Concerto 5.10 SR8 (5.10.4098 or later) Release Notification: New Planning Module

Product Highlights

- Introducing New Concept: CCPM 2.0
- Web-based, fully integrated into Concerto Web. MS Project is no longer needed.
- CCPM capability for both planning a new project and re-planning an in process project
- Multi-view matrix architecture, designed specifically for multi-phase based WBS (work breakdown structure), allows for quick planning deployment
- Fully integrated with existing global resource structure.
- Simplified network analysis tools for users to optimize schedules
- Integrated subtask functionality allows Project Manager to create a project plan with high level tasks only and add detailed workflow at a later time.
- Global Template Depository allows fast, centralized, managed project launch with high consistency and flow conformability
- Specifically designed for ETO, MRO, NPD, EPC, IT and Software Development environments

CCPM 1.0 vs CCPM 2.0

Critical Chain Project Management with the use of buffers was a quantum leap in improving project management performance. This was the first time where task priorities could be objectively calculated. Nevertheless, as more organizations have adopted CCPM and with vast implementation experiences accumulated over the years, CCPM 1.0 is not without its shortcomings:

1. Project plans require up front task details. This increases planning cost as more time is now required to build a project network.

2. Detailed plans require frequent changes in order to keep the project up-to-date. Since many of the details put into the original project network become invalid as the project changes over time, the project manager would need to constantly check out the project and amend the changes. This increases execution cost as more re-planning efforts are now required.

With CCPM 2.0, Concerto's new planning tool offer 2 major improvements to overcome these shortcomings. First, in addition to the traditional WBS (work breakdown structure), tasks can be organizing by user defined "phases". Use of "phases" allow the project to be

matrix-architectured. There are 2 positive implications when project networks can be further defined by WBS-Phase combinations:

1. Project networks can now have a framework architecture. This allows a project plan to be quickly defined. As long as the architecture is consistent before and after execution, task level details can be added later without changing the structure of the project.
2. Common WBS under the same Phase usually share the same resource type. Therefore, estimation of resources and effort would be much easier.
3. Phases can now be easily identified if they should be treated as constraints for pipelining purposes.

Our Vision For A New Project Planning Tool

1. Visualization - Work streams rather than tasks in a row.

2. Better task/sub-task architecture - allows planners to keep project plans at a high level without sacrificing the details.

3. Standardization - by defining standard phases, consistent and conforming project deployment.

This obviously has implications beyond planning into execution. We believe there is an opportunity to simplify the execution management processes, and also the potential to implement Kanban.
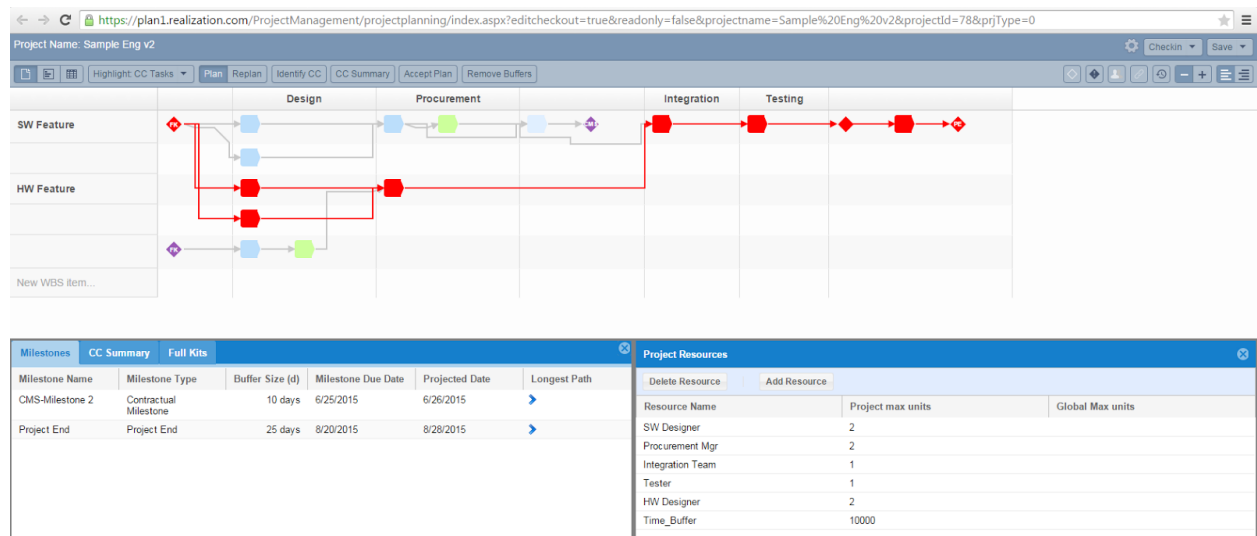
What's New?

