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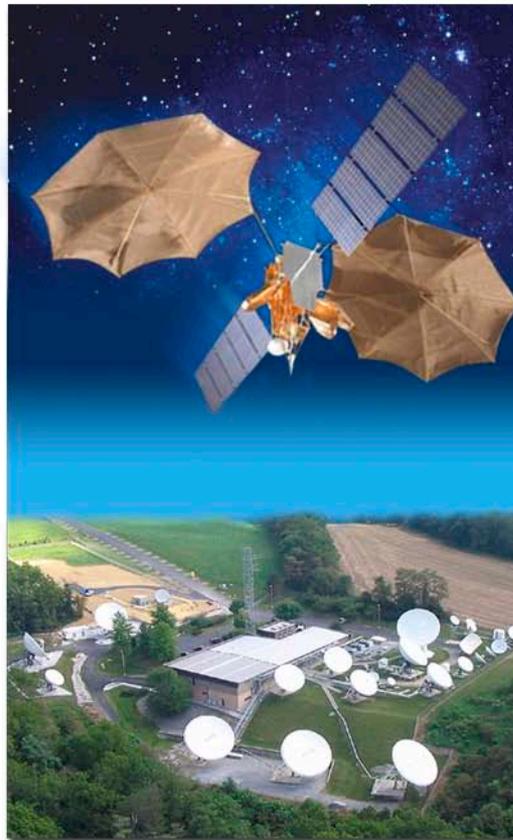
Streamlining Processes and Appraisals

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Harris Corporation
November 17, 2009*

NDIA CMMI® Conference and User Group



Aviation electronics



Space and ground satellite communications systems



Communications and information networks



Intelligence, surveillance, and reconnaissance



Operations and support services

People – Innovation – Process

-
- Challenge
 - Approach
 - Results
 - Summary

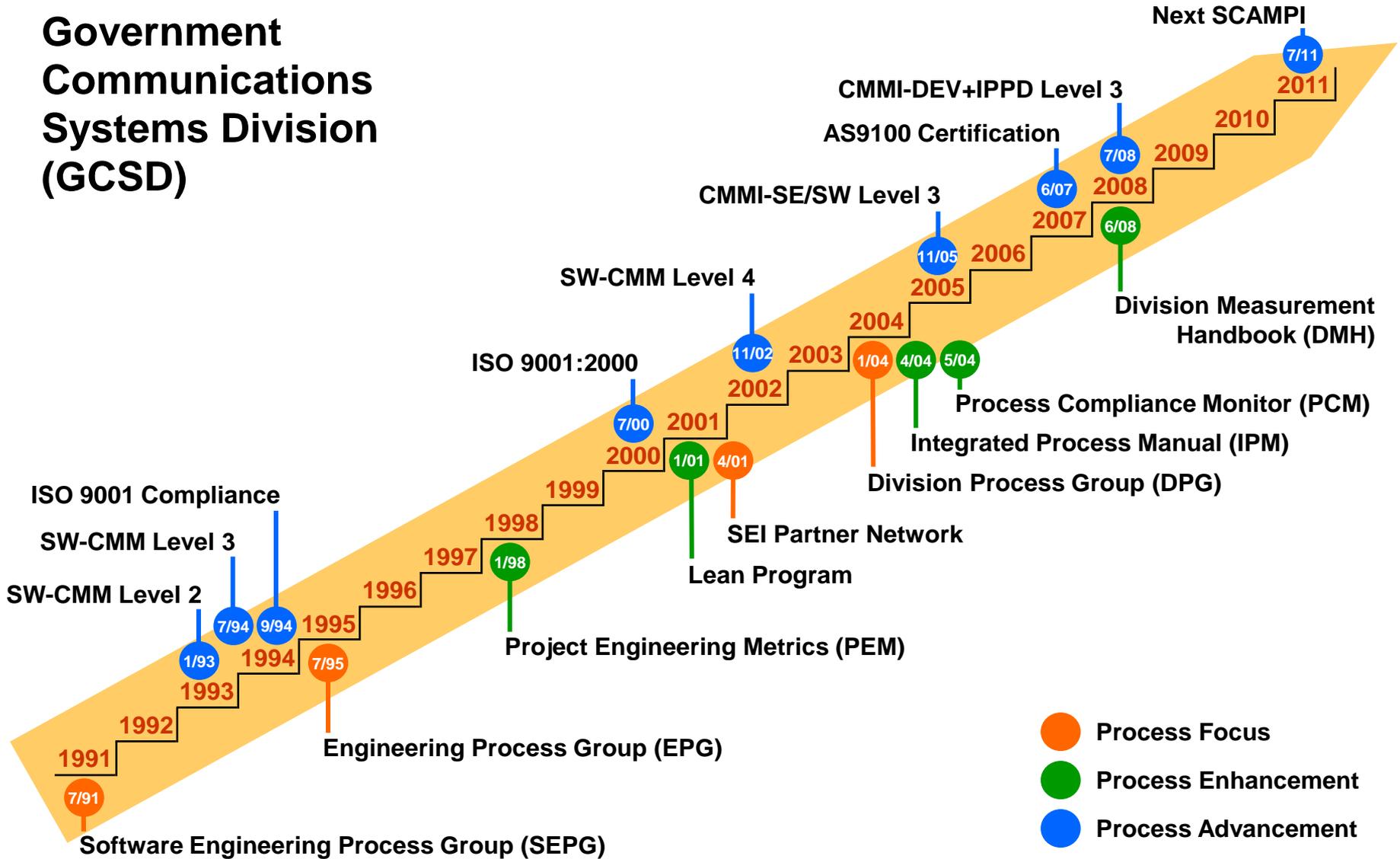
- Streamline the organizational processes by reducing the:
 - Number of process requirements
 - Amount of appraisal evidence
 - Effort required by programs
- Maximize the re-use of appraisal evidence to minimize the number of unique work products
- Limit the impact to the programs by minimizing the changes
- Simplify the task of preparation and conduct of appraisals
 - Organizational independent QA audits
 - SCAMPISM Class A/B/C appraisals
- Maintain the process compliance requirements between:
 - Organizational processes
 - CMMI[®] processes
 - Appraisal evidence (relevant and adequate)

