MORS Workshop
The Global War on Terrorism: Analytical Support, Tools, and Metrics of Assessment
30 November-2 December 2004
US Naval War College
Newport, Rhode Island

Technical Chair: Dr. William Forrest Crain

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1703 N. Beauregard Street ◆ Suite 450 ◆ Alexandria Virginia 22311-1717
(703) 933-9070 ◆ FAX: (703) 933-9066 ◆ email: morsoffice@mors.org
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**19a. NAME OF RESPONSIBLE PERSON**  
Corrina Ross-Witkowski

**19b. TELEPHONE NUMBER (include area code)**  
703-933-9070

**FAX:** 703-933-9066

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MORS Workshop: The Global War on Terrorism: Analytic Support, Tools and Metrics of Assessment
30 November – 2 December 2004, Naval War College, Newport, Rhode Island

BACKGROUND

The September 11, 2001 terrorist attacks on the World Trade Center and the Pentagon have thrust the United States into the Global War on Terrorism (GWOT). As a result the US has joined the rest of the world by entering into a new age of instability. The current strategic environment demands that our armed forces conduct operations simultaneously across the full spectrum of conflict — from conventional combat in major contingency operations like OPERATION IRAQI FREEDOM (OIF) to peace operations such as OPERATION JOINT FORGE. Subsequently, the value of analysts who support the warfighter has and will continue to be a significant combat multiplier in these efforts.

Recent experiences in providing analytic support to the combatant commanders in the prosecution of the GWOT have brought to the fore several areas that are of major importance and interest to the warfighter. These include:

- The need to better characterize GWOT and articulate the desired endstate
- The determination of nation state and regional instability
- The conduct of stability operations
- Analytic Tools to support the GWOT
- Metrics of Assessment in the GWOT
- Homeland Defense

With these experiences in mind, MORS hosted a workshop on analytic support to GWOT at the Naval War College, Newport, RI from 30 November to 3 December 2004. The workshop provided a forum for discussing analytic support, tools and metrics of assessment in the Global War on Terrorism. If the mark of a good MORS workshop is the quality and diversity of the people it brings together, then this workshop was a huge success. The GWOT workshop brought together a diverse group of analysts and decision makers from within DoD, from other government agencies, allied nations, industry, and academia. The workshop attracted over 160 participants representing each service, the joint staff and OSD, several combatant commands (COCOMs), several intelligence organizations, the Department of State, and the US Agency for International Development (USAID). Participants from the UK, Israel, Sweden and Canada were also included in the mix. Several participants brought recent in-theater experience in OIF and/or Operation Enduring Freedom (OEF) to the table as well.

WORKSHOP OVERVIEW

The workshop began with a plenary session that was highlighted by thought provoking presentations by GEN Wayne Downing (plenary), and two members of the Naval War College faculty – Professor Jeff Norwitz (perspective on detainee operations at Guantanamo) and Professor Tom Barnett (author of The Pentagon’s New Map). Each presentation challenged the audience to examine current national strategy and served to set the tone for the subsequent working group sessions. The plenary session also included a panel discussion that focused on analytic support to decision makers in theater and featured panelists with extensive analytic experience in theater, to include an allied perspective.

The remainder of the workshop was dedicated to working group sessions in each of the 6 areas of interest listed above. A synthesis group, consisting of senior analysts, was also included to assess insights across all of the working groups and help present a consistent set of workshop findings. The Homeland Defense working group concentrated their effort on laying the groundwork for an upcoming Homeland Defense MORS Workshop (tentatively scheduled for 15-17 November 2005). What follows is a brief synopsis of the activities and conclusions from the other five working groups, followed by some conclusions drawn by the synthesis group.

GWOT PROBLEM DEFINITION WORKING GROUP

This working group focused on GWOT problem definition. The group reviewed current strategic guidance and available literature and developed a framework for analysis. Ideally, this group should have been composed of Department of State representatives, policy staff, counter-terrorism intelligence experts, operators, and operations research system analysis (ORSA) analysts. In practice, the group had limited regional experience and was heavily weighted toward operators and ORSA analysts. (See WORKSHOP, p. 31)
WORKSHOP
(continued from p. 1)

lysts from throughout DoD. Thus, the perspective of the group’s effort is one of users of policy guidance. The group attempted to frame and comment upon existing guidance and open literature on GWOT to offer an analytic perspective that may be of assistance to national leadership and in future analytic efforts. The working group recommends viewing the Global War on Terror as an insurgency within Islam.

The existing guidance documents are consistent with respect to the overall objectives for the GWOT. They are:

- Defend the homeland
- Defeat terrorist networks
- Win the war of ideas

However, the guidance is vague on the nature of the conflict. Chapter 12 of the 9/11 Commission Report is very direct in its criticism of the policy for its lack of clarity. The title ‘Global War on Terror’ is not analytically productive in that terrorism is a tactic to achieve an end. Beyond a criminal organization, the guidance does not describe the threat or source of conflict.

Although controversial and politically sensitive, the term ‘insurgency within Islam’ is highly descriptive of the nature of the conflict. It provides focus on the threat, the approach, the objectives, and a framework for examining US and community response. It is important to note that this is not a ‘war against Islam.’ This is a conflict amongst the Muslim community. Al Qaeda is seeking to change the system of governance in the Muslim world. Ultimately, it will be the Muslim community’s decision to accept Al Qaeda’s vision, continue with its current regimes, or find an alternative.

This working group’s adoption of an insurgency framework, however, is not meant to suggest a disregard for the growth of transnational threats or other ‘terrorist’ organizations. Multiple views support an insurgent framework, including the 9/11 Commission and General Downing’s plenary address at this MORS workshop. It is interesting to note that General Downing participated in the 2002 drafting of the National Strategy for Combating Terrorism and presented an insurgency point of view during his presentation.

Establishing the legitimacy of one’s side is central to winning this conflict. Like all politics, insurgencies are local in nature. The US will need a global strategy, yet needs to be locally flexible at the operational and tactical levels. Unlike past insurgencies, this one is complicated by the following issues:

- We do not understand the bounds of this conflict. If there are any, they will be determined by the extremists;
- The insurgency appears to have expansive, nonnegotiable political aims;
- Weapons of mass destruction (WMD) and other technologies have changed the calculus of this insurgency; and,
- The insurgent area of operations has expanded to include the United States, Europe, and the rest of the non-Islamic world.

Additionally, the center of gravity falls naturally from the insurgency framework. It is the population, both theirs and ours. This is one of the few common threads among the wide-range of historic insurgen-

cies. The best means for success is for the locals to recognize the need to win for themselves.

Recommendations

The problem definition working group made the following initial recommendations:

First Priority:
- Further examine US National Security Structure:
  - What is the US structure to balance winning the war of ideas and killing terrorists through military action?
  - How can we more immediately improve the inter-agency process and share data/create a common data system among allies, agencies, and departments?

Second Priority:
- Understand the Muslim Community:
  - How can we understand and utilize the Muslim Diaspora?
  - Are Leadership exchanges, such as those that took place during the Cold War, of value?
  - What are the best methods to understand Muslim cultural boundaries and how might we shape them?

- Wage the war of ideas:
  - What is an alternative to Bin Laden in the eyes of Muslims?
  - What Islamic de-programming techniques are available?

- Educate the American public:
  - How can we communicate the nature of the conflict?

(See WORKSHOP, p. 32)
WORKSHOP
(continued from p. 31)

- How can we explain the potential length of the conflict?

Third Priority:
• Define DoD Roles and Missions:
  - How can the military effectively be used across a broad range of missions to address the conflict (e.g. assistance and security)?

FORECASTING NATION-STATE AND REGIONAL INSTABILITY WORKING GROUP

The forecasting working group focused its efforts on four key objectives:
1. Identify and review analytic approaches, tools and models for forecasting national and regional instability.
2. Identify decision maker, analyst, and planner information requirements at various stages of operation (no intervention, intervention, post-intervention).
3. Identify gaps between what analysts and planners NEED and what current approaches, tools, and models currently provide.
4. Recommend ways to fill these gaps.

This working group drew a distinction between strategic analysts and planners, who have a long term perspective and need to understand cause-effect relationships in order to identify the relevant drivers of instability, and operational analysts and planners who have a short term perspective. Working group participants agreed that a forecasting approach that supports strategic analysts must include assessment of alternative policy options. They also agreed that it is critical for operational analysts to be embedded in the decision maker's organization.

Forecasting Approaches

The group examined several instability forecasting models. Strategic forecasting models are macro-structural in their orientation. They forecast the likelihood that states will fail or will become unstable from 2 to 15 years in advance. The forecasts are based on statistical analyses of the historical relationships between instability and macrostructural trends in social, political, demographic and economic factors. Examples include:

- Central Intelligence Agency (CIA) Political Instability Task Force (aka, State Failure Task Force)
- Center for Army Analysis' ACTOR (Analyzing Complex Threats for Operations and Readiness) model
- ABC Terrorism Prediction Model (Psygnase Technologies). This model, which has been operational for several years, searches through textual reports for antecedents or precursors to terrorist attacks. Using neural networks, the model can estimate the timing, target, and consequences of a terrorist attack (within the context of a protracted campaign) with about 85% overall accuracy.
- Center for Army Analysis' FORECITE Monitor. Collects data (in near real time) on who is doing what to whom, when, where and how around the world. The data form behavioral indices that allow one to track changes in the character and intensity of interactions between individuals, organizations, and states.

Operational forecasting models are characterized by their ability to collect and assimilate substantial data, in near real time, on the character and intensity of behavioral interactions at any level of analysis (individual, organization, state). Their predictive power increases as historical and current data become available. Some operational forecasting models have a proven track record in the context of current operations. However, these models are also limited and have not been used to the fullest extent of their potential. Though we have made some progress in our ability to make point predictions (ABC Model), the operational models are generally useful only for analyzing and forecasting trends in behavioral interactions (FORECITE). These models do not yet facilitate meaningful course of action assessments. They fail to provide rigorous insights into causes and effects of instability and require manual adaptation to system perturbations.

Gaps and Recommendations

The forecasting working group identified several gaps between what decision makers and planners need and what forecasting approaches are currently able to provide. The group centered its recommendations on two general themes: Analytical support to decision makers and the need for greater collaborative relationships.

ANALYTICAL SUPPORT TO DECISION MAKERS WORKING GROUP

Contemporary approaches to forecasting instability do not currently support robust
course of action assessments. This is in
some measure attributable to a lack of data;
the data we need are not being collected, or
are simply not available for use by the ana-
lysts who need them. Toward that end, we
offer the following recommendations:

• Put greater emphasis on integrating and
sharing data, especially on an interagency
basis.

• Collect new data, with greater emphasis
placed on sub-national level indicators.
We know a great deal about which nation-
al-level conditions are portents of nation-
al-level instability. If we could collect
data on these same factors, more fre-
quently and at the local or provincial level,
we could forecast the timing and location
of instability with greater precision.

• Increase emphasis on transnational actors.
Academics, US government agencies
(Census Bureau), and International Gov-
ernment Agencies (The World Bank) have
compiled extensive time series indicators
that describe characteristics of countries.
These data have been instrumental in
developing national-level forecasting
models. We lack comparable levels of
analysis other than the nation-state (like
terrorist groups).

• Fully automate the collection and tagging
of event data and event antecedents. Cur-
rently, those few analysts who have time
to do it manually generate much of the
most useful dynamic behavioral indica-
tors. The lack of human resources devot-
ed to developing and managing these data
collections limits their geographic and
temporal scope. We have made tremen-
dous progress in our ability to use natural
language parsing capabilities to automat-
cally collect these data with the same
accuracy as human beings. However, we
need to provide greater funding to projects
that have demonstrated this ability.

Collaborative Relationships

• Between government and academia. Cur-
rently, instability forecasting models rely
on data collected primarily by univer-
sity-based political scientists for their
own purposes. To the extent that the gov-
ernment relies on these data for its insta-
bility forecasting models, it needs to pro-
vide more funding to keep them current.

We also need to encourage greater partic-
ipation of university-based scholars in
forums such as MORS, especially those
from the “non-traditional” ORSA fields
(like political science and sociology).

• Between the ORSA and Intelligence
communities. Forecasting stability
requires both intelligence and ORSA
skills. However, there is very little mean-
ingful collaboration, mutual understand-
ing, or appreciation within these commu-
nities for what the other does. Both
communities could benefit from the
development of forums for fostering
greater collaboration and understanding
between the intelligence and ORSA com-
unities.

• Interagency. Several government agen-
cies—like the State Department, US
Agency for International Development
(USAID), Department of Defense (DoD),
and Central Intelligence Agency (CIA) —
have similar missions with respect to cri-
sis early warning. Their research and
development programs are highly redu-
dant and there is little formal interagency
collaboration to coordinate these efforts.

This results in wasted resources and
redundant and there is little formal interagency
collaboration to coordinate these efforts.
The results in wasted resources and
retards the incremental advancement of
the state of the art in forecasting instabil-
ity. We should strive to establish an inter-
agency task force for early warning to
coordinate these efforts.

• International. Finally, the forecasting
working group noted that there is a great
deal of interesting work being done in this
area by allied and friendly countries, such
as the UK, Switzerland, Germany, and
Sweden. Though structures exist to
exchange information, few mechanisms
exist to facilitate meaningful collabora-
tion.

ANALYTIC SUPPORT TO
STABILITY AND TRANSITION
OPERATIONS WORKING GROUP

The stability and transition operations
working group emphasized the fact that dif-
ferent types of “Phase IV” analyses are need-
ed at different levels. Inside the Beltway at
the Service headquarters and Joint Staff
level, analysis should be involved with
determining the appropriate force level and
force structure for stability and transition
operations. At the Combatant Command
level, analysts must appreciate and highlight
the impact that courses of action in one
phase could have on courses of action in
another phase. A wide range of models
exists to support and evaluate stability and
transition operations. The diverse analytic
requirements of these operations are such
that no single model can meet all of them.

It is important to understand the ramp-
down of decisive operations and the ramp-
up of stability and transition operations.
Sta-
bility operations are the link between
decisive and transition operations. Still, the
analyst and the commander will be using
decisive operations EEAs and measure of
effectiveness (MOEs) concurrently with
transition operations MOEs. It is difficult
to determine when one phase ends and anoth-
er begins.

It is critical to synchronize quantifiable
elements of national power including Host
State objectives and Intergovernmental
Organization (IGO) and Nongovernmental
Organization (NGO) objectives. The com-
mander will be well served if analysis
describing the success or failure to support
these organizations is conducted. At the
same time, the IGOs and NGOs need to
understand that they will have to adapt to be
relevant. The same is true regarding host
nation support. Too often analysis is con-
ducted concerning the US or coalition capa-
bilities, but the host nation capabilities are
overlooked. We must develop a joint ana-
lytic doctrine to mutually support both the
warfighter and non-military organizations.

The relationship the analyst builds with
the decision makers is critical. Deployed
analysts are of great value. We as a com-


nity must better describe what we can
bring to the table for the other elements of
the staff.

Additionally, the culture of analysis on
peace operations does not exist outside of the
military as it does within the military. In
OIF, there has been little communication
between analysts supporting the civilian
leadership and military leadership.

Working Group Recommendations

The stability and transition operations
working group made the following recom-
mandations:

• Analysts in support of stability and tran-
sition operations, especially those who are
deployed, should be highly skilled in the
management of data, VBA, and the presen-
tation of information;

• A process should be developed to famil-
iarize deploying analysts with the experi-
ences of analysts who have recently
deployed, and to enhance reach-back
capabilities to organizations across the
analytic community;

(See WORKSHOP, p. 34)
WORKSHOP
(continued from p. 33)

• Better inform senior decision makers about ORSA capabilities;
• Develop a joint analytic doctrine to support both military and non-military organizations and facilitate stability and transition operations analysis efforts between military commands, non-military agencies and the host nation; and
• Initiate a dialogue with analysts in other governmental agencies to integrate their capabilities in stability and transition operations analysis.

GWOT ANALYTIC RESOURCES
WORKING GROUP

This working group focused on assessing current and emerging analytic tools pertinent to GWOT analysis. Figure 1 (on page 31) shows a potential assessment framework that the group brainstormed after initial attempts to bin tools into a more traditional strategic/operational/tactical framework. The working group was divided into two subgroups — technologist’s viewpoint and end user’s viewpoint. The technologist subgroup came up with 14 questions that the tools should address:

1. Where and when are terrorists likely to attack?
2. Who are the terrorists?
3. How are terrorists funded (locate and model funding streams)?
4. How are terrorists resourced (locate and model resource streams)?
5. What effects will actions taken against terrorists have?
6. What impact will a “war of ideas” have at home and abroad?
7. How do we detect and counter deception?
8. How do we support planning, execution monitoring and assessment?
9. How do we support creating strategy and objectives?
10. How do we do adversary modeling?
11. How do we construct the social network of parent organizations?
12. How do we identify individual terrorist to kill?
13. What is the nature of GWOT?
14. What metrics do we need to develop?

The end user subgroup came up with five areas that are of interest to users:

1. Who are, or will be, the terrorists?
2. What is the type of terrorism?
3. What is the scale of terrorism?
4. What will be the impact of proposed blue actions?
5. What blue actions are recommended?