Concerto's new planning tool with the matrix Project View. Using phases to define project architecture, resources and effort required for each phase can be quickly identified.
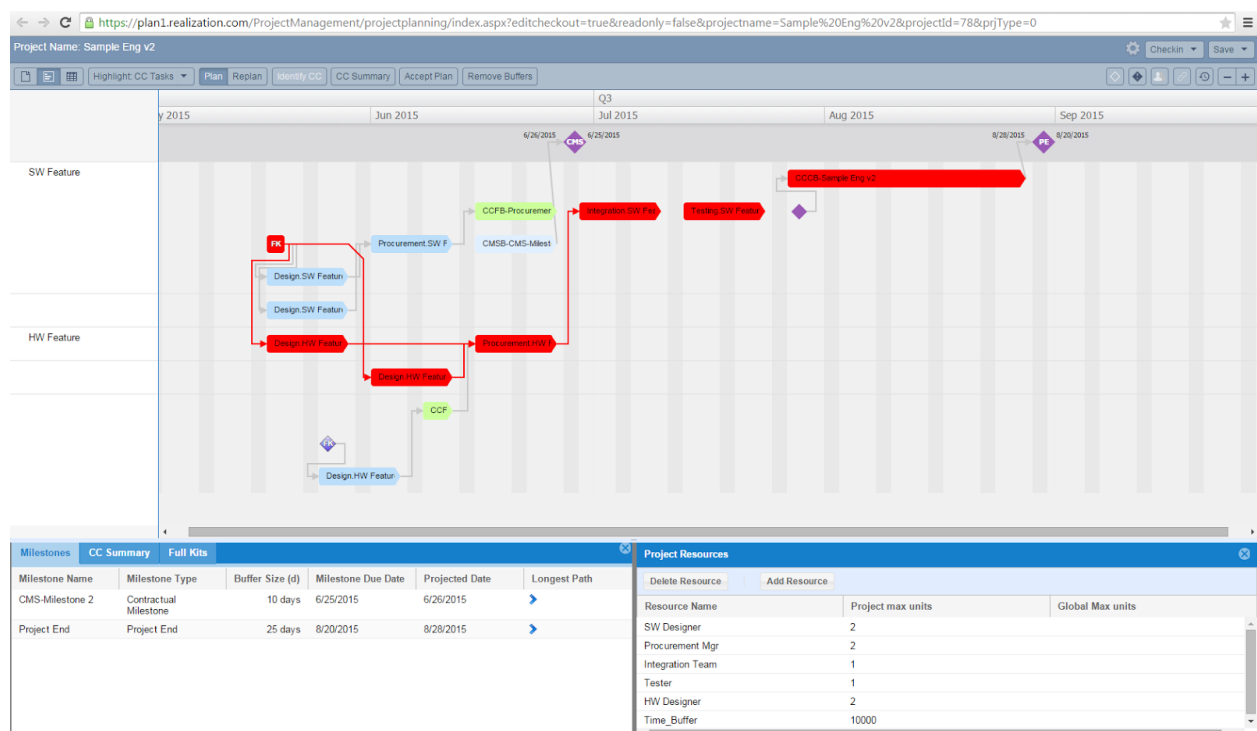
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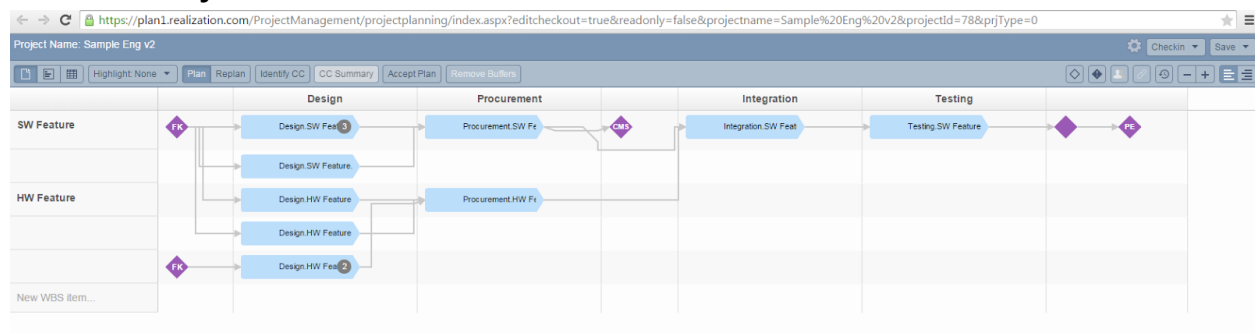
After Identify CC

