
Operational Environment Master Plan (OEMP)



Distribution Restriction: The material in this document is under development. It is NOT approved for final distribution, but to be used as a conceptual reference for COE and OPFOR requirements to set realistic training conditions.

Headquarters, Training and Doctrine Command, ACoS G2

Operational Environment (OE) Master Plan (MP)

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1. Executive Summary

THE OPERATIONAL ENVIRONMENT

"In the years ahead, the United States will confront complex, dynamic and unanticipated challenges to our national security and the collective security of our Friends and allies. These challenges will occur in many forms and will be waged across the spectrum of conflict – ranging from peaceful competition to general war and at all points in between."

The Army of the 21st Century: A Balanced Army for a Balanced Strategy

1. Operational Environment (OE) training conditions must use battlefield complexities to drive full-spectrum operations (FSO) (offense, defense, and stability) within various points of the spectrum of conflict (peaceful competition to general war and at all points in between), employing kinetic and non-kinetic effects, against various types of threats – including hybrid (diverse and dynamic combinations of regular and irregular forces, both conventional and unconventional, as well as criminal elements, all unified in purpose). Training conditions must bring the challenges associated with teaching, coaching, training, and developing multi-skilled, agile, and adaptive leaders, increase cultural competencies and language capabilities, and help us meet Army and Joint training objectives by achieving maximum proficiency ratings in FSO Mission Essential Tasks.

The task, then, is to replicate the challenges of complexity and extended time in the training environment – at schools, training centers, and home station.

Leader Development Strategy for an Expeditionary Army, 11 September 2009

2. The Operational Environment Master Plan (OEMP) identifies and defines the complexities in terms of conditions and resource requirements (tools) needed to transform traditional training methodologies into contemporary operational complexities of the 21st Century. The OEMP holistically defines high and medium fidelity requirements that establish current and future, realistic and viable training conditions at the Combat Training Centers (CTCs), Homestation Training (HST) sites, institutions and Centers of Excellence (CoEs), and Enduring Mobilization Training Centers (EMTC).

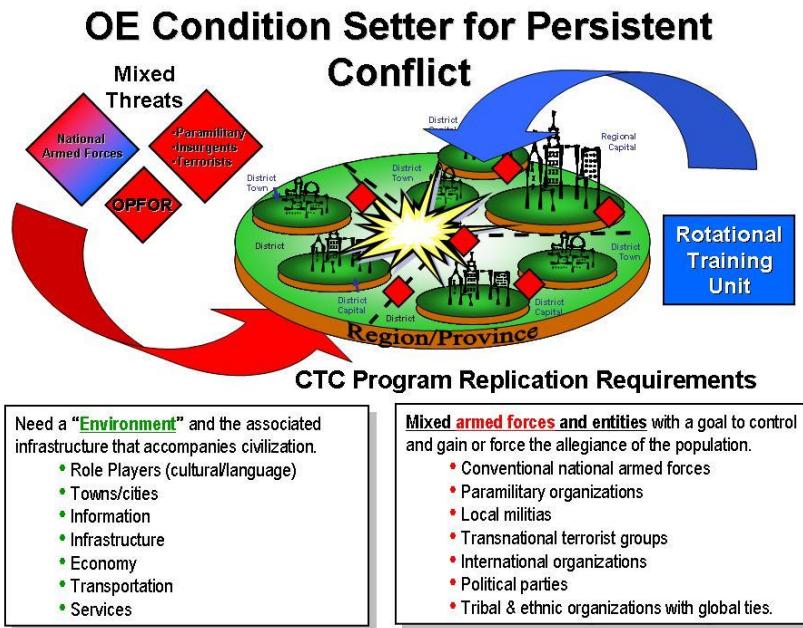
3. Enclosure B of the OEMP provides Army and TRADOC leaders a rough order of magnitude dollar cost, baseline estimate for resource-decision consideration. To implement these requirements, TRADOC program directors, councils of colonels, and program modernization

reviews will have to conduct further cost and risk analysis, in coordination with FORSCOM, as well as establish funding priorities, and provide these recommendations to the training general officer steering committee and HQDA G-3/5/7 (DAMO-TRS/C) for funding within FY 12-17 programs of record and program objectives management projections to ensure that FSO training conditions replicate the OE complexities.

4. The OEMP construct for presenting the OE is divided into three parts, (1) the OE (2) the OPFOR, and (3) OE validation for trainers and educators. The benchmark used for replication requirements is to be considered "good enough" solution, as directed by DA G3, to replicate OE complexities at CTCs, HST sites, and EMTCs. It should be noted that fidelity requirements have not been defined for learning institutions and Centers of Excellence (CoE) at this time.

a. OE: The replicated environment must be capable of setting conditions to drive BLUFOR training objectives and provide enough stimuli to inject the complexities of the OE. OE complexities and influences are defined by eight variables as described in FM 3.0, which include political, military, economic, social, information, infrastructure, physical terrain, and time (PMESII-PT).

(1) Political: The Political variable encompasses the Governmental orientation and loyalty toward BLUFOR, the



administrative bureaucracy, type of governmental, stability, effectiveness, and status. Most political replication requirements are not resource constrained, with the exception of cultural or special skilled role-players. This variable is primarily developed through the scenario development.

(2) Military: See OPFOR paragraph below.

(3) Economic: The Economic variable encompasses the type and function of the economic base, status, and structure to include the banking and criminal aspects. This variable is one of the more difficult to replicate as manifestations of it, such as markets and farming, are easily to see, but providing the interconnected complexities that encompass monetary and economic dependencies are multifaceted. Costs incurred in this category primarily support farming/ranching and industry replication, including banks. However, innovative methods, such as field-fuel points as gas stations can also stimulate this variable.

(4) Social: The Social variable encompasses various aspects of the demographic mix as social/religious groups to include volatility, transience, literacy, and criminal tolerance. Much of this variable is also influenced on cultural and language complexities. This variable is the most resource intensive based on recurring annual costs of role-players. Current role-player costs across the Army are difficult to estimate as there is no centralized oversight as recommended by the Army Audit Agency.

(5) Information: The Information variable encompasses the various potential mediums and conditions of passing or influence information flow, as well as sophistication levels of equipment and use. The recent introduction of independent commercially compatible cellular network systems (IC3NS) and wireless local loop (WLL) technology within the CTCs is promoting a newly realized information environment that entails replicated cellular telephones, internet (cyber), high-powered cordless phones (HPCP), voice over internet protocol phones (POIP), and also provides some bases for radio and television. While many of these initiatives were led by TRADOC G2 and funded through the Joint Improvised Explosives Devices Defeat Organization (JIEDDO) and the Joint Forces Command's (JFCOM) Joint National Training Capability (JNTC) OPFOR program, the lack of critically needed sustainment funding is threatening the loss of these complexities.

(6) Infrastructure: The Infrastructure variable encompasses the urban layout and building types and density, as well as available services and overarching information and transportation architectures. The fundamental foundation for determining the minimum number of towns needed to replicate a high-fidelity environment is the premise that every training maneuver battalion is responsible for interacting/securing at least two towns (causing the battalion commander and his staff to look at least into two different directions) consisting of one small and one medium town. Additionally, one large town is added for a brigade headquarters to not only provide oversight of battalions, but also be responsible for the interaction with the large town (province capital). This "Lego" effect implies that as the number of maneuver battalions or other specialized units increase per training event, the requirements for number of towns and buildings also increased.

(7) Physical Terrain: The Physical Environment (training environments) variable encompasses various landforms, drainage considerations, natural hazards, and vegetation; it also includes the climatic conditions. Most terrain at training locations "is what it is," however, planning considerations for types of units and potential missions should be drivers for determining which units attend which CTCs. For example, a unit with a primary OIF/OEF mission of main supply route (MSR) and convoy security should conduct their Mission Readiness Exercise (MRE) at the National Training Center (NTC) given the more terrain along MSRs.

(8) Time: The time variable encompasses timeline and scenario setting conditions to provide for exercise event resolution. While least resource intensive, this variable is one of the more complicated as many weeks or months of "real-world" experiences must be replicated in 6-12 days significantly increasing the operational tempo of incidents.

b. OPFOR: The Military variable of the OE encompasses all aspects of the type (regular/irregular, conventional/unconventional, hybrid) capability, and equipment of the OPFOR as well as any niche weaponry and unique tactics. By default, within the training environment, it also includes the replication of host-nation/foreign security forces (HNSF/FSF) as well as other armed elements such as criminals. OEMP OPFOR requirements are outlined in three categories: (1) Training Aides, Devices, Simulators and Simulations (TADSS); (2) Command,

control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR), and (3) Vehicles.

(1) TADSS: This will be the most expensive modernization effort of the military variable as it includes the cost to develop the ability to replicate multi-spectral threat air defense stimulants/systems (Infrared and radio frequency) needed to train aircraft crew early warning systems.

(2) Vehicles: The second highest anticipated cost is for the OPFOR Surrogate Wheeled Vehicle (OSWVs) program which includes both the combat and commercial vehicles, required to replicate the global proliferation of combat wheeled vehicles, such as the Russian-made BTR, and also to challenge the agility and speed of Stryker Brigade Combat Teams (SBCTs). Additionally, most commercial vehicles (collectively over 800 at the CTCs) are procured through local methods vice as an Army program of record that would allow it to negotiate better prices through the power of volume.

(3) C4ISR: This category is probably the least developed, but potentially the most significant for the 21st century and beyond as it includes not only aspects of the OPFOR electronic warfare and command and control capabilities, but also computer network and information exploitation/attack capabilities needed to realize the implications of information warfare and the continuing advancements of cyber-warfare.

c. Training and Validation: As the Army's responsible official for establishing OE and OPFOR training conditions for training across the army, TRADOC G2 will continue to develop OE/OPFOR training, publications and lessons learned, and conduct program accreditations and validations. Moreover, the addition of the Joint Training Counter-Improvised Explosive Devices Operations Integration Center (JTCOIC) brought about the ability to provide OE wrap-around capabilities, better fidelity in OPFOR (insurgent) network replication, and an OE central training database (brain).

5. CTCs:

a. OE: Training environments at the CTCs must encompass capabilities to replicate four of the eight OE variables (economic, social, information, and infrastructure). The remaining variables, other than the OPFOR, can be replicated through scripting.

(1) Within these four variables, the highest reoccurring cost will again be the social variable which accounts for cultural, language, and special skilled role-players. Types and quantities for these role players range from 233 at NTC, 434 at JRTC and JMRC for full spectrum training rotations, and up to 540 for Maneuver Rehearsal Exercises (MREs). However, these numbers may increase as rotational training units increase (see Civilians on the Battlefield Working Group paper, enclosure B).

(2) A large cost presented in the previous version of the OEMP included upgrades to training environment infrastructure for at least seven urban sites per CTC (1 large, three medium, and three small) which is drastically reduced as all Maneuver CTCs (MCTCs) now meet the minimum requirements with the exception of roads and underground networks at the National Training Center (NTC).

(3) The information operations realm of training conditions still requires greater fidelity and replication. Significant improvements have been made over the past two years with the introduction of an independent commercially compatible cellular network system (IC3NS) at the NTC and the Joint Readiness Training Center (JRTC), and a radio broadcast capability at NTC. An investment in fiber optics and fourth generation wireless technologies at all three CTCs is ongoing but will deliver internet, email and blogging capabilities upon completion.

(4) The Battle Command Training Program (BCTP) uses the Joint Non-Kinetic Effects Model (JNEM) to analyze the impacts of military operations on civilian groups during simulation Warfighter exercises (WFX) by attempting to simulate complex human dynamics. BCTP expects to transition from the Corps Battle Simulation (CBS) to the Warfighter's Simulation (WARSIM) by FY11.

b. OPFOR: CTCs must be capable of replicating 50-70% of a Tier II equipped OPFOR Brigade Tactical Group (BTG), modified slightly per maneuver CTC (MCTC) to address specific CTC training parameters.

(1) OPFOR requirements were cross-walked with current capabilities on hand at each of the CTCs to determine shortages and/or gaps for funding purposes. CTC requirements include air

defense systems, combat & commercial vehicles, and specific OPFOR weapons such as shoulder fired anti-tank systems.

(2) Additionally, OPFOR Aviation (attack, recon and lift) are being worked separately with DAMO-TR, DAMO-AV, Army G8, TRADOC G2, TCM-L and CTCD. The cost and fielding of the OPFOR aircrafts (UH-72A), equipped with Multiple Integrated Laser Engagement System (MILES), instrumentation, visual modifications (VISMOD) and command and control (C2) packages are being coordinated and synchronized separately through Army G3 (DAMO-AV) and Army G8.

6. HST/EMTC:

a. OE: Training sites must have a minimum of three complex terrain sites (towns/MOUT), with associated PMESII-PT influences. As with the CTCs, the sustainment cost of role players to replicate medium fidelity of social, religious, language and culture will account for most recurring funding requirements. Also critical is the means to replicate the information variable.

b. OPFOR: HST/EMTC required resources to replicate a task-organized OPFOR maneuver battalion to challenge BLUFOR battalion collective training objectives, except a conventional (blue) battalion level defense which must be a priority CTC event.

2. Facts and Assumptions

1. Facts:

a. FM 7.0 dictates that the Army will not return to the old way of training and that (it) will demand innovation and change as (it) adapts unit training and leader development in the years ahead (short-term FY 09-11 and Program Objective Memorandum [POM] year FY 12-17).

b. The Army's Leader Development Strategy for an Expeditionary Army, dated 11 September 2009, states that training "must develop leaders who are effective in the context of ill-defined problems against an enemy likely to migrate among operational themes. We must develop leaders by challenging them with "**complexity**" and "**extended time.**" We "raise the bar" on the leader in training and education by adding the complexities of societal, religious, tribal, and economic factors - and occasionally by adding mass - and we develop leaders who can anticipate the adaptations and transitions an enemy will make during the course of an extended campaign.

c. Goal 7, Objective F, of the Army Training and Leader Development Strategy (AT&LDS), dated 2 December 2008, provides that HQDA G3/5/7 will "Develop, field, and sustain modernized LVC, including gaming, training systems and OPFOR equipment to maintain relevancy and to improve fidelity of instrumentation TADSS and facilities pillars at the CTCs, including Exportable Training Capability, in accordance with the CTC Way Ahead and Operational Environment Master Plan (OEMP)."

d. The Army Campaign Plan (ACP) (Change 5), Campaign Objective 4 outlines the requirement to "train the Army and Grow Adaptive Leaders." One key major objective is 4-5 which requires us to "adapt Army training to support AFORGEN and the changing COE."

e. DAMO-TRS presented at the Training and Leader Development General Officer Steering Committee (TLGOSC), chaired by the DA G3, a "Collective Training Investment Strategy" which included aspects of CTC, home-station (HS), and mobilization station (MOB) training capabilities out to year 2015. Both the COE and OPFOR capabilities called for a "High" fidelity of replication at the maneuver CTCs (MCTCs) and at BCTP. The Exportable Training Capability (ETC), Homse-Station Training

(HST) sites, and Enduring Mobilization Training Centers (EMTC) require a "Medium" fidelity.

f. The Chief of Staff of the Army Training and Leader Development guidance summarizes that training must be focused on the COE and our leader development on the future OE.

g. The CSA announced during the Army Training and Leader Development Conference that the Army will return to a single METL as the formerly Core Mission Essential Task List (CMETL) and Deployable Mission Essential Task List (DMETL) confused the force. As such, all training must focus on setting full spectrum operations (FSO) training conditions along several points within the spectrum of conflict to include Limited Intervention, Irregular Warfare, and Major Combat Operations operational themes.

h. Guidance provided by the DA G3/5/7 on 21 December 2007 via a DA Task to TRADOC (Integrating the COE into Army Training), states that for constraint resource purposes, this OEMP should define "Good Enough" requirements.

i. DA G3/5/7 Memorandum dated 27 March 2008, which captured "Due-Outs" from the CSA CTC Huddle tasked TRADOC - To ensure a full-spectrum capable OPFOR...identify and compare requirements with those on hand (CTCs) and recommend desired, required, and critical OE capability levels to execute baseline MCO and IW scenario at CTCs...

j. The TRADOC Intelligence Support Activity (TRISA) will further define the variables of the Operational Environment in the proposed FM 3.2 using the political, military, economic, social, infrastructure, information, physical environment, and time (PMESII-PT) as a framework.

2. Assumptions:

a. FORSCOM will predominately schedule Heavy Brigade Combat Teams (HBCTs) and Stryker Brigade Combat Teams (SBCTs) to attend training at the NTC while scheduling predominantly Infantry Brigade Combat Teams (IBCTs) at JRTC; Special Operations Forces (SOF) will continue to be integrated to both training centers (and JMRC).

b. United State Army Europe (USAUER) continues to train various types of units including HBCTs, SBCTs, IBCTs, and

airborne units, as well as multinational and coalition military units.

c. Even with the recently acquired land-expansions east and west of NTC and continued plans for land expansion at the JRTC, Maneuver Combat Training Centers (MCTCs) will not have enough physical terrain to fully maneuver a heavy brigade combat team (HBCT) and an OPFOR Brigade Tactical Group (BTG) to include deep operations and must include considerations for simulative and/or constructive replication domains.

e. The DA G3 approved April 2007 Civilians on the Battlefield [Role Players] working group (COB-WG) model setting the minimum benchmark of one province with three districts (minimum 7 towns) per CTC continues to be an adequate baseline to replicate environmental factors in full-spectrum training. However, the NTC has recommended a relook based on what they feel are new immersing training requirements that would elevate OIF MRX requirements to at least eight towns.

3. Training for Persistent Conflict

"During the next decade or more of persistent conflict, the Army will prepare to operate among indigenous populations with Joint, interagency, and multinational partners against networked, adaptive, asymmetrically capable and equipped adversaries in order to achieve US objectives."

CSA, June 2007 (echoed July 2009)

1. Persistent conflict inspires different interpretations and may be understood by some foreign states as less than war, and by others as total war. Key aspects of persistent conflict include:

- a. Terrain holds broader significance than a military advantage alone.
- b. Violence, as applied by the enemy, is calculated on how it affects control of the population, and not necessarily by the Laws of Land Warfare.
- c. Enemy cannot be destroyed in a conventional sense with external intervention. He can be defeated and/or neutralized, or made irrelevant with wise tactical and strategic choices and the application of alternative interpretations of ideology.
- d. Characterized by a continually changing mix of armed forces and entities working to coerce, control and gain the allegiance of a population.
- e. Local problems are global problems and local actions have 2nd and 3rd order effects regionally and globally.

2. During the Army Training and Leader Development Conference in July 2009, the Chief of Staff of the Army (CSA) spoke of two critical elements consistent and conducive of the Operational Environment:

- a. As a 21st Century Land-power, we will operate in "an Era of Persistent Conflict" consisting of:

- Globalization

- Technology
- Demographics
- Resource Demand
- Climate Change
- Weapons of Mass Destruction
- Failing States

b. As a 21st Century Land-power, we'll be engaged within an "Evolving Character of Conflict" that is characterized by:

- Diverse Actors
- Hybrids Threats
- Among the People
- Unpredictable Indigenous Partners
- Global Media
- Interagency Partners

2. This type and character of conflict must be replicated as a "condition" setting requirements in Army training and Leader Development - complexities of the operational environment. Further discussions of the "Operational Environment" can be read about in the TRADOC G2 White Paper, The Operational Environment, approved by the TRADOC Commander in August 2009, see enclosure 1.

3-1. TRADOC Campaign Plan (TCP) Considerations

The future will continue to be one of persistent conflict--a period of protracted conflict among state, non-state actors, and individual actors who use violence to achieve their political and ideological ends. Driven by the interaction of several trends ranging from globalization to the proliferation of Weapons of Mass Destruction, the future is uncertain and increasingly complex. Today, the Army, as part of a joint, interagency, and multinational force, must be prepared to confront a combination of threats -- traditional, disruptive, catastrophic, and irregular -- at times simultaneously.

TCP 2010-11, 25 June 2009

1. The TCP is synchronous with the Army Campaign Plan, and demonstrates TRADOC's commitment to continuous improvement in pursuit of winning our Nation's wars and preserving the All-Volunteer Force. TCP outcomes and specified tasks, to include OE and OEMP requirements identified for training and leader development will be executed to the extent possible with available resources. Resource availability is a function of direct funding by HQDA and savings garnered through TRADOC business efficiencies.
2. The TRADOC CG's priority outlined within the TCP are:
 - a. Leader Development (Training, Education, Experience):
 - (1) Prepare leaders to execute missions in extended campaigns. Campaigns mean time, time means change, and change requires leaders who can anticipate change, create opportunities, and manage transitions.
 - (2) The leader development strategy describes the shifting balance of tactical and operational art as our adversaries decentralize, network, and operate among the people to overcome our technological advantages. This demands that we develop leaders who can lead increasingly decentralized organizations, network with their Joint, Interagency, Intergovernmental, and Multinational partners, and who can develop plans and operations that win the support of the population while defeating the enemy.

(3) Requires equal commitment to the three pillars of leader development—training, education, and experience—and considers the development of leaders to be a career-long process.

- c. Initial Military Training
- c. Support to ARFORGEN
- d. Future Capabilities Integration
- e. Army Training Strategy
- f. Human Capital Core Enterprise

3. Core functions and key enablers. Our core functions are integral to our core competencies and are the critical major functions that allow us to accomplish TRADOC's mission. Our key enablers are significant functions necessary to execute two or more core functions. We see ourselves as an organization through our core competencies, core functions, and key enablers. MSO leads will develop clear responsibilities, authorities, accountability, metrics, governance, resources, and outcomes for each core function for which they have responsibility. The review of our organization, competencies and functions may generate additional requirements for new alignments, relationships and changes in task organization to produce improvements in our support to ARFORGEN, the HCE and the Army.

a. Core functions:

(1) LOO Human Capital core functions: Acquire, Distribute, Sustain, Transition, Structure, and Develop (Career Management), Compensate (FY 10).

(2) LOO IMT core functions: Initial Military Training.

(3) LOO Training, Leader Development, and Doctrine core functions: Leader Development, Lessons Learned, Doctrine, Training Development, Training Support, and Functional Training.

(4) LOO Develop and Integrate Capabilities core functions: Concept Development, Requirements Determination, and Capabilities Integration.

b. Key Enablers defined as a significant function that underpins the ability to execute two or more core functions and include: Knowledge Management, Operational Environment, and Capabilities Innovation.

(1) TRADOC G2 was directed to frame the Operational Environment (OE) and replicate it across TRADOC; AR 350-2 (Opposing Forces Program) extends this requirements across the Army.

(2) Framing the operational environment is essential for insuring relevant concepts, capabilities, training, and leader development programs.

(a) The OE facilitates the identification of current and future requirements and provides the standards for rigorous experimentation. It enables the US Army to train and educate Soldiers and Leaders against the conditions found in the near and mid-term operational environment to include providing a wide range of adversary capabilities and complex circumstances.

(b) Using a central training (data) brain (CTB), the OE can be enriched and populated with actual current data for common scenarios for training, education, and capabilities development based on the OE.

(c) The development of common scenarios, specifically for training and education, will insure we produce a consistent product containing the dilemmas and challenges essential for effective training and leader development. The common scenarios will be diverse enough to allow educators and trainers to focus on specific development of branch and functional competencies.

(3) The OEMP must capture, especially with respect to leader development and training, resource requirements critical to replicating these OE complexities with consideration for very limited resources and funding.

3-2. Training Tasks and Considerations

1. Most of the OEMP requirements were developed with respect to task needing to be trained, both collective and leader development. As such, FORSCOM Training Guidance was used as a baseline for requirements across the Army. While specific requirements may have shifted in terms of priority, overarching training requirements and tasks remain constant as often the conditions and how the tasks are executed change, not the task itself (conditions and standards change). The below list of task were considered when working groups were challenged with how to set 'good enough' training conditions that help meet training objectives:

a. Army Warrior Training Tasks:

- Improvised Explosive Device Defeat Training
- Introduction To Detainee Operations
- Basic Iraqi and Afghani Language Training
- Every Soldier is a Senior Training (ES2)
- Collect and Report Combat Intelligence

b. Leader Training Tasks:

- Understand the Military, Political, Cultural, Economic, and Religious Environment
- Utilize an Interpreter
- Perform Negotiations
- Plan and Conduct Urban Operations
- Supervise Application of The Rules of Engagement and Use Graduated Response Matrix
- Conduct Casualty and Medical Evacuation
- Supervise Traffic Control
- Cordon and Search
- Improvised Explosive Device Defeat Training
- Crowd Control
- Enforce the Law of War and Geneva Conventions
- Supervise Handling of Enemy Personnel and Equipment
- Biometrics

c. Collective Training at Squad/Platoon, Company, and Battalion levels; and CSS:

Squad/Platoon Level

- Traffic Control Point Operations
- Observation Post Operations
- Convoy Operations
- Quick Reaction Force Operations
- Cordon and Search Operations
- Urban Operations
- MOUT
- Entry Control Point Operations
- Patrolling
- React to Sniper
- Cross a Danger Area
- Attack
- Ambush
- Raid
- Break Contact
- Conduct IED Defeat Reconnaissance and Route Clearance
- Nine-Principles of IED Combat
- Conduct Patrol Pre-Brief / Debrief

Company Level

- Convoy Operations
- Cordon and Search
- Urban Operations
- Plan and Execute Non-Lethal Capabilities
- Defend in Sector
- Attack
- Ambush
- Raid
- Collect, Receive, Analyze, and Disseminate Intelligence

Battalion Level

- Liaison with Outside Agencies
- Plan, Command and Control Quick Reactionary Force Operations
- Force Protections

- Convoy Operations
- Media Relations
- Conduct Intelligence and Reconnaissance Operations
- Conduct Knowledge Management Operations

CS/CSS Units

- Maintain OPSEC/COMSEC
- Proficient in Relevant and Applicable Combat Tasks for Assigned Missions
- Contracting
- React to Sniper

Place Emphasis on Company and Below:

- Set-Up Unit Defense
- Defend Against Level I Threats
- Defend Unit Area
- Convoy Operations
- Graduated Response (Escalation Of Force)
- Identification, Reporting And Recovery of Missing or Isolated Personnel

Place Emphasis on Battalions and Groups:

- Conduct Command and Control of Operations
- Plan Operations Using the MDMP
- Conduct Information Operations

4. Full-Spectrum Training Conditions

The complexity of today's operational environments requires commanders to combine offensive, defensive, and stability or civil support...

FM 3.0 (FEB 2008)

1. The Army's operational concept is *full spectrum operations*: Army forces combine offensive, defensive, and stability or civil support operations simultaneously as part of an interdependent joint force to seize, retain, and exploit the initiative, accepting prudent risk to create opportunities to achieve decisive results. They employ synchronized action-lethal and nonlethal—proportional to the mission and informed by a thorough understanding of all variables of the operational environment. Mission command that conveys intent and an appreciation of all aspects of the situation guides the adaptive use of Army forces. (FM 3.0, FEB 2008)
2. Training environments must set appropriate conditions and support BLUFOR Full-Spectrum training objectives. Training for Full-spectrum operations must include offensive, defensive, and stability/civil support tasks executed under conditions within varied operational themes which may include: Limited Intervention, Peace Operations, Irregular Warfare, and Major Combat Operations.
3. While "environments" are stand alone entities to set appropriate full spectrum training conditions with minimal resources, every replicated training environment must support specific training objective. As such, and for definitional and resource requirements, the operational environment is broken down into eight variables: political, military, economy, social, information, infrastructure, physical environment, and time (PMESII-PT). These critical variables are defined in with sub-variables which are further defined by gradients. Each of these variables, sub-variables, and gradients are manipulated and resourced to appropriately establish the operational themes that drive COE conditions to meet specific full-spectrum training objectives.

4. FM 3.0 establishes themes with specific Joint operations for which environmental conditions must be set.

a. An *operational theme* describes the character of the dominant major operation being conducted at any time within a land force commander's area of operations. The operational theme helps convey the nature of the major operation to the force to facilitate common understanding of how the commander broadly intends to operate (FM 3.0).

b. FM 3.0 provides the following examples joint military operations within operational themes:

(1) Limited Intervention: covers a wide range of Joint operations and has a clearly defined purpose and limited end state, with corresponding limitations imposed on the supporting operations, characterize limited intervention operations. Exercise scenarios and COE variables must set realistic conditions that support BLUFOR training objectives for conducting:

- Noncombatant evacuation operations (NEO).
- Strikes.
- Raids.
- Show of force.
- Foreign humanitarian assistance.
- Elimination of weapons of mass destruction.
- Consequence management.
- Sanction Enforcement.

(2) Peace Operations: are characterized by complex, ambiguous, and at times, uncertain situations that may have some or all of the following: asymmetrical threats, failed states, absence of rule of law, gross violations of human rights, collapse of civil infrastructure, or presence of displaced persons and refugees. Exercise scenarios and COE variables must set realistic conditions that support BLUFOR training objectives for conducting:

- Peacekeeping operations (PKO)
- Peace building operations (PB)
- Peacemaking (PM)
- Peace Enforcement Operations (PEO)
- Conflict Prevention

(3) Irregular warfare: addresses the range of conflicts in which irregular forces, insurgency, and unconventional warfare are the predominate features of the conflict. Exercise scenarios and COE variables must set realistic conditions that support BLUFOR training objectives for conducting:

- Foreign internal defense.
- Support to Insurgencies.
- Counterinsurgency.
- Combating terrorism.
- Unconventional Warfare

(4) Major Combat Operations: take place in circumstances usually characterized as war. Successful major combat operations usually seek to defeat or destroy the enemy's armed forces and seize terrain. The proportion of offense, defense, and stability operations varies with changes in the nature of the operation, where it falls on the spectrum of conflict, and the military requirements. The CTC MP outlines specific Core Mission Essential Tasks (CMETS) that must be trained for within the Major Combat Operations aspect of the operational themes. Tasks were further drilled down to specifically address Heavy Brigade Combat Teams (HBCTs), Infantry Brigade Combat Teams (IBCTs), Stryker Brigade Combat Teams (SBCTs), or Armored Cavalry Regiments (ACRs).

3-4. Operational Themes (Samples) in Persistent Conflict

1. To set proper full-spectrum COE conditions, the OPFOR must have the capability (be equipped and resourced) to conduct OPFOR counter-tasks for both conventional and paramilitary forces. As such, OPFOR elements are a critical tool to scenario developers to emphasize operational themes as described in Chapter III. The below menu of operational themes provides minimal sample conditions that the OPFOR should be capable of setting - they are not meant to be OPFOR counter-tasks.

1. Limited Intervention: To emphasize an environment that supports training in operational themes entailing NEO, strikes, raids, show of force, etc., the OPFOR must be resourced and capable to replicate at least the following (these are not intended to be OPFOR counter-tasks):

a. Conventional OPFOR:

(1) Methods of Operation:

- Centralized w/some decentralized Ops
- Control of vital/key public facilities/services/LOCs
- Biased/corrupt/extreme Military leadership
- Limited or biased police forces
- Varied degrees of military action accountability

(2) Key Capabilities:

- None to BN(-) Light/motorized, some mech/armor
- Extremely limited logistical support capability
- Tech vehicles w/limited Tier III & IV
- Little to no specialized equipment (i.e. UAV)
- Limited redundant and secure C3

b. Irregular/Paramilitary:

(1) Methods of Operations:

- Insurgents/freedom fighters/paramilitary/terrorists
- Irregular/asymmetric & terrorist tactics

- Decentralized operations
- Creation of sanctuaries; COBs as shields
- IEDs & Suicide Bombings
- Sniper/Ambush/Demonstrations/ Kidnappings

(2) Key Capabilities:

- Advanced IED/VBIED – and the like
- Shoulder fired ATs & MANPADS
- Information operations expertise
- Trained, funded, and motivated

2. Peace Operations: To emphasize an environment that supports training in operational themes entailing PKO, PB, PM, PEO, etc., the OPFOR must be resourced and capable to replicate at least the following:

a. Conventional OPFOR:

(1) Methods of Operation:

- Mostly centralized with some decentralized Ops.
- Lack control of key public facilities/services/LOCs
- Biased/corrupt/extreme Military leadership.
- Limited or biased police/security forces.
- varied degrees of military/police accountability.

(2) Key Capabilities:

- None to BN(-) Light/motorized, some mech/armor.
- Limited in personnel experience and tactics.
- Tech vehicles w/limited Tier III or IV equipment.
- Little to no specialized equipment (i.e. UAV).
- Limited redundant or secure C3.

b. Irregular/Paramilitary:

(1) Methods of Operations:

- None or low level insurgency activity
- Strong but disorganized gang/warlord activity.
- Assassination, kidnappings, and hasty ambushes.
- Rare IEDs & Suicide Bombings.

- Violent demonstrations and/or protests.

(2) Key Capabilities:

- Rudimentary IED/VBIED – and the like.
- Limited shoulder fired ATs & MANPADS.
- Attacks mostly designed to intimidate sway opinion.
- Mostly not well trained, funded, and motivated.

3. Irregular Warfare: To emphasize an environment that supports training in operational themes entailing foreign internal defense, support to insurgencies, counterinsurgency, combating terrorism, etc., the OPFOR must be resourced and capable to replicate at least the following:

a. Conventional OPFOR:

(1) Methods of Operation:

- Centralized w/some decentralized Ops.
- Control of vital/key public facilities/services/LOCs.
- Biased/corrupt/extreme Military leadership.
- Limited or biased police forces.
- Varied degrees of military action accountability.

(2) Key Capabilities:

- BN(+) Light/motorized/some mechanized & armor.
- Varied in personnel experience and tactics.
- Tech vehicles w/limited Tier III&IV
- Some specialized/advanced equipment (i.e. UAV).
- Limited redundant and secure C3.

b. Irregular/Paramilitary:

(1) Methods of Operations:

- Insurgents/freedom fighters/paramilitary/terrorists.
- Irregular/asymmetric & terrorist tactics.
- Decentralized operations.
- Creation of sanctuaries; COBs as shields.

- IEDs & Suicide Bombings.
- Sniper/Ambush/Demonstrations/ Kidnappings.

(2) Key Capabilities:

- Advanced IED/VBIED - and the like.
- Shoulder fired ATs & MANPADS.
- Information operations expertise.
- Trained, funded, and motivated.

4. Major Combat Operations: To emphasize an environment that supports training in operational themes entailing foreign internal defense, support to insurgencies, counterinsurgency, combating terrorism, etc., the OPFOR must be resourced and capable to replicate at least the following:

a. Conventional OPFOR:

(1) Methods of Operation:

- Denial of Entry, force oriented
- Liner & Non-Liner, integrated or decentralized.
- Defenses to destroy, preserve, or deny.
- Organized into disrupt, main, reserve, deception, counterattack, protect, and/or security forces.

(2) Key Capabilities:

- BTG (-) w/Division assets.
- Tier II-IV WEG identified equipment w/night capabilities.
- Long range artillery, mortars, PGMs; limited air support.
- Advanced RISTA, IO, and CCD&CM.
- Redundant and Secure C3 to include SATCOM.
- Emphasis on Mobility.

b. Irregular/Paramilitary:

(1) Methods of Operations:

- SOF supported or led.
- Exploit U.S. ROE vulnerabilities.
- Guerilla operations.

- Decentralized.
- Sniper.

(2) Key Capabilities:

- More advanced if SOF supported/led.
- Mines/IED/VBIED.
- Shoulder fires Tier I-III AT systems.
- MANPADS.

4. Operational Environment (OE) Variables

1. The United States Army faces many challenges now and in the foreseeable future, ranging from the potential for major regional conflict to a plethora of ongoing and possible small scale contingencies. The international security environment is characterized by extreme fluidity, changing coalitions, new actors appearing and disappearing from the scene, and the proliferation of advanced technology and increased capabilities. The growing presence of influential private, non-governmental, and international organizations, each with their own unique set of interests and objectives, further complicates the security environment. Increasingly, complex terrain and urban environments comprise the areas in which decisive action must be taken to resolve crises. Cultural and demographic factors that transcend borders make conflict resolution a complicated and lengthy process. This overarching set of conditions is referred to as the Contemporary Operational Environment (COE).
2. The COE is a composite of all conditions, circumstances, and influences that affect the employment of military forces and bear on the decisions of the unit commander. All Army training will be conducted in a COE that consists of operational variables defined by the political, military, economic, social, information, infrastructure, physical environment, and time (PMESII-PT) status/condition of a state. The COE will replicate a range of conditions for full-spectrum training that could be encountered in various operational areas.
3. The variables of the COE must set the conditional framework for leader development and the conditions themselves for training. While all must be present and replicated to various degrees to meet leader development and training objectives, some will typically always have a predominance of impact during training, such as the military variable. COE variables do not exist in isolation from one another. The linkages of the variables cause the complex and often simultaneous dilemmas that a military force might face. In order to provide realistic training, training scenarios must stimulate this synergistic effect to the maximum degree that is feasible. The complexity of the specific OE in training can be adjusted to keep it appropriate for the required training objectives and the training state of various U.S. Army units.

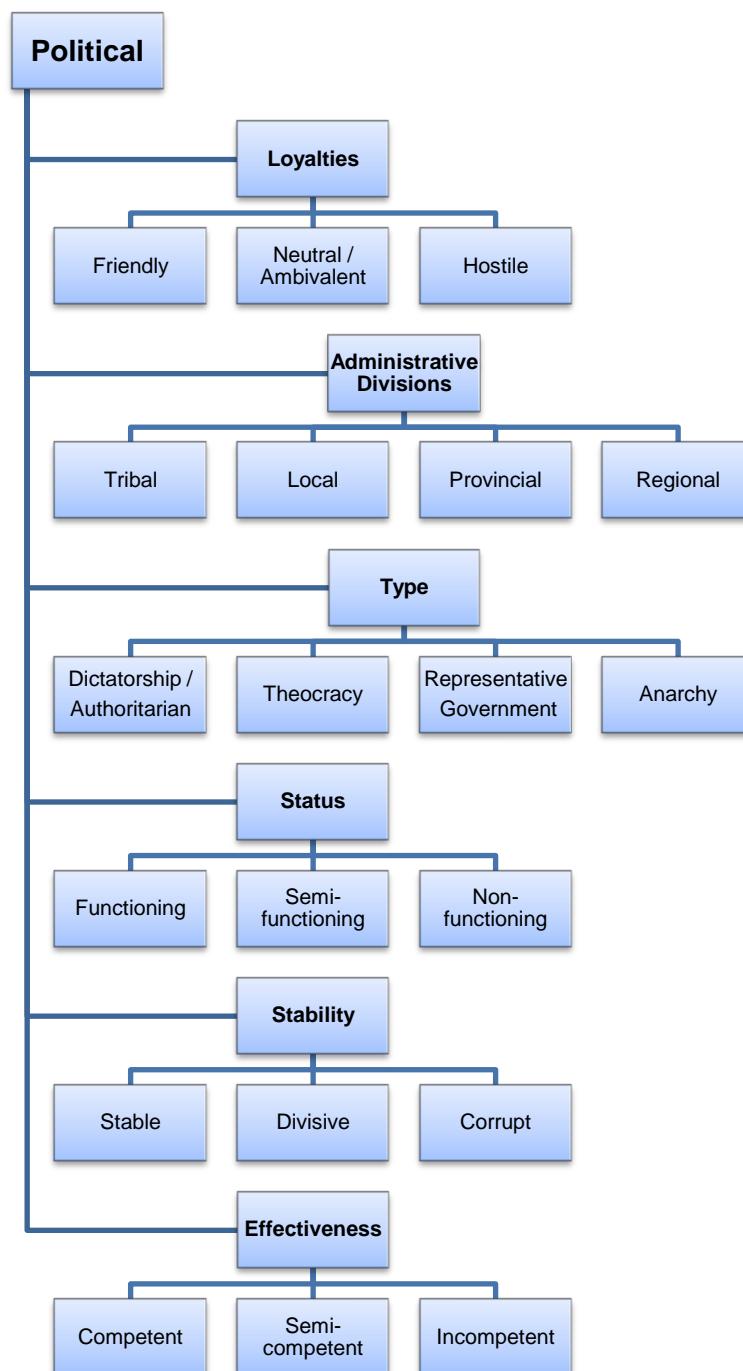
4-1. PMESII-PT Definitions & Gradients

1. PMESII-PT definitions and gradients are provided for each variable to not only describe the variable itself, but to also provide various means and gradients for training purposes.
2. Gradients provide training community leadership as well as scenario developers a variety of options to replicate specific variables to different degrees with numerous variations to account for the multitude of worldwide options.
3. While live collective training venues may not be able to replicate all gradients and variations simultaneously (which is neither expected nor realistic), it is viable and strongly encouraged that for each variable, at least one gradient of all sub-variables as listed in each of the PMESII-PT sub-paragraphs in the following chapters are represented. Specific requirements for CTC, HST, FGPs and CoEs are provided in their respective chapters.

4-1 (1) PmESII-PT Definitions & Gradients

Political Variable

1. Definition: The Political variable encompasses the Governmental orientation and loyalty toward BLUFOR, the administrative bureaucracy, type of governmental type, stability, effectiveness, and status.



2. Sub-categories and gradients:

a. Loyalties: (Scenario Considerations) Describes government orientation and attitude towards BLUFOR. Once established, this setting manifests itself in the scenario in the form of Role Player instructions or combat instructions to the OPFOR.

(1) Friendly - Describes an overall favorable, positive reception of BLUFOR activities, presence, and initiatives. Limits infiltration and scripted sabotage against BLUFOR actions. High level of tips (4 to 5 per day) and populace cooperation against OPFOR activities

(2) Neutral/Ambivalent - Describes an undecided reception of BLUFOR activities, presence, and initiatives. Increased infiltration and scripted sabotage against BLUFOR actions. Moderate level of tips (2 to 3 per day) and populace cooperation against OPFOR activities.

(3) Hostile - Describes an unfavorable, negative reaction to BLUFOR activities, presence, and initiatives. Heavy infiltration and scripted sabotage against BLUFOR actions. Low level of tips (1 to 2 per day) and populace cooperation against OPFOR activities.

b. Administrative Divisions: (Scenario and Resource Considerations) Determines the number of bureaucratic divisions within a scenario government. Also determines the type of governmental focus, domestic or international. An example would be federal, state, and local, with a primary focus on local matters.

(1) Tribal - Sub-local focus, limited government or government of limited status. Characterized by COB Tribal elders, religious figureheads.

(2) Local - Town and some district focus in the government day to day operations.

(3) Provincial - District and minimal cross-border focus by the local and provincial government. Some regional (international) elements and story themes present in the scenario. Government COB adopt a national focus at the expense of Local and Tribal needs.

(4) Regional - International and cross border focus based on the existence of multiple regions or national borders in the scenario OE.

c. Type: (Scenario and Resource Considerations) Determines the type of government structure and associated behaviors encountered by BLURFOR.

(1) Dictatorship/Authoritarian - Characterized by increased government bureaucracy, limited freedoms and decree based rule.

(2) Theocracy - Defined as the religious control of the state and all state functions. Government personnel are either religious figures themselves or defer their decisions to religious figure influencers (mullahs or equivalent)

(3) Representative Government - Characterized as a representative form of government --either democratic, republic or parliamentary in form--with elected representatives and executives. All the government politics are governed by will of people and government has limited, defined powers.

(4) Anarchy - No functioning government, necessitates a "tribal" and religious leader lead towns

d. Stability: (Scenario Considerations) Defines the initial level of government cohesion and strife within an OE government. Helps establish the levels of Status and Effectiveness and sets the conditions for Infrastructure Services Level and sets the overall Social Strife level in the OE.

(1) Stable - Defined as not more than two major political parties with minimal dissent and issues of contention (not more than two clearly defined issues). Presented and manifested in OE through scripting and role player sub-instructions.

(2) Divisive - Establishes conditions for Moderate Social strife. Requires the establishment of up to three different political groups with at least three competing interests to be written into the scenario sub-events, back-stories, and Role player sub-instructions.

(3) Corrupt - Establishes conditions for Moderate or potentially high Social strife. Requires the establishment of up to three different political groups with at least three competing interests to be written into the scenario sub-events, back-stories, and Role players instructions.

e. Effectiveness: (Scenario and Resource Considerations) Describes the level of services and infrastructure repair. Also determines the amount of criminal tolerance and general law & order in a society.

(1) Competent - Defined as 60-75% of all government services provided throughout the scenario OE, 60-75% of all infrastructure present and functioning. Limited civil unrest.

(2) Semi-competent - Defined as 40-60% of all government services provided throughout the scenario OE, 60-75% of all infrastructure present and functioning.

(3) Incompetent - Defined as 20-40% of all government services provided throughout the scenario OE, 60-75% of all infrastructure present and functioning.

f. Status: (Scenario and Resource Considerations)

(1) Functioning - Full complement of all specified COB government positions required in the provincial, district and town elements.

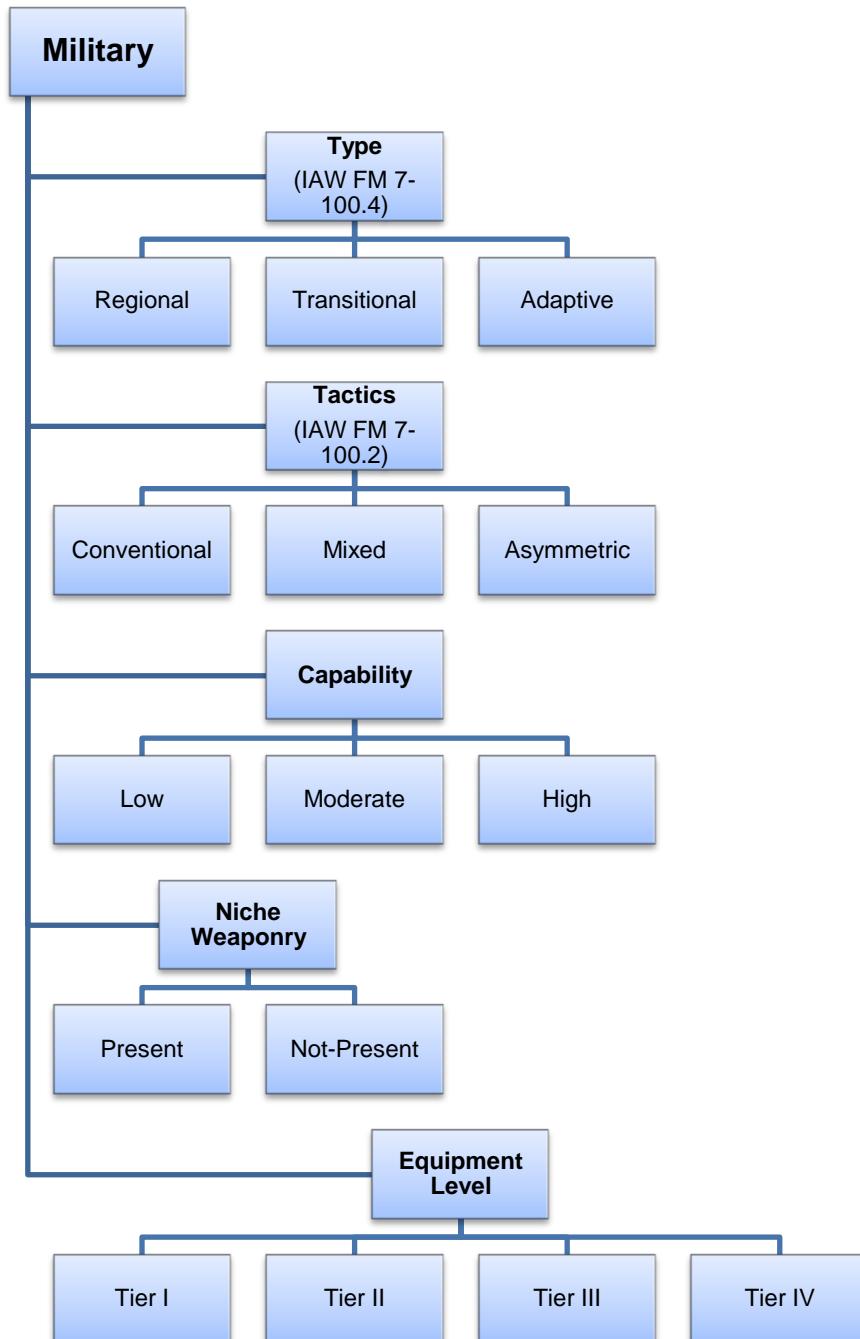
(2) Semi-Functioning - The government is only partially manned and capable of administering its area.

(3) Non-Functioning - The government is partially manned and minimally capable of administering its area.

4-1 (2) PmESII-PT Definitions & Gradients

Military Variable

1. Definition: The Military variable encompasses the aspects of the type, capability, and equipment of the OPFOR as well as any niche weaponry and unique tactics.



2. Sub-categories and gradients:

a. Type (Scenario Consideration): Specifies the types of unit organizations present within a scenario. Determined by referencing FM 100.4.

(1) Regional - Conventional standing military units.

(2) Transitional - Border Patrol, Constabulary, and paramilitary forces present. Some Guerrilla forces present.

(3) Adaptive - Paramilitary, Insurgent, Guerrilla, and armed criminal elements present in the OE. Limited conventional unit organizations and tactics present.

b. Tactics (Scenario Considerations): Specifies the primary methods of tactics, techniques and procedures used by OPFOR within the scenario OE. Specific tactics used are found in FM7-100.3.

(1) Regional (conventional) - Conventional OPFOR Operational concepts and tactics present in the OE. Limited SOF play or adaptive operations present.

(2) Transitional (mixed) - Mixed (Conventional and paramilitary) OPFOR Operational concepts and tactics present in the OE. Limited SOF play or adaptive operations present.

(3) Adaptive (asymmetric) - Primarily paramilitary and adaptive OPFOR Operational concepts and tactics present in the OE. High levels of SOF play or paramilitary, adaptive operations present.

c. Capability (Scenario Development): Describes the overall effectiveness of OPFOR units and formations in conducting successful coherent operations. Determines the level of tactical nuance and strategic depth used in OPFOR play against BLUFOR units and tactics.

(1) Low - Capable of no "wildcard" TTPs or adaptive operations or tactics used in response to specific BLUFOR vulnerabilities.

(2) Moderate - Capable 1 or 2 "wildcard" TTPs or adaptive operations or tactics used in response to specific BLUFOR vulnerabilities.

(3) High - Capable 3 to 4 "wildcard" TTPs or adaptive operations or tactics used in response to specific BLUFOR vulnerabilities.

d. Niche Weaponry (Scenario and Resource Consideration): Defines the ability of scenario OPFOR to possess and employ Niche weaponry or capabilities that negate BLUFOR capabilities.

(1) Present - OPFOR able to employ TIER I equipment and commensurate technique as specified in the WEG.

(2) Not Present - OPFOR limited to TIER II -TIER IV levels of equipment as specified in the WEG

e. Equipment Level (Scenario and Resource Considerations): Technical level of equipment used against BLUFOR in scenarios as specified by the WEG Tier tables (see also paragraph 4-1-2)..

(1) TIER I - Weapons systems across the different functional areas that a major military force with state-of-the-art technology would generally have, causing the OPFOR to achieve technical equality or overmatch against similar BLUFOR weapon systems.

(2) TIER II - Modern competitive weapons systems fielded in significant numbers for the last 10 to 20 years, with limitations or vulnerabilities being diminished by available upgrades.

(3) TIER III - Equipment systems dating back 30 to 40 years. They have limitations in all three subsystems categories: mobility, survivability, and lethality. However, they can still challenge vulnerabilities of U.S. forces.

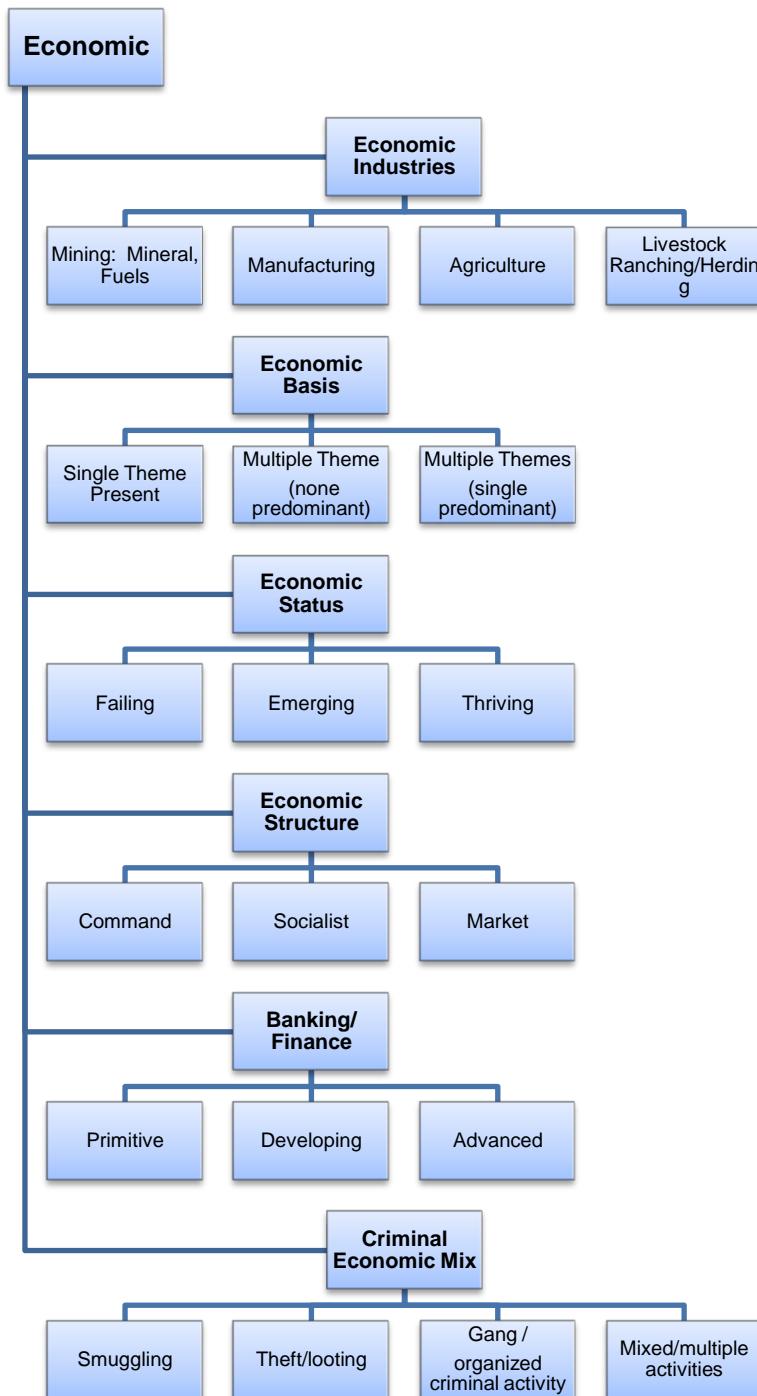
(4) TIER IV - Weapon system which are 40 to 50 years old, some of which have been upgraded numerous times. These represent equipment typically found in forces of Third World or smaller developed countries. Use of effective strategy, adaptive tactics, niche technologies, and terrain limitations could enable a Tier 4 OPFOR to challenge the effectiveness of a U.S. force in achieving its goals. This tier includes militia,

guerrillas, special police, and other forces. This category also includes the panoply of improvised weapons or equipment.

4-1 (3) PmESII-PT Definitions & Gradients

Economic Variable

1. Definition: The Economic variable encompasses the type and function of the economic base, status, and structure to include the banking and criminal aspects.



2. Sub-categories and gradients:

a. Economic Industries (Scenario and Resource Considerations): Presents a listing of the most probable replicable industrial bases present in a scenario OE. Each industry theme represents and replicates the entire line or theme from the standpoint of actors and props required to replicate the initial inputs, refinement, distribution, and, ultimately, their retail sale of the goods created.

(1) Mining/Mineral Fuels - Mining: a series of props and activities used to replicate a mining or petroleum operation. Scenario writers must create COB transactions to replicate the production and movement of goods, intra-province, inter-district, and inter-town.

(2) Manufacturing - A series of props, Role player instructions and pre-scripted activities that replicate a complete manufacturing, distribution, wholesale, and retail series of actions to approximate a product life cycle in the OE. Scenario writers must create COB transactions to replicate the production and movement of goods, intra-province, inter-district, and inter-town.

(3) Agriculture - A series of props, Role player instructions and pre-scripted activities that replicate a complete agricultural infrastructure to include, planting, crop cultivation, distribution, wholesale, and retail actions to approximate an agricultural or product life. Scenario writers must create COB transactions to replicate the production and movement of goods, intra-province, inter-district, and inter-town.

b. Economic Base of the OE (Scenario Considerations): Describes the replication of up to three different, complete economic themes per town to describe the scenario economy: mining, manufacturing, or agricultural industries, or livestock ranching/herding.

(1) Multiple economic themes present, single or none predominant - Describes the condition where multiple industries are present in an economy. Any single industry selected as predominant will cause scenario writers to ensure the preponderance of storylines, themes, and COB roles are focused on that industry and all of its associated parts.

(2) Single industry theme present - Describes the condition of a single economically significant industry. The industry theme selected acts as the focal point for all economic storylines, themes, and COB roles focused on that industry and its sustainment.

c. Economic Structure (Scenario and Resource Considerations): Helps describe the type of economic activity present. Manifests itself in the form of specific activities, number of role players required to replicate the behavior and scenario design instructions in the form of Role descriptions for different activities.

(1) Command - A centrally controlled and regulated economy lacking many products and service; Black Market operations and smuggling is wide spread (represented by three or more types of illicit goods being traded--one or more necessary to cob population well being).

(2) Socialist - Denotes a partially controlled economy with some black market trade in controlled items. Will require half COB special mission element to replicate limited black-market and some organized crime.

(3) Free Market - Limited black-market, robbery, or organized crime activities. Types of crime replicated: petty theft and limited drug or single item smuggling, distribution and sales.

d. Criminal and Economic Mix (Scenario and Resource Considerations): Describes the predominant type of criminal activities present in the OE, from High (3 types of activities) to Low (1 activity). Each activity represented requires $\frac{1}{4}$ COB special mission element to replicate the activity, in addition to scenario storyline.

(1) Smuggling - Defined as the acquisition, distribution, and sale of a controlled, restricted or forbidden item. Requires the replication of all aspects of the distribution chain, from suppliers to mules, to retail customers.

(2) Theft/Looting - small theft rings to replicate the acquisition and distribution of stolen property.

(3) Gang/Organized Crime type Activities - defined as role player instructions and storylines to replicate criminal activities such as bribery, coercion, thuggery, protection rackets, and inter gang rivalry

(4) Mixed/Multiple Activities Present - Multiple, above mentioned activities present in the OE. Represented by multiple minor or major sub events occurring during the scenario play.

e. Banking and Finance (Scenario and Resource Consideration): All minor implements and props that more effectively replicate the economic environment.

(1) Primitive - Hawala, private money lender type arrangement. Requires at least one COB money lender, with currency per town (7 total).

(2) Developing - Mixture of private moneylenders and Banking infrastructure (Bank building with props).

(3) Advanced - Banking infrastructure (one bank with employees per town). Private money-lending restricted to criminal/gang activity.

f. Status (Scenario Considerations) - Represents the employment status and level of disenfranchisement of the COB populace. Manifests itself in specific role assignments and COB sub instructions for role players instructions.

(1) Failing - 2/3 COB unemployment, high criminal tolerance

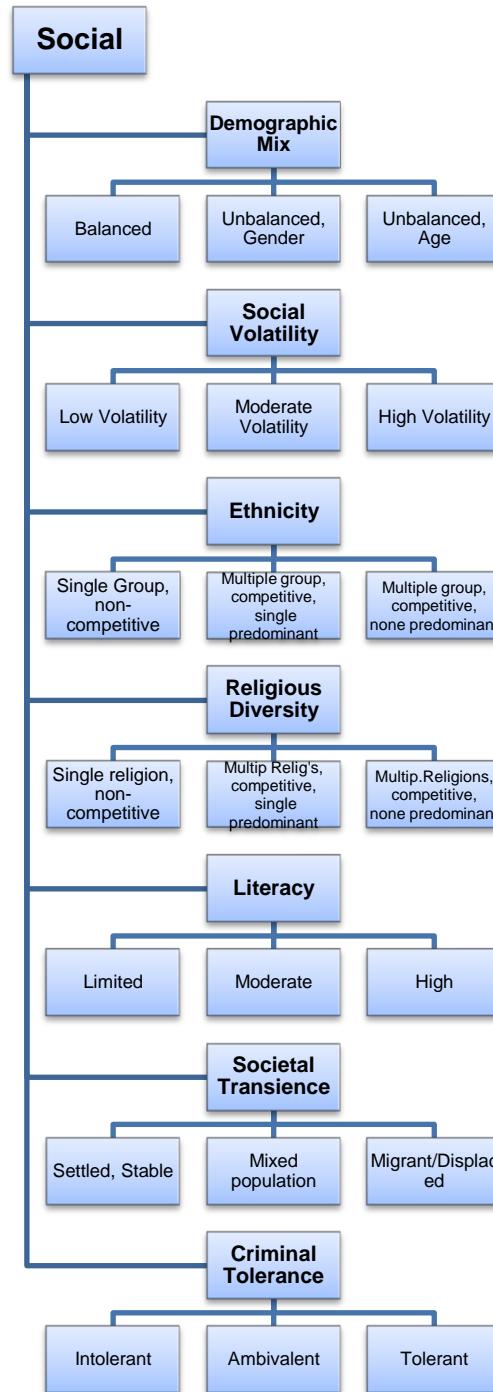
(2) Emerging - 1/2 COB unemployment with 1/2 disenfranchised.

(3) Thriving - Majority of COB employed with 1/4 disenfranchised.

4-1 (4) PmESII-PT Definitions & Gradients

Social Variable

1. Definition: The Social variable encompasses various aspects of the demographic mix as social/religious groups to include volatility, transience, literacy, and criminal tolerance.



2. Sub-categories and gradients:

a. Demographic Mix or Scenario Diversity (Scenario Considerations): Describes the number of gender and age balance of a COB population.

(1) Balanced - A scenario environment consisting of equal proportions of gender and military age population.

(2) Unbalanced (gender) - A scenario environment consisting of unequal proportion of gender (male, female) in proportion to the overall group. The military age proportion of the population is not affected and remains the same as if it were in a balanced setting.

(3) Unbalanced (age) - A scenario environment consisting of a greater proportion of the military age demographic (male, female) in proportion to the overall COB population. The gender proportion of the population is not affected and remains the same as if it were in a balanced setting.

b. Social Volatility (Scenario Considerations) - Describes the amount of inter-group or religious conflict present in a society and the amount of civil unrest present. Determined by Ethnicity, Religious Diversity, (political) effectiveness, refugee prevalence, and political type and status.

(1) Low Volatility - 1-2 preplanned or spontaneous riots or civil disorders based on religious or ethnic strife present within the scenario.

(2) Moderate Volatility - 3-4 preplanned or spontaneous riots or civil disorders based on religious or ethnic strife present within the scenario.

(3) High Volatility - 5-6 preplanned or spontaneous riots or civil disorders based on religious or ethnic strife present within the scenario.

c. Literacy (Scenario Considerations): Describes the education level, media and technical sophistication of the COB population. Helps determine the scripting requirements and may introduce specific scenario sub-themes into a scenario setting.

(1) Limited - 1/4 COB population literate or educated. Limited education infrastructure and jobs (no more than 5%).

(2) Moderate - 1/2 COB population literate or educated. Moderate amount of education infrastructure and jobs (no more than 10%).

(3) High - 3/4 COB population literate or educated. High amount of education infrastructure and jobs (no more than 15%).

d. Ethnicity (Scenario and Resource Considerations): Describes the number and specifies the interaction of various ethnic groups within a scenario population

(1) Single Group - single Group; non Competitive.

(2) Multiple Group, Competitive, Single Predominant - Up to three distinct groups distributed within the COB population with one group as the dominant population.

(3) Multiple Group, Competitive, None Predominant - Up to three distinct groups distributed within the COB population with no group designated as the dominant population.

e. Religious Diversity (Scenario and Resource Consideration): Describes the number and specifies the interaction of various religious groups within a scenario population

(1) Single Group - single Group; non Competitive.

(2) Multiple Group, Competitive, Single Predominant - Up to three distinct groups distributed within the COB population with one group as the dominant population.

(3) Multiple Group, Competitive, None Predominant - Up to three distinct groups distributed within the COB population with no group designated as the dominant population.

f. Societal Transients (Scenario and Resource Considerations): Describes the initial prevalence of refugee or displaced migrant populations within the scenario OE. Once set, the designation does not preclude the possibility of migrant populations as a result of BLUFOR action or inaction.

(1) Settled/Stable - Population is settled, organized, and does not move or displace except when confronted with occasions of extreme duress.

(2) Mixed Populations - Population movement is based on BLUFOR activities or pre-scripted as a scenario sub-event in response to BLUFOR training needs.

(3) Migrant/Displaced - Population frequently moves and displaces as a part of the normal state of affairs. Populace is nomadic and stateless.

g. Criminal Tolerance (Scenario Considerations): Defines the level of criminal activity tolerated by the social groups' mores and norms. It determines the amount and level of criminal economic mix and intensity of activity.

(1) Not Tolerated - Limited criminal activity. 1-2 activities present from the Criminal economic Mix. It is limited to up to 30% of the total urban landscape (1-2 towns).

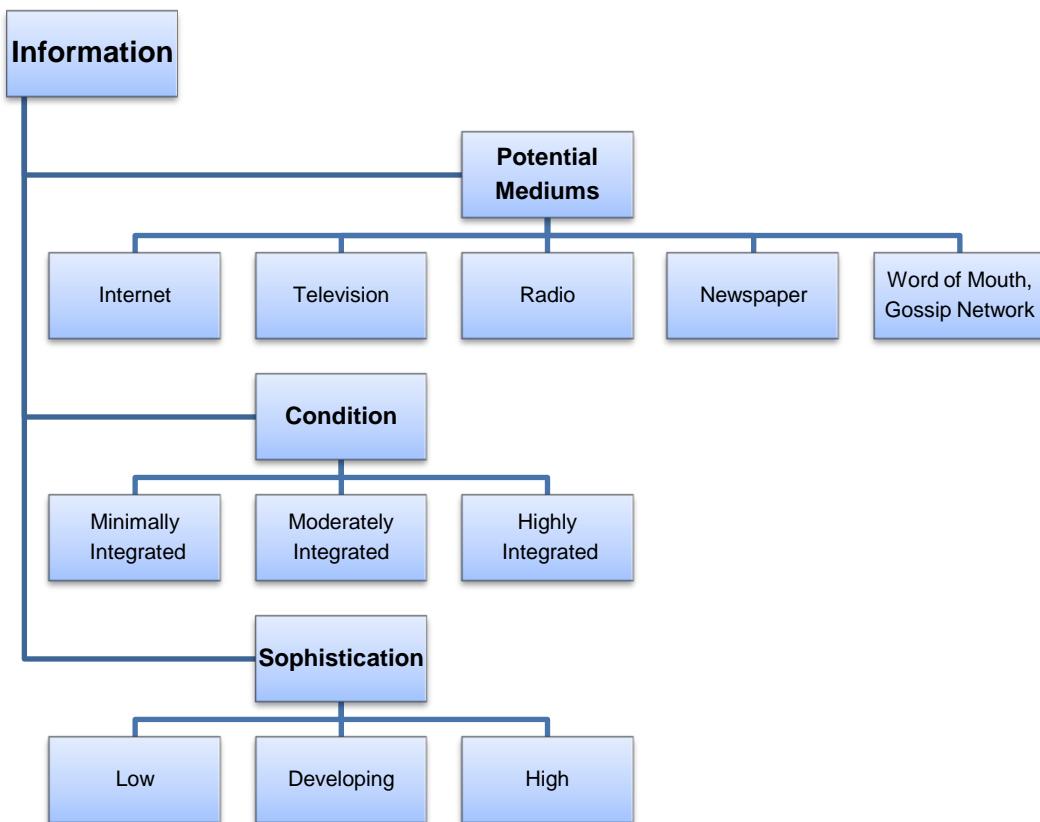
(2) Ambivalent - Moderate criminal activity present. 1-3 activities present from the Criminal economic Mix. It is limited to 50% of the total urban landscape (3-4 towns). Presence of at least one criminal gang distributed throughout the scenario environment.

(3) High criminal activity present. 3-4 activities present from the Criminal economic Mix, two or more rival criminal gangs or organizations present and active in the scenario (manifested by competition, gang or mob warfare). It is limited to presence in 75% of the total urban landscape (5-6 towns).

4-1 (5) PmESII-PT Definitions & Gradients

Information Variable

1. Definition: The Information variable encompasses the various potential mediums and conditions of passing or influence information flow, as well as sophistication levels of equipment and use.



2. Sub-categories and gradients:

a. Information Condition (Scenario and Resource Considerations): Describes the complexity of the information environment present in a scenario. Sets the conditions for the types, capabilities, and activities of the information mediums present in the scenario.

(1) Minimally integrated - Single additional information source present and replicated within the Scenario OE (typically the newspaper or possibly radio mediums) in addition to the Word of Mouth (WOM), Gossip network.

(2) Moderately Integrated - Two to three information sources present in the OE in addition to Word of Mouth, Gossip Network. Typically replicated by the inclusion of newspaper and one other medium.

(3) Highly Integrated - Maximum saturation of multiple information sources. Requires three or more information sources present in addition to WOM, Gossip net.

b. Potential Mediums (Scenario and Resource considerations): Describes the type of information or media sources that may be present in a scenario the material requirements that enables their replication.

(1) Internet - Interruptible, 4-5 building intranet access per town, capable of replicating an 'internet' capable of hosting at least six dynamic pages or sites consisting of the following site types: two web-logs, two internet chat rooms, and two news websites.

(2) Television - A single channel, cable broadcast capability with a connected studio production site (located in play box), associated personnel, and sufficient programming to broadcast 10 hours per day.

(3) An AM or FM radio broadcast station, with associated personnel, and the ability to broadcast programming for 10 hours per day for the duration of an exercise. Broadcast and studio facilities would ideally be located in the training area to enhance training realism.

(4) Newspaper - Media personnel (role players) and associated equipment required to create and locally produce a single page newspaper or flyer. Minimum of one production element present per two towns.

c. Sophistication (Scenario and Resource Considerations): Describes the scenario population's ability to manufacture, create, utilize, or adapt to new ideas and technology. Drives the ability of a society to incorporate or possess a niche or high technology concept or item within the scenario. Also determines level of OPFOR niche technology present and overall level of equipment (Tier 1-Tier 4) present in the OE.

(1) Low - Capable of manifesting and using Tier 2 through Tier 4 level of equipment. Possesses one element of

Tier I technology. COB players capable of grasping higher level concepts, though not afraid of adopting them.