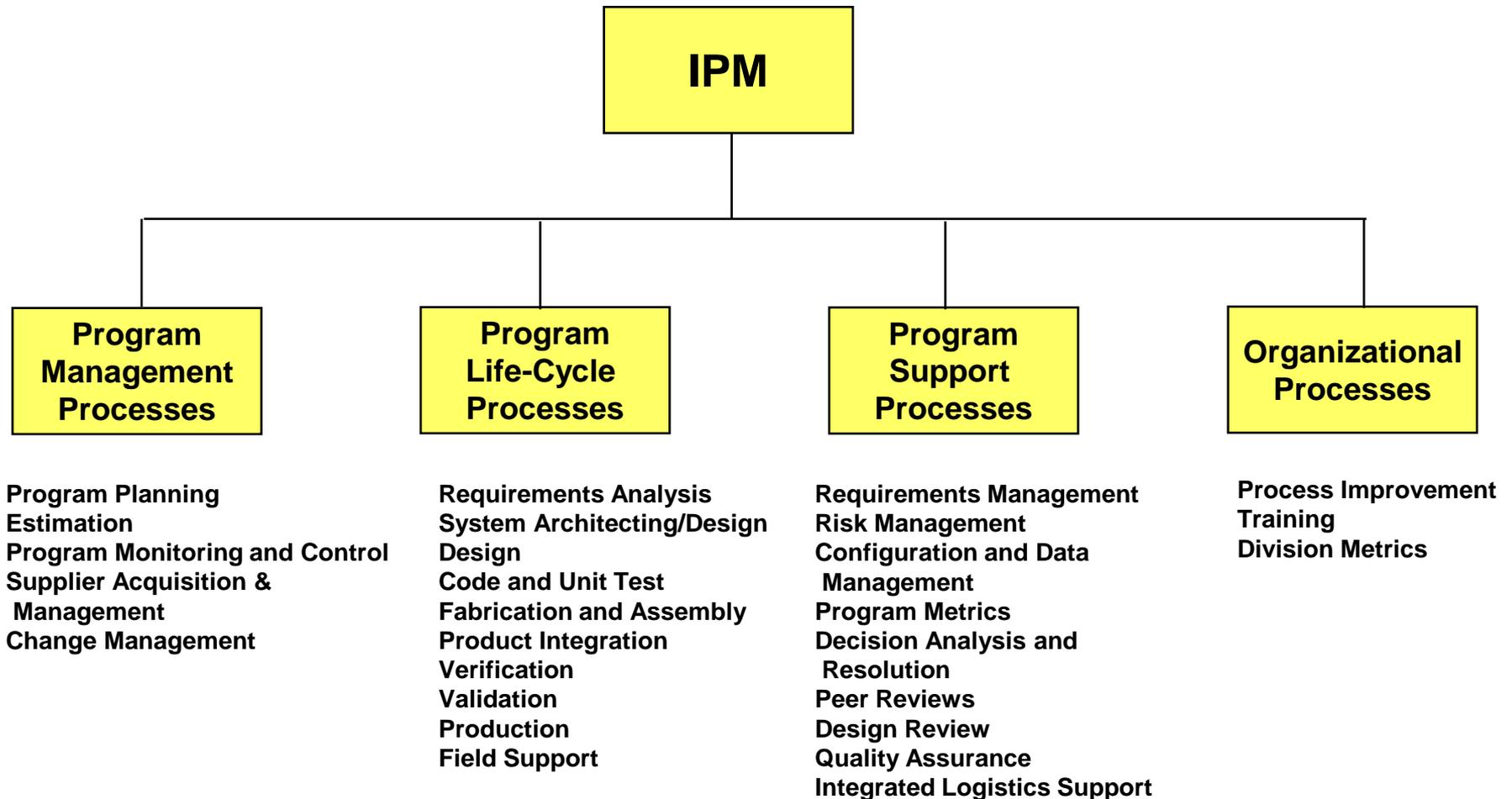
- Background
 - Continuous process improvement
 - Organizational-centric integrated processes
 - Integrated process compliance
- Implementation
 - Streamline appraisal evidence
 - Streamline process requirements
- Validation
 - Internal assessments
 - SCAMPISM

