



Taking the “Software” Out of TSP

Implementing TSP on a Non-Software Team

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Jason Huibregtse – TSP Symposium – Sept. 2012



_experience the commitment™

Agenda

- Why TSP?
- Modifications to the Standard
- Goals
- Tasks Assigned
- Data Collected
- Challenges
- Revisit Goals
- Discussion and Questions

Why use TSP for the Process Group?

- Tested Framework
- Schedule and Task Tracking
- Consistency
 - Terminology
 - Earned Value
 - Quality measures
 - Schedule variance
 - Time on task
- Example to others using the process

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Modifications to the Standard

- Key areas where changes were made
 - Training
 - Processes
 - Defect Types
 - Roles
 - Expectations

Modifications - Training

- Software Teams
 - PSP Fundamentals – 5 days
 - PSP Advanced (optional) – 5 days
- Process Group
 - Team Member Training – 3 days
 - Leading a Development Team – 3 days
 - Some Fundamentals/Advanced

Modifications – Process Phases

Not all standard phases apply

- Detailed Design
- Code
- Co
- Co
- Co
- Un

More relevant phases needed

- Research
- Draft Document
- Personal Review
- Peer Review
- Release

Modifications – Defect Types

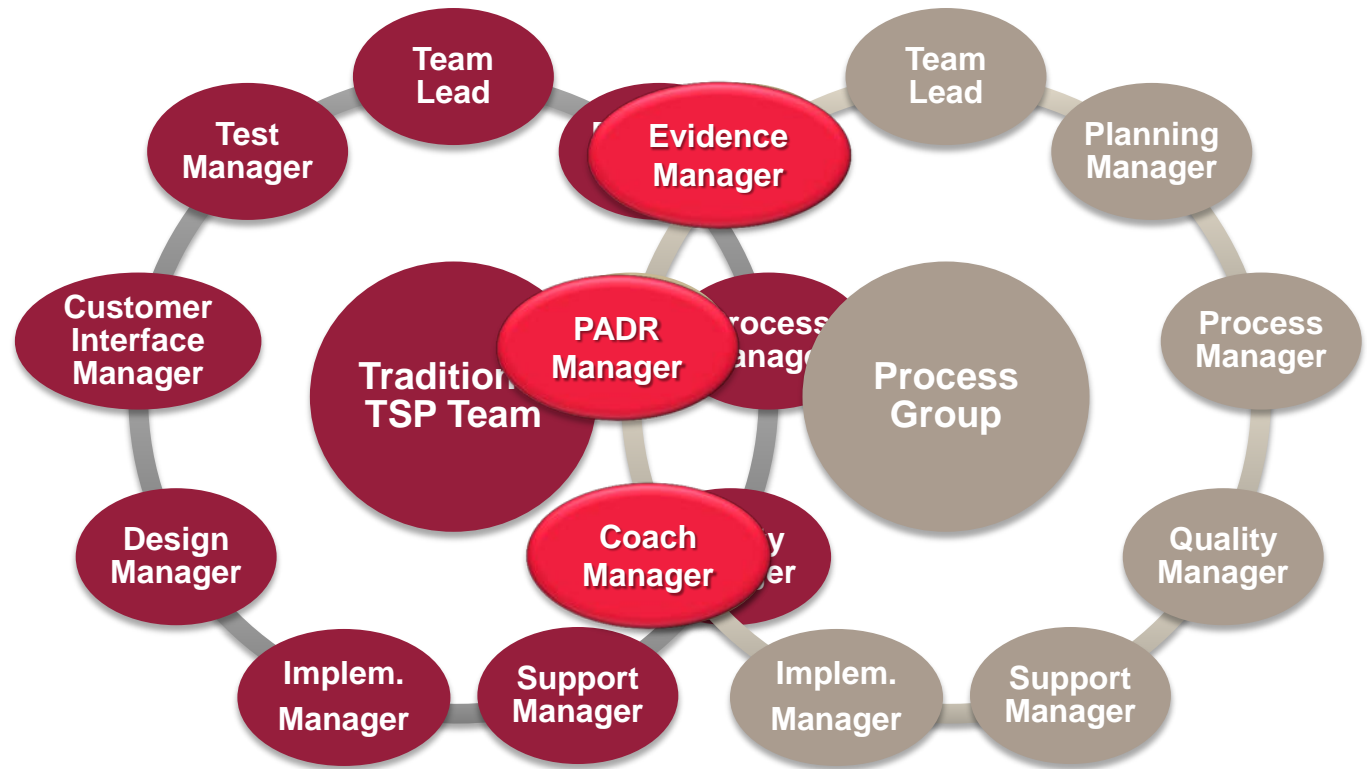
Software defect types not needed

- Syntax
- Int
- Fu
- Sy

More relevant defect types needed

- Data Omission
- Grammar
- Spelling
- Format

Modifications - Roles



Modifications - Expectations

- Typical Expectations
 - Schedule
 - Budget
- Quality
 - Clear and concise organizational processes
 - Prompt support for SW teams
 - Shining example of process fidelity

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Process Group Goals

- Support day to day activities of SW teams
 - Process updates
 - Launch support
 - Coaching support
 - Historical evidence gathering
 - General process expertise
- Support process improvement events
 - GAP Analysis
 - ISO 9001 Audits
 - CMMI Appraisals