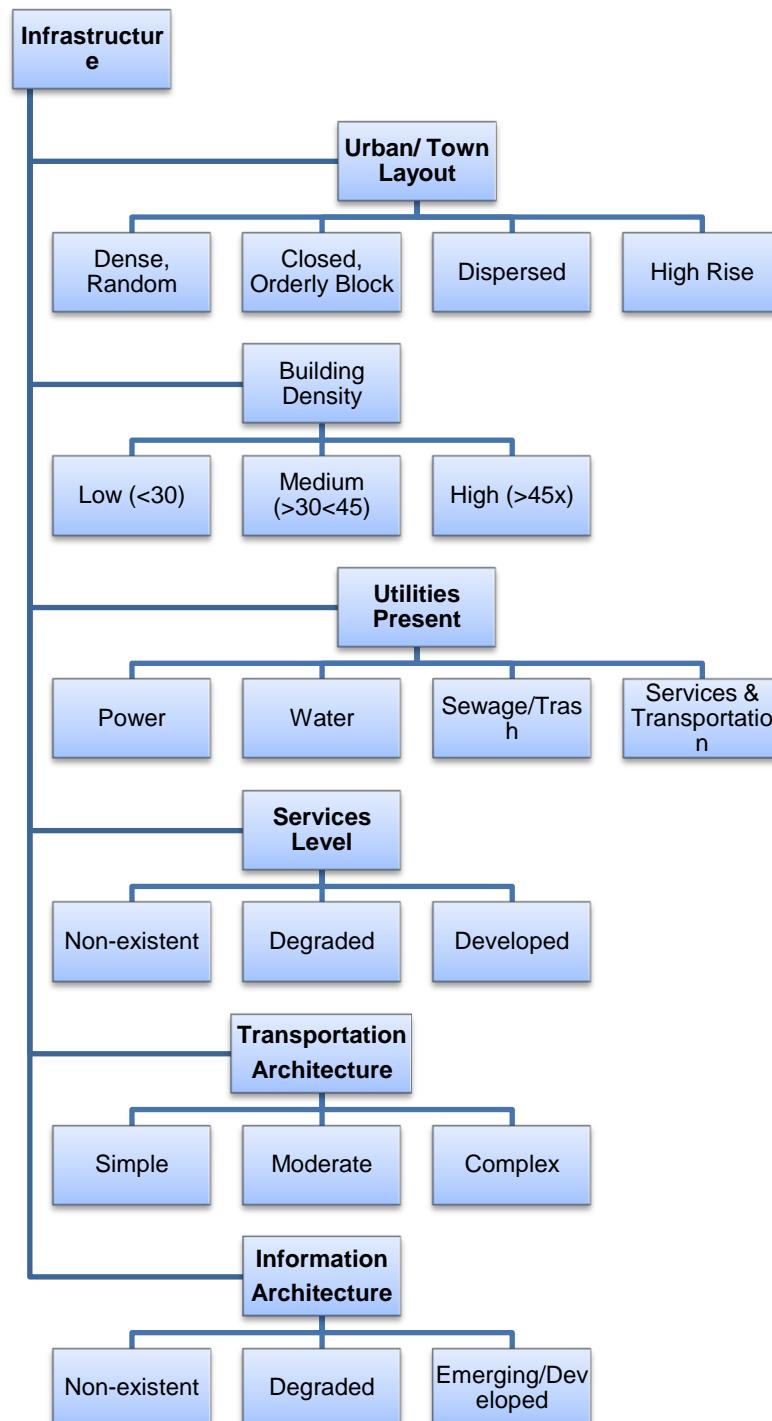
(2) Developing - Capable of manifesting and using Tier 2 level of equipment and up to two types of Tier I (niche) technology. COB players capable of grasping higher level concepts and generally receptive to new ideas and innovations.

(3) High - Capable of manifesting and using Tier 1 level of equipment and at least two types of Tier I (niche) technology. COB players capable of grasping higher level concepts and are very receptive to new ideas and innovations.

4-1 (6) PmESII-PT Definitions & Gradients

Infrastructure Variable

1. Definition: The Infrastructure variable encompasses the urban layout and building types and density, as well as available services and overarching information and transportation architectures.



2. Sub-categories and gradients:

a. Urban/Town Layout (Resource Considerations): The physical layout of a village, town, or city generally represents a historical composite of the area's urban development as specified by FM 3-06/FM 3-06.11.

(1) Dense/Random - Dense, random construction are buildings located close together along the edges of narrow winding streets.

(2) Closed Orderly Block - Urban areas consisting of residential and commercial type buildings. Buildings often form continuous fronts for as much as a city block, and each block normally contains an inner court. Streets in this area normally average meters in width and are normal.

(3) Dispersed - Dispersed areas consist of row-houses or single dwellings with yards, trees, gardens, and fences. The street pattern is normally rectangular or gently curving. Street widths average 14 meters. However, buildings are normally set back 6-8 meters from the road.

(4) High Rise - Urban area consisting of multistoried buildings, separated by large open areas such as parking lots, recreation areas, parks, and individual one-story buildings. Rarely are there unbroken rows of houses facing the street in this type area.

b. Urbanization (building density) (Resource Consideration)
- Describes the average building density within each town of the seven town OE replication model, as implied the COB WG whitepaper.

(1) Low - Up to 30 structures with at 15 permanent buildings or less per town (remaining can be mobile structures) with no two story structures. Single economic industry structures present in each town.

(2) Medium - 30 to 45 structures per town with at least 23 permanent building of which three are multi-story structures, one government center (5 building cluster) and one site of significance (3 building cluster). Two Economic industry structures present per town.

(3) High - 46 or more structures per town with at least 10 Multi-story structures clustered together or separated by a one story building or open area, one government center (12 building cluster), and one site of significance (a 6 building cluster) per district.

c. Utilities (Scenario and Resource Requirements): Describes the range of replicable services present within a typical scenario OE. Defines the material and scenario scripting requirements associated with each replicated service.

(1) Power (Electricity) - Power generation and distribution equipment, capable of providing selectively interruptible power to 75% of all structures present in the OE. Conceptually this network would be similar in design to a series of trailer park power points, centrally powered, with a interruptible node at each built up area. The power network can be controlled and one or more nodes can be shut down to give the appearance of a variety of gradient conditions.

(2) Water - Water piping, distribution equipment, or plumbing to provide each built-up area with an interruptible water supply. Similar in design to the power network, the water network can be centrally or locally controlled to provide the appearance of a developed to non-existent water supply within the OE.

(3) Sewage - At least one large sewer or drainage pipe infrastructure of at least 200m length, either buried or above ground, following along the a town main or secondary roads to give the appearance of a simple infrastructure. The pipe infrastructure should branch at least once with an extension of at least 50m. At least one town substitutes this branching drainpipe for a shallow trench, 200m in length running along the town's main road.

(4) Services and Transportations - Up to two complete public services elements and their respective vehicle requirements (per COB whitepaper), up to 150 additional COB-Vs, and at least one replicated gas/service station (1-2 structure POL distribution point) per district or every two towns.

d. Services Level (Scenario and Resource Considerations): Describes the approximate percentage of replicable services available to each town. Each utility present in the scenario

has its own respective service level, which determines the material and scenario writing requirements for the scenario.

(1) Non-Existent - 25% of all distribution nodes or required infrastructure and COB elements/material are present or operational, with physical distribution and services present to at least 1/4rd of the structures in each "switched on" area.

(2) Degraded - 50% of all distribution nodes or required infrastructure and COB elements/material are present or operational, with physical distribution and services present to at least 1/3rd of the structures in each "switched on" area.

(3) Developed - 75% of all distribution nodes or required infrastructure and COB elements/material are present or operational, with physical distribution and services present to at least half of the structures in each "switched on" area.

e. Transportation Architecture (Scenario and Resource Considerations): Details the existing road and transportation network present in an OE. Describes the type of roads present and the coverage of the road network to any built up areas. Includes airports, ports, rail, and surface road networks.

(1) Simple - Single track or improved two lane hardball road networks, extending to all built up areas. Single line railway, no functioning airports, limited river transportation networks.

(2) Moderate - Improved multi- lane hardball road networks, extending to all built up areas with secondary, two lane hardball roads paralleling primary roads. Two to three 2 line railways, connecting at least 50% of the OE infrastructure. One functioning airport and, if present moderate river transportation networks.

(3) Complex - Multi- lane hardball highway networks, extending to all built up areas with secondary, multi-lane hardball roads paralleling primary roads. Three to four 2 line railways, connecting at least 75% of the OE infrastructure. Two to three large sized, functioning airports (jet capable) and, if present extensive river transportation networks.

f. Information Architecture (Scenario and Resource Considerations): Data, telephone landline, and wireless (cellular) communications access for the OE. Defined as an

interruptible infrastructure with the capacity to service 4-5 buildings per built-up area. Cellular coverage is defined as Cellular phone service, selectively interruptible, providing enough coverage to service 75% of the scenario play box.

(1) Non-Existent - 25% of all distribution nodes or required infrastructure and COB elements/material are present or operational, with coverage extending to at least 1/4 of the scenario play box.

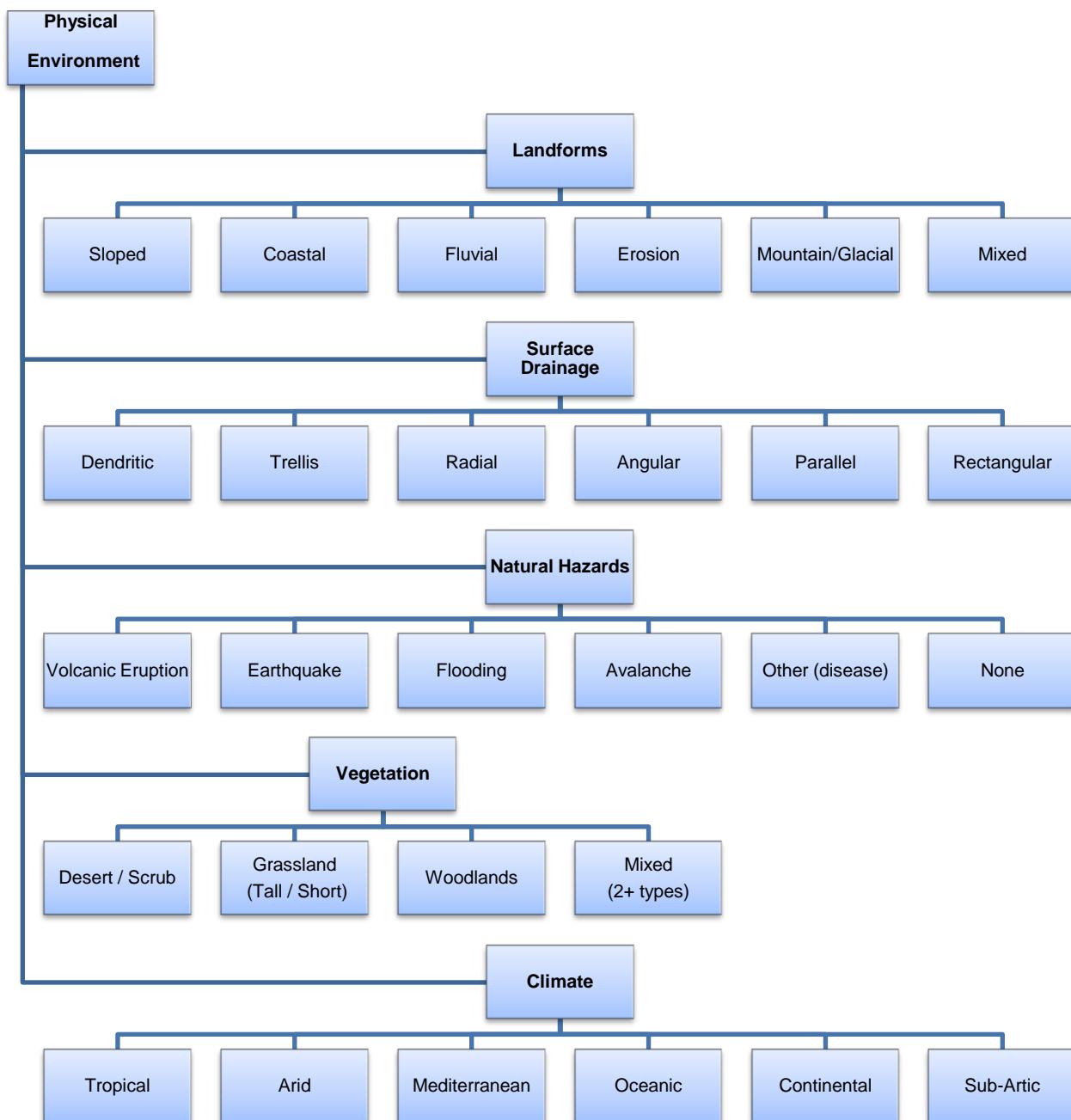
(2) Degraded - 50% of all distribution nodes or required infrastructure and COB elements/material are present or operational, with coverage extending to at least 1/3rd of the scenario play box.

(3) Developed/Emerging - 75% of all distribution nodes or required infrastructure and COB elements/material are present or operational, with coverage extending to at least 3/4 of the scenario play box.

4-1 (7) PmESII-PT Definitions & Gradients

Physical Environment Variable

1. Definition: The Physical Environment (training environments) variable encompasses various landforms, drainage considerations, natural hazards, and vegetation; it also includes the climatic conditions.



2. Sub-categories and gradients:

- Landforms (Scenario Considerations): Types of terrain predominating the OE (describes more than 60% of the terrain present in the OE). Limitations inherent with specific types of terrain are enforced by OC rules (Live), or computer enforced simulation rules. (Definitions derived from <http://encyclopedia.thefreedictionary.com/Landform>)

(1) Sloped - Sloping landforms consisting of, but not limited to the following types: cliffs, dells, escarpments, glens, gullies, hills, mountains, plains & plateaus, ridges, valleys, and watersheds.

(2) Coastal - Coastal landforms consisting of, but not limited to the following types: bays, beaches, cuspatc forelands, capes, coves, delta, fjords, slagoons, sounds, spits or tombolos.

(3) Fluvial - Riverine or water type landforms consisting of, but not limited to the following types: - arroyos, basins, bars, bayous, lakes, levees, marshes, rivers & streams, swamps, waterfalls, watersheds or combinations of those mentioned.

(4) Erosion - Erosion type landforms consisting of, but not limited to the following types: canyons, caves, and desposition or eolian landforms.

(5) Mountain/Glacial - Mountain landforms consisting of, but not limited to the following types: mountain ranges, crevasses, U-shaped valleys, glaciers, hanging valleys, kane deltas, outwash fans, and other types of valley formations.

(6) Mixed Landforms - One or more of the above categories of landforms comprising over 80% of the available terrain in an OE.

b. Drainage (Scenario Considerations): Describes the primary type of surface water drainage pattern present in the OE. Used primarily in designing virtual and constructive scenarios and determines streams, river flows, and flooding patterns present in an OE.

(1) Dendritic - A tree-like pattern composed of branching tributaries to a main stream, characteristic of essentially flat lying and homogeneous rocks. This drainage type is typical of glacial tilt, tidal marshes, and localized areas in sandy coastal plains.

(2) Trellis - Drainage pattern where the mainstream runs parallel, and small streams flow and join at right angles. This pattern is found in areas where sedimentary or metamorphic rocks have been folded.

(3) Radial - A drainage pattern where streams flow outward from a high central area. The pattern is found on domes, volcanic cones, and round hills.

(4) Annular - The annular pattern is a modified form of the radial drainage system, found where sedimentary rocks are upturned by a dome structure. In this pattern, streams circle around a high central area. The granitic dome drainage channels may follow a circular path around the base of the dome when it is surrounded by tilted beds.

(5) Parallel - In the parallel pattern, major streams flow side by side in the direction of the regional slope. Parallel streams are indicative of gently dipping beds or uniformly sloping topography. The greater the slope, the more nearly parallel the drainage and the straighter the flow. Local areas of lava flows often have parallel drainage, even though the regional pattern may be radial. Coastal plains, because of their slope toward the sea, develop parallel drainage overboard regions.

(6) Rectangular - A specific type of angular drainage and is usually a minor pattern associated with a major type such as dendritic. Characterized by abrupt bends in streams and develops where a tree-like drainage pattern prevails over a broad region. Its drainage pattern is extremely angular and has easily recognizable short gullies that are locally parallel.

c. Vegetation (Scenario Consideration) - Describes the predominant vegetation found in an OE. Primarily a virtual or constructive setting. Can be replicated live in select instances by applying OC enforced rules to govern behavior in the type of area specified.

(1) Desert/Scrub - A variety of trees that have had their growth stunted soil or climatic conditions. Shrubs comprise the undergrowth in open forests, but in arid and semiarid areas they are the dominant vegetation. Shrubs normally offer no serious obstacle to movement and provide good concealment from ground observation however, they may restrict fields of fire.

(2) Grassland - Grasslands from .5 to 2m in height. Grassland more than 1 meter high is considered tall. Very tall grass may provide concealment for foot troops. Foot movement in savannah grasslands is slow and tiring; vehicular movement is

easy; and observation from the air is easy. Improved solid trafficability during seasonal wet periods.

(3) Woodlands - Broadleaf , deciduous, or coniferous forests capable of slowing dismounted troops and military vehicles, canalizing movement and causing limited observation and fields of fire. The type of woodland is determined by the dominant tree type (>60% of either deciduous or coniferous types). Forests containing >60% mix of either type are considered mixed.

(4) Mixed (two or more types) - Multiple types of vegetation, creating the preponderance of a OE vegetation present.

d. Climate (Scenario Considerations): Specific environmental climatic zones sharing similar climatic attributes such as temperature, length of the solar day (sunlight), and in particular latitudinal distance from the equator. In replicable environments, climate is primarily classified on the basis of temperature and precipitation. Climatic descriptions are used in scenarios to vary climatic conditions to better train BLUFOR units, exposing them to the variety of climatic conditions and their effects on operations. This variable is primarily used in a virtual and constructive environment. Some climatic conditions can be replicated in a live setting using scenario based rules and play box restrictions on player and OPFOR movement and actions. Variable conditions are defined in <http://encyclopedia.thefreedictionary.com/Climate>.

(1) Tropical - A type of climate characterized by 12 months of mean temperatures above 18 degrees Celsius (64.4F) and almost continuous rainfall throughout the year, usually convectional occurring predominantly in the afternoon.

(2) Arid - Climate encountered in regions too dry to support a forest, but not dry enough to be a desert. The soil is considered too moist to be a desert, but too dry to support normal forest life. Characterized by hot summers and cold winters, with 10-20 inches of rain or snowfall per year.

(3) Mediterranean - A climate that resembles those of the lands bordering the Mediterranean Sea. These climates generally occur on the western coasts of continental landmasses, roughly between the latitudes of 30° and 45° north and south of the equator. Areas with this climate receive almost all of their

yearly rainfall during the winter season, and may go anywhere from 2-5 months during the summer without having any significant precipitation.

(4) Oceanic - Oceanic climates are characterized by a narrower annual range of temperatures than are encountered in other places at a comparable latitude, and differ from Mediterranean climates in that significant amounts of precipitation are received in summer.

(5) Continental - Characterized by winter temperatures cold enough to support a fixed period of stable snow cover each year, and relatively low precipitation occurring mostly in summer, although east coast areas (chiefly in North America) may show an even distribution of precipitation. They have either forest or tall-grass prairie as natural ground cover and include some of the most productive farmlands in the world. All such climates have at least three months of temperatures in excess of 10°C (50°F) and winters with at least one month below 0°C (32°F).

(6) Sub-Artic - Regions having a sub-arctic climate (also called boreal climate) are characterized by long, usually very cold winters, and brief, warm summers. It is found on large landmasses, away from the moderating effects of an ocean, generally at latitudes from 50° to 70°N . Due to the absence of any large landmasses at such latitudes, it is not found in the Southern Hemisphere.

e. Natural Hazards (Scenario Considerations): Describes the type of natural disasters or hazards that BLUFOR may be required to contend with when conducting humanitarian relief, civil order, or stability and support operations. Can be replicated in live virtual or constructive settings by the adoption of chemical, nuclear attack conditions (virtual or constructive), or the use of OC enforced rules to govern transit and survivability of such events in a live setting.

(1) Volcanic Eruption - Self-explanatory. Characterized by moderate to fast lava flows and possible explosive eruptions of rock and hot ash (similar to the Mt St Helens eruptions and after effects).

(2) Earthquakes - Large magnitude, long duration, surface quakes resulting in severe infrastructure damage and urban destruction.

(3) Flooding - Large area flooding of 2 to 3 meters of depth, disrupting all transportation, destroying infrastructure, and subsiding after a prolonged period. Often accompanied by local contagions and waterborne diseases, which are best replicated by chemical or biological weapon effects.

(4) Avalanche - Self explanatory. Large scale effect occurring primarily in a mountain or terraced valley.

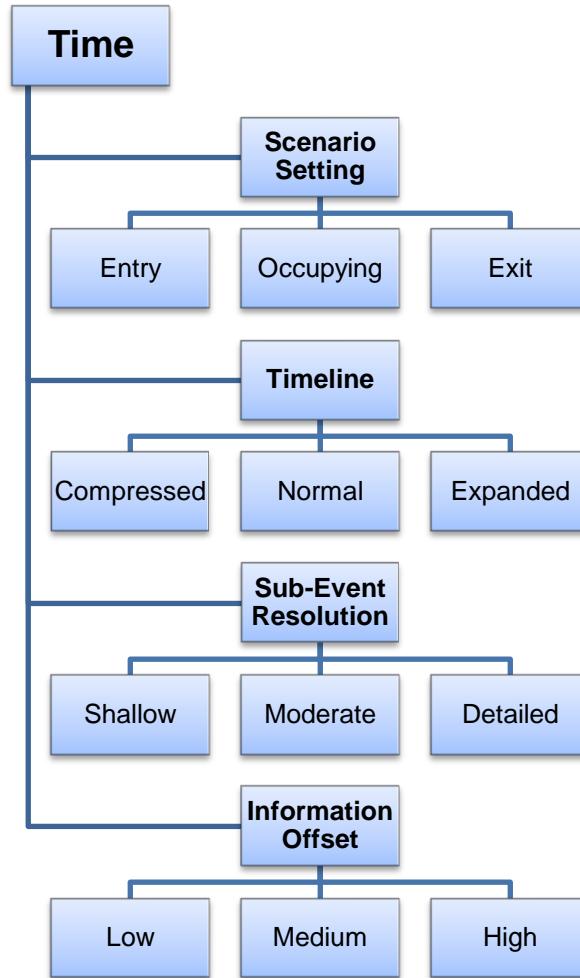
(5) Other (disease) - Any natural, biological, short term, short duration, large area affect, propagated by either weather or prevailing terrain conditions present in an OE.

(6) Non - Self explanatory.

4-1 (8) PmESII-PT Definitions & Gradients

Time Variable

1. Definition: The time variable encompasses timeline and scenario setting conditions to provide for exercise event resolution.



2. Sub-categories and gradients:

- a. Setting (Scenario Consideration): Defines the amount of pre-knowledge that the BLUFOR unit would rightfully possess based on the amount of time the unit has spent in the OE prior to scenario STARTEX. The setting determines the amount of information offset that BLUFOR is entitled to prioritize.

(1) Entry - BLUFOR is initially beginning its tour of duty. The unit is not established and has limited knowledge of the OE.

(2) Occupying - BLUFOR is mid-way through its tour of duty. The unit is established and has moderate knowledge of the OE.

(3) Exit - BLUFOR is nearing the end of its tour of duty in the OE. The unit is established and has detailed knowledge of the environment.

b. Scenario Timeline - The number of major sub-events scripted into the scenario OE used to drive BLUFOR training objectives.

(1) Compressed - 10-12 major OE sub-events planned with sufficient planning conducted to diagram and execute effects in response to probable BLUFOR actions. Setting used only for a highly experienced, capable unit.

(2) Normal - 4-5 major OE sub-events planned with sufficient planning conducted to diagram and executes effects in response to probable BLUFOR actions. Setting used for a well trained, moderately experienced unit.

(3) Expanded - 1-3 major OE sub-events planned with sufficient planning conducted to diagram and execute effects in response to probable BLUFOR actions. Setting used for moderately trained, relatively experienced unit to emphasize specific training objectives.

c. Sub-Event Resolution (Scenario Consideration): Defines the planning depth of each major sub-event planned in a scenario. The setting may describe the entire scenario, encompassing all sub-events or may describe specific sub-events within the scenario.

(1) Shallow - Sub-effects depth limited to 2nd order effects.

(2) Moderate - Sub-event effects depth limited to 3rd order effects.

(3) Detailed - Sub-event effects depth expanded to capture 2nd, 3rd, and 4th order effects in response to BLUFOR actions and counter actions.

d. Information Offset (Scenario Consideration): Tips, informants, and serendipitous events or reports that presage OPFOR activities in a meaningful, predictive way. This information is either provided to BLUFOR prior to STARTEX for planning purposes or is scripted into the scenario.

(1) Low - 10% of all OPFOR activities or major sub events are presaged by sufficient tips, hints or indicators to enable successful BLUFOR reaction or interdiction to the events.

(2) Medium - 20% of all OPFOR activities or major sub events are presaged by sufficient tips, hints or indicators to enable successful BLUFOR reaction or interdiction to the events.

(3) High - 30% of all OPFOR activities or major sub events are presaged by sufficient tips, hints or indicators to enable successful BLUFOR reaction or interdiction to the events.

4-2. OPFOR (Military) Replication

1. The world, as well as potential threat states/entities, has learned much about U.S. military capabilities and vulnerabilities.
 - a. Threat forces, both conventional and unconventional/irregular, will make doctrinal and force-equipment changes to leverage these lessons learned to be a greater contender against the U.S. As such, U.S. forces will encounter more capable threats with better equipment which must be reflected in training.
 - b. Hybrid threats simultaneously employ regular and irregular forces, including criminal elements to achieve their objectives using an ever changing variety of conventional (in terms of arms, equipment and formations) and unconventional (specially equipped and organized) tactics to create multiple dilemmas.
2. As weapons and weapon technology continues to be more proliferated to third world countries and potential threats, it is impossible to accurately assess which, what type, and how many enemy weapons and capabilities U.S. Forces will engage with. Consequently, the OPFOR must be equipped with various weapons and capabilities to be competent of presenting a composite of threat weapons and capabilities.
3. As such, the OPFOR presented for the CTC program is a hybrid specifically modified for program, budget, and training resource requirements to provide training centers and sites the OPFOR capabilities critical to meeting BLUFOR training objectives in a realistic and viable operational environment.
4. Collective training sites and centers must be capable of setting realistic and relevant COE conditions that support unit or institutional training objectives. While COE variables were already defined using the PMESII-PT framework, this chapter specifically focuses on OPFOR organizations and capabilities for both conventional OPFOR forces and replicated OPFOR irregular/paramilitary forces.
5. The CTC Master Plan, AR 350-2 (Section 1-5; OPFOR) and AR 350-50 (Section 1-3, CTC Program), and the Memorandum for Record, signed by the TRADOC Commanding General on XX December

2009, requires the OPFOR to be free thinking, opportunity based, and the best-trained adversary in the world capable of providing the toughest and most challenging fight.

a. In addition, the OPFOR should be equipped to replicate units on modern battlefields in future conflicts with maximum free play, adaptability, and the ability to win. OPFOR tactics, techniques, and procedures (TTPs), as well as overarching equipment and organizational structure may vary between CTCs, but must reference back to the FM 7-100 series manuals as well as the Worldwide Equipment Guide (WEG) .

b. For the purpose of modernizing and resourcing OPFOR organizations or elements to meet specific COE condition for meeting unit training objectives for full-spectrum training, specific and tangible goals are set in this document.

4-2 (1) OPFOR "Condition" setting Requirements

1. To set proper full-spectrum COE conditions, the OPFOR must have the capability (be equipped and resourced) to conduct OPFOR counter-tasks for conventional and paramilitary forces, or a hybrid combination. As such, OPFOR elements are a critical tool to scenario developers to emphasize operational themes along the spectrum of conflict as described in FM 3.0. The below menu of operational themes provides minimal sample conditions that the OPFOR should be capable of setting – they are not meant to be OPFOR counter-tasks. Combining aspects from both conventional and irregular/paramilitary methods and capabilities as listed below will provide exercise designers hybrid variants.

1. Limited Intervention: To emphasize an environment that supports training in operational themes entailing NEO, strikes, raids, show of force, etc., the OPFOR must be resourced and capable to replicate at least the following (these are not intended to be OPFOR counter-tasks) :

a. Conventional OPFOR:

(1) Methods of Operation:

- Centralized w/some decentralized Ops
- Control of vital/key public facilities/services/LOCs
- Biased/corrupt/extreme Military leadership
- Limited or biased police forces
- Varied degrees of military action accountability

(2) Key Capabilities:

- None to BN(-) Light/motorized, some mech/armor
- Extremely limited logistical support capability
- Tech vehicles w/limited Tier III & IV
- Little to no specialized equipment (i.e. UAV)
- Limited redundant and secure C3

b. Irregular/Paramilitary:

(1) Methods of Operations:

- Insurgents/freedom fighters/paramilitary/terrorists

- Irregular/asymmetric & terrorist tactics
- Decentralized operations
- Creation of sanctuaries; COBs as shields
- IEDs & Suicide Bombings
- Sniper/Ambush/Demonstrations/ Kidnappings

(2) Key Capabilities:

- Advanced IED/VBIED – and the like
- Shoulder fired ATs & MANPADS
- Information operations expertise
- Trained, funded, and motivated

2. Peace Operations: To emphasize an environment that supports training in operational themes entailing PKO, PB, PM, PEO, etc., the OPFOR must be resourced and capable to replicate at least the following:

a. Conventional OPFOR:

(1) Methods of Operation:

- Mostly centralized with some decentralized Ops.
- Lack control of key public facilities/services/LOCs
- Biased/corrupt/extreme Military leadership.
- Limited or biased police/security forces.
- varied degrees of military/police accountability.

(2) Key Capabilities:

- None to BN(-) Light/motorized, some mech/armor.
- Limited in personnel experience and tactics.
- Tech vehicles w/limited Tier III or IV equipment.
- Little to no specialized equipment (i.e. UAV).
- Limited redundant or secure C3.

b. Irregular/Paramilitary:

(1) Methods of Operations:

- None or low level insurgency activity
- Strong but disorganized gang/warlord activity.
- Assassination, kidnappings, and hasty ambushes.

- Rare IEDs & Suicide Bombings.
- Violent demonstrations and/or protests.

(2) Key Capabilities:

- Rudimentary IED/VBIED - and the like.
- Limited shoulder fired ATs & MANPADS.
- Attacks mostly designed to intimidate sway opinion.
- Mostly not well trained, funded, and motivated.

3. Irregular Warfare: To emphasize an environment that supports training in operational themes entailing foreign internal defense, support to insurgencies, counterinsurgency, combating terrorism, etc., the OPFOR must be resourced and capable to replicate at least the following:

a. Conventional OPFOR:

(1) Methods of Operation:

- Centralized w/some decentralized Ops.
- Control of vital/key public facilities/services/LOCs.
- Biased/corrupt/extreme Military leadership.
- Limited or biased police forces.
- Varied degrees of military action accountability.

(2) Key Capabilities:

- BN(+) Light/motorized/some mechanized & armor.
- Varied in personnel experience and tactics.
- Tech vehicles w/limited Tier III&IV
- Some specialized/advanced equipment (i.e. UAV).
- Limited redundant and secure C3.

b. Irregular/Paramilitary:

(1) Methods of Operations:

- Insurgents/freedom fighters/paramilitary/terrorists.
- Irregular/asymmetric & terrorist tactics.
- Decentralized operations.

- Creation of sanctuaries; COBs as shields.
- IEDs & Suicide Bombings.
- Sniper/Ambush/Demonstrations/ Kidnappings.

(2) Key Capabilities:

- Advanced IED/VBIED - and the like.
- Shoulder fired ATs & MANPADS.
- Information operations expertise.
- Trained, funded, and motivated.

4. Major Combat Operations: To emphasize an environment that supports training in operational themes entailing foreign internal defense, support to insurgencies, counterinsurgency, combating terrorism, etc., the OPFOR must be resourced and capable to replicate at least the following:

a. Conventional OPFOR:

(1) Methods of Operation:

- Denial of Entry, force oriented
- Liner & Non-Liner, integrated or decentralized.
- Defenses to destroy, preserve, or deny.
- Organized into disrupt, main, reserve, deception, counterattack, protect, and/or security forces.

(2) Key Capabilities:

- BTG (-) w/Division assets.
- Tier II-IV WEG identified equipment w/night capabilities.
- Long range artillery, mortars, PGMs; limited air support.
- Advanced RISTA, IO, and CCD&CM.
- Redundant and Secure C3 to include SATCOM.
- Emphasis on Mobility.

b. Irregular/Paramilitary:

(1) Methods of Operations:

- SOF supported or led.
- Exploit U.S. ROE vulnerabilities.

- Guerilla operations.
- Decentralized.
- Sniper.

(2) Key Capabilities:

- More advanced if SOF supported/led.
- Mines/IED/VBIED.
- Shoulder fires Tier I-III AT systems.
- MANPADS.

4-2 (2) OPFOR Equipment Tier System

1. A "Tier" system of OPFOR weapon/system capabilities was designed to provide exercise scenario developers flexibility. Flexibility in optimizing OPFOR weapon and system capabilities is critical in appropriately challenging BLUFOR units while also balancing unit training objectives.
2. It is not economical for the OPFOR to have various types of mechanized and armored vehicles and weapon systems, it is important for the OFPOR and the training community to maintain a capability that allows OPFOR weapons and system to be simplistically visually modified (VISMOD) while also being able to credit these systems with different Multiple Integrated Laser Engagement System (MILES) capabilities. Hence, a T-72 tank for example, can easily be modified into a T-80 by adding a couple of reactive armor plates and programming it with an updated MILES Laser (increase in Ph/Pk).
3. There are four types of Tier tables ranging from highest/most capable (Tier I) to the lowest/least capable (Tier IV). CTC OPFOR units must be capable of fully replicating at least the Tier II level.
 - a. Tier 1 -- reflects systems across the different functional areas that a major military force with state-of-the-art technology would generally have.
 - b. Tier 2 -- reflects modern competitive systems fielded in significant numbers for the last 10 to 20 years, with limitations or vulnerabilities being diminished by available upgrades.
 - c. Tier 3 -- systems date back generally 30 to 40 years. They have limitations in all three subsystems categories: mobility, survivability, and lethality; however, they can still challenge vulnerabilities of U.S. forces.
 - d. Tier 4 -- systems reflect 40- to 50-year-old systems, some of which have been upgraded numerous times. These represent equipment typically found in forces of Third World or smaller developed countries. Use of effective strategy, adaptive tactics, niche technologies, and terrain limitations could enable a Tier 4 OPFOR to challenge the effectiveness of a U.S.

force in achieving its goals. This tier includes militia, guerrillas, special police, and other forces.

Note. Niche systems and niche technology upgrades provide capabilities that exceed the general capability level of the overall force.

4. A sample of OPFOR Tiered equipment is provided:

	Systems	Tier I	Tier II	Tier III	TIER IV
IFV	Inf. Fighting Veh Ar. Pers Carrier	BMP-3M and BMP/Kliver	BMP-2M BTR-80A	AMX-10 BTR-60PB	BMP-1PG M113A1
Tanks	Main Battle Tank Tracked HACV Wheeled HACV	T-90S 2S25 AMX-10RC Desert Storm	T-72B Improved Type 63AM AMX-10 PAC 90 AMX-10RC	Chieftain M1985 AMX-13 EE-9	T-55AM PT-76B M41A3 EE-9
Recon	Cbt Recon Veh Ar. Scout Car Sensor Rec. Veh AT Recon Vehicle	BRM-3K/Credo BRDM-2M HJ-62C PRP-4M (TALL MIKE)	BRM-3K BRDM-2M HJ-62C PRP-4M (TALL MIKE)	BRM-1K Fox BRM-1K PRP-4 (TALL MIKE)	EE-9 BRDM-2 BRM-1K PRP-3 (SMALL FRED)
ACVS	Armored Cmd Veh Command APC	MP-21 BTR-90AK	BMP-1KSh BTR-80AK	BMP-1KSh BTR-60PBK	BMP-1KSh M113A1
ATGMS	Company ATGM Battalion Div ATGM Veh Bde ATGM Veh (Wheeled) Hvy ATGM Lchr Abn ATGM Lchr Div Tow AT Gun Bde Tow AT Gun	Gill MR ATGM Lchr Kornet ATGM Lchr Kornet-LR BMP/Kliver BTR-80/Kliver Mokopa and Kornet-LR BMD/Kliver AT 2A45MR 2A45MR	AT-13 HOT-3 9P149 w/AT-9 AMX-10 HOT 3 BRDM-2 HOT 3 Kornet-LR and 9P149/AT-9 BMD-3 with AT-5B 2A45M MT-12R	AT-13 AT-5b 9P149 w/AT-6 BMP/AT-5B ATM 9P148/AT-5B 9P149 w/AT-6 BMD-2 with AT-5B MT-12 M40A1	AT-7 Red Arrow 8; AT-5B 9P148/AT-5B Type 85/Red Arrow-8 Jeep/Red Arrow-8 9P148/AT-5B BMD-1P with AT-5B MT-12 M40
RW Acft	MI-24R/K BO-105 MI-8MT/MI-17 MI-26	HIND-F HIND-D BO-105 MI-8MT/MI-17 MI-26	Ah-1 F GAZELLE MI-8 MI-6	UH-1	
Guns/ Mortars	Combo Gun Tracked Combo Gun Wheeled Td Mortar or Combo Gn 82mm Mortar 82-mm Auto Mortar 60-mm Mortar	2S9-1 2S23 MO-120-RT or 2B16 W84 2B9 Type 90	2S9-1 2S23 MO-120-RT or 2B16 W84 2B9 Type 90	2S9 2S23 MO-120-RT 2B14-1 2B9 Type 63-1	2S12 2S12 2S12 2B14-1 2B14-1 Type 63-1
Howit- zers	Tow Lt Howitzer Towed Med How/Gn Self-Prop Howit. Mult. Rkt Launch.	D-30 G5 G6, AU-F1T Prima 9A52-2 9P132 2S1	D-30 2A65 G6, 2S19, 2S3M Prima 9A52-2 9P132 2S1	D-30 2A36 2S3M BM-21 9P140 9P132 2S1	D-30 D-20 2S1 Type 63 Fadjr-3 9P132 2S1

OE Master Plan
15 September 2009
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	Systems	Tier I	Tier II	Tier III	TIER IV
	Heavy MRL 1-Rd Rkt Launcher Amphibious SP How				
ADA/ SAMS	<u>AD Systems</u> Long Range SAMs Anti-Rad. Msl Med rng & Med/ Hi-Alt. SAMs Short Rge/Div SAMs Tow Gun/Msl Sys Bde SP Msl Sys Bde Gun/Msl Sys SP AA Gun Abn/Amphib SPAAG MANPADS Tow AD Gun Lt.Towed AA Gun Hvy Tow AA Gun Heavy AA MG	SA-10 Favorit SA-12A/SA-12B FTS-2000 Buk-M1-2/SA-17 Pantsir-S1-0, SA-15 Skyguard/Aspide II CROTALE -NG 2S6M1 -- BTR-3D SA- 18Super/Igla-S S-60 ZU-23M1 KS-19 ZPU-4	SA-10C SA-12A/SA-12B -- SA-11 (Buk-M1) SA-15 Skyguard/Aspide II CROTALE 2S6M (combines SAM and SP gun system) BTR-3D SA-18 S-60 ZU-23M KS-19 ZPU-4	SA-5 -- SA-4, SA-3 SA-2, SA-6b (Buk-M) SA-6b, SA- 8b CROTALE 2S6M (combines SAM and SP gun system) BTR-3D SA-14, SA- 16 Type 65 ZU-23M KS-19 ZPU-4	-- -- SA-3 SA-2 SA-6a SA-6a and S-60 SA-9 SA-9 and ZSU-23-4 ZSU-57-2 SA-7b Type 65 ZU-23 KS-19 ZPU-4
EW	Electronic Warfare Ground Based COMINT GROUND Based ECM Ground Based ELINT UHF SATCOM Jammer Radar Jammer	SGS2000 TRC274 WEASEL 2000	GSY1800 AMEWS MCS90 TAMARA	TARAN (R381T) ELK7010 RAMONA	TURN SERIES (R381- 1,2, and 3) R330P RPS-5/6
Radars	Btlfld Surv Rdr Manp. Radar Unatt. Grd Sens Therm Nite View Laser Tgt Desig Laser Rngefndr/ Gonio meter Fire Cont. Syst	Credole FARA-1 BSA Digital Net Sophie Thermal Binocs DHY-307 Vector/SG12	Credole FARA-1 Sophie/NVG 2 Gen II 1D15 DHY-307 Vector/SG12	TALL MIKE NVG 2 Gen II 1D15 PAB-2M	TALL MIKE NVG 1Gen II ---

4-2 (3) Casualty Assessment

1. The Multi Integrated Laser Engagement System (MILES) is similar to "laser tag" used to replicate actual rounds to stimulate near-real time casualty assessments on the training battlefield. MILES consists of transmitters (attached to weapons) and decoders (receivers/targets). Both transmitters and decoders are preprogrammed to replicate firing and registering of specific weapon systems, which are predominantly based on U.S. weapon capabilities vice threat/OPFOR ones. This provides OPFOR weapons inaccurate lethality and develops incorrect OPFOR tactics, techniques, and procedures (TTPs), and ultimately influences incorrect BLUFOR lessons learned in live training environments.

a. Background:

(1) MILES lasers transmitters shoot specific encoded lasers that identify each laser to a specific type of weapon and effective range. Decoders are placed on potential targets including personnel and equipment. The decoders decode the laser and determine what the probability of hit (PH) vice probability of kill (PK) would be based on preprogrammed data into the decoder (hence, the decoder decides the outcome not the weapon/laser). As such, the PH/PK factor database stored in the decoder must reflect OPFOR weapon capabilities. Within the MILES system, approximately 30 active codes are used to designate specific weapon capabilities.

(2) Almost all OPFOR weapon MILES codes actually use BLUFOR weapon codes, or at least their PH/PK. This provides the OPFOR incorrect weapons capabilities and produces incorrect casualty assessment - which in turn changes the TTPs of both OPFOR and BLUFOR. For example, ATSC is currently procuring a reconfigurable using the MILES version II, an OPFOR RPG-7 uses the same code as a BLUFOR Viper (AT system); hence, they share the same PH/PK probability. However, this is not realistic as a Viper has a higher PH/PK than a RPG-7. While actual PH/PKs are classified, even modified unclassified codes should resemble a sense of reality that drives reasonable TTPs and conclusions in live training. Furthermore, as in the RPG example, other similar systems such as the RPG-22 or 29, or the Panzerfaust would also use the same code 15 making VISMOD and OPFOR weapons modernizations partially irrelevant to training conditions -

when reality is that global modernization is a reality, especially in military capabilities.

(3) The below is a current and proposed representation of MILES Codes generally used (Some CTCs and home-stations may vary slightly) :

CODES	Current System	Proposed System	Comments
00	Universal Kill	Same	
01	Maverick/Hellfire	Hellfire-Longbow	
02	Hellfire	Unassigned	
03	AT-3 Sagger (BMP)	Same	
04	60/80/4.2mm	Unassigned	
05	M15 Mine	Unassigned	
06	Weapon X Hit	Unassigned	
07	Tow, Shillelagh, AT6 (Hind-D)	AT-4/6/8, Tow, Shillelagh	
08	Dragon, Spandrel (BRDM)	Same	
09	M202 Flame	Javelin	
10	M21 Antitank, 125mm	125mm (T80)	
11	Claymore M18A1, M16	Same	
12	105mm	Same	
13	152mm, 122mm (M1974)	Same	
14	2.75/57/73mm (BMP) Rckt	73mm BMP	
15	Viper	Same	Used for RPG-7
16	120mm	Same	
17	90mm	Unassigned	
18	8 in, 105/122/155mm Howitzer	Unassigned	
19	40mm Grenade	Same	
20	Rickey (cluster Bomb)	Unassigned	
21	GAU-8	30mm (AH-64)	
22	25mm, DIVAD, ZSU 23-4	25mm, ZSU 23-4	
23	VULCAN, ABN 20mm, 30mm (Hind-D)	Same	NTC Hind-D/BMP-2
24	M2, M85 MG	Same	
25	Chaparral	Same	
26	Stinger	Same	
27	M16 Rifle, M60 MG, Coax MG 7.62mm	Coax MG 7.62mm	
28	Hvy Wpn miss: 105/152mm, Viper, etc	Same	
29	Lt Wpn miss: Rifle, MG, Coax, etc	Same	
30	Lt Wpn Spare Miss, Optical Reset	Same	
31	Hvy Wpn Spare Miss	Same	
32	IFS Actuation	Same	No Effect
33	SA-14	Same	NTC/JRTC
34	ZSU 23-4 Radar Mode	Same	NTC/JMRC

(4) While the reconfiguration of MILES gear (both laser and decoder) is technically accomplishable, the stigma is the work/study that needs to be done to convert the classified PH/PK data to usable unclassified data. Hence, the actual limitation of MILES codes is not the issue - it's developing the PH/PK.

b. MILES Code Development: The lead agency for MILES is the Army Training Support Agency (ATSC)/TRADOC Capability Manager-Live (TCM-L) as the training developer and the Program Executive Office for Simulation, Training, and Instrumentation (PEO-STRI) as the materiel developer. While both TCM-L and PEO-STRI support MILES development, it was the U.S. Army Material Systems Analysis Activity (AMSAA) that produced both the classified and unclassified PH/PK data. However, on 3 September 2003, AMSAA published a memorandum deferring to provide any further unclassified PH/PK data. While discussions evolved around numerous other impacting issues, the result remained the same - the Army no longer had a specific office to provide such technical unclassified data. ATSC and TRADOC G2 attempted to develop a valid process that translated classified PH/PK data to usable unclassified data, AMSAA did not support the validity of the process. Even at the request of the Deputy Commander for Training, CAC, for AMSAA to continue to support the training community, requests were declined and unclassified PH/PK data has not been updated in over four years.

c. Cost Factor: There are two considerations in developing a cost factor to modify current MILES to better reflect threat/OPFOR weapon capabilities; for neither is an actual cost (in dollars) provided.

(1) The cost for someone to conduct the analysis to turn classified PH/PK data into usable unclassified data. In AMSAA's 2003 memorandum they recommended that an integrated Product Team be formed with full representation across all elements of the training community. While ATSC and TRADOC G2 did review potential options for such, the training community did not have a subject matter expert (SME) to actually present a methodology for such a process. Hence, under ATSC or potentially AMSAA/TRADOC supervision, at least one SME contractor needed to be funded to conduct the required analysis.

(2) There is also a cost affiliated with updating the stored unclassified data in both the MILES transmitters and decoders. While this cost is currently unknown, a more cost

effective method to accomplish this was developed at the NTC. Additionally, cost can be drastically reduced if such an update was integrated with the implementation of the I-MILES.

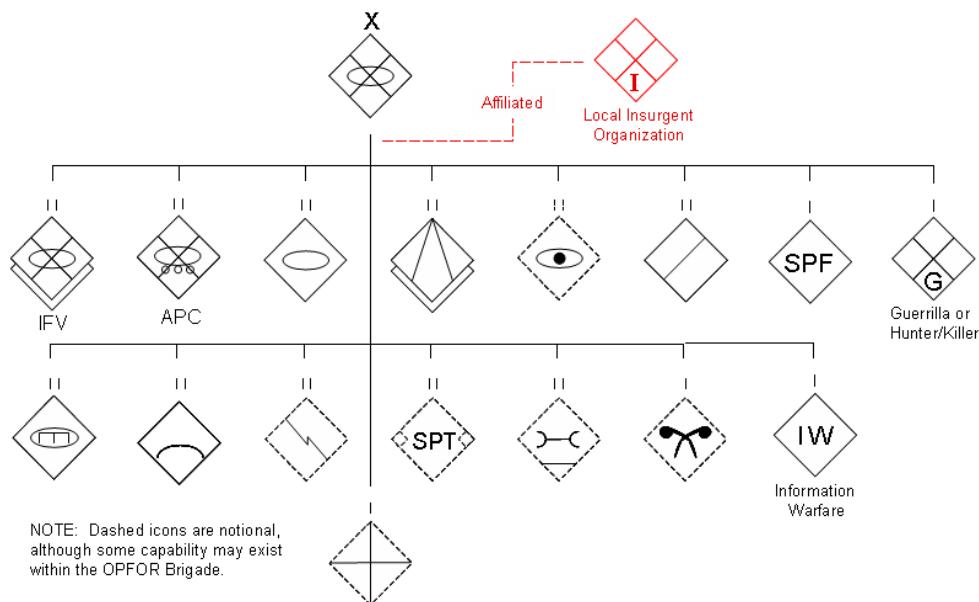
2. Instrumented MILES (I-MILES): The I-MILES builds on the accomplishments of MILES 2000 and MILES XXI (21) but makes the MILES codes externally programmable and incorporates the MILES capability with CTC Instrumentation systems which allows improved target engagement and data tracking. I-MILES capabilities and new development must also consider OPFOR requirements.

3. Requirements: The following equipment/weapons systems are deemed not realistically replicated by current MILES codes or capabilities; technical data for each system can be obtained from the Worldwide Equipment Guide (WEG) .

- | | |
|---------------|---|
| ATGM/RPG | <ol style="list-style-type: none">1. ATDL, RPG 7V2. ATGL LR RPG-293. ATGL Panzerfaust T6004. ATDL, Armbrust5. ATGM Lcher, Eryx6. ATGM HOT3 (BRDM)7. ATGM Manport AT138. 125-mm AT, 2A45M9. AD/AT Starstreak10. ATDL, RPG 2211. ATDL, RPG-27 |
| Air Defense | <ol style="list-style-type: none">1. MANPADS SA 18 92. MANPADS SA 143. AA Gun/Msl, 2S6M4. SA85. SA9 |
| Rifles | <ol style="list-style-type: none">1. Sniper Rifle 7.62mm2. Anti-material Rifle.50 |
| Vehicles Wpns | <ol style="list-style-type: none">1. BTR-80 & BMP-2 (30mm - code 23)2. T-80BV & 2A45 AT (125mm APFSDS-T)5. 2S23/2S9-1 (120mm Combo) |

4-2 (4) Generic OPFOR Brigade Tactical Group (BTG)

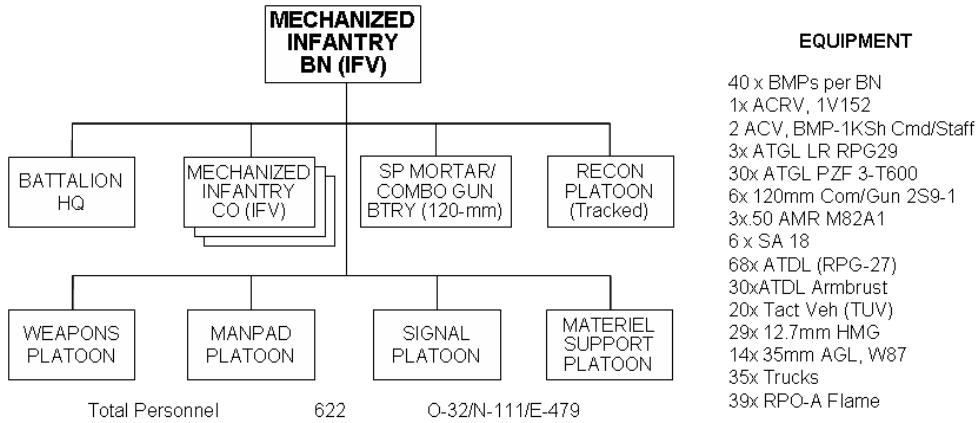
1. The following composition of a generic CTC-like BTG provides the framework that justifies the types and numbers of equipment and capabilities required by MCTCs. Between the three maneuver CTCs, only the number of Infantry Fighting Vehicle (IFV) and Anti-tank battalions are changes to accommodate specific MCTC requirements. The below is a generic composition of an OPFOR BTG:



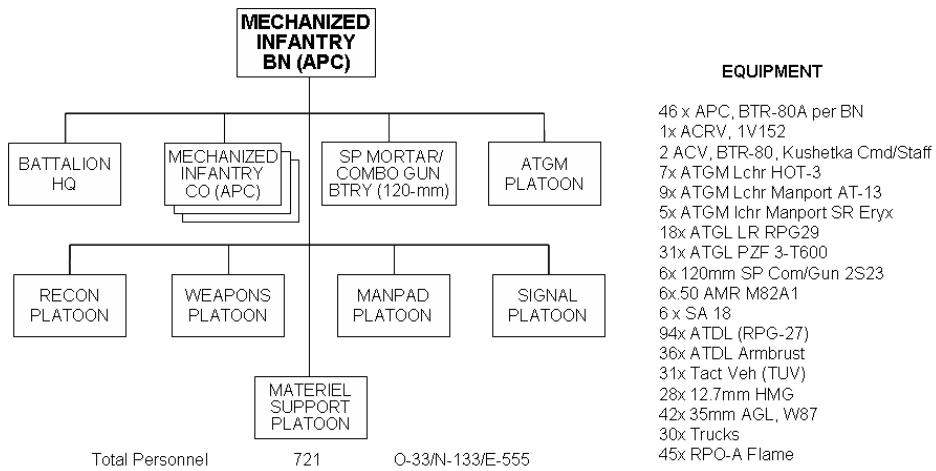
NOTE: When training a Stryker BCT (SBCT), the OPFOR BTG must be reconfigured into a Motorized (anti-armor-light) BTG by changing the two IFV battalions to motorized battalions, eliminating the armor battalion and one AT battalion, while increasing the guerilla company to a battalion size, and adding a sniper company, a SPF deep attack/recon platoon, an attack helicopter company, and a utility helicopter company.

2. Within the provided BTG, equipment and capabilities of the following battalions must be replicated to various degrees at each of the CTCs. The following are BTG units are depicted at 100% strength of key combat systems:

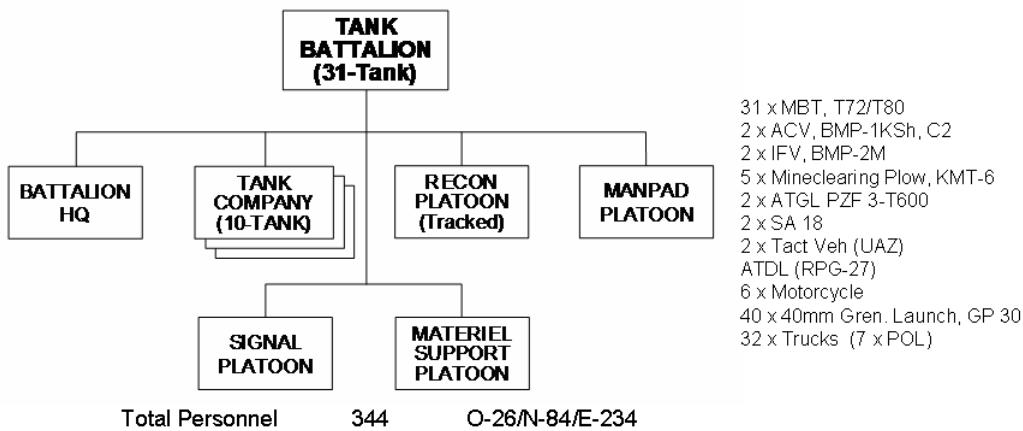
- The composition of a generic **IFV** Battalion belonging to an OPFOR BTG consists of:



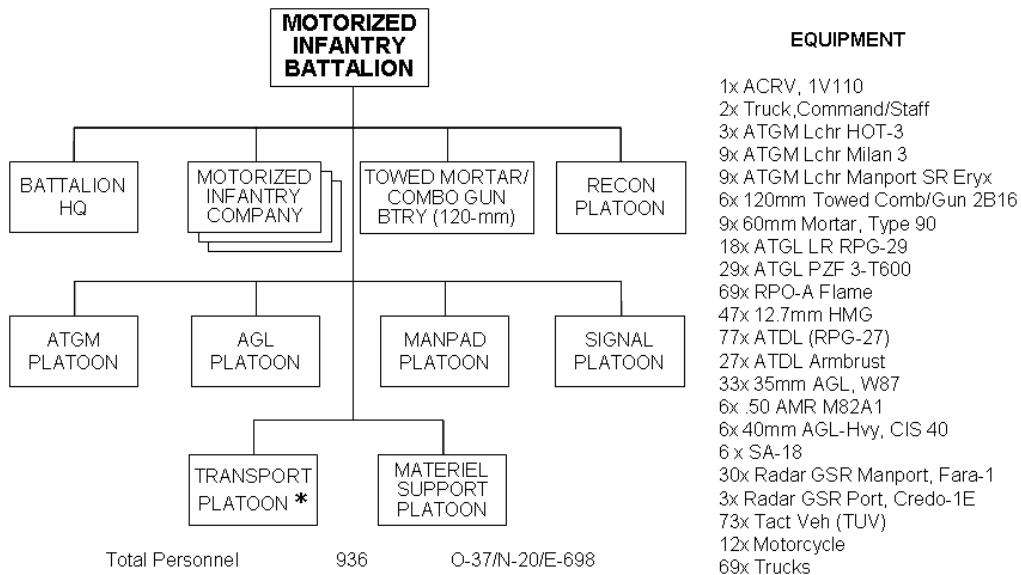
b. The composition of a generic **APC** Battalion belonging to an OPFOR BTG consists of:



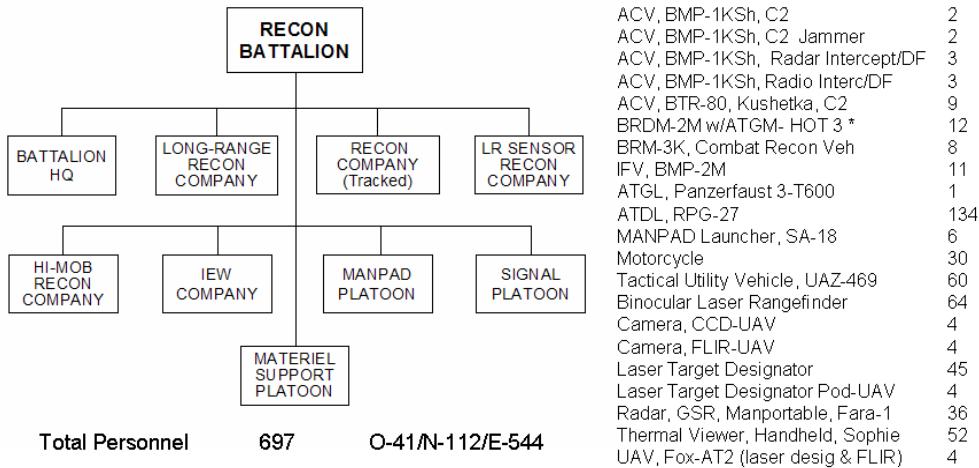
c. The composition of a generic **Tank** Battalion belonging to an OPFOR BTG consists of:



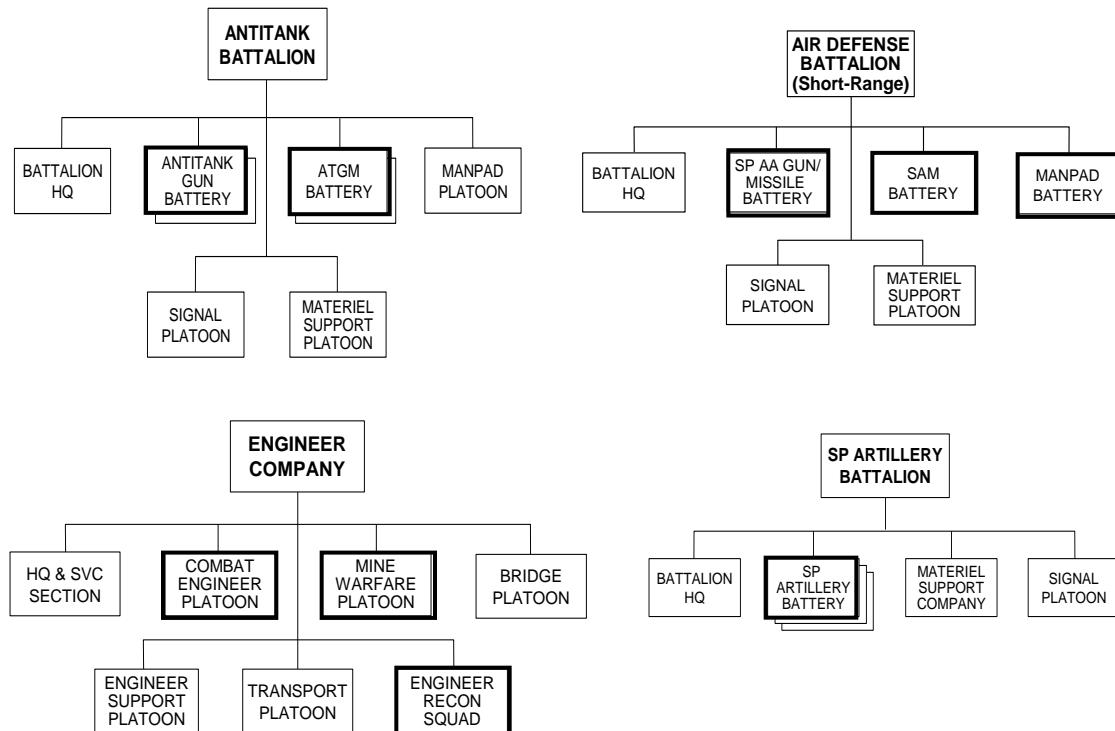
d. A Motorized Infantry Battalion (MIB) is primarily found in a Motorized BTG, but could also be task-organized into other BTGs based on the required training objectives and scenario development. If used, most equipment of the IFVs can be used in the MIB; hence, primarily trading in the IFVs for trucks and adding more shoulder fired ATGMs. The transportation platoon is present only in motorized infantry battalions. It is not present in militia units or other non-motorized infantry units.



c. The composition of a generic **Reconnaissance** Battalion belonging to an OPFOR BTG consists of:



4. While most equipment capabilities of primary maneuver systems such as from tank, IFV, and APC battalions will be replicated at approximately **70%** or more, only critical equipment from the Antitank, Air defense, Engineer, and Artillery will be replicated live. Highlighted in bold boxes are emphasized units/capabilities that must be replicated (See paragraphs 5-2 for minimum CTC requirements):



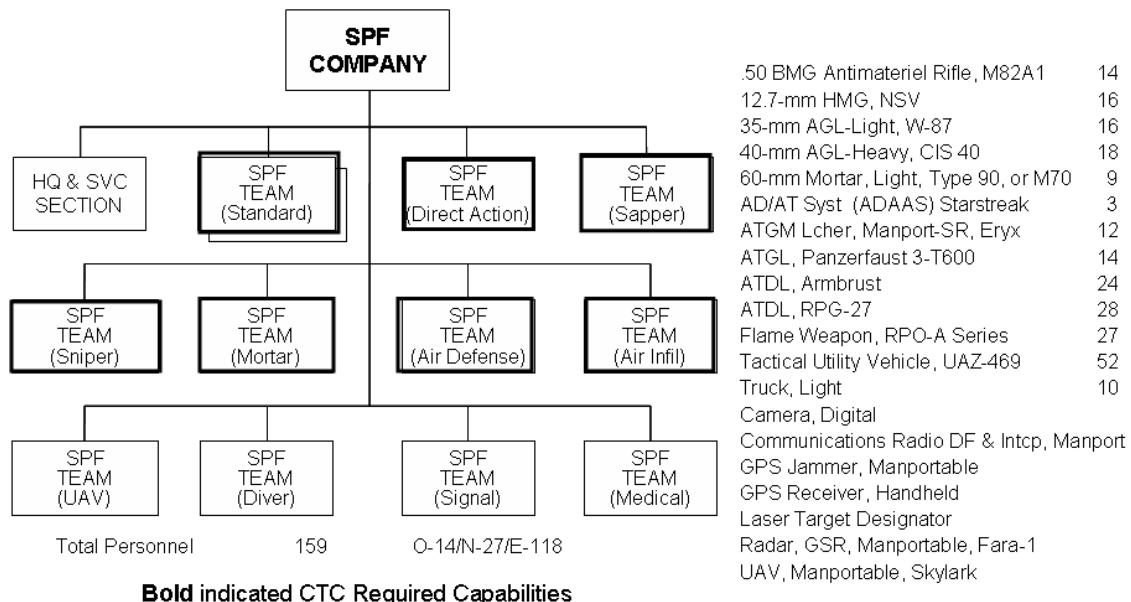
5. Additionally, due to their combat support roles deemed not as critical for high-intensity combat training, OPFOR units such as the Support Battalion, Maintenance Battalion, Signal Battalion, and Medical Company are replicated in a constructive and simulative model - if at all. The Artillery Battalion is also predominantly replicated in the constructive or virtual model due to the range of the weapon system and the limited maneuver space to realistically deploy them (only one battery needs to be replicated live).

4-2(5) Irregular/Paramilitary Organizations

1. Special Purpose Forces (SPF): Along with providing a unique set of military capabilities, the SPF company also provides an avenue for accommodating "niche" weapons and equipment technology into training.

a. The SPF company is the lowest level of tailor-able SPF organization capable of representing all capabilities required for training. Hence, while an entire company may not be required for replication purposes, scenario developers should use the "company" annotation to justify all aspects of SPF capabilities.

b. The below provided SPF Company represent critical capabilities which CTCs must be able to replicate. CTCs are not required to be capable of replicating the total numbers of equipment listed, but does have the option if training objectives require so. See paragraphs 5-2 for minimum CTC requirements.

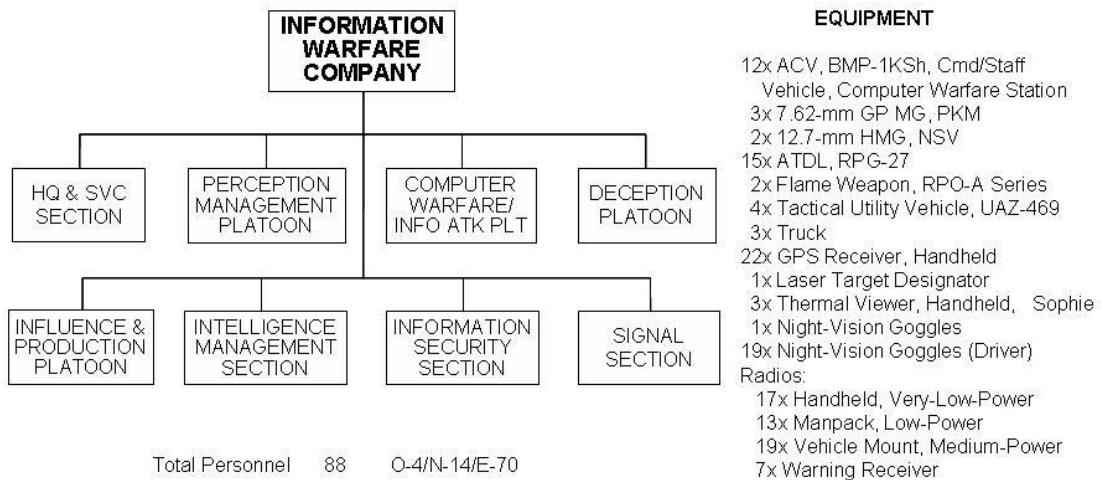


2. Information Warfare Company (IWC): This is a multi-purpose IW unit with electronic attack, protection, deception, perception, computer, and intelligence capabilities.

a. The IWC is the lowest level of tailor-able IW organization capable of representing all capabilities required for training. Hence, while an entire company may not be required

for replication purposes, scenario developers should use the "company" annotation to justify all aspects of IW capabilities.

b. CTCs are not required to be capable of replicating the total numbers of equipment listed, but does have the option if training objectives require so. See paragraphs 5-2 for minimum CTC requirements.

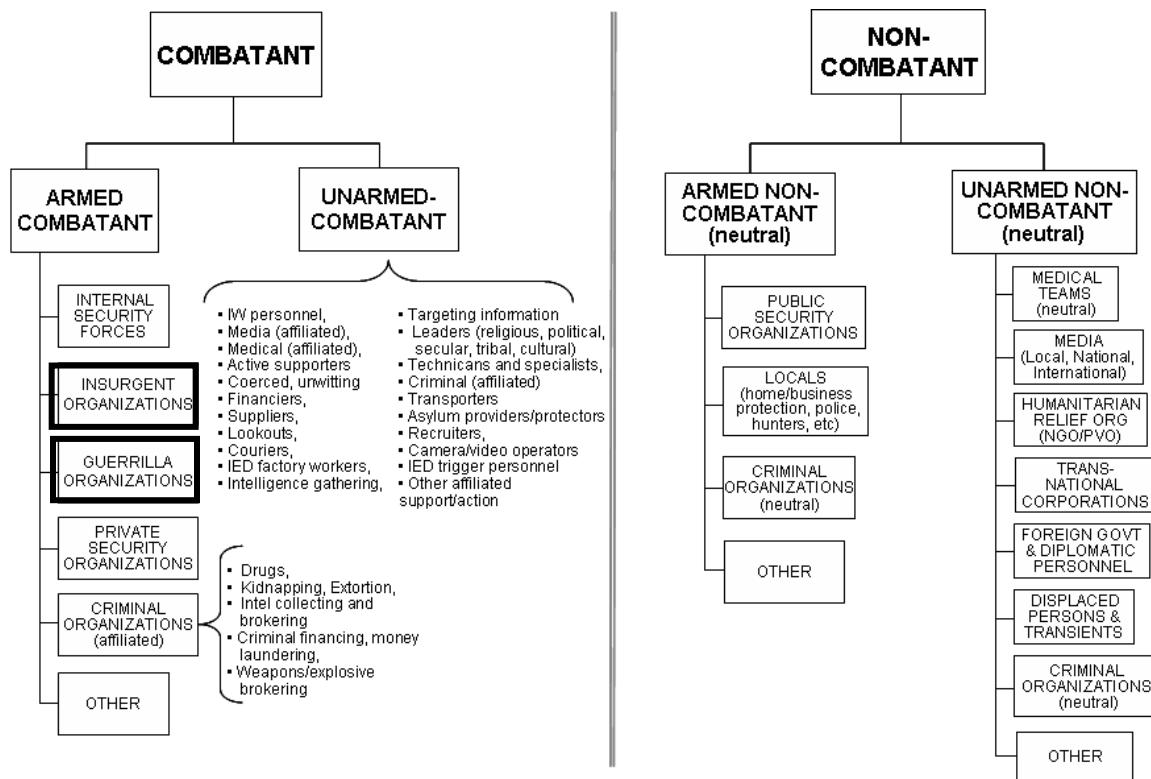


3. CTCs must also be resourced to replicate actions/functions of armed and un-armed combatants and non-combatants.

a. Typically, armed combatants and non-combatants must be replicated with soldiers (due to weapons requirement) while unarmed combatants and non-combatants are replicated with funded civilian role-players (also known as civilians on the battlefield [COBs]).

b. For CTC resource, planning, and training purposes, the COE IMP will only focus on organizations and associated equipment for armed insurgent and guerilla organizations.

c. Examples both armed and unarmed combatants/non-combatants include (highlighted in bold are the two organizations that must be resourced and planned for):

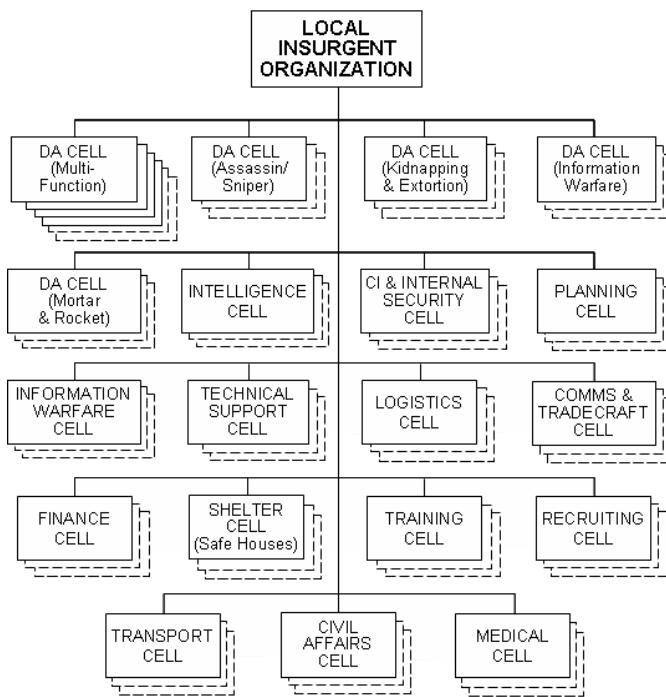


4. Insurgent Organizations: The term Local Insurgent Organization includes any insurgent organization below regional, provincial, or district level. This includes small cities, towns, villages, parishes, communities, neighborhoods, and/or other lower-level insurgent organizations.

a. Insurgent organizations are amorphous. Their ability to continually adapt to all aspects of their environment is directly relational to their survivability and lethality. These dynamic organizations manifest themselves primarily by their unpredictability; their ability to influence and to blend in with the population; their shifting architectures, affiliations, alliances, behaviors, TTP (tactics, techniques, and procedures), and players; and their spectrum of lethality (IED to WMD).

b. The local insurgent organization is the lowest level of tailor-able insurgent organization representing all of the capabilities required for training.

c. CTCs and other training centers are not required to be capable of replicating the total numbers of equipment listed, but does have the option if training objectives require so.



