ORTEC Workforce Scheduling 7

User Manual

Module Budget & Control

May 2025

PUBLIC

ORTEC

Published: May 19, 2025

Version: 2025.1643093

Table of Contents

1 Budget and Control

When constructing a schedule, various criteria have to be met. In many cases, a certain budget is concerned. This may mean that the costs of the schedule have to be below a predetermined level, or that the number of planned hours should be under or above a certain value. The module Budget & Control supports the planner in taking these criteria into consideration. In the future, it will be possible to generate schedules conforming to the given budget

1.1 Purpose

The purpose of the Budget & Control module is to support budget-based planning. Two main components can be distinguished. First, the Budget part gives insight into the available amount of money or time. Second, the Control part supports taking into account the costs or time when adjusting the planning. Altogether, using the Budget & Control module results in a planning that not only meets the usual requirements but also demands in terms of money or time.

1.2 Process

As described above, the Budget & Control module can be used for gaining insight into the actual figures of a certain schedule compared with the budgeted values, as well as for incorporating them into the planning process. In the first case, the module supports the following process:

1. The organization determines the required budget for each department.
2. These budgets can be imported using a dedicated Excel sheet, supplied by ORTEC.
3. The imported budget and the costs can be shown as a value per day, as a key performance indicator (KPI), or both.
4. The part of the budget that is already consumed by the schedule is calculated based on so-called reporting rules. These rules can be used to configure the calculations.

1.3 Terminology

Three terms play an important role in the description of this module: budget, costs and control. They are described below.

- **Budget**

  A budget is a predetermined limiting value for a certain measure. It is important to emphasize that a budget does not necessarily refer to an amount of money. One could also use a budget to limit, for instance, the number of planned hours in a single month. Usually, a budget in terms of money is an upper limit, whereas a budget in hours is a lower bound, but this is not necessarily true in all cases.

- **Costs**

What is regarded as costs depends on the considered budget. In this respect, costs are all quantities that count for comparison with the predetermined budget. Since the budget is not necessarily defined in terms of money, costs do not have to be measured in terms of money either. For example, if the budget sets a boundary for the number of productive hours on a certain day, every planned productive hour counts in the comparison with this budget. In this example, costs are defined as productive hours. Summarizing, the budget and related actual costs should always refer to the same 'variable' and therefore have the same unit of measure.

- **Control**

  Control refers to the possibility to adjust costs based on the given budget. This is especially relevant in the second purpose of this module, which is incorporating the budget, costs, and KPIs in the planning process.

1.4 How to use

One major function of the Budget & Control module is showing the available budget in the various components, especially the plan board. For this purpose, some existing functionalities are needed, as well as a number of functionalities especially dedicated to the Budget & Control module.

