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CPM Scheduling with Primavera Unifier

Don McNatty, PSP

March 26, 2014

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- Primavera P6 Implementation Specialists
- Primavera Contract Management Implementation Specialists
- P6 Certified Trainers
- Contract Management Certified Trainers

2014 Technical Webinar Series

Thank you for joining today's technical webinar

- Mute – all call in phones are automatically muted in order to preserve the quality of the audio for all attendees.
- Questions – during the session, questions can be submitted through the Questions Box on the right side of the screen . We will try to address your questions at the end of the presentation, time permitting.
- Follow up – all registrants will receive an Excel file listing all questions and responses along with a link to the recorded webinar.

Safe Harbor

- The statements made in this technical presentation are based on our current knowledge of the tools.
- Our statements should not be construed to be an official “Oracle perspective”, but are intended to be the sharing of technical and user knowledge gained as we explore new paths and technologies, usually in advance of our clients.
- Our statements should not be construed as in conflict with any Oracle statement, as the Oracle statement is likely made based on more current knowledge than may be available to us.

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- Hard Dollar, Acumen Fuse, Ecosys, Prism G2, US Cost, Microsoft Dynamics...
- Global Data Centers in USA, London, Singapore and Brisbane

Abstract

CPM Scheduling with Primavera Unifier

- Oracle Primavera Unifier has a built-in scheduling component that supports creating schedules including activities, durations, logic and constraints. Unifier also supports importing schedules from P6 and MS Project. Many people have asked if they still need P6 to do schedules if they have Primavera Unifier? In this presentation we take an in-depth look at what schedule functionality is actually provided in Unifier, if it calculates a critical path, and how to best use this functionality to meet your scheduling requirements.

Agenda

- The “Unifier Webinar Series”
- What is Primavera Unifier?
- Fundamentals of the Unifier Schedule module
- Creating a CPM schedule in Unifier
- Perspective on CPM schedules with Unifier
- Integrating with P6
- Best Practice recommendation
- Questions

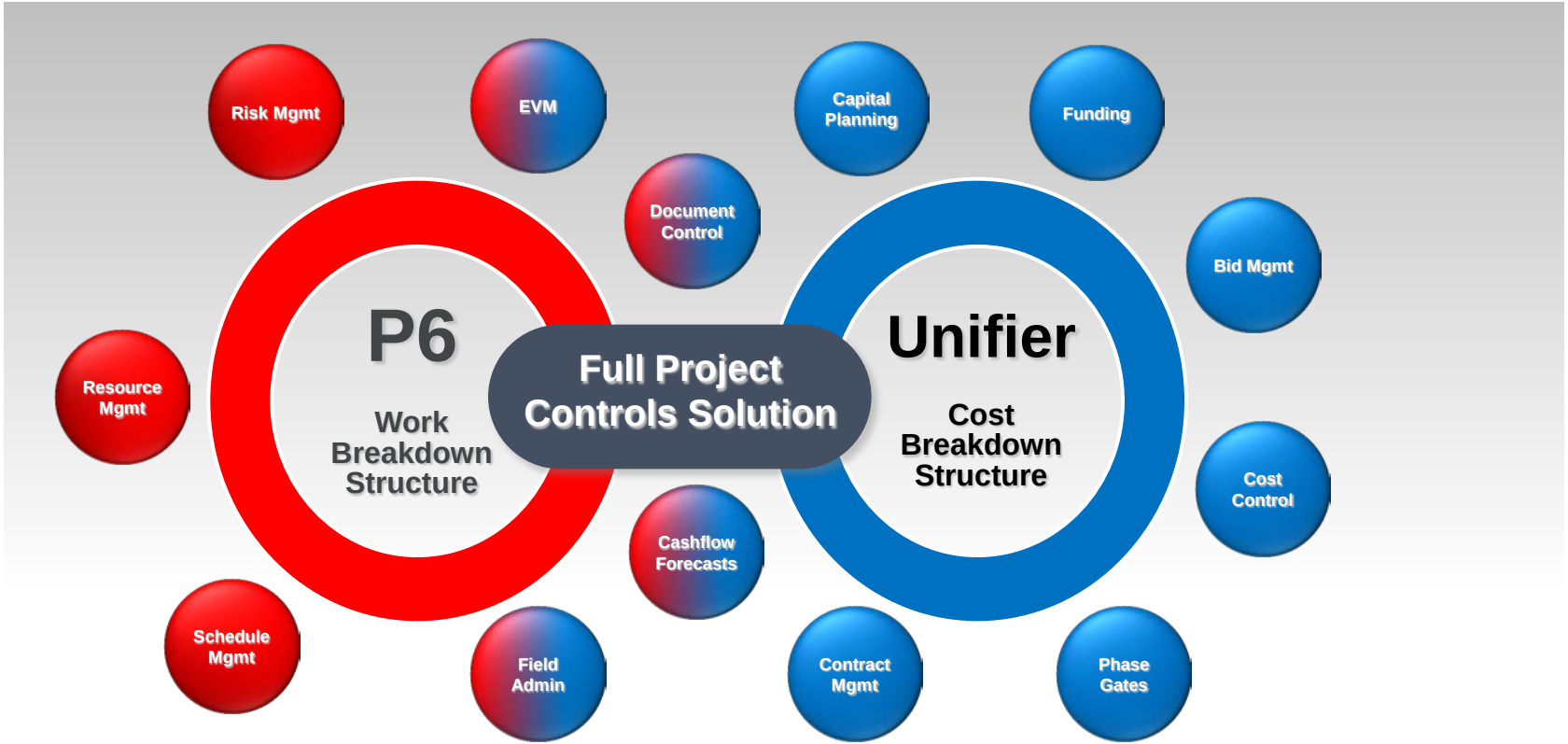
The “Unifier Webinar Series”

DRMcNatty is providing the following webinars on Unifier to help our clients better understand Unifier and how Unifier is Implemented.

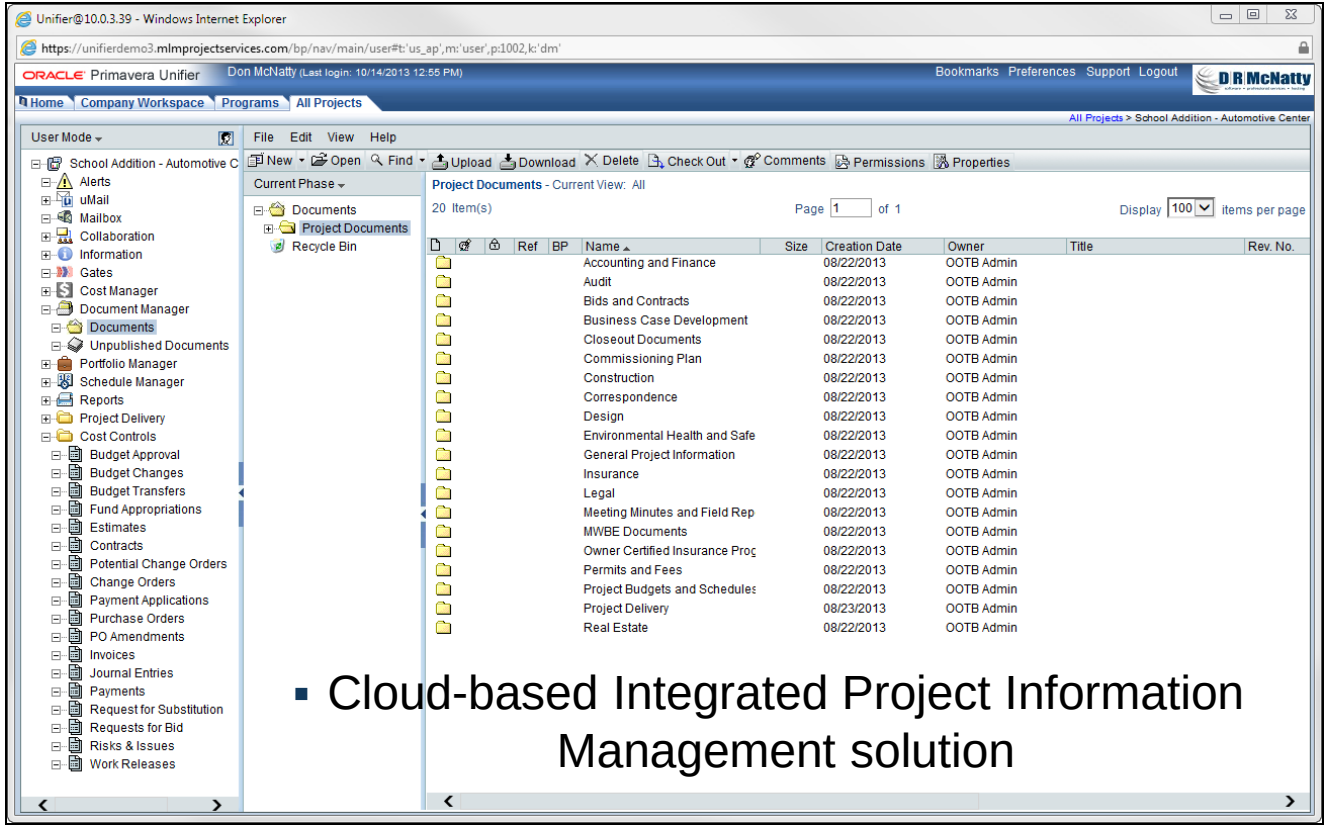
- August – Overview of Oracle Primavera Unifier & Contract Management
- September – Migrating from Contract Management to Unifier
- October – Implementing Unifier in an Owner, CM or GC environment
- December – Unifier/P6 Cost and Schedule Integration
- January – Integrate Unifier with Webservice Utilities
- March – CPM Scheduling with Unifier

Video of previous webinars are posted at
www.drmcnatty.com/Resources/Webinars/

Oracle Primavera P6 + Primavera Unifier



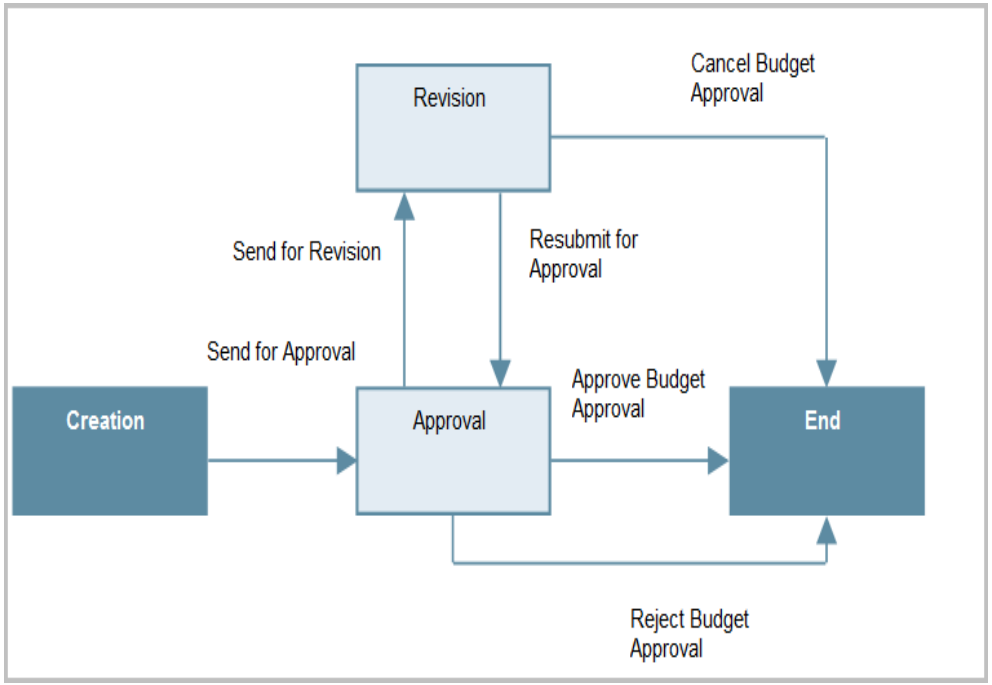
What is Primavera Unifier?