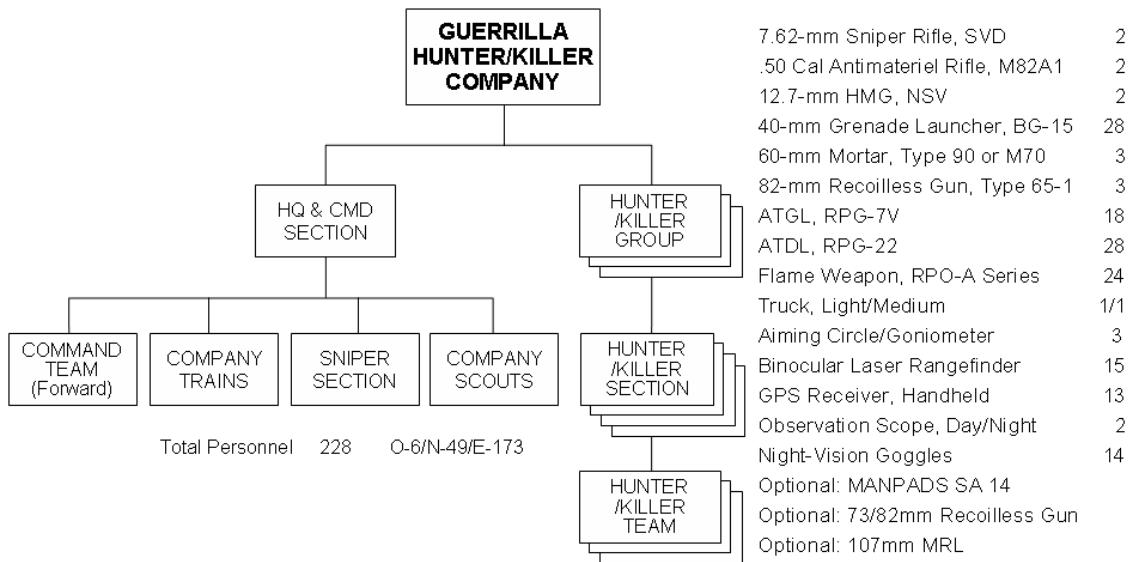
Total Personnel 171

7.62-mm Sniper Rifle, Mosin/Nagt	9
40-mm Grenade Launcher, BG-15	27
60-mm & 107-mm Monotube each	1
ATGL, RPG-7V	16
ATDL, RPG-22	8
IED / IED Vest	52/3
Motorcycle/motorscooter/bicycle	3
Sedan, Civilian	31
Truck, Pickup, Civilian	16
Van, Civilian	10
Antenna, Satellite	10
Binoculars	33
Digital Camcorder/camera	34/35
GPS Receiver, Handheld	49
Laser Rangefinder, Handheld	2
Observation Scope, Day/Night	2
Night-Vision Goggles	46
Cordless Telephone/Base	83/4
Cell Phone	157
Computer, Desktop	24
Computer, Laptop	96
Computer, PDA	94
Handheld, Very-Low-Power	162
Manpack, Low-Power	17
Portable, Satellite Telephone	38

5. Hunter/Killer Company (H/K): The H/K team structure is ideal for dispersed combat such as fighting in built-up areas, especially urban combat.

a. Complete battalions and brigades can be organized for combat as H/K units. A Guerrilla Company consists of three H/K Groups, each group having four sections of three Infantry H/K teams. Therefore, the company contains a total of 36 H/K teams – 38 H/K teams if the sniper team and the company scout are also counted.

b. CTCs are not required to be capable of replicating the total numbers of equipment listed, but does have the option if training objectives require so. See paragraphs 5-2 for minimum CTC requirements.



6. Functions of irregular forces:

a. Insurgent forces are groups that conduct irregular or unconventional warfare within the borders of their country in order to undermine or overthrow a constituted government or civil authority. The distinction between terrorists and insurgents is often blurred because of the tactics employed by each. Some terrorists groups have become insurgent organizations, while insurgent organizations have used terror tactics. An insurgent organization may use more than one form of tactics and, based on its strategy, its actions could cut across the entire spectrum of warfare—employing terror, guerrilla, and conventional military tactics to achieve its goals. Typically, most insurgent groups employ terrorist and guerilla tactics. (see Chapter 3, FM 7-100.3)

b. Paramilitary Organizations use tactics that resemble those used by regular military forces, but may differ in terms of scale or sophistication. Specific tactical applications for these groups depend on their goals, motivation, capabilities and organizational structure. Thus, paramilitary forces are not restricted to any specific guidelines. (see Chapter 2, FM 7-100.3)

c. Terrorism (terrorists) is the calculated use of unlawful violence or threat of unlawful violence to inculcate fear, intended to coerce or intimidate governments or societies in the pursuit of goals that are generally political, religious, or ideological. Terrorism's principal target is the psychological balance of the enemy society, its population, and its leadership. It typically accomplishes this through violence directed at civilians, and that is what distinguishes it from other forms of calculated violence used to achieve one these goals. Terrorist groups vary widely in size, organizational structure, motivation, sophistication, and level of activity. (see Chapter 4, FM 7-100.3.)

d. Internal Security Forces deal with various internal threats to the regime. These forces are generally well organized, trained, and equipped to perform a host of diverse missions. These organizations have specified missions throughout the spectrum from peacetime to total war. These organizations conduct activities against a variety of enemies, such as criminals, political dissidents, and insurgents, as well as against an enemy's military during war. Accordingly, the operations and tactics employed will vary depending on the particular mission, target, and enemy origin (internal, regional, or extra-regional). (see Chapter 5, FM 7-100.3)

e. Drug and Criminal Organizations pervade the contemporary operational environment. These organizations exist in time of war and peace. They operate totally in their own self-interest, and their principal goal is to flourish and expand. They are normally independent of nation-state control and often extend beyond national boundaries to operate regionally or worldwide. Individual drug dealers and criminals or small-scale organizations do not have the capability to adversely affect legitimate political, military, and judicial organizations—but the large-scale organizations do. (see Chapter 6, FM 7-100.3)

4-2(6) Transnational Terrorist Networks

1. The Chief of Staff of the Army directed a study which resulted in a CG TRADOC approved corresponding concept on 10 December 2007, for insuring that training at the Combat Training Centers (CTC) include the tasks that emphasize detection of terrorists, countering of terrorist operations and managing the consequences of a terrorist attack. Intent is to have commanders think of terrorist organizations and operations in terms of operational and strategic consequences as well as tactical outcomes, beyond their local area of operations.
2. As a result of operations in the Global War on Terrorism (GWOT), it has become apparent that security of the population and the national infrastructure has taken on a new prominence not yet fully recognized in training. As such, CTCs were directed to structure a world class irregular force from within current OPFOR resources to replicate transnational terrorist activity focused on training unit outcomes (lessons).
3. As several new tasks, associated with military operations in an era of persistent conflict have emerged, Leader Training Programs (LTP) include limited or no instruction on international terrorism, the motivations of terrorist groups, or typical tactics, techniques and procedures (TTP) associated with multiple terrorist groups. LTPs need to incorporate appropriate education on prominent terrorist groups and their "modus operandi." A lesson plan for terrorism within LTP and the BCTP seminar will bring additional training with limited additional training time.
4. Additionally, TRADOC G2 was directed to establish a two person cell, to be located at the TRADOC Intelligence Support Activity (TRISA) to:
 - a. Coordinate with the Combat Training Center Directorate in order to provide support to all CTCs for scenario development and execution of corresponding terrorist operations.
 - b. Assist in adding a module on transnational terrorism to the Tactical Commanders Development Program taught at Fort Leavenworth.

c. Assist in the development of a terrorism education segment and practical planning exercise for Corps and Division commanders and staffs during Battle Command Training Program Seminars that captures the complexity of conducting multi-national operations while combating transnational terrorism.

5. There are also a number of organizations across the Armed Forces, US Government and Academia that can educate and train units from Brigade Combat Teams (BCT) through Joint Task Forces (JTF) on terrorism and its methods. These can be enlisted in support of the training and education efforts. Division and Corp's headquarters must be prepared to execute key Universal Joint Task List (UJTL) tasks regarding combating terrorism. Therefore, it is essential that this training capability include BCT through JTF commanders and staffs.

4-2(7) Cyber Threats

1. Information technology (IT) and digitization are integral elements woven into the virtual fabric of today's society. The increasingly indispensable nature of information technology, however, has transformed these systems into high value targets of cyber-war and cyber-terrorism, and presents a significant threat to both the military and national security. Examples of military and national IT security services include video teleconferencing, the Defense Switched Network (DSN), the unclassified IP router network (NIPRNET), the Secret IP router network (SIPRNET), and the Army Battle Command System (ABCS) architecture.
2. Just as the United States has capitalized on the use of computer technology, our enemies have not overlooked the fact that they must also operate in the computer age. Cyber threats include more than 40 nation-states that have openly declared their intent to develop cyber warfare capabilities. Additionally, it includes transnational and domestic criminal organizations, hacker groups who sympathize with our [U.S.] enemies, terrorist organizations (evidenced by forensic analysis of captured computers) and insiders who support our enemies. Terrorist groups can use cyber capabilities to assist them in planning and conducting their operations, and also to create destruction and turmoil by attacking our systems and our critical infrastructures.
3. One common aspect is that organizations trying to attack using information technology will more than likely want to keep the information network up, or at least limit their destruction or disruptions to discrete portions of the network. For a true "cyber-terrorist," the network is the method of attack. It is the weapon, or at the least, the medium through which an attack is delivered. Information warfare of this sort requires that messages and computer commands are transmitted, programs and malicious software be emplaced, fraudulent transactions take place, and information be available for exploitation. Defacing websites, crashing portions of a target network, accessing enemy information, denying network access to other groups, manipulating financial confidence and causing panic exemplify this warfare - they will want us to believe that our networked information is unreliable. Examples of this approach would include the chaos and destruction caused by disrupting a

nation's air traffic control system, crashing two trains together by overriding the railroad signal and switching system, or the loss to the economy by blocking and falsifying commercial communications.

4. We need to be able to replicate four types of Cyber Attack (CA): When analyzing the objectives of a cyber attack and the ultimate outcome the attack may have, the effects of cyber attack align generally into four areas. The first three effects listed below address the impact on the actual IT systems themselves, 441 whereas the last effect addresses the impact of using the IT system for physical destructive purposes.

a. Loss of Integrity. Integrity is lost if unauthorized changes are made to the data or IT system by either intentional or accidental acts.

b. Loss of Availability. If a mission-critical IT system is attacked and rendered unavailable to its end users, the organization's mission will most likely be affected.

c. Loss of Confidentiality. The impact of unauthorized disclosure of confidential information can range from the jeopardizing of national security to the disclosure of Privacy Act data.

d. Physical Destruction. Physical destruction refers to the ability to create actual physical harm or destruction through the use of IT systems, such as transportation, power, and water companies that operate with networks of computer-controlled devices known as supervisory control and data acquisition (SCADA) .

5. There are four key threat sources with associated motivations and actions as depicted in the below diagram:

<i>Threat Source</i>	<i>Motivation</i>	<i>Threat Actions</i>
<i>Foreign Military / Terrorist</i>	Destruction Exploitation Revenge Blackmail	<ul style="list-style-type: none">. Bomb/Terrorism. Information warfare. System attack (e.g., distributed denial of service). System penetration. System tampering

<i>Hacker, cracker</i>	Challenge Ego Rebellion	<ul style="list-style-type: none"> . Hacking . Social engineering . System intrusion, break-ins . Unauthorized system access
<i>Computer criminal</i>	Destruction of information Illegal information disclosure Monetary gain Unauthorized data alteration	<ul style="list-style-type: none"> . Computer crime (e.g., cyber stalking) . Fraudulent act (e.g., replay, impersonation, interception) . Information bribery . Spoofing . System intrusion
<i>Industrial espionage</i>	(companies, foreign governments, other government interests) Competitive advantage Economic espionage	<ul style="list-style-type: none"> . Economic exploitation . Information theft . Intrusion on personal privacy . Social engineering . System penetration . Unauthorized system access (access to classified, proprietary, and/or technology related information)

6. For the purpose of the OEMP in terms of required resources to realize training complexities in a cyber-vulnerable environment, training centers and major exercises need to establish four key components:

a. A Cyber Environment (CE): This includes the fiber optic infrastructure already present, to various degrees, at most CTCs. It also includes the servers, wireless local loops, computers, internet cafés, and like items. Integrated capabilities must include a replicated internet, e-mail service, and blogging...at a minimum. It must also have the ability to allow Operations Group to monitor and pull-down information for after action review assessments and lesson learned purposes.

b. A conducive Scenario: Scenarios must present such a cyber environment as part of the integrated training environment which will include variants of OPFOR and role-player free-play communication, as well as accommodate scripted events for limited and very specific training objectives or audiences within the rotational training unit.

c. OPFOR capabilities: The OPFOR must have the ability to "post" certain types of information onto the internet, have

computers with e-mail accounts, and most importantly – be given soft-skill lessons and mentoring by subject matter experts (SMEs). Last, to conduct computer network attacks and the like, actual with applicable required will also need to provided (augmentation) to the OPFOR.

d. Work-around white cell methods: The replicated internet site is merely that, a replication operated within the constraints of available resources. As such, the replicated internet may not be able to stimulate all complexities required adjudicate a cyber attack and must therefore be augmented with work-around methods.

4-2(8) Host Nation/Coalition/Allied Services

1. As the United States Army continues to operate in Joint, Interagency, Intergovernmental, and Multinational (JIIM) environments, the need to train for such conditions and environment also drives requirements. Within the "Military" OE variable, the need to replicate multinational forces, including differentiating between host nation, coalition, and/or allied forces must be considered and resourced.
2. There is no standard brigade tactical group, brigade combat team, or regimental line-and-block diagram of what a host nation, coalition, and/or allied force will need to be replicated, nor is it capability based as presented with the OPFOR. Rather, the size and structure of the unit tasked to replicate such a force will need to be determined or predicated based more on the unit training objective and if training is oriented on CMETL or DMETL.
3. Many of the military hardware material items can be replicated by using either U.S. equipment or OPFOR surrogate equipment/training aides. However, some critical aspects will require unique visual modifications (VISMOD) to differentiate the host nation, coalition, and/or allied forces.
 - a. Uniforms: OE complexities require training centers or sites to replicate a multitude of military affiliated elements (in addition to local and national police forces). Practically all elements will need a unique patterned, not necessarily style, of uniform. Currently versions being used in addition to the standard BLUFOR Army Combat Uniform (ACU) which include the Desert Camouflage Uniform (DCU) and the Battle Dress Uniform (BDU). Replicated elements requiring uniforms, in addition to host nation local and national police uniforms include:
 - Border Patrol/Defense
 - Host Nation Military Forces
 - Allied/Coalition Services
 - Conventional OPFOR
 - Irregular OPFOR (various types)
 - b. Equipment: Most replicated host nation, coalition, and/or allied forces should be able to use standard U.S. equipment or TDA augmented OPFOR equipment. However, as with the uniforms, some VISMOD may need to be made to better delineate

friend and foe, though similarities are perfectly fine as that also provides some of the realistic complexities of today's OE.

(1) While aspects of equipment uniformity in a irregular warfare environment is more convoluted, equipment that replicates foreign "traditional" military capabilities, such as tanks, infantry fighting vehicles (IFVs) in Major Combat Operations (MCO) or Hybrid driven scenarios, will need to be addresses as they are for home-station training.

(2) Considerations for implementing VISMOD measures on U.S. type equipment may include:

- A simple generic and very cost effective method, though not the most preferred, would be to attach small unique flags and placards or a red-star panel to sides of vehicles.
- Tanks replicating foreign armor vehicles should raise their skirts, add a VISMOD that changes the vehicle silhouette, such as adding fake fuel tank barrels (plastic trash can) in the back or a dome on top of the turret, and add a heat thermal pad near the turret.
- IFV replication for foreign mechanized vehicles may include an added triangular nose to the front of the vehicles (similar to the ones used on M113 to make it look more like a BMP), as well as modifying the frontal thermal signature by adding a heating pad.
- Wheeled vehicles, except for HMMWVs used as combat or reconnaissance vehicles may only require a red-star panel that attaches both sides of the vehicle as well as one in the front (three per vehicle). HMMWVs used as combat or reconnaissance vehicles may require a triangular attachment to the front of the vehicle that also has a thermal heating pad. The triangular attachment should provide the vehicle a more pointed silhouette as to replicate a BRDM view.
- Other equipment, such as artillery, radars, and signal and intelligence vehicles should have at a minimum the three panels as described for wheeled

vehicles as well as an OPFOR flag for major weapon systems (i.e. Arty & Engineer platforms).

(3) Considerations for implementing VISMOD measures on OPFOR vehicles may simply include small flags and placards.

4-2 (9) Future OPFOR Requirements

1. Much of the OEMP addresses current OPFOR requirements in terms of weapons and technology for FY 10-15, which is a POM driven process. However, OPFOR capabilities far beyond immediate and current requirements already exists to keep the OPFOR (both conventional and unconventional) relevant in the near term future.
2. The below listed OPFOR capabilities and requirements must be POM'ed for and addressed. While they are not considered immediate critical requirements, they are very valid and must be addressed:

SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (FY 20-25)
INFANTRY WEAPONS		
Infantry Assault Rifle	Rifle 6.8mm to 500 m day/night, w/EO laser pointer sight on key weapons. Shoot around corner sight link. Underbarrel 40mm grenades (CS, HEDP, buckshot, starburst, HE airburst and concussion). Rifle barrel grenades 400m	On-bipod range 600-800m. Day/ night EO sight all weapons link to laptop/PDA/NVG/helmet viewer w/real-time RF link. Multispectral smoke grenades. EO recon grenade Remote fire platform-60m link.
Tactical Shotgun	12-gauge pump or semi-auto, 8 rds. Short and long interchangeable barrels, day/ night sights. Variable choke. Shells include AP-sabot, starburst, HE concussion, slug.	Time fuzed focused fragmentation airburst rd for use against dug in personnel, aircraft and UAVs. Frangible rounds Multispectral smoke, CS grenades.
Sniper Rifle Light	Bolt action, 7.62 mm rd, 15 lbs max weight with ammo. 10X optic w/ night channel. Range 800-1000m.	Ballistic EO holographic LRF sight. Improved night channel to 1500m. Weapon robot option
Anti-Material Rifle (AMR) or Sniper Rifle (Heavy)	Semi-auto .50 cal. Weight 25 lbs max. Range 1,800 m. Armor pen 20 mm. Frangible multipurpose rd (AP 11 mm, incendiary, 20 fragments). As sniper rifle, range 1,000-1,500 m. 20 X EO sight with night channel.	Ballistic EO holographic laser range-finder sight. Night sight channel II /thermal combined, range 2500+ m. Remote fire platform-60m link or weapon robot option.
Automatic Grenade Launcher (AGL)-Light	35mm manportable launcher with 6/9/12-round drums. HEAT grenade range 600 m 80mm penetration. Frag-HE grenade range 1,500m. EO day/ night sights. 1 per inf sqd	Air-burst munition (ABM), ballistic sights. Increased range, lethality. Wider proliferation. Multi-spectral smoke grenades. Thermal sight. Remote fire.
Automatic Grenade Launcher (AGL)-Heavy	40mm weight 17 kg. Range 2,200m. Ballistic fire control computer w/ EO sight. Dual-purpose grenade, HE w/ 60mm armor penetration. Buckshot round. Electronic fuzed HE air-burst munition (ABM). 32/48-round cans. Thermal night sight, range 2,200 m.	Increased range. ABM retrofit any MK 19 type 40-mm AGL. HEAT rd defeats 200+ mm armor. Multispectral smoke, unattended ground sensor (acoustic, seismic RF), and comms jam grenades. Weapon robot option.

SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (FY 20-25)
	INFANTRY WEAPONS	
Antitank Grenade Launcher (long range) Mid-Term: Expand to AD/AT Missile Launcher	125mm tandem HEAT 800+m range, 1100+ mm. Tripod and bipod. HE-Thermobaric grenade. LRF computer sight. EO day/II Night sight. Nil smoke. Remote-fire platform option.	Dual-purpose grenade 1,700m. SAL - homing grenades: HEAT 1000m, 1,300+mm; HE 1,000m. TV/thermal sights, laser designator 5 km, directs arty rds. KE LBR/SAL sub-missile 4 km. GPS corrected grds
Antitank Grenade Launcher (medium range) Mid-Term: Expand to AD/AT Missile Launcher	60mm tube. Use in enclosed spaces. Tandem HEAT (900+ mm to 600m), dual purpose 1700m. Ballistic LRF/II night sight to 1,500 m. Remote launch tripod. Nil smoke.	SAL-H grde ,1000 m. Laser designator 5 km. Thermal night sight 4 km. IR autotracker. KE LBR submissile fits converted launcher. Range 4 km. GPS grenades.
Antitank Grenade Launcher (disposable)	125mm tandem HEAT 300m range, 1000+ mm. Shoulder fired. Nil smoke.	Multipurpose. Increased range. Reduced recoil-enclosed spaces. HE anti-personnel effects.
Antitank Grenade Launcher (disposable)	80mm HEAT, 200m range, 630 mm. Low signature, no smoke/flash	Same improvements as with 125 mm ATDL (above).
AT/AP Hand Grenade and Rifle barrel grenade	HEAT/Frag, 165-mm penetration, 20 m Frag radius, 20 m range, weighs 1.1 kg. Rifle grenades: HEAT 150mm to 300m	Hand grd to 40 m. Dual purpose bullet-thru rifle grd, no recoil, 150mm/Frag 20 m, 3 in belt pack.
Remote-fire Platform/ Weapon Robot	Manportable, <15 kg w/60m Laptop/PDA link. EO sight - MG/AGL/rifle	Tracked, 24 kg, 2 hour charge, 2 gen FLIR, 10 km RF link range.
Air Defense and General Purpose Machinegun	12.7mm MG. EO day/night 3 gen II computer sight. Lightweight MMW radar to 5 km. Display link to AD azimuth warning net. Frangible rd to 2.5 km. Emplace 10 sec. Dismount, vehicle pintel mount. TV/FLIR. Remote station or remote fire platform	12.7-mm 4-barrel (vulcan type) mini-gun with 1000-4000 rds per minute. Remote control option. TV sights w/2nd gen FLIR. Improved ammunition 3 km. Laser dazzler to blind sights. Vehicle or towed remote fire.
Improvised Multi-role Man-portable Rocket Launcher (AD/Anti-armor)	4-tube 57-mm launcher, high-velocity dual-purpose rockets. EO day/ night sight. Blast shield. Range 1,000 m. Penetration 300 mm, 10 m radius.	Prox fuze, 1,500 m range. Penetration 400 mm, 20 m radius.
Infantry Flame Weapon	Disposable thermobaric grenade. Range: 600 m effective. Effects = 122 mm artillery rd. Multipurpose -targets personnel, bunkers, buildings, light armor, materiel, etc. Nil smoke.	Increased range and accuracy. Removable LRF day/night sight. Remote fire platform or weapon robot option.
Close Protection System		See Deception and Countermeasures
Infantry Weapon Night Sight (Night Optical Device- NOD)	3rd gen II night vision goggles/sights/IR pointers all dismounts, range 1,000-1,500 m. For AGLs machineguns, light sniper and heavy sniper rifles/AMRs, AT grenade launchers. FLIR all recon assets.	Uncooled 3rd gen FLIR (thermal and II combined) NVGs and weapon sights infantry 600m. Priority dismounted weapon sights 2,000+ m. ATGMs to 7 km.

SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (FY 20-25)
MANEUVER		
Armored Personnel Carrier (APC)	8x8 chassis, 1-man turret, 30-mm gun (and imp rd), coax MG. NLOS ATGM launcher 4 km. Thermobaric ATGM. FLIR. 2 remote 7.62-mm MGs or 12.7 - mm AD MG (1/pltn). Armor sideskirts	10x10 chassis, hybrid drive. Added box armor. Micro-recon/attack UAVs. Close Protection System. AD/AT (KE LBR) missile and NLOS ATGM 6 km.
Armored Personnel Carrier Combat Support Vehicle (Weapons Squad APC or Infantry Support Vehicle, or Company Command Vehicle in Mech APC Bn)	2-man turret, wheeled 8x8 chassis. 100 mm and 30mm guns, auto grenade launcher, auto-tracker, hunter-killer FCS. Gun-launch ATGM fire on move. 100 mm LBR ATGM 5.5 km, NLOS (SAL) 7, also HE. 30/100-mm HE electronic fuzed rds 7 km. AD 12.7 mm MG, 3 remote 7.62 MG. Imp 30-mm rd. Laser designator.	Chassis SAB, 100mm KE (600 CE) protection. Micro-UAVs for recon/attack. AD/AT missile with LBR/ SAL and KE/HE warhead 10 km. Tunable laser designator, range 15 km. Radar warning receiver MMW radar. Cmd IFV SATCOM. Close Protection Sys
Infantry Fighting Vehicle	2-man turret, amphib tracked chassis. 30mm gun (improved sabot 110+mm penetration). 40mm ABM auto grenade launcher, NLOS fiber-optic guided ATGM 6 km. HE ATGM. Electronic-fuzed Frag-HE rd 5 km. 2nd gen FLIR. Auto-tracker. Hunter-killer fire control. AD MG, 3 remote 7.62 mm MGs. Imp 30mm rd. Laser designator 10 km.	Hybrid drive. Box armor ERA. 100 mm KE/600 CE. Gun 45mm cased telescoped. Ammo includes sabot, AD/AT (KE LBR) rd 4 km, HE frangible rd. LBR/SAL ATGM 12 km. MMW radar. Micro-UAVs recon, attack. Tuneable laser designator 15 km. Radar warner, laser radar. Close Protection System
Heavy Infantry Fighting Vehicle (Heavy IFV in Heavy Bn, IFV Combat Support Vehicle in Mech IFV Bn, or IFV Company Command Vehicle as required)	2-man turret, amphib tracked chassis. 100mm protection. Auto-tracker, hunter-killer FCS, ATGM fire on move. 100 and 30mm guns, auto grenade launcher, 100 mm LBR ATGM 5.5 km, NLOS (SAL) 7, also HE. 100 and 30 mm HE electronic fuzed rds 7 km. AD 12.7 mm MG, 3 remote 7.62 MG. Imp 30-mm rd. Laser designator.	Hybrid drive. Box ERA, 300mm KE (600 CE) protection. 100-mm HEAT round. Micro-UAVs for recon/attack. AD/AT Missile rd with LBR/ SAL and KE/HE warhead 7 km. Tunable laser designator, range 15 km. Radar warning receiver MMW radar. Co Cmd IFV SATCOM. Close Protection Sys
Heavy Combat Support Vehicle (HCSV)	Modern tank chassis 5 dismounts. Twin 30mm overhead gun, improved rd, 30mm AGL, 2 x 7.62 mm remote MGs, 12.7 mm AD MG. NLOS ATGM 6km, thermobaric ATGM. 700+mm KE/ 1200+ CE armor w/ERA. 2 gen FLIR	3-barrel 30-mm Gatling gun, AHEAD type electronic-fuzed rd. ATGM SAL-H 1,400+mm 12 km. Launch AD/AT (KE LBR) missile and MANPADS 7 km. Micro-UAVs rcn/atk. CPS. Hybrid drive.
Main battle tank	Welded turret, increased KE armor protection. 125mm gun, larger sabot (700+mm), LBR/SAL-homing ATGM 8 km. Laser designator also direct SAL artillery/mortar rd to 10 km. 2nd gen thermal sight (7 km and 50X sights). Day/ night ATGM launch on move. Auto-tracker, laser radar, laser dazzler to blind sights. Focused fragmentation (AHEAD-type) 125-mm HE rd used against helo/AT targets. HEAT-MP, dual-purpose submunition round	Reduced turret w/compartmented ammo. Electromagnetic, ceramic armor, 3 gen ERA, 500 mm top/ mine protection. Hybrid drive. Laser/radar warner. Sabot rd more penetration. ATGMs SAL 12 km, LBR 8 km. AD/AT KE LBR rd 7 km. Medium laser weapon. FLIR 10 km, 100 X sight. MMW FC radar. Tuneable laser designator. Micro-UAVs attack/ recon. Control robotic tank. Close Protection Sys
Robotic Tank	System not fielded until Mid-term. It would complement or substitute for Heavy IFV/tank at platoon.	Tank 1/2 scale conventional size. Driver compartment for pre-battle. Weapons, sensors, armor, mobility same as tank. Remote-control overhead gun/ autoloader.

SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (FY 20-25)
MANEUVER		
Armored Tactical Utility Vehicle (TUV)	4x4 vehicle with amphibious 1/4 mt amphibious trailer, 2-6 personnel. Weapons 12.7-mm MG or AGL). Multi-role - tactical and support units (mech, recon, C4, AD, AT, security, log,). Run-flat, central tire inflation.	6x6 with improved mine protection. Remote or overhead weapon station. Recon version w/masted radar/TV/thermal sensor suite. Hybrid drive. Smoke launcher. Recon grenades
MANPADS Vehicle Conversion Kit	MANPADS team carrier vehicles, battalion and brigade. See Air Defense	See Air Defense
Light Strike Vehicle	Tactical utility vehicle 4x4, roll bars, open sides, rear engine, 2-4 persons. MG, AGL, ATGL, or MANPADS	Deep-water ford to 2 m, amphibious with bladders. Optional 23-mm pintel-mount chain gun.
All-Terrain Vehicle (ATV)	6x6, 4-person capacity, 3.5 mt payload. Amphibious capability, amphibious trailer. Can tow weapons and mount MG or AGL.	Mine protection. Hybrid electronic/diesel drive. Track conversion for swamp, snow, etc. Snap-on cab for cold weather etc.

SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (FY 20-25)
RECONNAISSANCE, INTELLIGENCE, SURVEILLANCE, TARGET ACQUISITION		
Binocular Laser rangefinder and Goniometer	Daytime detection 20 km, recognition 5-7. GPS. Thermal channel (below) goniometry, computer - digital transmit.	See Thermal Binoculars (below). Heads-up display links to terminal. Transmit images to net.
Helmet Cam	Soldier camera link to laptop/PDA 2 km. NVG feed. Remote mast mount.	Improved night viewer with 3 gen II or thermal. Night rg 2 km.
Thermal Binoculars Mid-term Thermal LRF	Uncooled 2 gen FLIR. 2x electronic zoom (EZ), image stabilization. Detect 9 km (13 EZ), recognition 3.5 km (5.5 EZ)	Add LRF, laser pointing system, internal GPS, internal color camera. FOs call indirect fires 10-13 km, 6+ precision, direct fire 5.5+. Recognize helo 7 km: 50 X zoom.
Laser target designator/rangefinder	Manportable, encoded, designates SAL-H rounds and bombs, ATGMs to 10 km. 2 gen thermal sight	Tunable laser with encoded pulse to 15 km. Mount on sensor robot
Observer Sensor Suite For Recon, SPF, Security, AT, AD, Artillery (Motorcycle, Dismount, ATV, or Vehicle)	Goniometer/laser designator base. Laptop or radio link. Thermal LRF binoculars, manpack radar. Aircraft azimuth warner. Net with UGS, remote camera, micro-UAVs. GPS	Increased range, encryption. SATCOM. Tunable encoded laser designator (range 15 km) to designate targets for SAL-H munitions. Mount on sensor robot.
Laptop Computer for Digital Sensor Network	System accesses sensor links: video cameras of tactical units, UGS monitor, maps/unit status displays, azimuth and alert nets. Digital data links, microphones for discussion, ground station terminal. Access long-range cordless and SATCOM phones, encrypted internet links. Terminal to control minefields and remote-detonate mines.	Personal data assistant for dismount use, or for mounting in or linking to weapon fire control system. Solar rechargeable batteries, extended range on links with retransmission UAVs. Use for hand-off control of UAVs, in-flight munition retargeting

SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (FY 20-25)
RECONNAISSANCE, INTELLIGENCE, SURVEILLANCE, TARGET ACQUISITION		
Surveillance radar	Manportable low probability of intercept GS radar detect/classify vehicles 30km, detect personnel 18 km. Netted digital/graphic display.	Remotely operated, masted in man-portable day/night EO sensor suite or from concealed base.
Mortar and Grenade Recon Rounds	82 mm mortar round with a CCD TV camera to 5,700 m, aerial NLOS zoom view to laptop for 20 sec. Rifle/AT grenade goes 600 m and sends photos to PDA on descent.	Slewable, FLIR, and zoom 40-mm AGL grenade with to 2,200 m, and mortar round to 5,700 m. In smoke grenade launchers on vehicles, 1000 m.
Unattended ground sensor set	Netted, acoustic, seismic, magnetic, IR. Acoustic sensor UGS array extends 12 km, for accuracy within 3m.	Robotic sensors w/sleep mode and underground concealed hide position minimal IR/MMW signature
Remote Cameras and Sensors	Motorized masted. Constant-on, command-on or acoustic/seismic wakeup. 20-30km link range. CCD measures and in-ground mount. 2 gen FLIR day/night passive scan.	Robotic sensor entrenched and concealed. On wake-up, mast rises to RISTA mode. Integrated net digital display. Link to sensor robots and robotic weapons.
Sensor Robot	Manportable tracked robot w/RAM/IR. Cameras in masted sensor pods (acoustic/EO/ seismic) w/wake-up. Transmits image to monitor. Camera range 3 km. Laser designator direct munitions 10 km	Solar charge and vehicle quick charge, longer charge capability. Camera/link range 20-03 km. Self-entrench. Composition chassis and RAM is undetectable to sensors.
Smart Dust		Rocket/UAV/aircraft scatter sensors attach to metal-emit 1 hour
Acoustic sensor vehicle	Vehicle mounts microphones or dismounts array to DF aircraft, ground vehicles, or artillery. Rapid queuing and netted digital display. Range 10km, accuracy 200m. Three vehicle set can locate artillery to 30 km with 1-2% accuracy in 2-45 sec. DF/que 30 targets/min	Hybrid drive. Range extends to 20-30 km with 10 m accuracy. Micro-UAVs with microphones to supplement the network in difficult terrain. Track and engage multiple targets. Range and accuracy SAB.
Wheeled Reconnaissance Vehicle	4x4, low profile. 1-man turret, 12.7-mm AD MG. Multi-sensor mast, 2 gen FLIR. GS radar classify vehicles 30 km, detect persons 18km, laser designator 10 km, UGS, laser radar, MANPADS, ATGM. Conformal MMW-IR net, MMW/IR grenades	Hybrid electronic/diesel drive. Micro-UAV range 12 km. 30 mm auto-cannon. Smoke launcher and recon grenades. Tunable laser designator can direct artillery/mortar/ATGM rounds 15 km. Close protection system.
Tracked Reconnaissance Vehicle	2-man turret, 30-mm gun, AD MG, MANPADS, ATGM. Masted multi-sensor suite, 2 gen FLIR, laser radar, auto-tracker, laser target designator 10 km. GPS/ inertial land nav, digital data. GS radar classify vehicles 30 km, detect personnel 18km. UGS net.	Hybrid electronic/diesel drive. IFF, Micro-UAV range 12 km. 40 mm gun. Hybrid diesel/ electric drive. Multi-spectral smoke launcher. Recon grenades. Tunable laser designator munitions to 15 km. Close protection system.
Long-range sensor vehicle	Tracked vehicle with elevated sensor suite on pod. Day/night TV, MMW radar detect to 45 km vehicle, 20 km personnel. 2 gen FLIR Net to UGS, UAVs, etc. Digital links to arty, AT, AD, recon, etc. 12.7-mm AD MG.	Longer range, increased target handling/transmission capacity. Manpack AD/AT LBR missile to 7 km. Tunable laser designator direct munitions to 15 km. Hybrid drive. Close protection system.

SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (FY 20-25)
RECONNAISSANCE, INTELLIGENCE, SURVEILLANCE, TARGET ACQUISITION		
Man-portable UAV and Micro-UAV	Hand-launch reconnaissance vehicle launch. Digital link to laptop for control/retrans. Composite materials. 60-minute, 10-km radius. Stabilized, GPS, LRF, day TV (10 km), FLIR (4 km).	Palm-size. Cassette launchers on combat and support vehicles, UGS, and tanks. Range 20 km, 90-min endurance. Acoustic vehicle acquisition/DF. Laser target designators. Micro-attack UAV
Airborne (Heliborne) MTI Surveillance Radar	Range 200 km, endurance 4 hrs.	SAR mode added. Range to 400 km
Commercial Satellite Imagery	Resolution 1m for IR, SAR also available. <2 days for request. Terminal on tactical utility vehicle.	Considerable response time reduction, 0.5 m resolution.

SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (20-25)
ANTI-TANK		
Manpack Air Defense and Antitank (Anti-armor) Launcher (Also listed in Air Defense)	Battalion supplement to ATGMs and to AD. Targets helicopters and LAVs. Shoulder launch missile with 3 KE LBR submissiles 7 km, 0 m altitude. Submissiles 25-mm sabot w/HE. Nil smoke. Mount on robotic launcher (below).	Will defeat all targets up to 200 mm. Range 7 km, time of flight 5 sec. Thermal sight 2nd gen. Launch from enclosed spaces. Can mount on robotic AD/AT launcher or AD/AT Robot vehicle (below).
Man-portable ATGM Launcher	SACLOS guided to 3 km. Tandem warhead defeats 1,200mm. Thermal sight. Jam-proof low noise/smoke. Fire from enclosed spaces. Mount on robotic launcher (below).	NLOS/IIR homing missile. Range increase to 4 km. Add twin ATGM remote ground launch station with autotracker. Laser dazzler.
Ground ATGM launcher Same as pintel mount add on Tactical Utility Vehicles, airborne/amphibious carriers, and other light vehicles	Portable robotic twin launcher. FOG-M top-attack or IIR-homing direct attack to 6 km. Tandem warhead defeats 1,000+ mm top attack. Thermal sight 5 km. Low noise/smoke signature, resists countermeasures. Vehicle mounts below	Range 7 km, defeats 1300+ mm. Thermobaric ATGM. Launch from enclosed spaces. Laser dazzler. Carries a Manpack Air Defense and Antitank Launcher and one AD/AT robot vehicle.
Robotic AD/AT Launcher AD/AT Robot Vehicle	Pintel mount shoulder/ground/ATV/ vehicle launch. Twin autotracker robotic launcher-60 m link. Operator in cover/spider hole. MMW/IR absorbent screen and net for operator, launcher and surrounding spall.	Masted 4-launcher, electric drive chassis. Self-entrench, then move to launch point. Remote link up to 10 km. Most AD/ATGM host vehicles have 2 control stations, 2 robots. ATGM same as above.
Towed antitank gun	125mm gun, larger sabot (700+mm), LBR/SAL-homing ATGM 8 km. Stabilized FCS sights, autotracker. Auxiliary propulsion unit. TV daysight (32x). Combined MMW radar and 2 gen thermal night sight (5-7 km). HEAT-MP, dual-purpose Frag/HE submunition rd	Remote unmanned gun with cassette, towed, dug into position, netted into AT net. Concealed position (retractable base and IR/MMW concealed). KE ATGM (7+ km), direct link to micro-UAVs and UGVs). Laser dazzler

SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (20-25)
ANTI-TANK		
Heavy recoilless gun vehicle, 106 mm	TUV, pintel mount. Tandem HEAT rd 700+mm dive attack, 3 km. SAL-homing, tandem ATGM 7+km .50-cal spotter rifle. Onboard laser designator. Ballistic computer sight, 2 gen thermal sight HE AP and flechette rounds.	Remote overhead weapon system mount to fit on APC, IFV, and TUV chassis. Nil smoke and noise signature. Tunable laser designator directs SAL munitions to 15 km. Micro-UAV/laser designator.
Self-propelled antitank gun	Amphibious airborne tracked, 125 mm gun, larger sabot (700+ mm), SAL ATGM 7 km. DPICM submunition, focus frag HE rd. Stabilized TV daysight (32x), 2 gen FLIR 5 km, autotracker. Laser designator 10 km.	Hybrid drive. MMW FC radar, KE ATGM (7+ km), direct link to micro-UAVs and UGVs). Laser dazzler. Tunable laser designator - direct SAL munitions to 15 km. Close protection system.
Tracked ATGM launcher vehicle	NLOS/IIR ATGM launcher on IFV. 1,000 mm dive attack, 6 km. Thermobaric ATGM. Low noise/smoke signature. 12.7-mm AD MG. Laser designator to 10 km.	Hybrid drive. ATGM KE LBR/ SAL Defeat 1,300mm 12 km. HE ATGM. Dual-target FCS auto-track. Launch-on-move. Laser dazzler. Atk/recon/designator UAV. Also control robot vehicle Close protection system.
Wheeled ATGM vehicle	4x4 light armored high-mobility recon vehicle. Same launcher system as above	Hybrid drive. Same launcher as above. Robot vehicle
Airborne Infantry ATGM launcher vehicle	Airborne and amphibious tracked light armored chassis with same launcher system as above	Hybrid drive. Airborne/amphibious tracked light armored chassis. Same launcher details as above
Heavy ATGM launcher vehicle	APC chassis. SAL-homing ATGM, 6 lhrs, 1,400mm, dive attack, 10 km. Encoded beam. Autotracker. Micro-UAV, laser target designator. Warhead options include Multi-purpose (HEAT/Frag-HE). 12.7-mm AD MG	Hybrid drive. Add IIR homing, 12 km range, 16kg Frag/HEAT tandem warhead for multi-target land-attack role. Warheads also include HE-thermobaric, and EMP. Laser dazzler. Atk/recon/laser designator UAV. Controls 1 robot vehicle
Heavy ATGM launcher vehicle, and Land attack cruise missile (LACM)	Tracked vehicle with 16 x SAL-homing ATGM, 15 kg warhead 800+mm dive attack, to 26 km. Micro-UAV. Laser target designator 10 km. 12.7-mm AD MG	Hybrid drive. IIR homing multi-purpose (HEAT/Frag-HE defeats 1,400+mm), EMP, 30-kg warhead, homing submunitions LACM. Laser designator 15 km. Laser designator UAV. Controls robot vehicle.
Attack UAV	Hit-to-kill system. Day/night 60+ km, up to 2 hours. GPS/inertial nav, TV/FLIR, Frag-HE warhead. Anti-radiation variant.	Add MMW for seekers. Cargo UAV dispenses: missiles, IR home submunitions, EMP munitions, SAL ATGMs -designates
Attack UAV Launcher vehicle	Hit-to-kill UAV launch from modular launcher, 18 UAVs. GPS/inertial nav, to 500 km. Initial version anti-radiation homing. Add TV guided and multi-seeker attack (hit-to-kill) UAV. Laser designator range 10 km.	Bus reusable UCAV with 4 ATGMs to 12 km, laser guided bombs. Laser designator 15 km. Dispenser for 16 terminally-homing submunitions with MMW/IR seekers.
Mini or Micro-Attack UAV	Hand or vehicle launch UAV with TV and FLIR guidance to 30 km, 300 m altitude, with 1-4 kg warhead.	Laser designator. Cassette launcher on key tactical vehicles. Recon/top-attack (dual role) UAVs.

SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (20-25)
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FIRE SUPPORT		
Towed medium gun-howitzer	FRAG-HE - 30 km, FRAG-HE BB - 39 km, Artillery delivered high precision munitions (ADHPM): SAL-H - 25 km, Sensor-Fuzed – 25 km	Autonomous fire direction. Modified recoil mechanism and breech Enhanced lethality, differential GPS corrected munitions 30 km.
Self-propelled medium gun-howitzer wheeled	45-cal gun. GPS/inertial land nav, self emplace, FC. Munitions: FRAG-HE – 30 km, FRAG-HE base bleed - 39 km. ADHPM: SAL-H - 25 km, Sensor-Fuzed – 25 km, GPS corrected 40 km.	Automated fire control. Barrel cooling, thermal warning systems. Autonomous fire direction. Differential GPS corrected munitions (including sensor-fuzed) 80 km.
Self-propelled medium gun-howitzer tracked	Ford depth 5.5 m. 40-cal gun. GPS/ inertial land nav, self emplace and FC. FRAG-HE 23 km, FRAG-HE rocket assist 31.5 km. ADHPM: SAL-H 25 km, Sensor-Fuzed 27 km, GPS corrected 40 km	Automated fire control. Barrel cooling, thermal warning systems. Differential GPS course corrected munitions (including sensor-fuzed) 80 km.
Self-propelled medium gun	Conventional munitions, FRAG-HE-BB – 30.5 km, FRAG-HE-RA–40 km. ADHPM: SAL-H - 25 km, Sensor-Fuzed – 24 km. GPS corrected 40 km.	Automated FC, barrel cooling and thermal warning, autonomous fire direction. Diff GPS corrected rounds (incl sensor-fuzed) 80 km.
Manportable mortar	Conventional munitions, 82mm FRAG-HE – 6.7 km. FRAG-HE-RA–13.0 km. Night capable direct/indirect fire sight. GPS. Prox fuze. Tandem ATGM 7 km.	Increased range and accuracy. Ballistic computer sight. Self-lay. Dual guided rd (diff GPS course corrected and SAL-H) to 7 km.
Towed mortar	120-mm FRAG-HE 7 km. ADHPM: SAL-H and IR-homing HEAT 9 km, Sensor-Fuzed – 7 km. Night capable direct/indirect fire sight, self-lay.	Improved range/precision. Ballistic computer sight. Dual guided (differential GPS corrected and SAL) to 15 km. Tandem ATGM 20 km.
Self-Propelled Combination Gun (Wheeled with wheeled, tracked with tracked)	120-mm gun/mortar system. GPS gun lay. Cannon Frag-HE (prox fuze option) 8.1 km, -RA 12.8, HEAT 1 km. All mortar rounds. ADHPM: Mortar SAL-H and IR-homing 9 km, Sensor-Fuzed 7 km. Cannon SAL-H rd 9 km.	New tracked chassis and turret. Hybrid drive. Laser target designator, diff GPS, automated FCS, autonomous laying. Frag-HE 14 km, -RA to 18, SAL-H 12 km. DPICM, and flechette. Tandem ATGM 20 km.
Towed Combination Gun	Same as above, except with a towed chassis. GPS gun barrel lay system.	Automated fire control, night FCS, autonomous lay, differential GPS
Manportable Single Round rocket launcher	122mm conventional, ADHPM munitions. FRAG-HE – 10.8 km. on tripod	Increased range and accuracy. Enhanced lethality.
Rocket Launcher Pod (107mm) For Use on Improvised/ Modified Launch Platforms	6-tube (2x3 rockets) pod vehicle mount (e.g., amphibious/airborne APC), towed cart, or ground stand. Remote launch fire control, which can fit inside of vehicle. Cart/vehicle 1-3 pods. GPS. Rocket range 8.5 km. Limited lateral launcher adjustment (move vehicle).	Improved launcher mount with servo-motors and remote computer FCS and in-view GPS data. Munitions include: mines, smoke, UGS, DPICM, SAL-homing HE/tandem HEAT, recon, chem. Use with laser designator. Extended range 10 km.

SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (20-25)
FIRE SUPPORT		
SP medium rocket launcher (100mm to 220mm)	122mm 50-tubes. Self-emplace (GPS/inertial nav). Onboard fire control. Munitions 33 km-DPICM, Smoke, Illum, AP/AT mines, RF jam rd, Incend, Chem. HE 90° precision fall, ADHPM: SAL-H rkt 32 km, Sensor fuzed 33 km.	Extended range. Increased accuracy. Enhanced lethality. Course corrected rockets (GPS/inertial) w/ DPICM, multi-mode (HEAT, HE, incendiary). Motorized spades for quick displace. Recon rocket to 40 km
SP heavy rocket launcher (220-240 mm)	Self-locating launcher, 16 tubes. (GPS/inertial nav). Onboard fire direction. Munitions: 220mm FRAG-HE –43 km, DPICM, Incendiary, Chemical. Thermobaric – 43 km. ADHPM: Sensor-Fuzed – 35 km.	Increased accuracy. Enhanced lethality. MRL can launch cruise missiles, UAVs. Differential GPS Course corrected munitions (DPICM, sensor fuzed, mines) to 70 km. Recon rocket (UAV) 70 km
SP heavy rocket launcher (220-mm and larger)	Self-emplace 300-mm 12-tube launcher. GPS/inertial navigation. Onboard FCS. Munitions: 300mm FRAG-HE – 90 km, DPICM, Incendiary, Chemical. Thermobaric – 90 km ADHPM: Sensor-Fuzed – 90 km. Recon rkt (expels UAV) - 90 km.	Extended range (100+ km). Increased accuracy and differential GPS. Enhanced lethality. MRL can launch cruise/ ballistic missiles. Recon rocket to 100+ km, UAV loiters for 30 min.
Artillery Scatterable Mines	Cannon, MRL, and mortar. 122mm MRLs can fire AT and/or AP mines to 35km and cover 24-81 hectares. 220 to 43 km. 300mm MRL range is 90km.	Extended range. Controlled minefields (RF link). Sensor fuzed. Advanced sensors. Target discrimination.
Weapon Locating Radar Vehicle (Counter-Mortar/ Counter-Battery Radar)	Detection range with low error rate. Mortar: 30 km. Cannon artillery: 20-25km. Rocket: 40km. Tactical missile: 55km.	Faster computer processors with digital links, differential GPS, and decreased radial error

SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (FY 20-25)
ENGINEER		
Line-Charge Mineclearing Vehicle	Clears lane 6x9 m. 2 line charges.	Hybrid drive.
Minelayer vehicle	Armored chassis w/7.62mm MG, lays 1,000 m AT field with 5m between mines. Lays controllable mines	Hybrid drive. Vehicle mount mine launchers. Launches controllable and intelligent minefields.
Minelayer, towed	Lays 10 to 12 mines per min. Lines 20/40 m apart. Can also lay controllable minefields.	Advanced sensors. Target discrimination. Can lay intelligent mines.
Remote mine launcher Pod System (Vehicle, trailer, ground)	Amphibious APC w/180 x 140-mm pods. It scatters mines, UGS, jammers, CS gas, and smoke grenades, to 30-60m. It can lay field AT/AP 1-1.2km x 30-120m.	Multi-sensor mines with wake-up, target discrimination. Controlled minefields, intelligent mines. Prox fuze mines (up to 540) 2 km 10 sec
Infantry Portable Scatterable Minelaying System	Remotely lays AT/AP mixed minefield 200-400m square from a distance up to 1090m. At platoon. 6 lb, 5 min set-up. Controllable mines.	Add intelligent mines. ATGL and AGL-delivered mines.
Scatterable Mines	Deliver by artillery (cannon, MRL, mortar), cruise missile, UAV, rotary or fixed-wing aircraft. Non-metallic case, undetectable fill, resistant to EMP and jammers, w/self-destruct.	Advanced multi-sensor mines with wake-up and target discrimination. Controlled minefields and intelligent mines.

SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (FY 20-25)
ENGINEER		
Improvised Explosive Device (IED)	Command (RF, wire) arm and detonate. Sensor armed (seismic, pressure, acoustic), sensor fuzed (IR, magnetic). Large shaped charge, EFP, daisy chain arty rds, large IED, mine converted cmd/SF. Defeat RF jammers, magnetic detectors.	Fuzes and radio links which can convert explosive devices and materials into intelligent IED fields (see intelligent minefield)
Unexplosive Ordnance (UXO)	Artillery cannon or rocket DPICM submunitions in impact pattern.	Unused blue remote-launch precision munition pods may be seized and used against them.
Off-route mines (Side attack and Top Attack)	Autonomous weapons that attack vehicles from the side as the vehicles pass. 125-mm Tandem HEAT (900+ mm). Target speed 30-60 km/h, range 150m acoustic and infrared sensors.	Sensor-fuzed EFP 600mm KE top attack. Remote or sensor actuated (controller turn-on/off), and 360-degree multi-sensor array. Hand/ UAV/arty/ATGL mortar emplace.
Intelligent minefields	Developmental programs and not proliferated	Self-healing-autonomously assures obstacle integrity. Advanced sensors, target discrimination, built-in logic. Non-nuclear EMP/ HPW.
Smart mines	Wide-area munitions (WAM) smart autonomous, GPS, seismic/acoustic sensors. AT/AV top-attack, stand-off mine. Lethal radius of 100 m, 360° Hand-emplaced.	Target discrimination , report data to monitor, evaluate target paths, built-in logic. Artillery or helo-emplace with GPS. Non-nuclear EMP or HPW options
Controlled Mines and Minefield	AT/AP mines can be machine emplaced. Armed, disarmed or detonated on RF command. Chemical fills and non-metallic cases are undetectable. Mines use CM and shielding to negate jammers or predetonating systems.	Control may be autonomous, based on sensor data and programmed in decision logic, or by operators monitoring with remote nets.
Engineer reconnaissance vehicle	Tracked IFV chassis. Amphibious-recon equip: sonar, NODs, rangefinder, soil analyzer, gyrocompass, underwater mine detection	Hybrid drive. Hand-held and vehicle-mounted ground-penetrating radars for mine detection
Obstacle Clearing vehicle	Tank chassis, NBC protected, dozer (3.8m), crane (2mt), scoop/ripper, and mine detonator	Hybrid drive.
Vehicle or Towed Line Charge Mineclearing System	Mounted on truck, IFV, APC, TUV or tank. Rocket launch 10 tubes HE or FAE, to 3km. Breach lanes 10x60m.	Hybrid drive.

SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (20-25)
INFORMATION WARFARE		
Lightweight Mobile ESM/DF	0.7-40 GHz, ESM/DF	SATCOM intercept capabilities
Electronic Warfare Radio Intercept/DF /Jammer System, VHF	Intercept, DF, track & jam FH; identify 3 nets in nonorthogonal FH, simultaneous jam 3 fixed freq stations (Rotary/fixed wing/UAV capable)	Integrated intercept/DF/jam for HF/VHF/UHF
Radio Intercept/DF HF/VHF/UHF	Intercept freq range 0.1-1000 MHz. (Rotary/fixed wing/UAV capable)	Wider Freq coverage. SATCOM intercept. Fusion/cue w/other RISTA for target location/ID

SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (20-25)
INFORMATION WARFARE		
Radio HF/VHF/UHF Jammer	One of three bandwidths: 1.5-30/20-90/100-400 MHz, intercept and jam. Power 1000W. Also on Rotary/FW/UAV	Increased capability against advanced signal modulations. UAV and mini-UAV Jammers.
Portable Radar Jammer	Power 1100-2500W. Jam airborne SLAR 40-60km, nav and terrain radars 30-50km. Helicopter, manpack.	UAV and long range fixed wing jammers.
High-Power Radar Jammer	Set of four trucks with 1250-2500 watt jammers at 8,000-10,000 MHz. Jams fire control radars at 30-150 km, and detects to 150 km.	UAV jammer.
Portable GPS jammer	4 -25 W power, 200-km radius. Manportable, vehicle & airborne (UAV) GPS jammers-increased range and power, and improvements in antenna design	Manportable, vehicle & airborne (UAV) GPS jammers-increased range and power, and improvements in antenna design
Arty-delivered and ATGL-launch Jammer	HF/VHF (1.5-120 MHz), 700m Jamming radius, est. (1Hr duration). 300 m for ATGL-launched version	Increased capability against advanced signal modulations
Missile and UAV-delivered EMP Munition	Cruise missiles and ballistic missile unitary warhead and submunition.	Increased capability against advanced signal modulations
Artillery-delivered and manpack EMP Munition	Cannon (152/155-mm), rocket (122/220/300-mm), and mortar (82/120-mm).	Increased power, capability, and range.
Cruise Missile Graphite Munitions and Aircraft "Blackout Bombs"	400-500 kg cluster bombs/ warheads with graphite strands to short out transmission stations and power grids.	Rocket precision and UAV-delivered munitions.
EMP Mine	Larger EMP mine. Effective radius 350 m, irregular/disruptive 500 m.	See intelligent minefields and smart mines

SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (FY 20-25)
COMMAND AND CONTROL		
Radio, VHF/FM, frequency-hopping	30-88 MHz, 100 hps, channels: 2,300, Mix of analog and digital radios, tactical cellular/digital phone, all nets digitally encrypted. Burst capability. UAV retransmission links	Digital radios, tactical cellular/digital phone, and satellite phones, all nets encrypted
Radio Relay Station, VHF/UHF,	60-120/390-420 MHz, range 30-40km per hop LOS	Digital comms networks. Network management station, automated battlefield management system
Command Post Vehicle, Division (wheeled and tracked versions)	4xHF/VHF high power, 1x VHF, 75-2000km. Digital comms, graphics, voice back-up. SATCOM, digitally encrypted.	Completely digital comms network all levels, fiber-optic cables. Network management station, automated battlefield management sys.

SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (FY 20-25)
DECEPTION & COUNTERMEASURE SYSTEMS		
Armored Vehicle Decoy, Mobile	Towed trailers & decoy heater units, and flares. Multi-spectral (high-fidelity) decoys positioned near target to divert homing munitions. Motorized radar corner reflectors.	Acoustic decoys with seismic effects. Multi-spectral (high-fidelity) decoys powered for acoustic and IR signatures. Linked to vehicle warning systems

SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (FY 20-25)
DECEPTION & COUNTERMEASURE SYSTEMS		
Armored Vehicle Decoy, stationary	Multi-spectral (high-fidelity) decoys of erectable/inflatable vehicles, with heaters, motorized radar corner reflectors.	Acoustic decoys w/seismic effects. Multi-spectral decoys powered acoustic/IR signatures
Vehicle and Weapon System Camouflage and Concealment	Tactical vehicles have MMW/IR paint and conformal nets, multi-spectral grenades, side skirts, thermal blankets, laser and radar warning receivers, acoustic engine exhaust & track modification.	Add mist thermal image concealment systems.
Vehicle/Man-portable Close Protection System		Man-portable remote grenade launcher 3-20 m. Quick-load pods 4 w/3 grenades ea). Pods hold CS gas, multi-spectral smoke, HE, or AT/AP mines. CPS 2 lchrs/vehicle.
Camouflage and Concealment for Dismounts	Radar absorbent/IR reflective uniforms, material covers, paints, screens, covers for spider holes. Thermal screens and pop-up stands give overhead, front and side visual/thermal protection day and night. MMW/IR protective face masks/gloves. Foxhole blast devices.	Ready-made hole mount turret installed w/hoist. It has 12.7 mm MG, 6 km NLOS ATGM launcher, 3rd gen FLIR thermal night sight, and radar absorbent/IR reflective paint on cover. Invisible to visual/ MMW/IR. Remote control option
Deception/Countermeasures for Dismounts	Radar corner reflectors, motorized radar corner reflectors. Inflatable, tethered, move w/air currents.	For additional countermeasure capabilities, see Chapter 14.
Non-Lethal (or Less Lethal) weapons	Acoustic directed energy system, sticky foam, rubber bullets, acoustic disrupters	Radio-frequency crowd disruption system. Water cannons. Laser dazzlers.

SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (FY 20-25)
ROTARY WING AIRCRAFT		
Attack helicopter	3-brl 23-mm revolver cannon, 8 semi-active laser homing ATGMs, range 10 km. Two 80mm rocket pods. Also 2 x IR-homing AAM (prox fuze, frag rod warhead), 2x LBR AAM/ASM (warhead w/3 KE submissiles, 7 km range). Laser designator. Range 450km. 2nd gen FLIR day/night capable, auto-tracker, IR jammer, chaff, flares.	Tandem cockpit, coaxial rotor, cruise speed 270 km/hr, 30-mm auto-cannon. Launch 8x SAL-H ATGM to 15 km, 28+kg HE warhead. Air-to-surface missile to 100 km. Pods w/ SAL-H 80/122-mm rockets. Fire control 3rd gen FLIR and MMW radar. Radar jammer. 2x IR-H AAM, 4 x AAM/ASM.
Multi-role Medium helicopter and Gunship	24 troops or 4000kg internal. Medium transport helicopter. Range 460 km. Twin 23-mm MGs, 8 ATGMs to 6 km. Mounts gun and rocket pods, ASMs, AAMs, mine pods. Day/night FLIR FCS. IR jammer, chaff, flares.	Quieter, more efficient main and tail rotors and engines increase performance. 8 x semi-active laser homing ATGMs, range 10 km. 3rd gen FLIR. Aircraft survivability equipment (radar jammers and IR countermeasures).

SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (FY 20-25)
ROTARY WING AIRCRAFT		
Multi-role helicopter and Gunship	10 troops (Load 750 kg internal or 700 external). Range 735 km. 20 mm cannon, 1 x 7.62mm MG, 6 SAL-H ATGMs, 2 AAMs. FLIR night sight. Laser target designator. Mine pods	Launch 6x SAL-H ATGM to 15 km, 28+kg HE warhead. 2 x AAM Air-to-surface missile to 100 km. Pods w/ SAL-H 80/122-mm rockets. 3d gen FLIR. ASE equipment
Light helicopter and gunship	3 troops (Load 1450 kg). Range 735 km. 20 mm cannon, 1 x 7.62mm MG, 6 SAL-H ATGMs, 2 AAMs. FLIR sight. Laser designator. Mine pods	4x SAL-H ATGMs, 10 km range. 3rd gen FLIR night sight.
Helicopter and Fixed-Wing Aircraft Mine Delivery System	Light helicopter pod scatters 60-80 AT mines or 100-120 AP mines per sortie. Medium helo/FW aircraft scatters 100-140 AT mines or 200-220 AP per sortie.	Controllable and intelligent mines for aircraft delivery. Larger aircraft can hold multiple pods.
FIXED WING AIRCRAFT		
Intercept FW Aircraft	30-mm auto-gun, AAM, ASM, ARMs TV/laser guided bomb. 8 pylons Range 3,300 km Max speed: Mach 4. FLIR	Stealth composite. ASE. Max G12+. All weather day/night. <u>Unmanned option</u>
Multi-Role FW Aircraft	30-mm gun, AAM, ASM, ARM pods, guided, GPS, sensor fuzed bombs, 14 hardpoints. Thrust vectoring. FLIR	Improved weapons, munitions. <u>Unmanned option</u> . ASE all radars. Max G12+ All weather day/night
Ground-Attack Aircraft	Twin 30-mm gun, 8 x laser ATGMs 16 km with 32 kg HE, 40 x 80mm rockets, ASMs, SAL-H and GPS sensor fuzed bombs, AA-10 and KE HVM AAM. 10 hardpoints. Range 500+km. FLIR	Stealth composite design. ASE. <u>Unmanned option</u> . Max G12+ 80-mm/122-mm rockets SAL-H, SAL-H ASM,100 to km, 2 gen FLIR, radar jammer, day/night
OTHER MANNED AERIAL SYSTEMS		
High-altitude Precision Parachute and Ram-air Parachutes	High-altitude used with oxygen tanks. Ram-air parachute includes powered parachute with prop engine.	Increased range and portability. Reduced signature. Increased payload.
Ultra-light Aircraft.	Two-seat craft with 7.62-mm MG and radio. Folds for carry, 2 per trailer.	Rotary-winged, two-seat, MG, 1/ trailer. Auto-gyro, more payload.
UNMANNED AERIAL VEHICLES		
UAV (Tactical)	Day/night recon to 200 km. GPS/inertial nav with digital links. SLAR, SAR, TV, IR scanner, ELINT, ECM suite. Jammer option. Mine dispense. Laser target designator 15 km. Retrans	Increased ranges, endurance. Diff GPS. Composite materials, low signature engine. Acoustic acquisition/DF. Retrans/relay/SATCOM links. UAV attack submunitions. Laser target designators.
UAV (Operational)	Day/night recon to 400+km. GPS/inertial nav with digital links. SLAR, SAR, TV, IR scanner, ELINT, ECM suite. Jammer option. Mine dispense. Laser target designator 15 km. Retrans/relay	Increased ranges, endurance. Diff GPS. High altitude ceiling (35 km) option. Retrans/ relay/SATCOM links. UAV attack submunitions. Laser target designators.

SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (FY 20-25)
ROTARY WING AIRCRAFT		
Unmanned Combat Aerial Vehicle on Operational UAV platform (below)	Medium UAV with 4 ATGMs (flyout to 10 km), laser guided bombs. Laser designator 15 km. Mine dispensers. GPS jammer, EW jammers. Range 400+ km.	Stealth composite design. ASE. Twin dispensers (pylons) with 16 terminally-homing submunitions, MMW/IR seekers. Range 500+ km

SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (FY 20-25)
THEATER MISSILES		
Short-Range Ballistic Missile	Twin launch vehicle. Autonomous (GPS/inertial), w/self-emplace. Onboard fire control. Non-ballistic launch, separating GPS corrected maneuvering warhead. Penetration Aides (Penaids), 10-m CEP. Range 450 km. ICM, cluster, nucs. Visual/MMW/IR signature of a truck. Launcher decoys.	Range increase to 800 m. Non-ballistic launch and trajectory. GPS-corrected maneuvering warhead with 1-meter precision. Terminal-homing submunitions. Cluster munitions with penaids (countermeasures). EMP warheads.
Medium-Range Ballistic Missile	Autonomous vehicle. Separating maneuvering warhead to 1300 km. GPS - 10-m CEP. Penaids. ICM, cluster, nucs. Launcher signature deception, decoys.	Increased range, 1-m CEP. Diff GPS and terminal homing, separating warhead. EMP warhead. Non-ballistic launch and trajectory
Cruise Missile and Launcher Vehicle	Ground launch capability. Range 470 km, preprogram GPS inertial guidance, in-course correction, 10-m CEP. Penaids. Munitions: cluster, chemical, thermobaric, DPICM/mine submunitions. Launcher signature deception, decoys	Launcher fire direction. Supersonic missile Diff GPS/ inertial nav, 1-m CEP. Extended range. EMP warhead option. Warheads include homing cluster munitions.
Cruise Missile (Multi-role) Note: Category includes specialized cruise missiles, long-range ATGMs, attack UAVs, and SAM systems which can engage ground targets at 12+ km.	Fiber-optic guided cruise missile for ground, air, sea launch. Range 60 km with 20-25-kg warhead. Two missiles on ground launcher (6 reloads) Two 1-missile pods/aircraft. Missile has dual HEAT and Frag-HE warheads. Pre-program phase GPS/inertial nav with waypoints. Thermal night camera.	Range to 100 km and 1-m CEP. Remote ground launchers with up to eight ready-to-launch missiles. Diff GPS/inertial guidance with multiple waypoints and evasive maneuvers. Penetration aids (countermeasures). Terminal-homing submunitions.

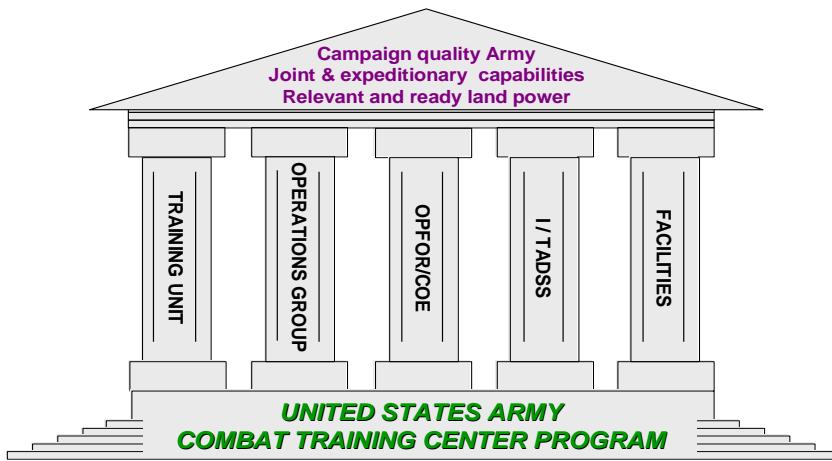
SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (FY 20-25)
AIR DEFENSE		
Air Defense and General Purpose Machinegun	Towed 12.7mm MG. EO day/night 3 gen II computer sight. Mounted bore-lined MMW radar 5 km. Display link to AD azimuth warning net. Frangible round to 2.5 km. Emplace 10 sec. Can dismount, or mount on vehicle pintel/turret w/TV/FLIR fire control.	Towed mount 12.7-mm 4-barrel (vulcan type) mini-gun, 1000-4000 rds per minute. TV sights, 2nd gen FLIR, IR auto-tracker with gun auto-slew. Improved ammunition range 3 km. Laser dazzler - blinds enemy sights. Remote-fire option.
Improvised Multi-role Man-portable Rocket Launcher (AD/Anti-armor)	4-tube 57-mm launcher, high-velocity dual-purpose rockets. EO day/ night sight. Blast shield. Range 1,000 m. Penetration 300 mm, 10 m radius.	Prox fuze, 1,500 m range. Penetration 400 mm, 20 m radius.

SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (FY 20-25)
AIR DEFENSE		
Manportable SAM launcher	IR homing, proximity fuze, frangible rod warhead (90% Prob hit and kill). 6 km day/night range, 0-3.5 km altitude, speed 2.6 mach. FLIR sight. Approach/azimuth link to AD warning net. launcher Nil smoke. Robotic twin launcher with auto-tracker. Used for vehicle quick mount.	Warhead/lethal radius increased air/ground targets. Improved seekers - not be decoyed by IR decoys/jammers. 2nd gen FLIR. Launch from enclosed spaces. Laser dazzler. Optional LBR KE warhead missile - 7 km. Mount on AD/AT robot vehicle
MANPADS Vehicle Conversion Kit	Add to IFV, APC, TUV (motorized) for Bn MANPADS (above) carry vehicle. Twin launcher, day/night IR autotracker FCS, MMW radar. Display link AD net.	Add twin launcher for AD/AT LBR KE warhead missile.
Manpack Air Defense and Antitank (Anti-armor) Launcher (also listed in Antitank)	Shoulder launch missile fits in ATGL, w/3 KE LBR submissiles 7 km, 0m min altitude. Submissiles 25-mm sabot defeats 200 mm armor/HE sleeve. FLIR. Platoon/company level. Nil smoke. Twin mount on robotic launcher.	Thermal sight 2nd gen. Launch from enclosed spaces. Mount on AD/AT robot vehicle. Substitutes for ATGMs some launchers. Laser beam guidance unit also is a tunable laser designator.
Helicopter Acoustic Detection System	Early warning vs helicopters. Range 10km, accuracy 200m. Linked to air defense net and IR sensors.	Increased range/accuracy. Active link to AD net or AD system. Track and engage multiple targets
Towed AA Short Range gun/missile system	2x23mm gun. Towed 2-wheel carriage. Frangible rd to 3,000 m (17mm pen). Onboard radar/TV fire control with ballistic computer, 5 km MMW radar, thermal night sight, auto-tracker Netted azimuth warner. Bore-lined twin MANPADS.	Replace with 20-mm Vulcan cannon. Range 4 km. Frangible and proximity-fuzed HE rds. FLIR night sight. MMW radar, Laser dazzler. Twin MANPADS launcher (see above). Carriage APU for 15-kph self relocation.
Brigade gun/missile turret for mount on tracked mech IFV, wheeled mech APC, truck (motorized) chassis	Twin 30-mm gun, APFSDS/frangible rounds to 4 km. Mounts 4 hyper-velocity LBR-guided SAMs to 8 km, 0 m min altitude. Passive IR autotracker and FLIR. 2 per battalion. Targets include light armored vehicles and other ground targets.	Dual mode (LBR/radar guided) high velocity missile, 18 km, 0 m min altitude. MMW radars, 2nd gen FLIR. Track/launch on move 30-mm tri-barrel Gatling cannon: AHEAD type electronic-fuzed rd, LBR KE submissile rd.
Divisional gun/missile system on tracked mech IFV, wheeled mech APC, truck (motorized) chassis	2 twin 30mm guns to 4 km. Target tracking radar 24km. FLIR. Day/night capability. 8 x radar/IR-command hypervelocity missiles, range 18 km, 12 at 0 m min altitude	Hybrid drive. Electronic-fuzed ammunition for guns. Track and launch on the move. Missile range 18 km at all altitudes. 2nd gen FLIR. Home- on-jam mode.
Towed Medium Range AA gun/missile system	System has 35mm revolver cannons, 1,000 rd/min. SAM launchers-4 missiles each, range 45 km, 0 min altitude. Radar range 45km. Thermal tracker. SAM modes include active homing, home-on-jam. Gun FLIR sight. Gun rds frangible or electronic-fuzed. Resists all ECM.	Ammo includes AD/AT (KE LBR) guided rd w/ HE frangible rod to 4 km. Auxiliary power unit for local moves. Improved FCS w/ phased array low probability of intercept radars, 2nd gen FLIR Ability to track and engage multiple targets.

SYSTEM	NEAR-TERM OPFOR (FY 15-20)	MID-TERM OPFOR (FY 20-25)
AIR DEFENSE		
Medium-range ground SAM system	Tracked launcher. Radar acquisition range 80-150 km, 0 m min altitude. 4 x radar-homing missiles to 45km, (4 simultaneous targets). Home-on-jam. Land-attack cruise missile option to engage priority ground targets to 15 km, waterborne 25 km. FLIR.	Hybrid drive. Improved FCS with radars and EO, 2nd gen FLIR, day/night all-weather system Home-on-jam mode.
Strategic SAM System	4 x track via missile guided missiles, with anti-radiation/home-on-jam/active homing modes. Range 200km. Warhead command detonation (lethal radius to 0 m min altitude). Vertical launch. 1-3 truck-mounted launchers/battery. Site CM, decoys. Emplace 5 min displace <5 min.	16 missiles/launcher. Extended range to 400 km, altitude 5m-50 km. Velocity (mach 7) and improved radars to intercept all aircraft (including stealth), cruise missiles, and ICBMs. Increased target handling capacity. More effective CMs.
Anti-helicopter Mines (Remote and Precision Launch)	Used in blind zones to force helos upward or deny helos firing positions and landing zones. Range 150m. Remote initiated use acoustic and IR fuse, acoustic wake-up, directed fragmentation. Precision-launch mines use operator remote launch and proximity fuze for detonation.	Stand-alone multi-fuse systems. Remote actuated hand-emplaced mines with 360-degree multi-sensor array, pivoting and orienting launcher, and 4-km IR-homing missile. Operator would monitor targets and control (turn on or off) sections, mines or net.

5. Combat Training Center (CTC) Program

1. The CTCs are critical to the success of the Army's training, transformation to Modular/Stryker/FCS BCTs, and support to the implementation of The Army Plan/Army Campaign Plan and the Army Modernization Plan. CTCs must be able to support and replicate simultaneous full-spectrum operations across the spectrum of conflict in an ever changing contemporary operational environment.
2. CTCs must be able to meet the Army Force Generation (ARFORGEN) throughput for units within the reset, ready, and available pools by providing the operational experience, environment, and conditions which facilitate and enable rotational unit commanders' readiness assessments.
3. The CTC program is governed by AR 350-50 (CTC Program) declaring the DA G3 as the Director and focal point of CTC actions. However, the Commanding General of TRADOC is responsible for the administration, validation, and integration of the program, which was delegated to the Combined Arms Center (CAC) under the supervision of the Deputy Commander for Training (CAC-T). Within CAC-T, the CTC Directorate is the single focal point of managing all aspects of the five CTC pillars, to include resource and funding allocations as approved and provided DA G3 (DAMO-TR).
4. On behalf of the CTC program and in compliance with AR 350-50 and AR 350-2, the COE/OPFOR pillar of the CTC program is primarily championed and overseen by the TRADOC G2, as the responsible official for the Army OPFOR Program. However, the COE/OPFOR pillar itself is managed and funded (via DA G3/5/7) by CTC-D as outlined in paragraph 3 above.



5. Goal 7, Objective F, of the FY09 Army Training and Leader Development Strategy, dated 2 December 2008, provides that HQDA G3/5/7 will "Develop, field, and sustain modernized LVC, including gaming, training systems and OPFOR equipment to maintain relevancy and to improve fidelity of instrumentation TADSS and facilities pillars at the CTCs, including Exportable Training Capability, in accordance with the CTC Way Ahead and Operational Environment Master Plan (OEMP) ."

5-1. CTC Program Requirements

1. As the Army's premier training program, the CTCs are the only training centers authorized a "high-fidelity" replication of a live operational environment and a professional and dedicated OPFOR. As such, the CTCs have unique program requirements critical to replicating the OE complexities and training conditions.

5-1 (1) CTC Operational Environment Assessments

1. CTC Operational Environment (OEs) for training includes aspects of the OE variables (political, military [OPFOR], economic, social, infrastructure, information, physical terrain, time [PMESII-PT]).
2. Gradients or the OE variables that CTCs must have the ability to replicate for full-spectrum training along the spectrum of conflict are described in Chapter 4. However, of the seven non-military (OPFOR) OE variables, only four are primarily resource intensive (Economic, Social, Information, Infrastructure) while the remaining three (political, Physical Terrain, Time) are predominately scenario driven or influenced. The below are resource considerations:
 - a. Economic Variable: This variable requires replication of aspects of economic value, such agriculture, manufacturing, mining, ranching, currency, banking, and the like. The key to a successful replication for this variable is not only to show manifestations of such (markets, petting zoo, etc), but to also provide them a value within the exercise that will draw natural cause-and-effects upon which lessons can be drawn.
 - b. Information Variable: The environmental aspect of the information variable is not based on operations, but simply provides the means. These include cellular and high-power-cordless telephones, voice-over-internet protocol (VOIP) communication, radio, television, intranet, and newspaper.
 - c. Social Variable: This is primarily human-interaction based and requires the largest enduring sustainment bill in terms of role players (language, cultural, special skills, and generic). Other considerations include unique props, dress/clothing, and human terrain experts.
 - d. Infrastructure Variable: This is by far holistically, but surprisingly the one in which the largest investments were made. It includes a minimum of 7-9 towns per training center of which 1 must be at least a large size (greater than 45, three should be medium sized (30-45 buildings), and 3 small towns (14-30 buildings) with both permanent and moveable buildings. This variable also includes at least 150 commercial style vehicles per training center for civilian traffic, and utilities. A

review of the DA G3 approved civilian on the battlefield working group (COB-WG) reveals that the towns, as well as the role-players, are based on a Lego concept in which the requirements for towns, as with role-players, increased as the size and type of add-on units increased per rotation.

3. The National Training Center (NTC) is probably the most robust and resourced CTC with tremendous emphasis and investment into the training OE. The below chart summarizes the NTC OE conditions (GREEN: Resourced to meet minimum requirements, AMBER: Enough to set certain conditions, but not enough to meet minimum benchmark required to replicated all appropriate complexities, RED: Very limited capability which hinders replicating conditions needed to meet full spectrum training objectives).

Infrastructure	Towns	G	Large (>45)	Medina Jabal/Tiefort City (598); Medina Wasl (181)
			Medium (30-45)	Move bldgs from large to medium towns
			Small <30; 14 P	Al Sharq (23), Al Jaff (21), Abar Layala (27), Mezra Masik Amar (25), Al Wahleed (12), Al Wahde (25), KKD (16), Al Karma (11), Wadi Al Raid (8)
	Utilities	G	Com-Pwr	Medina Jabal & Wasl (2 towns)
			Gen-Pwr	All others (9)
			Water	Replicated
	COB-Vs	G	Various	Req 155, Auth 155, OH 183
	Physical Terrain	R	Roads	Asphalt very limited from Irwin to 4-corners and around Medina Jabal & Wasl; road from Jabal to Wasl planned but not funded.
			Sub-terrain	Basically none due to reported safety issues
			Caves	Seven exist.
Information	Cell Phones	G	JIEDDO Funded & sustained for 2 years Fy09-11	
	Radio/TV	A	Use of Fiber for local stations; need \$276 for Radio – use WLL for TV replication	
	Web/WLL	G	JIEDDO Funded & sustained for 2 years Fy09-11	
Social	Role Players	G	Crit. Req 233 (MRE 295), validated 100 work-yrs	
	Religious	A	Currently only Muslim oriented	
	Dress	G		
Economic	Agriculture	A	Has animals; need farming equip (not to actually grow)	
	Manufacture	A	Very limited; had industry plans - but changed to military barracks	
	Bank & Finance	A	Being developed in infrastructure;	

4. The Joint Readiness Training Center (JRTC) is relatively robust and resourced to set appropriate full spectrum training conditions. The below chart summarizes the JRTC OE conditions (GREEN: Resourced to meet minimum requirements, AMBER: Enough to set certain conditions, but not enough to meet minimum benchmark required to replicated all appropriate complexities, RED: Very limited capability which hinders replicating conditions needed to meet full spectrum training objectives).

Infrastructure	Towns *	Large (>45)	Sulliya (including east)
		Medium (30-45)	CACTF (new), Takira, Wadi Al Tarif,
		Small <30; 14 P)	Al Mawsil (Dist Cap), Sadiq, Barakah, Mosalah, Jarbar Nahr, Meelsar, Al Kujaar,
	Utilities	Com-Pwr	All Towns
		Gen-Pwr	Mobile towns/camps if needed
		Water	Replicated
	COB-Vs	Various	Req 150, Auth 150, OH 150
	Physical Terrain	Roads	Adequate Asphalt (mostly perimeter road) & gravel
		Sub-terrain	Suliayah (proper) and CACTF (new)
		Caves	Numerous in various state
Information	Cell Phones	G	JNTC Funded & sustained for 2 years Fy08-10
	Radio/TV	A	3x TV & 3 x Radio for \$2M from OPS GP
	Web/WLL	A	JIEDDO Funded & sustained for 2 years Fy09-11
Social	Role Players	G	Crit. Req 434 (MRE 540), validated 100 work-yrs
	Religious	A	Currently only Muslim oriented
	Dress	A	
Economic	Agriculture	G	Appear to have resources, must execute
	Manufacture	A	Currently not being physically replicated
	Bank & Finance	A	Being developed in infrastructure;

5. The Joint Multinational Readiness Center (JMRC) is relatively robust and resourced with the exception of the "information" variable due to frequency spectrum issues. The below chart summarizes the JMRC OE conditions (GREEN: Resourced to meet minimum requirements, AMBER: Enough to set certain conditions, but not enough to meet minimum benchmark required to replicated all appropriate complexities, RED: Very limited capability which hinders replicating conditions needed to meet full spectrum training objectives).

Infrastructure	Towns	Large (>45)	Ubungsdorf (52 bldgs w power chemp plant)
		Medium (30-45)	Hammelburg (out-of-area German site w/100+ blds), Kittensee (40 bldgs), Charlie South/Sadr City (IED lane, 90+ bldgs)
		Small <30; 14 P	Enslwang, Schwend, Raversdorf (14+ bldgs@); Mud Hut (4-6 bldgs)
	Utilities	Com-Pwr	All Towns (-Mud)
		Gen-Pwr	Mud Hut Village
		Water	Ubungsdorf, all other replicated
	COB-Vs	Various	Req 150, Auth 150, OH 155
		Roads	Adequate Asphalt (mostly perimeter road) & gravel
		Sub-terrain	Ubungsdorf
		Caves	Four reinforced caves exist throughout training area
Information	Cell Phones	(R)	Frequency and ISR issues in Germany; looking at VOIP to replicate Cells.
	Radio/TV	(R)	Work-arounds only, looking at NTC initiative for potential solution using JMRC existing fiber optics
	Web/WLL	(A)	JIEDDO Funded & sustained for 2 years Fy09-11
Social	Role Players	(G)	Crit. Req 434 (MRE 540), validated 100 work-yrs
	Religious	(G)	Capable of replicating multiple (K-FOR & OIF/OEF)
	Dress	(G)	Capable of replicating multiple (K-FOR & OIF/OEF)
Economic	Agriculture	(A)	Exists due to locals; needs to be also part of open maneuver area
	Manufacture	(A)	Has small industry near Ubungsdorf
	Bank & Finance	(A)	Being developed in infrastructure;

6. The Battle Command Training Program (BCTP) is relatively robust and resourced primarily due to its ability to replicate the OE in a simulative/constructive state. The below chart summarizes the BCTP OE conditions (GREEN: Resourced to meet minimum requirements, AMBER: Enough to set certain conditions, but not enough to meet minimum benchmark required to replicated all appropriate complexities, RED: Very limited capability which

hinders replicating conditions needed to meet full spectrum training objectives).

Infrastructure	Towns	Large (>45)	Constructive environment scalable
		Medium (30-45)	Constructive environment scalable
		Small <30; 14 P)	Constructive environment scalable
	Utilities	Com-Pwr	Yes. Provided via MSEL injects.
		Gen-Pwr	Yes. Provided via MSEL injects.
		Water	Yes. Provided via MSEL injects.
	COB-Vs	Various	Replicated in model.
		Roads	Replicated in model.
	Physical Terrain	Sub-terrain	Replicated in model.
		Caves	Replicated in model.
Information	Cell Phones	(A)	Provided via MSEL injects. Limited robustness in SIGINT.
	Radio/TV	(G)	Produce "Global News Network" and opposition TV news and "Warbird" print media. Limited robustness in SIGINT.
	Web/WLL	(A)	Capable of replicating adversarial Webpage.
Social	Role Players	(G)	Crit. Req 434 (MRE 540), validated 100 work-yrs
	Religious	(G)	Capable of replicating multiple (OIF/OEF)
	Dress	(G)	Capable of replicating multiple (OIF/OEF)
Economics	Agriculture	(G)	Provided via MSEL injects.
	Manufacture	(G)	Provided via MSEL injects.
	Bank & Finance	(G)	Provided via MSEL injects.

5-1 (2) OPFOR Units & Training

1. AR 350-2 establishes the OPFOR program to provide commanders and their units a viable "sparring partner" by challenging training audiences with a non-cooperative and uncompromising opponent. While regulatory standards for units replicating OPFOR in training exercises are difficult to attain (which justifies the permanent and professional designated OPFOR units at the CTCs in Fort Irwin, Fort Polk, and Hohenfels, Germany), every effort must be made to ensure that units assigned the task of the OPFOR at CTCs, home-station, and ETC exercises attain the absolute highest level of competency.

a. OPFOR units, regardless of status, must be the best trained adversarial force available and provide a relevant experience during home-station and ETC exercises by setting the toughest and most challenging conditions (fight) short of war (AR 350-50).

b. To replicate the COE for full spectrum based training exercises, three replication factors must be considered with respect to training: (1) conventional OPFOR, (2) irregular/unconventional OPFOR, and (3) armed civilians on the battlefield. All three elements, to various degrees, must be trained to accomplish the following OPFOR objectives:

- Oppose BLUFOR training objectives and anticipated COAs.
- Reflect FM 7-100 doctrine.
- Provide conditions appropriate to the training unit training objectives, troop list, expected training status, and selected OE.

c. Within TRADOC G2, the G2 Training Directorate (Formerly OPFOR) as well as the TRADOC Intelligence Support Activity (TRISA) will provide limited training support capabilities in the form of Mobile Training Teams (MTT), COE Train the Trainer program (TTT), and computer-based access to TRADOC G2 publications.

2. Professional OPFOR: The professional OPFOR constitutes both the FORSCOM assigned unit to perform the OPFOR mission, as well as contractors that are used to augment OPFOR capabilities.

a. FORSCOM Assigned OPFOR units: These units are FORSCOM dual-mission units with a primary OPFOR mission.

(1) Units assigned these missions (11th ACR, 1-509th ABN, 1-4 INF) must not only maintain an acceptable degree of mission-readiness as a deployable FORSCOM unit, but must also train to be proficient in OPFOR tactics, techniques, and procedures, and must be capable of thinking and acting culturally different and tactically in a frame-of-mind other than that of U.S. soldiers. This concept applies to OPFOR elements that not only perform the conventional OPFOR mission, but also the irregular/paramilitary aspects of the OPFOR mission. OPFOR units must be at a state of readiness that allows them to be the best and toughest adversary in the world (IAW AR 350-50) for present, future, and unique challenges.

(2) OPFOR units are required to have a OPFOR training program which typically consists of attending the OPFOR academy when newly assigned, routine officer and non-commissioned officer professional development classes, and on the job training with often internal leader certification checklists/programs. As training is a commander's responsibility, TRADOC G2 does not provide guidelines or requirements as to how their program should be run or developed. However, as part of the annual COE/OPFOR accreditation, a review of the OPFOR unit's OPFOR training plan will be completed to assess and provide the commander an external feedback as to how effective their programs appears from a mission execution standpoint.

(3) It is, however, strongly advised and encouraged, that operational leaders of the OPFOR, such as an assistant S3 or Operations SGM does attend the TRISA COE Train-the-Trainer 5-day course.

(4) When the professional OPFOR is notified of a contingency mission requiring another units to perform the OPFOR mission, or remaining elements of the professional OPFOR requires heavy augmentation, TRADOC G2 is to be notified to immediately assist and support in the transition process.

b. Contracted OPFOR: Contracts written to specifically augment Army OPFOR units with civilian contractors must address within the contract that they too fall under the purview of AR 350-50 and AR 350-2. This includes undergoing complete accreditation process as part of the CTC COE/OPFOR program – contractors should not invoke contractor proprietary rights! The training and overall qualification should be of the same standard as for professional OPFOR soldiers and as directed in AR 350-50, AR 350-2, and the CTC MP.

5-1 (3) ETC and COE/OPFOR Academy Cadre

1. Both, the instructors of the COE/OPFOR Academy as well as the ETC Cadre, are first and foremost trainers for units learning to replicate an OPFOR. As such, they should be subject matter experts (SME) in FM 7-100 series manuals, AR 350-50, and AR 350-2.

2. OPFOR Academy Instructors: The OPFOR Academy is the institutional and educational framework that provides classroom and practical application to units designated to perform OPFOR missions. It also teaches OPFOR TTPs to rotational training units (RTUs).

a. All academy sessions (courses) should be preceded with a class that presents and explains the COE (PMESII) variables. For generic full-spectrum related-ETC training, as for training units moving from the "reset" to the "available" cycle of the Army Force Generation Model (ARFORGEN), classes should focus on the doctrinal aspects of the OPFOR as prescribed in the FM 7-100 series manuals.

b. For MRE/MRX purposes, OPFOR academies that are used to supplement training reflecting real-world contingencies/threats, instructors must ensure that they have an expert understanding of their topics; FORSCOM G2, with support of TRADOC G2, should validate instructor qualification to teach MRE/MRX oriented blocks of instruction.

c. OPFOR Academy instructors must be graduates of the COE TTT prior to teaching COE doctrine; at a minimum, all instructors should at least be scheduled to attend the next semi-annual COE TTT, both military and civilian (civil service or contractor). Academies can request from TRISA (Fort Leavenworth) applicable copies of Operational Environment Assessments (OEAs).

3. ETC OPFOR Cadre: The Exportable Training Capability (ETC) OPFOR cadre holds two functions: (1) train and control the OPFOR, and (2) training and control the civilian role players.

a. OPFOR Cadre: The ETC OPFOR cadre is part of the ETC Exercise Control (EXCON) group, but is also the responsible agent that facilitates the training for the designated

homestation unit tasked to perform the OPFOR mission as part of an ETC. As such, OPFOR Cadre must be fully certified as Observer/Controllers (O/Cs) in accordance with the host CTC O/C Academy standards, as well as function as an OPFOR unit Trainer, hence, functionally, they are OPFOR Trainers and Controllers (OT/Cs). The OPFOR Cadre is also the critical link in assisting the Training, Analysis and Feedback Facility (TAFF) to maintain situational awareness of the OPFOR, role players, communication with controllers, and produce material that support After Action Reports.

(1) As with BLUFOR O/Cs, O/CTs must be fully certified and graduates of the O/C academy per respective ETC standards. Each must also have attended the OPFOR Academy and be capable of demonstrating knowledge of the COE variables and OPFOR doctrine IAW the FM 7-100 series manuals.

(2) The senior OPFOR Cadre in charge and his operations officer/NCO must be a COE TTT graduate and must be familiar with regulatory OPFOR requirements per AR 350-2 (OPFOR Program) and AR 350-50 (Combat Training Center Program).

b. Civilian Role-Player Cadre (RPC): COE exercises require interaction between BLUFOR and civilians on the battlefield - both armed and unarmed non-combatants. The non-combatant role players or civilians on the battlefield (COBs) create increased training opportunities in civil affairs (CA) operations, the handling of news media, leadership challenges of displaced persons, (DPs), rules of engagement (ROE), refugees and local inhabitants, as well as effects of non-governmental organizations/private voluntary organizations (NGO/PVOs).

(1) As with O/Cs, RPC must be fully certified and graduates of the O/C Academy per respective ETC standards, as well as have attended the OPFOR Academy and be capable of demonstrating knowledge of the 11 COE variables and OPFOR doctrine IAW the FM 7-100 series manuals.

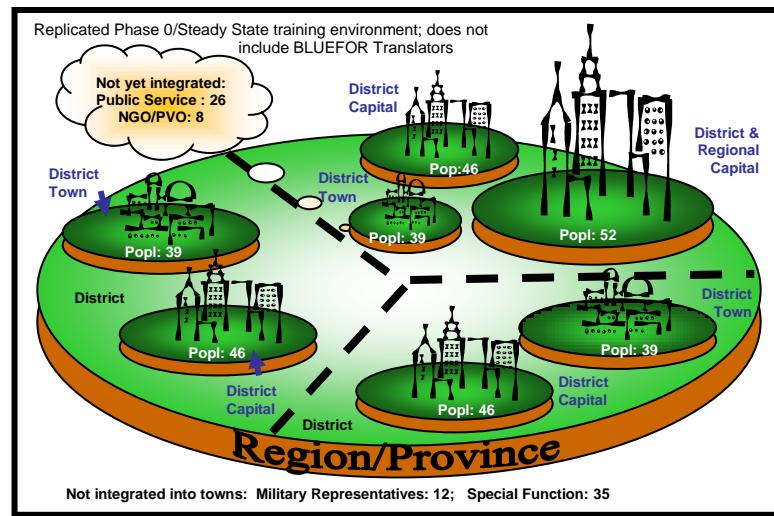
(2) RPCs must be capable of taking COB scripts/instructions and teach/coach/mentor role-players how to apply their roles within the confines of the exercise. COB Controllers must also ensure that in coordination with the exercise planners, COBs are provided minimum role-player instructions.

5-1 (4) Role Player Requirements

1. The use of contractors, as role-players (RPs) to replicate civilians on the battlefield (COBs) and other non-combatants to set realistic training conditions and meeting training objectives, has grown exponentially. Contractors are currently predominantly used to replicate COBs extensively at the Army's Combat Training Centers (CTCs), mobilization station sites, and even home-station training (HST). HQDA provided each Maneuver Combat Training Center (MCTC) funding for 100 Work Year Equivalents for their RP programs; this funding remains in the base CTC program and must continue to be funded to support base RP programs at the MCTCs.
2. RPs throughout Army training venues replicate the human terrain (HT) of contemporary operational environments (COE) and include generic role players (GRPs), special skilled role players (SKRPs) with certain skills, knowledge, and experience, foreign language speaking role players (FLSs) and/or cultural role players (CRPs).
3. In response to a HQDA G3 and TRADOC DCSOPS&T tasking, TRADOC DCSINT led a working group (WG) to identify a "good enough" short term COB and CRP resource requirements for Army training venues for FY 07 budget supplemental adjustments, and establish a methodology or model on which to base requirements for the out years. The WG was comprised of representatives from DCSOPS&T, the Combined Arms Center (CTCD, CAL, CALL, CTD), the United States Army Intelligence Center and School (USAICS) Cultural Center, CTCs (NTC, JRTC, JMRC, BCTP), FORSCOM G3 (co-lead), 1st Army, and Coalition Forces Land Component Command (CFLCC).
4. The WG determined that a set of common definitions must be used (i.e. the term "COB" was incorrectly used, "RPs" should be used - the requirement is for RPs) and that FLS and CRPs are critically required RPs to set realistic and viable training conditions, especially during mission rehearsal exercises (MRXs).
 - a. A methodology and model was developed that accounted for the training tasks and training conditions to set a baseline requirement for types and numbers of required RPs for a steady state/phase 0 exercise. This methodology uses a "Lego-Effect"

model that has the ability to grow from its baseline, which is centered on a Brigade Combat Team (BCT), hence, as the rotation training unit (RTU) increases in size, so does the RP requirements.

b. The model is founded on complex terrain (towns) that encompasses a region/province (for BDE Staff training) with three districts (one per maneuver BN). Each district accounts for two towns to force Battalions to conduct operations into at least two directions while also supporting company level training objectives. One additional town was added in one district to account for the region/province capital.



5. Collectively, these towns are made up of GRPs, SKRPs, FLSs, and CRPs to replicate province/district/town governments as well as public services and other influential factors. The required number of CONTRACT role players was tallied based on generic steady state and MRE training requirements per CTC (see page 29 for summary of required role-players by types and functions):

CTC	Phase 0 / Steady State (non-MRE) RP requirements (validated/critical)				
	GRP	FLS	CRP	SKRP	Total **
JRTC	201/174	208/182	22/20	3/3	434/379
NTC	0*	208/182	22/20	3/3	233/205
JMRC	201/174	208/182	22/20	3/3	434/379
BCTP	3/3	4/4	0	3/3	10/10

CTC	MRE/MRX*** RP requirements (validated/critical)				
	GRP	FLS	CRP	SKRP	Total **
JRTC	245/218	0	288/260	7	540/485
NTC	0*	0	288/260	7	295/267
JMRC	245/218	0	288/260	7	540/485

BCTP	0	0	9/9	6/6	15/15
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***NOTE:** NTC GRPs are complimented by 11th ACR soldiers (total requirement is 201 for Steady State and 245 for MREs). If 11th ACR was to be deployed, GRPs would need to be contracted to perform this function.

****NOTE:** Total role player numbers may not correlate to contractor man-year equivalents and may increase if the BCT being trained has additional attached units.

***** NOTE:** MRE/MRX recommended role player numbers (GRPs, FLSS, CRPs, SKRPs) are a generic baseline, additional training requirements may justify increased requirements (i.e. Stryker BCTs, SOC elements, additional support units, etc)

6. As training at CTCs continues to support real world contingencies, and the dynamic complexities of OIF and OEF continue to change, immersing issues also continue to rise. While many of these do not support enduring requirements, further assessments may need to be conducted to justify limited training funds for such issues which include:

a. Increase in the number of role-players given the higher demand of MCTCs to replicate Iraqi Military units for most of their rotations (NTC estimates at least an additional 95 cultural role players for OIF MRXs).

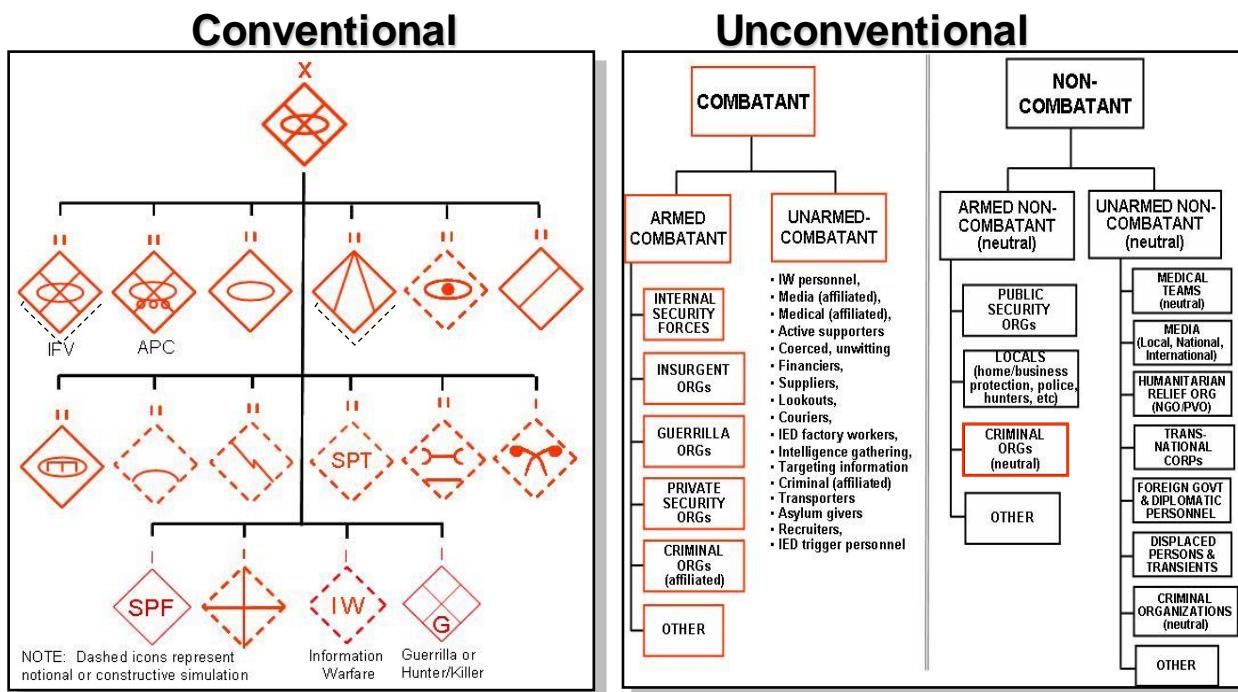
b. Increase in number of commercial vehicles to provide a higher fidelity of traffic (NTC recommends an increase from 155 to 425).

c. Increase in overall number of role-players (NTC currently uses approximately 1600 vice the 540 OEMP required role-players which certainly increased the level of fidelity).

d. Increase in the minimum number of provinces from one to two, and 7 towns to 8 (primarily an NTC raised issue).

5-2 CTC OPFOR Organizations and Requirements

1. Each of the maneuver CTCs (MCTCs) is assigned permanent FORSCOM units whose primary mission is to replicate conventional and unconventional, combatant and non combatant, forces/persons. As such, these units are often referred to as the professional OPFOR. While the unit itself is a Modified Table of Organization and Equipment (MTOE) organization, they are also supplemented with a Table of Distribution and Allowances (TDA) which authorized them special OPFOR persons and/or equipment in addition to the MTOE authorizations.
2. The below chart is the overarching replication requirement, in terms of personnel and equipment, that professional OPFOR units must be capable of replicating with high-fidelity of confidence and resources (Training Aids, Devices, Simulators and Simulations [TADSS]).



3. All changes to OPFOR MTOEs and/or TDAs must be approved by TRADOC G2, G2 Training Directorate. This requirement, as directed in AR 350-2, also applies to all non-MOTE and TDA OPFOR associated TADSS.

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5-2 (1) NTC OPFOR Organization and Requirements

1. 1. Overview: The National Training Center (NTC) is located at Fort Irwin, CA, in the Mojave Desert. It is the largest of the CTC programs and primarily trains heavy brigade combat teams (HBCTs) but also specialize in SOF and Joint training exercises. Additionally, they are the Army's IED center of excellence (CoE).

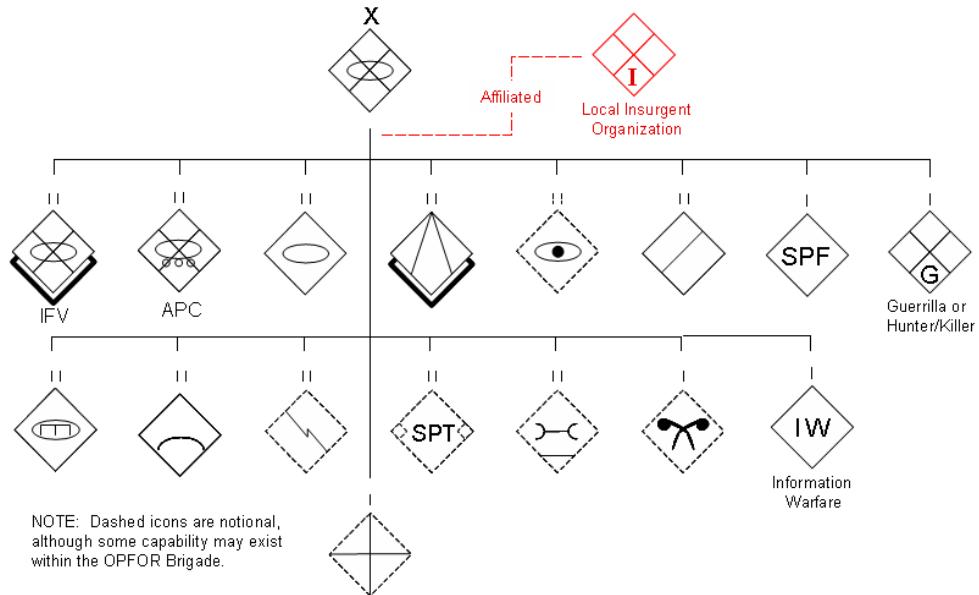
a. Mission: Provide tough, realistic, joint and combined arms training in multi-national venues across the full spectrum of conflict; focus on developing collective task proficiency at the brigade combat team and all echelons below; assist commanders in developing trained, competent leaders and soldiers by presenting them with current problem sets from the Contemporary Operating Environment (COE); and identify unit training deficiencies, provide feedback to improve the force, and prepare for success in the Global War on Terrorism and future joint battlefields. (CTC MP FY10-15 POM)

b. OPFOR: The OPFOR mission is performed by the 11th Armored Cavalry Regiment (ACR) consisting of two armored cavalry squadrons and a support squadron. 11th ACR supports 10 to 11 rotations a year. Rotational days are generally 24 hours a day, regardless of the rotational scenario. For the 11th ACR, rotations run 20-25 days, including preparation, execution, and recovery phases. When not in rotation, the 11th ACR conducts war-fighter METL proficiency training, MOS proficiency training, and Tank, Bradley and Light Cavalry gunnery exercises (two Level I and two Level II gunneries annually). The 11th ACR is to retain a dual mission capability in accordance with the ARFORGEN model that provides a professional and adaptable threat while simultaneously retaining the capability to deploy world wide as a multi-component Heavy Brigade Combat Team.

2. OPFOR Organization: Due to the training requirement to challenge and be capable of "sparing" with BLUFOR HBCTs, the 11th ACR must be capable of replicating a fully mechanized Brigade Tactical Group (BTG).

a. The NTC OPFOR BTG must consist of two mechanized battalions, one tank battalion, two anti-armor battalions, one armored personnel carrier (APC) battalion, a reconnaissance battalion, and an artillery battalion. (note: Unique to NTC is

the addition of one mechanized battalion and one anti-tank battalion).



b. Due to the lack of assigned infantry, engineer, and artillery units to the 11th ACR, the NTC OPFOR must be augmented with three infantry companies, one engineer company, one field artillery battery, and one mortar platoon per rotation for a total augmentation requirement of approximately 650 personnel per rotation.

3. While most of these units, as well as supporting units, do not necessarily have to be replicated with all live equipment at MCTCs, a minimum essential equipment list (MEEL) is provided to identify required systems (generally 70% strength):

a. Mechanized Battalions (**IFV**) MEEL:

Equipment	Req	Auth	OH	Comments
BMPs (2 x BNs)	80	72	72	90%
2 ACV, BMP-1KSh (C2)	4	4	4	100%
ATGL LR RPG-29	6	4	0	66%; req 4
ATGL PZF 3-T600	60	15	15	50%; use current RPG7 w/VISMOD
120mm Combo 2S9-1	12	8	0	70%; req 8 (82mm Mort used)
.50 AMR M82A1	6	4	0	70%; req 4
SA 18	12	8	9	70%; (use Stinger) req 8
ATDL (RPG-27)	136	68	68	50%; AT-4 available
ATDL Armbrust	60	30	0	70%; req 30

Equipment	Req	Auth	OH	Comments
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b. **APC** Battalion MEEL:

Equipment	Req	Auth	OH	Comments
APC, BTR-80A per BN	46	32	0	70%; req 32
ACV, BTR-80, Kushetka, C2	2	2	0	100%; req 2
ATGM Lchr HOT-3	7	5	5	70%; replaces AT-5 BRDM, req 5
ATGM Lchr Manport AT-13	9	5	5	50%; can use TOW to simulate, need MILES
ATGM lchr Manport SR Eryx	5	3	0	50%; req 3
ATGL LR RPG-29	18	9	0	50%; req 9
ATGL PZF 3-T600	31	16	16	50%; use current RPG7 w/VISMOD
120mm SP Com/Gun 2S23	6	4	4	70% strength; 82mm Mort; req 4
.50 AMR M82A1	6	3	0	50% strength; req 3
SA 18	6	4	0	70% strength; 20 Stingers available; req 4
ATDL (RPG-27)	94	47	47	50%; use VISMOD AT-4
ATDL Armbrust	36	17	0	50%; req 17

c. **Tank** Battalion MEEL:

Equipment	Req	Auth	OH	Comments
MBT, T80 per BN	31	31	31	100%
IFV, BMP-2M	6	5	4	90%
ACV, BMP-1KSh, C2	2	2	0	100%; req 2
Mineclearing Plow, KMT-6	9	7	0	70%; VISMOD; req 7
ATGL PZF 3-T600	2	1	0	50%; req 1
SA 18	6	4	0	70% strength; 12 Stingers, need MILES, req 4
ATDL (RPG-27)	34	17	17	50%; VISMOD AT-4, need MILES

d. **Reconnaissance** Battalion MEEL:

Equipment	Req	Auth	OH	Comments
ACV, BMP-1KSh, C2	2	1	0	50%; req 1
ACV, BMP-1KSh, C2 Jammer, Interc/DF	3	2	0	66%; will require soldiers/contractors, req 2
ACV, BMP-1KSh, Radar Intercept/DF	3	1	0	33%; will require soldiers/contractors, req 1
ACV, BTR-80, Kushetka, C2	9	7	0	70%; using HMMWV/BRDM, req 7
BRDM-2M w/ATGM-HOT3	12	8	0	70%; replaces AT5 BRDM; req 8

Equipment	Req	Auth	OH	Comments
IFV, BMP-2M	11	10	4	90%; req 4
ATDL, RPG-27	134	67	?	50%; can use VISMOD AT-4; req ?
MANPAD, SA-18	6	4	0	70%; req 4
Tactical Utility Vehicle, UAZ-469	60	12	12	20%; can use HMMWV/BRDM
Laser Target Designator	45	23	?	50%; req ?
Radar, GSR, Manportable, Fara-1	36	6	0	16%; req 6
Thermal Viewer, Handheld, Sophie	52	26	?	50%; req ?
UAV, Fox-AT2 (laser desig & FLIR)	4	3	3	70%, Raven B

e. Other critical systems MEEL from the **Anti-Tank Battalion**, **Artillery Battalion**, **Engineer Battalion**, and **Air Defense Battalion**:

Equipment	Req	Auth	OH	Comments
Bridge, AVLB	2/3	1	0	50%; req 1
Ditching Machine, MDK-3	3	2	4	66%
Minelayer, GMZ, UMZ, PMZ-4	9	5	0	50% strength; Combat engineer Co required
Route-Clear Veh, BAT-2	1	1	0	70%; Combat engineer Co required
Mineclearing Roller, KMT-7	6	4	0	66%; VISMOD Requirements;
Ar. Eng. Tractor, IMR-2M	2	1	0	(ACE); Combat engineer Co required; req 1
Mine Breach Veh, UR-77	1	1	0	(VISMOD); req 1
SP AA Gun/Msl Syst, 2S6M	6	4	0	NGCATS with Dog Ear Radar; req 4
ACV, AD, Sborka w/dog ear	5	3	0	70%, VISMOD-instrumented, req 3
152-mm SP Howitzer, 2S19	18	6	0	12 constructive, 6 live/VISMOD; req 6
Art Loc Rdr IL220	1	1	0	VISMOD; req 1
ATGM, AMX-10 HOT 3 or AT-9	24	12	0	50%; replaces AT-5 BRDM, req 8
125-mm AT Gun, 2A45M	24	8	0	33%; req 4
ATGL, Pnzfst 3-T600	42	21	11	50%; use current RPG7 w/VISMOD; req 9
ATDL, RPG-27	130	65	0	50%; can use VISMOD At-4; req ?
ACV, BMP-1KSh, C2 (IW) (Computer Warfare Station)	12	3	0	VISMOD & replicated in constructive sim; req 3 VISMOD

f. Additional **IW/SPF/Guerilla** warfare required equipment (this is equipment that can not be duplicated or borrowed from other conventional OPFOR units due to uniqueness or the likelihood that they are already being used):

Equipment	Req	Auth	OH	Comments
7.62mm Sniper Rifle, SVD/Mosin	11	8	?	70%; US version OK; Req 8
ATGL, Panzerfaust 3-T600	14	7	0	50%; req 7
GPS Jammer, Manportable	3	3	0	100%; req 2
Radar, GSR, Manport. Fara-1	3	1	0	33%; req 1
Laser Target Designator	15	7	?	50%; req ?
RPG 7V	34	17	17	50%;
RPG 22	36	18	0	50%; use US made LAW; req 18
ATDL, RPG-27	33	14	0	50%; can use VISMOD At-4; req ?
ATDL, Armbrust	24	12	0	50%; req 12
ATGM Lcher, Manport-SR, Eryx	12	6	0	50%; req 6
.50 BMG Antimat. Rifle, M82A1	14	7	0	50%; req 7
AD/AT Sys (ADAAS) Starstreak	3	2	0	?? 66%; req 2
Commo Radio DF & Intcp, Manport	3	1	0	33%; requires soldiers or contractors; req 1
Portable, SATCOM	38	9	?	20%; req ?
MANPADS SA 14/18	12	8	0	70%; req 8
60mm mortar	13	9		70%; req ?
IED Vests	52	36	0	70%/ req 36

4. **Total NTC** OPFOR system requirements within a BTG at approximately 70% or higher strength per system:

Equipment	Req	Auth	OH	Comments
120mm Combo 2S9-1	12	8	0	70%; 12 mtrs; req 8
120mm Combo 2S23	6	4	0	70%; use 82mm mtr; req 4
125-mm AT, 2A45M	24	8	6	33%; req 2
Howitzer, 2S19	18	6	0	33%; req 6 via Augmentation
.50 Antimat Rifle	29	12	2	50%; req 10 (2x Barrels OH, need MILES)
60mm mortar	13	9	0	70%; req 9
7.62mm Sniper Rif	11	8	0	70%; req 8
Arty loc rdr IL220	1	1	0	100%; req 1
ACV, AD, dog ear	5	3	0	70%; req 3
AA Gun/Msl, 2S6M	6	4	0	70%; NGCATS-rep ASET-IV; req 4

Equipment	Req	Auth	OH	Comments
APC, BTR-80A	57	41	0	70%; req 32 (incl 9 x C2)
ACV, BMP-1KSh, IW) (Computer)	12	3	0	25%; req 3
AD/AT Starstreak	3	2	0	70%; req 2
RPG 7V	34	17	357	50%; SLM; 440 var 2 turn-in;
RPG 22	36	18	0	50%; use US made LAW;
ATDL, RPG-27	556	277	183	50%; can use AT-4; NTC has 600 for BLUE & Red
ATDL, Armbrust	120	59	0	50%; req 59
ATGL LR RPG-29	27	11	0	50%; req 11
ATGL PZF 3-T600	149	74	74	50%; use VISMOD RPG7; req 16
ATGM HOT3 (BRDM)	43	25	0	60%, 20xBRDM AT-5; req 25
ATGM Manport AT13	9	5	24	50%; can use TOW; req 5
ATGM Lcher, Eryx	17	9	0	50%; req 9
Bridge, AVLB	2	1	0	50%; req 1
Ditch. Mach.MDK-3	3	2	4	66% 4 x SEE, 2 x John Deer
Radio DF/Atk BMP1	5	2	3	40%; req sldr/contr; req 32
Radar DF/Atk BMP1	3	1	1	33%; req sldr/contr req 1
Eng.Tractor IMR2M	2	1	7	50%; req sldr/contr req 1
GPS Jammer, Manp	3	3	0	100; req 3
IED Vests	52	36	36	70%;
IFV, BMP-2M	105	94	99	90%; +16xM113 version (9 converted to OSTVs) 15 at FCS
Laser Designator	60	30	0	50%; req 30
MBT, T80	31	31	52	70%; 3 at FCS
Mine Breach, UR77	1	1	3	100; (VISMOD) M113
Mine Plow, KMT-6	9	7	7	70%; M113
Mine Roller, KMT7	6	4	3	70%; req 1 M113
Minelayer, GMZ, UMZ, PMZ-4	9	5	3	70%; Engineer CO Augmentation needed; req 2 (3x 548)
MANPADS SA 14	12	8	0	66%; req 8
MANPADS SA 18	30	21	0	70% (20 Stingers); req 21
Portable, SATCOM	38	9	?	18%; req ?
Radar, GSR, Manp	39	7	0	18%; req 7
Route-Clear BAT-2	1	1	6	100%; ACE x 6
COB-Vs	155	155	183	100%; req ?
UAZ Tact Veh	60	18	74	30; use HMMWV w/77 shark noses
UAV, Fox-AT2 (lslr desig & FLIR)	4	3	6	Raven B; also use silver fox & get WASP in FY 08
Thermal View, handheld, Sophie	52	26	?	50%; req 26
BM-21 (Optional)		1		

5. NTC OPFOR Personnel Manning:

a. The following spreadsheets show the minimum required OPFOR manning based on the previously presented OPFOR Battalions within the BTG that NTC must be capable of replicating at the high end of MCO.

b. While the NTC can replicate the majority of required OPFOR force with organic manning, they will need to be augmented with one each non-organic engineer company and field artillery battery per full-spectrum rotation.

Mech Bn 1					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
BMP	36	3 + 3	108	108	
BMP C2	2	3	6		
2S9 120mm	4	3	12		
Total			126	108	234

Mech Bn 2					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
BMP	36	3 + 3	108	108	
BMP C2	2	3	6		
2S9 120mm	4	3	12		
Total			126	108	234

APC Bn					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
BTR-80A	32	2+4	64	128	
BTR-80 C2	2	2	4		
ATGM Hot-3	5	3	15		
2S9 120mm	4	3	12		
Total			95	128	223

Tank Bn					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
MBT T-80	31	3	93		
BMP	5	3+3	15	15	
BMP C2	2	3	6		
Total			114	15	129

Recon Bn					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
BMP C2	1	3	3		
BTR-80	7	2+4	14	28	
ATGM Hot-3	8	3	24		
BMP	10	3+3	30	30	
UAZ 469	12	2	24		
GSR Radar	6	2	12		
UAV	3	3	9		
Total			116	58	174

AT Bn 1					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
2A45M ATG	8	3	24		
ATGM Hot-3	12	3	36		
BMP C2	3	3	9		
Total			69		69

AT Bn 2					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
2A45M ATG	8	3	24		
ATGM Hot-3	12	3	36		
BMP C2	3	3	9		
Total			69		69

IW/SPF Co	113
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Total Combat Force Requirement **1245**

Proposed Augmentee Requirement = 1 X En Co and 1 X FA Btry

6. The current overarching assessment of NTC OPFOR capabilities is provided below in which Red indicates the a severe degradation of capabilities that will have negative impact on training and training conditions cannot be properly replicated; Amber indicates a limited condition-setting capability that accepts some risk or requires work-arounds; and Green provides that a "good-enough" solution exists, although modifications may have to be made to stay relevant:

OPFOR Weapons	Anti-Tank	A	Received 400 new TASC Shoulder Launched Missiles (SLM) as RPG; need others too an appropriate MILES codes (uses AT-4 code)
	Air Defense	R	One unfunded ASET IV; need replacement system for 2S6, ZSU, and MANPADS (SA 7/14/16/16/18)
	Artillery	G	FORSCOM agreed for augmentation of one Battery
	Rifles	A	US Sniper rifles; has two variations of AK Rifles (real imported but no ammo and 5.56mm version but malfunctions).
OPFOR TADSS	MILES	R	Wrong or non-existing OPFOR weapon Ph/Pk codes (mostly US codes) and inadequate performance for urban effects & assessments
	IEDs	G	JIEDDO supported
	IED Like	A	Currently JIEDDO Supported
OPFOR C4ISR	IW/EW	R	Has MI company with appropriate MOS but no IW/EW equipment
	C2	A	No OPFOR entity tracking system (like BLUFOR tracker), has SATCOM
	ISR	A	Has various UASs, US Army thermal & similar devices
OPFOR Vehicles	OSV/OSV-MBT	G	Has appropriate number to replicate 1 tank BN + 3 BMP BNs (BN- spare)
	OSWV	R	None to challenge Stryker BCTs or replicate world-proliferation to gain advantages in speed, urban mobility, & noise reduction. No light utility vehicles (BLUFOR, OPFOR, OC, visitors use HMMWVs)
	Technical Veh's	A	Limited local production, no Army program (COB-Vs OK)
	VISMODs	A	OSV fleet great; HMMWV fleet limited to shark-nose; Engineer VISMODs required
	Aircraft	A	UH 72 being fielded; no FLIR to provide attack version beyond 1km stand-off engagement to properly train BCT air defenses

5-2 (2) JRTC OPFOR Organization and Requirements

1. Overview: The Joint Readiness Training Center (JRTC) is located at Fort Polk, LA, approximate 60 miles southwest of Alexandria near Leesville. It consists largely of wooded terrain and primarily trains infantry brigade combat teams (IBCTs) and special operations units, but also specialize in Joint training exercises.

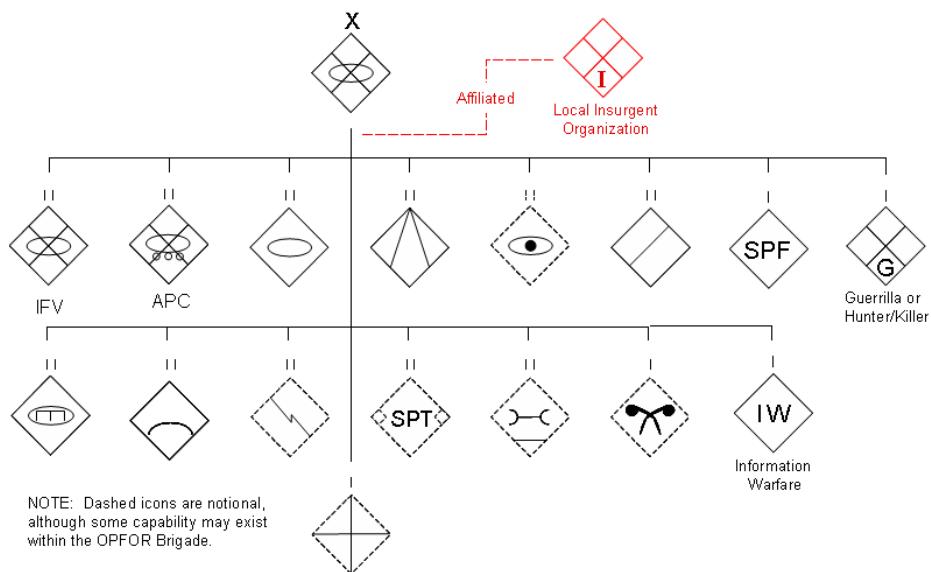
a. Mission: To conduct tough, realistic, multi-echelon, joint and combined arms training to develop bold, innovative leaders able to deal with complex situations; flexible, skilled soldiers imbued with the warrior ethos; and highly proficient, cohesive units capable of conducting operations across the full spectrum of conflict. (CTC MP FY10-15 POM)

b. OPFOR: The OPFOR mission is performed by the 1-509th (Airborne) Infantry Battalion consisting of a headquarters company, two airborne infantry companies and one (TDA) cavalry troop which drives their OPFOR tanks. The OPFOR normally supports up to 10 rotations a year [being able to surge to 11 rotations per year]. Rotational days are generally 24 hours a day, regardless of the rotational scenario. For the OPFOR, rotations run 18-21 days a month to include a preparation, execution, and recovery phases. When not in rotation, training days are IAW training requirements to maintain the Battalion's METL, including airborne operations and MOS training. In addition, the Battalion conducts one EIB testing cycle and one Jumpmaster MTT a year. The EIB and Jumpmaster MTT are run over a 20-day period. The cavalry troop deploys off post, two weeks each fiscal year, to conduct MOS Specific training. Since the outset of the Global War on Terrorism, two companies of 1-509th IN (ABN) (OPFOR) have deployed, and may be required to do so again for future operations therefore; the 509th must be resourced as a combat infantry battalion and prepared to execute a secondary mission as a deployable force.

2. OPFOR Organization: Due to the training requirement to challenge and be capable of "sparring" with BLUFOR IBCTs, the 1-509th must but be capable of replicating a mechanized Brigade Tactical Group (BTG).

a. The JRTC OPFOR BTG must consist of one mechanized infantry, one armored personnel carrier (APC), one tank, one

anti-armor, one reconnaissance, and one artillery battalion each. (note: the mechanized IFV or APC battalion can be replaced with a motorized (truck) battalion but would require additional OPFOR infantry to make up lost fire-power). At JRTC, additional emphasis is also placed in non-conventional forces.



b. Due to the lack of assigned specialized units and personnel, the JRTC OPFOR must be augmented to be fully capable for supporting full-spectrum training:

(1) 1-509th is not authorized organic engineer, intelligence, air defense, or artillery units which must be augmented to various degrees pending rotational training requirements.

(2) OPFOR Augmentation Units (OAU) continue to support JRTC by replicating both host nation and threat forces. An ARNG battalion should be designated with a habitual relationship to JRTC IAW AR 350-50. Additionally, with the newly emplaced 01-06 MTOE, the 1-509th will incur additional losses as company executive officer positions are deleted and rifle squads are reduced from nine soldiers to seven; while the new end-strength may reflect a full MTOE fill, the reduced overall numbers may adversely affect the unit's ability to perform full-spectrum OPFOR missions unless the MTOE is adjusted or augmentations fill the gap.

(3) Historically, JRTC OPFOR relied upon the 2nd ACR (SBCT) to supply MOS qualified drivers for their OPFOR surrogate

vehicles (OSV) BMPs. However, with the departure of the 2nd ACR (SBCT) from Fort Polk and the stationing of the 4th Brigade, 10th Mountain Division, the pool of qualified drivers no longer exists on Fort Polk. An already submitted request through FORSCOM to HQDA G3/5/7 for an additional MTOE infantry company will help alleviate this problem, if approved and manned.

3. While most of the below listed units, as well as supporting units, do not necessarily have to be replicated with all live equipment at MCTCs, a mission essential equipment list (MEEL) is provided to identify those systems required to fully replicate the capabilities found in the OPFOR BTG at 70% strength:

a. Mechanized Battalion (**IFV**) MEEL:

Equipment	Req	Auth	OH	Comments
BMPs	40	28	28	70%
2 ACV, BMP-1KSh (C2)	2	2	2	100%
ATGL LR RPG-29	3	2	0	66%; req 2
ATGL PZF 3-T600	30	15	15	50%; use current RPG7 w/VISMOD
120mm Combo 2S9-1	6	4	0	70%; req 4 (82mm Mort used)
.50 AMR M82A1	3	2	2	70%; req 2
SA 18	6	4	0	70%; req 4
ATDL (RPG-27)	68	34	34	50%; AT-4 available
ATDL Armbrust	30	15	0	70%; req 15

b. **APC** Battalion MEEL:

Equipment	Req	Auth	OH	Comments
APC, BTR-80A per BN	46	32	0	70%; req 32
ACV, BTR-80, Kushetka, C2	2	2	0	100%; req 2
ATGM Lchr HOT-3	7	5	5	70%; replaces AT-5 BRDM, req 5
ATGM Lchr Manport AT-13	9	5	5	50%; can use TOW to simulate, need MILES
ATGM lchr Manport SR Eryx	5	3	0	50%; req 3
ATGL LR RPG-29	18	9	0	50%; req 9
ATGL PZF 3-T600	31	16	16	50%; use current RPG7 w/VISMOD
120mm SP Com/Gun 2S23	6	4	4	70% strength; 82mm Mort; req 4
.50 AMR M82A1	6	3	0	50% strength; req 3
SA 18	6	4	0	70% strength; 20 Stingers available; req 4

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Equipment	Req	Auth	OH	Comments
ATDL (RPG-27)	94	47	47	50%; use VISMOD AT-4
ATDL Armbrust	36	17	0	50%; req 17

c. **Tank** Battalion MEEL:

Equipment	Req	Auth	OH	Comments
MBT, T80 per BN	31	21	21	70%; req 9
IFV, BMP-2M	6	4	4	70%
ACV, BMP-1KSh, C2	2	2	0	100%; req 2
Mineclearing Plow, KMT-6	9	7	0	70%; VISMOD; req 7
ATGL PZF 3-T600	2	1	0	50%; req 1
SA 18	6	4	0	70%; req 4
ATDL (RPG-27)	34	17	17	50%; VISMOD AT-4, need MILES

d. **Reconnaissance** Battalion MEEL:

Equipment	Req	Auth	OH	Comments
ACV, BMP-1KSh, C2	2	1	0	50%; req 1
ACV, BMP-1KSh, C2 Jammer, Intercom/DF	3	2	0	66%; will require soldiers/contractors, req 2
ACV, BMP-1KSh, Radar Intercept/DF	3	1	0	33%; will require soldiers/contractors, req 1
ACV, BTR-80, Kushetka, C2	9	7	0	70%; using HMMWV/BRDM, req 7
BRDM-2M w/ATGM-HOT3	12	8	0	70%; replaces AT5 BRDM; req 8
IFV, BMP-2M	11	8	4	70%; req 4
ATDL, RPG-27	134	67	?	50%; can use VISMOD AT-4; req ?
MANPAD, SA-18	6	4	0	70%; req 4
Tactical Utility Vehicle, UAZ-469	60	12	12	20%; can use HMMWV/BRDM
Laser Target Designator	45	23	?	50%; req ?
Radar, GSR, Manportable, Fara-1	36	6	0	16%; req 6
Thermal Viewer, Handheld, Sophie	52	26		50%; req ?
UAV, Fox-AT2 (laser design & FLIR)	4	3	3	70%, Raven B

e. Other critical systems MEEL from the **Anti-Tank** Battalion, **Artillery** Battalion, **Engineer** Battalion, and **Air Defense** Battalion:

Equipment	Req	Auth	OH	Comments
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Equipment	Req	Auth	OH	Comments
Bridge, AVLB	2/3	0	0	Not required; replicated in constructive sim
Ditching Machine, MDK-3	3	0		Not required; replicated in constructive sim
Minelayer, GMZ, UMZ, PMZ-4	9	5	0	50% strength; Combat engineer Co required
Route-Clear Veh, BAT-2	1	1	0	70% ; Combat engineer Co required
Mineclearing Roller, KMT-7	6	4	0	66%; VISMOD Requirements;
Ar. Eng. Tractor, IMR-2M	2	1	0	(ACE); Combat engineer Co required; req 1
Mine Breach Veh, UR-77	1	1	0	(VISMOD); req 1
SP AA Gun/Msl Syst, 2S6M	6	4	0	NGCATS with Dog Ear Radar; req 4
ACV, AD, Sborka w/dog ear	5	3	0	70%, VISMOD-instrumented, req 3
152-mm SP Howitzer, 2S19	18	6	0	12 constructive, 6 live/VISMOD; req 6
Art Loc Rdr IL220	1	1	0	VISMOD; req 1
ATGM, AMX-10 HOT 3 or AT-9	12	6	0	50%; replaces AT-5 BRDM, req 8
125-mm AT Gun, 2A45M	12	4	0	33%; req 4
ATGL, Pnzfst 3-T600	21	10	1	50%; use current RPG7 w/VISMOD; req 9
ATDL, RPG-27	65	32	0	50%; can use VISMOD At-4; req ?
ACV, BMP-1KSh, C2 (IW) (Computer Warfare Station)	12	3	0	VISMOD & replicated in constructive sim; req 3 VISMOD

f. Additional **IW/SPF/Guerilla** warfare required equipment (this is equipment that can not be duplicated or borrowed from other conventional OPFOR units due to uniqueness or the likelihood that they are already being used):

Equipment	Req	Auth	OH	Comments
7.62mm Sniper Rifle, SVD/Mosin	11	8	?	70%; US version OK; Req 8
ATGL, Panzerfaust 3-T600	14	7	0	50%; req 7
GPS Jammer, Manportable	3	3	0	100%; req 2
Radar, GSR, Manport. Fara-1	3	1	0	33%; req 1
Laser Target Designator	15	7	?	50%; req ?
RPG 7V	34	17	17	50%;
RPG 22	36	18	0	50%; use US made LAW; req 18

Equipment	Req	Auth	OH	Comments
ATDL, RPG-27	28	14	0	50%; can use VISMOD At-4; req ?
ATDL, Armbrust	24	12	0	50%; req 12
ATGM Lcher, Manport-SR, Eryx	12	6	0	50%; req 6
.50 BMG Antimat. Rifle, M82A1	14	7		50%; req 7
AD/AT Sys (ADAAS) Starstreak	3	2	0	?? 66%; req 2
Commo Radio DF & Intcp, Manport	3	1	0	33%; requires soldiers or contractors; req 1
Portable, SATCOM	38	7	?	20%; req ?
MANPADS SA 14/18	12	8	0	70%; req 8
60mm mortar	13	9		70%; req ?
IED Vests	52	36	0	70% / req 36

4. **Total JRTC OPFOR** system requirements within a BTG at approximately 70% or higher strength per system:

Equipment	Req	Auth	OH	Comments
120mm Combo 2S9-1	6	4	0	70%; req 2
120mm Combo 2S23	6	4	0	70%; use 82mm mtr; req 4
125-mm AT, 2A45M	12	4	0	33%; req 4
Howitzer, 2S19	18	6	0	33%; Augmentation
.50 Antimat Rifl	23	12	0	50%; req 12
60mm mortar	13	9	4	+8x81mm Mortars; req 5 NEEDS LOUDER SIGNATURE
7.62mm Sniper Rif	11	8	0	70%; req 8 M24x3, M110x3, M14x3 (MILES Issues)
Arty loc rdr IL220	1	1	0	100%; req 1
ACV, AD, dog ear	5	3	0	70%; req 3
AA Gun/Msl, 2S6M	6	4	0	70%; NGCATS-rep ASET-IV; req 4
APC, BTR-80A	57	41	0	70%; req 32 (incl 9 x C2)
ACV, BMP-1KSh, IW (Computer)	12	3	0	25%; req 3
AD/AT Starstreak	3	2	0	70%; req 2
RPG 7V	34	17	124	50%; Var1x40, var2x84
RPG 22	36	18	0	50%; use US made LAW; req 18
ATDL, RPG-27	423	211	0	50%; can use AT-4; req 211
ATDL, Armbrust	90	44	0	50%; req 44
ATGL LR RPG-29	21	11	0	50%; req 11
ATGL PZF 3-T600	98	49	33	50%; use VISMOD RPG7; req 16
ATGM HOT 3 (BRDM)	31	19	0	50%, replaces AT-5; req 19
ATGM Manport AT 7/13	9	5	0	50%; can use TOW; req 5
ATGM Lcher, Eryx	17	9	0	50%; req 9
Bridge, AVLB	2	0	0	Constructively simulated
Ditch. Mach.MDK-3	3	0	0	Constructively simulated
Radio DF/Atk BMP1	5	2	0	40%; req sldr/contr; req 32
Radar DF/Atk BMP1	3	1	0	33%; req sldr/contr req 1

Equipment	Req	Auth	OH	Comments
Eng.Tractor IMR2M	2	1	0	50%; req sldr/contr req 1
GPS Jammer, Manp	3	3	0	100%; req 3
IED Vests	52	36	0	70%; req 36
IFV, BMP-2M	63	45	31	70%; 89 x M113; (incl 5x C2) req 14
Laser Designator	60	30	0	50%; req 30
MBT, T80	31	21	29	70%;
Mine Breach, UR77	1	1	0	100%; (VISMOD) req 1
Mine Plow, KMT-6	9	7	7	70%; req 7 Homemade
Mine Roller, KMT7	6	4	4	70%; req 4 Homemade
Minelayer, GMZ,UMZ,PMZ-4	9	5	0	70%; Engineer CO Augmentation needed; req 5
MANPADS SA 14	12	8	0	66%; req 8
MANPADS SA 18	24	16	0	66% (20 Stingers); req 16
Portable, SATCOM	38	7	3	18%; req 4
Radar, GSR, Manp	39	7	0	18%; req 37
Route-Clear BAT-2	1	1	0	100%; req 1
COB-Vs	150	150	150	100%;
UAZ Tact Veh	60	18	16	30; use BRDM nose & turret; req 2
UAV, Fox-AT2 (lsr desig & FLIR)	4	3	3	Raven B (use by RTU)
Thermal View, handheld, Sophie	52	26	0	50%; req 26
BM-21 (Optional)		1	0	

5. JRTC OPFOR Personnel Manning:

a. The following spreadsheets show the minimum required OPFOR manning based on the previously presented OPFOR Battalions within the BTG that JRTC must be capable of replicating at the high end of MCO.

b. While the JRTC can replicate the majority of required OPFOR force with organic manning when their MTOE is reconfigured into a standard Infantry Battalion (current authorization is only 442 with a D Company TDA), they will still need to be augmented with two Infantry Companies and one each non-organic engineer company and field artillery battery per full-spectrum rotation.

Mech Bn					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
BMP	28	3 + 3	84	84	
BMP C2	2	3	6		

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2S9 120mm	4	3	12		
Total			102	84	186

APC Bn					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
BTR-80A	32	2+4	64	128	
BTR-80 C2	2	2	4		
ATGM Hot-3	5	3	15		
2S9 120mm	4	3	12		
Total			95	128	223

Tank Bn					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
MBT T-80	21	3	63		
BMP	4	3+3	12	12	
BMP C2	2	3	6		
Total			81	12	93

Recon Bn					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
BMP C2	1	3	3		
BTR-80	7	2+4	14	28	
ATGM Hot-3	8	3	24		
BMP	8	3+3	24	24	
UAZ 469	12	2	24		
GSR Radar	6	2	12		
UAV	3	3	9		
Total			110	52	162

AT Bn					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
2A45M ATG	4	3	12		
ATGM Hot-3	6	3	18		
BMP C2	3	3	9		
Total			39		39
IW/SPF Co					113

Total Combat Force Requirement 427 276 816

Proposed Augmentee Requirement = 2 X Inf Co, 1 X En Co, and 1 X FA Btry

6. The current overarching assessment of JRTC OPFOR capabilities is provided below in which Red indicates the a severe

degradation of capabilities that will have negative impact on training and training conditions cannot be properly replicated; Amber indicates a limited condition-setting capability that accepts some risk or requires work-arounds; and Green provides that a "good-enough" solution exists, although modifications may have to be made to stay relevant:

OPFOR Weapons	Anti-Tank	(A)	Maintains older variant 2 RPG-7 with MILES Code selector but no appropriate MILES codes (uses AT-4 code)
	Air Defense	(R)	One unfunded ASET IV; need replacement system for 2S6, ZSU, and MANPADS (SA 7/14/16/18)
	Artillery	(G)	FORSOCOM agreed for augmentation of one Battery
	Rifles	(A)	US Sniper rifles; has no threat variant rifles (AKs)
OPFOR TADSS	MILES	(R)	Wrong or non-existing OPFOR weapon Ph/Pk codes (mostly US codes) and inadequate performance for urban effects & assessments
	IEDs	(G)	JIEDOO supported
	IED Like	(A)	Currently JIEDOO Supported
OPFOR C4ISR	IW/EW	(R)	Has no intelligence IW/EW equipment or operators (no MICO)
	C2	(A)	No OPFOR entity tracking system (like BLUFOR tracker), has SATCOM
	ISR	(A)	Has Raven B UAS; use US Army thermal & similar devices
OPFOR Vehicles	OSV/OSV-MBT	(G)	Has appropriate number to replicate 1 tank BN + 1 BMP BN (70%)
	OSWV	(R)	None to challenge Stryker BCTs or replicate world-proliferation to gain advantages in speed, urban mobility, & noise reduction. No light utility vehicles (BLUFOR, OPFOR, OC, visitors use HMMWVs)
	Technical Veh's	(A)	Limited local production, no Army program (COB-Vs OK)
	VISMODs	(A)	OSV fleet great; HMMWV fleet limited to shark-nose; Engineer VISMODs required
	Aircraft	(A)	UH 72 being fielded; no FLIR to provide attack version beyond 1km stand-off engagement to properly train BCT air defenses

5-2 (3) JMRC OPFOR Organization and Requirements

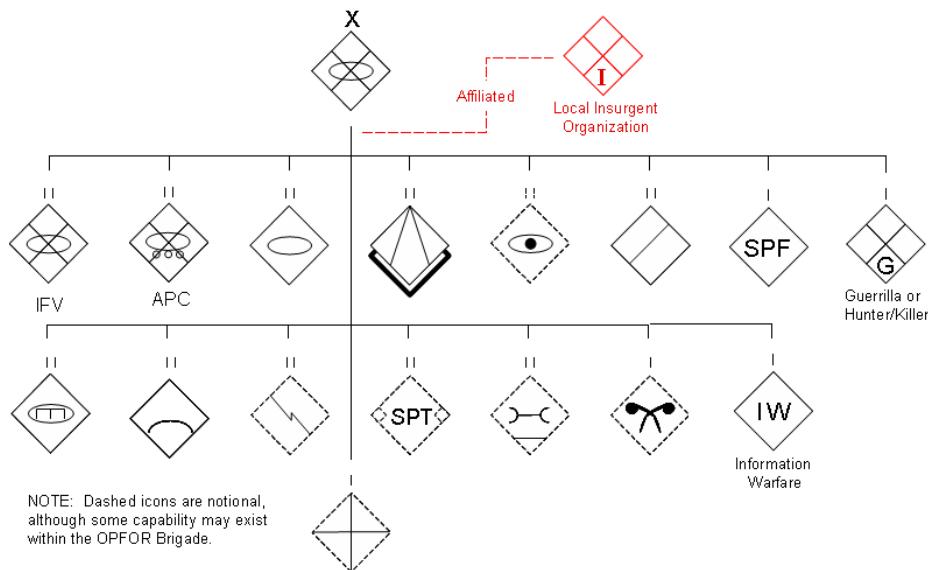
1. Overview: The Joint Multinational Readiness Center (JMRC) is located at Hohenfels, Germany, approximate two hours northeast of Munich, and is subordinate to the Joint Multinational Training Center (JMTC). It consists largely of wooded terrain and rolling hills and trains a multitude of military units to include IBCTs, SBCT, HBCTs, SOF, and multinational units. It also specializes in Joint training exercises.

a. Mission: To provide tough, realistic, and challenging joint and combined arms training; focuses on improving readiness by developing Soldiers, their leaders and units in support of the Global War on Terrorism, and for success on current and future battlefields; provides simulated combat training exercises for task organized Brigade Combat Teams (BCT)/Heavy BCT, Stryker BCT, Airborne BCT, and functional brigades across the full spectrum of operations; plans coordinates, and executes Combat Training Center (CTC) and Exportable Training Capability (ETC) rotations/Mission Rehearsal Exercises to prepare units for full spectrum operations: Major Combat Operations (MCO), Counter-Insurgency (COIN) Operations, and Security Operations Stability Operations (SOSO). (CTC MP FY10-15 POM)

b. OPFOR: The OPFOR mission is performed by the 1-4th Infantry Battalion consisting of a headquarters company that includes an anti-armor platoon and a scout platoon; three light infantry companies and one tank company which uses TDA OSV MBTs at JMRC but trains on M1s for real world deployments. The OPFOR normally supports up to 8 rotations a year and forms the center of the exportable training capability. Rotational days are generally 24 hours a day, regardless of the rotational scenario and run 18-21 days a month to include a preparation, execution, and recovery phases. When not in rotation, training days are IAW training requirements to maintain the Battalion's METL. In addition, the battalion provides one maneuver company augmented with a battalion TAC on continual bases in support of OEF.

