• Vehicle Mounted CREW 3.2: \$37.1M</li> <li>• CREW Vehicle Radio Jammer for Legacy Vehicles: \$19M</li> <li>• CREW Vehicle Radio Jammer for Fixed Locations: \$27.2M</li> </ul> <p>Detect Ground:</p> <ul style="list-style-type: none"> <li>• Counter Bomber: \$17.4M</li> <li>• Beach Comber: \$16M</li> <li>• Vehicle Optics Sensor System (VOSS): \$51.3M</li> <li>• PBIED/VBIED Defeat: \$89.3M</li> </ul> <p>Neutralize:</p> <ul style="list-style-type: none"> <li>• Technology Upgrades for EOD Robots: \$23.7M</li> <li>• Devil Pup: \$4.8M</li> </ul> <p>Mitigate:</p> <ul style="list-style-type: none"> <li>• Self Protection Adaptive Roller Kit (SPARK): \$236M</li> </ul> <p>Joint IED Defeat Test Board: \$111.1M</p> <p>Other R&amp;D Investments: \$184.2M</p> <p>Remaining 24 Programs: \$260.8M*</p>
<b>Training</b> <b>\$0.5B</b>	<p><b>Train the Force:</b></p> <p>Joint Center of Excellence (JCOE):</p> <ul style="list-style-type: none"> <li>• Joint Training COIC: \$19.3M</li> <li>• IED Mobile Assistance Training Teams: \$17.7M</li> <li>• Mobile C-IED Interactive Trainer: \$10.4M</li> <li>• Home Made Explosives: \$3.9M</li> <li>• Tactical Site Exploitation: \$3.8M</li> <li>• Other JCOE Programs: \$71.3M</li> </ul> <p>Systems Integration and Modeling and Simulation:</p> <ul style="list-style-type: none"> <li>• Home Station Training Lanes: \$128.4M</li> <li>• Joint Training COIC Database: \$5.2M</li> </ul> <p>IEDD Integration Cell (I2C): \$16.5M</p> <p>Technical Collection: \$11.5M</p> <p>1<sup>st</sup> Army CTC Leveling: \$9.4M</p> <p>Remaining 23 Programs: \$78.3M*</p>
<b>S&amp;I</b> <b>\$0.1B</b>	<p><b>Staff and Infrastructure:</b></p> <p>Headquarters: \$100.9M</p>

**FY09**

Figure-8: FY09 JIEDDO Funding Highlights

# **FY 2009 Major Accomplishments**

## **Attack the Network (AtN)**

JIEDDO's AtN Line of Operation enables offensive operations against complex networks of financiers, IED makers, trainers, and their supporting infrastructure by providing intelligence, surveillance, reconnaissance, information operations, counter-bomber targeting, biometrics, and weapons technical intelligence capabilities. JIEDDO's significant FY 2009 AtN accomplishments include the following new and improved C-IED capabilities.

### **C-IED Operations Integration Center (COIC)**

In FY 2009, the COIC continued to provide fused analysis products to warfighters that enabled effective attacks against enemy IED networks. Continuously seeking new, innovative information fusion tools and methods, the COIC provided value to warfighters by connecting stove-piped information sources, accessing national-level intelligence data, and conducting timely analysis to meet requesting unit operational timelines. COIC analysts, working alongside interagency partners, responded to 2,154 requests for support (RFS) during FY 2009, compared to 1,780 requests in FY 2008 – a 21 percent increase. Since its FY 2007 inception, JIEDDO COIC has answered 4,716 warfighter requests for information – and in the process has simultaneously built and improved the body of IED network analytical knowledge.

### **JIEDDO COIC Analytical Support Team (JCAST).**

The Deputy Secretary of Defense approved the JCAST initiative which enables JIEDDO to provide embedded COIC AtN operations and analytical and technical support to warfighters in Afghanistan and Iraq. The COIC planned and coordinated JCAST as a single initiative to streamline forward support initiated earlier under three separate initiatives. In FY 2009, the three initiatives provided up to 117 personnel to support deployed warfighters. Forward support under JCAST is also more flexible to evolving requirements than had previously been possible.

**Social Dynamics.** JIEDDO's Social Dynamic Analysis (SDA) program employed experts from multiple social science disciplines to build tools, techniques, and procedures to understand current and future C-IED environments. The resulting knowledge enabled warfighters to understand cultural context of their operating environment, to understand insurgent behaviors, and to target enemy networks.

**Edge User.** Edge User is a communications capability specifically intended to enable COIC collaboration with brigade combat team C-IED planning/operations cells in Iraq

and Afghanistan. In FY 2009, JIEDDO procured and fielded the Edge User system to Afghanistan to support brigade combat teams whose tactical communications capabilities were unable to effectively communicate with the COIC.

## **Additional COIC Programs**

**Modeling and Simulation.** From its FY 2007 inception through the end of FY 2009, the COIC produced 130 3-D virtual terrain models that enabled warfighters to move virtually through, over, and around their operational areas. In FY 2009, tactical units conducted more than 70 rehearsals or war games using these computer models to refine their tactical planning.

### **Weapons Technical Intelligence (WTI)**

WTI is an intelligence category focused on the collection and forensic and technical exploitation of IEDs, associated components, and improvised weapons. WTI uniquely combines Service, intelligence community, Federal law enforcement, and national laboratory capabilities to produce actionable intelligence that enables the identification and disruption of low-signature networks that employ IEDs.



**Cache of IED-making materials.** Photo 1st Lt. Kurt Stahl

In FY 2009, JIEDDO invested almost \$125M in WTI initiatives to improve and refine the exploitation capabilities and processes for overseas contingencies. While the main effort continued to be rapid response to immediate theater WTI requirements, JIEDDO played a critical role supporting WTI institutionalization in the DoD.

