

Defense Contract Management Command



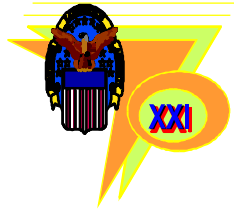
Software Performance Evaluation Maturity Model (SPE-MM)

PSM Users' Group Conference

20 July 1999

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***Defense Contract Management Command
Software Center***



Software Performance Evaluation Maturity Model



Agenda

- ◆ Introduction
- ◆ Development
- ◆ Goals
- ◆ Structure
- ◆ Pilot Test Approach & Issues
- ◆ Reporting Techniques
- ◆ Next Step
- ◆ Questions
- ◆ Contact



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Introduction

- ◆ Presentation at last years PSM Users' Group Conference focused on training DCMC software workforce on measurement need and application
- ◆ Need to determine effectiveness of training
- ◆ Has the software measurement effort improved
- ◆ Need to develop a consistent method of evaluating
- ◆ Method needed to include DCMC policy on surveillance of software development which includes software measurement plus other best practices



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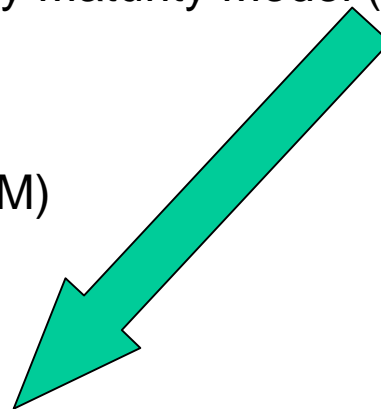
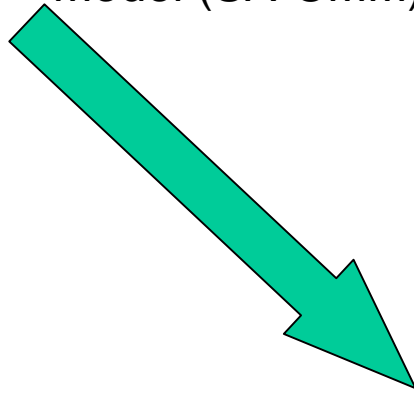


Development of the DCMC model used portions of the following:

Software Acquisition Capability
Model (SA-CMM)

Federal Aviation Administration Integrated
Capability Maturity Model (FAA-iCMM)

Software Capability
Maturity Model (SW-CMM)



DCMC SPE-MM

SPE-MM derived from SA-CMM features



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SPE-MM Development

- ◆ Concept document developed - approved Aug '98
- ◆ Project Plan developed
 - ☑ Three phased approach
 - ☑ What were going to do
 - ☑ When were going to do it
 - ☑ How much will it cost
 - ☑ What is the benefit to DCMC
- ◆ Project Team established
 - ☑ Various skill levels
- ◆ Model and profile questionnaire baseline Jan '99



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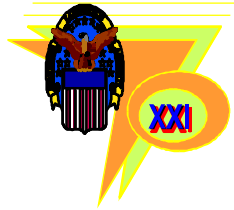


Goals

Determine the “health” of DCMC Contract Administration Office (CAO) activities in the area of software Contract Administration Support (CAS) performance.

- ◆ Allow a CAO Commander to identify existing level of maturity and goals to improve upon software CAS activities
- ◆ Identify needs to adjust Command training, policy, and guidance
- ◆ Focus DCMC Software Center assistance

