



INSTITUTE FOR DEFENSE ANALYSES

NSD-4883

IDA Risk Assessment Integrated Risk Assessment and Management  
Model (IRAMM)

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May 2013

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IDA Log No. H 13-000747



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## IDA Risk Assessment IRAMM\*

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\*Integrated Risk Assessment and Management Model  
Work Sponsored Under Contract  
DLA – Strategic Materials  
RAMF-SM Project

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## IRAMM Overview

- IRAMM is a structured elicitation framework within which senior leaders are asked to express their world views on the strategic risks – political, military, and economic – facing the US in a given timeframe (e.g., 10 years). Individual interviews are not for attribution and last approximately 1.5 hours.
- Following the individual interviews, leaders are asked to participate in a group discussion where their views on risk are considered for group discussion and sometimes debate. The group discussion has been viewed as a valuable exercise and often results in participants modifying their views.
- The IRAMM framework and interviews have been used to construct full force alternatives, the merits of which in comparison with one another can be evaluated using the IRAMM framework.

\*Could also be applied in other departments/agencies  
with security missions, e.g., DHS, NSC

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# The IRAMM Framework

## Strategic Risk Assessments in IRAMM

Definitions and strong scales are provided in order to establish a common frame of reference and permit commensurability

**Strategic Risk equals Expected Loss to the Nation:** Adverse consequences to the Nation weighted by the likelihood of adverse events occurring

Respondents provided with calibrated, ratio-level scales with examples of political, military and economic consequences

### Consequences Scales

Political	Military	Economic
<b>Extreme</b>		
<b>High</b>		
<b>Moderate</b>		
<b>Low</b>		