Observations

• The group agreed that the quality of the analyst is more important than the quality of the tools.
• Tools such as geographical information systems (GIS), visualization tools, and collaborative environments can be invaluable. Similarly, tools that reduce data management time free up the analyst to concentrate on actual analysis.
• Tool quality and characteristics varies widely.
• Combinations of tools and collaboration/reachback will be needed.
• Traditional OR tools will be useful for GWOT, but we need some new ones as well. The major gaps appear to be at the application level, rather than at the methodology level.
• We need to take a broader viewpoint with respect to GWOT than we have in past conflicts. Other communities are involved and other communities can help with analytic resources.

The group is in the process of preparing a database of GWOT-relevant tools and resources (data, tools, and people) that will be available to the community. The database currently has some 100 entries.

METRICS WORKING GROUP

This working group attempted to develop metrics to measure military effectiveness in the GWOT. In general, metrics can be established relative to three basic areas:

- Ends, Ways, and Means. “Ends” metrics measure progress relative to a stated objective; “Ways” metrics measure the level of activity targeted at, or thought to support, the attainment of a stated objective; and “Means” metrics measure levels of resources dedicated to or expended in support of those activities.

The group used the following Military Strategic Objectives (MSO) as defined in the National Military Strategic Plan for the War on Terrorism:

• Establish conditions that counter ideological support for terrorism
• Defeat terrorists and their organizations
• Deny terrorists the resources they need to operate and survive
• Enable partner nations to counter terrorists
• Persuade, coerce, and when necessary, compel states and non-states to cease support for terrorists
• Deny WMD/E proliferation, recover and eliminate uncontrolled materials, and maintain capacity for consequence management

The group made significant progress and identified several dozen metrics that could provide insight on whether DoD is achieving the MSOs. These metrics have been provided to J5. While time did not allow the group to identify metrics relating to specific military activities, the group did develop generic metrics to relate measures of military activities to approved endstate metrics. Since the military activities vary by area of responsibility, it may be more effective for the joint staff to task the COCOMs to report activity levels that they believe have the best chance of positively affecting the MSO metrics. Then, COCOM levels of activity ("Ways") can be measured, correlated and adjusted to see how they affect respective MSOs. Finally, resource expenditures ("Means") can be programmed and measured by the respective services to determine the costs associated with obtaining any MSO.

Areas for Future Emphasis

While this working group made good progress toward defining an initial set of objective measures from which we can track progress in the GWOT, much remains to be done. Among the areas that require emphasis:

• Fix responsibility for data collection. Much of this responsibility will lie outside of DoD.
• One focus of the GWOT is the "hearts and minds" of the people we are assisting and combating. OR techniques within the areas of civil affairs and information warfare need to be developed. A good way to start would be to form more partnerships with these communities in our common efforts in the War on Terror. In particular, within the working group there was a large distrust of the accuracy of current polling methods.
• At some point in monitoring GWOT progress, human judgment becomes necessary. The linkages between many of the identified metrics have not been explored and are probably a ripe area for the devel-
The Global War on Terror presents the Western world with a tremendous challenge. We are confronted with an insurgency within Islam. All working groups recognize that our fight is not against the Islamic Religion, but with extremists within Islam. However, although each working group generally agrees that our fight is not against Islam, they often use words that make it sound like it is. The enemy conducts operations against the globalization of western values and influence. This makes its potential targets very large. Counter operations are difficult to conduct because the terrorist threat is not hierarchical in nature. It is a collection of loosely networked cells that act independent of each other and any chain of command. Further, weapons of mass destruction and disruptive technologies magnify the risk to our populace and way of life.

The effectiveness of operations conducted in this conflict is difficult to assess because of its breadth. It is far easier for us to assess the impact of a particular operation than to determine that operation’s impact on the global war. Yet, we need to think globally. We need to be able to determine the impact of yesterday’s battle in Fallujah on tomorrow’s fight elsewhere. Where are the analyses to determine this impact? Who is thinking globally? Where is the organization that is advising and evaluating the use of national power in this global war? We cannot afford to win the battle but lose the war or lose the peace.

We need to define an endstate for GWOT. How are we going to plot a path to get there if we don’t know where there is? The GWOT is winnable, but in what sense? Will we be able to fully eliminate it? Is it similar to the War of Poverty or the War on Drugs? It has been said that this is a War of Generations. In our society of instant gratification, short attention spans, “I want it yesterday” mentalities, how will we stay the course?

We need to understand our enemy. This is a fundamental difference between GWOT and the Cold War. At the height of the Cold War, if, for example, you brought a Communist Politico to Wal-Mart, he would be amazed at the wealth of our country and at what an open, free market economy can bring. If you bring a terrorist to Wal-Mart, all he sees is an example of the decadence of the Great Satan. We need to understand the centers of gravity of our enemy, and the environment that spawns him and her. And then, based upon these centers of gravity, we need to perform an Intelligence Preparation of the Battlefield. Not a geographical one, but a sociological one for a global campaign plan.

The GWOT will not be won through military power alone. It will require all the elements of our national power. Where do we analyze the application of national power? If the President asks the DoD to solve a problem, he gets a military answer; the State Department, a diplomatic one. Where do we evaluate the apportionment of national power? What are the methodologies, metrics, and tools to assess a little bit of this and some of that?

Our role, as military ORSAs, in the GWOT presents us with some unique and immediate challenges. The DoD is not always the lead in addressing certain challenges. For Homeland Security, civil agencies have the lead and DoD is supporting. For the GWOT, the Department of State has the lead. Where are the ORSAs of the other agencies? What is the venue in which we come together to provide support to our leaders? In what context can we assess our ability to perform in this supporting role?

All the working groups recognized the need for interagency, interdepartmental, and international cooperation and the ability to analyze combined actions. However, stovepipes and the lack of clearly defined responsibilities make this difficult. For example, local law enforcement agencies do not wish to share crime-fighting information because of their “operational security” concerns. We need to break down these stovepipes within our own government.

There is a real concern amongst workshop participants about the increasing need for analysis. There is a need for more analysts within the Combatant Commands and analysts who understand other department and agency capabilities. If we believe that the Global War on Terror is a fundamentally different war, and a war of generations, what are we, as a MORS community, doing to prepare ourselves? The phenomenology of this war is primarily social, not physical. What are we doing to obtain the necessary social, political, and historical training? Operations Research is a multidisciplinary field. How are we attracting folks with the right backgrounds and expertise into our community?

Overarching Recommendations

- Develop a campaign analysis plan for the Global War on Terror - one that is globally strategic, cross-community, and considers all the elements of national power of the US and our allies.
- Identify and analyze the centers of gravity of our enemy. Use this as a basis to build the campaign analysis plan.
- Plan for the long term. GWOT will likely be generations in length; build the analyses plan accordingly.
- Make a conscious effort to expand the pool of ORSA talent and make it more interdisciplinary with the social sciences.
- Finally, facilitate the coordination of analyses across the government to be able to analyze the use of national power.

CONCLUDING REMARKS FROM THE SYNTHESIS GROUP

The goal of the GWOT workshop was to provide a forum for discussing analytic support, tools, metrics, and to gain insight on bringing. If you bring a terrorist to Wal-Mart, are we attracting folks with the right back-
The Global War on Terrorism: Analytical Support, Tools, and Metrics of Assessment

Working Group 1: Forecasting Nation-State and Regional Instability

30 November - 2 December 2004
US Naval War College
Newport, Rhode Island
Purpose

1. Identify and review analytical approaches, tools, and models for forecasting national and regional instability
2. Identify analyst and decision maker informational requirements at various phases of operation (no intervention, intervention, post-intervention)
3. Identify gaps between what analysts and decision makers NEED and what current approaches, tools, and models currently provide
4. Recommend ways ahead to fill these gaps

These are the four objectives of Working Group 1 (Forecasting Nation-state and Regional Instability).
Scope

Assessed the informational requirements of two different sets of analytical consumers at different levels of analysis

We began by identifying the analysts, planners and decision makers that require early warning insights. We placed them in one of two categories depending on whether they had a strategic or operational perspective.
Strategic Forecasting

- OSD (policy), NSC, Joint Staff (J5 Strategy) COCOMs, State, USAID, and Coalition partners
- Long-term perspective (5-20 years)
- Draw "insights" from multiple sources using multiple methods
- Need to know what form instability will take (e.g., civil war, inter-state war, revolution, coups, social unrest, economic disruption)
- Decision makers emphasize the importance of identifying causal factors associated with instability — need to identify key drivers
- Need to provide course of action assessment
  - No matter how accurate the underlying analysis/model, if it is not accompanied with an assessment of alternative policy options, it is of questionable relevance
  - Use as a basis for making long-term policy and resource decisions

Strategic analysts and planners have a long-term perspective (5-20 years), draw insights from multiple products, generally need to know what form instability will take (i.e., war, economic crisis, social unrest), and emphasize the need to determine cause-effect relationships in order to identify the policy-relevant drivers of instability. Participants were unanimous in thinking that any relevant forecasting approach MUST support a course of action assessment; no matter how precise an underlying forecast, if it is not accompanied with an assessment of alternative policy options, it is of questionable relevance.
OperationalForecasting

- Short-term perspective (days to weeks)*
- Need the RIGHT advice NOW
- Timing and location of forecasted adverse actions is critical
- Draws insights from multiple products
- Short-term HARD resource decisions
- Need to measure and monitor effectiveness
- Analyst needs close proximity to the decision maker and staff (need to be integral part of team)

*(vary depending on proximity to intervention)

Operational analysts and planners generally take a short-term perspective, seeking insights into phenomena that will occur over the next few days, weeks, and in some cases months. Because of the short time horizon, operators need the right advice now. As a result, it is critically important that the analyst be imbedded in close proximity to the decision maker and his staff. The timing and location of impending instability needs to be specified with precision in order for the operational planner to efficiently and effectively allocate hard resources.
"Models" to Conduct Assessments

**Strategic Forecasting Models**
- Most are macro-structural in orientation
- Forecast the likelihood of country instability and state failure 2-15 years in advance given historical relationships (and future forecasts) of broad macro-structural trends in social, demographic, political, and economic factors
  - Examples
    - CIA Political Instability Task Force (aka, State Failure)
    - CAA's ACTOR

**Operational Forecasting Models**
- Capabilities to monitor, assess, and forecast trends in dynamic behavioral interactions between people, organizations, and states
  - Examples
    - Psynapse Technologies' ABC terrorism prediction model
    - CAA's FORECITE Monitor
    - Georgia Institute of Technologies' Harbingers of Conflict Program

We examined several instability forecasting models to determine how they measured up to these requirements. We placed these models into one of two categories depending on whether they provided strategic or operational insights.

**Strategic forecasting models** are macro-structural in their orientation. They forecast the likelihood that states will fail or will become unstable from 2 to 15 years in advance. The forecasts are based on statistical analyses of the historical relationships between instability and macro-structural trends in social, political, demographic and economic factors. Examples include: the CIA Political Instability Task Force (aka, State Failure Task Force) and the Center for Army Analysis’ ACTOR (Analyzing Complex Threats for Operations and Readiness) model.

**Operational forecasting models** consist of capabilities that monitor, assess, and forecast trends in dynamic behavioral interactions between people, organizations, and states. Examples include:

- ABC Terrorism Prediction Model (Psynapse Technologies). This model, which has been operational for several years, searches through textual reports for antecedents or precursors to terrorist attacks. Using neural networks, the model can estimate the timing, target, and consequences of a terrorist attack (within the context of a protracted campaign) with about 85% overall accuracy.
- Center for Army Analysis' FORECITE Monitor. Collects data (in near real time) on who is doing what to whom, when, where and how around the world. The data form behavioral indices that allow one to track changes in the character and intensity of interactions between individuals, organizations, and states.
Evaluation -- Current Strategic Forecasting Models

**Strengths**
- Provide accurate, global, systematic analyses of structural conditions conducive to instability
- Provide insight into which countries are likely to become more or less stable in the coming years, given trends in their underlying conditions
- Identify the relevant conditions on a country-specific basis that, if altered, could enhance (or further undermine) national stability

**Limitations**
- Only provide general risk propensities for countries at the national level on an annual basis
  - No insights provided into the specific timing, nature, and specific (sub-national) location of triggering events
- Based on correlation and pattern recognition of conditions — cannot identify dynamic causal chains
  - Cannot "predict" triggers or relevant internal dynamics years in advance
- Beyond vague generalizations, do not (and cannot) provide compelling, actionable, course of action analysis

We then evaluated the strengths and limitations of these models. The strengths of the strategic models include the following:

- They provide accurate, global, systematic analyses of structural conditions conducive to instability.
- They provide insights into which countries are likely to become more or less stable in the coming years given trends in their underlying conditions.
- They identify the relevant conditions on a country-specific basis that, if altered, could enhance (or further undermine) national stability.

Limitations of the strategic forecasting models included the following:

- They only provide general risk propensities for countries at the national level on an annual basis. As a result, they provide no insights into the specific timing, nature, and location of events that might trigger instability.
- They are based on correlations between broad conditions and instability. As a result, they cannot identify dynamic causal chains.
- Beyond vague generalizations, these models do not (and cannot) provide compelling, actionable, course of action analyses.
Evaluation -- Current Operational Forecasting Models

• Strengths
  ♦ Collect and assimilate data in near real time on the character and intensity of behavioral interactions at any level of analysis (individual, organization, state)
  ♦ Predictive power increases as historical and current data become available
  ♦ Some models have a proven track record in the context of current operations

• Limitations
  ♦ Some progress in making point predictions (ABC Model), but generally useful only for analyzing and forecasting behavioral trends (FORECITE)
  ♦ Do not yet facilitate course of action analysis
  ♦ Do not provide cause and effect analysis
  ♦ Require manual adaptation to system perturbation
  ♦ Have not been used to the fullest extent of their potential

We identified the following strengths in the operational models:

• Their ability to collect and assimilate substantial data, in near real time, on the character and intensity of behavioral interactions at any level of analysis (individual, organization, state)

• Their predictive power increases as historical and current data become available.

• Some models have a proven track record in the context of current operations.

However, we also noted the following limitations:

• Though we have made some progress in our ability to make point predictions (ABC Model), the operational models are generally useful only for analyzing and forecasting trends in behavioral interactions (FORECITE).

• These models do not yet facilitate meaningful course of action assessments.

• They do not provide rigorous insights into cause and effect of instability.

• They require manual adaptation to system perturbations.

• Nevertheless, they have not been used to the fullest extent of their potential.
Gaps and Recommendations
(Analytical Support)

• Analytical Support to Decision Makers
  • Data collection and availability
  • Current approaches fail to address courses of action
  • Recommendations
    → Integrate/share existing data
    → Collect new data—increase emphasis on sub-national level indicators
    → Increase emphasis on transnational actors
    → Fully automate the collection and tagging of event data and event antecedents
    → Greater use of experimentation in the short-term to illuminate cause and effect relationships.

We identified several gaps between what decision makers and planners need and what forecasting approaches are currently able to provide. We centered our recommendations on two general themes: Analytical support to decision makers and the need for greater collaborative relationships.

Analytical Support to Decision Makers

Current forecasting approaches do not currently support robust course of action assessments. This is in some measure attributable to a lack of data; the data we need are not being collected, or are simply not available for use by the analysts who needs them for forecasting. We, therefore, offer the following recommendations.

Greater emphasis on integrating and sharing data, especially on a cross-agency basis

Collecting new data, with greater emphasis placed on sub-national level indicators. We know a great deal about which national-level conditions are portents of national-level instability. If we could collect data on these same factors, more frequently and at the local or provincial level, we could forecast the timing and location of instability with greater precision.

Increase emphasis on transnational actors. Academics, US government agencies (Census Bureau), and International Government Agencies (The World Bank) have compiled extensive time series indicators that describe characteristics of countries. These data have been instrumental in developing national-level forecasting models. We lack comparable data for units of analyses other than the nation-state (like terrorist groups).

Fully automate the collection and tagging of event data and event antecedents. Currently, those few analysts who have time to do it generate much of the most useful dynamic behavioral indicators manually. The lack of human resources devoted to developing and managing these data collections limits their geographic and temporal scope. We have made tremendous progress in our ability to use natural language parsing capabilities to automatically collect these data with the same accuracy as human beings. However, we need to provide greater funding to projects that have demonstrated this ability.
Collaborative Relationships

Between government and academia. Currently, instability forecasting models rely on data collected primarily by university-based political scientists for their own purposes. Due to a lack of funding, these data sets sometimes are not updated for 5 or 10 years, which limits their ability to be used in forecasting models.

- **Recommendation**: To the extent that the government relies on these data for its instability forecasting models, it needs to provide more funding to keep them current. We also need to encourage greater participation of university-based scholars in forums such as MORS, especially those from the “non-traditional” ORSA fields (like political science and sociology).

Between the ORSA and Intelligence communities. Forecasting stability requires both intelligence and ORSA skills. However, there is very little meaningful collaboration, mutual understanding, or appreciation within these communities for what the other does. Even the words *data*, *analysis*, and *validation* mean very different things to the ORSA and intelligence analyst.

