TSPi Quality Plan - Form SUMQ

Name	นางสาววรรัตน์ กะเสริม <u>, (</u> QM)	Date	27 ม.ค. <u>8 พ.ย.</u>
	นายณัฐนันท์ อมรเลิศวิทย์ (QA)		2564
Team	4	Instructor	อ.อภิสิทธิ์ แสงใส
Part/Level	System	Cycle	<u>32</u>
Summary Rat LOC/hour	tes	Plan >200	Actual 14243/318=44.79 13187/288.5 =45.09
% Reuse (% o	of total LOC)	>5.0%	307/100=3.07
	e (% of N&C LOC)	>3.0%	307/100=3.07
Percent Defec	t Free (PDF)		
In compile		>10%	4 <u>3</u> .2%
In build and in	ntegration	>70%	52.17% <u>67.23%</u>
Defect/page Requirements	s review	<0.5	207/287 = 0.72748/228 = 3.28
HLD review		<3.0	ไม่ได้ดำเนินการ $\frac{5.20}{457/14}$ $5 = 3.13$
Defects/KLOO	\mathbb{C}		
Code review		<2	27/14.243 = 1.89 <u>134/13.187 = 10.16</u>
Compile		<10	63/14.243 = 4.42 <u>74/13.187 = 5.611</u>
Code inspecti	on	<7.5	ไม่ได้ดำเนินการ <u>23/13.1</u> 87 = 1.744
Build and inte	egration	<0.5	118/14.243=8.2 <u>78</u> /13.187 =5.91
Total develo	ppment	75-150	$ \begin{array}{r} 208/14.243 = \\ 14.60309/13.187 \\ = 28.03 \end{array} $
Defect Ratios Code review/	Compile	>2.0	27/63=0.43 <u>76/84</u> =0.90
Development	time ratios (%)		
Requirements	s review	>0.25	3.28
HLD review		>0.5	3.13
Code review/	code	>0.5	67.6/208.=0.325 <u>1</u> 0.16/288.5=0.03
A/FR		1	(67.6+18.5+8)/(4 2.7)=22.08(3.28+ 3.13+4)/(68.43.)=
Review rates Code LOC/ho	our	<200	0.152 14243/67.6=210.7 013187/55.7=236.
			0 <u>1318//55.7=236.</u> <u>75</u>

Requirement pages/hour	<20 287/18.5=15.51 <u>22</u> 8/18.7=12.19
HLD pages/hour	<5 ไม่ได้ดำเนินการ <u>145/9</u>
Inspection rates	<u>= 16.11</u>
Code LOC/hour	<200 ไม่ได้ดำเนินการ <u>13187/เ</u>
	<u>วลาที่ทีม 2 ตรวจ</u>

TSPi Quality Plan - Form SUMQ (continued)

Team 4 Instructor 2.564 Part/Level System Cycle 3 Defect-injection Rates (Defects/Hr.) Plan Actual Requirements 0.25 3765/2023 = 1.87 DLD 0.0 14243/83 = Code 4.0 14243/83 = Compile 0.3 0.83 = 0.0 Unit test 0.2 151/64/00/00/00 Build and integration 0.1 2940/118 = 24.92 System test 0.0 151/64/00/00/00 System test 0.5 3765/2023 = 1.87 HLD review 0.5 55/2023 = 1.87 Code review 0.5 15/64/00/00/00 Code review 0.5 0.83 = 0.0 Code review 0.0 0.83 = 0.0 Code inspection 5.0 0.83 = 0.0 Unit test 3.0 151/64/00/00/00 Build and integration 1.0 0/118 = 0.0 Phase Yields Requirements review 70% 151/64/00/00/00	Name	นางสาววรรัตน์ กะเสริม <u>, (</u> QM)	Date	27 ม.ค. <u>8 พ.ย.</u>
Part/Level System Cycle 3 Actual Actual 3765/2023 = 1.87 DLD D.0.0 Inlight further DLD D.0.0 DLD		นายณัฐนันท์ อมรเลิศวิทย์ (QA)		2564
Defect-injection Rates (Defects/Hr.) Plan Actual Requirements 0.25 3765/2023 = 1.87 DLD 0.0 "ม่าได้ค่าเนินการ Code 4.0 14243/83 = 171.61 Compile 0.3 0/83 = 0.0 Unit test 0.2 "ม่าได้ค่าเนินการ Build and integration 0.1 2940/118 = 24.92 System test 0.0 "ม่าได้ค่าเนินการ Defect-removal Rates (Defects/Hr.) Requirements review 0.5 3765/2023 = 1.87 HLD review 0.5 3765/2023 = 1.87 Code review 0.5 0.83 = 0.0 Code review 0.5 0.83 = 0.0 Code inspection 5.0 0/83 = 0.0 Unit test 3.0 ไม่ได้ค่าเนินการ Build and integration 1.0 0/118 = 0.0 Phase Yields 70% 3765/80,948 = 4.66% HLD review 70% 1.0 1.0 Test development 70% 0.83 = 0.0% Code review 70% 0.83 = 0.0% </td <td>Team</td> <td>4</td> <td>Instructor</td> <td>อ.อภิสิทธิ์ แสงใส</td>	Team	4	Instructor	อ.อภิสิทธิ์ แสงใส
Requirements 0.25 3765/2023 = 1.87 DLD 0.0 ไม่ให้คับนิยาการ Code 4.0 14243/83 = 171.61 Compile 0.3 0/83 = 0.0 Unit test 0.2 ไม่ให้คับนิยาการ Build and integration 0.1 2940/118 = 24.92 System test 0.0 ไม่ให้คับนิยาการ Defect-removal Rates (Defects/Hr.) Requirements review 0.5 3765/2023 = 1.87 HLD review 0.5 ไม่ให้คับนิยาการ Code review 0.0 0/83 = 0.0 Code inspection 5.0 0/83 = 0.0 Code inspection 5.0 0/83 = 0.0 Unit test 3.0 ไม่ให้คับนิยาการ Requirements review 70% 3765/80,948 = 4.66% HLD review 70% 1.083 = 0.0% Code review 70% 0/83 = 0.0% Code review 70% 0/83 = 0.0% Code review 70% 0/83 = 0.0% Code inspection 70% 0/83 = 0.0% Code inspec	Part/Level	System	Cycle	3
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% before build and integration >97.5% 22.66%		*		

