



75th MORSS CD Cover Page

UNCLASSIFIED DISCLOSURE FORM CD Presentation

712CD

For office use only 41205

12-14 June 2007, at US Naval Academy, Annapolis, MD

Please complete this form 712CD as your cover page to your electronic briefing submission to the MORSS CD. Do not fax to the MORS office.

Author Request (To be completed by applicant) - The following author(s) request authority to disclose the following presentation in the MORSS Final Report, for inclusion on the MORSS CD and/or posting on the MORS web site.

Name of Principal Author and all other author(s):

MAJ Melanie Carlson, USA

Principal Author's Organization and address:

Department of Systems Engineering
Mahan Hall
USMA
West Point, NY 10996

Phone: _845-938-5539

Fax: _845-938-5919_

Email: _melanie.carlson
@usma.edu_

Original title on 712 A/B: _Assessing Security Cooperation Programs

Revised title: _____

Presented in (input and Bold one): (**WG_28**, CG____, Special Session ____, Poster, Demo, or Tutorial):

**This presentation is believed to be:
UNCLASSIFIED AND APPROVED FOR PUBLIC RELEASE**

Report Documentation Page

Form Approved
OMB No. 0704-0188

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE 01 JUN 2007	2. REPORT TYPE N/A	3. DATES COVERED -	
4. TITLE AND SUBTITLE Assessing Security Cooperation Programs		5a. CONTRACT NUMBER	
		5b. GRANT NUMBER	
		5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)		5d. PROJECT NUMBER	
		5e. TASK NUMBER	
		5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Department of Systems Engineering Mahan Hall USMA West Point, NY 10996		8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)		10. SPONSOR/MONITOR'S ACRONYM(S)	
		11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release, distribution unlimited			
13. SUPPLEMENTARY NOTES See also ADM202526. Military Operations Research Society Symposium (75th) Held in Annapolis, Maryland on June 12-14, 2007, The original document contains color images.			
14. ABSTRACT			
15. SUBJECT TERMS			
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified	UU
			18. NUMBER OF PAGES 20
			19a. NAME OF RESPONSIBLE PERSON



Assessing Security Cooperation Programs

MAJ Melanie Carlson, USMA
Melanie.Carlson@usma.edu

Security Cooperation Assessment



Agenda



- Problem Definition
- Objectives
- Approach
- Notional Example
- Future Work



Problem Definition

- Global Combatant Commands (GCCs) conduct security cooperation activities with partner nations across their sphere of influence in support of nation security objectives
- Defense Security Cooperation Agency (DSCA) is charged with the development, implementation, assessment and coordination of security cooperation plans and programs for DoD
- Assessment is challenged by incompatible methods and metrics across GCCs, incomparable evaluations, false interactions, lack of meaningful or objectives-based analysis

