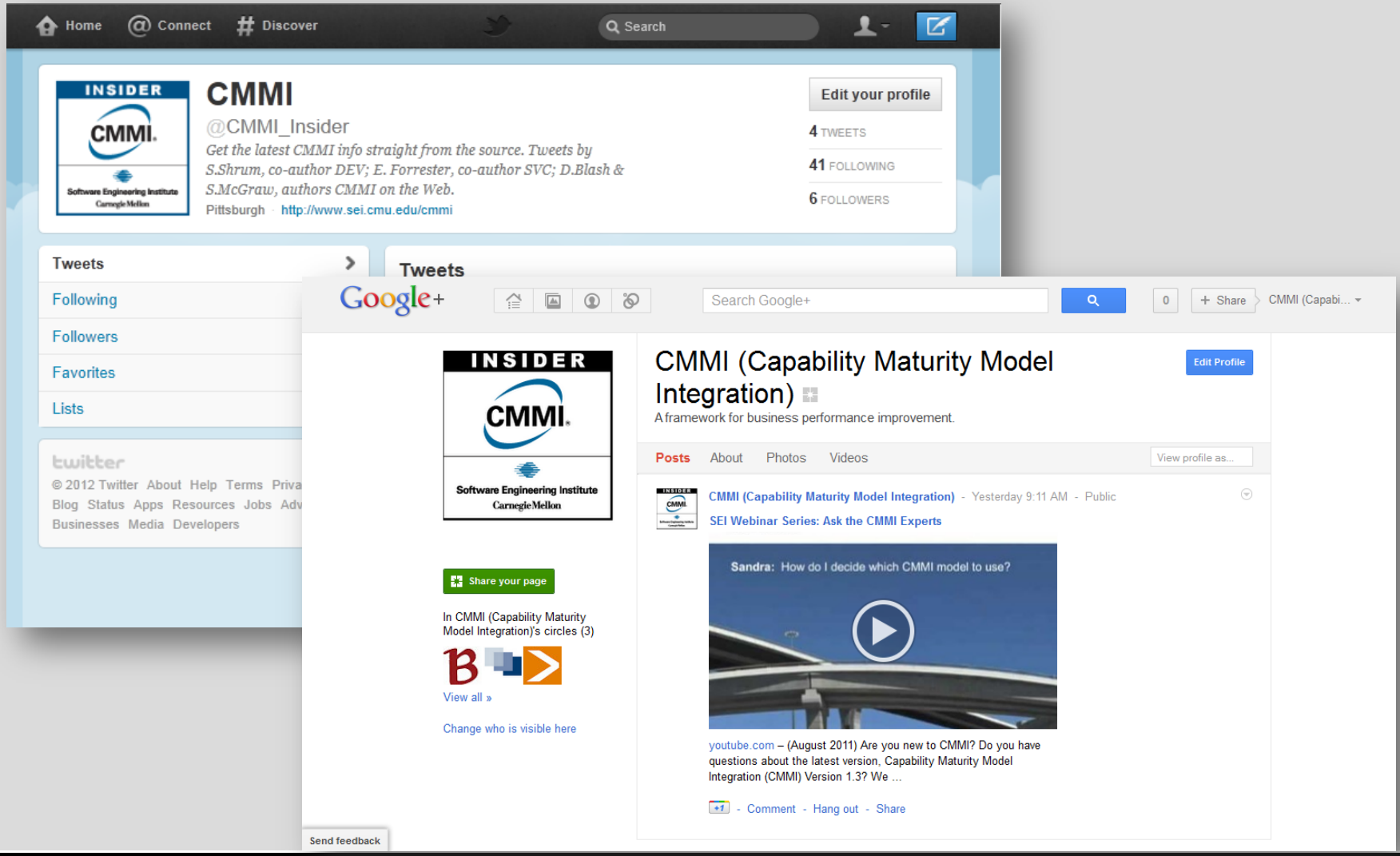
Getting the performance you need from processes that work: The CMMI Accelerated Improvement Method

Timothy A. Chick
Gene Miluk

March 8, 2012

CMMI group is now on Twitter and Google+



Today's Presenter

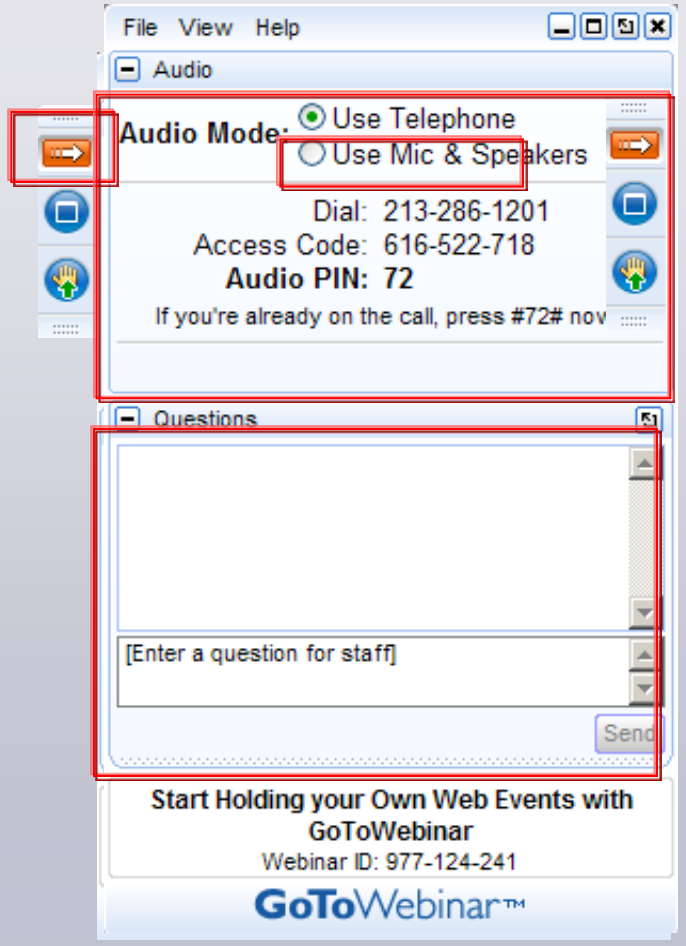
Timothy A. Chick is a senior member of the technical staff at the Software Engineering Institute (SEI) where he works on the Team Software Process (TSP) Initiative.

In this role, Chick is responsible for defining, developing, and transitioning into practice high-performance software and systems engineering practices based on the principles and concepts in TSP and Capability Maturity Model Integration (CMMI). His work includes applied research, product and training development, education/training delivery, and consulting in the domains of software engineering and systems engineering process improvement.

Today's Presenter

Gene Miluk is currently a Senior Member of the Technical Staff at the Software Engineering Institute (SEI), Carnegie Mellon University. For the past 20 years Gene had been working with SEI client organizations undertaking software process improvement, software acquisition improvement and technology transition. He is an SEI authorized SCAMPI Lead Assessor , an SEI Certified SCAMPI High Maturity Assessor, a CMMI instructor, TSP instructor and a SEI Certified Team Software Process Mentor Coach . Gene is also a Six Sigma Black Belt and a Certified SCRUM Master.

How to Participate Today



Open and close your Panel

View, Select, and Test your audio

Submit text questions

Q&A addressed at the end of today's session

AIS Performance Guarantees, with Metrics that Matter

Performance Metrics That Matter	Industry Average	AIS Average
Schedule deviation	>50%	<11%
No. of defects in delivered product 100,000 LOC	>100	<15
% of design and code inspected	<100	100
Time to accept 100,000 LOC product	4 months	5 weeks
% of defects removed prior to system test	<60%	>85%
% of development time fixing system defects	>33%	<10%
Cost of quality	>50%	<35%
Warranty on products	?	Lifetime

Source: Seshagiri, Girish. High Maturity Pays off, CrossTalk, Jan./Feb. 2012. http://www.crosstalkonline.org/storage/issue-archives/2012/201201/201201-Seshagiri.pdf

Cost
Firm fixed price upon acceptance of requirements specifications
Schedule
Not to exceed 10% of committed schedule
Weekly status reporting with ability to detect as little as one-day schedule slip
Agility
Time in test significantly less than customer's historical average
Rework time significantly less than customer's historical average
Quality
Acceptance test defects significantly lower than customer's historical average
AIS *will fix defect found in production use free for the life of the product!!!*

Polling Question

Level of Experience/Understanding on this Topic?

1. New to SEI process methodologies
2. Very knowledgeable on CMMI
3. Very knowledgeable on TSP
4. Some knowledge of software process improvement in general

Getting Performance From Processes That Work

Advanced Information Services

- *Recently delivered more than 500,00 lines of code on time to a federal agency on a firm fixed price contract. Zero vulnerabilities were found during two independent vulnerability tests. About half the development team was straight out of college.*
- *<11% Schedule deviation, <15 defects in delivered product per 100,000 LOC*

Naval Oceanographic Office, N64

- 25% of projects delivered early
- Customer delivered defects averaged <0.5 defects/KLOC

520th Software Maintenance Squadron, Hill AFB

- Within a year after instituting TSP, they "were routinely releasing software with very low or zero defects and meeting cost and schedule estimates."
- Improved productivity by more that 400 percent
- 99.4% defects removal before release

NAVAIR

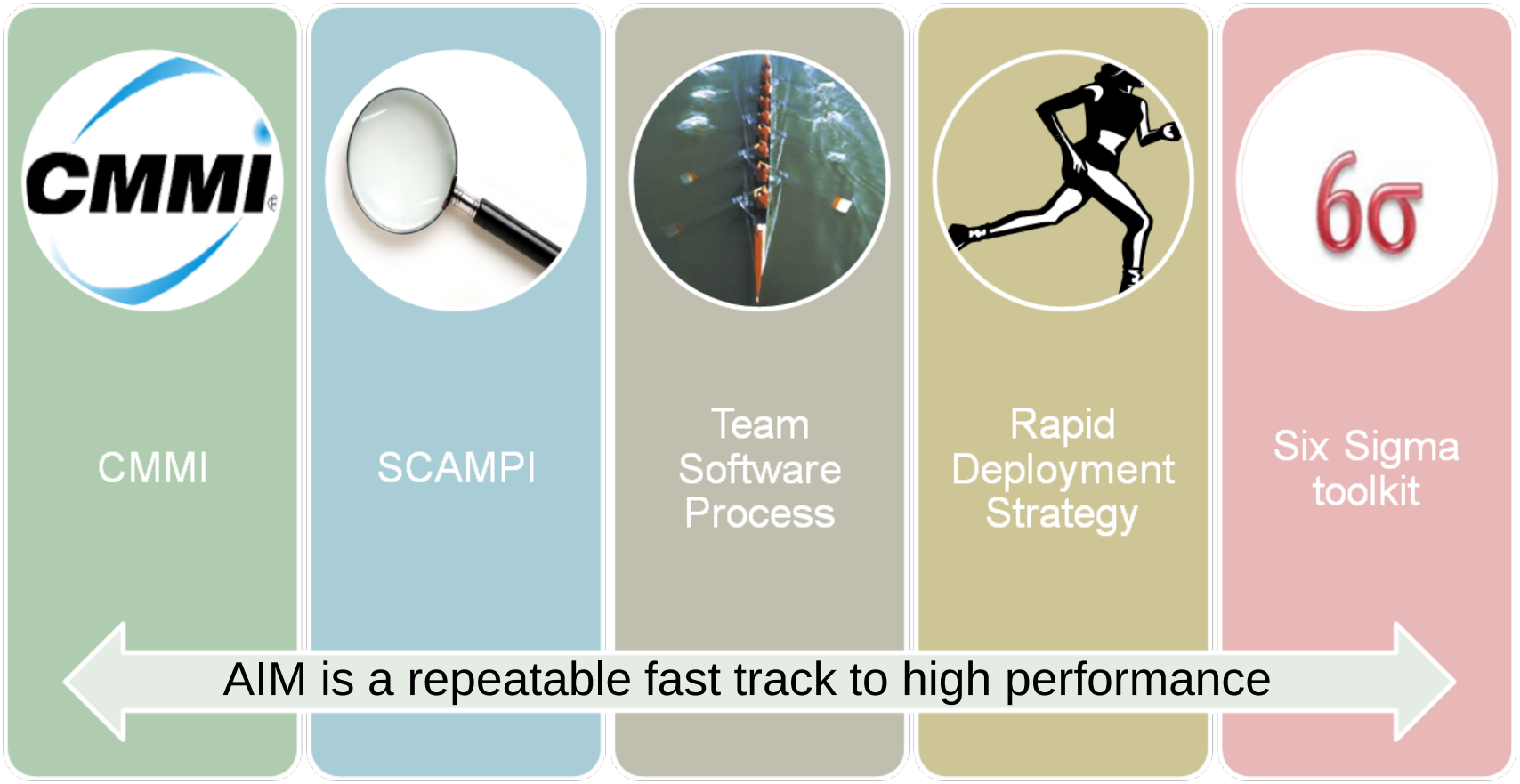
- AV-8B JSSA experienced a 21 - 48% decrease in defect density and experienced a $1,767,362 ROI
- P-3C Software Support Activity experienced a $978,849 ROI due to quality improvements

CGI Federal, TPG, SEID

- Productivity Increased by 35%
- Estimated Time on Task Variance Reduced from 18% to 7%
- Defects Found in Validation Testing Reduced by 50%
- Schedule Variance Reduced to Less than 10%

The CMMI Accelerated Improvement Method (AIM)

Integrates and Leverages Effective Improvement Technologies



What is CMMI?

The Capability Maturity Model Integration (CMMI) is a compendium of best practices that can help you achieve business goals related to

- Cost and Schedule
- Productivity
- Product/service quality
- Customer satisfaction

CMMI describes broad ***characteristics*** of a process but does not describe any specific development processes or methods.

Team Software Process (TSP)

TSP is an agile, team-focused process for software and systems development.

TSP improves organizational performance from the bottom up by building self-managed teams that

- meet their commitments
- are more productive
- produce higher quality products

TSP is method agnostic.

It complements and improves your existing processes and practices.

With TSP, teams adopt common processes, methods, metrics, and use historical data to plan, track, and improve.

TSP improves competitive advantage by improving the performance of project teams and the individuals on those teams.

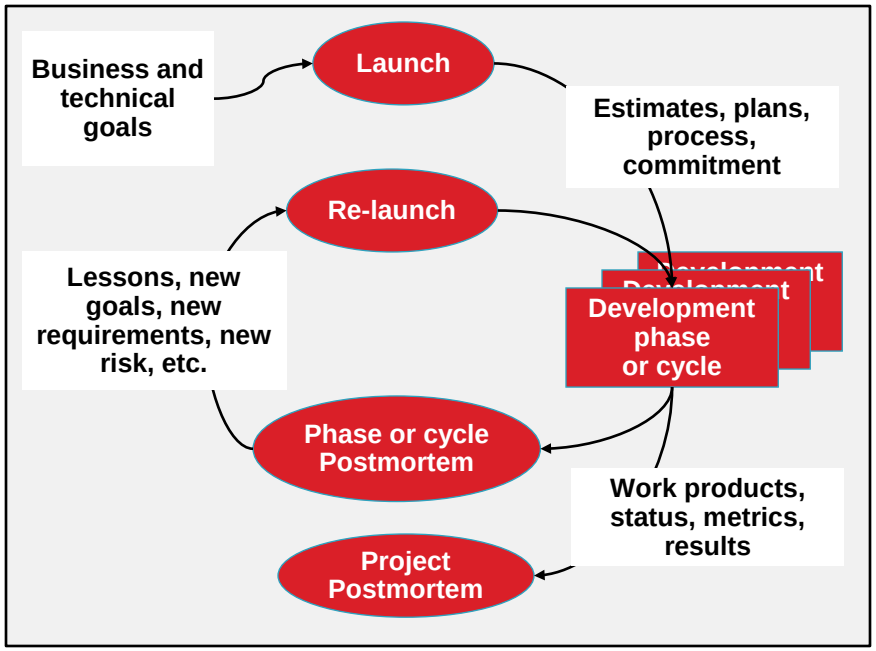
TSP Development Strategy

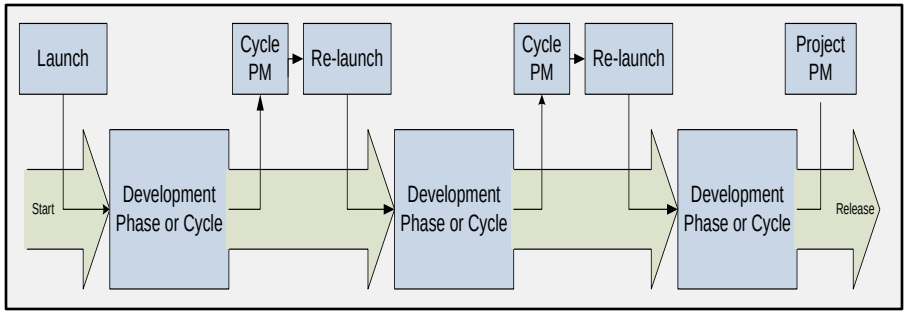
Projects can begin on any phase or cycle.

Iterations start with a launch or re-launch and end with a postmortem.

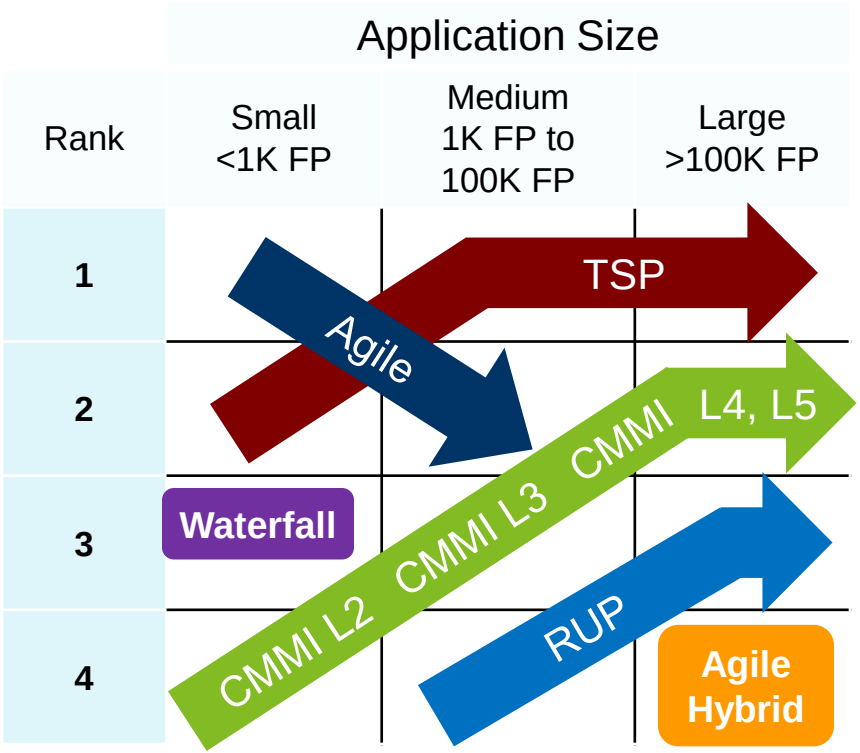
The development strategy is guided by business and technical needs.

- iteratively in small cycles
- in a spiral with increasing cycle content
- sequentially as in a waterfall





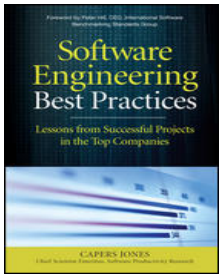
TSP: Software Engineering Best Practice

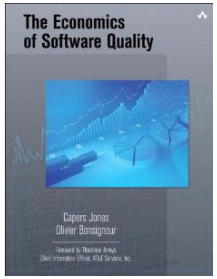


Development practices by size of application in function points (FP; 1FP ≈ 30 to 50 SLOC) [1] [2]

Demonstrated benefits

- scalable to application size
- situation tailorable
- predictable cost and schedule
- best quality (defect intolerant)
- continuous high throughput
- creates self-managed teams that own their processes and plans
- operationally defined for high-fidelity and clear end states, e.g. “done”





[1] Software Engineering Best Practices, by Capers Jones, 2010.

[2] The Economics of Software Quality, by Capers Jones, 2011.

CMMI and TSP

CMMI is a model that describes many of the best practices for development.

- about “what” not “how-to”
- an improvement roadmap
- a capability benchmark

TSP is a process that integrates many CMMI best practices.

