

Scheduling Report

L. O'Toole and H. Simonis

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1 Introduction

Table 1: Problem

Name	Timepoints as Date	Nr Products	Nr Process	Nr Disjunctive Resources	Nr Cumulative Resources	Nr Orders	Nr Jobs	Nr Tasks
P1	true	5	5	8	1	50	50	200

2 Orders

Table 2: Orders (Total 50)

Name	Product	Process	Qty	Release	Due	Earliness Weight	Lateness Weight
Order0	Prod4	Process 4	4	0	928	1.00	1.00
Order1	Prod4	Process 4	1	0	2,546	1.00	1.00
Order2	Prod3	Process 3	1	0	2,809	1.00	1.00
Order3	Prod3	Process 3	4	0	506	1.00	1.00
Order4	Prod1	Process 1	5	0	800	1.00	1.00
Order5	Prod0	Process 0	7	0	159	1.00	1.00
Order6	Prod3	Process 3	5	0	2,759	1.00	1.00
Order7	Prod1	Process 1	5	0	1,852	1.00	1.00

Name	Product	Process	Qty	Release	Due	Earliness Weight	Lateness Weight
Order8	Prod1	Process 1	2	0	287	1.00	1.00
Order9	Prod1	Process 1	4	0	80	1.00	1.00
Order10	Prod1	Process 1	8	0	1,696	1.00	1.00
Order11	Prod4	Process 4	4	0	1,838	1.00	1.00
Order12	Prod3	Process 3	5	0	2,542	1.00	1.00
Order13	Prod2	Process 2	5	0	1,013	1.00	1.00
Order14	Prod3	Process 3	2	0	1,602	1.00	1.00
Order15	Prod2	Process 2	5	0	2,862	1.00	1.00
Order16	Prod2	Process 2	6	0	335	1.00	1.00
Order17	Prod2	Process 2	9	0	2,403	1.00	1.00
Order18	Prod3	Process 3	6	0	2,691	1.00	1.00
Order19	Prod3	Process 3	9	0	2,773	1.00	1.00
Order20	Prod3	Process 3	9	0	657	1.00	1.00
Order21	Prod1	Process 1	5	0	2,725	1.00	1.00
Order22	Prod1	Process 1	4	0	1,851	1.00	1.00
Order23	Prod4	Process 4	6	0	2,641	1.00	1.00
Order24	Prod2	Process 2	4	0	1,854	1.00	1.00
Order25	Prod1	Process 1	3	0	100	1.00	1.00
Order26	Prod0	Process 0	7	0	2,440	1.00	1.00
Order27	Prod4	Process 4	3	0	1,701	1.00	1.00
Order28	Prod4	Process 4	9	0	311	1.00	1.00
Order29	Prod3	Process 3	5	0	251	1.00	1.00
Order30	Prod2	Process 2	4	0	2,739	1.00	1.00
Order31	Prod2	Process 2	3	0	2,439	1.00	1.00
Order32	Prod0	Process 0	8	0	104	1.00	1.00
Order33	Prod0	Process 0	1	0	1,955	1.00	1.00
Order34	Prod2	Process 2	7	0	2,488	1.00	1.00
Order35	Prod3	Process 3	3	0	348	1.00	1.00
Order36	Prod1	Process 1	3	0	2,719	1.00	1.00
Order37	Prod3	Process 3	8	0	1,664	1.00	1.00
Order38	Prod4	Process 4	9	0	2,348	1.00	1.00
Order39	Prod3	Process 3	3	0	1,947	1.00	1.00
Order40	Prod2	Process 2	8	0	2,304	1.00	1.00
Order41	Prod0	Process 0	4	0	2,703	1.00	1.00
Order42	Prod3	Process 3	5	0	384	1.00	1.00
Order43	Prod0	Process 0	3	0	2,821	1.00	1.00

Name	Product	Process	Qty	Release	Due	Earliness Weight	Lateness Weight
Order44	Prod3	Process 3	5	0	1,885	1.00	1.00
Order45	Prod1	Process 1	8	0	1,333	1.00	1.00
Order46	Prod3	Process 3	9	0	1,386	1.00	1.00
Order47	Prod3	Process 3	2	0	837	1.00	1.00
Order48	Prod0	Process 0	5	0	2,088	1.00	1.00
Order49	Prod2	Process 2	1	0	2,669	1.00	1.00