- Cloud-based Integrated Project Information Management solution

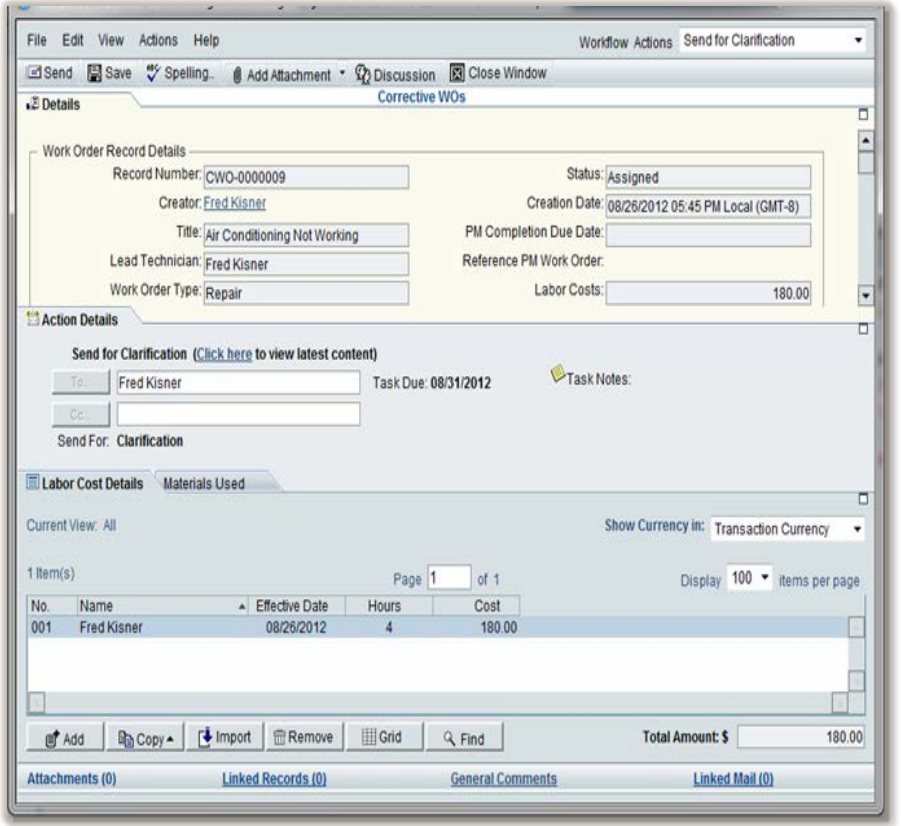
What is Primavera Unifier?

- Full document management with configurable folder structure.
- Configurable Business Processes.
- Automation to drive business rules.



What is Primavera Unifier?

- Intuitive User Interface
- User defined content
- Real-time visibility of project data
- Specific access levels to information
- Complete audit trail of all edits and changes

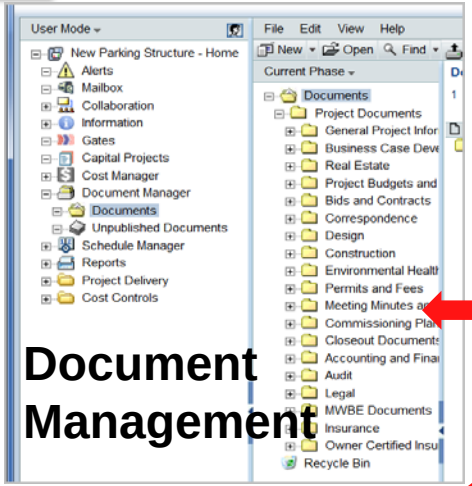


Available Pre-Configured Packages

R9.14 – Posted on eDelivery Dec 2013

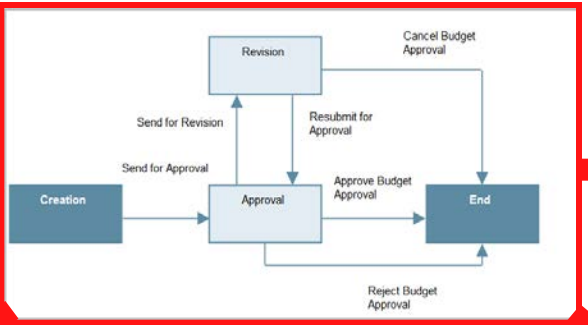
- Capital Project & Program Management (CPPM)
  - Primavera Unifier Capital Planning
  - Primavera Unifier Cost Controls
  - Primavera Unifier Project Delivery Management

Interactive Example

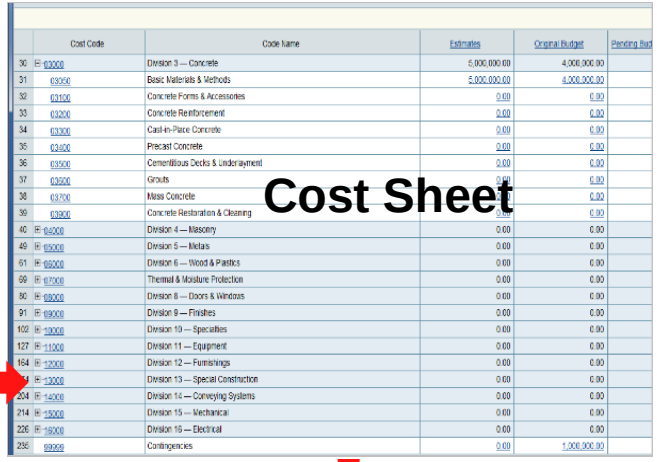


Document Management

Business Processes

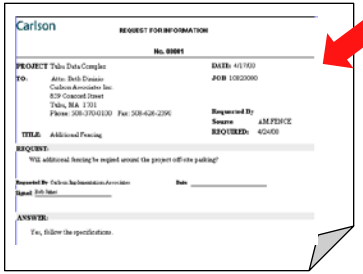


Cost Sheet

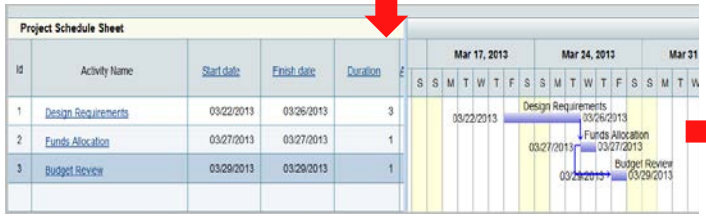


	Cost Code	Code Name	Estimates	Original Budget	Pending Bud
30	03000	Division 3 — Concrete	5,000,000.00	4,000,000.00	
31	03050	Basic Materials & Methods	5,000,000.00	4,000,000.00	
32	03100	Concrete Forms & Accessories	0.00	0.00	
33	03200	Concrete Reinforcement	0.00	0.00	
34	03300	Cast-in-Place Concrete	0.00	0.00	
35	03400	Precast Concrete	0.00	0.00	
36	03500	Cementitious Decks & Underlayment	0.00	0.00	
37	03600	Grouts	0.00	0.00	
38	03700	Mass Concrete	0.00	0.00	
39	03900	Concrete Restoration & Cleaning	0.00	0.00	
40	04000	Division 4 — Masonry	0.00	0.00	
49	05000	Division 5 — Metals	0.00	0.00	
61	06000	Division 6 — Wood & Plastics	0.00	0.00	
69	07000	Thermal & Moisture Protection	0.00	0.00	
80	08000	Division 8 — Doors & Windows	0.00	0.00	
91	09000	Division 9 — Finishes	0.00	0.00	
102	10000	Division 10 — Specialties	0.00	0.00	
127	11000	Division 11 — Equipment	0.00	0.00	
164	12000	Division 12 — Furnishings	0.00	0.00	
174	13000	Division 13 — Special Construction	0.00	0.00	
204	14000	Division 14 — Conveying Systems	0.00	0.00	
214	15000	Division 15 — Mechanical	0.00	0.00	
226	16000	Division 16 — Electrical	0.00	0.00	
235	99000	Contingencies	0.00	1,000,000.00	

Document



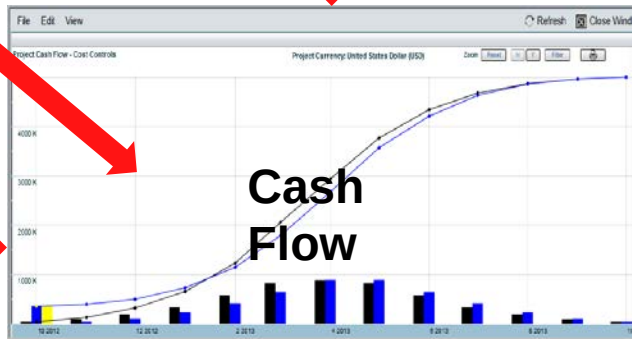
Schedule Sheet



Project Schedule Sheet

Id	Activity Name	Start date	Finish date	Duration
1	Design Requirements	03/22/2013	03/26/2013	3
2	Funds Allocation	03/27/2013	03/27/2013	1
3	Budget Review	03/29/2013	03/29/2013	1