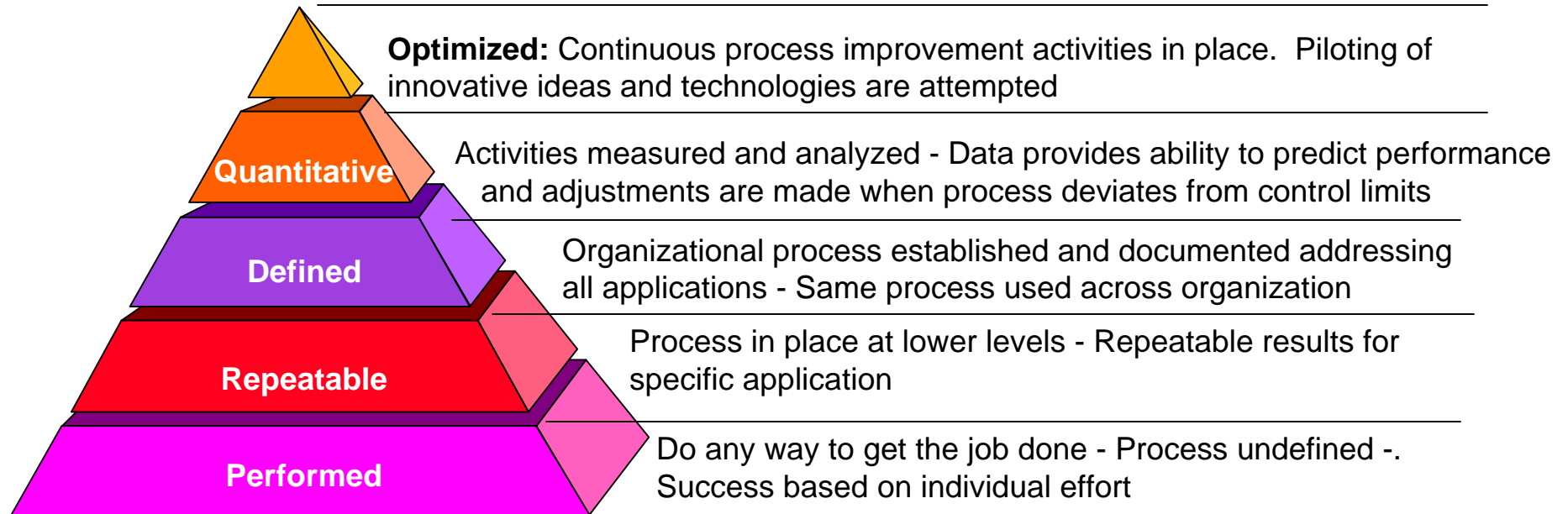




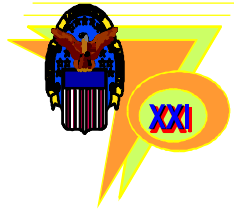
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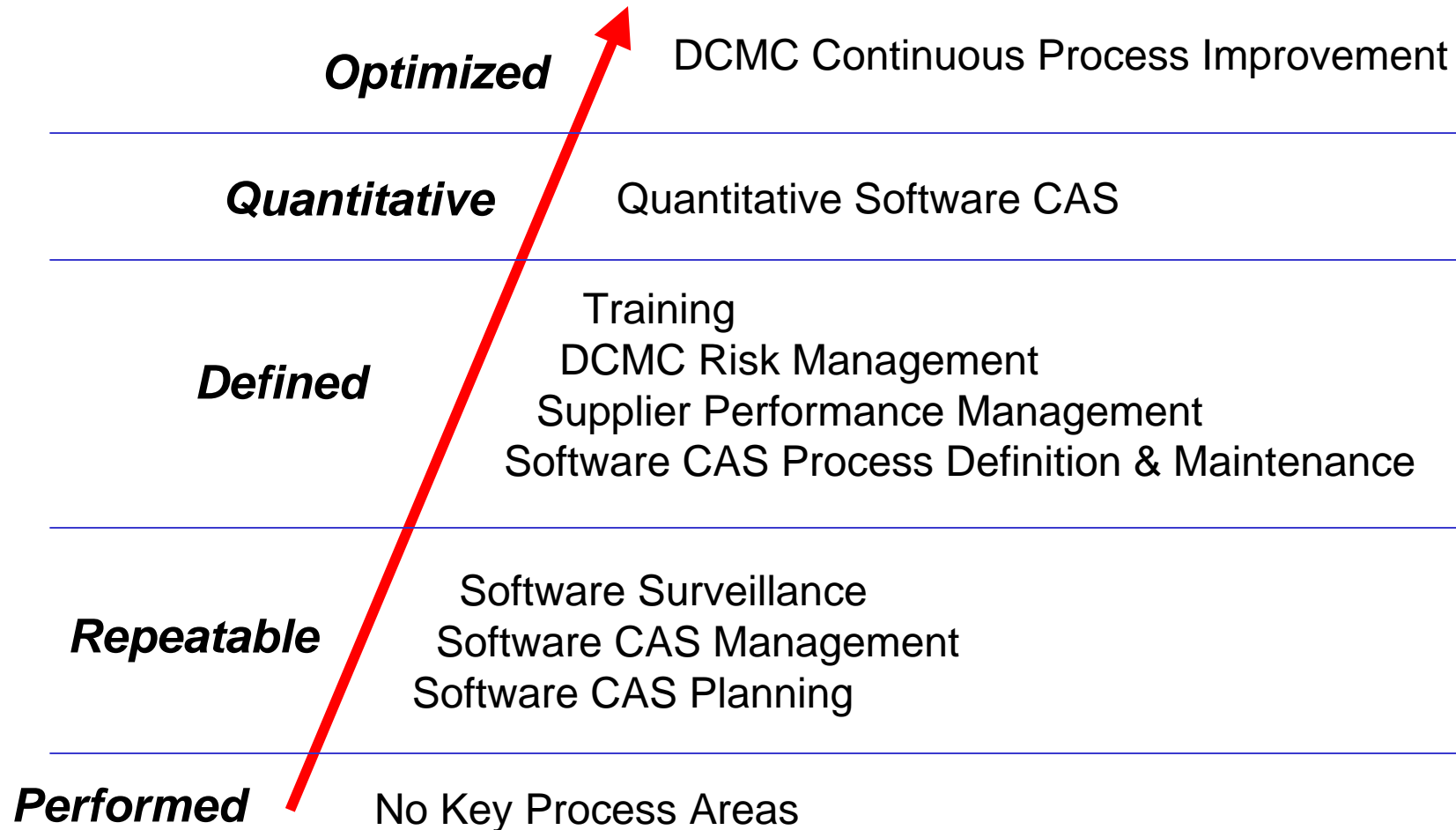
SPE-MM Structure