Timeline View of new planning tool offers the same capability as MS Project's Gantt View

It is not always possible to obtain all of the requirements needed for the project, and waiting to collect or "invent" unforeseeable tasks in a project plan costs managers and stakeholders. The ability to be flexible in designing a project network while reducing the effort for re-planning and integrating with Waterfall & Agile approaches are the goals of CCPM 2.0.

Using Subtask To Detail Out Task Requirement during Execution

In the real world, the details of the project are usually not known during the early stages. However a rough project plan is needed in order to serve as a guiding principle for execution. By allowing details to be filled in later, the Project Manager can focus on high level goals that are essential to the organization's business objective.

Through the subtask functionality, the Project Manager can define detailed workflow for each high level tasks with additional breakdown of required duration, needed resources and manager within the encapsulated main task and phase without altering the project structure. This results in less effort and less frequent re-planning. Detail flow is added later when more information becomes available.

The Rollup Duration selection dropdown also allow users to define subtasks workflow and the aggregated duration would be correctly reflected on Task List. In this example, task Phase 1. WBS 1 has 2 subtasks with duration of 3 days and 4 days respectively. In the Task List's view, when Task Manager expand the subtask view, the rollup duration of 7d from the 2 sequentially defined subtasks would be reflected next to the main task's remaining duration (10d).
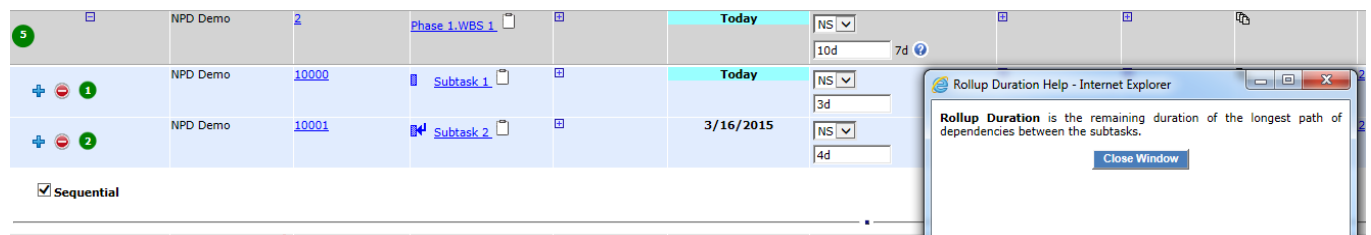
All subtasks under a specific task must be modeled as either parallel or sequential. This revised design is to simplify execution and prevent unnecessarily complex modeling. Should custom dependency be required for the subtasks, the user would need to create additional regular tasks to accommodate the more elaborate dependency design.
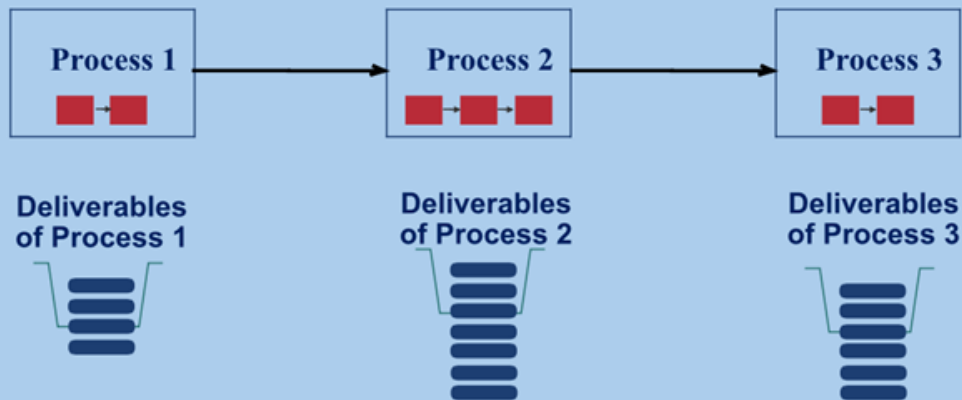
Case Study: CCPM 2.0 Modeling in ETO Environment

The CCPM 2.0 Concept can be applied to many different type of project environments, such as ETO, MRO, NPD, EPC, IT/Software, and Engineering involving hardware design and manufacturing. For example, in ETO (Engineering To Order) environments, work flows through design, procurement, manufacturing and quality test.