Cash Flow

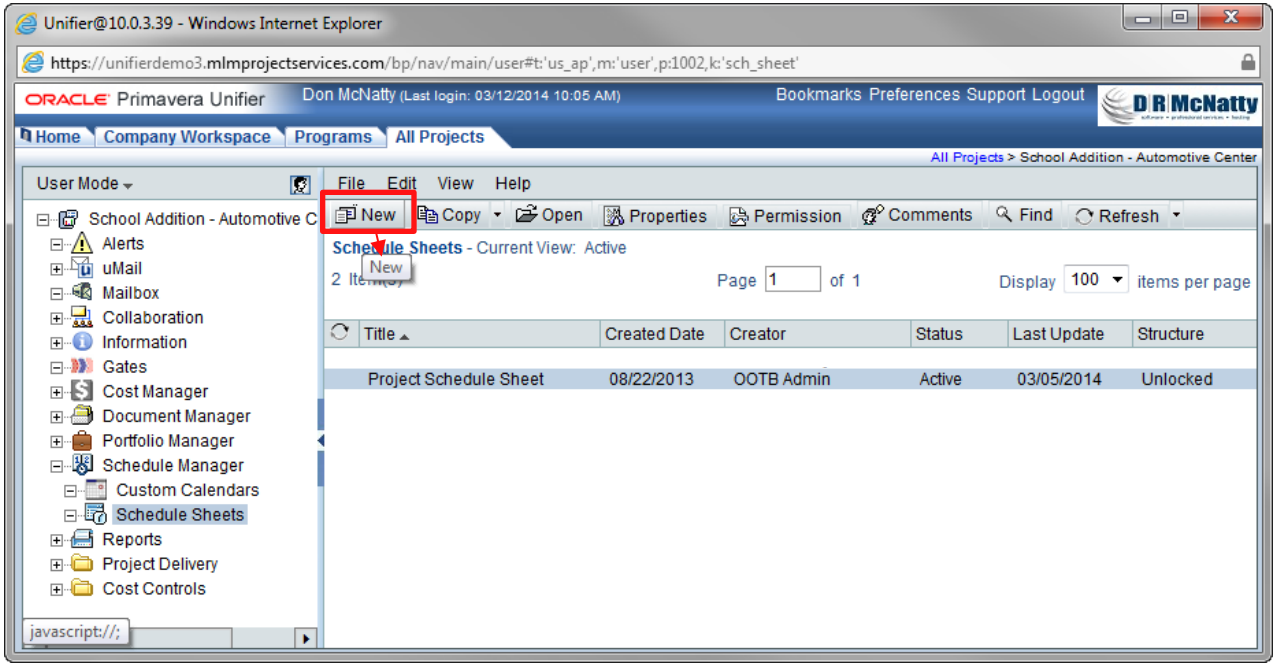


Fundamentals of Unifier Schedule Module

Part of the Cost Control Pre-Configured Package

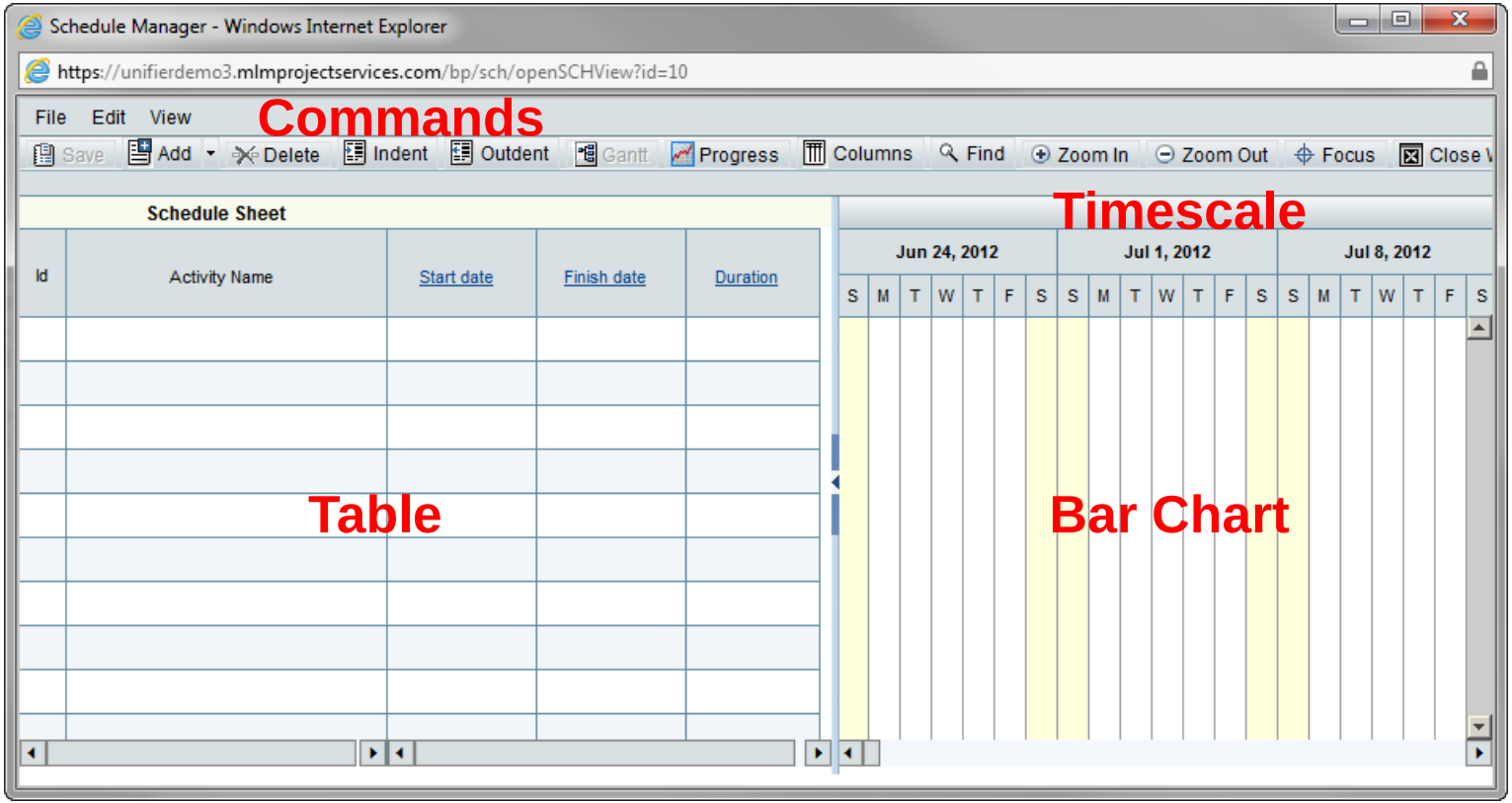
- Administrator creates a Schedule Sheet Template.
- Multiple Schedule Sheets can be created but only one is the “Master”.
- The Master Schedule Sheet integrates with other modules.
  - Cash flow requires integration between Schedule and Cost Sheets.
- Supports adding activities, durations, relationships.
- Indicates a “critical path”.
- Also supports importing schedules from P6, MSP and CSV files.

Create a Schedule in Unifier

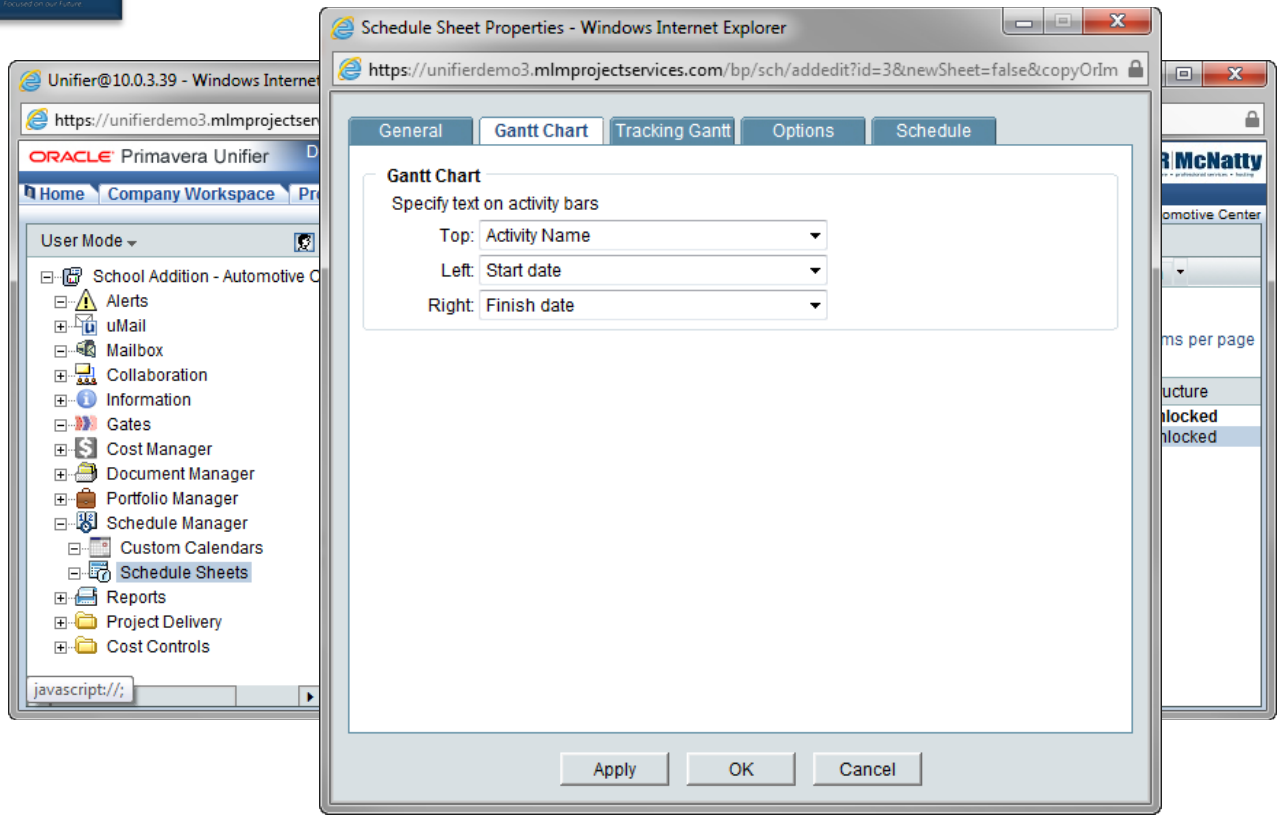


- Within a project, under Schedule Manager, create a New Schedule Sheet.
- Unifier allows multiple Schedule Sheets in a project but only one can be the “Master Sheet”.
- You can select the Schedule Sheet to integrate with P6.
- Other schedule sheets might be versions or copies

