

ID		WBS	Task Name	Work	Duration	Start	Finish		
								7/4	7/11
1		1	NGAO Parametric Oscillator	1,346 hrs	187.29 days?	Thu 7/15/10	Mon 4/4/11		
2	✓	1.1	Demonstration Planning	52 hrs	37.5 days?	Thu 7/15/10	Mon 9/6/10		
3	✓	1.1.1	Define scope	10 hrs	5 days?	Thu 7/15/10	Wed 7/21/10		
4	✓	1.1.2	Define tasks	20 hrs	12.5 days?	Thu 7/15/10	Mon 8/2/10		
5	✓	1.1.3	Schedule efforts and costs	20 hrs	37.5 days?	Thu 7/15/10	Mon 9/6/10		
6	✓	1.1.4	Engineering Change Requests (ECR)	2 hrs	1 day?	Thu 7/15/10	Thu 7/15/10		
7		1.2	Preparation	116 hrs	19.58 days?	Thu 7/15/10	Wed 8/11/10		
8		1.2.1	Parametric Oscillator algorithm background investigation	4 hrs	5 days?	Thu 7/15/10	Wed 7/21/10		
9	✓	1.2.2	NGWFC architecture background investigation	16 hrs	2 days?	Fri 7/16/10	Mon 7/19/10		
10		1.2.3	Wavefront Processor (WFP) and Interface (WIF) documentation and co	16 hrs	2.67 days?	Tue 7/20/10	Thu 7/22/10		
11		1.2.4	Wavefront Controller Command Processor (WCP) documentation and c	16 hrs	2.67 days?	Thu 7/22/10	Tue 7/27/10		
12		1.2.5	Setup and document software development environment at Waimea HQ	20 hrs	6.25 days?	Tue 7/27/10	Wed 8/4/10		
13		1.2.6	Setup and document NGWFC lab hardware at Waimea HQ	44 hrs	5 days?	Wed 8/4/10	Wed 8/11/10		
14		1.3	Management	280 hrs	167 days?	Thu 7/15/10	Fri 3/4/11		
15	✓	1.3.1	Requirements Document	48 hrs	8.25 days?	Mon 9/6/10	Thu 9/16/10		
16	✓	1.3.1.1	Write system and subsystem requirements. Documented at a leve	40 hrs	6.25 days?	Mon 9/6/10	Tue 9/14/10		
17	✓	1.3.1.2	Specify NGWFC external commands and status information requir	4 hrs	1 day?	Tue 9/14/10	Wed 9/15/10		
18	✓	1.3.1.3	Specify telemetry items for TRS archiving, if any	4 hrs	1 day?	Wed 9/15/10	Thu 9/16/10		
19	✓	1.3.1.4	Milestone: Requirements review	0 hrs	0 days?	Thu 9/9/10	Thu 9/9/10		
20	✓	1.3.2	Generate SOW	40 hrs	10 days?	Fri 9/17/10	Fri 10/1/10		
21		1.3.3	Writeup Contract with Microgate	28 hrs	9.75 days?	Fri 10/1/10	Fri 10/15/10		
22		1.3.3.1	Sole Source Justification	8 hrs	2.5 days?	Fri 10/1/10	Wed 10/6/10		
23		1.3.3.2	Generate Contract	20 hrs	6.25 days?	Wed 10/6/10	Thu 10/14/10		
24		1.3.3.3	Milestone: Contract Signed	0 hrs	1 day?	Thu 10/14/10	Fri 10/15/10		
25		1.3.4	Ensure remote access for Microgate	4 hrs	5 days?	Fri 10/15/10	Fri 10/22/10		
26		1.3.5	Oversee and direct Microgate (project long continuous task)	60 hrs	101.5 days?	Thu 10/14/10	Fri 3/4/11		
27		1.3.6	Schedule Tracking	100 hrs	167 days?	Thu 7/15/10	Fri 3/4/11		
28		1.4	Microgate RTC Mods	340 hrs	44.33 days?	Thu 10/14/10	Wed 12/15/10		