- about “how-to” not “what”
- an improvement tool
- a performance benchmark

AIM is a “how-to” solution that:

- is both high-performance and high-maturity.
- can be deployed quickly.
- is low cost with rapid return on investment.
- works as a stand-alone solution or as an add-on to existing processes.
- helps organizations that are just getting started.
- provides a breakthrough for mature organizations.
- is an affordable approach for smaller organizations.
- results in a situation-tailorable engineering method to provide the right balance of agility and discipline for a broad portfolio of projects.

Value Proposition

	Traditional	AIM
Cost	Variable - 2% to 10% but for how long and with what benefits?	Fixed, known, manageable with predictable results
Timeframe to measureable results	Years	Months
ROI	Realized in years	Realized in months Compounded over years
Risk – MTBCEO	High - may need to re-establish sponsorship	Low - builds sponsorship
Risk – compliance vs. performance	High - alienation, frustration	Low - builds ownership and commitment
Pace	Strategic	Strategic and tactical

Rapid Deployment Strategy

The pace of change in business and technology is accelerating, and you have to move fast just to keep up and even faster to get ahead.

Improvements need to be implemented quickly and with near-immediate ROI.

The Rapid Deployment Strategy does this.

- tactical, project-focused improvement
- fast, results oriented approach
- each project's investment is recovered within 6 to 12 months

experience the commitment ™

March 2011

AIM Implementation Projects

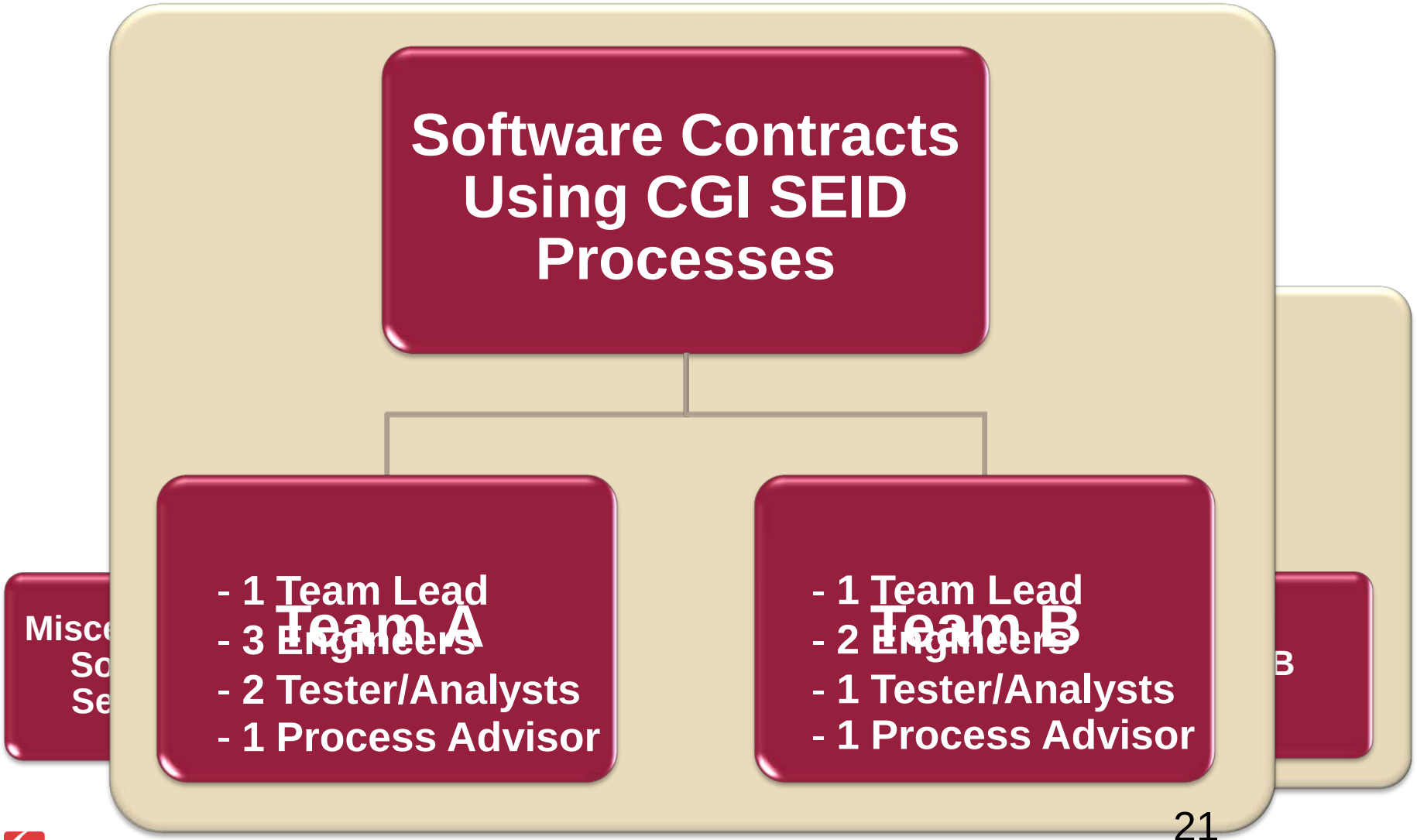
Who is CGI?

- A global leader in IT, business process, and professional services, CGI partners with federal agencies to provide end-to-end solutions for defense, civilian, and intelligence missions
- Acquired Stanley Associates, Inc. in August 2010
- This division has provided software services for our government customer at this site for over 30 years
- This division has participated with its government customer in process improvement since 1991, having previously achieved a CMMI Level 5 rating

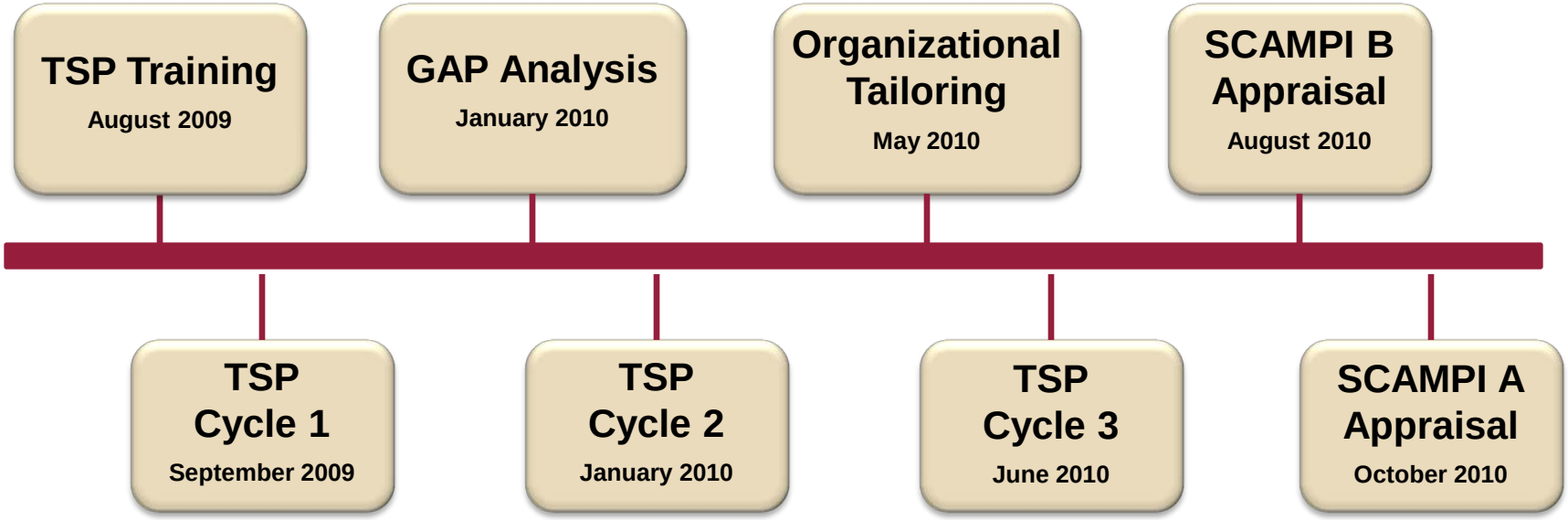
Organizational goals

- Improve existing software development processes and software team performance
- Improve software quality
- Enhance process performance
  - Estimations
  - Consistency
  - Schedule
- Achieve a CMMI ML3 rating in 18 months or less

Organizational Scope and Team Composition



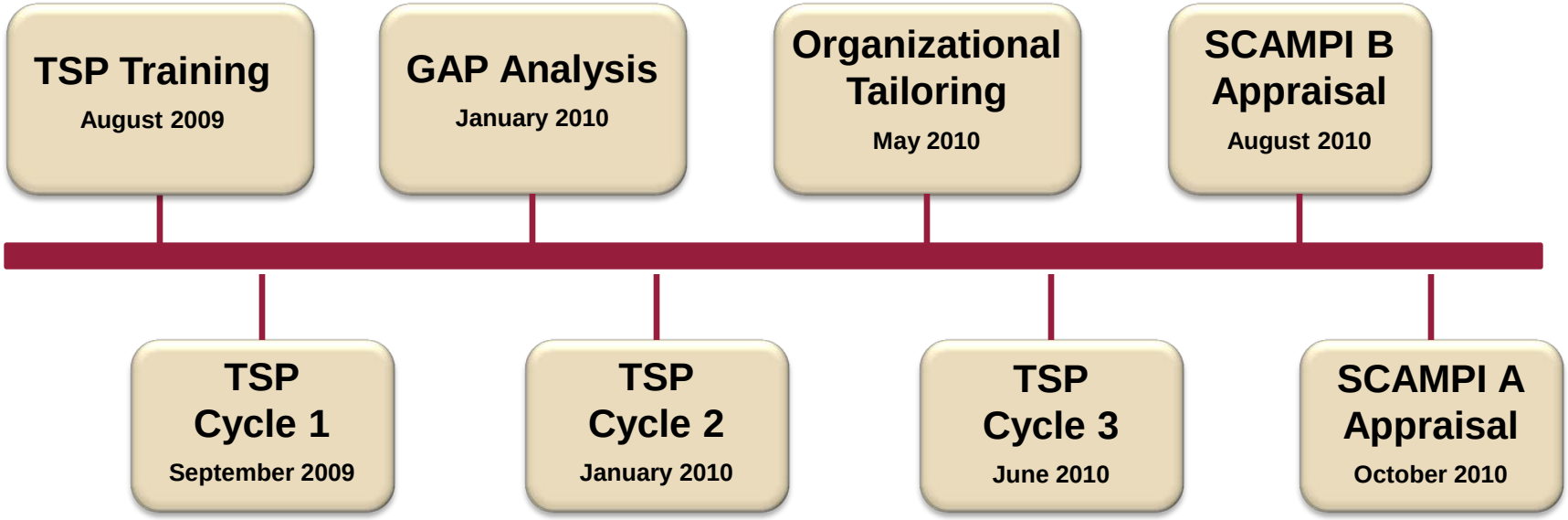
CGI Implementation Timeline



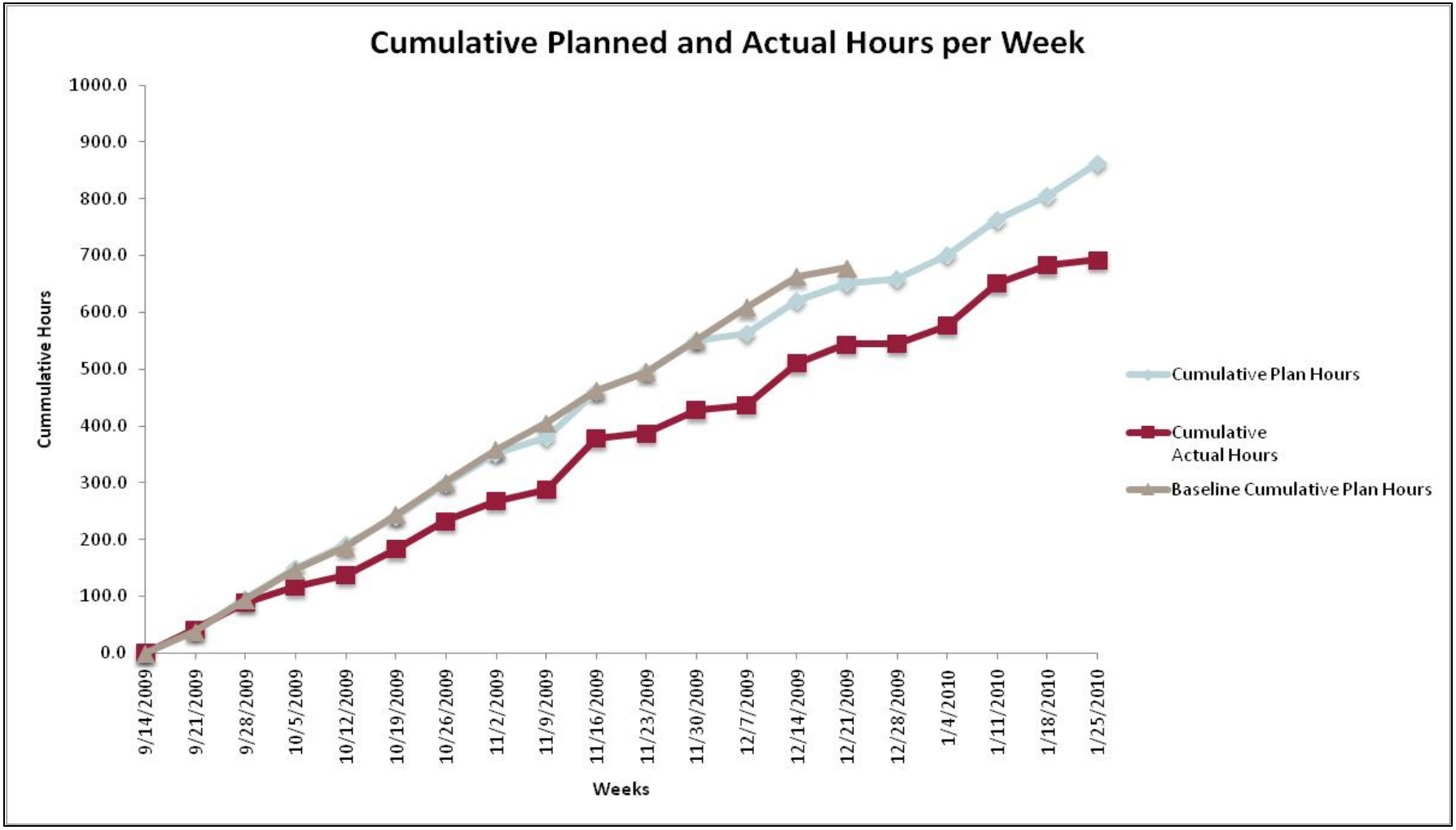
PSP/TSP Training

- SEI Implementing CMMI for High Performance, an Executive Seminar – 02 Jun 09
- Leading a Development Team – 06 Aug 09
- TSP Team Member Training – 20 Aug 09
- PSP Fundamentals – 14 Aug 09
- PSP Advanced – 28 Aug 09

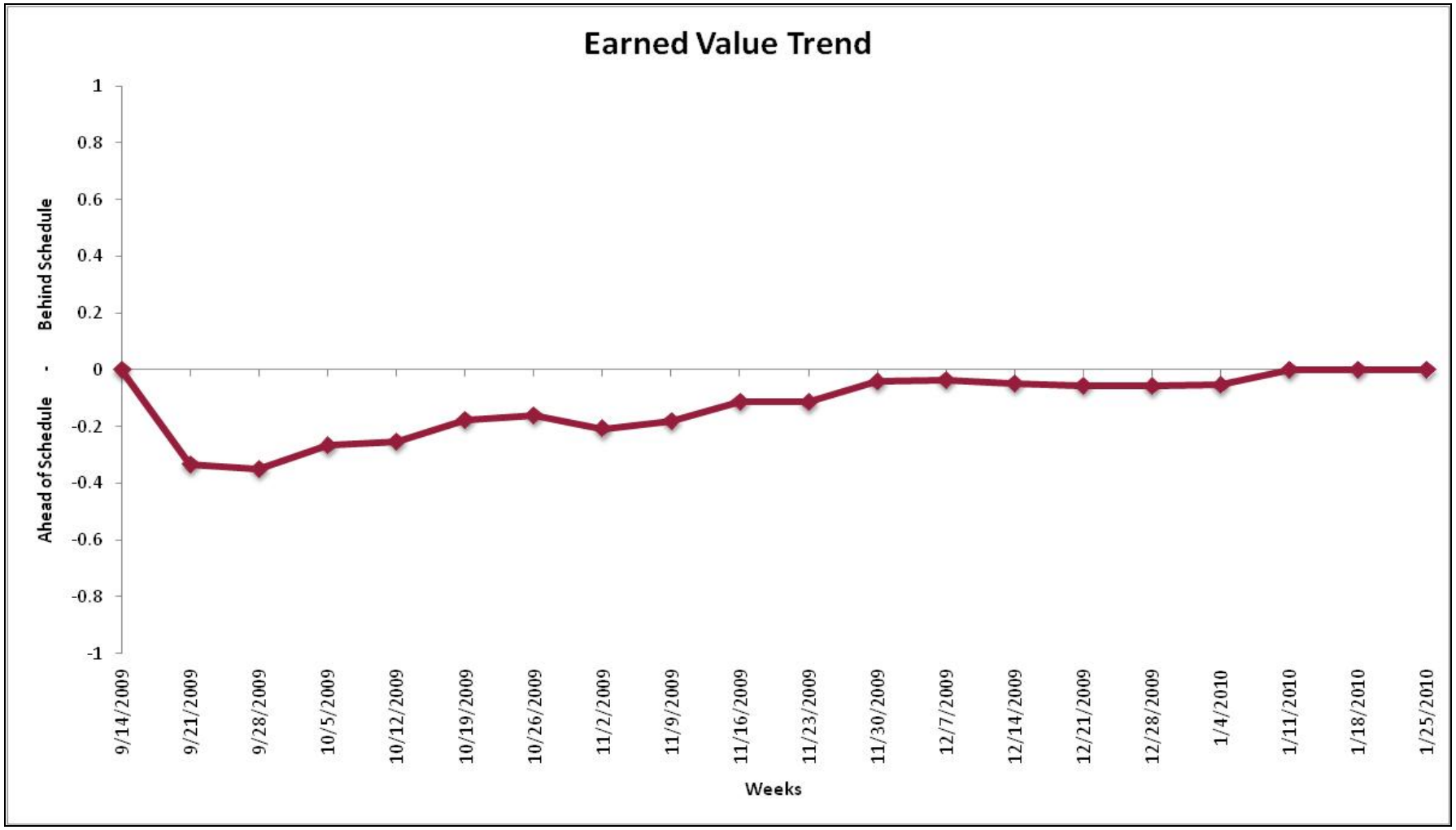
CGI Implementation Timeline



Team B – Cycle 1 Planned vs. Actual Hours

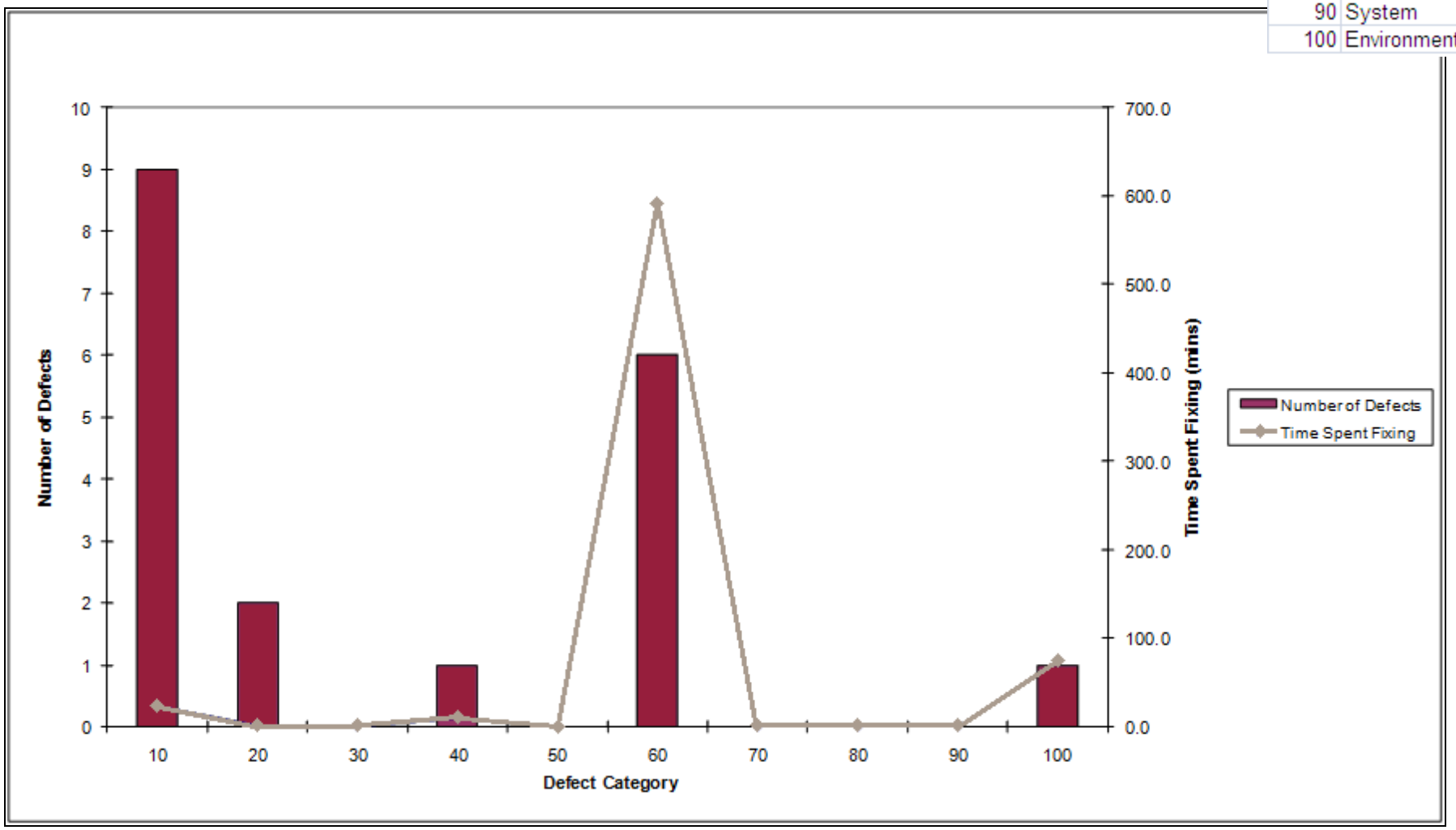


Team B – Cycle 1 Earned Value Trend



Team B – Cycle 1 Pareto Analysis

10	Documentation
20	Syntax
30	Build, Package
40	Assignment
50	Interface
60	Checking
70	Data
80	Function
90	System
100	Environment