Blank Schedule Sheet

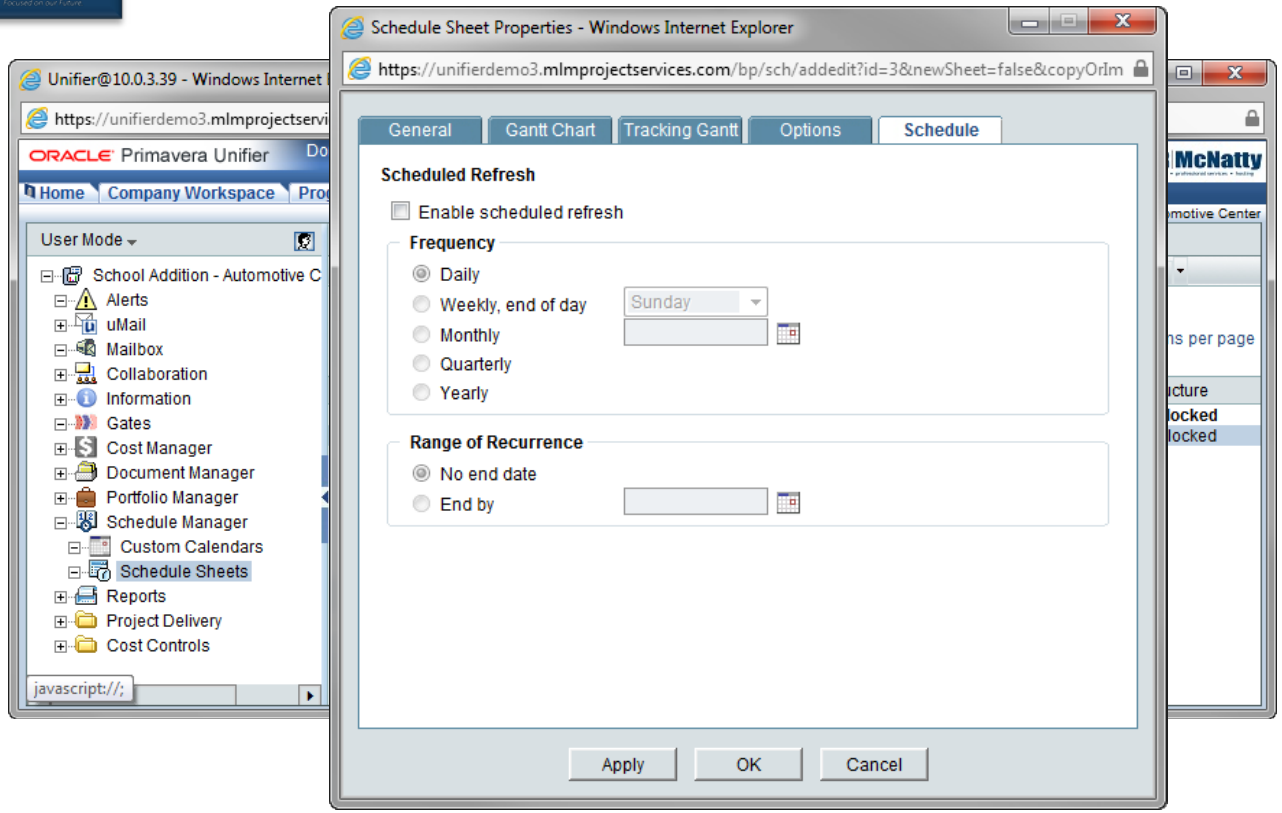


Create a Schedule in Unifier



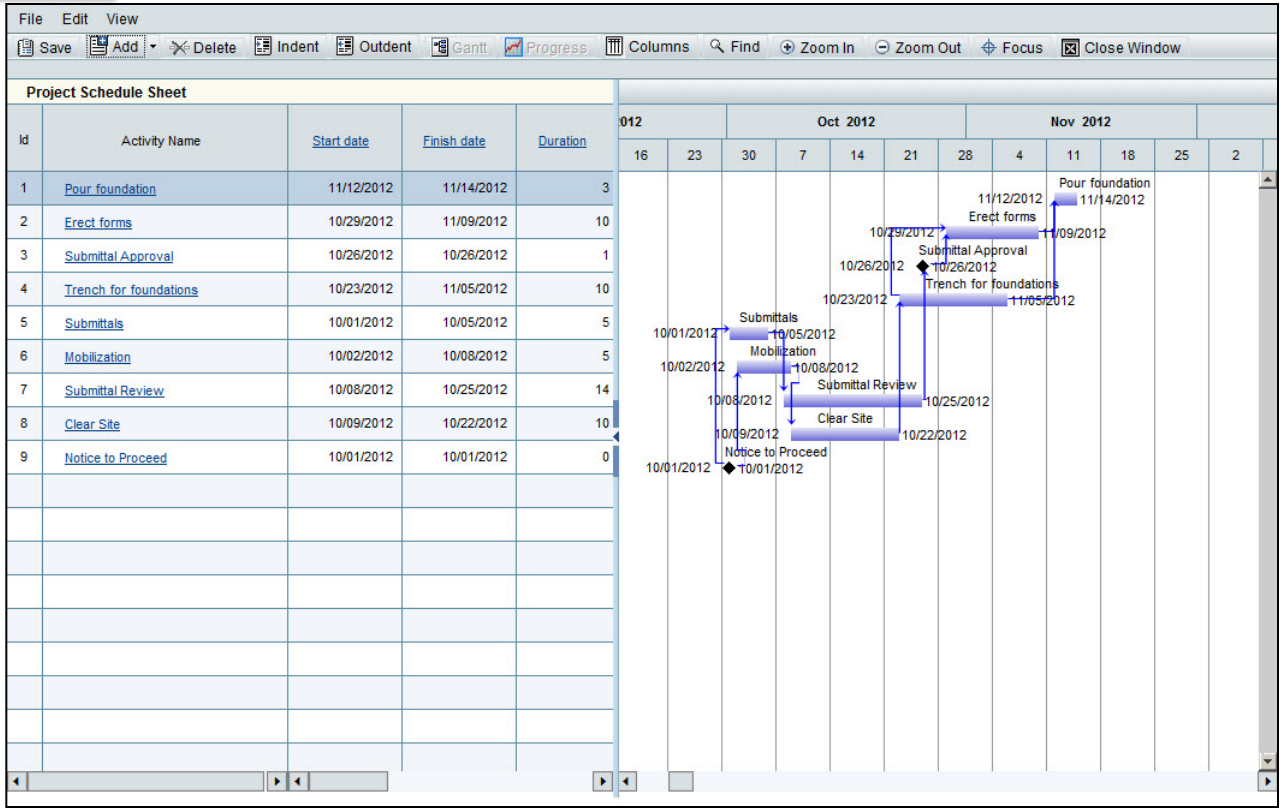
- Set up Properties
- General
- Gantt Chart

Create a Schedule in Unifier



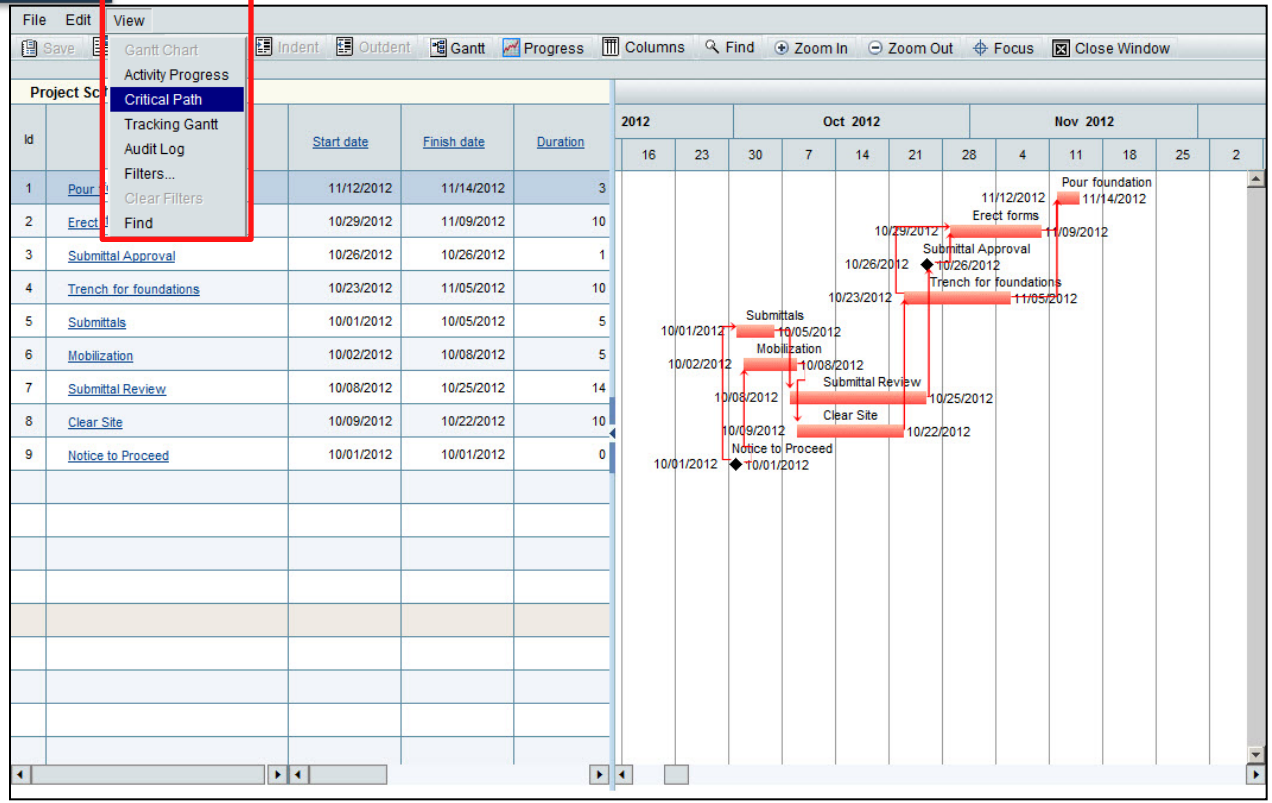
- Set up Properties
- General
- Gantt Chart
- Tracking Gantt (Target)
- Options
- Schedule (auto update)

Create a Schedule in Unifier



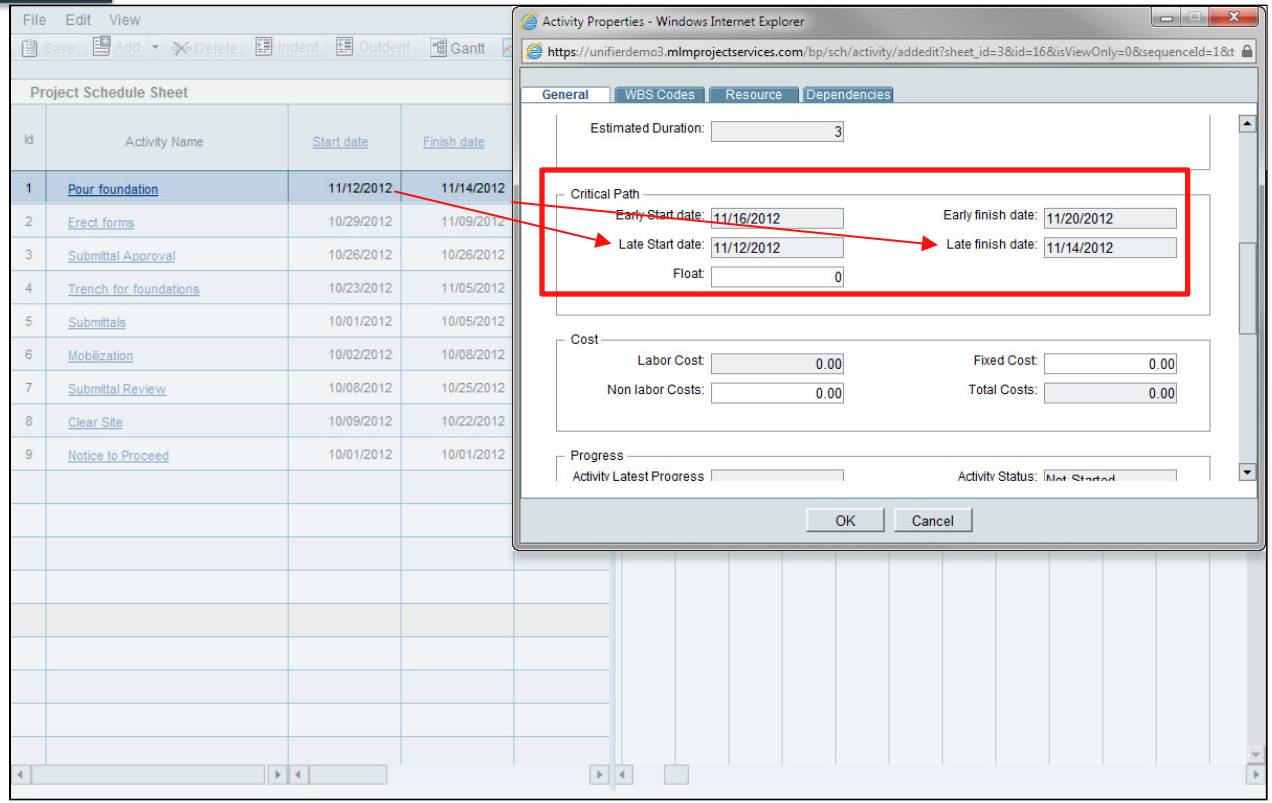
- Notice to Proceed was the first activity entered.
- Activities automatically renumbered as more added
- Id is the default sort.
- Milestones display as diamonds but use a one day duration.
- Calculates automatically as relationships (predecessors only) are added.
- No indication of driving/non-driving relationships or float.

