TaskBox Notation

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Taskboxes are graphical representations of task. The proposed notation aims to be as much coherent as possible across different types of diagrams: *Gantt*, *WBS* and *Task Networks*.

Taskboxes for Gantt's

A *basic task*, i.e. a no further decomposed task, is represented by a white box depicting the *planned time span* of the task.

Below the white box, a thin white box depicts the *actual time span*. Inside the actual timespan, a gray bar proportionally shows the *completion percentage* of the task.

Figure 1 shows some examples of basic tasks. From top: started late with poor progress, started very late and very poor progress, timely started and timely carried out, started early and completed, not yet started and late, not yet started.

As consequences of the notation we have that:

• the actual time span bar can never go beyond the *today date line;*

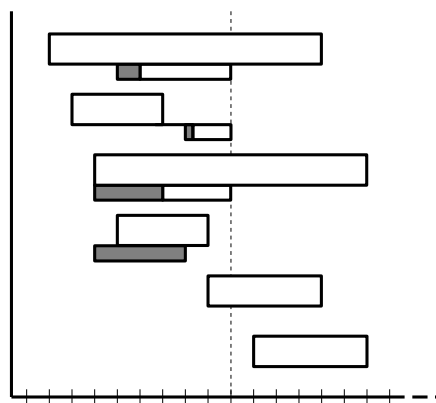• the actual time span bar cannot stop before the today date line if the task is not completed;

Fig. 1. Basic tasks in a Gantt diagram

Following the Gantt tradition, a *composed task*, i.e. a task detailed by other tasks, is represented by a thick black line that highlight the task coverage using a bracket like notation. Actual timespan and completion are added below the thick line and bracket like ends encompass the union of planned and actual timespans. Figure 2 shows some examples of composed tasks.

Taskboxes in can be decorated with textual information. In particular:

• on the left side are shown the task WBS identifier and (user option) the task name; text width is fixed, it is calculated to allow room for the lowest level WBS identifier; if task

name is shown, width must not exceed 1/6 of the whole diagram width; if needed, the task name is truncated and marked by "…";

- on the right side are shown information about task effort; information may be for the whole task, shown in the form <u>actual</u>/planned effort, or (user option for the task shown at the lowest level) detailed for each resource assigned to the task; text width is fixed, it must allow room for the global information and must not exceed 1/6 of the whole diagram width; if needed, resource names are truncated and marked by "…", if needed the list is truncated too;
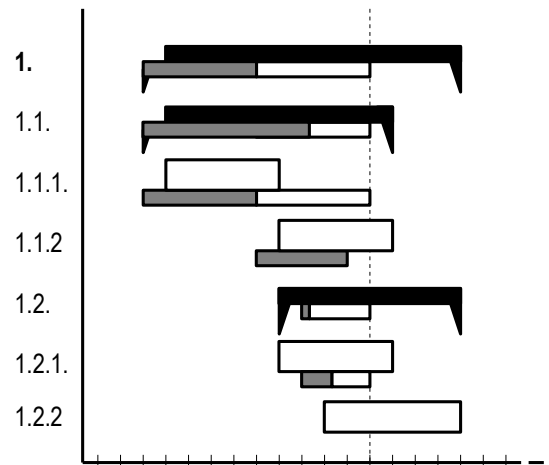

Fig. 2. Composed tasks in a Gantt diagram

Taskboxes for WBS's and Task Networks

A *taskbox* represents a task at a given level of abstraction in the WBS. A taskbox may have several *fields* that show information about the task.

The minimal taskbox has only the *header field*, which shows just the *WBS task identifier*, this may be useful for drawing chart of huge projects at a very fine grained task level. The header field may also contain the *task name* (user option).

Other (user options) fields in a taskbox may be:

- *planned data*: *duration*, *effort* and *cost*; each numerical value is always shown with the appropriate unit of measure;

- *planned timeframe*: *start date* and *end date*, ISO format;

- *resources*: *personal effort, person, role*; effort is always shown with the appropriate unit of measure;

- *actual timeframe*: *actual start date* and *actual end date*, ISO format.

- *actual data*: *actual duration, actual effort, actual cost*, each numerical value is shown with the appropriate unit of measure; the actual data field shows also a *completion bar*; when the bar does not reach is full lenght, each info has to be interpreted as the partial data available at the date the taskbox is drawn; when the actual data field is shown the personal effort in the resources field is shown in the form actual/planned;

When actual data are not available they are replaced by the "NA" keyword. In particular the actual end date is available only if the task is at 100% completion.