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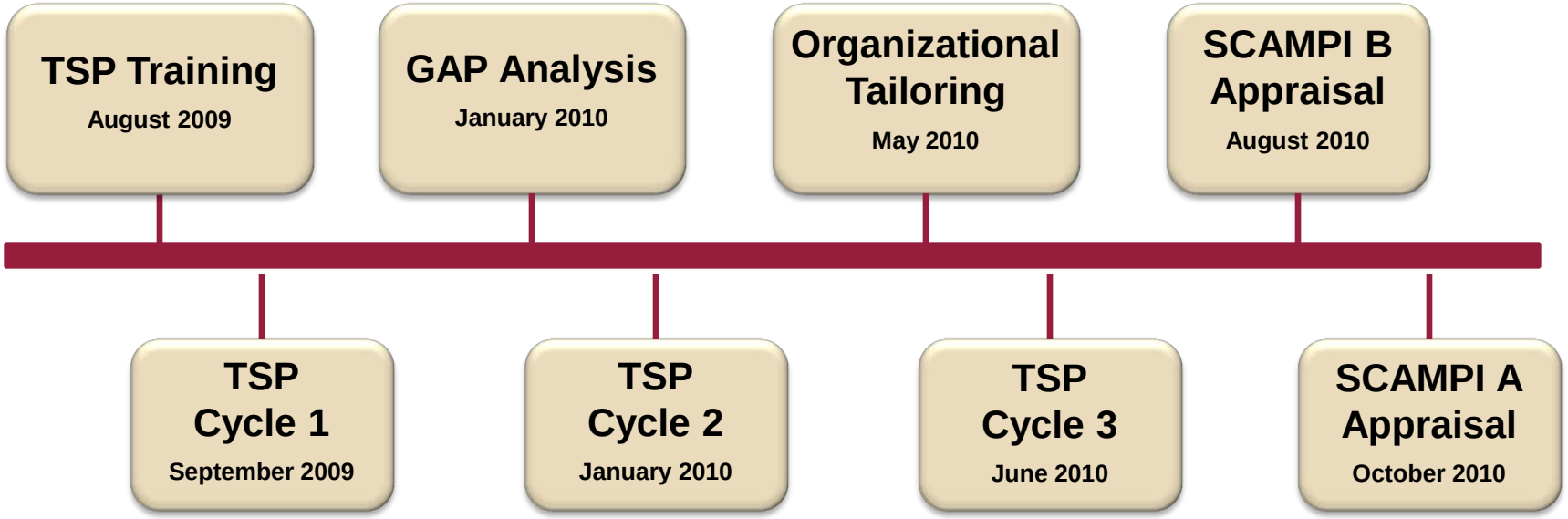
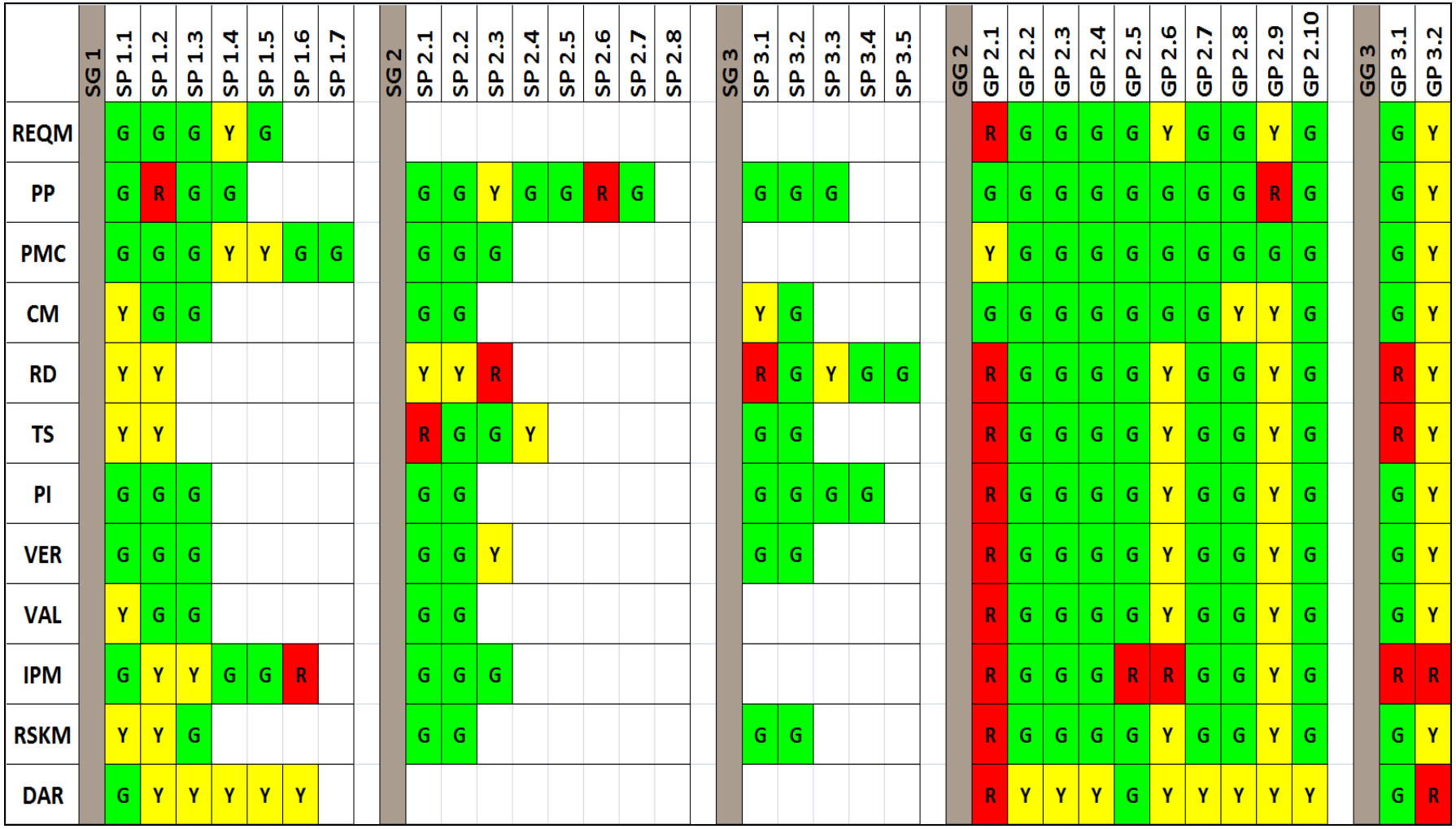
CGI Implementation Timeline



Team A – Gap Analysis Results



	SG 1	SP 1.1	SP 1.2	SP 1.3	SP 1.4	SP 1.5	SP 1.6	SP 1.7	SG 2	SP 2.1	SP 2.2	SP 2.3	SP 2.4	SP 2.5	SP 2.6	SP 2.7	SP 2.8	SG 3	SP 3.1	SP 3.2	SP 3.3	SP 3.4	SP 3.5	GG 2	GP 2.1	GP 2.2	GP 2.3	GP 2.4	GP 2.5	GP 2.6	GP 2.7	GP 2.8	GP 2.9	GP 2.10	GG 3	GP 3.1	GP 3.2
REQM		G	G	G	Y	G																			R	G	G	G	G	Y	G	G	Y	G		G	Y
PP		G	R	G	G					G	G	Y	G	G	R	G			G	G	G				G	G	G	G	G	G	G	G	R	G		G	Y
PMC		G	G	G	Y	Y	G	G		G	G	G													Y	G	G	G	G	G	G	G	G	G		G	Y
CM		Y	G	G						G	G								Y	G					G	G	G	G	G	G	Y	Y	G		G	Y
RD		Y	Y							Y	Y	R							R	G	Y	G	G		R	G	G	G	G	Y	G	G	Y	G		R	Y
TS		Y	Y							R	G	G	Y						G	G					R	G	G	G	G	Y	G	G	Y	G		R	Y
PI		G	G	G						G	G								G	G	G	G			R	G	G	G	G	Y	G	G	Y	G		G	Y
VER		G	G	G						G	G	Y							G	G					R	G	G	G	G	Y	G	G	Y	G		G	Y
VAL		Y	G	G						G	G														R	G	G	G	G	Y	G	G	Y	G		G	Y
IPM		G	Y	Y	G	G	R			G	G	G													R	G	G	G	R	R	G	G	Y	G		R	R
RSKM		Y	Y	G						G	G								G	G					R	G	G	G	G	Y	G	G	Y	G		G	Y
DAR		G	Y	Y	Y	Y	Y																		R	Y	Y	Y	G	Y	Y	Y	Y	Y		G	R

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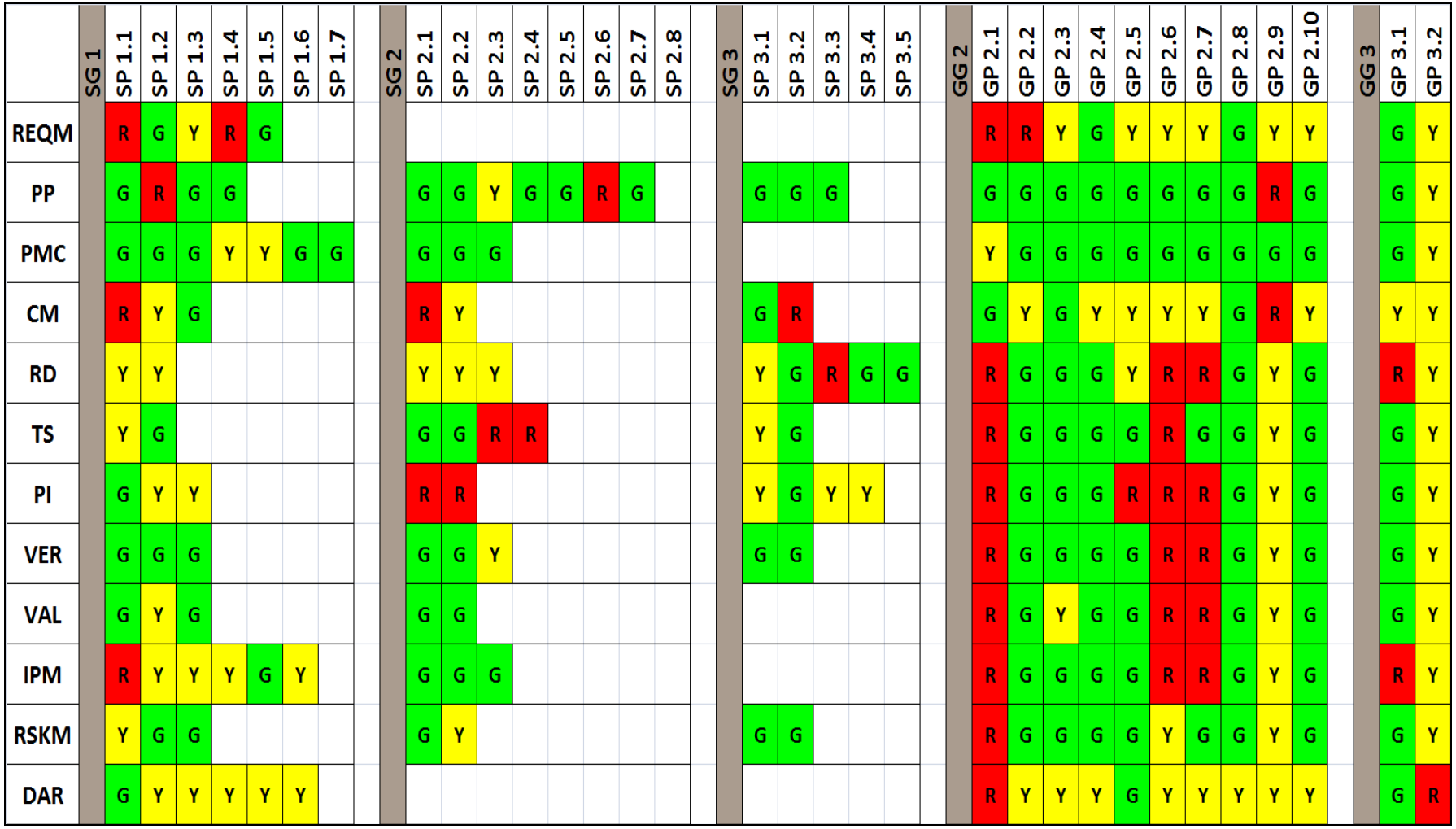
Team B – Gap Analysis Results



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REQM		R	G	Y	R	G																			R	R	Y	G	Y	Y	Y	G	Y	Y		G	Y
PP		G	R	G	G					G	G	Y	G	G	R	G			G	G	G				G	G	G	G	G	G	G	G	R	G		G	Y
PMC		G	G	G	Y	Y	G	G		G	G	G													Y	G	G	G	G	G	G	G	G	G		G	Y
CM		R	Y	G						R	Y								G	R					G	Y	G	Y	Y	Y	Y	G	R	Y		Y	Y
RD		Y	Y							Y	Y	Y							Y	G	R	G	G		R	G	G	G	Y	R	R	G	Y	G		R	Y
TS		Y	G							G	G	R	R						Y	G					R	G	G	G	G	R	G	G	Y	G		G	Y
PI		G	Y	Y						R	R								Y	G	Y	Y			R	G	G	G	R	R	R	G	Y	G		G	Y
VER		G	G	G						G	G	Y							G	G					R	G	G	G	G	R	R	G	Y	G		G	Y
VAL		G	Y	G						G	G														R	G	Y	G	G	R	R	G	Y	G		G	Y
IPM		R	Y	Y	Y	G	Y			G	G	G													R	G	G	G	G	R	R	G	Y	G		R	Y
RSKM		Y	G	G						G	Y								G	G					R	G	G	G	G	Y	G	G	Y	G		G	Y
DAR		G	Y	Y	Y	Y	Y																		R	Y	Y	Y	G	Y	Y	Y	Y	Y		G	R

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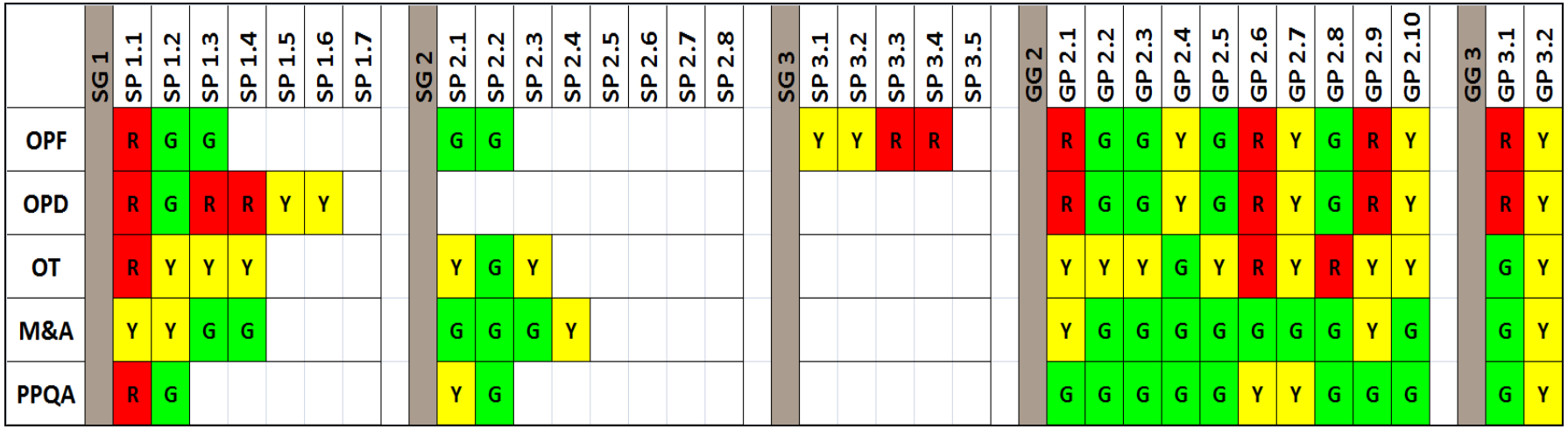
Organizational – Gap Analysis Results



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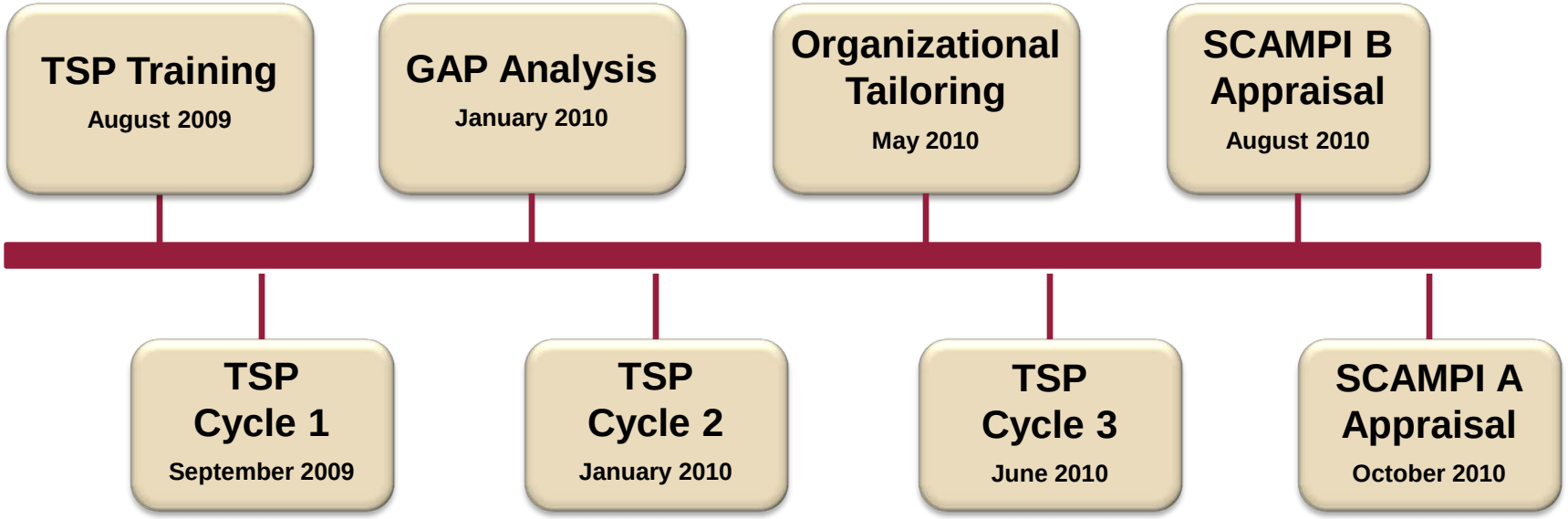
OPF		R	G	G						G	G								Y	Y	R	R			R	G	G	Y	G	R	Y	G	R	Y		R	Y
OPD		R	G	R	R	Y	Y																		R	G	G	Y	G	R	Y	G	R	Y		R	Y
OT		R	Y	Y	Y					Y	G	Y													Y	Y	Y	G	Y	R	Y	R	Y	Y		G	Y
M&A		Y	Y	G	G					G	G	G	Y												Y	G	G	G	G	G	G	G	Y	G		G	Y
PPQA		R	G							Y	G														G	G	G	G	G	Y	Y	G	G	G		G	Y