Project: ParOsc_v4.mpp
Date: Fri 9/10/10

Critical 

Critical Split 

Critical Progress 

Task 

Split 

Task Progress 

Baseline 

Baseline Split 

Baseline Milestone 

Milestone 

Summary Progress 

Summary 

Project Summary 

External Tasks 

External Milestone 

Deadline 

ID		WBS	Task Name	Work	Duration	Start	Finish		
								7/4	7/11
29		1.4.1	NGWFC Design Document (WFP, WIF)	80 hrs	10 days?	Thu 10/14/10	Thu 10/28/10		
30		1.4.2	Document NGWFC Test Plan (WFP,WIF)	80 hrs	10 days?	Thu 10/28/10	Thu 11/11/10		
31		1.4.3	Implementation of WFP algorithm and Wavefront Controller Interface (W	80 hrs	10 days?	Thu 11/11/10	Thu 11/25/10		
32		1.4.4	Microgate Testing on Waimea NGWFC system	80 hrs	10 days?	Thu 11/25/10	Thu 12/9/10		
33		1.4.5	WMKO run tests based on MG test plan	20 hrs	3.33 days?	Thu 12/9/10	Tue 12/14/10		
34		1.4.6	Milestone: WMKO acceptance of Microgate mods	0 hrs	1 day?	Tue 12/14/10	Wed 12/15/10		
35		1.5	Systems Engineering / Design	188 hrs	39.83 days?	Fri 10/1/10	Fri 11/26/10		
36		1.5.1	Design Parametric Oscillator Algorithm	68 hrs	17 days?	Fri 10/1/10	Tue 10/26/10		
37		1.5.1.1	Determine "as built" STRAP, DTT, and WFP control loop paramete	4 hrs	1 day?	Fri 10/1/10	Mon 10/4/10		
38		1.5.1.2	Investigate parametric oscillator algorithm used for IF	8 hrs	2 days?	Mon 10/4/10	Wed 10/6/10		
39		1.5.1.3	Modify KAON 680 Simulink simulation	16 hrs	4 days?	Wed 10/6/10	Tue 10/12/10		
40		1.5.1.4	Write Par. Osc. Algorithm Design Document	24 hrs	6 days?	Tue 10/12/10	Wed 10/20/10		
41		1.5.1.5	Provide algorithm outline and direction to software team	16 hrs	4 days?	Wed 10/20/10	Tue 10/26/10		
42		1.5.2	Software Design Document	80 hrs	13.5 days?	Tue 10/26/10	Mon 11/15/10		
43		1.5.2.1	AO Design Document (WCP)	40 hrs	6.67 days?	Tue 10/26/10	Thu 11/4/10		
44		1.5.2.2	Design modification to AO User Tools (if required)	20 hrs	12.5 days?	Tue 10/26/10	Fri 11/12/10		
45		1.5.2.3	Design modification to AO SC (if required)	20 hrs	3.33 days?	Thu 11/4/10	Tue 11/9/10		
46		1.5.2.4	Milestone: Design review	0 hrs	1 day?	Fri 11/12/10	Mon 11/15/10		
47		1.5.3	Software Test Plan	40 hrs	9.33 days?	Mon 11/15/10	Fri 11/26/10		
48		1.5.3.1	Document AO Test Plan (WCP)	20 hrs	3.33 days?	Mon 11/15/10	Thu 11/18/10		
49		1.5.3.2	Document System Level Summit Integration Test Plan	20 hrs	5 days?	Thu 11/18/10	Thu 11/25/10		
50		1.5.3.3	Milestone: Test plan review	0 hrs	1 day?	Thu 11/25/10	Fri 11/26/10		
51		1.6	Implementation and Lab Testing	180 hrs	48 days?	Fri 11/26/10	Wed 2/2/11		
52		1.6.1	Wavefront Control Command Processor (WCP)	60 hrs	16.58 days?	Fri 11/26/10	Tue 12/21/10		
53		1.6.1.1	Implementation of AO (WCP) modifications	40 hrs	6.67 days?	Fri 11/26/10	Tue 12/7/10		
54		1.6.1.2	Testing on Waimea NGWFC system	20 hrs	3.33 days?	Wed 12/15/10	Tue 12/21/10		
55		1.6.2	AO User Tools	30 hrs	18.75 days?	Tue 12/21/10	Fri 1/14/11		
56		1.6.2.1	Implementation of AO User Tools (IDL tools) modifications	20 hrs	12.5 days?	Tue 12/21/10	Thu 1/6/11		

