



Irregular Warfare Analysis Workshop
WG 2: SSTRO

Military Operations Research Society
Working Group Out Brief

3-6 February 09

Chairs: COL Dean Mengel and Mr. Bill Krondak

Agenda



- Working Group Purpose
- Participants
- Schedule / Briefs received
- Findings / Suggestions
- Key Take-Aways

Working Group Purpose/Charges



Purpose:

- Identify SO challenges and problem areas to be solved
- Identify analytical methods that might help solve those areas

Charges:

- Identify challenges and problem areas
- Learn about analytical methods and techniques
- Determine whether the methods/models/techniques will address identified problem areas
- For problems with no solutions, what are desired characteristics of an appropriate tool or method

Participants



- Shawn Steene, OUSD (P) SOLIC
- Peter Bulanow, Northrop Grumman,
- Vincent Chustz, OASD/HA
- Ken Raab, ATEC
- Duane Schilling, CAA
- Martin Lidy, IDA
- Bill Meyer, ERDC
- Capt Taitano, USAF A9A
- Michael Schmidt, SOCOM
- John Armstrong, SOCOM J9
- LTC Sanders, CAA
- Curtis Bottom, TRAC
- Dave Lindow, TRAC
- Kerry Lenninger, TRAC
- Elizabeth Lyon, USACE
- Curtis Blais, NPS
- Brianne Adams, TRAC
- Mr. Doug Edwards, CAA
- Al Sweetser, OSD PAE
- Mike Esper, PKSOI
- Earl Mathis, NSWC
- Kurt Bodiford, Lockheed Martin
- MAJ Dave Mills, SOCOM
- LtCol Caputo, SOCOM
- Mike Hall, Lockheed Martin
- LtCol Monbouquette, SOUTHCOM
- Greg Andreozzi, CAA
- Tom Gross, Lockheed Martin
- Lisa McComas, JHU/APL
- Bill Krondak, TRAC (co-chair)
- COL Dean Mengel, CAA (co-chair)

Working Group #2 Agenda - Wednesday



<u>Wednesday, 4 February</u>		
1300 - 1315	Welcome and Introductions	COL Dean Mengel
1315-1400	Challenges/Areas Requiring Analysis	LtCol Vinnie Caputo, USSOCOM
1400-1430	Challenges/Areas Requiring Analysis	Mr. Martin Lidy, IDA
1500-1545	Challenges/Areas Requiring Analysis	Mr. Shawn Steene, OSD SOLIC
1545-1630	Challenges/Areas Requiring Analysis	Mr. Mike Esper, PKSOI

Working Group # 2 – Session 1 Challenge



Areas

Wednesday – 4 Feb

Challenge Area <Source>	Description	Severity / Impact	Difficulty with Solutions
1. Foreign Security Forces <USSOCOM>	Need a coherent plan for building and training Foreign Security Assistance (SFA) Forces.	Supply of forces may not be available to meet demand from COCOMs.	Coordination with interagency elements is inadequate.
2. Identification of SFA Requirements (missions, etc.) <USSOCOM>	Need to understand and identify the demands driving SFA requirements.	Related to challenge area above, need to identify demand to plan resources and schedule training.	-Need clarification by identifying total US govt demand and then identifying DOD piece.
3. Prioritization of SFA Requirements <USSOCOM>	- Need tools/methods to prioritize SFA activities.	Each COCOM has high priority requirements but not enough resources to fill needs.	Who has authority to prioritize between COCOM requirements?
4. Personnel Tracking <USSOCOM>	Determine and track training, skill sets, and experience relevant to SO.	Some missions may require special skills or experience. Who has them?	- Need more than skill identification. - Consider implications for career path .

Working Group # 2 – ^{Draft} Session 1 Challenge



Areas

Wednesday – 4 Feb

Challenge Area <Source>	Description	Severity \ Impact	Difficulty with Solutions
5a. Information prep of the Operational Environment <IDA>	Determine what needs to be done within each sector. -Determine causes/fixes. -Reconstruction reqts for self-governance. - How to recognize when “self-governing” achieved	Without this info, resources may be misapplied or inappropriate actions may be taken.	Who has responsibility for this? Different agencies have different perspectives. Needs must be relevant the host nation.
5b. Information prep of the Operational Environment <IDA>	Determine potential partners and what they can do. -Affected govt/society. -Int’l partners (donor nations, humanitarian, financial org, non-govt). -USG agencies.	Without this information, inefficient or ineffective efforts may result.	Who has responsibility for leading or coordinating this effort?

