L24.02b
ProjectLibre Example

Open Source Alternative to MS Project

- MS Project is not part of the standard Office Suite
- Free Alternatives are available but vary widely in quality and capabilities
- The best alternative that LaACES have discovered is the open-source software ProjectLibre
- Installer available via the download link here https://www.projectlibre.com/
- Will send you to a SourceForge page to download

New Project

- On starting LibreProject a dialog box asking we want to open an existing project or create a new project
- Select create new project
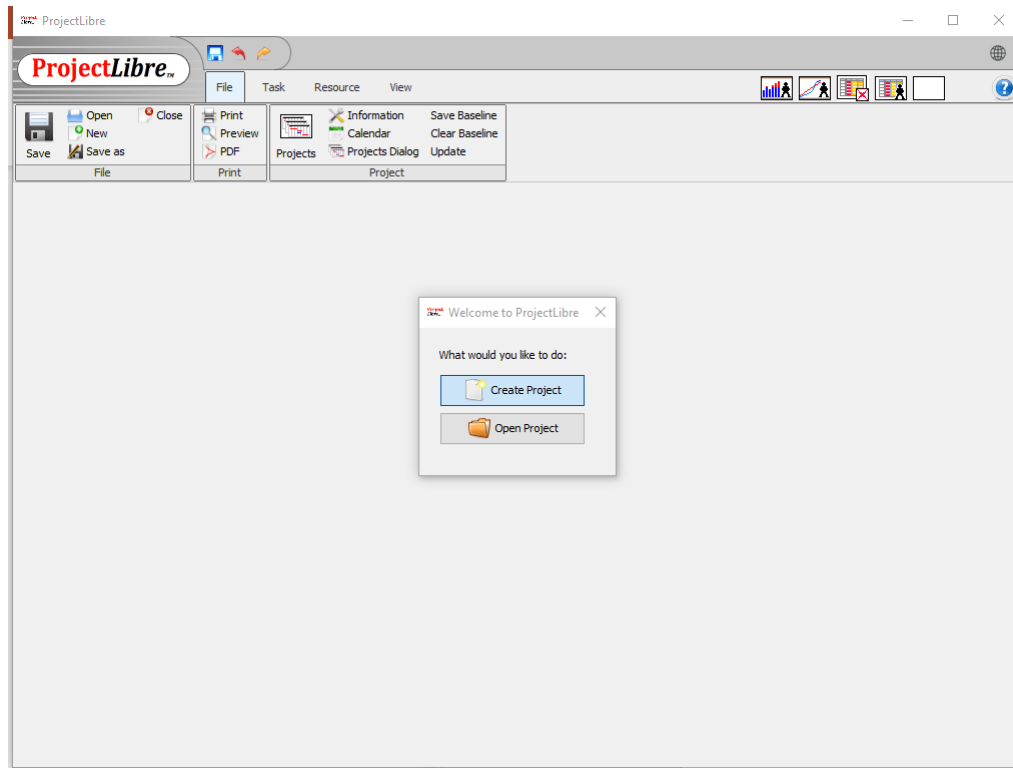
Basic Project Information

- Next we will get a dialog box for basic project info like project name, who the project manager is, and the start date for the project