Project: ParOsc_v4.mpp
Date: Fri 9/10/10

Critical 

Critical Split 

Critical Progress 

Task 

Split 

Task Progress 

Baseline 

Baseline Split 

Baseline Milestone 

Milestone 

Summary Progress 

Summary 

Project Summary 

External Tasks 

External Milestone 

Deadline 

ID		WBS	Task Name	Work	Duration	Start	Finish		
								7/4	7/11
57		1.6.2.2	Testing on Waimea NGWFC system	10 hrs	6.25 days?	Thu 1/6/11	Fri 1/14/11		
58		1.6.3	AO SC	30 hrs	5 days?	Fri 1/14/11	Fri 1/21/11		
59		1.6.3.1	Implementation of AO SC modification by WMKO on HQ system	20 hrs	3.33 days?	Fri 1/14/11	Thu 1/20/11		
60		1.6.3.2	Testing on Waimea NGWFC system	10 hrs	1.67 days?	Thu 1/20/11	Fri 1/21/11		
61		1.6.4	Lab Integration	60 hrs	7.67 days?	Fri 1/21/11	Wed 2/2/11		
62		1.6.4.1	Perform and document lab integration tests	60 hrs	6.67 days?	Fri 1/21/11	Tue 2/1/11		
63		1.6.4.2	Milestone: Lab integration complete	0 hrs	1 day?	Tue 2/1/11	Wed 2/2/11		
64		1.7	Summit Integration	62 hrs	10.33 days?	Wed 2/2/11	Wed 2/16/11		
65		1.7.1	NGWFC	28 hrs	4.67 days?	Wed 2/2/11	Wed 2/9/11		
66		1.7.1.1	Install upgrade on summit system	8 hrs	1.33 days?	Wed 2/2/11	Thu 2/3/11		
67		1.7.1.2	Run same Microgate test plan used for HQ testing	20 hrs	3.33 days?	Thu 2/3/11	Wed 2/9/11		
68		1.7.2	AO	14 hrs	2.33 days?	Wed 2/9/11	Fri 2/11/11		
69		1.7.2.1	Install upgrade on summit system	4 hrs	0.67 days?	Wed 2/9/11	Wed 2/9/11		
70		1.7.2.2	Run same test plan used for HQ testing	10 hrs	1.67 days?	Wed 2/9/11	Fri 2/11/11		
71		1.7.3	System Integration	20 hrs	3.33 days?	Fri 2/11/11	Wed 2/16/11		
72		1.7.3.1	Run system level summit integration test plan	20 hrs	3.33 days?	Fri 2/11/11	Wed 2/16/11		
73		1.8	Parametric Oscillator Demonstration	88 hrs	23 days?	Wed 2/16/11	Mon 3/21/11		
74		1.8.1	Observing Plan	8 hrs	2 days?	Wed 2/16/11	Fri 2/18/11		
75		1.8.1.1	Plan nighttime observations with Parametric Oscillator	8 hrs	2 days?	Wed 2/16/11	Fri 2/18/11		
76		1.8.2	Observation	24 hrs	6 days?	Fri 2/18/11	Mon 2/28/11		
77		1.8.2.1	Nighttime testing of Par. Osc. modification	24 hrs	6 days?	Fri 2/18/11	Mon 2/28/11		
78		1.8.3	Demonstration Report	56 hrs	15 days?	Mon 2/28/11	Mon 3/21/11		
79		1.8.3.1	Analysis of test data	40 hrs	10 days?	Mon 2/28/11	Mon 3/14/11		
80		1.8.3.2	Write demonstration test report	16 hrs	4 days?	Mon 3/14/11	Fri 3/18/11		
81		1.8.3.3	Milestone: Recommendation on implementation (Section of final re	0 hrs	1 day?	Fri 3/18/11	Mon 3/21/11		
82		1.9	Remaining Implementation Plan for Parametric Oscillator	40 hrs	9.38 days?	Mon 3/21/11	Mon 4/4/11		
83		1.9.1	Define tasks and effort remaining for implementation	20 hrs	3.13 days?	Mon 3/21/11	Fri 3/25/11		
84		1.9.2	Schedule efforts and cost	20 hrs	6.25 days?	Fri 3/25/11	Mon 4/4/11		