Process Improvement Timeline

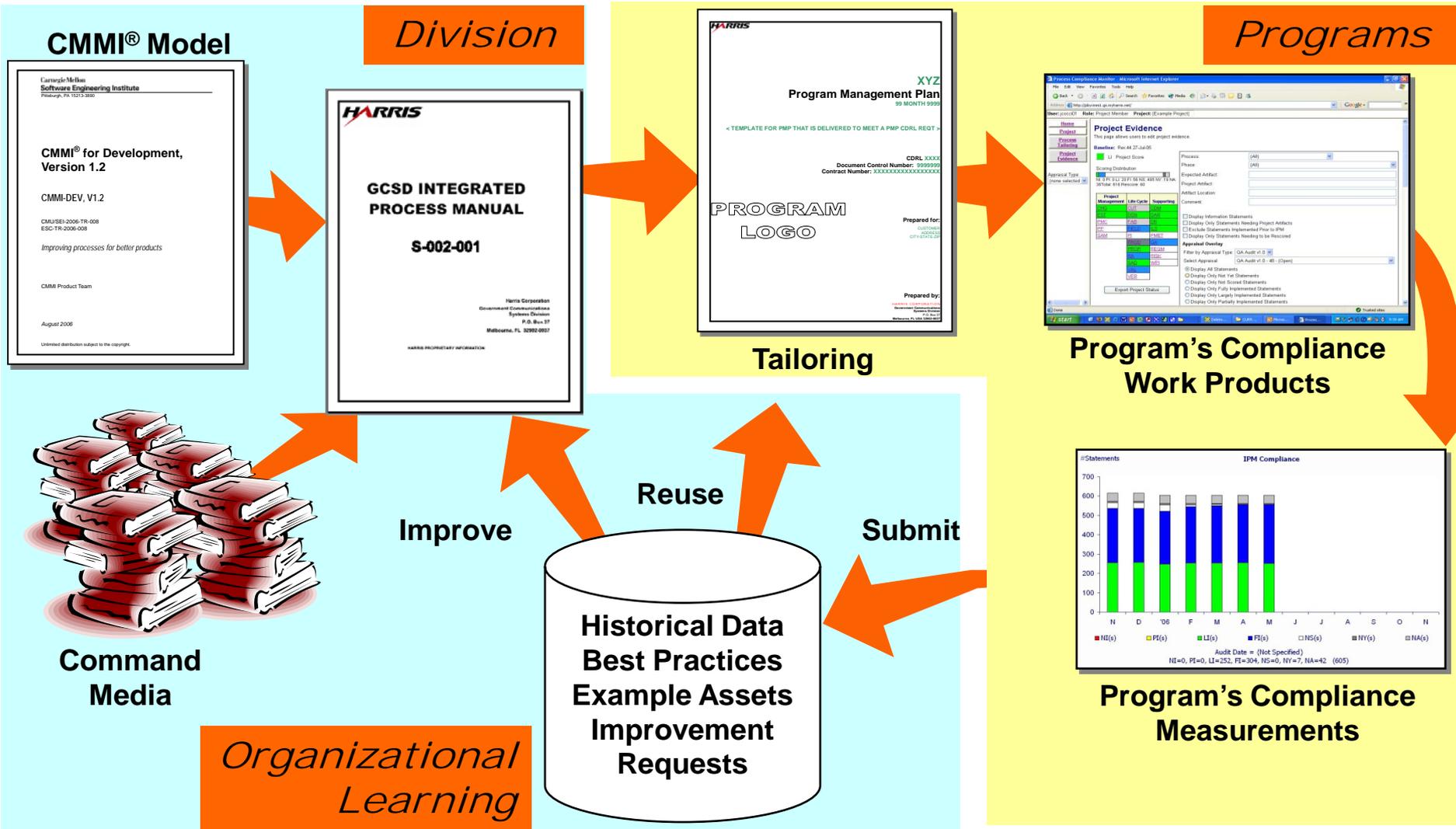


Government Communications Systems Division (GCSD)





