

APPLYING CONSTRAINTS

LYNX CCPM Project Plans

A-dato

High Performance Delivered

Available Constraints

As late as possible / As soon as possible → controlled by LYNX (CCPM) Scheduling Settings

In CCPM Mode the following constraints are controlled by the defined "Project Properties" for Scheduling behavior for the Critical Chain and Feeding Chains and cannot be controlled by the user:

- As late as possible
- As soon as possible

ID	Name	Duration	Start	End
1	P10-T1	Validation of Concept	[5 days]	05
2	P10-T2	Build Part 1	[5 days]	12
3	P10-T3	Integration 1	[3 days]	19
4	P10-T4	Review of Concept	3 days	
5	P10-T5	External design	[3 days]	
6	P10-T6	Build 2a	[3 days]	
7	P10-T7	Integration 2	4 days	

Project properties

General Documents Custom fields Project dates Scheduling Resource availability Critical chain

How do you want this project to be scheduled?

Schedule engine

- Schedule tasks 'as soon as possible'
'as soon as possible' will schedule tasks forward from the project start date
- Schedule tasks 'just in time'
'just in time' will schedule tasks backwards from the project end date
- Activate CCPM schedule engine
CCPM provides a project management solution based on the Theory Of Constraints
 - Schedule feeding chains 'as soon as possible'
 - Schedule feeding chains 'just in time'

Reschedule behavior for projects containing progress information

- If the status is set to 'Not started', schedule the project using the original plan
- If the status is set to 'Not started', schedule the project based on the current progress

Multi project behavior

- Tasks should be scheduled in consecutive order
- Allow tasks to split to optimize resource allocation

Resource load leveling

- Auto balance resource requirements based on resource availability

Save project as a template

OK Cancel

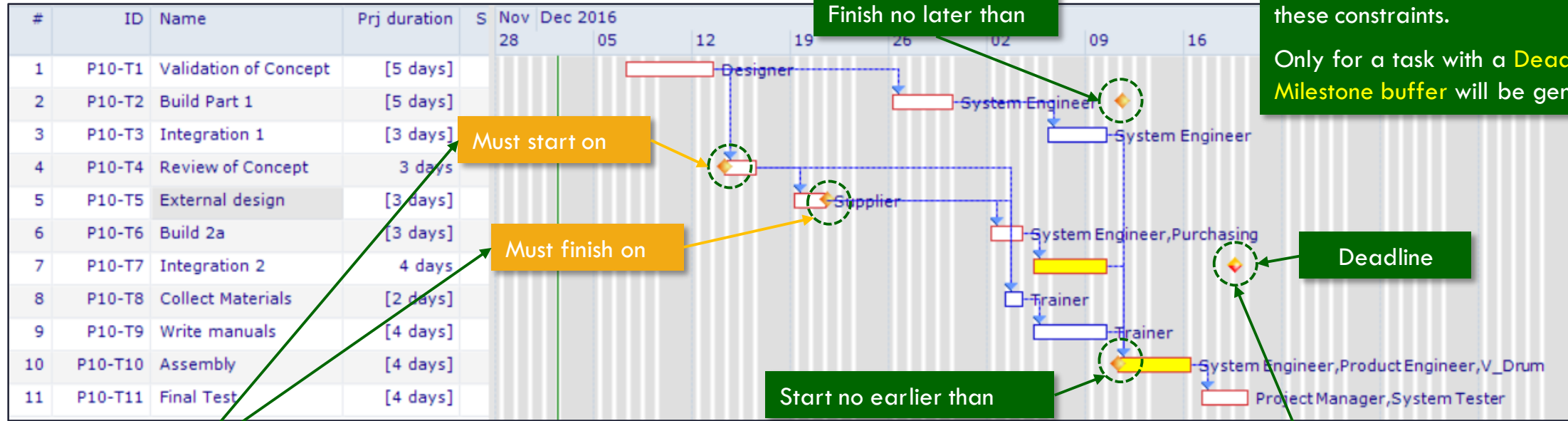
Messages (0) General Constraint Progress Resource requirements

Constraint Date

- As soon as possible
- As late as possible
- As soon as possible
- Do not level
- Finish no earlier than
- Finish no later than
- Ignore task
- Must finish on
- Must start on
- Start no earlier than
- Start no later than

System Engineer, Product Engineer, V_Drum
Project Manager, System Tester

Recommended Constraints in CCPM



Finish no later than and a Deadline have the same “scheduling” effect. LYNX will try to push all task before these constraints. Only for a task with a Deadline a Milestone buffer will be generated.

The “Must” constraints are not recommended, as they pin tasks to fixed positions that cannot move, which eliminates flow and flexibility from the plan.

Constraint: As soon as possible

Date: clear

Deadline: clear

Recommended Constraints in CCPM Mode

- Finish no earlier than
- Finish no later than
- Start no earlier than
- Start no later than

Other possible Constraints

Do not level/Ignore Task

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The screenshot shows the Microsoft Project interface. On the left is a task list with columns for ID, Name, and Prj duration. The main area is a Gantt chart showing task dependencies and resource assignments. A 'Constraint' dialog box is open, displaying a list of constraint types. Two options, 'Do not level' and 'Ignore task', are highlighted with dashed green boxes. A green callout box on the left explains that tasks with the 'Ignore Task' constraint are not included in resource load. Another green callout box on the right explains that 'Do Not Level' means resource dependencies are ignored when calculating a Critical Chain.