- Summary
  - 326 Adequate Implementation of Mode Practice
  - 171 Partial Implementation of Model Practice
  - 81 Implementation Absent or Poorly Addressed

Gap Analysis Results

- Software Teams
  - Existing processes and toolsets such as TSP and version control systems added strength to team practices
  - Many tasks were being performed without generating artifacts necessary for CMMI
  - Organizational processes are weak
- Launch the Process Group as a TSP Team
  - Create New Organizational Processes
  - Track Appraisal Preparation Progress
  - Address Identified Weaknesses

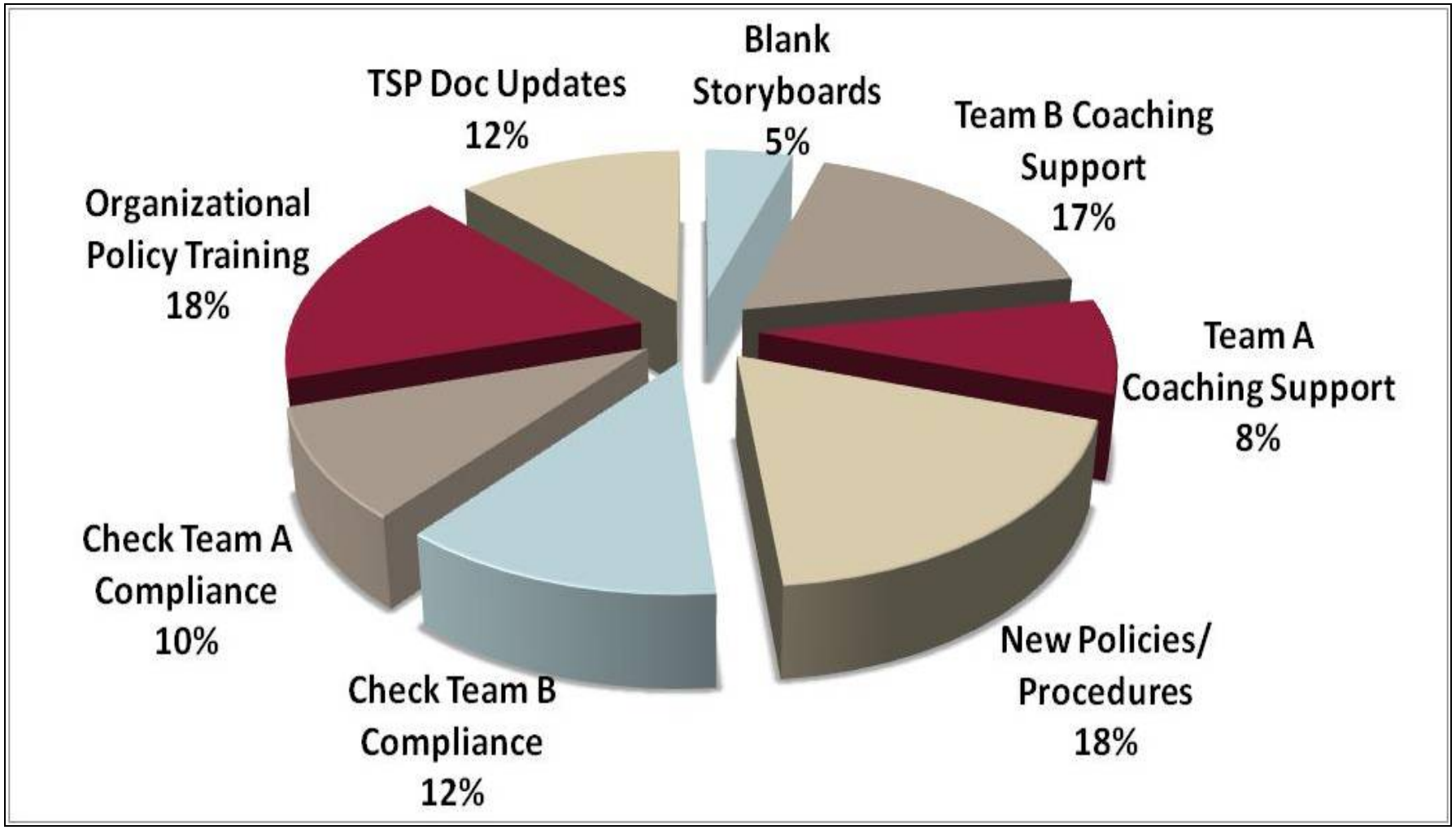
CGI Implementation Timeline



Launching the Process Group

- Team Composition
  - Team Lead, 4 additional team members
  - All working on a part-time basis
- Role Revisions
  - Declined to use the Training Manager role
  - Added a role for Evidence Manager
- New scripts
  - LAUSUPPORT
  - UPDATEPAL
  - CYCLE
- 252 corrective actions tracked as tasks by the PG

Process Group – Cycle 1 Work Distribution



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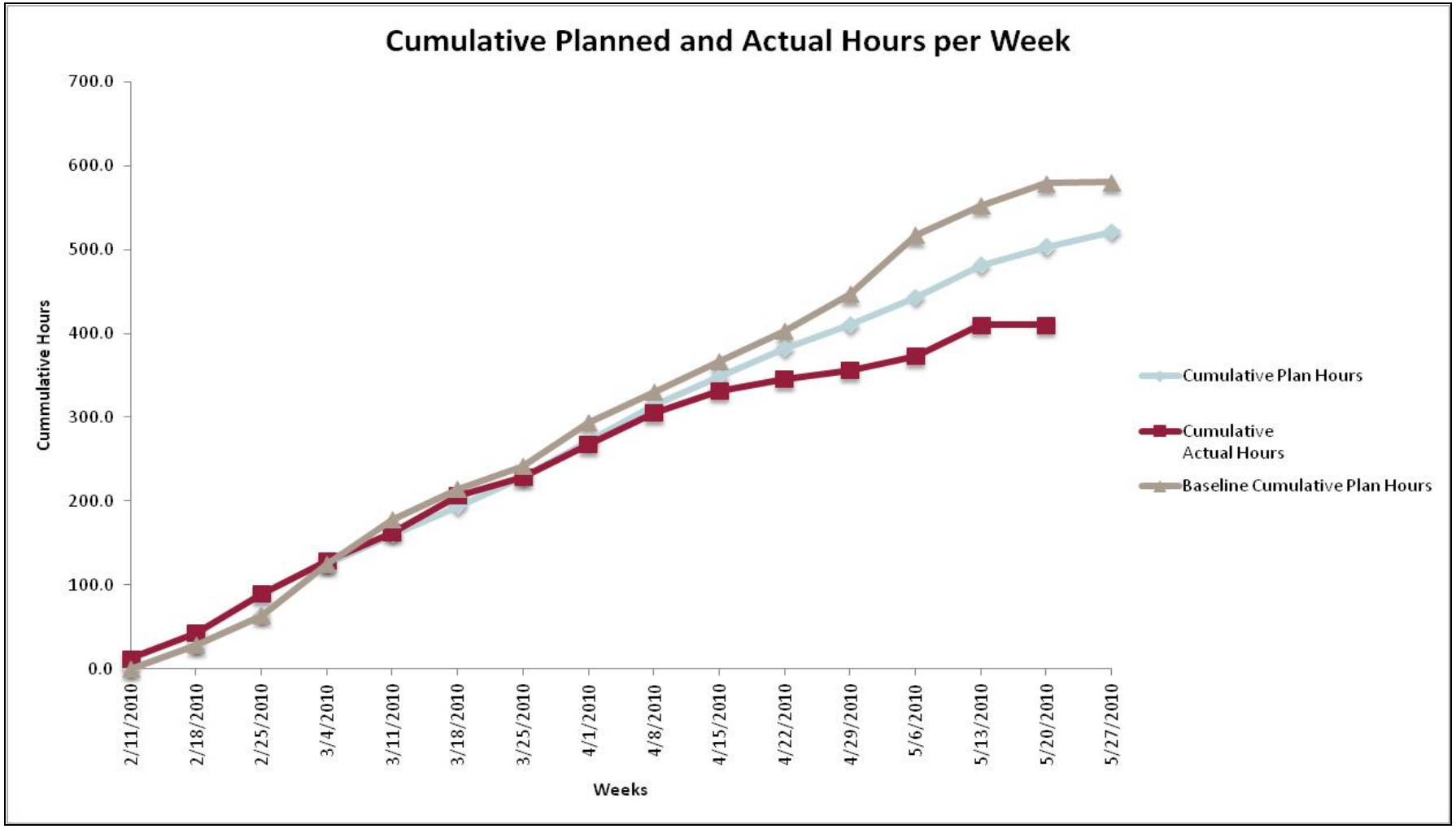
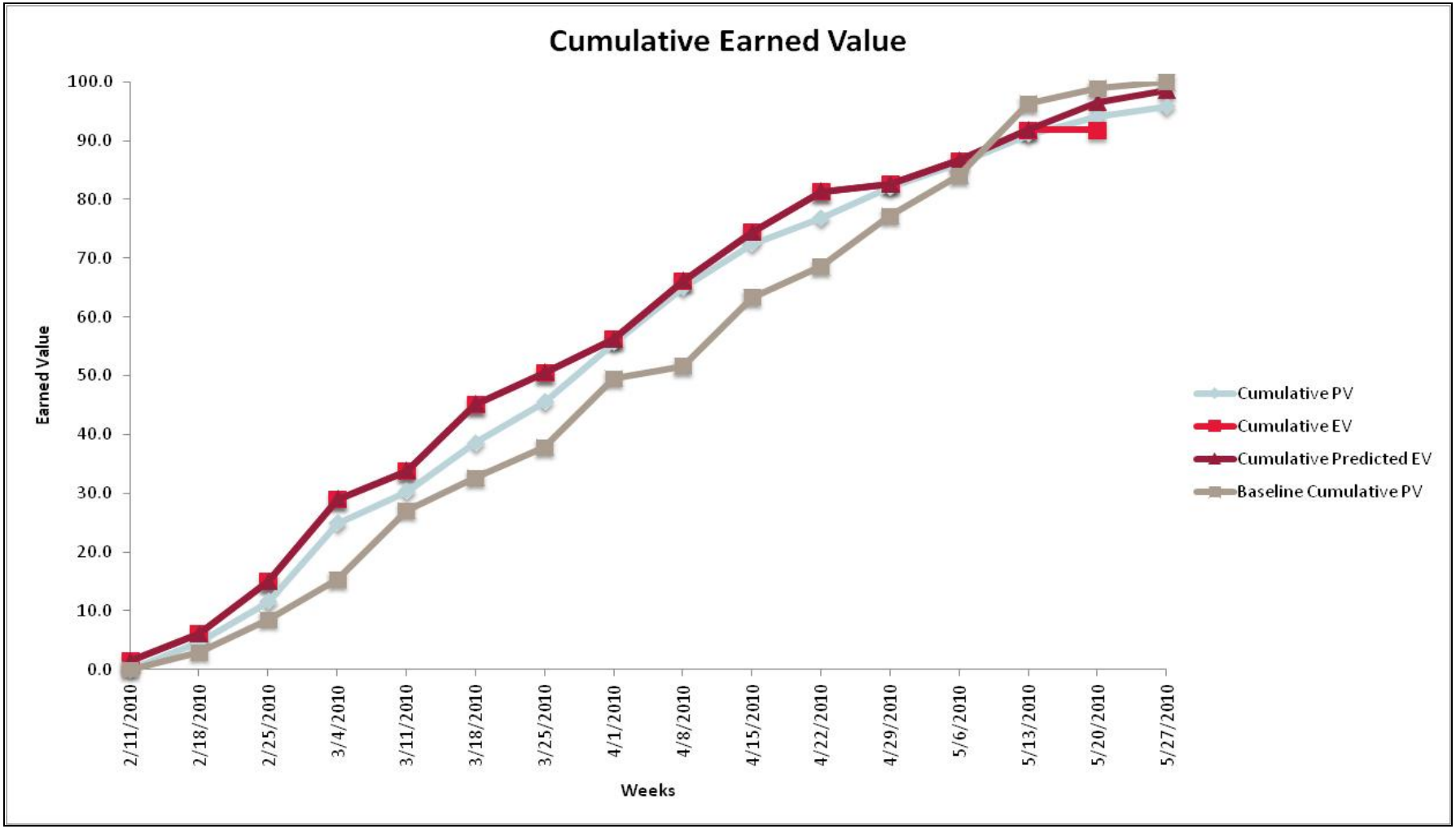
Process Group – Cycle 1 Plan vs. Actual Hours



Process Group – Cycle 1 Cumulative EV



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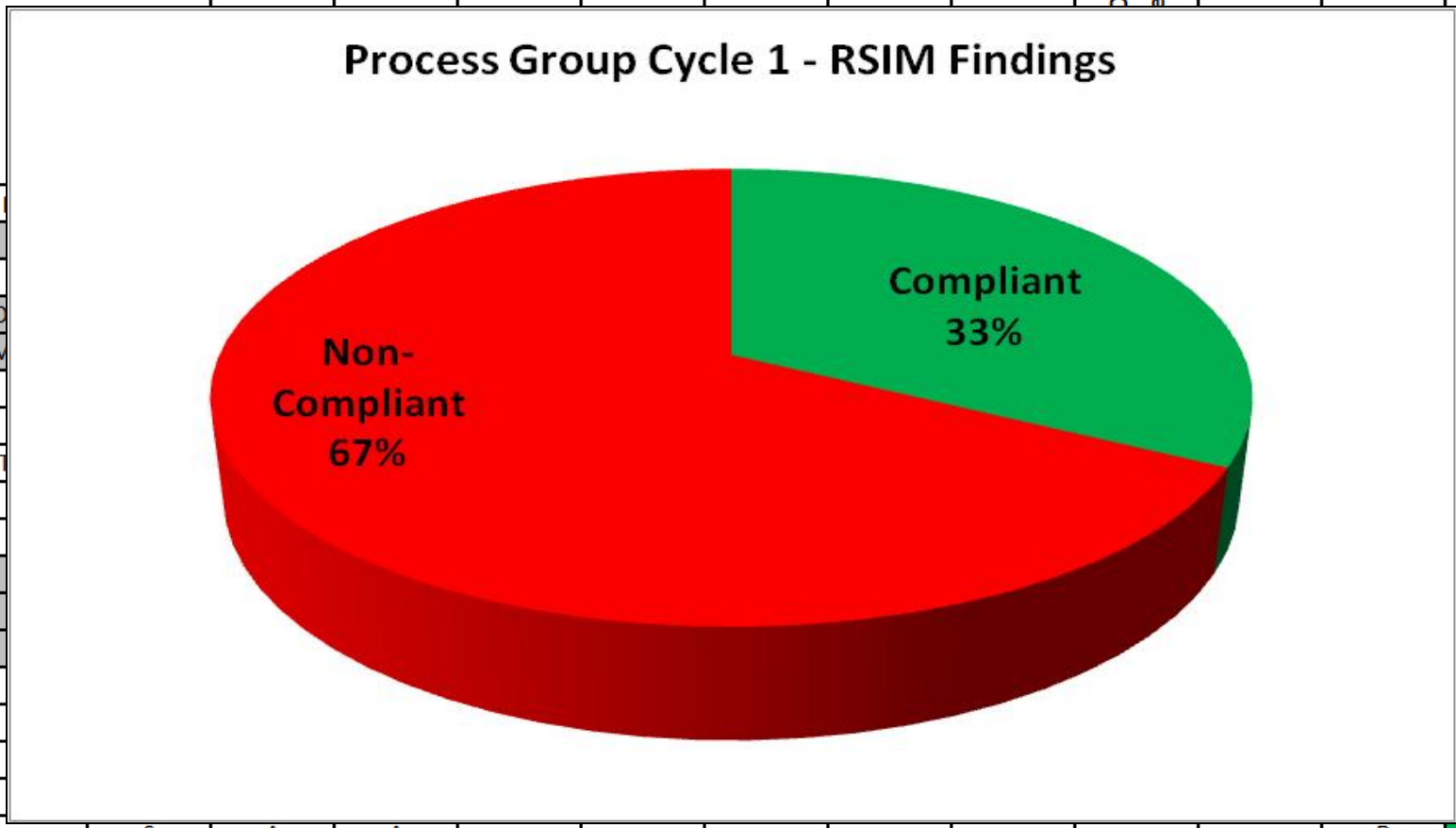
Process Group – Cycle 1 RSIM

R	Responsible
A	Accountable
C	Consulted
I	Informed



Scripts,											
ANA											
CCR											R
CHECKPO											
CHECKTM											
CIBPS											R
CIR											R
CMAUDIT											R
DEFECT											R
GOAL											R
HLD											
IMP											
IMP6											
INS											G
INS											G
INV											R
ITL											R
LAU	S	A	A							R	G
LAU1	S	R	R							C	G

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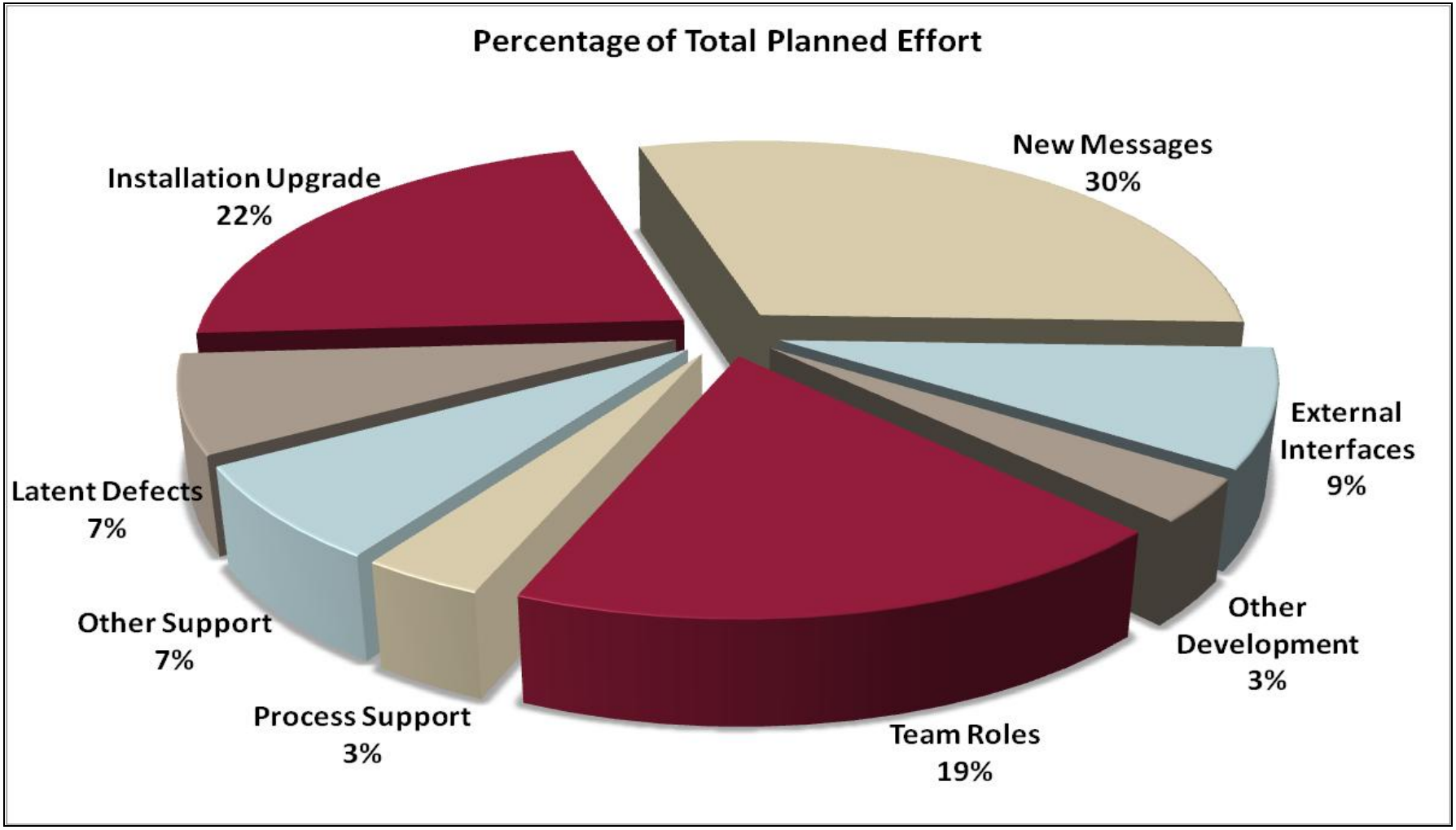
Team B – Cycle 2 Work Distribution