2. OPFOR Organization: Due to the training requirement to challenge and be capable of "sparing" with various BLUFOR units, the 1-4th must but be capable of replicating a mechanized Brigade Tactical Group (BTG).

a. The JMRC OPFOR BTG must consists of one mechanized, armored personnel carrier (APC), tank, reconnaissance, and artillery battalion each; and two anti-armor battalions. (note: the mechanized IFV or APC battalion can be replaced with a motorized (truck) battalion but would require additional OPFOR infantry to make up lost fire-power).



b. 1-4th is not authorized engineer, intelligence, air defense, or artillery units which must be augmented to various degrees pending rotational training requirements. Army Reserve (or ARNG when available) units continue to support JMRC by replicating host nation forces and augmenting the OPFOR.

3. While most of the below listed units, as well as supporting units, do not necessarily have to be replicated with all live equipment at MCTCs, a mission essential equipment list (MEEL) is provided to identify required systems (generally 70% strength):

a. Mechanized Battalion (**IFV**) MEEL:

Equipment	Req	Auth	OH	Comments
BMPs	40	28	0	70% (still use M113; 89); req 28
2 ACV, BMP-1KSh (C2)	2	2	0	100%; req 2
ATGL LR RPG-29	3	2	0	66%; req 2
ATGL PZF 3-T600	30	15	0	50%; use current RPG7 w/VISMOD
120mm Com/Gun 2S9-1	6	4	4	70%; req 4 (82mm Mort used)
.50 AMR M82A1	3	2	2	70%; req 2

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Equipment	Req	Auth	OH	Comments
SA 18	6	4	0	70%; req 4
ATDL (RPG-27)	68	34	34	50%; AT-4 available
ATDL Armbrust	30	15	0	70%; req 15

b. **APC** Battalion MEEL:

Equipment	Req	Auth	OH	Comments
APC, BTR-80A per BN	46	32	0	70%; req 32
ACV, BTR-80, Kushetka, C2	2	2	0	100%; req 2
ATGM Lchr HOT-3	7	5	0	70%; replaces AT-5 BRDM, req 5
ATGM Lchr Manport AT-13	9	5	0	50%; can use TOW to simulate, need MILES; req 5
ATGM lchr Manport SR Eryx	5	3	0	50%; req 3
ATGL LR RPG-29	18	9	0	50%; req 9
ATGL PZF 3-T600	31	16	0	50%; use current RPG7 w/VISMOD
120mm Combo 2S23	6	4	4	70% strength; 82mm Mort; req 4
.50 AMR M82A1	6	3	0	50% strength; req 3
SA 18	6	4	4	70% strength; 20 Stingers available; req 4
ATDL (RPG-27)	94	47	?	50%; use VISMOD AT-4
ATDL Armbrust	36	17	0	50%; req 17

c. **Tank** Battalion MEEL:

Equipment	Req	Auth	OH	Comments
MBT, T80 per BN	31	31	31	100% (OSV MBTs)
IFV, BMP-2M	6	4	0	70%
ACV, BMP-1KSh, C2	2	2	0	100%; req 2
Mine clearing Plow, KMT-6	9	7	0	70%; VISMOD; req 7
ATGL PZF 3-T600	2	1	0	50%; req 1
SA 18	6	4	0	70%; need MILES, req 4
ATDL (RPG-27)	34	17	0	50%; VISMOD AT-4, need MILES

d. **Reconnaissance** Battalion MEEL:

Equipment	Req	Auth	OH	Comments
ACV, BMP-1KSh, C2	2	1		50%; req 1
ACV, BMP-1KSh, C2 Jammer, Interc/DF	3	2	0	66%; will require soldiers/contractors, req 2
ACV, BMP-1KSh, Radar Intercept/DF	3	1	0	33%; will require soldiers/contractors, req 1

Equipment	Req	Auth	OH	Comments
ACV, BTR-80, Kushetka, C2	9	7	0	70%; using HMMWV/BRDM, req 7
BRDM-2M w/ATGM-HOT3	12	8	0	70%; replaces AT5 BRDM; req 8
IFV, BMP-2M	11	8	4	70%; req 4
ATDL, RPG-27	134	67	0	50%; can use VISMOD AT-4; req ?
MANPAD, SA-18	6	4	0	70%; req 4
Tactical Utility Vehicle, UAZ-469	60	12	12	20%; can use HMMWV/BRDM; have VISMODs for BRDM replication
Laser Target Designator	45	23	?	50%; req ?
Radar, GSR, Manportable, Fara-1	36	6	0	16%; req 6
Thermal Viewer, Handheld, Sophie	52	26		50%; req ?
UAV, Fox-AT2 (laser desig & FLIR)	4	3	0	70%, req 3 (JNTC - Freq issue)

e. Other critical systems MEEL from the **Anti-Tank** Battalion, **Artillery** Battalion, **Engineer** Battalion, and **Air Defense** Battalion:

Equipment	Req	Auth	OH	Comments
Bridge, AVLB	2/3	0	0	Not required; replicated in constructive sim
Ditching Machine, MDK-3	3	0	0	Not required; replicated in constructive sim
Minelayer, GMZ, UMZ, PMZ-4	9	5	0	50% strength; Combat engineer Co required
Route-Clear Veh, BAT-2	1	1	0	70% ; Combat engineer Co required
Mine clearing Roller, KMT-7	6	4	0	66%; VISMOD Requirements;
Ar. Eng. Tractor, IMR-2M	2	1	0	(ACE); Combat engineer Co required; req 1
Mine Breach Veh, UR-77	1	1	0	(VISMOD); req 1
SP AA Gun/Msl Syst, 2S6M	6	4	0	NGCATS with Dog Ear Radar; req 4
ACV, AD, Sborka w/dog ear	5	3	0	70%, VISMOD-instrumented, req 3
152-mm SP Howitzer, 2S19	18	6	6	12 constructive, 6 live/VISMOD; req 6 (VISMODs are in Motorpool)
Art Loc Rdr IL220	1	1	0	VISMOD; req 1
ATGM, AMX-10 HOT 3 or AT-9	24	8	0	50%; replaces AT-5 BRDM, req 8
125-mm AT Gun, 2A45M	24	8	12	33%; req 4 (4 TOW2 systems in the AT platoon (MTOE); 8 additional from TDA)
ATGL, Pnzfst 3-	42	21	0	50%; use current RPG7 w/VISMOD;

Equipment	Req	Auth	OH	Comments
T600				req 21
ATDL, RPG-27	130	65	0	50%; can use VISMOD At-4; req ?
ACV, BMP-1KSh, C2 (IW) (Computer Warfare Station)	12	3	0	VISMOD & replicated in constructive sim; req 3 VISMOD

f. Additional **IW/SPF/Guerilla** warfare required equipment (this is equipment that can not be duplicated or borrowed from other conventional OPFOR units due to uniqueness or the likelihood that they are already being used):

Equipment	Req	Auth	OH	Comments
7.62mm Sniper Rifle, SVD/Mosin	11	8	10	70%; US version OK (M14)
ATGL, Panzerfaust 3-T600	14	7	0	50%; req 7
GPS Jammer, Manportable	3	3	0	100%; req 2
Radar, GSR, Manport. Fara-1	3	1	0	33%; req 1
Laser Target Designator	15	7	?	50%; req ?
RPG 7V	34	17	17	50%;
RPG 22	36	18	0	50%; use US made LAW; req 18
ATDL RPG 27	28	14	0	50%; can use VISMOD At-4; req ?
ATGM Lcher, Manport-SR, Eryx	24	12	0	50%; req 12
.50 BMG Antimat. Rifle, M82A1	12	6	0	50%; req 6
AD/AT Sys (ADAAS) Starstreak	14	7		50%; req 7
Commo Radio DF & Intcp, Manport	3	2	0	?? 66%; req 2
Portable, SATCOM	3	1	0	33%; requires soldiers or contractors; req 1
MANPADS SA 14/18	38	7	40+	20%; req ? MILES warehouse has over 90 of these (I think)
60mm mortar	12	8	8	70%; req 8 (Companies have very Spartan mortar VISMODs)
IED Vest	13	9	9	70%; req ? 1-4 has made these.

4. **Total JMRC** OPFOR system requirements within a BTG at approximately 70% or higher strength per system:

Equipment	Req	Auth	OH	Comments
120mm Combo 2S9-1	6	4	0	70%; req 2
120mm Combo 2S23	6	4	0	70%; use 82mm mtr; req 4

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Equipment	Req	Auth	OH	Comments
125-mm AT, 2A45M	12	4	0	33%; req 4
Howitzer, 2S19	18	6	0	33%; req 6
Arty loc rdr IL220	1	12	0	50%; req 12
60mm mortar	13	9	12	82mm Mortars
7.62mm Sniper Rif	11	8	0	70%; req 8
2 ACV, BMP-1KSh	6	1	0	100%; req 1
ACV, AD, dog ear	5	3	0	70%; req 3
AA Gun/Msl, 2S6M	6	4	0	70%; NGCATS-rep ASET-IV; req4
APC, BTR-80A	57	41	0	70%; req 32 (incl 9 x C2)
ACV, BMP-1KSh, IW) (Computer)	12	3	0	25%; req 3
AD/AT Starstreak	3	2	0	70%; req 2
RPG 7V	34	17	17	50%; use current VISMOD
RPG 22	36	18	0	50%; use US made LAW; req 18
ATDL, RPG-27	488	243	?	50%; can use AT-4; req ?
ATDL, Armbrust	120	44	0	50%; req 44
ATGL LR RPG-29	24	11	0	50%; req 11
ATGL PZF 3-T600	119	59	33	50%; VISMOD RPG7; req 26
ATGM HOT3 (BRDM)	42	25	0	50%, replaces AT-5; req 25
ATGM Manport AT7/13	9	5	0	50%; can use TOW; req 5
ATGM Lcher, Eryx	17	9	0	50%; req 9
Bridge, AVLB	2	0	0	Constructively simulated
Ditch. Mach.MDK- 3	3	0	0	Constructively simulated
Radio DF/Atk BMP1	5	2	0	40%; req sldr/contr; req 32
Radar DF/Atk BMP1	3	1	0	33%; req sldr/contr req 1
Eng.Tractor IMR2M	2	1	0	50%; req sldr/contr req 1
GPS Jammer, Manp	3	3	0	100%; req 3
IED Vests	52	36	0	70%; req 36
IFV, BMP-2M	63	45	0	70%; 89 x M113; (incl 5x C2) req 40
Laser Designator	60	30	0	50%; req 30
MBT, T80	31	31	31	100%
Mine Breach, UR77	1	1	0	100%; (VISMOD) req 1
Mine Plow, KMT-6	9	7	0	70%; req 7
Mine Roller, KMT7	6	4	0	70%; req 4
Minelayer, GMZ,UMZ,PMZ-4	9	5	0	70%; Engineer CO Augmentation needed; req 5
MANPADS SA 14	12	8	0	66%; req 8
MANPADS SA 18	24	16	0	66% (20 Stingers); req 16
Portable, SATCOM	38	7	0	18%; req ?
Radar, GSR, Manp	39	7	0	18%; req 37

Equipment	Req	Auth	OH	Comments
Route-Clear BAT-2	1	1	0	100%; req 1
COB-Vs	150	150	72	100%; req ?
UAZ Tact Veh	60	18	18	30; use BRDM/HMMWV; Using MTOE and TDA
UAV, Fox-AT2 (lsr desig & FLIR)	4	3	0	70%, req 3 (JNTC - Freq issue)
Thermal View, handheld, Sophie	52	26	0	50%; req 26
BM-21 (Optional)		1	6?	

5. JMRC OPFOR Personnel Manning:

a. The following spreadsheets show the minimum required OPFOR manning based on the previously presented OPFOR Battalions within the BTG that JMRC must be capable of replicating at the high end of MCO.

b. While the JMRC can replicate the majority of required OPFOR force with organic OPFOR Infantry Battalion (currently authorized 648 personnel), they will need to be augmented with one three Infantry Companies, an engineer company, and a field artillery battery per full-spectrum rotation when training a HEAVY BCT (a IBCT training unit will require only 1 Infantry Company as augmentation).

Mech Bn 1					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
BMP	36	3 + 3	108	108	
BMP C2	2	3	6		
2S9 120mm	4	3	12		
Total			126	108	234

APC Bn					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
BTR-80A	32	2+4	64	128	
BTR-80 C2	2	2	4		
ATGM Hot-3	5	3	15		
2S9 120mm	4	3	12		
Total			95	128	223

Tank Bn					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
MBT T-80	31	3	93		

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BMP	5	3+3	15	15	
BMP C2	2	3	6		
Total			114	15	129

Recon Bn					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
BMP C2	1	3	3		
BTR-80	7	2+4	14	28	
ATGM Hot-3	8	3	24		
BMP	10	3+3	30	30	
UAZ 469	12	2	24		
GSR Radar	6	2	12		
UAV	3	3	9		
Total			116	58	174

AT Bn #1					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
2A45M ATG	8	3	24		
ATGM Hot-3	12	3	36		
BMP C2	3	3	9		
Total			69		69

AT Bn #2					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
2A45M ATG	8	3	24		
ATGM Hot-3	12	3	36		
BMP C2	3	3	9		
Total			69		69

IW/SPF Co 113

Total Combat Force Requirement 1011

Proposed Augmentee Requirement = 1 X En Co, 1 Inf Co, and 1 X FA Btry

6. The current overarching assessment of JMRC OPFOR capabilities is provided below in which Red indicates the a severe degradation of capabilities that will have negative impact on training and training conditions cannot be properly replicated; Amber indicates a limited condition-setting capability that accepts some risk or requires work-arounds; and Green provides that a "good-enough" solution exists, although modifications may have to be made to stay relevant:

**OE Master Plan
15 September 2009
Version 2.0**

OPFOR Weapons	Anti-Tank	A	Received 400 new TASC Shoulder Launched Missiles (SLM) as RPG; need others too an appropriate MILES codes
	Air Defense	R	One unfunded ASET IV; need replacement system for 2S6, ZSU, and MANPADS (SA 7/14/16/18)
	Artillery	G	FORSCOM agreed for augmentation of one Battery
	Rifles	A	US Sniper rifles; has two variations of AK Rifles (real imported but no ammo and 5.56mm version but malfunctions).
OPFOR TADSS	MILES	R	Wrong or non-existing OPFOR weapon Ph/Pk codes (mostly US codes) and inadequate performance for urban effects & assessments
	IEDs	G	JIEDDO supported
	IED Like	A	Currently JIEDDO Supported
OPFOR C4ISR	IW/EW	R	Has MI company with appropriate MOS but no IW/EW equipment
	C2	A	No OPFOR entity tracking system (like BLUFOR tracker), has SATCOM
	ISR	A	Has various UASs, US Army thermal & similar devices
OPFOR Vehicles	OSV/OSV-MBT	R	Has 1 tank BN but uses M113 for 2 BMP BNs (get OSV BN(–) from NTC)
	OSWV	R	None to challenge Stryker BCTs or replicate world-proliferation to gain advantages in speed, urban mobility, & noise reduction. No light utility vehicles (BLUFOR, OPFOR, OC, visitors use HMMWVs)
	Technical Veh's	A	Limited local production, no Army program (COB-Vs OK)
	VISMODs	R	Only has OSV Tanks, still Old/manual M113 fleet to replicate two BMP BNs – does not provide TIER II level threat and fails to challenge HBCT to same condition/standard as as NTC/JRTC; HMMWV fleet limited to painting them black, no shark-nose; Engineer VISMODs required
	Aircraft	A	UH 72 being fielded; no FLIR to provide attack version beyond 1km stand-off engagement to properly train BCT air defenses

5-2 (4) BCTP OPFOR Organization and Requirements

1. Overview: The Battle Command Training Program (BCTP) is located at Fort Leavenworth, KS, but conducts its training at home-stations. BCTP provides leader and staff oriented command training exercises through its primarily constructive training environment. BCTP consists of several Operations Groups of which one is the COE/OPFOR Operations Group (OPSGP COE).
2. Mission: Conduct or support combined arms training that replicates JIIM Operations in a full spectrum Contemporary Operational Environment, at worldwide locations, in accordance with the ARFORGEN Model, for BCTs, Support Brigades, Divisions, Corps, ASCCs, JFLCCs and JTFs in order to create training experiences that enable the Army's Senior Battle Commanders to develop current, relevant, campaign-quality, joint and expeditionary Battle Command instincts and skills (CTC MP FY10-15 POM).
3. OPFOR: OPSGRP-COE (led by a COL/06) ensures BCTP exercise environments effectively replicate the challenging composite of conditions, circumstances and influences existing in full-spectrum JIIM operations during Division, Corps, ASCC, JFLCC and JTF exercises.
 - a. OPSGRP COE establishes and enhances the political, military, economic, social, infrastructure and information environment, resulting in the creation of a complex asymmetric battlefield. It includes developing, coordinating and executing required media support, legal issues and documents, and scripting of religious issues. It is responsible for the overall exercise design and control.
 - b. OPSGRP-COE is fully capable of replicating OPFOR units as prescribed in Chapter 4 as well as other configurations described in the FM 7-100 series manuals. OPFOR limitations within the constructive training domain are directly addressed to and by the National Simulation Center (NSC) also located at Fort Leavenworth.
 - c. OPSGRP-COE consists of four divisions: (1) World Class PMESII, (2) World Class OPFOR, (3) Plans and Operations, and a newly established Contracting Division - each led by a LTC/05.

This OPS GRP is supplemented with a limited number of cultural and language role players.

d. The PMESII Division supports execution of BLUFOR information operations plans and coordinates with the WCOPFOR to ensure actions are nested with COE asymmetric warfare activities.

(1) The methodology for the members of the PMESII is to replicate and control those operations. These supporting activities can include:

- The creation, replication, or modification of country studies; development of story lines and MSEL events;
- Developing material and events in support of Information Operations (IO);
- Developing material and events to replicate Interagency (IA) coordination, including interaction with other US Government agencies, foreign government agencies, international organizations, and humanitarian relief organizations;
- Developing material and events to replicate civilians on the battlefield, contractors on the battlefield; establishment of an adversarial WEB site for the posting of COE information/media campaign activities and media activities.

(2) It uses and manages Subject Matter Experts (SME) to represent selected organizations to bring a non-linear human aspect to the exercise environment.

(3) During Division and Corps exercises it employs a team from the US Army Strategic Command and it can, with the approval of the Exercise Director, employ elements of the 1st Information Operations Command (Land) Vulnerability Assessment Team.

(4) The PMESII Division recommends, coordinates, synchronizes, and monitors execution of Political, Economic, Social, Infrastructure and Information event scenarios not simulated by CBS, BBS, JNEM, or JCATS.

(5) The PMESII Division recommends effects (benefits and penalties) based on training unit planning and actions/reaction to MSEL/storyline events during an exercise.

4. Constructive Simulation: BCTP conducts constructive simulations using a combination of simulations called Multi-Resolution Federation.

a. It uses CBS (Corps Battle Simulation), JMSEL (Joint Master Sequence Events List) and JNEM (Joint Non-Kinetic Effects Model) to replicate the Contemporary Operational Environment. CBS is the current constructive simulation. However, BCTP is in the process of supporting the operational readiness evaluation of WARSIM which is the follow-on replacement for CBS. WARSIM is anticipated to be the new constructive simulation for BCTP in FY 10. JNEM is the simulation that when combined with CBS gives the simulation the ability to change the groups and their satisfaction level, so it adds to stability operations.

b. Simulation workarounds include, but are not limited to, psychological operations (PSYOP) effects, CI/HUMINT, POW Operations and Civilians on the battlefield.

5. The current overarching assessment of BCTP OPFOR/simulation capabilities is provided below in which Red indicates the a severe degradation of capabilities that will have negative impact on training and training conditions cannot be properly replicated; Amber indicates a limited condition-setting capability that accepts some risk or requires work-arounds; and Green provides that a "good-enough" solution exists, although modifications may have to be made to stay relevant:

OPFOR Weapons	Anti-Tank	G	Constructive environment scalable
	Air Defense	G	Constructive environment scalable
	Artillery	G	Constructive environment scalable
	Rifles	G	Constructive environment scalable
OPFOR TADSS	MILES		N/A
	IEDs	G	Constructive environment scalable
	IED Like	G	Constructive environment scalable
OPFOR C4ISR	IW/EW	A	Lacking OPFOR Information Attack and Computer Warfare
	C2	G	Constructive environment scalable
	ISR	G	Constructive environment scalable
OPFOR Vehicles	OSV/OSV-MBT	G	Constructive environment scalable
	OSWV	G	Constructive environment scalable
	Technical Veh's	G	Constructive environment scalable
	VISMODs	G	Constructive environment scalable
	Aircraft	G	Constructive environment scalable

5-2 (5) ETC COE/OPFOR Summary

1. Exportable Training Capability (ETC) requirements, in terms of the COE and OPFOR, will compliment and/or duplicate most of those as of homestation training requirements since homestation resources must also set ETC training conditions. Details of the homestation training requirements are outlined in Chapter 7 while ETC requirements and training processes are outlined in the ETC O&O. The following is a summary of the ETC O&O including role-player requirements, military equipment, and O/C provisions.

2. Role-Players:

a. The ETC will be resourced with 100 Contractor Man-year Equivalents (CME) to support COB and CRP requirements which is a separate requirement from that allocated to brigades for homestation training.

b. Some of these CMEs may be stationed and travel with the ETC to ensure continuity for scenarios and minimize contractor train-up time. Some may be contracted at the exportable training site to reduce travel cost.

c. Foreign Language Speakers (FLS) may not be necessary for ETC events given the unit's training requirements in the early reset/train period of ARFORGEN. FLS requirements may increase if the unit is preparing for a deployment.

d. The following are key exercise design considerations for COB, CRP, and FLS integration:

- The planning guidance for the number of required urban sites (not necessarily complex) should be based on roughly two towns per Combat Maneuver Battalion which typically equals two battalions per BCT, but could be as many as four when using the Artillery BN and the RSS, (implying 4 to 8 active towns). However, this may vary based on type of unit, training objectives, type of training etc.

- Core Professional CRPs are those that actually manage the CRP/COB program and are included in the OPFOR Cadre structure (two GS-9 employees); key CRP positions should be filled with the 100 (work-years) habitual contractors per ETC.

- Augmentation CRPs are those role players beyond the cadre staff and the routine contractors. The number of augmenters required per rotation, if any, depends on the size of units to be trained at a given time, training objectives, scenario design, and resources available.
- Military role players will also become more prevalent as we re-enter full-spectrum training as only Soldiers can carry actual weapons. This implies that Soldiers need to replicate not only the traditional kinetic engagements, but simultaneously to varying degrees the insurgency fight, the foreign police and armed forces, and potential allied forces.

3. OPFOR: ETC OPFOR capabilities will rely heavily on home-station resources as outlined in Chapter 6 of the OEMP. An ETC OPFOR will primarily be composed of home-station BLUEFOR designated battalion units that is charged to replicate a task-organized OPFOR battalion of a brigade tactical group (BTG). These units must have the ability to support full-spectrum training scenarios across the spectrum of conflict. While the OPFOR and their equipment should portray a variety of potential threat capabilities from conventional and unconventional forces, and adapt their tactics, techniques, and procedures (TT&P) to counter BLUFOR TTPs and operations, the Senior Trainer/Unit Commander will have to make the final decision as to how much of his resources he will dedicate on manning and equipping his OPFOR.

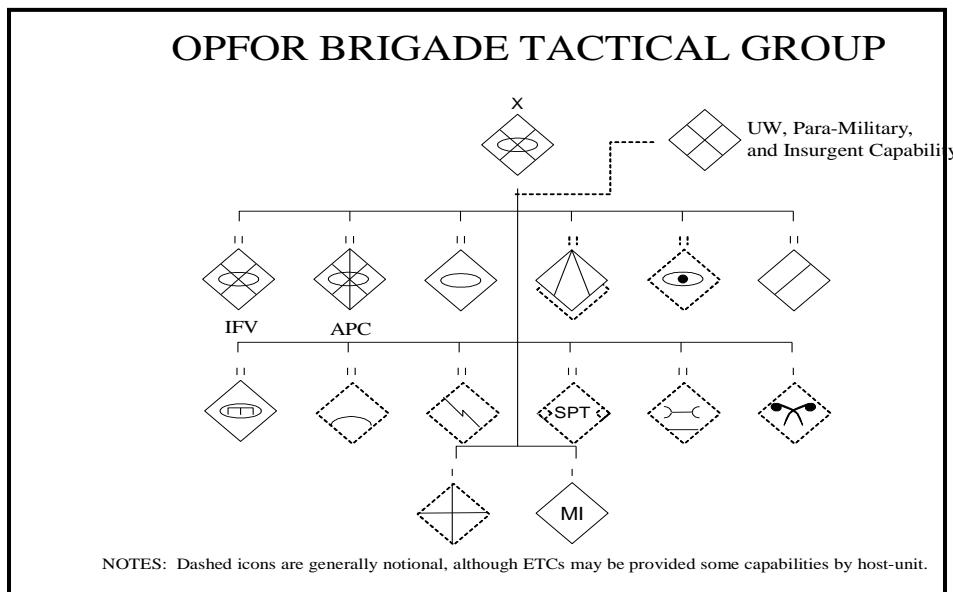
a. Conventional: OPFOR conventional units will typically represent elements of a task organized Brigade Tactical Group (BTG) (see below figure) that are specifically task organized to help meet training objectives. This implies that at homestation, the OPFOR should only need to be of a battalion size or equivalent unit.

- On the high spectrum end, typically a balanced armor/mech battalion of two tank and two mechanized companies would need to be replicated to train an armor or mechanized BLUFOR battalion of the BCT.

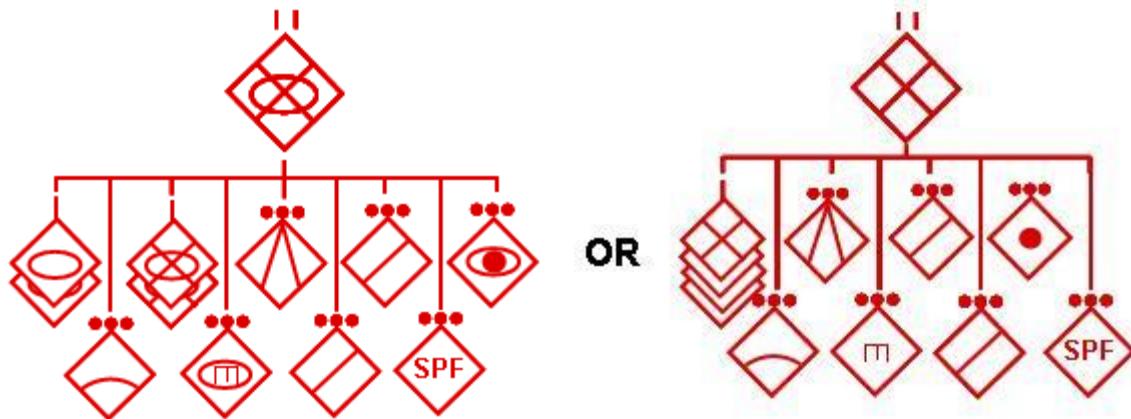
- However, any elements of the below presented OPFOR BTG can also be replicated to address specific OPFOR capabilities required to meet BLUFOR training objectives.

- The tasked OPFOR unit and Soldiers will normally use organic equipment and vehicles, and must develop unique

signatures that differentiate between BLUFOR and OPFOR players under day and limited visibility conditions.



b. Provided below are two generic conventional OPFOR battalions in consideration for homestation training exercises. While other variations (battalions) can be used from the BTG to meet a commanders training objectives, the below diagrams provide the baseline justification for OPFOR resources:



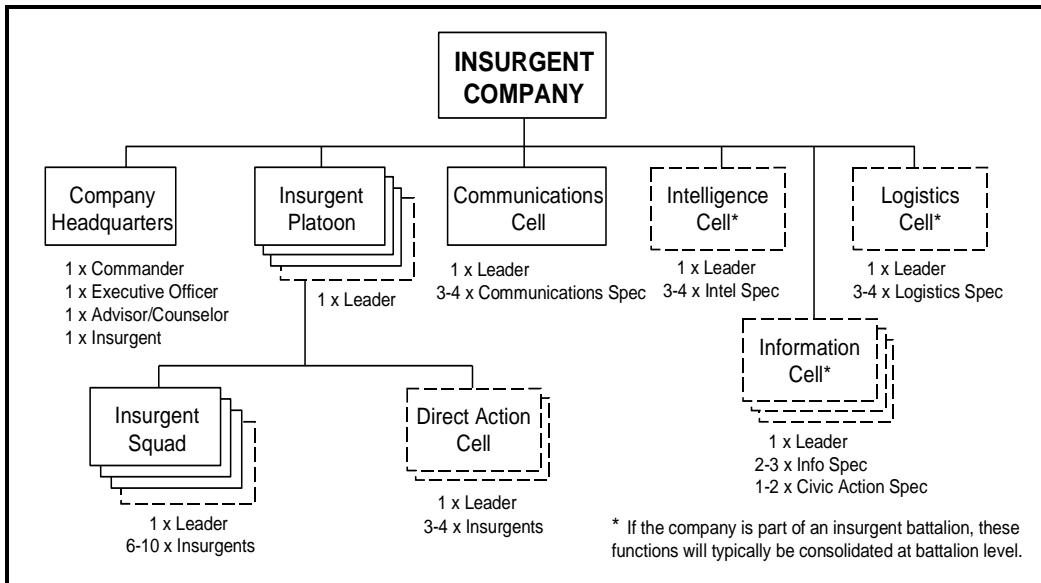
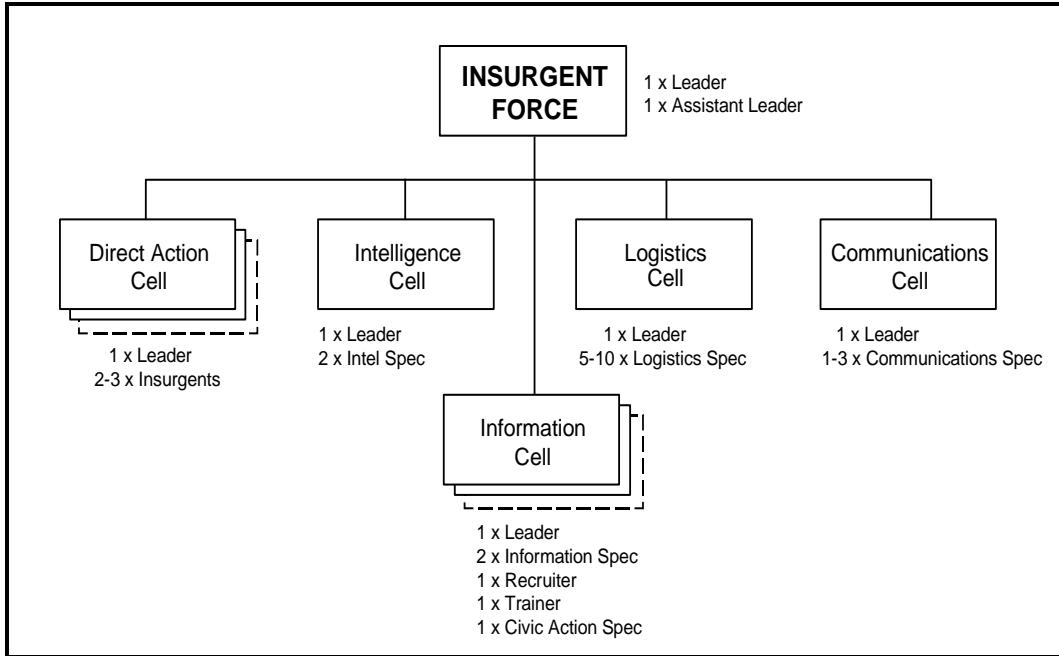
c. Conventional OPFOR Tier System: Because homestation training may opt to replicate various types of BTG units and capabilities, the below tier-tables are provided as general guidance to help dictate appropriate OPFOR capabilities/competencies; for more information, see the Worldwide Equipment Guide (WEG) .

- **Tier 1:** New or upgraded systems currently fielded in military forces.
- **Tier 2:** Modern competitive systems fielded in significant numbers for the last 10 to 20 years, with limitations or vulnerabilities that can be expected to be diminished through available upgrades.
- **Tier 3:** Systems date back generally 30 to 40 years. They feature vulnerabilities in all three areas of mobility, survivability and lethality.
- **Tier 4:** Systems reflect 40 to 50 year-old systems, some of which have been upgraded numerous times.

c. Unconventional OPFOR: Unconventional forces have an array of compositions, purposes and adopted equipment; see FM 7-100.3 for details. Such forces or elements are often described as insurgent forces, terrorists, internal security forces, paramilitary units, and drug and crime organizations. Tasks and purposes for each may vary and employed tactics may be more convoluted than definable at times. There is no Tier system for unconventional OPFOR elements (insurgents etc). Specific weapons and weapon systems for unconventional forces should be selected based on desired and/or required effects that best support BLUFOR training objectives and are within the realm of the exercise scenario. Additionally, replicated unconventional equipment, such as IED or RPGs should maintain relevance to real size and weight considerations. Unconventional forces include:

- **Insurgent forces** (see Chapter 3, FM 7-100.3)
- **Paramilitary Organizations** (see Chapter 2, FM 7-100.3)
- **Terrorism (terrorists)** (see Chapter 4, FM 7-100.3)
- **Internal Security Forces** (see Chapter 5, FM 7-100.3)
- **Drug and Criminal Organizations** (see Chapter 6, FM 7-100.3)

An example of a generic insurgency force cell structure and/or insurgent company is depicted below. Either elements, or another organization as described in FM 7-100.3, may be used to depict the unconventional force needed to supplement an OPFOR BTG to provide BLUFOR a full spectrum based training event.



4. Visually modifying equipment (VISMOD): While difficult at times, VISMOD emphasis is based on years of experience at home-station and MCTCs where both BLUFOR and OPFOR actions and counteractions were incorrectly employed (or the lack off) due to false equipment/weapon identifications...not due to improper identification, but due to the use of the same equipment by both sides. Such experiences degrade the realism of the exercise, promote accusations of cheating, break morale, and undermine the

cause-and-effect nature desired from the training experience that adds relevance to AARs.

OPFOR Equipment:

a. There is no requirement within the training community to use actual threat systems to replicate OPFOR capabilities. Whenever an ETC or home-station has the resources to provide an actual threat system or weapon to supplement the realism of the OPFOR, it is preferred, but an OPFOR capability-based system vice an actual threat system is the accepted norm. That implies using OPFOR surrogate systems (look-like threat systems) or even US weapons and systems that are visually modified. However, the overarching goal of the OPFOR equipment is to perform at a composite level of potential threat systems while also providing some degree of variants in the visual appearance.

b. Visual Modification (VISMOD): The OPFOR/COE uniforms, equipment, and vehicles should be distinctively different from the training unit's uniforms, equipment, and vehicles. Typically, most units designated as ETC OPFOR/COE will use their organic U.S. Army provided equipment as part of their OPFOR/COE mission. Such equipment, however, should be visually modified whenever possible, for both day and limited visibility operations.

(1) Homestation training requirements to set appropriate conditions for VISMODs are addressed in Chapter 7. While not fully funded for complete implementation, the the ETC OPFOR/COE Cadre can advise the designated OPFOR/COE unit on specific VISMOD efforts.

(2) The designated OPFOR/COE unit should coordinate VISMOD requirements with their respective Training Support Center to ensure the distinctive items are ready for the ETC event.

(3) While difficult at times, VISMOD emphasis is based on years of experience at home-station and MCTCs where both BLUFOR and OPFOR actions and counteractions were incorrectly employed (or the lack off) due to false equipment/weapon identifications...not due to improper identification, but due to the use of the same equipment by both sides. Such experiences degrade the realism of the exercise,

promote accusations of cheating, break morale, and undermine the cause-and-effect nature desired from the training experience that adds relevance to AARs.

c. Special Requirements: Scenario developers and the OPFOR cadre must identify special OPFOR equipment and capability requirements early in the planning stages. While most OPFOR equipment could be supplemented for replication purposes during ETC exercises, not all such solutions and work-around efforts are feasible for a realistic cause-and-effect training exercise. Examples of such may include providing actual CTC IR and laser emulating MANPADS vice using mere MILES systems for exercises with aviation emphasis, augmenting the OPFOR with ASET IV air defense replication systems, or even supplementing the ETC OPFOR with limited CTC OPFOR Surrogate tanks and vehicles (OSTVs and OSVs) to more realistically challenge BLUFOR anti-tank employment and engagements.

5. OPFOR Cadre:

a. The OPFOR cadre is part of the ETC Exercise Control (EXCON) group, but is also the responsible agent that facilitates the training for the designated units tasked to perform the OPFOR mission as part of an ETC. The OPFOR Cadre be fully certified as Observer/Controllers (O/Cs) in accordance with the host CTC O/C Academy standards, as well as function as an OPFOR unit Trainers, hence, functionally, they are OPFOR Trainers and Controllers (OT/Cs). The OPFOR Cadre is also the critical link in assisting the Training, Analysis and Feedback Facility (TAFF) to maintain situational awareness of the OPFOR, role players, communication with controllers, and produce material that support After Action Reports.

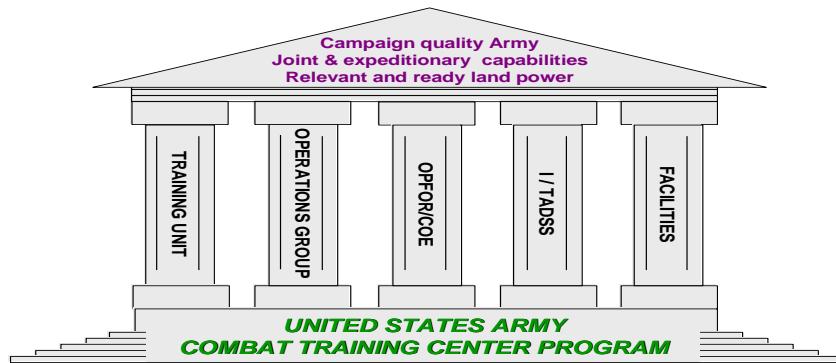
b. Cadre Team: The 23-member team will be led by a branch qualified field-grade combat arms officer with extensive CTC experience. His team consists of 6 members that are charged to lead the OPFOR Academy instruction, 12 members that provide OPFOR unit OT/C coverage, 1 intelligence NCO, and 2 COB coordinators. The team is also augmented with up to 100 contracted role players and any other augmentation as deemed appropriate by the training unit, EXCON, and the O/C team leader.

c. COB Controllers: COE exercises require interaction between BLUFOR and non-combatants. The non-combatant role players or COBs create increased training opportunities in civil

affairs (CA) operations, the handling of news media, leadership challenges of displaced persons, (DPs), rules of engagement (ROE), refugees and local inhabitants, as well as effects of non-governmental organizations/private voluntary organizations (NGO/PVOs). COB Controllers will be capable of taking COB scripts/instructions and teach/coach/mentor role-players how to apply their roles within the confines of the exercise. COB Controllers will also ensure that in coordination with the exercise planners, COBs are provided minimum role-player instructions.

5-3. CTC Resource (POM) Strategy & Requirements

1. Providing training units a viable "sparring partner" in a realistic contemporary operational environment is the foundation of the COE/OPFOR pillar that makes up one of five CTC program pillars:



2. As a critical pillar of the CTC program, the COE/OPFOR pillar must also be fully integrated into the Program Objective Memorandum (POM) to adequately compete for budget resources and not a mere afterthought. The lack of a proper COE/OPFOR modernization strategy that is inadequately integrated and/or resourced within the POM process will degrade the environmental conditions and OPFOR capabilities to realistically reflect real-world challenges - which will ultimately result in training units "sparring" with an OPFOR that is still fighting the last war.

3. The CTC COE/OPFOR POM strategy must encompass three critical aspects:

a. OPFOR: This includes aspects of OPFOR weapons and equipment, vehicles, training aids, and command/intelligence related capabilities.

b. Environment: This includes resourcing requirements for the training infrastructure, economy, social aspects, and information variables.

c. Training and Accreditation: This is primarily related to the ability for TRADOC G2 to provide direct OE and OPFOR training support functions to the training community.

5-3 (1) Current COE/OPFOR Disposition

Baseline COE and OPFOR replication requirements are outline in Section III of Chapter 2, Combat Training Center Master Plan (CTC MP) in accordance with the FM 7-100 series manuals and the Operational Environment Master Plan (OEMP). While significant shortcomings in the training environment are also recognized in Section III of Chapter 2, it is critical to maintain and fund current COE/OPFOR programs until new/updated programs and initiatives can be implemented. The following is a CTC wide scope within the (1) training Environment and (2) the OPFOR of current capabilities and shortfalls.

1. Training Operational Environment: These requirements continue to be critical as they set the conditions for both BLUEFOR and OPFOR non-kinetic effects and add realism to action, reaction, and counter-actions required to draw true and reasonable lessons learned.

Current OE Replication Capabilities through FY 09				
	Heading	Items	Current Status	Shortcoming
Infra-structure	Structures	1. Permanent multistory bldg 2. Permanent single story bldg 3. Mobile buildings	CTCs have 9-23 various size towns with some rudiment and some permanent buildings. Each CTC has one main Urban site.	Majority of the towns meet the minimum conditions-setting requirements for full spectrum training. Improvements to existing towns continue across the CTC program, but these are less critical.
	COBVs	1. Sedans 2. Minivans 3. SUVs 4. Buses 5. One-ton Trucks 6. Panel vans/trucks	NTC and JRTC have enough COB-Vs independently procured as training aids. JMRC still needs additional vehicles. All have heavy sustainment costs.	A COB-V program is needed to ensure adequate numbers & types of vehicles are procured at best price. A collective program should also reduce sustainment costs.
	Physical Terrain	1. Tunnels & Caves 2. Road networks	JMRC and JRTC have tunnels; NTC no longer does due to safety	Additional tunnels, especially caves are needed. All

Current OE Replication Capabilities through FY 09				
Heading	Items	Current Status	Shortcoming	
		<p>concerns, All have some form of caves. Roads are mostly unimproved and have gravel; JMRC and JRTC have enough perimeter road networks to train convoy operations on such terrain, NTC has practically none except within two towns and enroute to 4-cornes (Median Wasl) which is considered not enough.</p>	CTCs need hardball improved roads for training, including full IED.	
	Utili-ties	<p>1. Electric 2. Water</p>	<p>Primarily, the main MOUT site has central electric with some running water, most towns use generators, and portable water sources; some have basically none.</p>	Impact of improper electric and running water not only impacts routine actions of COBs, OPFOR, and BLUFOR, but also drives logical secondary causes and effect which impact lessons learned.
Economy	Agri-culture	<p>1. Farming land & equipment 2. Ranching & animals</p>	<p>Farming and ranching is limited to visual effects when present at all, with minimum impact on operations. Animals are scarce with essentially no impact.</p>	<p>Farming and ranching is critical in war-torn/sanctioned countries as towns become more self-reliant. A realistic OE must represent that and impact on operations.</p>
	Manufacturing	<p>1. Production development 2. Product Distribution 3. Import/export</p>	<p>There are no production replication capabilities; very little visual effects of actual manufacturing; NTC does have one</p>	<p>Larger urban sites have some manufacturing capabilities which attract people for work. This is critical for cause and effect and impacts lessons</p>

Current OE Replication Capabilities through FY 09				
Heading	Items	Current Status	Shortcoming	
		factory in Medina Wasl.	learned	
	Banking & Finance	1. Banks & security 2. Bank notes (money)	All training centers use locally produced currency; JMRC is limited in replication of this due to local laws. CERP and other process are trained.	Adequacy of banking and financial impact are still inadequate as the currency has no common value to base goods and services on; hence, role-players treat it as scripts lacking reality and normalcy.
Information	Tele-phone/ WEB	1. IC3NS 2. Land-line 3. Intranet	Most towns have at least one land-line telephone. Internet is basically still non-existent. Independent closed loop Cellular service is now available at JRTC and NTC; JMRC was denied frequency requests by host nation.	Lack of adequate land-lines, cordless phones, and intranet/internet limits the communication flow and OPFOR C2 which limits realistic training for BLUFOR IO and ISR.
	Commer-cial	1. Radio 2. Television	Radio is present at JRTC only and NTC; JMRC replicates local radio mostly using town PA systems. TVs replication is limited to BLUFOR.	Each MCTC must have a capability to replicate at least one radio and television station with local broadcast to impact the "information" variable.
	News-paper	1. Per town (single page) 2. Small press for Capital	Local newspapers are being replicated at each of the CTCs with adequate success, but mostly produced in garrison.	Garrison production of newspapers hampers the natural process and limits the OPFOR & BLUFOR potential influence.
			Each of the CTCs is authorized (non-MRX) 208	While more <u>is</u> better, minimum established

Current OE Replication Capabilities through FY 09			
Heading	Items	Current Status	Shortcoming
Social	Language / Culture	1. Role Players 2. Cultural Experts 3. Linguists 4. HTT	foreign language speakers and 22 cultural role players (significantly more for MRXs), in addition to generic role players (only NTC is not authorized GRPs). Only 100 work years per CTC is funded. HTTs are currently being integrated.
	Social-Dress	1. SW Asian 2. European 3. Eastern	NTC and JRTC has primarily SW Asian attire; JMRC also has special attire to support Kosovo (KFOR) rotations. JMRC uses a warehouse of procured items, JRTC enjoys a contractor facility that produces these items.
	Religious	1. Props 2. Building VISMOD 3. SMEs	Religious aspects for Muslim religions are well replicated; aspect of Christian religions can also be replicated with minor adjustments.

2. OPFOR: Requirements for both conventional and unconventional OPFOR capabilities have shared similarities and will be used by entities that replicate both - there are not specific requirements for just conventional or unconventional OPFOR.

Current OPFOR (Conventional and Unconventional) Replication Capabilities through FY 09				
Heading	Items	Current Status	Shortcoming	
Weapons TADSS	ATGM	1. ATGL LR RPG-29 2. ATDL, Armbrust 3. ATGM, Eryx 4. ATDL, RPG 22 5. AD/AT Starstreak 6. ATGM HOT3 (BRDM) 7. 125-mm AT, 2A45M 8. ATDL, RPG- 27 (AT-4)	CTC shoulder fired anti-tank missiles/grenades is limited to a RPG-7V VISMOD which uses a AT-4 Ph/Pk kill code. The system does have an ability to carry up to 10 different codes.	Worldwide proliferation of these systems provides threats variable killing capabilities with each having its own advantage and disadvantage. CTC must be capable of replicating each and every system to realistically challenge BLUFOR for the COE.
	Air Defense Air Defense Cont'd	1. MANPADS SA 18 2. MANPADS SA 14 3. AA Gun/Msl, 2S6M 4. SA8 (EAB) x6 (Green Flag) 5. SA9 (EAB) x6 (Green Flag)	CTCs use the Stinger system to replicate MANPADS which has no effect other than being MILES equipped. The ASET IV was retired with only one (gap filling) system remaining available to each CTC (rental)	CTC must have a MANPAD and larger surface to air missile and gun replication to realistically challenge aircraft early warning systems via electromagnetic, IR, and laser stimulants while also providing pilots an AAR capability for both Army and Air Force.
	Artillery	1. 120mm Combo-Gun, 2S9-1 2. 120mm Combo-Gun, 2S23 3. Howitzer, 2S19 4. 60mm mortar x23 1. 120mm Combo-Gun, 2S9-1 2. 120mm Combo-Gun, 2S23 3. Howitzer, 2S19 4. 60mm mortar	Artillery is primarily replicated in the simulated/virtual domain where it is a viable contender for BLUE. No live assets are used.	A limited number (battery size) of live indirect weapons systems are needed to stimulate live ISR and targeting processes for both Army and Joint target identification and engagement training; especially for air-crews.

Current OPFOR (Conventional and Unconventional) Replication Capabilities through FY 09			
Heading	Items	Current Status	Shortcoming
Rifles	1. Sniper Rifle (7.62mm) 2. Anti-material Rifle (.50 Cal)	Currently the M21 sniper rifle is used with limited MILES capability. No anti-material rifle is available, but both the rifle and the MILES is being developed.	Sniper capabilities continue to be an integral part of urban ops; the OPFOR must have a realistic rifle to replicate this threat capability and associated TTPs.
MILES	1. Codes (Ph/PKs) 2. Equipment	MCTC are primarily using the basic and MILES 2000 systems comparable with BLUEFOR. MILES head harness are traditional helmet mounts and spider-web helmet mounts. Most OPFOR MILES Ph/PK codes are borrowed BLUEFOR weapon codes.	OPFOR must enjoy not only comparable BLUFOR MILES systems, but also requires unique MILES specifically to help replicate the civil environment such as extremely light-weight head sensors (halos) that makes role-players vulnerable to MILES head injuries. MILES codes are also inadequate as they replicate the capabilities of BLUFOR weapons systems vice OPFOR.
IEDS & Grenades	1. Suicide Vests x108 2. Remote Detonated 3. Pressure Plated 4. Vehicle mounted Grenades 1. Baseball 2. Potato Smasher (RKG-3)	CTCs have developed many viable solutions to IED training using varied types of training aids. Each MCTC has received basic IED training kits in FY 05-06 which are now only partially used and didn't include suicide vests. IEDs are still described	Despite the CTC initiatives to stay abreast of immersing IEDs, they continue to evolve and change. JIEDDO and GWOT funding has provided some levels of support but will not be available for long term. IEDs are also not limited to the concept currently used; we must stay ahead of

Current OPFOR (Conventional and Unconventional) Replication Capabilities through FY 09			
Heading	Items	Current Status	Shortcoming
		as not impacting enough in terms of decibels/volume and visual explosive signature. No grenades exist; rolled and taped MRE wrappers are used with chem. Lights.	the next "improvised" concept. For grenades, often BLUE and Red will employ other than grenade-associated tactics.
OPFOR C4ISR	C2	1. Cell Telephones 2. Wireless Internet 3. SATCOM, Portable 4. Battle Command tracking System (BCTS)	NTC and JMRC now enjoy the use of independent commercially compatible closed-loop cellular telephones and limited numbers of SATCOMS. No internet/intranet or BCTS CNO capability exists at any of the MCTCs.
	EW	1. Radio DF/Atk (BMP1) 2. GPS Jammer 3. Radar DF/Atk (BMP1)	NTC has outdated versions of Prophet EW systems as part of their MICO; JRTC and JMRC have not IW/EW intelligence capabilities. None have GPS, CNA or Radar EW systems.
	ISR	1. UAV, Fox-AT2 2. Arty Loc Rdr IL220 2. Thermal View, Sophie 3. Laser	All MCTCs have received their allocation of JTNC procured Raven-B UASS; JMRC is operating on a limited
			The lack of a proper OPFOR air defense early warning radar allows BLUFOR aircraft to enjoy more stealth than

Current OPFOR (Conventional and Unconventional) Replication Capabilities through FY 09				
Heading	Items	Current Status	Shortcoming	
	Designator 4. ACV, AD, dog ear 5. Radar, GSR, Manport.	frequency permission by the German Government. Man- portable thermal sights are limited to organic MTOE systems. With the retirement of the ASET IV, the OPFOR has not air defense early warning radar. OPFOR does not have a counter- radar replicated or actual system.	realistically expected; adequate BLUFOR air corridor and SEAD planning and execution will not be properly challenged for lessons learned. The lack of an OPFOR counter-fire radar capability limits not only the realistic effect (other than the constructively provided ones), but hinders live BLUFOR ISR and targeting process for HVTs (something has to be live).	
OPFOR Vehi- cles	OSWV	1. BTR-80 2. BRDM-2 3. ACV, BTR- 80 4. UAZ Tact Veh 5. 12mm Gun/How Combo	MCTC currently have no OSWV fleet. The OPFOR used HMMWV VISMODs to replicate BRDMs and standard U.S. military trucks.	With the introduction of Styker BCTs and armored HMMWVs, the OPFOR has no complimentary vehicles to truly challenge SBCTs to inevitably meet their training objectives. Not only is this a critical shortfall IAW AR 350-2 and AR 35-50, but these systems are needed to replicate current worldwide capabilities (soviet had them for decades) and are necessary for urban warfare.
	Techni-	1. Trucks (MG) x45 2. Trucks	MCTCs basically of no technical vehicles except	Third world countries that cannot afford

Current OPFOR (Conventional and Unconventional) Replication Capabilities through FY 09			
Heading	Items	Current Status	Shortcoming
cals	(Mortar) x15 3. Trucks (ADA) 15 4. SUV/Trucks (C2) x15	very crude modification to existing trucks.	traditional military equipment, as well as insurgents and the like, will and have procured robust technical vehicles with multiple capabilities.
VISMODs	1. Route-Clear BAT-2 2. Mine Breach, UR77 3. Mine Plow, KMT-6 4. Mine Roller, KMT7 5. Bridge, AVLB 6. Eng. Tractor 7. Minelayer, GMZ, UMZ, PMZ-4	Most engineer assets are replicated in the virtual domain and positively impact targeting planning and execution, but environmental impact limit certain engineer activity, especially at JRTC and JMRC. Additionally, only NTC has organic OPFOR engineer capabilities.	All MCTCs must be capable of replicating at least limited OPFOR activities for all spectrums of engineer capabilities. One or more of each M/CM/S system must reside with the OPFOR. While actual threat engineer vehicles are not required, VISMODS of BLUFOR or commercial systems should be made available for all full-spectrum rotations.

5-3 (2) Environmental Resource Requirements

1. Requests for funding via the CTC POM process will be a centralized effort by TRADOC G2 with direct input and support of the CTCs. This implies that TRADOC G2 will lead the effort to establish a standardized requirements list of critical PmESII-PT necessities that must be replicated at the CTCs to set a realistic and viable training condition.
 - a. CTCD and CTCs are requested to support this effort by working directly with TRADOC G2 to determine shortfalls, establishing means and cost estimates via local contract mechanisms, and providing justification.
 - b. In coordination with all interested parties, TRADOC G2 will provide the training community a recommended priority and funding list to CTC quarterly reviews (CTC-QRs) and request approval of specific funding requirements via the CTC Council of Colonels (CTC CoC). TRADOC G2 will participate in the annual CTC Modernization Conference and, as required, will also provide COE and OPFOR modernization updated at the semi-annual CTC Conference.
2. The purpose of centralizing this effort is not to add a layer of bureaucracy or limit a CTC Commander's direct influence over limited resources, but to help prioritize and manage critical resources/funding when applied to PmESII-PT efforts across the spectrum of the Army training community.
3. As part of this process, TRADOC G2 will request of CAC as well as DA G3 via the CTC Modernization Conference, the CTC Council of Colonels, and the Training and Leaders General Officer Steering Committee (TLGOSC) to continue to provide funding within the newly established CTC POM funding lines that specifically address environmental training requirements (PmESII-PT) as part of the COE/OPFO CTC Pillar. This funding line will be further broken down into specific program headings with prioritized requirements.
4. The below spreadsheet outlines the "Environmental" POM line with its four program categories. Each category is program line and subsequent categories and requirement lines are listed in order of priority:

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Pri	Prog.	Category	APPN	Requirement
3	Infrastructure	4. Structures	OP OMA	1. Permanent multi-story bldg 2. Permanent single story bldg 3. Mobile buildings
		1. COB-vs	OMA	1. Police 2. Ambulances 3. Public Pick-up 4. Public Sedans 5. Public Coups 6. Public Vans 7. Commercial Buses 8. Fire Trucks 9. Garbage Trucks 10. Commercial Trucks
		3. Physic. Terrain	OP OMA	1. Tunnels & Caves 2. Road networks
		2. Utilities	OP OMA	1. Electric 2. Water
4	Economic	1. Agricultural	OMA	1. Farming land & equipment 2. Ranching & animals
		2. Manufacturing	OP OMA	1. Production development 2. Product Distribution 3. Import/export
		3. Banking & Finance	OP OMA	1. Banks & security 2. Bank notes (money)
2	Information	1. WLL/Phone/ Web	OP OMA	1. IC3NS (Sustainment) 2. Land-line 3. Internet
		2. Commercial	OP OMA	1. Radio 2. Telephone
		3. Newspaper	OMA	1. Per town (single page) 2. Small press for Capital
1	Social	1. Language/ Culture	OP/OMA	1. Cultural Experts (RPs) 2. Linguists (RPs) 3.
		2. Dress	OP OMA	1. SW Asian 2. European 3. Eastern
		3. Religious	OP OMA	1. Props 2. Building VISMOD 3. SMEs

5-3 (3) OPFOR Resource Requirements

1. OPFOR related equipment requirements will be centralized and programmed for by TRADOC G2 Training Directorate. Requirements are coordinated through the Army Training Support Center (ATSC) /TRADOC Capabilities Manager-Live (TCM-L) and the CTC Directorate (CTCD) and presented to the CTC Council of Colonels (CTC CoC) on a semi-annual basis for funding validation.
2. The below chart depicts current aggregate numbers of OPFOR systems and weapons across the MCTCs (required per FM 7-100 series manuals, authorized which indicates the minimal critical requirement, and on-hand) as well as applicable numbers per individual MTC.

TOTAL MCTC OPFOR Equipment				Current MCTC OPFOR Equipment					
				NTC		JRTC		JMRC	
Equipment	Req	Auth	OH	Auth	OH	Auth	OH	Auth	OH
120mm 2S9-1 Combo	24	16	0	8	0	4	0	4	0
120mm Combo 2S23	18	12	0	4	0	4	0	4	0
125-mm AT, 2A45M	60	20	10	8	6	4	0	4	4
Howitzer, 2S19	54	18	0	6	0	6	0	6	0
.50 Antimat Rifle	58	36	0	12	0	12	0	12	0
60mm mortar	39	27	13	9	0	9	4	9	12
7.62mm Sniper Rif	33	24	0	8	0	8	0	8	0
Art Loc Rdr IL220	3	3	0	1	0	1	0	1	0
ACV, AD, dog ear	15	9	0	3	0	3	0	3	0
AA Gun/Msl, 2S6M	18	12	0	4	0	4	0	4	0
APC, BTR-80A **	171	123	0	41	0	41	0	41	0
ACV, BMP-1KSh, IW)	36	9	0	3	0	3	0	3	0
AD/AT Starstreak	9	6	0	2	0	2	0	2	0
RPG 7V	102	51	500	17	200	17	200	17	100
RPG 22	108	54	0	18	18	18	0	18	0
ATDL, RPG-27	1467	731	213	277	183	211	0	243	30
ATDL, Armbrust	330	147	0	59	0	44	0	44	0
ATGL LR RPG-29	72	33	0	11	0	11	0	11	0
ATGL PZF 3-T600	366	182	214	74	74	49	33	59	33
ATGM HOT3 (BRDM)	116	69	0	25	0	19	0	25	0
ATGM Manprt AT7/13	27	15	5	5	24	5	0	5	0
ATGM Lcher, Eryx	51	27	0	9	0	9	0	9	0
Bridge, AVLB	6	1	0	1	0	0	0	0	0
Ditch. Mach.MDK-3	9	2	2	2	4	0	0	0	0
Radio DF/Atk	15	6	2	2	3	2	0	2	0

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TOTAL MCTC OPFOR Equipment				Current MCTC OPFOR Equipment					
				NTC		JRTC		JMRC	
Equipment	Req	Auth	OH	Auth	OH	Auth	OH	Auth	OH
BMP1									
Radar DF/Atk	9	3	0	1	0	1	0	1	0
BMP1									
Eng.Tractor	6	3	1	1	7	1	0	1	0
IMR2M									
GPS Jammer, Manp	9	9	0	3	0	3	0	3	0
IED Vests	156	108	0	36	0	36	0	36	0
IFV, BMP-2M**	231	184	187	94	156	45	31	45	0
Laser Designator	180	90	0	30	0	30	0	30	0
MBT, T80	93	83	112	31	52	21	29	31	31
Mine Breach, UR77	3	3	1	1	0	1	0	1	0
Mine Plow, KMT-6	27	21	0	7	0	7	0	7	0
Mine Roller, KMT7	18	12	0	4	0	4	0	4	0
Minelayer, GMZ, UMZ, PMZ-4	27	15	6	5	6	5	0	5	0
MANPADS SA 14	36	24	0	8	0	8	0	8	0
MANPADS SA 18	78	53	0	21	0	16	0	16	0
Portable, SATCOM	114	23	16	9	9	7	7	7	0
Radar, GSR, Manp	117	21	6	7	6	7	0	7	0
Route-Clear BAT-2	3	3	1	1	1	1	0	1	0
COB-Vs	455	455	395	155	300	150	150	150	120
UAZ Tact Veh	180	126	0	18	74	18	16	18	18
UAV, Fox-AT2 (lsr desig & FLIR)	12	9	9	3	6	3	3	3	0
Thermal, handheld, Sophie	156	78	0	26	0	26	0	26	0
BM-21 (Optional)	0	3	6	1	?????	1	0	1	6?

* NOTE: JRTC and NTC will need Engineer augmentation

** NOTE: Includes Command and Control (C2) versions

3. Capitalizing on the above information, the following reference again the requirements, but provide additional procurement comments critical for prioritizing requirements:

Equipment	Req	Auth	OH	Comments
120mm 2S9-1 Combo	24	16	0	70%; Tracked OSV, 12 mtrs; req 16
120mm Combo 2S23	18	12	0	70%; part of QSWV fleet, use 82mm mtr; req 12
125-mm AT, 2A45M	60	20	10	33%; 6NTC, 4JMRC; req 10
Howitzer, 2S19	54	18	0	33%; 1 Btry per MCTC; FORSCOM will augment; req 0
.50 Antimat Rifle	58	36	0	50%; req 36 will also need MILES adapter
60mm mortar	39	27	13	70%; +12x82mm; req 14
7.62mm Sniper Rif	33	24	0	70%; currently using US version. req 24
Art Loc Rdr IL220	3	3	0	100%; VISMOD & virtual targeting (IS) OK req 3
ACV, AD, dog ear	15	9	0	70%; VISMOD & virtual targeting (IS) OK req 9 VISMOD

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Equipment	Req	Auth	OH	Comments
AA Gun/Msl, 2S6M	18	12	0	70%; FMAST (ASET-IV); Ft. Rucker & ASE lead with PEO-STRI Spt; req12
APC, BTR-80A	171	123	0	70%; (w/27xC2) OSWV Fleet; req 123
ACV, BMP-1KSh, IW (Computer)	36	9	0	25%; Capability more important than vehicle; req 9
AD/AT Starstreak	9	6	0	70%; req 6
RPG 7V	102	51	500	50%; use new SLM engine
RPG 22	108	54	0	50%; could use US made LAW; only VISMOD for SLM required; req 54
ATDL, RPG-27	1467	731	213	50%; 183 NTC, 30 JMRC; only VISMOD for SLM required; req 518
ATDL, Armbrust	330	147	0	50%; only VISMOD for SLM required; req 147
ATGL LR RPG-29	72	33	0	50%; only VISMOD for SLM required; req 33
ATGL PZF 3-T600	366	182	182	50%; only VISMOD for SLM required; req 182
ATGM HOT3 (BRDM)	116	69	0	60%, 32xBRDM AT-5; req 69
ATGM Manport AT7/13	27	15	5	50%; can use TOW; 24 only at NTC
ATGM Lcher, Eryx	51	27	0	50%; req 27
Bridge, AVLB	6	1	0	50%; req 1 at NTC
Ditch. Mach.MDK-3	9	2	2	66% (SEE) 4 x NTC
Radio DF/Atk BMP1	15	6	2	40%; 3 older Prophets x NTC, req 4 systems & contractors as operators for JMRC and JRTC
Radar DF/Atk BMP1	9	3	0	33%; req sldr/contr req 3 systems & contractors as operators JMRC and JRTC
Eng.Tractor IMR2M	6	3	1	50%; (ACE 7xNTC), req 2
GPS Jammer, Manp	9	9	0	100; req 9
IED Vests	156	108	0	70%; req 108
IFV, BMP-2M	231	184	187	90%; (17 are C2) Need to redistribute NTC to JMRC (approx 28)
Laser Designator	180	90	?	50%; req ?
MBT, T80	93	83	112	70-100%
Mine Breach, UR77	3	3	1	100; (ACE) 1xNTC; req 2
Mine Plow, KMT-6	27	21	0	70%; req 21
Mine Roller, KMT7	18	12	0	70%; req 12
Minelayer, GMZ,UMZ,PMZ-4	27	15	6	70%; 6 x NTC; NTC & JMRC need Engr Aug; req 9
MANPADS SA 14	36	24	0	66%; (stinger used) req 24 - working JNTC MAST
MANPADS SA 18	78	53	0	70% (63 Stingers); req 22 - working JNTC MAST
Portable, SATCOM	114	23	16	18%; req 7; Could use augmentation
Radar, GSR, Manp	117	21	6	18%; req 15; Could use augmentation
Route-Clear BAT-2	3	3	1	100%; req 2; Could use augmentation
COB-Vs	455	455	570	100%; 300 NTC, 150 JRTC, 120 JMRC; req 30 at JMRC
UAZ Tact Veh	180	126	108	30%; BRDM/HMMWV; need VISMOD for UAZ
UAV, Fox-AT2 (lsr desig & FLIR)	12	9	9	6 NTC, 3 JRTC, 3 at JMRC
Thermal View, handheld, Sophie	156	78	?	50%; req ?
BM-21 (Optional)			0	Type 63 107mm rockets JMRC & JRTC

4. Per the CSA guidance to provide a recommended list of items considered "Desired, Required, and Critical," the following is provided without consideration for funding, but rather based on

value in setting critical conditions needed to meet training objectives in realistic training environments. Additionally, the items listed are for additional or new items; there continue to be numerous fielded condition setting capabilities that are not yet fully funded and carried as unfunded requirements (UFRs) within the CTC program, such as role-players and commercial vehicles:

a. Critical:

(1) JT COIC - Provides the Central Training Database; real data from theaters to training events CTCs, HSTs, & CoEs.

(2) MILES - No specific/outdated OPFOR Codes (AT, AD, IED); antiquated capabilities for urban sites.

(3) OPFOR IW & EW - *Information Warfare* CNO and CNA as well as EA; *Signals Reconnaissance* Intercept & exploit.

(4) OPFOR Air Defense - ASET IV is obsolete and no MANPADS with IR & RF signatures.

(5) Grenades/AP Mines - No grenades exist, currently using home-made RKG-3s; changes Red and Blue TTPs.

(6) OSWV - Lack of Combat Wheeled Vehicles to replicate world proliferation, speed & maneuverability in urban terrain, noise reduction, and appropriately challenge Stryker BCTs.

b. REQUIRED:

(1) OPFOR Engineers - Cannot produce required conditions without augmentation.

(2) OPFOR Shoulder-fired AT - ATSC has program but lacks required funding (RPG7/22/29, Armbrust, Eryx, AT7/13/14, etc).

(3) OPFOR Tech Veh's - Commercial vehicles technically modified to support military purposes.

(4) OPFOR Personnel at JRTC - Insufficient for FSO unless proposed 1-4 receives INF CO and augmentation is provided.

(5) Aviation Engagements and support - Lack of OPFOR HELO FLIR reduces stand of 5 kms to 1km limiting BLUFOR AD posture training. Organic or augmented utility lift helicopters will be required for air mobile operations by OPFOR.

(6) OPFOR C2 Communication - this includes Red-Tracker, battle command systems, and modern civil communication devices (GSM, CDMA, etc).

(7) NTC Improved Roads - extremely limited which hampers realistic convoy movement for IED.

(8) NTC Sub-Terrain - Currently no sub-terrain (safety considerations w/local reptiles (snakes etc)).

c. DESIRED:

(1) Role-player increase (COBs) - OEMP sets FS/MRE baseline; does not account for larger urban complexes.

(2) Role-player Vehicles (COB-Vs) - OEMP sets FS/MRE baseline 150; does not account for larger urban complexes.

(3) OPFOR Artillery - Minimum of one live Arty Btry (2S9-1, 2S23, 2S19); FORSCOM augmentation.

(4) Commercial Vehicles - COB-Vs for OE and OPFOR as a Army program (procurement and sustainment)

(5) OPFOR Rifles - Small arms rifles (AK, Sniper, Anti-material) for handling of threat weapons by US soldiers.

5-3 (4) OPFOR Resource Concept

1. The currently included CTC modernization/POM concept includes the submission of one OPFOR POM line with three program lines based on requirements developed and provided in the previous sections. The three program lines include:

a. OPFOR Weapons/ Training Aids Devices Simulations and Simulators (TADSS) (Priority 1): Weapon and weapon systems listed in this category emphasize the priority of replicating the weapon/system capabilities and less on the platform on which it may be mounted; i.e. an SA 9 surface to air missile listed in the "weapon" category puts the development emphasis on replicating the SA 9 rocket simulation vice the BRDM, BMP, or Technical vehicle platform which becomes secondary. This program line is currently listed as priority number one as training against outdated or legacy OPFOR weapons causes the OPFOR to employ inadequate or out-of-date tactics, techniques, and procedures (TTPs), which are countered by BLUFOR who respond with incoherent counter TTPs to what is realistic in the foreseeable COE; i.e. MANPADS and ATGMs. Within weapon systems, corresponding MILES codes and probabilities of hits must be updated. Specifically to TADSS are items that include COE/OPFOR instrumentation, commercial vehicles, and MILES.

b. OPFOR C4ISR (Priority 2): The command, control, communication, computer, intelligence, surveillance, and reconnaissance (C4ISR) program line lists items that directly or indirectly support the OPFOR listed capabilities, vice an operational environment factor or a TADSS. For example, the development of cellular telephone network could be considered a TADSS but the requirement has more emphasis on an OPFOR communication capability than that of merely replicating a realistic environment - difference being the emphasis of desired capabilities with respect to OPFOR needs.

c. OPFOR Vehicles: This category includes the OPFOR Surrogate Vehicles (OSV) fleet encompassing tanks, IFVs, and combat wheeled vehicles. This category also include OPFOR "technical" vehicles which are modified commercial vehicles for military use, such as mounting a machine gun in the back of a truck with a reinforces suspension system. This category currently does not include normal commercial/public vehicles

which are considered "training aids" and more easily procured as such.