- **Recommendation**: ORSAs need to be intelligence analysts and intelligence analysts need some ORSA skills. Both could benefit from the development of forums for fostering greater collaboration and understanding between the intelligence and ORSA communities. Such forums could lead to the introduction of an “ORSA-type” curriculum within the intelligence schools.
Gaps and Recommendations  
(Collaborative Relationships 2)

- **Interagency (Overall)**
  - Different agencies have similar missions
    - State, USAID, DoD, CIA are all pursuing some kind of early warning program
    - Lots of duplication, VERY little analytical collaboration (NIH?)
    - Results in wasted resources
    - Retards incremental advancement of the state of the art
  - **Recommendation**
    - Develop an interagency task force for early warning to coordinate efforts

- **International**
  - Lots of interesting work being done by allied and friendly countries (UK, Sweden, Switzerland, Germany)
  - Structures exist to “exchange” information, but few mechanisms exist to facilitate meaningful collaboration

**Interagency (overall).** Several government agencies—like the State Department, US Agency for International Development (USAID), DoD, and CIA—have similar missions with respect to crisis early warning. Their research and development programs are highly duplicative and there is very little formal interagency collaboration to coordinate these efforts. This results in wasted resources and retards the incremental advancement of the state of the art in forecasting instability.

  - **Recommendation:** Develop an interagency task force for early warning to coordinate these efforts.

**International.** Finally, we noted that there is a lot of interesting work being done in this area by allied and friendly countries, such as the UK, Switzerland, Germany, and Sweden. Though structures exist to “exchange” information, few mechanisms exist to facilitate meaningful collaboration.
Working Group 2: Analytical Support to Phase IV Operations, was chaired by Dr. Karsten Engelmann, from the Center for Army Analysis (CAA). The co-chairs were MAJ Robert Kewley, CAA, MAJ Andy Farnser, Army QDR office, and Mr. Steve Stephens, Marine Corps Studies and Analysis. The working group was well-attended, with up to 30 individuals from government and industry. The attendees were divided evenly between uniform and non-uniform personnel. One interesting aspect of the group is the great number of formerly deployed individuals, as well as deploying individuals.
WG 2 Chairs and Co-Chairs

- Chair: Dr. Karsten Engelmann  
  (703) 806-5532, engelmann@caa.army.mil

- Co-Chairs: MAJ Rob Kewley  
  (703) 806-5562, kewley@caa.army.mil

- Mr. Cortez "Steve" Stephens  
  (703) 784-6029, cortez.stephens@usmc.mil

- MAJ Andy Farnsler  
  (703) 695-1102, andrew.farnsler@us.army.mil
WG 2 Agenda

- Overview
- Working group objectives
- Conclusions
- Recommendations
- Future workshops
Overview
WG 2 Assignment (from MORS)

- Each working group will present
  - A recommended analysis approach for each of their topics, including a course of action for implementing the approach
  - These suggested approaches will identify current tools, models, methods and metrics that may be used in assessing the effectiveness of the GWOT
    - For example; how successful are we at disrupting the financial flows of terrorist organizations? How do we measure the progress of stability operations?
  - This will provide a basis for building a library of appropriate assessment tools
  - Further, recommendations for future workshops and working group meetings that will concentrate on specific areas will be proposed for Sponsor consideration
**WG 2 Overview**

- **Focus Areas**
  - The transition from major combat operations (MCO) to counter-terrorism and counter insurgency
  - Supporting a political process that is both appropriate to the region and culture that enhances security
  - Predicting the actions of global terrorists in the nation or region after major combat operations and after the US has withdrawn
  - Predicting what kind of actions during Phase II and III will best support Phase IV operations after Phase III

- **Objectives (what we accomplished)**
  - Identify the over-lap area between Phase II and III and Phase IV Operations
  - Identify how analysts can better serve decision makers during Phase IV Operations
  - Identify applicable models and tools

The focus areas were only tangentially touched on. The main emphasis was the objectives. The group overall felt that the focus areas were appropriate. The one exception was that additional time and emphasis should be placed on the interaction between the military and the other elements of power. This is especially true when dealing with non-governmental organizations and inter-governmental organizations.

Overall, the military is able to bring assets to the "show" that the other organizations interested in alleviating conflict and the problems caused by conflict, are unable to. For example, the military is able to bring far more, and better equipped security forces to a reconstruction (Phase IV) effort than IGOs/NGOs/PVOs are able to. Additionally, the military, through its inherent capabilities, brings some limited construction capability to the re-construction effort. Another very strong area that the military is able to assist in is the establishment of communications, and the ability to coordinate the disparate organizations involved in the reconstruction effort. This is facilitated by the strong management skills that senior (and even junior) officers have. Other areas where the military is ideal for Phase IV operations is in the training of security forces to enable the host nation to take over the defense of their own country. Finally, because of its structure, the military is often the best choice for the creation of a separate, specialized Phase IV headquarters under which the Inter-governmental organizations (IGOs), Non-governmental organizations (NGOs) and Private Venture Organizations (PVOs) may operate.

Thus, it could be argued that this list of objectives needs to be expanded... and the focus area needs to be taken off of the military and onto the other elements of power. To accomplish this, we will need to be inclusive of other organizations (state, IGOs, NGOs, PVOs) and their analytical capabilities. An inter-agency analytical huddle similar to this MORS workshop is necessary, and should include not only DoD, but also other governmental representation, and even non-governmental representation.
Comments on Plenary Sessions as They Pertain to WG 2

- How to present analysis to the decision maker
- Facing a global counter-insurgency campaign
- Not getting at the root cause
- The Strategic Goal: 4 D's
- Establish the relationships
- Suggest alternatives
- Model on a strategic world-wide basis
- Is the cost-benefit ratio against us?
- Are we winning or losing?
- Inter-agency cooperation is at an all time-low

The plenary speakers presented a number of points that are cognizant with respect to the WG 2 objectives. GEN Downing (ret) asked the question of how we are going to get at the root causes of the underlying conditions that enable the international and state sanctuaries to exist that are supporting terrorist organizations and their leadership. He mentioned the 4 D's of strategic goals: Defend, defeat, deny, and diminish. We need to be able to analyze how successful we are in diminishing the underlying conditions, denying international and state sanctuaries, and finally defeating the terrorist organizations and its leadership GEN Downing (ret) emphasized the importance of presenting analysis to the decision maker. This, of course, is the most important aspect of analysis. Analysis that is not presented in a concise manner to a decision maker does not help the decision maker. Furthermore, an analyst that does not win the trust of the decision maker will be unable to make an impact on the decision makers actions. This leads into an idea that will be explored later – the competency of the analyst. A competent analyst must not only be able to produce analytically rigorous products, but must also be able to present those products in a convincing manner that enables the decision maker to act on the ideas presented.

War on terrorism is a war on a tactic – and declaring war on a tactic is hazy. We are facing a global war not on terrorism...but on terrorists – insurgents within Islam.
Levels and Geographical Places of Phase IV Analysis

- Multiple locations and types of analysis
  - Beltway type of analysis
    - What forces do you need to accomplish a mission? Size and skill sets
    - What skill sets do analysts need to support the combatant commanders?
    - What tools do we need to build?
  - At the COCOM level
    - Analysis to support planning (Phase I, II, III and IV)
    - Analysis to support course of action (Phase I effects II, III, etc.)
  - In the field with the commander
    - Assessment and combat assessment
      - How well are we doing, or how poorly are we doing
- What analysis are IGO/NGO/PVOs conducting?

Different types of Phase IV analyses are needed at different levels. Inside the Beltway at the Service headquarters and Joint Staff level, Phase IV analysis should be involved with determining the appropriate force level and force structure for Phase IV analysis. This type of analysis would include determining types and amounts of skill sets needed. In addition, this type of analysis could include determining equipment requirements for Phase IV operations. This type of analysis could impact program development.

At the Combatant Command level, analysis could be used to support the planning process of operations from Phase 0 all the way through Phase IV and highlight the impact that courses of action in one phase could have on courses of action in another phase.

At the Joint Task Force level and below, Phase IV analysis is needed for assessment and decision support. Logistics analysis is as critical in Phase IV as in the other phases and may be more so.
Working Group Objectives
Identify the overlap area between Phase II and III and Phase IV Operations

- **Summary**
  - Identify the questions that need to be asked about Phase IV and applied to Phase III. Need to be able to explain the "so what's" from Phase IV analysis to Phase III analytical efforts
  - Phase III and Phase IV are often simultaneous operations
  - Need to be analytically involved from the beginning (Phase 0?)
  - Analysis occurs pre-campaign at Beltway level for planning and force structure development
  - Need to make sure non-military organizations understand military lingo and vice-versa
  - Provide the means for good force planning for Phase IV. It needs to be simple to use and understand

Important to discover and understand the ramp-down of Phase III and the ramp-up of Phase IV operations. Stability operations are the link between Phase III and Phase IV. Still, the analyst and the commander will be using Phase III EEAs and MOEs along with the Phase IV MOEs. There is a lot of overlap between the two. In fact, it is difficult to determine when Phase III ends and when Phase IV begins. It can be argued that a new phase-less approach needs to be identified. As was pointed out by Dr. Rose, the end states need to be well defined. This can be difficult because an end state for a phase may be declared (as in Iraq), but the campaign may slip back. There probably needs to be triggers to determine when we move from Phase III to Phase IV. We need to develop a joint analytic doctrine to support the war fighter and non-military organizations both.

One important element is the matter of intelligence, as COL(P) Keller pointed out, we need to spend less time in the intelligence cycle on managing information and commensurately more time on analyzing information. This is true for Phase III analysis as well as Phase IV. The question remains, are the informational elements appropriate for Phase III also for Phase IV? How do Intelligence and Intelligence gathering systems change from Phase III to Phase IV? What resources change from Phase III to Phase IV. This needs to be identified and understood. For example, how does the troop to task change over time as you change phases. We don’t need a huge model to generate the results. How do we make choices. What higher level subjects would be useful.
Identify the over-lap area between
Phase II and III and Phase IV Operations

• Important Elements
  - Need tools that synchronize quantifiable elements of national power (DIME). These include
    - Host State objectives and Interests
    - Commander(s)’ priorities/top ten
    - Coalition members objectives and red lines
    - Inter-governmental Organization/Nongovernmental Organization objectives (how to include them into the evaluation process)
  - Information operations – conducted in Phase III, but often shows up in Phase IV. Content analysis and polling

One issue that needs to be addressed is the need to synchronize quantifiable elements of national power including Host State objectives and Inter-governmental Organization and Nongovernmental Organization (IGO/NGO) objectives. The commander will be well served if analysis describing the success or failure to support these organizations is conducted. At the same time, the IGOs/NGOs need to understand that they will have to adapt to be relevant. Their sometimes reluctance regarding working with the military will need to be reduced...and greater ties between the two groups established. The same is true regarding host nation support. Too often analysis is conducted concerning the US or Coalition capabilities, but not taking into consideration the host nation capabilities...and if those capabilities are increasing or decreasing. It is understood that data gathering on these organizations is, at best, difficult.

Analysis support during the planning for and conduct of Phase II operations and Phase III operations could indicate impacts on Phase IV operations. Analyses supporting Information operations would be very useful, but there is not much analysis done pertaining to Information Operations (IO). More needs to be done analyzing IO not just for Phase IV, but also for the preceding phases and their eventual impact on Phase IV IO and Phase IV operations in general. It is critical that information operations are consistent throughout all phases.
Identify What Needs to be Done to Better Serve Decision Makers During Phase IV Operations

- Summary
  - Understand decision maker’s objectives and priorities
  - Assist the decision maker in determining progress towards the end-state and resource allocation to meet prioritized goals
  - Understand data requirements Phase IV operations

- Important Elements
  - Need for measures that are scalable between levels of command (tactical, operational, strategic, national)

We need to ensure that we not only have the analysis but also the recommendations for the commander and explanations for the commander. We need to understand the commander’s plan. However, what do we do in situations where the commander may not have a plan, or a plan that changes over time? The analyst needs to continue to be flexible, and be willing to take sucking chest wounds bringing analysis to the commander. The commander is not the only decision maker. For example, the chief of staff, as well as the J3 or G3.

Analysis to support Phase IV planning begins with the analysis to support Phase I planning. The analysis to support selection of courses of action for Phase II planning and Phase III planning should incorporate the effect of Phase II operations and Phase III operations on Phase IV operations. Analysis can simulate alternative exit criteria for Phase IV. There is a Maslow Hierarchy type of structure that is characteristic of Phase IV operations that can be exploited by analysis. Numbers that are derived subjectively in the analysis process should not be presented to the decision maker in numerical format. A ‘stoplight’ presentation should be used with strong textual support for assessments.
Identify Appropriate Models and Tools

Summary

- Due to the diversity of Phase IV operations, no single model can be a panacea for analytical support to Phase IV operations (a family of models is needed)
- Wars like WWII (and the occupation of states in the aftermath) are not primary reference for modern peacekeeping
- Doctrine for assessment will aid in tool development, utility, and analyst preparation
- We need a model to prioritize how resources are spent
- We need to transition from measuring completion of tasks, to achievement of objectives (effects based measurement)
- Linear combinations of output metrics can be subjective and mask the importance of dependencies. However, the analyst may not have the opportunity to present complex analysis
- Influence diagrams, decision analysis, spreadsheet tools, GIS; Microsoft Project show great promise
- Encourage MORS Sponsors to contact the various agencies to find out what tools and requirements they have. The same is true for Coalition members, etc.

A model as defined here is a mathematical or otherwise logically rigorous representation of a system or a system’s behavior – in this case combat and non-combat operations. A model can be used as a shorthand form of communication that simplifies, emulates, or scales some aspect of the real system in order to enable the simulation. The difficulty for analysts is how to select optimal simplifying assumptions, especially when improving upon or modifying models to ensure the best use of resources and to prevent the models and analysts from being overwhelmed by the amount of data generated. This is especially true when dealing with models in support of Phase IV operations.

WWII is not a relevant model for Phase IV operations. There are too many differences for a valid comparison with today. WWII was total war with unconditional surrender. For example, Dresden Germany was totally destroyed by allied bombing. In fact, the amount of war damage remaining in 1991 was greater than the amount of war damage in Baghdad in 2003. One out of every seven faces in post-War Germany was an Allied face. There is no way that the United States has the ability to mobilize and put this many boots on the ground.

A wide range of models exist to support and evaluate Phase IV operations. The analytical requirements of Phase IV are such that no single model can meet all of them.
Models and Tools

- Important Elements
  - The analyst is THE most important tool
  - In general, the OR community needs improvement in the analytic skills required for Phase IV operations
  - Agreement within community on the terminology for Phase IV operations
  - Tools should support "spread-sheet" deep analysis. Simple to use, and easy to explain the results
  - Spatial-analysis tools are critical to Phase IV operations
  - Commercial Off The Shelf – Good graphics
  - Reach-back to organizations with "more-powerful" tools is necessary and desirable

Tools are important, but not essential to analysis. The analyst himself is the most important tool. Every combat analyst is an analyst. Every analyst, however, cannot be a combat analyst. A difficulty we have is that in general, all of our military Services are deficient in the skills required for Phase IV operations.

Given that, the selection of what goes into the analyst's tool box is a function of the analyst. They should be tools the analyst knows and is familiar with. During a deployment is not the time and place to learn new tools. Simplistic tools also play a special role to the analyst. Not only do simple tools allow rapid analysis, critical to real-time analysis, but the results created are often presented in a more appropriate manner to an information-saturated combat decision maker.

The type of tools required also depend on the type of command supported. An analyst supporting a division-level command will require different tools than one supporting a theater-level command. Not only should the level of the command be considered, but also who within the command an analyst is supporting. This concept is also true with respect to the different services, coalition members, and the IGO/NGO community.

Of special interest are spatial-analysis tools. Spatial analysis is very valuable because commanders already understand sophisticated spatial analysis techniques that create maps. Adding thematic data that represents complex analysis is only one step beyond what the commanders have been trained to understand since being a 1st lieutenant.

Finally, reach-back capability needs to be fully implemented. Deployed analysts need to understand what analytical efforts are better conducted by rear-area organizations with more powerful tools at their disposal. Tools that help to develop or facilitate reach-back are rapidly becoming available, and accessible to the users.
Conclusions and Recommendations
General Conclusions

- Conclusions
  - Deployed analyst is an ORSA ambassador
  - There is a profound difference between how the military and civilians view the ends, ways and means and the metrics used to evaluate them
  - Need to improve communications between military and civilian analysts and organizations (e.g., the Iraqi analytical huddles)
  - Reach-back is the analysts force multiplier
  - Bureaucrats are a good thing...

The relationship the analyst builds with the decision makers is decisive. Analytical support is a changing environment. It is also determined by the decision maker — and not all decision makers are the same. We need to better describe what we can bring to the table for the other elements of the staff. Deployed analysts are of great value — better than a power-point chart in explaining to the staff what we can do.

There is a profound difference between how the military looks at analysis and how civilians look at analysis. The culture of analysis on peace operations does not exist outside of the military as it does within the military. In Iraq, there was little or no communication between analysts in support of civilian leadership and military leadership. Most of the analysis was done on the military side, not on the civilian side.