Integrated Compliance Approach



Work Products for Compliance

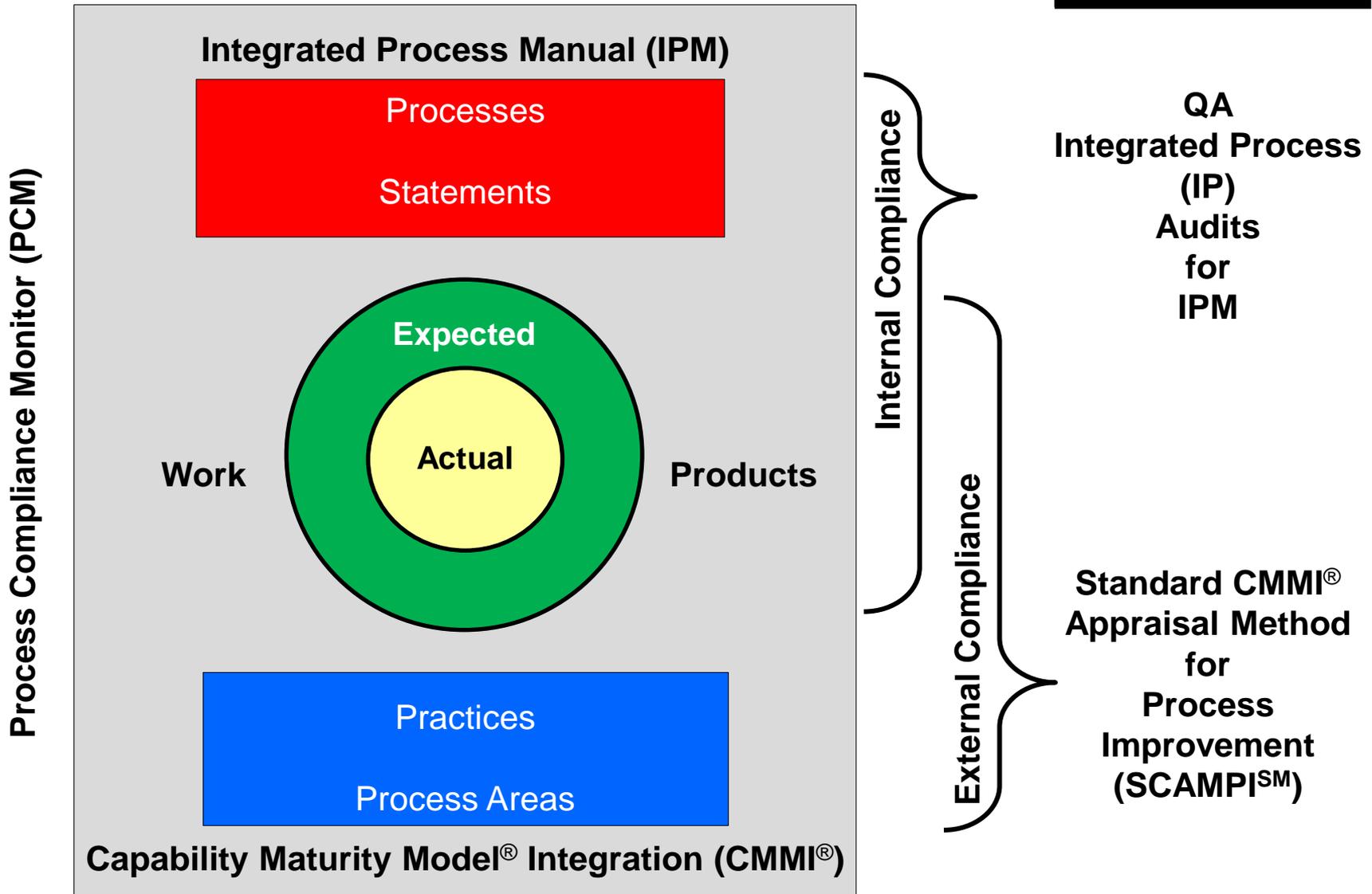


Overview A brief description of the process intent	
Entry Criteria State, Prerequisites, Criteria	Exit Criteria State, Criteria
Inputs Needed work products, resources	Outputs Resulting work products
Required Activities Mandatory tasks to implement the process	
Measures Process performance against plans	
Organizational Improvement Information Metrics, reusable work products	
Verification Process compliance oversight	
Tailoring Approved tailoring, process specific	
Implementation Guidance Common implementation descriptions	
Supporting Documentation and Assets Applicable organizational references	



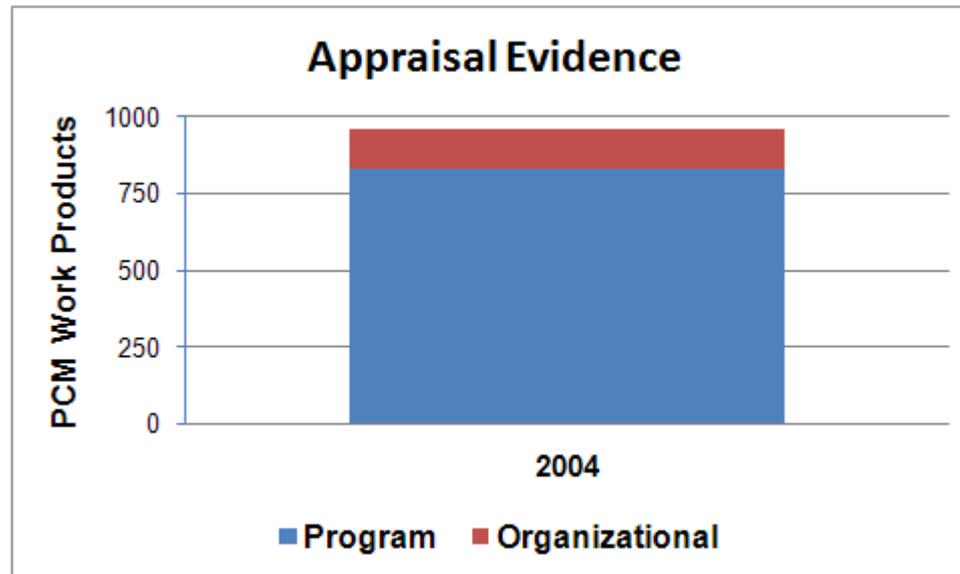
Program work products needed to demonstrate IPM process compliance

Appraisal Context



- Background
 - Continuous process improvement
 - Organizational-centric integrated processes
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- Product-centric focus
- Reverse engineering to achieve simplification
- Reuse of unique work products
- Organization default work products and locations



- Instead of looking from the process view – looked from a program work products view
- Basic guidelines:
 - Every CMMI® practice shall have a minimum set of adequate expected work products in PCM
 - Every IPM statement shall have a minimum set of adequate expected work products in PCM
 - Every PCM work product (existing or new) shall map to one or more IPM statements and CMMI® practices
 - Maximize the re-use of existing work products
 - PCM Startup Template
 - Standard Directory Structure

- Mapped program work products to IPM statements and to relevant CMMI® practices
 - IPM mapping clearly documented in PCM tool
 - CMMI® mapping in PCM tool - transparent to the program
- Work product descriptions clarified to help the program understand relevance
 - Descriptions let the program know why this work product is important
 - IPM perspective
 - CMMI® perspective
- Provided name of typical project work product to be used
- Provided standard directory structure location where that work product should be maintained