3 Solution

Table 3: Relaxation of Constraints

Name	Label	Enforce Release Date	Enforce Due Date	Enforce Cumulative	Enforce WiP	Enforce Downtime	Nr Threads	Timeout (s)
Sol1	test	true	false	false	true	true	2	60
Sol2	test	true	false	true	true	true	2	60
Sol3	test	true	false	false	true	true	2	60

Table 4: Solutions (Total 3)

Name	Solver Status	Objective Type	Objective Value	Bound	Gap	Makespan	Flowtime	Total Lateness	Max Lateness	Nr Late	Total Earliness	Max Earliness	Nr Early	Model Type	Time (s)
Sol1	Solution	TotalLateness	2,491	1079.00	0.57	2,495	67,626	2,491	657	10	19,038	1,346	40	CPO	60.24
Sol2	Solution	Makespan	2,643	1732.00	0.34	2,643	72,509	19,900	2,270	23	31,564	2,611	27	CPO	60.09
Sol3	Solution	Makespan	2,170	710.00	0.67	2,170	70,931	15,710	1,913	19	28,952	2,489	31	CPO	60.07

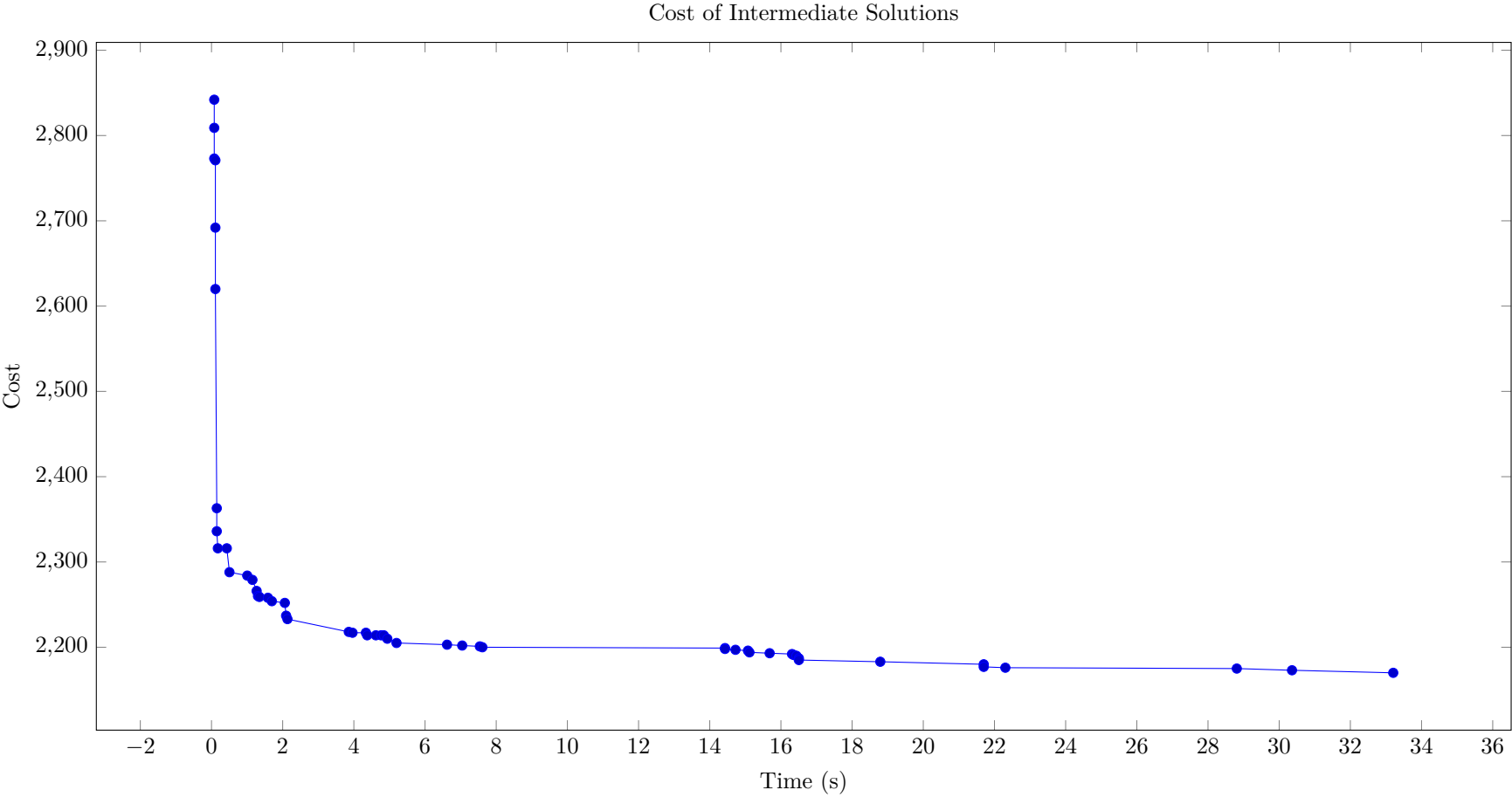
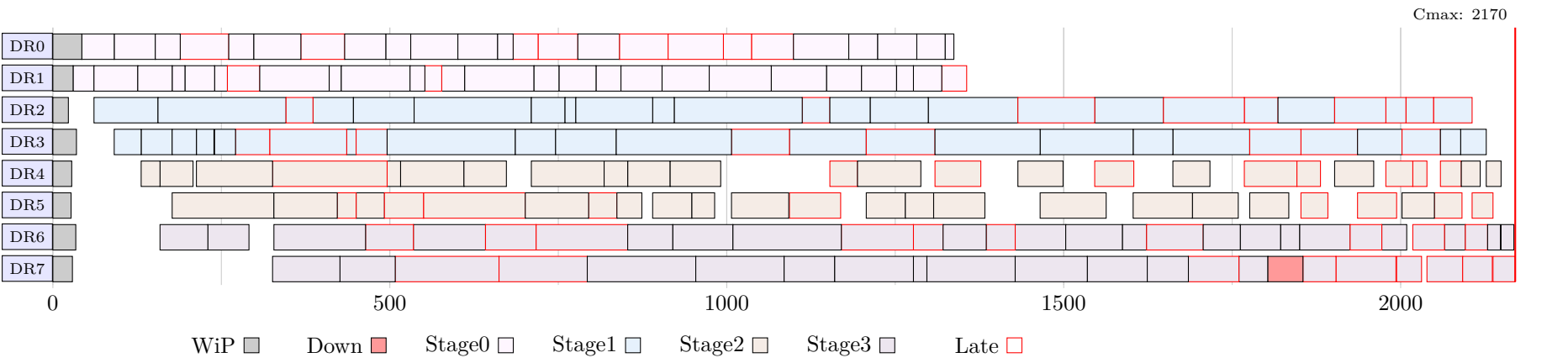