There is a difference between rebuilding infrastructure and rebuilding institutions. Rebuilding infrastructure is constructing schoolhouses. Rebuilding institutions is providing teachers, a curriculum, equipment, and an administration. Rebuilding institutions is for the long haul and involves administration and the personnel cycle of recruiting, training, and developing. The numbers of administrators required is a part of British nation-building doctrine. Trained bureaucrats are necessary to make a country function.
General Recommendations

- **Recommendations**
  - Further develop the analyst
    - Management of data, VBA, and the presentation of information
    - Capture experience (5 w's) of deployed analyst and use to train other analysts
    - Build a lessons learned web-site for deployed analysts. The tools and the lessons learned (CALL, AFSA, MORS, JFCOM)
    - Professional school curriculum for all service branches
  - Inform senior decision makers what ORSA analysts can bring to the decision making process through doctrine, war college, other means
  - Enhance reach-back capabilities (joint, inter-agency, schoolhouses)
  - Coordinate Phase IV analysis efforts between commands, services, and agencies
  - Develop proven and promising tools and models
  - Improve military-civilian (IGO/NGO) analytical link-up
  - Need to further develop doctrine for assessment, especially Joint, for analysis
  - Determine what analysis can be made available to the rest of the world to encourage IGO/NGO/PVO analytical efforts
Recommendations for Future Workshops and Working Group Meetings

- Further discussion on analysis support to operations (not necessarily a Phase-specific one)
- Work directly with deployed analysts – bring the conference to the theater
- Bring in international contributors (difficulty with classification)
- Bring in inter-governmental, non-governmental, and private organizations
- Develop courses to further train the analyst

There are several general recommendations as to how to proceed with future workshops. The first is to recognize that this workshop was only a start... or more appropriately, only one stop on the path to analytical nirvana. The success here in Newport is only the beginning. After three days of work, there are more questions that need to be answered. Thus, the first recommendation is to do this again. The majority of individuals would attend again, perhaps in six months, to determine what has been accomplished.

An even more appropriate recommendation is to have a meeting of deployed analysts discuss this issue.

International contribution will also add to the value of the conference. However, it is important to recognize that there is a difficulty in the fact that the international members cannot have access to classified information. Resolving this issue, and obtaining foreign clearances will help to include the critical international community into the problem analysis.
Working Group 3 was charged with investigating the resources needed and available for analysis in the Global War on Terrorism (GWOT). The group determined that these resources include tools, data, people (e.g., subject matter experts), and methods.
## Membership

- Hartley, Dr Dean S. III, Chair
- Cipparone, Mr John S., Co-Chair
- Allen, Dr Patrick D.
- Applin, Mr Frank Michael (Mike)
- Bell, Maj Jason A
- Brown, LCDR Patrick Shane
- Carley, Dr Kathleen M.
- Clark, Capt Clinton R.
- Cullenbine, Capt Christopher A
- Fowler, Maj Michael W.
- Goss, Mr John Benson II
- Hardy, LCDR Randall C.
- Herring, Maj David J.
- Hesser, Mr W. Andrew
- Hetherington, Capt Cheryl Lynn
- Hey, Mr William E.
- Huxtable, Mr Phillip A.
- Kapos, Mr Ervin
- Koehler, Mr Matthew Thomas Kristian
- Kolitz, Mr Stephan E.
- MacKerrow, Edward
- McCurdy, Mr Michael L
- McMullin, Mr James D
- Panagos, Mr James
- Pfleiffer, Mr Mark Peter
- Rose, Dr George
- Schultz, CDR Johnny L.
- Sharpe, Mr John
- Smith, Mr Justin E.
- Spinetta, Maj Lawrence J.
- Stigler, Prof Andrew L
- Vaccaro, Mr James Matthew
- Vered, Dr Moshe

Membership included US, UK, Israeli and Austrian citizens both military and civilians with varied technical expertise.
The first order of business was to reach agreement within the group on a working definition of terrorism. This definition was used to ensure a common basis for making decisions on the various aspects of the group’s program.

The tools may be sophisticated computer programs, such as simulations or linear programs; they may be simpler computer programs, such as spreadsheets; or they may be non-computer aids, such as checklists. The data may reside in carefully constructed databases on computers, in less convenient forms on computers, or as hardcopy, such as books and papers. The word “tools” will be used in two ways. Its broader use is as a simple word to describe the various resources used by the analyst in supporting the GWOT. “Tools” in its narrower sense will refer to simulations, models, and decision aids that are sufficiently well-defined to have been given names by their developers.

The principal function of the group was to produce useful information about the tools of GWOT. Some useful things can be said about tools in general; however, most of the value will be in listing available tools and information about those tools (meta-data) and discussing areas that are missing tools. In order to discover that something is missing, one must know what is needed and what is available that might fill the need (the list).

The actual list of tools with the metadata is included as an Excel spreadsheet in Appendix C.

To the extent possible, the group also added an evaluation of some of the tools. Working Group 3 divided itself into two subgroups to produce such an evaluation. One subgroup considered the tools from a technologist’s point of view, while the other took the viewpoint of possible end users.

Finally, the group produced this final report.
Difficulty in Defining Terrorism

- Is Terrorism a tactic or a clash of world views?
- Do we need to know why terrorists are terrorists from a "tool" evaluation point of view?
- **Clash of World Views**: implies a need for careful examination of culture(s) of terrorists for clues to the solutions
- **Tactic**: implies a need to consider whether the acceptance of the tactic is culture-specific or general within human nature and how that acceptance might spread or retreat
- These two points imply that we need to understand the social landscape of terrorism to ensure that the correct tools exist and that the tools perform as needed.
Difficulty in Defining a Terrorism Event

- By Effect: cultural definition (e.g., is killing all bugs terrorism? Was fire bombing Dresden terrorism?)
- By Intent: cause terror (in the mind of the actor, but who says, e.g., hate crimes vs. crimes)
- By Result: cause terror (in the mind of the affected, but what about releasing mice in a crowd?)
- When is a freedom fighter a terrorist?

The Ends Justify the Means

- Rejected in Western Thought
  - Actually, reject statement that particular ends justify any and all means
  - Most agreed that removing WMD from Iraq justified invasion; however, agreement not universal
- Terrorists either
  - Believe their ends justify any means, or
  - Believe their ends justify means that we don’t agree are justified

One might attempt to define terrorism by its effects, by its intent, or by its results. However, each has problems when taken by itself. Killing all bugs might not be terrorism by any cultural definition. However, killing cows in India certainly might be terrorism; whereas, killing cows in the US would not be automatically assumed to be terrorism. Defining the intent of a perpetrator is difficult. Even statements by the perpetrator may be insufficient as they may be deliberately misleading or may not reflect the underlying root causes. Even though terror may be the result of an act, not all terror is caused by terrorism.

The fact that some identify individuals as freedom fighters and some others identify the same individuals as terrorists illustrates that the definition is not straightforward.

Perhaps terrorism has a philosophic identity. Most of the Western world rejects the philosophy that the ends justify the means, or rather that a particular goal can justify any and all means for its achievement. Western philosophy contends that the means for achieving a particular goal, such as ensuring that Iraq had no weapons of mass destruction (WMD), requires debate for justification.

Perhaps it is a fact that terrorists either believe that their ends justify any means or that their ends justify means that the rest of us don’t believe are justified by those ends.

If this is the case, then naming the conflict a War on “Terrorism” is appropriate, because we are objecting to the tactics (means) being used, not their right to desire their ends.
It was observed that terrorism often presents itself in a backward sequence. First, an event is observed. Only after that are perpetrators discovered, said perpetrators having motives, means and opportunity. After that, it may be discovered that there is an organization behind the perpetrators. The organization having its own, perhaps different, motives, means and opportunities.

This organization may instigate additional events through other perpetrators. At the event level, the “X” marks indicate avenues for stopping terrorism, through preventing a particular event, capturing or killing the potential perpetrators, or removing their access to the means of creating the event. Removing all the opportunities, “defending against attacks,” is “H” or hard. Removing the motive sets for potential perpetrators is a long-term effort, “L”.

At the organizational level, the “X,” “H,” and “L” marks have the same meanings.
Anatomy of Terrorism
Sample Characteristics

- Threat or use of violence over large scales
- Political goals
- Ideological goals
- Unlawful tactics
- May have legal front
- Target civilians deliberately
- Non-state organization
- State terrorism

Several characteristics were proposed as potential determinants for the existence of terrorism.

The threat or use of violence over large scales is meant to exclude local terrorism (e.g., the Washington snipers) from the purview of the Global War on Terrorism. It was posited that from an organizational perspective political and/or ideological goals should be present. This doesn’t exclude money, excitement or adulation as goals of some of the individuals involved.

The group was convinced that the deliberate and consistent use of unlawful tactics must be involved.

The existence of legal front organizations, political or charitable, should not exclude organizations as terrorists. Some organizations may also use legitimate channels in such a fashion as to bring into question that legitimacy, e.g., the Hawala money transfer/banking network, or national policies of non-disclosure of banking information.

Conscious, non-state organizations that conduct operations are candidates. This does not exclude collections of organizations or organizations with loosely connected additional individuals.

State supported or sponsored organizations are possible candidates; however, there was disagreement as to whether organizations that act solely within the sponsoring state could be labeled as terrorist.
### Potential Characteristics vs Iconic Groups

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Al Qaeda</th>
<th>Taliban</th>
<th>Jamaah Islamiyah</th>
<th>Hamas</th>
<th>IRA</th>
<th>US Army</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threat or use of violence over large scales</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Political goals</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Ideological goals</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Unlawful tactics</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>May have legal front</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Target civilians deliberately</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Non-state organization</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>State terrorism</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>

The chart above shows that no single characteristic is sufficient to define an organization as a valid target for the Global War on Terrorism. However, taken as a whole, organizations with a preponderance of check marks, especially ones using unlawful tactics and targeting civilians deliberately, are targets.
15 Minute Presentations to WG 3

- Agent Based Modeling for Stability and Support Operations Analysis Philip Barry, Matthew Koehler, Brian Widdowson
- Threat Anticipation Program Agent-Based Simulation of Terrorist Motivations, Objectives and Strategies (TAPAS) Edward MacKerrow
- Global Terrorism: Support Tools for Prediction and Planning Jim Vaccaro
- Dynamic Network Analysis for Counter Terrorism Kathleen M. Carley
- Air Operations Center (AOC) Tools to support GWOT Strategy Lawrence Spinetta
- Counter-Terrorism Analysis Capability (CTAC) Concept Mike McCurdy
- COAST, etc. Patrick Allen
- FAST Toolbox for OOTW John Cipparone
### MetaData on Tools

<table>
<thead>
<tr>
<th>Type Application</th>
<th>Technique</th>
<th>Direct User</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web site, spreadsheet</td>
<td>Model, methodology, forecasting (~1 month forecast)</td>
<td>OR Analyst, Intel analyst</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Function Area</th>
<th>Description: Use Case</th>
<th>Application Area</th>
<th>Time Frame</th>
<th>Utility Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example</td>
<td>Tools, Analyze, Search, or Process</td>
<td>Event, scenario, forecast, or decision analysis</td>
<td>Predicts trends and patterns for decision-making</td>
<td>Termination, Events, Incidents, Forecasting, Analysis</td>
<td>Tool, railway, industry, real estate, LEA, organized crime, intelligence analysis, market analysis</td>
<td>Easy-to-use, intuitive, interactive, web-based tool for analysts</td>
</tr>
<tr>
<td>Event generated from a complex trading strategy (e.g., FORECAST)</td>
<td>Tool</td>
<td>Identifies potential trends and patterns for decision-making</td>
<td>Predicts trends and patterns for decision-making</td>
<td>Termination, Events, Incidents, Forecasting, Analysis</td>
<td>Tool, railway, industry, real estate, LEA, organized crime, intelligence analysis, market analysis</td>
<td>Easy-to-use, intuitive, interactive, web-based tool for analysts</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Person</th>
<th>Role</th>
<th>Task</th>
<th>Source</th>
<th>PO</th>
<th>Processed by</th>
<th>Released</th>
<th>(Year/Quarter)</th>
<th>(Active</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example</td>
<td>Tools, Analyze, Search, or Process</td>
<td>Event, scenario, forecast, or decision analysis</td>
<td>Predicts trends and patterns for decision-making</td>
<td>Tool, railway, industry, real estate, LEA, organized crime, intelligence analysis, market analysis</td>
<td>Easy-to-use, intuitive, interactive, web-based tool for analysts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A sample of metadata entry.
### Metadata on Tools

<table>
<thead>
<tr>
<th>Metadata Item</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>(of tool)</td>
</tr>
<tr>
<td>POC</td>
<td></td>
</tr>
<tr>
<td>Relevance</td>
<td>(1-5)</td>
</tr>
<tr>
<td>Source</td>
<td>Available, Prototype - Active, Prototype - Instruction, Concept</td>
</tr>
<tr>
<td>Techniques</td>
<td>Automated Cluster Analysis, Visual GIS, Statistical Analysis, Network Analysis, Forecasting, Prediction, Situation Awareness, Fault Tree, Decision Tree, Process Control</td>
</tr>
<tr>
<td>Time Frame</td>
<td>Results are applicable Now, Real Soon</td>
</tr>
<tr>
<td>Training Time</td>
<td></td>
</tr>
<tr>
<td>Type Application</td>
<td>Simulation, Database, Spreadsheet, Custom Program, Checklist</td>
</tr>
<tr>
<td>Use Issues</td>
<td>(1-5)</td>
</tr>
<tr>
<td>Utility/Simplicity</td>
<td></td>
</tr>
<tr>
<td>Validity</td>
<td>(1-5)</td>
</tr>
<tr>
<td>WG 3 Assessment</td>
<td></td>
</tr>
<tr>
<td>When was it built</td>
<td></td>
</tr>
<tr>
<td>Which questions does it answer? (focus area(s))</td>
<td></td>
</tr>
<tr>
<td>&quot;For whom&quot;</td>
<td>G2, G3, G5, G7, Commander, Ambassador, FBI, CIA</td>
</tr>
<tr>
<td>Accreditation</td>
<td>What type of network can this tool be displayed on: classified or unclassified</td>
</tr>
<tr>
<td>Application Area</td>
<td>Terrorists, Events, Instability, Materials, Funding, Support, Plans, Operations</td>
</tr>
<tr>
<td>Category</td>
<td></td>
</tr>
<tr>
<td>Comment</td>
<td></td>
</tr>
<tr>
<td>Cost</td>
<td></td>
</tr>
<tr>
<td>Customization Time</td>
<td></td>
</tr>
<tr>
<td>Description: Use Case</td>
<td></td>
</tr>
<tr>
<td>Direct User</td>
<td></td>
</tr>
<tr>
<td>Does it handle open source?</td>
<td></td>
</tr>
<tr>
<td>H/W/SW Requirements</td>
<td></td>
</tr>
<tr>
<td>U/D Format (e.g., XML)</td>
<td></td>
</tr>
<tr>
<td>Military Use</td>
<td></td>
</tr>
</tbody>
</table>

A listing of metadata categories and examples of entry types
Statistics on Tools

- 7 data sources
- 14 methods
- 7 persons
- 73 tools

Initial statistics on the numbers of each category of resources in the spreadsheet. The numbers will be larger in the final spreadsheet.
## Technologist Subgroup: 14 Focus Areas

<table>
<thead>
<tr>
<th>ID #</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>How can we predict where and when terrorists will attack?</td>
</tr>
<tr>
<td>2</td>
<td>How can we identify terrorists?</td>
</tr>
<tr>
<td>3</td>
<td>How do we locate and model terrorist funds and funding streams?</td>
</tr>
<tr>
<td>4</td>
<td>How do we locate and model terrorist resources and resource streams?</td>
</tr>
<tr>
<td>5</td>
<td>How do we predict the effects of actions taken against terrorists?</td>
</tr>
<tr>
<td>6</td>
<td>How do we engage in a war of ideas at home and abroad?</td>
</tr>
<tr>
<td>7</td>
<td>How do we detect and counter deception?</td>
</tr>
<tr>
<td>8</td>
<td>How do we support planning, execution monitoring and assessment?</td>
</tr>
<tr>
<td>9</td>
<td>How do we support creating strategy and objectives?</td>
</tr>
<tr>
<td>10</td>
<td>How do we do adversary modeling?</td>
</tr>
<tr>
<td>11</td>
<td>How do we construct a social network of parent organizations?</td>
</tr>
<tr>
<td>12</td>
<td>How do we identify individual terrorists to kill?</td>
</tr>
<tr>
<td>13</td>
<td>What is the nature of GWOT?</td>
</tr>
<tr>
<td>14</td>
<td>What metrics do we need to develop?</td>
</tr>
</tbody>
</table>

The fourteen focus areas identified by the Technologist Subgroup.
The technologist subgroup began by defining the 14 questions of the previous slide. They then mapped techniques, methodologies, and data requirements that were appropriate for answering each question (shown on the next set of slides). Using this mapping, the subgroup entered information into the spreadsheet showing which focus areas (questions) each tool might address.

Finally, the subgroup listed challenges and observations. The more general comments have been combined in the final recommendations. The ones listed here are more pertinent to tool creation and use. Coordination and collaboration are prominent needs.
### 1. How Can We Predict Where and When Terrorists Will Attack?