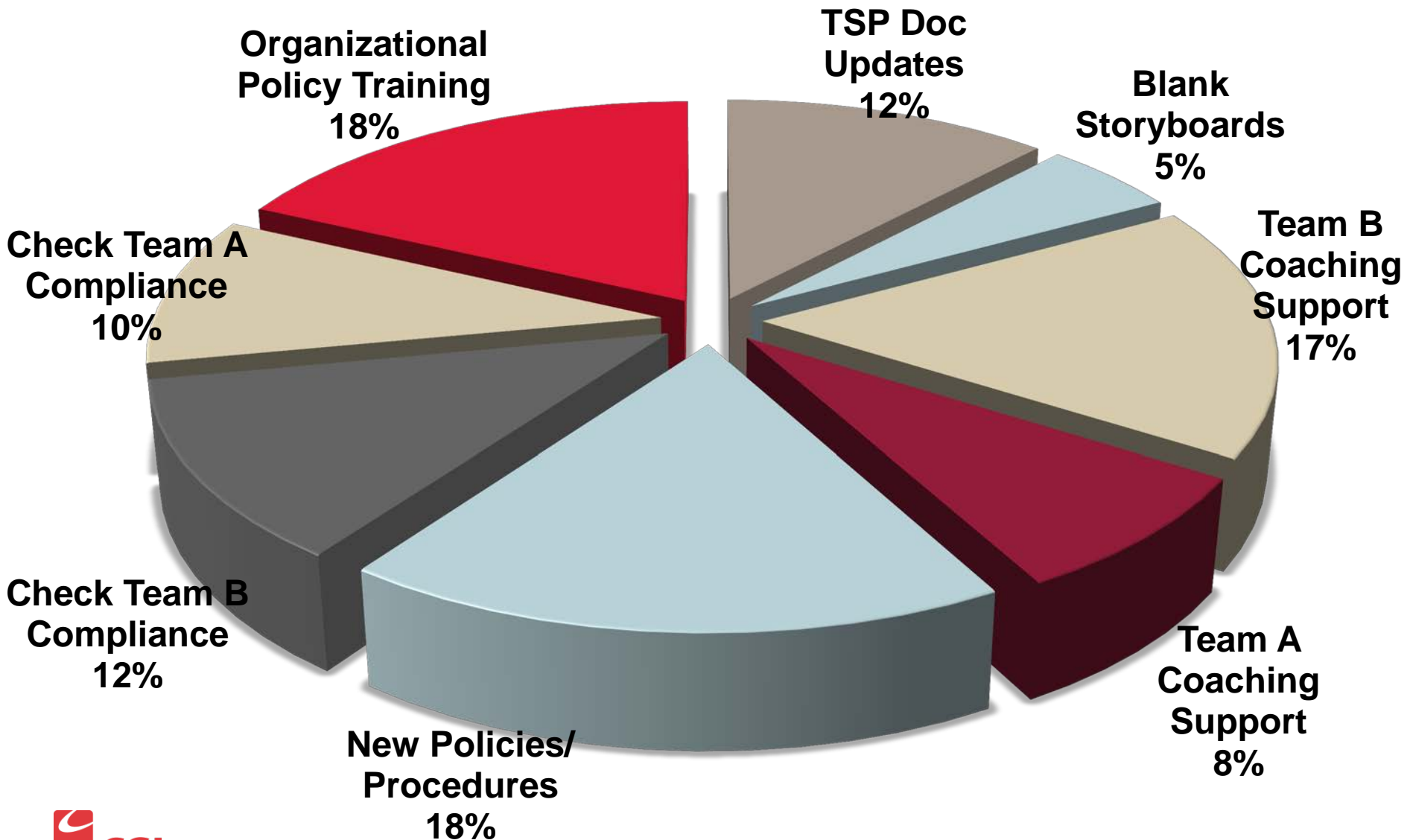
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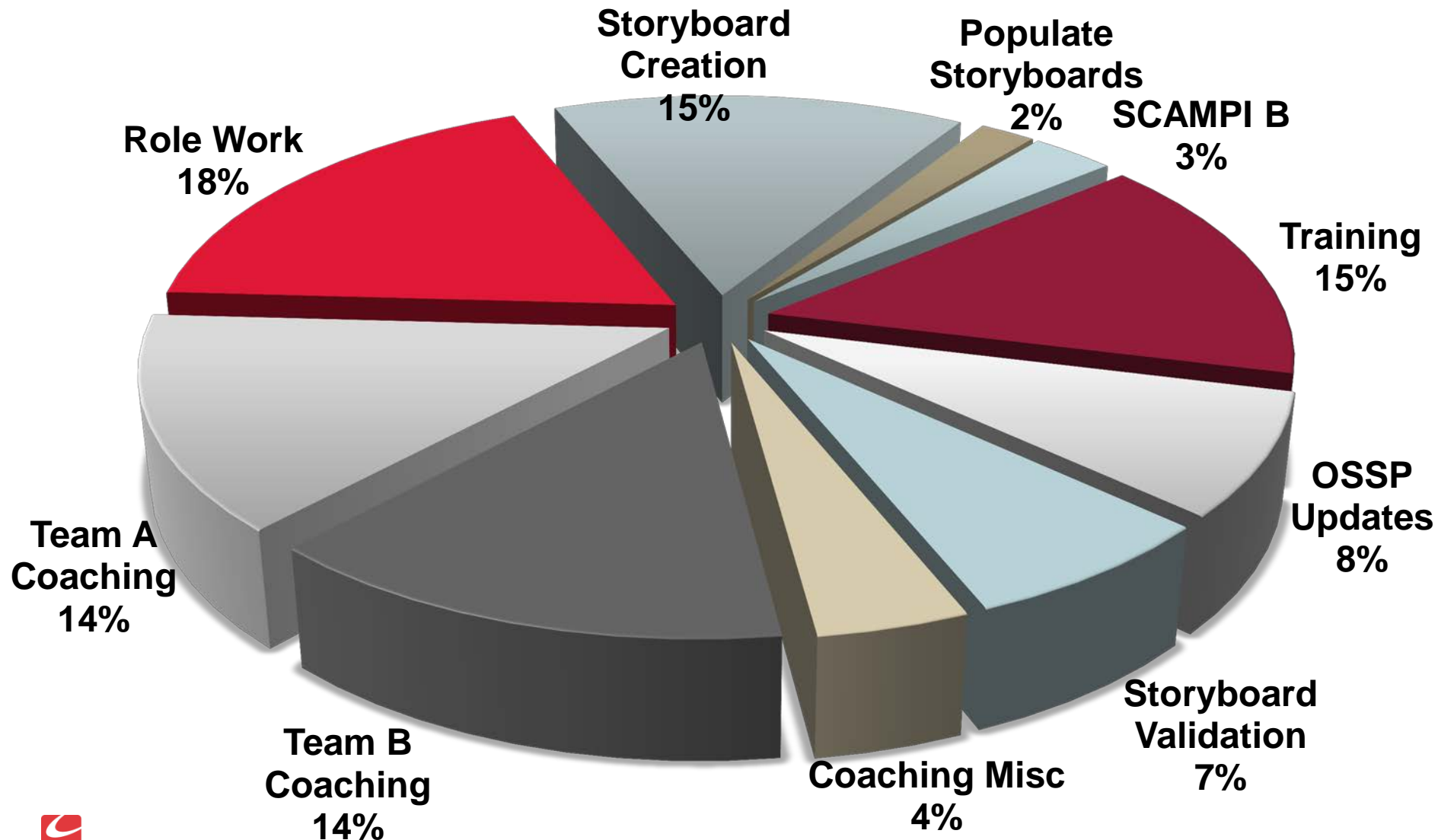
Process Group Tasks

- What does the Process Group do?
 - Create new processes
 - Update existing processes
 - Provide training for policies and procedures
 - Prepare for and conduct process improvement events
 - Address weaknesses found during process improvement events
- What new duties did TSP add?
 - Launch support
 - Coaching support
 - Role work