The Terrorist Explosive Device Analytical Center (TEDAC) serves as the primary national facility for the processing, exploiting, and storing of WTI-related material for the DoD. In FY 2009, JIEDDO and the FBI concluded that the TEDAC was substantially under-resourced to meet expected near-term exploitation requirements and timelines on the high volume of material being recovered from the battlefield. In



response, JIEDDO provided an additional \$64M to expand analytical capabilities and triple material exploitation capacity in future years.

In Afghanistan in FY 2009, U.S. Forces-Afghanistan (USFOR-A) recovered thousands latent fingerprints of value from IEDs. This enabled biometric matches to people associated with IEDs. A high priority USFOR-A effort is collecting fingerprint data from the population to compare against latent fingerprints recovered from IED-related material.

In Iraq in FY 2009, Multi-National Force-Iraq (MNF-I) recovered over 5,000 latent prints of value from IEDs. To date, WTI efforts have enabled the identifications and detention of hundreds of suspects and of IED suspects.

In 2009, JIEDDO, in coordination with the Defense Intelligence Agency (DIA), published and distributed more than 10,000 WTI handbooks. These handbooks provide detailed information on a wide range of WTI functions to assist commanders, staffs, and other warfighters in understanding and applying WTI concepts and capabilities.

In September 2009, and in collaboration with the Army, DIA, Department of Justice, and other government agencies, JIEDDO coordinated comprehensive, full-spectrum C-IED WTI tactical training for a deploying Stryker Brigade Combat Team's Soldiers – a significant shift from the historical practice of training individual augmentees to perform WTI tasks. The "TIDAL SUN" initiative was a proof-of-concept for standing up and providing holistic WTI pre-deployment unit training.

In 2009, JIEDDO facilitated C-IED information sharing enhancements from the strategic to the tactical levels. Working in concert with the C-IED community of interest, JIEDDO focused on facilitating the creation of a C-IED database federation, in which individual database owners make their data searchable and accessible using a common lexicon and an information exchange model. In November 2009, JIEDDO successfully demonstrated that data could be discovered and extracted from three distinct IED databases. The demonstration leveraged the Net-Centric Enterprise Services information-sharing infrastructure as prescribed by the DoD Net-Centric Data Strategy, DoD Directive 8320.2, and other policy and guidance.

## Special Programs

Special Programs initiatives enable the warfighter to better predict where and how the enemy is employing IEDs, understand the nature and location of enemy IED networks, and prevent the enemy from achieving success and strategic influence with IEDs.

**Wolfhound.** Wolfhound is a direction-finding system used by ground forces to locate personal communications

devices in Afghanistan. Wolfhound is the first system of its kind designed for use in dismounted operations. JIEDDO funded the Research Development Testing and Evaluation (RDT&E), procurement, and sustainment of 69 systems.

## Detect Air

Detect Air systems enable the warfighter to detect insurgent IED emplacement activity and all observables associated with IEDs and their emplacement from airborne platforms.

**Command Wire and Disturbance Detection.** Command Wire (CW) detection is a priority capability because the command wire-initiated IEDs often have larger, more lethal charges. During IED emplacement, insurgents frequently cause detectable ground disturbances that can enable IED detection. In FY 2009 JIEDDO funded four command wire and change detection technology solutions. These initiatives were either operationally tested or funded for development as proofs of concept and all strive to achieve as effective combination of sensor technology to detect IED observables.

**The Vehicle and Dismount Exploitation Radar (VADER).** Vader is a collaborative JIEDDO and Defense Advanced Research Project Agency (DARPA) project to develop an airborne ground moving target indicator system that identifies both vehicular movement and insurgents on foot. Specifically designed for C-IED AtN operations, VADER's real-time processing, exploitation, and dissemination capabilities alert warfighters to insurgent locations. Two VADER prototype systems have flown more than 127 flight tests.



Vehicil and Dismount Exploitation Radar. JIEDDO Photo

## Predict and Prevent

Predict-and-Prevent systems enable the warfighter to gain collection, exploitation, and analytic advantage — Signals Intelligence (SIGINT), Electronic Intelligence (ELINT), Human Intelligence (HUMINT), Communications Intelligence (COMINT) — in support of AtN efforts.

**Keyhole.** This enhanced optics system consists of man-portable equipment items that provide increased capability to snipers and unit-designated marksmen. Keyhole delivers an all-weather, day-or-night targeting capability to defeat and deter IED emplacements. In FY 2009, JIEDDO provided 158 systems to units in theater.

**Route Clearance Optics System (RCOS).** RCOS provides the same enhanced Keyhole optics reconfigured specifically to support Route Clearance Teams. Route Clearance Teams use RCOS to identify IEDs and emplacement activity along routes. JIEDDO procured 48 systems for route clearance operations in Afghanistan.

## Defeat the Device (DtD)

JIEDDO's DtD Line of Operation enhances freedom of maneuver and safe operations for Coalition Forces. Defeat the Device focuses on providing defensive technologies to detect IEDs, neutralize them before they can be detonated, or mitigate the effects of detonations. JIEDDO's FY 2009 investment included the following new and improved C-IED capabilities.

### **Counter Radio-Controlled IED Electronic Warfare (CREW)**

The CREW family of systems prevents radio-controlled IED (RCIED) switches from functioning. As cell phone and radio technologies advance, the RCIED threat rapidly evolves, which in turn drives rapid countermeasure investments to keep peace. In partnership with DoD CREW Single Manager (PMS 408), JIEDDO funded the research, development, and procurement of the following man-portable, vehicle-mounted, and fixed-site jamming technologies in FY 2009:

**THOR III, Dismounted Man-Portable CREW (CREW 3.1).** THOR III built upon previous dismounted CREW capabilities to increase performance against RC-IED threats. THOR III also reduced the dismounted warfighter's load from three to two boxes. JIEDDO guided and funded the research, development, and procurement of THOR III systems.