Software Engineering Institute's Software Acquisition Capability
Maturity Model tailored to DCMC Mission



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Pilot Test Approach

- ◆ Standardized method and data collection tools
- ◆ Two trained/experienced teams (5 per team)
- ◆ 6 locations selected by Districts (East & West)
- ◆ Questionnaires provided in advance
- ◆ Additional feedback from pilot sites on model improvement
- ◆ Preliminary feedback on evaluation from pilot sites was positive
- ◆ Provided roll up analysis to pilot sites



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Pilot Test Issues

- ◆ SPE objective was not clearly understood
- ◆ Perception of added requirements imposed
 - ☑ Fear that CAO Commander will demand ultimate level (Optimized)
 - ☑ Fear of a Command-wide performance level
 - ☑ More DCMC Policy requirements
 - ☑ Fear of Competition
- ◆ Perception of another audit/assessment

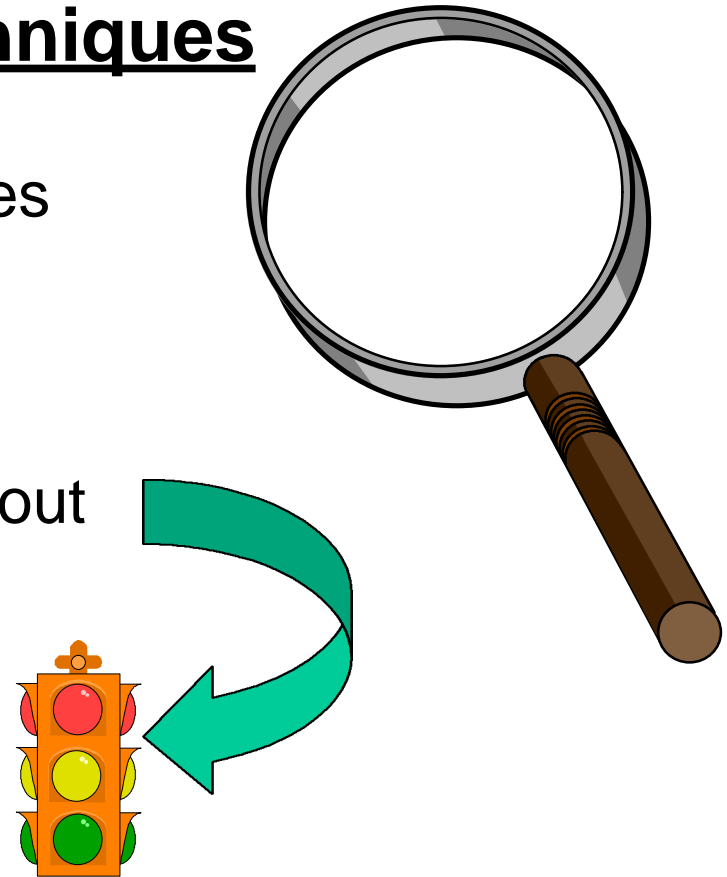


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Example Reporting Techniques

- ◆ KPA strengths & weaknesses
- ◆ High level maturity profile
- ◆ KPA common feature breakout
- ◆ KPA roll-up by CAO





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KPA: S/W CAS PLANNING (Example)

The purpose of Software CAS Planning is to ensure that all reasonable planning for the Software acquisition is conducted and that all elements of the project are included.

STRENGTHS

S/W Surveillance Plans in place and have been distributed.

WEAKNESSES

No CAO S/W Facility Plan is currently in place.

No measurements are currently being made by management of the S/W CAS planning activities.

No measurement process in place and measurement analysis not performed.

CAO management demonstrates a minimal level of awareness of S/W insight activities.