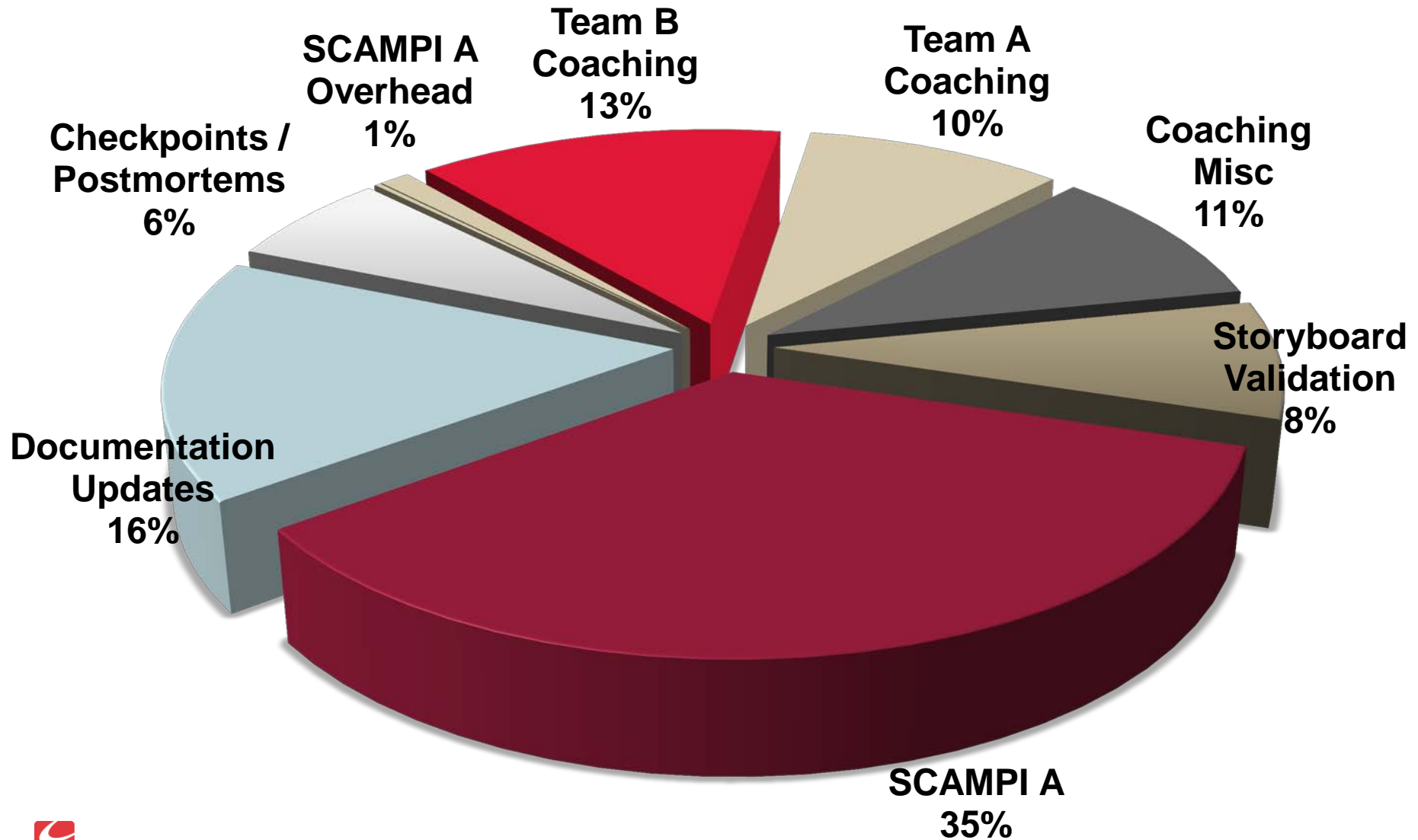
Cycle 1 Task Breakdown



Cycle 2 Task Breakdown



Cycle 3 Task Breakdown



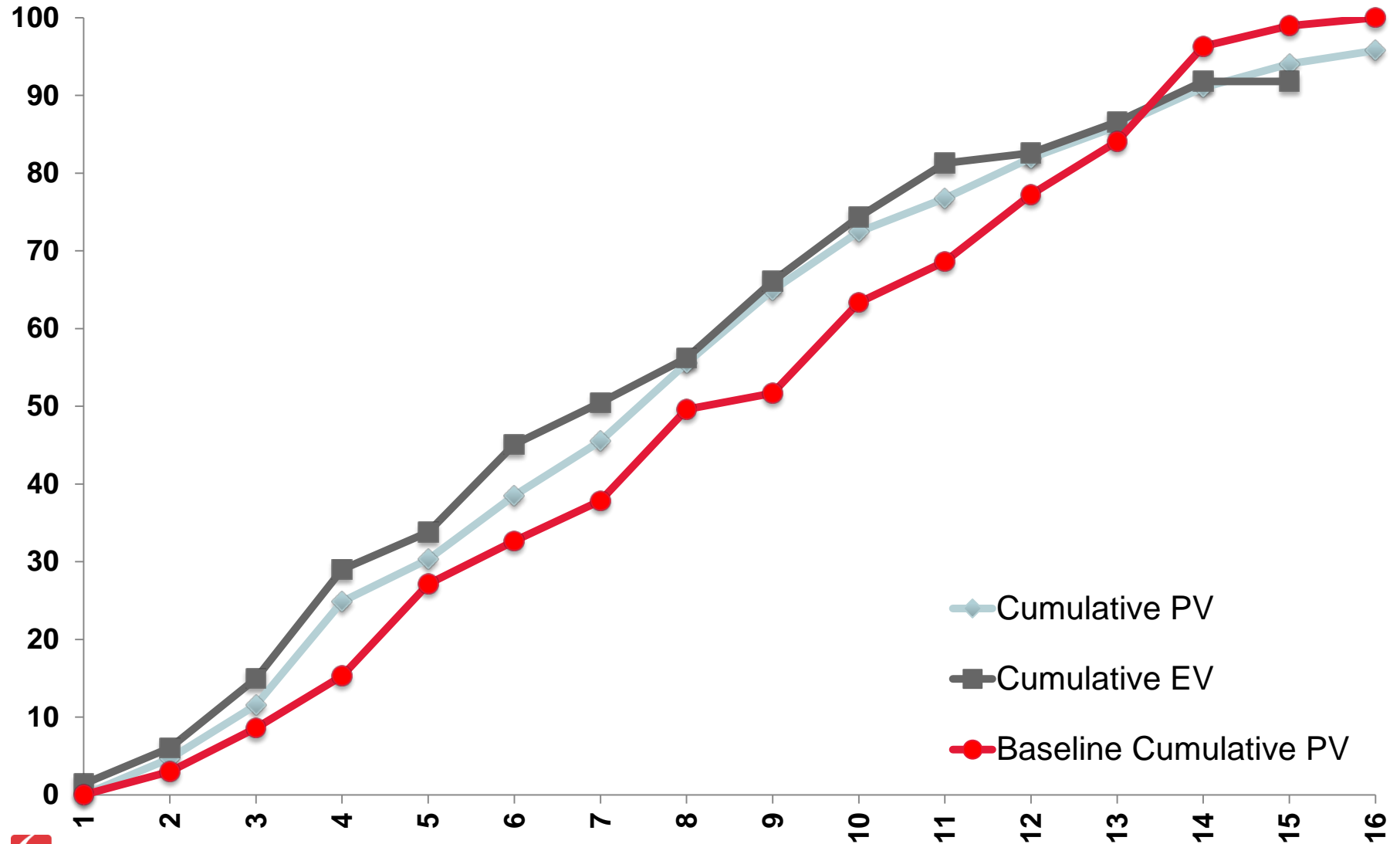
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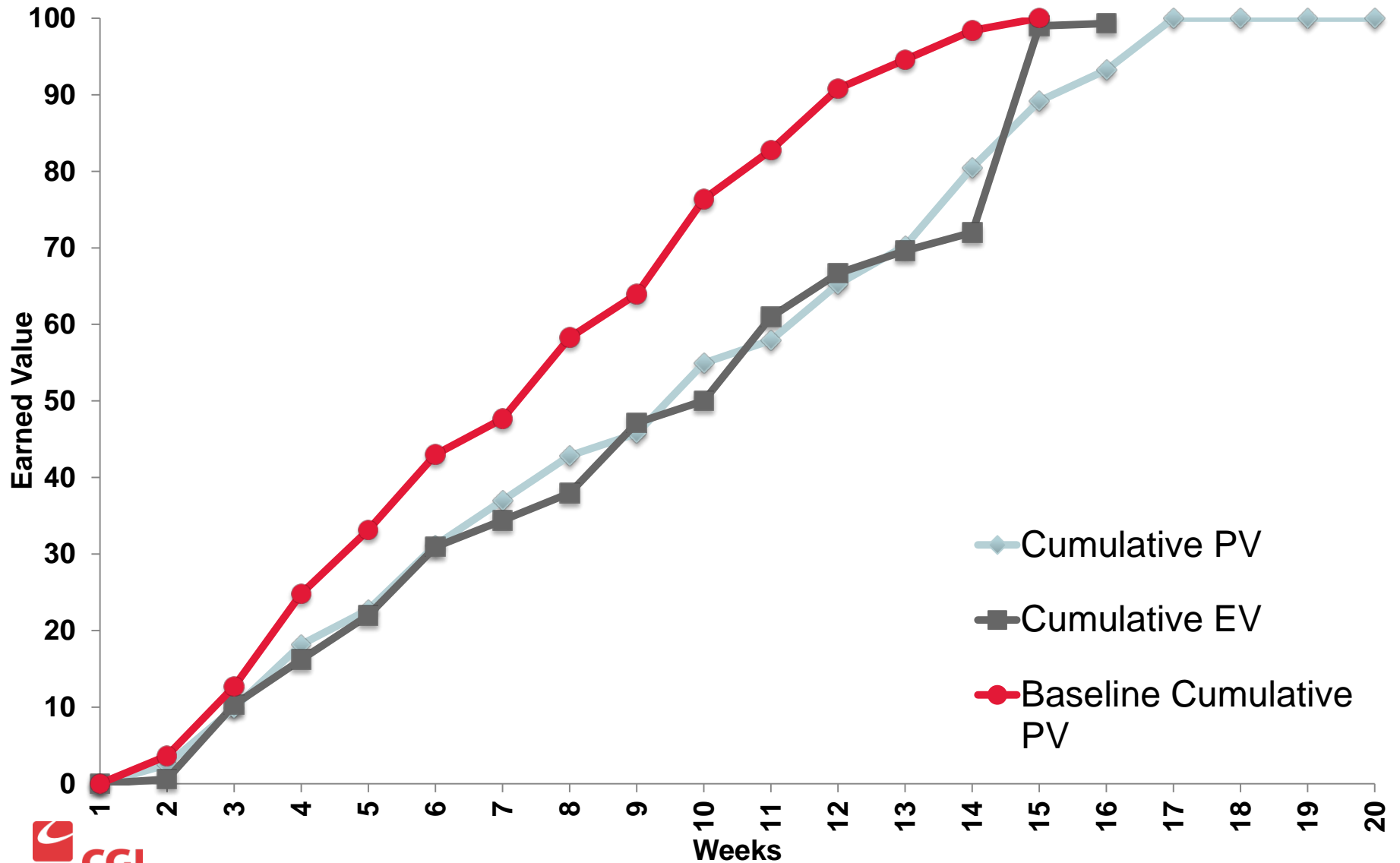
What type of data is collected?

- Metrics Collected
 - Size – Number of Pages, Number of Modifications
 - Effort – Time
 - Quality – Defects in work products
 - Schedule – Project Status vs. Plan
- How is the data used?
 - Proxy tables
 - Organizational metrics database