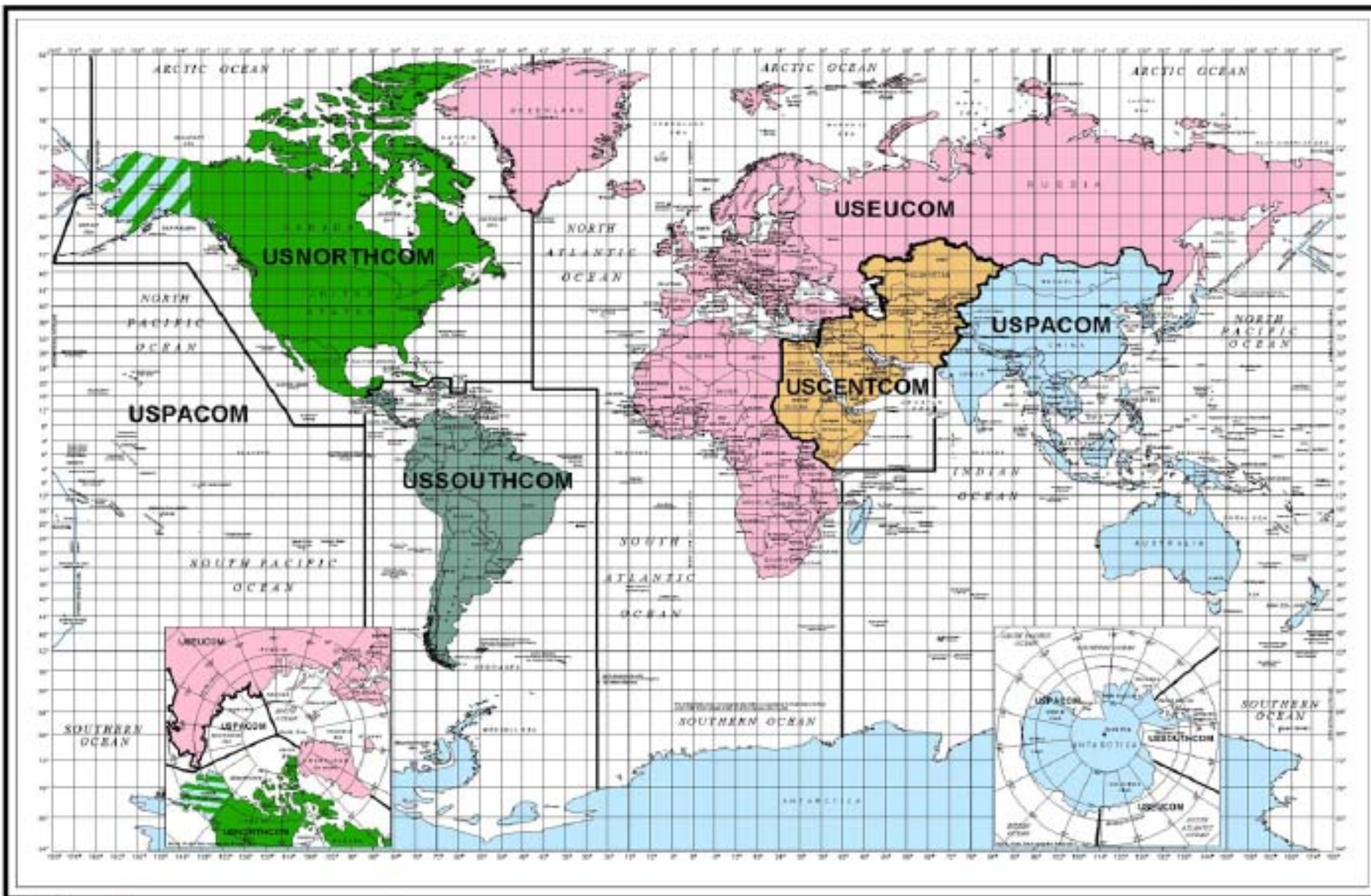


Objective

- Develop a common, repeatable, logical and simple quantitative assessment process of the return on investment of security cooperation efforts across Global Combatant Commands (GCCs)
- Assess how well diverse security cooperation activities are supporting program objectives
- Provide decision makers with information on the effectiveness of security cooperation efforts

THE WORLD WITH COMMANDERS' AREAS OF RESPONSIBILITY

2010 01 01
Control Code 5010-104
10 APR 2010



SERIES 1107
EDITION 5-NIMA



7-104 and Public Law 106-398
50 USC
50 USC 5010-104 (2010-01-01)
Map Edition 0010 001 001 001

States of Alaska and Hawaii are shown in green.
States of Responsibility: Forces based in Alaska
are assigned to USNORTHCOM.

Maritime boundaries are shown in light blue.
Some boundaries are not shown.

1:135,000,000
NO REPRESENTATION OF SCALE

This map is a reproduction of the
original map. It is not a
reproduction of the original map.