Figure 1: Machine Gantt for Solution Sol3



Resource Utilization for Solution Sol3

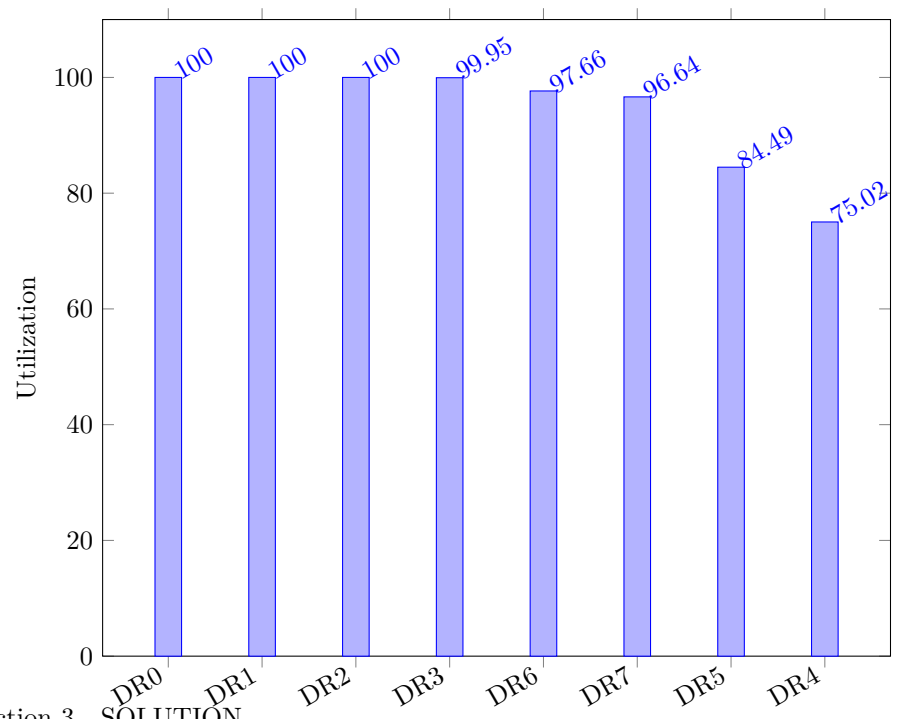


Figure 2: Job Gantt for Solution Sol3 (Part 1 of 2)