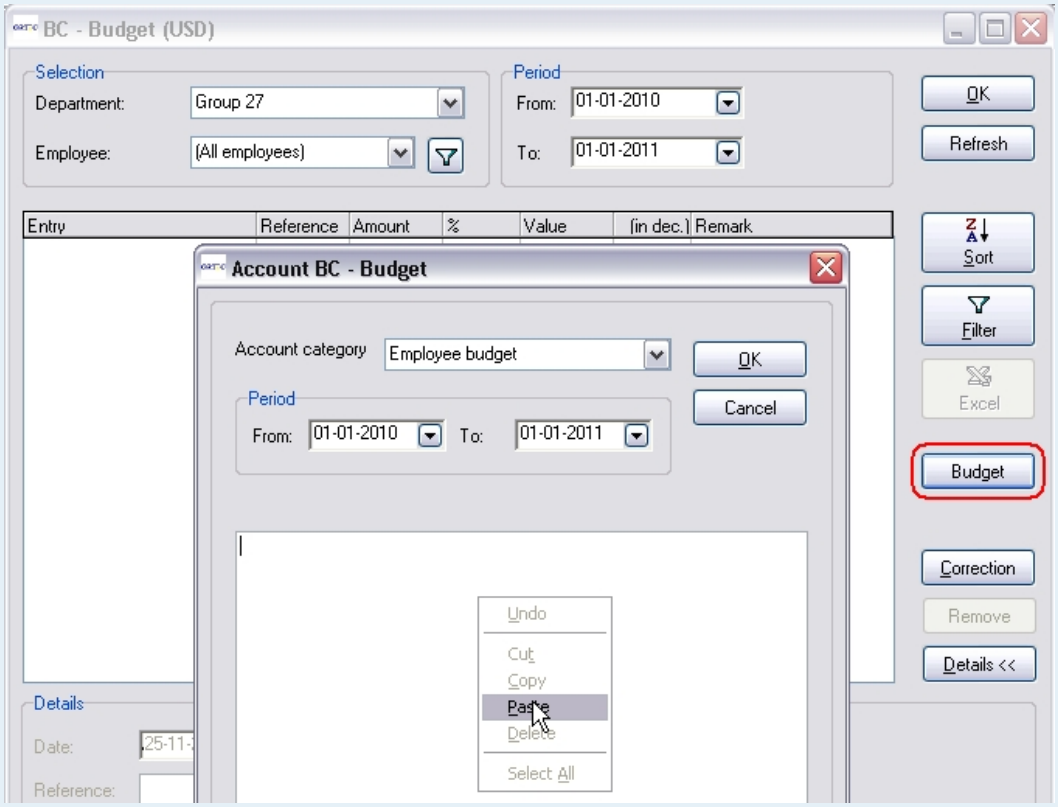
The reporting rules used by the Budget & Control module can be regarded as an extension to the existing compensation rules. Both types of rules function in a similar way, except the reporting rules also apply to employees who are not assigned to any employment conditions group.

2 Importing the budget from Excel

The budget data needs to be prepared in Excel so that it can be easily imported. For this purpose, ORTEC offers a number of special Excel sheets. Budgets can be entered on a reporting account, which needs to be done per department. It is possible to enter multiple budgets for a department simultaneously.

1. To enter the budgets, open the concerned reporting account and click the **Budget** button.

Example



2. In the popup window, select the appropriate **Account category** and **Period**.
3. The budget data can now be selected and copied from Excel, then pasted into the empty field. The pasted data should consist of two columns: one with dates and one with corresponding amounts, as shown in the screenshot below.

Example

	A	B
1	01-01-2010	3900
2	02-01-2010	3900
3	03-01-2010	4500
4	04-01-2010	4500
5	05-01-2010	3900
6	06-01-2010	3900

Only the budgets with corresponding dates that fall within the specified period can be imported. All previous budgets within the specified period are deleted, even for dates for which no new budget is entered.

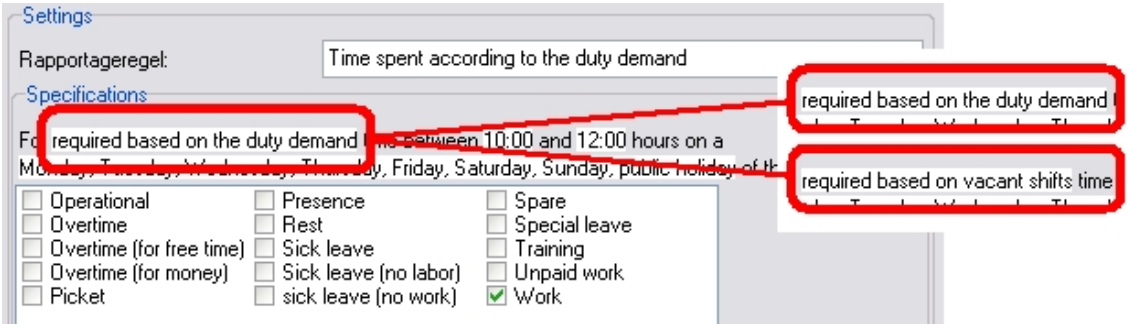
3 Calculating costs and KPIs

In order to calculate costs and KPIs, the costs per employee per hour can be entered as an employee property. It is possible to enter different costs for hired employees and temporary workers. Permissions can be used to hide these costs for certain users.