Working Group # 2 – ^{Draft} Session 1 Challenge



Areas

Wednesday – 4 Feb

Challenge Area <Source>	Description	Severity \ Impact	Difficulty with Solutions
5c. Information prep of the Operational Environment <IDA>	Determine how to achieve unity of effort. -Collaborative and Cooperative architectures. - Public diplomacy and strategic communications.	Without unity of effort, inefficient or ineffective efforts may be initiated that fail to meet needs and waste resources. This sends negative message to host nation.	Information sharing is hindered by lack of common terminology and political issues.
5d. Information prep of the Operational Environment <IDA>	Determine how to measure progress toward achieving objectives. -Quantitative metrics -Qualitative metrics.	Without proper metrics to measure progress, no way exists to determine whether certain projects or interventions are working or remain appropriate.	Need prior identification of goals/objectives When is “good enough” achieved?

Working Group # 2 – ^{Draft} Session 1 Challenge



Areas

Wednesday – 4 Feb

Challenge Area <Source>	Description	Severity \ Impact	Difficulty with Solutions
6. What capability and capacity does DOD need for sectors other than security? <OSD SOLIC>	-DOD is both supported and supporting agency for SO, therefore must know what is needed. -What factors should be considered when prioritizing support? -Need metrics to evaluate performance.	Supply of forces of appropriate type may not be available to meet demand from COCOMs.	- Requires decisions and guidance outside DOD. -“Restore” is relatively clear, but “support” is more open-ended
7. Security Force Assistance <OSD SOLIC>	- Need to identify overall SFA demand. - Need process to identify and prioritize SFA needs of partners - Need metrics to evaluate performance.	Meeting overall demand has implications for SOF/GPF and AC/RC Mix.	

Working Group # 2 – ^{Draft} Session 1 Challenge



Areas

Wednesday – 4 Feb

Challenge Area <Source>	Description	Severity \ Impact	Difficulty with Solutions
8. Lethal and non-lethal capabilities <PKSOI>	Must use mix of methods to set conditions supporting other instruments of power.	Must establish security for progress but not totally alienate relevant populations.	Non-lethal capabilities are more than rubber bullets and tear gas.
9. How should the military support reconstruction and stabilization policy and strategy? <PKSOI>	This requires actions in Doctrine, Organization, Training, Materiel, Leadership, Personnel and Facilities.	This could be a significant resource issue. Leaders must be able to make informed decisions.	Need to clearly understand other agencies capabilities and intent with respect to this area.
10. How do information and info ops support and nest within stability operations? <PKSOI>	Information operations and strategic communications must be informed by data and send consistent messages.	Inconsistent or late info ops and strategic comms make US look bad and can be exploited by rivals and opposition media.	Can problem be solved analytically?

Working Group # 2 – ^{Draft} Session 1 Challenge



Areas

Wednesday – 4 Feb

Challenge Area <Source>	Description	Severity \ Impact	Difficulty with Solutions
11. Do the joint and service task lists sufficiently address the range of activities required to conduct joint stability operations? <PKSOI>	Must ensure unit missions and Mission Essential Task Lists are updated and that doctrine and training are appropriate.	Supply of forces of appropriate type and capability may not be available to meet demand from COCOMs.	-Army and Joint Task lists recently reviewed as part of Army's SO Capabilities Based Assessment. -Must review other service task lists.
12. Is the military's current approach sufficient for operations where the focus is on "relevant populations" and not an enemy force? <PKSOI>	This requires actions in Doctrine, Organization, Training, Materiel, Leadership, Personnel and Facilities.	This could be a significant resource issue. Leaders must be able to make informed decisions.	-Must be able to identify status of military's ongoing efforts to assess. -Can problem be solved analytically? -How do you measure "sufficient" approach?

Working Group # 2 – ^{Draft} Session 1 Challenge



Areas

Wednesday – 4 Feb

Challenge Area <Source>	Description	Severity \ Impact	Difficulty with Solutions
13. How do we best determine appropriate MOEs and MOPs for full spectrum operations? <PKSOI>	Must identify Metrics that cover range of sectors, include strategic to tactical level, cover immediate response , transition, and sustaining efforts. Can they be modeled and simulated	Without proper metrics to measure progress, no way exists to determine whether certain projects or interventions are working or remain appropriate.	-Can metrics be modeled and/or simulated? -If some metrics are “qualitative” how do you evaluate?
14. How does the military support emerging security initiatives and DOD policy on Security Sector Reform? <PKSOI>	Must identify how support requirements change with changing policies in this area.	This could be a significant resource issue. Leaders must be able to make informed decisions.	