Project: ParOsc_v4.mpp
Date: Fri 9/10/10

Critical 

Critical Split 

Critical Progress 

Task 

Split 

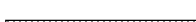
Task Progress 

Baseline 

Baseline Split 

Baseline Milestone 

Milestone 

Summary Progress 

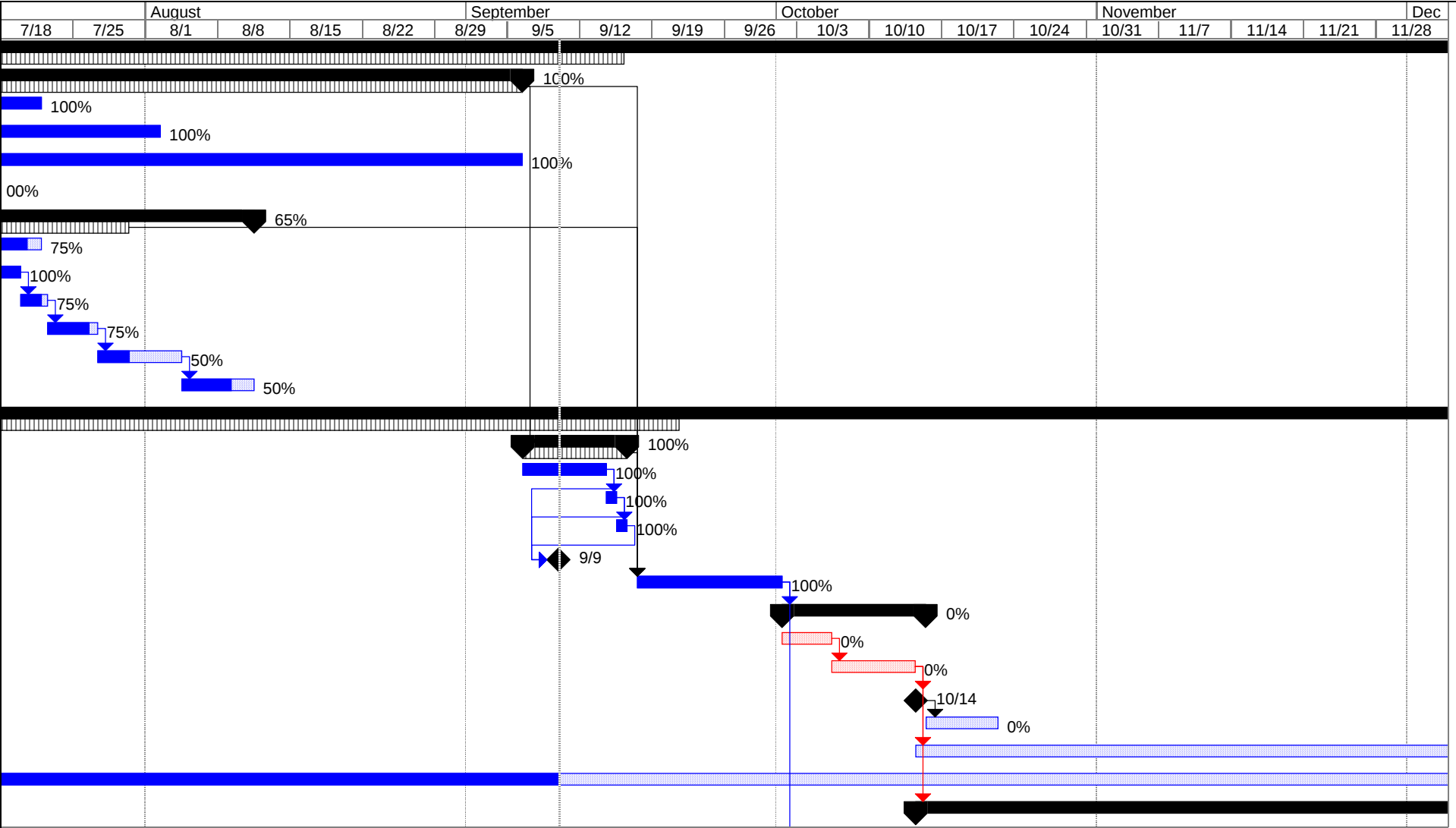
Summary 

Project Summary 

External Tasks 