- Note the forward scheduled box indicates we are scheduling forward from a start date, we could uncheck that to schedule backwards from a completion date
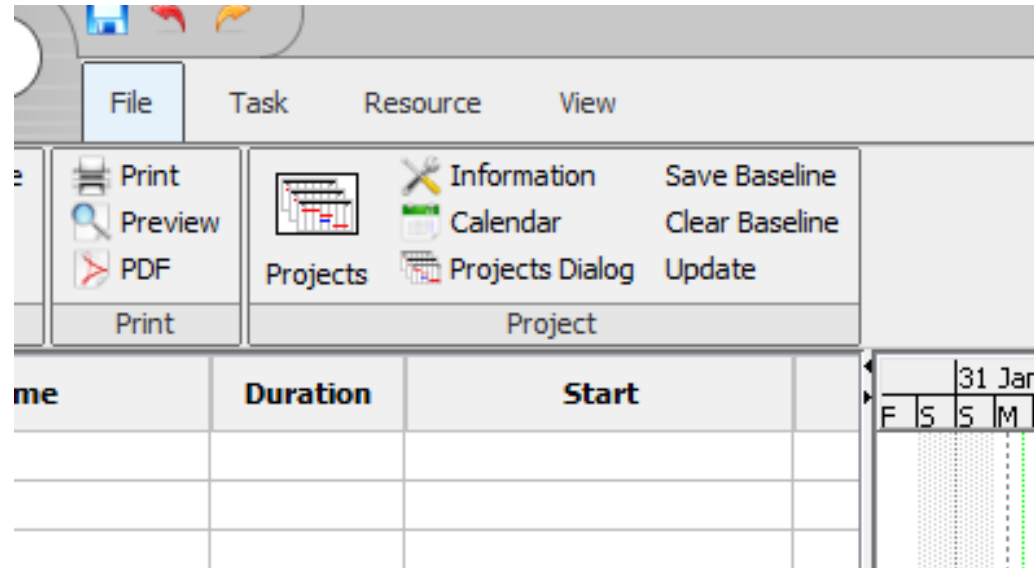
Setting the Working Hours

- Before we schedule any tasks we want to change the working hours for the project

- Otherwise, will assume assume everyone is able to work standard 8 hour days

- We want to schedule tasks based on realistic working hours

Hit the calendar button inside the project box when the file tab is selected from the menu
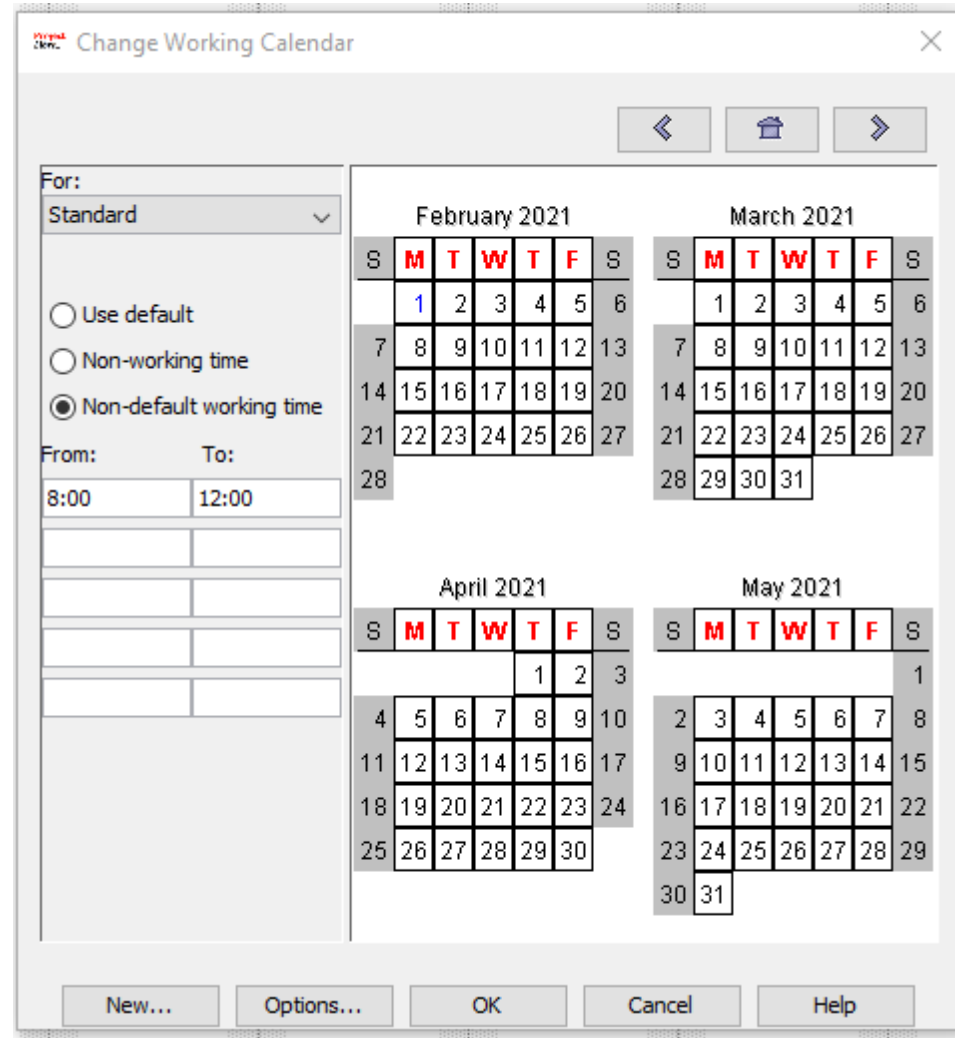
- This will bring up a window allowing us to change the working time on calendar

