Schedule/Milestones

The schedule shows a graphic representation of the milestones and tollgates that we defined in the project model. The purpose of the schedule and the other diagrams is to simplify and clarify tracking. It is therefore important for the picture to be straightforward, and preferably formatted to one page per diagram. A schedule typically appears as below[1].

Figure 14 – An example of a schedule

You fill in the milestones and tollgates taking place during any given week, day, or whatever timescale you are using in your schedule. The time scale is often days in the majority of smaller projects. In the following example we have mixed weeks and days. Do this according to Figure 15 below. As you see, we are using different symbols for milestones and tollgates. Upon checking the numbers you will see that all the decision points from the project model are included in the schedule. Enter the appropriate update status in the column under "updated."

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[1] Both the schedule and resource plan can easily be created in Excel

Milestones/Tollgates:

#	Milestone	#	Milestone	#	Milestone	#	Milestone
1	Project plan done	5	Appetizer approved	9	Dessert purchase done	13	Drinks purchased
2	Project plan approved	6	Entree purchase done	10	Dessert done	14	Drinks approved
3	Appetizer purchase done	7	Entree done	11	Dessert approved	15	Final report done
4	Appetizer done	8	Entree approved	12	Snacks purchased	16	Final report approved

Figure 15 – Example of how to complete a schedule

Gantt chart / Activity plan

 Gantt charts[2] or activity plans, as they are sometimes called, are used to show how the different activities in the project go together. A Gantt chart is created by writing out the name of the project activities on the Y axis. The X axis constitutes the project's running time from project start to project completion. For each activity a line is drawn that starts at the time that the activity starts and ends where the activity is intended to end. In such a way the line shows the run time of the project. The arrows between the activities in the picture show dependence between activities; for example, a certain activity may not be able to start before another activity is completed. As such, the Gantt chart is a graphic representation of how all the activities in the project go together. In many smaller project plans it is not necessary to create a Gantt chart, at least not in those where retrospective planning has been carried out.

ID	Uppgiftsnamn	Varaktighet
1	Köp potatis, pepparrot m.m.	4t
2	Skala potatisen	3t
3	Koka potatisen	2t
4	Mosa potatisen	2t
5	Skala pepparroten	2t
6	Riv pepparroten	3t
7	Sätt ugnen på 225	1t
8	Rör i pepparrot m.m.	,5t
9	Smaka av	,5t
10	Spritsa potatistoppar	1t
11	Grädda potatis i ugn	2t
12	Lägg upp potatistoppar	,5t
13	Dekorera med mörk sås	,5t
14	Dekorera med tryffel m.m.	,5t

---

[2] After Henry Gantt who developed the diagram in the early 20th century.

Figure 16 – An example of a Gantt chart

Allocation plan

The allocation plan will show the points in the project to which resources have been allocated. Allocation plans are important in smaller projects, too, even if it may seem unnecessary to diagram allocation where there is only one single person in the project. The allocation plan essentially just means that all the project members will *jointly* mark the calendar to show when they are going to work and between what times, i.e. the length of their work shifts.

The allocation plan has a time scale that matches up with the schedule and it may be wise to allocate a little extra time before each milestone and tollgate. The allocation plan is completed by entering the number of hours one has planned to work for a certain week or day. Once the allocation plan has been created, it is easy to create a resource plan.

Resource plan

Resources are often taken to mean work shifts counted in hours. The resources for the project are planned in an allocation plan and tracked in the resource plan. These two plans are often represented in the same document- see the figure below.

Figure 17 - An example of an allocation – and resource plan.

When the project begins, enter the project's estimated time use line in the resource plan. The estimated time use line is the project's ceiling: in other words, the number

of hours the project has until completion. (The rule of thumb in an academic context is that 1 point corresponds to 40 hours, so that the estimated time use line for a 5-point course equals 200 hours per person). When one oversteps the estimated time use line, the project goes from having been a profitable project to being a loss project.

The other line to be completed is the "planned time use line." Note that this line follows directly from how you planned for the project's members to work in the allocation plan and thus provides a graphic representation of how you intend to use resources (in this case hours). It may be somewhat demanding to fill in the "planned time use line" for each day, so this may instead be drawn on a weekly basis; but if one does not plan to work for a few days or weeks, this should be reflected in the "planned time use line," which then becomes horizontal during this period.