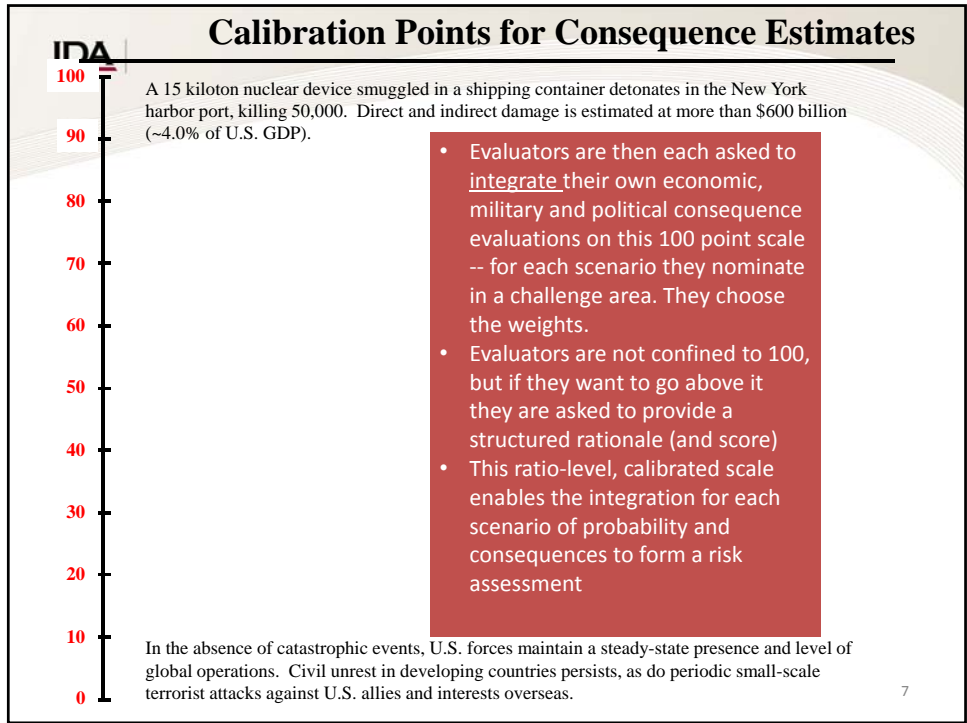
## 2012 "Challenge" Areas\*

Challenge Areas	Definitions
<b>Major Combat</b>	Operations conducted against a state or non-state actor that possesses significant military capability. This area should account for risk related to the use of WMD during the course of major combat. <i>e.g., China, North Korea, Iran, Libya</i>
<b>Irregular Warfare</b>	Stability operations, counterinsurgency, peacekeeping, or counterterrorism operations involving significant participation of U.S. forces in combat or prospective combat. <i>e.g., Iraq, Afghanistan, Bosnia, Somalia</i>
<b>Homeland Defense</b>	Protection of U.S. sovereignty, territory, population, and critical infrastructure against external threats. This area should delineate among risks from WMD, cyber attack, and all other forms of external attack (except those directly related to Major Combat). <i>e.g., 9/11, missile attack, WMD attack, cyber attack, other terrorist attack</i>
<b>Global Peacetime Operations</b>	Operations conducted to influence partners and adversaries. This area should account for risks related to changes in allied or adversary military capabilities, weapons proliferation, or political instability that are contrary to U.S. peacetime military objectives but do not result in U.S. combat operations. <i>e.g., presence, deterrence, building partnership capacity, counter-proliferation, freedom of navigation, humanitarian and disaster response.</i>

\*Based on DoD's 2012 Comprehensive Review Strategy

## IRAMM Strategic Consequences Scale Aid

Economic	Military	Political
<ul style="list-style-type: none"> <li>• 4% or greater cumulative loss in GDP</li> <li>• <b>Extreme</b>, semi-permanent structural and economic costs.</li> <li>• Capital flows massively degraded and/or dollar collapses jeopardizing U.S. economic foundation.</li> <li>• Alliances and economic agreements terminated.</li> </ul>	<ul style="list-style-type: none"> <li>• Loss of more than 10% of overall military force capability; <u>recovery longer than 4 years</u>.</li> <li>• Covering worldwide mission areas adequately is impossible.</li> <li>• Deterrence severely compromised in key areas.</li> <li>• Potential international condemnation due to high non-combatant casualties.</li> <li>• Loss of confidence in military, internally and externally.</li> </ul>	<ul style="list-style-type: none"> <li>• The U.S. seen as unreliable by multiple allies or coalition partners and new regional security orders emerge.</li> <li>• Loss of credibility as guarantor of global security.</li> <li>• Allies and friends create their own nuclear arsenals to guarantee their security</li> <li>• Competitors become increasingly aggressive and adversarial.</li> </ul>
<ul style="list-style-type: none"> <li>• 3% cumulative loss in GDP</li> <li>• <b>Severe</b> economic costs resulting from trade disruptions, operational factors, or property damage.</li> <li>• Capital flows seriously degraded and/or substantial devaluation of dollar.</li> <li>• Global economy stalled.</li> <li>• Recovery eventually.</li> </ul>	<ul style="list-style-type: none"> <li>• Loss of 5-10% of overall military force capability; <u>recovery within 4 yrs</u></li> <li>• Reduced worldwide mission areas commitment.</li> <li>• Deterrence weak in key areas.</li> <li>• Critical U.S. vulnerability revealed to all from military surprise.</li> <li>• International criticism due to high non-combatant casualties.</li> </ul>	<ul style="list-style-type: none"> <li>• U.S. strategic influence severely degraded.</li> <li>• U.S. loses credibility in one or more key regions of the world.</li> <li>• One or more competitors takes advantage of perceived U.S. weakness.</li> <li>• Some coalitions fail; some allies turn away from the U.S.</li> </ul>
<ul style="list-style-type: none"> <li>• 2% cumulative loss in GDP</li> <li>• <b>Serious</b> economic costs due to trade disruptions, operational factors, or property damage.</li> <li>• Capital flows degraded and /or value of dollar weakens.</li> <li>• Economic disruptions possible, but no recession follows.</li> <li>• Reconstruction of key economic capabilities could take months.</li> </ul>	<ul style="list-style-type: none"> <li>• Loss of 1-5% of military force capability; <u>recovery within 18 months</u>.</li> <li>• Worldwide mission areas still covered.</li> <li>• Overall mission success not questioned.</li> <li>• Deterrence weaker, but still strong.</li> <li>• High non-combatant casualties.</li> </ul>	<ul style="list-style-type: none"> <li>• U.S. weakened as major global political broker.</li> <li>• International cooperation with U.S. put at risk.</li> <li>• U.S. credibility weakened with one or more competitors.</li> <li>• U.S. partners doubt U.S. commitment and begin to forge separate security arrangements or seek unilateral measures to guarantee their security.</li> </ul>
<ul style="list-style-type: none"> <li>• 1% cumulative loss in GDP</li> <li>• <b>Some economic costs</b> due to trade disruptions, operational factors, or property damage.</li> <li>• Confidence quickly restored domestically and internationally.</li> </ul>	<ul style="list-style-type: none"> <li>• Loss of <u>less than 1%</u> of military force capability.</li> <li>• Worldwide mission areas covered adequately.</li> <li>• Low or predicted non-combatant casualties.</li> </ul>	<ul style="list-style-type: none"> <li>• Some political opposition to and suspicion of U.S. intentions in previously friendly countries.</li> <li>• Reduced willingness of allies and friends to cooperate with U.S. on other international security goals.</li> </ul>
<ul style="list-style-type: none"> <li>• Negligible effect on GDP</li> </ul>	<ul style="list-style-type: none"> <li>• No major loss of military force capability overall.</li> <li>• Worldwide mission areas covered adequately.</li> <li>• Low or predicted non-combatant casualties.</li> </ul>	<ul style="list-style-type: none"> <li>• Some minor political opposition to and suspicion of U.S. intentions in previously friendly countries.</li> </ul>