In these environments, you may have to order many parts for manufacturing to start after the initial design. Instead of creating tasks for each order, you can group all the long lead tasks and short lead time tasks together, and manage the details in the subtasks. This is the basic idea of CCPM 2.0

Users should stop worrying about the individual tasks, and instead think about how a project has to go through a set of processes. And for the overall project plan, what is needed, and what are the dependencies between the processes.

Then think about what are the tasks in each of the processes. The tasks inside of the processes can change. Dependencies between the tasks might change also. You might want to capture it or not and leave it up to the managers to decide during execution. This creates additional flexibility, which was missing in CCPM 1.0
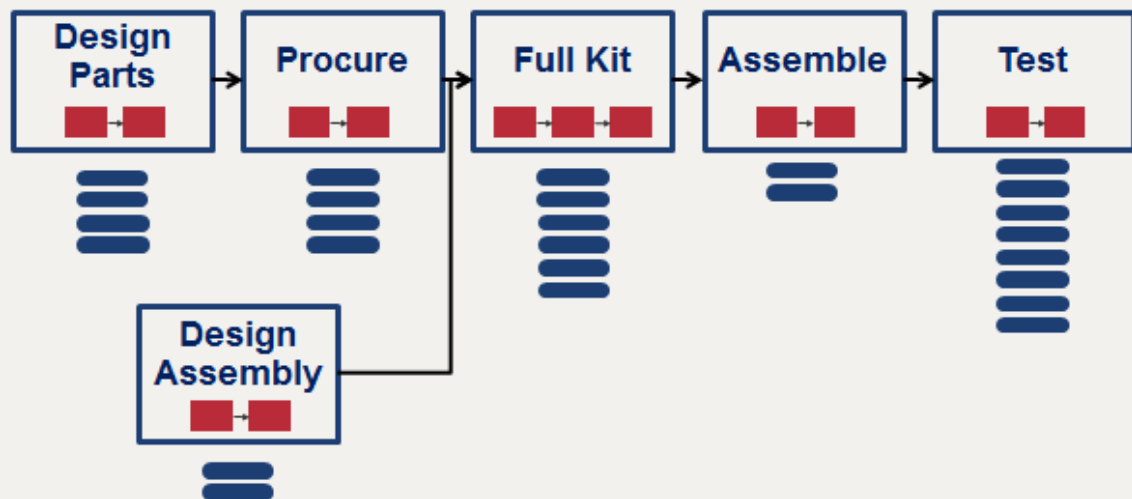
CCPM 2.0 SOLUTION: PROCESS BASED PLANS

Process 1 → Process 2 → Process 3

Deliverables of Process 1

Deliverables of Process 2

Deliverables of Process 3

IT – Design, Development, Testing
ETO – Design, Procurement, Manufacturing, Quality Test

ENGINEER-TO-ORDER MANUFACTURING EXAMPLE

Design Parts → Procure → Full Kit → Assemble → Test

Design Assembly

In most projects, 15-20% of the work is in the critical path and the remaining 80% is volume of work. There is a lot of flexibility in how this work can be performed. Using subtasks can help in exploiting this flexibility.

If you arrive at the WIP limit for subtasks and maintain the limit for subtasks that can be released in a phase, then it will help you to get additional local measurements. You can look at WIP (count of IP subtasks) vs. WIQ (count of NS subtasks) and the rate of completion (count of completed tasks in last 2-3 week).

If the WIP limit is maintained for subtasks at the phase level and if WIQ (Work in Queue) is going up, then you know there is some resource constraint which needs to be dealt with. If a new manager is coming in and even if he is not that familiar with CCPM, he/she can look at the rate of completions. If WIP is going up and the rate of completions is coming down in 4-6 weeks, he/she can quickly make process adjustments. This helps you to give good feedback at the local level.

If you are doing well at overall task level, the project buffer is green, and Work in Queue is steady, then you know that you are able to keep pace with the incoming work and you are able to control multi-tasking.

You can keep the sequence flexible until you get started on the work. You can start only what you can finish as you are taking up only smaller chunks of work. When there is change in scope, you can avoid wasted time and capacity in ongoing unfinished work. You can minimize the impact of scope changes.