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To identify Command-wide performance indicators in specific S/W CAS activities

KPA SATISFACTION PROFILE EXAMPLE

KPA RATING

= KPA CRITERIA MET
 = KPA CRITERIA NOT MET

LEVEL RATING

Performed
 Repeatable
 Defined
 Quantitative
 Optimized

CAO-F										
CAO-E										
CAO-D										
CAO-C										
CAO-B										
CAO-A										
	SW C Plan	SWC Mgt	SW Surveillance	Prd Def & Main	Sup'r Perf Mgt	DCMC RM	Training	Quant SW C	DCMC CPI	Maturity Level

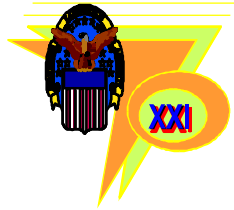


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KPA Breakout Example

Maturity	Co1	Co2	Co3	Ab1	Ab2	Ab3	Ab4	Ac1	Ac2	Ac3	Ac4	Ac5	Ac6	Ac7	Me1	Me2	Ve1	Ve2
Performed																		
No KPAs																		
Repeatable																		
SWC Pln	Y	Y		Y				Y	Y	Y	Y	Y			Y		Y	Y
SWC Mgt	Y	Y		Y	Y	Y	Y	Y	Y	Y					Y		Y	
SW SURV	Y	Y		Y	Y	Y		Y	Y	Y	Y				Y		Y	N
Defined																		
SWC PD&M	N	N	Y	N	Y	Y	Y	Y	N	Y	Y	Y	N		Y		N	
SPM	Y			N	N			N	N	Y	Y	Y	N		Y		Y	Y
DCMC RM	N	N		Y	Y	Y		N	N	N	N	N			N		N	N
Tmg	Y	Y		N	Y	N		N	Y	Y	Y	N			N		Y	Y
Quantitative																		
QSWC	N	N		Y	N			N	N	N	N	N	N		N		N	N
Optimized																		
DCMC CPI	N	N	N	N	Y			N	N	N	N	N	N		N	N	N	N
Commitment	Co																	
Ability	Ab							N Not Met										
Activity	Ac							Y Met										
Measurement	Me																	
Verification	Ve																	



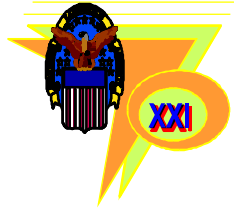
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KPA roll-up by CAO Example

Maturity	Co1	Co2	Co3	Ab1	Ab2	Ab3	Ab4	Ac1	Ac2	Ac3	Ac4	Ac5	Ac6	Ac7	Me1	Me2	Ve1	Ve2
Performed																		
No KPAs																		
Repeatable																		
SWC Plan	2	1		0				3	3	3	1	1			5		1	5
SWC Mgt	4	0		0	2	2	4	5	6	4					5		2	
SW Surv	0			3	2	4		4	2	2	1	1	2	2	6		6	5
Defined																		
SWC PD&M	4	3	3	3	3	3	5	5	5	6	4	4	5		4		5	
SPM	0			2	1			5	5	4	6	0	3		4		2	3
DCMC RM	3	4		1	2	2		4	5	5	4	4			5		4	4
Trng	1	1		3	2	1		3	2	0	1	5			2		1	1
Quant																		
QSW CAS	5	5		5	4			5	6	6	6	6	5		6		6	6
Optimized																		
DCMC CPI	6	2	3	3	1			6	6	6	6	2	4		6	6	6	6
Commitment	Co																	
Ability	Ab																	
Activity	Ac																	
Measurement	Me																	
Verification	Ve																	

"One Book"
 Not "One-Book"
 Number of CAO occurrences of SPE-MM "Not Met"



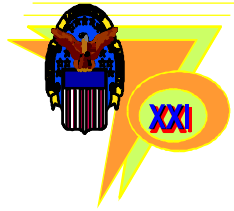
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Next Step

Phase II

- ◆ Model updated based on
 - ☑ Pilot evaluations
 - ☑ Comments obtained
- ◆ Evaluate remaining CAOs
- ◆ Plan to complete by Sept '00
- ◆ Analyze data for possible policy change
- ◆ Model can be used as Internal Self Assessment tool



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Other Related Activity

- ◆ Performing follow-up with pilot evaluation for possible action plan for process improvements
- ◆ DCMC Earned Value Center is tailoring the SPE-MM in order to evaluate CAO performance related to DCMC Earned Value activity
- ◆ DCMC is the Executive Agent for Earned Value
- ◆ Future plans is to combined the SPE-MM and EV-MM and include Systems Engineering into one integrated model



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Other Related Activity

- ◆ CMM Based Surveillance initiative planned that will attempt to standardize our process and enhance Program Office visibility
- ◆ Developing guidebook that will provide insight to the activities performed by software personnel





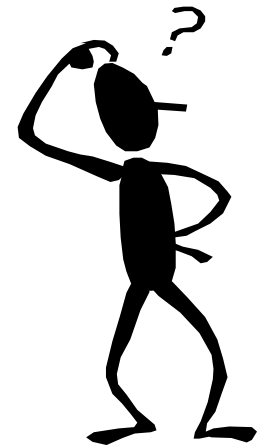
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Questions

Comments

Issues ...





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