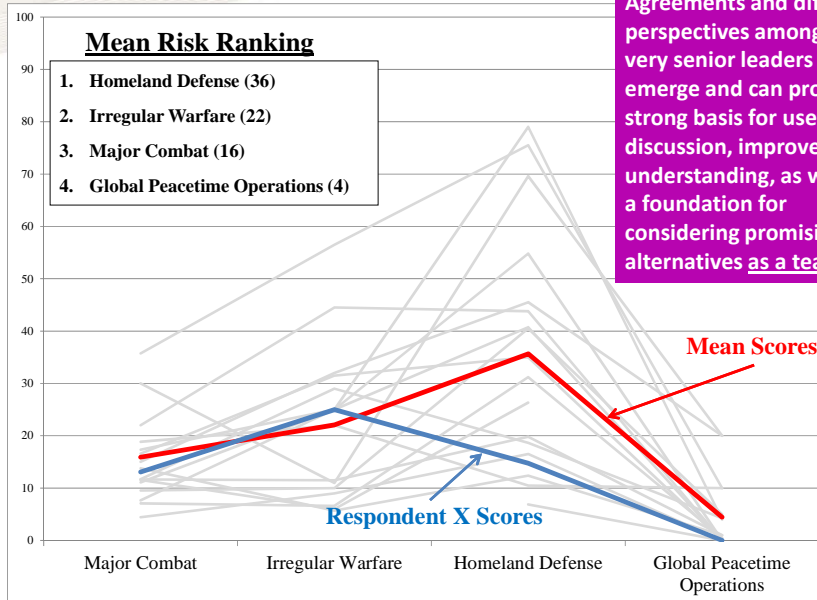


## IDA | IRAMM Results and Group Discussion

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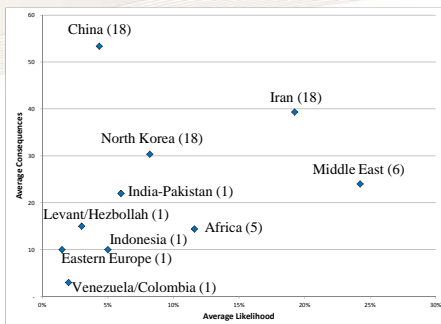


# Risk Profiles ( Summer 2012)



Agreements and differing perspectives among even very senior leaders emerge and can provide a strong basis for useful discussion, improved understanding, as well as a foundation for considering promising alternatives as a team

## Example Challenge Area Results: Drivers of Risk in Major Combat (2012)



Numbers in parentheses indicate how many respondents estimated risk for this type of scenario.

	Average Risk (Weighted by Number of Responses)	Likelihood Range	Consequence Range
Iran	6.3	6-60%	20-70
North Korea	2.4	0-18%	5-70
China	2.1	0-11%	10-100
Middle East	1.6	3-50%	8-50
Africa	0.3	2-24%	2-40
India-Pakistan	0.1	6%	22
Indonesia	0.0	5%	10
Levant/Hezbollah	0.0	3%	15
Eastern Europe	0.0	2%	10
Venezuela-Colombia	0.0	2%	3

### Key Majority Views

- 67% believe Iran poses the greatest risk of any potential major combat operations.
- 72% believe the chances of going to war with Iran are 15% or higher.
- 72% believe the chances of going to war with China are 5% or less.