You can now exploit additional flexibility in sequence and gain increases in cycle time. You can capture all the details in the plan but still keep the overall plan simple. With simpler plans, it's easy to update and manage. You don't need the remaining duration update for each item; which may not be reliable anyways. What is important is whether the item is complete. And using the rate at which the work is getting completed (number of completed subtasks for the last 2-3 weeks in the given phase), you can project the task remaining duration update.

# How to Plan and Re-Plan Using the New Planning Module?

The new multi-view planner offers **Project View**, **Timeline View** and **Table View**. In the Project View, each named row denotes a Work Breakdown Structure (WBS); any unnamed row below a named row indicates that it belongs to the same parent (named) WBS.

The columns are designed to parse major phases within a project. Planning and re-planning functions are controlled by the Plan/Replan tab. Selection choice will toggle the displayed function buttons:
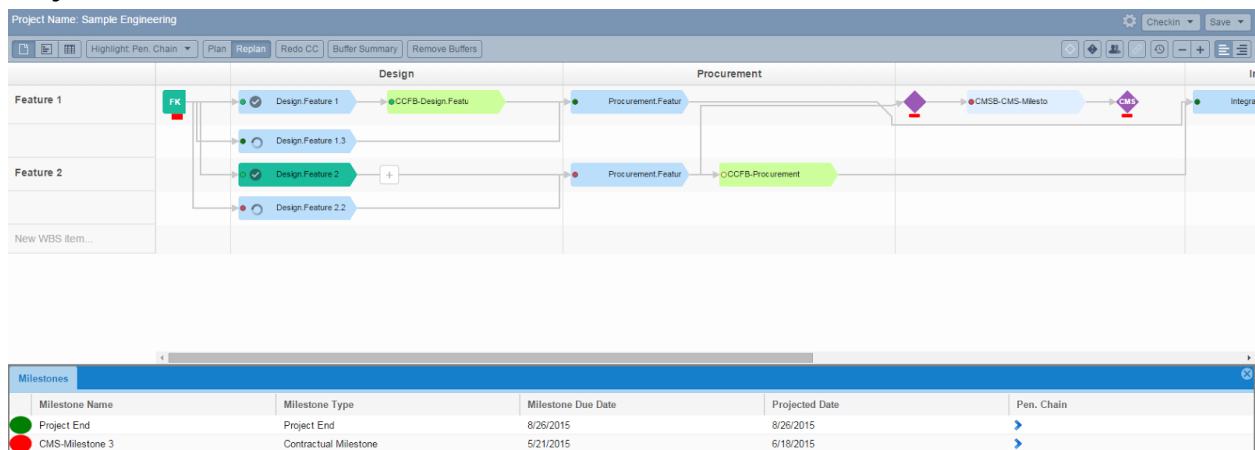**Plan Mode**
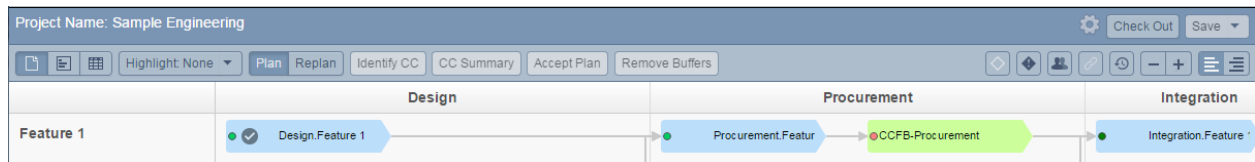
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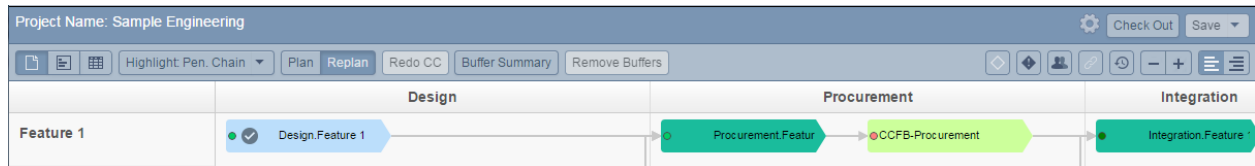
Project View

The Project View is a powerful tool, enabling the Project Designer to quickly build the plan. After filling in the details, such as assigning resources and duration, the Timeline View can quickly give planned task and milestone schedules. The Project Designer can easily grasp the big picture, as well as the feasibility of the newly designed project plan.