### **Detect Ground**

Detect Ground systems seek to both detect person-borne, vehicle-borne, and buried IEDs and suspicious activity associated with IED emplacement.

**CounterBomber.** Stand-off detection is critical to preventing person-borne suicide IED attacks. CounterBomber is a radar and video system employed at entry control points to detect suicide bombers. JIEDDO funded 20 CounterBomber systems for OEF.

**BeachComber.** Reacting to an immediate warfighter need to find buried IEDs, JIEDDO tested multiple commercial off-the-shelf handheld metal detectors to select one for rapid acquisition and deployment. JIEDDO funded 3,000 detectors for dismounted operations in Afghanistan.

**Vehicle Optics Sensor System (VOSS).** Explosive Ordnance Disposal (EOD) and route clearance teams use this day-night, thermal imaging camera mounted on a telescoping mast to detect IEDs and IED emplacement activities. In FY 2009, JIEDDO continued the funding of 538 VOSSs and transferred this initiative to the Army.

**Entry Control Point (ECP) Solutions in a Box.** JIEDDO funded 234 ECP in a Box kits, tailored to meet specific ECP operational needs in OEF. Each ECP in a Box consisted of up to 15 C-IED components that detect IEDs, protect personnel, and mitigate IED blasts at ECPs. Kit composition was based upon site surveys of vehicle and pedestrian traffic.

### **Neutralize**

Neutralize systems seek to deny IED actuation at a time and place of the enemy's choosing.

**Robot Technology Upgrades.** JIEDDO funded 3,140 upgrade kits for TALON and PACBOT robots to improve system capabilities, the man-machine interface, and logistics supportability. Upgrades included lightweight cameras, improved batteries, and handheld video screens to provide the EOD and engineer forces a more versatile robot.

**Devil Pup EOD Robot.** Devil Pup is a man-packable robot specifically designed for dismounted EOD operators. Devil Pup provides the capability to remotely disarm IEDs during long-range foot patrols. JIEDDO funded the procurement and delivery of 55 Devil Pup robots.



Devil Pup EOD Robot. JIEDDO Photo

## Mitigate

Mitigate systems seek to minimize the effects of IED blasts on personnel, equipment, and facilities.

### Self Protection Adaptive Roller Kit II (SPARK II).

JIEDDO funded the development and procurement of the SPARK II in response to CENTCOM's urgent requirement for a more maneuverable roller for Afghanistan's rugged terrain. JIEDDO will field 1,679 SPARK II rollers to OEF in 2010.



Route Clearance Team with RHINO and SPARKS. JIEDDO Photo

## JIEDD Test Board (JTB)

JTB validates that JIEDDO-funded C-IED initiatives are proven capabilities and allows DoD leadership to confidently field new technologies. In FY 2009, JIEDDO funded over 500 JTB test events.

The JTB conducted tests to evaluate JIEDDO C-IED efforts across the JIEDDO capabilities portfolio, including handheld metal detectors, robots, counter-PIR systems, airborne IED detection systems, and support equipment.

JTB conducted over 200 COCOM-requested test events to validate CREW systems' performance and document their compatibility with other U.S. and Coalition electronic systems.

The Joint Ied Defeat Test Board invested in Joint Experimental Range Complex and the installation of advanced communications systems.

The Joint IED Defeat Test Board funded upgrades to electronic warfare test benches and ranges.

The Joint IED Defeat Test Board coordinated working groups drawn from the Services, industry, and

academia in support of the JIEDDO C-IED efforts. These working groups created tools for data management, standardized test protocols, coordinated electronic warfare techniques, and prioritized threat lists.

## Train the Force (TtF)

JIEDDO's TtF Line of Operation assesses Joint and Service C-IED training requirements and supports the development and improvement of training initiatives to enable warfighters to organize, plan, and conduct C-IED operations; properly employ C-IED equipment; and improve understanding of emerging IED threats.

In FY 2009, JIEDDO funded \$509M in a broad array of C-IED training initiatives to support urgent Service and COCOM requirements. JIEDDO refined its unit pre-deployment training with emphasis on training synchronization, Battle Staff C-IED training, and information sharing.

**Home Station Training Lanes.** FY 2009 was JIEDDO's last year funding the Home Station Training Lanes (HSTLs) initiative due to the Deputy Secretary of Defense's June 2008 decision to transfer the lanes to the Services. Over the course of 16 months, JIEDDO provided nearly \$500 million dollars to the Services for constructing, equipping, and manning HSTLs. The HSTL initiative created or upgraded 57 home station training lanes at 55 locations and encompassed more than 150 C-IED training initiatives.

**Joint Center of Excellence.** The JIEDDO Joint Center of Excellence (JCOE) focused on facilitating individual, collective, and unit C-IED training – enabling joint forces to proactively defend against and defeat IED threats they will face in combat. The JCOE also addressed IED training gaps arising from the rapid fielding of C-IED capabilities directly to combat theaters.



JIEDDO JCOE instructor at Ft. Irwin. JIEDDO Photo



Located at Fort Irwin, California, and operational since 2006, the JCOE leads four subordinate, Service-oriented centers of excellence (COE): the Army COE at Fort Irwin; the Navy COE at Indian Head, Maryland; the Air Force COE at Lackland Air Force Base, Texas; and the Marine Corps COE at Twentynine Palms, California.



**JCOE construction of an Iraqi village.** *JIEDDO Photo*

In FY 2009, the JCOE funded \$290M in materiel training initiatives and \$123M on technical, non-materiel C-IED training solutions. Through FY 2009, the JCOE has supported C-IED training for more than 65 Army brigade combat teams and 60 Marine Corps battalions constituting more than 200,000 individual service members.