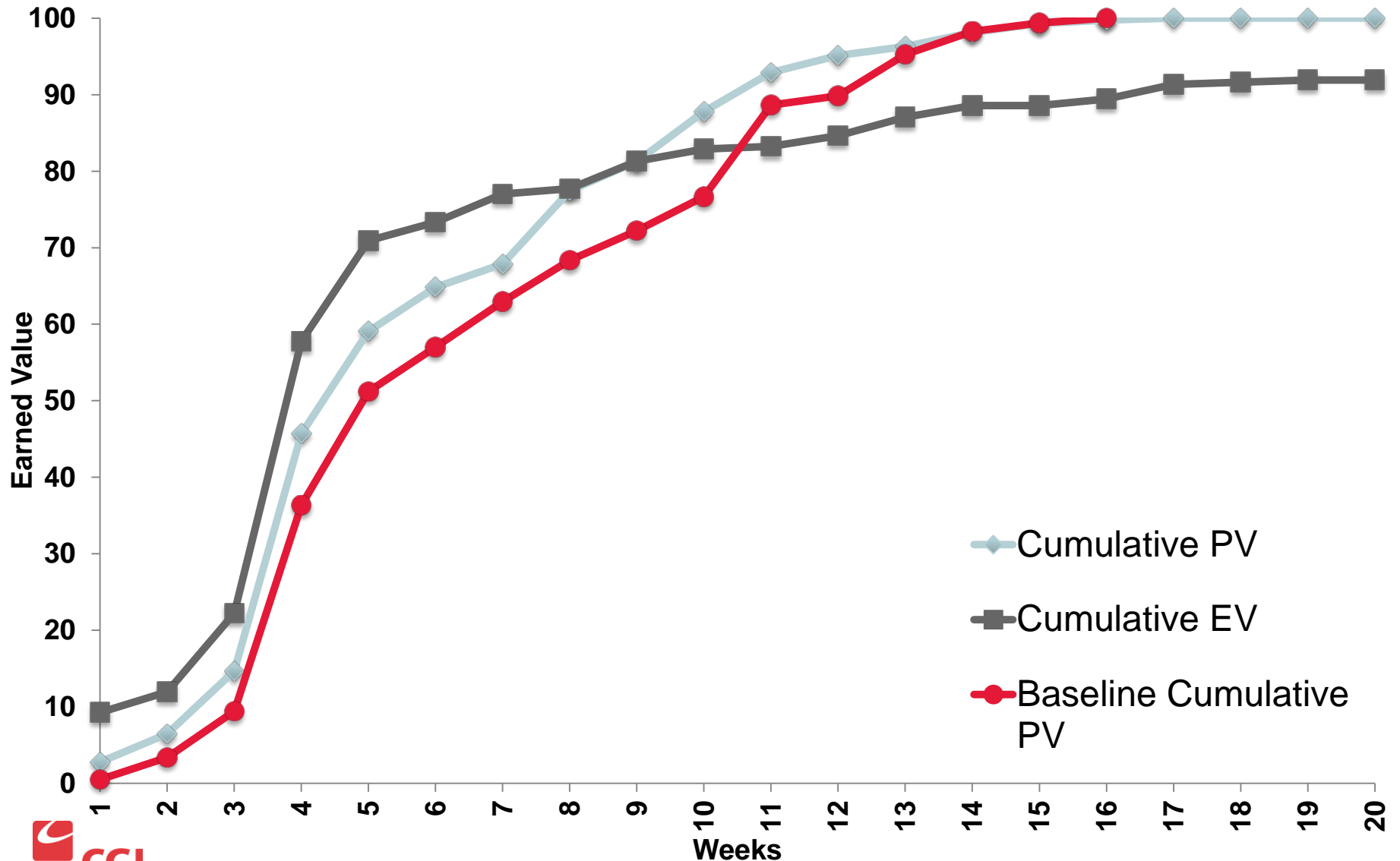
Cycle 1 Cumulative EV



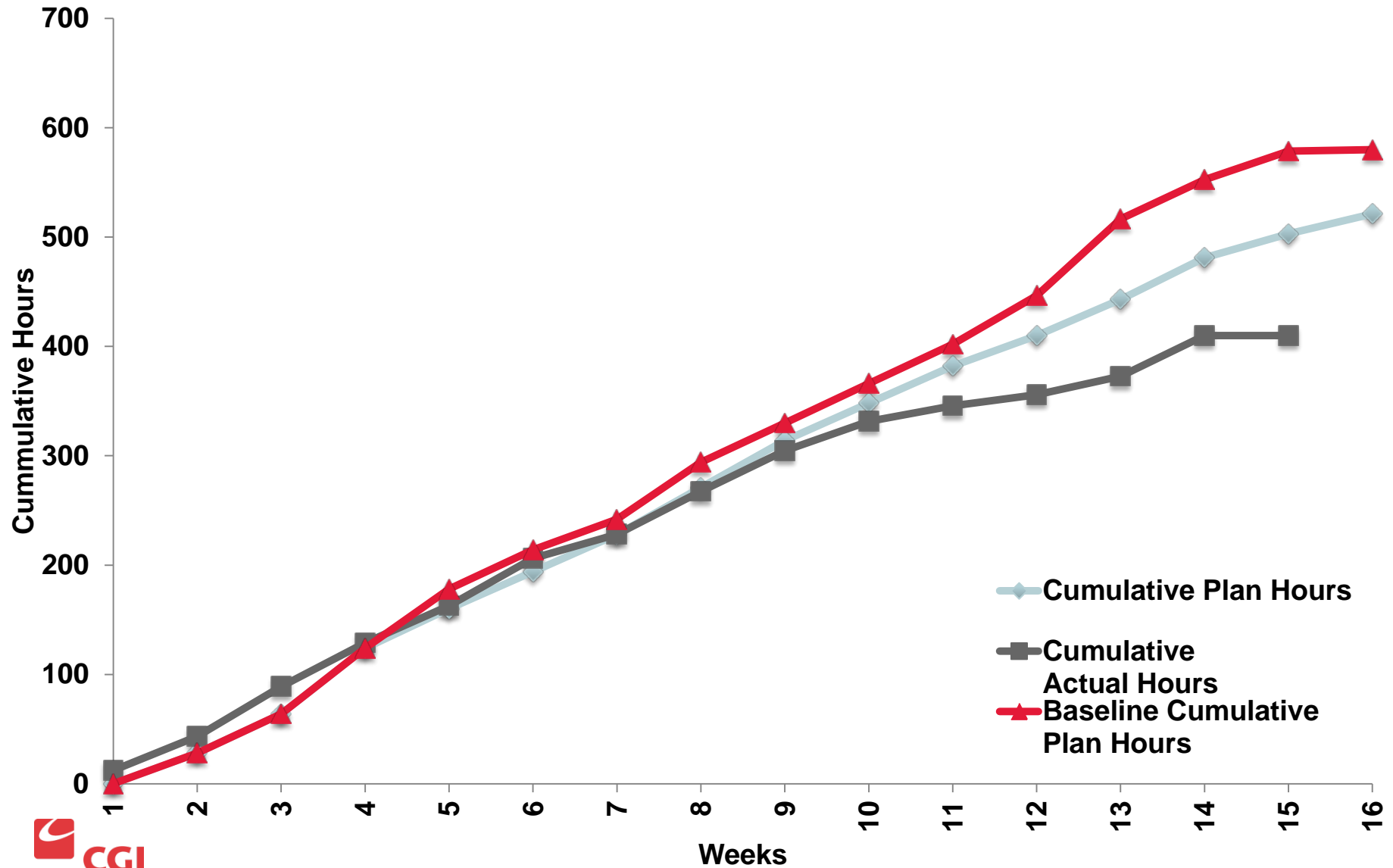
Cycle 2 Cumulative EV



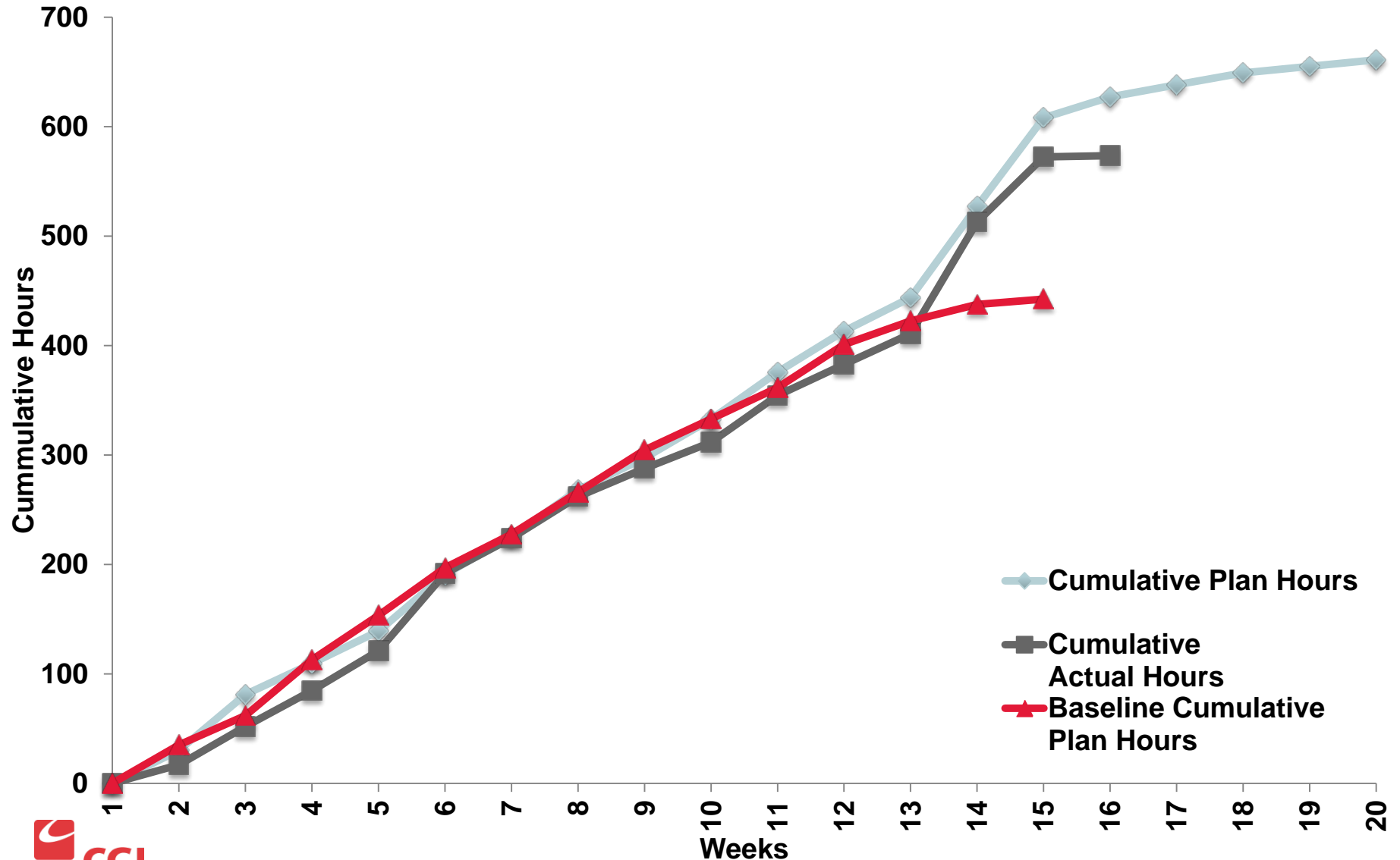
Cycle 3 Cumulative EV



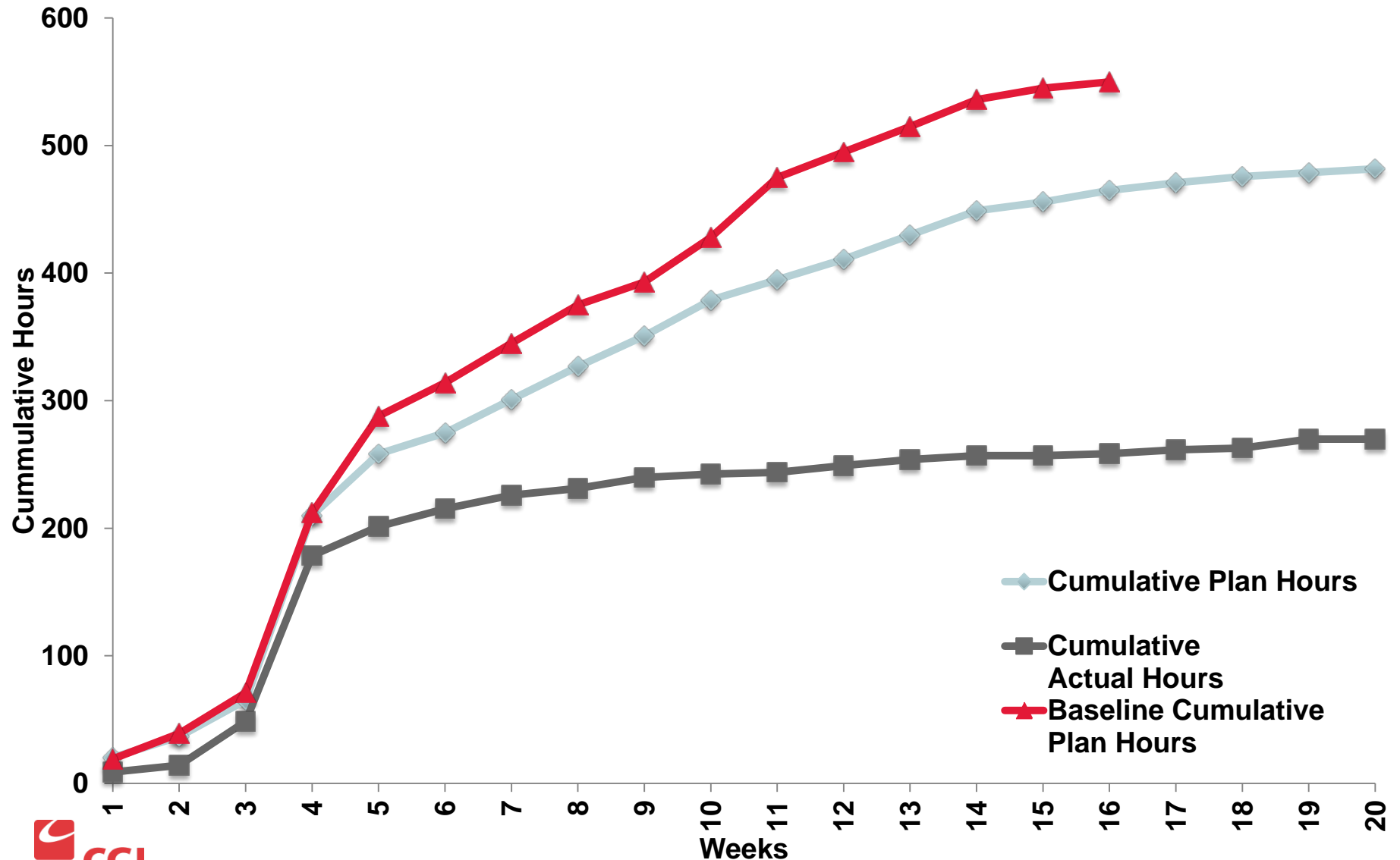
Cycle 1 Planned vs Actual TOT



Cycle 2 Planned vs Actual TOT



Cycle 3 Planned vs Actual TOT



Process Group Metrics – Proxy Tables

Process	Proxy Table in Hours					Proxy Table in Size				
	VS	S	M	L	VL	VS	S	M	L	VL
Create	1.4	2.8	5	11.9	23.8	1.7	3.4	6	14.2	28.4
Review & Update	1.4	2.8	4.8	7.5	15	1.6	3.3	5.5	8.6	17.3
Training	4.7	9.5	14.1	16.3	32.6	5.5	11	16.3	18.8	37.7

Process Group Metrics – Time Metrics

Process Phase	Plan Time	% Plan Time	Actual Time	% Actual Time	Actual % - Plan %