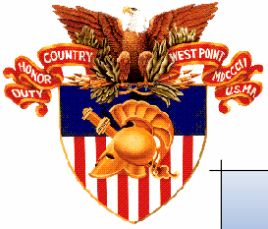
© 2010 USARPACOM. All rights reserved.
This map is a reproduction of the original map.
It is not a reproduction of the original map.

© 2010 USARPACOM. All rights reserved.
This map is a reproduction of the original map.
It is not a reproduction of the original map.



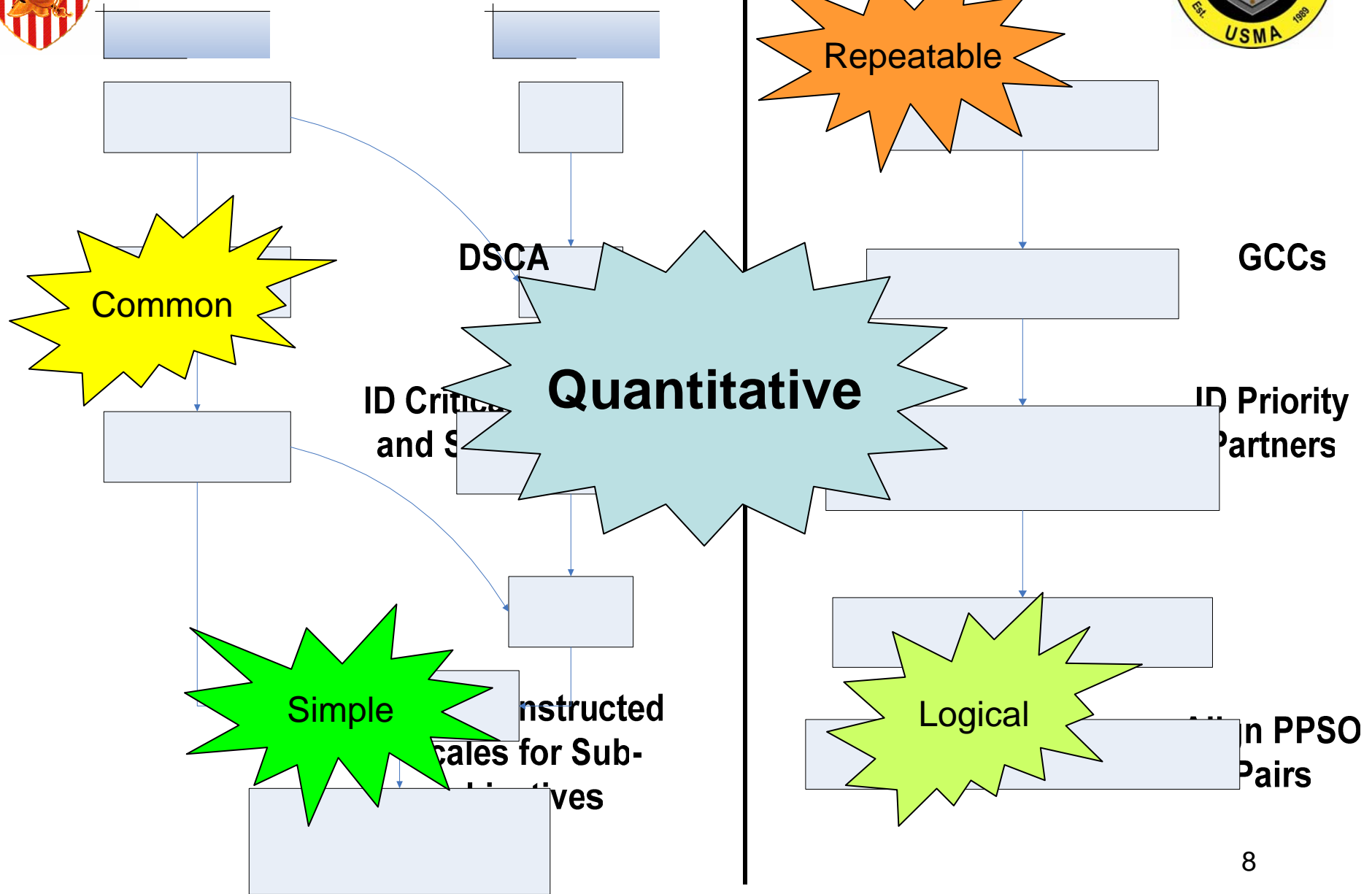
Approach

- Develop a methodology that:
 - Measures **progress** resulting from security cooperation activities vs. goals (or initial assessments)
 - Uses weights that reflect **priorities** and **expectations** of GCCs with respect to partners and objectives
 - Focuses internally, at the GCC level, on progress by country and objective
- Recognize that:
 - Priorities, partners and objectives may change year to year
 - Some outcomes are not directly linked to or caused by security cooperation programs



PRE

POST





Notional Example

Pre-FY Tasks: DSCA



- ID Critical Objectives and Sub-objectives for all GCCs
 - A5, A6, D1, D2, D3 (2 sub-objectives each)
 - Example Objective:
 - Reform the defense establishment of select countries
 - Example Sub-objective:
 - Establish a professional NCO corps



Notional Example

Constructed Scales



- Build **Constructed Scales** for each sub-objective
 - Based on SME and GCC input
 - General enough to apply to all partners across GCCs
 - Simple, Logical Scales
 - A = worst case scenario (no professional NCO corps)
 - E = ideal (well developed, seasoned NCO corps in place)
- Interim stages define a logical progression in achievement of the goal/ideal



Notional Example

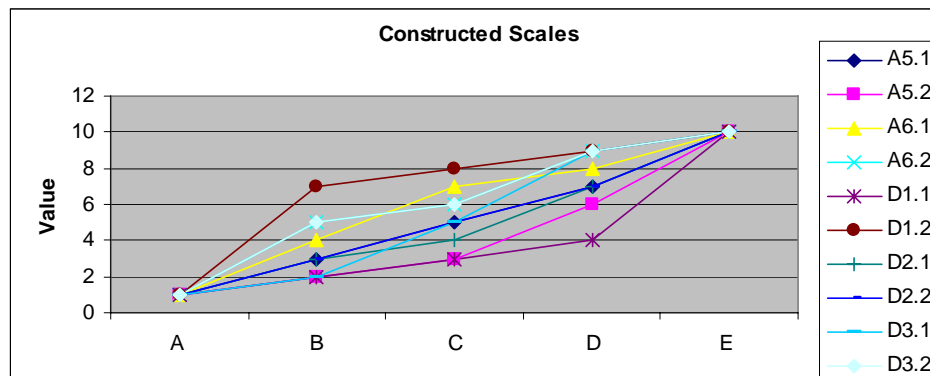
Value Functions



- Create **Value Functions** for each sub-objective
 - Based on SME and GCC input

CONSOLIDATED VALUE FUNCTIONS FOR ALL SUB-OBJECTIVES (NOTIONAL)

Score	Sub-Objective									
	A5.1	A5.2	A6.1	A6.2	D1.1	D1.2	D2.1	D2.2	D3.1	D3.2
A	1	1	1	1	1	1	1	1	1	1
B	3	2	4	5	2	7	3	3	2	5
C	5	3	7	6	3	8	4	5	5	6
D	7	6	8	9	4	9	7	7	9	9
E	10	10	10	10	10	10	10	10	10	10



Notes:
 Must increase - cannot stay the same
 Must start with 1 and end with 10
 A = worst case
 E = ideal



Notional Example



Pre-FY Tasks: GCCs

- Identify Priority Partners (PPs)
- Align Priority Partners and Sub-objectives
 - PPSO pairs