In order for milestone and full kit to be meaningfully standout from the perspective of project's architecture, the concept of "Pinch Point" is introduced. This means a milestone or a Full Kit can only be created and placed before or after a phase. Drop down menu at the end of each phase's header allows use to insert or remove a milestone/FK task as well as setting tasks properties for that phase.

Table View

The Table View offers data-oriented, skimming-through capability for users to review project data, as well as input data efficiently. Instead of assigning resources and duration for each

task in the Project View individually, once the project architecture has been defined, the Project Designer can quickly switch to the Table View and input the required task assignments, duration, and any other task data before running Identify Critical Chain.

## CCPM Network Analysis Tools

You can convert your plan to a Critical Chain Project Network in both Project and Timeline Views.
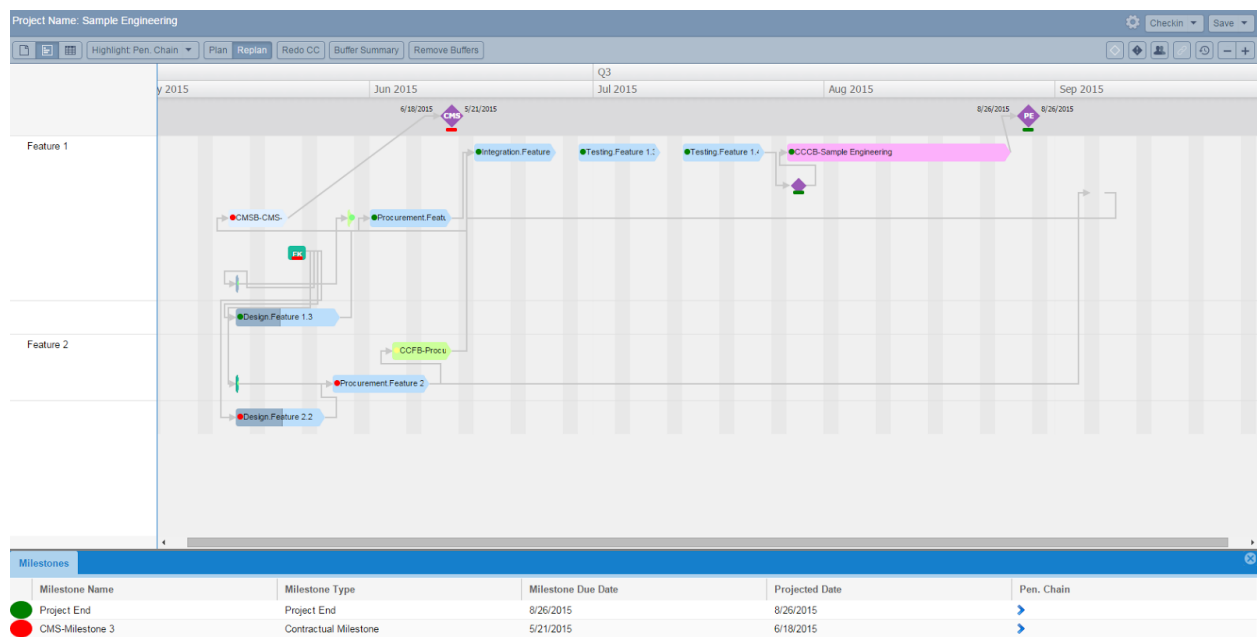
Under the Highlight button, there are tools available to analyze and perform network optimization. To utilize these tools, the user will first need to select the task or buffer in question and then choose the relevant drop-down menu option.
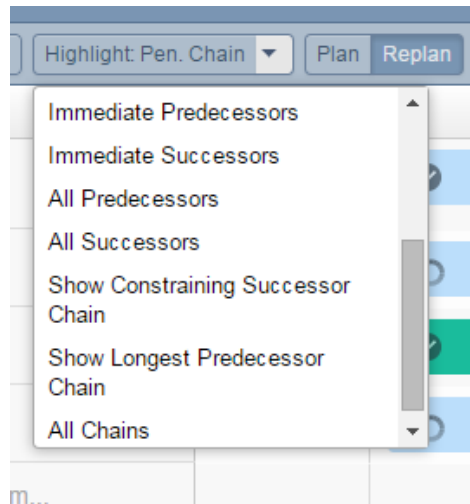
Once the selected option is executed, the tasks are highlighted in an orange color.
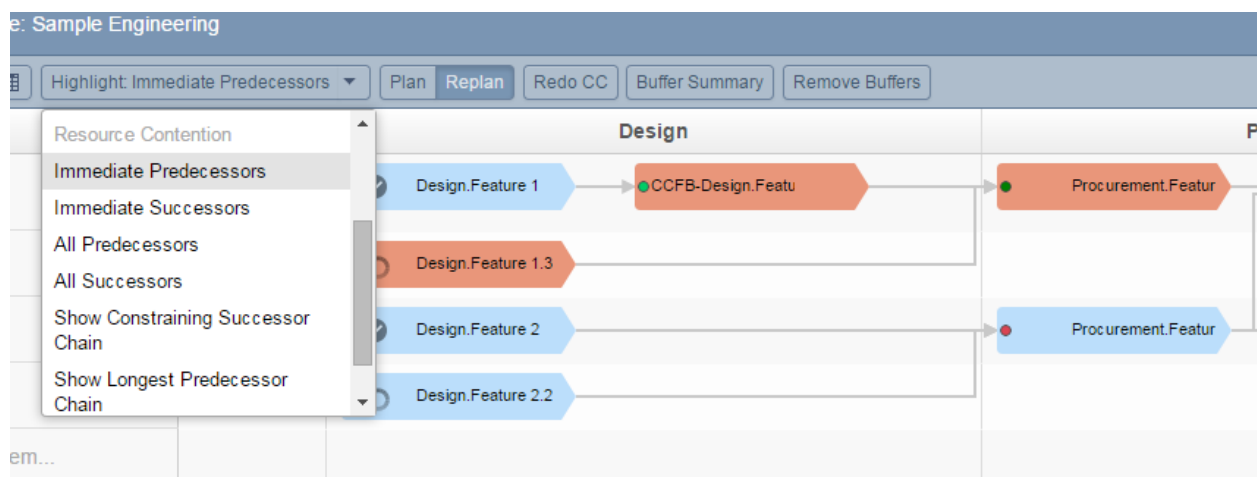

