LehnertCS, LLC

1482 Gone Away Ct.
Wheaton, IL 60189
(630)260-4770
E-Mail: ellen@lehnertcs.com

Article for MPUG ezine – May, 2009
Ellen Lehnert, PMP, MCT, MCITP – LehnertCS, LLC
www.lehnertcs.com

Topic: Creating a limited resource availability schedule.

Ira H. of Northbrook, IL asks: I have a schedule for a short project where the resources are working on other projects as well. Because of this, I can't assign any of the resources to more than 15 hours per week. What is the best way to create this schedule and keep the assignments at this level of effort?

Answer: It seems that most schedulers and project managers are constantly trying to balance limited resource availability for projects. MS Project can help you create this type of schedule as long as you give it all of the information that it will require. You will need to put the resource availability in the driver's seat to make a schedule like this work. The MS Project scheduling rule that will guide us is:

A project schedule is scheduled based on the PROJECT CALENDAR until a resource is assigned to the task and then the RESOURCE CALENDAR will take over. This scheduling will occur unless a TASK CALENDAR is assigned and the resource calendar is ignored. Fixed Duration tasks are tied to dates and resources will be scheduled between the dates of the task.

See the steps below:

1. First create calendars that will support the type of scheduling you are trying to develop. Use the Standard calendar as the Project Calendar using 8-5 scheduling time (default value). Add to the calendar any holidays that will occur during the project. (Tools → Change working time)

2. After you have saved the changes above, make a copy of the Standard Calendar and call it "Resources at 50%". Then set the working time on this calendar be 3 hours per day.

3. Assign the Standard Calendar as the Project Calendar. (Project → Project Information)

4. Go to the resource sheet – View → Resource Sheet

5. Create project resources and assign the "Resources at 50%" calendar to all the resources. Make sure that the Max. Units remain a 1 or 100%. At this point you could update the resource calendars with vacation and unavailable days for the project.

6. Return to the Gantt Chart: View→ Gantt Chart

7. **Tools → Options→ Calendar**
   Start and end times should be 9:00 am and 12:00PM (or whatever was chosen as the 3 hours per day time frame on the calendar)
   Set number of hours per day to 3
   Set number of hours per week to 15

1482 Gone Away Ct.
Wheaton, IL 60189
(630)260-4770
E-Mail: ellen@lehnertcs.com

Tools → Options→ Schedule
Set your default task type to either Fixed Units or Fixed Work. Doing this will default each task to a task type that will allow the schedule to be developed based on resource availability.
Effort-driven scheduling (either yes or no will work – will be yes for Fixed Work)
Click **OK** to save the options

8. At this point you can enter your tasks and create your WBS. You should be estimating work on a task and not duration. The duration will be calculated at a rate of 3 hours per day when the resource assignment is created. I suggest creating the assignment using a split screen: View → More Views → Task Entry view. Right click in the bottom pane and select Resource Work as a view.

As the assignments are created, the timeline will move forward because the availability of the resource of the 3 hours per day will drive the schedule. You can view the resource assignments using the Resource Usage view. Drill into a timescale of per week per day and you will see the daily assignment levels for the resources. I would also double check for overallocations that might have occurred as the result of assignments on multiple tasks which are concurrent. Also, if resource availability changes for the project, the resource calendars should be updated as well.

NOTE: Many users of MS Project might have adjusted the Max. Units column to 50% or less to accomplish resource limited availability. It should be noted Fixed Duration tasks will act differently than Fixed Unit or Fixed Work tasks under these circumstances. For example: if you have a fixed duration task which is a 2 hour meeting and a resource with a 50% Max. Unit is assigned; the resource will perform 50% of the work or attend 1 hour of the 2 hour meeting. Another concern is that the resource name doesn't reflect what the contents of the max. units field and if you have varying values, assignments should be watched carefully when created; results become more unpredictable. When Ira assigns a resource to 9 hours of work, he wanted it to take 3 days unless the resource was not available. The goal of Ira's schedule was to limit the assignments to 3 hours per day. Allowing the resource calendars to drive the schedule was a workable solution.