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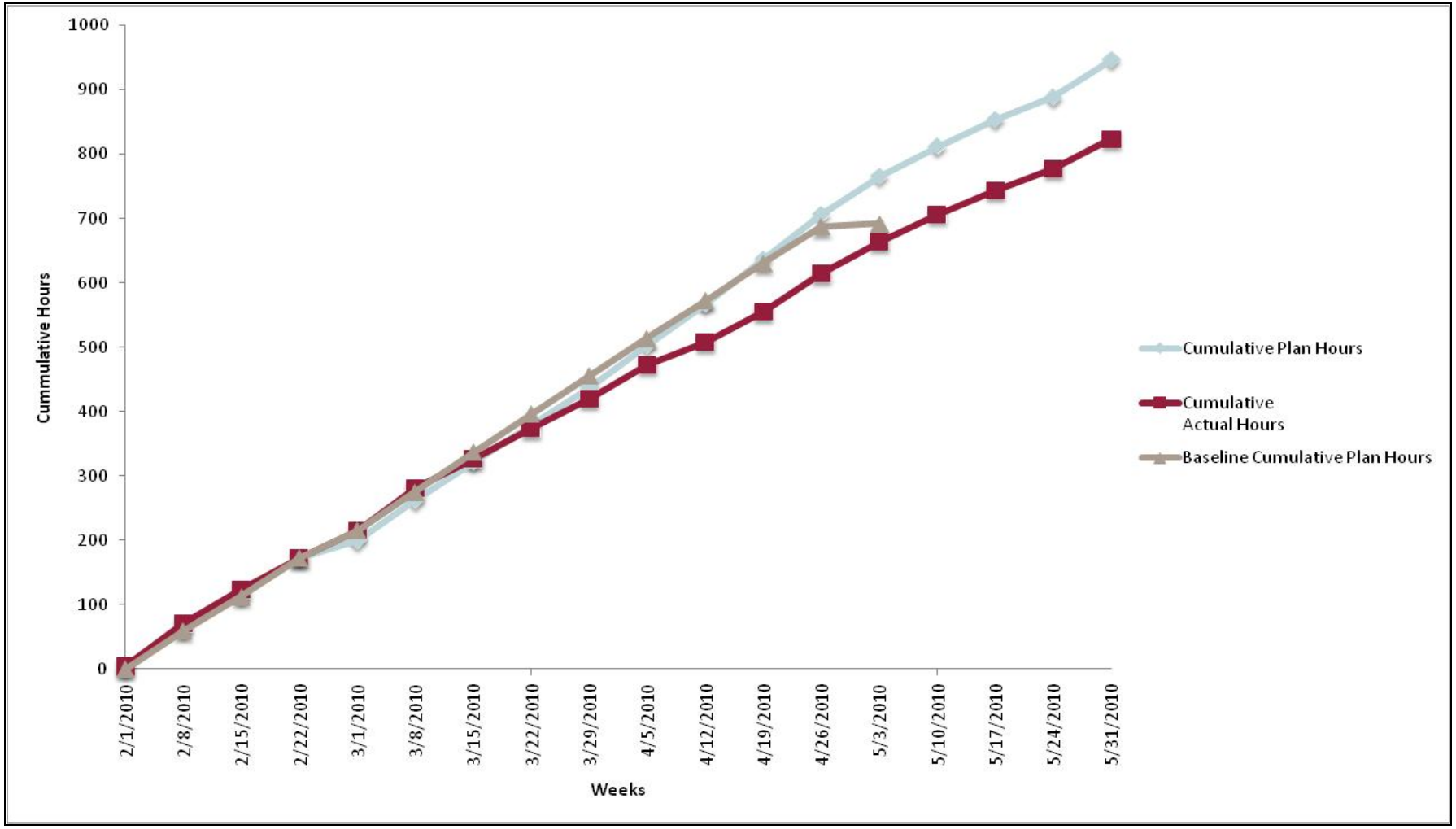
Team B – Cycle 2 Planned vs. Actual Hours



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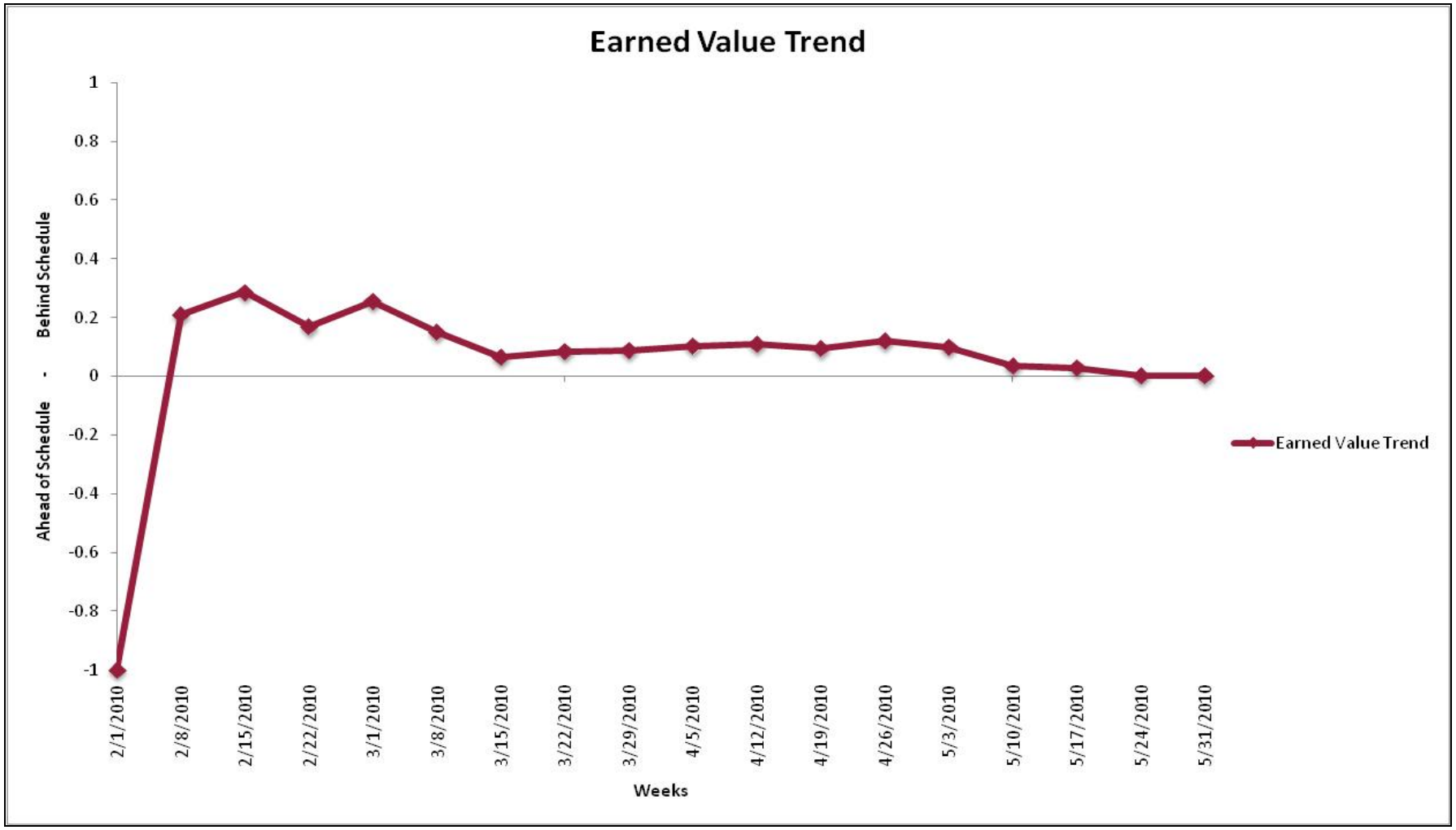
Team B – Cycle 2 Earned Value Trend



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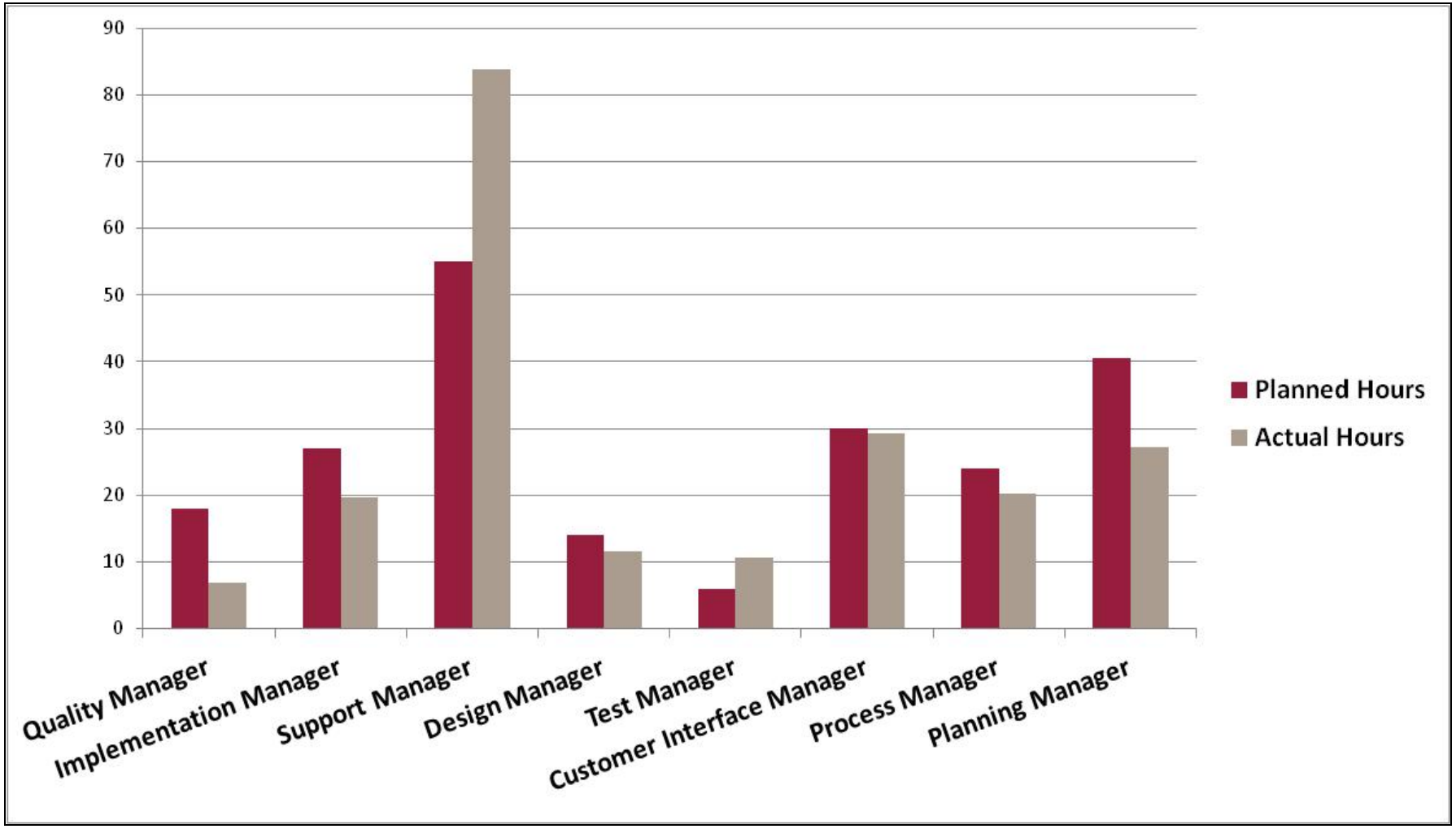
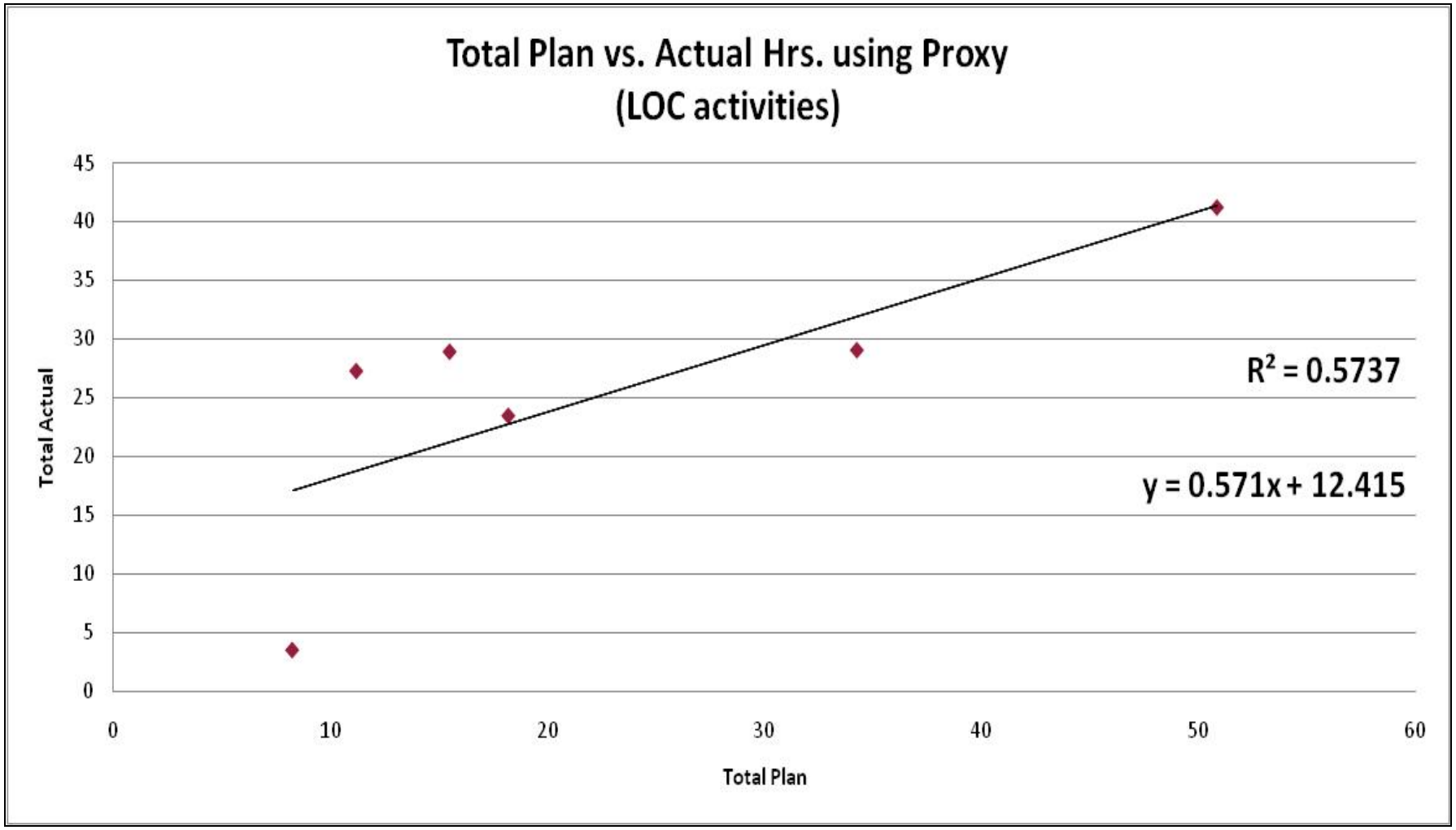
Team B – Cycle 2 Plan vs. Actual Role Work