Next, reporting accounts can be used to show budgets, costs, and KPIs for a selection of employees. The numbers displayed on these accounts are calculated via reporting rules. These rules can, for example, be used to specify which activity types should be considered for the budget, such as 'Work', and which should not, such as 'Break'.

To use the reporting rules for the desired calculations, the following functionality is available:

- Booking entries according to required time based on the duty demand or vacant shifts: In order to estimate costs in advance, it is possible to perform calculations based on time according to the duty demand or vacant shifts. A special compensation rule is available for this purpose. It can be used to enter the desired time based on activity class or type for a certain time interval. This rule acts similarly to the existing compensation rule 'Allowances per time interval'.



- Expression DEPARTMENTPROPERTY: A department property can be used to store a certain standard value per department, such as hourly wage. By incorporating the expression ‘DEPARTMENTPROPERTY’ in a calculation, one can then refer to this value.

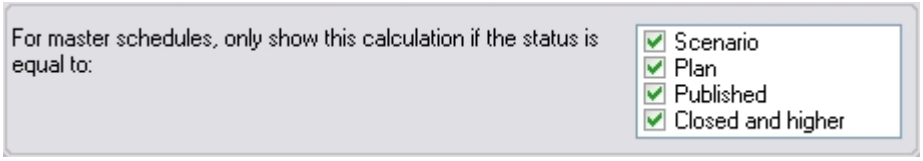
4 Daily calculations

In the plan board, values from the reporting accounts are shown through daily calculations. For the Budget & Control module, three additional daily calculations are available. Furthermore, these calculations have been given additional functionalities.

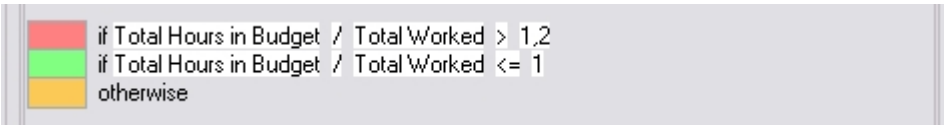
4.1 Functionalities for daily calculations

A number of functionalities are available for the added daily calculations, as well as for employee calculations and vertical norms.

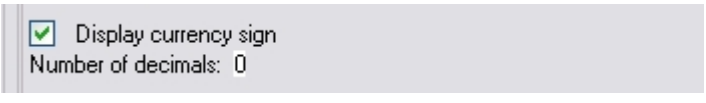
- Display calculation depending on schedule status: Since a certain calculation may only be relevant in part of the planning process, it can be configured for which schedule statuses the calculation should be shown. Four checkboxes are present, as shown in the screenshot below.

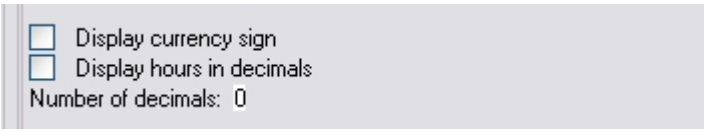


- Conditional formatting: The result of a calculation can be assigned different background colors depending on a manually specified condition. This enables the user, for example, to mark values that exceed the budget with a certain color. Three different colors can be selected, allowing the use of traffic light colors as easily understandable indicators.



- Appearance: A checkbox is available for configuring whether a currency sign should be displayed. The desired currency sign can be set by adding the setting 'CURRENCYSIGN' and assigning the desired sign (e.g., '€', '$', etc.). When the calculation is based on a reporting account with the type of entries set as 'Time', it can also be configured whether times should be displayed using a colon (e.g., 12:45) or with decimals (e.g., 12,75). For both amounts of money and time, the number of decimals to be displayed can be set.