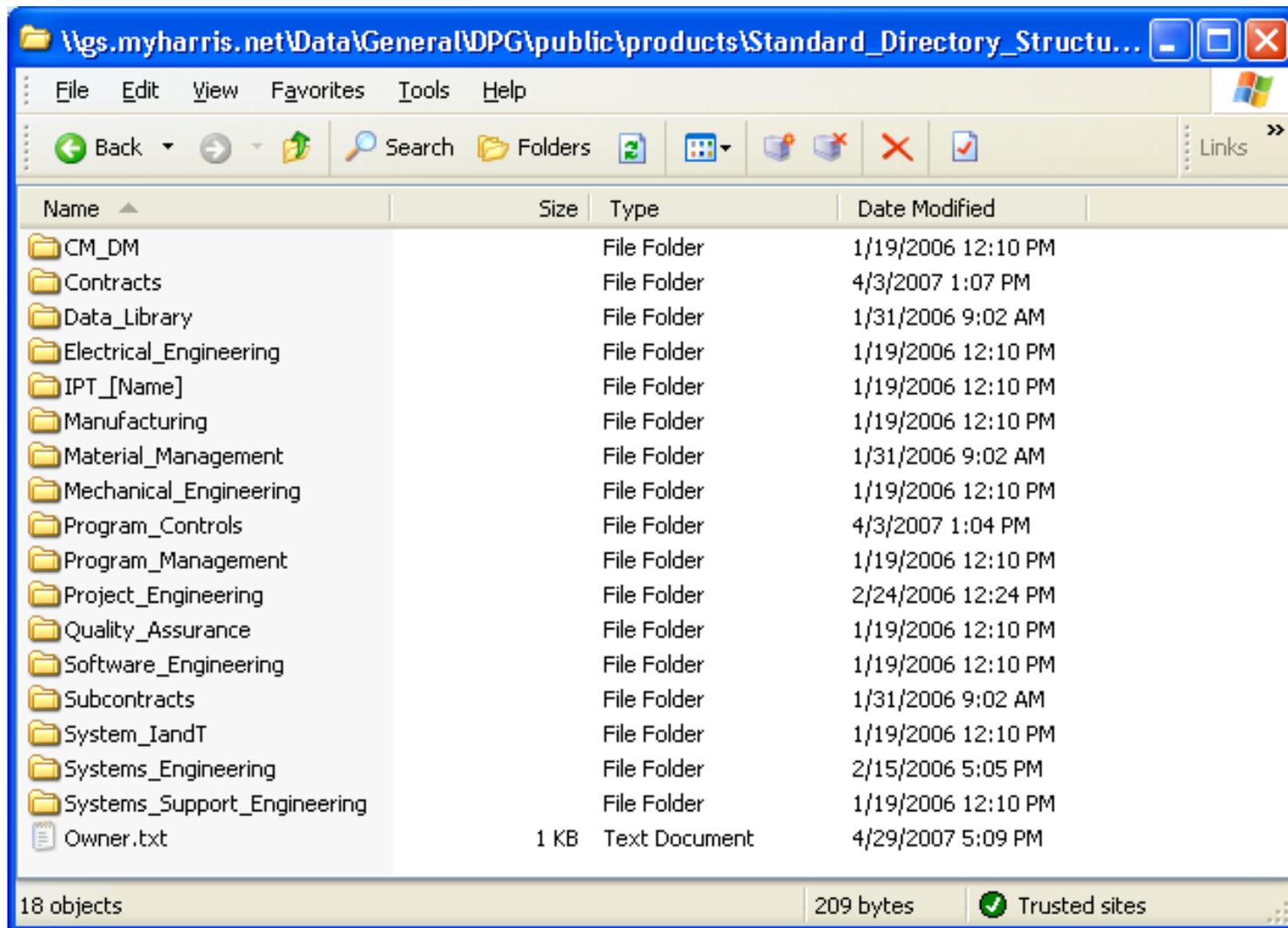
IPM Tag	IPM Statement	Project Work Product	Expected Work Product Description	CMMI Tag
RA.RA.3	Work with stakeholders to capture needs, expectations, constraints, and interfaces for all phases of the system life-cycle.	Concept of Operations (CONOPS)	Approved Concept of Operations (CONOPS) that documents system mission, system operation, operational control, staffing, interfaces and operational environment - from an external perspective	RD.GP2.6 RD.SP1.1
		Customer requirements specification	Customer requirements specification (i.e., A-Spec)	RD.GP2.6 RD.SP1.1 RD.SP1.2
		Minutes from working groups	Records of requirements elicitation techniques utilized on the program (e.g., Prototypes, modeling, simulation, working groups, use cases)	RD.SP1.1

Project Work Product	IPM Tag	IPM Statement	CMMI Tag
Concept of Operations (CONOPS)	RA.RA.3	Work with stakeholders to capture needs, expectations, constraints, and interfaces for all phases of the system life-cycle.	RD.GP2.6
			RD.SP1.1
	RA.RA.4.a	Ensure the stakeholder mission and operational needs are validated and documented in the Concept of Operations (CONOPS).	RD.SP3.1
	SAD.RA.3.g	Define the system functional baseline.	RD.SP3.1
			TS.SP1.2

Project Work Product	CMMI Tag	CMMI Practice	IPM Tag
Concept of Operations (CONOPS)	RD.GP2.6	Place designated work products of the requirements development process under appropriate levels of control.	RA.RA.3
	RD.SP1.1	Elicit stakeholder needs, expectations, constraints, and interfaces for all phases of the product life cycle.	RA.RA.3
	RD.SP3.1	Establish and maintain operational concepts and associated scenarios.	RA.RA.4.a
	RD.SP3.4	Analyze requirements to balance stakeholder needs and constraints.	RA.RA.4.a
TS.SP1.2	Select the product component solutions that best satisfy the criteria established.	SAD.RA.3.g	

- Supports IPM Compliance with work products in a common structure across programs
- Top level directories are used as location for program work products
 - Avoids tying PCM work products to low level directories
 - Easy access by all program team members
 - Avoids confusion as to which is the latest version of a work product
 - Flexibility for custom directories which contain “work-in-progress”
- Pre-populated with latest forms, checklists and plan templates
 - Set up by IT group when program data server is assigned