- While we could set specific times or days off for now we just want set the working time to a more realistic 20 hours (hours a day)

- With the standard calendar selected from the drop down select MTWTF by shift clicking on all the days
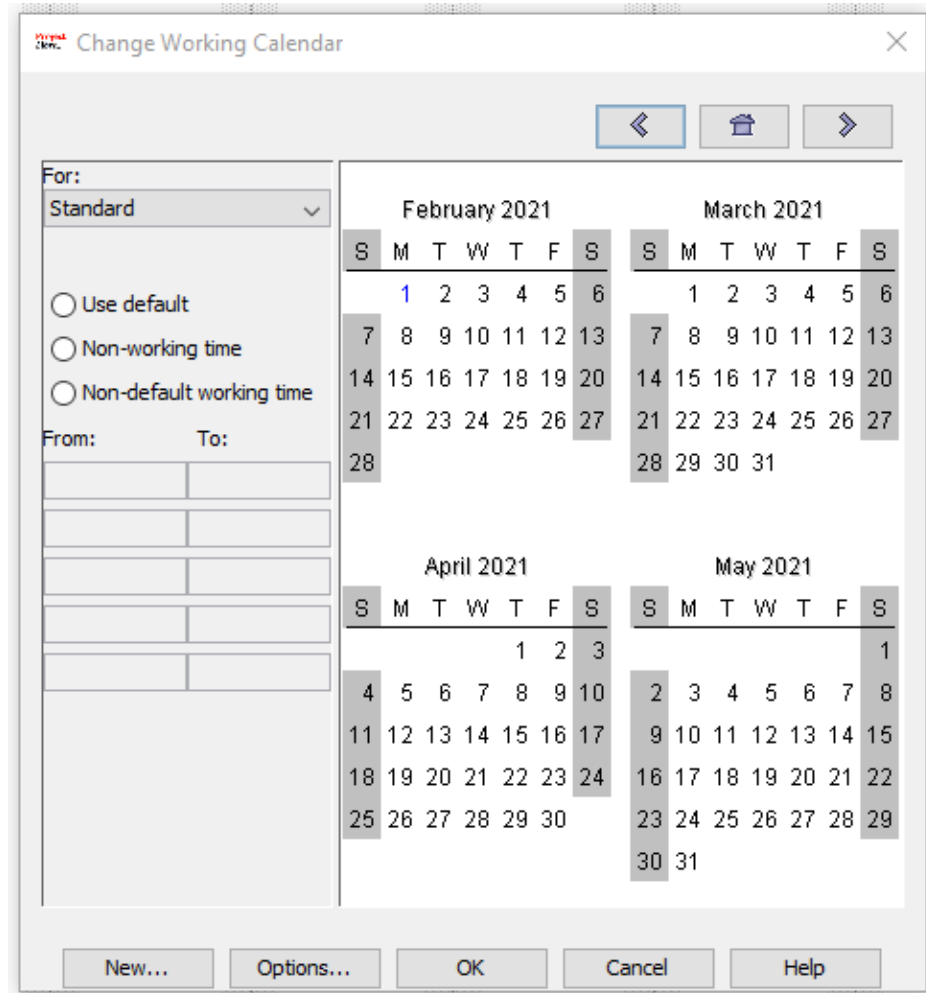
Setting the Working Hours (3)