Global Resource Integration

The Project Designer is no longer required to create or maintain his or her own local resource sheet. In this new version, once a Global Resource File has been created and added to Concerto, any plan created by this new planner will benefit from a pre-populated resource dropdown list when assigning resources to a task. In addition, should a new resource need to

be added, the Project Designer can have the privilege to create new resources, which also become available globally for all projects.

This design eliminates the need for Project Designers to create or maintain separate local resources list, which will ensure consistency of resource naming and integrity of resource max units.
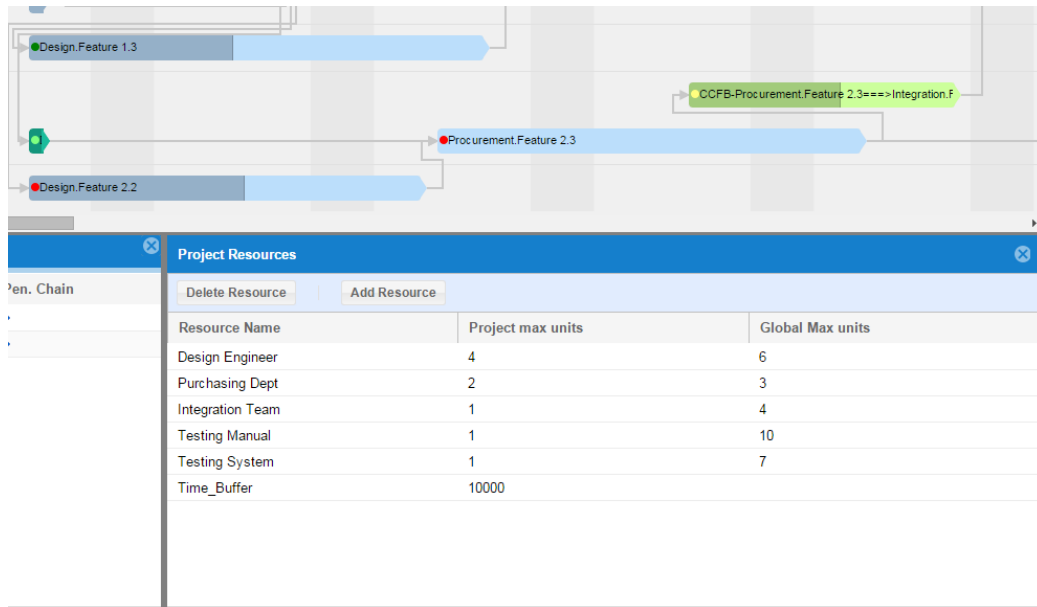

Modeling changes when creating IMS, CMS and Full Kit using the new planning tool

In MS Project, full Kit tasks must be inserted between 2 tasks. In the new planning module, Full Kit tasks can be inserted between 2 phases or prior to a phase. However, it cannot be inserted between 2 tasks within the same phase.