External Milestone 

Deadline 



Project: ParOsc_v4.mpp
Date: Fri 9/10/10

Critical

Critical Split

Critical Progress

Task

Split

Task Progress

Baseline

Baseline Split

Baseline Milestone

Milestone

Summary Progress

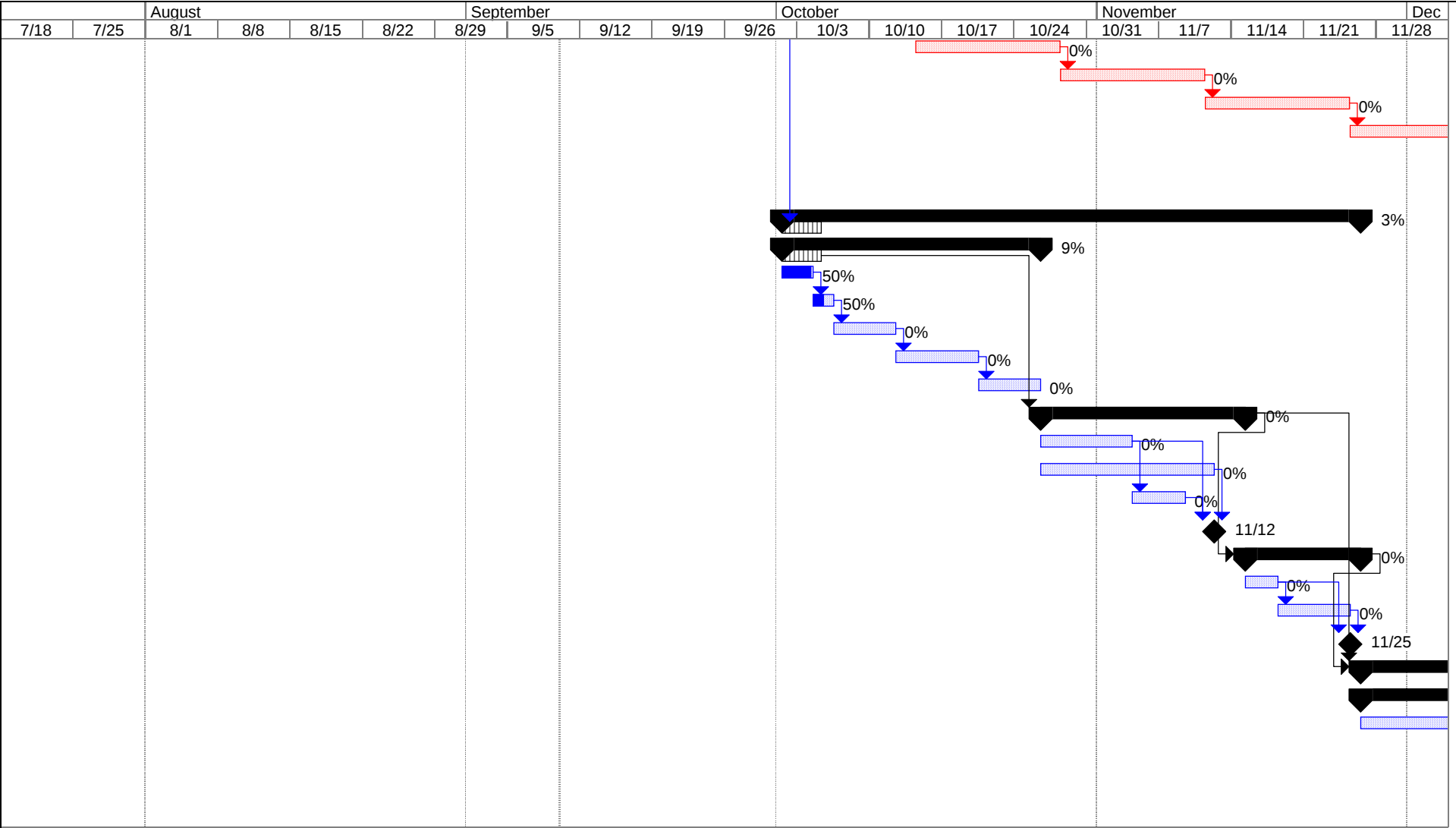
Summary

Project Summary

External Tasks

External Milestone