FY 2009 C-IED training innovations developed and funded through JCOE included:

**Tactical Site Exploitation (TSE).** In a span of 90 days, the JCOE produced an initial TSE capability at the Army's National Training Center (NTC). TSE trains warfighters on search techniques, collection methods, and tactical questioning to ensure that documents, material, and personnel are identified, collected, protected, and evaluated. This enables rapid exploitation of information gained, facilitating further investigation and action against IED networks. The TSE initiative included constructing a small village complex modeled on Iraqi villages, where certified TSE instructors conducted search training.

Capitalizing on the initial success, the JCOE expanded the TSE training to the Joint Multinational Readiness Center (JMRC) in Hohenfels, Germany, and seven other sites, including Camp Shelby, Camp Atterbury, Fort Hood, Fort Bliss, and Marine Corps Base in Kaneohe Bay, Hawaii. In the aggregate, the JCOE invested more than \$7M in TSE and other search training initiatives during FY 2009.

**Home Made Explosives (HME).** In early FY 2009, Combined Joint Task Force (CJTF) Paladin, Afghanistan, identified an urgent need for warfighters to detect HME and unknown bulk explosives (UBE) being used in IEDs. Within five days of receiving



**Intermediate Search (Tactical Site Exploitation).** *JIEDDO Photo*

the requirement, the JCOE began training a joint, interagency, and coalition team to assist in HME/UBE training. In collaboration with Los Alamos National Laboratory explosives chemists, the JCOE developed a course to provide warfighters specialized knowledge of the chemistry involved in producing HME – enabling them to recognize HME production signatures.

**C-IED Mobile Assistance Training Teams (C-MATT).** In FY 2009, the JCOE created C-MATT to provide focused C-IED training for units not having a pre-deployment training opportunity at a combat training center (CTC). The C-MATTs coached, mentored, and trained unit leaders and battle staffs to implement USCENTCOM's Counter-IED Training and Capabilities Guidance. C-MATT leveraged C-IED home station training lanes for units requiring this training, as identified by the Army's force generation process. During FY 2009, C-MATTs trained more than 6,000 Soldiers, Sailors, and Airmen.



**Mobile C-IED Interactive Trainer.** *JIEDDO Photo*

**Joint Asymmetric Threat Awareness and C-IED Training Program (JATAC).** In FY 2009, the JATAC training program, started in FY 2007, continued to address critical C-IED pre-deployment training gaps, such as: embedding C-IED trainers and

enablers in deploying units, training opposing force role players to provide relevant and realistic training to deploying units, training tactical site exploitation skills, and preparing EOD forces for theater-specific threats. Through FY 2009, the JATAC program has trained 8,500 service members at 27 locations for deployment to Iraq or Afghanistan.

**Mobile C-IED Interactive Trainer (MCIT).** The MCIT initiative provided Soldiers, Sailors, Airmen, and Marines with self-paced, interactive, adaptable, field-configurable IED threat training specific to each unit's anticipated area of operation. The MCIT consists of four 40-foot trailers equipped with interactive multi-media equipment that can rapidly be adapted to evolving threats. The MCIT increases warfighter C-IED awareness with information about IED components, IED employment strategies, and IED network organization and functioning.

In FY 2009, warfighters at Fort Bragg and Camp Pendelton provided enthusiastic support for the MCIT system. JIEDDO anticipates delivering future systems to CONUS and combat zone locations to meet warfighter training requirements.



MCIT training at Ft Bragg. JIEDDO Photo

**Joint Training Counter-IED Operations Integrations Center (JTCOIC).** In FY 2009, the JTCOIC achieved initial operating capability in Newport News, Virginia, as the single source for training COIC tools and processes to the Services

and Joint Forces for IED network attack. JIEDDO plans to fund the JTCOIC as a proof-of-concept initiative for two years before transferring the capability.

During FY 2009, the JTCOIC supported active and reserve Army, Navy, Air Force, and Marine Corps components. The JTCOIC established training support cells at the Army's CTCs in the U.S. and Germany.

The JTCOIC inaugurated support to Joint Forces Command (JFCOM) for the United Endeavor exercise series, which trains Division, Corps, Marine Expeditionary Force, and Joint Task Force headquarters deploying to Iraq and Afghanistan. JTCOIC's support included developing IED network scenarios and storylines to create appropriate, robust IED problem sets drawn from Iran and Afghanistan for these headquarters. The JTCOIC also mentored the JFCOM exercise C-IED observer trainers to facilitate realistic, productive staff training.

C-IED training innovations developed and funded through the JTCOIC during FY 2009 included:

**Systems Integration and Modeling and Simulation (SIMS).** In FY 2009, the JTCOIC continued the development of training, modeling, and simulations capabilities through their SIMS team. The SIMS team employed innovative technologies and methods to recreate IED events as interactive, three-dimensional visualizations. JTCOIC is able to produce a realistic visualization as quickly as four days – a unique DoD capability. During the year, more than 150 organizations downloaded these unclassified training products for deployment preparation.

**JTCOIC Central Training Database.** The JTCOIC collected information from more than 50 data sources and archived them in its central training database – amassing more than one million combat zone messages and reports. The JTCOIC, JCOE, and other units draw upon this database to develop rich C-IED exercises for units at the operational and tactical levels. The information drawn from the central training database profoundly impacted training environments by enabling realistic detail that was previously unattainable.

## **Competitive Strategies Group (CSG)**

The Competitive Strategies Group (CSG) extends the JIEDDO Director's strategic and critical thinking process by challenging JIEDDO's strategy and decisions with independent, critical, and alternative perspectives that are technologically, culturally, and politically aware. These efforts enable JIEDDO to gain and maintain a competitive advantage across the global operational environment. CSG is functionally aligned with a Strategic Influence Cell (SIC), a Cultural and Political Perspectives Cell (CPC), and a Technology Exploitation Cell.