#	ID	Name	Prj duration
1	P10-T1	Validation of Concept	[5 days]
2	P10-T2	Build Part 1	[5 days]
3	P10-T3	Integration 1	[3 days]
4	P10-T4	Review of Concept	3 days
5	P10-T5	External design	[3 days]
6	P10-T6	Build 2a	[3 days]
7	P10-T7	Integration 2	4 days
8	P10-T8	Collect Materials	[2 days]
9	P10-T9	Write manuals	[4 days]
10	P10-T10	Assembly	[4 days]
11	P10-T11	Final Test	[4 days]

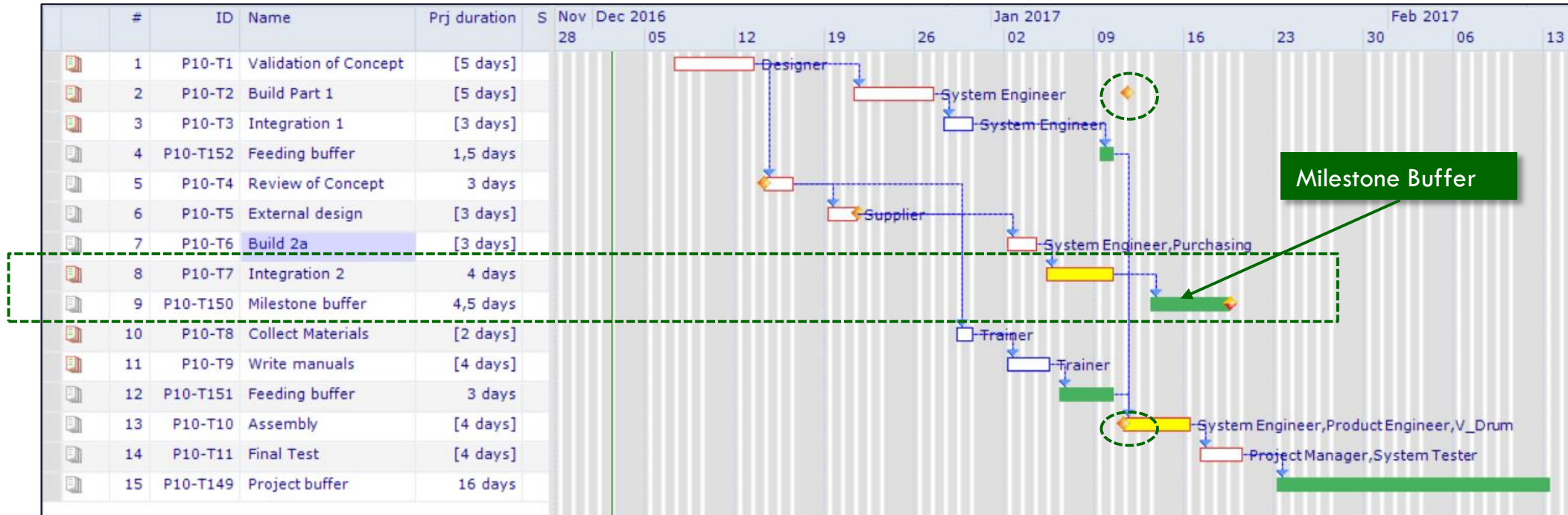
Task with the Constraint "Ignore Task" are not included in the resource load anymore. Better alternative is to remove such a task from the plan.

Do Not Level means possible resource dependencies will be ignored when calculating a Critical Chain. The normal dependencies (predecessors and successors) remain.