Deadline



Project: ParOsc_v4.mpp
Date: Fri 9/10/10

Critical

Critical Split

Critical Progress

Task

Split

Task Progress

Baseline

Baseline Split

Baseline Milestone

Milestone

Summary Progress

Summary

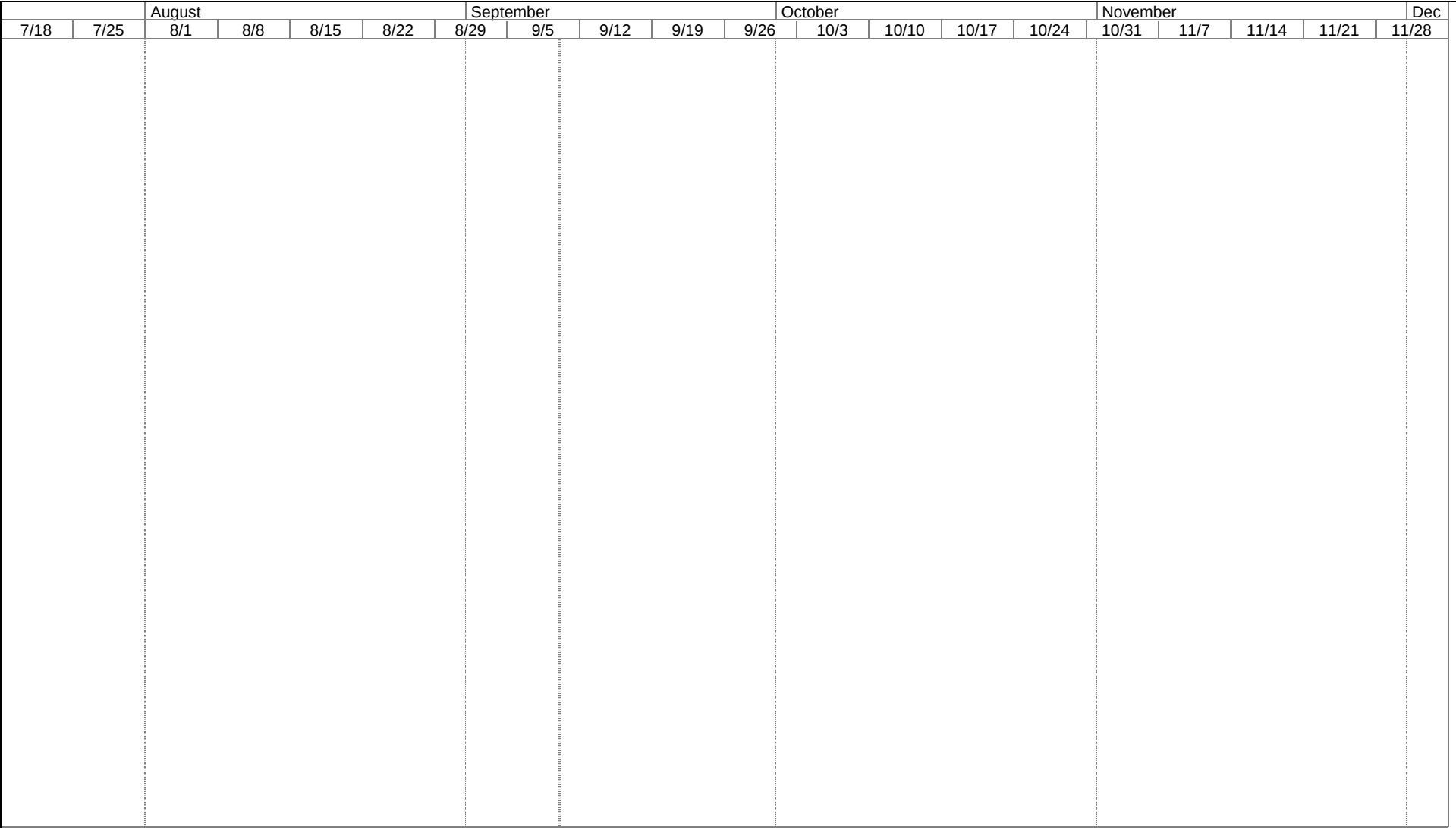
Project Summary

External Tasks

External Milestone

Deadline

Page 5