### Key Points of Disagreement

- There is a wide range of views on the consequences of major combat operations
- Opinion was divided on whether China would be the most consequential major combat operation (50%), or whether war with Iran or Korea would be as or more consequential than war with China (50%)

## Sample Alternative Viewpoints Homeland WMD Attack (2012)

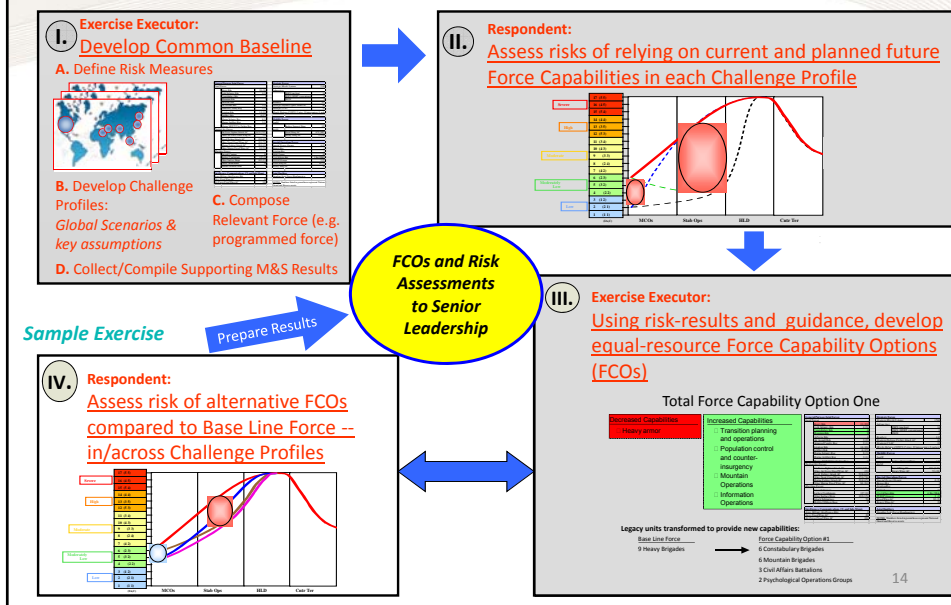
	Greater Risk Viewpoint	Lesser Risk Viewpoint
1	There are a lot of WMD materials out there and plenty of will and intent to use them against us. Chemical is the easiest to acquire and employ by far. The psychological effects are very important, it's not just the damage that's caused. Look at what happened to the economy after 9/11. And with WMD, an attack would leave a "dead zone" that would suppress economic activity for a very long time. In central places like Manhattan or NY or LA ports or Washington, that would have serious effects.	Though people think of WMD as being the greatest risk there is, it's not necessarily true. For example, a sarin gas attack in the subway may not be as consequential as multiple suicide bombers in malls in multiple locations, either in terms of direct damage or the psychological effect on the economy. And the gas attack is less likely.
2	Biological attack is much more likely than a nuclear attack, though it will be limited and contained. The most severe consequences from even a contained bio attack will be the shock: fear-based effects on the economy could be very bad.	An engineered biological agent could cause mass casualties, but, ultimately, it's of lower consequence because it gets dealt with in a relatively short amount of time and within a contained area.
3	Nuclear and radiological attack both have 100-point consequences. Even a radiological bomb, if it went off in lower Manhattan, would take 24,000 years to clean up.	Biological agents are very hard to weaponize and, if that did occur, it would be on a small scale. Nuclear attack would require a lot of things to have to come together; it would be least probable of all the WMD.