Working Group # 2 – ^{Draft} Session 1 Challenge



Areas

Wednesday – 4 Feb

Challenge Area <Source>	Description	Severity \ Impact	Difficulty with Solutions
15. How does the US military's approach nest within the emerging body of interagency, intergovernmental, and allied approaches to reconstruction and stabilization? <PKSOI>	Must identify how force requirements change with changing approaches in this area.	This could be a significant resource issue. Leaders must be able to make informed decisions.	Can problem be solved analytically?

Working Group #2 Agenda - Thursday



Thursday, 5 February

0800-0830	Review of Challenges	COL Dean Mengel
0830-0930	Methods, Models, and Simulations for SO Analysis	Ms. Kerry Lenninger, TRAC
1000-1045	Nexus Network Learner	Ms. Debbie Duong, OSD PA&E
1045-1145	Primary Force Estimator (PRIME)	Ms. Trudy Ferguson, CAA
1300-1345	Wargaming	LTC Dave Sanders, CAA
1345-1430	Task-event-outcome IW Analysis	LTC Russ Schott, TRAC
1500-1545	Workshops as an Analysis Tool	Mr. Greg Andreozzi, CAA
1545-1630	Contingency Operations Tiger Team Initiative and Representing Urban Cultural Geography in Stability Operations	Mr. Tim Perkins, ERDC, Mr. Jack Jackson, TRAC

Working Group # 2 – Session 2a Methods, Models, Simulations














Thursday 5 Feb

Method\Model\ Simulation <Agency>	Description	Areas addressed	Current Status
1. Integrated Gaming System <TRAC FLVN>	<ul style="list-style-type: none"> -Flexible definition of infrastructure and factions. -Stochastic. 	<ul style="list-style-type: none"> -Faction satisfaction. -Infrastructure status. -Military impacts. -Operational insights. 	In use.
2. PSOM <UK DSTL/JS J8>	<ul style="list-style-type: none"> - Strategic and Operational level training assessment. -Social Behavioral response. - Stochastic \ Deterministic. 	<ul style="list-style-type: none"> -High level pol/mil. -Gain insights on operational impacts of high level decisions and resource allocations. 	In use.
3. Nexus Network Learner <OSD PA&E>	<ul style="list-style-type: none"> -Societal Assessment -Bayesian . - Stochastic. - Agent Based. - Modular. - Adaptive to data and other models. 	<ul style="list-style-type: none"> -Assess DIME impact (different COAs) on social changes. - Examine modification of behavior. 	In use with continuing development.

Working Group # 2 – Session 2a Methods, Models,

Simulations



Thursday 5 Feb

Method\Model\ Simulation <Agency>	Description	Areas Addressed	Current Status
4. Primary Force Estimator (PRIME – ATLAS model) <CAA>	<ul style="list-style-type: none"> - Task based using approved rules of allocation. - Includes geospatial considerations. - Quick turn results. - Deterministic. 	Army forces only.	Under development.
5. Wargaming <CAA>	<ul style="list-style-type: none"> - Human in the loop board game method. - Focused on Security. - Regional and overall Theater focus. 	<ul style="list-style-type: none"> -Assess force levels required to respond to different levels of violence. -Integration with other DIME aspects of campaign. 	<ul style="list-style-type: none"> -Established and in use. -Expansion of capabilities underway to address issues other than violence levels.

Working Group # 2 – Session 2a Methods, Models,

Simulations



Thursday 5 Feb

Method\Model\ Simulation <Agency>	Description	Areas Addressed	Current Status
6. Task Event Outcome (TEO) IW Analysis <TRAC >	<ul style="list-style-type: none"> - Tactical focus. - Human in the loop Wargame. -Quick turn around. -Ties in to Lines of Effort (LOE) 	<ul style="list-style-type: none"> - Analyze changes in organization equipment and TTP. -Identify required changes in MOE (different metrics). - Capture, analyze and disperse experience/ information gained in the field. -Link actions to LOE to higher PMSEII states. 	Requirements under development.
7. Workshops <CAA>	<ul style="list-style-type: none"> - Provides an established structure to examine non-quantitative issues. -SME-based. -Senior level reviews. 	-Investigate a wide variety of issues related to stability operations.	Available and in use.