Plan after calculation and adding buffers

Milestone buffer is inserted task with a deadline

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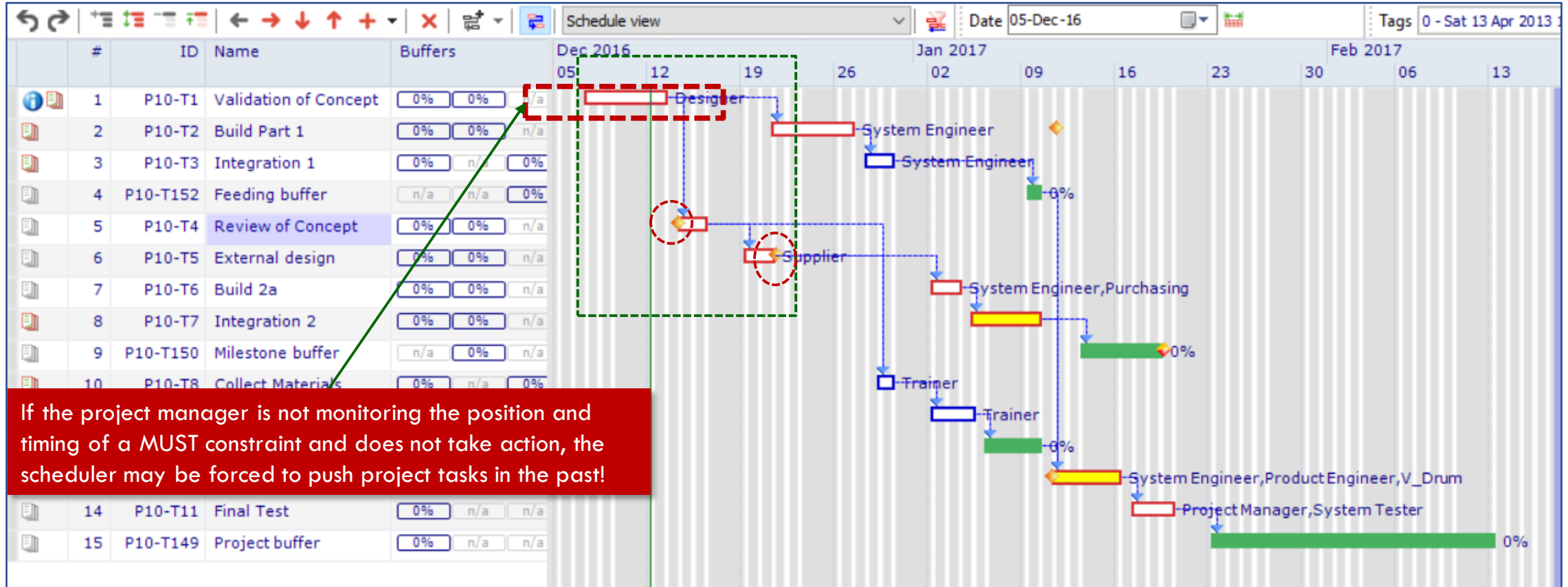


A Start no Earlier Than Constraint pushes the task and its subsequent chain toward the future (without pinning the task at a fixed position)

Project = Released

Impact “Must” Constraints → Scheduler cannot move tasks

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Recommendation: avoid using “Must” constraints in CCPM plans.

Milestone Monitoring and Management

Milestone “Feeding Chain Tasks”

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#	ID	Name	Buffers
1	P10-T1	Validation of Concept	0% 0% n/a
5	P10-T4	Review of Concept	0% 0% n/a
6	P10-T5	External design	0% 0% n/a
7	P10-T6	Build 2a	0% 0% n/a
8	P10-T7	Integration 2	0% 0% n/a
9	P10-T158	Milestone buffer	n/a 0% n/a

Constraint dialog box details:

- Constraint: As soon as possible
- Date: use scheduled date
- Deadline: use scheduled date
- Calculated constraint: **Milestone constraint: Fri 13 Jan 2017 19:30, feeding chain: 13 day**

After completing T1, still 13 days Feeding Chain Tasks towards the Milestone remain:
 (T4(3d)+ T5(3d) + T6(3d) + T7(4d))

My activities

Milestone Constraint Management and Monitoring

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The screenshot displays a software interface for task management. On the left, a table lists tasks with columns for ID, Description, Start date, Milestone constraint, Priority, and RTS. The task 'Validation of Concept' (ID P10-T1) is highlighted with a dashed green box. A green arrow points from this task to the 'Task details' panel on the right. The 'Task details' panel shows information for 'ID P10-T1', including description, project, manager, and scheduled dates. A dashed green box highlights the 'Milestone constraint' field in the details, which matches the value in the table. Below the details, there are tabs for 'Resourcing', 'Notes (8)', 'Documents (0)', 'Custom fields', and 'Working hours'. The 'Resourcing' tab is active, showing the role 'Resource Mike Dempsey', skill 'Designer', and resource '* Mike Dempsey'. The status is 'Not started' and the effort is '5 days/40h'. The expected completion is 'Thu 15 Dec 17:00 at 100%'.

ID	Description	Start date	Milestone constraint	Priority	RTS
P10-T1	Validation of Concept D3 Product development	Today 9:00 [w49]	Fri 13 Jan 2017 19:30 [-13 days]	High	Yes
P10-T10	Assembly D3 Product development	Wed 4 Jan 2017 9:00 [w1]		Medium	No
P10-T11	Final Test D3 Product development	Tue 10 Jan 2017 9:00 [w2]		Medium	No

Task details

ID P10-T1
Description Validation of Concept
Project D3 Product development
Project manager A-dato Consulting, A-dato
Scheduled dates Today 9:00 - Thu 15 Dec 17:00
Milestone constraint Fri 13 Jan 2017 19:30 [-13 days]
Last update Mon 25 Jul 10:56 by A-dato Consulting
Task manager Robin Porter, LYNX GmbH
Sven Cramer, A-dato

Resourcing | Notes (8) | Documents (0) | Custom fields | Working hours

Designer

Your role Resource Mike Dempsey
Skill Designer
Resource(s) * Mike Dempsey
Status Not started
Ettc 5 days/40h
Please enter the 'expected time to complete' for this task
Expected completion Thu 15 Dec 17:00 at 100%