## Development and Risk Assessments of Full Force Alternatives

# Applying IRAMM

- After baseline assessments and group discussions...
- Develop and then evaluate promising alternative programs built from “puts” and “takes” elicited from evaluators as well as those identified through any available detailed studies in the department
- Use risk and cost measures to structure disciplined comparison of major alternatives for the overall program
- IRAMM has been tested for such full application and is ready for tailored applications in major departmental reviews

## A Four Step IRAMM Process



## A Few Prior Respondents and Their Views on IRAMM

## IRAMM -- Select Evaluators (‘05 and ‘12) – 90 Minute Sessions

- General Doug Brown
- Dr. Stephen Cambone
- General James Cartwright
- General Bantz Craddock
- General Michael Hagee
- General Timothy Keating
- Mr. Kenneth Krieg
- General Peter Pace
- General Peter Schoomaker
- General Norton Schwartz
- 17 others

### Select 2005 Interviewees

- Commander, U.S. Special Operations Command
- Undersecretary of Defense, Intelligence
- Commander, U.S. Strategic Command
- Commander, U.S. Southern Command
- Commandant, U.S. Marine Corps
- Commander, U.S. Northern Command
- Undersecretary of Defense, Acquisition, Technology, and Logistics
- Vice Chairman, Joint Chiefs of Staff
- Chief of Staff, U.S. Army
- Commander, U.S. Transportation Command

- Mr. Frank Carlucci
- General George Casey (ret)
- General Kevin Chilton (ret)
- Admiral Vernon Clark (ret)
- Mr. Alan Estevez
- General Alfred Grey (ret)
- General Michael Hayden (ret)
- General H.T. Johnson (ret)
- General Larry Welch (ret)
- Dr. John P. White
- 8 Others

### Select 2012 Interviewees

- Former Secretary of Defense
- Former Chief of Staff, U.S. Army
- Former Commander, U.S. Strategic Command
- Former Chief of Naval Operations
- Assistant Secretary of Defense, Logistics and Materiel Readiness
- Former Commandant, U.S. Marine Corps
- Former Director, Central Intelligence Agency
- Former Commander, U.S. Transportation Command
- Former Chief of Staff, U.S. Air Force
- Former Deputy Secretary of Defense

## Recommendations from Some DoD Senior Leaders after Participating in 2005 IRAMM Pilot Tests

### Chairman of the Joint Chiefs of Staff, Gen Pace

- Brief methodology and results regularly to SecDef
- Present results to senior decision groups

### Director, OSD Program Analysis and Evaluation, Mr. Berkson

- Convene forum for senior respondents to discuss, resolve, and/or elevate strong differences of opinion identified by the assessment
- Develop a roadmap for using the results in PPBE decision fora

### Director, JS J8, Force Structure, Resources and Assessment, VADM Chanik

- IRAMM would be a perfect focus for a group session; would need at least two hours
  - A strategic risk assessment like this should be conducted on a biennial basis so as to help the Department measure change and develop a database of major decisions and their impact on risk

### Undersecretary of Defense, AT&L, Mr. Krieg

- Use framework to improve DoD-Congressional interactions on strategy and resource trade-off decisions
- Extend to interagency venues
- Build risk assessment framework into new GO/FO and SES training

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## IRAMM- Senior Leadership Risk Assessments

- Provide a **structured framework** to help senior leadership discussions on strategy, force planning, and policy choices
- Provide a **common risk framework** for senior leaders across the Department
- Frame key **assumptions, agreements, disagreements** and uncertainties among senior leaders
- Enable **holistic evaluation of full force alternatives** and large capability trade-offs from a strategic risk perspective within budget parameters
- Provide **quantitative and qualitative** risk assessment results with an **"audit trail" of supporting rationale**

**Strategic Risk equals Expected Loss to the Nation:  
Adverse consequences to the Nation weighted by the  
likelihood of adverse events occurring**

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## Back-up

## Detail on IRAMM Objectives

- Involve the organization's leadership *directly* in the strategic risk assessments and in the alignment of strategic objectives with resources; align ends-ways-means using risk and costs as metrics/discipline
- Build credible strategic risk assessments and defense program through individual and group effort
  - Initial (baseline) assessments in roughly 90 minute, not-for-attribution interviews with senior evaluators/leaders
  - Group discussion of individuals' results
  - Reevaluations
  - Develop promising alternative forces/programs in sessions with evaluators and other SMEs as appropriate
  - Employ group assessments to evaluate promising program alternatives
- Capture agreements and differences and use follow-on group discussion to build consensus, to probe differing perspectives in same language, to consider major trades, and for efficient leadership team building around major objectives
  - Develop and assess alternatives from a risk mitigation/cost perspective
  - Draw upon best available objective and detailed research evidence to inform senior leaders as they evaluate baseline and alternatives
- Provide a way for senior leadership to issue guidance on the development of, and make choices among, alternative force structures/capabilities (options) to best mitigate risk within a resource constraint
- Improve the chances that the department can get the biggest bang/payoff for the buck in its overall program
- Provide senior leaders with a disciplined process that is resource-informed, open to consideration of many plausible scenarios, and framed in a transparent, common lexicon with scales and qualitative components that are strong enough to permit valid comparison of alternatives across major mission/capability areas; conduct IRAMM as close-hold as senior leaders deem necessary.