CGI

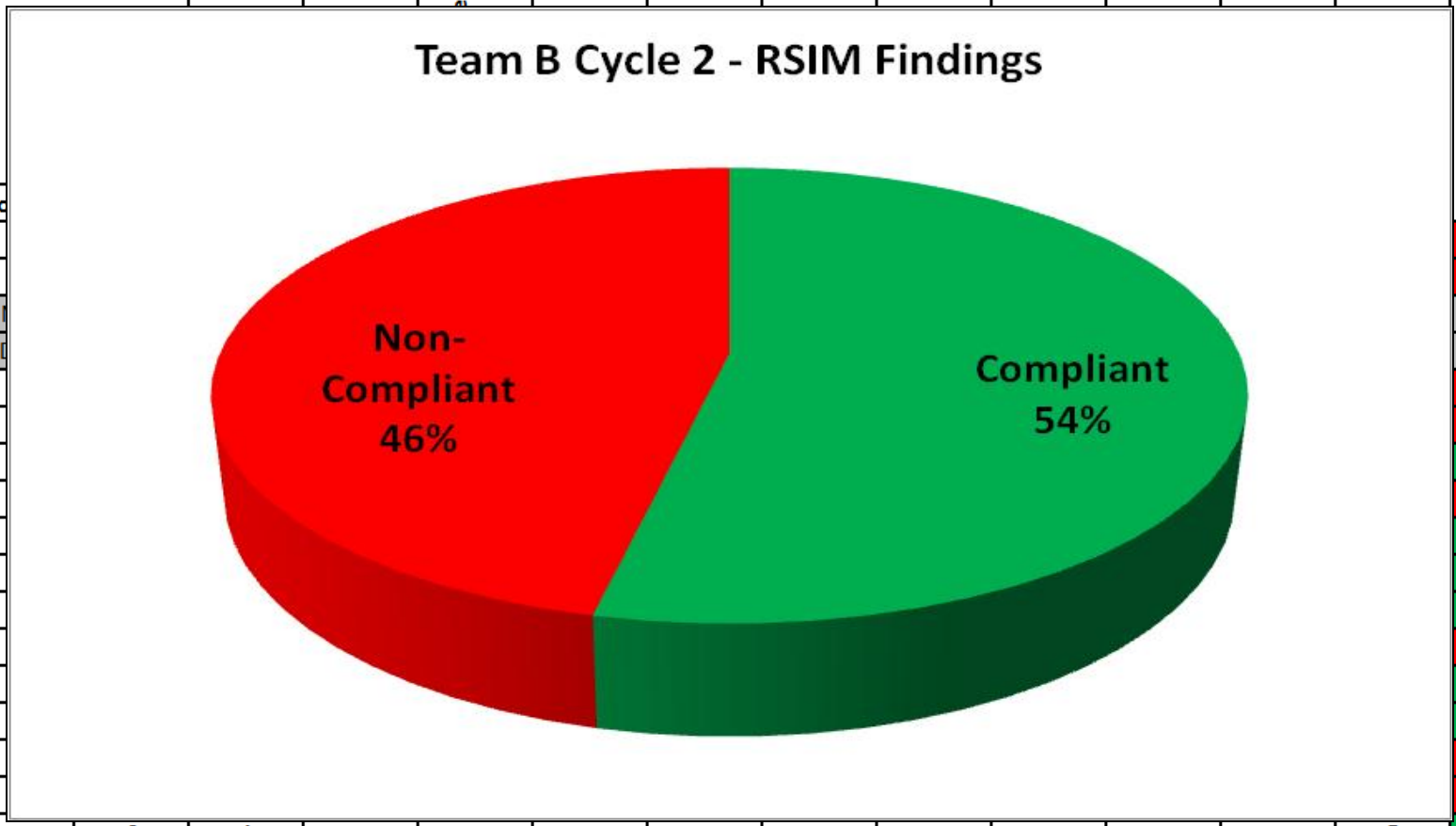
Team B – Cycle 2 Plan vs. Actual Hours



CGI

Team B – Cycle 2 RSIM

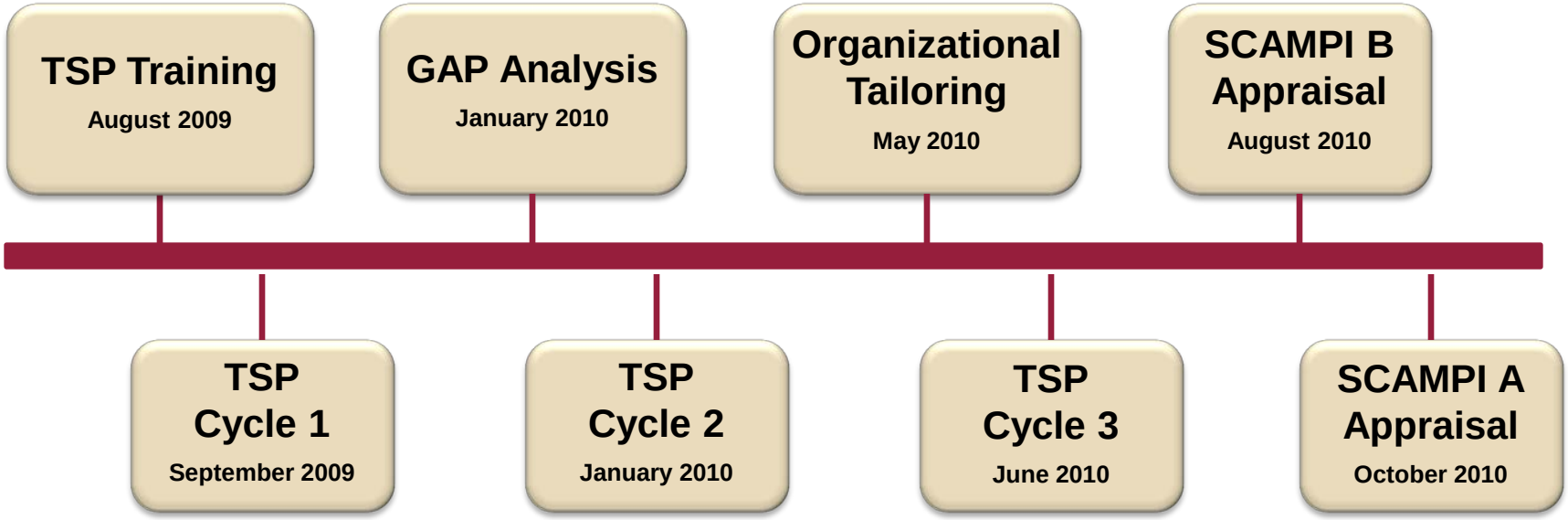
R	Responsible
A	Accountable
C	Consulted
I	Informed



Scripts, Fc													G – Compliant R - Non-Compliant
ANA													R
CCR													R
CHECKPOI													
CHECKTMI													
CIBPS													R
CIR													R
CMAUDIT													G
DEFECT													R
GOAL													G
HLD													G
IMP													G
IMP6													R
INS													G
INS													G
INV													R
ITL													R
LAU	S	A										R	G
LAU1	S	R										C	G

CGI

CGI Implementation Timeline



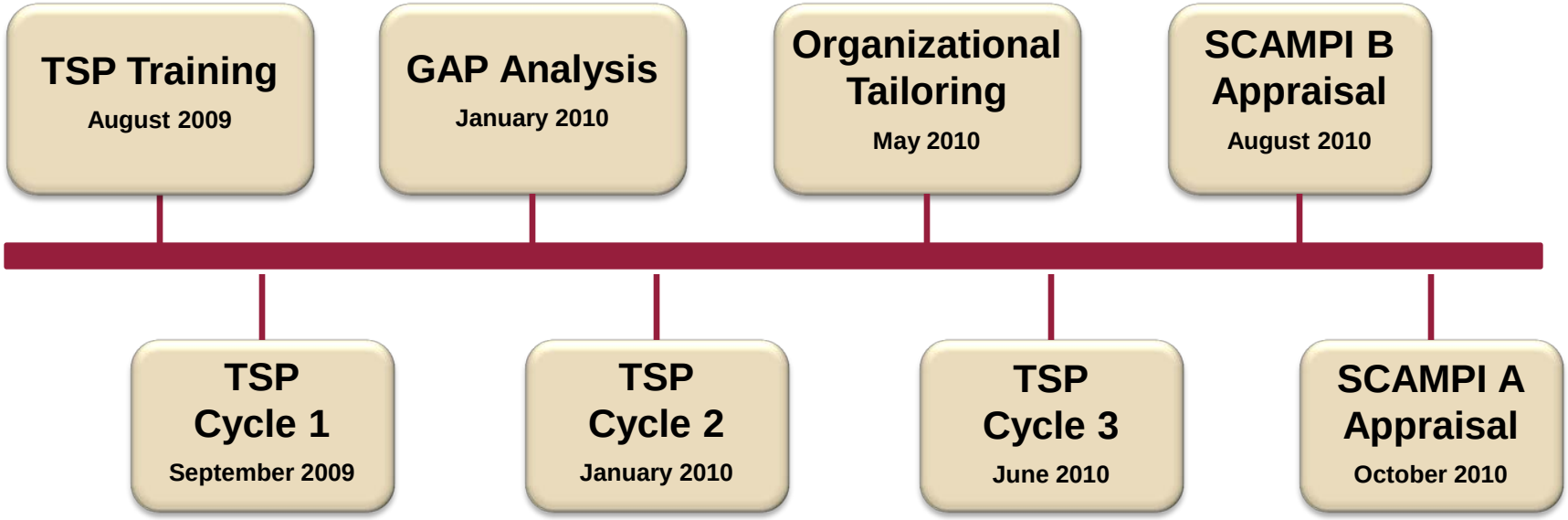
Organizational Tailoring

- Cycle 1 – Core TSP principles
- Cycle 2 – Began using more elements of AIM
  - Checkpoint evaluation of Form RSIM revealed we were not fully compliant with the current processes
- Tailoring of AIM processes to reflect CGI's processes "as practiced"

Organizational Tailoring

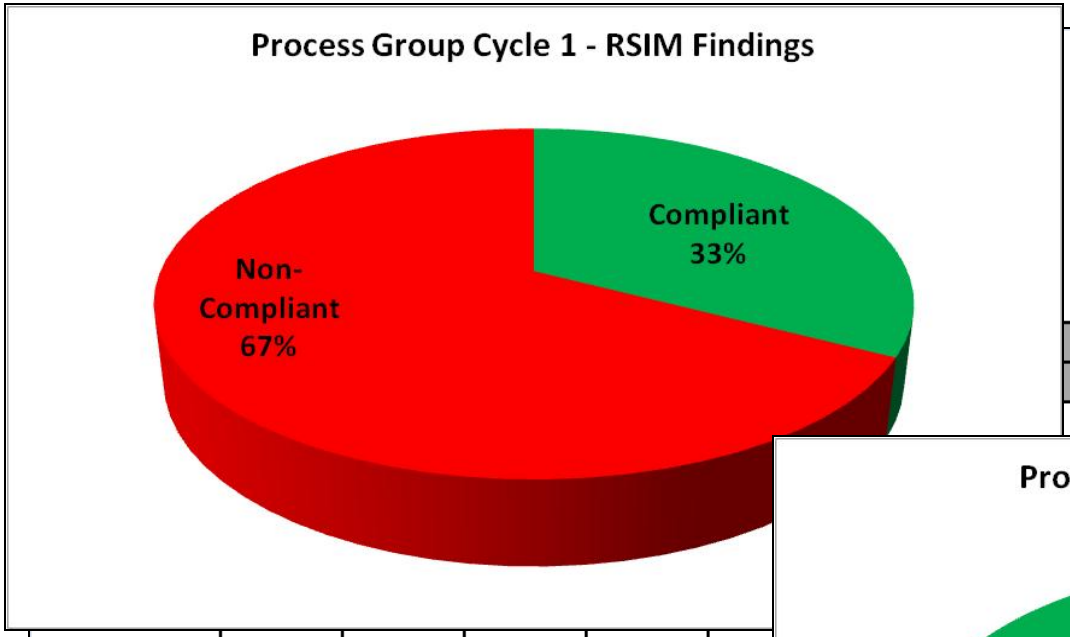
- Organizational processes were updated to allow for TSP to be used by software teams in addition to standard software practices
- TSP Documentation was updated to reflect CGI's processes as they are practiced
  - TSP Configuration Management Scripts/Forms removed
  - Training support removed
  - CGI organizational structure worked into TSP Documents
  - Gaps between TSP and organizational processes were filled
  - Effort required (18 hours x 3 people = 54 task hours)

CGI Implementation Timeline



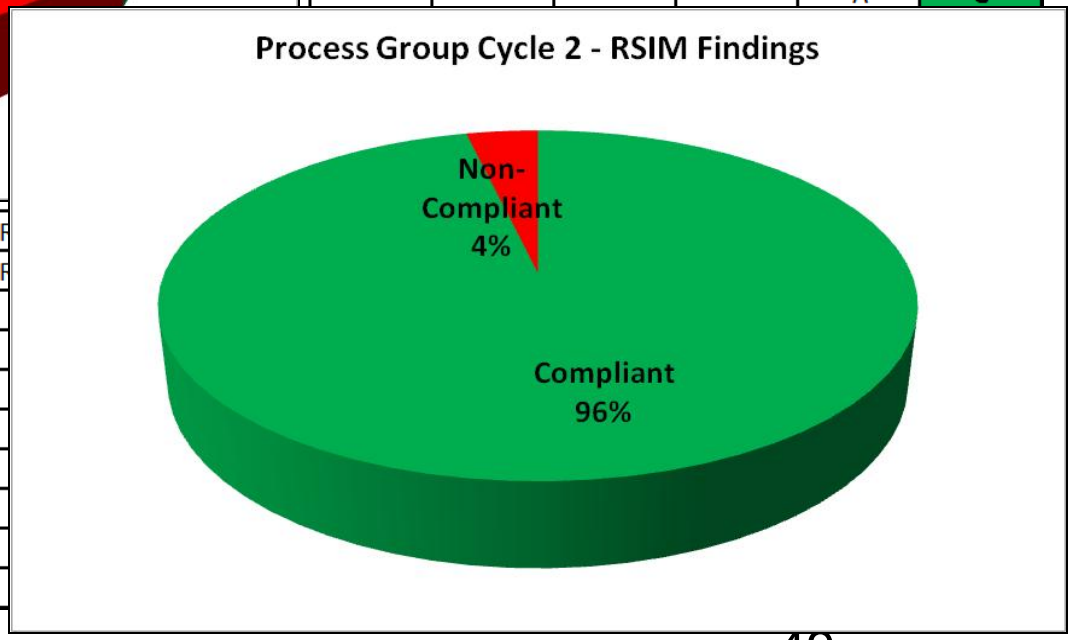
Process Group – Cycle 2 RSIM

R	Responsible
A	Accountable
C	Consulted
I	Informed

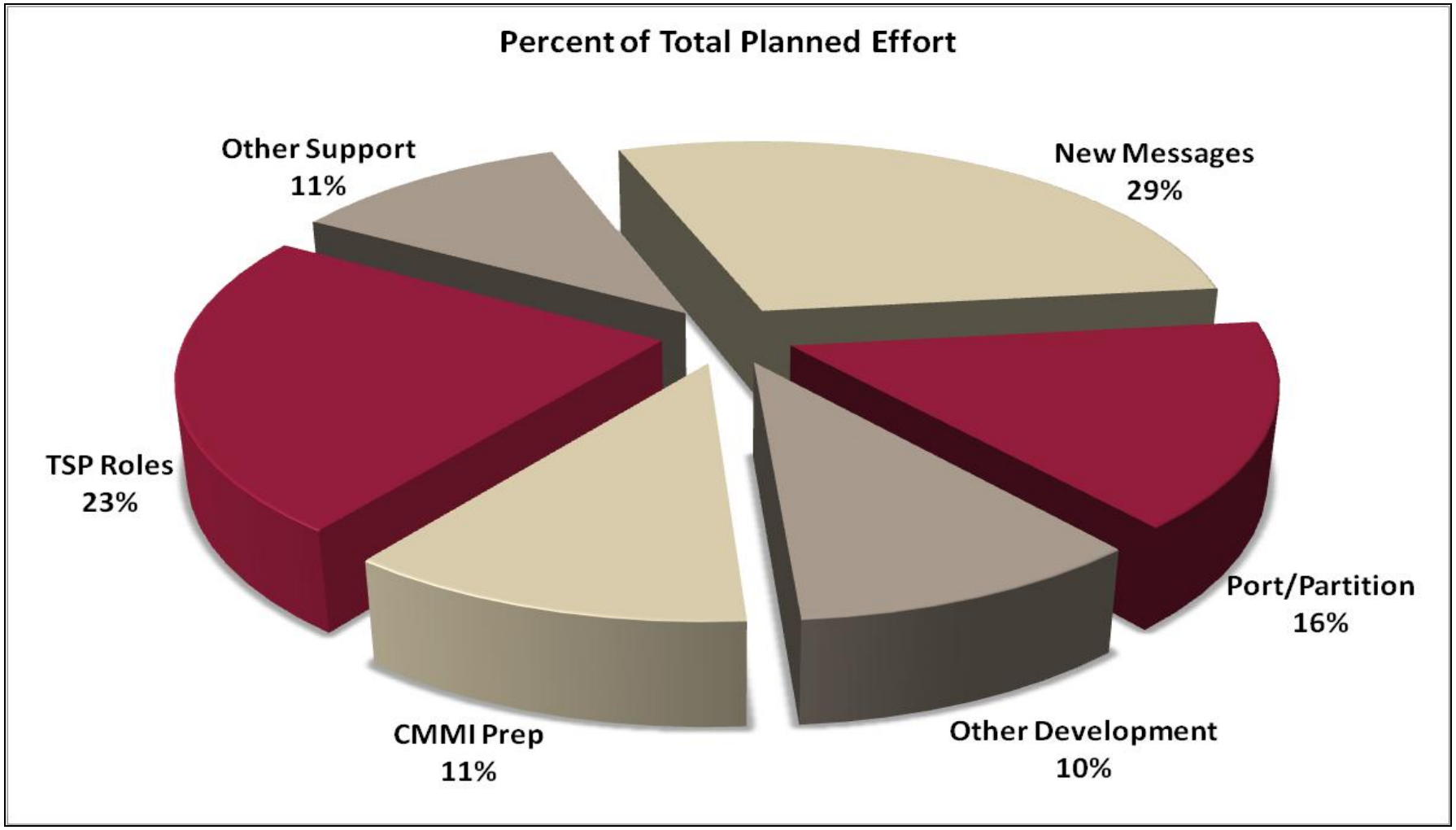


Quality Manager	Process Asset and Data Repository Manager	Evidence Manager	Coaching Manager	PG Team	G – Compliant R - Non-Compliant
			A		G
					G
				A	G

LAU4	S		R		F
LAU6	S		R		F
LAU7	S		R		
LAU8	S		R		
LAU9	S	A	A		
LAUPM	S	I			
LAUSUPPORT	S	I			
LOGD	F				
LOGPIP	F	I	C		
LOGSPDR	F	I	I		