The "estimated result" is an indicator that is set as a cross upon each update. The purpose of the estimated result is to show how the project leader estimates that the project will progress. Finally, fill in a solid line to show how many hours have been spent on the project up to the current day. This is known as the "Time worked line." Tracking methods are covered in greater detail in the chapter on Project tracking.
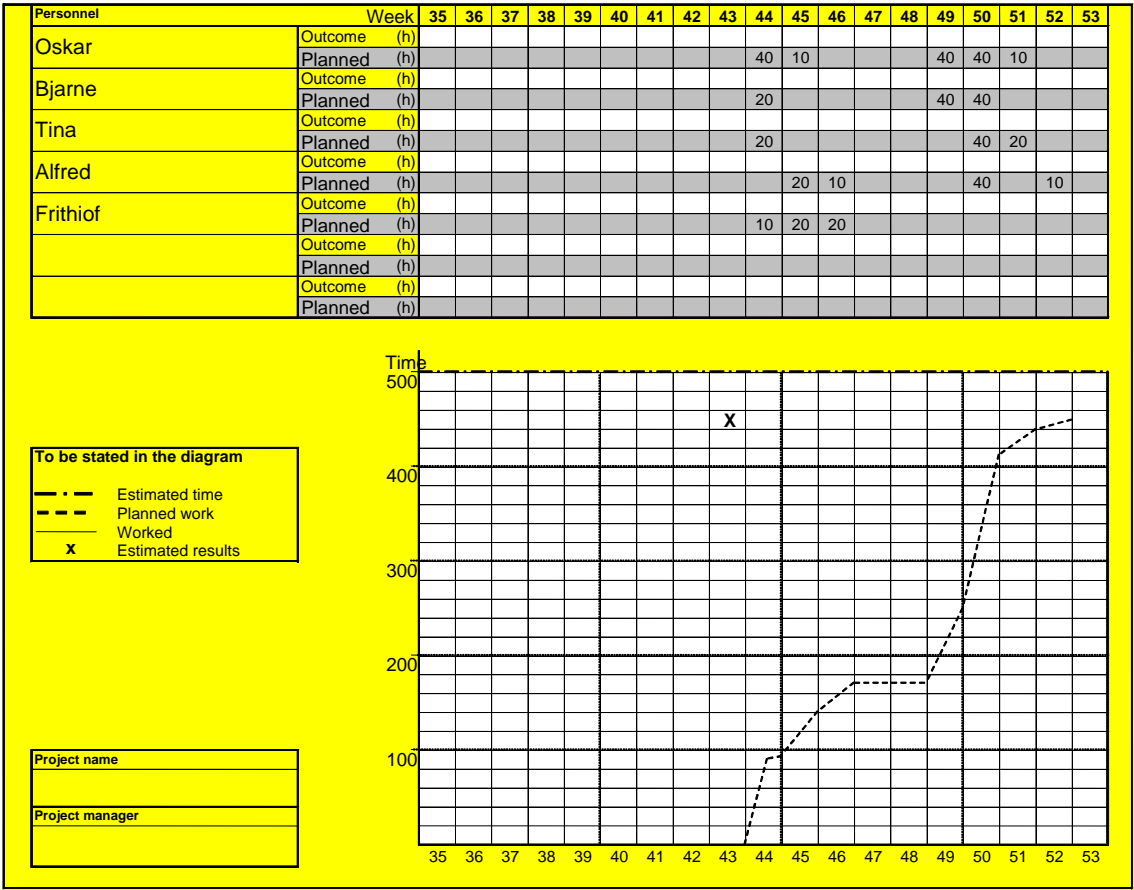
Personnel	Week	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
Oskar	Outcome (h)																			
	Planned (h)										40	10				40	40	10		
Bjarne	Outcome (h)																			
	Planned (h)										20					40	40			
Tina	Outcome (h)																			
	Planned (h)										20						40	20		
Alfred	Outcome (h)																			
	Planned (h)											20	10				40		10	
Frithiof	Outcome (h)																			
	Planned (h)										10	20	20							
	Outcome (h)																			
	Planned (h)																			
	Outcome (h)																			
	Planned (h)																			

To be stated in the diagram

— · — Estimated time
— — — Planned work
——— Worked
X Estimated results

Project name

Project manager

Figure 18 - An example of how to complete an allocation – and resource plan.