3. The recommended single COE/OPFOR POM line allows funding to be applied to various program lines within provided priorities. Additionally, if overall COE/OPFOR modernization funding is cut, a single POM line allows the program manager to adjust affected program, category, and requirement lines as required, avoiding entire program lines to be nullified or cut solely based on budget cuts.

4. The below spreadsheets outlines the "OPFOR" recommended POM lines with its three program categories. Each category is program line and subsequent categories and requirement lines are listed by POM Category in order of priority, this may not coincide with the desire, required, critical recommendation as listed above, but merely give budget managers a POM line prioritization. Which and how specific items are funded and in what priority, must be decided through program directors/managers, and the council of colonels process:

Pri	Prog.	Category	APPN	Requirement
1	OPFOR Weapons/ TADSS	1. MILES	RDTE OMA	1. Codes (Ph/PKs) 2. Equipment
		2. Air Defense	RDTE OP OMA	1. MANPADS SA 18 9 2. MANPADS SA 14 3. AA Gun/Msl, 2S6M 4. SA8 5. SA9
		3. ATGM	RDTE OP OMA	1. ATDL, RPG 7V 2. ATGL LR RPG-29 3. ATGL Panzerfaust T600 4. ATDL, Armbrust (5. ATGM Lcher, Eryx 6. ATGM HOT3 (BRDM) 7. ATGM Manport AT13 8. 125-mm AT, 2A45M 9. AD/AT Starstreak 10. ATDL, RPG 22 11. ATDL, RPG-27
		4. IEDs	RDTE OP OMA	1. Suicide Vests 2. Remote Detonated 3. Pressure Plated 4. Vehicle mounted
		5 Artillery	RDTE OP OMA	1. 120mm Combo-Gun 2. 2S9-1, Combo Howitzer, 3. 2S19 4. Arty Loc Rdr IL220 5. 60mm mortar

Pri	Prog.	Category	APPN	Requirement
		6 Rifles	RDTE OP OMA	1. Sniper Rifle 7.62mm 2. Anti-material Rifle.50
2	OPFOR C4ISR	1. I/EW	RDTE OP OMA	1. Radio DF/Atk (BMP1) 2. GPS Jammer 3. Computer Warfare 4. Radar DF/Atk (BMP1)
		2. C2	OMA	1. Cell Telephones (Sust) 2. Wireless Internet 3. SATCOM, Portable
		3. ISR	RDTE OP OMA	1. UAV, Fox-AT2 2. Thermal View, Sophie 3. Laser Designator 4. ACV, AD, dog ear 5. Radar, GSR, Manport.
3	OPFOR Vehicles	3. OSWV	RDTE OP OMA	1. BTR-80 (w/C2) 2. BRDM-2 3. UAZ Tact Veh
		4. Technicals	OP OMA	1. Trucks (MG) 2. Trucks (Mortar) 3. Trucks (ADA) 4. SUV/Trucks (C2)
		5. VISMOD	OP OMA	1. Route-Clear BAT-2 2. Mine Breach, UR77 3. Mine Plow, KMT-6 4. Mine Roller, KMT7 5. Bridge, AVLB 6. Eng. Tractor 7. IMR2M Ditch.Mach.MDK-3 8. Minelayer, GMZ, UMZ, PMZ-4

5. Combat Training Center (CTC) Program

1. The CTCs are critical to the success of the Army's training, transformation to Modular/Stryker/FCS BCTs, and support to the implementation of The Army Plan/Army Campaign Plan and the Army Modernization Plan. CTCs must be able to support and replicate simultaneous full-spectrum operations across the spectrum of conflict in an ever changing contemporary operational environment.
2. CTCs must be able to meet the Army Force Generation (ARFORGEN) throughput for units within the reset, ready, and available pools by providing the operational experience, environment, and conditions which facilitate and enable rotational unit commanders' readiness assessments.

3. The CTC program is governed by AR 350-50 (CTC Program) declaring the DA G3 as the Director and focal point of CTC actions. However, the Commanding General of TRADOC is responsible for the administration, validation, and integration of the program, which was delegated to the Combined Arms Center (CAC) under the supervision of the Deputy Commander for Training (CAC-T). Within CAC-T, the CTC Directorate is the single focal point of managing all aspects of the five CTC pillars, to include resource and funding allocations as approved and provided DA G3 (DAMO-TR).

4. On behalf of the CTC program and in compliance with AR 350-50 and AR 350-2, the COE/OPFOR pillar of the CTC program is primarily championed and overseen by the TRADOC G2, as the responsible official for the Army OPFOR Program. However, the COE/OPFOR pillar itself is managed and funded (via DA G3/5/7) by CTC-D as outlined in paragraph 3 above.



5. Goal 7, Objective F, of the FY09 Army Training and Leader Development Strategy, dated 2 December 2008, provides that HQDA G3/5/7 will "Develop, field, and sustain modernized LVC, including gaming, training systems and OPFOR equipment to maintain relevancy and to improve fidelity of instrumentation TADSS and facilities pillars at the CTCs, including Exportable Training Capability, in accordance with the CTC Way Ahead and Operational Environment Master Plan (OEMP)."

5-1. CTC Program Requirements

1. As the Army's premier training program, the CTCs are the only training centers authorized a "high-fidelity" replication of a live operational environment and a professional and dedicated OPFOR. As such, the CTCs have unique program requirements critical to replicating the OE complexities and training conditions.

5-1 (1) CTC Operational Environment Assessments

1. CTC Operational Environment (OEs) for training includes aspects of the OE variables (political, military [OPFOR], economic, social, infrastructure, information, physical terrain, time [PMESII-PT]).
2. Gradients or the OE variables that CTCs must have the ability to replicate for full-spectrum training along the spectrum of conflict are described in Chapter 4. However, of the seven non-military (OPFOR) OE variables, only four are primarily resource intensive (Economic, Social, Information, Infrastructure) while the remaining three (political, Physical Terrain, Time) are predominately scenario driven or influenced. The below are resource considerations:
 - a. Economic Variable: This variable requires replication of aspects of economic value, such agriculture, manufacturing, mining, ranching, currency, banking, and the like. The key to a successful replication for this variable is not only to show manifestations of such (markets, petting zoo, etc), but to also provide them a value within the exercise that will draw natural cause-and-effects upon which lessons can be drawn.
 - b. Information Variable: The environmental aspect of the information variable is not based on operations, but simply provides the means. These include cellular and high-power-cordless telephones, voice-over-internet protocol (VOIP) communication, radio, television, intranet, and newspaper.
 - c. Social Variable: This is primarily human-interaction based and requires the largest enduring sustainment bill in terms of role players (language, cultural, special skills, and generic). Other considerations include unique props, dress/clothing, and human terrain experts.
 - d. Infrastructure Variable: This is by far holistically, but surprisingly the one in which the largest investments were made. It includes a minimum of 7-9 towns per training center of which 1 must be at least a large size (greater than 45, three should be medium sized (30-45 buildings), and 3 small towns (14-30 buildings) with both permanent and moveable buildings. This variable also includes at least 150 commercial style vehicles per training center for civilian traffic, and utilities. A

review of the DA G3 approved civilian on the battlefield working group (COB-WG) reveals that the towns, as well as the role-players, are based on a Lego concept in which the requirements for towns, as with role-players, increased as the size and type of add-on units increased per rotation.

3. The National Training Center (NTC) is probably the most robust and resourced CTC with tremendous emphasis and investment into the training OE. The below chart summarizes the NTC OE conditions (GREEN: Resourced to meet minimum requirements, AMBER: Enough to set certain conditions, but not enough to meet minimum benchmark required to replicated all appropriate complexities, RED: Very limited capability which hinders replicating conditions needed to meet full spectrum training objectives).

Infrastructure	Towns	G	Large (>45)	Medina Jabal/Tiefort City (598); Medina Wasl (181)
			Medium (30-45)	Move bldgs from large to medium towns
			Small <30; 14 P	Al Sharq (23), Al Jaff (21), Abar Layala (27), Mezra Masik Amar (25), Al Wahleed (12), Al Wahde (25), KKD (16), Al Karma (11), Wadi Al Raid (8)
	Utilities	G	Com-Pwr	Medina Jabal & Wasl (2 towns)
			Gen-Pwr	All others (9)
			Water	Replicated
	COB-Vs	G	Various	Req 155, Auth 155, OH 183
	Physical Terrain	R	Roads	Asphalt very limited from Irwin to 4-corners and around Medina Jabal & Wasl; road from Jabal to Wasl planned but not funded.
			Sub-terrain	Basically none due to reported safety issues
			Caves	Seven exist.
Information	Cell Phones	G	JIEDDO Funded & sustained for 2 years Fy09-11	
	Radio/TV	A	Use of Fiber for local stations; need \$276 for Radio – use WLL for TV replication	
	Web/WLL	G	JIEDDO Funded & sustained for 2 years Fy09-11	
Social	Role Players	G	Crit. Req 233 (MRE 295), validated 100 work-yrs	
	Religious	A	Currently only Muslim oriented	
	Dress	G		
Economic	Agriculture	A	Has animals; need farming equip (not to actually grow)	
	Manufacture	A	Very limited; had industry plans - but changed to military barracks	
	Bank & Finance	A	Being developed in infrastructure;	

4. The Joint Readiness Training Center (JRTC) is relatively robust and resourced to set appropriate full spectrum training conditions. The below chart summarizes the JRTC OE conditions (GREEN: Resourced to meet minimum requirements, AMBER: Enough to set certain conditions, but not enough to meet minimum benchmark required to replicated all appropriate complexities, RED: Very limited capability which hinders replicating conditions needed to meet full spectrum training objectives).

Infrastructure	Towns *	Large (>45)	Sulliya (including east)
		Medium (30-45)	CACTF (new), Takira, Wadi Al Tarif,
		Small <30; 14 P)	Al Mawsil (Dist Cap), Sadiq, Barakah, Mosalah, Jarbar Nahr, Meelsar, Al Kujaar,
	Utilities	Com-Pwr	All Towns
		Gen-Pwr	Mobile towns/camps if needed
		Water	Replicated
	COB-Vs	Various	Req 150, Auth 150, OH 150
	Physical Terrain	Roads	Adequate Asphalt (mostly perimeter road) & gravel
		Sub-terrain	Suliayah (proper) and CACTF (new)
		Caves	Numerous in various state
Information	Cell Phones	G	JNTC Funded & sustained for 2 years Fy08-10
	Radio/TV	A	3x TV & 3 x Radio for \$2M from OPS GP
	Web/WLL	A	JIEDDO Funded & sustained for 2 years Fy09-11
Social	Role Players	G	Crit. Req 434 (MRE 540), validated 100 work-yrs
	Religious	A	Currently only Muslim oriented
	Dress	A	
Economic	Agriculture	G	Appear to have resources, must execute
	Manufacture	A	Currently not being physically replicated
	Bank & Finance	A	Being developed in infrastructure;

5. The Joint Multinational Readiness Center (JMRC) is relatively robust and resourced with the exception of the "information" variable due to frequency spectrum issues. The below chart summarizes the JMRC OE conditions (GREEN: Resourced to meet minimum requirements, AMBER: Enough to set certain conditions, but not enough to meet minimum benchmark required to replicated all appropriate complexities, RED: Very limited capability which hinders replicating conditions needed to meet full spectrum training objectives).

Infrastructure	Towns	Large (>45)	Ubungsdorf (52 bldgs w power chemp plant)
		Medium (30-45)	Hammelburg (out-of-area German site w/100+ blds), Kittensee (40 bldgs), Charlie South/Sadr City (IED lane, 90+ bldgs)
		Small <30; 14 P	Enslwang, Schwend, Raversdorf (14+ bldgs@); Mud Hut (4-6 bldgs)
	Utilities	Com-Pwr	All Towns (-Mud)
		Gen-Pwr	Mud Hut Village
		Water	Ubungsdorf, all other replicated
	COB-Vs	Various	Req 150, Auth 150, OH 155
		Roads	Adequate Asphalt (mostly perimeter road) & gravel
		Sub-terrain	Ubungsdorf
		Caves	Four reinforced caves exist throughout training area
Information	Cell Phones	(R)	Frequency and ISR issues in Germany; looking at VOIP to replicate Cells.
	Radio/TV	(R)	Work-arounds only, looking at NTC initiative for potential solution using JMRC existing fiber optics
	Web/WLL	(A)	JIEDDO Funded & sustained for 2 years Fy09-11
Social	Role Players	(G)	Crit. Req 434 (MRE 540), validated 100 work-yrs
	Religious	(G)	Capable of replicating multiple (K-FOR & OIF/OEF)
	Dress	(G)	Capable of replicating multiple (K-FOR & OIF/OEF)
Economic	Agriculture	(A)	Exists due to locals; needs to be also part of open maneuver area
	Manufacture	(A)	Has small industry near Ubungsdorf
	Bank & Finance	(A)	Being developed in infrastructure;

6. The Battle Command Training Program (BCTP) is relatively robust and resourced primarily due to its ability to replicate the OE in a simulative/constructive state. The below chart summarizes the BCTP OE conditions (GREEN: Resourced to meet minimum requirements, AMBER: Enough to set certain conditions, but not enough to meet minimum benchmark required to replicated all appropriate complexities, RED: Very limited capability which

hinders replicating conditions needed to meet full spectrum training objectives).

Infrastructure	Towns	Large (>45)	Constructive environment scalable
		Medium (30-45)	Constructive environment scalable
		Small <30; 14 P)	Constructive environment scalable
	Utilities	Com-Pwr	Yes. Provided via MSEL injects.
		Gen-Pwr	Yes. Provided via MSEL injects.
		Water	Yes. Provided via MSEL injects.
	COB-Vs	Various	Replicated in model.
		Roads	Replicated in model.
	Physical Terrain	Sub-terrain	Replicated in model.
		Caves	Replicated in model.
Information	Cell Phones	(A)	Provided via MSEL injects. Limited robustness in SIGINT.
	Radio/TV	(G)	Produce "Global News Network" and opposition TV news and "Warbird" print media. Limited robustness in SIGINT.
	Web/WLL	(A)	Capable of replicating adversarial Webpage.
Social	Role Players	(G)	Crit. Req 434 (MRE 540), validated 100 work-yrs
	Religious	(G)	Capable of replicating multiple (OIF/OEF)
	Dress	(G)	Capable of replicating multiple (OIF/OEF)
Economics	Agriculture	(G)	Provided via MSEL injects.
	Manufacture	(G)	Provided via MSEL injects.
	Bank & Finance	(G)	Provided via MSEL injects.

5-1 (2) OPFOR Units & Training

1. AR 350-2 establishes the OPFOR program to provide commanders and their units a viable "sparring partner" by challenging training audiences with a non-cooperative and uncompromising opponent. While regulatory standards for units replicating OPFOR in training exercises are difficult to attain (which justifies the permanent and professional designated OPFOR units at the CTCs in Fort Irwin, Fort Polk, and Hohenfels, Germany), every effort must be made to ensure that units assigned the task of the OPFOR at CTCs, home-station, and ETC exercises attain the absolute highest level of competency.

a. OPFOR units, regardless of status, must be the best trained adversarial force available and provide a relevant experience during home-station and ETC exercises by setting the toughest and most challenging conditions (fight) short of war (AR 350-50).

b. To replicate the COE for full spectrum based training exercises, three replication factors must be considered with respect to training: (1) conventional OPFOR, (2) irregular/unconventional OPFOR, and (3) armed civilians on the battlefield. All three elements, to various degrees, must be trained to accomplish the following OPFOR objectives:

- Oppose BLUFOR training objectives and anticipated COAs.
- Reflect FM 7-100 doctrine.
- Provide conditions appropriate to the training unit training objectives, troop list, expected training status, and selected OE.

c. Within TRADOC G2, the G2 Training Directorate (Formerly OPFOR) as well as the TRADOC Intelligence Support Activity (TRISA) will provide limited training support capabilities in the form of Mobile Training Teams (MTT), COE Train the Trainer program (TTT), and computer-based access to TRADOC G2 publications.

2. Professional OPFOR: The professional OPFOR constitutes both the FORSCOM assigned unit to perform the OPFOR mission, as well as contractors that are used to augment OPFOR capabilities.

a. FORSCOM Assigned OPFOR units: These units are FORSCOM dual-mission units with a primary OPFOR mission.

(1) Units assigned these missions (11th ACR, 1-509th ABN, 1-4 INF) must not only maintain an acceptable degree of mission-readiness as a deployable FORSCOM unit, but must also train to be proficient in OPFOR tactics, techniques, and procedures, and must be capable of thinking and acting culturally different and tactically in a frame-of-mind other than that of U.S. soldiers. This concept applies to OPFOR elements that not only perform the conventional OPFOR mission, but also the irregular/paramilitary aspects of the OPFOR mission. OPFOR units must be at a state of readiness that allows them to be the best and toughest adversary in the world (IAW AR 350-50) for present, future, and unique challenges.

(2) OPFOR units are required to have a OPFOR training program which typically consists of attending the OPFOR academy when newly assigned, routine officer and non-commissioned officer professional development classes, and on the job training with often internal leader certification checklists/programs. As training is a commander's responsibility, TRADOC G2 does not provide guidelines or requirements as to how their program should be run or developed. However, as part of the annual COE/OPFOR accreditation, a review of the OPFOR unit's OPFOR training plan will be completed to assess and provide the commander an external feedback as to how effective their programs appears from a mission execution standpoint.

(3) It is, however, strongly advised and encouraged, that operational leaders of the OPFOR, such as an assistant S3 or Operations SGM does attend the TRISA COE Train-the-Trainer 5-day course.

(4) When the professional OPFOR is notified of a contingency mission requiring another units to perform the OPFOR mission, or remaining elements of the professional OPFOR requires heavy augmentation, TRADOC G2 is to be notified to immediately assist and support in the transition process.

b. Contracted OPFOR: Contracts written to specifically augment Army OPFOR units with civilian contractors must address within the contract that they too fall under the purview of AR 350-50 and AR 350-2. This includes undergoing complete accreditation process as part of the CTC COE/OPFOR program – contractors should not invoke contractor proprietary rights! The training and overall qualification should be of the same standard as for professional OPFOR soldiers and as directed in AR 350-50, AR 350-2, and the CTC MP.

5-1 (3) ETC and COE/OPFOR Academy Cadre

1. Both, the instructors of the COE/OPFOR Academy as well as the ETC Cadre, are first and foremost trainers for units learning to replicate an OPFOR. As such, they should be subject matter experts (SME) in FM 7-100 series manuals, AR 350-50, and AR 350-2.

2. OPFOR Academy Instructors: The OPFOR Academy is the institutional and educational framework that provides classroom and practical application to units designated to perform OPFOR missions. It also teaches OPFOR TTPs to rotational training units (RTUs).

a. All academy sessions (courses) should be preceded with a class that presents and explains the COE (PMESII) variables. For generic full-spectrum related-ETC training, as for training units moving from the "reset" to the "available" cycle of the Army Force Generation Model (ARFORGEN), classes should focus on the doctrinal aspects of the OPFOR as prescribed in the FM 7-100 series manuals.

b. For MRE/MRX purposes, OPFOR academies that are used to supplement training reflecting real-world contingencies/threats, instructors must ensure that they have an expert understanding of their topics; FORSCOM G2, with support of TRADOC G2, should validate instructor qualification to teach MRE/MRX oriented blocks of instruction.

c. OPFOR Academy instructors must be graduates of the COE TTT prior to teaching COE doctrine; at a minimum, all instructors should at least be scheduled to attend the next semi-annual COE TTT, both military and civilian (civil service or contractor). Academies can request from TRISA (Fort Leavenworth) applicable copies of Operational Environment Assessments (OEAs).

3. ETC OPFOR Cadre: The Exportable Training Capability (ETC) OPFOR cadre holds two functions: (1) train and control the OPFOR, and (2) training and control the civilian role players.

a. OPFOR Cadre: The ETC OPFOR cadre is part of the ETC Exercise Control (EXCON) group, but is also the responsible agent that facilitates the training for the designated

homestation unit tasked to perform the OPFOR mission as part of an ETC. As such, OPFOR Cadre must be fully certified as Observer/Controllers (O/Cs) in accordance with the host CTC O/C Academy standards, as well as function as an OPFOR unit Trainer, hence, functionally, they are OPFOR Trainers and Controllers (OT/Cs). The OPFOR Cadre is also the critical link in assisting the Training, Analysis and Feedback Facility (TAFF) to maintain situational awareness of the OPFOR, role players, communication with controllers, and produce material that support After Action Reports.

(1) As with BLUFOR O/Cs, O/CTs must be fully certified and graduates of the O/C academy per respective ETC standards. Each must also have attended the OPFOR Academy and be capable of demonstrating knowledge of the COE variables and OPFOR doctrine IAW the FM 7-100 series manuals.

(2) The senior OPFOR Cadre in charge and his operations officer/NCO must be a COE TTT graduate and must be familiar with regulatory OPFOR requirements per AR 350-2 (OPFOR Program) and AR 350-50 (Combat Training Center Program).

b. Civilian Role-Player Cadre (RPC): COE exercises require interaction between BLUFOR and civilians on the battlefield - both armed and unarmed non-combatants. The non-combatant role players or civilians on the battlefield (COBs) create increased training opportunities in civil affairs (CA) operations, the handling of news media, leadership challenges of displaced persons, (DPs), rules of engagement (ROE), refugees and local inhabitants, as well as effects of non-governmental organizations/private voluntary organizations (NGO/PVOs).

(1) As with O/Cs, RPC must be fully certified and graduates of the O/C Academy per respective ETC standards, as well as have attended the OPFOR Academy and be capable of demonstrating knowledge of the 11 COE variables and OPFOR doctrine IAW the FM 7-100 series manuals.

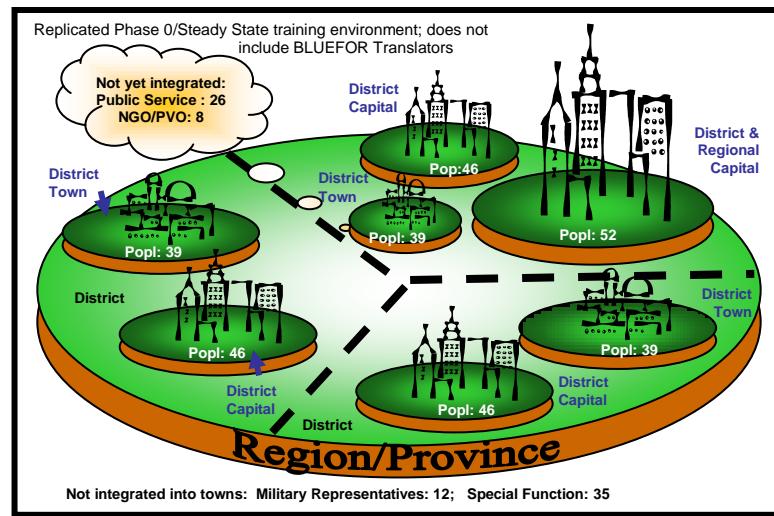
(2) RPCs must be capable of taking COB scripts/instructions and teach/coach/mentor role-players how to apply their roles within the confines of the exercise. COB Controllers must also ensure that in coordination with the exercise planners, COBs are provided minimum role-player instructions.

5-1 (4) Role Player Requirements

1. The use of contractors, as role-players (RPs) to replicate civilians on the battlefield (COBs) and other non-combatants to set realistic training conditions and meeting training objectives, has grown exponentially. Contractors are currently predominantly used to replicate COBs extensively at the Army's Combat Training Centers (CTCs), mobilization station sites, and even home-station training (HST). HQDA provided each Maneuver Combat Training Center (MCTC) funding for 100 Work Year Equivalents for their RP programs; this funding remains in the base CTC program and must continue to be funded to support base RP programs at the MCTCs.
2. RPs throughout Army training venues replicate the human terrain (HT) of contemporary operational environments (COE) and include generic role players (GRPs), special skilled role players (SKRPs) with certain skills, knowledge, and experience, foreign language speaking role players (FLSs) and/or cultural role players (CRPs).
3. In response to a HQDA G3 and TRADOC DCSOPS&T tasking, TRADOC DCSINT led a working group (WG) to identify a "good enough" short term COB and CRP resource requirements for Army training venues for FY 07 budget supplemental adjustments, and establish a methodology or model on which to base requirements for the out years. The WG was comprised of representatives from DCSOPS&T, the Combined Arms Center (CTCD, CAL, CALL, CTD), the United States Army Intelligence Center and School (USAICS) Cultural Center, CTCs (NTC, JRTC, JMRC, BCTP), FORSCOM G3 (co-lead), 1st Army, and Coalition Forces Land Component Command (CFLCC).
4. The WG determined that a set of common definitions must be used (i.e. the term "COB" was incorrectly used, "RPs" should be used - the requirement is for RPs) and that FLS and CRPs are critically required RPs to set realistic and viable training conditions, especially during mission rehearsal exercises (MRXs).
 - a. A methodology and model was developed that accounted for the training tasks and training conditions to set a baseline requirement for types and numbers of required RPs for a steady state/phase 0 exercise. This methodology uses a "Lego-Effect"

model that has the ability to grow from its baseline, which is centered on a Brigade Combat Team (BCT), hence, as the rotation training unit (RTU) increases in size, so does the RP requirements.

b. The model is founded on complex terrain (towns) that encompasses a region/province (for BDE Staff training) with three districts (one per maneuver BN). Each district accounts for two towns to force Battalions to conduct operations into at least two directions while also supporting company level training objectives. One additional town was added in one district to account for the region/province capital.



5. Collectively, these towns are made up of GRPs, SKRPs, FLSs, and CRPs to replicate province/district/town governments as well as public services and other influential factors. The required number of CONTRACT role players was tallied based on generic steady state and MRE training requirements per CTC (see page 29 for summary of required role-players by types and functions):

CTC	Phase 0 / Steady State (non-MRE) RP requirements (validated/critical)				
	GRP	FLS	CRP	SKRP	Total **
JRTC	201/174	208/182	22/20	3/3	434/379
NTC	0*	208/182	22/20	3/3	233/205
JMRC	201/174	208/182	22/20	3/3	434/379
BCTP	3/3	4/4	0	3/3	10/10

CTC	MRE/MRX*** RP requirements (validated/critical)				
	GRP	FLS	CRP	SKRP	Total **
JRTC	245/218	0	288/260	7	540/485
NTC	0*	0	288/260	7	295/267
JMRC	245/218	0	288/260	7	540/485

BCTP	0	0	9/9	6/6	15/15
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***NOTE:** NTC GRPs are complimented by 11th ACR soldiers (total requirement is 201 for Steady State and 245 for MREs). If 11th ACR was to be deployed, GRPs would need to be contracted to perform this function.

****NOTE:** Total role player numbers may not correlate to contractor man-year equivalents and may increase if the BCT being trained has additional attached units.

***** NOTE:** MRE/MRX recommended role player numbers (GRPs, FLSS, CRPs, SKRPs) are a generic baseline, additional training requirements may justify increased requirements (i.e. Stryker BCTs, SOC elements, additional support units, etc)

6. As training at CTCs continues to support real world contingencies, and the dynamic complexities of OIF and OEF continue to change, immerring issues also continue to rise. While many of these do not support enduring requirements, further assessments may need to be conducted to justify limited training funds for such issues which include:

a. Increase in the number of role-players given the higher demand of MCTCs to replicate Iraqi Military units for most of their rotations (NTC estimates at least an additional 95 cultural role players for OIF MRXs).

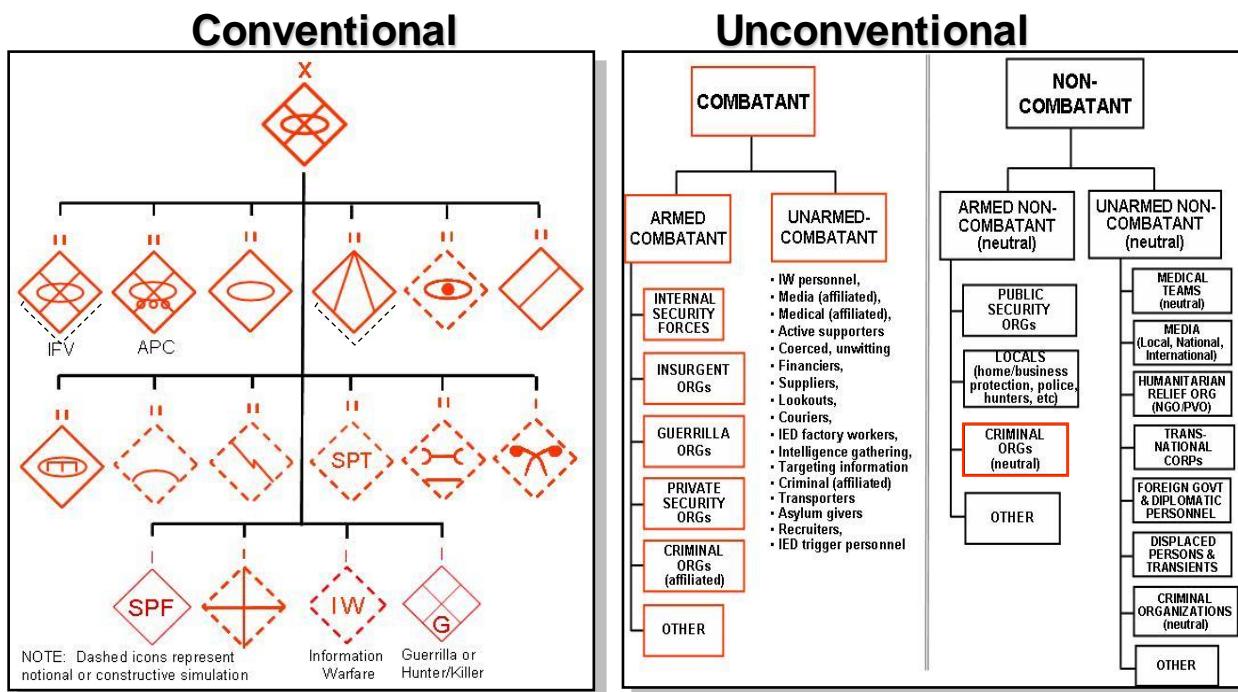
b. Increase in number of commercial vehicles to provide a higher fidelity of traffic (NTC recommends an increase from 155 to 425).

c. Increase in overall number of role-players (NTC currently uses approximately 1600 vice the 540 OEMP required role-players which certainly increased the level of fidelity).

d. Increase in the minimum number of provinces from one to two, and 7 towns to 8 (primarily an NTC raised issue).

5-2 CTC OPFOR Organizations and Requirements

1. Each of the maneuver CTCs (MCTCs) is assigned permanent FORSCOM units whose primary mission is to replicate conventional and unconventional, combatant and non combatant, forces/persons. As such, these units are often referred to as the professional OPFOR. While the unit itself is a Modified Table of Organization and Equipment (MTOE) organization, they are also supplemented with a Table of Distribution and Allowances (TDA) which authorized them special OPFOR persons and/or equipment in addition to the MTOE authorizations.
2. The below chart is the overarching replication requirement, in terms of personnel and equipment, that professional OPFOR units must be capable of replicating with high-fidelity of confidence and resources (Training Aids, Devices, Simulators and Simulations [TADSS]).



3. All changes to OPFOR MTOEs and/or TDAs must be approved by TRADOC G2, G2 Training Directorate. This requirement, as directed in AR 350-2, also applies to all non-MOTE and TDA OPFOR associated TADSS.

**OE Master Plan
15 September 2009
Version 2.0**

5-2 (1) NTC OPFOR Organization and Requirements

1. 1. Overview: The National Training Center (NTC) is located at Fort Irwin, CA, in the Mojave Desert. It is the largest of the CTC programs and primarily trains heavy brigade combat teams (HBCTs) but also specialize in SOF and Joint training exercises. Additionally, they are the Army's IED center of excellence (CoE).

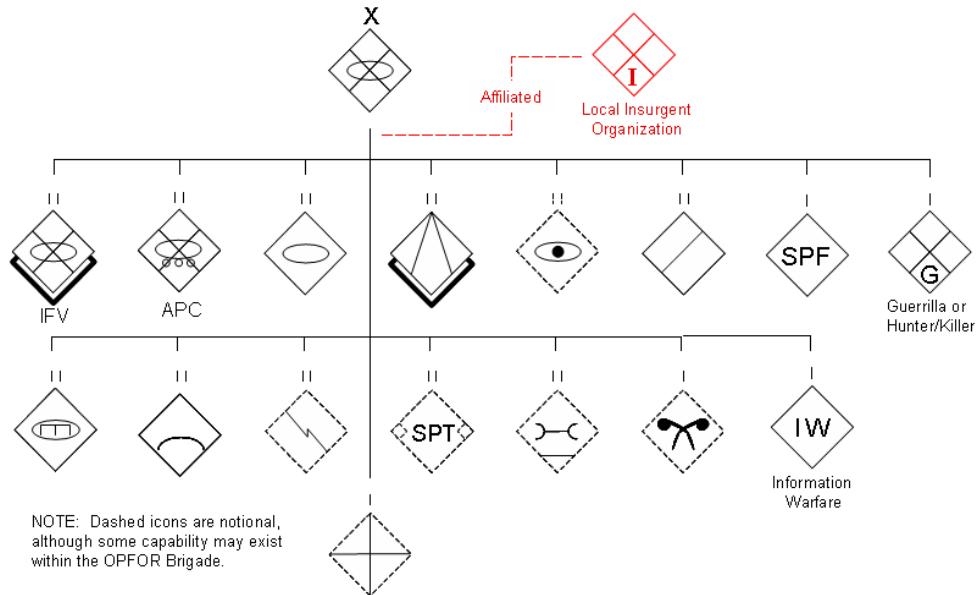
a. Mission: Provide tough, realistic, joint and combined arms training in multi-national venues across the full spectrum of conflict; focus on developing collective task proficiency at the brigade combat team and all echelons below; assist commanders in developing trained, competent leaders and soldiers by presenting them with current problem sets from the Contemporary Operating Environment (COE); and identify unit training deficiencies, provide feedback to improve the force, and prepare for success in the Global War on Terrorism and future joint battlefields. (CTC MP FY10-15 POM)

b. OPFOR: The OPFOR mission is performed by the 11th Armored Cavalry Regiment (ACR) consisting of two armored cavalry squadrons and a support squadron. 11th ACR supports 10 to 11 rotations a year. Rotational days are generally 24 hours a day, regardless of the rotational scenario. For the 11th ACR, rotations run 20-25 days, including preparation, execution, and recovery phases. When not in rotation, the 11th ACR conducts war-fighter METL proficiency training, MOS proficiency training, and Tank, Bradley and Light Cavalry gunnery exercises (two Level I and two Level II gunneries annually). The 11th ACR is to retain a dual mission capability in accordance with the ARFORGEN model that provides a professional and adaptable threat while simultaneously retaining the capability to deploy world wide as a multi-component Heavy Brigade Combat Team.

2. OPFOR Organization: Due to the training requirement to challenge and be capable of "sparing" with BLUFOR HBCTs, the 11th ACR must be capable of replicating a fully mechanized Brigade Tactical Group (BTG).

a. The NTC OPFOR BTG must consist of two mechanized battalions, one tank battalion, two anti-armor battalions, one armored personnel carrier (APC) battalion, a reconnaissance battalion, and an artillery battalion. (note: Unique to NTC is

the addition of one mechanized battalion and one anti-tank battalion).



b. Due to the lack of assigned infantry, engineer, and artillery units to the 11th ACR, the NTC OPFOR must be augmented with three infantry companies, one engineer company, one field artillery battery, and one mortar platoon per rotation for a total augmentation requirement of approximately 650 personnel per rotation.

3. While most of these units, as well as supporting units, do not necessarily have to be replicated with all live equipment at MCTCs, a minimum essential equipment list (MEEL) is provided to identify required systems (generally 70% strength):

a. Mechanized Battalions (**IFV**) MEEL:

Equipment	Req	Auth	OH	Comments
BMPs (2 x BNs)	80	72	72	90%
2 ACV, BMP-1KSh (C2)	4	4	4	100%
ATGL LR RPG-29	6	4	0	66%; req 4
ATGL PZF 3-T600	60	15	15	50%; use current RPG7 w/VISMOD
120mm Combo 2S9-1	12	8	0	70%; req 8 (82mm Mort used)
.50 AMR M82A1	6	4	0	70%; req 4
SA 18	12	8	9	70%; (use Stinger) req 8
ATDL (RPG-27)	136	68	68	50%; AT-4 available
ATDL Armbrust	60	30	0	70%; req 30

Equipment	Req	Auth	OH	Comments
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b. **APC** Battalion MEEL:

Equipment	Req	Auth	OH	Comments
APC, BTR-80A per BN	46	32	0	70%; req 32
ACV, BTR-80, Kushetka, C2	2	2	0	100%; req 2
ATGM Lchr HOT-3	7	5	5	70%; replaces AT-5 BRDM, req 5
ATGM Lchr Manport AT-13	9	5	5	50%; can use TOW to simulate, need MILES
ATGM lchr Manport SR Eryx	5	3	0	50%; req 3
ATGL LR RPG-29	18	9	0	50%; req 9
ATGL PZF 3-T600	31	16	16	50%; use current RPG7 w/VISMOD
120mm SP Com/Gun 2S23	6	4	4	70% strength; 82mm Mort; req 4
.50 AMR M82A1	6	3	0	50% strength; req 3
SA 18	6	4	0	70% strength; 20 Stingers available; req 4
ATDL (RPG-27)	94	47	47	50%; use VISMOD AT-4
ATDL Armbrust	36	17	0	50%; req 17

c. **Tank** Battalion MEEL:

Equipment	Req	Auth	OH	Comments
MBT, T80 per BN	31	31	31	100%
IFV, BMP-2M	6	5	4	90%
ACV, BMP-1KSh, C2	2	2	0	100%; req 2
Mineclearing Plow, KMT-6	9	7	0	70%; VISMOD; req 7
ATGL PZF 3-T600	2	1	0	50%; req 1
SA 18	6	4	0	70% strength; 12 Stingers, need MILES, req 4
ATDL (RPG-27)	34	17	17	50%; VISMOD AT-4, need MILES

d. **Reconnaissance** Battalion MEEL:

Equipment	Req	Auth	OH	Comments
ACV, BMP-1KSh, C2	2	1	0	50%; req 1
ACV, BMP-1KSh, C2 Jammer, Interc/DF	3	2	0	66%; will require soldiers/contractors, req 2
ACV, BMP-1KSh, Radar Intercept/DF	3	1	0	33%; will require soldiers/contractors, req 1
ACV, BTR-80, Kushetka, C2	9	7	0	70%; using HMMWV/BRDM, req 7
BRDM-2M w/ATGM-HOT3	12	8	0	70%; replaces AT5 BRDM; req 8

Equipment	Req	Auth	OH	Comments
IFV, BMP-2M	11	10	4	90%; req 4
ATDL, RPG-27	134	67	?	50%; can use VISMOD AT-4; req ?
MANPAD, SA-18	6	4	0	70%; req 4
Tactical Utility Vehicle, UAZ-469	60	12	12	20%; can use HMMWV/BRDM
Laser Target Designator	45	23	?	50%; req ?
Radar, GSR, Manportable, Fara-1	36	6	0	16%; req 6
Thermal Viewer, Handheld, Sophie	52	26	?	50%; req ?
UAV, Fox-AT2 (laser desig & FLIR)	4	3	3	70%, Raven B

e. Other critical systems MEEL from the **Anti-Tank Battalion**, **Artillery Battalion**, **Engineer Battalion**, and **Air Defense Battalion**:

Equipment	Req	Auth	OH	Comments
Bridge, AVLB	2/3	1	0	50%; req 1
Ditching Machine, MDK-3	3	2	4	66%
Minelayer, GMZ, UMZ, PMZ-4	9	5	0	50% strength; Combat engineer Co required
Route-Clear Veh, BAT-2	1	1	0	70%; Combat engineer Co required
Mineclearing Roller, KMT-7	6	4	0	66%; VISMOD Requirements;
Ar. Eng. Tractor, IMR-2M	2	1	0	(ACE); Combat engineer Co required; req 1
Mine Breach Veh, UR-77	1	1	0	(VISMOD); req 1
SP AA Gun/Msl Syst, 2S6M	6	4	0	NGCATS with Dog Ear Radar; req 4
ACV, AD, Sborka w/dog ear	5	3	0	70%, VISMOD-instrumented, req 3
152-mm SP Howitzer, 2S19	18	6	0	12 constructive, 6 live/VISMOD; req 6
Art Loc Rdr IL220	1	1	0	VISMOD; req 1
ATGM, AMX-10 HOT 3 or AT-9	24	12	0	50%; replaces AT-5 BRDM, req 8
125-mm AT Gun, 2A45M	24	8	0	33%; req 4
ATGL, Pnzfst 3-T600	42	21	11	50%; use current RPG7 w/VISMOD; req 9
ATDL, RPG-27	130	65	0	50%; can use VISMOD At-4; req ?
ACV, BMP-1KSh, C2 (IW) (Computer Warfare Station)	12	3	0	VISMOD & replicated in constructive sim; req 3 VISMOD

f. Additional **IW/SPF/Guerilla** warfare required equipment (this is equipment that can not be duplicated or borrowed from other conventional OPFOR units due to uniqueness or the likelihood that they are already being used):

Equipment	Req	Auth	OH	Comments
7.62mm Sniper Rifle, SVD/Mosin	11	8	?	70%; US version OK; Req 8
ATGL, Panzerfaust 3-T600	14	7	0	50%; req 7
GPS Jammer, Manportable	3	3	0	100%; req 2
Radar, GSR, Manport. Fara-1	3	1	0	33%; req 1
Laser Target Designator	15	7	?	50%; req ?
RPG 7V	34	17	17	50%;
RPG 22	36	18	0	50%; use US made LAW; req 18
ATDL, RPG-27	33	14	0	50%; can use VISMOD At-4; req ?
ATDL, Armbrust	24	12	0	50%; req 12
ATGM Lcher, Manport-SR, Eryx	12	6	0	50%; req 6
.50 BMG Antimat. Rifle, M82A1	14	7	0	50%; req 7
AD/AT Sys (ADAAS) Starstreak	3	2	0	?? 66%; req 2
Commo Radio DF & Intcp, Manport	3	1	0	33%; requires soldiers or contractors; req 1
Portable, SATCOM	38	9	?	20%; req ?
MANPADS SA 14/18	12	8	0	70%; req 8
60mm mortar	13	9		70%; req ?
IED Vests	52	36	0	70%/ req 36

4. **Total NTC** OPFOR system requirements within a BTG at approximately 70% or higher strength per system:

Equipment	Req	Auth	OH	Comments
120mm Combo 2S9-1	12	8	0	70%; 12 mtrs; req 8
120mm Combo 2S23	6	4	0	70%; use 82mm mtr; req 4
125-mm AT, 2A45M	24	8	6	33%; req 2
Howitzer, 2S19	18	6	0	33%; req 6 via Augmentation
.50 Antimat Rifle	29	12	2	50%; req 10 (2x Barrels OH, need MILES)
60mm mortar	13	9	0	70%; req 9
7.62mm Sniper Rif	11	8	0	70%; req 8
Arty loc rdr IL220	1	1	0	100%; req 1
ACV, AD, dog ear	5	3	0	70%; req 3
AA Gun/Msl, 2S6M	6	4	0	70%; NGCATS-rep ASET-IV; req 4

Equipment	Req	Auth	OH	Comments
APC, BTR-80A	57	41	0	70%; req 32 (incl 9 x C2)
ACV, BMP-1KSh, IW) (Computer)	12	3	0	25%; req 3
AD/AT Starstreak	3	2	0	70%; req 2
RPG 7V	34	17	357	50%; SLM; 440 var 2 turn-in;
RPG 22	36	18	0	50%; use US made LAW;
ATDL, RPG-27	556	277	183	50%; can use AT-4; NTC has 600 for BLUE & Red
ATDL, Armbrust	120	59	0	50%; req 59
ATGL LR RPG-29	27	11	0	50%; req 11
ATGL PZF 3-T600	149	74	74	50%; use VISMOD RPG7; req 16
ATGM HOT3 (BRDM)	43	25	0	60%, 20xBRDM AT-5; req 25
ATGM Manport AT13	9	5	24	50%; can use TOW; req 5
ATGM Lcher, Eryx	17	9	0	50%; req 9
Bridge, AVLB	2	1	0	50%; req 1
Ditch. Mach.MDK-3	3	2	4	66% 4 x SEE, 2 x John Deer
Radio DF/Atk BMP1	5	2	3	40%; req sldr/contr; req 32
Radar DF/Atk BMP1	3	1	1	33%; req sldr/contr req 1
Eng.Tractor IMR2M	2	1	7	50%; req sldr/contr req 1
GPS Jammer, Manp	3	3	0	100; req 3
IED Vests	52	36	36	70%;
IFV, BMP-2M	105	94	99	90%; +16xM113 version (9 converted to OSTVs) 15 at FCS
Laser Designator	60	30	0	50%; req 30
MBT, T80	31	31	52	70%; 3 at FCS
Mine Breach, UR77	1	1	3	100; (VISMOD) M113
Mine Plow, KMT-6	9	7	7	70%; M113
Mine Roller, KMT7	6	4	3	70%; req 1 M113
Minelayer, GMZ, UMZ, PMZ-4	9	5	3	70%; Engineer CO Augmentation needed; req 2 (3x 548)
MANPADS SA 14	12	8	0	66%; req 8
MANPADS SA 18	30	21	0	70% (20 Stingers); req 21
Portable, SATCOM	38	9	?	18%; req ?
Radar, GSR, Manp	39	7	0	18%; req 7
Route-Clear BAT-2	1	1	6	100%; ACE x 6
COB-Vs	155	155	183	100%; req ?
UAZ Tact Veh	60	18	74	30; use HMMWV w/77 shark noses
UAV, Fox-AT2 (lslr desig & FLIR)	4	3	6	Raven B; also use silver fox & get WASP in FY 08
Thermal View, handheld, Sophie	52	26	?	50%; req 26
BM-21 (Optional)		1		

5. NTC OPFOR Personnel Manning:

a. The following spreadsheets show the minimum required OPFOR manning based on the previously presented OPFOR Battalions withing the BTG that NTC must be capable of replicating at the high end of MCO.

b. While the NTC can replicate the majority of required OPFOR force with organic manning, they will need to be augmented with one each non-organic engineer company and field artillery battery per full-spectrum rotation.

Mech Bn 1					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
BMP	36	3 + 3	108	108	
BMP C2	2	3	6		
2S9 120mm	4	3	12		
Total			126	108	234

Mech Bn 2					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
BMP	36	3 + 3	108	108	
BMP C2	2	3	6		
2S9 120mm	4	3	12		
Total			126	108	234

APC Bn					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
BTR-80A	32	2+4	64	128	
BTR-80 C2	2	2	4		
ATGM Hot-3	5	3	15		
2S9 120mm	4	3	12		
Total			95	128	223

Tank Bn					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
MBT T-80	31	3	93		
BMP	5	3+3	15	15	
BMP C2	2	3	6		
Total			114	15	129

Recon Bn					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
BMP C2	1	3	3		
BTR-80	7	2+4	14	28	
ATGM Hot-3	8	3	24		
BMP	10	3+3	30	30	
UAZ 469	12	2	24		
GSR Radar	6	2	12		
UAV	3	3	9		
Total			116	58	174

AT Bn 1					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
2A45M ATG	8	3	24		
ATGM Hot-3	12	3	36		
BMP C2	3	3	9		
Total			69		69

AT Bn 2					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
2A45M ATG	8	3	24		
ATGM Hot-3	12	3	36		
BMP C2	3	3	9		
Total			69		69

IW/SPF Co	113
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Total Combat Force Requirement **1245**

Proposed Augmentee Requirement = 1 X En Co and 1 X FA Btry

6. The current overarching assessment of NTC OPFOR capabilities is provided below in which Red indicates the a severe degradation of capabilities that will have negative impact on training and training conditions cannot be properly replicated; Amber indicates a limited condition-setting capability that accepts some risk or requires work-arounds; and Green provides that a "good-enough" solution exists, although modifications may have to be made to stay relevant:

OPFOR Weapons	Anti-Tank	A	Received 400 new TASC Shoulder Launched Missiles (SLM) as RPG; need others too an appropriate MILES codes (uses AT-4 code)
	Air Defense	R	One unfunded ASET IV; need replacement system for 2S6, ZSU, and MANPADS (SA 7/14/16/16/18)
	Artillery	G	FORSCOM agreed for augmentation of one Battery
	Rifles	A	US Sniper rifles; has two variations of AK Rifles (real imported but no ammo and 5.56mm version but malfunctions).
OPFOR TADSS	MILES	R	Wrong or non-existing OPFOR weapon Ph/Pk codes (mostly US codes) and inadequate performance for urban effects & assessments
	IEDs	G	JIEDDO supported
	IED Like	A	Currently JIEDDO Supported
OPFOR C4ISR	IW/EW	R	Has MI company with appropriate MOS but no IW/EW equipment
	C2	A	No OPFOR entity tracking system (like BLUFOR tracker), has SATCOM
	ISR	A	Has various UASs, US Army thermal & similar devices
OPFOR Vehicles	OSV/OSV-MBT	G	Has appropriate number to replicate 1 tank BN + 3 BMP BNs (BN- spare)
	OSWV	R	None to challenge Stryker BCTs or replicate world-proliferation to gain advantages in speed, urban mobility, & noise reduction. No light utility vehicles (BLUFOR, OPFOR, OC, visitors use HMMWVs)
	Technical Veh's	A	Limited local production, no Army program (COB-Vs OK)
	VISMODs	A	OSV fleet great; HMMWV fleet limited to shark-nose; Engineer VISMODs required
	Aircraft	A	UH 72 being fielded; no FLIR to provide attack version beyond 1km stand-off engagement to properly train BCT air defenses

5-2 (2) JRTC OPFOR Organization and Requirements

1. Overview: The Joint Readiness Training Center (JRTC) is located at Fort Polk, LA, approximate 60 miles southwest of Alexandria near Leesville. It consists largely of wooded terrain and primarily trains infantry brigade combat teams (IBCTs) and special operations units, but also specialize in Joint training exercises.

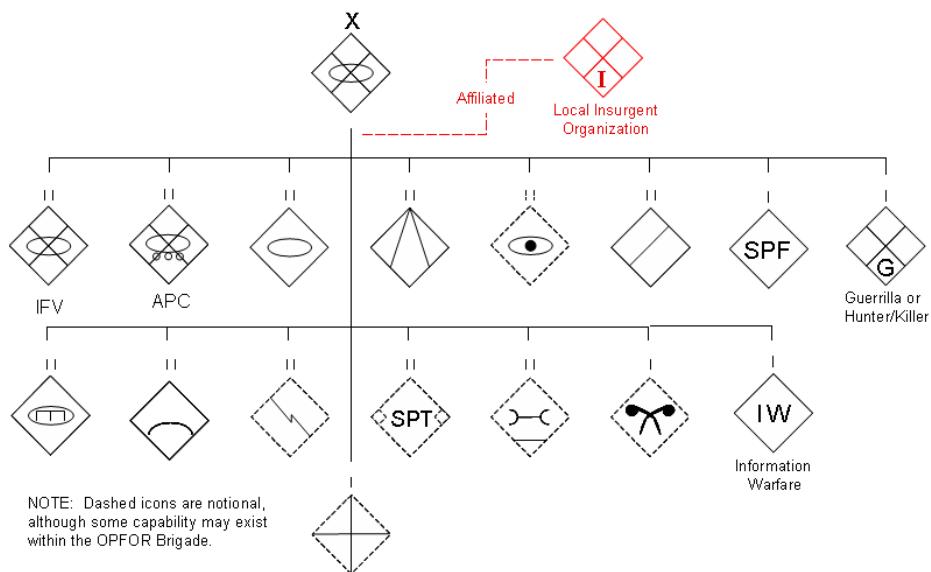
a. Mission: To conduct tough, realistic, multi-echelon, joint and combined arms training to develop bold, innovative leaders able to deal with complex situations; flexible, skilled soldiers imbued with the warrior ethos; and highly proficient, cohesive units capable of conducting operations across the full spectrum of conflict. (CTC MP FY10-15 POM)

b. OPFOR: The OPFOR mission is performed by the 1-509th (Airborne) Infantry Battalion consisting of a headquarters company, two airborne infantry companies and one (TDA) cavalry troop which drives their OPFOR tanks. The OPFOR normally supports up to 10 rotations a year [being able to surge to 11 rotations per year]. Rotational days are generally 24 hours a day, regardless of the rotational scenario. For the OPFOR, rotations run 18-21 days a month to include a preparation, execution, and recovery phases. When not in rotation, training days are IAW training requirements to maintain the Battalion's METL, including airborne operations and MOS training. In addition, the Battalion conducts one EIB testing cycle and one Jumpmaster MTT a year. The EIB and Jumpmaster MTT are run over a 20-day period. The cavalry troop deploys off post, two weeks each fiscal year, to conduct MOS Specific training. Since the outset of the Global War on Terrorism, two companies of 1-509th IN (ABN) (OPFOR) have deployed, and may be required to do so again for future operations therefore; the 509th must be resourced as a combat infantry battalion and prepared to execute a secondary mission as a deployable force.

2. OPFOR Organization: Due to the training requirement to challenge and be capable of "sparring" with BLUFOR IBCTs, the 1-509th must but be capable of replicating a mechanized Brigade Tactical Group (BTG).

a. The JRTC OPFOR BTG must consist of one mechanized infantry, one armored personnel carrier (APC), one tank, one

anti-armor, one reconnaissance, and one artillery battalion each. (note: the mechanized IFV or APC battalion can be replaced with a motorized (truck) battalion but would require additional OPFOR infantry to make up lost fire-power). At JRTC, additional emphasis is also placed in non-conventional forces.



b. Due to the lack of assigned specialized units and personnel, the JRTC OPFOR must be augmented to be fully capable for supporting full-spectrum training:

(1) 1-509th is not authorized organic engineer, intelligence, air defense, or artillery units which must be augmented to various degrees pending rotational training requirements.

(2) OPFOR Augmentation Units (OAU) continue to support JRTC by replicating both host nation and threat forces. An ARNG battalion should be designated with a habitual relationship to JRTC IAW AR 350-50. Additionally, with the newly emplaced 01-06 MTOE, the 1-509th will incur additional losses as company executive officer positions are deleted and rifle squads are reduced from nine soldiers to seven; while the new end-strength may reflect a full MTOE fill, the reduced overall numbers may adversely affect the unit's ability to perform full-spectrum OPFOR missions unless the MTOE is adjusted or augmentations fill the gap.

(3) Historically, JRTC OPFOR relied upon the 2nd ACR (SBCT) to supply MOS qualified drivers for their OPFOR surrogate

vehicles (OSV) BMPs. However, with the departure of the 2nd ACR (SBCT) from Fort Polk and the stationing of the 4th Brigade, 10th Mountain Division, the pool of qualified drivers no longer exists on Fort Polk. An already submitted request through FORSCOM to HQDA G3/5/7 for an additional MTOE infantry company will help alleviate this problem, if approved and manned.

3. While most of the below listed units, as well as supporting units, do not necessarily have to be replicated with all live equipment at MCTCs, a mission essential equipment list (MEEL) is provided to identify those systems required to fully replicate the capabilities found in the OPFOR BTG at 70% strength:

a. Mechanized Battalion (**IFV**) MEEL:

Equipment	Req	Auth	OH	Comments
BMPs	40	28	28	70%
2 ACV, BMP-1KSh (C2)	2	2	2	100%
ATGL LR RPG-29	3	2	0	66%; req 2
ATGL PZF 3-T600	30	15	15	50%; use current RPG7 w/VISMOD
120mm Combo 2S9-1	6	4	0	70%; req 4 (82mm Mort used)
.50 AMR M82A1	3	2	2	70%; req 2
SA 18	6	4	0	70%; req 4
ATDL (RPG-27)	68	34	34	50%; AT-4 available
ATDL Armbrust	30	15	0	70%; req 15

b. **APC** Battalion MEEL:

Equipment	Req	Auth	OH	Comments
APC, BTR-80A per BN	46	32	0	70%; req 32
ACV, BTR-80, Kushetka, C2	2	2	0	100%; req 2
ATGM Lchr HOT-3	7	5	5	70%; replaces AT-5 BRDM, req 5
ATGM Lchr Manport AT-13	9	5	5	50%; can use TOW to simulate, need MILES
ATGM lchr Manport SR Eryx	5	3	0	50%; req 3
ATGL LR RPG-29	18	9	0	50%; req 9
ATGL PZF 3-T600	31	16	16	50%; use current RPG7 w/VISMOD
120mm SP Com/Gun 2S23	6	4	4	70% strength; 82mm Mort; req 4
.50 AMR M82A1	6	3	0	50% strength; req 3
SA 18	6	4	0	70% strength; 20 Stingers available; req 4

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Equipment	Req	Auth	OH	Comments
ATDL (RPG-27)	94	47	47	50%; use VISMOD AT-4
ATDL Armbrust	36	17	0	50%; req 17

c. **Tank** Battalion MEEL:

Equipment	Req	Auth	OH	Comments
MBT, T80 per BN	31	21	21	70%; req 9
IFV, BMP-2M	6	4	4	70%
ACV, BMP-1KSh, C2	2	2	0	100%; req 2
Mineclearing Plow, KMT-6	9	7	0	70%; VISMOD; req 7
ATGL PZF 3-T600	2	1	0	50%; req 1
SA 18	6	4	0	70%; req 4
ATDL (RPG-27)	34	17	17	50%; VISMOD AT-4, need MILES

d. **Reconnaissance** Battalion MEEL:

Equipment	Req	Auth	OH	Comments
ACV, BMP-1KSh, C2	2	1	0	50%; req 1
ACV, BMP-1KSh, C2 Jammer, Intercom/DF	3	2	0	66%; will require soldiers/contractors, req 2
ACV, BMP-1KSh, Radar Intercept/DF	3	1	0	33%; will require soldiers/contractors, req 1
ACV, BTR-80, Kushetka, C2	9	7	0	70%; using HMMWV/BRDM, req 7
BRDM-2M w/ATGM-HOT3	12	8	0	70%; replaces AT5 BRDM; req 8
IFV, BMP-2M	11	8	4	70%; req 4
ATDL, RPG-27	134	67	?	50%; can use VISMOD AT-4; req ?
MANPAD, SA-18	6	4	0	70%; req 4
Tactical Utility Vehicle, UAZ-469	60	12	12	20%; can use HMMWV/BRDM
Laser Target Designator	45	23	?	50%; req ?
Radar, GSR, Manportable, Fara-1	36	6	0	16%; req 6
Thermal Viewer, Handheld, Sophie	52	26		50%; req ?
UAV, Fox-AT2 (laser design & FLIR)	4	3	3	70%, Raven B

e. Other critical systems MEEL from the **Anti-Tank** Battalion, **Artillery** Battalion, **Engineer** Battalion, and **Air Defense** Battalion:

Equipment	Req	Auth	OH	Comments
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Equipment	Req	Auth	OH	Comments
Bridge, AVLB	2/3	0	0	Not required; replicated in constructive sim
Ditching Machine, MDK-3	3	0		Not required; replicated in constructive sim
Minelayer, GMZ, UMZ, PMZ-4	9	5	0	50% strength; Combat engineer Co required
Route-Clear Veh, BAT-2	1	1	0	70% ; Combat engineer Co required
Mineclearing Roller, KMT-7	6	4	0	66%; VISMOD Requirements;
Ar. Eng. Tractor, IMR-2M	2	1	0	(ACE); Combat engineer Co required; req 1
Mine Breach Veh, UR-77	1	1	0	(VISMOD); req 1
SP AA Gun/Msl Syst, 2S6M	6	4	0	NGCATS with Dog Ear Radar; req 4
ACV, AD, Sborka w/dog ear	5	3	0	70%, VISMOD-instrumented, req 3
152-mm SP Howitzer, 2S19	18	6	0	12 constructive, 6 live/VISMOD; req 6
Art Loc Rdr IL220	1	1	0	VISMOD; req 1
ATGM, AMX-10 HOT 3 or AT-9	12	6	0	50%; replaces AT-5 BRDM, req 8
125-mm AT Gun, 2A45M	12	4	0	33%; req 4
ATGL, Pnzfst 3-T600	21	10	1	50%; use current RPG7 w/VISMOD; req 9
ATDL, RPG-27	65	32	0	50%; can use VISMOD At-4; req ?
ACV, BMP-1KSh, C2 (IW) (Computer Warfare Station)	12	3	0	VISMOD & replicated in constructive sim; req 3 VISMOD

f. Additional **IW/SPF/Guerilla** warfare required equipment (this is equipment that can not be duplicated or borrowed from other conventional OPFOR units due to uniqueness or the likelihood that they are already being used):

Equipment	Req	Auth	OH	Comments
7.62mm Sniper Rifle, SVD/Mosin	11	8	?	70%; US version OK; Req 8
ATGL, Panzerfaust 3-T600	14	7	0	50%; req 7
GPS Jammer, Manportable	3	3	0	100%; req 2
Radar, GSR, Manport. Fara-1	3	1	0	33%; req 1
Laser Target Designator	15	7	?	50%; req ?
RPG 7V	34	17	17	50%;
RPG 22	36	18	0	50%; use US made LAW; req 18

Equipment	Req	Auth	OH	Comments
ATDL, RPG-27	28	14	0	50%; can use VISMOD At-4; req ?
ATDL, Armbrust	24	12	0	50%; req 12
ATGM Lcher, Manport-SR, Eryx	12	6	0	50%; req 6
.50 BMG Antimat. Rifle, M82A1	14	7		50%; req 7
AD/AT Sys (ADAAS) Starstreak	3	2	0	?? 66%; req 2
Commo Radio DF & Intcp, Manport	3	1	0	33%; requires soldiers or contractors; req 1
Portable, SATCOM	38	7	?	20%; req ?
MANPADS SA 14/18	12	8	0	70%; req 8
60mm mortar	13	9		70%; req ?
IED Vests	52	36	0	70% / req 36

4. **Total JRTC OPFOR** system requirements within a BTG at approximately 70% or higher strength per system:

Equipment	Req	Auth	OH	Comments
120mm Combo 2S9-1	6	4	0	70%; req 2
120mm Combo 2S23	6	4	0	70%; use 82mm mtr; req 4
125-mm AT, 2A45M	12	4	0	33%; req 4
Howitzer, 2S19	18	6	0	33%; Augmentation
.50 Antimat Rifl	23	12	0	50%; req 12
60mm mortar	13	9	4	+8x81mm Mortars; req 5 NEEDS LOUDER SIGNATURE
7.62mm Sniper Rif	11	8	0	70%; req 8 M24x3, M110x3, M14x3 (MILES Issues)
Arty loc rdr IL220	1	1	0	100%; req 1
ACV, AD, dog ear	5	3	0	70%; req 3
AA Gun/Msl, 2S6M	6	4	0	70%; NGCATS-rep ASET-IV; req 4
APC, BTR-80A	57	41	0	70%; req 32 (incl 9 x C2)
ACV, BMP-1KSh, IW (Computer)	12	3	0	25%; req 3
AD/AT Starstreak	3	2	0	70%; req 2
RPG 7V	34	17	124	50%; Var1x40, var2x84
RPG 22	36	18	0	50%; use US made LAW; req 18
ATDL, RPG-27	423	211	0	50%; can use AT-4; req 211
ATDL, Armbrust	90	44	0	50%; req 44
ATGL LR RPG-29	21	11	0	50%; req 11
ATGL PZF 3-T600	98	49	33	50%; use VISMOD RPG7; req 16
ATGM HOT 3 (BRDM)	31	19	0	50%, replaces AT-5; req 19
ATGM Manport AT 7/13	9	5	0	50%; can use TOW; req 5
ATGM Lcher, Eryx	17	9	0	50%; req 9
Bridge, AVLB	2	0	0	Constructively simulated
Ditch. Mach.MDK-3	3	0	0	Constructively simulated
Radio DF/Atk BMP1	5	2	0	40%; req sldr/contr; req 32
Radar DF/Atk BMP1	3	1	0	33%; req sldr/contr req 1

Equipment	Req	Auth	OH	Comments
Eng.Tractor IMR2M	2	1	0	50%; req sldr/contr req 1
GPS Jammer, Manp	3	3	0	100%; req 3
IED Vests	52	36	0	70%; req 36
IFV, BMP-2M	63	45	31	70%; 89 x M113; (incl 5x C2) req 14
Laser Designator	60	30	0	50%; req 30
MBT, T80	31	21	29	70%;
Mine Breach, UR77	1	1	0	100%; (VISMOD) req 1
Mine Plow, KMT-6	9	7	7	70%; req 7 Homemade
Mine Roller, KMT7	6	4	4	70%; req 4 Homemade
Minelayer, GMZ,UMZ,PMZ-4	9	5	0	70%; Engineer CO Augmentation needed; req 5
MANPADS SA 14	12	8	0	66%; req 8
MANPADS SA 18	24	16	0	66% (20 Stingers); req 16
Portable, SATCOM	38	7	3	18%; req 4
Radar, GSR, Manp	39	7	0	18%; req 37
Route-Clear BAT-2	1	1	0	100%; req 1
COB-Vs	150	150	150	100%;
UAZ Tact Veh	60	18	16	30; use BRDM nose & turret; req 2
UAV, Fox-AT2 (lsr desig & FLIR)	4	3	3	Raven B (use by RTU)
Thermal View, handheld, Sophie	52	26	0	50%; req 26
BM-21 (Optional)		1	0	

5. JRTC OPFOR Personnel Manning:

a. The following spreadsheets show the minimum required OPFOR manning based on the previously presented OPFOR Battalions within the BTG that JRTC must be capable of replicating at the high end of MCO.

b. While the JRTC can replicate the majority of required OPFOR force with organic manning when their MTOE is reconfigured into a standard Infantry Battalion (current authorization is only 442 with a D Company TDA), they will still need to be augmented with two Infantry Companies and one each non-organic engineer company and field artillery battery per full-spectrum rotation.

Mech Bn					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
BMP	28	3 + 3	84	84	
BMP C2	2	3	6		

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2S9 120mm	4	3	12		
Total			102	84	186

APC Bn					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
BTR-80A	32	2+4	64	128	
BTR-80 C2	2	2	4		
ATGM Hot-3	5	3	15		
2S9 120mm	4	3	12		
Total			95	128	223

Tank Bn					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
MBT T-80	21	3	63		
BMP	4	3+3	12	12	
BMP C2	2	3	6		
Total			81	12	93

Recon Bn					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
BMP C2	1	3	3		
BTR-80	7	2+4	14	28	
ATGM Hot-3	8	3	24		
BMP	8	3+3	24	24	
UAZ 469	12	2	24		
GSR Radar	6	2	12		
UAV	3	3	9		
Total			110	52	162

AT Bn					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
2A45M ATG	4	3	12		
ATGM Hot-3	6	3	18		
BMP C2	3	3	9		
Total			39		39
IW/SPF Co					113

Total Combat Force Requirement 427 276 816

Proposed Augmentee Requirement = 2 X Inf Co, 1 X En Co, and 1 X FA Btry

6. The current overarching assessment of JRTC OPFOR capabilities is provided below in which Red indicates the a severe

degradation of capabilities that will have negative impact on training and training conditions cannot be properly replicated; Amber indicates a limited condition-setting capability that accepts some risk or requires work-arounds; and Green provides that a “good-enough” solution exists, although modifications may have to be made to stay relevant:

OPFOR Weapons	Anti-Tank	(A)	Maintains older variant 2 RPG-7 with MILES Code selector but no appropriate MILES codes (uses AT-4 code)
	Air Defense	(R)	One unfunded ASET IV; need replacement system for 2S6, ZSU, and MANPADS (SA 7/14/16/18)
	Artillery	(G)	FORSOCOM agreed for augmentation of one Battery
	Rifles	(A)	US Sniper rifles; has no threat variant rifles (AKs)
OPFOR TADSS	MILES	(R)	Wrong or non-existing OPFOR weapon Ph/Pk codes (mostly US codes) and inadequate performance for urban effects & assessments
	IEDs	(G)	JIEDOO supported
	IED Like	(A)	Currently JIEDOO Supported
OPFOR C4ISR	IW/EW	(R)	Has no intelligence IW/EW equipment or operators (no MICO)
	C2	(A)	No OPFOR entity tracking system (like BLUFOR tracker), has SATCOM
	ISR	(A)	Has Raven B UAS; use US Army thermal & similar devices
OPFOR Vehicles	OSV/OSV-MBT	(G)	Has appropriate number to replicate 1 tank BN + 1 BMP BN (70%)
	OSWV	(R)	None to challenge Stryker BCTs or replicate world-proliferation to gain advantages in speed, urban mobility, & noise reduction. No light utility vehicles (BLUFOR, OPFOR, OC, visitors use HMMWVs)
	Technical Veh's	(A)	Limited local production, no Army program (COB-Vs OK)
	VISMODs	(A)	OSV fleet great; HMMWV fleet limited to shark-nose; Engineer VISMODs required
	Aircraft	(A)	UH 72 being fielded; no FLIR to provide attack version beyond 1km stand-off engagement to properly train BCT air defenses

5-2 (3) JMRC OPFOR Organization and Requirements

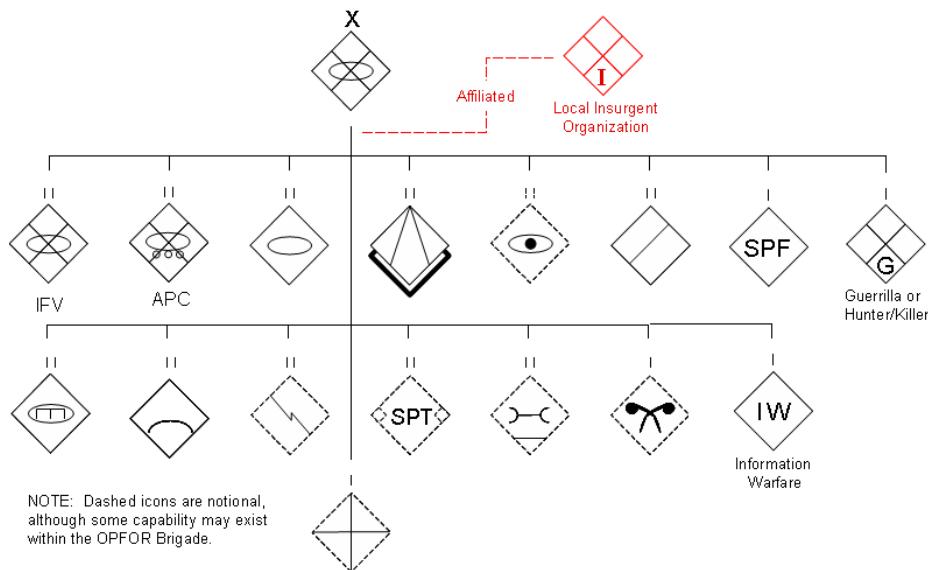
1. Overview: The Joint Multinational Readiness Center (JMRC) is located at Hohenfels, Germany, approximate two hours northeast of Munich, and is subordinate to the Joint Multinational Training Center (JMTC). It consists largely of wooded terrain and rolling hills and trains a multitude of military units to include IBCTs, SBCT, HBCTs, SOF, and multinational units. It also specializes in Joint training exercises.

a. Mission: To provide tough, realistic, and challenging joint and combined arms training; focuses on improving readiness by developing Soldiers, their leaders and units in support of the Global War on Terrorism, and for success on current and future battlefields; provides simulated combat training exercises for task organized Brigade Combat Teams (BCT)/Heavy BCT, Stryker BCT, Airborne BCT, and functional brigades across the full spectrum of operations; plans coordinates, and executes Combat Training Center (CTC) and Exportable Training Capability (ETC) rotations/Mission Rehearsal Exercises to prepare units for full spectrum operations: Major Combat Operations (MCO), Counter-Insurgency (COIN) Operations, and Security Operations Stability Operations (SOSO). (CTC MP FY10-15 POM)

b. OPFOR: The OPFOR mission is performed by the 1-4th Infantry Battalion consisting of a headquarters company that includes an anti-armor platoon and a scout platoon; three light infantry companies and one tank company which uses TDA OSV MBTs at JMRC but trains on M1s for real world deployments. The OPFOR normally supports up to 8 rotations a year and forms the center of the exportable training capability. Rotational days are generally 24 hours a day, regardless of the rotational scenario and run 18-21 days a month to include a preparation, execution, and recovery phases. When not in rotation, training days are IAW training requirements to maintain the Battalion's METL. In addition, the battalion provides one maneuver company augmented with a battalion TAC on continual bases in support of OEF.