<table>
<thead>
<tr>
<th>List of Techniques</th>
<th>Needs and Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Intelligence Community tools</td>
<td>• Intelligence Community databases</td>
</tr>
<tr>
<td>• Terrorists Futures Market</td>
<td></td>
</tr>
<tr>
<td>• Data Mining coupled with Markov Models for prediction</td>
<td></td>
</tr>
<tr>
<td>• Multiagent systems for general predictions</td>
<td></td>
</tr>
<tr>
<td>• Visualization with human reasoning to predict patterns</td>
<td></td>
</tr>
<tr>
<td>• Simple regression analysis on existing data</td>
<td></td>
</tr>
<tr>
<td>• Models of Red, like systems dynamics models</td>
<td></td>
</tr>
<tr>
<td>• Massive player online games (Everquest)</td>
<td></td>
</tr>
<tr>
<td>• Wargaming</td>
<td></td>
</tr>
</tbody>
</table>

Techniques and needs or data sources applicable for this focus area.
2. How Can We Identify Terrorists?

<table>
<thead>
<tr>
<th>List of Techniques</th>
<th>Needs and Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategic</strong></td>
<td><strong>Strategic</strong></td>
</tr>
<tr>
<td>Data mining of raw text to identify new organizations or size of organizations</td>
<td>Identify Region of Interest</td>
</tr>
<tr>
<td>Network Estimation</td>
<td>Identify the Terrorist Groups in Region of interest</td>
</tr>
<tr>
<td>Link analysis and social network analysis</td>
<td>Databases of existing terrorist groups</td>
</tr>
<tr>
<td>Discriminant analysis</td>
<td>HUMINT/SIGINT</td>
</tr>
<tr>
<td><strong>Operational</strong></td>
<td><strong>Operational</strong></td>
</tr>
<tr>
<td>Inferring Resource flows</td>
<td>Command Structure and key actors</td>
</tr>
<tr>
<td>Data analysis, link analysis, dynamic network analysis</td>
<td>Modus operandi</td>
</tr>
<tr>
<td>Simulation of network perturbations</td>
<td>Level of effort or sophistication</td>
</tr>
<tr>
<td>Wargaming</td>
<td>Known resource flows</td>
</tr>
<tr>
<td><strong>Tactical</strong></td>
<td><strong>Tactical</strong></td>
</tr>
<tr>
<td>Profiling of terrorists</td>
<td>Terrorist OPSEC Tactics</td>
</tr>
<tr>
<td>Target Analysis</td>
<td>Interagency Target Lists</td>
</tr>
<tr>
<td>Friendly OPSEC</td>
<td>Access to real-time raw field data</td>
</tr>
<tr>
<td>Vulnerability/vulnerability analysis</td>
<td></td>
</tr>
<tr>
<td>Forensic Analysis</td>
<td></td>
</tr>
<tr>
<td>Terrorist Flow and process models</td>
<td></td>
</tr>
<tr>
<td>System dynamics, colored Petri nets, multiagent systems</td>
<td></td>
</tr>
<tr>
<td>Influence networks, simulation</td>
<td></td>
</tr>
</tbody>
</table>

Techniques and needs or data sources applicable for this focus area.
3. How Do We Locate and Model Terrorist Funds and Funding Streams?

List of Techniques

- **Strategic**
  - Mayavi—virtual simulated city
  - Dynamic network and network flow models
  - Link analysis tools
  - Multi-agent modeling
  - Auditing tools
  - Data mining tools
  - Explore Dept of Treasury / ABA techniques

- **Tactical**
  - Profiling
  - Link Analysis

Needs and Data Sources

- **Strategic**
  - Data sources (Hawala, charity flows, bank transactions)
  - Security Exchange data
  - Criminal activity to support terrorism (smuggling, robbery, narcotics)

- **Tactical**
  - Where did the individual get funds?
  - How much money is the individual carrying?
  - Data commonality issues

Techniques and needs or data sources applicable for this focus area.
4. How Do We Locate and Model Terrorist Resources and Resource Streams?

<table>
<thead>
<tr>
<th>List of Techniques</th>
<th>Needs and Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategic</strong></td>
<td><strong>Strategic</strong></td>
</tr>
<tr>
<td>Mayaviz—virtual simulated city</td>
<td>Data sources (manpower, weapons, ideology)</td>
</tr>
<tr>
<td>Dynamic network and network flow models</td>
<td>Criminal activity to support terrorism (smuggling, robbery, narcotics)</td>
</tr>
<tr>
<td>Multi-agent modeling</td>
<td>Explore Customs data sources</td>
</tr>
<tr>
<td>Link analysis tools</td>
<td><strong>Tactical</strong></td>
</tr>
<tr>
<td>Data mining tools</td>
<td>Where did individual get resources?</td>
</tr>
<tr>
<td>Explore Customs tools</td>
<td>Data commonality issues</td>
</tr>
</tbody>
</table>

**Tactical**
- Profiling
- Link Analysis
- Dynamic Network Analysis

Techniques and needs or data sources applicable for this focus area.
5. How Do We Predict the Effects of Actions Taken Against Terrorists

<table>
<thead>
<tr>
<th>List of Techniques</th>
<th>Needs and Data Sources</th>
</tr>
</thead>
</table>
| Long term Effects (5+ years) | - COA Analysis  
- Wargaming (Seminar, structured)  
- Simulations (multiagent, other)  
- Planning tools  
- Bayesian Influence Analysis  
- System Dynamic Models  
- Dynamic Network Analysis Tools  
- ACTOR-like models  
- Enterprise Models (Multi-regression models)  
- Cultural modeling |
| Mid Term (1-5 years) | - Real gap in applying techniques |
| Near Term (<= 1 year) | - COA Analysis  
- Wargaming (Seminar, structured)  
- Simulations (multiagent, other)  
- Planning tools  
- Bayesian Influence Analysis  
- System Dynamic Models  
- Dynamic Network Analysis Tools |

Techniques and needs or data sources applicable for this focus area.
6. How Do We Engage in a War of Ideas at Home and Abroad

<table>
<thead>
<tr>
<th>List of Techniques</th>
<th>Needs and Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning Tools</td>
<td>Are we engaged at the national/global level?</td>
</tr>
<tr>
<td>Assessment Tools</td>
<td>Strategic PSYOP (Gap)</td>
</tr>
<tr>
<td>Focus Groups</td>
<td>Measuring effect of PSYOP</td>
</tr>
<tr>
<td>Cultural Training Tools</td>
<td>Massive Data storage capabilities required</td>
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<tr>
<td>Polling and market research, surveys, diffusion models</td>
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<tr>
<td>Social Network Analysis (identify opinion leaders)</td>
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<tr>
<td>Meme (e.g., Idea battlespace/arena)</td>
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<tr>
<td>Mental Model (what they say, semantic comparison, ontology)</td>
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<tr>
<td>High level simulations</td>
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<tr>
<td>Dynamic Network Analysis</td>
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<tr>
<td>Support to PSYOP (e.g., CNA)</td>
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<tr>
<td>Techniques to encourage popular support against terrorists</td>
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<tr>
<td>Bayesian Influence techniques</td>
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<tr>
<td>Web scraping techniques</td>
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<tr>
<td>Automated and semi-automated text analysis techniques</td>
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<tr>
<td>Media Analysis</td>
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<tr>
<td>Language translators</td>
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</table>

Techniques and needs or data sources applicable for this focus area.
7. How Do We Detect and Counter Deception?

<table>
<thead>
<tr>
<th>List of Techniques</th>
<th>Needs and Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Data Mining Tools, perturbation analysis</td>
<td>• How do we identify something different from the norm</td>
</tr>
<tr>
<td>• Linguistic techniques to identify excess pauses</td>
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<tr>
<td>• Polyscans, brain scans</td>
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<tr>
<td>• Wargaming, brainstorming</td>
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<tr>
<td>• Structure organization to avoid miscommunication and detect deception</td>
<td></td>
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<tr>
<td>• Analyst cueing tool (identify non-redundant or discrepant information)</td>
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</tbody>
</table>

Techniques and needs or data sources applicable for this focus area.
8. How Do We Support Planning, Execution Monitoring and Assessment?

<table>
<thead>
<tr>
<th>List of Techniques</th>
<th>Needs and Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classic OR Techniques</td>
<td></td>
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<tr>
<td>Planning tools</td>
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<tr>
<td>Colored Petri Nets</td>
<td></td>
</tr>
<tr>
<td>And everything above and below as reachback support</td>
<td></td>
</tr>
</tbody>
</table>
9. How Do We Support Creating Strategy and Objectives?

<table>
<thead>
<tr>
<th>List of Techniques</th>
<th>Needs and Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wargaming</td>
<td></td>
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<tr>
<td>Brainstorming</td>
<td></td>
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<tr>
<td>SWOT analysis (strengths, weaknesses, opportunities and threats)</td>
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<tr>
<td>Influence models</td>
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<tr>
<td>Multiagent modeling (e.g., evolutionary models)</td>
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<tr>
<td>Deliberate analysis</td>
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</tbody>
</table>

Techniques and needs or data sources applicable for this focus area.
### 10. How Do We Do Adversary Modeling?

**List of Techniques**

- Wargaming
- Brainstorming
- SWOT analyses (strengths, weaknesses, opportunities and threats)
- Influence models
- Multiagent modeling (e.g., social network and cultural models)
- Bayesian Net Models
- Deliberate analysis
- Rule based Red reaction models
- Red Teaming
- Reinforcement neural net
- Colored Petri Nets

**Needs and Data Sources**

Techniques and needs or data sources applicable for this focus area.
11. How Do We Construct a Social Network of Parent Organizations?

List of Techniques

- **Strategic**
  - Data mining of raw text to identify new organizations
  - Network estimation
  - Link analysis and social network analysis
  - Discriminant analysis

- **Operational**
  - Inference and resource flows
  - Data analysis, link analysis, dynamic network analysis
  - Simulation of network perturbations
  - Wargaming

- **Tactical**
  - Profiling of terrorists
  - Target analysis
  - Friendly OPSEC
  - Vulnerability/criticality analysis
  - Forensic analysis
  - Terroist flow and process models
  - System dynamics, colored Petri nets, multiagent systems,
  - Influence networks, simulation

Needs and Data Sources

- **Strategic**
  - Identify Region of Interest
  - Identify the Terrorist Groups in Region of Interest
  - Databases of existing terrorist groups
  - HUMINT/INT

- **Operational**
  - Command structure and key actors
  - Modus operandi
  - Level of effort or sophistication
  - Known resource flows

- **Tactical**
  - Terrorist OPSEC Tactics
  - Interagency Terrorist Lists
  - Access to real-time raw field data

Techniques and needs or data sources applicable for this focus area.
12. How Do We Identify Individual Terrorists to Kill? (1)

<table>
<thead>
<tr>
<th>List of Techniques</th>
<th>Needs and Data Sources</th>
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</thead>
<tbody>
<tr>
<td><strong>Strategic</strong></td>
<td><strong>Strategic</strong></td>
</tr>
<tr>
<td>• Data mining of raw text to identify new organizations or size of organizations</td>
<td>• Identify Region of Interest</td>
</tr>
<tr>
<td>• Network Estimation</td>
<td>• Identify the Terrorist Groups in Region of Interest</td>
</tr>
<tr>
<td>• Link analysis and social network analysis</td>
<td>• Databases of existing terrorist groups</td>
</tr>
<tr>
<td>• Discriminant analysis</td>
<td>• HUMINT/INT</td>
</tr>
<tr>
<td><strong>Operational</strong></td>
<td><strong>Operational</strong></td>
</tr>
<tr>
<td>• Inferring Resource flows</td>
<td>• Command structure and key actors</td>
</tr>
<tr>
<td>• Data analysis, link analysis, dynamic network analysis</td>
<td>• Modus operandi</td>
</tr>
<tr>
<td>• Estimation of network perturbations</td>
<td>• Level of effort or sophistication</td>
</tr>
<tr>
<td>• Wargaming</td>
<td>• Known resource flows</td>
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<tr>
<td><strong>Tactical</strong></td>
<td><strong>Tactical</strong></td>
</tr>
<tr>
<td>• Profiling of terrorists</td>
<td>• Terrorist OPSEC Tactics</td>
</tr>
<tr>
<td>• Target Analysis</td>
<td>• Interagency Terrorist Lists</td>
</tr>
<tr>
<td>• Friendly OPSEC</td>
<td>• Access to real-time raw field data</td>
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<tr>
<td>• Vulnerability / offensiveness analysis</td>
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<tr>
<td>• Forensic analysis</td>
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<tr>
<td>• Terrorist flow and process models</td>
<td></td>
</tr>
<tr>
<td>• System dynamics, colored Petri nets, multiagent systems,</td>
<td></td>
</tr>
<tr>
<td>• Influence networks, simulation</td>
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</tbody>
</table>

Techniques and needs or data sources applicable for this focus area.
12. How Do We Identify Individual Terrorists to Kill? (2)

<table>
<thead>
<tr>
<th>List of Techniques</th>
<th>Needs and Data Sources</th>
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</thead>
<tbody>
<tr>
<td>• Long term Effects (5+ years)</td>
<td></td>
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<tr>
<td>- COA Analysis</td>
<td></td>
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<tr>
<td>- Wargaming (Seminar, structured)</td>
<td></td>
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<tr>
<td>- Simulations (multiagent, other)</td>
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<tr>
<td>- Planning tools</td>
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<tr>
<td>- Bayesian Influence Analysis</td>
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<tr>
<td>- System Dynamic Models</td>
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<tr>
<td>- Dynamic Network Analysis Tools</td>
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<tr>
<td>- ACTOR-like models</td>
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<tr>
<td>- Enterprise Models (multi-regression models)</td>
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<tr>
<td>- Cultural modeling</td>
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<td>• Mid Term (1-5 years)</td>
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<tr>
<td>- Real Gap in applying techniques</td>
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<tr>
<td>• Near Term (&lt; 1 year)</td>
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<tr>
<td>- COA Analysis</td>
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<tr>
<td>- Wargaming (Seminar, structured)</td>
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<tr>
<td>- Simulations (multiagent, other)</td>
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<tr>
<td>- Planning tools</td>
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<td>- Bayesian Influence Analysis</td>
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<tr>
<td>- System Dynamic Models</td>
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<tr>
<td>- Dynamic Network Analysis Tools</td>
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</tbody>
</table>

Techniques and needs or data sources applicable for this focus area.
13. What is the Nature of GWOT?

<table>
<thead>
<tr>
<th>List of Techniques</th>
<th>Needs and Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>See Working Group 6 results and introductory notes on terrorism and insurgencies</td>
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</table>

Techniques and needs or data sources applicable for this focus area.
### 14. What Metrics Do We Need to Develop?

<table>
<thead>
<tr>
<th>List of Techniques</th>
<th>Needs and Data Sources</th>
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</thead>
<tbody>
<tr>
<td>See Working Group 4 results</td>
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Techniques and needs or data sources applicable for this focus area.
End User Subgroup: Process

- **Purpose**: Evaluate "tools and their products" for "end use and implementation"
- **Define “users”**
- **Identify “for whom”**
- **Define criteria for use (Scale 1-5)**
  - Relevance (applicability to the decision or question)
  - Utility/Simplicity (ease of use of output)
  - Validity (accuracy for intended purpose)

The end user subgroup had the problem of defining who the end users might be and how to evaluate tools for use.

The criteria they decided upon were relevance to the GWOT problem appropriate to a given end user, the utility and simplicity for the end user of the tool's output (including the possibility of extensive analyst interface between the actual tool output and the output presented to the end user), and the validity of the results for the end user's purposes.
The end user subgroup spent a considerable amount of time trying to fit the GWOT problem into the traditional Strategic/Operational/Tactical framework and determined that this framework was inappropriate. They determined that a multi-dimensional framework was more appropriate. One dimension is the functional role of the end user. A second dimension is the physical scale of interest. A third dimension is the time scale of interest. Each end user will be concerned with a specific region of the two scales, as shown by the colored/lined area in the bottom left area of the slide. Each tool will address its own region, as shown in the upper area, marked by the “x”s.

Additionally, each user will be interested in one or more of the questions, shown as user requirements in the lower right of the slide. In this example, all areas are of interest. Each tool will address the questions with different levels of competence. In this example, the two left questions are shown at a yellow/vertical lines (moderate) level; the middle question is shown at the green/solid (good) level; and the right two questions are shown at the red/horizontal line (poor) level.
Data showed an interesting dichotomy. For analysts, data is supremely important and means the inputs to the tools. For end users, the analysts’ data is unimportant; however, the outputs of the analysis are often referred to as data and are naturally important.

The group agreed that the quality of the analyst is more important than the quality of the tools. A good analyst can produce good results from poor tools; but a poor analyst is unlikely to produce good results even with good tools. However, the quality of tools is easier to discuss.

Infrastructure tools are the ones that support the process of analysis. Tools such as geographical information systems (GIS), visualization tools, and collaborative environments can be invaluable in the correct settings even though they are not GWOT tools, per se. Similarly, tools that reduce data management time serve to improve the analysis.
The qualities of the tools are varied. Each has its own time to use, learn, brief results, etc. The readiness for use and the amount of manpower required to operate the tools varies. Some are more robust in the face of limited or poor data and others require complete and exact data to produce any results at all.