Review and Update	15.3	61.0%	29.24	61.2%	0.2%
Personal Review	1.7	6.8%	2.09	4.4%	-2.4%
Peer Review	7.15	28.5%	15.11	31.6%	3.1%
Release	0.95	3.8%	1.37	2.9%	-0.9%
Total	25.1		47.80		

Process Group Metrics - Defects

Type	Work Product	Injected	Removed	Fix Time	Description
240	SB - PG Populate - OT	CODE	CODEINSP	1.0	Added Training Database link as evidence to OT SB GP2.6.
240	SB - PG Populate - OT	CODE	CODEINSP	1.0	Replaced Training Plans & Records link with Patty's Training Plan and Record to OT SB SP2.5.
10	SPDR/PIP - Process SPDR	CODE	CODEINSP	2.0	Deleted PG Custom Scripts LAU3 and PM
200	Update Custom Processes	CODE	CODEINSP	4.0	Update RSIM-PG Excel spreadsheet to match the RSIM-PG Word document.
210	Update P/P - 2-286	CODE	CODEINSP	2.0	Replaced 'CVS' with 'an approved configuration management tool' in paragraph 4.6.
230	Update P/P - 2-286	CODE	CODEINSP	2.0	Revised last sentence in para 9.2 to read better.
230	Update P/P - 2-286	CODE	CODEINSP	1.0	Revised 5th sentence in para 9.6 to read correctly.
240	PM Report - Last Cycle	CODE	CR	0.5	Changed Cycle 2 to Cycle 1
270	PM Report - Last Cycle	CODE	CR	0.1	Removed extraneous period
270	PM Report - Last Cycle	CODE	CR	0.2	Removed 'Stanley' as in 'Stanley SEID'

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Challenges

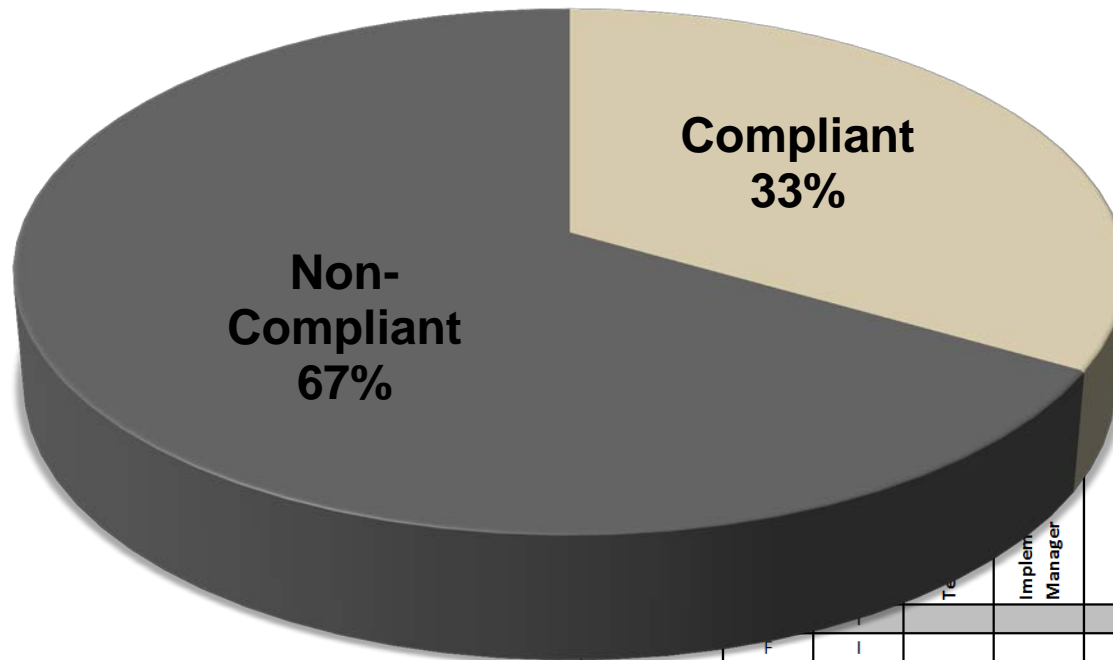
“Nobody has a more sacred obligation to obey the law than those who make the law”