GCC X

10 Priority Partners

Partner	Objectives									
	A5		A6		D1		D2		D3	
	A5.1	A5.2	A6.1	A6.2	D1.1	D1.2	D2.1	D2.2	D3.1	D3.2
1	X	X	X	X			X	X	X	
2	X	X	X		X	X		X		
3	X	X	X		X	X	X	X		
4					X	X		X	X	X
5					X	X				
6	X		X	X			X			X
7					X	X				
8	X		X	X	X	X			X	X
9	X		X				X		X	X
10				X			X	X	X	X



Notional Example

Weightings by GCCs

- Use Swing Weight Matrix to Determine Objective and Sub-objective Weights

OBJECTIVE A5 (Notional)

Linked to National Security Objectives

IMPORTANCE (Reflects Priorities in Country and Sub-Objective)



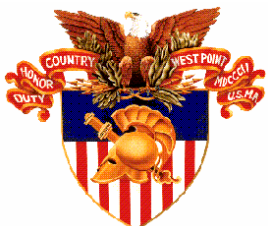
POTENTIAL for Improvement Over Time (Reflects Goals)

Great

Some

Minimal

	Critical	Significant	Considerable
3-A5.1		1-A5.2	9-A5.1
3-A5.2			
	100	75	35
1-A5.1		6-A5.1	2-A5.1
		8-A5.1	
	90	50	20
			2-A5.2
	80	40	1



Notional Example

Weighting



- Use Swing Weight Matrix to Determine Objective and Sub-objective Weights
 - Reflect priorities and potential

OBJECTIVE A5

Partner	PPSO Roll Up						Tot Value
	A5.1	Value	Weight	A5.2	Value	Weight	
1	X	90	0.173	X	75	0.144	521
2	X	20	0.038	X	1	0.002	
3	X	100	0.192	X	100	0.192	
4			0.000			0.000	
5			0.000			0.000	
6	X	50	0.096			0.000	
7			0.000			0.000	
8	X	50	0.096			0.000	
9	X	35	0.067			0.000	
10			0.000			0.000	
		345		176			

POTENTIAL for Improvement Over Time (Reflects Goals) ↑

Great
Some
Minimal

← IMPORTANCE (Reflects Priorities in Country and Sub-Objective)

	Critical	Significant	Considerable
3-A5.1		1-A5.2	9-A5.1
3-A5.2			
	100	75	35
1-A5.1		6-A5.1	2-A5.1
		8-A5.1	
	90	50	20
			2-A5.2
	80	40	1



Notional Example

Pre Tasks: GCCs



- Roll up Objective and Sub-objective Weights Across Priority Partners

Partner	Objectives										PP Total	% Total
	A5		A6		D1		D2		D3			
	A5.1	A5.2	A6.1	A6.2	D1.1	D1.2	D2.1	D2.2	D3.1	D3.2		
1	0.173	0.144	0.120	0.152			0.159	0.097	0.047		0.892	17.8%
2	0.038	0.002	0.024		0.066	0.066		0.177			0.373	7.5%
3	0.192	0.192	0.088		0.112	0.112	0.159	0.106			0.960	19.2%
4					0.039	0.039		0.027	0.002	0.113	0.220	4.4%
5					0.132	0.132					0.263	5.3%
6	0.096		0.160	0.104			0.088			0.113	0.561	11.2%
7					0.059	0.059					0.118	2.4%
8	0.096		0.002	0.160	0.092	0.092			0.094	0.094	0.630	12.6%
9	0.067		0.040				0.002		0.151	0.169	0.429	8.6%
10				0.152			0.168	0.018	0.169	0.047	0.554	11.1%
	1.000		1.000		1.000		1.000		1.000		5.000	