Creating a Schedule in Unifier



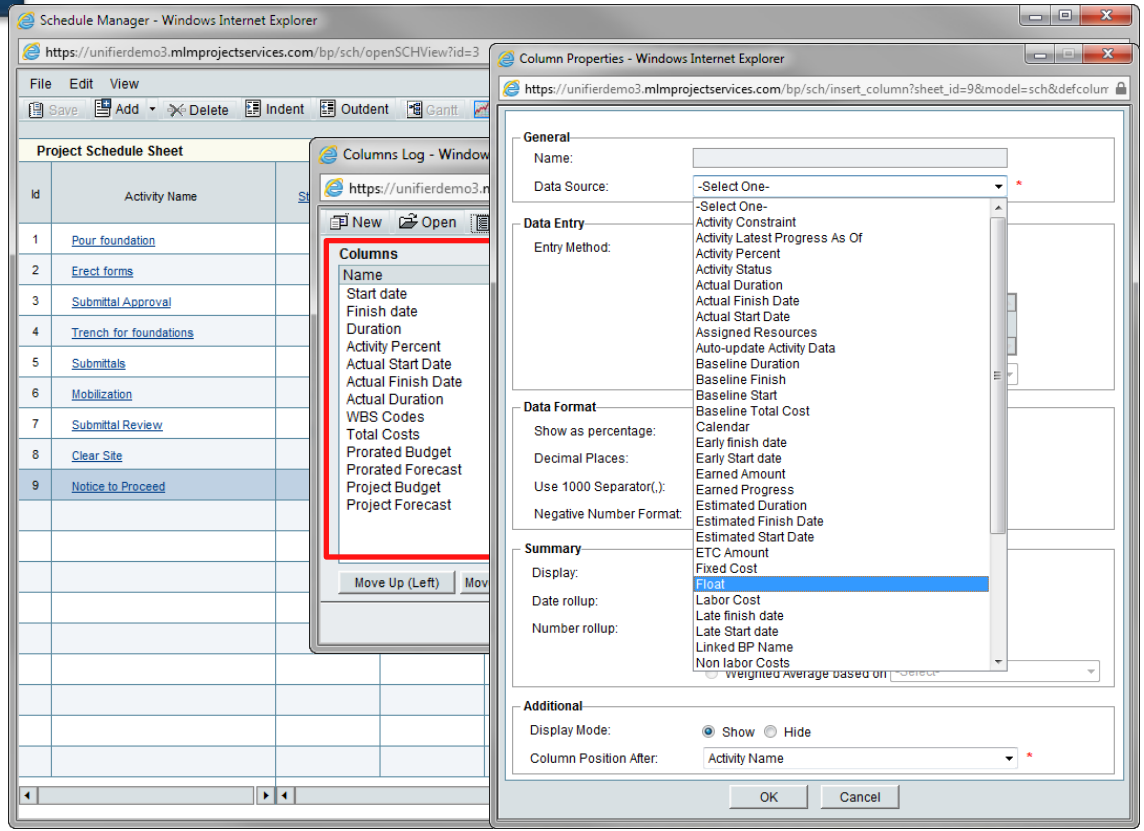
- View, Critical Path – displays a critical path.
- Could not find any details on how Unifier calculates the Critical path.
- Could not verify that it uses the same Forward/ Backward algorithm as P6.
- Noticed that all activities displayed red (critical).

Creating a Schedule in Unifier



- Check the detail screen on each activity for dates.
- The Detail window indicates that Late Dates are earlier than Early Dates!
- It turns out that the Detail window reverses the dates - can correct with uDesigner.
- The Float value is zero (0) even though there is a variance between Early and Late Dates.

Actual Dates & Modifing Columns



- The Schedule Sheet Template that is included with the “Pre-Configured Packages” includes columns for entering Actual Dates.
- Recalculation after entering actual dates is automatic
- The Columns icon provides ability to change columns.
- Use “New” button to add more columns.

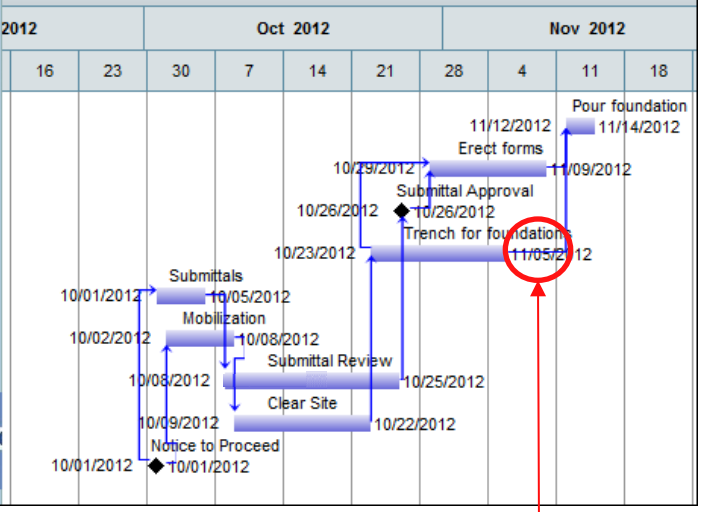
Added Float Column to Layout

File Edit View

Save | Add | Delete | Indent | Outdent | Gantt | Progress | Columns | Find | Zoom In | Zoom Out | Focus | Close Window

Project Schedule Sheet

Id	Activity Name	Duration	Start date	Finish date	Float
1	Pour foundation	3	11/12/2012	11/14/2012	0.00
2	Erect forms	10	10/29/2012	11/09/2012	0.00
3	Submittal Approval	1	10/26/2012	10/26/2012	0.00
4	Trench for foundations	10	10/23/2012	11/05/2012	0.00
5	Submittals	5	10/01/2012	10/05/2012	0.00
6	Mobilization	5	10/02/2012	10/08/2012	0.00
7	Submittal Review	14	10/08/2012	10/25/2012	0.00
8	Clear Site	10	10/09/2012	10/22/2012	0.00
9	Notice to Proceed	0	10/01/2012	10/01/2012	0.00

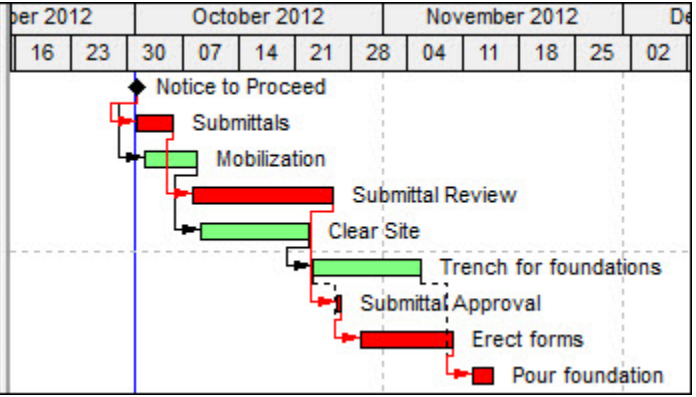


- Added Float column.
- Note that all Float = 0 (Zero)

The path through Mobilize, Clear & Trench should have 2 days of Float

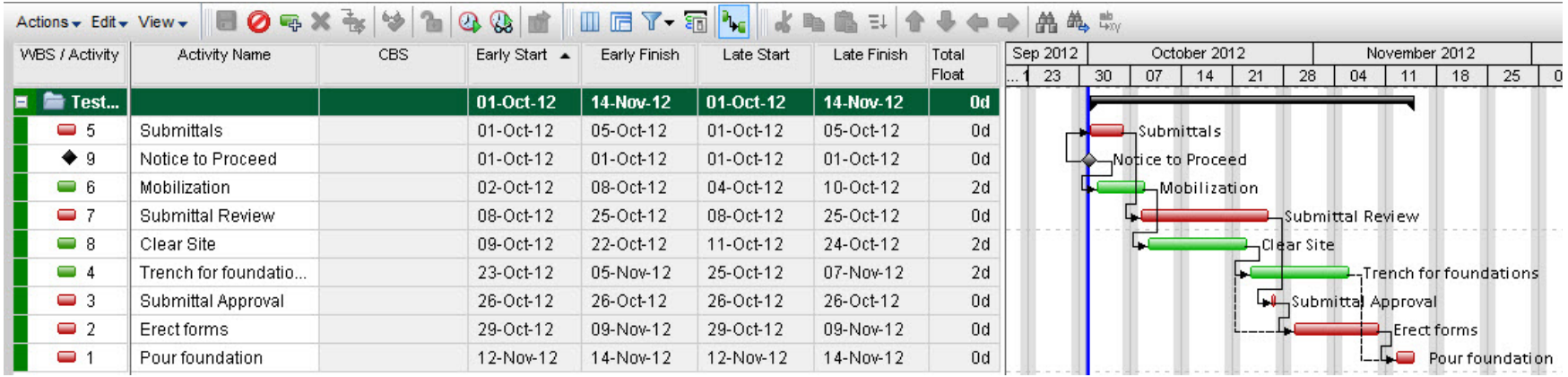
The same schedule in P6

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
9	Notice to Proceed	0	01-Oct-12		0
5	Submittals	5	01-Oct-12	05-Oct-12	0
6	Mobilization	5	02-Oct-12	08-Oct-12	2
7	Submittal Review	14	08-Oct-12	25-Oct-12	0
8	Clear Site	10	09-Oct-12	22-Oct-12	2
4	Trench for foundations	10	23-Oct-12	05-Nov-12	2
3	Submittal Approval	1	26-Oct-12	26-Oct-12	0
2	Erect forms	10	29-Oct-12	09-Nov-12	0
1	Pour foundation	3	12-Nov-12	14-Nov-12	0



- Manually added the same activities with the same ID's in P6.
- The Submittal Approval Milestone (Activity 3) had to have a 1 day duration to match the Unifier calculation.
- P6 correctly calculates and displays Total Float.
- P6 provides sort based on Early Start.

Same schedule in P6 EPPM (Web)



- P6 Web also shows correct dates, bars and float.
- This is the manually created schedule in P6.
- In the next section we'll show how this schedule, created in P6, can be easily transferred to Unifier to drive Unifier cash flow graphics and reports.

Perspective on CPM Schedules in Unifier

I would not attempt to build a true CPM schedule in Unifier

- While some calculations appear to be incorrect, they can be corrected or re-labeled using uDesigner in Unifier.
- Unifier Bar Charts can be built using activities and relationships.
- This is a simple way to create a bar chart to drive cash flow diagrams.
- If simple bar charts to drive cash flow are all you need, then you can avoid having to use an external scheduling tool.
- You can have the best of both worlds by allocating Unifier Costs in P6 and then “Sending” the dates/allocation into Unifier.