-Sophocles

Challenges

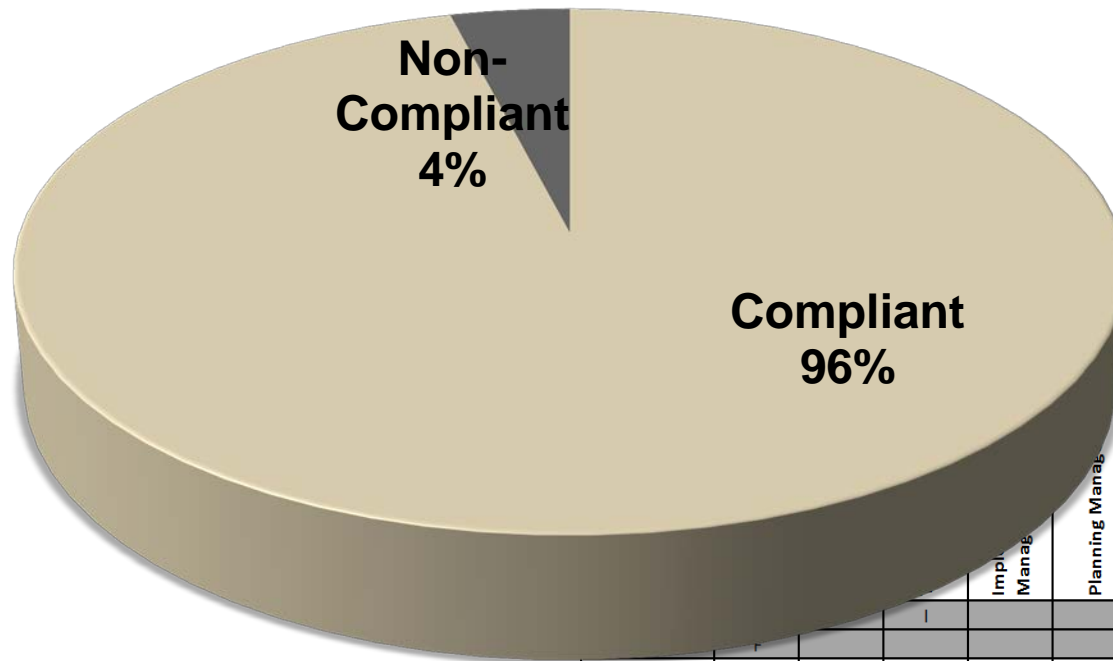
- The Process Group is... the Process Group
- How do we hold the Process Group accountable?
 - Checkpoint reports
 - Objective QA audits

Challenges – Cycle 1 Checkpoint



	Team Lead	Implementer Manager	Planning Manager	Process Manager	Support Manager	Quality Manager	Process Asset and Data Repository Manager	Evidence Manager	PG Team	G – Compliant R – Non-Compliant
	F	I			R				I	R
CHECKPOINT	S	I	C						I	
CHECKTMDR	F									
CIBPS	F	I	C		R				C	R
CIR	F	I		A	R	A			I	R
CMAUDIT	S	I	C		C	R			I	R
DEFECT	F					C			I	R
GOAL	F	A	A						R	R
HLD	S	C	I						R	
IMP	S	I	I	R		R			C	
IMP6	S	I	I	R					I	
INS	S					R			R	G
INS	F					R			R	G
INV	F								R	R
ITL	F	I							R	R
LAU	S	A	A						R	G
LAU1	S	R	R						C	G

Challenges – Cycle 2 Checkpoint



				Impl Manag	Planning Manag	Process Manager	Support Manager	Quality Manager	Process Asset and Data Repository Manager	Evidence Manager	Coaching Manager	PG Team	G – Compliant R – Non-Compliant
			I								A		G
	F												G
CYCLE	S	C	R									A	G
GOAL	F	A	A										G
LAU	S	A	A									R	G
LAU1	S	R	R								R	C	G
LAU2	S		R								C	R	G
LAU3 *	S		R				R				C	R	G
LAU4	S		R		R						C	R	G
LAU6	S		R		R						C	R	G
LAU7	S		R								C	R	G
LAU8	S		R								C	R	G
LAU9	S	A	A								R	R	G
LAUPM	S	I									R	R	G
LAUSUPPORT	S	I							R			R	G
LOGD	F							C				R	G
LOGPIP	F	I	C			R							G
LOGSPDR	F	I	I			R						I	G

Challenges – Cycle 3 Checkpoint

**Compliant
100%**

				Impl Manag	Planning Manag	Process Manager	Support Manager	Quality Manager	Process Asset and Data Repository Manager	Evidence Manager	Coaching Manager	PG Team	G – Compliant R – Non-Compliant
			I								A		G
	F												G
CYCLE	S	C	R									A	G
GOAL	F	A	A										G
LAU	S	A	A									R	G
LAU1	S	R	R								R	C	G
LAU2	S		R								C	R	G
LAU3 *	S		R				R				C	R	G
LAU4	S		R		R						C	R	G
LAU6	S		R		R						C	R	G
LAU7	S		R								C	R	G
LAU8	S		R								C	R	G
LAU9	S	A	A								R	R	G
LAUPM	S	I									R	R	G
LAUSUPPORT	S	I							R			R	G
LOGD	F							C				R	G
LOGPIP	F	I	C			R							G
LOGSPDR	F	I	I			R						I	G

Challenges

- Some concepts were slow to catch on
 - Defects
 - Peer Reviews
 - Roles
 - Custom Processes

Challenges

- Training
 - Classroom training insufficient
 - One on one help required
- Part time workforce – Full time job
- Existing Policies and Procedures

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How did they do with their goals?

- Support day to day activities
 - Process Updates
 - Launches
 - Coaching
- Process Improvement Events
 - GAP Analysis
 - SCAMPI Appraisals

Improvement Event Results – GAP Analysis

	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		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	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			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

Improvement Event Results – SCAMPI B

	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	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	G
PMC		G	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	

Improvement Event Results – SCAMPI A

	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	FI
SP 1.2	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	LI
SP 1.3	FI	FI	FI	FI		FI		FI	FI	FI	FI	FI	FI	FI	FI	FI	FI		FI	PI
SP 1.4	FI	FI	FI	FI									FI	FI	FI				FI	NI
SP 1.5	FI		FI										FI		FI				FI	NR
SP 1.6			FI																FI	
SP 1.7			FI																	
Specific Goal 2																				
SP 2.1		■	■	■	■	■	■	■	■	■	■	■		■	■	■	■	■		
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																		
Specific Goal 3																				
SP 3.1		■				■	■	■	■	■					■	■				
SP 3.2		FI				FI	FI	FI	FI	FI					FI	FI				
SP 3.3		FI				FI	FI	FI	FI	FI					FI	FI				
SP 3.4							FI		FI											
SP 3.5							FI													
Specific Goal 4																				
SP 4.1																■				
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	FI
GP 2.2	FI	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	FI
GP 2.4	FI	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	FI
GP 2.6	FI	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	FI
GP 2.8	FI	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	FI
GP 2.10	FI	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	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
GP 3.2	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI

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**Any
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