Indicator of Partner Emphasis

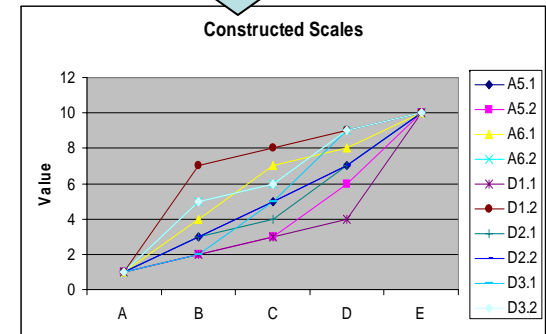
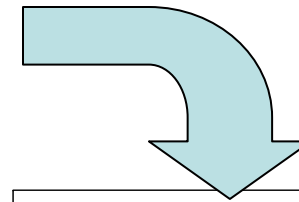


Notional Example

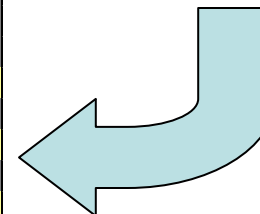
Goals / Assessments by GCCs

- Assess each PPSO pair using Constructed Scales and convert to Value Scores using Value Functions

Pre-FY Assessment - Scale Score										
Partner	A5		A6		D1		D2		D3	
	A5.1	A5.2	A6.1	A6.2	D1.1	D1.2	D2.1	D2.2	D3.1	D3.2
1	B	C	A	A			B	B	E	
2	B	D	B		C	B		C		
3	C	B	B		C	C	C	C		
4					D	C		D	A	A
5					A	C				
6	A		D	B			A			C
7					A	A				
8	D		C	D	B	A			C	C
9	D		C				C		A	B
10				C			C	E	A	A



Pre-FY Assessment - Value Mapping										
Partner	A5		A6		D1		D2		D3	
	A5.1	A5.2	A6.1	A6.2	D1.1	D1.2	D2.1	D2.2	D3.1	D3.2
1	3	3	1	1			3	3	10	
2	3	6	4		3	7		5		
3	5	2	4		3	8	4	5		
4					4	8		7	1	1
5					1	8				
6	1		8	5			1			6
7					1	1				
8	7		7	9	2	1			5	6
9	7		7				4		1	5
10				6			4	10	1	1





Notional Example

Initial Weighted Value Scores



- Apply weights to Value Scores and roll up weighted values by Sub-objective, Objective, and Priority Partner

PRE-FY WEIGHTED VALUE													
Partner	A5		A6		D1		D2		D3		Total - PP	Max	% Max
	A5.1	A5.2	A6.1	A6.2	D1.1	D1.2	D2.1	D2.2	D3.1	D3.2			
1	0.518	0.432	0.120	0.152			0.477	0.292	0.471		2.461	8.915	28%
2	0.115	0.012	0.096		0.197	0.461		0.883			1.764	3.725	47%
3	0.960	0.384	0.351		0.336	0.895	0.636	0.530			4.091	9.604	43%
4					0.158	0.316		0.186	0.002	0.113	0.774	2.203	35%
5					0.132	1.053					1.184	2.632	45%
6	0.096		1.278	0.519			0.088			0.678	2.659	5.609	47%
7					0.059	0.059					0.118	1.184	10%
8	0.672		0.011	1.438	0.184	0.092			0.471	0.565	3.433	6.298	55%
9	0.470		0.280				0.007		0.151	0.847	1.755	4.290	41%
10			0.911				0.671	0.177	0.169	0.047	1.975	5.538	36%
Total - SO	2.831	0.827	2.136	3.019	1.066	2.875	1.880	2.067	1.264	2.250			
Total - Obj	3.658		5.155		3.941		3.947		3.514				
% Max	37%		52%		39%		39%		35%				

Goals



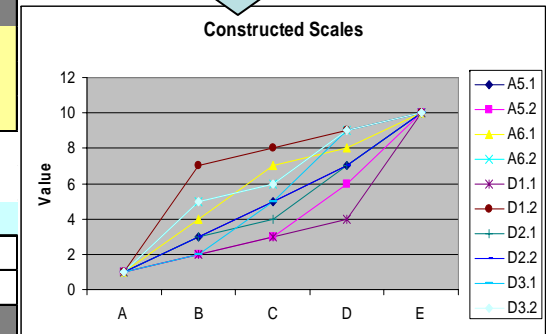
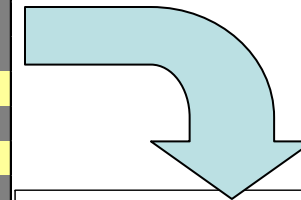
Notional Example