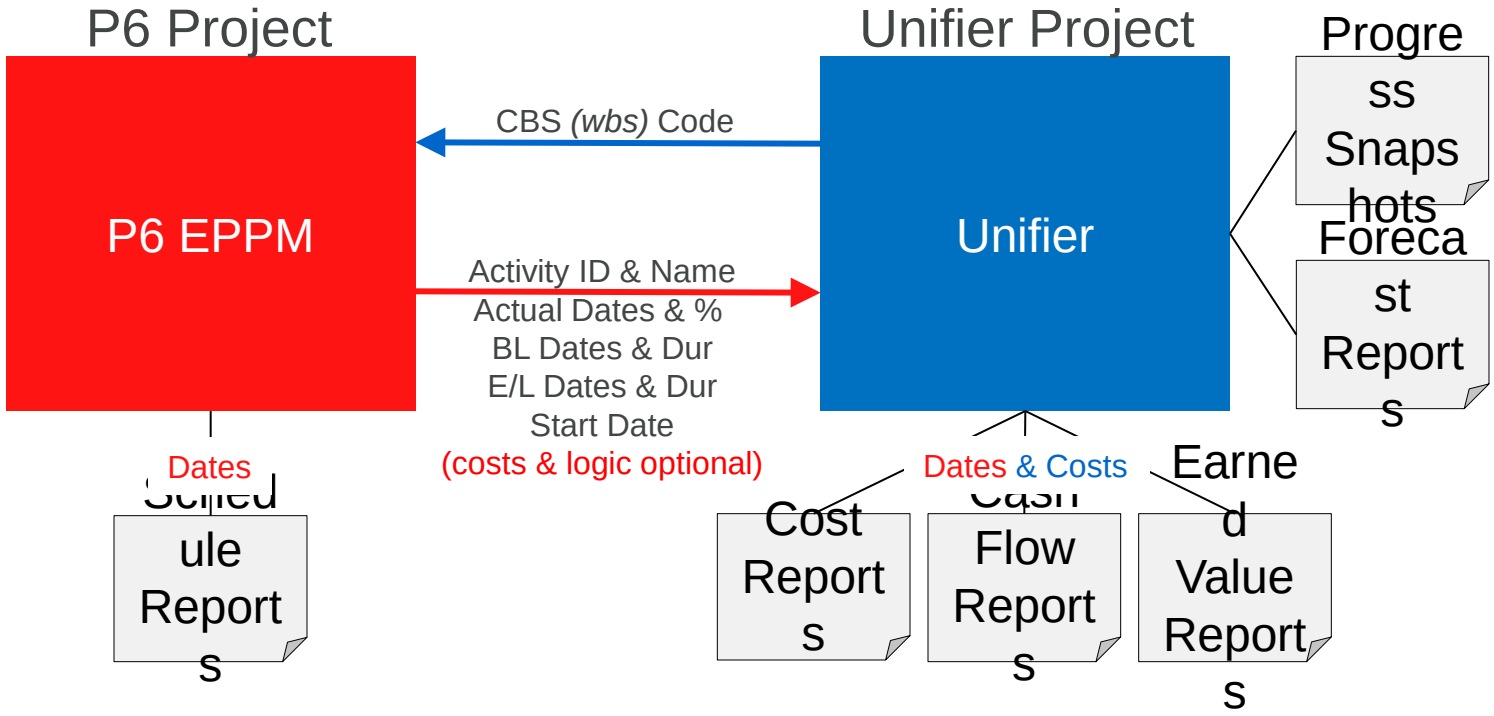
Other Integration Capabilities

Manually import schedules from following formats

Data Format	Data mapping requirements
CSV	Requires mapping: you can select the mapping when you upload the file.
MPP	Mapping is not required. Import limited to Start & Finish Date, Duration.
Primavera XML	Requires default data mapping.
MS Project SML	Requires mapping: you can select the mapping when you upload the file.

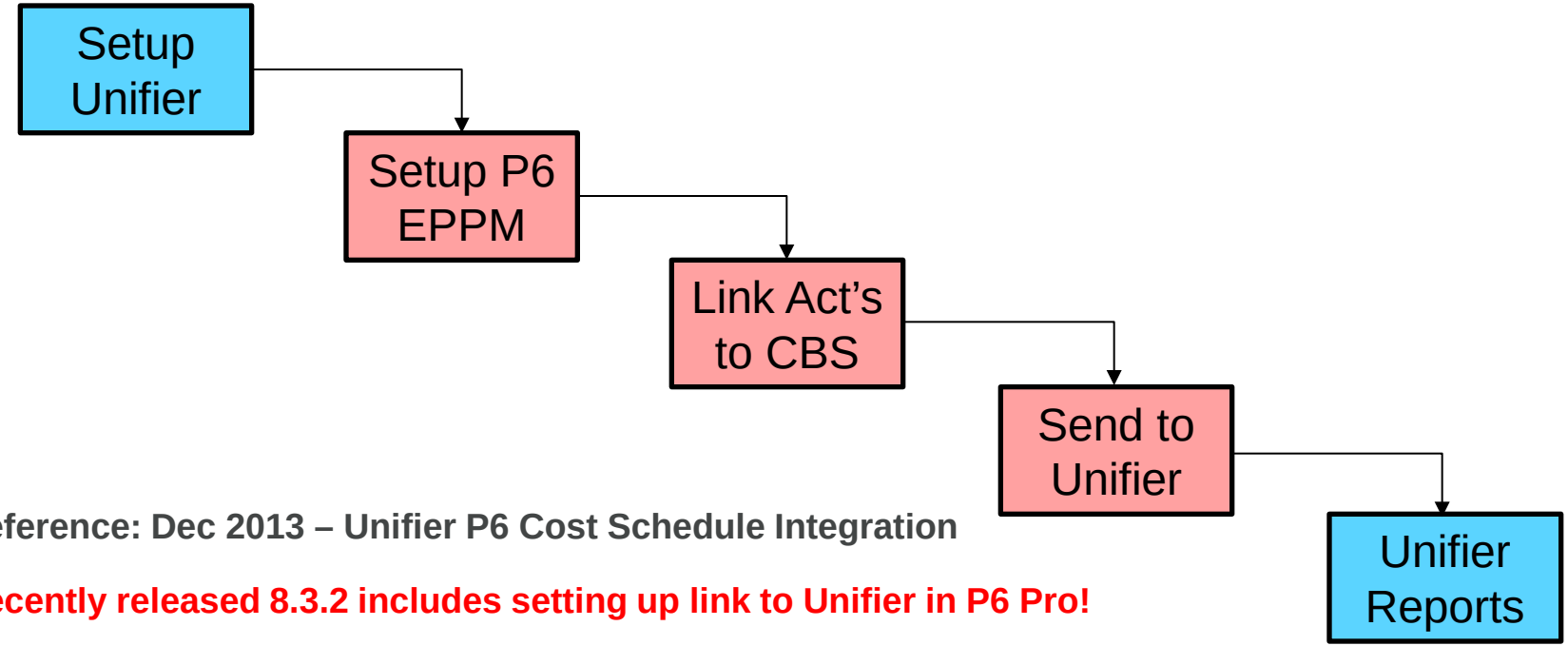
Fundamentals of P6-Unifier Integration

Based on “Base Product” P6 EPPM 8.3 and Unifier 9.13 (8/2013)



Integration Process

Based on “Base Product” P6 EPPM 8.3 and Unifier 9.13 (8/2013)

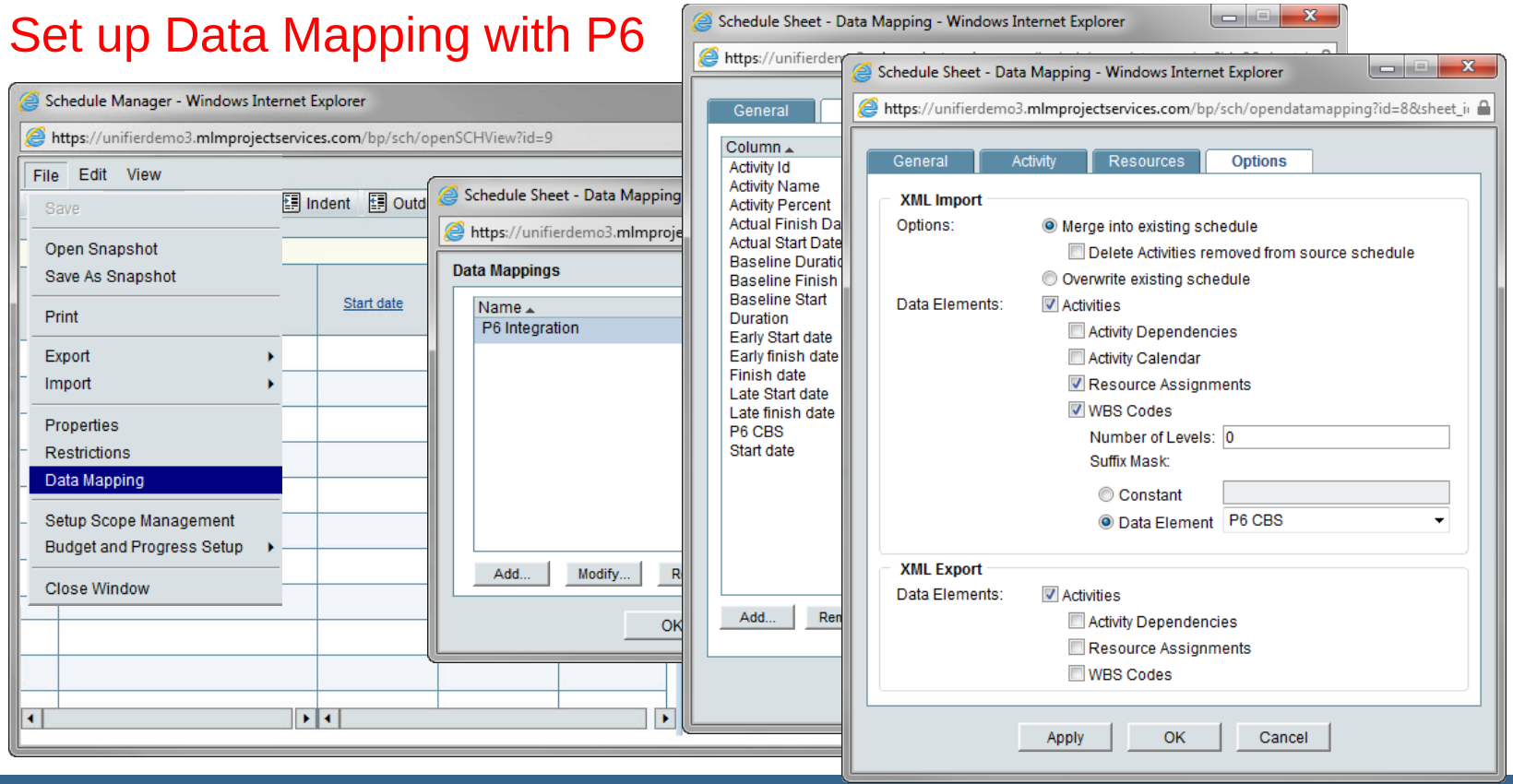


Reference: Dec 2013 – Unifier P6 Cost Schedule Integration

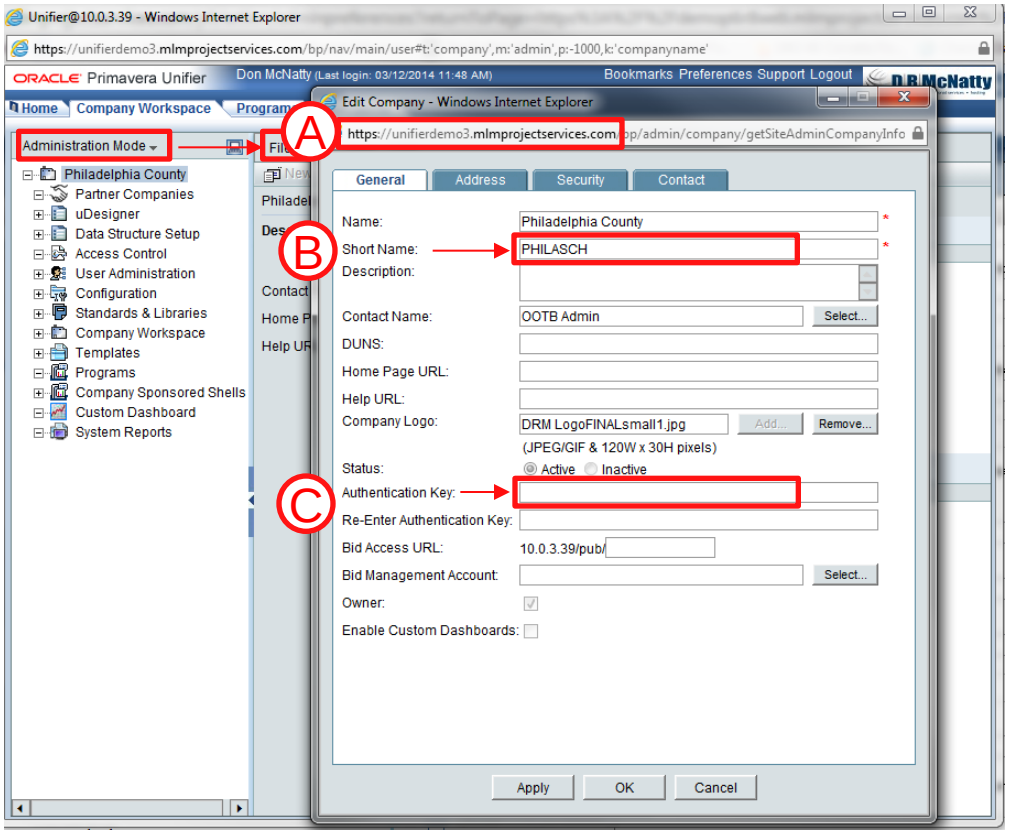
Recently released 8.3.2 includes setting up link to Unifier in P6 Pro!