Standard Directory Structure



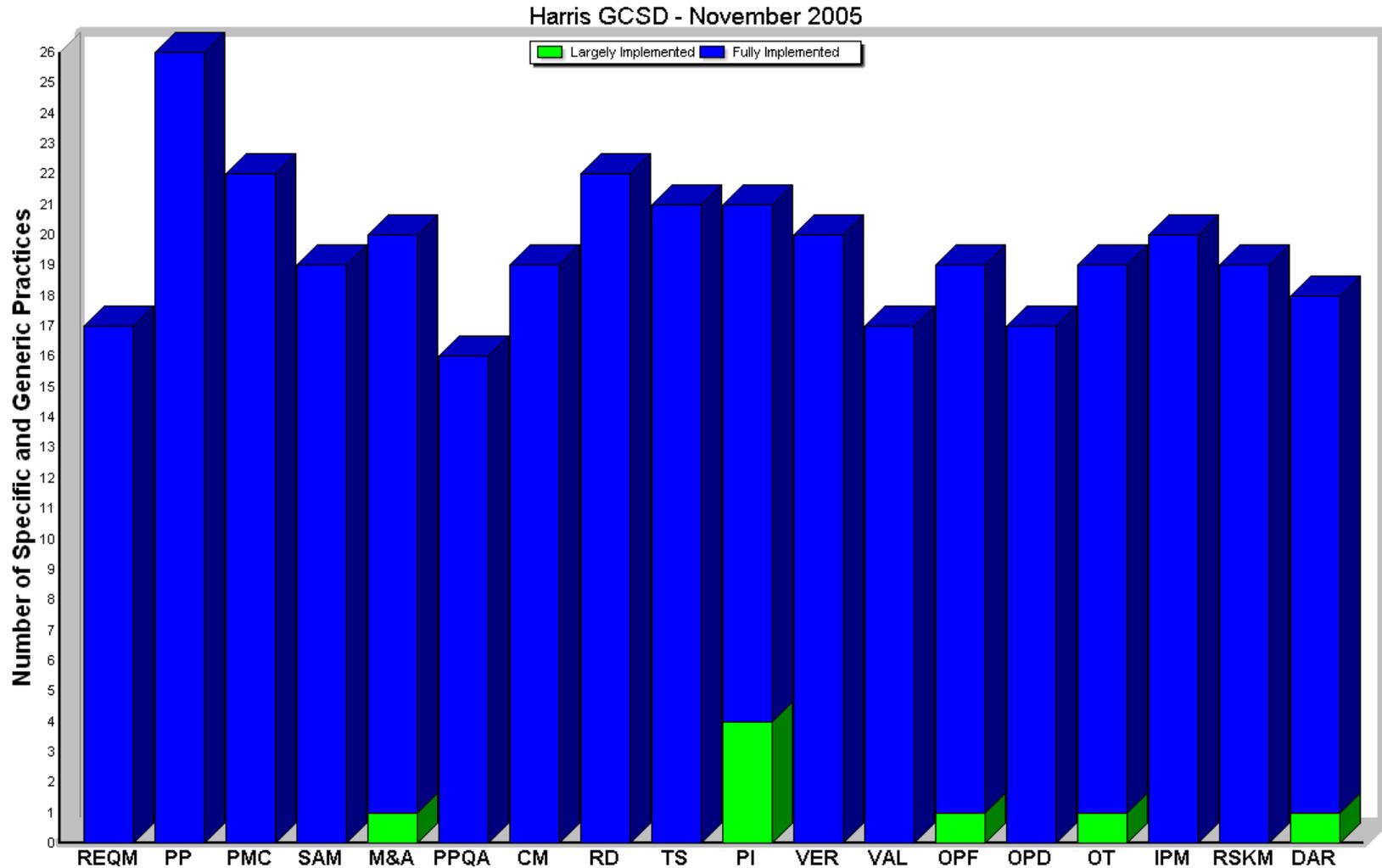
- Common process tailoring across programs
- IPM statements with no CMMI relationship
- Consolidation, modification or deletion of IPM statements reducing the amount of work products without compromising the overall process requirements
- SCAMPI results to identify work products not required



- Identify common process tailoring across programs
- Identify IPM statements with no CMMI relationship
- Review SCAMPI results to identify work products not required for CMMI
- Review IPM statements with functional organizations to identify recommendations for reduction(delete, modify, combine)
- Draft a streamlined IPM and associated PCM work products
- Conduct Peer Reviews with representative program team leaders & members, and all functional organizations

- Verification section removed from PCM tool in each process
 - Programs not required to tailor, provide work products, or audit
 - Remains in IPM as reference/guidance
- Deleted procedural detail
- Combined similar/related statements within a process
 - Examples
 - Establishing and maintaining plans, budgets, schedules, etc.
 - Identify and categorize risks
- Consolidated statements within a process that had similar/same expected work products resulting in fewer:
 - Statements for tailoring
 - Work products
 - Audits by QA