Project: ParOsc_v4.mpp
Date: Fri 9/10/10

Critical

Critical Split

Critical Progress

Task

Split

Task Progress

Baseline

Baseline Split

Baseline Milestone

Milestone

Summary Progress

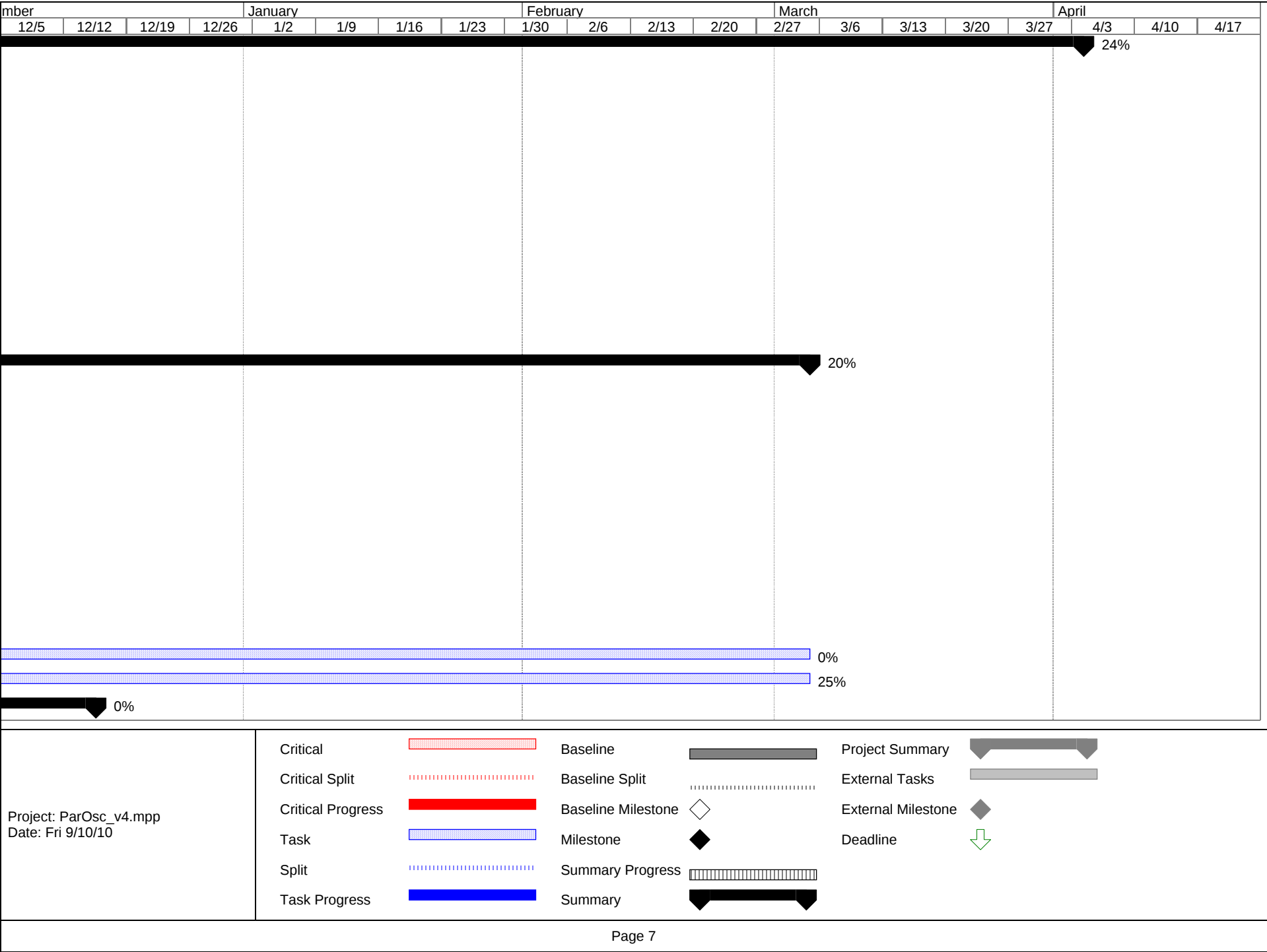
Summary

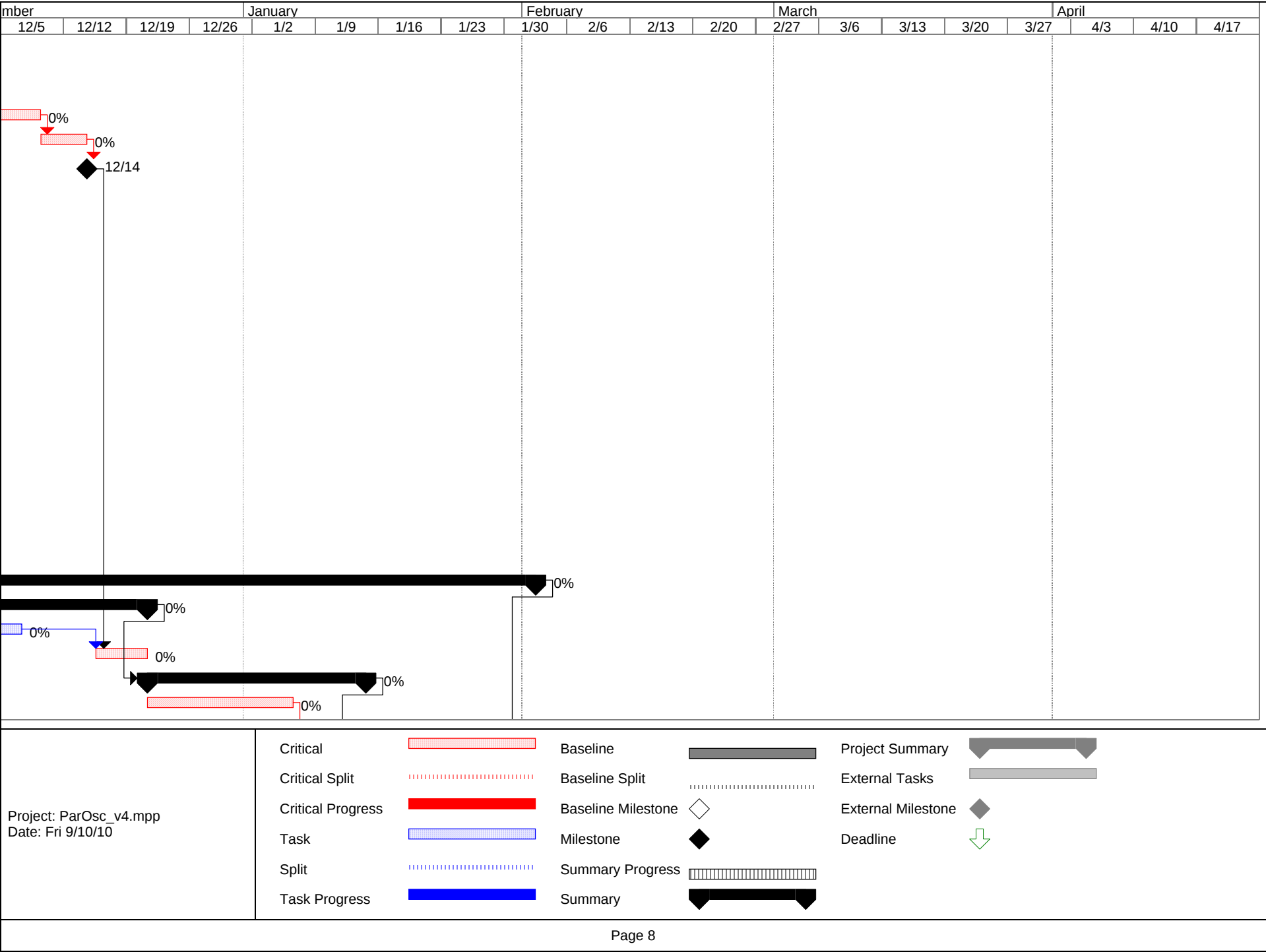
Project Summary

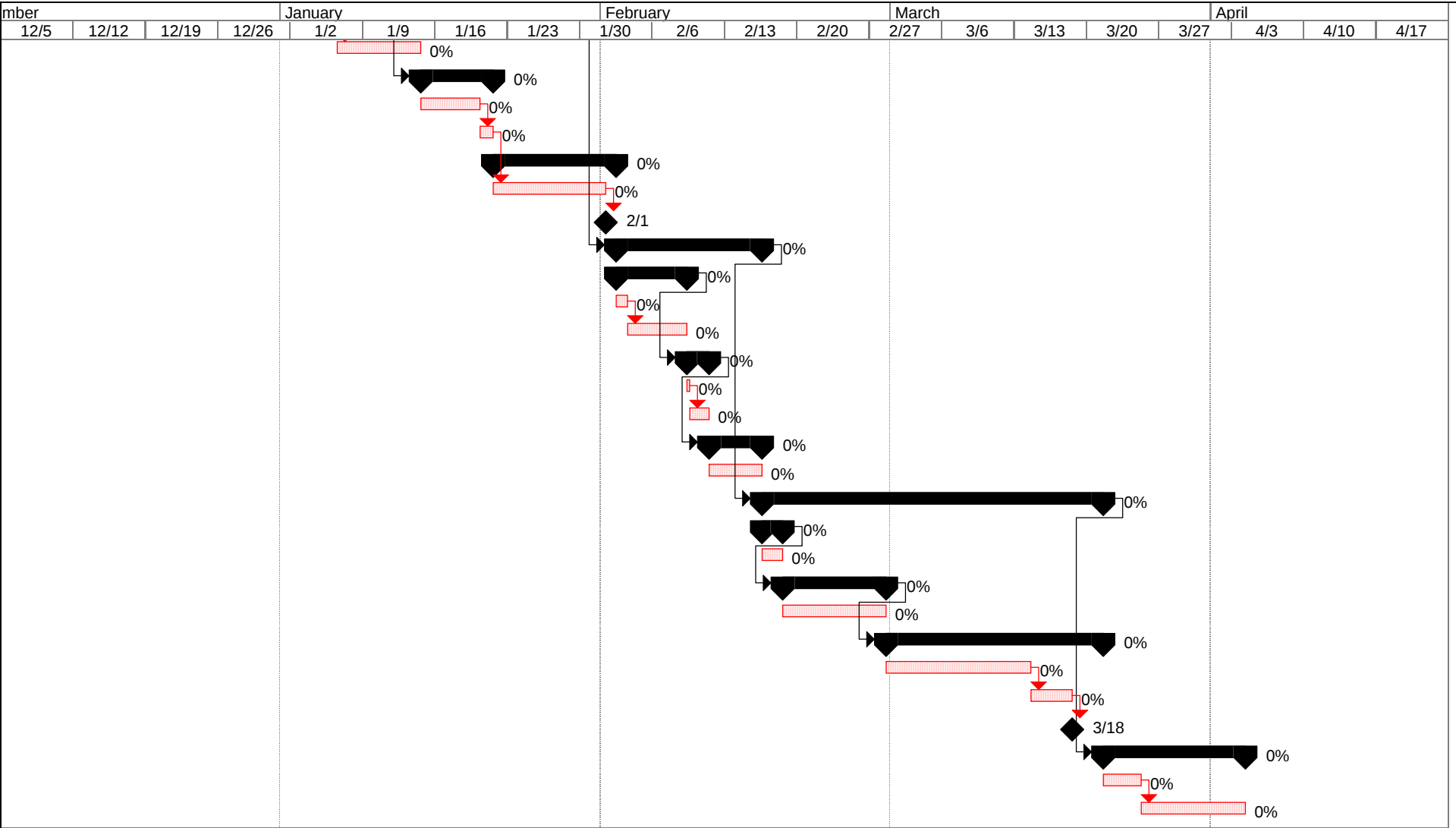
External Tasks

External Milestone

Deadline







Project: ParOsc_v4.mpp
Date: Fri 9/10/10

Critical

Critical Split

Critical Progress

Task

Split

Task Progress

Baseline

Baseline Split

Baseline Milestone

Milestone

Summary Progress

Summary

Project Summary

External Tasks

External Milestone

Deadline