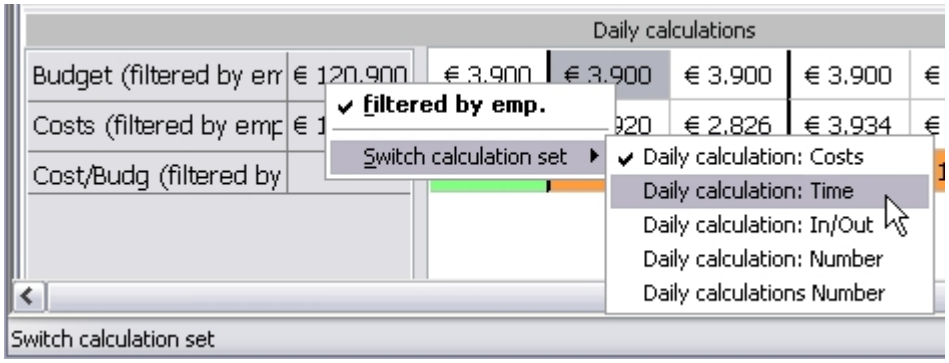




- Filtered employees: When a certain filter is applied to the employees in the plan board, each calculation can refer to either all employees or only the ones that are not filtered out. A checkbox is available for selecting the desired option.

- Sum of selected cells: In order to calculate the sum of a number of displayed calculations, one can simply select the concerning cells. The sum will then be displayed automatically in the status bar (bottom left corner window).

- Change calculation via right mouse menu: The calculation to be shown can directly be changed in the plan board. After a right mouse click on the calculation title, a menu with the relevant options will appear.

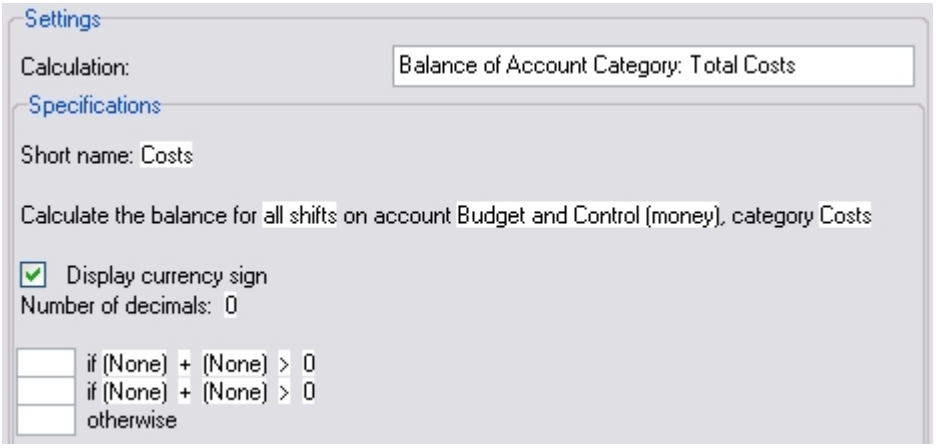


> This option is not only available in the daily calculations field, but also at the employee information, the employee calculations and the KPI's.

