

# LONGEST CHAIN DETERMINATION

Splitting of Critical Task based  
Earliest availability of Critical Resource

# A-dato

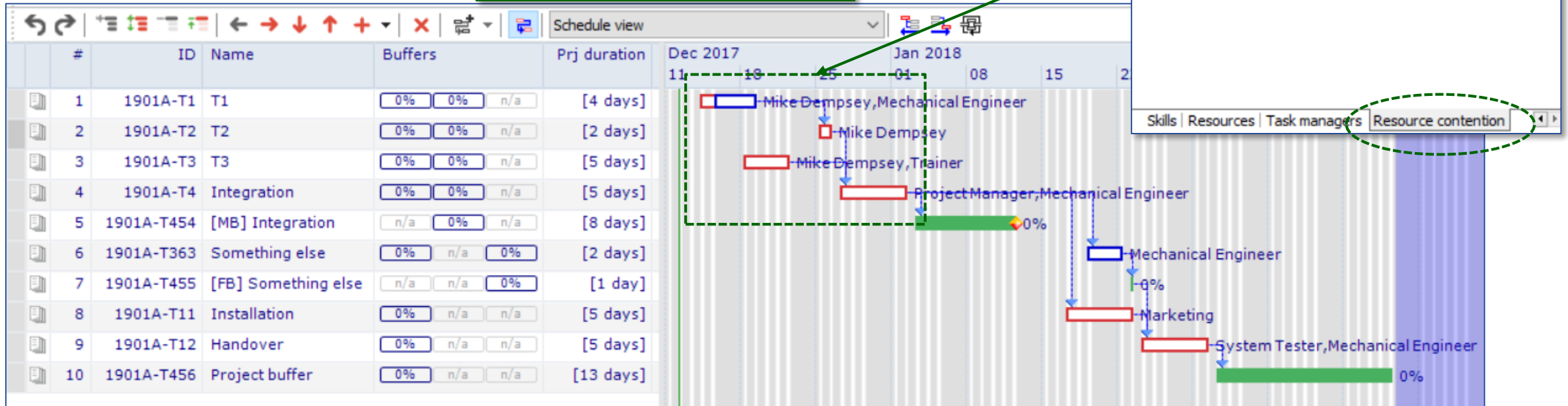
High Performance Delivered

# Splitting of a Critical Task

## *Mike Dempsey is the Critical Resource*

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The "Longest Chain" included Resource Contention, due to the assignment of Mike Dempsey, across T1, T2 and T3.



# When is a Critical Task split?

*Objective is to minimize the duration of the Longest Chain!*

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The screenshot displays a project management software interface. The top section shows a Gantt chart with a task 'T1' (ID 1901A-T1) of duration [4 days]. The task is split into two segments: a 2-day segment assigned to 'Mike Dempsey; Mechanical Engineer' and a 2-day segment assigned to 'Mike Dempsey; Trainer'. The bottom section shows the task details for '1901A-T1 T1'. The 'Requirements' table lists two resource requirements:

Resource/Skill	Estimated time	Units	Status	Est
S: Designer [Mike Dempsey:16h]	2 days/16h	100%	Not started	
S: Mechanical Engineer [*Karra Niki:32h]	4 days/32h	100%	Not started	

Splitting occurs if a task as more than 1 resource requirement and the Critical Resource has the shortest duration. In this example the designer is required 2 days on the task.

# If splitting is to be prevented....

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The screenshot shows a project management software interface. At the top, there are icons for Save, Cards view, Print, Resource load, and Properties. Below these is a toolbar with navigation and editing icons. The main area is a Gantt chart showing task durations from Dec 2017 to Jan 2018. Tasks are listed in a table below the chart:

#	ID	Name	Buffers	Prj duration
1	1901A-T1	T1	0% 0% n/a	[4 days]
2	1901A-T2	T2	0% 0% n/a	[2 days]
3	1901A-T3	T3	0% 0% n/a	[5 days]
4	1901A-T4	Integration	0% 0% n/a	[5 days]
5	1901A-T454	[MB] Integration	n/a 0% n/a	[8 days]
6	1901A-T363	Something else	0% n/a 0%	[4 days]

Below the Gantt chart, there are tabs for Resource requirements, Dependencies, Custom fields, Visual, Tracking, and Workpackage. The Resource requirements tab is active, showing a table of resource requirements:

Resource/Skill	Estimated time	Units	Status
S: Designer [Mike Dempsey:16h]	4 days/32h	50%	Not started
S: Mechanical Engineer [*Karra Niki:32h]	4 days/32h	100%	Not started

A green callout box with white text says: "Splitting is prevented when durations of all required resources are equal." Arrows point from this box to the 'Estimated time' column of the resource requirements table. Another green callout box with white text says: "If the effort is not equal, change the unit % to modify the expected workload." An arrow points from this box to the 'Units' column of the resource requirements table.

If the effort is not equal, change the unit % to modify the expected workload .