**Strategic Influence and Cultural Political Cell (SIC/CPC).** The SIC/CPC provides an independent capability to fully explore alternatives in plans, operations, concepts, organizations, and capabilities in the context of the operational environment and from the perspectives of partners, adversaries, and others. Over the past 12 months, the SIC/CPC has published more than 70 "red teaming" information papers designed to provoke thought and generate discussion to help shape an understanding of how the adversary may view actions taken by Blue Forces. Topics included: "Coalition Force buildup in Afghanistan: What will be the response?" "What will happen when CF draws down in Iraq?" and "How does North Korea plan to use IEDs?"

In response to the FY 2009 National Defense Authorization Act, the SIC/CPC collaborated with various organizations and agencies to identify potential IED threats facing the COCOMs in 2012-2018. JIEDDO's response highlighted the portability of knowledge and skills needed to construct and use IEDs. The report concluded that each COCOM faces divergent and decentralized hostile actors with increasing capability and lethality.

**Technology Exploitation Cell (TEC).** The TEC provided an independent capability to create and exploit technical C-IED defeat alternatives. The cell

considered "what's next?" in the IED fight, reached out to the commercial sector to identify new and emerging technologies, and leveraged relationships with other government agencies, industry, and academia to discover and mitigate vulnerabilities and potential uses of current and emerging technologies as IEDs. The TEC is organized into three groups:

**Technical Red/Blue Team Assessment Group.** During FY 2009, competing Technical Red/Blue Teams completed more than 65 "QuickLook" and detailed assessments. These teams from Johns Hopkins University/Applied Physics Lab, Georgia Tech Research Institute, and Massachusetts Institute of Technology/Lincoln Labs theorized Red Force counter-countermeasures (CCMs) to defeat Blue Force C-IED systems. In response, Blue Teams documented the expected effectiveness of likely Red Force CCMs, identified system limitations and vulnerabilities, and offered recommendations to improve the system's capabilities. These efforts shaped the development of Service and JIEDDO initiatives, such as MAXPOWER, COUNTERBOMBER 2, Shield, Laser Vibrometry IED Detection, and the Joint Light Tactical Vehicle.

**Device Coordination Group (DCG).** The DCG reverse-engineered and reproduced IEDs found in Iraq and Afghanistan. These IED surrogate devices were used for Joint Counter-IED system testing and training. In 2009, DCG supported 15 test events and provided more than 1,100 individual devices for DoD test ranges and laboratories.

**Device Innovation Group (DIG).** The DIG provided research in and production of emerging threats not yet seen, but likely to be used. During 2009, the DIG traveled to international technology tradeshows and conferences and selected consumer electronics to be evaluated as possible future IEDs.



# **FY 2009 Transitions, Transfers, and Terminations**

**C-IED Initiative Transitions, Transfers, and Terminations (T3).** Chartered by the DoD to rapidly acquire C-IED capabilities, JIEDDO seeks to transition or transfer proven C-IED initiatives to the Services, COCOMS, or government agencies for lifecycle management and sustainment within two years. Similarly, JIEDDO seeks to terminate initiatives that have met an urgent requirement and are no longer needed or have failed to deliver anticipated results. Timely initiative transition, transfer, or termination avoids JIEDDO being saddled with long-term resource commitments and enables JIEDDO to apply limited resources to the most urgent emerging C-IED requirements.

JIEDDO transitioned or transferred 48 C-IED capabilities and terminated 14 initiatives in FY 2009 (*see Appendix below*). JIEDDO transitions C-IED initiatives when those initiatives are expected to provide an enduring capability for the joint force and are expected to become a program of

record funded in the President's budget. JIEDDO transfers C-IED initiatives when the solution is not expected to provide an enduring capability, but will continue to be sustained and used in the current conflict; transferred initiatives are expected to be sustained through Overseas Contingency Operations supplemental funding requests.

JIEDDO hosts monthly Transition and Transfer Working Group meetings with Service, COCOM, and agency representatives for process transparency and to provide Services, COCOMs, and agencies time to program and otherwise plan for transitions and transfers. Annually in the 3rd Quarter, JIEDDO formally briefs its T3 recommendations to the Protection Functional Capabilities Board (P-FCB) Working Group, Joint Capabilities Board (JCB), and Joint Requirements Oversight Council (JROC). Based upon JROC's endorsement, a JROC Memorandum (JROCM) is prepared for the Vice Chairman of the Joint Chiefs of Staff, informing the Services and agencies of the JROC action. The T3 list along with the JROCM is forwarded to the Deputy Secretary of Defense (DSD) for T3 decision.

Army FY09 Transfers	Description	Source
(U) AMSTEL	(U) Highly classified C-IED effort	DSD 8/17/07
(U) Backscatter X-rays of Personnel	(U) Safe, non-intrusive screening system that rapidly and accurately images metallic and non-metallic objects concealed on a person's body.	DSD 8/17/07
(U) Bloodhound	(U) COTS EMI sensors and magnetometers to detect and locate deeply buried weapons caches.	DSD 8/17/07
(U) CREW – Coalition Joint Spectrum Management Planning Tool	(U) Software designed to assist EWOs in the employment of Counter Radio-Controlled IED Electronic Warfare (CREW) systems (jammers) in support of tactical operations.	DSD 8/17/07
(U) Eagle Eye	(U) Mobile integrated surveillance for force protection providing Full Motion Video from EO/IR sensor, with radar cueing & PSDS2.	DSD 8/17/07
(U) Explosive Detection Equipment	(U) Family of commercial systems to non-intrusively inspect vehicles and cargo for explosives and other contraband associated with IEDs.	DSD 8/17/07
(U) IED Detection and Interrogation Arm	(U) A stand-off capability to RG-31 and Husky that is similar to the arm on a Buffalo vehicle.	DSD 8/17/07
(U) Joint Trauma Analysis and Prevention of Injury in Combat	(U) Joint database for collection, analysis, and sharing of information related to effectiveness of personal protective equipment and vehicle equipment designed to protect against blast injury.	DSD 8/17/07
(U) Law Enforcement Program (LEP)	(U) Expert criminal enterprise analysts who can enhance commander's ability to identify, monitor, penetrate, interdict, and suppress criminal networks.	DSD 8/17/07
(U) Next Generation Mobile Non-Intrusive Inspection System	(U) Field-deployable, trailer-mounted mobile inspection systems using gamma and X-ray technologies to inspect vehicle interiors and engine compartments.	DSD 8/17/07
(U) RDISS (Rapid Deployable Integrated Surveillance System	(U) Rapidly deployable surveillance system for quick set-up of Combat Outposts.	DSD 8/17/07