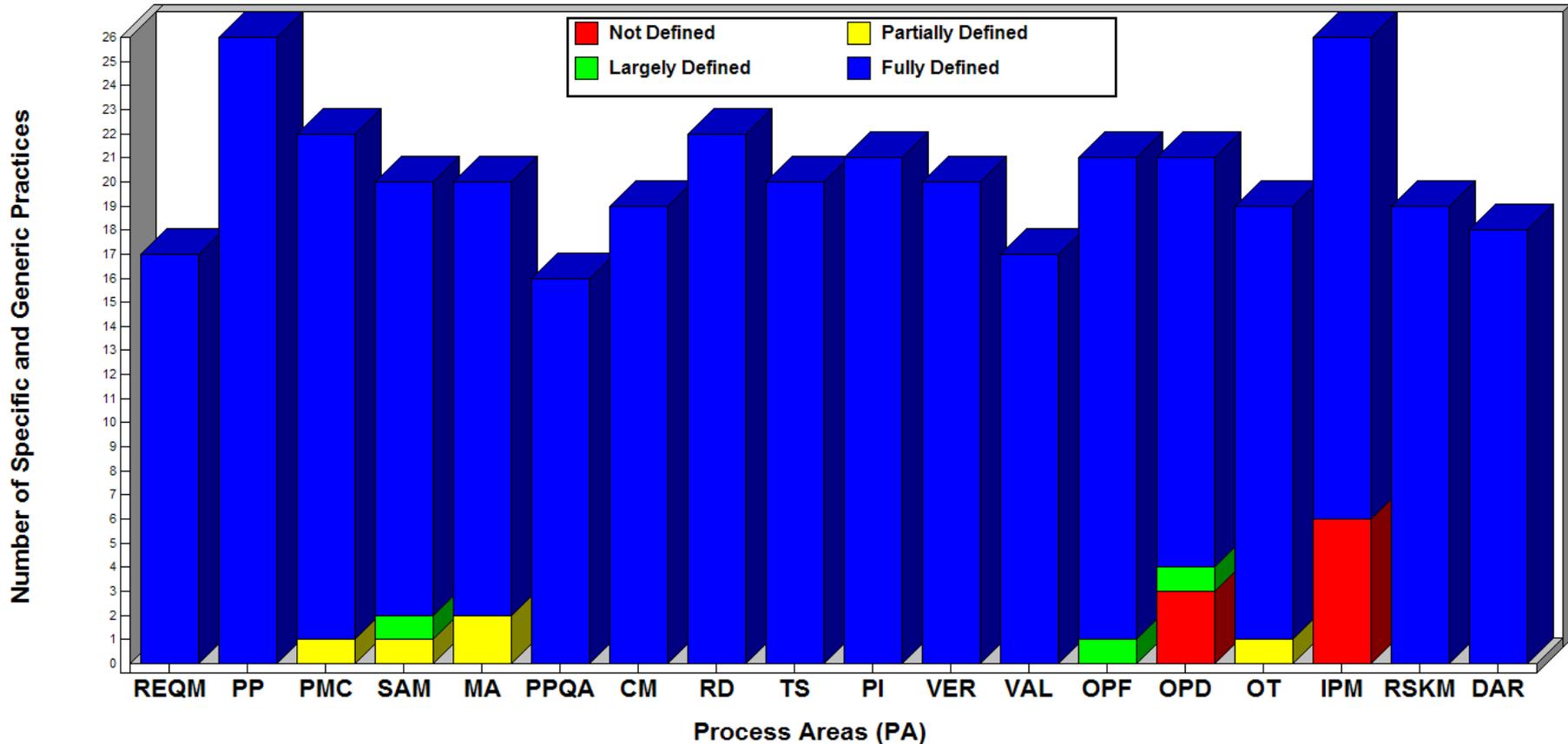
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SCAMPISM Definition Findings 2007

