TILOS 7

The linear project management software used worldwide for road, pipeline, transmission line, railway, tunnel and other civil engineering projects.

Use TILOS to incorporate design details, construction challenges, risk elements and your project schedule in a single view.

Fully integrates with the leading CPM scheduling tools.

Simply the best tool for planning and managing linear projects.

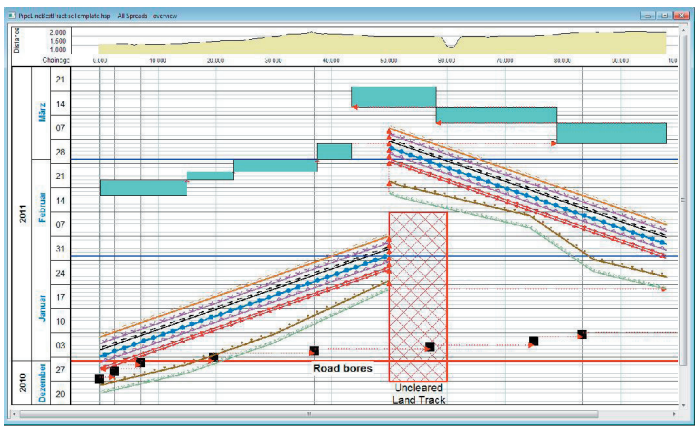
Linear project

Why is TILOS superior for Linear Projects?

Traditional planning systems display their results in bar charts or network diagrams. Linear projects present unique challenges because the crews and equipment move along the construction right-of-way to perform their work. Permits, environmental constraints, construction related issues and risk elements are easily incorporated into the plan to give a single overall view of the project

Neither of the traditional diagrams are able to show a graphical link between the location where the work is performed (the distance axis) and the time when it is executed (the time axis).

Time distance diagrams clearly communicate the scope by showing the project details and the schedule in one view.



How do I read a linear schedule?

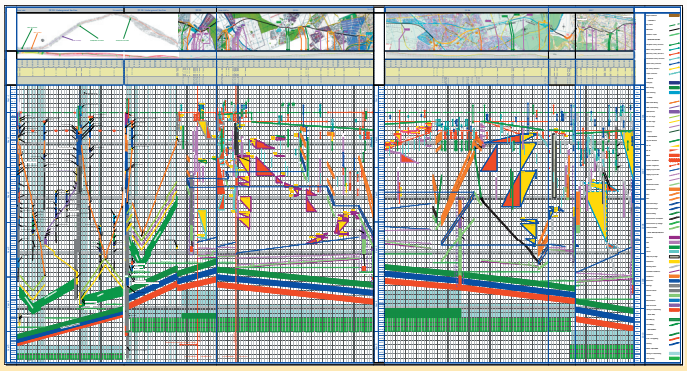
Linear schedules are able to communicate more information because of the distance related data assigned to each task. The links between site and schedule information enables a quicker and deeper understanding of the construction plan.

- **Work Rate indicated by slope:** Typically the distance axis is horizontal and the time axis is vertical (although this can be reversed). Furthermore, the slope of the task line indicates the speed, or productivity rate of the crew performing the work in the field.
- **Overlapping Task Lines:** Task lines that overlap indicate possible collisions and show that the construction plan is not feasible.
- **Non-linear activities:** Non-linear activities, where the crew is stationary, are represented by block tasks. Examples include block valve installations, road bores or bridge foundation work.
- Restricted areas do not allow to plan tasks in a given time and distance window because of permitting issues preventing land access or environmental issues (such as bird areas or rare plants). Clash detection highlights those tasks crossing these areas.

How do I create a linear schedule quickly?

TILOS can be used as a standalone planning system or in combination with other planning systems. Either way, TILOS supports the quick creation of a linear schedule.

- **Quickly create your plan:** The time distance diagram can be directly drawn on the screen as you would on paper. The task templates with predefined line styles, colours, text information, method of how to calculated quantities, productions rates and resources reduce the work to a minimum.
- **Easily duplicate repetitive work:** Repetitive work sequences can be selected and copied to an new location (including logic links). Task lengths and durations are updated to reflect the change in location automatically.
- **Import existing plans:** Task lists from other programs such as MS Project or Primavera can be directly imported into TILOS. The shape, line styles and colour are taken from the work type based task template. Existing plans can be updated as well.