Army FY09 Transfers	Description	Source
(U) Route Clearance Debris Blower	(U) Powerful air blower used to remove debris to identify camouflaged IEDs on roadsides.	DSD 8/17/07
(U) Ruggedized Detection Imaging Module	(U) Imaging system that detects contraband and other threats found on people and vehicles.	DSD 8/17/07
(U) Toggle Trust	(U) Highly classified C-IED effort	DSD 8/17/07
(U) Vehicle Optics Sensor System (VOSS)	(U) Combines high-resolution color, low-light night vision and advanced thermal imaging in a single lightweight gimbal that is mast-mounted.	DSD 8/17/07
(U) Z101 Walk-Through Portal	(U) Stand-off personnel scanning capability at Entry Control Points. Portable, conveyor belt-based, backscatter x-ray system.	DSD 8/17/07
(U) Triced Block	(U) Highly classified C-IED effort	DSD 8/17/07
Navy FY09 Transfers	Description	
(U) CREW – SM – JCREW Technique Development	(U) Joint JIEDDO and Navy Technique Development effort	DSD 8/17/07
(U) CREW – SM – Mounted 2.1 Sustainment / Support	(U) Sustainment and support effort for CREW Mounted 2.1	DSD 8/17/07
(U) Bomb Suit NVGs	(U) Night Vision Goggles	DSD 8/17/07
(U) EOD – Disposable Firing Systems	(U) Remote Firing Systems	DSD 8/17/07
(U) EOD Robotic Systems Datalink	(U) Communications upgrade for EOD robots	DSD 8/17/07
(U) EOD SATCOM	(U) Communications upgrade for EOD teams	DSD 8/17/07
(U) EA-6B LITENING Pods	(U) Modification of USMC ES-6B LITENING ISR Pods to provide EO/IR Capability.	DSDM 8/18/09
Marine FY09 Transfers	Description	
(U) CREW – USMC - Sustainment	(U) Sustainment of USMC CREW Systems	DSD 8/17/07
(U) Ground-Based Observation and Surveillance System (G-BOSS)	(U) Integrated and networked ground ISR system	DSD 8/17/07
(U) Z – Backscatter Vans: MOA dtd 28 Jan 2008	(U) Mobile imaging system for remote vehicle inspections for hidden explosives at entry control points.	DSDM 8/18/09
Air Force FY09 Transfers	Description	
(U) CREW – SM – Mounted 2.1	(U) Force protection capability against RCIED threats for all tactical wheeled military vehicles.	DSD 8/17/07
Air Force FY09 Additional Transfers	Description	
(U) GaRDS	(U) Gamma Ray detection vehicle system for screening trucks, cargo containers, and passenger vehicles for contraband and explosives.	MFR to Air Force

SOCOM FY09 Transfers	Description	Source
(U) Native Echo	(U) A non-attributable multi-media influence effort	DSD 8/17/07
Agency FY09 Transfers	Description	Source
(U) NSA: Tangletamer	(U) Highly classified SIGINT effort	DSD 8/18/09

Terminations		
(U) CREW – PDCREW – Legacy	(U)	Repair services and spares at the lowest replaceable unit. The rapid introduction of improved CREW systems soon limited the sustainability of this initiative, as newer CREW variants could not be serviced by the old spares components.
(U) EOD Hotstick	(U)	Telescopic, man-portable, lightweight robotic manipulator
(U) Hotshot	(U)	Vehicle-mounted RCIED neutralization system
(U) IO Reachback	(U)	Reachback provided to Information Operations support to JIEDDO
(U) Jaguar I (FOPEN)	(U)	UHF radar system on a C-12 aircraft to provide airborne tactical surveillance
(U) JUNCTORENEMY	(U)	Highly classified C-IED project
(U) Semi-Autonomous HMMWV	(U)	Remote Control HMMWV to lead convoys in urban terrain
(U) Snarf	(U)	X-Ray apparatus used to identify hazards internal to suspect devices. 7/14/09 LOO IPT recommended Termination.



## ***JIEDDO Field Teams***

JIEDDO Field Teams are deployed to Iraq and Afghanistan to ensure that all C-IED efforts translate effectively into each theater. They serve as JIEDDO's primary operational link, supporting the successful integration of C-IED training, materiel programs, and network attack solutions into current operations.

JIEDDO Field Teams supported the delivery and distribution, ongoing development, and operational training of a wide array of C-IED capabilities throughout FY 2009, including mine-rollers, CREW systems, pre-detonation systems, and route clearance equipment.

Non-materiel support included integration of Corps, Division, and Marine Expeditionary Force support team elements into coordinated C-IED cells; observation of individual unit C-IED TTPs; and facilitation of in-theater and reach-back COIC support for operations planning and execution.