Create a Schedule Sheet in Unifier

Set up Data Mapping with P6



Make a note of values needed in P6



- Go to Company Workspace Tab
- Be in Administrator Mode
- File, Open

A – The Unifier URL

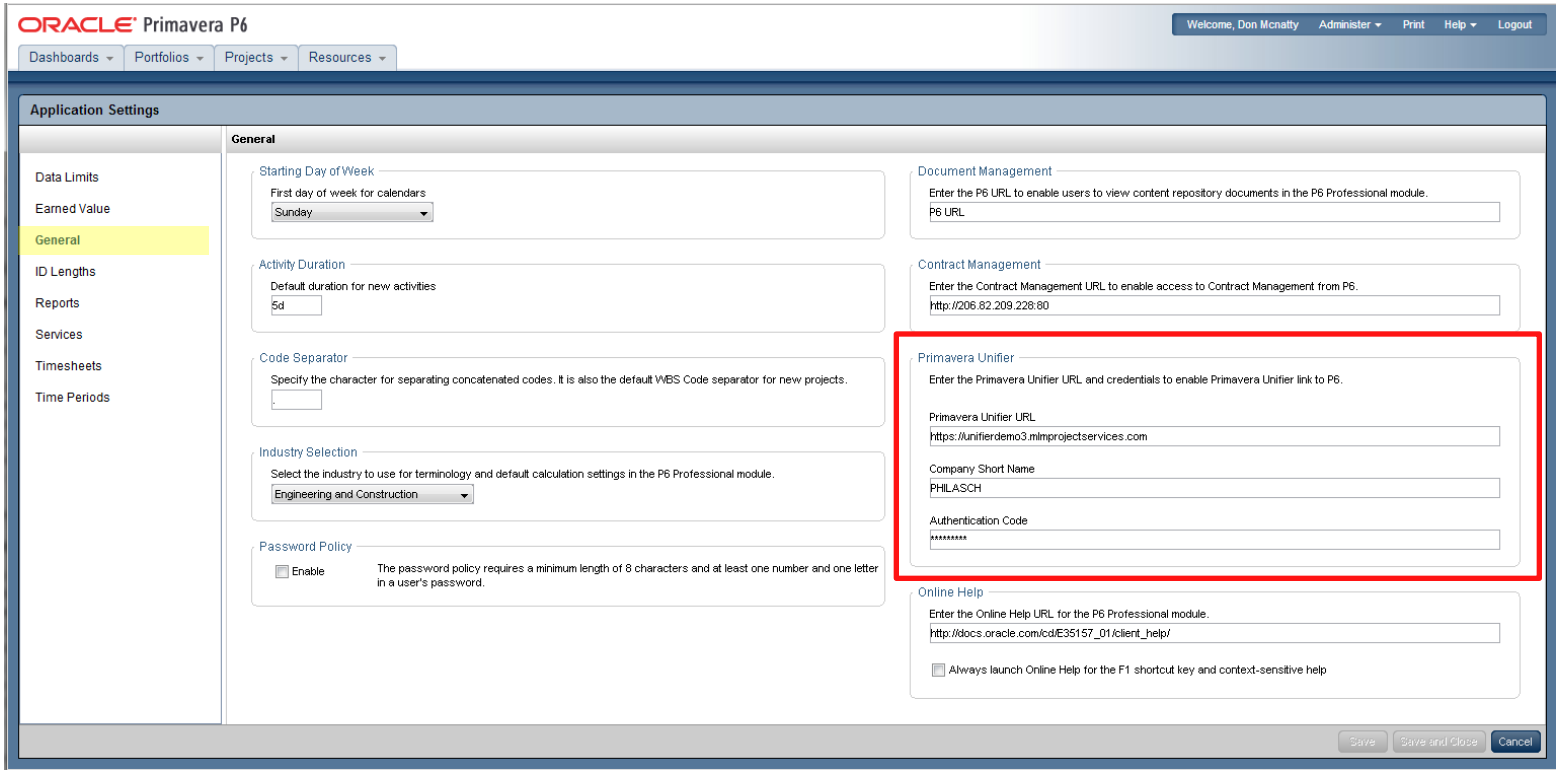
B – The Company “Short Name”

C – The “Authentication Key”

(you may need to see your Unifier Administrator for this).