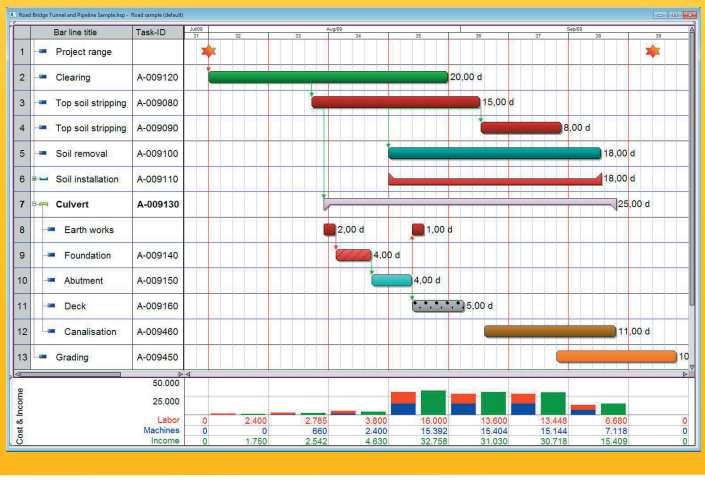


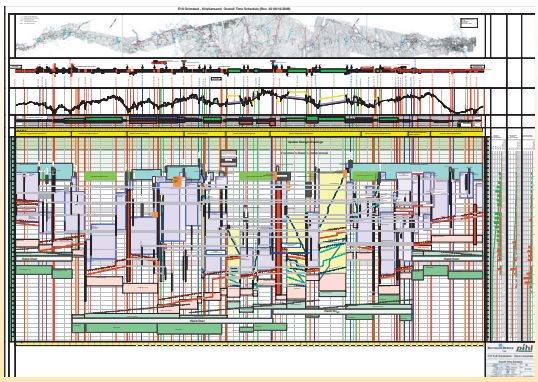
Railway Project, South Africa 2010
To get more information please visit:
www.tilos.org/railway-construction

Are Gantt charts possible in TILOS?

TILOS automatically generates a traditional Gantt chart representation of your project as you plan it in the time-distance view (or vice versa).

- **Fully customizable Gantt charts**: you decide how you want the tasks to be grouped for presentation. Possible choices are by resource, by activity type or simply the natural progression of the work. Data can also be displayed in columns and exported easily to Excel.
- **Different types of Gantt charts:** two types of Gantt charts are possible: traditional time based or location based. A location based Gantt chart displays where work has been completed along a ROW, making it easy to identify skips and other areas that have not been completed.
- **Multiple Gantt Charts**: TILOS allows you define as many Gantt charts as you require to effectively display and manage your project.



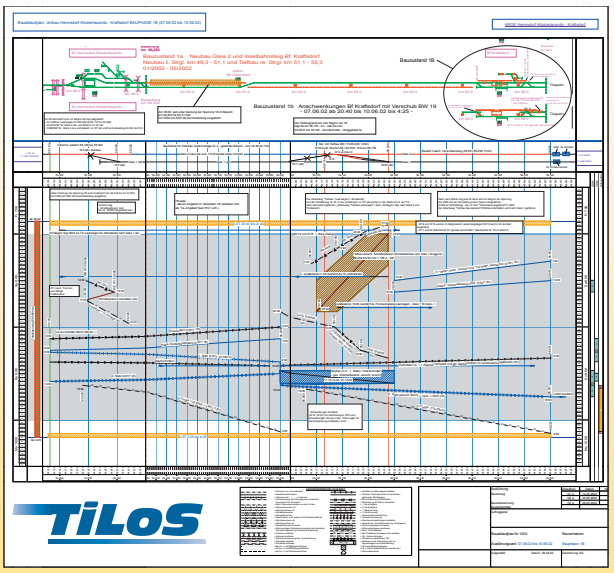


Highway Project in Norway, Bilfinger Berger
To get more information please visit:
www.tilos.org/higway-construction

How can TILOS be used on your project?

TILOS can be used in all phases of a project, from early design to controlling on site. The ability to schedule, in as much detail as required, enables you to show overall plans or detailed plans down to one minute precision.

- **Design phase for feasibility studies**: TILOS is designed to allow quick and easy planning by simply drawing the schedule directly on the screen.
- **Tendering and procurement phase**: TILOS demonstrates that the bid has been well prepared and the company will be able to finish the project successfully in the specified time frame. Collisions can be easy detected.
- **Execution phase**: TILOS allows you to plan the project in detail, execute the work and record progress on the project.
- **Claim management**: analyze changes to the project and show the results while preparing and defending claims.



Hermsdorf to Klosterlausnitz-Germany
To view more sample projects and get more information please visit:
www.tilos.org/tilos-samples

How do I keep my plan up to date?

In most project management systems progress is defined on actual dates and % complete, while the % value is often estimated. TILOS can record progress for each task based on units installed and show exactly which sections of the project have been completed.