4.2 Daily calculations for Budget and Control

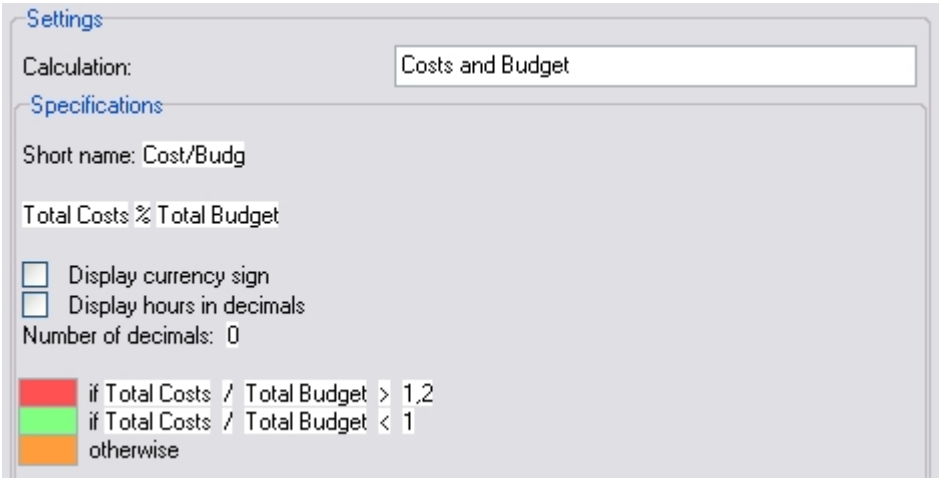
- Balance of account category: This calculation displays the value of a category from an account, similar to the employee calculation. The selection of shifts for which this value is calculated can be defined using one of the following five available options:
  - All shifts
  - Shifts for another cost center
  - Shifts for another department

- Shifts for cost center of department
- Shifts in department



- Calculation based on other calculations: This calculation can be used for comparison of other calculations in the set. All usual operators are available, as well as a percentage sign, which can be used to calculate the ratio between two calculations and show the result as a percentage.

For such a calculation to work, the calculations on which it is based have to be shown in the plan board as well.



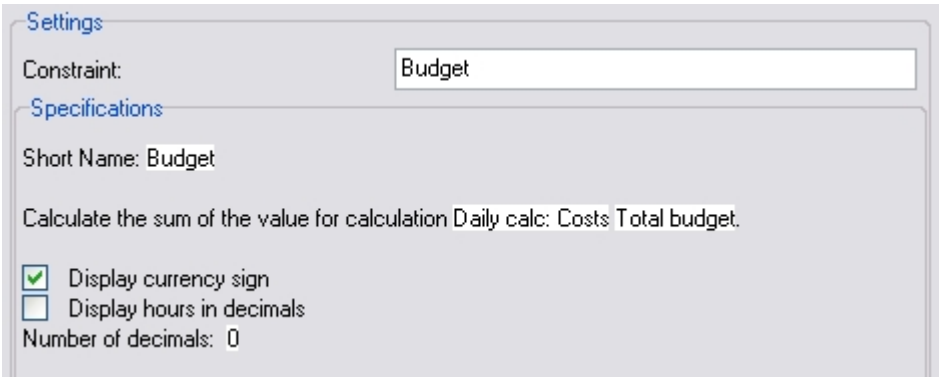
5 KPIs

KPIs can be used to quantify the quality of a schedule, for instance, with respect to the available budget. The calculation of a KPI is based on the results from daily and/or employee calculations.

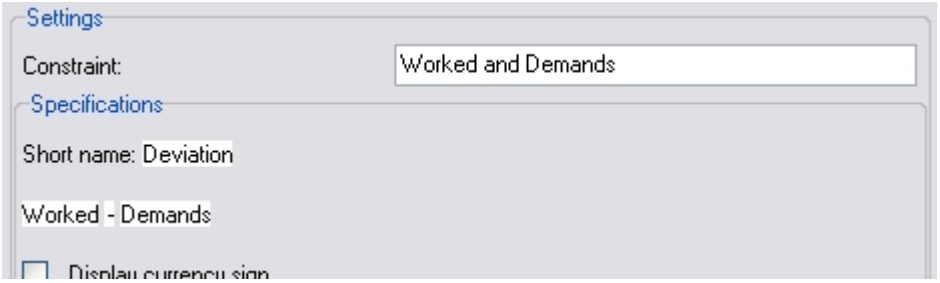
5.1 Showing KPIs

Two types of calculations are available for KPIs:

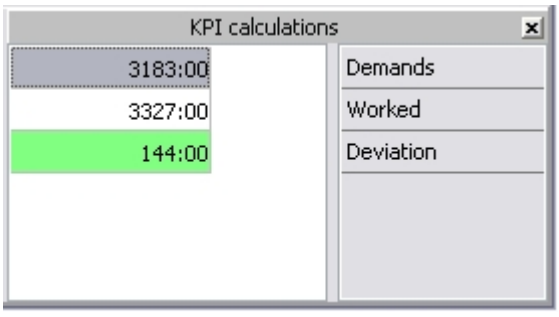
- Sum of other calculations: This calculation sums up all results from another calculation over the schedule's period. This can either be a daily or an employee calculation. The calculation set, as well as the actual calculation, can be selected from drop-down menus.



- Calculation based on other calculations: This calculation can be used for comparison of other calculations in the set. Its presumably most useful application is the calculation of a certain actual value as a percentage of the budgeted value.



The resulting KPI component of the plan board could look like this:



Always one of the cells will be selected and therefore does not have the color assigned in the KPI configuration window.

Similar to the other calculations, the displayed set of KPIs can be changed via the right mouse menu.

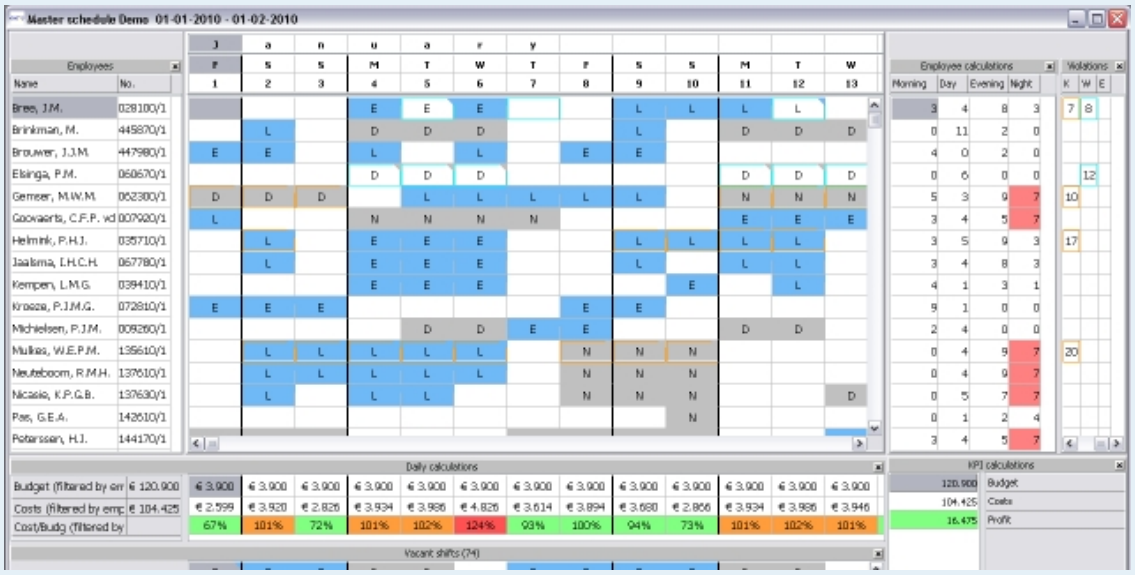
6 Example cases

Two example cases will be used to illustrate how the functionalities can be applied. In both examples, first, the eventual result will be shown, and then it will be described how this result can be achieved. In the first example, a budget in terms of money is used. In the second example, a time budget is concerned.