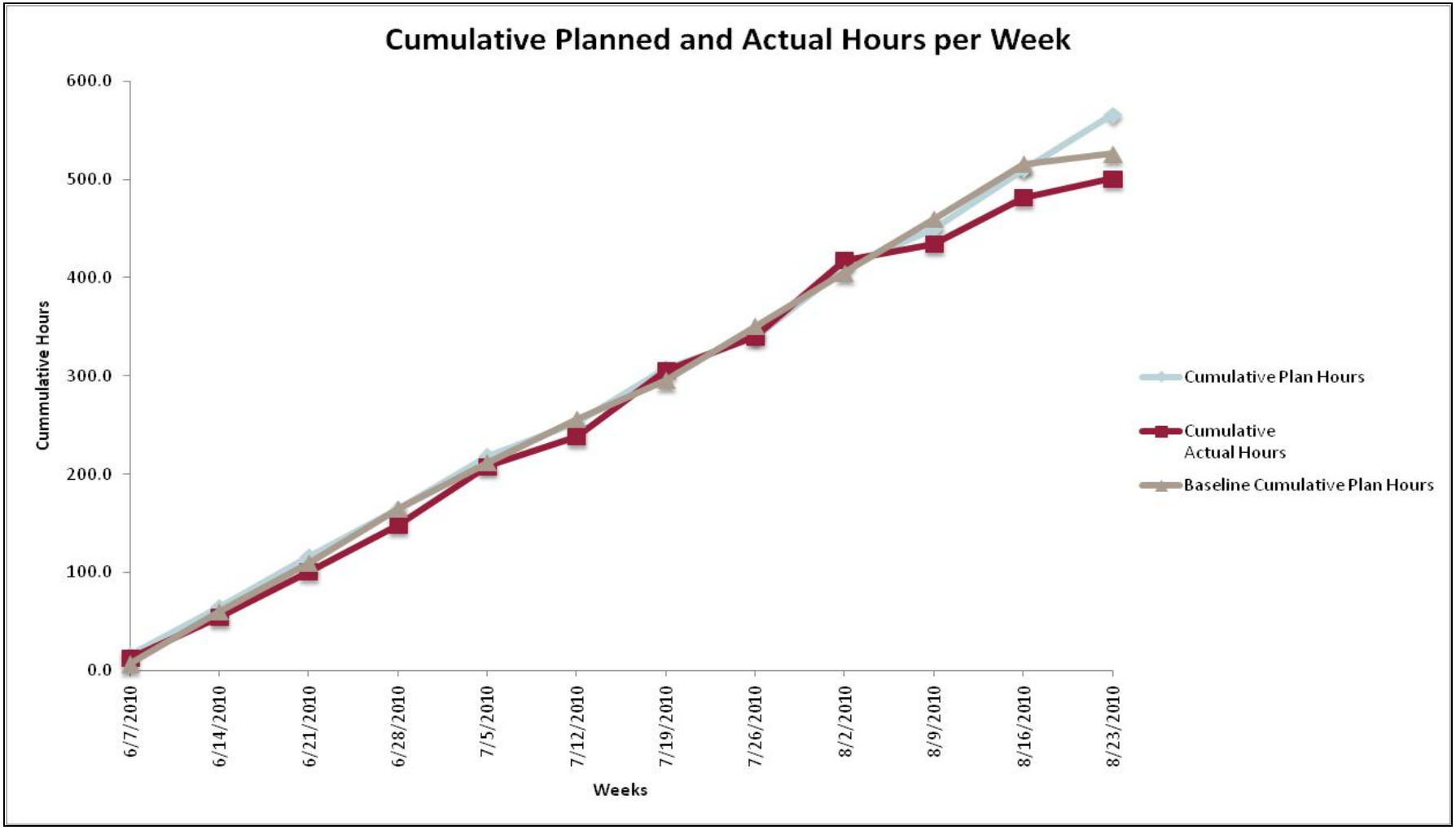


Team B – Cycle 3 Work Distribution

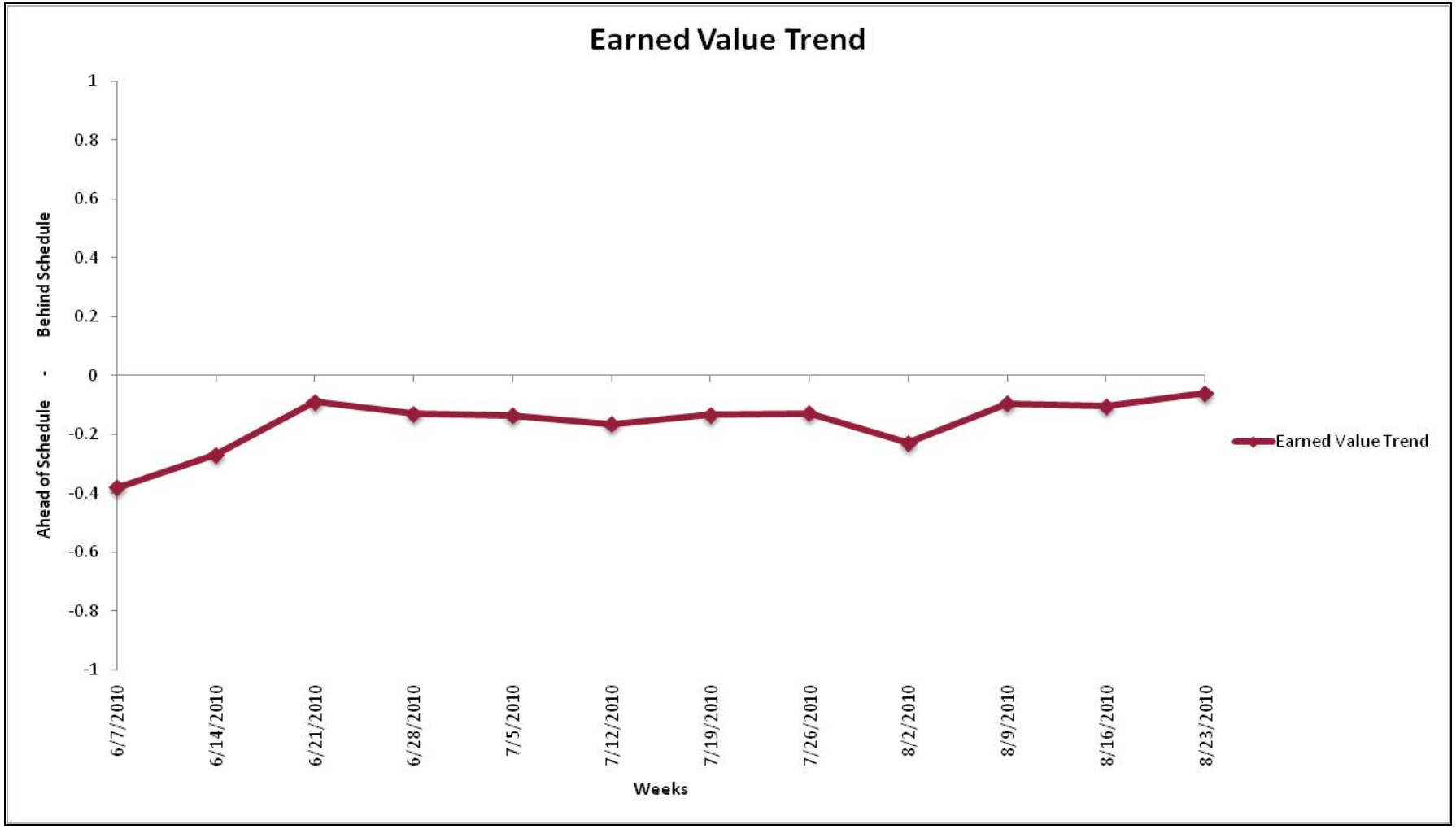


CGI

Team B – Cycle 3 Planned vs. Actual Hours

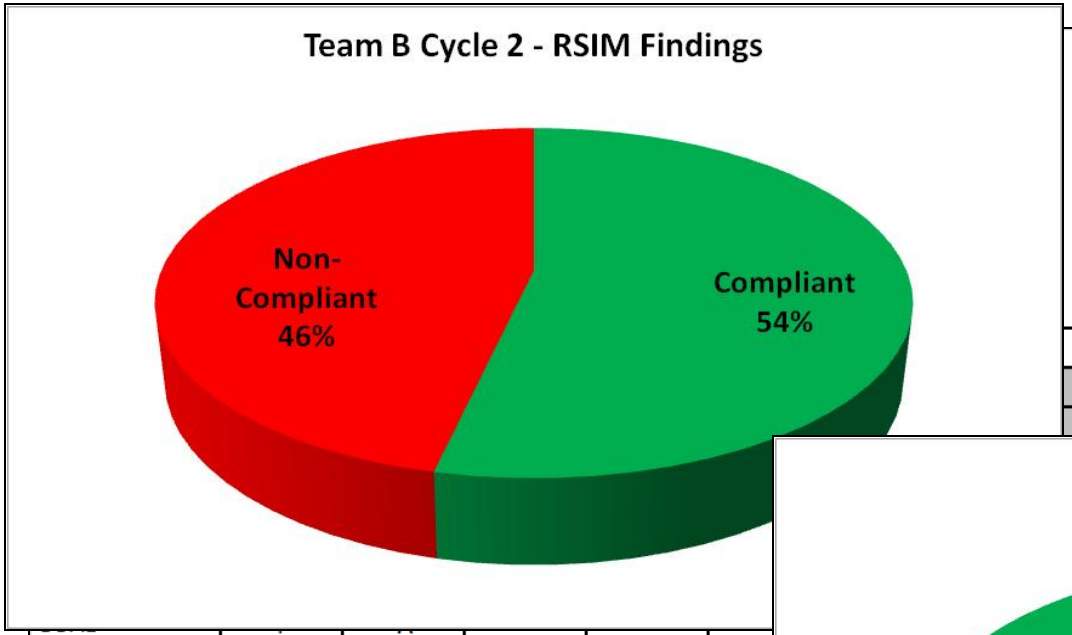


Team B – Cycle 3 Earned Value Trend



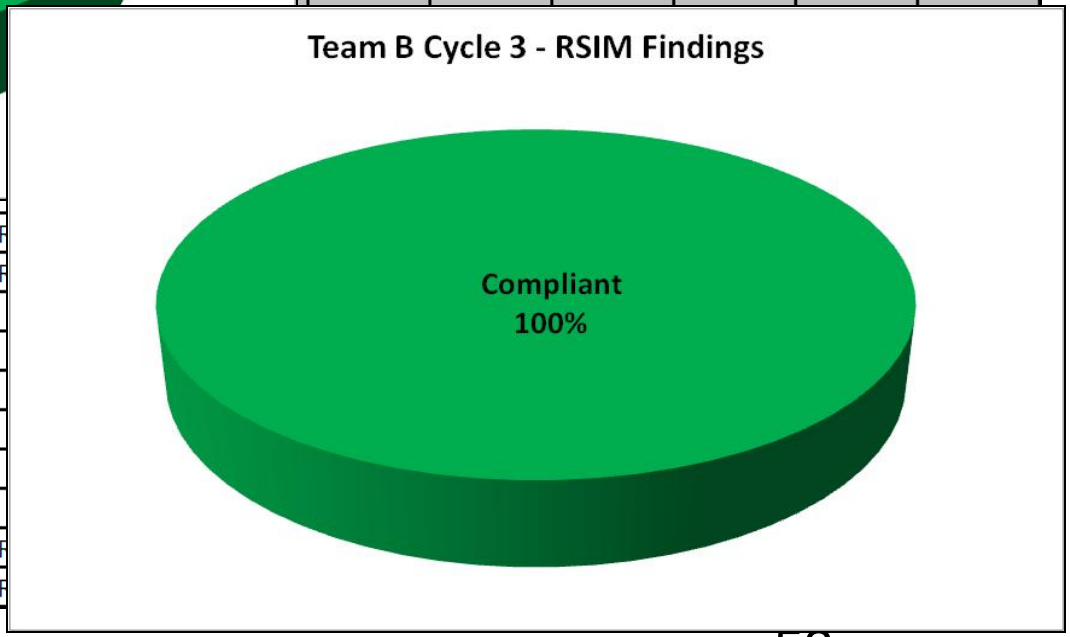
Team B – Cycle 3 RSIM

R	Responsible
A	Accountable
C	Consulted
I	Informed



Process Manager	Support Manager	Quality Manager	Test Manager	TSP Team	G – Compliant R - Non-Compliant
				R	G
				I	

HLD	S	C			F
IMP	S	I			F
IMP6	S	I			
INS	S				
INS	F				
LAU	S	A			
LAU1	S	R			
LAU2	S		R		
LAU3	S		R		F
LAU4	S		R		F



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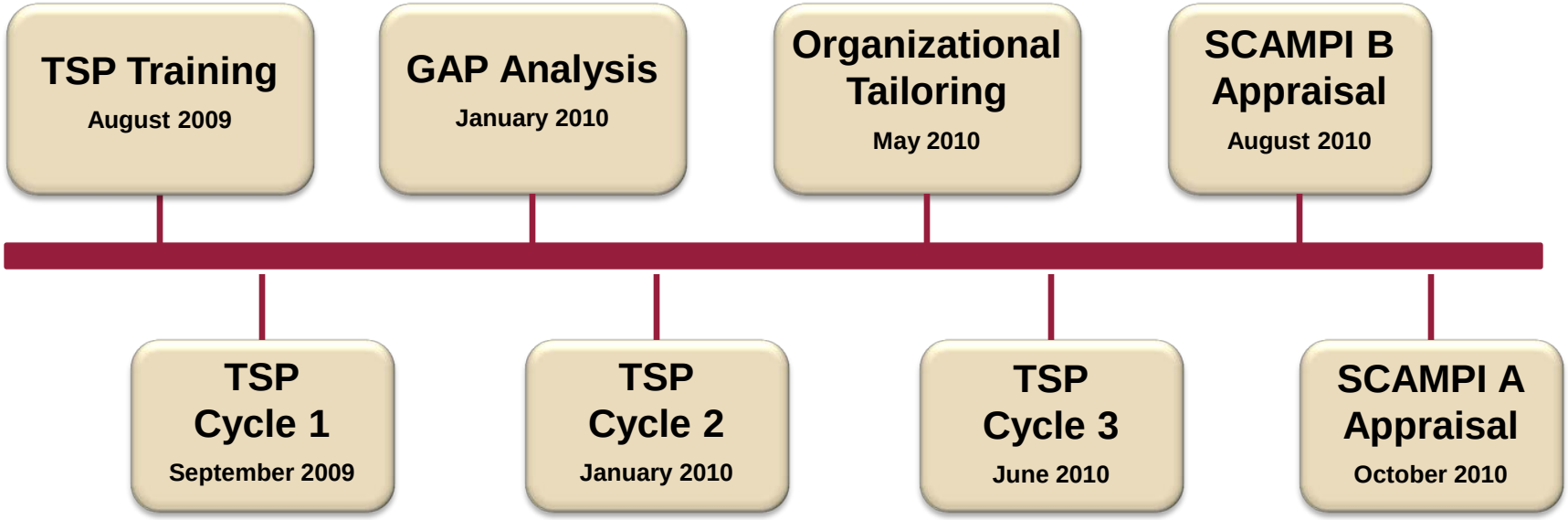
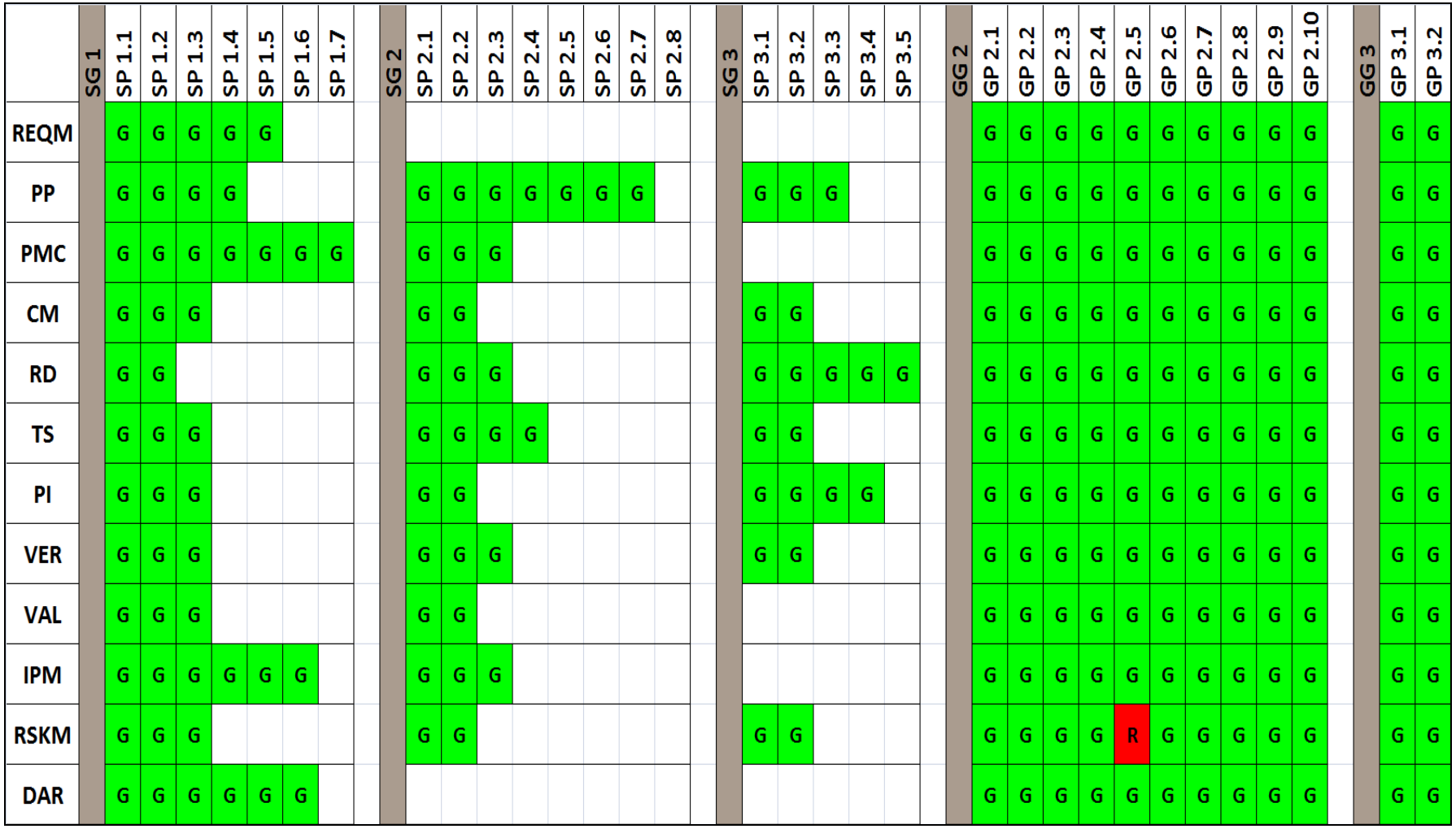
CGI Implementation Timeline



Team A – SCAMPI B Results



	SG 1	SP 1.1	SP 1.2	SP 1.3	SP 1.4	SP 1.5	SP 1.6	SP 1.7	SG 2	SP 2.1	SP 2.2	SP 2.3	SP 2.4	SP 2.5	SP 2.6	SP 2.7	SP 2.8	SG 3	SP 3.1	SP 3.2	SP 3.3	SP 3.4	SP 3.5	GG 2	GP 2.1	GP 2.2	GP 2.3	GP 2.4	GP 2.5	GP 2.6	GP 2.7	GP 2.8	GP 2.9	GP 2.10	GG 3	GP 3.1	GP 3.2
REQM		G	G	G	G	G																			G	G	G	G	G	G	G	G	G	G		G	G
PP		G	G	G	G					G	G	G	G	G	G	G			G	G	G				G	G	G	G	G	G	G	G	G	G		G	G
PMC		G	G	G	G	G	G	G		G	G	G													G	G	G	G	G	G	G	G	G	G		G	G
CM		G	G	G						G	G								G	G					G	G	G	G	G	G	G	G	G	G		G	G
RD		G	G							G	G	G							G	G	G	G	G		G	G	G	G	G	G	G	G	G	G		G	G
TS		G	G	G						G	G	G	G						G	G					G	G	G	G	G	G	G	G	G	G		G	G
PI		G	G	G						G	G								G	G	G	G			G	G	G	G	G	G	G	G	G	G		G	G
VER		G	G	G						G	G	G							G	G					G	G	G	G	G	G	G	G	G	G		G	G
VAL		G	G	G						G	G														G	G	G	G	G	G	G	G	G	G		G	G
IPM		G	G	G	G	G	G			G	G	G													G	G	G	G	G	G	G	G	G	G		G	G
RSKM		G	G	G						G	G								G	G					G	G	G	G	R	G	G	G	G	G		G	G
DAR		G	G	G	G	G	G																		G	G	G	G	G	G	G	G	G	G		G	G

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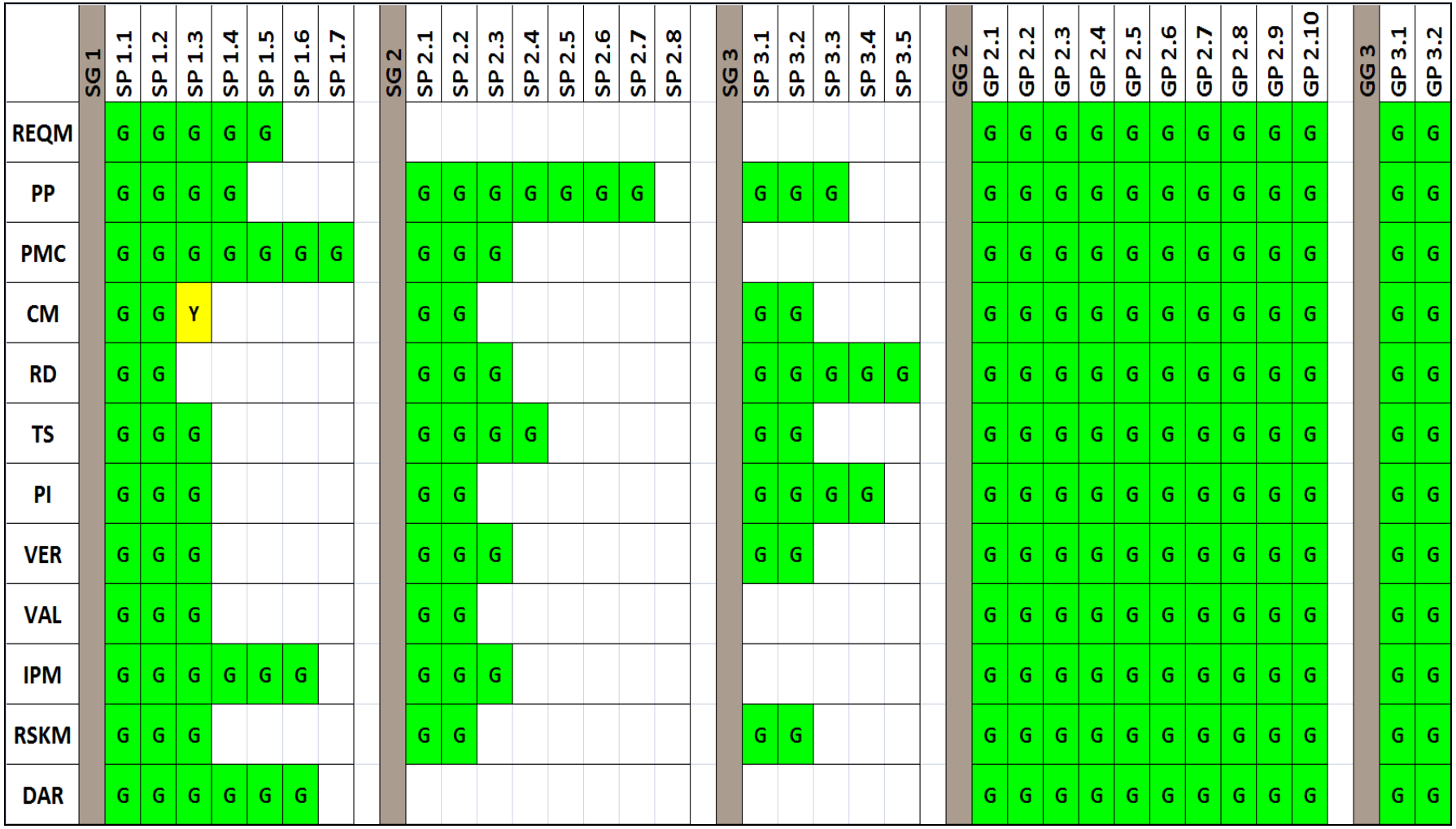
Team B – SCAMPI B Results