- Next click the "Non-default working time" option to allow us to change the time

- In the time field we could select specific working hours but all we really care about is having a 4 hour workday

- So delete the afternoon 13:00 to 17:00 blocks, then click ok

- Afterwards reopen the calendar and click on the days to be sure that change was applied

- Now tasks will be scheduled assuming 4 hours of work is what can be accomplished in a day

Enter the major tasks

- Type in the major tasks (WBS level 1) in the "Name" box.
- Each row is a separate task
- Do not worry about the rest of the columns for now

Insert Rows

- Select the row above which you want to insert a subunit
- Select "Insert" from the "Task" section of the Task menu tab
- To delete a row, select the row and select "Delete" from the same menu section

Enter the subunit task names

- Type in the name of the subunit task in the "Task Name" field
- Subunits are "indented" with the ident buttong with the right arrow next to the insert and delete buttons
- When subunits are so "indented" the major unit will become bold and the Gantt chart bar will change shape

Complete entering WBS

- Repeat the process of inserting rows, typing in the task name and indenting the subunit continues until all tasks in the WBS are entered

Display the WBS code

- Right click on any of the column headers such as "Name"
- Select "Insert Column"
- Choose "WBS" from the "Field" dropdown and hit ok

Entering the WBS code

- Any empty WBS column should now be visible
- You will have to manually enter the appropriate WBS code (1, 1.2, 1.2.1, etc.) for the tasks

		WBS	Name	Duration	Start	Finish
1		1	⊟ Power System	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
2		1.1	Power Source	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
3		1.2	FCU Supply	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
4		1.3	DAU HD Supply	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
5		1.4	DAU Supply	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
6		1.5	⊟ CubeSat Supply	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
7		1.5.1	Interface to Power Sourc	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
8		1.5.2	⊟ FCU Control Interface	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
9		1.5.2.1	Establish Control Requi	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
10			Design Control Interfac	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
11			Prototype and test des	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
12			Complete Design	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
13			Implement and test des	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
14			DC/DC converters	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
15			FCU Monitoring Interface	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
16			Integrate and Test	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
17			Flight Control Unit	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
18			Data Archive Unit	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
19			Data Archive Disc	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
20			Auxiliary Transmitter	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
21			Mechanical Structure	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
22			Thermal Control	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
23			System Integration and Test	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
24			Management	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM

Task bars

- With all subunits inserted the lowest level will be red rectangles and higher levels will be black bars with points on the ends.