Tracking- and follow-up for schedules/milestone plans

Initial planning should just serve as a forecast of the project's time consumption and resource consumption. This forecast must be routinely updated so that appropriate measures can be taken during the project if necessary. As part of every project meeting, both the schedule and the resource plan should be updated.

At every update session, a new row is started in the schedule and all activities are moved down to the new row. Milestones and tollgates that have been completed are marked with a solid circle or triangle. Activities that have been delayed are moved to the time when it is estimated that they can be completed. Any milestones and tollgates that might have been completed ahead of schedule are moved to the time when they were completed. The affiliation of milestones and tollgates are marked with a line. The line is then drawn straight down if the planning is followed. If anything has been delayed, the line is drawn forward, and if anything has been completed ahead of schedule, the line is drawn backward.

Week	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49						50						51	52	53
Updated																Må	Ti	On	To	Fr	Må	Ti	On	To	Fr	Fr			
										1	2, 13	14				12	9			10	11		3, 6		4, 5	7, 8	15	16	
2004-10-28										○	○○	◇				○	○		○	◇	○○		○○	○○	○	◇			
2004-11-19										●	◆	○	◇			○	○		○	◇	○○		○◇	○◇	○	◇			
2004-12-03											●	◆				●	●		●	◇	○○		○◇	○◇	○	◇			
2004-12-09																			◆	○	●●		○◇	○◇	○	◇			
2004-12-17																							●◆	●●	●	◇			

Project manager	Milestones/tollgates						
	1	Project plan finished	5	Appetizer approved	9	Dessert purchase done	13	Drinks purchased
	2	Project plan approved	6	Entree purchase done	10	Dessert done	14	Drinks approved
	3	Appetizer purchase done	7	Entree done	11	Dessert approved	15	Final report done
	4	Appetizer done	8	Entree approved	12	Snack purchased	16	Final report approved

Figure 29 – Schedule tracking

Tracking and follow-up for the resource plan

At every update session the resource plan should show in graphic terms:

Estimate – showing the total number of estimated man hours for the project.

Planned – showing how you plan to budget time for the project. Note that the slant on the planned line directly follows from how you have planned that the project's members are to work in the allocation plan.

Worked – showing the actual number of hours that have been worked as of the current update session.

Estimated result – showing the total number of man hours that you at each update session estimate the project will have used once completed. This is marked by a cross, for example, at each update session.

The purpose of estimating the end result at every update session is to develop a historical view of how the project leader estimated that the project would progress at these points. In addition, the project may in some cases entail more worked hours than planned at a given point, which does not need to be negative if the project has completed more sub-activities than planned. As such, the project leader will be able to show that the project is still estimated to remain within its framework by using the "estimated result."