Two other qualities are important to understand. Naturally, tools that are totally committed to GWOT are more efficient in the sense that effort is not expended to generate only small amounts of applicable output; however, a tool with only fractional applicability can be useful when nothing else is available. In addition, tools vary in the "force" of their results. A tool that delivered "The Answer" would be wonderful, although very unlikely. However, knowing that a tool only hints at a result can be very useful if there is no other input to the decision.

Static tools, metrics, rule sets, etc., can be useful; however, in the face of likely continual change in the GWOT environment, dynamic tools, metrics, rule sets, etc., may be more useful.
**Recommendations, etc.**

- No tool satisfies all needs across:
  - Levels of command
  - Segments of problem domain, e.g., finding terrorists, reducing spread of terrorism, preventing resurgence
  - Reach-back and/or collaboration may be frequently needed

- **Tool Content**
  - We can use traditional OR techniques (simulation, regression, etc.), but we need some new specialized ones
  - Major gaps in current tools are at the application level rather than at the general technique level
  - Tools should be assessed and continually reassessed against reality

- **Broader Viewpoint**
  - We need extensive interagency and coalition data on terrorism/terrorists
  - We need to look outside the military at other communities, such as banking, marketing and media, for ways to handle human factors
  - New applications should be developed by multidisciplinary teams

No tool was discovered that satisfies all needs in any dimension. Combinations of tools and collaboration/reachback will be needed.

Traditional OR tools will be useful for GWOT; however, we need some new ones, also. The major gaps appear to be at the application level, rather than at the methodology level.

We need to take a broader viewpoint in GWOT than in combat. Other communities are involved and other communities can help with analysis resources.
Recommendations, etc.

- Applicability of the strategic-operational-tactical framework to GWOT is in question

Finally, the applicability of the strategic-operational-tactical framework in examining the needs for tools was not helpful. This might have implications for the value of this framework in the broader prosecution of the GWOT.
Working Group 4 Chairs were Dr. John Borsi and Lt Col Bob Rosedale.
Introduction

- Key Focus Area
  - JCS J-5 GWOT Strategic Framework Metrics
    - Existing process to assess progress toward SECDEF GWOT objectives

- State of the Art
  - J-5 community identified issues but had no objective metrics
  - Six J-5 defined Military Strategic Objectives
    - Proposed MOE's for each MSO

- Good Metrics: What are you really trying to capture – Ends, Ways, or Means?
  - Ends metrics are yardsticks to measure progress toward or away from a stated objective
  - Ways metrics measure level of activity or inputs that you think may influence the objective
  - Means metrics measure resources expended to support the ways
  - All metrics should be
    - S - Specific
    - M - Measurable
    - A - Achievable
    - R - Relevant
    - T - Timely

The focus of the working group changed from the published TOR to supporting J-5s current efforts in developing the National Military Strategic Plan for the War on Terror. The NMSP-WOT contains a hierarchy of leadership objectives and issues on which the SECDEF would like to measure our progress. Prior to this workshop the existing metrics are subjective assessments.

Our challenge was to identify OBJECTIVE measures.

Recognizing that we did not have enough time here to accomplish everything needed to define good metrics we did try to keep some of the basics in mind for the development of good measures.
Military Strategic Objectives (MSO)

- Establish conditions that counter ideological support for terrorism
- Defeat terrorists and their organizations
- Deny terrorists the resources they need to operate and survive
- Enable partner nations to counter terrorists
- Persuade, coerce, and when necessary, compel states and non-states to cease support for terrorists
- Deny WMD/E proliferation, recover and eliminate uncontrolled materials, and maintain capacity for consequence management

These are the 6 Military Strategic objectives we focused on to develop objective measures.
Example Measures

- MSO: Deny WMD/E Proliferation, Recover and Eliminate Uncontrolled Materials, and Maintain Capacity for Consequence Management
  - Issue: Capacity for consequence management
  - Metrics
    - Number of HAZMAT teams
    - Timeliness, accuracy, relevancy, and coverage of notification system
      - Number of exercises/events that meet established standards
    - Percent of response times that meet or exceed established standards
    - Number, frequency, and scope of civil HAZMAT exercises and assessment
    - Number of partner nations with some capability
      - Resources
      - Training
      - Combined exercises
    - Number of recovery and reconstitution plans for critical infrastructure
      - Sourced?
      - Exercised?
    - Readiness ratings for identified first responders

This is an example of some of the objective measures we developed. For this MSO, one of the identified “issues” was maintaining our capacity for consequence management. Looking at this issue we developed a range of proposed metrics to track over time that range from the relatively mundane notion of the number of hazmat teams we have, to the more nebulous issue of timeliness, accuracy, relevancy and coverage of notification.

This last issue highlights a common theme through many of the metrics we developed that we need to have established “standards” which we would measure our performance against.

In addition, measuring capability against “rare events” will probably require a full complement of somewhat realistic exercises to test that capability.
Our experience over the last couple of days fully lived up to our expectations that we could not do it all. Here we have listed most of the activities that will need to be done to make our efforts more useful.

Of particular concern is the need to establish offices of primary responsibility and offices of collateral responsibility for much of the information needed for these metrics. The current approach is to farm all of the measures out to the COCOMS. Many of the defined metrics are better suited to agencies outside the DoD or for central collection agency such as DIA or the Terrorist Threat Integration Center.
Unresolved Issues

- **MSOs versus military activities**
  - What does the military report on? How do we report at the strategic level on objectives in which the military is a "supporting" agency?
    - Example: “Persuade, coerce, ..., states . . . to cease support for terrorists”
  - WG Recommendation:
    - 1. Assign Global metrics to central agencies and collect non-DoD metrics from responsible agencies
    - 2. Task COCOMs with measures of military activities and local/immediate impacts
    - 3. Correlate military activities to direct MSO metrics

- **Available resources to collect, process, and score metrics**

- **Linkage to SECDEF overarching objectives**

The single largest point of contention within our group centered on whether we should be reporting on the level and effectiveness of military activities or whether our focus should be on metrics that are often outside the control of the DoD. Recognizing that this discussion was not unique to this workgroup, we developed a compromise position that we recommend on this slide — centered on correlating levels of military activity to the objective measures of progress for that objective.

Additionally, we need to note that we are talking about a significant level of effort required to go from “subjective” assessments to “quantitative” assessments. Realistically, resources will need to be allocated toward this effort if the DoD decides to implement even a small part of this “quantification effort.”

Finally, we did not fully do what we set out to do — we still need to link these metrics to SECDEF defined overarching objectives.
The Global War on Terrorism: Analytical Support, Tools, and Metrics of Assessment

Working Group 5: Decision Support to HLS/HLD

30 November - 2 December 2004
US Naval War College
Newport, Rhode Island

The Working Group Chair was Tom Denesia from NORAD-NORTHCOM Analysis Directorate. The Co-Chairs were Glen Roussos and Rich Woodford both from NORAD-NORTHCOM Analysis Directorate.
Background

Working Group 5 was formed to discuss pertinent HLS/HLD issues and focus areas for a potential workshop in the November 2005 timeframe.
Perceived low level of cooperation among HLS/HLD analytic communities contributes to homeland vulnerability.

Even though some interaction takes place between the HLS and HLD communities, it appears that more could be done to promote coordination between these communities. From an operations research perspective, an interchange between the communities regarding the key issues and resulting decision support tools seems to be needed. For example, within the working group, there was no knowledge of any DoD analysts working with DHS analysts. There seems to be a real need to enhance the cooperation and there appears to be no forum to bring analysts together to bridge analytic issues and analysts which support HLS and HLD.
Mission

- Establish a cooperative analytic framework
- Foster analytic cooperation by
  - Providing structure for a recurring forum
  - Developing strategies to increase cooperation
  - Addressing analytic disconnects and limitations
    - Between HLS and HLD missions
    - DoD and non-DoD agencies

The analytic community needs to establish a structure or periodic forum where HLS and HLD analysts can interact and exchange information. As relationships are established between the analytic communities, information can be exchanged more freely – fostering improved cooperation.

This forum could identify areas where analytic efforts overlap, where decision support tools exist in one community and not the other, and where there is a lack of decision tools in either community for key issues and questions. It could also identify areas where the unique issues of HLS and HLD have no overlap. The result would be a synergistic effort where overlapping efforts could be minimized and existing tools developed in one community could be shared with the other.

The cooperative forum would primarily focus on the mission aspect of each organization, but could also identify the agency issues associated with HLS and HLD analytic cooperation.
The workshop purpose is to identify and understand common areas for analytic support to decision makers in both the HLS and HLD analytic communities. GWOT Working Group 5 identified a list of areas that each proposed working group for the HLS-HLD Workshop should address and provide as an output from the workshop. These areas include: (1) Critical analytic issues; (2) Analytic capabilities; (3) Opportunities for cooperative analysis; (4) Assessment techniques; (5) Tool sets and models; (6) Data repositories and sources; and, (7) Gaps and shortfalls.
The working group discussed potential focus areas/work groups and which organizations should participate. The specific focus of the working group will be a function of the specific issues and who will end up chairing the group. As a result, our working group discussed and identified potential focus areas, potential membership, and, in some cases, who might potentially lead the working groups. These focus areas include:

**Maritime Security** should incorporate both maritime defense and maritime domain awareness. This work group should include USCG, DHS, Navy, BICE, and TSA.

**Transportation** should include maritime, land and air. This WG should include DOT, FAA, USCG, TSA, rail organization, trucking, and Corp of Engineers.

**Air and Missile Defense** should focus on the connections that are, should & could be made with DHS. This WG should include DHS, FAA, FEMA, JTAMDO, MDA, and SMDC.

**Border security** should be focused on the land borders with Canada and Mexico. This WG should include Canadians, DHS/BICE, border patrol, N-NC BPG.

**National Infrastructure** should include: DHS and the National Infrastructure Protection Center (or whatever it is called now under DHS), DTRA, ..

**Consequence Management** will look at assets and/or resources required for various events/issues. This WG should include: DHS, FEMA, HHS, CDC, NGB, USCG, ..

**Vulnerability Assessments** (via Red Teaming) and associated scenarios (Scenario Drivers) should be addressed prior to the workshop or at least should be an ongoing activity to periodically review and re-assess potential vulnerabilities and the resulting changes in scenarios as they adapt to the threat.
The Global War on Terrorism: Analytical Support, Tools, and Metrics of Assessment

Working Group 6: Problem Definition

30 November - 2 December 2004
US Naval War College
Newport, Rhode Island
Outline

- Background
- Current GWOT Guidance
- WG 6 GWOT Definition
- Historical Comparison
- WG 6 Definition Comments
- End-state
- Next Steps – How to use the Definition
- Preliminary Recommendations
**Background**

- **WG 6 Composition**
  - Only one intelligence analyst/islamic specialist on the first day
  - Group consisted of analysts and operators, users of policy guidance
- **...Beware of conclusions...**

WG 6 focused on the GWOT problem definition. Ideally, this group should have been composed of Department of State representatives, Policy staff, counter-terrorism intelligence experts, operators/COCOM staff, and ORSA analysts.

The group had limited regional experience. Only one member (Mr. Garry Greco) had served on the Joint Intelligence Task Force for Counter Terrorism. Although Gary heavily participated during the formative first day of the working group, he was not available for the remainder of the conference. He greatly contributed to the groups understanding of terrorists associated with the Al Qaeda movement and broader groups in North Africa, the Middle East, Central Asia, and South East Asia.

The group was heavily weighted toward operators/COCOM staff (SOCOM, EUCOM, PACOM, Joint Staff) and ORSA analysts from throughout the Department.

Thus, the perspective of this brief is one of users of policy guidance. We have attempted to frame and comment upon existing guidance and open literature on GWOT from an ‘analytic bent’ that we hope will be of assistance to our leadership and for future analytic efforts.
### WG 6 Participants

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
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<tbody>
<tr>
<td>Mr. Andrew Coe</td>
<td>IDA</td>
</tr>
<tr>
<td>Mr. Michael DeBarto</td>
<td>SAIC</td>
</tr>
<tr>
<td>LTC David Doane</td>
<td>HQDA</td>
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<tr>
<td>Mr. Curt Dorescher</td>
<td>Allon</td>
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<tr>
<td>Dr. Stephen Downes-Martin</td>
<td>NWC</td>
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<tr>
<td>Mr. Preston Dunlap</td>
<td>OSD PA&amp;E</td>
</tr>
<tr>
<td>Mr. Robert Eberth</td>
<td>Sanderling Research Corp</td>
</tr>
<tr>
<td>Mr. Gary Greco</td>
<td>NWC/DIA JIFT(CT)</td>
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<tr>
<td>MAJ Jonathan Hamill</td>
<td>USAF</td>
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<tr>
<td>Capt Cheryl Hetherington</td>
<td>USAF</td>
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<td>MAJ Dan Leventry</td>
<td>EUCOM</td>
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<tr>
<td>Lt Col Peter Livingston</td>
<td>USAF</td>
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<tr>
<td>Dr. David Markowitz</td>
<td>OSD PA&amp;E (Chair)</td>
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<tr>
<td>Mr. Scott Mingledorff</td>
<td>NGIC</td>
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<tr>
<td>Mr. Michael Ottenberg</td>
<td>AT&amp;T</td>
</tr>
<tr>
<td>LTC Burdett Thompson</td>
<td>Joint Staff J-5</td>
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<tr>
<td>COL Glenn Vavra</td>
<td>SOCOM</td>
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<td>Dr. Robert Westerman</td>
<td>PACOM</td>
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<tr>
<td>Mr. James Bextield, FS</td>
<td>OSD PA&amp;E (Synthesis Group)</td>
</tr>
<tr>
<td>Dr. Gregory Parnell, FS</td>
<td>USMA (Synthesis Group)</td>
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</tbody>
</table>
Webster’s Definition

- Define: ‘to explain the nature or essential qualities of’

Although the definition of definition is elementary, a descriptor of the nature of the GWOT conflict is particularly important for analysts without large exposure to high-level policy debate on the GWOT strategy, objectives, and goals. Without it, analysts will wander. As of the time of this MORS Workshop, only a limited number involved with GWOT contingency plan development have been exposed to this information. Unfortunately, this work is still in draft and may not be released to a wider audience.
Current GWOT Guidance

- Definition from current strategy documents
  - Three objectives for GWOT
    - Defend the homeland
    - Defeat terrorist networks
    - Win the war of ideas
  - Enemy is a 'network of networks' composed of extremists

- Problem: current GWOT guidance
  - Does not describe the nature of the conflict
    - It focuses on the tactic employed (terrorism) which leads to a failure to appreciate the nature of the conflict
    - A "network of network" describes all human activities
    - Is too easily confused with targeting
    - Is too nebulous to operationalize – what is the war of ideas?
    - Does not acknowledge potential long duration of the conflict

There are several published and draft GWOT guidance documents. The important guidance documents include the "National Strategy for Combating Terrorism" developed by the National Security Council, the Department of State Regional Action Plans, and the draft National Military Strategic Plan for the War on Terror. The 9/11 Commission report, although not a policy document, also provides valuable insights on the nature of the conflict.

The existing guidance documents and the 9/11 commission are self-consistent on the overall objectives for the GWOT. These are summarized under the first bullet.

However, the guidance is vague on the nature of the conflict. Chapter 12 of the 9/11 Commission is very direct in its criticism of the policy for its lack of clarity. The title ‘Global War on Terror’ is not analytically productive in that terrorism is a tactic to achieve an ends. Beyond a criminal organization, it does not describe the threat or source of conflict — a people with a political objective.

Within the Department, the published descriptive terms meant to convey further meaning, such as a ‘network of networks’, are not particularly useful. A network can describe any sort of human activity. For example, working group 6 is a network. At the next level, this MORS conference is a network of networks. Unfortunately in the Department of Defense, the term ‘network’ has been utilized in a variety of contexts with connotations potentially inappropriate for GWOT — It describes a communications system, a new form of high-tech, ‘transformed’ ‘net-centered’ warfare only available to the US, and a method used for targeting. All but the last are confusing when describing the Al Qaeda movement and the last leads one to focus on killing — not the larger war of ideas.

Additionally, none of the documents specify the tenets for the war of ideas. What are ours and what are theirs? Again, terrorism is a tactic, not a people, movement, or objective.