	ⓐ	WBS	Name	Duration	Start	Finish
1		1	⊟ Power System	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
2		1.1	Power Source	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
3		1.2	FCU Supply	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
4		1.3	DAU HD Supply	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
5		1.4	DAU Supply	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
6		1.5	⊟ CubeSat Supply	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
7		1.5.1	Interface to Power Sourc	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
8		1.5.2	⊟ FCU Control Interface	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
9		1.5.2.1	Establish Control Requi	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
10		1.5.2.2	Design Control Interfac	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
11		1.5.2.3	Prototype and test des	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
12		1.5.2.4	Complete Design	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
13		1.5.2.5	Implement and test des	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
14		1.5.3	DC/DC converters	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
15		1.5.4	FCU Monitoring Interface	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
16		1.6	Integrate and Test	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
17		2	⊞ Flight Control Unit	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
19		3	⊞ Data Archive Unit	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
21		4	⊞ Data Archive Disc	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
23		5	⊞ Auxiliary Transmitter	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
25		6	⊞ Mechanical Structure	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
27		7	⊞ Thermal Control	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
29		9	⊞ System Integration and	1 day?	2/1/21 8:00 AM	2/2/21 12:00 PM
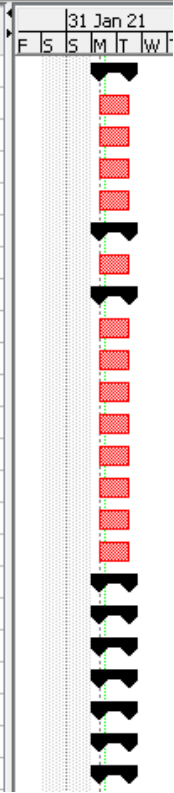
Set the task durations

- Now enter the time associated with each task in the "Duration" field.
- Set durations for the lowest level tasks and the total time will be summarized or rolled-up to the next highest level.

		WBS	Name	Duration	Start	Finish
1		1	⊟Power System	10 days	2/1/21 8:00 AM	2/12/21 12:00 PM
2		1.1	⊞Power Source	5 days	2/1/21 8:00 AM	2/5/21 12:00 PM
4		1.2	⊞FCU Supply	10 days	2/1/21 8:00 AM	2/12/21 12:00 PM
6		1.3	⊞DAU HD Supply	5 days	2/1/21 8:00 AM	2/5/21 12:00 PM
8		1.4	⊞DAU Supply	10 days	2/1/21 8:00 AM	2/12/21 12:00 PM
10		1.5	⊟CubeSat Supply	4 days	2/1/21 8:00 AM	2/4/21 12:00 PM
11		1.5.1	⊞Interface to Power So	2 days	2/1/21 8:00 AM	2/2/21 12:00 PM
13		1.5.2	⊟FCU Control Interface	4 days	2/1/21 8:00 AM	2/4/21 12:00 PM
14		1.5.2.1	Establish Control Requi	1 day	2/1/21 8:00 AM	2/1/21 12:00 PM
15		1.5.2.2	Design Control Interfac	2 days	2/1/21 8:00 AM	2/2/21 12:00 PM
16		1.5.2.3	Prototype and test des	4 days	2/1/21 8:00 AM	2/4/21 12:00 PM
17		1.5.2.4	Complete Design	1 day	2/1/21 8:00 AM	2/1/21 12:00 PM
18		1.5.2.5	Implement and test des	2 days	2/1/21 8:00 AM	2/2/21 12:00 PM
19		1.5.3	⊞DC/DC converters	3 days	2/1/21 8:00 AM	2/3/21 12:00 PM
21		1.5.4	⊞FCU Monitoring Interf	3 days	2/1/21 8:00 AM	2/3/21 12:00 PM
23		1.6	⊞Integrate and Test	3 days	2/1/21 8:00 AM	2/3/21 12:00 PM
25		2	⊞Flight Control Unit	10 days	2/1/21 8:00 AM	2/12/21 12:00 PM
27		3	⊞Data Archive Unit	10 days	2/1/21 8:00 AM	2/12/21 12:00 PM
29		4	⊞Data Archive Disc	3 days	2/1/21 8:00 AM	2/3/21 12:00 PM
31		5	⊞Auxiliary Transmitter	5 days	2/1/21 8:00 AM	2/5/21 12:00 PM
33		6	⊞Mechanical Structure	10 days	2/1/21 8:00 AM	2/12/21 12:00 PM
35		7	⊞Thermal Control	5 days	2/1/21 8:00 AM	2/5/21 12:00 PM
37		9	⊞System Integration and	50 days	2/1/21 8:00 AM	4/9/21 12:00 PM

Set the task durations (2)

- Smaller time units such as hours can be set but duration will always be displayed in decimal days
- Durations can also be set by double clicking on a task and changing either the "duration" (displayed in days) or "work" (displayed in hours) under the general tab.