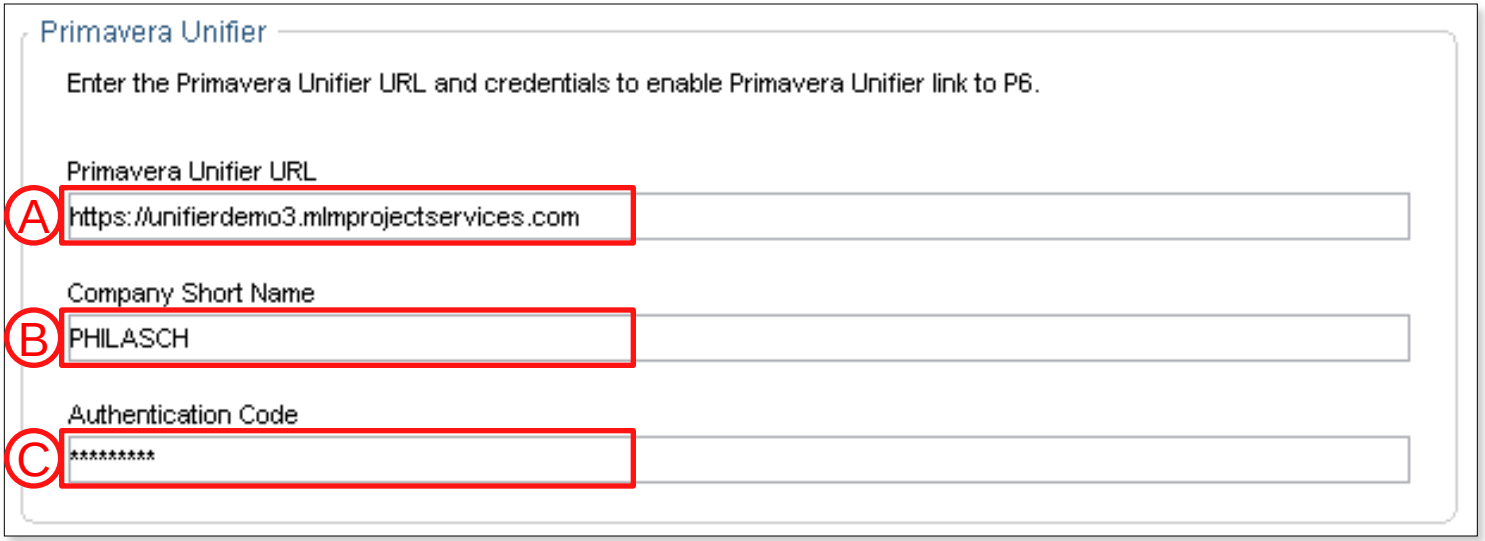
P6 configuration must be done in EPPM

Administer, Application Settings, General



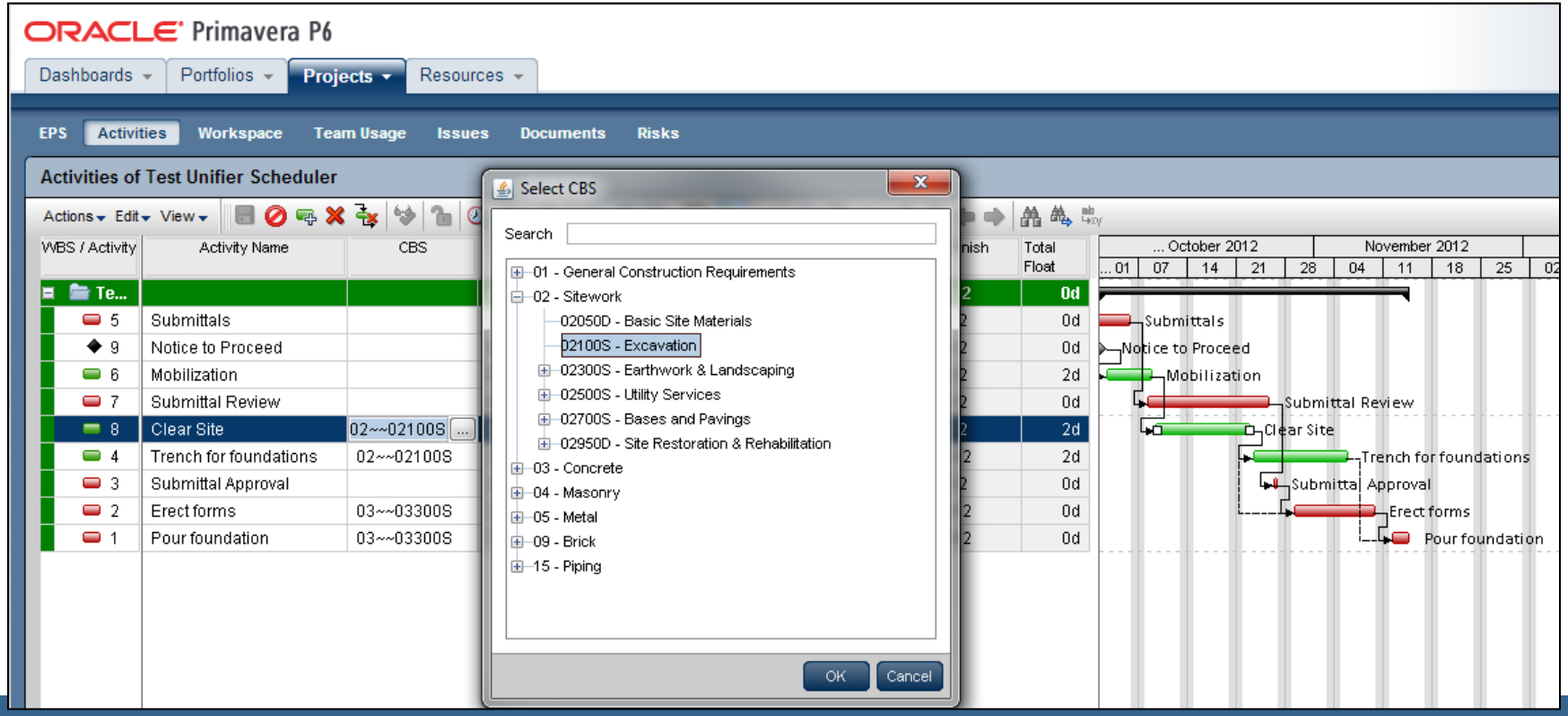
P6 configuration must be done in EPPM

Administer, Application Settings, General

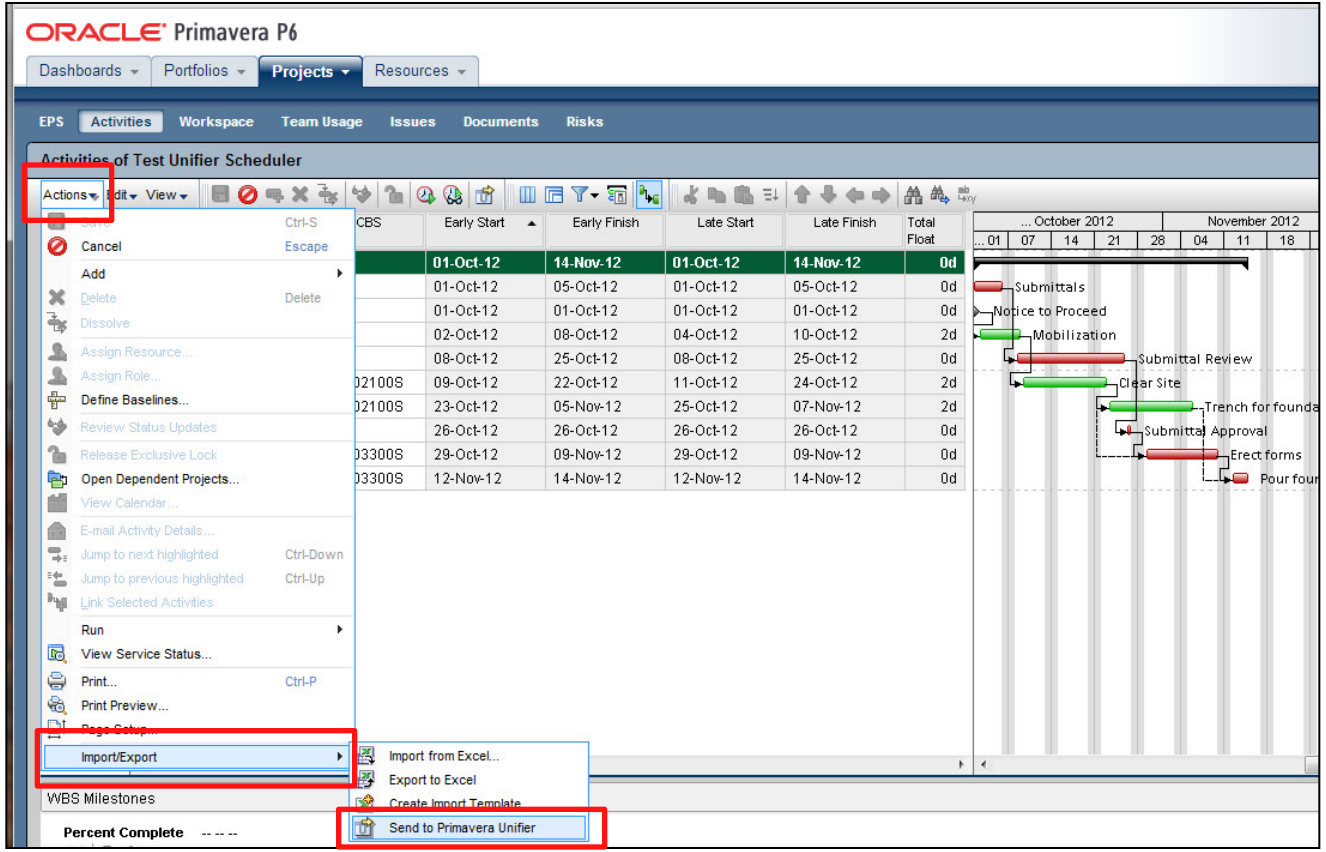


In P6 (Web or Pro)

Add the CBS Column to your layout to populate Costs (optional)



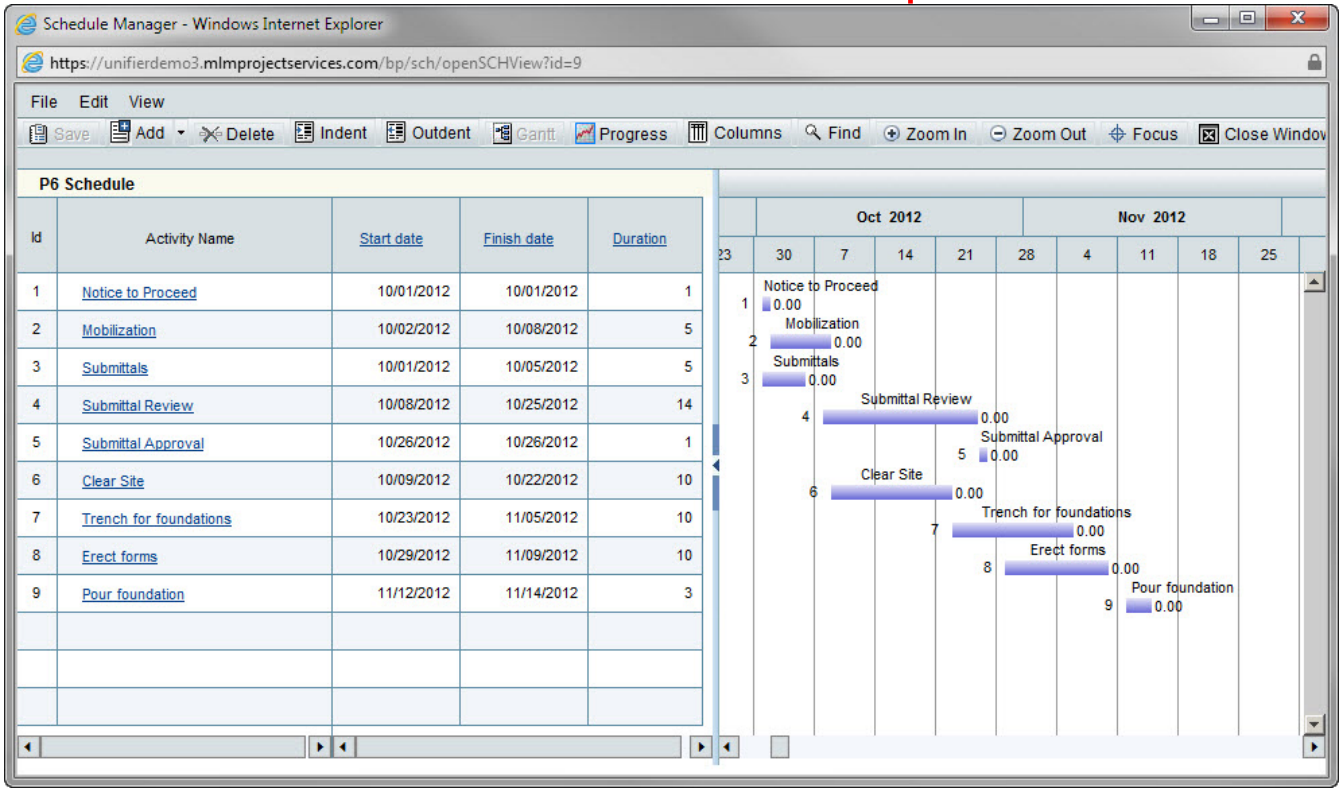
From P6 Web or Pro…



- From the Activities screen
- Actions, Import/Export
- Send to Primavera Unifier…

P6 populates the Unifier “P6 Schedule Sheet”

Dates & Durations correct – did not import P6 float value



- The P6 Activity ID is stored in a separate Unifier field.
- The Schedule sheet can be updated based on current schedule.
- Schedule Sheets can be copied and saved as static versions of the schedule.

Unifier Cash Flow driven by P6 schedule

	Name	From Date	To Date	Total	Unassigned	10 2012	11 2012	12 2012	1 2013
	Baseline	10/01/2012	10/21/2013	0.00	0.00	0.00	0.00	0.00	0.00
	P6 Dates Baseline	10/01/2012	10/21/2013	12,000,000.00	6,085,735.88	1,661,156.85	1,524,777.02	156,091.03	361,224.80
	Approved Spends	10/01/2012	10/21/2013	0.00	0.00	0.00	0.00	0.00	0.00

- The P6 dates are driving the initial “Baseline”.
- I can filter out “Unassigned”.
- Using Unifier Business Processes I can develop other curves.
- Other P6 dates can also be brought in to drive other curves such as commitments.

Integration Observations

Steps are straight-forward and worked smoothly from P6

- Setup required in P6 EPPM but can “send” from either EPPM or Pro.
- Unifier “costs” do not “import” to P6, you can only link an activity to a Unifier “CBS Code” (Cost Breakdown Structure).
- A Unifier Cost Code can be assigned to multiple activities in P6.
- A single activity on P6 can have only one Unifier Cost Code.
- “P6 Send to Unifier” can include cost allocations, earned value, resources and relationships.

Best Practice Recommendation

- Manage Costs in Unifier
  - (Funding, Estimates, Budgets, Commitments, Spends, Forecasts, Earned…)
- Manage the Schedule in P6
  - (Planning, Baselines, Current Updates, Forecasts, Earned Value, As-built)
- Combine as needed to produce time distributions of Cost Data or reports that are linked to the “System of Record” for each element.
- Simplify Cost/Schedule/Earned value reporting through Integrated Reporting.

Project Management

Functionality	P6 EPPM	P6 Pro	Primavera Unifier
INITIATING			
Templates	✓		✓
Project Import / Export (XER,P3, MPP, XLS)		✓	✓
Project Import / Export (Primavera and Ms Project XML)	✓	✓	✓
Assign project code values	✓	✓	
PLANNING			
Open multiple projects at once	✓	✓	
Create a Work Breakdown Structure (WBS)	✓	✓	
Create activities	✓	✓	✓
Import new activities from MS Excel	✓	✓	✓
WBS level Summary Activity	✓	✓	
Create activity steps	✓	✓	
Create relationships between activities	✓	✓	✓
Create cross-project relationships	✓	✓	
View activity relationships	✓	✓	✓
Assign constraints to activities	✓	✓	
Assign roles to activities	✓	✓	Unifier Roles Only
Assign resources to activities	✓	✓	Unifier Resources Only
Perform Critical Path Method (CPM) Scheduling	✓	✓	
Perform Resource Leveling	✓	✓	
Assign activity code values	✓	✓	
View activity notebook topics	✓	✓	
Interactive Gantt Chart	✓	✓	✓
Configurable Gantt Chart (bar labels and colors)	✓	✓	
Create Custom Filters	✓	✓	✓
EXECUTING			
Update activity dates	✓	✓	✓
Update remaining units or percent complete (%)	✓	✓	✓
Update activity steps & step UDFs	✓	✓	
Update activity notebook topics	✓	✓	
Update resource assignment details	✓	✓	
Update resource assignment actual units	✓	✓	✓
Update Expenses	✓	✓	
Update Notebook Topics	✓	✓	
Progress Spotlight	✓	✓	
CONTROLLING			
Run Schedule Checker	✓		
Use Schedule Preview	✓		
Perform Period Closeout	✓	✓	
Baselines	✓	✓	✓
Create Reflection Projects		✓	
Display Total Float	✓	✓	
Float Path Analysis	✓	✓	
Create and save Activity Layouts/Views	✓	✓	

- Compares Primavera Unifier Schedule functionality to P6 EPPM (web) and Pro (client)
- Float calculations in Unifier would preclude referring to it as capable of CPM calc.
- Above could be corrected through re-writing pre-packaged content.

Questions

All questions are gathered into a master sheet, answered and distributed to all registrants as well as posted on our website.

- Answers are based on our own experiences using the various software products related to your questions.

Thank you for participating

- Don McNatty – dmcnatty@drmcnatty.com

UPCOMING EVENTS

The DRM/MLM team is participating in these upcoming events.

Hope to see you there!

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