## Strategy & Risk Program Principles

- **First principle:** include as key components in a risk assessment
  - Probability of adverse event(s) occurring
  - Consequences -- if the event(s) should occur (of relying on a particular Force Capability Option, Course of Action, Mitigation Plan, Portfolio of investments)
- **Second principle:** develop and use strong scales, at the proper levels, as recommended in recent academic literature
  - Otherwise, it is very hard to make valid (commensurate) comparisons, especially for balancing, to facilitate good trades and for optimization across missions/capabilities to better align ends-ways-means in a resource-informed strategic development context
- **A third principle:** develop procedures that involve the decision-makers directly (at whatever level):
  - Make procedures transparent and in same language
  - Engage decision makers as directly as possible
  - Elicit both quantitative assessments and supporting rationales
  - Build candid group discussion to promote understanding, convergence, assessment of mitigation alternatives, and stronger leadership teams

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## The Strategy and Risk Program

**Our Mission Objective:** Promote the use of strong, relevant risk metrics, scales and concepts to help decision-makers improve the allocation of scarce resources under their control in order to better meet key (strategic) objectives of their organizations to enhance national security

**Get biggest national security payoff from whatever resources are available**

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**REPORT DOCUMENTATION PAGE**

*Form Approved  
OMB No. 0704-0188*

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<b>1. REPORT DATE (DD-MM-YY)</b> May 2013		<b>2. REPORT TYPE</b> Final		<b>3. DATES COVERED (From - To)</b>	
<b>4. TITLE AND SUBTITLE</b>  IDA Risk Assessment Integrated Risk Assessment and Management Model (IRAMM)				<b>5a. CONTRACT NO.</b>	
				<b>5b. GRANT NO.</b>	
				<b>5c. PROGRAM ELEMENT NO(S).</b>	
<b>6. AUTHOR(S)</b>  James S. Thomason, J. Darrell Morgeson, Michael F. Fitzsimmons				<b>5d. PROJECT NO.</b>	
				<b>5e. TASK NO.</b> DE-6-3247	
				<b>5f. WORK UNIT NO.</b>	
<b>7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)</b> Institute for Defense Analyses 4850 Mark Center Drive Alexandria, VA 22311-1882				<b>8. PERFORMING ORGANIZATION REPORT NO.</b> IDA NS Document D-4883	
<b>9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)</b> Defense Logistics Agency - Strategic Materials 8725 John J. Kingman Road Fort Belvoir, VA 22062				<b>10. SPONSOR'S / MONITOR'S ACRONYM(S)</b> CAPE	
				<b>11. SPONSOR'S / MONITOR'S REPORT NO(S).</b>	
<b>12. DISTRIBUTION / AVAILABILITY STATEMENT</b> Approved for public release; distribution is limited.					
<b>13. SUPPLEMENTARY NOTES</b>					
<b>14. ABSTRACT</b>  Briefing provides synopsis of strategic risk methods and assessments for 2013 NDS Requirements Report to Congress.					
<b>15. SUBJECT TERMS</b>  strategic risk; future risk; force-planning; aligning ends-ways-means					
<b>16. SECURITY CLASSIFICATION OF:</b>			<b>17. LIMITATION OF ABSTRACT</b>  UU	<b>18. NO. OF PAGES</b>  16	<b>19a. NAME OF RESPONSIBLE PERSON</b> James S. Thomason
<b>a. REPORT</b>  U	<b>b. ABSTRACT</b>  U	<b>c. THIS PAGE</b>  U			<b>19b. TELEPHONE NUMBER (Include Area Code)</b> (703) 845-2480