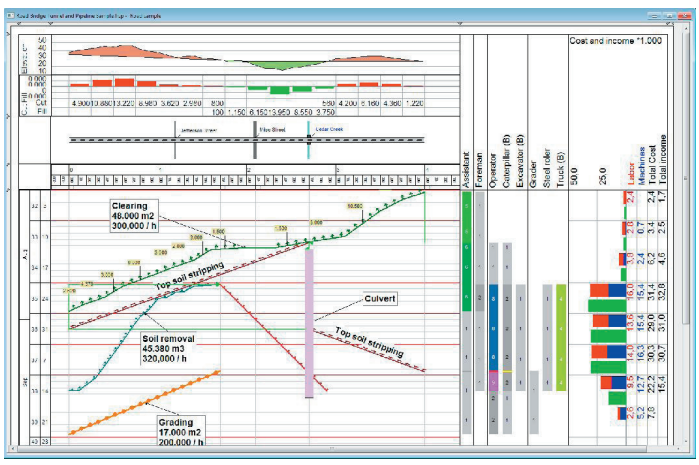
- **Recording progress:** Progress can be recorded in three methods: percentage based, work based or distance based. The precise location information where the work has been completed can be shown with a simple distance based Gantt chart or on the time distance chart.
- **Importing progress:** The progress data can be imported from the daily site reports or entered manually into TILOS. A flexible import feature reads the data from Excel files and assigns the progress directly to the activities, analyzes the results and updates the remaining work program.
- **Re-scheduling and re-planning:** The remaining work can be re-evaluated to meet the project goals. This can be done by increasing resources (to increase productivity) or by making changes to the construction plan such as adding another crew to recover the baseline.
- The baseline shows differences between plan and execution and highlights delays in the project at an early stage. TILOS allows you to create as many baselines as necessary to control and report on your project.
- **Forecast end date:** TILOS will forecast the end date by averaging the daily productivity rate of each task or you can manually enter the planned rate to determine if you can recover the baseline.

How do I describe the project site details?

Site related data such as risk elements, elevation and crossing lists help you understand the project and to identify issues that may impact your schedule . As most data is available before any scheduling work starts, TILOS can easily import this data to reduce the effort of re-entering data multiple times.

- **Symbols and pictures** can be imported and placed along the distance axis to describe the work that has to be performed in the project.
- **Scales and grids** describe important station points. Grid lines assigned to stations also simplify data entry.
- **Speed profiles** model non-linear productivity rates in different sections of the project such as: slope areas, wetlands, heavy rock areas or simply base productivity on learning curves.
- **Distance related graphs** such as: elevation, slope diagrams or mass haul profiles showing cut and fill sections can be generated directly from profile data.

Time Distance with site details



Top ten reasons why you should use TILOS for linear projects!

Easily plan your project by drawing it on the screen.

A powerful graphical interface for planning time-distance-diagrams with full support of the critical path technology, enhanced by location and production constraints . Automatically creates Gantt charts as you develop the time-distance-diagram.

Provides maximum flexibility in organizing your plan.

Flexible view system allows maximum customization to your specific needs. Place as many sub-plans from the same or other projects into the same view to show the overall project or more detailed plans.

Allows integration of existing data.

TILOS integrates directly with Primavera, Microsoft Project, Excel and PowerProject to reduce development time

Eliminates planning mistakes.

Clash detection and clash avoidance. Specify the distance between crews to avoid collisions, but if it happens, TILOS will tell you where.

Realistic planning using construction specifications.

Distance based calculation: TILOS calculates the work parameters based on the distance values. For example, in rail construction a sleeper is installed every 0.667 m. Based on the length of the task, TILOS calculates the number of sleepers needed and the number of railcars needed to transport them.

Full control over costs and resources.

Powerful resource calculation: TILOS supports flexible resource calculations based on the task quantity and time parameters to model the construction process and driving parameters more accurately.

Save time planning by using company templates.

Library: TILOS supports template activities in a library with their display and resource attributes. Drawing a task as a simple line means: setting the speed of the process, calculating the work parameters, the resource assignments and their cost in the background with little extra effort.

Compare actual against performed.

Baselining allows the comparison of the planned versus actual schedule to identify and highlight any differences. Earned value analysis is possible with TILOS.

High quality output of your professional plans.

High quality output: TILOS produces high quality drawings in any size, similar to CAD systems.

Quick return on investment.

Save time and money. A client study has shown, that even on the first project, the planning time was reduced by 50% from 40 to 20 hours.

Feedback from clients

James Lyon from HDR Inc. in USA:

"TILOS transformed our engineers' attitude toward project scheduling from something extra they never had time for to a tool they "owned" and wouldn't go to a meeting without."

Geert Bijmolt from NACAP in Netherlands:

"I appreciate that the TILOS team continuously improves this application and also listens to the client for improvement, so please continue on this level."

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