Lastly, all parties studying GWOT generally agree that the global conflict that resulted in the 9/11 attacks will last for an extended period. Although the term ‘Global War on Terror’ has strong political motivation, the war of ideas may necessitate preparing the American people for a conflict potentially lasting decades.
**WG 6 GWOT Definition**

- **Problem statement**
  - The world is confronted with an **insurgency within Islam** of global scope

- **Challenge**
  - De-legitimize the insurgency
  - Support the Muslim community in developing viable **alternatives** to the insurgency
  - The US will need a **global strategy**, yet need to be **locally flexible** at the operational and tactical levels

- **Complications**
  - The conflict does not appear to have any bounds. If there are any, they will be determined by the Muslim population
  - The insurgency appears to have expansive, non-negotiable political aims
  - WMD and other technologies have changed the calculus of fringe-element insurgents
  - Insurgent area of operations has expanded to include the United States, Europe, and the rest of the non-Islamic world

- **Center of Gravity**
  - Population (both theirs and ours)

- **Better Means:**
  - Support the locals to win the war for themselves

---

**Definition consistent with:**
- Defend the homeland
- Defeat terrorist networks
- Win the war of ideas

*Nature and Focus are different*

---

Although controversial and politically sensitive, the term ‘insurgency within Islam’ is highly descriptive of the nature of the conflict. It provides focus on the threat, their approach, their objectives, and a framework for examining US and community response. Terrorism is a tactic of an insurgent. It is also important to note that this is not a ‘war against Islam’. This is a conflict amongst the Muslim community. Al Qaeda is seeking to change the system of governance in the Muslim world. Ultimately, it will be the Muslim community’s decision to accept Al Qaeda’s vision, continue with their current regimes, or find an alternative.

This working group’s adoption of an insurgency framework, however, is not meant to suggest a disregard for the growth of transnational threats or other ‘terrorist’ organizations. Currently, there is no other global terrorist network beyond Islamic extremists. This is the greatest threat.

Multiple views support an insurgent framework, including the 9/11 Commission and Gen Downing’s talk at this MORS workshop. It is interesting to note that Gen Downing participated in the 2002 drafting of the National Strategy for Combating Terrorism and has currently presented an insurgency point of view.

The challenges listed on the slide are natural consequences of an insurgency framework. Core to winning an insurgency is establishing the legitimacy of one’s side and de-legitimizing the other. Like all politics, insurgencies are local in nature. Motivation can be global, but they are decided locally.

The complications represent unique features for this insurgency not seen in other historical examples. The combination of the four points creates a direct security concern for the United States and changes US risk calculus for becoming involved with the conflict.

The center of gravity falls naturally from the insurgency framework. It is one of the few common threads among the wide-range of historic insurgencies.

The means for success are only indirectly related to US actions, the best means is for the locals need to win for themselves.

As noted on the bottom right of the slide, the insurgency framework fully supports the three strategy objectives identified on the previous slide. The framework suggests mechanisms to achieve them—mechanisms the ORSA community can assess and improve.
Comparison between Communist Motivated Wars of Liberation and GWOT/Islamic Insurgency

<table>
<thead>
<tr>
<th>Similarities</th>
<th>Differences</th>
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<tbody>
<tr>
<td>- Politically motivated and ideologically justified (communism/Islam) – neither are monolithic</td>
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<tr>
<td>- Myth and glorification of insurgency</td>
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<tr>
<td>- War by indirect means (proxy)</td>
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<tr>
<td>- Center of gravity: people</td>
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<tr>
<td>- Long term war – decades</td>
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<tr>
<td>- Growing nonstate-sponsorship of insurgencies</td>
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<td>- No external/state-imposed limits on actions</td>
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<td>- Global reach/battlefield</td>
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<td>- WMD proliferation to third world insurgents</td>
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<td>- Fragmented and/or incomplete US strategy on</td>
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<tr>
<td>- Strategic communication</td>
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<tr>
<td>- Alliance structure</td>
<td></td>
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<tr>
<td>- US government organization</td>
<td></td>
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<tr>
<td>- Communism had more clearly defined sponsor – current situation is more like 1880s</td>
<td></td>
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<tr>
<td>- Religious vs economic motivation</td>
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</tr>
</tbody>
</table>

The insurgency framework is further explained by a historical comparison. This slide provides examples of the similarities and differences between the wars of liberation experienced during the early stages of the cold war and today’s insurgency within Islam.

Some highlights to note on the slide:

- Similarities, 2nd bullet: The resistance movements of World War II were perceived by the participants as decisive methods for winning the conflict. Both sides propagated myths of their success (French resistance in western Europe, partisan resistance in Eastern Europe, communist resistance in China) and this became the inspiration for many of the wars of liberation started in the late 40s, 50s and early 60s. Noteworthy early successes of these movements furthered the perception. Similarly, the Soviet withdrawal from Afghanistan inspires the Al Qaeda movement. The myths associated with the late 1980s motivate many of their actions with the hope that they may replicate that conflict on a greater scale.

- Differences, first four bullets: One of the primary changes from the cold war era is the growth of non-state sponsored insurgents. Many are empowered by the ease of obtaining disruptive technology. This has several implications. The lack of a state removes traditional interstate escalation control. The ease of movement of non-state actors has expanded the battlefield globally. Unlike the cold war where only the super-powers were able to possess WMD, the spread of technology, in particular bio-technology, is available through small, individually funded organizations.

- Differences, 5th bullet: Another significant change is the underdeveloped USG response to the GWOT. The USG initiated a far sweeping series of alliances, internal reforms, and strategic initiatives to confront Communism and Soviet expansion to include the proxy wars of the era. To date, the US is still formulating its GWOT response. Although the US has created the Department of Homeland Security and produced several national strategy documents, the overall vision of how to wage the war on terror has not been absorbed by a large set of the Department. For example, at this working group only a handful of people understood that the Department of State was the lead organization for the GWOT. This lack of common vision in the staff hinders our ability to wage the strategic communication war, hinders our ability to participate in an alliance structure, or the inter-agency.
WG 6 Definition Comments

- **Insurgency framework**
  - Significant literature and background on insurgencies
  - Good classification and analytic techniques appear available
  - Tools may not be advanced

- **Challenges and gaps**
  - How should the USG and international community structure itself to confront the insurgency within Islam?
  - How do we win the war of ideas?
    - What do Muslims want for a legitimate government?
    - How do we de-legitimize the Islamic extremists?
  - How does the US influence a society where the US is not wanted?
  - Can we set boundaries or limits to the violence?
  - How to set US public expectations for a long, violent war?

The last two slides provide a description of the problem. The insurgency framework has several benefits in focusing the analytic community on how to address GWOT issues. These benefits are listed under the first bullet, with a warning that more in-depth tools the ORSA community has relied on in the past may need to be developed for this new conflict.

The second major bullet highlights some major challenges we need to resolve to confront the insurgency within Islam. They are derived from the insurgency framework. These serve as an initial set to motivate the ORSA (and broader) community to develop analytic assessments and methods to support our senior leadership.
End-state

- Muslim population has rejected and acts against any resurgent Islamic insurgency
- Attacks on the United States and its allies have been eliminated or are limited to an acceptable level
- Muslim nations peacefully integrate into the world economy

This slide provides a list of proposed end-state conditions as derived from an insurgency point of view.

The first end-state reinforces the second. The second is not achievable without the first.

The third bullet refers to the overall goal of integrating the Muslim-developed viable ‘alternative’ within the global economy so that the flow of strategic resources will be maintained.
Next Steps – How to use the Definition

• Analytic Agenda: Defense Planning Scenario on GWOT
  - Challenge: inter-relationship between Green (the people) and Red (Islamic insurgents and sympathizers)
  - Uses of the scenario
    → Strategic discussions in QDR
    → Explore re-organization of USG
    → CONOPs testing and development
    → Test and evaluate a 2012 STRATCOM IO portfolio
    → Identify ‘TEMPO’ of mission-areas for GWOT (how frequently, how long)

• Initial thoughts on analysis and modeling
  - Traditional mission models for DoD activities associated with GWOT may be adequate
  - Insurgency campaign modeling is of concern

The working group discussed how the community might use this definition.
The first step was to incorporate our findings into the Analytic Agenda. The Analytic Agenda is a Department-wide initiative to improve the quality, transparency, and speed of analysis to support the Department’s decision processes. One of the pillars is the development of a scenario set that will be commonly used by the Components to inform resourcing decisions. The Defense Planning Scenarios (DPS), published by OSD(Policy), are the the first step. They provide high level guidance on scenario scope, participants, road to war, Blue and Red CONOPs, and a range of variables the community should explore. Select DPSs are then followed by the development of more in-depth force and CONOPs data sets (Multi-Service Force Deployment data), and ‘analytic baselines’ - initial analytic assessment with all of the information required to provide that assessment.

Currently, a GWOT scenario is under discussion. If an insurgency framework is used in such a scenario, the DPS will need to expand on the center of gravity: the people. This type of information has not been included in the scenarios to date.

The second sub-bullet lists potential users of the DPS scenario. The working group then discussed methods to assess such a DPS. Overall, the community felt comfortable that mission-level models could be modified or jury-rigged to provide some level of assessment. The greatest challenge would be to link the missions together into an overall campaign plan. Many of the tools, and plain know-how, will need to be developed.
This slide summarizes the working group’s recommendations to further progress in assessing the GWOT from an insurgency framework. They are listed roughly in priority, with the first bullet being the highest, the 2nd through 4th being the next tier, and the 5th is the last.

The first has the highest priority because it will establish who is responsible for conducting the remainder of the tasks. The second tier (bullets two through four) are crucial for winning the war of ideas and seizing the conflicts center of gravity: the people. The last is of importance to the Department.
The Global War on Terrorism: Analytical Support, Tools, and Metrics of Assessment

Synthesis Working Group

30 November - 2 December 2004
US Naval War College
Newport, Rhode Island

Co-Chairs:
Col Jerry Diaz and
Dr Greg Parnell, FS
GWOT Synthesis Working Group

The Synthesis Working Group (SWG) is a strategic body that helps the workshop achieve its objectives by

- Synthesizing the products of the six working groups by
  - Determining common themes
  - Highlighting the seams or gaps
  - Identifying critical issues
- Facilitating as necessary
- Developing overarching workshop recommendations

A MORS workshop is fundamentally different than the MORS Symposium or a mini-symposium. In a symposium setting, you sit back and receive presentations about the work that colleagues are pursuing. In a workshop, you are expected to participate in the discussion. Your working group lead should schedule at least as much time for discussion as there is for presentations. The output is more than knowledge gained, but a product distinct to that working group’s goals.

The goal of the GWOT workshop was to provide a forum for discussing analytic support, tools, metrics, and to gain insight on operational assessment techniques and capabilities to better support the GWOT. The objective of the SWG is to help the Workshop Chair achieve his goals for a successful meeting. We asked the Synthesis members to identify three things:

1. Themes that are common to other working groups
2. Gaps or seams that the working groups or the workshop is missing
3. Critical issues that may be unique to that working group, but need to be reinforced to the entire workshop

Also, we helped the working group leads by facilitating as necessary and as a group, developed overarching workshop recommendations.
We had nine members on the Synthesis group — a group of very senior, eclectic, MORS'ians to be sure. Some of our members sat in one working group, others floated amongst groups.
SWG GWOT Observations

GWOT presents a tremendous challenge:
- The world is confronted with an insurgency within Islam
- Operations primarily against globalization of western values and influence
- Leverage network of extremists that export terrorism locally, regionally, and globally
- WMD significantly magnifies risk

We had some general observations about the workshop. The Global War on Terror presents us with tremendous challenges:

- We are confronted with an insurgency within Islam. We recognize that our fight is not against the Islamic Religion, but with extremists within Islam. Further, although we make the point that our fight is not against Islam, we then use words that make it sound like it is.
- The enemy conducts operations against the globalization of western values and influence.
- The threat is not hierarchical in nature. It is a collection of loosely networked cells that act independent of each other and any chain of command.
- Further, weapons of mass destruction, i.e. technology, magnify the risk to our populace and way of life.
SWG Observations

- GWOT is difficult because of its breadth
  - Need to assess effectiveness of specific operations, but to evaluate globally
  - Cannot afford to win the battle, but lose the war or the peace

- Need to define the end state
  - US/Allies globally, regionally, locally
  - Timeline: War of Generations
  - Identify milestones to get there? Metrics?

- Documents that lay an initial framework for GWOT
  - National Strategy for Combating Terrorism
  - National Military Strategic Plan for the WOT (DRAFT)
  - US Government Action Plan for the War on Terror
  - OPLAN 71 – Identifies SOCOM as the military lead for GWOT

The Global War on Terror is difficult to assess because of its breadth. It is far easier for us to assess the impact of a particular operation than to determine its impact on this global war. We need to think globally.

We need to be able to determine the impact of yesterday’s battle in Faluja on tomorrow’s fight in Indonesia. Where is the analyses to determine this? Who is thinking globally? Where is the organization, tiger team, working group, that is advising and evaluating the use of National power in this global war. We cannot afford to win the battle, but lose the war or lose the peace.

We need to define the end state of the GWOT. How are we going to plot a path to get there if we don’t know where there is? It has been said that this is a War of Generations. In our society of instant gratification, short attention spans, “I want it yesterday” mentalities, how will we stay the course over the long haul without a destination and milestones and metrics to get us there?

Finally, there are several documents directly related to GWOT. We found that many of us had never heard of them, much less read them. These are must reads.
We need to understand our enemy.

-This is a fundamentally different war than the Cold War. At the height of the Cold War, if, for example, you brought a Communist Politico to Wal-Mart, he would be amazed at the wealth of our country and at what an open, free market economy can bring. If you bring a terrorist to Wal-Mart, all he sees is an example of the decadence of the Great Satan.

-The Global War on Terror is winnable, but in what sense? Will we be able to fully eliminate it? Is it similar to the War of Poverty or the War on Drugs?

We need to understand the centers of gravity of our enemy, and the environment that spawns him and her.

-We need to perform an Intelligence Preparation of the Battlefield. Not a geographical one, but a sociological one for a global campaign plan.

-We need to determine if there are parallels to other social challenges like inner-city gangs. Is the despair and lack of hope that fuels the gang similar to what fuels terrorist recruiting?

We need a common lexicon to ensure we’re not talking past each other.
The Global War on Terror will not be won through military power alone. It will require all the tenets of our National power (military, diplomatic, economic...). Where do we analyze the application of National power? If the President asks the DoD to solve a problem, he gets a military answer; the State Department, a diplomatic one. Where do we evaluate the apportionment of National power? Where are the methodologies, metrics, and tools to assess a little bit of this and some of that?

All the WGs recognized the need for interagency, interdepartmental, and international cooperation and the ability to analyze combined actions. However, stovepipes and the lack of clearly defined responsibilities make this difficult. For example, local law enforcement agencies do not wish to share crime fighting information because of their “OPSEC” concerns. We need to break down these stovepipes within our own government. Now, these stovepipes are not surprising. Our country is fueled by capitalism, capitalism means competition, and competition leads to stovepipes. But for our future, we need to find a way to break these stovepipes down.

We have some unique and immediate challenges today. The DoD is a player, not leader, in these challenges. For Homeland Security, civil agencies have the lead and DoD is supporting. For the GWOT, the Department of State has the lead. Where are the ORSAs of the other agencies? What is the venue that we come together in to provide support to our leaders? In what context can we assess our ability to perform in this supporting role?
There is a real concern amongst the working group about the increasing need for analyses and analysts. There is a need for more analysts within the Combatant Commands and analysts that understand other Department and Agency capabilities.

If we believe that the Global War on Terror is fundamentally a different war, and a war of generations, what are we, as a MORS community, doing to prepare ourselves? The phenomenology of this war is primarily social, not physical. What are we doing to get ourselves the necessary social, political, and historical training? Operations research is a multidisciplinary field. How are we attracting folks with the right backgrounds and expertise into our community?

Has our essential skill set changed? Is this war fundamentally different? Are we prepared?

How are we capturing analytic lessons learned?

- In the 1960s, the Army conducted Project Camelot where they modeled instability in South America. Is this model relevant today? Only one person in the workshop knew about this project. How are we not losing work from the past?

- Both the AF and the Army have developed a Combat Analyst website. Do we need a joint site? Should we develop a coalition site?
Recommendations to Sponsors

- Need a campaign plan for GWOT
- Identify/analyze/exploit GWOT centers of gravity
  - Islamic extremism?
  - The populations?
  - Western influence/presence?
- Plan for the long term (war of generations)
  - Title 10 – organize, train, and equip ORSAs for GWOT
  - Expand ORSA talent pool (social science, political science, ...)
- Facilitate coordination across the government
  - Ability to analyze the use of National power

We close with overarching recommendations to our MORS Sponsors.

1. Develop a campaign analysis plan for the Global War on Terror. One that is globally strategic and considers all the tenets of the National power of the US and our allies.

2. Identify and analyze the centers of gravity of our enemy. Use this as a basis to build the campaign analysis plan.

3. Plan for the long term. Organize, train, and equip ORSAs for the Global War on Terror. Further, make a conscious effort to expand the pool of ORSA talent, to make it more interdisciplinary with the social sciences.

4. Finally, facilitate the coordination of analyses across the government to be able to analyze the use of National power.