Note: Here we can se that our 8 hours of work will take 2 days, as per our 4 hour daily schedule
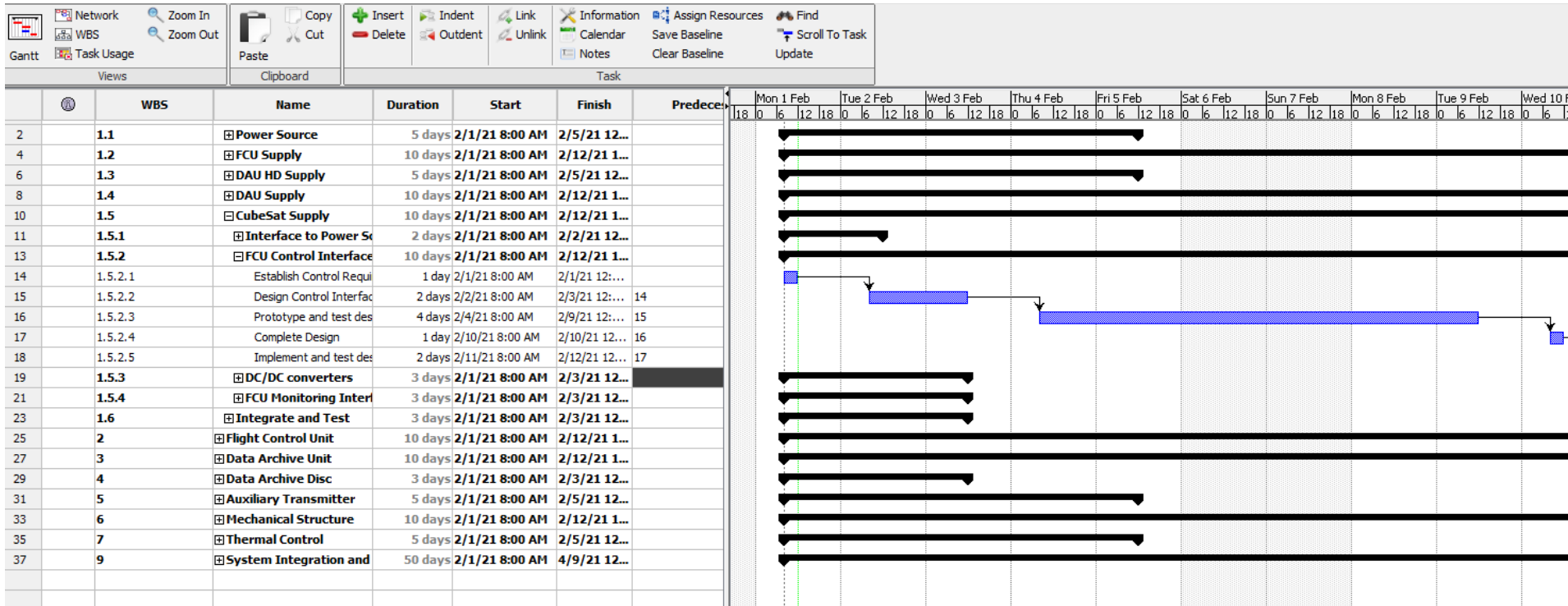
Set the task predecessors

- Enter the task dependence (i.e. which tasks must be complete prior to starting the next task) in the "Predecessors" field.
- You need to use the row number, not the WBS code.

Set the timescale of the chart

- Changing timescale of the chart is accomplished vua zooming in and out with the appropriate buttons

Make an image for documents

- Unfortunately, ProjectLibre does not have export option
- The best option seems to be adjust the Gantt chart and task list windows until they display what you want to show
- Then either take a screenshot and crop and example is shown below