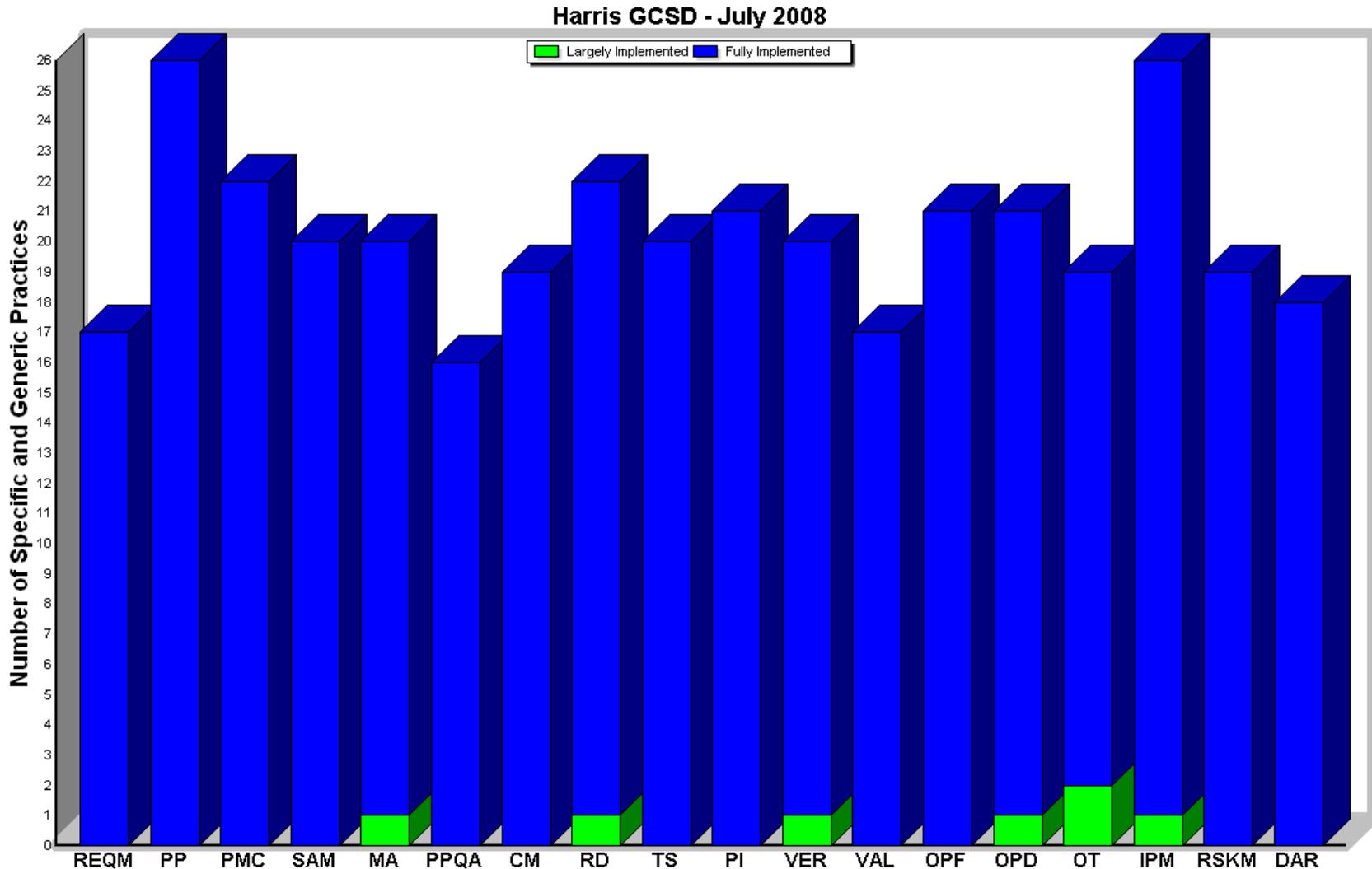


Harris GCSD (Defined Process/Artifacts by Practice) - Apr 2007

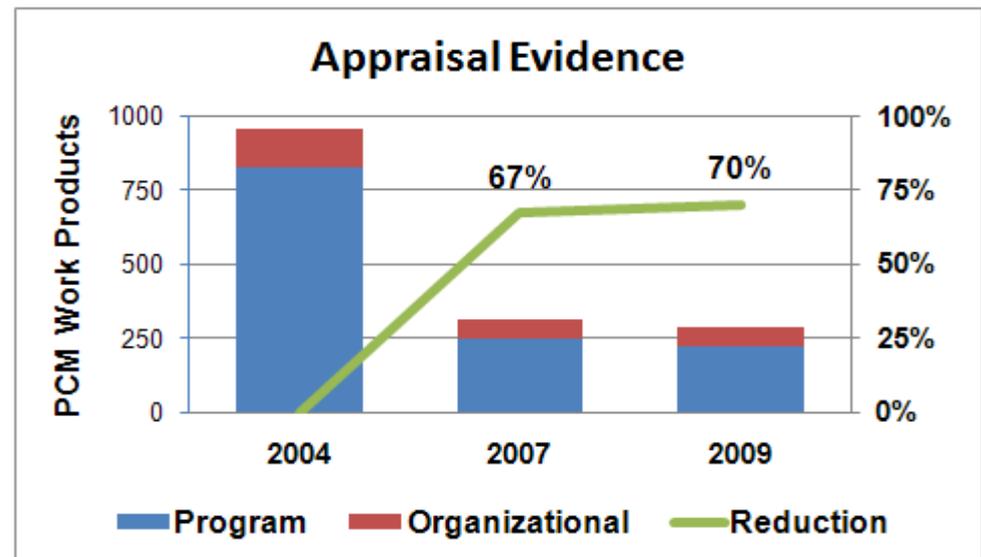
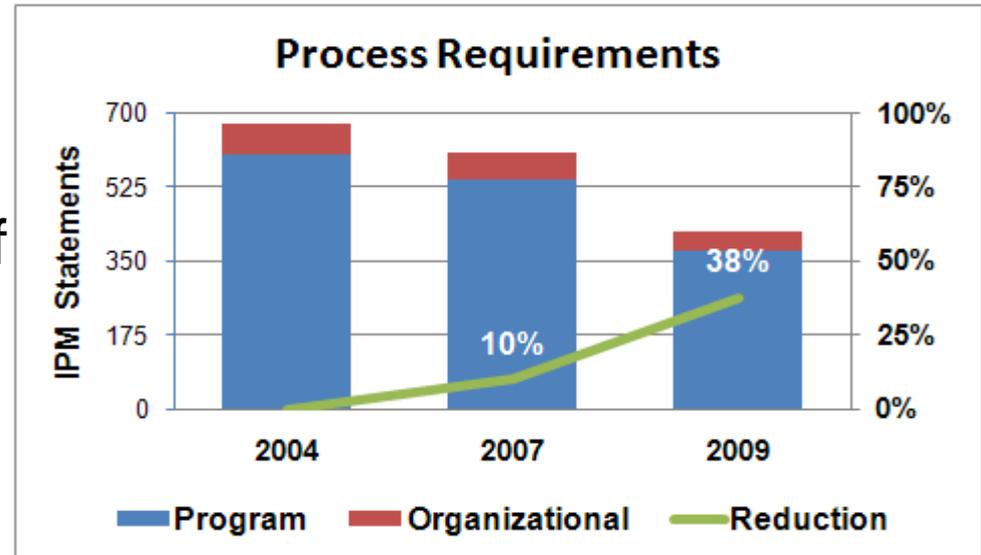


	REQM	PP	PMC	SAM	MA	PPQA	CM	RD	TS	PI	VER	VAL	OPF	OPD	OT	IPM	RSKM	DAR
Not Defined	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	6	0	0
Partially Defined	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	0	0	0
Largely Defined	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0
Fully Defined	17	26	21	18	18	16	19	22	20	21	20	17	20	17	18	20	19	18

Weaknesses subsequently mitigated to achieve Fully Defined



- Significant reduction in process requirements
- Maximized the re-use of appraisal evidence to minimize the number of unique work products
- Created a process-centric view to maintain program work products
- Reduced effort required by programs
- Maintained CMMI[®] compliance



Streamlining Results - 2



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Program work products needed to demonstrate IPM process compliance

2009

- Established a product-centric view to compliment the existing process-centric view providing:
 - Efficient and focused project data collection
 - Improved support for projects and the organization
 - Integrity of the appraisal method and achievement of sponsor objectives
- Streamlined the organizational processes resulting in reduced:
 - Number of process requirements
 - Amount of appraisal evidence
 - Effort required by programs
- Maximized the re-use of unique work products
- Minimized the impact of changes to the programs
- Simplified the preparation and conduct of appraisals:
 - Organizational independent QA audits
 - SCAMPISM Class A/B/C appraisals
- Maintained the process compliance requirements:
 - Relevant and adequate evidence
 - Organizational processes
 - CMMI® processes

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- SEI-Certified Introduction to CMMI® Instructor
- Harris SEI Partner Business & Technical Point of Contact

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