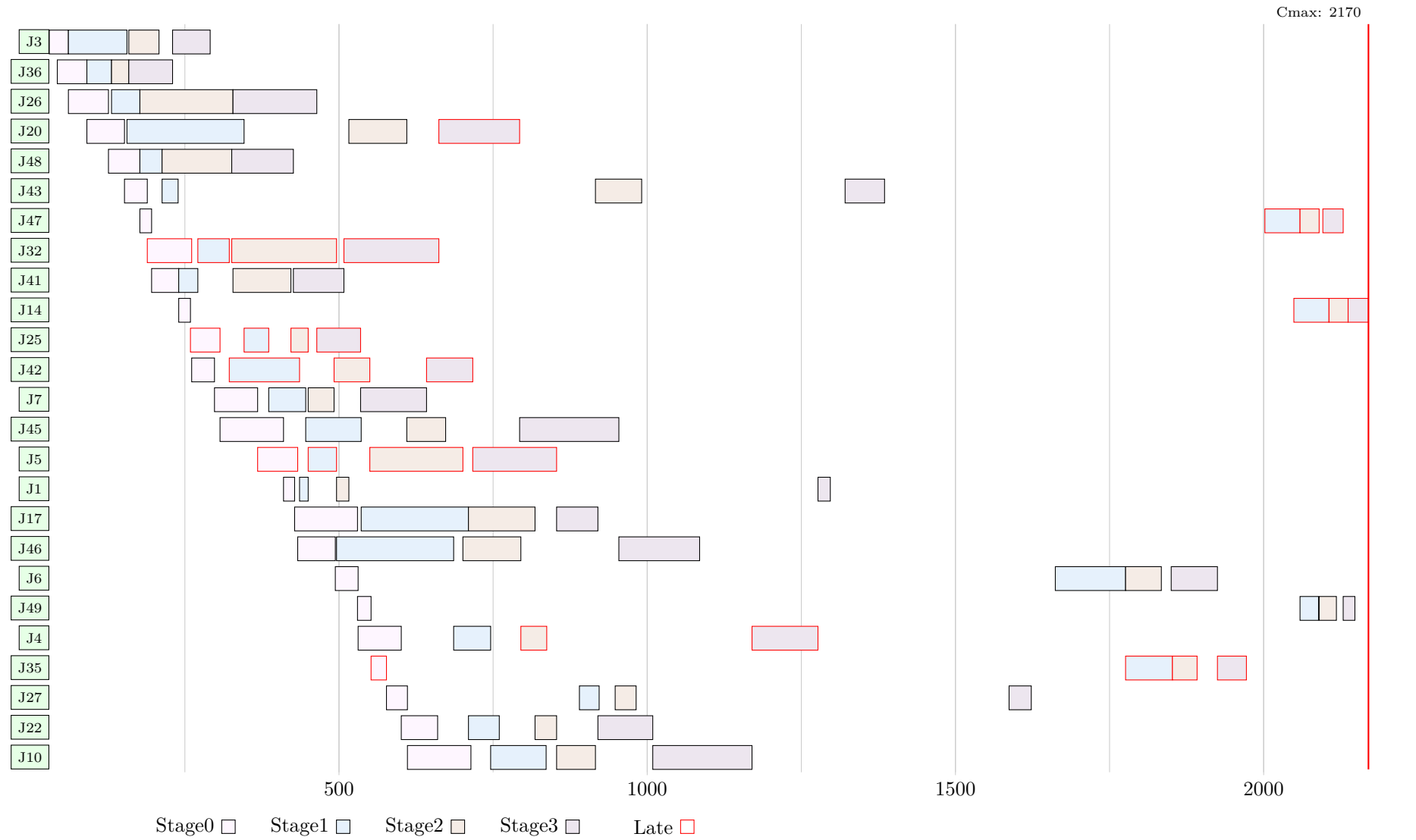


Figure 3: Job Gantt for Solution Sol3 (Part 2 of 2)