You should note the total worked hours at every update session. The resource plan is divided into weeks or days on the X axis and hours on the Y axis, in order to facilitate weekly updates.
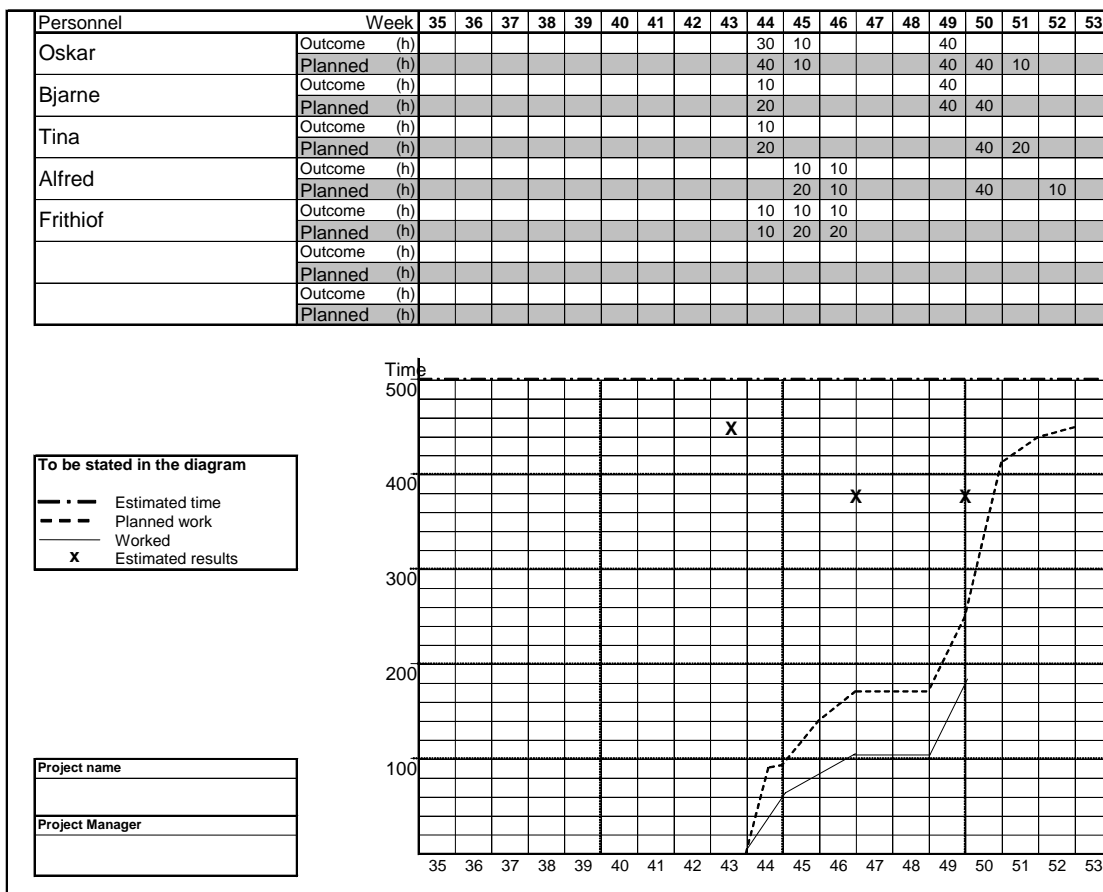
Personnel		Week	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
Oskar	Outcome	(h)										30	10				40				
	Planned	(h)										40	10				40	40	10		
Bjarne	Outcome	(h)										10					40				
	Planned	(h)										20					40	40			
Tina	Outcome	(h)										10									
	Planned	(h)										20						40	20		
Alfred	Outcome	(h)											10	10							
	Planned	(h)											20	10				40		10	
Frithiof	Outcome	(h)										10	10	10							
	Planned	(h)										10	20	20							
	Outcome	(h)																			
	Planned	(h)																			
	Outcome	(h)																			
	Planned	(h)																			

To be stated in the diagram

— · — Estimated time
— — Planned work
——— Worked
x Estimated results

Project name

Project Manager

Figure 30 – Resource plan tracking

"The planned curve" as such is not updated, but rather serves as a reference for the "total worked curve," which is the one that is continuously updated.

***Tip** Always keep a backup copy of the schedule and resource plan.*

Tracking and follow-up for the activity plan/Gantt chart

If the project is using a Gantt chart, a current status line can be drawn that marks the status of the different activities. The current status line shows how much of the respective activity has been completed in relation to its entirety.
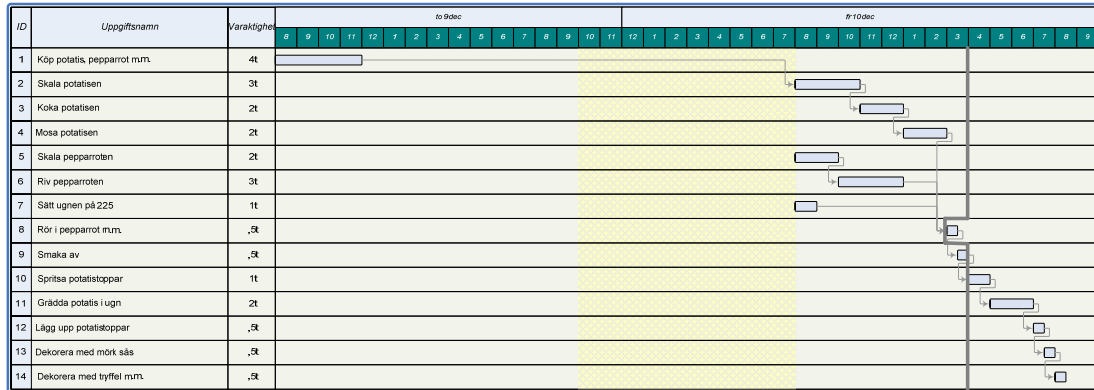

Figure 31 – Gantt chart with current status line