An *alert mark* may be (user option) shown in the top-left corner of the taskbox. The alert mark highlight differences between planned and actual data (even if the details ar not shown). When actual values differ from planned ones a "Δ" mark is placed. When at least one difference implies bad news (delay or budged exceeded) the mark shown is "Δ!".

All fields use the same font in the same size, the header field text is bold. Font and font size may be an user option. Actual data values are underlined.

The size of the task box is fixed for all the taskboxes in a chart. Each row has the same height that depends on the font size. Height of the taskboxes depends on the fields shown. Among taskboxes of the same chart can vary only if the resource field is shown.

Width depends on the font size and is calculated to allow room for the information to be shown, but is the same for all taskboxes of the same chart. In particular:

- for minimal taskboxes, width must allow room for the lowest level WBS identifier; if task name is shown, width is extended by 200%; if needed, the task name is truncated and marked by "...";

- if data or timeframe fields are shown, width must allow room for the values (the needed number of digits depends from project data); subfields in the same row must have equal width;

- if resource field is shown, width is inherited from other shown fields, doubled if the header field shown only the WBS task identifier; if needed, person and role are truncated and marked by "..." (person and role in the same way, to show at least the first letters of both).
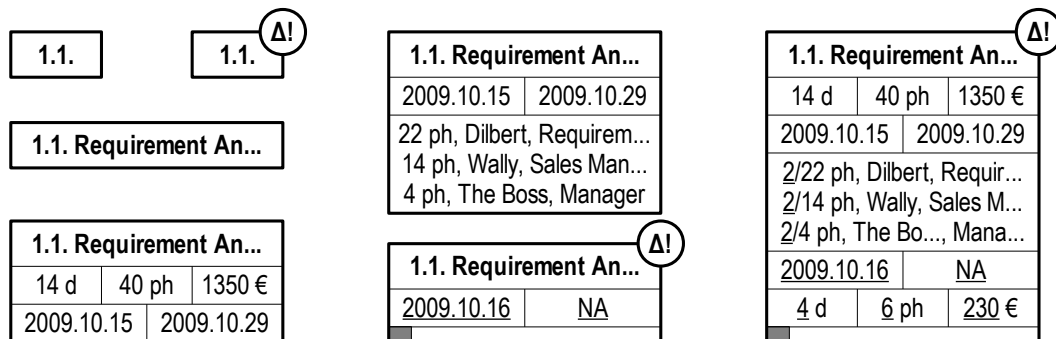
Refer to fig. 3 for examples of valid taskboxes.

Fig. 3. Examples of taskboxes showing different levels of detail.

Composition

Composition relations are shown only in WBS diagrams.

A composition relation is a line starting from the middle of the bottom side of the parent task and ending in the middle of the top side of the component task.

Dependencies and critical paths

Dependencies are shown only in Gantt (user option) and in Task Network diagrams.

A finish to start dependence is an arrow line exiting from the middle of right side of the *needed task* and entering in the middle of the left side of the *dependent task*.

Inner dependances between subtasks of a collapsed task are not shown.

If the needed task is an inner subtask of a collapsed task, the arrow line exits from the middle of the bottom side of the collapsed task.

If the dependant task is an inner subtask of a collapsed task, the arrow line enters in the middle of the top side of the collapsed task.

Critical path ... TBW

Diagram completion

WBS diagram are always completed by a 0 level task representing the *project*. Level 1 activities are by definition components of the project.

Task Network diagrams are always completed by the *start project* and *end project* milestones. All tasks that do not depend on other tasks depend by definition by the start project milestone. All tasks that are not needed by other tasks are by definition needed by the end project milestone.

General options

Any diagram can be shown at a given WBS level (user option) or following a detailed user specification about collapsed/exploded tasks. In particular:

- in a Gantt diagram, composed tasks that happen to be collapsed are still shown as composed tasks;

- in a WBS diagram, composed tasks that happen to be collapsed are marked by a "+" before the WBS identifier; no mark is shown for parent task that have their component subtask shown;

- in a Task Network diagram, only the lowest displayed tasks are shown (no upper levels); composed tasks that happen to be collapsed are marked by a "+" before the WBS identifier.

TBW:

temporal span of Gantt diagrams;

time grain of Gantt diagrams;

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