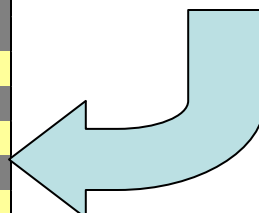
Post-FY Tasks: GCCs

- Assess each PPSO pair using Constructed Scales and convert to Value Scores using Value Functions

Post-FY Assessment - Scale Score										
Partner	A5		A6		D1		D2		D3	
	A5.1	A5.2	A6.1	A6.2	D1.1	D1.2	D2.1	D2.2	D3.1	D3.2
1	C	B	A	A			B	B	E	
2	B	E	C		C	B		C		
3	D	C	B		D	C	C	C		
4					D	D		D	B	A
5					B	C				
6	B		E	C			B			C
7					C	B				
8	D		D	D	B	A			B	B
9	D		C				D		B	B
10				C			C	D	A	B



Post-FY Assessment - Value Mapping										
Partner	A5		A6		D1		D2		D3	
	A5.1	A5.2	A6.1	A6.2	D1.1	D1.2	D2.1	D2.2	D3.1	D3.2
1	5	2	1	1			3	3	10	
2	3	10	7		3	7		5		
3	7	3	4		4	8	4	5		
4					4	9		7	2	1
5					2	8				
6	3		10	6			3			6
7					3	7				
8	7		8	9	2	1			2	5
9	7		7				7		2	5
10				6			4	7	1	5





Notional Example Analysis of Results



- Roll up weighted values by Sub-objective, Objective, and Priority Partner
- **Compare** Pre-FY and Post-FY Total Weighted Values for Objectives and Priority Partners
 - Identify areas of significant **improvement or decline** to address in detail

DRIVE DISCUSSION

POST-FY WEIGHTED VALUE														
Partner	A5		A6		D1		D2		D3		Total - PP	Max	% Max	Change
	A5.1	A5.2	A6.1	A6.2	D1.1	D1.2	D2.1	D2.2	D3.1	D3.2				
1	0.864	0.288	0.120	0.152			0.477	0.292	0.471		2.663	8.915	30%	8.2%
2	0.115	0.019	0.168		0.197	0.461		0.883			1.843	3.725	49%	4.5%
3	1.344	0.576	0.351		0.447	0.895	0.636	0.530			4.779	9.604	50%	16.8%
4					0.158	0.355		0.186	0.004	0.113	0.815	2.203	37%	5.3%
5					0.263	1.053					1.316	2.632	50%	11.1%
6	0.288		1.597	0.623			0.265			0.678	3.451	5.609	62%	29.8%
7					0.178	0.414					0.592	1.184	50%	400.0%
8	0.672		0.013	1.438	0.184	0.092			0.188	0.471	3.058	6.298	49%	-10.9%
9	0.470		0.280				0.012		0.301	0.847	1.911	4.290	45%	8.9%
10				0.911			0.671	0.124	0.169	0.235	2.110	5.538	38%	6.9%
Total - SO	3.752	0.883	2.529	3.123	1.428	3.270	2.062	2.014	1.134	2.345				
Total - Obj	4.635		5.652		4.697		4.076		3.478					
% Max	46%		57%		47%		41%		35%					
Change	26.7%		9.6%		19.2%		3.3%		-1.0%					



Future Work

- Assessing Value vs. Resources
 - Compare value changes to resource allocation
- Developing Compelling Presentation of Information / Visualizations
- Developing an Adaptable, User Friendly, Excel-based System to Facilitate the Process