In MS Project, CMS can only have single predecessor dependency. In the new planner module, CMS can have multiple predecessors. This adds flexibility to the project design. IMS, on the other hand, needs to be zero duration when created using the new planner; this is to ensure all milestone type such as CMS, IMS or PE, are consistent in nature.

Global Template Depository

Now, a project can be saved as a template through the Concerto Web Interface, and shared across the organization. To save a project as template, select "Save As Template".
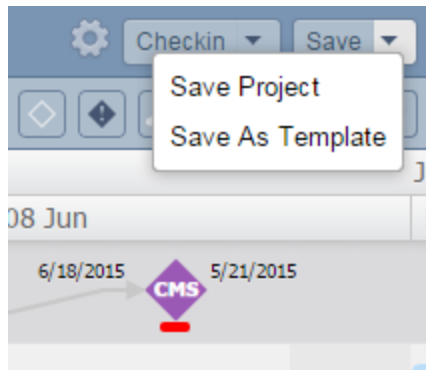
And when creating a new project, the Project Designer can choose a template from the template drop down list to design the project from.
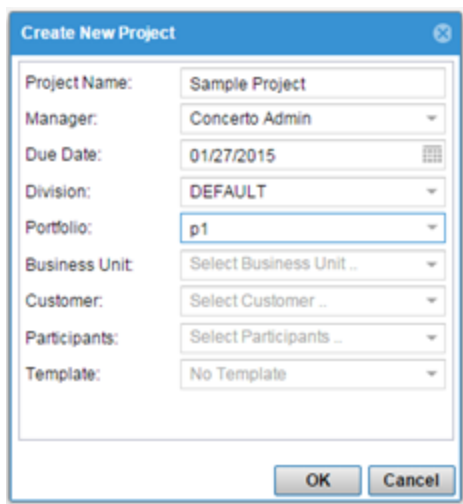

What To Do?

Creating Your Project using the Project View

Creating a new project plan is simple. Click on "Create New Plan" in the sub-menu bar under the "Project Mgr > Modify" screen.

You can either enter a new name and select Manager and Division, or choose from the existing templates.

Using Global Template Depository

Users will first save a project as a template. The project snapshot will be saved as another project and will be marked as template (shown in the Modify Project screen under the file type column).

Load Template As/in Project

When a user clicks the "Create New Project" button in the Modify Project screen, the new project dialog opens, which contains a Template dropdown. By default, a division is selected and the templates for that division are loaded in the dropdown. If a user selects a different Division, the Template drop-down will be updated to display the templates from that newly selected division.

The Template description shall be visible (changed dynamically on selected template) below the Template dropdown box as shown below.

- This can then be used as an independent project or it can also be saved as a template after editing.

- Selecting no template would load a default project with 1 task, PE milestone and 1 link connecting them.

- Project Attributes shall not be copied from the template. It shall be the same as what the user enters in the new project dialog.

- If a user is creating a project for the first time, user will not have any templates to select while creating the project

Privileges

The option to save any project will be enabled only for Admin users. Other users can only create plans using the available templates

Modify

In the Modify screen, templates are displayed with a file type of PPI-TEMPLATE. This allows users to differentiate them from normal projects.

Checkout Project

On clicking "Checkout", template will be checked out in the Planning screen. User can edit the checked out project. The following options will be given to user for editing the Template:

- Save Project: Click the button to save the changes made in the template

- Save As Template: User can save the current template with a different name.

- Identify CC : User can run IDCC on the template after editing it

- CC Settings: This option is also provided to the user while editing the template

- Check-in : After check-in, the changes are saved and the template will become available to other users. And if a user goes to the Modify screen (or clicks refresh), the Undo Checkout option will not be visible as the lock has already removed after clicking the Checkin button in the new UI.

Undo Checkout

After doing Undo Checkout, the template will become available to other users for editing (changes will not be reverted)

Edit Checked-out project

This link is required along with *undo-checkout* so that if a user accidentally closes the Project Planning UI tab, he/she can open it again from the Modify Project screen. It will work the same way as Checkout except that it will not check for project locks.

Set Status

Users will not be allowed to change the status of the Templates. The status of the Templates will always be In Plan.

View Project Link

This link will open the template network in the Planning Screen as Read Only.