	SG 1	SP 1.1	SP 1.2	SP 1.3	SP 1.4	SP 1.5	SP 1.6	SP 1.7	SG 2	SP 2.1	SP 2.2	SP 2.3	SP 2.4	SP 2.5	SP 2.6	SP 2.7	SP 2.8	SG 3	SP 3.1	SP 3.2	SP 3.3	SP 3.4	SP 3.5	GG 2	GP 2.1	GP 2.2	GP 2.3	GP 2.4	GP 2.5	GP 2.6	GP 2.7	GP 2.8	GP 2.9	GP 2.10	GG 3	GP 3.1	GP 3.2
REQM		G	G	G	G	G																			G	G	G	G	G	G	G	G	G	G		G	G
PP		G	G	G	G					G	G	G	G	G	G	G			G	G	G				G	G	G	G	G	G	G	G	G	G		G	G
PMC		G	G	G	G	G	G	G		G	G	G													G	G	G	G	G	G	G	G	G	G		G	G
CM		G	G	Y						G	G								G	G					G	G	G	G	G	G	G	G	G	G		G	G
RD		G	G							G	G	G							G	G	G	G	G		G	G	G	G	G	G	G	G	G	G		G	G
TS		G	G	G						G	G	G	G						G	G					G	G	G	G	G	G	G	G	G	G		G	G
PI		G	G	G						G	G								G	G	G	G			G	G	G	G	G	G	G	G	G	G		G	G
VER		G	G	G						G	G	G							G	G					G	G	G	G	G	G	G	G	G	G		G	G
VAL		G	G	G						G	G														G	G	G	G	G	G	G	G	G	G		G	G
IPM		G	G	G	G	G	G			G	G	G													G	G	G	G	G	G	G	G	G	G		G	G
RSKM		G	G	G						G	G								G	G					G	G	G	G	G	G	G	G	G	G		G	G
DAR		G	G	G	G	G	G																		G	G	G	G	G	G	G	G	G	G		G	G

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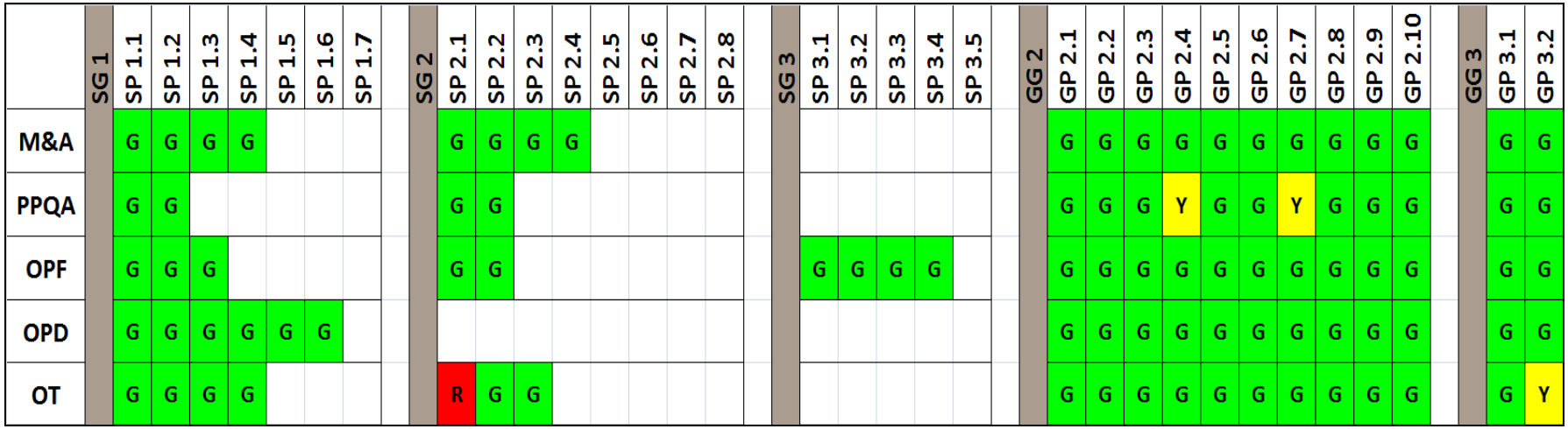
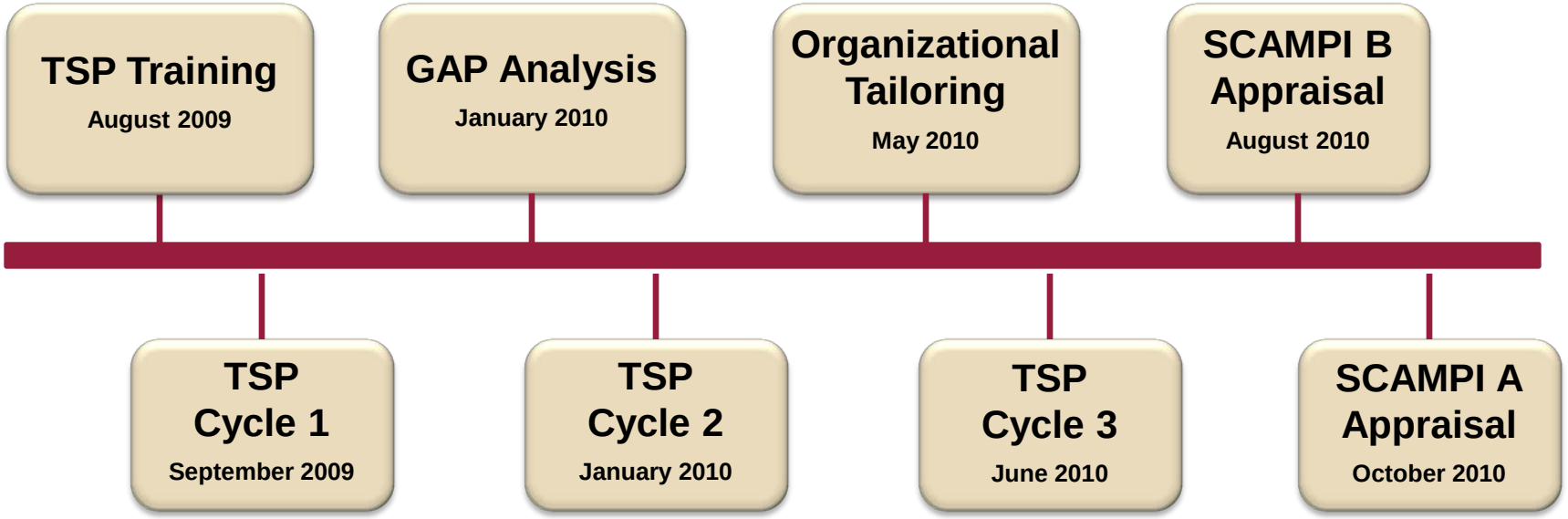
Organizational – SCAMPI B Results



	SG 1	SP 1.1	SP 1.2	SP 1.3	SP 1.4	SP 1.5	SP 1.6	SP 1.7	SG 2	SP 2.1	SP 2.2	SP 2.3	SP 2.4	SP 2.5	SP 2.6	SP 2.7	SP 2.8	SG 3	SP 3.1	SP 3.2	SP 3.3	SP 3.4	SP 3.5	GG 2	GP 2.1	GP 2.2	GP 2.3	GP 2.4	GP 2.5	GP 2.6	GP 2.7	GP 2.8	GP 2.9	GP 2.10	GG 3	GP 3.1	GP 3.2
M&A		G	G	G	G					G	G	G	G												G	G	G	G	G	G	G	G	G		G	G
PPQA		G	G							G	G														G	G	G	Y	G	G	Y	G	G	G		G	G
OPF		G	G	G						G	G								G	G	G	G			G	G	G	G	G	G	G	G	G	G		G	G
OPD		G	G	G	G	G	G																		G	G	G	G	G	G	G	G	G	G		G	G
OT		G	G	G	G					R	G	G													G	G	G	G	G	G	G	G	G	G		G	Y

- Summary
  - 574 Adequate Implementation of Mode Practice
  - 4 Partial Implementation of Model Practice
  - 2 Implementation Absent or Poorly Addressed

CGI Implementation Timeline

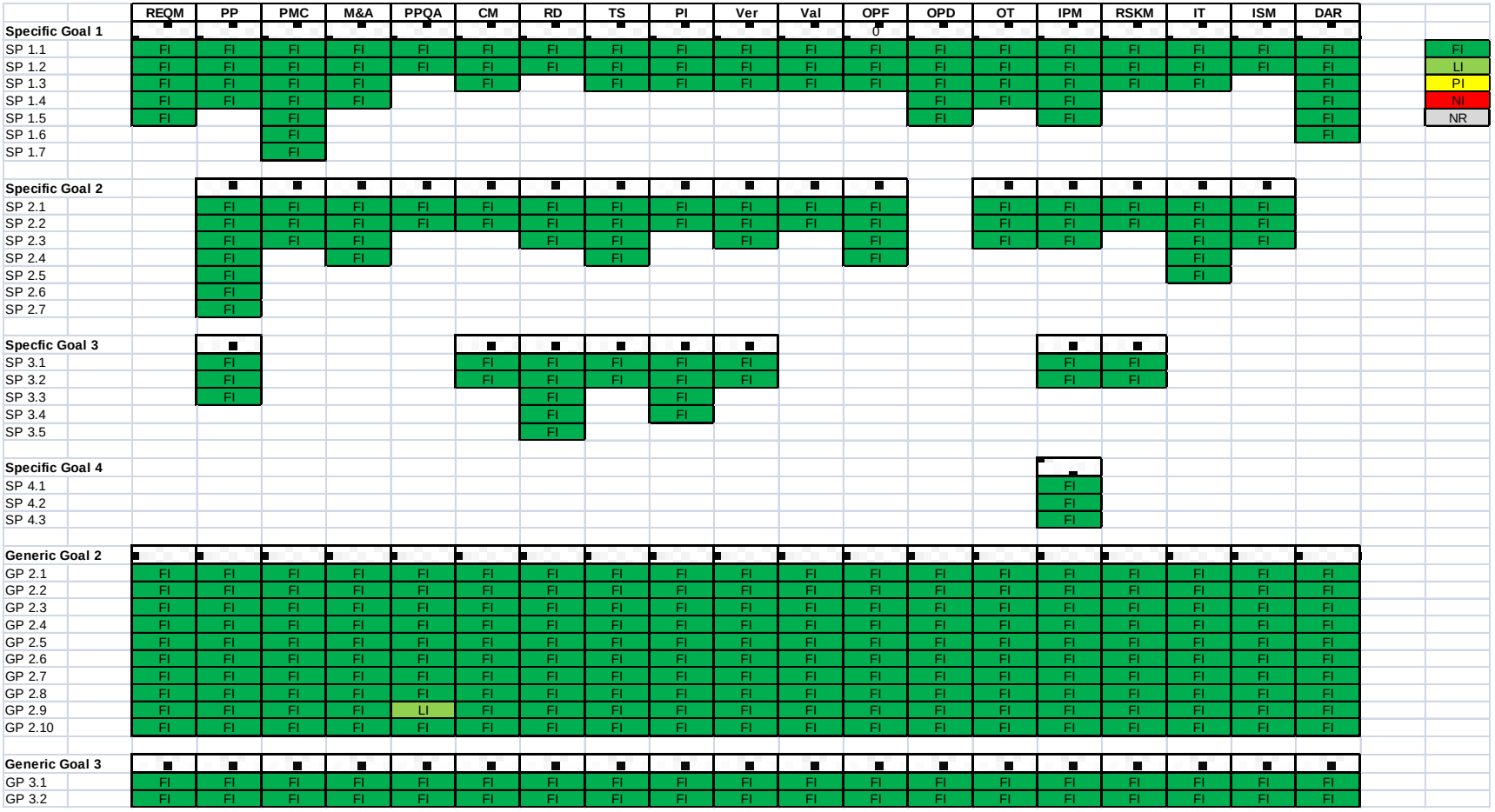


CMMI Appraisal Preparation

- Traditional Teams
  - Engineering Projects
  - Process Group
  - Management
  - PPQA
  - Org. Support Roles
  - Training
- Major impact to other functions within the division

- TSP Team
  - TSP Projects
  - Process Group
  - Management
  - Function Roles (filled by PG or TSP Project Members)
- Minimal Impact on other functions within the division

CGI SCAMPI A Practice Ratings

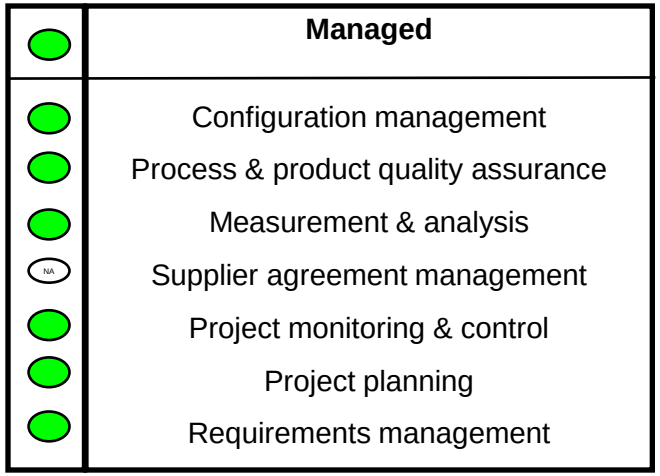


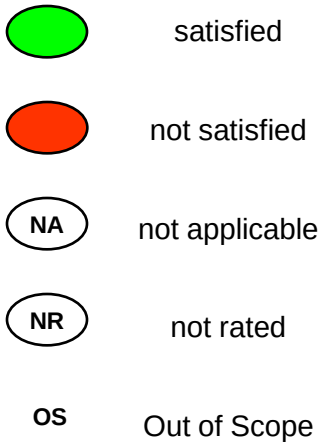
	REQM	PP	PMC	M&A	PPQA	CM	RD	TS	PI	Ver	Val	OPF	OPD	OT	IPM	RSKM	IT	ISM	DAR
Specific Goal 1												0							
SP 1.1	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI
SP 1.2	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI
SP 1.3	FI	FI	FI	FI		FI		FI	FI	FI	FI	FI	FI	FI	FI	FI	FI		FI
SP 1.4	FI	FI	FI	FI									FI	FI	FI				FI
SP 1.5	FI		FI										FI		FI				FI
SP 1.6			FI																FI
SP 1.7			FI																
Specific Goal 2																			
SP 2.1		FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI		FI	FI	FI	FI	FI	
SP 2.2		FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI		FI	FI	FI	FI	FI	
SP 2.3		FI	FI	FI			FI	FI		FI		FI		FI	FI		FI	FI	
SP 2.4		FI		FI				FI				FI					FI		
SP 2.5		FI															FI		
SP 2.6		FI																	
SP 2.7		FI																	
Specfic Goal 3																			
SP 3.1		FI				FI	FI	FI	FI	FI					FI	FI			
SP 3.2		FI				FI	FI	FI	FI	FI					FI	FI			
SP 3.3		FI					FI		FI										
SP 3.4							FI		FI										
SP 3.5							FI												
Specific Goal 4																			
SP 4.1															FI				
SP 4.2															FI				
SP 4.3															FI				
Generic Goal 2																			
GP 2.1	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI
GP 2.2	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI
GP 2.3	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI
GP 2.4	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI
GP 2.5	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI
GP 2.6	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI
GP 2.7	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI
GP 2.8	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI
GP 2.9	FI	FI	FI	FI	LI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI
GP 2.10	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI
Generic Goal 3																			
GP 3.1	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI
GP 3.2	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI

FI
LI
PI
NI
NR

CGI

Process Area Profile





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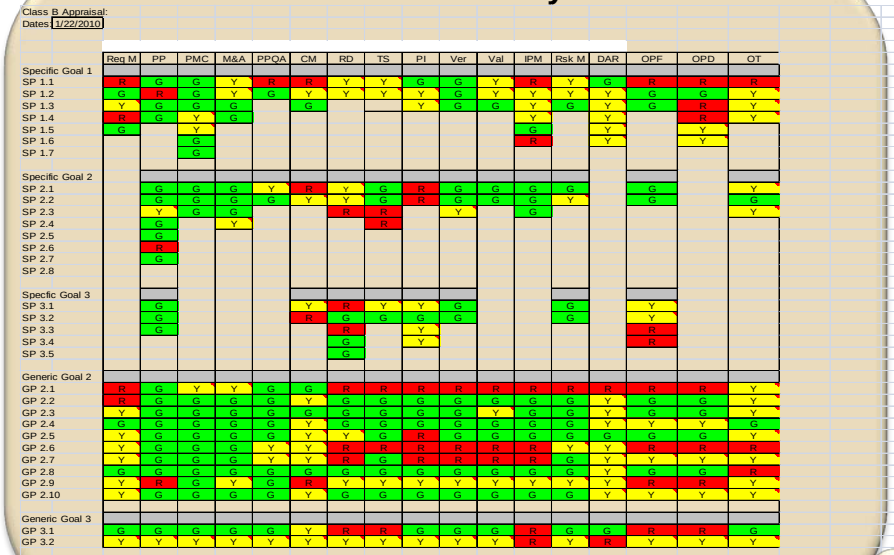
Accelerated Improvement Method (AIM) Implementation Timeline

CGI Federal, TPG, SEID

Project Performance Today vs Pre-TSP

- Productivity Increased by 35%
- Estimated Time on Task Variance Reduced from 18% to 7%
- Defects Found in Validation Testing Reduced by 50%
- Schedule Variance Reduced to Less than 10%

Initial GAP Analysis



August 2009 — TSP Training

September 2009 — TSP Cycle 1

January 2010 — TSP Cycle 2; EPG Launch

May 2010 — Organizational Tailoring of TSP Processes

June 2010 — TSP Cycle 3

August 2010 — SCAMPI B Appraisal

October 2010 — SCAMPI A Appraisal, ML 3 Rating

SEID Objectives:

- **Improve Quality**
- **Improve Estimations**
- **Improve Productivity**

CGI

AIM Product Suite: Process, Training, Tools

Process Notebook

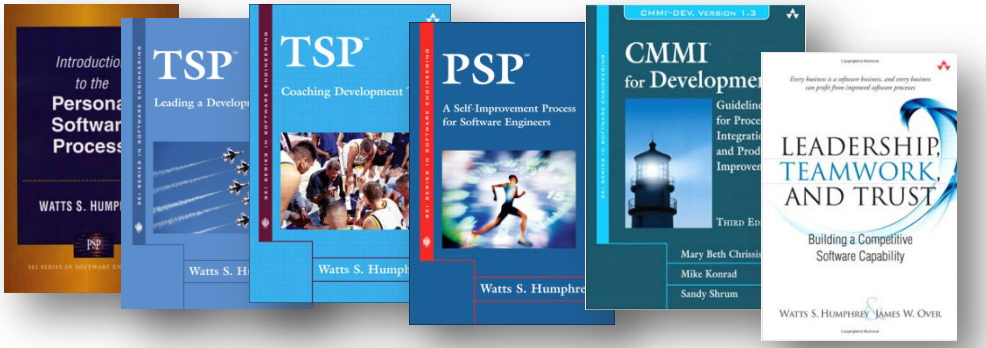
- Process scripts
- Forms
- Guidelines and standards
- Role descriptions

Training and Textbooks

- Executives
- Project Managers
- Engineering
- TSP Coach
- TSP Trainer
- Appraiser
- Process Group

Tools

- TSP Workbook
- PSP Workbook
- Coach/Trainer Workbook



TSP Team Launch - Script LAU

Purpose	To guide teams in launching a software-intensive project
Entry Criteria	- The launch preparation work has been completed (PREPL, PREPT). - All team members and the team leader are committed to attend launch meetings 1 through 9 and the launch postmortem, and management and marketing representatives are prepared and available for meetings 1 and 9. - An authorized launch coach is on hand to lead the launch process.
General	Schedule

Day	1	2	3	4
Timing	8:30-6:45	8:00-5:00	8:30-5:30	8:30-4:30
Meetings	1, 2, and 3	3(cont.), 4, 5, and 6	6 (cont.), 7 and 8	9 and PM

Step	Activities	Description
1	Project and Management Objectives	Hold team launch meeting 1 (script LAU1). - Review the launch process and introduce team members. - Discuss the project goals with management and marketing.
2	Team Goals and	Hold team launch meeting 2 (script LAU2).

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SEI Fax: +1 412-268-6257

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