2. OPFOR Organization: Due to the training requirement to challenge and be capable of "sparing" with various BLUFOR units, the 1-4th must but be capable of replicating a mechanized Brigade Tactical Group (BTG).

a. The JMRC OPFOR BTG must consists of one mechanized, armored personnel carrier (APC), tank, reconnaissance, and artillery battalion each; and two anti-armor battalions. (note: the mechanized IFV or APC battalion can be replaced with a motorized (truck) battalion but would require additional OPFOR infantry to make up lost fire-power).



b. 1-4th is not authorized engineer, intelligence, air defense, or artillery units which must be augmented to various degrees pending rotational training requirements. Army Reserve (or ARNG when available) units continue to support JMRC by replicating host nation forces and augmenting the OPFOR.

3. While most of the below listed units, as well as supporting units, do not necessarily have to be replicated with all live equipment at MCTCs, a mission essential equipment list (MEEL) is provided to identify required systems (generally 70% strength):

a. Mechanized Battalion (**IFV**) MEEL:

Equipment	Req	Auth	OH	Comments
BMPs	40	28	0	70% (still use M113; 89); req 28
2 ACV, BMP-1KSh (C2)	2	2	0	100%; req 2
ATGL LR RPG-29	3	2	0	66%; req 2
ATGL PZF 3-T600	30	15	0	50%; use current RPG7 w/VISMOD
120mm Com/Gun 2S9-1	6	4	4	70%; req 4 (82mm Mort used)
.50 AMR M82A1	3	2	2	70%; req 2

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Equipment	Req	Auth	OH	Comments
SA 18	6	4	0	70%; req 4
ATDL (RPG-27)	68	34	34	50%; AT-4 available
ATDL Armbrust	30	15	0	70%; req 15

b. **APC** Battalion MEEL:

Equipment	Req	Auth	OH	Comments
APC, BTR-80A per BN	46	32	0	70%; req 32
ACV, BTR-80, Kushetka, C2	2	2	0	100%; req 2
ATGM Lchr HOT-3	7	5	0	70%; replaces AT-5 BRDM, req 5
ATGM Lchr Manport AT-13	9	5	0	50%; can use TOW to simulate, need MILES; req 5
ATGM lchr Manport SR Eryx	5	3	0	50%; req 3
ATGL LR RPG-29	18	9	0	50%; req 9
ATGL PZF 3-T600	31	16	0	50%; use current RPG7 w/VISMOD
120mm Combo 2S23	6	4	4	70% strength; 82mm Mort; req 4
.50 AMR M82A1	6	3	0	50% strength; req 3
SA 18	6	4	4	70% strength; 20 Stingers available; req 4
ATDL (RPG-27)	94	47	?	50%; use VISMOD AT-4
ATDL Armbrust	36	17	0	50%; req 17

c. **Tank** Battalion MEEL:

Equipment	Req	Auth	OH	Comments
MBT, T80 per BN	31	31	31	100% (OSV MBTs)
IFV, BMP-2M	6	4	0	70%
ACV, BMP-1KSh, C2	2	2	0	100%; req 2
Mine clearing Plow, KMT-6	9	7	0	70%; VISMOD; req 7
ATGL PZF 3-T600	2	1	0	50%; req 1
SA 18	6	4	0	70%; need MILES, req 4
ATDL (RPG-27)	34	17	0	50%; VISMOD AT-4, need MILES

d. **Reconnaissance** Battalion MEEL:

Equipment	Req	Auth	OH	Comments
ACV, BMP-1KSh, C2	2	1		50%; req 1
ACV, BMP-1KSh, C2 Jammer, Interc/DF	3	2	0	66%; will require soldiers/contractors, req 2
ACV, BMP-1KSh, Radar Intercept/DF	3	1	0	33%; will require soldiers/contractors, req 1

Equipment	Req	Auth	OH	Comments
ACV, BTR-80, Kushetka, C2	9	7	0	70%; using HMMWV/BRDM, req 7
BRDM-2M w/ATGM-HOT3	12	8	0	70%; replaces AT5 BRDM; req 8
IFV, BMP-2M	11	8	4	70%; req 4
ATDL, RPG-27	134	67	0	50%; can use VISMOD AT-4; req ?
MANPAD, SA-18	6	4	0	70%; req 4
Tactical Utility Vehicle, UAZ-469	60	12	12	20%; can use HMMWV/BRDM; have VISMODs for BRDM replication
Laser Target Designator	45	23	?	50%; req ?
Radar, GSR, Manportable, Fara-1	36	6	0	16%; req 6
Thermal Viewer, Handheld, Sophie	52	26		50%; req ?
UAV, Fox-AT2 (laser desig & FLIR)	4	3	0	70%, req 3 (JNTC - Freq issue)

e. Other critical systems MEEL from the **Anti-Tank** Battalion, **Artillery** Battalion, **Engineer** Battalion, and **Air Defense** Battalion:

Equipment	Req	Auth	OH	Comments
Bridge, AVLB	2/3	0	0	Not required; replicated in constructive sim
Ditching Machine, MDK-3	3	0	0	Not required; replicated in constructive sim
Minelayer, GMZ, UMZ, PMZ-4	9	5	0	50% strength; Combat engineer Co required
Route-Clear Veh, BAT-2	1	1	0	70% ; Combat engineer Co required
Mine clearing Roller, KMT-7	6	4	0	66%; VISMOD Requirements;
Ar. Eng. Tractor, IMR-2M	2	1	0	(ACE); Combat engineer Co required; req 1
Mine Breach Veh, UR-77	1	1	0	(VISMOD); req 1
SP AA Gun/Msl Syst, 2S6M	6	4	0	NGCATS with Dog Ear Radar; req 4
ACV, AD, Sborka w/dog ear	5	3	0	70%, VISMOD-instrumented, req 3
152-mm SP Howitzer, 2S19	18	6	6	12 constructive, 6 live/VISMOD; req 6 (VISMODs are in Motorpool)
Art Loc Rdr IL220	1	1	0	VISMOD; req 1
ATGM, AMX-10 HOT 3 or AT-9	24	8	0	50%; replaces AT-5 BRDM, req 8
125-mm AT Gun, 2A45M	24	8	12	33%; req 4 (4 TOW2 systems in the AT platoon (MTOE); 8 additional from TDA)
ATGL, Pnzfst 3-	42	21	0	50%; use current RPG7 w/VISMOD;

Equipment	Req	Auth	OH	Comments
T600				req 21
ATDL, RPG-27	130	65	0	50%; can use VISMOD At-4; req ?
ACV, BMP-1KSh, C2 (IW) (Computer Warfare Station)	12	3	0	VISMOD & replicated in constructive sim; req 3 VISMOD

f. Additional **IW/SPF/Guerilla** warfare required equipment (this is equipment that can not be duplicated or borrowed from other conventional OPFOR units due to uniqueness or the likelihood that they are already being used):

Equipment	Req	Auth	OH	Comments
7.62mm Sniper Rifle, SVD/Mosin	11	8	10	70%; US version OK (M14)
ATGL, Panzerfaust 3-T600	14	7	0	50%; req 7
GPS Jammer, Manportable	3	3	0	100%; req 2
Radar, GSR, Manport. Fara-1	3	1	0	33%; req 1
Laser Target Designator	15	7	?	50%; req ?
RPG 7V	34	17	17	50%;
RPG 22	36	18	0	50%; use US made LAW; req 18
ATDL RPG 27	28	14	0	50%; can use VISMOD At-4; req ?
ATGM Lcher, Manport-SR, Eryx	24	12	0	50%; req 12
.50 BMG Antimat. Rifle, M82A1	12	6	0	50%; req 6
AD/AT Sys (ADAAS) Starstreak	14	7		50%; req 7
Commo Radio DF & Intcp, Manport	3	2	0	?? 66%; req 2
Portable, SATCOM	3	1	0	33%; requires soldiers or contractors; req 1
MANPADS SA 14/18	38	7	40+	20%; req ? MILES warehouse has over 90 of these (I think)
60mm mortar	12	8	8	70%; req 8 (Companies have very Spartan mortar VISMODs)
IED Vest	13	9	9	70%; req ? 1-4 has made these.

4. **Total JMRC** OPFOR system requirements within a BTG at approximately 70% or higher strength per system:

Equipment	Req	Auth	OH	Comments
120mm Combo 2S9-1	6	4	0	70%; req 2
120mm Combo 2S23	6	4	0	70%; use 82mm mtr; req 4

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Equipment	Req	Auth	OH	Comments
125-mm AT, 2A45M	12	4	0	33%; req 4
Howitzer, 2S19	18	6	0	33%; req 6
Arty loc rdr IL220	1	12	0	50%; req 12
60mm mortar	13	9	12	82mm Mortars
7.62mm Sniper Rif	11	8	0	70%; req 8
2 ACV, BMP-1KSh	6	1	0	100%; req 1
ACV, AD, dog ear	5	3	0	70%; req 3
AA Gun/Msl, 2S6M	6	4	0	70%; NGCATS-rep ASET-IV; req4
APC, BTR-80A	57	41	0	70%; req 32 (incl 9 x C2)
ACV, BMP-1KSh, IW) (Computer)	12	3	0	25%; req 3
AD/AT Starstreak	3	2	0	70%; req 2
RPG 7V	34	17	17	50%; use current VISMOD
RPG 22	36	18	0	50%; use US made LAW; req 18
ATDL, RPG-27	488	243	?	50%; can use AT-4; req ?
ATDL, Armbrust	120	44	0	50%; req 44
ATGL LR RPG-29	24	11	0	50%; req 11
ATGL PZF 3-T600	119	59	33	50%; VISMOD RPG7; req 26
ATGM HOT3 (BRDM)	42	25	0	50%, replaces AT-5; req 25
ATGM Manport AT7/13	9	5	0	50%; can use TOW; req 5
ATGM Lcher, Eryx	17	9	0	50%; req 9
Bridge, AVLB	2	0	0	Constructively simulated
Ditch. Mach.MDK- 3	3	0	0	Constructively simulated
Radio DF/Atk BMP1	5	2	0	40%; req sldr/contr; req 32
Radar DF/Atk BMP1	3	1	0	33%; req sldr/contr req 1
Eng.Tractor IMR2M	2	1	0	50%; req sldr/contr req 1
GPS Jammer, Manp	3	3	0	100%; req 3
IED Vests	52	36	0	70%; req 36
IFV, BMP-2M	63	45	0	70%; 89 x M113; (incl 5x C2) req 40
Laser Designator	60	30	0	50%; req 30
MBT, T80	31	31	31	100%
Mine Breach, UR77	1	1	0	100%; (VISMOD) req 1
Mine Plow, KMT-6	9	7	0	70%; req 7
Mine Roller, KMT7	6	4	0	70%; req 4
Minelayer, GMZ,UMZ,PMZ-4	9	5	0	70%; Engineer CO Augmentation needed; req 5
MANPADS SA 14	12	8	0	66%; req 8
MANPADS SA 18	24	16	0	66% (20 Stingers); req 16
Portable, SATCOM	38	7	0	18%; req ?
Radar, GSR, Manp	39	7	0	18%; req 37

Equipment	Req	Auth	OH	Comments
Route-Clear BAT-2	1	1	0	100%; req 1
COB-Vs	150	150	72	100%; req ?
UAZ Tact Veh	60	18	18	30; use BRDM/HMMWV; Using MTOE and TDA
UAV, Fox-AT2 (lsr desig & FLIR)	4	3	0	70%, req 3 (JNTC - Freq issue)
Thermal View, handheld, Sophie	52	26	0	50%; req 26
BM-21 (Optional)		1	6?	

5. JMRC OPFOR Personnel Manning:

a. The following spreadsheets show the minimum required OPFOR manning based on the previously presented OPFOR Battalions within the BTG that JMRC must be capable of replicating at the high end of MCO.

b. While the JMRC can replicate the majority of required OPFOR force with organic OPFOR Infantry Battalion (currently authorized 648 personnel), they will need to be augmented with one three Infantry Companies, an engineer company, and a field artillery battery per full-spectrum rotation when training a HEAVY BCT (a IBCT training unit will require only 1 Infantry Company as augmentation).

Mech Bn 1					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
BMP	36	3 + 3	108	108	
BMP C2	2	3	6		
2S9 120mm	4	3	12		
Total			126	108	234

APC Bn					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
BTR-80A	32	2+4	64	128	
BTR-80 C2	2	2	4		
ATGM Hot-3	5	3	15		
2S9 120mm	4	3	12		
Total			95	128	223

Tank Bn					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
MBT T-80	31	3	93		

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BMP	5	3+3	15	15	
BMP C2	2	3	6		
Total			114	15	129

Recon Bn					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
BMP C2	1	3	3		
BTR-80	7	2+4	14	28	
ATGM Hot-3	8	3	24		
BMP	10	3+3	30	30	
UAZ 469	12	2	24		
GSR Radar	6	2	12		
UAV	3	3	9		
Total			116	58	174

AT Bn #1					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
2A45M ATG	8	3	24		
ATGM Hot-3	12	3	36		
BMP C2	3	3	9		
Total			69		69

AT Bn #2					
Equipment	QTY	Crew + Dismounts	Total Crew	Total DM	Total Pers
2A45M ATG	8	3	24		
ATGM Hot-3	12	3	36		
BMP C2	3	3	9		
Total			69		69

IW/SPF Co 113

Total Combat Force Requirement 1011

Proposed Augmentee Requirement = 1 X En Co, 1 Inf Co, and 1 X FA Btry

6. The current overarching assessment of JMRC OPFOR capabilities is provided below in which Red indicates the a severe degradation of capabilities that will have negative impact on training and training conditions cannot be properly replicated; Amber indicates a limited condition-setting capability that accepts some risk or requires work-arounds; and Green provides that a "good-enough" solution exists, although modifications may have to be made to stay relevant:

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OPFOR Weapons	Anti-Tank	A	Received 400 new TASC Shoulder Launched Missiles (SLM) as RPG; need others too an appropriate MILES codes
	Air Defense	R	One unfunded ASET IV; need replacement system for 2S6, ZSU, and MANPADS (SA 7/14/16/18)
	Artillery	G	FORSCOM agreed for augmentation of one Battery
	Rifles	A	US Sniper rifles; has two variations of AK Rifles (real imported but no ammo and 5.56mm version but malfunctions).
OPFOR TADSS	MILES	R	Wrong or non-existing OPFOR weapon Ph/Pk codes (mostly US codes) and inadequate performance for urban effects & assessments
	IEDs	G	JIEDDO supported
	IED Like	A	Currently JIEDDO Supported
OPFOR C4ISR	IW/EW	R	Has MI company with appropriate MOS but no IW/EW equipment
	C2	A	No OPFOR entity tracking system (like BLUFOR tracker), has SATCOM
	ISR	A	Has various UASs, US Army thermal & similar devices
OPFOR Vehicles	OSV/OSV-MBT	R	Has 1 tank BN but uses M113 for 2 BMP BNs (get OSV BN(–) from NTC)
	OSWV	R	None to challenge Stryker BCTs or replicate world-proliferation to gain advantages in speed, urban mobility, & noise reduction. No light utility vehicles (BLUFOR, OPFOR, OC, visitors use HMMWVs)
	Technical Veh's	A	Limited local production, no Army program (COB-Vs OK)
	VISMODs	R	Only has OSV Tanks, still Old/manual M113 fleet to replicate two BMP BNs – does not provide TIER II level threat and fails to challenge HBCT to same condition/standard as as NTC/JRTC; HMMWV fleet limited to painting them black, no shark-nose; Engineer VISMODs required
	Aircraft	A	UH 72 being fielded; no FLIR to provide attack version beyond 1km stand-off engagement to properly train BCT air defenses

5-2 (4) BCTP OPFOR Organization and Requirements

1. Overview: The Battle Command Training Program (BCTP) is located at Fort Leavenworth, KS, but conducts its training at home-stations. BCTP provides leader and staff oriented command training exercises through its primarily constructive training environment. BCTP consists of several Operations Groups of which one is the COE/OPFOR Operations Group (OPSGP COE).
2. Mission: Conduct or support combined arms training that replicates JIIM Operations in a full spectrum Contemporary Operational Environment, at worldwide locations, in accordance with the ARFORGEN Model, for BCTs, Support Brigades, Divisions, Corps, ASCCs, JFLCCs and JTFs in order to create training experiences that enable the Army's Senior Battle Commanders to develop current, relevant, campaign-quality, joint and expeditionary Battle Command instincts and skills (CTC MP FY10-15 POM).
3. OPFOR: OPSGRP-COE (led by a COL/06) ensures BCTP exercise environments effectively replicate the challenging composite of conditions, circumstances and influences existing in full-spectrum JIIM operations during Division, Corps, ASCC, JFLCC and JTF exercises.
 - a. OPSGRP COE establishes and enhances the political, military, economic, social, infrastructure and information environment, resulting in the creation of a complex asymmetric battlefield. It includes developing, coordinating and executing required media support, legal issues and documents, and scripting of religious issues. It is responsible for the overall exercise design and control.
 - b. OPSGRP-COE is fully capable of replicating OPFOR units as prescribed in Chapter 4 as well as other configurations described in the FM 7-100 series manuals. OPFOR limitations within the constructive training domain are directly addressed to and by the National Simulation Center (NSC) also located at Fort Leavenworth.
 - c. OPSGRP-COE consists of four divisions: (1) World Class PMESII, (2) World Class OPFOR, (3) Plans and Operations, and a newly established Contracting Division - each led by a LTC/05.

This OPS GRP is supplemented with a limited number of cultural and language role players.

d. The PMESII Division supports execution of BLUFOR information operations plans and coordinates with the WCOPFOR to ensure actions are nested with COE asymmetric warfare activities.

(1) The methodology for the members of the PMESII is to replicate and control those operations. These supporting activities can include:

- The creation, replication, or modification of country studies; development of story lines and MSEL events;
- Developing material and events in support of Information Operations (IO);
- Developing material and events to replicate Interagency (IA) coordination, including interaction with other US Government agencies, foreign government agencies, international organizations, and humanitarian relief organizations;
- Developing material and events to replicate civilians on the battlefield, contractors on the battlefield; establishment of an adversarial WEB site for the posting of COE information/media campaign activities and media activities.

(2) It uses and manages Subject Matter Experts (SME) to represent selected organizations to bring a non-linear human aspect to the exercise environment.

(3) During Division and Corps exercises it employs a team from the US Army Strategic Command and it can, with the approval of the Exercise Director, employ elements of the 1st Information Operations Command (Land) Vulnerability Assessment Team.

(4) The PMESII Division recommends, coordinates, synchronizes, and monitors execution of Political, Economic, Social, Infrastructure and Information event scenarios not simulated by CBS, BBS, JNEM, or JCATS.

(5) The PMESII Division recommends effects (benefits and penalties) based on training unit planning and actions/reaction to MSEL/storyline events during an exercise.

4. Constructive Simulation: BCTP conducts constructive simulations using a combination of simulations called Multi-Resolution Federation.

a. It uses CBS (Corps Battle Simulation), JMSEL (Joint Master Sequence Events List) and JNEM (Joint Non-Kinetic Effects Model) to replicate the Contemporary Operational Environment. CBS is the current constructive simulation. However, BCTP is in the process of supporting the operational readiness evaluation of WARSIM which is the follow-on replacement for CBS. WARSIM is anticipated to be the new constructive simulation for BCTP in FY 10. JNEM is the simulation that when combined with CBS gives the simulation the ability to change the groups and their satisfaction level, so it adds to stability operations.

b. Simulation workarounds include, but are not limited to, psychological operations (PSYOP) effects, CI/HUMINT, POW Operations and Civilians on the battlefield.

5. The current overarching assessment of BCTP OPFOR/simulation capabilities is provided below in which Red indicates the a severe degradation of capabilities that will have negative impact on training and training conditions cannot be properly replicated; Amber indicates a limited condition-setting capability that accepts some risk or requires work-arounds; and Green provides that a "good-enough" solution exists, although modifications may have to be made to stay relevant:

OPFOR Weapons	Anti-Tank	G	Constructive environment scalable
	Air Defense	G	Constructive environment scalable
	Artillery	G	Constructive environment scalable
	Rifles	G	Constructive environment scalable
OPFOR TADSS	MILES		N/A
	IEDs	G	Constructive environment scalable
	IED Like	G	Constructive environment scalable
OPFOR C4ISR	IW/EW	A	Lacking OPFOR Information Attack and Computer Warfare
	C2	G	Constructive environment scalable
	ISR	G	Constructive environment scalable
OPFOR Vehicles	OSV/OSV-MBT	G	Constructive environment scalable
	OSWV	G	Constructive environment scalable
	Technical Veh's	G	Constructive environment scalable
	VISMODs	G	Constructive environment scalable
	Aircraft	G	Constructive environment scalable

5-2 (5) ETC COE/OPFOR Summary

1. Exportable Training Capability (ETC) requirements, in terms of the COE and OPFOR, will compliment and/or duplicate most of those as of homestation training requirements since homestation resources must also set ETC training conditions. Details of the homestation training requirements are outlined in Chapter 7 while ETC requirements and training processes are outlined in the ETC O&O. The following is a summary of the ETC O&O including role-player requirements, military equipment, and O/C provisions.

2. Role-Players:

a. The ETC will be resourced with 100 Contractor Man-year Equivalents (CME) to support COB and CRP requirements which is a separate requirement from that allocated to brigades for homestation training.

b. Some of these CMEs may be stationed and travel with the ETC to ensure continuity for scenarios and minimize contractor train-up time. Some may be contracted at the exportable training site to reduce travel cost.

c. Foreign Language Speakers (FLS) may not be necessary for ETC events given the unit's training requirements in the early reset/train period of ARFORGEN. FLS requirements may increase if the unit is preparing for a deployment.

d. The following are key exercise design considerations for COB, CRP, and FLS integration:

- The planning guidance for the number of required urban sites (not necessarily complex) should be based on roughly two towns per Combat Maneuver Battalion which typically equals two battalions per BCT, but could be as many as four when using the Artillery BN and the RSS, (implying 4 to 8 active towns). However, this may vary based on type of unit, training objectives, type of training etc.

- Core Professional CRPs are those that actually manage the CRP/COB program and are included in the OPFOR Cadre structure (two GS-9 employees); key CRP positions should be filled with the 100 (work-years) habitual contractors per ETC.

- Augmentation CRPs are those role players beyond the cadre staff and the routine contractors. The number of augmenters required per rotation, if any, depends on the size of units to be trained at a given time, training objectives, scenario design, and resources available.
- Military role players will also become more prevalent as we re-enter full-spectrum training as only Soldiers can carry actual weapons. This implies that Soldiers need to replicate not only the traditional kinetic engagements, but simultaneously to varying degrees the insurgency fight, the foreign police and armed forces, and potential allied forces.

3. OPFOR: ETC OPFOR capabilities will rely heavily on home-station resources as outlined in Chapter 6 of the OEMP. An ETC OPFOR will primarily be composed of home-station BLUEFOR designated battalion units that is charged to replicate a task-organized OPFOR battalion of a brigade tactical group (BTG). These units must have the ability to support full-spectrum training scenarios across the spectrum of conflict. While the OPFOR and their equipment should portray a variety of potential threat capabilities from conventional and unconventional forces, and adapt their tactics, techniques, and procedures (TT&P) to counter BLUFOR TTPs and operations, the Senior Trainer/Unit Commander will have to make the final decision as to how much of his resources he will dedicate on manning and equipping his OPFOR.

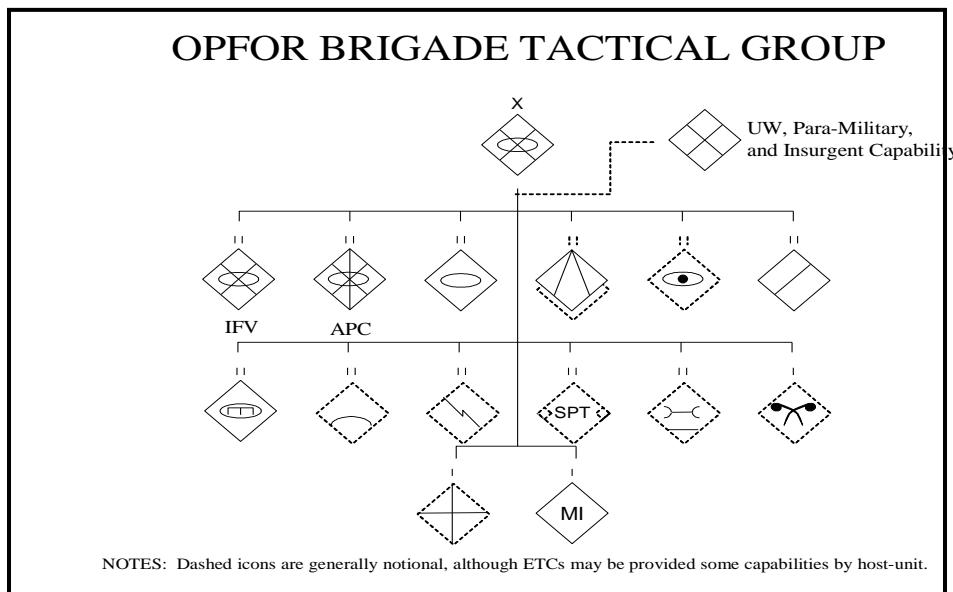
a. Conventional: OPFOR conventional units will typically represent elements of a task organized Brigade Tactical Group (BTG) (see below figure) that are specifically task organized to help meet training objectives. This implies that at homestation, the OPFOR should only need to be of a battalion size or equivalent unit.

- On the high spectrum end, typically a balanced armor/mech battalion of two tank and two mechanized companies would need to be replicated to train an armor or mechanized BLUFOR battalion of the BCT.

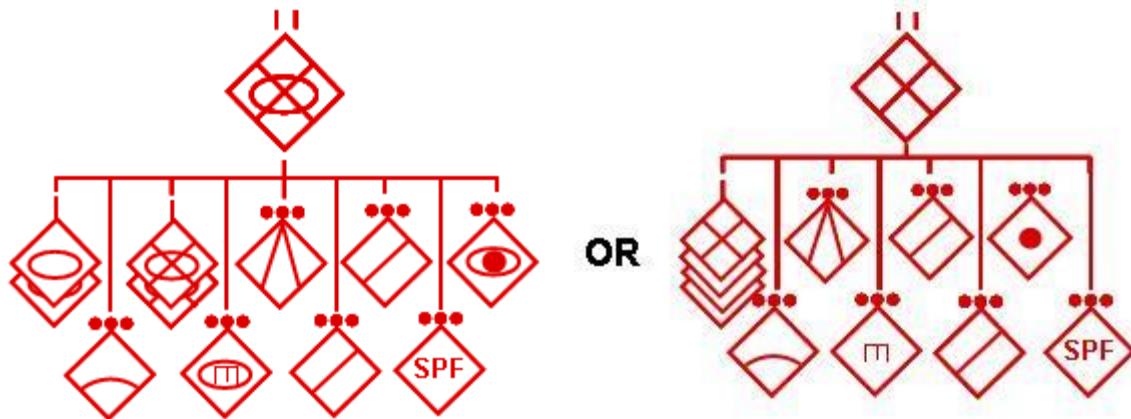
- However, any elements of the below presented OPFOR BTG can also be replicated to address specific OPFOR capabilities required to meet BLUFOR training objectives.

- The tasked OPFOR unit and Soldiers will normally use organic equipment and vehicles, and must develop unique

signatures that differentiate between BLUFOR and OPFOR players under day and limited visibility conditions.



b. Provided below are two generic conventional OPFOR battalions in consideration for homestation training exercises. While other variations (battalions) can be used from the BTG to meet a commanders training objectives, the below diagrams provide the baseline justification for OPFOR resources:



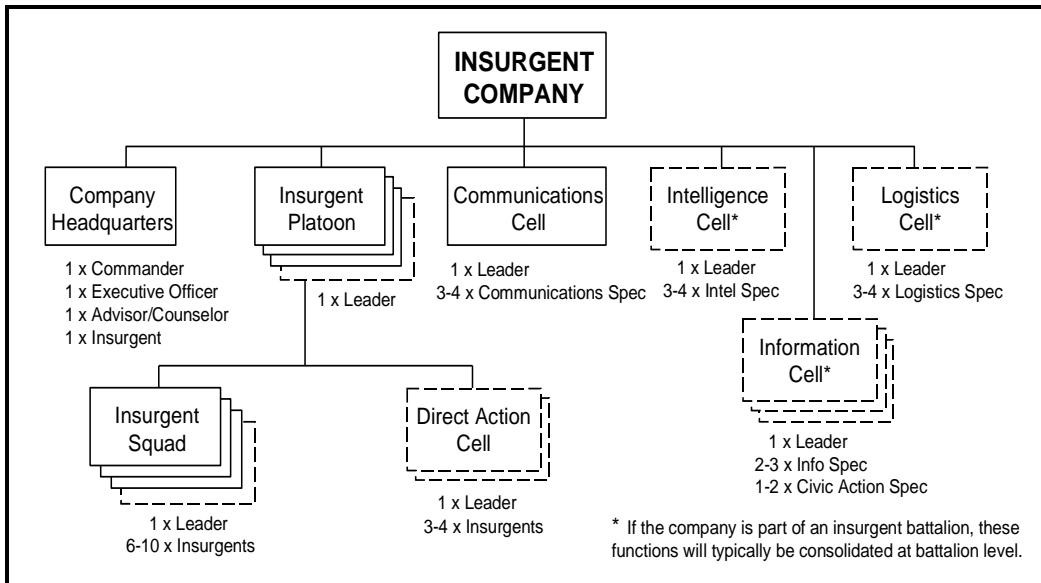
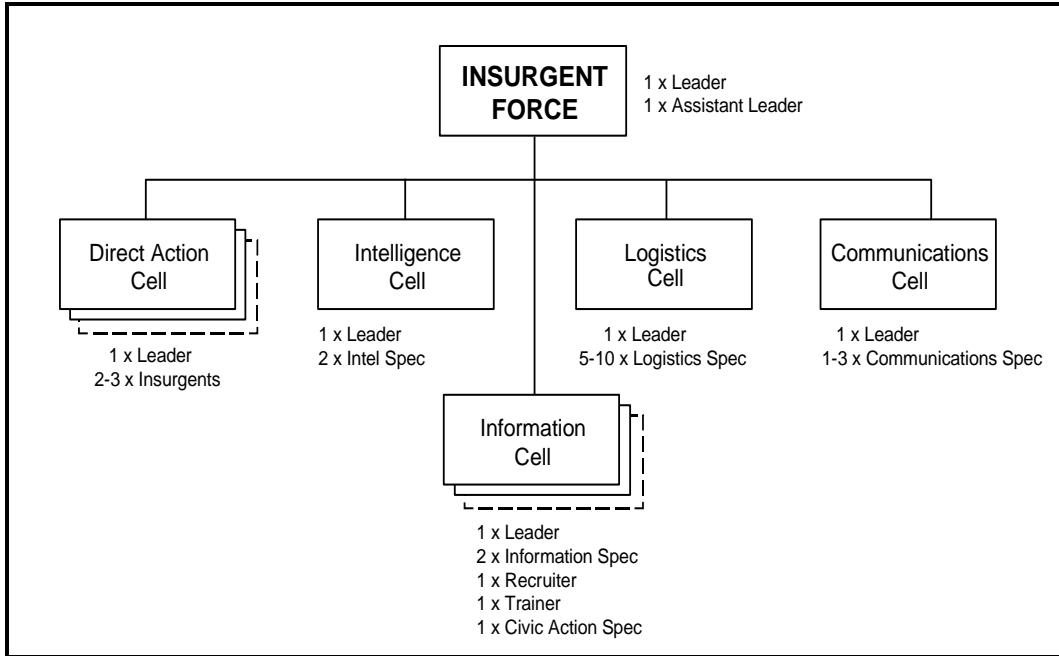
c. Conventional OPFOR Tier System: Because homestation training may opt to replicate various types of BTG units and capabilities, the below tier-tables are provided as general guidance to help dictate appropriate OPFOR capabilities/competencies; for more information, see the Worldwide Equipment Guide (WEG) .

- **Tier 1:** New or upgraded systems currently fielded in military forces.
- **Tier 2:** Modern competitive systems fielded in significant numbers for the last 10 to 20 years, with limitations or vulnerabilities that can be expected to be diminished through available upgrades.
- **Tier 3:** Systems date back generally 30 to 40 years. They feature vulnerabilities in all three areas of mobility, survivability and lethality.
- **Tier 4:** Systems reflect 40 to 50 year-old systems, some of which have been upgraded numerous times.

c. Unconventional OPFOR: Unconventional forces have an array of compositions, purposes and adopted equipment; see FM 7-100.3 for details. Such forces or elements are often described as insurgent forces, terrorists, internal security forces, paramilitary units, and drug and crime organizations. Tasks and purposes for each may vary and employed tactics may be more convoluted than definable at times. There is no Tier system for unconventional OPFOR elements (insurgents etc). Specific weapons and weapon systems for unconventional forces should be selected based on desired and/or required effects that best support BLUFOR training objectives and are within the realm of the exercise scenario. Additionally, replicated unconventional equipment, such as IED or RPGs should maintain relevance to real size and weight considerations. Unconventional forces include:

- **Insurgent forces** (see Chapter 3, FM 7-100.3)
- **Paramilitary Organizations** (see Chapter 2, FM 7-100.3)
- **Terrorism (terrorists)** (see Chapter 4, FM 7-100.3)
- **Internal Security Forces** (see Chapter 5, FM 7-100.3)
- **Drug and Criminal Organizations** (see Chapter 6, FM 7-100.3)

An example of a generic insurgency force cell structure and/or insurgent company is depicted below. Either elements, or another organization as described in FM 7-100.3, may be used to depict the unconventional force needed to supplement an OPFOR BTG to provide BLUFOR a full spectrum based training event.



4. Visually modifying equipment (VISMOD): While difficult at times, VISMOD emphasis is based on years of experience at home-station and MCTCs where both BLUFOR and OPFOR actions and counteractions were incorrectly employed (or the lack off) due to false equipment/weapon identifications...not due to improper identification, but due to the use of the same equipment by both sides. Such experiences degrade the realism of the exercise, promote accusations of cheating, break morale, and undermine the

cause-and-effect nature desired from the training experience that adds relevance to AARs.

OPFOR Equipment:

a. There is no requirement within the training community to use actual threat systems to replicate OPFOR capabilities. Whenever an ETC or home-station has the resources to provide an actual threat system or weapon to supplement the realism of the OPFOR, it is preferred, but an OPFOR capability-based system vice an actual threat system is the accepted norm. That implies using OPFOR surrogate systems (look-like threat systems) or even US weapons and systems that are visually modified. However, the overarching goal of the OPFOR equipment is to perform at a composite level of potential threat systems while also providing some degree of variants in the visual appearance.

b. Visual Modification (VISMOD): The OPFOR/COE uniforms, equipment, and vehicles should be distinctively different from the training unit's uniforms, equipment, and vehicles. Typically, most units designated as ETC OPFOR/COE will use their organic U.S. Army provided equipment as part of their OPFOR/COE mission. Such equipment, however, should be visually modified whenever possible, for both day and limited visibility operations.

(1) Homestation training requirements to set appropriate conditions for VISMODs are addressed in Chapter 7. While not fully funded for complete implementation, the the ETC OPFOR/COE Cadre can advise the designated OPFOR/COE unit on specific VISMOD efforts.

(2) The designated OPFOR/COE unit should coordinate VISMOD requirements with their respective Training Support Center to ensure the distinctive items are ready for the ETC event.

(3) While difficult at times, VISMOD emphasis is based on years of experience at home-station and MCTCs where both BLUFOR and OPFOR actions and counteractions were incorrectly employed (or the lack off) due to false equipment/weapon identifications...not due to improper identification, but due to the use of the same equipment by both sides. Such experiences degrade the realism of the exercise,

promote accusations of cheating, break morale, and undermine the cause-and-effect nature desired from the training experience that adds relevance to AARs.

c. Special Requirements: Scenario developers and the OPFOR cadre must identify special OPFOR equipment and capability requirements early in the planning stages. While most OPFOR equipment could be supplemented for replication purposes during ETC exercises, not all such solutions and work-around efforts are feasible for a realistic cause-and-effect training exercise. Examples of such may include providing actual CTC IR and laser emulating MANPADS vice using mere MILES systems for exercises with aviation emphasis, augmenting the OPFOR with ASET IV air defense replication systems, or even supplementing the ETC OPFOR with limited CTC OPFOR Surrogate tanks and vehicles (OSTVs and OSVs) to more realistically challenge BLUFOR anti-tank employment and engagements.

5. OPFOR Cadre:

a. The OPFOR cadre is part of the ETC Exercise Control (EXCON) group, but is also the responsible agent that facilitates the training for the designated units tasked to perform the OPFOR mission as part of an ETC. The OPFOR Cadre be fully certified as Observer/Controllers (O/Cs) in accordance with the host CTC O/C Academy standards, as well as function as an OPFOR unit Trainers, hence, functionally, they are OPFOR Trainers and Controllers (OT/Cs). The OPFOR Cadre is also the critical link in assisting the Training, Analysis and Feedback Facility (TAFF) to maintain situational awareness of the OPFOR, role players, communication with controllers, and produce material that support After Action Reports.

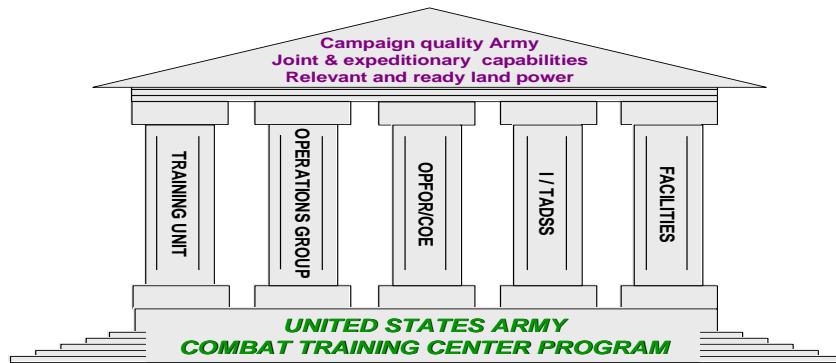
b. Cadre Team: The 23-member team will be led by a branch qualified field-grade combat arms officer with extensive CTC experience. His team consists of 6 members that are charged to lead the OPFOR Academy instruction, 12 members that provide OPFOR unit OT/C coverage, 1 intelligence NCO, and 2 COB coordinators. The team is also augmented with up to 100 contracted role players and any other augmentation as deemed appropriate by the training unit, EXCON, and the O/C team leader.

c. COB Controllers: COE exercises require interaction between BLUFOR and non-combatants. The non-combatant role players or COBs create increased training opportunities in civil

affairs (CA) operations, the handling of news media, leadership challenges of displaced persons, (DPs), rules of engagement (ROE), refugees and local inhabitants, as well as effects of non-governmental organizations/private voluntary organizations (NGO/PVOs). COB Controllers will be capable of taking COB scripts/instructions and teach/coach/mentor role-players how to apply their roles within the confines of the exercise. COB Controllers will also ensure that in coordination with the exercise planners, COBs are provided minimum role-player instructions.

5-3. CTC Resource (POM) Strategy & Requirements

1. Providing training units a viable "sparring partner" in a realistic contemporary operational environment is the foundation of the COE/OPFOR pillar that makes up one of five CTC program pillars:



2. As a critical pillar of the CTC program, the COE/OPFOR pillar must also be fully integrated into the Program Objective Memorandum (POM) to adequately compete for budget resources and not a mere afterthought. The lack of a proper COE/OPFOR modernization strategy that is inadequately integrated and/or resourced within the POM process will degrade the environmental conditions and OPFOR capabilities to realistically reflect real-world challenges - which will ultimately result in training units "sparring" with an OPFOR that is still fighting the last war.

3. The CTC COE/OPFOR POM strategy must encompass three critical aspects:

a. OPFOR: This includes aspects of OPFOR weapons and equipment, vehicles, training aids, and command/intelligence related capabilities.

b. Environment: This includes resourcing requirements for the training infrastructure, economy, social aspects, and information variables.

c. Training and Accreditation: This is primarily related to the ability for TRADOC G2 to provide direct OE and OPFOR training support functions to the training community.

5-3 (1) Current COE/OPFOR Disposition

Baseline COE and OPFOR replication requirements are outline in Section III of Chapter 2, Combat Training Center Master Plan (CTC MP) in accordance with the FM 7-100 series manuals and the Operational Environment Master Plan (OEMP). While significant shortcomings in the training environment are also recognized in Section III of Chapter 2, it is critical to maintain and fund current COE/OPFOR programs until new/updated programs and initiatives can be implemented. The following is a CTC wide scope within the (1) training Environment and (2) the OPFOR of current capabilities and shortfalls.

1. Training Operational Environment: These requirements continue to be critical as they set the conditions for both BLUEFOR and OPFOR non-kinetic effects and add realism to action, reaction, and counter-actions required to draw true and reasonable lessons learned.

Current OE Replication Capabilities through FY 09				
	Heading	Items	Current Status	Shortcoming
Infra-structure	Structures	1. Permanent multistory bldg 2. Permanent single story bldg 3. Mobile buildings	CTCs have 9-23 various size towns with some rudiment and some permanent buildings. Each CTC has one main Urban site.	Majority of the towns meet the minimum conditions-setting requirements for full spectrum training. Improvements to existing towns continue across the CTC program, but these are less critical.
	COBVs	1. Sedans 2. Minivans 3. SUVs 4. Buses 5. One-ton Trucks 6. Panel vans/trucks	NTC and JRTC have enough COB-Vs independently procured as training aids. JMRC still needs additional vehicles. All have heavy sustainment costs.	A COB-V program is needed to ensure adequate numbers & types of vehicles are procured at best price. A collective program should also reduce sustainment costs.
	Physical Terrain	1. Tunnels & Caves 2. Road networks	JMRC and JRTC have tunnels; NTC no longer does due to safety	Additional tunnels, especially caves are needed. All

Current OE Replication Capabilities through FY 09				
Heading	Items	Current Status	Shortcoming	
		<p>concerns, All have some form of caves. Roads are mostly unimproved and have gravel; JMRC and JRTC have enough perimeter road networks to train convoy operations on such terrain, NTC has practically none except within two towns and enroute to 4-cornes (Median Wasl) which is considered not enough.</p>	CTCs need hardball improved roads for training, including full IED.	
	Utili-ties	<p>1. Electric 2. Water</p>	<p>Primarily, the main MOUT site has central electric with some running water, most towns use generators, and portable water sources; some have basically none.</p>	Impact of improper electric and running water not only impacts routine actions of COBs, OPFOR, and BLUFOR, but also drives logical secondary causes and effect which impact lessons learned.
Economy	Agri-culture	<p>1. Farming land & equipment 2. Ranching & animals</p>	<p>Farming and ranching is limited to visual effects when present at all, with minimum impact on operations. Animals are scarce with essentially no impact.</p>	<p>Farming and ranching is critical in war-torn/sanctioned countries as towns become more self-reliant. A realistic OE must represent that and impact on operations.</p>
	Manufacturing	<p>1. Production development 2. Product Distribution 3. Import/export</p>	<p>There are no production replication capabilities; very little visual effects of actual manufacturing; NTC does have one</p>	<p>Larger urban sites have some manufacturing capabilities which attract people for work. This is critical for cause and effect and impacts lessons</p>

Current OE Replication Capabilities through FY 09				
Heading	Items	Current Status	Shortcoming	
		factory in Medina Wasl.	learned	
	Banking & Finance	1. Banks & security 2. Bank notes (money)	All training centers use locally produced currency; JMRC is limited in replication of this due to local laws. CERP and other process are trained.	Adequacy of banking and financial impact are still inadequate as the currency has no common value to base goods and services on; hence, role-players treat it as scripts lacking reality and normalcy.
Information	Tele-phone/ WEB	1. IC3NS 2. Land-line 3. Intranet	Most towns have at least one land-line telephone. Internet is basically still non-existent. Independent closed loop Cellular service is now available at JRTC and NTC; JMRC was denied frequency requests by host nation.	Lack of adequate land-lines, cordless phones, and intranet/internet limits the communication flow and OPFOR C2 which limits realistic training for BLUFOR IO and ISR.
	Commer-cial	1. Radio 2. Television	Radio is present at JRTC only and NTC; JMRC replicates local radio mostly using town PA systems. TVs replication is limited to BLUFOR.	Each MCTC must have a capability to replicate at least one radio and television station with local broadcast to impact the "information" variable.
	News-paper	1. Per town (single page) 2. Small press for Capital	Local newspapers are being replicated at each of the CTCs with adequate success, but mostly produced in garrison.	Garrison production of newspapers hampers the natural process and limits the OPFOR & BLUFOR potential influence.
			Each of the CTCs is authorized (non-MRX) 208	While more <u>is</u> better, minimum established

Current OE Replication Capabilities through FY 09			
Heading	Items	Current Status	Shortcoming
Social	Language / Culture	1. Role Players 2. Cultural Experts 3. Linguists 4. HTT	foreign language speakers and 22 cultural role players (significantly more for MRXs), in addition to generic role players (only NTC is not authorized GRPs). Only 100 work years per CTC is funded. HTTs are currently being integrated.
	Social-Dress	1. SW Asian 2. European 3. Eastern	NTC and JRTC has primarily SW Asian attire; JMRC also has special attire to support Kosovo (KFOR) rotations. JMRC uses a warehouse of procured items, JRTC enjoys a contractor facility that produces these items.
	Religious	1. Props 2. Building VISMOD 3. SMEs	Religious aspects for Muslim religions are well replicated; aspect of Christian religions can also be replicated with minor adjustments.

2. OPFOR: Requirements for both conventional and unconventional OPFOR capabilities have shared similarities and will be used by entities that replicate both - there are not specific requirements for just conventional or unconventional OPFOR.

Current OPFOR (Conventional and Unconventional) Replication Capabilities through FY 09				
Heading	Items	Current Status	Shortcoming	
Weapons TADSS	ATGM 1. ATGL LR RPG-29 2. ATDL, Armbrust 3. ATGM, Eryx 4. ATDL, RPG 22 5. AD/AT Starstreak 6. ATGM HOT3 (BRDM) 7. 125-mm AT, 2A45M 8. ATDL, RPG- 27 (AT-4)	CTC shoulder fired anti-tank missiles/grenades is limited to a RPG-7V VISMOD which uses a AT-4 Ph/Pk kill code. The system does have an ability to carry up to 10 different codes.	Worldwide proliferation of these systems provides threats variable killing capabilities with each having its own advantage and disadvantage. CTC must be capable of replicating each and every system to realistically challenge BLUFOR for the COE.	
Air Defense	1. MANPADS SA 18 2. MANPADS SA 14 3. AA Gun/Msl, 2S6M	CTCs use the Stinger system to replicate MANPADS which has no effect other than being MILES equipped. The ASET IV was retired with only one (gap filling) system remaining available to each CTC (rental)	CTC must have a MANPAD and larger surface to air missile and gun replication to realistically challenge aircraft early warning systems via electromagnetic, IR, and laser stimulants while also providing pilots an AAR capability for both Army and Air Force.	
Air Defense Cont'd	4. SA8 (EAB) x6 (Green Flag) 5. SA9 (EAB) x6 (Green Flag)			
Artillery	1. 120mm Combo-Gun, 2S9-1 2. 120mm Combo-Gun, 2S23 3. Howitzer, 2S19 4. 60mm mortar x23 1. 120mm Combo-Gun, 2S9-1 2. 120mm Combo-Gun, 2S23 3. Howitzer, 2S19 4. 60mm mortar	Artillery is primarily replicated in the simulated/virtual domain where it is a viable contender for BLUE. No live assets are used.	A limited number (battery size) of live indirect weapons systems are needed to stimulate live ISR and targeting processes for both Army and Joint target identification and engagement training; especially for air-crews.	

Current OPFOR (Conventional and Unconventional) Replication Capabilities through FY 09			
Heading	Items	Current Status	Shortcoming
Rifles	1. Sniper Rifle (7.62mm) 2. Anti-material Rifle (.50 Cal)	Currently the M21 sniper rifle is used with limited MILES capability. No anti-material rifle is available, but both the rifle and the MILES is being developed.	Sniper capabilities continue to be an integral part of urban ops; the OPFOR must have a realistic rifle to replicate this threat capability and associated TTPs.
MILES	1. Codes (Ph/PKs) 2. Equipment	MCTC are primarily using the basic and MILES 2000 systems comparable with BLUEFOR. MILES head harness are traditional helmet mounts and spider-web helmet mounts. Most OPFOR MILES Ph/PK codes are borrowed BLUEFOR weapon codes.	OPFOR must enjoy not only comparable BLUFOR MILES systems, but also requires unique MILES specifically to help replicate the civil environment such as extremely light-weight head sensors (halos) that makes role-players vulnerable to MILES head injuries. MILES codes are also inadequate as they replicate the capabilities of BLUFOR weapons systems vice OPFOR.
IEDS & Grenades	1. Suicide Vests x108 2. Remote Detonated 3. Pressure Plated 4. Vehicle mounted Grenades 1. Baseball 2. Potato Smasher (RKG-3)	CTCs have developed many viable solutions to IED training using varied types of training aids. Each MCTC has received basic IED training kits in FY 05-06 which are now only partially used and didn't include suicide vests. IEDs are still described	Despite the CTC initiatives to stay abreast of immersing IEDs, they continue to evolve and change. JIEDDO and GWOT funding has provided some levels of support but will not be available for long term. IEDs are also not limited to the concept currently used; we must stay ahead of

Current OPFOR (Conventional and Unconventional) Replication Capabilities through FY 09			
Heading	Items	Current Status	Shortcoming
		as not impacting enough in terms of decibels/volume and visual explosive signature. No grenades exist; rolled and taped MRE wrappers are used with chem. Lights.	the next "improvised" concept. For grenades, often BLUE and Red will employ other than grenade-associated tactics.
OPFOR C4ISR	C2	1. Cell Telephones 2. Wireless Internet 3. SATCOM, Portable 4. Battle Command tracking System (BCTS)	NTC and JMRC now enjoy the use of independent commercially compatible closed-loop cellular telephones and limited numbers of SATCOMS. No internet/intranet or BCTS CNO capability exists at any of the MCTCs.
	EW	1. Radio DF/Atk (BMP1) 2. GPS Jammer 3. Radar DF/Atk (BMP1)	NTC has outdated versions of Prophet EW systems as part of their MICO; JRTC and JMRC have not IW/EW intelligence capabilities. None have GPS, CNA or Radar EW systems.
	ISR	1. UAV, Fox-AT2 2. Arty Loc Rdr IL220 2. Thermal View, Sophie 3. Laser	All MCTCs have received their allocation of JTNC procured Raven-B UASS; JMRC is operating on a limited
			The lack of a proper OPFOR air defense early warning radar allows BLUFOR aircraft to enjoy more stealth than

Current OPFOR (Conventional and Unconventional) Replication Capabilities through FY 09				
Heading	Items	Current Status	Shortcoming	
	Designator 4. ACV, AD, dog ear 5. Radar, GSR, Manport.	frequency permission by the German Government. Man- portable thermal sights are limited to organic MTOE systems. With the retirement of the ASET IV, the OPFOR has not air defense early warning radar. OPFOR does not have a counter- radar replicated or actual system.	realistically expected; adequate BLUFOR air corridor and SEAD planning and execution will not be properly challenged for lessons learned. The lack of an OPFOR counter-fire radar capability limits not only the realistic effect (other than the constructively provided ones), but hinders live BLUFOR ISR and targeting process for HVTs (something has to be live).	
OPFOR Vehi- cles	OSWV	1. BTR-80 2. BRDM-2 3. ACV, BTR- 80 4. UAZ Tact Veh 5. 12mm Gun/How Combo	MCTC currently have no OSWV fleet. The OPFOR used HMMWV VISMODs to replicate BRDMs and standard U.S. military trucks.	With the introduction of Styker BCTs and armored HMMWVs, the OPFOR has no complimentary vehicles to truly challenge SBCTs to inevitably meet their training objectives. Not only is this a critical shortfall IAW AR 350-2 and AR 35-50, but these systems are needed to replicate current worldwide capabilities (soviet had them for decades) and are necessary for urban warfare.
	Techni-	1. Trucks (MG) x45 2. Trucks	MCTCs basically of no technical vehicles except	Third world countries that cannot afford

Current OPFOR (Conventional and Unconventional) Replication Capabilities through FY 09			
Heading	Items	Current Status	Shortcoming
cals	(Mortar) x15 3. Trucks (ADA) 15 4. SUV/Trucks (C2) x15	very crude modification to existing trucks.	traditional military equipment, as well as insurgents and the like, will and have procured robust technical vehicles with multiple capabilities.
VISMODs	1. Route-Clear BAT-2 2. Mine Breach, UR77 3. Mine Plow, KMT-6 4. Mine Roller, KMT7 5. Bridge, AVLB 6. Eng. Tractor 7. Minelayer, GMZ, UMZ, PMZ-4	Most engineer assets are replicated in the virtual domain and positively impact targeting planning and execution, but environmental impact limit certain engineer activity, especially at JRTC and JMRC. Additionally, only NTC has organic OPFOR engineer capabilities.	All MCTCs must be capable of replicating at least limited OPFOR activities for all spectrums of engineer capabilities. One or more of each M/CM/S system must reside with the OPFOR. While actual threat engineer vehicles are not required, VISMODS of BLUFOR or commercial systems should be made available for all full-spectrum rotations.

5-3 (2) Environmental Resource Requirements

1. Requests for funding via the CTC POM process will be a centralized effort by TRADOC G2 with direct input and support of the CTCs. This implies that TRADOC G2 will lead the effort to establish a standardized requirements list of critical PmESII-PT necessities that must be replicated at the CTCs to set a realistic and viable training condition.
 - a. CTCD and CTCs are requested to support this effort by working directly with TRADOC G2 to determine shortfalls, establishing means and cost estimates via local contract mechanisms, and providing justification.
 - b. In coordination with all interested parties, TRADOC G2 will provide the training community a recommended priority and funding list to CTC quarterly reviews (CTC-QRs) and request approval of specific funding requirements via the CTC Council of Colonels (CTC CoC). TRADOC G2 will participate in the annual CTC Modernization Conference and, as required, will also provide COE and OPFOR modernization updated at the semi-annual CTC Conference.
2. The purpose of centralizing this effort is not to add a layer of bureaucracy or limit a CTC Commander's direct influence over limited resources, but to help prioritize and manage critical resources/funding when applied to PmESII-PT efforts across the spectrum of the Army training community.
3. As part of this process, TRADOC G2 will request of CAC as well as DA G3 via the CTC Modernization Conference, the CTC Council of Colonels, and the Training and Leaders General Officer Steering Committee (TLGOSC) to continue to provide funding within the newly established CTC POM funding lines that specifically address environmental training requirements (PmESII-PT) as part of the COE/OPFO CTC Pillar. This funding line will be further broken down into specific program headings with prioritized requirements.
4. The below spreadsheet outlines the "Environmental" POM line with its four program categories. Each category is program line and subsequent categories and requirement lines are listed in order of priority:

**OE Master Plan
15 September 2009
Version 2.0**

Pri	Prog.	Category	APPN	Requirement
3	Infrastructure	4. Structures	OP OMA	1. Permanent multi-story bldg 2. Permanent single story bldg 3. Mobile buildings
		1. COB-vs	OMA	1. Police 2. Ambulances 3. Public Pick-up 4. Public Sedans 5. Public Coups 6. Public Vans 7. Commercial Buses 8. Fire Trucks 9. Garbage Trucks 10. Commercial Trucks
		3. Physic. Terrain	OP OMA	1. Tunnels & Caves 2. Road networks
		2. Utilities	OP OMA	1. Electric 2. Water
4	Economic	1. Agricultural	OMA	1. Farming land & equipment 2. Ranching & animals
		2. Manufacturing	OP OMA	1. Production development 2. Product Distribution 3. Import/export
		3. Banking & Finance	OP OMA	1. Banks & security 2. Bank notes (money)
2	Information	1. WLL/Phone/ Web	OP OMA	1. IC3NS (Sustainment) 2. Land-line 3. Internet
		2. Commercial	OP OMA	1. Radio 2. Telephone
		3. Newspaper	OMA	1. Per town (single page) 2. Small press for Capital
1	Social	1. Language/ Culture	OP/OMA	1. Cultural Experts (RPs) 2. Linguists (RPs) 3.
		2. Dress	OP OMA	1. SW Asian 2. European 3. Eastern
		3. Religious	OP OMA	1. Props 2. Building VISMOD 3. SMEs

5-3 (3) OPFOR Resource Requirements

1. OPFOR related equipment requirements will be centralized and programmed for by TRADOC G2 Training Directorate. Requirements are coordinated through the Army Training Support Center (ATSC) /TRADOC Capabilities Manager-Live (TCM-L) and the CTC Directorate (CTCD) and presented to the CTC Council of Colonels (CTC CoC) on a semi-annual basis for funding validation.
2. The below chart depicts current aggregate numbers of OPFOR systems and weapons across the MCTCs (required per FM 7-100 series manuals, authorized which indicates the minimal critical requirement, and on-hand) as well as applicable numbers per individual MTC.

TOTAL MCTC OPFOR Equipment				Current MCTC OPFOR Equipment					
				NTC		JRTC		JMRC	
Equipment	Req	Auth	OH	Auth	OH	Auth	OH	Auth	OH
120mm 2S9-1 Combo	24	16	0	8	0	4	0	4	0
120mm Combo 2S23	18	12	0	4	0	4	0	4	0
125-mm AT, 2A45M	60	20	10	8	6	4	0	4	4
Howitzer, 2S19	54	18	0	6	0	6	0	6	0
.50 Antimat Rifle	58	36	0	12	0	12	0	12	0
60mm mortar	39	27	13	9	0	9	4	9	12
7.62mm Sniper Rif	33	24	0	8	0	8	0	8	0
Art Loc Rdr IL220	3	3	0	1	0	1	0	1	0
ACV, AD, dog ear	15	9	0	3	0	3	0	3	0
AA Gun/Msl, 2S6M	18	12	0	4	0	4	0	4	0
APC, BTR-80A **	171	123	0	41	0	41	0	41	0
ACV, BMP-1KSh, IW)	36	9	0	3	0	3	0	3	0
AD/AT Starstreak	9	6	0	2	0	2	0	2	0
RPG 7V	102	51	500	17	200	17	200	17	100
RPG 22	108	54	0	18	18	18	0	18	0
ATDL, RPG-27	1467	731	213	277	183	211	0	243	30
ATDL, Armbrust	330	147	0	59	0	44	0	44	0
ATGL LR RPG-29	72	33	0	11	0	11	0	11	0
ATGL PZF 3-T600	366	182	214	74	74	49	33	59	33
ATGM HOT3 (BRDM)	116	69	0	25	0	19	0	25	0
ATGM Manprt AT7/13	27	15	5	5	24	5	0	5	0
ATGM Lcher, Eryx	51	27	0	9	0	9	0	9	0
Bridge, AVLB	6	1	0	1	0	0	0	0	0
Ditch. Mach.MDK-3	9	2	2	2	4	0	0	0	0
Radio DF/Atk	15	6	2	2	3	2	0	2	0

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TOTAL MCTC OPFOR Equipment				Current MCTC OPFOR Equipment					
				NTC		JRTC		JMRC	
Equipment	Req	Auth	OH	Auth	OH	Auth	OH	Auth	OH
BMP1									
Radar DF/Atk	9	3	0	1	0	1	0	1	0
BMP1									
Eng.Tractor	6	3	1	1	7	1	0	1	0
IMR2M									
GPS Jammer, Manp	9	9	0	3	0	3	0	3	0
IED Vests	156	108	0	36	0	36	0	36	0
IFV, BMP-2M**	231	184	187	94	156	45	31	45	0
Laser Designator	180	90	0	30	0	30	0	30	0
MBT, T80	93	83	112	31	52	21	29	31	31
Mine Breach,									
UR77	3	3	1	1	0	1	0	1	0
Mine Plow, KMT-6	27	21	0	7	0	7	0	7	0
Mine Roller,									
KMT7	18	12	0	4	0	4	0	4	0
Minelayer,									
GMZ, UMZ, PMZ-4	27	15	6	5	6	5	0	5	0
MANPADS SA 14	36	24	0	8	0	8	0	8	0
MANPADS SA 18	78	53	0	21	0	16	0	16	0
Portable, SATCOM	114	23	16	9	9	7	7	7	0
Radar, GSR, Manp	117	21	6	7	6	7	0	7	0
Route-Clear BAT-									
2	3	3	1	1	1	1	0	1	0
COB-Vs	455	455	395	155	300	150	150	150	120
UAZ Tact Veh	180	126	0	18	74	18	16	18	18
UAV, Fox-AT2									
(lsr desig & FLIR)	12	9	9	3	6	3	3	3	0
Thermal,									
handheld, Sophie	156	78	0	26	0	26	0	26	0
BM-21 (Optional)	0	3	6	1	?????	1	0	1	6?

* NOTE: JRTC and NTC will need Engineer augmentation

** NOTE: Includes Command and Control (C2) versions

3. Capitalizing on the above information, the following reference again the requirements, but provide additional procurement comments critical for prioritizing requirements:

Equipment	Req	Auth	OH	Comments
120mm 2S9-1 Combo	24	16	0	70%; Tracked OSV, 12 mtrs; req 16
120mm Combo 2S23	18	12	0	70%; part of QSWV fleet, use 82mm mtr; req 12
125-mm AT, 2A45M	60	20	10	33%; 6NTC, 4JMRC; req 10
Howitzer, 2S19	54	18	0	33%; 1 Btry per MCTC; FORSCOM will augment; req 0
.50 Antimat Rifle	58	36	0	50%; req 36 will also need MILES adapter
60mm mortar	39	27	13	70%; +12x82mm; req 14
7.62mm Sniper Rif	33	24	0	70%; currently using US version. req 24
Art Loc Rdr IL220	3	3	0	100%; VISMOD & virtual targeting (IS) OK req 3
ACV, AD, dog ear	15	9	0	70%; VISMOD & virtual targeting (IS) OK req 9 VISMOD

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Equipment	Req	Auth	OH	Comments
AA Gun/Msl, 2S6M	18	12	0	70%; FMAST (ASET-IV); Ft. Rucker & ASE lead with PEO-STRI Spt; req12
APC, BTR-80A	171	123	0	70%; (w/27xC2) OSWV Fleet; req 123
ACV, BMP-1KSh, IW (Computer)	36	9	0	25%; Capability more important than vehicle; req 9
AD/AT Starstreak	9	6	0	70%; req 6
RPG 7V	102	51	500	50%; use new SLM engine
RPG 22	108	54	0	50%; could use US made LAW; only VISMOD for SLM required; req 54
ATDL, RPG-27	1467	731	213	50%; 183 NTC, 30 JMRC; only VISMOD for SLM required; req 518
ATDL, Armbrust	330	147	0	50%; only VISMOD for SLM required; req 147
ATGL LR RPG-29	72	33	0	50%; only VISMOD for SLM required; req 33
ATGL PZF 3-T600	366	182	182	50%; only VISMOD for SLM required; req 182
ATGM HOT3 (BRDM)	116	69	0	60%, 32xBRDM AT-5; req 69
ATGM Manport AT7/13	27	15	5	50%; can use TOW; 24 only at NTC
ATGM Lcher, Eryx	51	27	0	50%; req 27
Bridge, AVLB	6	1	0	50%; req 1 at NTC
Ditch. Mach.MDK-3	9	2	2	66% (SEE) 4 x NTC
Radio DF/Atk BMP1	15	6	2	40%; 3 older Prophets x NTC, req 4 systems & contractors as operators for JMRC and JRTC
Radar DF/Atk BMP1	9	3	0	33%; req sldr/contr req 3 systems & contractors as operators JMRC and JRTC
Eng.Tractor IMR2M	6	3	1	50%; (ACE 7xNTC), req 2
GPS Jammer, Manp	9	9	0	100; req 9
IED Vests	156	108	0	70%; req 108
IFV, BMP-2M	231	184	187	90%; (17 are C2) Need to redistribute NTC to JMRC (approx 28)
Laser Designator	180	90	?	50%; req ?
MBT, T80	93	83	112	70-100%
Mine Breach, UR77	3	3	1	100; (ACE) 1xNTC; req 2
Mine Plow, KMT-6	27	21	0	70%; req 21
Mine Roller, KMT7	18	12	0	70%; req 12
Minelayer, GMZ,UMZ,PMZ-4	27	15	6	70%; 6 x NTC; NTC & JMRC need Engr Aug; req 9
MANPADS SA 14	36	24	0	66%; (stinger used) req 24 - working JNTC MAST
MANPADS SA 18	78	53	0	70% (63 Stingers); req 22 - working JNTC MAST
Portable, SATCOM	114	23	16	18%; req 7; Could use augmentation
Radar, GSR, Manp	117	21	6	18%; req 15; Could use augmentation
Route-Clear BAT-2	3	3	1	100%; req 2; Could use augmentation
COB-Vs	455	455	570	100%; 300 NTC, 150 JRTC, 120 JMRC; req 30 at JMRC
UAZ Tact Veh	180	126	108	30%; BRDM/HMMWV; need VISMOD for UAZ
UAV, Fox-AT2 (lsr desig & FLIR)	12	9	9	6 NTC, 3 JRTC, 3 at JMRC
Thermal View, handheld, Sophie	156	78	?	50%; req ?
BM-21 (Optional)			0	Type 63 107mm rockets JMRC & JRTC

4. Per the CSA guidance to provide a recommended list of items considered "Desired, Required, and Critical," the following is provided without consideration for funding, but rather based on

value in setting critical conditions needed to meet training objectives in realistic training environments. Additionally, the items listed are for additional or new items; there continue to be numerous fielded condition setting capabilities that are not yet fully funded and carried as unfunded requirements (UFRs) within the CTC program, such as role-players and commercial vehicles:

a. Critical:

(1) JT COIC - Provides the Central Training Database; real data from theaters to training events CTCs, HSTs, & CoEs.

(2) MILES - No specific/outdated OPFOR Codes (AT, AD, IED); antiquated capabilities for urban sites.

(3) OPFOR IW & EW - *Information Warfare* CNO and CNA as well as EA; *Signals Reconnaissance* Intercept & exploit.

(4) OPFOR Air Defense - ASET IV is obsolete and no MANPADS with IR & RF signatures.

(5) Grenades/AP Mines - No grenades exist, currently using home-made RKG-3s; changes Red and Blue TTPs.

(6) OSWV - Lack of Combat Wheeled Vehicles to replicate world proliferation, speed & maneuverability in urban terrain, noise reduction, and appropriately challenge Stryker BCTs.

b. REQUIRED:

(1) OPFOR Engineers - Cannot produce required conditions without augmentation.

(2) OPFOR Shoulder-fired AT - ATSC has program but lacks required funding (RPG7/22/29, Armbrust, Eryx, AT7/13/14, etc).

(3) OPFOR Tech Veh's - Commercial vehicles technically modified to support military purposes.

(4) OPFOR Personnel at JRTC - Insufficient for FSO unless proposed 1-4 receives INF CO and augmentation is provided.

(5) Aviation Engagements and support - Lack of OPFOR HELO FLIR reduces stand of 5 kms to 1km limiting BLUFOR AD posture training. Organic or augmented utility lift helicopters will be required for air mobile operations by OPFOR.

(6) OPFOR C2 Communication - this includes Red-Tracker, battle command systems, and modern civil communication devices (GSM, CDMA, etc).

(7) NTC Improved Roads - extremely limited which hampers realistic convoy movement for IED.

(8) NTC Sub-Terrain - Currently no sub-terrain (safety considerations w/local reptiles (snakes etc)).

c. DESIRED:

(1) Role-player increase (COBs) - OEMP sets FS/MRE baseline; does not account for larger urban complexes.

(2) Role-player Vehicles (COB-Vs) - OEMP sets FS/MRE baseline 150; does not account for larger urban complexes.

(3) OPFOR Artillery - Minimum of one live Arty Btry (2S9-1, 2S23, 2S19); FORSCOM augmentation.

(4) Commercial Vehicles - COB-Vs for OE and OPFOR as a Army program (procurement and sustainment)

(5) OPFOR Rifles - Small arms rifles (AK, Sniper, Anti-material) for handling of threat weapons by US soldiers.

5-3 (4) OPFOR Resource Concept

1. The currently included CTC modernization/POM concept includes the submission of one OPFOR POM line with three program lines based on requirements developed and provided in the previous sections. The three program lines include:

a. OPFOR Weapons/ Training Aids Devices Simulations and Simulators (TADSS) (Priority 1): Weapon and weapon systems listed in this category emphasize the priority of replicating the weapon/system capabilities and less on the platform on which it may be mounted; i.e. an SA 9 surface to air missile listed in the "weapon" category puts the development emphasis on replicating the SA 9 rocket simulation vice the BRDM, BMP, or Technical vehicle platform which becomes secondary. This program line is currently listed as priority number one as training against outdated or legacy OPFOR weapons causes the OPFOR to employ inadequate or out-of-date tactics, techniques, and procedures (TTPs), which are countered by BLUFOR who respond with incoherent counter TTPs to what is realistic in the foreseeable COE; i.e. MANPADS and ATGMs. Within weapon systems, corresponding MILES codes and probabilities of hits must be updated. Specifically to TADSS are items that include COE/OPFOR instrumentation, commercial vehicles, and MILES.

b. OPFOR C4ISR (Priority 2): The command, control, communication, computer, intelligence, surveillance, and reconnaissance (C4ISR) program line lists items that directly or indirectly support the OPFOR listed capabilities, vice an operational environment factor or a TADSS. For example, the development of cellular telephone network could be considered a TADSS but the requirement has more emphasis on an OPFOR communication capability than that of merely replicating a realistic environment - difference being the emphasis of desired capabilities with respect to OPFOR needs.

c. OPFOR Vehicles: This category includes the OPFOR Surrogate Vehicles (OSV) fleet encompassing tanks, IFVs, and combat wheeled vehicles. This category also include OPFOR "technical" vehicles which are modified commercial vehicles for military use, such as mounting a machine gun in the back of a truck with a reinforces suspension system. This category currently does not include normal commercial/public vehicles

which are considered "training aids" and more easily procured as such.