Working Group # 2 – Session 2a Methods, Models,

Simulations



Thursday 5 Feb

Method\Model\ Simulation <Agency>	Description	Areas Addressed	Current Status
8. Contingency Operations Tiger Team (COTT) <USACE \ TRAC>	-Provides recommendations relating to USACE and ERDC R&D, analysis and studies for reconstruction, stability, contingency, aid, and relief efforts.	- Understand challenges and build collaborative solutions to complex problems in reconstruction and stability efforts. -Develop, identify, and validate potential R&D solutions to strategic and mission-level stability and reconstruction challenges. -Link capabilities from different sources or programs.	COTT formed, collaborations being established.
9. Agent-based model for cultural geography in SO <COTT/USACE/TRAC>	- Stochastic - Agent Based - Stand alone tool - Tactical focus	- Provide evaluation of impact of SO infrastructure projects on social perceptions.	Under development.

Working Group #2 Agenda - Friday



Friday, 6 February

0800-0845	Review of Products	Mr. Bill Krondak
0845-0930	Additional Challenges/Methods	Mr. Bill Krondak
0930-1030	Attributes of Desired Methods/Tools for challenge areas not addressed	Mr. Bill Krondak

Working Group # 2 – Session 1 Challenge



Areas

Friday, 6 February

Challenge Area	Description	Severity \ Impact	Difficulty with Solutions
1. Data collection and information sharing	<ul style="list-style-type: none">- Needed to Support modeling- No common structure- Need for common nomenclature- Accessibility of data	Without valid data, analysis is subject to major errors in results.	Data is costly. Valid data is even costlier.
2. Need for common nomenclature for SO	-Some terms used by a discipline are unfamiliar to or have different meaning for another discipline.	“Failure to communicate” can result in embarrassment or failure.	Must understand different use of terms by various analytical, military, and social science disciplines.

Working Group # 2 – Session 2a Methods, Models,

Simulations Friday, 6 Feb

Method\Model\ Simulation	Description	Areas addressed	Current Status
1. Use of the Analytic Agenda	Helps forecast demand based on Defense Planning Scenarios and analytical baseline results.	Range of scenarios to include “steady-state” situations/vignettes.	Available for multiple scenarios but IW/SO scenario work is still underway
2. Multi-attribute Decision Analysis	Provides structured process to help prioritize elements when multiple factors must be taken into account.	Supports decision making when data or factors may not be measurable.	Available but requires decision maker, staff, and key SME to participate.
3. Program evaluation and review technique (PERT) or Critical Path Method (CPM)	Provides structured approach to identify sequential and parallel tasks and highlight those that are critical to overall success in either time or value.	Could be used for structuring and prioritizing sequential or parallel tasks within or across sectors.	Available but requires SME on tasks and the “inputs” and “outputs” of tasks to help sequence and prioritize.

Critical insights

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Friday 6 Feb

- **No single method, model or simulation (MMS) will provide complete answer, but many can provide results to help inform decisions in one or more areas.**
- **Several of the MMS can be used immediately:**
 - **IGS, PSOM,**
 - **Wargaming,**
 - **Workshop Methods,**
 - **COTT,**
 - **Analytic Baseline products, and**
 - **MADM, PERT, or CPM.**
- **Many MMT under development have promise.**
- **Identification of metrics is absolutely critical.**
- **Identification and collection of relevant data is difficult but must be done.**

Findings & Suggestions



- Findings:
 - Even though everyone agrees that Stability Operations requires whole of government, non-government, coalition, and host nation/public participation, most of our methods, models, and techniques do not account for all of them
 - It appears that many of the challenge areas are indirect results of an absence of overarching strategies and goals
 - It is hard to understand how some tools, methods, and models work without common terms of reference – the same is true for data
- Suggestions:
 - Develop common terms of reference for understanding how tools, methods, and models work and for describing data
 - Ensure future collaboration efforts continue and expand to include the entire SO community-of-interest

Key Working Group Take-Aways



- Though Stability Operations is only a part of Irregular Warfare, it still presents a large problem space
- Challenge areas presented by different agencies had some common threads:
 - Determination of demand/requirements
 - Prioritization of efforts/risk management
 - Determination/use of metrics
 - Attaining “whole of government” approach
- Many challenge areas are not adequately addressed by current analytical methods, models, and techniques
- Many promising methods, models, and techniques are in development