TSPi Quality Plan Instructions - Form SUMQ

Purpose	- This form holds plan and actual quality data for parts or assemblies.
General	 Where possible, establish goals based on your own historical data. Where data are not available, use the QUAL standard for guidance (see Appendix G). Before making the quality plan, you must have a partially completed SUMP form with size and development time data by process phase.
Make the Quality Plan	 To make the quality plan, do the following: Estimate the defects injected in each phase (use plan data and the QUAL standard for defects injected per hour times hours spent by phase). Estimate the yield for each defect-removal phase (QUAL standard). The defects removed in each phase are estimated as the number of defects at phase entry, times the estimated yield for that phase, divided by 100. Examine the defects/KLOC values for reasonableness. If the defects/KLOC values are not reasonable, adjust phase times, defect injection rates, or yields (use QUAL standard for guidance). When the numbers appear reasonable, the quality plan is complete.
Record Actual Quality Data	To complete the quality plan with actual values, enter the following data: Record development time in the time log and summarize in SUMP. Record the defects found in the defect log and summarize in SUMP. Enter the size of each product produced and summarize in SUMP. With the completed SUMP data, complete the SUMQ form with the TSPi tool or as described below and in Chapter 5.
TSPi Tool	 If you use the TSPi tool, it will complete all the SUMQ calculations. Without the tool, you will have to make the SUMQ calculations as you complete each step described above. At part completion, make the quality calculations by following the instructions below and in Chapter 5.
Header	 Enter your name, date, team name, and instructor's name. Name the part or assembly and its level. Enter the cycle number.
Summary Rates	 LOC/hour: new and changed LOC divided by total development hours. % Reuse: the percentage of total LOC that was reused. % New Reuse: the percentage of new and changed LOC that was inserted in the reuse library.
Percent Defect Free (PDF)	 PDF refers to the percentage of a program's components that had no defects in a development or test phase. Thus, if 3 of a program's 10 components had no defects in compile, that program would have a PDF of 30% in compile. Base the plan percent defect free (PDF) values on the QUAL standard.
Defects/page and Defects/KLOC	 Set the defect/page and defect/KLOC plan values during planning. Defects/page are calculated as (no. of defects)/(no. of pages) Defects/KLOC are calculated as 1000*(no. of defects)/(N&C LOC).
Defect Ratios	 These are the ratios of the number of defects found in various phases. Thus, the (code review)/compile ratio is the ratio of the defects found in code review to those found in compile. These ratios can also be calculated from the defects/KLOC values. When the denominator phase values are 0, enter "inf."

(continued)

TSPi Quality Plan Instructions - Form SUMQ (continued)

Development Time	- These are the ratios of the times spent in each development phase.
Ratios (%)	 These are the ratios of the times spent in each development phase. Thus, the DLD/code ratio is the ratio of the time spent in detailed design
Ratios (70)	to the time spent in coding a program.
	- Calculate the planned and actual ratios from the SUMP date.
	- When the denominator phase values are 0, enter "inf."
A/ED	-
A/FR	 A/FR is calculated as the ratio of appraisal to failure time. Appraisal time is the time spent reviewing and inspecting programs.
	 Appraisal time is the time spent reviewing and inspecting programs. Failure time is the time spent compiling and testing programs.
	 To calculate A/FR, divide the total detailed design review, code review,
	and inspection times by total compile and unit test times.
	 Use the sum of personal review and total team inspection times.
	- When the denominator phase values are 0, enter "inf."
Review and	- Calculate the review and inspection rates by dividing the size of the
Inspection Rates	reviewed product by the total review or inspection time in hours.
inspection Rates	 Make this calculation for each review and inspection.
	- In planning, use the QUAL standard for guidance (Appendix G).
	- When the denominator phase values are 0, enter "inf."
Defect Injection and	- The defect rates are calculated in defects injected per hour.
Removal Rates	- Thus, for coding, if you spent 2 hours coding a 100 LOC module and
Kemovai Kates	injected 12 defects, you would have injected 6 defects/hour.
	- Similarly, if you spent 1 hour reviewing this module and found 4 defects,
	you would have removed 4 defects/hour.
	- Based on the QUAL standard, establish standard team rates.
Phase Yield	- Phase yield refers to the percentage of the defects in the product that
	were removed in that phase.
	- Thus, in reviewing a 100 LOC module, if the review found four and you
	later determine that there were 6 defects in the module, the phase yield
	would be 100*4/6=66.7%.
	- In planning, use historical data to estimate the yield values needed for
	each defect-removal phase.
	- After each phase, calculate the estimated yield values.
Process Yield	- Process yield refers to the percentage of the defects injected into a
	product that were removed before a given phase.
	- Thus, for a 100 LOC module, if you later determine that a total of 8
	defects were injected into a module before compile and 5 were removed
	before compile, the yield before compile would be 100*5/8=62.5%.
	- In planning, use the QUAL standard or your own data to estimate the
	yield values for each defect-removal phase.