3. The recommended single COE/OPFOR POM line allows funding to be applied to various program lines within provided priorities. Additionally, if overall COE/OPFOR modernization funding is cut, a single POM line allows the program manager to adjust affected program, category, and requirement lines as required, avoiding entire program lines to be nullified or cut solely based on budget cuts.

4. The below spreadsheets outlines the "OPFOR" recommended POM lines with its three program categories. Each category is program line and subsequent categories and requirement lines are listed by POM Category in order of priority, this may not coincide with the desire, required, critical recommendation as listed above, but merely give budget managers a POM line prioritization. Which and how specific items are funded and in what priority, must be decided through program directors/managers, and the council of colonels process:

Pri	Prog.	Category	APPN	Requirement
1	OPFOR Weapons/ TADSS	1. MILES	RDTE OMA	1. Codes (Ph/PKs) 2. Equipment
		2. Air Defense	RDTE OP OMA	1. MANPADS SA 18 9 2. MANPADS SA 14 3. AA Gun/Msl, 2S6M 4. SA8 5. SA9
		3. ATGM	RDTE OP OMA	1. ATDL, RPG 7V 2. ATGL LR RPG-29 3. ATGL Panzerfaust T600 4. ATDL, Armbrust (5. ATGM Lcher, Eryx 6. ATGM HOT3 (BRDM) 7. ATGM Manport AT13 8. 125-mm AT, 2A45M 9. AD/AT Starstreak 10. ATDL, RPG 22 11. ATDL, RPG-27
		4. IEDs	RDTE OP OMA	1. Suicide Vests 2. Remote Detonated 3. Pressure Plated 4. Vehicle mounted
		5 Artillery	RDTE OP OMA	1. 120mm Combo-Gun 2. 2S9-1, Combo Howitzer, 3. 2S19 4. Arty Loc Rdr IL220 5. 60mm mortar

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Pri	Prog.	Category	APPN	Requirement
		6 Rifles	RDTE OP OMA	1. Sniper Rifle 7.62mm 2. Anti-material Rifle.50
2	OPFOR C4ISR	1. I/EW	RDTE OP OMA	1. Radio DF/Atk (BMP1) 2. GPS Jammer 3. Computer Warfare 4. Radar DF/Atk (BMP1)
		2. C2	OMA	1. Cell Telephones (Sust) 2. Wireless Internet 3. SATCOM, Portable
		3. ISR	RDTE OP OMA	1. UAV, Fox-AT2 2. Thermal View, Sophie 3. Laser Designator 4. ACV, AD, dog ear 5. Radar, GSR, Manport.
3	OPFOR Vehicles	3. OSWV	RDTE OP OMA	1. BTR-80 (w/C2) 2. BRDM-2 3. UAZ Tact Veh
		4. Technicals	OP OMA	1. Trucks (MG) 2. Trucks (Mortar) 3. Trucks (ADA) 4. SUV/Trucks (C2)
		5. VISMOD	OP OMA	1. Route-Clear BAT-2 2. Mine Breach, UR77 3. Mine Plow, KMT-6 4. Mine Roller, KMT7 5. Bridge, AVLB 6. Eng. Tractor 7. IMR2M Ditch.Mach.MDK-3 8. Minelayer, GMZ, UMZ, PMZ-4

8 OE/OPFOR Enabling Organizations

1. There are numerous organizations and entities that have a direct or indirect impact in replicating the operational environment and OPFOR. Most notably are the customer oriented process related ones, such as the Combat Training Center (CTC) Council of Colonels (CoC) and the Homestation Training (HST) CoC, coupled with their associated master plans (MPs).
2. This chapter of the OEMP, however, will focus on less on processes and more on the organizations that provide OE/OPFOR educational, training, data, reach-back, procurement, and material development support. These are categorized into two basic elements: (1) those within TRADOC G2 and (2) those external to TRADOC.
 - a. Those within include the TRADOC G2 Training Directorate, The Joint Training Counter-IED Operations Integration Center (JTCOIC), and the TRADOC Intelligence Support Activity (TRISA).
 - b. External organization that directly support OE/OPFOR replication initiatives include the Army Training Support Center (ATSC), Threat Systems Management Office (TSMO), Program Executive Office (PEO-STRI), and Army Materiel Systems Analysis Activity (AMSAA).

8-1 Organic TRADOC G2 Enablers

1. In accordance with AR 350-2 and the TRADOC Campaign Plan (TCP), TRADOC G2 is the responsible official for the TRADOC OE and the Army OPFOR program. This includes the integrated development, management, administration, integration, and approval functions.
2. TRADOC G2 accomplishes this function with several internal resources, but also heavily relies on external partners to study, procure, develop, and sustain/maintain OE and OPFOR related program functions, capabilities, systems, and enablers.
3. Within the TRADOC G2, critical enabling organizations and directorates include:
 - a. The Joint Training COIC (JTCOIC) which is responsible to for all Joint aspects of training COIC functions and capabilities, and is also becoming a centralized warehouse to enhance customer oriented training capabilities for OE references.
 - b. The G2 Training Directorate is the "Champion" of the Army OPFOR program responsible of development and updated of the OEMP, modernizing OE and OPFOR capabilities, lead agency for the CTC program COE/OPFOR Pillar, and implementing the TRADOC OE and OPFOR processes for quality assurance and accreditation programs.
 - c. The TRADOC Intelligence Support Activity (TRISA) provides multiple OE enabling capabilities to includes Threats support, Modeling & Simulation (M&S), Foreign Military Studies Office (FMSO), Human Terrain Teams (HTTs), University of Foreign Military and Cultural Studies (UFMCS), and doctrinal support for each.
4. TRADOC G2 is committed to providing OE/OPFOR education and training support in the form of Staff Assistance Visits (SAV), Mobile Training Teams (MTT), a COE Train the Trainer program (TTT), Operational Environment Assessments (OEAs), scenario development support, accreditations, and OE/OPFOR publications.

8-1 (1) G2 Training Directorate (COE/OPFOR)

1. The G2 Training Directorate, formerly known as the OE/OPFOR Directorate, is Army's and TRADOC's lead for AR 350-2 (the Opposing Forces Program) and overseeing many of the responsibilities with the exception of developing and updating the OE/OPFOR doctrine and training support material which is primarily done by the TRADOC Intelligence Support Activity (TRISA) Threats Directorate. Within this Directorate's responsibility lies the OEMP, accreditation/validation of the OE/OPFOR program across the Army, modernization efforts of the OE/OPFOR program across army training centers and locations, leading efforts of the OE/OPFOR Pillar of the CTC Program in accordance with AR 350-50, representing the Army OE/OPFOR program within the Joint National Training Capability (JNTC), and providing staff assistance to Army, sister-service, and Joint organizations and entities not directly addressed in this sub-chapter.
2. One of the more emerging responsibilities of the G2 Training Directorate is the development and update of this OEMP which has become one of most resource intensive initiatives for which it is not uniquely staffed, but added as one of its concurrent responsibilities. The OEMP will be updated annually and revised, as needed, semi-annually in line with bi-annual POM cycles.
3. The Directorate is responsible for validating and accrediting Army units' or organizations' ability to replicate the OE across the training and leader-development domains which includes TRADOC and non-TRADOC institutions and centers through the TRADOC Quality Assurance Office (QAO), the combat training center program (CTC), home-station training (HST), enduring mobilization training centers (EMTCs), and other training and leader development programs not specifically addressed.
 - a. QAO - TRADOC G2 Training Directorate provides one dedicated and certified individual to provide direct support to the TRADOC QAO at Fort Monroe. Within this capacity, the individual has current responsibilities for Standard 3 and supporting responsibilities for several other integrated Standards. Schools and Centers are accredited approximately every three years or as directed by the QAO Director. This function is sponsored and paid for by the TRADOC QAO (starting FY10).

b. CTC - The Directorate conducts on-the-ground and in-the-field accreditations annually of each CTC, to include a division level, active component brigade level, and reserve/national guard brigade level BCTP exercise.

(1) These accreditations are conducted primarily by TRADOC G2 personnel but are augmented with subject matter experts (SMEs) from the Collective Training Directorate (CTD), Center of Army Leadership (CAL), and other SMEs.

(2) While personnel are provided from TRADOC G2, TDY travel and per-diem costs are paid for by the CTC program.

c. HST - Support to HST training and capturing resource requirements is currently not funded. FORSCOM has currently made to specific requests for support of assessments of feedback for such; however, this will become a critical aspect as unit dwell time increase within the ARFOGEN process that will extend the Reset phase and increase emphasis on HST exercises.

d. EMTC - Semi-annual accreditation requirements for these locations are addressed in AR 350-2, however, they have not been conducted in numerous years due to various changes in mobilization processes and other continuing circumstances. Accreditation visits to these sites are not funded, but indirectly supported, in part, through TRADOC G2.

4. Considered the premier Army training, the Combat Training Center (CTC) program requires most of the TRADOC G2 Training Directorates support and effort in direct support of the Combat Training Center Directorate (CTCD).

a. The mission statement of the CTCD, on a daily basis, is to serve as the direct staff to the DA Responsible Official (TRADOC DCG, Combined Arms) and extended staff for the DA G-3 to facilitate validation, administration, and integration of the Combat Training Center (CTC) Program. Ensures CTC Program requirements and modernization are linked to a viable resourcing strategy and CTC vision for the future, integrates training issues across all CTCs, and assist in programming and integrating DOD T2 and JNTC initiatives into the CTC Program.

b. The CTC program is built upon five pillars: (1) the Training Unit, (2) the Operations Groups, (3) the OE/OPFOR, (4) ITADSS, and (5) Facilities. While TRISA provides the doctrinal

and scenario development support to the CTC program, it is the G2 Training Directorate that provides the "ownership" of the pillar to ensure equities required to set appropriate and realistic conditions are properly represented and "Championed." CTCD recognizes this effort and provides G2 Training Directorate the travel and per-diem funds to accomplish this mission. Within this function, the Directorate takes lead to initiate and argue for OPFOR modernization funding and sustainment, as well as assist in material development and procurement of Instrumentation, Training Aids, Devices, Simulators, and Simulations (ITADDS).

5. The G2 Training Directorate is also the Army's representative to the Department of Defense's (DODs) and Joint Forces Command (JFCOM) Joint National Training Capability (JNTC) program for their OPFOR Pillar. This effort is resourced with one JNTC Contractor responsible for ensuring that Army OPFOR modernization and training initiatives include Joint considerations and that requirements are integrated into Joint forums, and vice versa.

8-1 (2) Joint Training COIC (JT COIC)

1. The Joint Training Counter-Improvised Explosive Devices Operations Integration Center (JT COIC) was established in July 2007 when Director of the Joint Improvised Explosive Devise Defeat Organization (JIEDDO) directed TRADOC to establish, use and maintain the JT COIC in Newport News, Virginia. Primary functions included of the JT COIC included:

a. Train individual members of command staffs and their leadership teams on the exploitation of joint, national, and interagency sources of data, analyses, and analytic tools.

b. Ensure the proficiency of deploying command staffs in the use of COIC capabilities.

c. Develop operational architectures for new material or other concepts for C-IED operations, at the tactical, operating or strategic levels, as required.

2. In December 2008, TRADOC, in coordination with JIEDDO and the U.S. Joint Forces Command (JFCOM), expanded the charter to incorporate a joint operational environment which includes all Services and joint formations.

3. The strategic concept for this plan is to develop capabilities and processes which sustain an enduring training support infrastructure for all Services and joint formations. These mission essential functions and tasks are the basis for the organizational design of the JT COIC, in order to implement the operational directives from JIEDDO and CG TRADOC.

a. Combat Training Centers (CTC) Training. Support to Services CTC training. ICW JIEDDO, COCOMs, JFCOM, Services, and CTCs, JT COIC provides current, relevant, and structured enablers in support of scenario development, exercise scripting (network thread injects), COIC tools training, staff mentoring and exercise support to various Service CTC programs in support of training scenarios and training events before, during and after CTC rotations in order to provide operational environment context and continuity of thought and analysis.

b. Reach-back Training. In coordination with JIEDDO, COCOMs, Services, and JFCOM, JT COIC provides support to reach-back training and the use of COIC reach-back capabilities and

opportunity for training the use and efficacy of other reach-back efforts. The JTCOIC will provide focused training teams in support of the Joint community, Service schools, and operational forces and meet the training requirements of Joint forces preparing for deployment. This mobile training team (MTT) training methodology includes replication of IED network threads and injects.

c. Modeling, Simulation, and Gaming (MS&G) and Assessment Support. ICW JIEDDO HQ and JIEDDO COIC, JTCOIC acts as a 'Skunk Works" for MS&G and for infusion and integration of data into MS&G efforts. JTCOIC delivers rapid responses to change through JTCOIC's Systems Integration and Modeling and Simulation (SIMS) capability. JTCOIC SIMS replicates IED events for inclusion in the Services individual and collective training and evaluates potential DOTMLPF solutions for deploying and deployed forces. The JTCOIC is the only DOD asset with this capability. Used in collective training venues and in self-development training domains, these products allow multiple participants to train simultaneously in an environment based on lessons learned today. Deploying forces use these visualization and training solutions to learn the most recent techniques, tactics and procedures and to develop a critical understanding of this ever-changing wartime environment.

d. Leader Development and Institutional Support. Support to institutional training. ICW with Service training commands, Joint Forces Command (JFCOM) and Special Operations Command (SOCOM), coordinate the integration of COIC capabilities into Service education and training programs. Ensure that training is developed to quickly refine and disseminate lessons learned.

e. Pre-deployment Operational Environment Support. Provide pre-deployment operational environment analytical support. In support of pre-deploying units, JTCOIC Comprehensive Look Team (CLT) analysts support training unit Request for Support and intelligence (RFS) to identify trends, patterns, and situational awareness. These patterns are then described in detail to the requestor. The intent is to sensitize the requestor to the types of enemy IED activity, the composition of the specific devices in the area, and enemy tactics, techniques and procedures. Purpose is to enable military units to better understand and attack and defeat networks and devices in advance of deployment.

f. Strategic Plans and Innovative Solutions. Engage and manage government, industry and academic partners to collaboratively analyze emerging threats and to create innovative solutions. The JT COIC will leverage the knowledge and experiences of its partners to provide warfighters the best solutions, orientation, familiarization, and exercise support prior to deployment.

g. Operations, Intelligence and Training Database. Provide and maintain a deep, detailed, and realistic Central Training Database (CTD) and replicate the Operational Environment (OE) for each Combat Training Center, Centers of Excellence, Institutional and Collective Training Sites, Home Station, and Joint Training Organizations while allowing for the integration of existing and emerging Battle Command Systems.

(1) The CTD must simultaneously support leader, training, capabilities development, collective training, and experiments. As development is completed, the CTD will support the OE Common Training Scenario development process by using a Scenario Building Application that includes the capability to capture injects, threads, training objectives, scenario decision trees, and related reports, allowing scenario developers to create parameters and story lines in one interface to inform automated processes.

(2) Scenario developers and scripters will be able to query real world data in order to create injects and provide background supporting reports to the injects. With the development of the Scenario Building Application, scenario developers will be able to access other databases and applications like Maps and Role Player data to build scenarios and modify/construct reports.

4. To provide the support described above, many of the capabilities and resources to establish the foundation for such have already been procured. However, the sustainment cost of personnel and systems (communication/connectivity) is currently not established within a baseline funding stream. Total required cost to sustain personnel and systems is estimated at \$12.7 million which includes:

- Personnel Requirement: 45 total personnel including 29 located at the JT COIC and two personnel each at NTC, JRTC, BCTP).

- Equipment Requirements: includes circuit costs, computers, storage, servers, and processors.

8-1 (3) TRADOC Intelligence Support Activity (TRISA)

1. The TRADOC Intelligence Support Activity (TRISA) provides training support capabilities in the form of Staff Assistance Visits (SAV), Mobile Training Teams (MTT), a COE Train the Trainer program (TTT), scenario development support in the form of a Exercise Design Guide (EDG), and database access to TRADOC G2 publications.

a. SAV: Currently not funded, TRISA has the ability to provide staff assistance visits - within purview of their functions (bulletized comments below). However, given that TRISA's personnel work force are analysts hired to perform analytical tasks and they have no organic training cell, requests for SAVs must be based on availability, current priorities, and available funding.

b. MTT: Currently not resourced or funded, it is the intent of the TRISA to provide a consistent MTT to support CTCs, ETCs, homestation training (HSTs), Centers of Excellence (CoEs), and Enduring Mobilization Training Centers (EMTC) elements or units tasked to conduct the OPFOR mission. Until fully resourced, this capability is only available on a case-by-case basis and in a very limited capacity.

(1) Scope: To provide instructional and practical application to units as to how to replicate a generic or specific OE, and prepare, plan, and execute OPFOR missions for both conventional and irregular aspects of a full-spectrum exercise.

(2) Execution: Requests may be submitted through FORSCOM G2 or G3/5/7 and submitted directly to TRISA. Until resourced, requests are evaluated and prioritized based on situation and available resources.

c. TTT: The COE TTT is hosted by TRISA and primarily held at Fort Leavenworth twice a year. It is a classroom environment 4-5 day instructional course with a short practical exercise.

(1) Scope: To provide an expert introduction block of instruction of COE and OPFOR doctrine to scenario developers, trainers, instructors, and cadre of training centers, training institutions, and/or OPFOR units.

(2) Execution: Within TRADOC, requests may be submitted directly to TRISA; FORSCOM units should submit their request through FORSCOM G2 or G3/4/7 who can submit requests directly to TRISA. Requests are prioritized typically based on first-come-first-served, but may also be prioritized on a potential student's impact on his/her COE/OPFOR mission/task.

d. EDG: The TRISA-Threats led and developed EDG, was recently approved by the Chief of Staff of the Army (CSA). The EDG provides a foundational framework for developing full-spectrum based exercises and works in concert with the Scearnio Blueprints; it also provides more relavent and updated information with respect to the OE and furhter defines the PMESII-PT aspects of the OE using gradients for exercise planning considerations.

e. G2 Database: The TRADOC G2 also maintains a database of COE and OE training information and support products via the Battale Command Knowledge System (BCKS). BCKS can be accessed by authorized individuals via their CAC or AKO credentials. TO access the database managed by TRISA-Threats, go to the right side of the BCKS main-page to box with several "links for our customers" of which the last listed one is "TRISA-Threats Web Site." Click on it - you may have to enter your AKO password several times. Incluced in this site is:

(1) OIF: Included are OE Assessments, insurgent products, maps, and other training resources.

(2) OEF: Included are OE Assessments, insurgent products, maps, and other training resources.

(3) Training Support Packages (TSPs): Icluded are COE Train the Trainer (TTT) TSP

(4) COE products: All the updated FM 7-100 series manuals (OPFOR), the Worldwide Equipment Guide (WEG), and the Exercise Design Guide (EDG).

(5) Handbooks: Handbooks and reference guides are FOUO and include the following:

- Kurdish Paramilitary N Iraq, Jun 07
- Hezbollah TTPs, Mar 07
- Hezbollah MilitaryWing, 07

- Politics of Hezbollah, Feb 07
- COE Actors adn Role-Player Handbook
- Sniper Attack Scenario Diagrams
- Threats to Bases, Camps and Outposts
- Islamic Charities Fund Insurgency Terror
- RCIED Triggers
- Paramilitary Insurgent Terror Groups OEF
- Political Groups OEF
- Political groups OIF Feb 06
- Paramilitary Insurgent Terrorist Groups OIF
- OIF IED Identification
- Common Insurgent TTP Diagrams
- Arab Cultural Awareness
- Terrorism

(6) Schools and Center Library: Included are numerous resources, documents, and briefings available for training institutions and centers.

(7) Terrorism Document Library: Included are numerous unclassified resources and case studies pertaininig to terrorism.

f. Scenario Reviews: TRISA provides scenario reviews from requesting organizations/centers to validate that scenarios meet OE requirements and their integration set appropriate conditions to support training objectives; they do not validate the scenario itself to meet training requirements or objectives, only the OE aspect in terms of condition setting requirements. While not staffed to support this function, TRISA will every effort to support requests that are submitted within a reasonable timeframe.

2. TRISA Products, handbooks and publications are posted on Army Knowledge On-Line (AKO) under files/U.S. Army Organizations/TRADOC/HQ Staff/DCS G2 (see below diagram)

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The screenshot shows a web browser window for the Army Knowledge Online (AKO) system at the URL <https://www.us.army.mil/suite/collaboration/start/admininterface.none?page=RenderHome.do>. The page title is "Army Knowledge Online - mario.hoffmann (CAC...)".

The interface includes a top navigation bar with links for Email, Files, Discuss, Groups, IM, Forms, Video, and People. Below the navigation bar is a banner featuring the U.S. Army logo and the text "AKO ARMY KNOWLEDGE ONLINE".

The main content area has tabs for AKO Home, DKO Home, and a Favorites section. The Favorites section contains links for Pages, Links, Files, and Forums, with a note that none are currently favorited.

The central part of the screen displays two tables:

- Files Communities:** A table showing one entry: "No communities found".
- Knowledge Centers:** A table listing several knowledge centers with details like Name, Description, Size, Date/Time GMT, and My Status (with Register and Unregister buttons). The entries are:
 - DCSINT (285 file(s), 26 May 2005 18:30)
 - TCOIC Knowledge Center (221 file(s), 19 Oct 2007 20:04)
 - ADCSINT-FMSO (1 file(s), 23 Feb 2006 17:53)
 - Human Terrain System (HTS) (1399 file(s), 25 Sep 2007 17:12)
 - TRADOC G-2 ISR Files (103 file(s), 18 Dec 2008 21:19)
 - TRISA (435 file(s), 17 Jan 2008 18:49)

A red arrow points to the "TRISA" entry in the Knowledge Centers table.

8-2 TRADOC Command and External Enablers

1. Besides organic resources dedicated to this effort from within the TRADOC G2, numerous other TRADOC command and external agencies have a direct responsibility is the development of training OEs within their purview of responsibilities. This often implies struggles for these organizations in terms of very limited funding.
2. TRADOC Organizations that have direct impact and responsibly for creating/replicating the complexities of the OE within their training and leader development domains include, but are not limited to:
 - Combined Arms Center (CAC)
 - Combat Training Center Directorate - CTCD (CAC)
 - Homestation Training Sites (CAC & FORSCOM)
 - Enduring Mobilization Training Centers - EMTC (FORSCOM & First Army)
 - Centers of Excellence & Schools (CAC)
 - Deployed Units training locations (COCOMs)
3. Critical to the material development of OE/OPFOR requirements within and external to TRADOC is the Army Training Support Center (ATSC), the Threat Systems Management Office (TSMO), the Program Executive Office (PEO), and the Army Material Systems Analysis Activity. Their contributive capabilities and requirements are listed in the following sub-chapters.

1. 8-2 (1) Army Training Support Center (ATSC)

1. The Army Training Support Center (ATSC) is a Field Operating Agency (FOA), located at Fort Eustis, that is subordinate to the Combined Arms Center (CAC). As an Army wide training support program, it is also responsible for overseeing the duties and responsibilities of the TRADOC Capabilities Manager-Live (TCM-L) who is TRADOC's capabilities manager for live training.

2. As such, ATSC and TCM-L performs and/or develops a multitude of function and capabilities that are often directly tied to training OEs or the OPFOR. For example, while TCM-L becomes the proponent for a training device for shoulder fired missile (SLM) systems, by default they also support the OPFOR program by integrating and often programming for the funding of OPFOR versions of the SLM, such as RPG-7 training devices, all multiple integrated laser exchange system (MILES) capable of casualty assessment purposes.

3. Specific duties and responsibilities that TCM-L provides, directly or indirectly to OE/OPFOR program includes, but is not limited to:

a. Serves as executive agent for Range Modernization and Standardization, Standards in Training Commission (STRAC) Training Ammunition Management, Integrated Training Area Management (ITAM), and Tactical Engagement Simulation (TES).

b. Serves as the proponent for training land, development of TES, live training support program, and Combat Training Center (CTC) training support systems.

c. Serves as the Training Developer (TD) for CTC training systems (e.g., OIS, OneTESS, etc). As such, they are responsible for development/submission of Initial Capability Document (ICD)/Capability Development Document (CDD)/Capability Production Document (CPD). ATSC also maintains the currently approved Mission Need Statements (MNS) and Operational Requirement Documents (ORDs). Additionally, TCM-Live will be the TRADOC representative to interface with the appropriate PM for development of the documented systems.

d. TCM-L's Live Training Support Division (LTSD) is intimately involved with the CTC program. The mission of the LTSD is to serve as the HQDA Executive Agent and staff for Live Training issues. LTSD is the proponent for the execution of live training and provides support in the areas of Tactical Engagement Simulation (TES), Instrumentation, and OPFOR. Responsibilities include:

(1) Serve as the Army's System Proponent and Executive Agent for TES, Instrumentation, and OPFOR Training Systems.

(2) Serve as proponent and user representative during execution of TMA programs related to TES, Instrumentation, and OPFOR systems.

(3) Provide input for requirements planning for future TES, instrumentation, and OPFOR Training Systems.

(4) Provide input to proponent training strategies as appropriate to ensure TES & Instrumentation aspects are supported.

(5) ICW with MCTCs provides input to DA PAM 350-38 (STRAC).

e. Combat Developer and HQDA Executive Agent for Tactical Engagement Simulation Systems (TESS) :

(1) Army TESS (A-TESS)

- Next generation TES, replacing laser-based MILES with state-of-the-art geo-pairing capabilities
- OSD and test community partnering for single TES solution
- An FCS complimentary system; supports FCS LUT

(2) MILES

- Fielding five product lines to CTCs and Army installations (IWS, SLM, WITS, CVS and UCD)
- ICW ACOM, develop BOIP and fielding plans
- Develop annual POM requirements for DA
- Ensure Manprint (form, fit, function) through participation in source selection and field testing

f. Combat Developer and User Representative for the CTC Modernization Program:

(1) Develop, validate, and field Instrumentation (IS) to the CTC:

- CTC-IS
- ETC-IS
- Live Fire ranges/targets
- CTC MOUT-IS and MCA

(2) Develop, validate and field OPFOR Systems

- Aviation
- Vehicle systems (Tracked, wheels, COBs)
- OPFOR TADSS

- (3) Conduct annual CTC Certification for ITADSS pillar for CTCD.
- (4) Assist CTCD in development of CTC Modernization POM requirements.
- (5) Combat Developer and User Representative for the Home station Instrumentation Training Systems (HITS).
- (6) Develop BOIP, fielding schedules, and POM requirements.

4. TCM-L is currently authorized one government employee that primarily focuses on OE/OPFOR requirements in coordination with TRADOC G2. That individual also oversees one contractor that is primarily responsible for Joint Capabilities Integration Development System process for OE and OPFOR requirements - primarily authors supporting documentation.

8-2 (2) Threat Systems Management Office (TSMO)

1. TSMO is responsible for the total life-cycle management of threat equipment for Army test and evaluation. The Director also acts as the Army POC for FMS of foreign equipment supporting US Government agencies. TSMO is also the Army expert for Threat Verification, Validation, and Accreditation (VV&A) Working Groups and provides support to Army T&E activities.

2. RESPONSIBILITIES: TSMO has the following responsibilities for threat simulators and actual threat equipment within the boundaries of the mission.

a. AR 381-11, Production Requirements and Threat Intelligence Support to the United States Army, 28 June 2000, paragraph 1-4 (j) (16) and AR 73-1, Test and Evaluation Policy, 10 November 2004, paragraph 2-2 (d) directs that PEO STRI/PM ITTS is responsible for threat simulator development, engineering, procurement, and operations to support T&E. TSMO is the executive agency for these functions.

b. TSMO, being part of the Program Manager, Instrumentation, Targets, and Threat Simulators (PM ITTS), ensures that both AR 381-11 and AR 73-1 requirements are properly met. There is no other organization within PM ITTS or PEO STRI that can accomplish these responsibilities concerning threat simulators or threat systems.

c. TSMO's mission is threat based covering the live, virtual, and constructive domains and the integration of these domains into a threat force supporting Army T&E. TSMO is responsible for:

(1) The establishment and sustainment of a distributed threat environment capable of supporting T&E.

(2) Providing threat intelligence analysis and acquisition expertise across threat functional areas, including Intelligence, Surveillance, and Reconnaissance (ISR), Electronic Warfare (EW), Computer Network Operations (CNO), Command and Control (C2), Maneuver, and Integrated Air Defense Systems (IADS).

(3) Providing Operations and Maintenance (O&M) of a threat ground fleet required to support Army T&E requirements.

(4) TSMO, working close with the threat intelligence community and Army Test and Evaluation Command (ATEC), has established a threat systems requirements process for identifying new or upgraded threat systems to support T&E within the T&E Battlefield Operating System (BOS) Program Objective Memorandum (POM). TSMO POM programs focus on the integration of the live, virtual and constructive (LVC) domains in support of Test and Evaluation (T&E).

(5) TSMO's growing role in Information Operations (IO) encompasses distributed support to the T&E and training communities. TSMO is responsible for operating and maintaining the Threat Battle Command Center (TBCC), which integrates existing PEO STRI simulation products, threat specific simulation devices, EW simulation engines, and communication/propagation modeling across a high fidelity, distributed threat C2 architecture, etc. across LVC domains. No other Army organization is positioned to provide this type of threat support.

(6) Within PM ITTS, TSMO is responsible for defining interface and interoperability requirements across all threat platforms as part of the larger PEO STRI objectives for simulation based products. TSMO threat expertise supports the Brigade Combat Team Modernization (BCT-M) effort, ATEC, and the intelligence community, to ensure their requirements are properly addressed in the T&E process.

3. Over the past three years, TSMO has grown in its support to the Combat Training Centers with development and fielding of the Independent Commercially Compatible Communications Network System (IC3NS) to the Joint Readiness Training Center (JRTC) and National Training Center (NTC). The system provides a closed loop communications network consisting of commercially available cellular network infrastructure that provides an authentic RF signals environment that applies GSM 900 and GSM 1800 communication standards, and supports this technology via the use of commercial off-the-shelf (COTS) sub-systems. This implementation establishes an open and scalable infrastructure supporting voice and data (text and picture) communications at the CTCs.

4. TSMO's training community support is cost reimbursable. However, TSMO has been able to significantly reduce expenses to the training community through its ability to leverage on-going

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threat acquisition and/or technology development efforts in support of its Test and Evaluation mission.

8-2 (3) Program Executive Office (PEO-STRI)

1. The Program Executive Office for Simulation, Training and Instrumentation (PEO-STRI) is the primary materiel developer (MD) for most of the OPFOR related modernization initiatives. Key program managers (PM) that support the CTC Program are:

a. PM Training Devices (TRADE) serves as the executive agent for AC Maneuver Combat Training Center Instrumentation and System Acquisition. PM TRADE also manages the development, acquisition and fielding of live training instrumentation systems, non-system individual and crew type Training Aides, Devices, Simulations, Simulators (TADSS), Tactical Engagement Simulators (TES) and generic training threat simulators which are associated with Combat Training Centers. PM TRADE is also involved in digitization in the live training environment.

b. PM Constructive Simulations (CON SIM) in partnership with the National Simulation Center (NSC), cost effectively develops and sustains constructive simulations primarily supporting the Army's command and staff training requirements from Company/Battalion through Echelons above Corps, through Joint Task Force levels across the full mission spectrum (SASO through mid/high intensity non nuclear conflict). PM CON SIM provides a suite of simulations to train the force: the Corps Battle Simulation (CBS), the Tactical Intelligence Simulation (TACSIM), the intelligence oriented Combat Synthetic Target Assessment Range (CSTAR), and, the Digital Battle Staff Trainer (DBST). The Aggregated Level Simulation Protocol (ALSP) is used today to link constructive simulations to create the battlefield environment required to support the training.

c. PM Instrumentation, Targets and Threat Simulators (ITTS) provides the New Generation Army Targetry System (NGATS), which will focus on eliminating current targetry deficiencies and will represent the variety of threats anticipated in military operations ranging from peacekeeping to high intensity conflict. The program will provide the Army with an improved, standardized targetry capability to support current training and respond to future enhanced weapon system performance, expanded engagement distances, and improved sensor discrimination. The NGATS will be mobile, transportable, deployable, and capable of continuous support during designated training periods. While capable of use in a simultaneous, multiechelon worldwide training environment, it will also support Army individual and collective gunnery

tasks (armor, infantry, aviation) during live fire and field training exercises at home station, maneuver Combat Training Centers (MCTC), and OCONUS locations.

d. PM Field Operations (Field OPS) provides support to fielded devices such as the CTC instrumentation systems (IS), Urban Ops IS, live training, CTC operations/maintenance devices support, aviation support, and MILES 2000. Within the OPFOR Program, they also become the support integration office for sustaining initiatives such as the cellular telephone network, wireless local loop system, IED training devices, etc - HOWEVER, they do not provide new funding unless these systems were part of a program of record.

8-2 (4) Army Materiel Systems Analysis Activity (AMSAA)

1. AMSAA has the inherent responsibility of determining analysis of Army material to include combat effects from and onto foreign equipment engagements. These analysis are often classified, but a variation of these are needed for the integration of the probability of hit (Ph) and the probability of kill (Pk) more commonly referred to as the Ph/Pk factors used within the Multiple Integrated Laser Engagement Systems (MILES).
2. The Close Combat Analysis Division of the AMSAA has provided such data in the past but the Director of the Research, Development, and Engineering Command of AMSAA determined in 2004 that by providing unclassified variant data of the classified Ph/Pk data would create negative training and potentially compromise the classified data and strongly recommended for the use of classified data in the MILES program. As such, he opted to no longer provide unclassified data. Unfortunately the conversion of the MILES equipment across the world to handle, store, and secure classified information would have astronomical funding implications and appeared to not to be a viable consideration for the training community.
3. In 2009, AMSAA apparently agreed to restore its support to providing unclassified data but wanted to ensure that such data is more accurate for training purposes without potentially compromising any classified information. As such, the dilemma of funding such an effort came about. For the interim, CAC though ATSC will reportedly fund one work-year to begin this process for FY10. However, this requirement will continue to be an enduring one and will need to be funded as such.

8-3. The Joint Capabilities Integration Development System (JCIDS)

1. The Joint Capabilities Integration Development System, or JCIDS, is the formal United States Department of Defense (DoD) procedure which defines acquisition requirements and evaluation criteria for future defense programs. While this system/process is more operationally oriented, it is also used to support training development requirements, to include the OE and OPFOR program. It is critical for OE/OPFOR program requirements to be tied to an already approved program, or must independently be validated through the JCIDS process in order for these requirements to be fully approved and funded within a program of record.
2. JCIDS was created to replace the previous service-specific requirements generation system, which allegedly created redundancies in capabilities and failed to meet the combined needs of all US military services. In order to correct these problems, JCIDS is intended to guide the development of requirements for future acquisition systems to reflect the needs of all four services (Army, Navy, Marines, and Air Force) by focusing the requirements generation process on needed capabilities as requested or defined by one of the US combatant commanders. In the JCIDS process, regional and functional combatant commanders give feedback early in the development process to ensure that their requirements are met.
 - a. History: JCIDS was developed under the direction of US Defense Secretary Donald Rumsfeld to address shortfalls in the DoD requirements generation system identified by the US joint chiefs of staff. These shortfalls were identified as: not considering new programs in the context of other programs, not sufficiently considering combined service requirements and effectively prioritizing joint service requirements, and not accomplishing sufficient analysis. The drive to create JCIDS was born out of a memo in March 2002 from the Secretary of Defense to the Vice Chairman, Joint Chiefs of Staff requesting a study on alternative ways to evaluate requirements. The Chairman, Joint Chiefs of Staff (CJCS) approved the new JCIDS on 24 June 2003. CJCS Instruction (CJCSI) 3170.01 provides a top-level description and outlines the organizational responsibilities. CJCS Manual (CJCSM) 3170.01 defines performance attributes, key

performance parameters, validation and approval processes, and associated document content.

b. Methodology: The central focus of JCIDS is to address capability shortfalls, or **gaps** as defined by combatant commanders. Thus, JCIDS is said to provide a **capabilities-based** approach to requirements generation. The previous requirements generation system focused on addressing future threat scenarios. While understanding the risks associated with future threat postures is necessary to develop effective weapons systems, a sufficient methodology requires a joint perspective which can both prioritize the risk associated with future threats and consider operational gaps in the context of all the services.

(1) If requirements are developed in this joint context, there is simultaneously a smaller chance of developing superfluously overlapping systems and a greater probability that weapons systems would be operational with one another i.e. common communication systems, weapons interfaces, etc). The Joint capability areas were established in conjunction with JCIDS in order to provide for a common lexicon throughout the Department of Defense.

(2) Another major emphasis of JCIDS is to consider whether a solution to a potential operational gap requires the development of a physical system (a **materiel** solution) or a procedural or training based solution (a **non-materiel** solution). In this sense, the JCIDS process provides a solution space that considers solutions involving any combination of doctrine, organization, training, materiel, leadership and education, personnel and facilities (DOTMLPF).

(3) Since combatant commanders define requirements in consultation with the Office of the Secretary of Defense (OSD), they are able to consider gaps in the context of strategic direction for the total US military force and influence the direction of requirements earlier in the acquisition process.

(4) The JCIDS process starts with the development of joint integrating concepts and the capability they imply from the US Secretary of Defense (SecDef) and combatant commanders. From the joint integrating concepts, the joint chiefs of staff refine requirements and develop an integrated priority list via a joint quarterly readiness review. Military judgement is further applied by the Joint Requirements Oversight Council (JROC) (comprised of the Vice Chairman of the Joint Chiefs of

Staff and other service vice-commanders) which **validates** requirement attributes and determines how to produce the required capability. From the JROC, the JCIDS process maps current programs against the standard as defined by JROC attributes to determine if gaps exist in providing the concepts defined by the SecDef and combatant commanders.

c. Analysis: In order to assess US capability to execute Joint Integrating Concepts there are three phases to capabilities-based assessment: a functional area analysis, a functional needs analysis, and a functional solutions analysis. The functional area analysis identifies operational tasks, conditions and standards needed to accomplish objectives.

(1) The Functional Needs Analysis assesses the ability of current and programmed capabilities to accomplish the tasks identified in the functional area analysis. The end product of these first two levels of analysis is a list of capability gaps.

(2) Functional solutions analysis (FSA) evaluates solutions from an operational perspective across the DOTMLPF spectrum. The FSA results in a list of potential need-based solutions and is further divided into three subcomponents: non-material analysis (DOT_LPF), material solutions (ideas for material approaches, or IMA, analysis) and the Analysis of Material Approaches to determine the best materiel or combination of approaches to produce the best capability.

(3) The final analysis is the Post-Independent Analysis which reviews the previous three functional analyses and selects an approach or approaches that best close the capability gaps. The original proposal sponsor documents a recommended change or produces an Initial Capabilities Document for a system.

(4) A proposal receives one of three designations based on the degree in which it applies to all three services: "JROC Interest", "Joint Integration" or "Independent". Independent proposals affect only a single service component. Joint integration programs require intelligence, munitions or interoperability certifications. "JROC Interest" programs apply to any program the JROC decides to review and all Acquisition Category (ACAT) 1/1A programs

d. Output Documents: Three documents are the output of the JCIDS analysis which together define needed capabilities, guide

materiel development and direct the production of capabilities. Each of these documents supports a major design approval decision each with gradual improving design maturity A, B or C.

(1) The sponsor is the single focal point for all three documents. The initial capabilities document (ICD) defines the capability need and where it fits in broader concepts, ultimately supporting the milestone A decision. (The Milestone A decision approves or denies a concept demonstration to show that a proposed concept is feasible).

(2) When the technology development phase is complete, a capability development document (CDD) is produced which provides more detail on the materiel solution of the desired capability and supports Milestone B decisions. (The milestone B approval starts the Engineering and Manufacturing Development Phase).

(3) Most important, the CDD also defines the thresholds and objectives against which the capability will be measured. After approval, the CDD guides the Engineering and Manufacturing Development Phase of the acquisition process.

(4) The capability production document (CPD) supports the Milestone C decision necessary to start the Production & Deployment Phase to include low-rate initial production and operational tests. The CPD potentially refines the thresholds from the CDD based on lessons learned during the Engineering and Manufacturing Development Phase.

e. Actors: The DoD component that oversees the JCIDS analyses acts as the *sponsor*. The sponsor also evaluates the affordability of various proposals and approaches determined in the study. Moreover, the sponsor coordinates with non-DoD departments and agencies on interagency capability matters. The Joint Staff, J8, Vice Director (VDJ-8), is the *gatekeeper* of the JCIDS process.

(1) The gatekeeper assigns the JPD, and assigns lead and supporting functional capabilities boards FCBs, and performs an initial review. The gatekeeper initially reviews all proposals and then designates the program's degree of joint potential and which Functional Capability Board and Joint Warfighting Capability Assessment Teams will receive the proposal. The gatekeeper determines the membership of the lead Functional Capabilities Board, the lead Joint Warfighting

Capability Assessment Team and the Joint Potential Designation. The Joint Potential Designation is based on input from Joint Forces Command, each of the Joint Warfighting Capability Assessment teams, and other elements of the Joint Staff. The gatekeeper periodically reevaluates the Joint Potential designation throughout the process because changes in the proposed capability may require it to change as well.

(2) When the gatekeeper has completed the initial review, they assign the analysis to a *functional capabilities board* (FCB). This board replaces the joint requirements panel (JRP) from the previous system, with expanded responsibilities and membership. The FCB is responsible for ensuring that new capabilities are developed with a joint warfighting context; ensuring that proposals are consistent with the Joint Force as described in the Joint Operating Concepts; validating Joint Impact proposals; organizing, analyzing and prioritizing capabilities proposals; supervising development and updating of functional concepts; and ensuring that integrated architectures are reflective of their functional area. The JROC now charters eight FCBs: (oversight authority is in parentheses):

- (1) Command and Control (U.S. JFCOM)
- (2) Battlespace Awareness (J2)
- (3) Force Application (J8),
- (4) Logistics (J4)
- (5) Protection (J8)
- (6) Force Support
- (7) Net Centric (J6)
- (8) Building Partnerships (J5)

(3) The head of the FCBs will probably be at least the O-7 or equivalent level. Membership in an FCB goes beyond the traditional membership of the services under the previous system in the JRP. The FCBs include O-6 or GS-15 equivalent representatives of the combatant commanders, key OSD staff, and representatives from the space and intelligence communities. This expanded membership gives the FCB Chairman the tools to make better and more broadly informed recommendations on the capability proposals to the JROC. It also involves the entire acquisition community early in the process. Other FCBs can be created by the JROC to oversee capability development and integration in the other functional areas.

(4) *Joint warfighting capability assessment teams* (JWCAs) coordinate with and aid the sponsor to prevent needless

overlapping of proposals across components and to ensure that joint capability gaps are properly addressed. They support the gatekeeper in determining the Joint Potential Designation and the lead and/or supporting JWCAs for each JCIDS document in the process.

9. OE/OPFOR Validation and Accreditation

1. The OE/OPFOR validation and accreditation program is part of existing and integrated accreditation programs within TRADOC and the Combined Arms Center (CAC). The authority to conduct these validation/accreditation visits are outlined in AR 350-2 (The Opposing Forces Program), AR 350-50 (The Combat Training Center Program), and TRADOC Operations Order 09-008 (TRADOC Campaign Plan [TCP], dated 25 June 2009).
2. A key to the credibility of replicating the OE and a viable Opposing Force (OPFOR) is the awareness that it fairly and accurately replicates a potential enemy within the context of a realistic operational environment, while meeting education and training objectives (AR 350-2). Additionally, to drive leader development, critical in rising adaptable, agile, and innovative leaders, is to subject students/audiences to the complexities of the OE that stress their competencies and draw lessons learned.
2. The TRADOC G2 Training Directorate is the responsible official for validating and accrediting OE/OPFOR replication within TRADOC as part of the TRADOC Quality Assurance (QA) Organizational Inspection Program (OIP) for TRADOC institutions, schools, and Centers of Excellence (CoEs), and the Combat Training Centers Program. AR 350-2 also outlines accreditations requirements for Enduring Mobilization Training Centers (EMTCs) (formerly Training Support Divisions).
3. Parameters for validation and accreditation efforts, within the OE/OPFOR framework, are set forth in:
 - a. AR 350-2, Opposing Forces Program, paragraph 2-5 (OPFOR/OE Accreditation)
 - b. AR 350-50, Combat Training Center Program, paragraph 2-13 (Commanding General, TRADOC), subparagraph h (responsible official for the validation and integration of the OPFOR Program).
 - c. AR 381-11, Threat Intel Support to the Army.
 - d. FM 7-100 series of manuals (FM 7-100, Opposing Force Doctrinal Framework and Strategy (FM 7-100.1, Opposing Force Operations; FM 7-100.2, Opposing Force Tactics, Approved Final

Draft; FM 7-100.3, Opposing Force: Paramilitary and Nonmilitary Organizations and Tactics, Approved Final Draft; FM 7-100.4, Opposing Force Organization Guide).

e. TRADOC G-2 White Paper, "The Operational Environment," approved by TRADOC CG, August 2009.

f. Army Quality Assurance (QA) Program Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, and Facilities (DOTMLPF) Accreditation Standard dated 22 August 2008 (Currently in revision as of 1 August 2009).

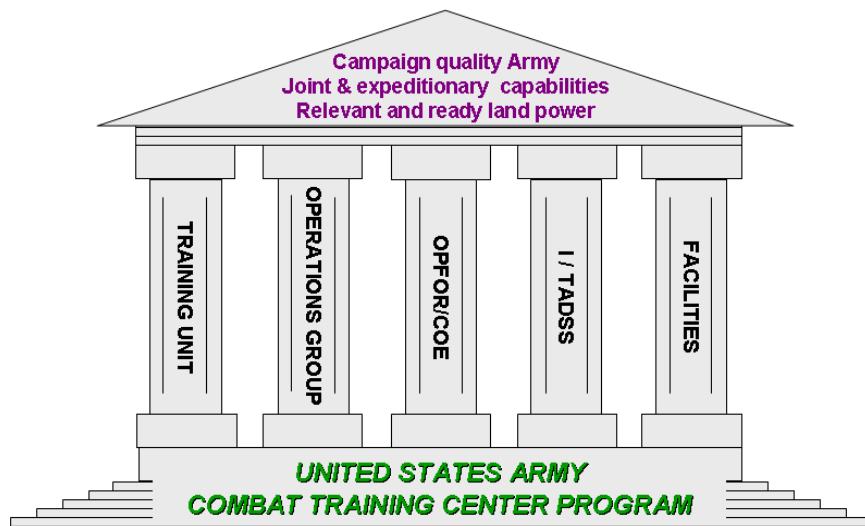
g. The Action Plan for the TRADOC Accreditation of Combat Training Center Program for FY 2008.

9-1 COE/OPFOR Validation Visits/Support

1. Validation visits are not tied to accreditation requirements for the purpose of the OEMP. Instead, validation visits are intended to mirror staff assistance visits for TRADOC institutions, schools, and Centers of Excellence (CoEs); Combat Training Centers; Enduring Mobilization Training Centers (EMTCs); and/or Home-station Training (HST) sites.
2. The purpose/scope for validation visits is two-fold:
 - a. Validate if the Program is on Track: Used as a mechanism for direct feedback as to how a CTC or other collective training program/exercise is employing the COE/OPFOR. This is a none-inspection review of a program or exercise by a scaled-down accreditation team to provide commanders and their staff an internal assessment and validate if their program/exercise is on track with accreditation guidelines and standards.
 - b. Program Development: Used to assess and validate the current condition of a new or changing program's OE/OPFOR integration and provides staff assistance in the development of a viable plan for corrections or enhancements. This differs from a traditional validation visit in that the TRADOC G2 Training Directorate provides direct assistance (participates), vice feedback, in the process of change.
3. As a minimum, a validation visit is scheduled for each CTC when an annual full accreditation is not feasible or not conducted for other reasons. In such a case, feedback results are still provided only to the program (CTC) commander for internal use; copies of results must be requested through the training program, not TRADOC G2.

9-2 Collective Training Accreditations

1. The purpose/scope of the Accreditation for the Combat Training Center (CTC) Program, and the Enduring Mobilization Training Centers (EMTCs) is to present a plan for accrediting the COE/OPFOR Program organization, functions, and training in support of the United States Army Combat Training Center Program as outlined in Army Regulation AR 350-50, Combat Training Center Program. Although the overarching purpose of the CTC program accreditation plan is primarily focused on the Operations Groups of the CTCs, the OE/OPFOR accreditation also focuses heavily on how the designated OPFOR unit accomplishes its task/mission in support of the OPS GP.
2. The accreditation process will address four of the five CTC Program "Pillars" described in AR 350-50 and portrayed below at Figure 1-1: Operations Group, Opposing Force/Contemporary Operational Environment (OPFOR/COE), ITADSS, and Facilities. The Operations Group pillar will focus on O/C Training. The OPFOR pillar will focus on replication of both OPFOR and the OE related to desired training outcomes. The ITADSS pillar will focus on the development and fielding of CTC associated ITADSS. The Facilities pillar will address CTC O&M funding validation issues only. Accreditation requirements for the COE/OPFOR Pillar are also addressed in AR 350-2, Opposing Forces Program.



3. The goal of the accreditation process is to:

a. Validate that training scenarios, with an emphasis on OPFOR OE replication, facilitate Army-wide training outcomes and Blue Force (BLUFOR) training objectives

b. Confirm that the CTC's Opposing Forces (OPFOR) adequately funded, staffed, trained, and equipped to replicate the COE.

c. Confirm that the OPFOR is indeed being used as a viable "sparring partner" as intended, to provide realistic field training through operations against a non-cooperative, uncompromising opponent that has the opportunity to "win" the fight in an exercise that allows "free play" to the maximum extent possible (AR 350-2).

d. Confirm that the O/C Academies, Leader Training Programs (LTP), and OPFOR Academies at each CTC employ the approved COE and FM 7-100 series related training material.

4. Methodology.

a. COE/OPFOR accreditations at CTCs will be coordinated annually (typically prior to the beginning of each FY) with the Director, Combat Training Center Directorate, and scheduled with CTCs through the appropriate ACOM to minimize disruption of the CTC training mission.

b. TRADOC G2 Training Directorate will issue standards (see enclosure 11) to accreditation members and also provide a copy of to the applicable CTC no later than 30 working days prior to a visit. These guides will be continually updated based on observations and insights obtained from recurring visits to the CTCs.

c. Accreditation Team members will be receptive to input, information, and clarifications provided by the CTC representatives during the site visit.

d. When scheduling visits to the CTCs, the team leader will request an entrance and exit briefing with the Commanding General and the Commander of the Operations Group or his designated representative; a office call with each CTC Commander will also be offered.

e. TRADOC G2 will compile individual validation reports and submit them to the TRADOC G2 for COE/OPFOR accreditation

approval. A copy of the report is send to CTCD who may further staff the OE/OPFOR portion of the overall CTC Accreditation through the Combined Arms Center Quality Assurance Office to the Deputy Commanding General, TRADOC for Combined Arms for approval and forwarding to the TRADOC Chief of Staff to issue the official accreditation status of the CTC Program.

5. The following agencies/offices partake in the OE/OPFOR Accreditation (IAW CTC Accreditation Action Plan):

a. TRADOC G2. Lead for CTC OE/OPFOR and EMTC accreditation process and execution. Accredits CTC OE/OPFOR in coordination with CTCD, CAL, ATSC, and CTD; schedules OE/OPFOR accreditation visits, develops action plans and corresponding standards guide, and provides input to CTCD for the annual CTC Accreditation Report.

b. TPIO Live: As required, provides subject matter expertise support for COE/OPFOR accreditation with respect to TADSS and instrumentation.

c. Collective Training Division (CTD): Provides support for CTC OPFOR/COE accreditation and linkage to collective training outcomes, ICW TRADOC G2 and CAL. Provides input to TRADOC G2 for action plan and standards guide development. Provides input to TRADOC G2 for annual CTC Accreditation Report.

d. Center for Army Leadership (CAL): Provides support for CTC OPFOR/COE accreditation and linkage to leader development (skills, knowledge, attributes), ICW TRADOC G2 and CTD. Provides input to TRADOC G2 for action plan and standards guide development. Provides input to TRADOC G2 for annual CTC Accreditation Report.

6. TRADOC G2 is resources with three full-time government employees which provides for the planning and oversight of the execution. However, it is limited on subject matter experts and depends on the personnel/agencies outlined in paragraph 5. Funding is primarily provided through the CTC program.

7. Collective training accreditations have six standards, of which standard four and five are interchangeable pending if the training exercise is a generic full-spectrum training exercise or a mission rehearsal exercise (MRX/MRE). Each standard has several criteria that must be met with specific guidelines. The

following are the six OE/OPFOR collective training standards with criteria:

a. **Standard 1** - Opposing Force (OPFOR) is adequately manned, trained, and equipped to replicate the COE and other directed training.

(1) OPFOR is appropriately manned IAW its MTOE and TDA, and adequately augmented for directed training.

(2) OPFOR is properly trained to replicate directed COE.

(3) OPFOR is properly equipped/ resourced to conduct full spectrum operations IAW COE and/or as directed by training scenario.

b. **Standard 2** - The Contemporary Operational Environment (COE) is adequately defined and understood by Army leaders and Observers, Controllers/ Trainers (OC/Ts).

(1) CTC has program to educate leaders and OC/Ts in the current COE and OPFOR doctrine.

(2) Variables of COE are properly defined and understood by leaders.

(3) CTC/OPFOR training academy conducts leader/seminar training using proper COE doctrine or as appropriate for directed training exercise.

c. **Standard 3** - CTC plans, implements, and resources for COE variables as appropriate for type of exercise and IAW exercise directors guidance.

(1) Variables of COE are implemented into the scenario development and master event script/task-list.

(2) Requirements to replicate the COE variables are properly resourced.

(3) COE role-players are properly trained to accomplish their tasks and purpose.

d. **Standard 4** - CTC executes full spectrum Warfighter/ Maneuver Exercises and other directed training IAW approved OPFOR/COE doctrine/Capabilities.

(1) Operational training environment supports full spectrum COE operations/scenarios.

(2) OPFOR conducts doctrinal military operations.

(3) OPFOR actions/counteractions drive BLUFOR full spectrum operations.

(4) Scenario and OPFOR develops tactical and/or operational challenges to balance BLUFOR unit readiness and leader development tasks.

(5) Balance of scenario directed CBIs and OPFOR free-play promotes true and reasonable cause and effects.

d. **Standard 5** - CTC plans, coordinates, and conducts Mission Rehearsal Exercises (MRXs) and Maneuver Readiness Exercises (MREs) and associated training IAW provided TRADOC and FORSCOM guidance, and Exercise Director's training objectives.

(1) Incorporates and properly replicates appropriate and applicable in-theater threat/OE derivatives.

(2) CTC leadership, OPFOR leadership, and OC/Ts are appropriately trained to replicate and train for specific threat OEs.

(3) COE variables are modified to reflect specific OE and/or as directed by Exercise Director (examples of considerations for specific OEs).

(4) Applies applicable criteria from standard 3 (plans, coordinates, and conducts training IAW OPFOR/COE doctrine and capabilities) AND:

- Considers anticipated future operations.
- Considers secondary effects of military operations within OE.

d. **Standard 6** - CTC sets conditions that drive counter IED, ISR, and non-kinetic effects to achieve RTU training objectives.

(1) CTC has an established and robust process to integrate relative current, real-world Counter-IED and affiliated data into exercise scenarios and databases.

(2) CTC replicates appropriate signatures for IED devices and Networks that facilitate collection by multi-disciplined, army and Joint intelligence collection platforms and analytical processes.

(3) CTC program provides enough physical, informational, and cognitive stimulants within the scenario and integrated training environment (LVC-G) to effectively support non-kinetic and information operations training objectives.

8. For further details about accreditations, please see the CTC Accreditation Action Plan, dated 16 August 2007, posted on AKO.

9-3. QAO Organizational Inspections Program

1. TRADOC G2 conducts OE/OPFOR accreditations for TRADOC and non-TRADOC schools, centers, and institutions in coordination with the TRADOC Quality Assurance Office's (QAO) Organizational Inspection Program (OIP). QAO accreditations are conducted on tri-annual basis consisting of approximately 2-4 centers of Excellence (CoEs) and/or 9-14 schools.
2. Of the 30 established and TRADOC CG approved accreditation standards, only standard #3 directly accounts for the OE/OPFOR requirements. However, it is also an integrated standard that has indirect bits and pieces embedded into other standards. Additionally, while the standards themselves are currently under revision (as of 1 August 2009), a complete QAO revision of standards in how they are presented and applied will be conducted in the 1st quarter of FY10. This should not change standard 3 in itself, but may change the framework in how it is evaluated.
3. Standard #3 is resourced to support one person with associated travel and per-diem costs. Several larger CoEs require at least two personnel, of which the second person is currently provided and funded by TRADOC G2 funds, but holistically unfunded.
4. QAO standard #3 - **Institution integrates the Contemporary Operational Environment (COE) into education and training.** This standards ensures that the Institutional staff and faculty have the ability to analyze a COE and create learning conditions reflective of COE variables and associated complexities, to include environment (at the appropriate level) using Opposing Force (OPFOR) doctrine and organizations, and COE aspects of Army and Joint training doctrine. Aspects of the criteria include:
 - a. Training Proponents:
 - (1) Proponent ensures that the curriculum teaches COE as a concept and integrates its complexities in problem solving.
 - (2) Proponent incorporates PMESII - PT (political, military, economic, social, information, infrastructure, and physical environment and time) into classroom work as well as

practical and training exercises, as appropriate, explaining these variables at a level appropriate for the training audience and illustrating them with appropriate examples from the COE.

(3) The curriculum integrates COE to realistically portray or replicate the complexities associated with nature of conditions of volatility, uncertainty, chaos, and ambiguity in Joint, Interagency, Inter-governmental, Multi-National (JIIM) operations.

(4) The curriculum includes other than OEF/OIF models in threats and scenarios.

(5) The Proponent uses a common framework of scenarios that fully represent the complexities of contemporary operational environments and reflects a wide range of reasonable and feasible threats including hybrid threats s. When appropriate, the Proponent develops and/or uses TRADOC G-2 approved or certified scenarios, OPFOR, databases, parametric data, and supporting training aids, devices, simulators, and simulations (TADSS) to replicate full-spectrum operations in COE conditions across the Spectrum of Conflict. Situations and scenarios that focus on tactics, techniques, and procedures (TTP) should be updated as appropriate. The Proponent determines how to integrate "live data" from TRADOC Central Training Database (currently resident in the JTCOIC) to enrich the training experience.

(6) Proponent Lessons Learned Integration (L2I) Organization (Directorate/Branch/Cell) uses TRADOC G-2 products and studies in their developmental process on observations, insights, and lessons (OIL).

(7) Proponent provides feedback to TRADOC G-2 on how COE is being integrated and the challenges and problems with integrating the COE and Command Training Guidance and TRADOC G-2 guidance in their education and training programs.

b. Training Implementers.

(1) Instructors teach COE as a concept and integrate its complexities in problem solving.

(2) Instructors teach students to assess the operational environment using the variables of political, military, economic, social, infrastructure, and information with

the addition of physical environment and time (PMESII - PT). Additionally, instructors teach students to use the factors of mission, enemy, terrain, time, troops available, and civil considerations (METT-TC) as the categories into which relevant information is grouped for a military operation.

(3) Instructors use the COE to set the foundation in teaching the components of full spectrum operations.

(4) Instructors incorporate the COE variables as a construct (when appropriate) when discussing observations, insights, and lessons (OIL).

10. OE/OPFOR Modernization Initiatives

1. The below paragraphs outline numerous initiatives that TRADOC G2 Training Directorate continue to work in coordination with Combat Training Center Directorate (CTCD), the Army Training Support Center (ATSC), Program Executive Office for Simulation, Training, and Instrumentation (PEO-STRI), Threat Systems Management Office (TSMO), United States Army Aviation Center (USAAC), Combined Arms Center (CAC), Forces Command (FORSCOM), DA G3/5/7, Joint Improvised Explosive Devise Defeat Organization (JIEDDO), and Joint Forces Command (JFCOM) with the Joint National Training Capability (JNTC) :

a. OE WP (see Enclosure 1): The Operational White Paper (OE-WP) is currently under final review by the TRADOC CG with an anticipated approval in August 2009. The paper was published by the TRADOC Intelligence Support Activity (TRISA) to provide TRADOC Lines of Operations (LOOs), and the Army, a framework of potential world/regional/state threat conditions with respect to operational environments and conditions that must be realistically replicated to meet training, leader development, and development and integration capabilities objectives.

b. RP/COB WG (see Enclosure 2): The Role Player - Civilians on the Battlefield Working Group paper (RP-COB WG) was published in April 2007. The WP provides definitions for the various types of role players, also known as civilians on the battlefield (COBs), provides basic required numbers of each type of role players for full-spectrum as well as MRE and MRX exercises, and introduces the framework for number and size of towns needed for full-spectrum and MRE/MRX exercises. The provided numbers provides the minimum requirements for budgetary purposes and should not be considered the solution set for all scenario requirements.

c. IC3NS ONS (see Enclosure 3): the Independent Commercially Compatible Cellular Network System (IC3NS) Operational Needs Statement (ONS) was revised and published a second time in June 2007. This capability was fielded to NTC in FY09. JRTC and JMRC fielding is scheduled for FY10. Funding and resource support comes through the Joint National Training Capability (JNTC) and JIEDDO efforts. It will provide the OPFOR as well as the training environment (role-players) realistic communication and information exchange capabilities while setting more realistic conditions for BLUFOR to contend with.

These cellular telephone systems are stand-alone, closed loop systems for training purposes only.

d. MANPADS ONS (see Enclosure 4): The Man-portable Air Defense System (MANPADS) Operational Needs Statement (ONS) was published in June 2006. These new MANPADS will provide the OPFOR realistic air defense capabilities with an infra-red (IR) simulated rocket stimulant to allow aircraft early warning systems to detect and alert pilots of launched rockets to conduct evasive maneuvers. These new MANPADS will also be equipped with an AAR capability. This initial effort is an interim solution sponsored and coordinated via JNTC; a larger Man-Portable ASE System Training (MAST) program which includes F-MATTS is a full production effort being pursued by the Air Survivability Equipment (ASE) Program Office at Fort Rucker, AL. Fielding is projected for FY10.

e. WLL ONS (see Enclosure 5): The Wireless Local Loop (WLL) Operational Needs Statement (ONS) was published in June 2007. The WLL provides live training communities the ability to replicate a realistic "information" COE variable capability by providing their OPFOR as well as role-players communication capabilities that strongly emphasize web based communications media that is used by current enemies and threats. This initiative, supported by JIEDDO entails building wireless data communication links around urban terrain.

f. OSWV ONS (see Enclosure 6): The OPFOR Surrogate Wheeled Vehicle (OSWV) Operational Needs Statement (ONS) was published in August 2006. This initiative provides the OFPORA combat wheeled vehicles to replicate Russian made BTR capabilities as well as other world-wide proliferated combat wheeled vehicles, and to provide the OPFOR a "sparring" capability to counter the BLUFOR Stryker vehicles. While ATSC has completed the CDD, funding was shifted from FY 10-12 to currently beyond FY 15.

g. COB-V ONS (see Enclosure 7): The Civilians on the Battlefield Vehicles (COB-V), also known as "technicals," Operational Needs Statement (ONS) was published in October 2006. This initiative provides a consistent requirement for commercial vehicles as training aids to be used to populate urban terrain and associated vehicular traffic. It also contends for the need to have modified commercial vehicles emulate threat gun-trucks and similar type vehicles.

h. Light Utility Helicopter (LUH) OPFOR-version (see Enclosure 8): Operational Needs Statement (ONS) was published in May 2006. This effort is a combined effort, coordinated and led by CTCD, to replace antiquated observer/controller and OPFOR helicopters. For NTC and JMRC it will replace the UH-1H; for JRTC it will replace actual Russian made helicopters such the HIND-D. The new UH-72A will have to be visually modified to differentiate OPFOR from O/C aircraft, as well as lift/cargo OPFOR helicopters from OPFOR gun-ships. Additionally, it will have tactical communications/radios, MILES, and instrumentation so that the aircrafts can be used for BLUFOR AARs.

i. F-MATTS formerly labeled NGCATS ONS (see Enclosure 9): Full-Scale Mobile ASE Tactical Training System (F-MATTS) OPFOR Air Defense (survivability equipment) Training System (NGCATS/F-MATTS) Operational Needs Statement (ONS) was published in April 2006. This system is a long term solution and a part of the MAST program it will replace the old ASET IV system and be capable of replicating multiple surface-to-air and gun air defense systems. This effort is sponsored by the Air Survivability Equipment (ASE) Program Office at Fort Rucker, AL, in full coordination with JNTC for Joint training considerations.

j. RKG-3 Grenade Operational Needs Statement (ONS) was published in May 2009 to provide soldiers with a training device that replicates a weapon of choice used by enemy forces in Iraq. At the time of its publication, no RKG-3 training device existed at Army Home Stations and Combat Training Centers (CTC) were attempting to fabricate locally made devices. The publication of this ONS was instrumental in garnering nearly \$300,000 dollars in Joint National Training Capability (JNTC) funds to develop and disseminate hundreds of these devices to Home Stations, CTCs, Force Generation Platforms, Centers of Excellence and Joint Training Centers. Procurement of these devices was in response to an immediate demand from the field. A long term solution is being worked for a MILES capable variant.

2. One critical aspect to the above initiatives is the lack of available sustainment funding. Newly provided guidance through HQDA G3/5/7 enforces the notions that fielded capabilities must be tied to a program of record (POR).

a. This puts the OE/OPFOR program in a predicament as it is an established program, but without funding as a POR. Previous modernization initiatives were either fielded with operational procurement (OP) funding from JNTC or JIEDDO, or were attached

it aligned programs through ATSC, such as instrumentation or MILES.

b. Some sustainment funding has been allocated by CTCD with CTC program dollars. However, the lack of baseline funding to sustain non-POR related initiatives, places CTCD in an unsupportive position.

11. Abbreviation/Acronyms

AAA	Army Audit Agency
ACR	Armored Cavalry Regiment
AMSAA	U.S. Army Material Systems Analysis Activity
AOR	Area of Responsibility
APC	Armored Personnel Carrier
ARTEP	Army Training and Evaluation Program
ATGL	Anti-Tank Grenade Launcher
ATGM	Anti-Tank Guided Missiles
ATSC	Army Training Support Center
BCT	Brigade Combat Team
BCTC	Battle Command Training Center
BCTP	Battle Command Training Program
BN	Battalion
BDE	Brigade
BTG	Brigade Tactical Group
C2	Command and Control
C3	Command, Control, and Communication
C4ISR	Command, Control, Communication, Computers, Intelligence, Surveillance & Reconnaissance
CALL	Center for Army Lessons Learned
CAAT	Combined Arms Assessment Team
CCD	Cover, Concealment and Deception
C/DEF	Contingency/Deploying Expeditionary Force
COE	Contemporary Operational Environment
CoE	Centers of Excellence
COBs	Civilians on the battlefield
COB-V	Civilian on the Battlefield Vehicles (commercial)
COB-WG	Civilian on the Battlefield Working Group
CRP	Cultural role players
CS	Combat Support
CSS	Combat Service Support
CTC	Combat Training Centers
CTCD	Combat Training Center Directorate
CTD	Collective Training Directorate
CTC-MP	Combat Training Center Master Plan
DA	Department of the Army
DF	Direction Finding
DLPT	Defense Language Proficiency Test
DOTMLPF	Doctrine, Organizations, Training, Material, Leadership & Education, Personnel, & Facilities
EA	Electronic Attack
EMTC	Enduring Mobilization Training Centers (formerly FGP)
ES	Electronic Support

ETC	Exportable Training Capability
EXEVAL	External Evaluation
EW	Electronic Warfare
FLS	Foreign language Speaker
FORSCOM	Forces Command
GRP	Generic Role-Player
GSR	Ground Surveillance Radar
GWOT	Global War on Terrorism
HBCT	Heavy Brigade Combat Team
H/K	Hunter/Killer (Guerilla)
HSTWG	Home-station Training Working Group
HST	Home-station training
HSTP	Home-station training master plan
HT	Human Terrain
HTT	Human Terrain Team
IBCT	Infantry Brigade Combat Team
IFV	Infantry Fighting Vehicle
ISR	Intelligence, Surveillance, and Reconnaissance
ITADDS	Instrumentation, Training Aids, Devices, Simulators, and Simulations
IO	Information Operation
IW	Information Warfare
IWC	Information Warfare Company
JIIM	Joint/Interagency/Intergovernmental/Multinational
JMRC	Joint Multinational Readiness Center
JNTC	JOINT NATIONAL TRAINING CAPABILITY
JRTC	Joint Readiness Training Center
MANPADS	Man-Portable Air Defense System
MCTC	Maneuver Combat Training Center
MEEL	Mission Essential Equipment List (OPFOR)
MILES	Multiple Integrated Laser Engagement System
MRE	Mission Readiness Exercise
MRX	Mission Rehearsal Exercise
MTT	Mobile Training Team
NGCATS	New Generation Collective Aircraft Training Syst.
NGO	Non-Governmental Organizations
NSC	National Simulation Center
NTC	National Training Center
OE	Operational Environment
OEF	Operation Enduring Freedom (Afghanistan)
OIF	Operation Iraqi Freedom (Iraq)
OPFOR	Opposing Forces
PEO-STRI	Program Executive Office for Simulation, Training, and Instrumentation
PH	Probability of Hit
PK	Probability of Kill

POM	Program Office Management
PRT	Provincial Reconstruction Team
PVO	Privately Owned Organizations
ROE	Rules of Engagement
RP	Role-players
RPC	Role-player Cadre
RTU	Rotational Training Unit
SATCOM	Satellite Communication
SBCT	Stryker Brigade Combat Team
SME	Subject Matter Expert
SOC	Special Operations Command
SKRP	Special Skilled Role Players
TADSS	Training Aides, Devices, Simulators & Simulations
TPIO-L	TRADOC Program Integration Office - Live
TRADOC	Training and Doctrine Command
TRISA	TRADOC Intelligence Support Activity
TSP	Training Support Packages
TTP	Tactics, Techniques, and Procedures
TTPEG	Training Program Execution Guidance
STX	Situational Training Exercise
USAICS	U.S. Army Intelligence Center & School
VISMOD	Visually Modified
WEG	Worldwide Equipment Guide
WG	Working Group
WLL	Wireless Local Loop
WOM	Word of Mouth