In Iraq, the JIEDDO Field Team Commander also serves as the in-theater COIC Director, leveraging COIC tools to enable commanders on the ground to effectively attack the IED networks within their respective areas of responsibility. In addition, the JIEDDO Field Team Afghanistan Commander also serves as the CJTF Paladin Commander and the International Security Assistance Force C-IED Branch Chief.

## ***Science and Technology***

JIEDDO continued to evolve its C-IED Science and Technology (S&T) program with a portfolio of more than 200 projects. The preponderance of JIEDDO's \$500M S&T investment focused on immediate warfighter needs; however, JIEDDO also made key investments to provide longer term C-IED solutions. In coordination with Director, Defense Research & Engineering, JIEDDO published its first S&T Investment Strategy for Countering IEDs – identifying counter-IED capability gaps; outlining S&T programs to address these gaps; and describing efforts to coordinate counter-IED S&T investments across the DoD.

In 2009, JIEDDO deployed multiple command wire detection systems to combat theaters for operational assessments, including Desert Owl, Copperhead, and Sand Dog. Through focused S&T investments, JIEDDO continued to advance state-of-the-art command wire and buried IED detection systems.

Through sensor fusion research investment, JIEDDO developed the fusion exploitation framework (FEF), an open-standard, software interface layer which serves as a foundation for implementing advanced fusion within multi-sensor and multi-intelligence systems. The FEF was transitioned from S&T to the Distributed Common Ground Station – Army (DCGS-A) V3.1. This capability will be delivered to theater in 4th quarter FY2010 and will enable both interactive and automated fusion within the Army's battlefield intelligence system.

In FY 2009, JIEDDO established a Social Dynamic Analysis (SDA) S&T portfolio in the Attack the Network Line of Operation to examine the use of social science, cultural understanding, and analytic methodologies to counter networks employing IEDs. Under the hypothesis that an insurgency has access to unlimited human capital and thus cannot be defeated by attrition, SDA examines social dynamics, counterinsurgency doctrine, and non-kinetic methods to deter, mitigate, and/or reduce insurgency.

Within the COIC, JIEDDO developed innovative new technologies and methodologies to assist all-source intelligence analysts in scoping, assessing, and fusing information about insurgent networks.

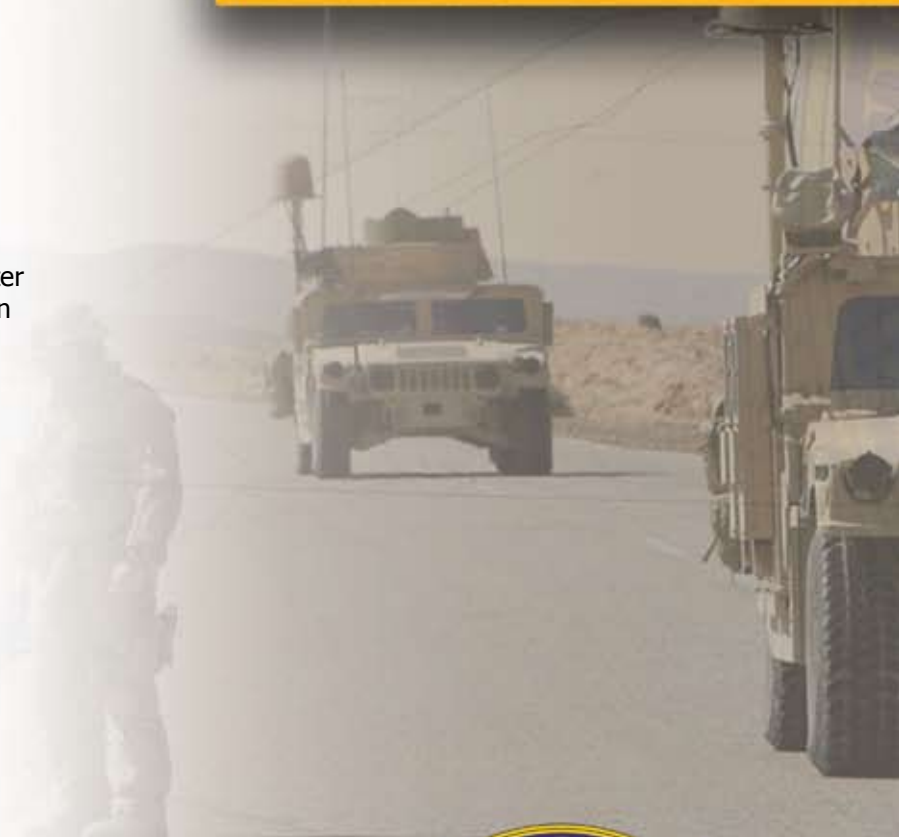
The JIEDDO S&T portfolio extends beyond technology development and looks to develop understanding of physical phenomena associated with IEDs and the environments in which they are placed. This understanding guides both new detection technology investment and warfighter training. JIEDDO S&T supported medical research to understand IED blast effects on warfighters – informing personal protection technology investments.

In 2009, JIEDDO continued to expand and leverage the resources of its solutions network to develop an increased understanding of the threat and to continuously search for new capabilities for the warfighter. JIEDDO participated as a member of the Defense Science and Technology Advisory Group to coordinate its S&T investments across the Services. JIEDDO leveraged National Research Council and Defense Science Board expertise to advise JIEDDO leadership on S&T program execution. JIEDDO hosted semi-annual Technology Outreach Conferences to publicize C-IED gaps and seek solution proposals from industry partners.