6.1 Example case 1: Money

The below screenshot shows the plan board in which daily calculations and KPIs for a budget in terms of money are properly configured:

Example



This configuration resulted from the execution of the following steps:

1. The budget is imported from Excel:
    a. In Excel, two columns are filled with data, one with dates and one with the budget for that data, and then selected.
    b. A reporting account with name Budget and Control and categories Budget and Costs is created. In the Type of entries tab, Payment is selected.
    c. This account is opened, and after (All employees) is selected the Budget window is opened.
    d. The account category Budget is selected, the period 01-01-2010 to 01-02-2010 is set and the Excel data for these 31 dates is pasted.
2. Hourly employment costs are set:

a. In the organization window, an employee property is created, and given a default value.

b. In the employee management window, employees with deviating hourly costs are assigned the created employee property with these costs.

3. Reporting rules are created:

    a. In the Rules tab in the organization window, a new collection of rules is added to the Maintenance reporting remuneration field.

    b. In this collection, rules are added in such a way that the number of hours worked is multiplied by the hourly cost of the concerning employee, and entered on the Costs category of the Budget and Control reporting account.

4. Daily calculations are created:

    a. In the Daily calculations tab of the Plan board settings window, a new set of daily calculations is opened.

    b. In the Daily calculations tab of the Plan board settings window, a new set of daily calculations is opened.

    c. In the same way, the values of the Costs category are summed up.

    d. A Calculation based on other calculations rule is used to calculate the results from the calculation mentioned in b as a percentage of the result from the calculation mentioned in c. Different colors are used to indicate whether the actual costs are below, around or far above the budget.

5. Via the Plan board settings drop down menu on the menu bar, the created set of daily calculations is shown in the plan board.

6. KPI calculations are created:

    a. In the KPI calculations tab of the Plan board settings window, a new set of KPI calculations is created.

    b. Using the rule Sum of other calculation, a calculation Costs is created which sums up all results of the daily calculation created in step 4b.

    c. In the same manner, all results of the daily calculation created in 4.c are summed up by the calculation Budget

    d. The rule Calculation based on other calculations is used to calculate and show the difference between the budget and actual costs in the schedule period, as determined by the calculations created in the previous two steps.

    e. The KPI is given a red background if the ratio ‘Costs / Budget’ exceeds the value 1,1, a green background when the ratio is below 1, and orange otherwise. Obviously, some other criteria could have been used as well, for instance based on the absolute difference instead of the ratio.

7. Finally, the order in which the calculations are displayed is changed, such that the plan board looks as shown by the screenshot at the beginning of this example case.

6.2 Example case 2: Time

The below screenshot shows the plan board in which daily calculations and KPIs for a time budget are properly configured:

Example

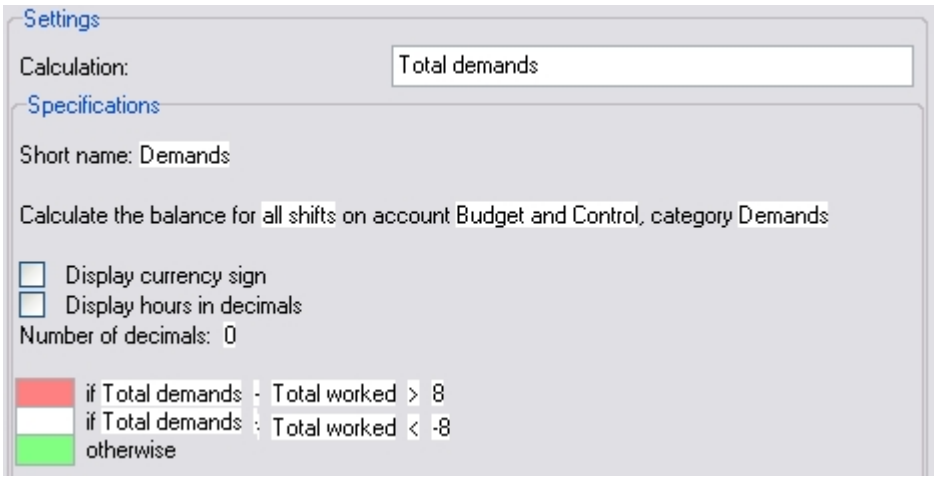
This configuration resulted from the execution of the following steps:

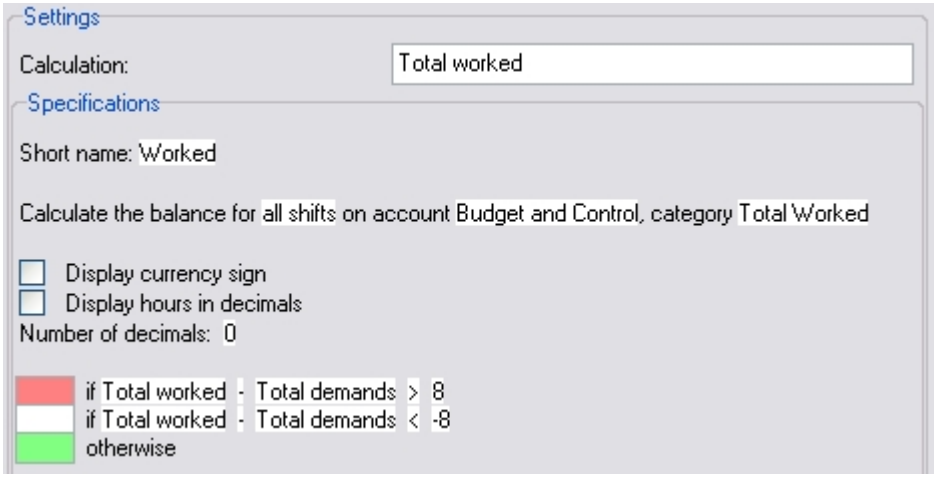
1. Time entries are enabled:
    a. A reporting account with name Budget and Control and categories Demands and Total Worked is created. In the Type of entries tab, Time is selected, which is the default value.
    b. Via the Rules tab in the Organization window, a set of reporting compensation rules is created.
    c. Within this set, a rule of type Time spent according to the duty demand is used to book all required based on the duty demand time of type Work on the Demand category of the Budget and Control account.
    d. The rule Variable entry for an activity class is used to book shifts containing Work on the Total Worked category of the Budget and Control account.
2. Daily calculations are created:
    a. In the Daily calculations tab of the Plan board settings window, a new set of daily calculations is opened.

b. Within this set, a Balance of Account Category rule is used to sum up the values of all shifts on the Total Worked category of the Budget and Control reporting account. This rule is named Total Hours Worked.

c. In the same way, the values of the Demands category are summed up by a rule named Total Hours in Budget.

d. Instead of using a third calculation to calculate the difference, the colors of both rules are configured such that if the value of one calculation exceeds the other one with more than 15 hours, it is colored red, whereas the other calculation stays white. If the difference between both values is less than 15 hours, both cells are colored green. How this is obtained is shown by the below screenshots.





3. Via the Plan board settings drop down menu on the menu bar, the created set of daily calculations is shown in the plan board.

4. KPI calculations are created:

   a. In the KPI calculations tab of the Plan board settings window, a new set of KPI calculations is created.

b. Using the rule Sum of other calculation, a calculation Worked is created which sums up all results of the daily calculation created in step 2b.

c. In the same manner, all results of the daily calculation created in 2.c are summed up by the calculation Demands.

d. The rule Calculation based on other calculations is used to calculate and show the difference between the demands and actual hours worked in the schedule period, as determined by the calculations created in the previous two steps.

e. The KPI is given a red background if the ratio 'Worked / Demands' exceeds the value 1,2, a orange background when the ratio is below 0,8, and green otherwise. Obviously, some other criteria could have been used as well, for instance based on the absolute difference instead of the ratio.

5. Finally, the order in which the calculations are displayed is adjusted, such that the plan board looks as shown by the screenshot at the beginning of this example case.

Contact information

For further information contact ORTEC, either through your existing ORTEC representative or by using the appropriate contact details listed on www.ortec.com

Our website offers case studies, white papers, brochures, demos and much more.