Finally, it was agreed by the SWG members that this was an outstanding workshop. It was obvious that the workshop chairs and working group leads had done a great deal of preparation and demonstrated strong leadership throughout the conference. Thank you for a great workshop.
Acronyms

MORS Workshop
The Global War on Terrorism:
Analytical Support, Tools, and Metrics of Assessment

ABA American Bankers Association
ACTOR Analyzing Complex Threats for Operations and Readiness
AFSAA Air Force Studies and Analyses Agency
AOC Air Operations Center
BICE Bureau of Immigration and Customs Enforcement
CAA Center for Army Analyses
CALL Center for Army Lessons Learned
CDC Center for Disease Control
CIA Central Intelligence Agency
COA Course of Action
COAST Course of Action Selection Tool
COCOM Combatant Command (Command Authority)
CTAC Counter-Terrorism Analysis Capability
DHS Department of Homeland Security
DIA Defense Intelligence Agency
DIME Diplomatic, Information, Military and Economic
DoD Department of Defense
DOT Department of Transportation
DPS Defense Planning Scenarios
DTRA Defense Threat Reduction Agency
EBO Effects Based Operations
EEA Environmental Effects Architecture
EUCOM United States European Command
FAA Federal Aviation Administration
FBI Federal Bureau of Investigations
FEMA Federal Emergency Management Agency
G1-G7 Army or Marine Corps component operations staff officer (Army division or higher staff, Marine Corps brigade or higher staff)
GIS Geographical Information System
GWOT Global War on Terrorism
Hazardous Materials
HHS US Department of Health and Human Resources
HUMINT Human Intelligence
HW/SW Hardware/Software
I/O Input/Output (example XML - eXtensible Markup Language)
IGO Inter-Governmental Organization
IO Information Operations
J2 Joint Staff Intelligence Directorate
J3 Joint Staff Operations Directorate
J5 Joint Staff Plans Directorate
JCS Joint Chiefs of Staff

Appendix A - 1
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>JFCOM</td>
<td>Joint Forces Command</td>
</tr>
<tr>
<td>JTAMDO</td>
<td>Joint Theater Air and Missile Defense Organization</td>
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<tr>
<td>MCO</td>
<td>Major Combat Operations</td>
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<tr>
<td>MDA</td>
<td>Missile Defense Agency</td>
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<tr>
<td>MOE</td>
<td>Measure of Effectiveness</td>
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<tr>
<td>MORS</td>
<td>Military Operations Research Society</td>
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<tr>
<td>MSO</td>
<td>Military Strategic Objectives</td>
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<tr>
<td>NGB</td>
<td>National Guard Bureau</td>
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<tr>
<td>NGO</td>
<td>Non-Governmental Organization</td>
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<tr>
<td>NIH</td>
<td>National Institute of Health</td>
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<tr>
<td>NMSP-WOT</td>
<td>Nation Military Strategic Plan for War on Terrorism</td>
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<tr>
<td>N-NC BPG</td>
<td>NORAD - NORTHCOM and the Bi-National Planning Group</td>
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<tr>
<td>NSC</td>
<td>National Security Council</td>
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<tr>
<td>OCR</td>
<td>Office of Collateral Responsibility</td>
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<tr>
<td>OEF</td>
<td>Operation Enduring Freedom</td>
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<tr>
<td>OIF</td>
<td>Operation Iraqi Freedom</td>
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<tr>
<td>OPR</td>
<td>Office of Primary Responsibility</td>
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<td>OPSEC</td>
<td>Operations Security</td>
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<td>OR</td>
<td>Operations Research</td>
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<td>ORSA</td>
<td>Operations Research and System Analysis</td>
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<tr>
<td>OSD</td>
<td>Office of the Secretary of Defense</td>
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<tr>
<td>PACOM</td>
<td>United States Pacific Command</td>
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<tr>
<td>POC</td>
<td>Point of Contact</td>
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<tr>
<td>PSYOP</td>
<td>Psychological Operations</td>
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<tr>
<td>PVO</td>
<td>Private Venture Organization</td>
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<tr>
<td>QDR</td>
<td>Quadrennial Defense Review</td>
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<tr>
<td>S&amp;T</td>
<td>Scientific and Technical</td>
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<tr>
<td>SECDEF</td>
<td>Secretary of Defense</td>
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<tr>
<td>SIGINT</td>
<td>Signals Intelligence</td>
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<tr>
<td>SMDC</td>
<td>Space and Missile Defense Command (Army)</td>
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<tr>
<td>SOCOM</td>
<td>United States Special Operations Command</td>
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<tr>
<td>SWG</td>
<td>Synthesis Working Group</td>
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<tr>
<td>SWOT</td>
<td>Strengths, Weaknesses, Opportunities and Threats</td>
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<tr>
<td>TAPAS</td>
<td>Threat Anticipation Program Agent-Based Simulations</td>
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<tr>
<td>TOR</td>
<td>Terms of Reference</td>
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<tr>
<td>TSA</td>
<td>Transportation Security Administration</td>
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<tr>
<td>UK</td>
<td>United Kingdom</td>
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<td>US</td>
<td>United States</td>
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<td>USA</td>
<td>United States Army</td>
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<td>USAF</td>
<td>United States Air Force</td>
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<td>USAID</td>
<td>US Agency for International Development</td>
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<td>USCG</td>
<td>United States Coast Guard</td>
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<td>USG</td>
<td>United States Government</td>
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<td>USMC</td>
<td>United States Marine Corps</td>
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<tr>
<td>USN</td>
<td>United States Navy</td>
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<tr>
<td>WMD</td>
<td>Weapons of Mass Destruction</td>
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1. Background

The September 11, 2001 terrorist attacks on the World Trade Center and the Pentagon have thrust the United States into the Global War on Terrorism (GWOT). As a result the U.S. has joined the rest of the world by entering into a new age of instability. Combating these terrorist threats has demanded that our armed forces conduct operations simultaneously across the full spectrum of conflict – from conventional combat in major contingency operations as in OPERATION IRAQI FREEDOM to peace operations such as OPERATION JOINT FORGE. Subsequently, the value of analysts who support the warfighter has and will continue to be a significant combat multiplier in these efforts.

Recent experiences in providing analytic support to the combatant commanders in the prosecution of the GWOT have brought to the fore several areas that are of major importance and interest to the warfighter. These include:

- The determination of nation state and regional instability
- The conduct of stability operations
- Analytic Tools to support the GWOT
- Metrics of Assessment in the GWOT
- Homeland Defense
- Problem Definition

2. Sponsor Interest

All MORS Sponsors have expressed a strong interest in this workshop.

3. Goals and Objectives

The proposed meeting will provide a forum for discussing analytic support, tools and metrics of assessment in the Global War on Terrorism. The workshop will bring together analysts and decision-makers from within DoD (e.g., Services, Combatant Commands, and associated Agencies), from other Departments (e.g.,
State and Homeland Security), as well as Allied countries. The goal is to gain insight on operational assessment techniques and capabilities to better support the Global War on Terrorism.

The Global War on Terrorism: Analytic Support, Tools and Metrics of Assessment (GWOT: ATM) workshop will be organized into six working groups and one synthesis group. The six working groups will address the key following issues; 1) forecasting nation state and regional instability, 2) analytic support to stability operations, 3) analytic tools to support the GWOT, 4) metrics of assessment in the GWOT, 5) homeland defense, and 6) GWOT problem definition. These working groups are not mutually exclusive, and this is deliberate. Explicitly introducing overlap between the working groups provides synthesis points for integrating the conclusions from each, and reduces the probability that major ideas will “fall through the cracks” between the workshop topics.

WG-1 Forecasting Nation State and Regional Instability—Identify analytic skills, tools, models, methods and metrics for forecasting instability at the national and regional level that can be exploited either by global terrorists or by those waging war on them. This working group will focus on measuring and forecasting:

- National and regional stability in the absence of military intervention by the U.S. and its allies as a precursor to military intervention
- National and regional stability during military intervention by the U.S. and its allies, specifically the stability effects on our allies who have strategic links with the region under attack
- National and regional stability after military intervention by the U.S. and its allies
- The kinds of instability that are beneficial to the U.S., and how to trigger them
- How global terrorists will try to create or exploit instability, and how to counter them

WG-2 Analytic Support to Stability Operations—Identify analytic skills, tools, models, methods and metrics for supporting stability operations in nations and regions after military intervention by the U.S. This working group will focus on:

- The transition from major combat operations (MCO) to counter-terrorism and counter insurgency
- Supporting a political process that is both appropriate to the region and culture and that enhances security
• Predicting the actions of global terrorists in the nation or region after major combat operations and after the U.S. has withdrawn
• Predicting what kind of actions during MCO will best support stability operations both during and after MCO

WG-3 GWOT: Tools, Data & Decision Support—Identify tools, models, methods and metrics for combating global terrorists. This working group will focus on support and measures for:

• Predicting terrorist attacks
• Identifying terrorists
• Locating terrorist funds and funding streams
• Predicting the effects of actions taken against terrorists
• Engaging in a war of ideas in the U.S. and overseas
• Construction of social networks of terrorist organizations
• Identifying which individual terrorists to kill, capture or subvert for maximum effect
• Identifying best actions to take

WG-4 Metrics for Assessing Military Effectiveness in the GWOT—Identify useful measures of effectiveness to monitor and improve military effectiveness in the Global War on Terrorism. This working group will focus on military responsibilities, decisions, and activities in the GWOT.

Considering the strategic, operational, and tactical levels of warfare, this working group will explore the metrics that would be useful in providing insight to decision makers within these areas. For each identified metric the group will determine methods and sources of data to obtain these measures.

WG-5 Homeland Defense—Identify the issues associated with 1) traditional military operations and 2) civil support of HLD and will identify useful decision support tools, models and metrics for quantifying the broad range of issues facing HLD decision-makers. This working group will also organize these tools, models and metrics into focus areas for a potential separate workshop in 2005. The focus areas for this working group will consist of:

• Traditional military operations related to Ground-based Missile Defense, Integrated Air Defense Systems, National Special Security Events, etc.
• Identification of trigger points and thresholds for federal support to first responders and the associated quantitative measures
• Identification of measures and methods for critical infrastructure identification and protection including potential centers of gravity that could be exploited by terrorists
• Identification and quantification of the requirements and linkages for interagency and first responder coordination associated with both natural disasters and terrorist-sponsored attacks
• Identification of useful modeling and simulation tools for HLD issues
• Characterization, identification, and quantification of potential threat axes’ of approach

WG-6 GWOT Problem Definition – Identify the differences in terminology, assumptions on the cause, and the nature of the threat that lead to confusion and misdirection of efforts. This working group will focus on defining:

• Different perceptions of the problem and the assumptions behind those perceptions
• An analytic framework for understanding the threat
• Measures and methods for data collection for elements of threat support and capability
• Measures and methods for assessing vulnerabilities and centers of gravity that the U.S. can exploit

Synthesis Group—The synthesis group will bring together the work of the six working groups and develop the overall recommendations from the analysis community to the individual service operations analysts. As well, this group will provide inputs and recommendations on development of analytic support to the GWOT.

4. Deliverables:

The MORS Synthesis Group will provide documentation listing actionable items to pursue that will facilitate the ORSA community in supporting the Global War on Terrorism. This will be in the form of a report and a briefing to the MORS Sponsors that lists state of the art assessment methods. These methods will include empirical data collection techniques leading to the development of usable models for forecasting national and regional instability (e.g. structural equation modeling). A summary of the report will be published in PHALANX and will be briefed at the 73rd MORS Symposium in June 2005.

Each working group will present a recommended analysis approach for each of their topics, including a course of action for implementing the approach. These
suggested approaches will identify current tools, models, methods and metrics that may be used in assessing the effectiveness of the GWOT, for example: How successful are we at disrupting the financial flows of terrorist organizations? How do we measure the progress of stability operations? This will provide a basis for building a library of appropriate assessment tools.

Further, recommendations for future workshops and working group meetings that will concentrate on specific areas will be proposed for Sponsor consideration.

5. Chairs:

Program Co-Chairs:
  Dr. Lynee Murray, NAVSEA Newport NUWC
  MurrayLD@npt.nuwc.navy.mil, 401-832-3543
  Dr. Stephen Downes-Martin, WGD NWC
downess@nwc.navy.mil, 401-841-6933

Technical Chair: Dr. Forrest Crain, Army G3
  William.F.Crain@us.army.mil, 703-614-9120

WG1 Chairs: Dr. Sean O’Brien, obrien@caa.army.mil, 703-806-5361
  Mr. Tim Hope, thope@alionscience.com, 703-998-1611
  Mr. H. J. Orgeron, orgeronhj@mccdc.usmc.mil, 703-784-0434
WG2 Chairs: Dr. Karsten Engelmann, engelman@caa.army.mil, 703-806-5532
  MAJ Rob Kewley, kewley@caa.army.mil, 703-806-5562
WG3 Chairs: Dr. Dean Hartley, DSHartley3@comcast.net, 865-425-9752
  Mr. John Cipparone, Jcipparone@drc.com, 571-226-8765
WG4 Chairs: Dr. John Borsi, john.borsi@pentagon.af.mil, 703-588-8198
  Lt Col Robert Rosedale, Robert.roosedale@pentagon.af.mil, 703-588-8818
WG5 Chairs: Mr. Thomas Denesia, Thomas.denesia@northcom.mil, 719-554-9680
  Mr. Glen Roussos, glen.roussos@northcom.mil, 719-554-9767
WG6 Chairs: Dr. David Markowitz, david.markowitz@osd.mil, 703-696-9360
  Mr. Curt Doescher, Curt.Doescher@hqda.army.mil, 703-692-6960
Synthesis Chairs: Dr. Greg Parnell, Gregory.Parnell@usma.edu, 845-938-4374
  Col Jerry Diaz, jerry.diaz@pentagon.af.mil, 703-588-6969

Appendix B - 5
6. Organizing Committee:

Dr. Forrest Crain  
Army G3  
703-614-9120  
William.F.Crain@us.army.mil

Dr. Stephen Downes-Martin  
NWC-WGD  
401-841-6933  
downness@nwc.navy.mil

Dr. Lynee Murray  
NAVSEA NUWC  
401-832-3543  
MurrayLD@Npt.NUWC.Navy.mil

Dr. Dick Deckro  
AFIT  
937-255-6565 x4325  
Richard.deckro@afit.edu

Mr. Brian Engler  
MORS  
703-933-9070  
brian@mors.org

Ms. Natalie Kelly  
MORS  
703-933-9070  
natalie@mors.org

Plus All Working Group Chairs (listed above)

7. Location and Dates

United States Naval War College, Newport, Rhode Island, 30 November – 2 December 2004.

8. Fees

Full Workshop: US Federal Government: $225/All Others: $450
One Day Only: US Federal Government: $115/All Others: $230

9. Classification: The Tuesday Plenary Session, Thursday Working Group Report-Out Session and two working groups (1 and 3) will be at the UNCLASSIFIED level, with all papers Approved for Public Release. One working group (2) will be at the UNCLASSIFIED level, except for one session. Three working groups (4, 5, and 6) will be at the classified level.
### 10. Agenda

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Appendix B - 7
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Appendix B - 8
Analysis of GWOT Tools Database

DRAFT

MORS Workshop
The Global War on Terrorism: Analytical Support, Tools, and Metrics of Assessment

(Working Group 3)

The accompanying Excel workbook contains two worksheets. The first is a Tools versus Questions worksheet and the second is a Tools versus Methods worksheet.

1. Tools vs Questions

The Tools are grouped by the categories in the database: data, methods, persons, and tools. The Questions represent the needs of the end-users, which should be served by the Tools. I have grouped the Questions by "Know?", "Plan?", "Do?", "Assess?", and "Support?". (I know the commas go inside quotes, but that's stupid here.)

Observing the grand totals for tools that support each question gives the impression that most of the questions are well covered by tools of one sort or another. The obvious exception is the question "What metrics do we need to develop?"

Less obvious, is the lack of coverage in the "Do?" group. Only three items in the database address this group: "Engaging in a War of ideas at home and Abroad," "How do we detect and counter deception?," and "How we identify individual terrorist to kill?" Clearly, there are other actions that are needed in the war on terrorism. Obvious actions, such as various legal operations, are not germane to the Department of Defense. However, there may be other actions that the DoD should be considering. Hence, I have added the question, "How do we define & select other actions?" Some of the tools in the database may support this question; however, other tools may be needed.

The number of tools that are needed to address all of the questions is very large, implying that consolidation, linking, or expansion of existing tools would be helpful.

2. Tools vs Methods

The Tools are sorted to group together those tools that use the same methods or at least to get the ones using each method near to each other. I have also grouped the tools into Unknown, Simulation, Influence, Association, Data, Behavior, Language, and Support groups.
The Influence group displays an obvious weakness in its total representation; however, when only dedicated tools are counted, weaknesses show up in simulation and behavior. Perhaps some of the tools with unknown methods actually reinforce some of these groups.

The number of tools that are needed to use all of the methods is very large, implying that consolidation, linking, or expansion of existing tools would be helpful.

3. Recommendations

Six recommendations can be based on this analysis:

- More work is required to develop metrics;
- Work is needed to determine what other alternative actions might aid the GWOT;
- Influence methods need to be better developed;
- Actual simulations need to be developed;
- More behavior tools are needed; and
- Consolidation, linking, or expansion of existing tools would be helpful.
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Appendix Cb - 1
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Appendix Cb - 6
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*Appendix Cb - 7*
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* KNOW*: Construction & Scoping Network at Regional Level
* PLAN*: How do we support advocacy & modeling?
* PLAN*: How do we support planning & evaluate monitoring?
* DFR*: Potential where and when to work with others

Appending to a Way of Sharing at Home and Abroad

Appendix Cb - 8
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(Working Group 3)

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Appendix Cb - 12