## (U) Acronyms

3G	third generation	GAO	Government Accountability Office
ACGU	Australia, Canada, Great Britain, United States	GCTF	Global Counter Terrorism Force
AFRICOM	U.S. Africa Command	GIRoA	Government of the Islamic State of Afghanistan
ABIED	Air-borne IED	GWOT	Global War on Terrorism
ANSF	Afghan National Security Forces	HME	homemade explosive
AOR	area of responsibility	HMDS	Husky Mounted Detection System
AOD	Acquisition Oversight Division	HMMWW	Highly Mobile Multipurpose Wheeled Vehicle
AQI	al Qaeda in Iraq	HOA	Horn of Africa
ATEC	Army Test and Evaluation Command	HSTLs	Home Station Training Lanes
AtN	JIEDDO LOO: Attack the Network	HUMINT	Human Intelligence
CAC	Capabilities Acquisition Center	I2C	IEDD Integration Cell
CCMS	counter-countermeasures	IED	Improvised Explosive Device
CDMA	Code Division Multiple Access	IEDD	IED Defeat
CENTCOM	U.S. Central Command	IK	Imirat Kaukaz
CF	Coalition Forces	IR	Infra Red
C-IED	Counter Improvised Explosive Device	IRAM	Improvised Rocket Assisted Mortar
CITP	Counter-IED Targeting Program	ISAF	International Security Assistance Force
CJTF	Combined Joint Task Force	ISF	Iraqi Security Forces
C-MATT	C-IED Mobile Assistance Training Teams	JAM	Jaysh al Mahdi
COCOMs	Combatant Commands	JATAC	Joint Asymmetric Threat Awareness and C-IED
COE	Center of Excellence	JCAAMP	Joint IED Defeat Capability Approval and Acquisition Management Process
COIC	Counter-IED Operations Integration Center	JCAST	JIEDDO COIC Analytical Support Team
COIN	Counterinsurgency	JCB	Joint Capabilities Board
COMINT	Communications Intelligence	JCOE	JIEDDO: Joint Center of Excellence
CONUS	Continental United States	JEMS	JIEDDO Enterprise Management System
CREW	Counter Radio Controlled IED Electronic Warfare	JFCOM	U.S. Joint Forces Command
CSG	Competitive Strategies Group	JIEDDF	Joint Improvised Explosive Device Defeat Fund
CTC	Combat Training Center	JIEDDO	Joint IED Defeat Organization
CVRJ	Combined Vehicle Radio Jammer	JMRC	Joint Multinational Readiness Center
CW	command wire	JOLLER	Joint IED Neutralize Roller
CWIED	Command Wire IED	JROC	Joint Requirements Oversight Council
DARPA	Defense Advanced Research Project Agency	JROCM	JROC Memorandum
DCG	Device Coordination Group	JTB	JIEDDO Test Board
DFFC	Directionally Focused Fragmentation Charge	JTCOIC	Joint Training Center IED Operations Center
DHS	Department of Homeland Security	JTF	Joint Task Force
DIA	Defense Intelligence Agency	LVBIED	Large Vehicle-Borne IED
DoD	Department of Defense	LOO	Line of Operation
DoJ	Department of Justice	MCFI	Multinational Coalition Forces-Iraq
DSTAG	Defense Science and Technology Advisory Group	MCIT	Mobile C-IED Interactive Trainer
DtD	JIEDDO LOO: Defeat the Device	MILF	Moro Islamic Liberation Front
DTMF	Dual Tone Multi-Frequency	MNF-I	Multi-National Forces Iraq
ECP	Entry Control Point	MRAP	Mine Resistant Ambush Protected (vehicle)
EFP	Explosively Formed Projectile	NDA CLT	Network Dynamic Analysis Comprehensive Look Team
ELINT	Electronic Intelligence	NORTHCOM	U.S. Northern Command
ELN	National Liberation Army	NATO	North Atlantic Treaty Organization
EO	electro-optical	NTC	National Training Center
EOD	Explosive Ordnance Disposal	OEF	Operation Enduring Freedom
EUCOM	U.S. European Command	OCO	Overseas Contingency Operations
FARC	Revolutionary Armed Forces of Columbia	OPFOR	Opposing Forces
FEF	Fusion Exploitation Framework	PACOM	U.S. Pacific Command
FOB	forward operating base		
FVEY	Australia, Canada, Great Britain, and New Zealand		

PBIED	Person-Borne IED
P-FCB	Protection Functional Capabilities Board
PIR	passive infrared (type of switch)
RC	regional command
RC	remote control
RC-East	Regional Command-East, Afghanistan
RC-South	Regional Command-South Afghanistan
RCIED	Radio-controlled IED
RCOS	Route Clearance Optics Suite
RF	radio frequency
RFI	request for information
RFS	request for support
RDT&E	Research Development Testing and Evaluation
S&T	Science and Technology
SDA	Social Dynamic Analysis
Services	U.S. Military Services
SIC/CPC	Strategic Influence and Cultural Political Cell
SIED	Suicide IED
SIGINT	Signals Intelligence
SIMS	Systems Integration and Modeling and Simulation
SIPR	Secret Internet Protocol Router
SOCOM	U.S. Special Operations Command
SPARK	Self Protection Adaptive Roller Kit
SVBIED	Suicide Vehicle-Borne IED
SVIED	Suicide Vest IED
T3	Transitions, transfers, and terminations
TEDAC	Terrorist Explosive Device Analytical Center
TRID	Technology Requirements and Integration Division
TSE	Tactical Site Exploitation
TtF	JIEDDO LOO: Train the Force
TTPs	tactics, techniques, and procedures
UBE	unknown bulk explosive
UBIED	Underbelly IED
UHF	ultra high frequency
ULFA	United Liberation Front of Assam
USF-I	U.S. Forces Iraq
USFOR-A	U.S. Forces-Afghanistan
UVIED	Under Vehicle IED
VBIED	Vehicle-Borne IED
VOIED	Victim-Operated IED (switch)
VOSS	Vehicle Optics Sensor System
WBIED	Water-Borne IED
WIT	Weapons Intelligence Teams
WTI	Weapons Technical Intelligence
YPG	Yuma Proving Ground









**Joint Improvised Explosive Device Defeat Organization  
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